

Modern Furniture Upholstering

A PRACTICAL HANDBOOK FOR
THE UPHOLSTERER

Second Edition—Revised and Enlarged

OVER ONE THOUSAND ILLUSTRATIONS WITH
DESCRIPTIVE TEXT

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TOOLS AND ACCESSORIES

A COMPARISON of the upholsterer's tools used to-day with those in vogue fifty or a hundred years ago indicates a very marked advance in convenience. As in other trades, the proper selection of the various implements which compose a modern kit is an important factor in regard to the quality and quantity of the work which may be accomplished.

The bench is of primary importance. It must be strong, light, and of a practical size. In the general upholstery shop, it must accommodate alike all sizes and kinds of upholstered furniture, and at the same time provide a cushion table and tufting board. On the opposite page we have illustrated a style of bench that is readily adaptable to the various needs of the trade. It is easily cleaned, will hold an ottoman or a davenport with equal facility, and the extension on the right provides a convenient place for tools. The arms are provided with movable pads for the protection of polished surfaces. A tufting frame with removable boards is placed upon the arms of the bench when used for making cushions or mattresses, the loose boards are placed on the frame when stuffing the cushion, and removed for tufting purposes.

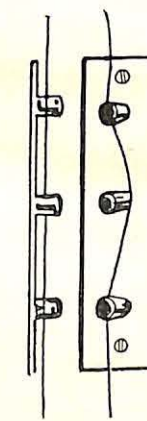
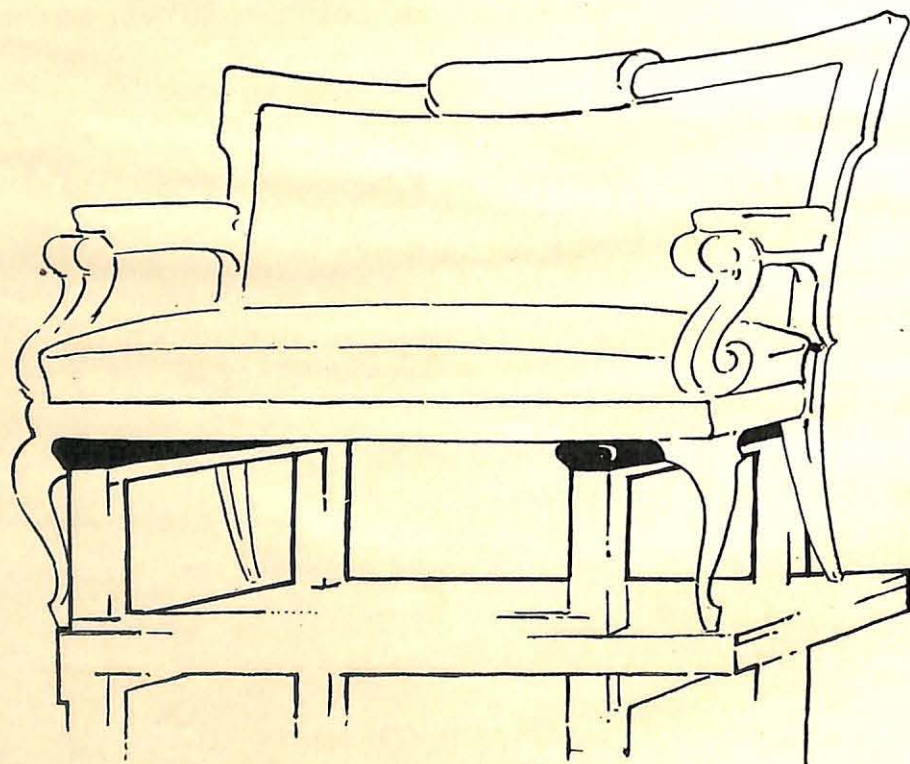
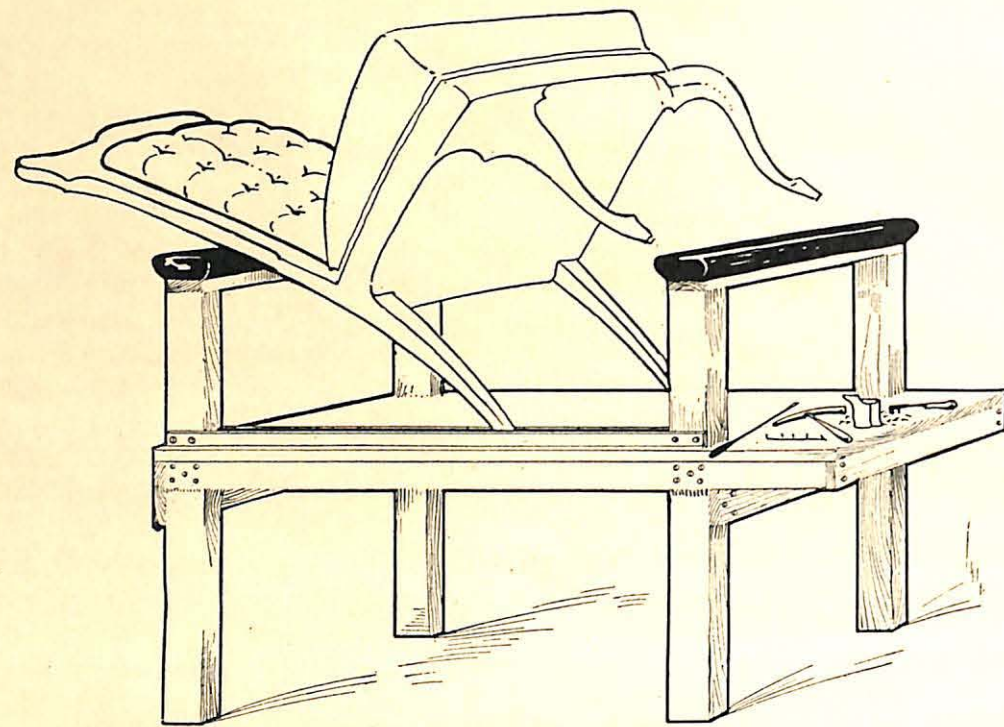
The most important tool, and that most used by the upholsterer, is the hammer. It should be neither too heavy nor too light, with a medium face, convenient claw, and of the finest temper.

The perfect hammer is so balanced that an arc described from the end of the handle will pass through the center of the head from face to claw.

The kit should contain, in addition to the regular upholsterer's hammer, Fig. 10, a small claw hammer for general heavy purposes, similar to Fig. 3. A gimp hammer with a smaller face might be included, but is not necessary for everyday work. The face of the hammer illustrated in Fig. 3 should be from one-half to three-quarters of an inch; that of Fig. 10 from three-eighths to seven-sixteenths; and the gimp hammer about five-sixteenths.

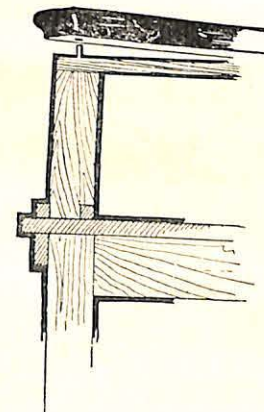
The shears are next in importance, and may have straight or bent handles. Fig. 9 is a good type of convenient shear. They should be heavy enough to cut easily the various weights of upholstery fabrics, and not too weighty to be handled with ease. These are frequently supplemented by the use of a pair of small pocket shears, which are carried in the pocket of the apron and used for light cutting.

Various kinds of needles are required, governed more or less by the nature of the work in hand. Thus, the diamond or triangular point is best for leather, while the round point is best for cotton and jute fabrics. The eye of the needle should be oblong rather than round, and in selecting them, next to temper, the strength of the



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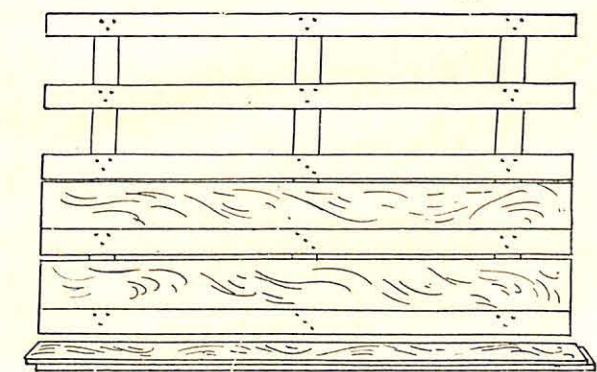
Wire straightener.



Details of bench and mattress frame.



Fig. 19



eye is the most important consideration. The complete kit of needles should include one or more two and a-half, four and six-inch circular needles like Fig. 11, and one or more six, eight, ten, twelve and fourteen-inch double-pointed needles, as Fig. 14. For some purposes single-pointed needles, Fig. 13, might be used, but when one is accustomed to their use the double-pointed needle is more convenient for tufting and stitching purposes. A three and four-inch packing needle, as Fig. 5, and a gross of upholsterer's skewers, as Fig. 12, also are necessary. Circular needles are measured from point to point, across the bow, straight needles from tip to tip.

Two kinds of webbing stretchers are necessary, that of Fig. 1 for new work where the whole length is used, and of Fig. 16 for repair work where it is necessary to tighten up the short lengths that have been in use. Usually three sizes of regulators are needed, as Fig. 2, six, eight and ten inches long.

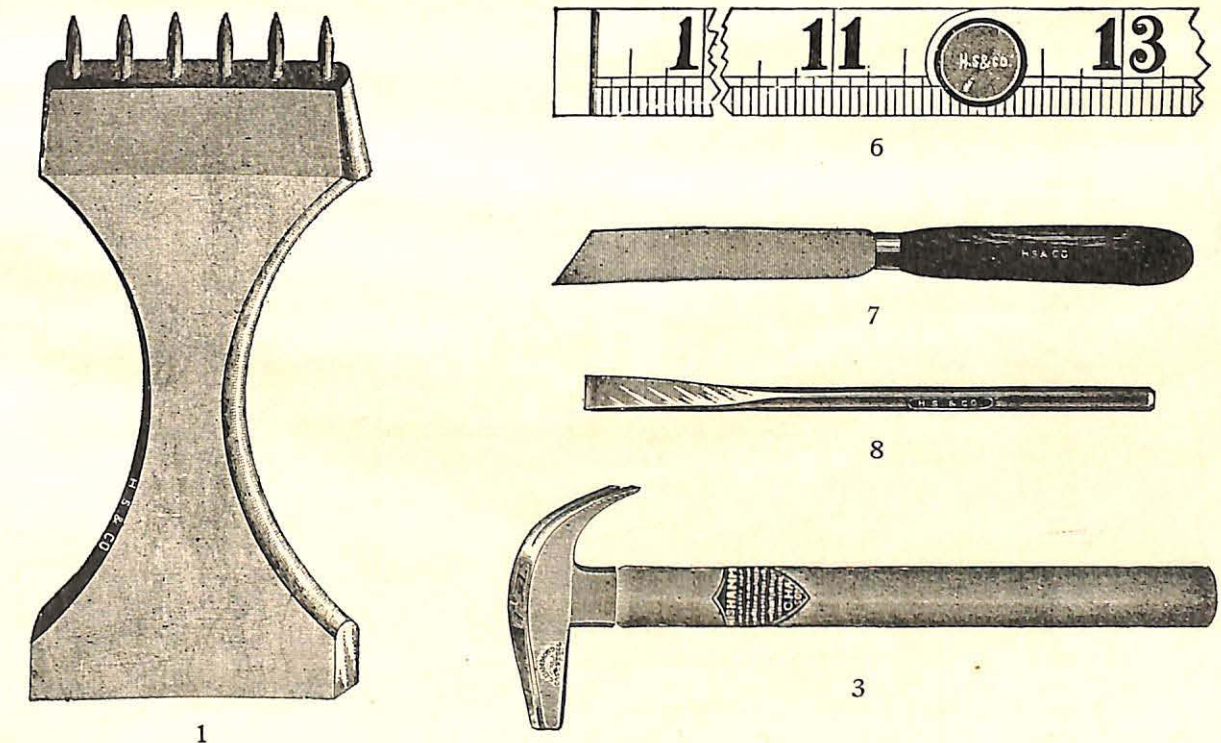
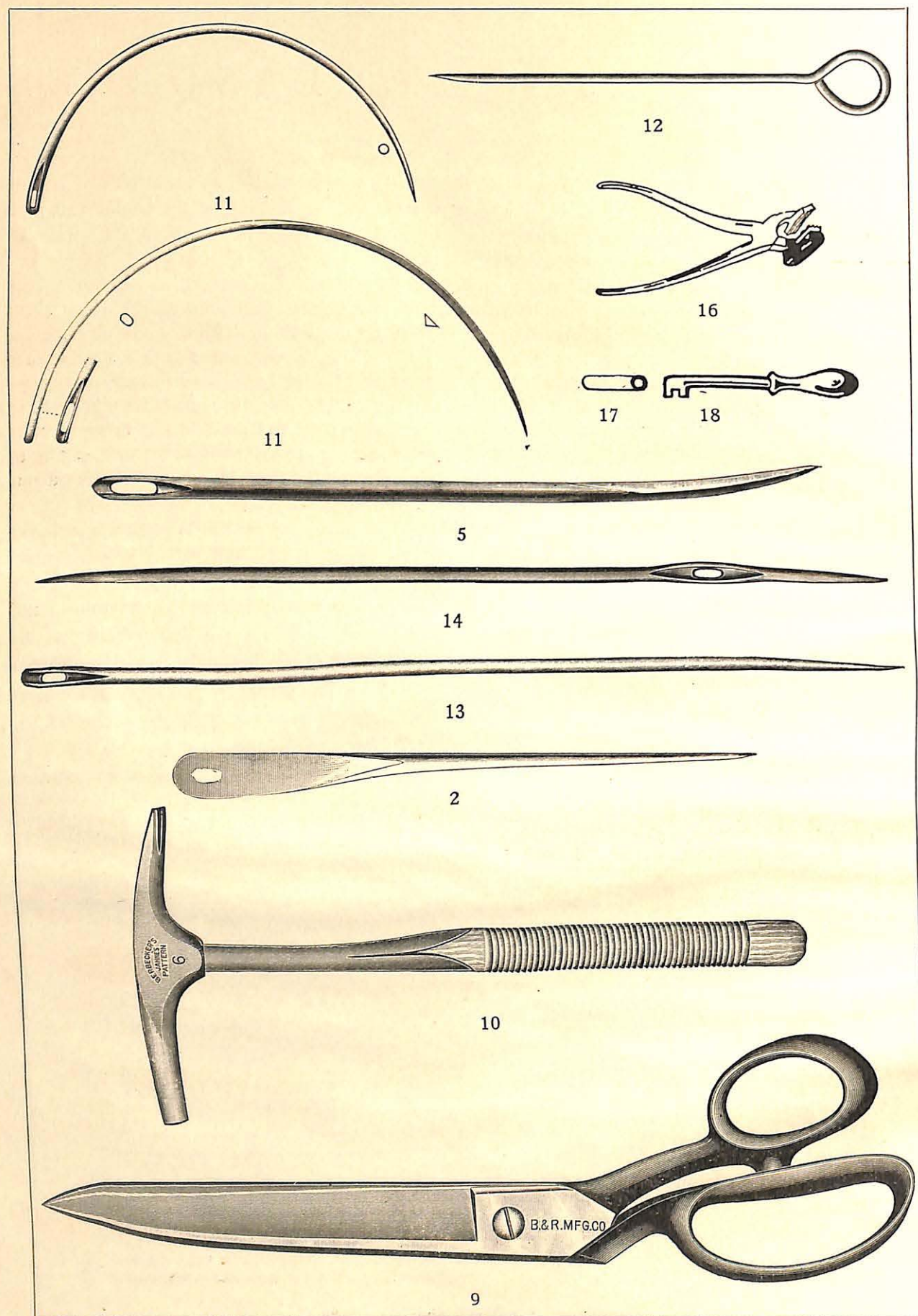
In addition to a yard stick and tape line, the upholsterer requires a steel rule two feet long,

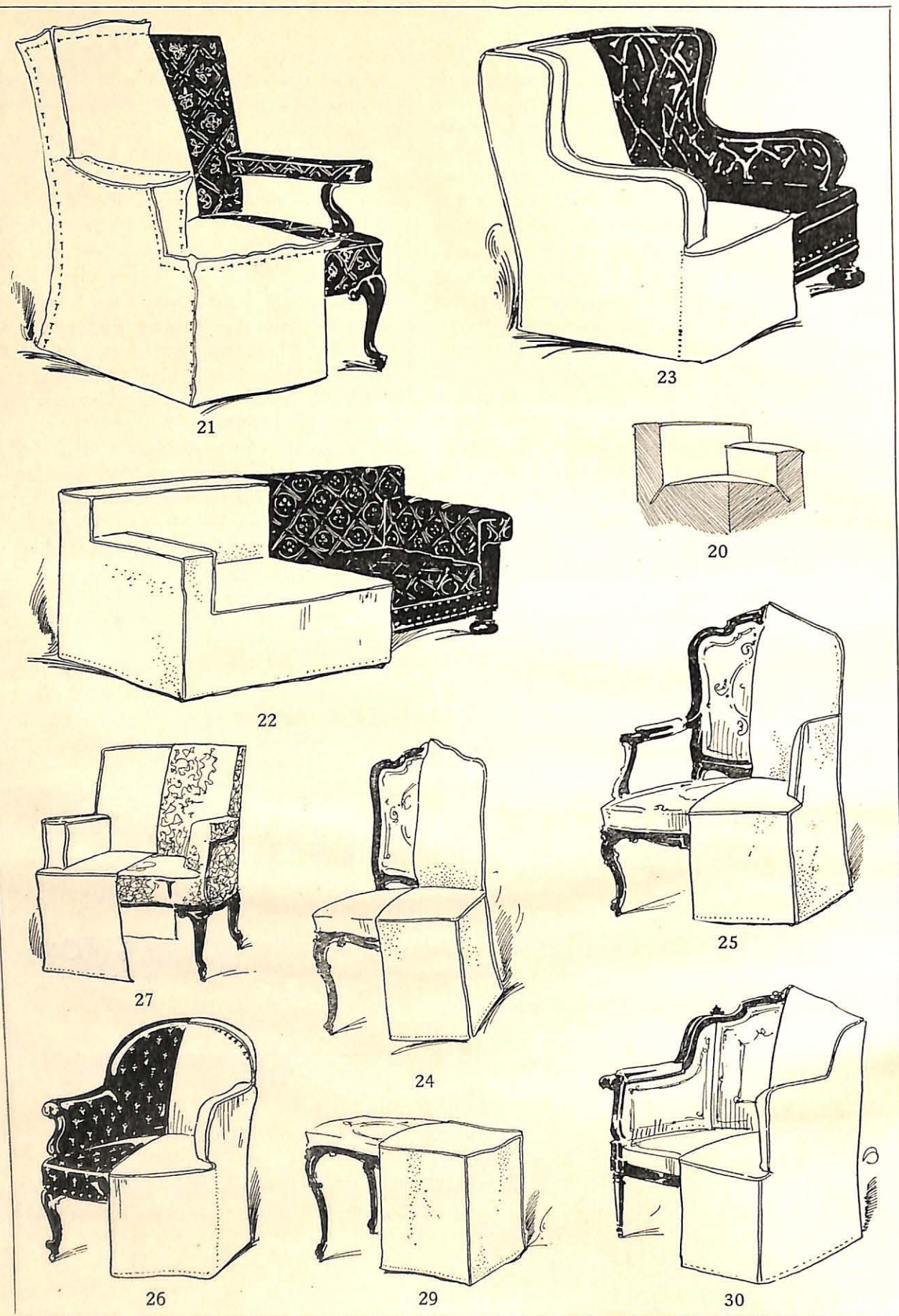
as Fig. 6, pivoted for folding in the middle. It should be graduated to eighths and sixteenths, and sufficiently flexible to be easily bent into a half circle.

Various kinds of trimming knives are used, but the shape of Fig. 7 is satisfactory for general purposes. A ripping chisel, as Fig. 8, is a very convenient tool, as is also a hardwood mallet, with a face about two and a half inches in diameter.

For special work various tools have been constructed from time to time, such as the wire bender, Fig. 18, a small piece of steel tubing, Fig. 17, used in conjunction with it, a packing stick, Fig. 19, and a good pair of general purpose pliers.

Quality is the prime essential in the selection of all upholstery tools, and, while the outlay required to secure the best may seem considerable, it will be found a better investment than the purchase of cheaper grades. The tools we have illustrated are not intended to represent the only practical articles of their kind, but only those most generally in use.





DETAILS OF SLIP COVER PLANNING

SLIP COVERINGS

ONE OF the first requisites in making slip-covers at a profit is to be able to properly estimate the quantity of goods required and the value of the time necessary to make them. For the average chair where the extreme width of the chair is less than the width of the fabric few measurements are needed, either for estimating or making.

By placing one end of the tape line at the bottom of the chair, A, Fig. 30B, and stretching it to B, then from B to C, from C to D, from D to E and from E to F, adding an inch at every point for seams, we find the quantity that would be required to cover such a chair as Fig. 24, with the exception of the sides. These are calculated by measuring from the floor to the top of the seat or arm, H to G. Doubling this quantity and adding it to that required from A, B, C, etc., to F, will give approximately the quantity required to make the slip-cover.

In planning the covers it is better to have the furniture convenient to the workroom, but as customers frequently require that the covers be fitted in the house, this is not always possible, and necessitates extra fitting, which must be covered in the estimate.

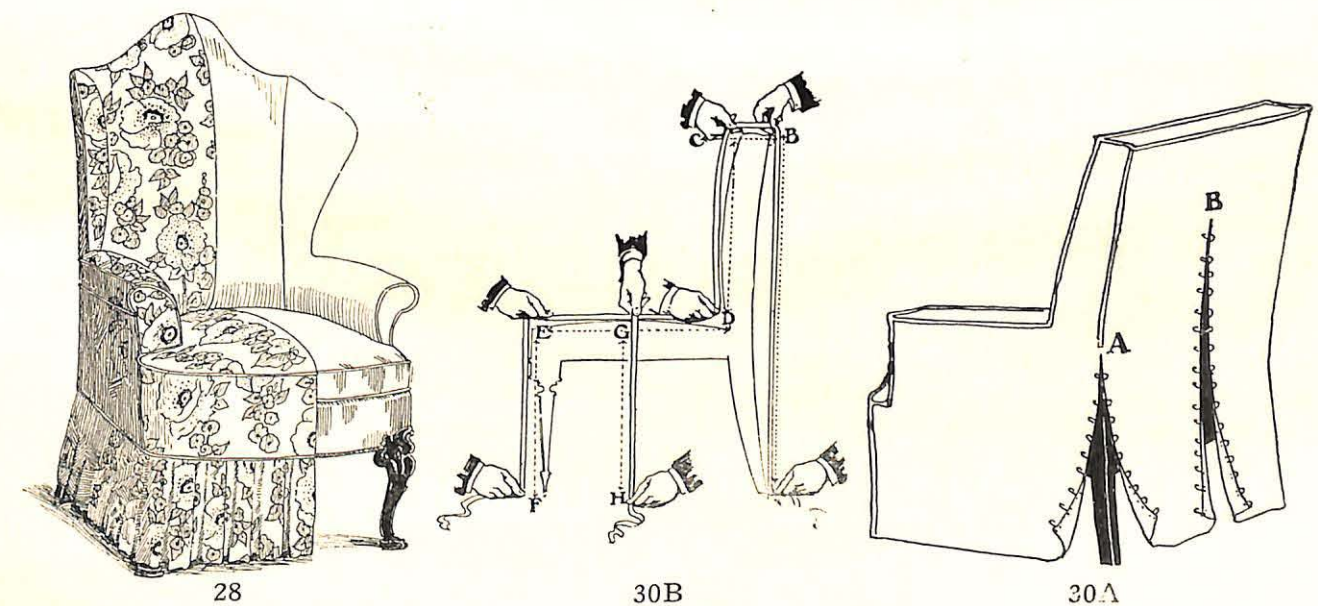
To cover the chair illustrated in Fig. 24, the material is laid over the chair in the same manner

as illustrated by the tape line when taking the measurements of Fig. 30B. Starting with the end of the material at A it is carried across the top of the chair at BC, down the back to D. The goods are then drawn over to E and down to the floor at F.

Make a pleat at B sufficient for seams, and likewise at C, D and E. The fabric is then carefully pinned to the chair sufficiently to prevent its drawing out of shape, and all fullness carefully smoothed to the edges where the seams are to be made. The goods should be carefully squared and smoothed into position before cutting at any of the angles B, C, D or E. The pleats pinched up at these points are to be split and carefully pinned, as Fig. 21, and the surplus is trimmed away.

This method of laying the goods over the chair in one continuous length can only be followed where the material is plain or has an indefinite reversible pattern; large floral designs must be planned so that the pattern always runs toward the top.

The side-covering, which is cut separately, is also pinned into position, and the seam allowances at the corners, as well as at the angles B, C and E, are carefully trimmed to the desired size, stitched and bound with tape or braid



The edges at D are pinned so that they may be sewn from the wrong side, and do not require binding. The bottom at A, H and F is turned to a hem about half an inch wide. The cover may be planned to fasten together with snap fasteners at the back corners, as A, Fig. 30A, or in the center, as B, allowance in either case being made for an overlap of about two inches. For chairs having a back that is wider at the top than at the bottom, the opening should be in the middle of the back at B; for all the others it may be left on both sides at A. On round edges like the top of Figs. 26 and 28, it is necessary to dispose of the surplus by taking small pleats in the seam. Pleats that are over two inches in length should be stitched down to keep them in position, and if bulky the surplus must be cut away.

After the material has all been carefully pinned in position it is removed from the chair and the seams bound with braid or tape.

On stuff-over furniture like Figs. 22, 23, 26, 27 and 28, about eight inches extra is allowed at D as a tuck-away. Note illustration Fig. 20. For pieces similar to 24, 25 and 30 an ordinary seam

allowance is all that will be necessary at this point. The tuckaway at D and below the arm of stuff-over pieces (see Fig. 20) may be either sewn together or left separate, and is tucked in between the upholstery when the cover is in place. It is customary on light upholstered pieces, as 24, 25 and 30, to bring the back and front edges together, without the boxing represented by B and C in Fig. 30B, but in all cases where the upholstery is sufficiently thick the boxing should be used, as it tends to keep the cover in better shape. The matter of making slip-covers, while not difficult, requires considerable care and patience in fitting, in order that the finished cover may fit without drawing or wrinkling at any point.

To estimate for large pieces which require more than one breadth to cover the seat, as Fig. 22, it is only necessary to calculate the extra number of breadths that are required and estimate accordingly.

In estimating the side pieces of Figs. 23, 28 and 30 the measurement is taken from the floor to the topmost point of the side, with seam allowance added.

PILLOWS AND CUSHIONS

THERE are so many points about the stuffing of cushions which are not included in the ordinary training of the upholsterer that this branch has grown to be almost a trade or specialty in itself.

Roughly speaking, cushions are divided into three classes—those having borders or boxing, Fig. 31, those having only a seam where the top and bottom are joined together, Fig. 32, and those that are made on a foundation, Fig. 33. Of these three the first two are usually reversible; the latter is not.

Those made with a border are the most difficult to construct, and are made in various ways, according to the size and wearing quality required. For cheaper cushions where the price is of more importance than wearing quality the cover is usually sewn up and the filling placed directly within it, without any inside casing; all good cushions, however, should be made with an inner casing or cotton form, which is sewn, stuffed and tufted independent of the cover. The casing is sewn up wrong side out, leaving a small opening at one end, through which the filling is inserted.

Make the border for the cotton casing as wide as the thickness required in the finished cushion, and allow a half inch extra on each edge for seams. The top and bottom must have an allowance of a half inch all around for seams, and in addition must be made from one-half to one and one-half inches per foot longer and wider than the finished size of the cushion. This extra allowance is taken up in the tufting, and varies according as to whether the cushion is soft or hard and shallow or deeply tufted.

After the casing has been made it is turned right side out, with the raw edges inside, and spread out on the marking table with the top and bottom exactly even, and the top is marked for buttons. There is no standard of distance for marking buttons, nor any specified number to be used per foot. The quantity is always a matter of taste, and is governed very largely by the style and size of the cushion.

We illustrate in Figs. 34, 35 and 36 three styles of cushion tufting, either of which is suit-

able for general purposes. After the points for buttoning have been marked with a pencil on the top side of the cotton case, dip a small brush in waterproof marking ink or stain and touch each point that has been marked, so that the color will penetrate to the bottom layer of cotton, and thus mark the top and bottom uniformly and distinctly.

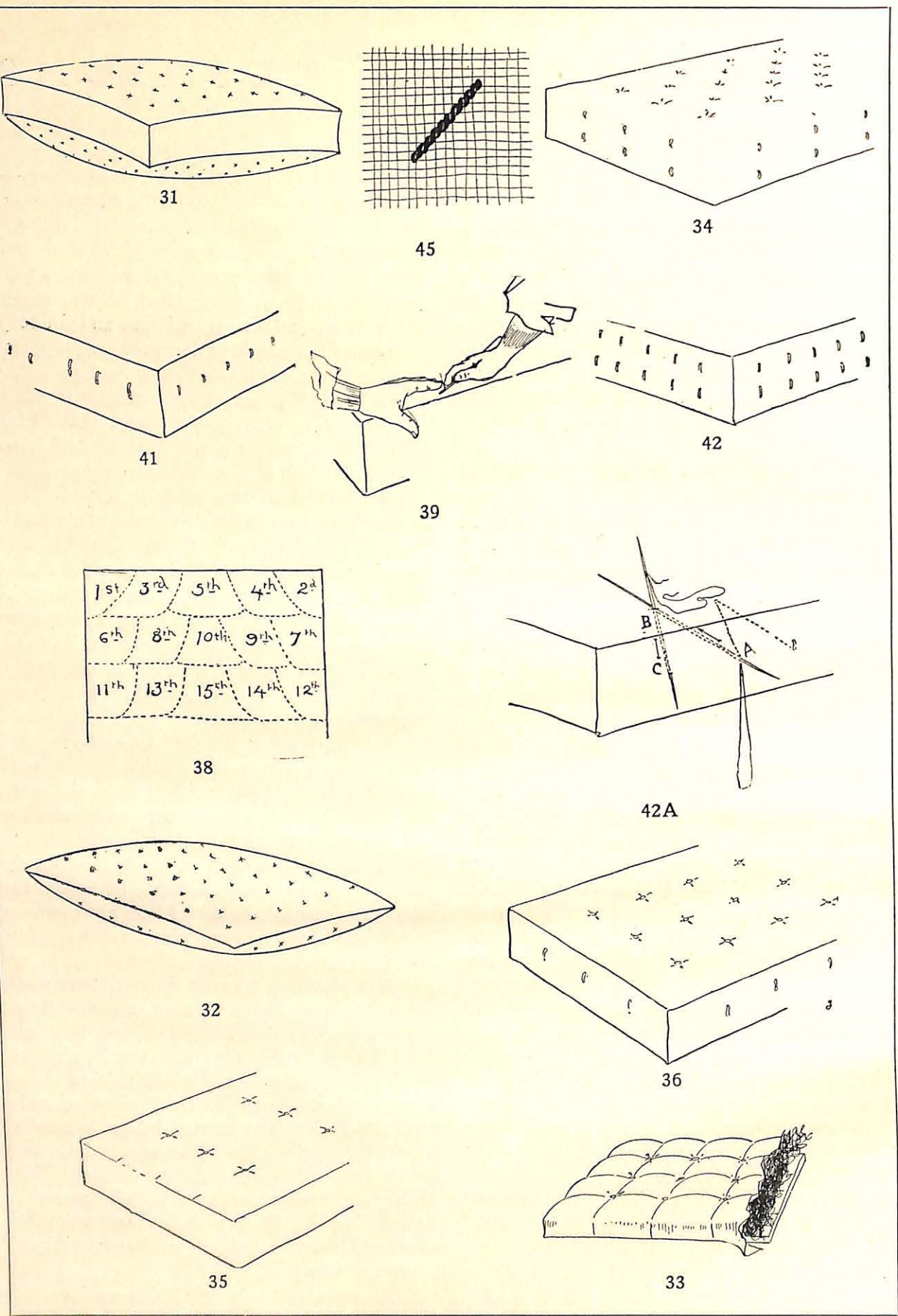
After this has been done, the case is spread on the stuffing bench (see Fig. 37) and the filling, which has been previously picked apart so that it is light, fluffy and free from lumps, is carried in through the opening and spread evenly and firmly until the cushion is filled.

Put in the material in small quantities, and as each successive handful is placed in position it must be woven and worked into what has been already put in, so that it forms one complete filling when finished. It is impossible to describe the method of weaving filling together except that it is done with a shaking motion from side to side, while the hand presses each additional handful into close contact with what has been already put in place.

Commencing at the farthest end from the opening, fill first the two outside corners until they are nice and plump, then gradually work from each outside corner to the middle until the entire end has been filled. Commencing again at the outside, deposit the first supply immediately behind the corner filling, and then fill toward the middle as before. The dotted lines and numbers in Fig. 38 show the progressive steps in the filling of the ordinary cushion.

Care should be taken as the work progresses to keep the same degree of fulness throughout the entire surface of the cushion, making the edges a little bit harder than the center, and keeping the whole filling as flat and near the finished shape of the cushion as possible. Until the art of stuffing cushions has been mastered there is usually a tendency to allow the filling to round out the case instead of keeping it flat on the top. This can be overcome by exerting a flattening pressure to the body of the filling with one hand while the other hand inserts the material and weaves it into a compact mass.

After the entire body of the cushion has



CUSHION DETAILS

been filled, the opening is then sewn up and the edges and corners regulated with a cushion regulator (see Fig. 39), using the regulator as a lever to draw the rounding edge of the cushion into a square angle and to pack the filling a little closer along the border. It is not always advisable to regulate the filling too far in advance of the stitching, as it is likely to work back before the stitches can bind it in place.

Where the edges of the finished cushion are required to be extra firm they are stuffed a little harder than usual, and a temporary stitching run through the cushion about six inches from the edge all the way around, as Fig. 44. This stitch keeps the filling from slipping away from the edge, and it is much easier to regulate than when the filling is not confined.

The ordinary side stitch used for holding the filling to the edge is a blind or invisible stitch on top and an ordinary visible stitch on the border. The method of making the blind stitch with a straight double-pointed needle is shown in Fig. 42A, the needle passing up from A and coming out at B, then entering the same hole at B so as to catch the filling inside the cover, is drawn out again at C, the action of the loop being to draw all the filling lying between the points A, B and C toward the edge of the cushion, where it is held in place. A circular needle may be used for side stitching, following the same method as with a straight needle; the circular needle, because of its curve, encloses a larger quantity of the filling, and makes a somewhat harder edge.

It is most important that the corners should be plump as well as square, and for this reason they should be stuffed a little more firmly than any other part of the cushion and the filling thoroughly drawn into the corners by means of the

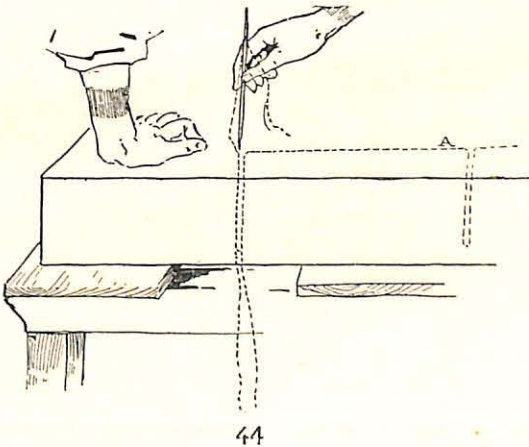
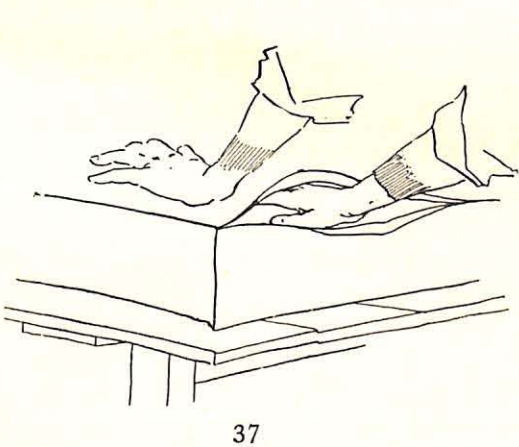
regulator, where it is held in place by the side stitching.

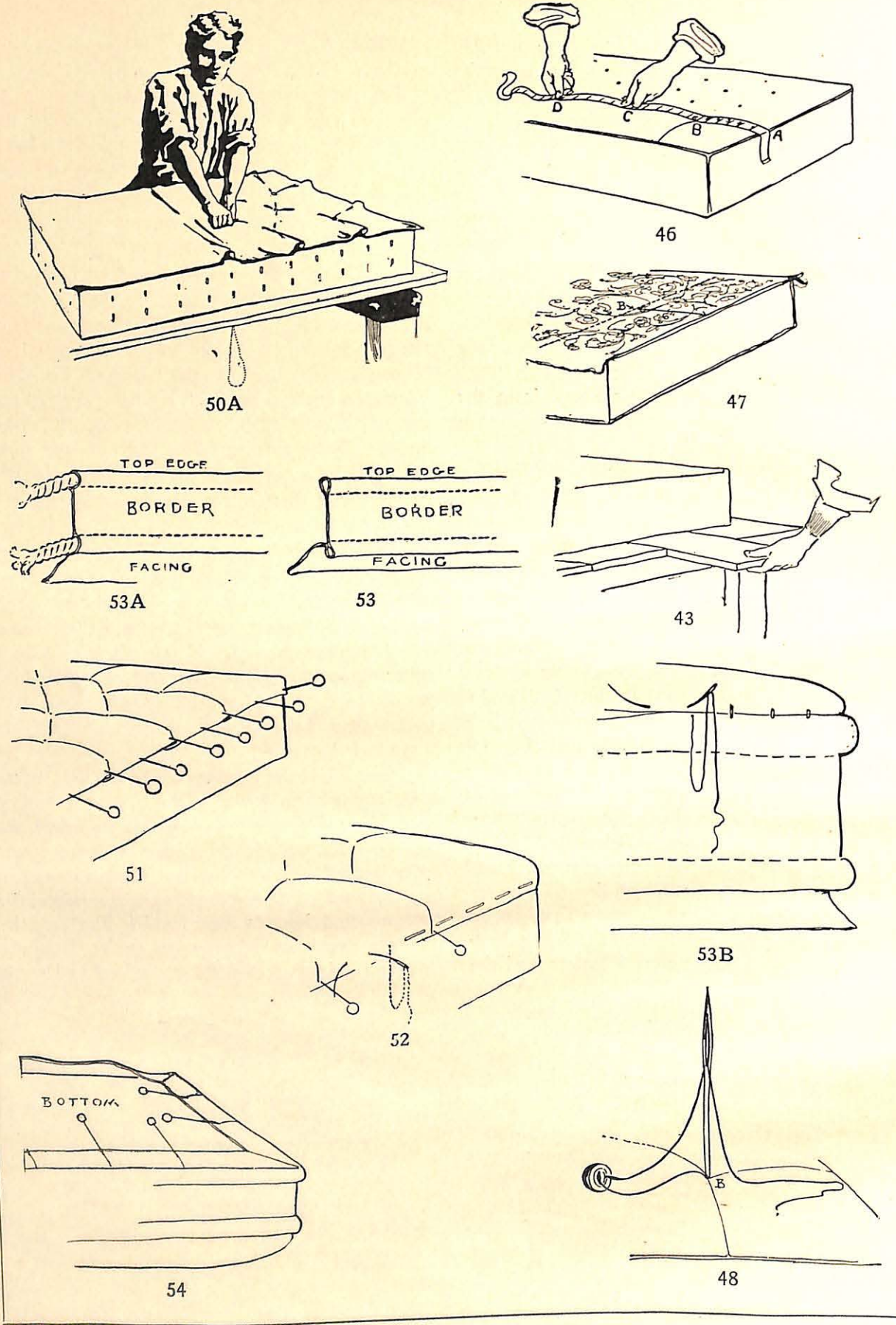
If the cushion is to have only one row of side stitching the stitches are taken from the center of the border to the top, as Fig. 41, but a much more substantial edge is made by first stitching, as Fig. 42A, and then turning the cushion over and repeating the same stitching on the other side. (See Fig. 42.)

After the sides have been completely stitched around, the temporary stitch A, Fig. 44, is removed and the filling is rearranged by means of the regulator to fill out any hollows that may have been caused by drawing the filling to the edges. When the cushion has been regulated, patted and smoothed until it is perfectly even, the loose boards of the tufting table, Fig. 43, are withdrawn and the cushion is tufted according to the marks inked through on the casing before it is filled.

Pass a double-pointed needle down through the cushion, as Fig. 44, then shift the point over a half inch and pass it back up to the top again so that it emerges a half inch from the point at which it first entered. If the stitch or loop is taken diagonally on the warp and weft threads of the cotton, as Fig. 45, the fabric will be less liable to tear than if the stitch is taken parallel with the thread of the fabric.

Sew all of the tufting twines through before tying any of them down. If the cushion is desired harder in the center than towards the edges, the outside tufts are tied down first and the center tufts last. If it is desired that the cushion shall be evenly tufted throughout its entire surface, the tufts are tied down in series, which distribute the pressure evenly over the entire surface. Never start to tie down a cushion at one end and work





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gradually to the other end, because if this is done the end that is tied down last will always be harder than the end at which the tufting was commenced.

After the cushion has been completely side-stitched and tied down in the cotton it is then ready for the cover, which may be put on in a number of different ways as hereafter explained, according to the shape of the cushion and the weight and nature of the covering.

For all cushions that are shaped in curves or that are any form other than rectangular, it is best to put the covering on first and sew the border to it by hand. To measure the amount of cover required for the top of the cushion take a tape line, as Fig. 46, and starting at one end just below the top seam (A, Fig. 46), draw the tape line smoothly and sink it into the first depression made by the tufting twine at B, then to C, to D, and so on to the end, taking care to always force the tape line as low as the tufting twine had drawn the cotton. Repeat the same method to find the width, and the number of square inches thus shown will be the amount of cover required for the top of the cushion.

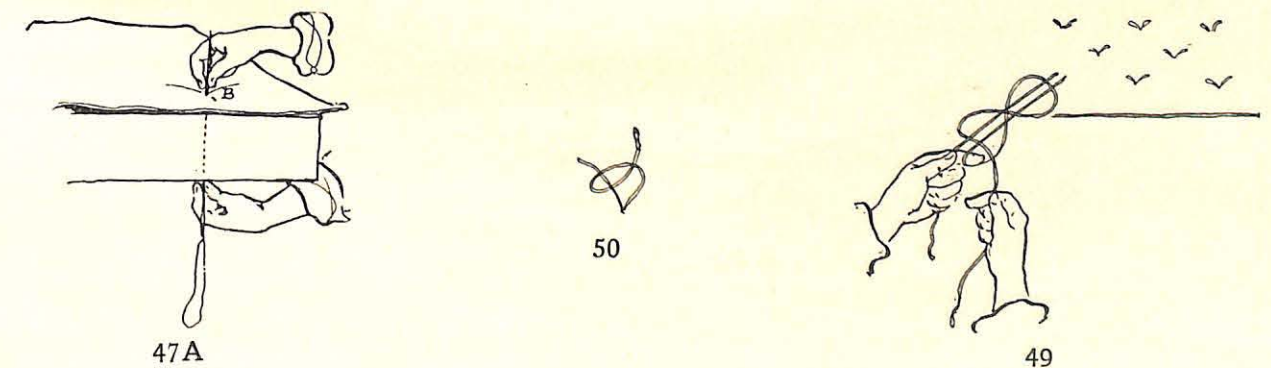
After the cover has been cut and seamed up to the proper size, draw a line on the back of it the distance recorded by the tape measure from A to B to indicate the line of the first row of buttons across the end of the cushion. Now, mark the center of this line, as Fig. 47, and press this point into the depression made by the middle end tuft (B, Fig. 47A). Draw the needle up through the cushion and fabric, thread on the button, as Fig. 48, then pass the needle back down through to the bottom of the cushion and tie the slip knot indicated by the twine in Fig. 49. Place a leather tuft or piece of cotton batting between the twines, draw it tight and secure the knot by one or more half-hitches, as Fig. 50.

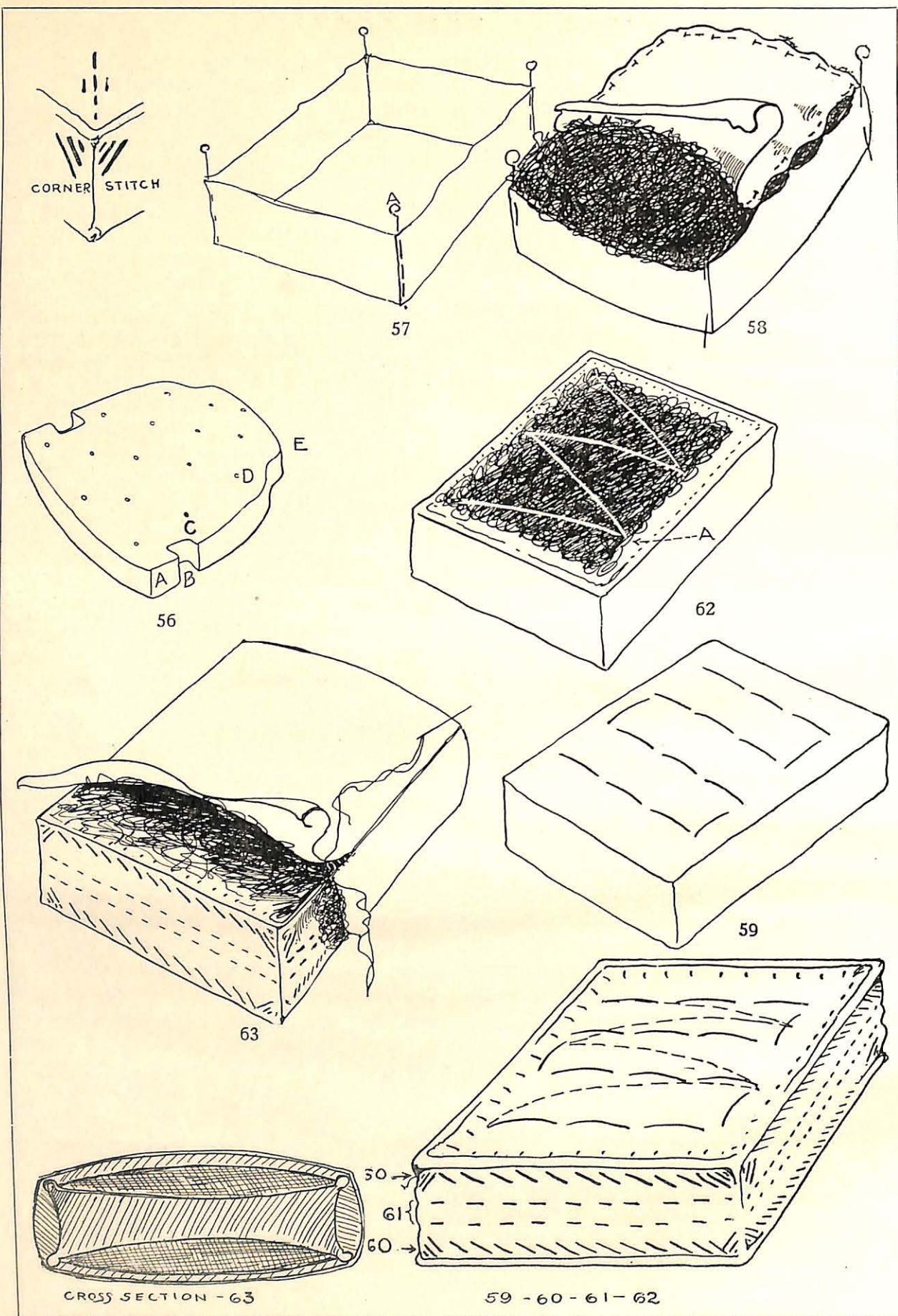
After the center button has been tied down, follow the line indicated on the back of the material to the next on the right or left of the middle one and repeat the buttoning until the entire end has been tied down. Then smooth the covering to the next row of buttons, and taking the center or nearest to the center press the goods into the tufting depression and button as formerly (Fig. 50A). It is absolutely necessary that the warp and weft threads of the goods should lie exactly at right angles on the cushion, and the buttons which are in a line lengthwise of the cushion or transversely, should draw on the same thread of the fabric, so that it will draw smoothly.

The buttons may be sewn in temporarily with a loose stitch, as were the tufting twines indicated in Fig. 44, and the cushion then turned over while the buttons are tied down consecutively. This is really more simple, because the knots are much easier to tie when the cushion is turned over and the tufting frame not in the way. After the buttons have all been pulled in and tied securely, pleats are formed, as Fig. 51, from the outside button out over the edge of the cushion, where they are pinned securely with skewers until sewn down by hand, as Fig. 52.

The border is cut to allow for a seam or the insertion of a small cord as a welt to define the top and bottom edges of the cushion, as Figs. 53 and 53A, and should also allow below the bottom welt or seam a width of at least one and one-half inches to serve as a facing on the bottom edge of the cushion, to be sewn under, as hereafter explained.

The border, having first been made up, as Fig. 53, is then pinned to the cushion, taking care to keep it perfectly straight with the edge of the same, and is sewn in place with a blind stitch, illustrated in Fig. 53B, by means of a circular needle. After the top of the border has been





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sewn in place, the bottom of the border, or rather the small portion of it which goes beneath the cushion, is pinned to the bottom of the cushion, as Fig. 54, and this again is sewn in place by hand, after which the cushion is lined.

This is the simplest method of covering circular, rounding or irregular-shaped cushions with a cover, border and lining. The square cushions may be covered a little differently, though there seems very little saving of time and little, if any, improvement in the appearance of the finished cushion. We give the method, however, for those who wish to use it.

After the goods have been cut, sewn to the proper size and marked, as explained in Fig. 47, instead of pulling in the buttons the goods are drawn into the depressions by the twine and only temporarily sewn, because after the covering has been pinned down around the edge, as Fig. 51, the border is pinned to the cover in such a manner as to hold the pleats rigidly in place. Then the twines which hold the cover to the form are removed, and the top and border as pinned are taken away and the border attached to the covering on the sewing machine; the lining may also be sewn to the bottom of the border, at the same time leaving an opening through which to insert the form.

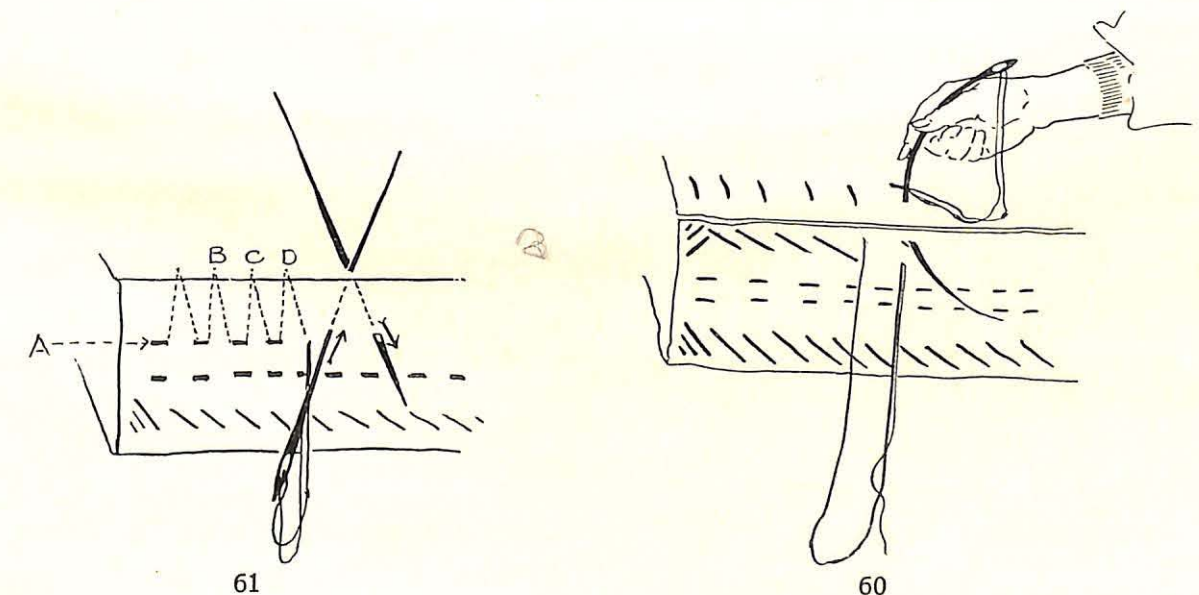
The border of the cushion will be much improved if it is stiffened by one thickness of buckram, cut so that the edges enter within the seams at the top and bottom welts, indicated in Fig. 53A. This is especially desirable where the fabric is so thin that it falls easily into the serra-

tions caused by side-stitching the cotton body of the cushion.

If it is not important that the pleats of the finished cushion shall be exact and symmetrical, which they should be if the above plan is followed, and where pleats in the border will not be distasteful, the covering for the cushion may be sewn up in the form of a case—i. e., cover, borders and lining—of a width and length to fit the cushion form, with one end left open through which the form is inserted. Commencing at the closed end of the cushion this covering is buttoned down progressively, the same method being pursued as described above for the separate cover and border.

After the buttons are all tied down, the fullness which appears in the border and on the edge of the cushion is smoothed into pleats from the outside row of buttons to the edge of the cushion, across the border and underneath. Many of the smaller cushions, such as chair and bench cushions, are made with the top, bottom and border of the same material, so that they can be reversed. When this is the case, buttons are used on both top and bottom of the cushion, knotted, as illustrated in Fig. 55, adding one or two half-hitches around the knotted twine to hold it in place, and then cutting the twine down close, so that both ends are concealed by the button.

Chair or other small cushions similar to Fig. 56 may be made with a cotton form or shaped in the cover. Take a paper pattern of the size of the seat, showing any irregularities which may be necessary in the outline to provide for arms,



corners, projections, etc. Lay the pattern on the fabric and cut out, allowing one-half inch seam allowance all around in addition to whatever may be necessary as a tufting allowance, figured on the basis of not less than an inch to the foot each way.

The border, which is cut separately, is pinned to the top and bottom covers and stitched in by machine, taking care to keep the corners at A, B, C, D, E, etc., perfectly square, and leaving an opening at the back of the cushion through which the filling is to be inserted. It is well to make the cotton case rather larger than is desired, so that it will fill the cover, which is smaller, neatly and well. If desired, these cushions can be made in the cover without using an inner cotton casing, and when this is done special care should be exercised in order to secure a correct fit.

There are other ways of filling cushions in addition to that outlined in Fig. 37, one of the most popular consisting of "laying" the filling as distinguished from "stuffing," which we have already explained. To make "laid" cushions the border is attached to the bottom of the form to make a shallow box of which the entire top is open (Fig. 57). The corners are held in an upright position by means of long skewers or needles, which are inserted in the tufting table, A, Fig. 57, and the filling, which has been previously picked until free from lumps, is now spread into this cotton box in successive layers, taking care to weave the whole filling into one compact mass. After a sufficient quantity has been placed in position, the cover is pinned to the top edge of the border all around, as illustrated in Fig. 58, and sewn in place, after which it is side-stitched and tufted in the usual way.

The advantages claimed for this method are that a given quantity of filling can be more evenly distributed throughout the entire surface of the

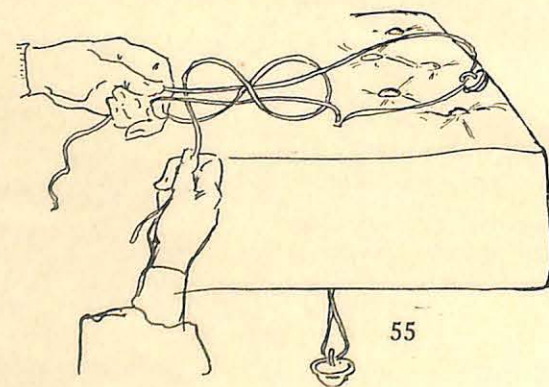
cushion, and that the material can be "woven" together better than is possible with the "stuffing" method. This, however, is a matter for personal determination, and we give the method for those who desire to use it.

The buttons of a cushion serve a two-fold purpose, that of binding the filling in place and ornamenting the surface of the cushion. In some cases, however, it is desirable that cushions should be made which will supply all the features of the ordinary cushion without a buttoned surface. One of the best methods of accomplishing this is to prepare the cotton form in the ordinary way, either stuffed or laid, as already explained, making the edges all around somewhat harder than is ordinarily the case. This form is sewn through and through with long stitches, as Fig. 59, keeping the stitches a short distance from the edges all around, so that plenty of filling will remain free to regulate to the edge.

Stitch the edge with a circular needle, as illustrated in Fig. 60, using two rows of stitches for the top of the cushion and two rows for the bottom. The first stitch, A, Fig. 61, is visible only on the edge, and does not catch the cover at B, C, D, etc., as indicated by the dotted line. The second stitch is visible on both top and border, is shorter than the first one, and is intended to draw the edge of the cushion into a compact solid form, as indicated in the illustration. The stitched cushion form is now treated as a foundation for a laid cushion, another filling is woven together under loose bridling twines, A, Fig. 62, then a light top filling placed over this and the top cover of the form sewn to the edge of the cushion, as illustrated in Fig. 63, after which the bottom is treated in the same way. A cushion made in this way provides a plain surface, and will retain its shape and wearing qualities under the most severe usage.

The Turkish edge cushion shown in Fig. 64 is in general use for yacht, church and lodge cushions. It may be made by the stuffing method, as Fig. 37, or by the laying process, as Fig. 58. It is side-stitched in the ordinary way, the same as other cushions, except that the upper edge is regulated into a rounding form instead of square.

Cushions that are upholstered on a foundation, as Fig. 33, may be made considerably harder than is possible in any other way, and lend themselves to a variety of fancy tufting that is not possible with the ordinary cushion.



Very shallow cushion pads, such as are used in the seats and backs of very light chairs, may be made on a foundation of stiff cardboard or buckram, but for larger cushions a more solid foundation is preferable. Quarter-inch lumber clinch-nailed together two-ply thick, so that the grain of one ply runs at right angles to the other, makes a satisfactory foundation for cushions of this character. It can be band-sawed to any shape, and is not liable to either warp or split.

There are three styles of tufting commonly used for built-up cushions, *i. e.*, biscuit, bun and diamond tufting, biscuit tufting usually being the most shallow, and also the most closely tufted of the three. After the foundation has been prepared, find the center each way and draw lines as dotted lines 1—1, 2—2, at intervals of one and one-half the distance desired between the buttons of the finished cushion. (Fig. 65.) Rule diagonal lines, as A, B, C, to cut through the intersections of the dotted lines, and mark these diagonal lines sufficiently heavy to be legible when tufting, as the smaller squares enclosed by the diagonal lines outline the size of the tufts, and the intersections of the diagonals mark the points where holes are to be bored for the buttons. (See Fig. 65.) When all the lines have been drawn the foundation is ready for upholstering, but the cover must also be marked for buttoning.

To ascertain the size of the covering needed, count the number of squares diagonally from one extremity to the other; thus from C to C, Fig. 65, numbers ten squares, and ten also from A to A; now take the size of the dotted squares first marked on Fig. 65 (three inches), and multiply the number of diagonal squares by the size of the

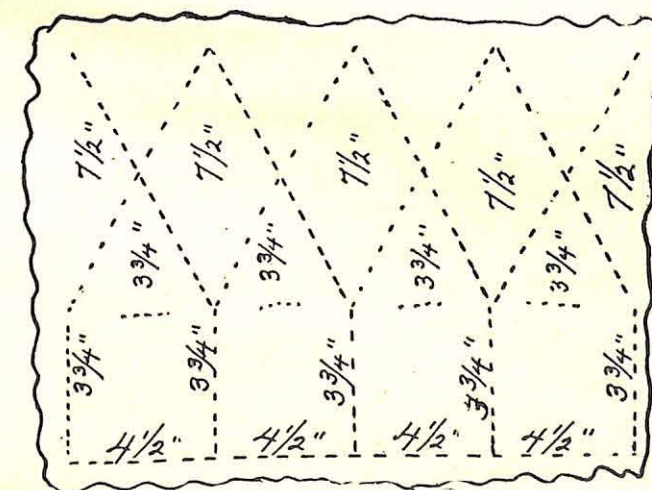
dotted squares, which gives us the size of the covering as 30 by 30 inches; add two inches all around for tacking, and a piece of covering 34 by 34 will be the size required.

For spaces such as Fig. 65, where the cushion is longer than wide, it is possible to economize in covering by joining two pieces together on the center line of tufting, B—B; take the width from the lower right-hand C to the upper B, nine squares, and the number from B—B to A, upper right-hand corner, five squares, and multiply each by three inches, as before, and we find that two pieces 27 by 15 inches, with tack allowance added, will be sufficient to cover the space thus divided by line B—B.

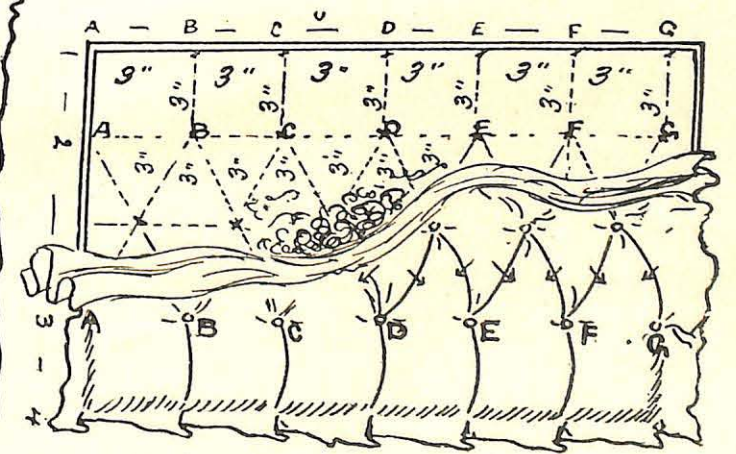
The covering is turned face downward upon the table and divided into the requisite number of three-inch squares, leaving the tack allowance beyond the outside lines, and keeping the lines parallel with the edges of the material, similar to Fig. 66A.

Attach the center mark of the lowest line on your material to X, the lowest button mark on your tufting surface on line A, Fig. 65, and temporarily tack the next marks on the bottom line at X—X, Fig. 65A. Stuff the fullness thus allowed between your button and X—X, and then put in button B, as Fig. 65A; the space between A—B and X forms a triangular pocket of fabric, which is stuffed up plumply and the next button pulled into place by following the marks on cover and tufting surface.

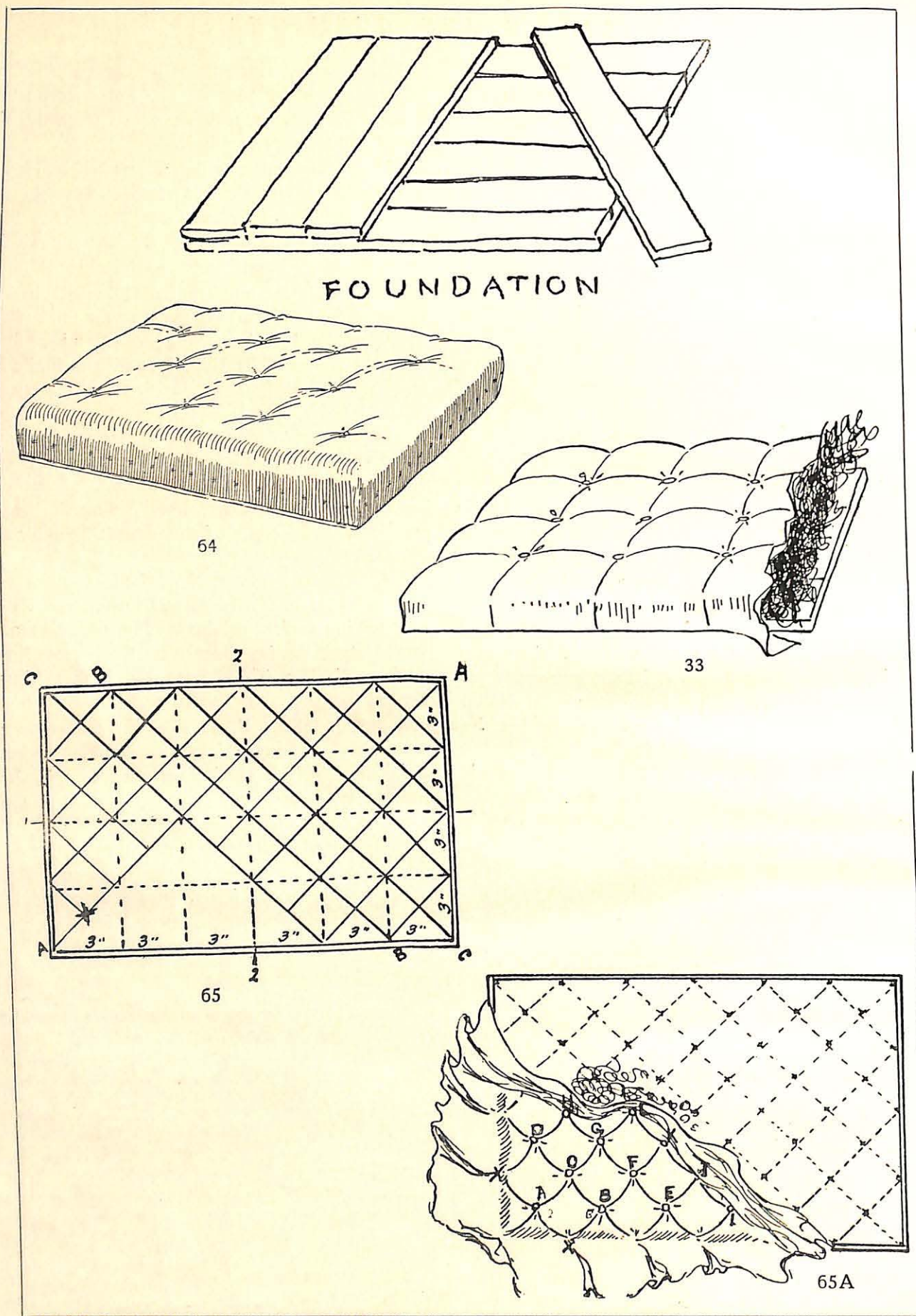
The rest of the tufting is now a repetition of this procedure, stuffing up the three-cornered pocket, pulling in the fourth button to complete the square, and forming the surplus from button



67A



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DETAILS OF UPHOLSTERED CUSHIONS

to button into a straight pleat. When all filled the edges are stuffed up plumply and tacked underneath the wood all around, the surplus fullness around the edge being formed into pleats running outward from the outside row of buttons, as Fig. 65A.

This is by no means an easy task for a novice, but patience and perseverance will accomplish the result, and the method of square-marking for the covering and diagonals intersecting similar sized squares on the foundation will give the proper allowance of fullness for all sizes and nearly all coverings.

Square or bun tufting is marked as Fig. 66, dividing the space into three-inch squares (or larger, if desired), and the covering marked also into squares as Fig. 66A from one to one and a half inches larger than those on the surface of the article. Thus, for three-inch squares, rule your cover into four and one-half-inch squares and add tacking allowance on edges.

The size of the covering can easily be ascertained, as you need the same number of four and one-half-inch squares of covering as there are three-inch squares marked out for tufting. Put in the entire bottom row of buttons and the first one of the next row Fig. 66, thus forming the triangular pockets, which are stuffed as previously explained for biscuit tufting.

Diamond tufting is made in a slightly different way, but the principle is the same. Rule the cross lines 1—2—3—4, as Fig. 67, line 3, say three inches from the bottom, line 2, six inches above line 3, and line 1 three inches higher again. Divide lines 1, 2, 3 and 4 into three-inch spaces, as shown on line 1, A—B—C, etc.; rule from B on line 2 to A on line 3, and also to C on line 3; rule from C on line 2 to B and D on line 3, and also from A on line 2 to B on line

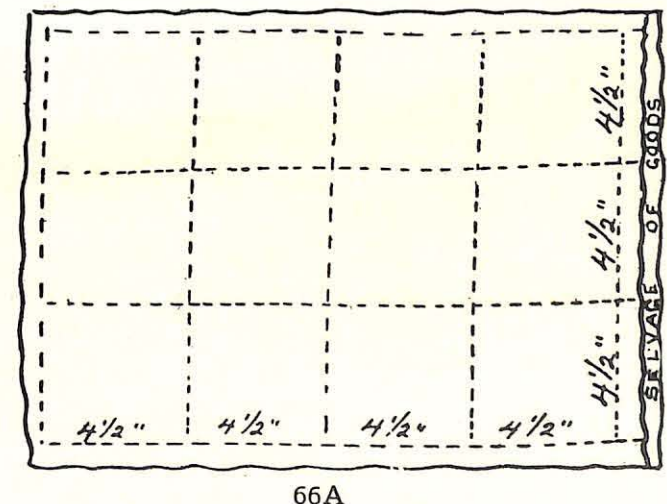
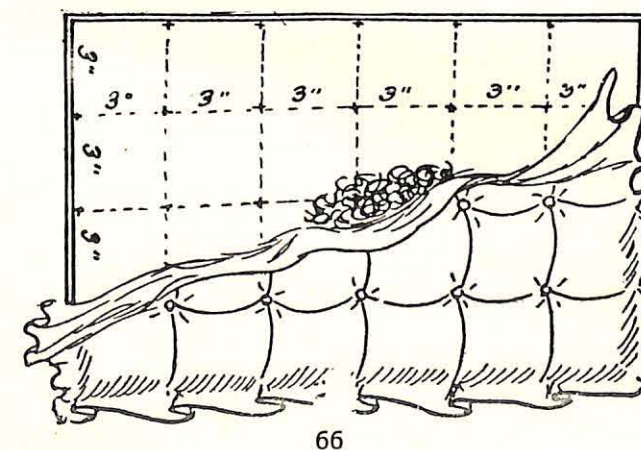
3, continuing this until the surface is all marked, as Fig. 67A. This will give you a row of intersecting diagonal lines between lines 2 and 3, and these intersections mark the diamonds for buttons.

To measure the space for covering, measure from A to B to C to D, and so on to G, adding one and a-half inches to the distance between each pair of points for fullness. Measure from 4 to 3 to 2 to 1 in the same way, adding one and a-half inches to each space, so that a panel the size of Fig. 67, which measures 12 by 18 inches, requires a piece of covering 18 by 27 inches, with an allowance of two inches all around for tacking (22 by 31). Mark the covering, as Fig. 67A, which shows the one and a-half inches added to the spaces between the upright lines and also to the spaces between the cross lines.

Put in the first row of buttons and draw the bottom edge of the goods, which lies directly in line with each button, straight down, and tack it temporarily there. This will form a series of pipes all across the bottom; stuff these evenly and plumply; then, commencing in the center, stuff up all the space between the first row of buttons and the second line; pull the cover down over this by pulling the button mark on the cover down to the button mark on the line, and put in the button, forming the surplus material diagonally from button to button into a pleat, as illustrated, Fig. 67.

Continue this row and the rest in like manner, folding the pleats downward and facing each other in pairs, as indicated by arrows.

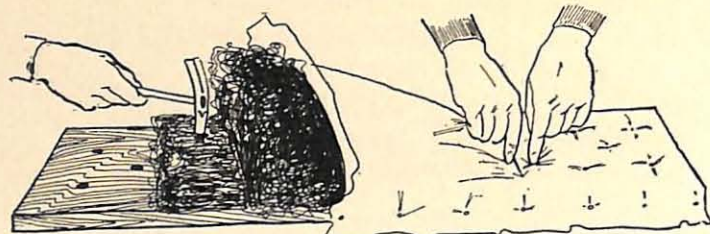
Finish the top with a row of pipes similar to the bottom, stuff up all the edges and tack them, drawing all the surplus fullness into pleats from



each button of the outside rows, and rounding the edges down to the place where finished off by tacking.

The pleats for biscuit, bun or diamond-tufted cushions are always turned, so that the wear to which the cushion will be subjected will smooth the pleats into shape, instead of being in opposition to the way the goods are turned.

There is an easy method of imitating this kind of upholstered cushion for cheap purposes. After the foundation has been bored for buttoning, a layer of the stuffing material is spread over it and tacked in place by driving large tacks



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down through it at intervals of about six to eighteen inches. Other layers of stuffing are laid upon this until the desired thickness is obtained.

The covering is then tacked loosely over the stuffing, as Fig. 68, allowing plenty of fullness for the buttons. After this has been done, commencing at one end, press down the goods directly over the first hole made for buttoning, and with the regulator draw away all of the filling until the finger presses the material right down to the foundation, after which the button is pulled into place. This operation is repeated at each point marked for buttons, taking care to keep the thread of the cover straight from button to button and not allowing any more slack than the stuffing will fill. After the buttons are all pulled in, the wrinkles from button to button are smoothed into pleats, and the cushion regulated into symmetrical form. This plan is only used for very cheap cushions where the covering is not of such a nature that the necessary and constant use of the regulator will cause permanent injury.

M A T T R E S S E S

MATTRESSES are made by either the stuffing or laying process, and regulated, side-stitched and tufted in the same manner as cushions, except that instead of buttons, leather tufts or bunches of cotton batting are used to prevent the twine from pulling through the ticking. To cut the ticking for a regular mattress four feet six inches wide by six feet four inches long, add five and one-half inches to length and width for borders, and also one inch to the foot each way for fullness, thus: 4 ft. 6 in. + 4½ in. (fullness) + 5½ in. (border) —total, five feet four inches wide; 6 ft. 4 in. + 6½ in. + 5½ in. —total, seven feet four inches long.

Cut off four breadths of ticking seven feet four inches long and sew them together double width in pairs, each pair thus sewed making one side of the tick, with border for one side and one end. Tear off any surplus width, then fold down five and one-half inches all across the end of one of these strips and run a stitch through the fold one-quarter inch in from the edge (Fig. 68A). Next, turn down the same distance, five and one-half inches, on the left-hand edge and stitch this also. This is to serve as the bottom of the tick. Now, take the other double-width piece of ticking, make the five and one-half inch fold on the end as before, and fold over and stitch the right-hand edge to form the right-hand border and the top of the tick. These two pieces are now joined together, as indicated in Fig. 69, and stitched all around except for a small opening left at one end for filling. The corners also are stitched together after having been folded in square box shape (Fig. 68A), and all of the border seams bound with mattress binding. Expert mattress sewers always put on the binding and sew the folded edges with one operation, a knack easily acquired with practice.

After the mattress has been completely filled, taking care to make the center slightly harder than the sides, the edges of the top side are regulated and side-stitched in a manner similar to that explained in cushion making, as Fig. 42A. Before the mattress is turned over the loose boards of the

tufting-table are now withdrawn and all of the tufting twine sewn in, as previously explained for Figs. 44 and 59, which see. Now turn the mattress over and regulate the other edges and side-stitch as before.

A much more durable edge than the ordinary side stitching of Figs. 42 and 42A is made by stitching after the manner of Figs. 60 and 61, omitting the extra corner stitches. Of these stitches the first two, A—A, Fig. 70, show on the top as well as on the border, while those of B—B show on the border only. The stitches on the border, A and B, are taken in line with the edge of the mattress, as Fig. 70. These stitches may be made with either a circular or straight needle, according to the importance of the work in hand, the circular needle making the most substantial edge, but taking more time.

The outside rows of tufts should be five inches from the edge, and there are usually four long rows of six tufts each, with three short rows of five tufts each between. This makes the diamond tufting, as Fig. 34, and is considered much softer than the square tufting of Fig. 36, the latter requiring seven rows of ten tufts each. If the tick is marked for tufts before stuffing, as explained in the method of marking cushions, there will be less difficulty in keeping the tufts exactly opposite.

To tie down the tufts, commence with the outside row and follow around the mattress row after row, so that the center is tied down last. This keeps crowding the filling toward the center of the mattress, and makes that part, which gets the greatest wear, harder than the rest.

A regular size mattress requires from nine to ten yards of ticking and an average of sixteen to seventeen yards of binding.

Mattresses that are made in two parts will remain elastic and wear longer than if made in one piece. The large part should be made the width of the bed square, so that it can be turned around from time to time and the wear evenly distributed over its entire surface. The smaller piece may also be turned occasionally, but as it is usually only a third of the entire mattress the

MATTRESSES

bulk of the wear comes on the larger piece.

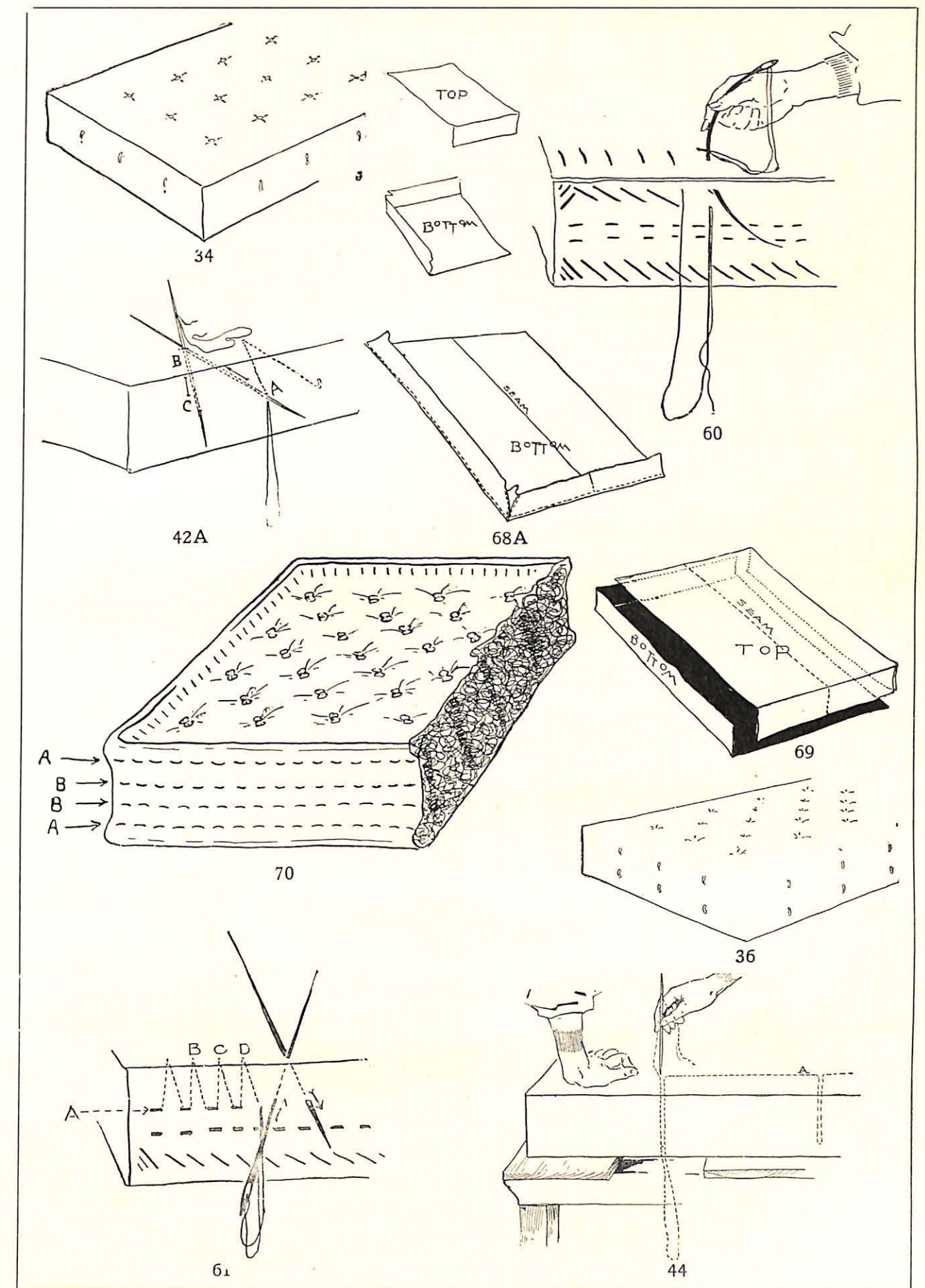
Various kinds of mattresses and cushion fillings are used according to the value and wearing quality desired, and range from excelsior, the cheapest, up to the finest grades of white curled hair drawings. Grading down from the most expensive there are several less expensive grades of hair, then moss, cotton felt, silk floss or kapok, African fiber, sea grass (marsh hay), sea moss and excelsior. All of the coarser materials are softened by a layer of tow bats, cotton bats, wool or wool flock laid between the filling and the ticking, and though the use of batting is not necessary for moss or hair fillings, a more luxurious mattress can be made by its use.

Mattresses should be made over every few years to keep them plump and free from dust and moths, and usually require an additional three or four pounds of filling each time remade.

In estimating on mattress contracts, as a rule each item of ticking and filling is fully and clearly specified. When this is done, estimating the cost is a comparatively easy matter. After learning the size and weight of the mattress, allow five

pounds for ticking, and estimate the difference as hair or filling on a cost per pound basis. Add the cost of ticking, allowing ten yards for the regular double bed one-piece mattress, or twelve yards for the double-bed two-piece mattress. Allow a sufficient sum to cover labor, and add to this total your percentage of profit. A single-bed mattress will average twenty per cent. less than for double-bed size.

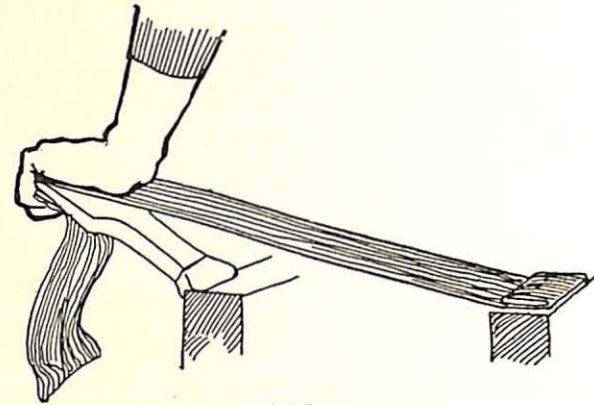
Regular size double-bed mattresses weigh on the average forty pounds each, thirty-five pounds of filling and five pounds of ticking. West of the Alleghanies the forty-pound hair mattress is considered sufficiently thick, though in the East fifty-pound mattresses are quite generally used. The proprietors of hotels and institutions usually consider it good economy to invest in heavier mattresses. These rules, of course, apply only to the hair cushion used in conjunction with the customary woven wire or spiral spring mattress, and are not intended to cover the specifications for the upholstered double-deck or Turkish mattress, which is explained later.



As the springs of spring-edged work must come close up to the frame where the spring edge is to be formed, it is necessary that the webbing should also come to the edge of the frame on those sides which are to have the spring edge. Thus the armchair bottom illustrated in Fig. 71 shows the first cross web right close up to the front rail, while the bottom of the small chair, Fig. 70, shows a strand close to the rail on both sides and also in front, as the spring edge of a small chair runs along both sides and across the front.

Under ordinary circumstances, it is not wise to have more space than two inches between the different strands of webbing, although, of course, the price of the article determines the amount of webbing and other supplies which can properly be expended upon it. Too much importance cannot be attached to the proper stretching of the webbing and also to its proper attaching to the frame, because on these two points depend the durability of the entire seat.

The tacks should be carefully spaced in the middle of the rail and the size should be chosen

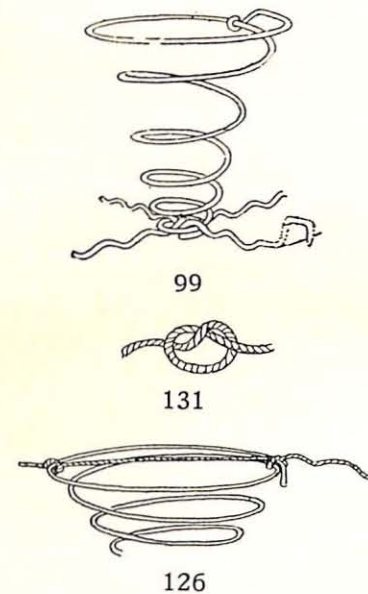
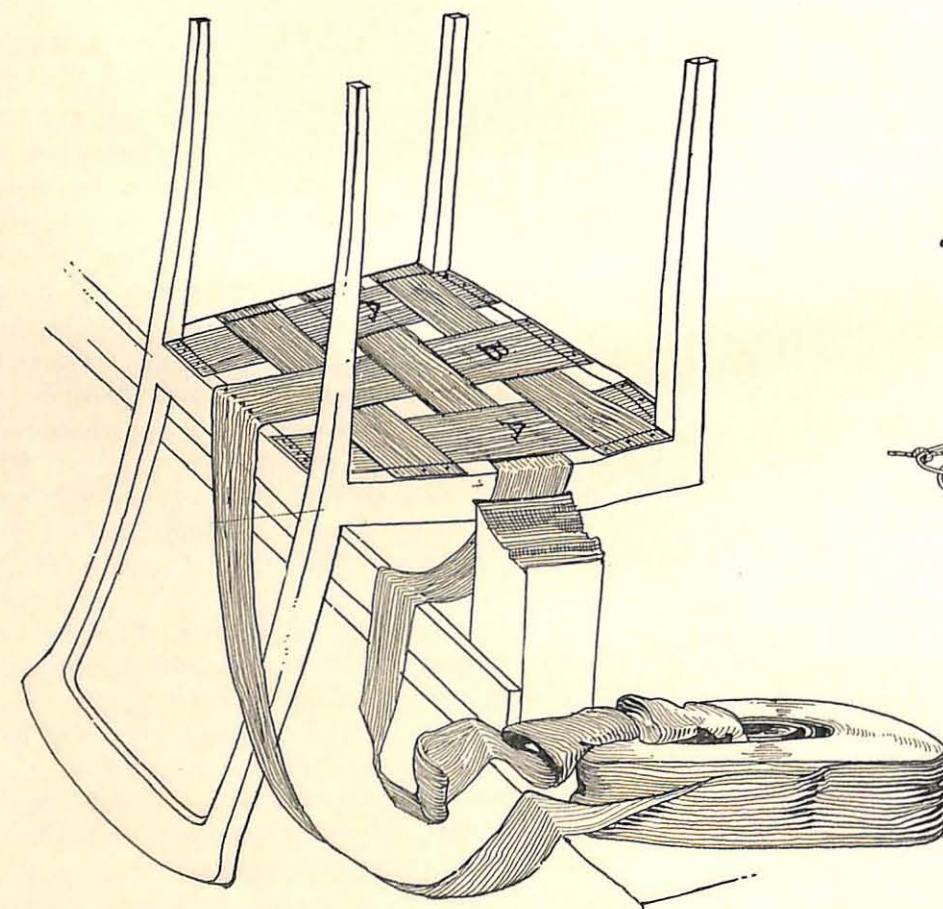


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in proportion to the strength of the wood in which they are to be driven, varying from six to twelve ounces as may be required.

The strain exerted in stretching the webbing should also be properly gauged to the strength of the chair frame and to the elasticity of the webbing.

The entire elasticity of the webbing should not be exhausted in the stretching so that it is at the breaking point, but it should be capable of



giving slightly under the pressure of use, while, at the same time, so taut that it will not bulge with the tying down of the springs. It is this elasticity of webbing which makes it preferred by many to the unyielding nature of wood or steel substitutes.

In the cheaper classes of upholstered furniture, solid bottoms of thin lumber or wood-slat bottoms are frequently used instead of webbing, and in recent years metal strands of various kinds have been extensively advocated as a more durable and cleanly substitute for either. Slat or wire strands, when used, are placed in the exact position to catch the different rows of springs that will be required. The wood slats, however, run only one way across the opening, while the wire supports are placed both ways in the same manner as webbing.

We have already described the different ways of webbing furniture, as required for spring or stitched edges. The illustrations of Figs. 77, 78, 79, 80, 81, 83, 84 and 85, illustrate more clearly the positions of the webbing in relation to the springs.

Figs. 77, 79, 80, 82 and 84, representing spring-edged arm-chairs, 87 and 88 represent the positions of springs for stitched edged arm-chairs; 78, 85 and 89 represent spring-edged small chairs, and 81 and 83 show the placing of springs in small chairs for stitched edges.

As will be seen by the positions of the circles in these illustrations, each strand of webbing, in-

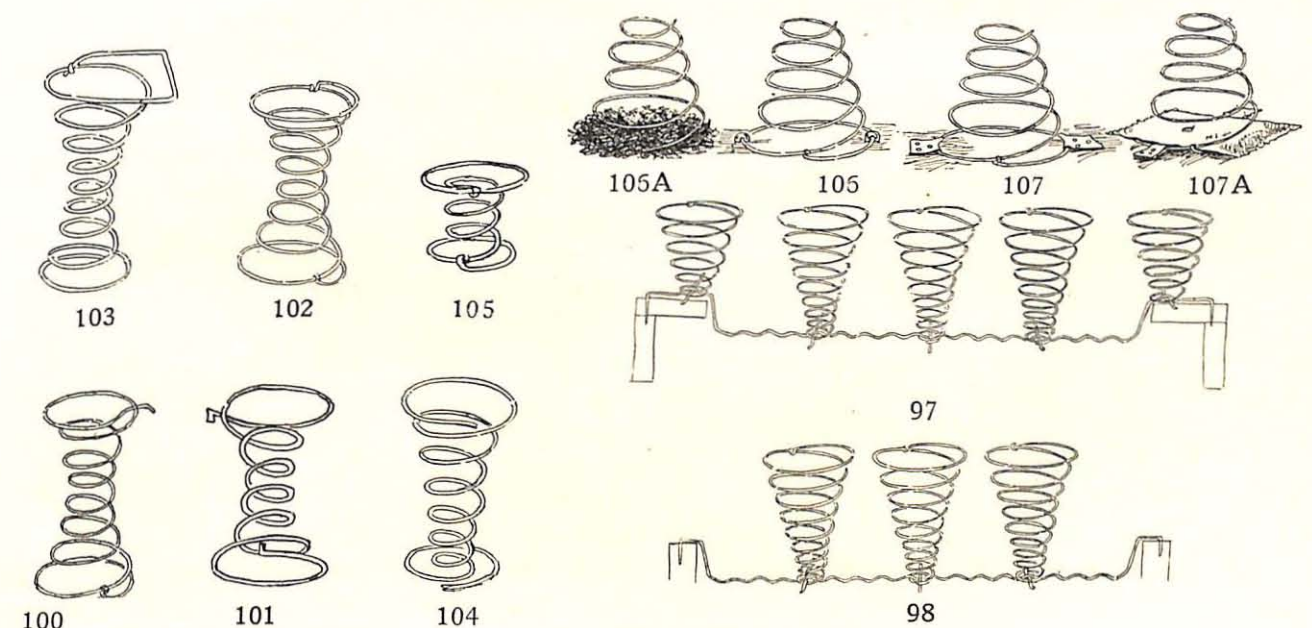
dicated by the shaded strips, is placed so that a row of springs will set fairly upon it. The circles also indicate in the different illustrations the number of springs required for different arrangements, using fewer or more as the style and value of the piece requires.

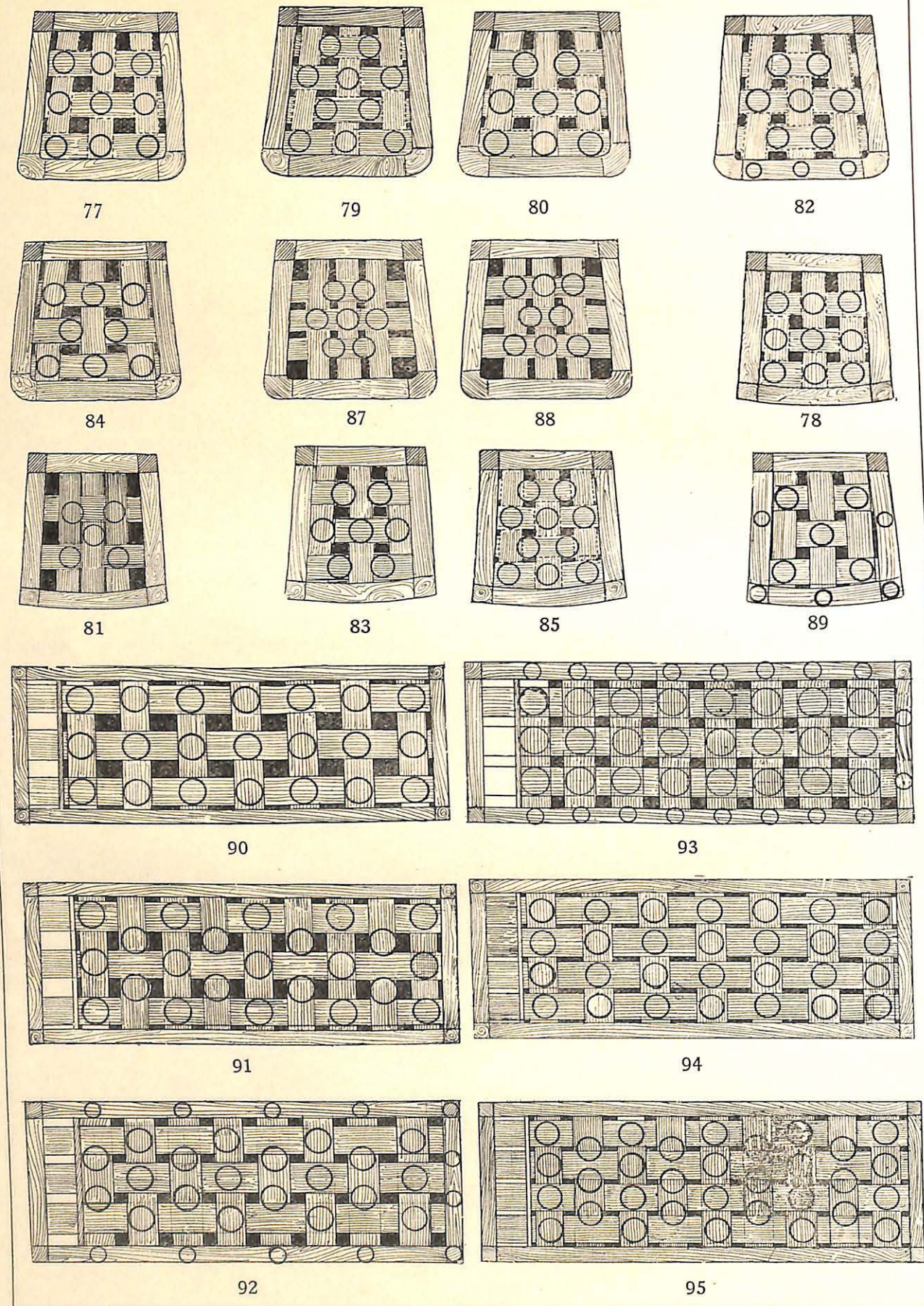
In Figs. 82, 89, 92 and 93 the small circles on the frame of the chair indicate small special springs, used, as will hereafter be described, for spring-edge work. Figs. 90 and 91 show the position of springs and webbing for stitched-edged lounges, while 92, 93, 94 and 95 show the position of springs for spring-edge work.

Two styles of metal webbing, or webbing substitutes, are shown in Figs. 96, 97 and 98; the webbing shown in Fig. 96 consists of a perforated flat steel band about three inches wide, which is fastened to the bottom of the chair by driving nails through the perforations. The wire strand shown in Figs. 97, 98 and 99, as will be readily seen, is made in special lengths to suit the various pieces of furniture, each end of the strand being sharpened to a staple point to be driven into the top of the frame.

The last-mentioned method of applying springs requires specially constructed springs having coils of gradually decreasing diameters from top to bottom, Fig. 99. In ordinary use, apart from this special spring, there are at most about five other kinds of regular spiral upholstery springs.

Fig. 101 shows the ordinary style of spring





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and Fig. 102 shows what is known as a tied spring, in which the end of the wire is given a couple of turns around the next coil. Fig. 103 is made for spring edges, the top coil having been turned particularly large and flattened on one side to rest squarely against the wire. Fig. 104 is specially turned for wood or slat bottoms. Ordinary springs, such as Figs. 102 or 101, may also be used for spring edges, but when the latter is used, instead of turning down both points of the spring, one point is turned outward and downward, to hook under the coil, as shown in Fig. 100. Fig. 105 shows the style of spring used on the frame for spring edges in Figs. 82, 89, 92 and 93.

It is well to turn down the points of the wire on all springs that are not tied, to prevent the wire from working through the webbing or the burlaps. A flat steel plate, having two or more perforations, so that one will project beyond the bench when the plate is fastened in place, can be used for this purpose.

To attach the springs to the webbing, they are first placed in position and then sewn, as indicated in Figs. 77A and 77B, using the packing needle already described (Fig. 5) and stitching twine. The stitches of each spring, usually three in number, are so planned that the last stitch taken will be at the nearest point to the next spring (see solid line, Fig. 77A), an important consideration in the economy of both time and twine.

To attach springs to wood bottoms, two methods are used, as illustrated in Figs. 106 and 107, the former using wire blind staples, and the latter ordinary six to ten ounce tacks and small pieces of webbing or heavy canvas; either of these methods requires that something in the way of a silencer should be placed below the unfastened coils to prevent rattling when the wire strikes the wood. For solid-bottomed furniture a small pad of tow can be twisted in under the spring and tacked by forcing a large tack through it into the wood, as Fig. 106A, or for slat-bottomed furniture, a piece of carpet or other heavy fabric fastened beneath the spring, as Fig. 107A, will be effective.

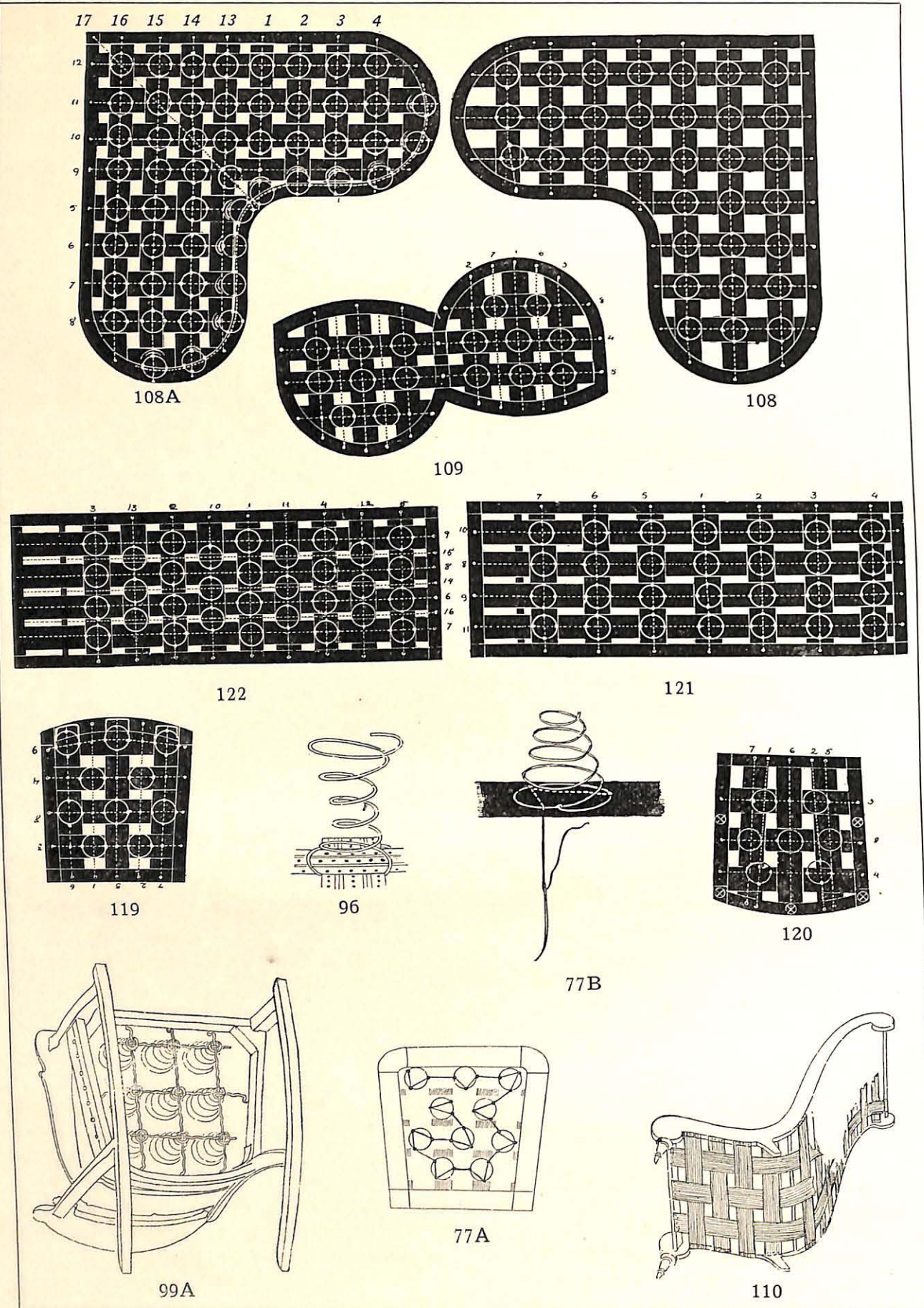
The method of attaching springs to the metal webbing of Fig. 96 can be readily seen from the illustrations, and consists simply of threading the bottom coil over and under each strand until all four sides of the coil are held in

position. This same method of twisting the spring into position is also used with ordinary webbing, but is not at all satisfactory and only employed on the very cheapest work.

The method of attaching the spring to corrugated wire supports is clearly shown in Fig. 99, and is accomplished by twisting the spring around so that the lower coil will pass over, then under the different strands, somewhat like the method described for 96. Fig. 99A shows the appearance of a chair entirely sprung up by the latter method. Fig. 97 shows the use of small edge springs, which are attached to the same corrugated wire that forms the foundation for the other springs. In addition to the special devices above mentioned, there are also a number of other methods in use of a more or less patented character, but those illustrated herewith comprise the most practical methods in general use.

Special-shaped furniture pieces, such as the cozy corner of Fig. 108, or the conversation chair 109, are webbed in much the same manner as ordinary straight-edge pieces, taking care always to cross the webbing strands at right angles to each other as near as the shape of the frame will permit. Circular frames are naturally more difficult to web because the webbing stretcher has not always a flat bearing upon which to rest, a little practice, however, will enable the workman to manipulate the stretcher at almost any desired angle. It will be noticed that in Figs. 108 and 109 the webbing is disposed with regard to the position the springs are to occupy rather than following absolutely the shape of the frame.

With very few exceptions webbing for springs is stretched perfectly flat each way across the opening, but in some cases it is necessary that the bottom of the seat formed by the webbing should follow the contour of the frame in a semi-convex form, as, for instance, in the Cleopatra or scroll chair, Fig. 110. In this chair the back rail, as will be noticed, is considerably below the level of the side rails at the lowest point. In order to preserve the shape of the bottom therefore the strands which cross from side to side are put on first and stretched very tightly. Then the strands which run from front to back are threaded through the cross strands and not stretched any more than sufficient to



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take up the slack and at the same time follow the outline of the bottom of the chair.

The method of placing the springs in circular-framed furniture is clearly shown in Figs. 108 and 109 for stitched edges and 108A for spring edges, the number being increased or diminished according to the wearing quality desired.

The standard sizes of upholstery springs in general use are four, six, eight, ten and twelve-inch, according to the depth of the frame and the height of the seat. It frequently occurs, however, that small springs are needed when none but large ones are in stock.

To reduce the height of a spring a common practice among upholsterers is to bend down one or two of the coils at each end so that the whole spring is considerably shortened, as will be seen in Figs. 111 and 111A. This, however, is never as satisfactory as it would be to use the proper size springs for the reason that in bending down the end coils, which are larger and consequently more elastic, only the stiffest part of the spring is left for use, so that while the spring is shorter it is also much harder or more rigid than a perfect spring of the proper height.

It is also frequently necessary to soften regular springs when found too stiff to be used for certain purposes. This is done by enlarging the diameter of two or three of the coils at each end of the spring, as Fig. 112, commencing at the end of the spring and opening out the coils all the way round until the desired flexibility is obtained.

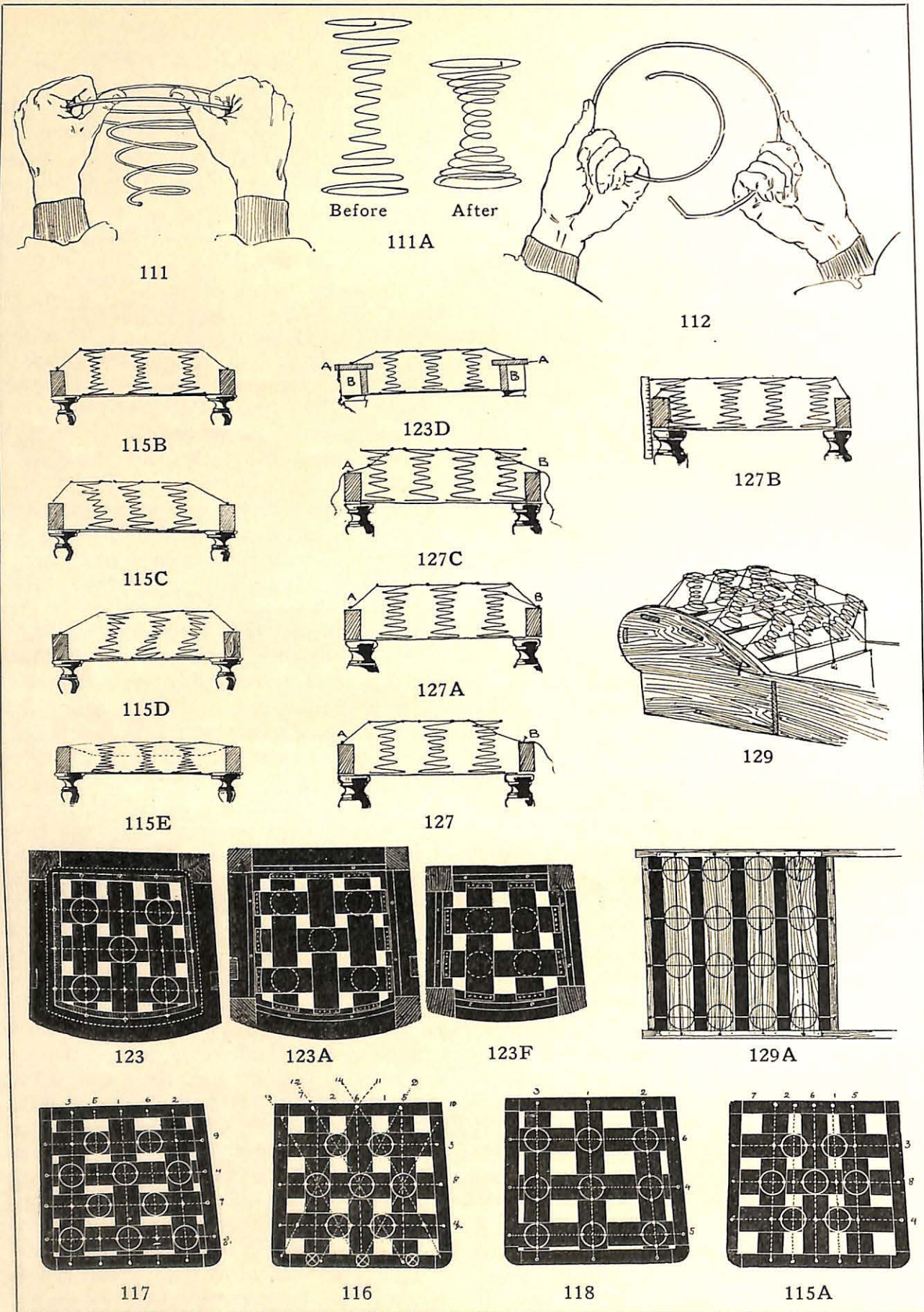
Of the sizes above mentioned the four and six-inch springs are used for very shallow seats, such as dining chairs, couches and very cheap parlor goods. Eight and ten-inch are used principally for good upholstered furniture of a semi-heavy character, and ten and twelve-inch for the largest show wood and stuffed-over pieces. For the arms and backs of chairs and heads of lounges much softer springs called pillow springs are used. These are about six inches high and are made of smaller gauge wire. Chair arms that are intended to be sprung up are constructed to allow a flat surface on which the springs may rest.

Spring-backed chairs will be fully covered later and need not here be dwelt upon, as will also the method of forming spring-edged arms

and the method of placing pillow springs in lounge heads.

Next to the proper webbing of the foundation and the proper placing of the springs the tying down is of the utmost importance and requires considerable practice to acquire the proper knack of working to advantage. By referring to the illustrations 115, 116, 117, 118, 119, 120, 121 and 122, which show the twines numbered according to their turn in being tied, it will be seen that it is usual to tie first all rows from front to back, afterwards crossing them with the twines which run from side to side.

Having measured the length of spring twine required to run from the back of the frame 1, Fig. 115A, across the springs of that row to X, allowing about two inches for every spring crossed, the length required for each row would be ascertained. These are cut off and, unless the springs are to be back tied, which requires at least twelve inches extra twine, a knot is tied in the end of each of the twines through which a ten or twelve-ounce tack is driven into the frame at 2, Fig. 115A, directly in line with the center of the springs of that row. Now draw the strand of twine tightly over the nearest point of the top coil of the first spring from the back, taking a complete turn around the coil; then draw the twine over the top of the spring, as Fig. 115B, and pull down until the spring has been reduced to the height desired. If the spring is not held so that pressure will cause it to descend in a straight perpendicular line the turn around the coil will permit it to be shifted forward or backward until this is possible; then grasping the twine where it circles the wire, to keep it from slipping, a knot is tied, as Fig. 115B. Cross the spring to the opposite side of the same coil and knot as before; then draw the twine across the second spring of the row and pressing it down into position to get the perpendicular as before, repeat the tying until all of the springs have been knotted into the twine. Now, drive a large tack, ten or twelve ounce, part way into the frame. Press the springs down while at the same time the twine is made to take a turn around the tack to permit of adjusting. By pressing the springs and keeping the end of the twine taut the springs may be compressed to the desired level, or by releasing the end of the twine can be permitted to rise as desired.



DETAILS OF SPRINGING UP

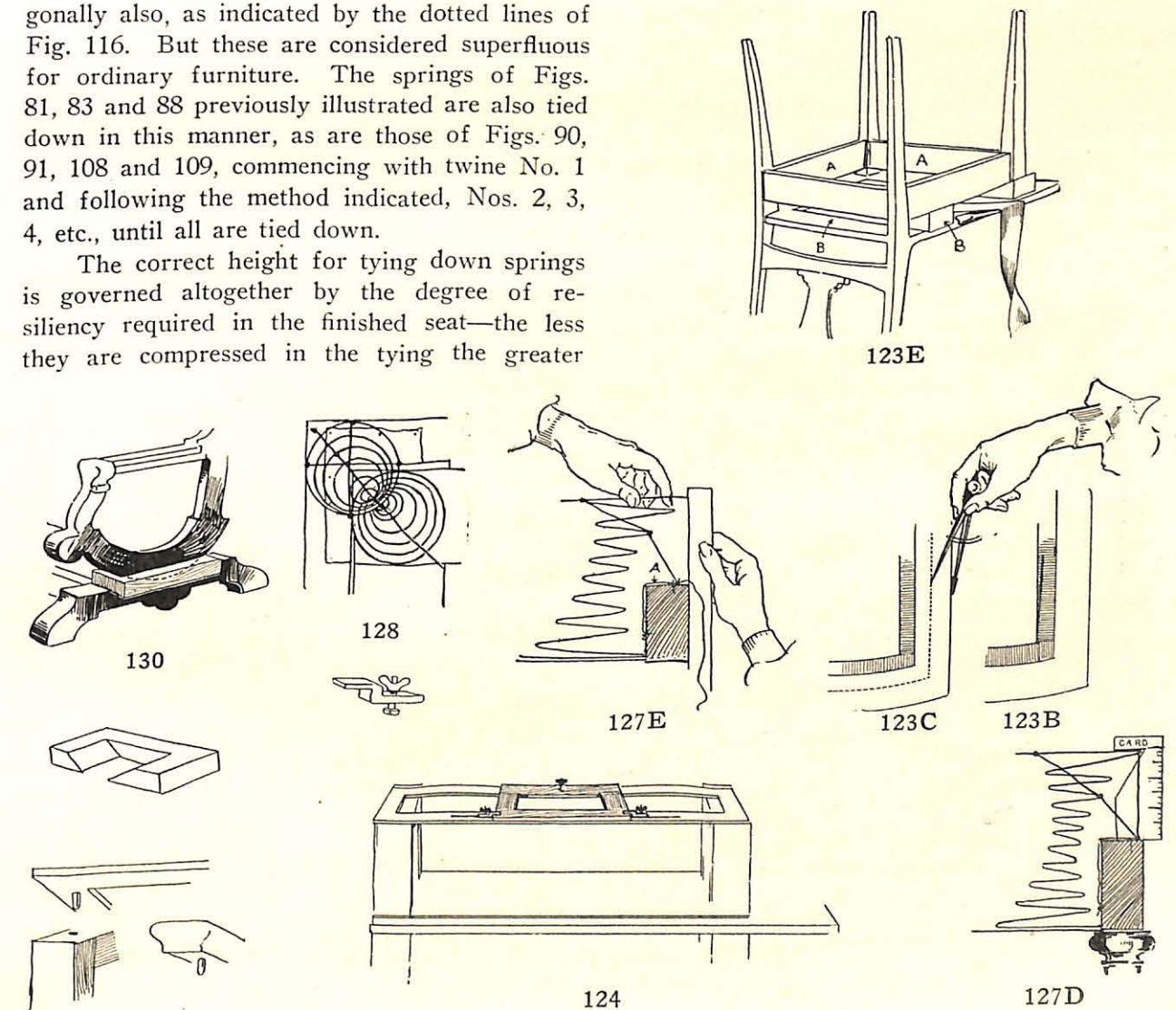
As soon as the proper height has been reached this tack is driven home together with another to bind the twine in place. It is of the utmost importance that each spring should be tied perfectly perpendicular, as any tendency to lean, however slight, destroys the perfection of the work.

Fig. 115C shows a side view of a row of three springs improperly tied in, with the springs all leaning backward. In Fig. 115D there is the same fault, with the leaning toward the front. Fig. 115B shows the same row properly tied so that the play of every spring will be perfectly perpendicular. After all of the rows from front to back have been tied in this manner, taking care to keep them all the same height, the same plan is repeated from side to side, so that each spring is tied four-square. For very expensive furniture the springs are sometimes tied diagonally also, as indicated by the dotted lines of Fig. 116. But these are considered superfluous for ordinary furniture. The springs of Figs. 81, 83 and 88 previously illustrated are also tied down in this manner, as are those of Figs. 90, 91, 108 and 109, commencing with twine No. 1 and following the method indicated, Nos. 2, 3, 4, etc., until all are tied down.

The correct height for tying down springs is governed altogether by the degree of resiliency required in the finished seat—the less they are compressed in the tying the greater

resiliency, and vice versa. The tops of the springs should never, except in very extreme cases, be less than two inches above the top of the frame, and as the degree of resiliency can never be more than that permitted by the twine the higher the tops of the springs are above the frame the more resilient the seat. The mistake is sometimes made by inexperienced workmen of tying the springs too low, so that there is not sufficient give to the seat before the strain comes on the tying twines, with the result that there is very little resiliency, and the twines soon break with the strain. Figs. 115B and 115E, illustrating the maximum resiliency of correct and incorrect tying, show clearly the dangers to avoid.

Pad-seat furniture (*i. e.*, that which is constructed without a regular rail for upholstering purposes, as Figs. 123 and 123F) is sprung up



in a manner similar to ordinary spring-seat furniture. Many, but not all, of these frames are provided with a rabbeted or depressed edge, as 123B, which permits all of the tacking, including the gimp, to lie below the polished surface of the frame. In some cases it is desirable to have a greater area of upholstering than this provides. In this case the frame is marked by means of a pair of dividers set to govern the width desired (usually one or one and one-half inches), so that one point will scratch the line that the upholstering is to follow on the surface of the seat, while the other point, which is covered with leather to protect the finish, is made to follow the outer edge, as 123C.

There is usually an objection to webbing dining chairs on the bottom of the rail, A—A, Fig. 123E, not only because rungs or spindles sometimes interfere with the hammer, but because the slightest sag of the webbing becomes visible and spoils the appearance of the chair. Where it is possible to apply the webbing to the bottom of the rail, however, a much better seat results, because deeper springs may be used. Where it is not possible to web on the rail the webbing must be stretched by hand and tacked to the bottom of the seat frame, as Fig. 123A and 123F, or where the seat frame is held to the rail by screws it is sometimes possible to loosen these screws and wedge the frame up, as Fig. 123E, so that the webbing may be stretched in the space forced open between the rail and

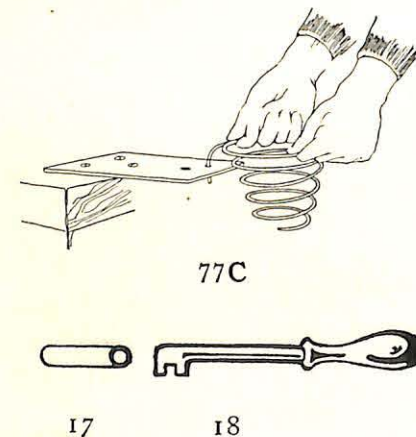
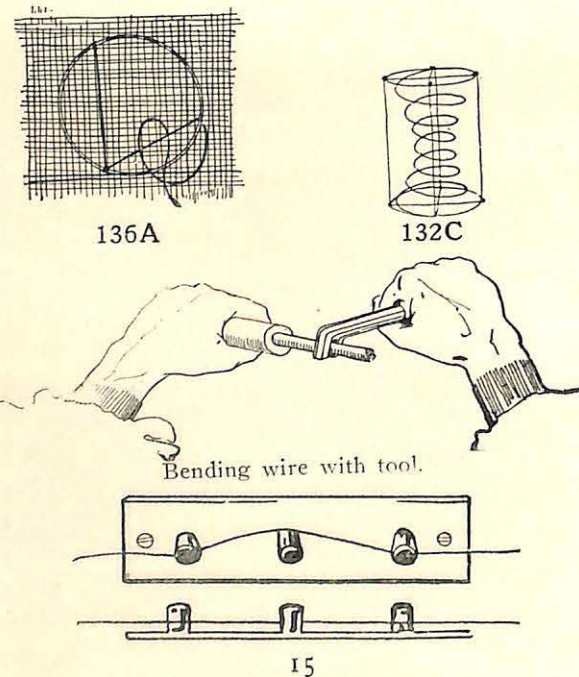
the seat. The corrugated steel spring supports illustrated in Fig. 98 provide an admirable method of overcoming the difficulties connected with this style of seat.

The springs of pad-seat dining chairs are tied down to within about an inch and a half (seldom more) of the top of the frame so that the upholstering as a whole will not make a pad more than two and a half inches above the frame at its highest central point.

Slip seats for diners are sometimes awkward to handle for lack of an adequate method of holding them solid while being upholstered. A simple frame device eighteen inches wide by four feet long, constructed of one by three-inch wood strips, to fit the bench top, as Fig. 124, provides a simple and effective clamp or vise for holding these frames in place, the open center of the frame permitting easy access to the bottom of the seat for sewing springs to webbing, double stuffing, tufting, etc. The two foreward clamps of this frame slide in grooves and are adjustable to the exact size of the seat. The back clamp is adjustable only as to thickness.

Slip-seat chair seat frames are always upholstered as thinly as possible, either with or without springs. All other dining chairs having the ordinary show-wood or stuff-over rails are upholstered like other spring-seat furniture.

A convenient rocker block for holding a platform rocker in a rigid position for working is shown in Fig. 130. It can be readily constructed out of a piece of soft wood, 1 x 3 x 12 inches, cut as illustrated. Lounge heads are sprung up as Fig. 129 for stitched edges and 129A for spring edges, the springs being usually either very soft standard gauge springs or specially constructed pillow springs.



Spring-edged furniture, as already partially illustrated, requires always more springs than for ordinary stitched-edged, because the springs must be disposed to provide one row close up to the frame wherever the spring-edge is to be formed. When placing unknotted springs always make sure that the top end of the wire will be bound to the next coil by the twine which ties down the spring, as Fig. 126 (page 24.)

After the springs have been all sewn in place to the webbing, as Figs. 77, 79, 80, 85, 78, 94, 95, a piece of webbing is tacked over the inner edge of the rail to prevent the spring from rattling if it strikes the rail. It covers from the top front edge down nearly to the bottom of the rail at A, Fig. 127E. The length of the twine required to tie the springs down is found by measuring from A, Fig. 127, over the springs to B, doubling this length for ordinary spring-edge work or adding eighteen inches if the spring is to be back tied, as Fig. 127A. If the back spring is not to be back tied a knot, Fig. 131, is formed in the end of the twine, then tacked to the back rail, and all the springs in that row except the front spring knotted into the twine, as already explained for Figs. 115A, B, etc. When the top coil of the front spring is reached, instead of knotting, one turn of the twine is taken around the coil, and then instead of crossing the top coil, the twine is dropped to the front of the third or fourth coil down, as shown in Fig. 127B; a tack is driven into the front rail, the twine passed around it and the springs depressed to the desired height and fastened solid, as already explained in connection with Fig. 115.

Where a spring-edge is to be formed on each side, as the lounges of Figs. 94, 95, the length of the twine is tripled instead of doubled in the measuring, a knot tied one-third of the distance from one end, tacked to the rail, and the longest twine passed first around the front of the fourth coil of the nearest spring, then up to the back of the top coil, around it, knotted to the top coils of all the center springs, slipped around the top coil of the last spring on the other side, down to the fourth coil at the front, and then tacked in place at A, as Fig. 127C. After all of the rows have been tied down in this way and the cross twines for all except the outside rows tied in place it will be found that all of the outside springs are capable of being

shifted forward or backward in the twines. This is required to enable the workman to bring the top coil of every outside spring out even with the perpendicular face of the rail. Now, placing a rule or straight-edge perpendicularly against the face of the rail at A, Figs. 127B and 127E, the top of the spring is pulled forward until the front edge just touches the rule; each edge spring is brought forward in like manner until all are in uniform position. Now, pass the loose surplus twine around this coil, draw the front edge of the spring down, as Fig. 127D, to the height the edge is to be, usually two to four inches, according to the depth required; tie a knot in the twine which will inclose the wire, then over to the back of the spring, around the coil, and tie a knot which will include the twine already there, then down to the front of the fourth coil, knot again, out to the rail and tack in position. It is immaterial whether the twine should follow this route or first to the front of the fourth coil, up to the back of the top, out to the front and then down, but we have found the first method suggested to be the most convenient way of working. A convenient way of gauging the height of the edge is to take a small strip of cardboard and nick in one edge, as shown in Fig. 127D, which will provide an accurate measure for the height desired.

Where the spring edge follows around the corner of a piece of furniture a spring is placed right in the angle of the turn and tied diagonally, as shown in the detailed illustration of Fig. 128.

The small springs which are used to form the independent spring edge shown in Figs. 82, 89, 92 and 93 are not much used at present. We give the method, however, for those who wish to employ it. The springs (Fig. 105), should be about five inches high, and not over two and three-quarter inches extreme diameter; or if wider the rail upon which they set must be increased sufficiently to support the full width of the spring. These springs are tied down separately, as Fig. 132C, before being attached in position on the frame.

By constructing two or three box-like forms of different heights (Fig. 132), a spring can be compressed, placed within the form (Fig. 132B) and readily tied to the exact height. Each spring is tied four-square, as Fig. 132C, and then attached in position. The other springs of the

leaving the corners to be tacked last. By working all of the wrinkles to the corners in this way it is possible to keep the burlaps perfectly smooth and taut.

On the best class of upholstered furniture it is usual to sew all the springs to the burlaps. The method, as indicated in Fig. 136, follows very closely the method of sewing the springs to the webbing on the bottom of the seat, with the exception that a four-inch circular needle, like Fig. 11, is employed, and the twine forms a knot around the spring at each stitch. See detail, Fig. 136A.

The burlaps used for covering the springs should be either a heavy close form of hopsacking or a closely-woven striped hessian.

A rattan or cane is sometimes employed for the spring-edge and a special clip has been devised to hold it in place. This clip is illustrated in Figs. 138 and 142.

Where wire is used another form of metal clip, illustrated in Figs. 148, 148A, 148B, may be used to bind the wire to the spring. This metal clip, as will be seen, page 38, is so constructed that one edge is rounded to engage a segment of the circular-top coil of the spring, while the other edge is perfectly straight to engage the straight wire.

Box springs and upholstered mattresses have so many points of similarity to ordinary spring-edge furniture that their springing up may be properly treated under this heading. Box springs differ in shape according as to whether they are for metal or wooden beds, the former being constructed as Fig 137, to permit a part of the box to go between the side rails of the bed, while for wooden beds perfectly plain construction, as Fig. 137A, is usually employed.

The making of the frame is purely a matter of carpenter work, although the upholsterer is naturally interested in the form of construction.

We give in Figs. 137B, 137C and 137D detailed plans of the corner construction, which may be followed or varied at will.

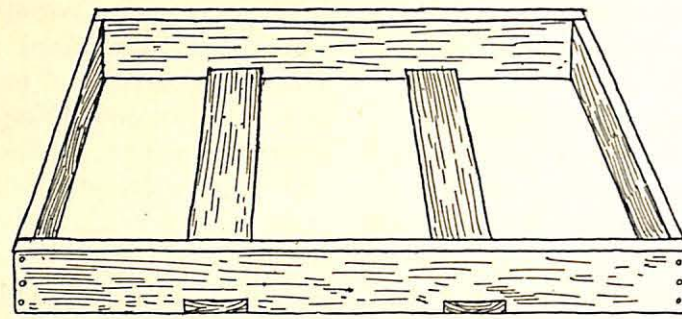
Box springs may be made with web, slat, solid wood or open-construction corrugated wire bottoms, and the springs are tied in the same manner as already explained for the lounges, Figs. 90, 91, 92, 93, 94, 95. The springs used should be of a size that will not require much reduction in the tying down, as this would impart a rounding surface to the top, whereas the object is to keep the surface as flat as possible.

Box springs are invariably made with a spring edge, using either a heavy wire for the edge or a piece of rattan specially marketed for the purpose, varying in diameter from three-eighths to five-eighths of an inch.

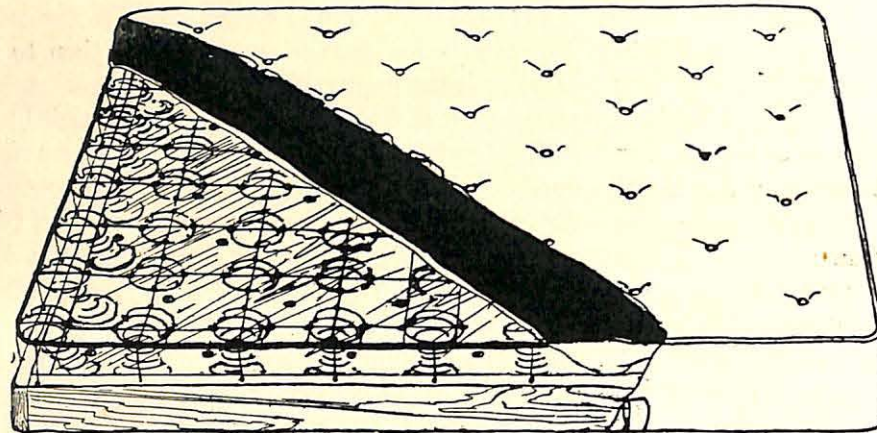
These are fastened to the edge of the springs by twine in the same manner as illustrated in Fig. 134 and 134A, B and C, with the exception that the cane is permitted to lie on the spring, as Fig. 138, instead of in front of it, as is the case in the spring-edge illustrations of Fig. 134, the reason being that rattan especially is so large that it would be projected too far beyond the face of the frame if it were attached to the front of the spring. The ends of the wire may be fastened by an ordinary splice, or a better plan is shown in Fig. 140, in which the ends overlap three or four inches, and after being bound together and turned back are fastened to the side of the edge spring. This, of course, cannot be done with the rattan, which must be split and formed into a solid splice, as Fig. 138.

A metal clamp, Fig. 142, has been placed on the market which completely does away with the use of twine for attaching the rattan to edge springs. It consists of two pieces of metal, one a washer-like piece bent to clip onto the wire of the spring and to provide a seat in which the rattan may rest; the other a small strip of an-

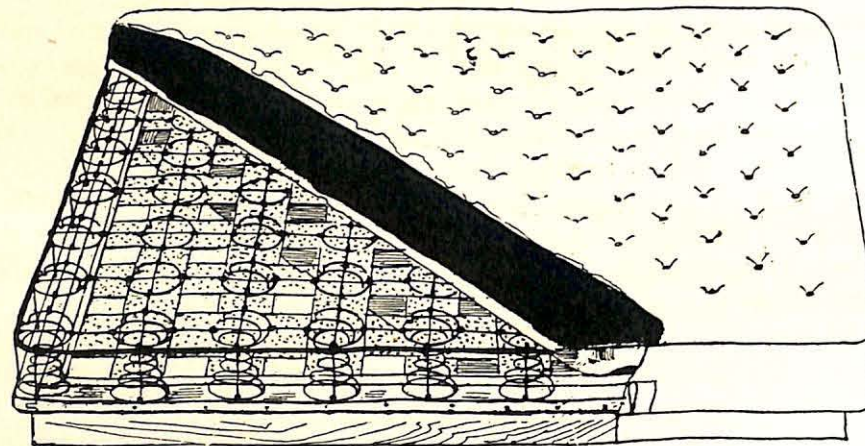
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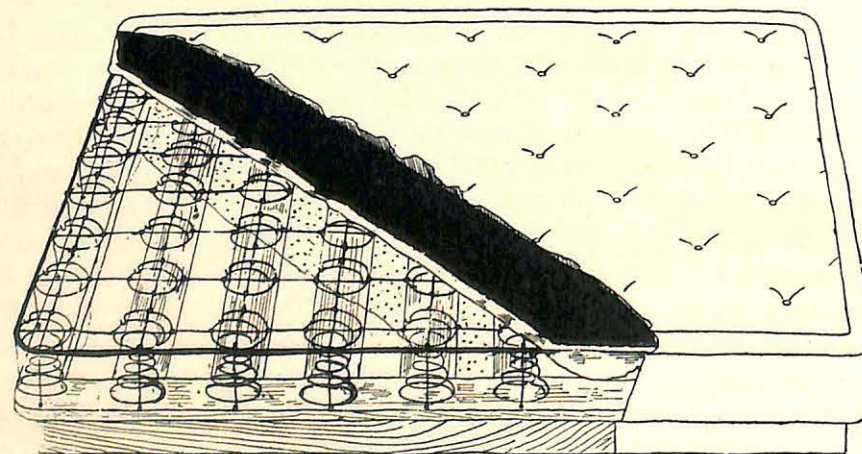
137A



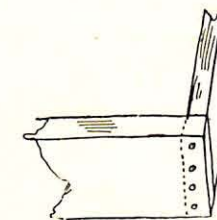
137E



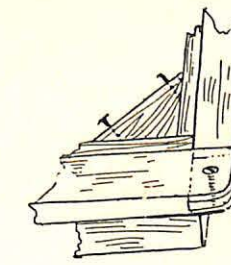
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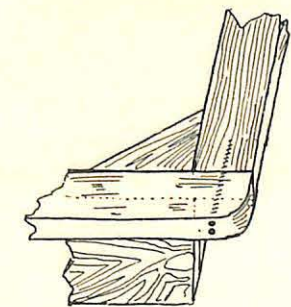
DETAILS OF BOX SPRINGS



137C



137D



137B

nealed metal, which hooks onto the wire and is then passed around the rattan and out through the bottom of the clip, where with a small tool, furnished for the purpose, the surplus is rolled into a solid coil.

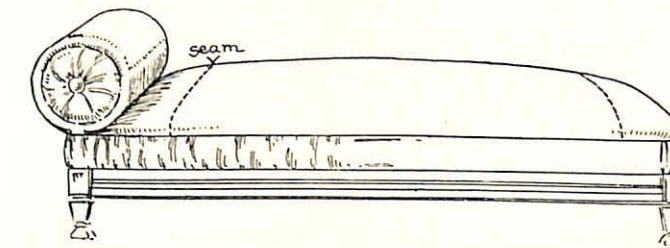
This device not only holds the clip absolutely to the spring, but at the same time permits the use of a rattan of any size. Fig. 143, a device on the same principle, is used for the purpose of splicing the rattan.

The methods of canvasing, sewing the springs to the burlaps and upholstering of box springs, are in all respects similar to methods

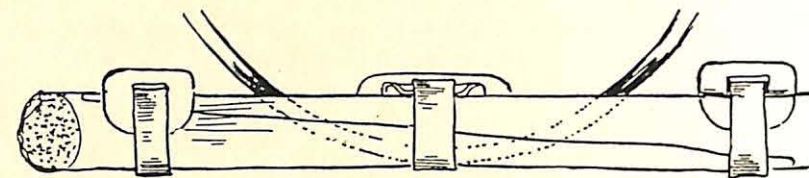
which will be explained later in connection with various furniture pieces, and need not here be dealt with.

Fig. 139 shows a detail of the most simple form of box construction for upholstered mattresses, and is intended to be webbed with linen webbing each way. The two slats which cross the bottom of the box are to prevent the sides from being drawn in by the operation of stretching the webbing.

Fig. 137A shows a solid wood bottom construction with one-half inch holes bored therein to permit tufting.



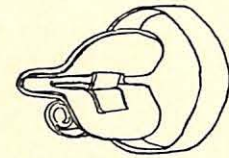
146



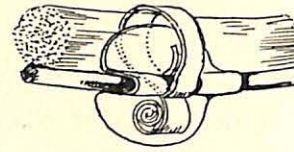
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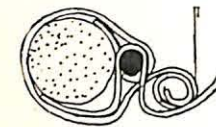
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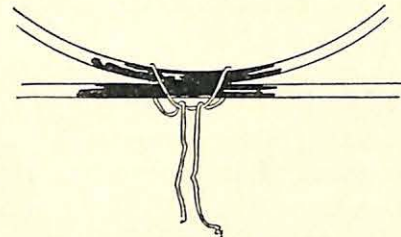
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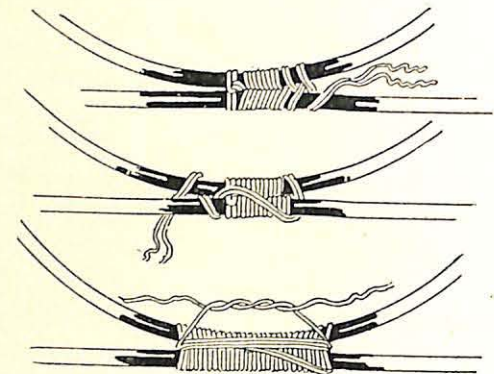
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142



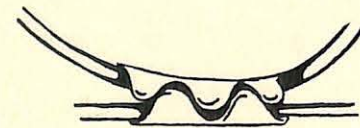
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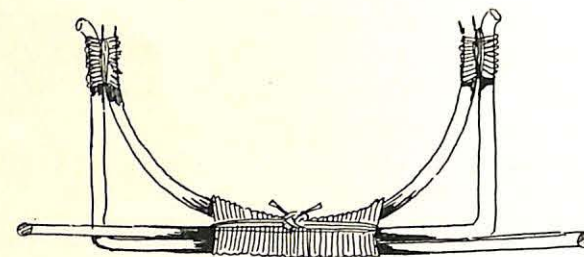
134A

134B

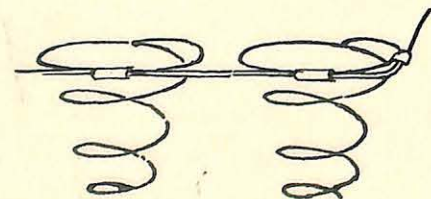
134C



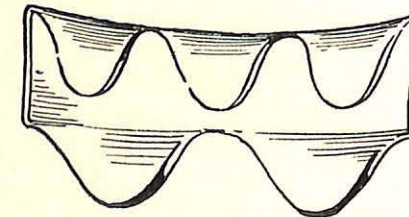
148A



140



148B



148

SPRING EDGE DETAILS

THE BRIDLED EDGE

FOLLOWING the springing up and canvassing, next in order is the laying on of the stuffing, which follows many methods, according to the nature of the work in hand.

The method employed in the cheapest class of furniture consists usually of a bridled edge and plain laid stuffing, confined only by the cover. This is the method commonly employed in the upholstering of cheap chairs and couches.

After the canvas has been tacked in place (see Figs. 136—136B) the "bridle," which consists of ordinary stitching twine, is sewn through the canvas in long stitches, as indicated by Fig. 144. This twine follows along the outside edge of the outer row of springs, just where the shape drops sharply from the edge of the springs to the wood.

Next the stuffing material, usually tow, or in the case of extremely cheap furniture excelsior, is picked free of all lumps and entered beneath the twine sufficiently to hold it in place, Fig. 145, while the surplus is made to form a big round roll, Fig. 145A, extending beyond the face of the frame and as high or higher than the tops of the springs. The roll is commenced at one end, and as each successive lump or handful of material is added the whole is kneaded together by the fingers into a compact, semi-solid form, having the appearance of Fig. 145B. Care must be taken not to allow stray wisps of material to fall below the top of the rail, but all must be nicely rounded in above the wood, as smoothly as possible.

After the bridled edge is complete a layer of stuffing material is spread over the entire surface of the canvas, being put in position handful by handful, and picked and kneaded together into a compact mass; then another layer and still another layer, until the desired thickness has been reached, as Fig. 145C.

No rule can be given as to how thick this pad should be. Sufficient, however, must be used to completely disguise or soften the presence of the springs underneath, and to give the article

form and solidity. In appearance the uncovered stuffing should seem at least half as much larger in bulk than the completed seat is to be. Or, in other words, the putting on of the cover should reduce the stuffing to two-thirds of its unconfined size.

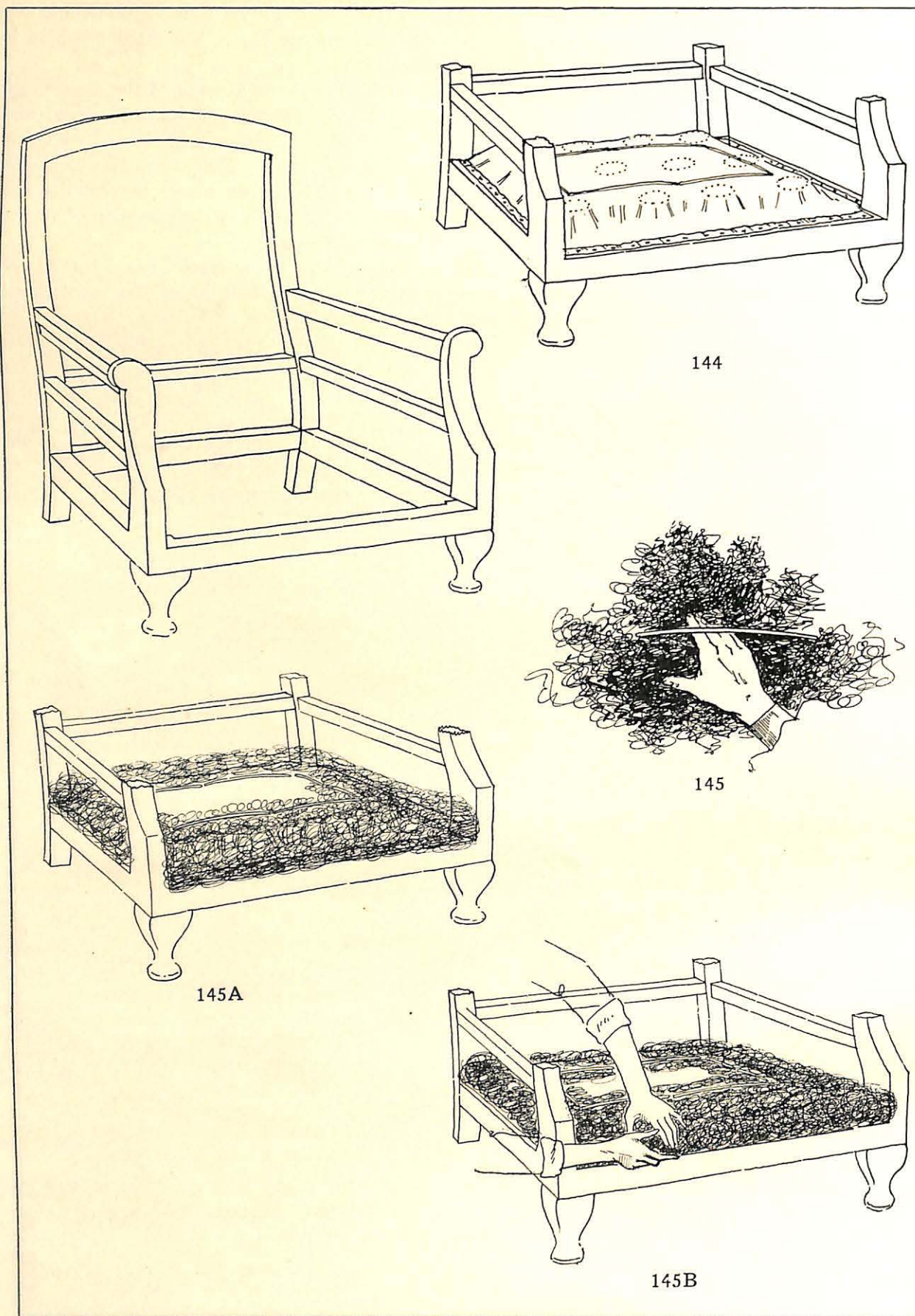
If the article is to be upholstered in the cover direct, without any cotton underlining, it is now in position to measure for the cover. By passing a tape-line over the seat and pulling it as taut as the cover will be each way the measurements can be readily ascertained. With a little practice it is an easy matter to measure the seat for the cover before any of the stuffing is put on, simply drawing the tape-line over the canvased springs and allowing an extra quantity for the stuffing.

The covering is invariably cut so that the pattern and warp threads run from front to back of the seat.

If, however, this would require cross seams that are disagreeably conspicuous, as Fig. 146, it is quite permissible to run the pattern lengthwise of the seat or back, as the case may be.

Seats or backs that are nearly square are usually slip tacked first from front to back; oblong-shaped seats are stretched first from end to end. Following the illustrations, Figs. 147, 147A, and 147B, the method of tacking down the cover from the first slip tack to the finished article will be easily followed, always bearing in mind that the corners are tacked last, and all fullness smoothed out each way from the center of every side.

No matter how well the stuffing material has been distributed, there will occur slight depressions or soft spots occasionally as the cover is pulled into position. To remedy this, additional stuffing is pushed up under the mass so as to crowd it out and fill up all hollows. Never add additional filling between the cover and the over-stuffing unless it is added in the form of another complete layer, as small bunches immediately below the cover will be visible as lumps in spite of the greatest care.



DETAILS OF THE BRIDLED EDGE

T H E P A D S E A T

CHEAP pad-seat pieces, like the chair Fig. 149, are bridled for stuffing in the same manner as described for Fig. 145A, the bridling twine following the outer edge of the springs as indicated in Fig. 150A, and the amount of stuffing inserted beneath this twine to form the edge being sufficient only to fill up the hollow left between the edge of the springs and the frame. (See dotted line Fig. 150.) Successive layers of stuffing material are then laid upon the whole surface of the seat, as already explained for Fig. 145C until the pad reaches the required thickness.

By drawing a tape line tightly each way over the stuffing the size of the cover can be ascertained. Slip-tack the cover at the back and draw it toward the front, then to each side, precisely as explained in the last chapter in connection with the bridled edge.

If the seat is to be upholstered in an under-cotton casing, the cotton is cut the required size and the back edge slip-tacked by three or four tacks, driven in only far enough to hold, as Fig. 151, then the front edge is pulled down to the front of the frame and slip-tacked in place as Fig. 151A, first in the center, then half way between the center and each outside corner. The sides are also slip-tacked in the same way, so that the complete slip-tacked seat will appear as Fig. 151B. Next release the slip-tacks at the back of the chair, turn in the edge of the cotton, and commencing at the center draw it down smoothly into shape and tack it in position (Fig. 151C). Then, working each way to within three inches of the corner and forcing the edge to assume a somewhat square shape, tack the cotton permanently in position (Fig. 151D). Care should be taken to keep the tacks of the cotton at least half an inch away from where the covering and gimp are to be tacked. Detail Fig. 152, of a cross section, shows the relative positions of the gimp, covering, cotton, stuffing, canvas and springs.

After the back is tacked permanently in place the front is tacked in the same way, and then each side, taking care to fill out any hollows which may appear by adding stuffing material beneath

the main body, as already explained for Fig. 145.

The corners are tacked down in place last, because all surplus in the cotton must be smoothed out and disposed of in a final pleat at the very corner, as Fig. 153. When completely tacked in place the pad in cotton should present the appearance of Fig. 154.

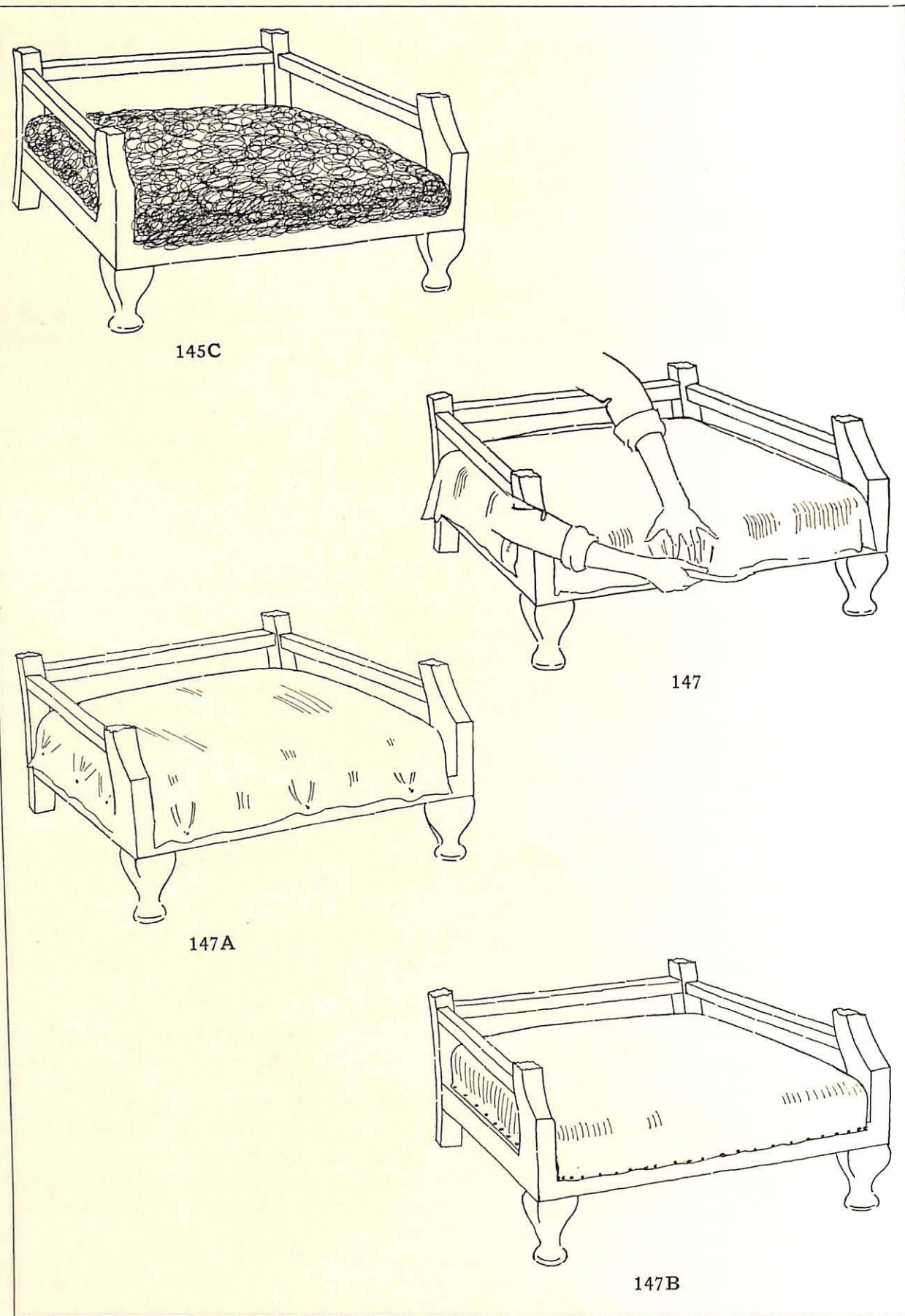
If a more durable upholstery is desired than this will provide, the edge, as formed in the cotton, can be regulated to a square form and the filling blind-stitched permanently into that position by means of a circular needle, following the method indicated in Fig. 154A. The needle passing in at A and out at B is reentered again at B without catching any of the cotton, and is drawn out at C, thus enclosing a triangularly-shaped quantity of stuffing which is drawn compactly to the front and retained there by the tightening of the stitch. Each successive stitch is pulled tightly into position and held in place by the free hand until the next stitch is taken.

Pad seats which have no spring foundation are upholstered in the same manner as pad backs and, to avoid unnecessary duplicate instruction, will be explained in that connection.

A still more durable seat can be made by again regulating the stuffing material to the edge and adding another row of stitching around the edge, this time allowing the stitches to show on top as well as on the edge. This creates an edge



149

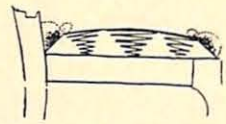


DETAILS OF THE BRIDLED EDGE

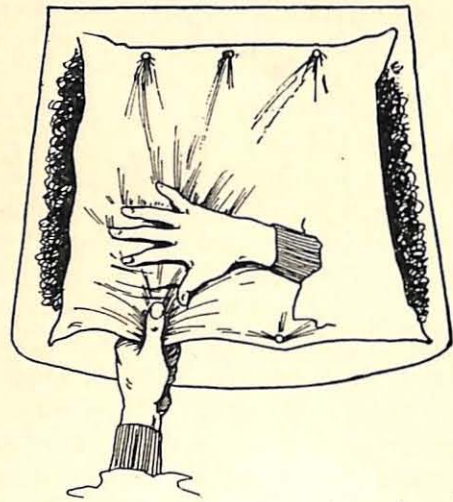
very similar in appearance to the imperial-edge cushion shown in Fig. 63.

Where it is the intention to make an edge of this character, however, the cotton should be left sufficiently loose, when tacked permanently into position, to allow the stitching to be drawn tight without drawing the edge in from the square. Fig. 156 illustrates the fault to be avoided, and Fig. 156A the correct appearance of the stitched cotton seat. Should the drawing in of the edge not be very great, it can sometimes be released by the following method. Pass a long, double-pointed needle down through the cotton, stuffing and canvas, but do not draw it completely through the webbing (see Fig. 154B), then shift the top

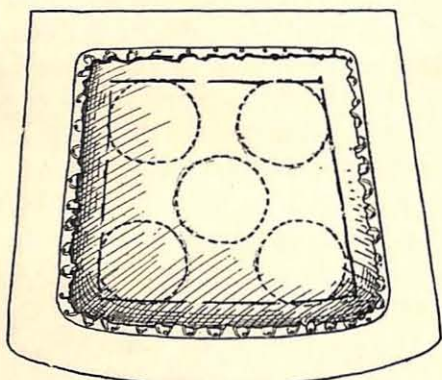
of the needle over a couple of inches, taking care not to enclose any portion of the springs or twine which do not lie close to the canvas, re-enter the needle in the canvas and force it up through and out of the cotton at top. Repeat this stitch at intervals of about four or five inches around the seat, keeping about four inches from the edge, and then slash the center of the cotton, as shown in Fig. 154C. It will, of course, be necessary to use a light top stuffing, to round over this form of seat after it has been stitched, which can be covered with another piece of cotton either sewn to the edge, as Fig. 155, or tacked in position, as Fig. 155A, after which the covering is put on in the regular way.



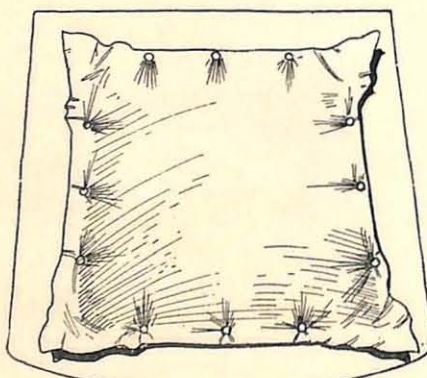
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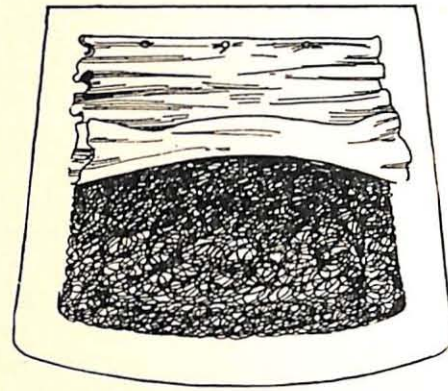
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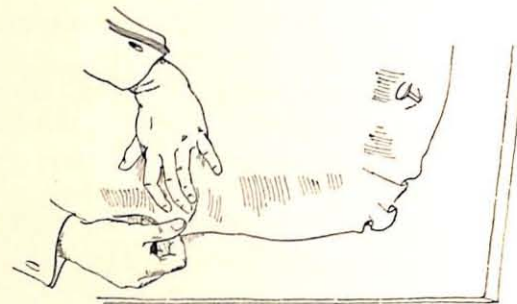
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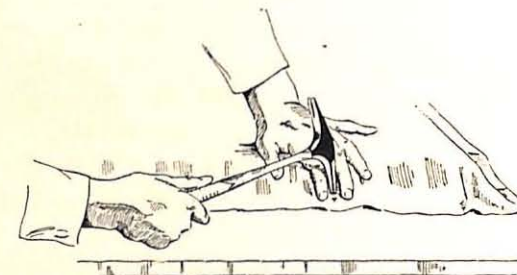
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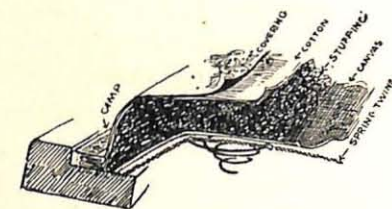
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151C



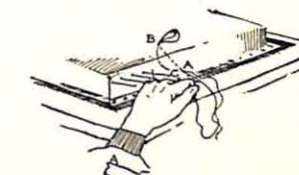
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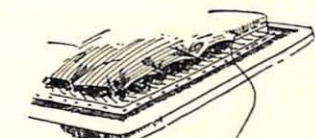
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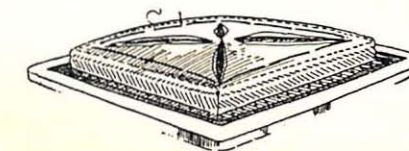
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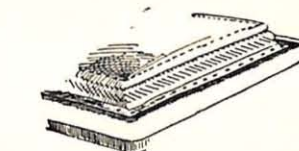
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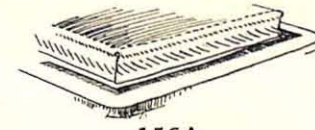
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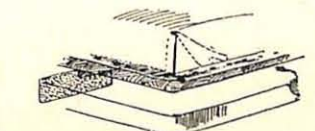
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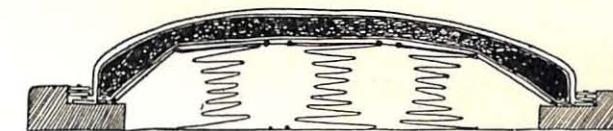
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156A



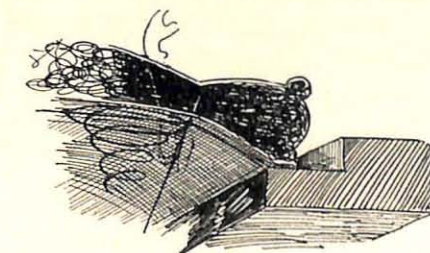
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155A



154B

DETAILS OF THE PAD SEAT

THE HARD STITCHED EDGE

HARD-EDGED furniture, technically so called to distinguish it from spring-edged furniture, takes its name from a hard stitched edge, which forms the front of the upholstered seat. Next to the proper placing and tying of the springs there is, perhaps, no one feature of an upholstered seat so important to its appearance and durability as the stitched edge.

After the springs have been tied down and canvassed, as Fig. 157, take a piece of burlaps—a strip will do—long enough to reach across the seat with about eight inches extra, turn the edge under (X, Fig. 157A), also turn in four or five inches of the end, and tack the corner to the frame at A, Fig. 157A. Keeping the back edge turned under, draw the burlaps across to the other side of the frame, turn in the surplus at the end and tack it at B, Fig. 157B. It will be noticed that these points A and B are practically in line with the edge of the front row of springs. Should the slope of the seat cause the burlaps to slide away from this line, it should be pinned in place, as indicated in Fig. 157C, and sewn to the seating burlaps with short stitches, as indicated. Allow a sufficient quantity of burlaps to cover the space indicated by the broken line, Fig. 159, with a little extra for turning in, and trim the surplus burlaps away. This canvas or burlaps, which should be as thin and pliable as possible without sacrificing the necessary strength, is to form the cover of the stitched edge, which though much more elaborately made, serves precisely the same purpose as the bridled edge of Fig. 145B.

After the surplus burlaps has been trimmed off a quantity of hair, or other stuffing material is picked free of all lumps and inserted under the burlaps to form a full round "roll," as shown in Figs. 158 and 159, a term by which the stitched edge is frequently designated. This roll is slip-tacked temporarily, as indicated in Fig. 159, and in bulk should be about half as large again as it is desired to be when permanently tacked down. To tack the burlaps permanently

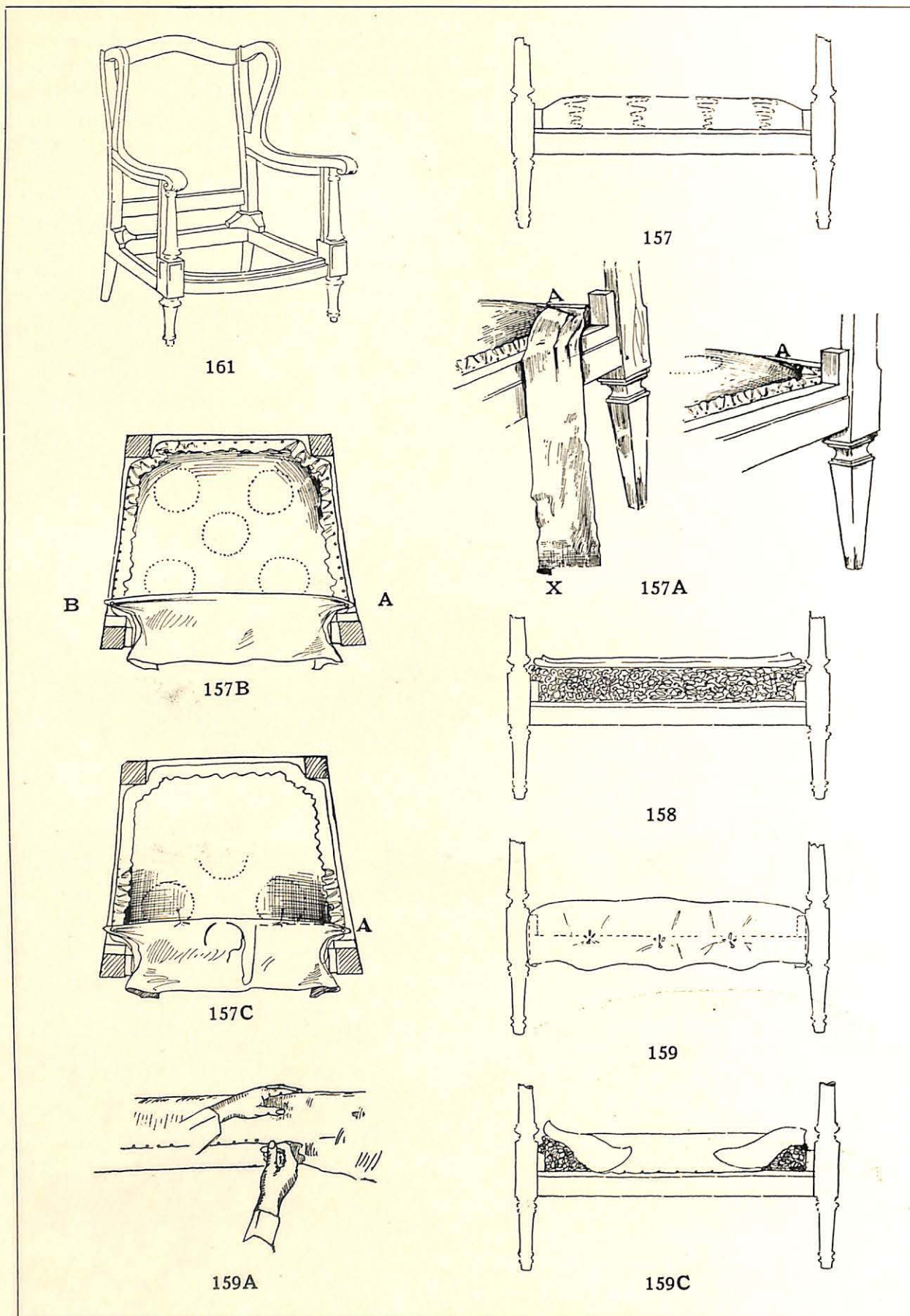
begin at the center and after releasing some of the slip tacks, turn in the edge of the burlaps and draw the roll down into position with one hand, as indicated in Fig. 159A, while the other hand squeezes and presses the mass into a somewhat square shape.

The burlaps which confines the roll is not permitted to extend over the face of the rail. The rabbeted edge is usually only about one-half an inch wide and all of its surface is required for the tacking of the covering and gimp. When drawing down the roll, therefore, the canvas is turned in just above the rail and the tacks are driven into the top edge as near as possible to the front without having the heads project beyond the face of the rabbet, where they would be a menace to the fingers of the upholsterer. An examination of Figs. 162B, C and D will make this point clear.

It will be of great assistance in forming the roll if the back edge of the burlaps has been turned straight with the thread, so that the lateral threads may serve as a guide in turning in the front edge. It is also extremely important that the roll should be filled exactly to the right degree of firmness, because if too hard it will be difficult to regulate and stitch, while on the other hand, if too soft, the stitched edge will not be sufficiently firm. No possible rule can be given that will indicate just how much stuffing material the roll should contain. One soon gets to know, however, with a little experience, and it is a good plan to practice on this point until the degree of firmness requisite for a satisfactory edge becomes almost a matter of instinct rather than of calculation.

If the roll as at first pulled into place for permanent tacking, as Fig. 159C, is found too hard, some of the stuffing should be drawn out, taking care not to remove it all from one place or in a lump; or if too soft more should be added beneath what is already in place.

As the roll is drawn down into position for permanent tacking the burlap cover should be pulled and smoothed in the direction of the lateral threads as well as straight down to pre-



DETAILS OF HARD EDGE UPHOLSTERING

vent what are technically known as cat's teeth, or cat draws. Fig. 159B illustrates a roll in which this precaution has been neglected, and appears to be all hills and hollows, while Fig. 159D shows the appearance of a properly-formed roll. No variation should be made in the size of the roll from one end to the other, but it should follow absolutely the outline of the frame and be of a uniform firmness throughout.

If the frame is provided with tack blocks in the corners, the roll should be rounded off down to meet the blocks and tacked there, as indicated by 159D. The roll is then ready for stitching.

It is customary to put a stitched edge on the front only of such pieces as the arm-chair or sofa of Figs. 160 and 161. On pieces similar to the divan, Fig. 165, the lady's chair, Fig. 163, and the reception chairs, Figs. 164 and 162, the stitched edge must be continued around the sides, as indicated in the different detail sketches, Figs. 162A, 163A, 164A and 165A, which show the method of attaching the burlaps to these different pieces, and with the illustrations of the completed rolls above mentioned, clearly indicate the different steps to be taken.

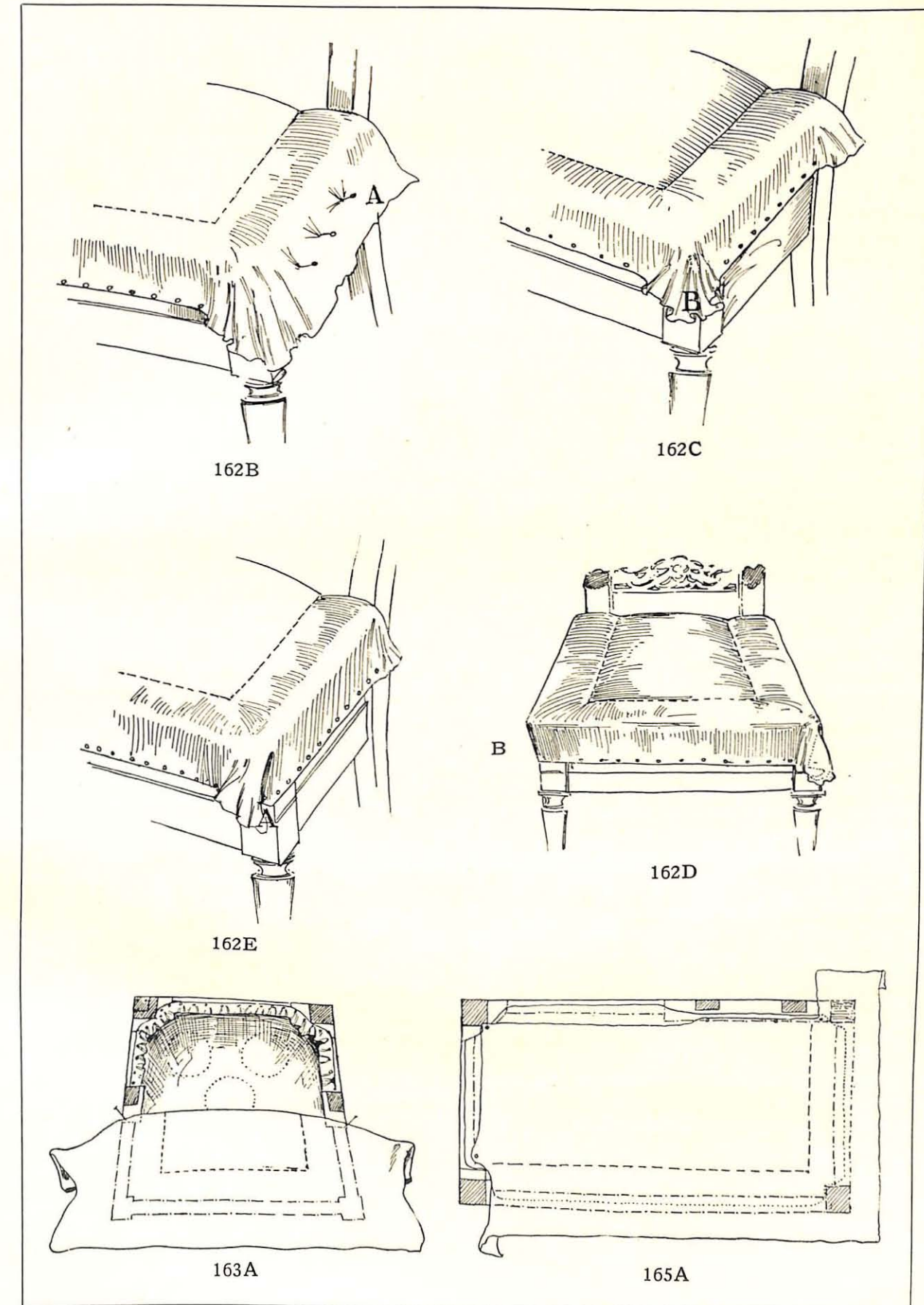
The corners of the rolls on pieces like Figs. 162, 163, 164 and 165, are usually somewhat difficult to form.

Presuming that the roll has progressed to the condition illustrated in Fig. 162B, the slip tacks which hold the burlaps at A are removed and the filling and burlaps are forced to assume the shape indicated in Fig. 162C, taking care to keep the side roll to the same proportions as those of the front roll. The burlaps cover will be quite full at the corner B, and if too cumbersome the surplus should be cut away, as indicated at A, Fig. 162E, after which a pleat is

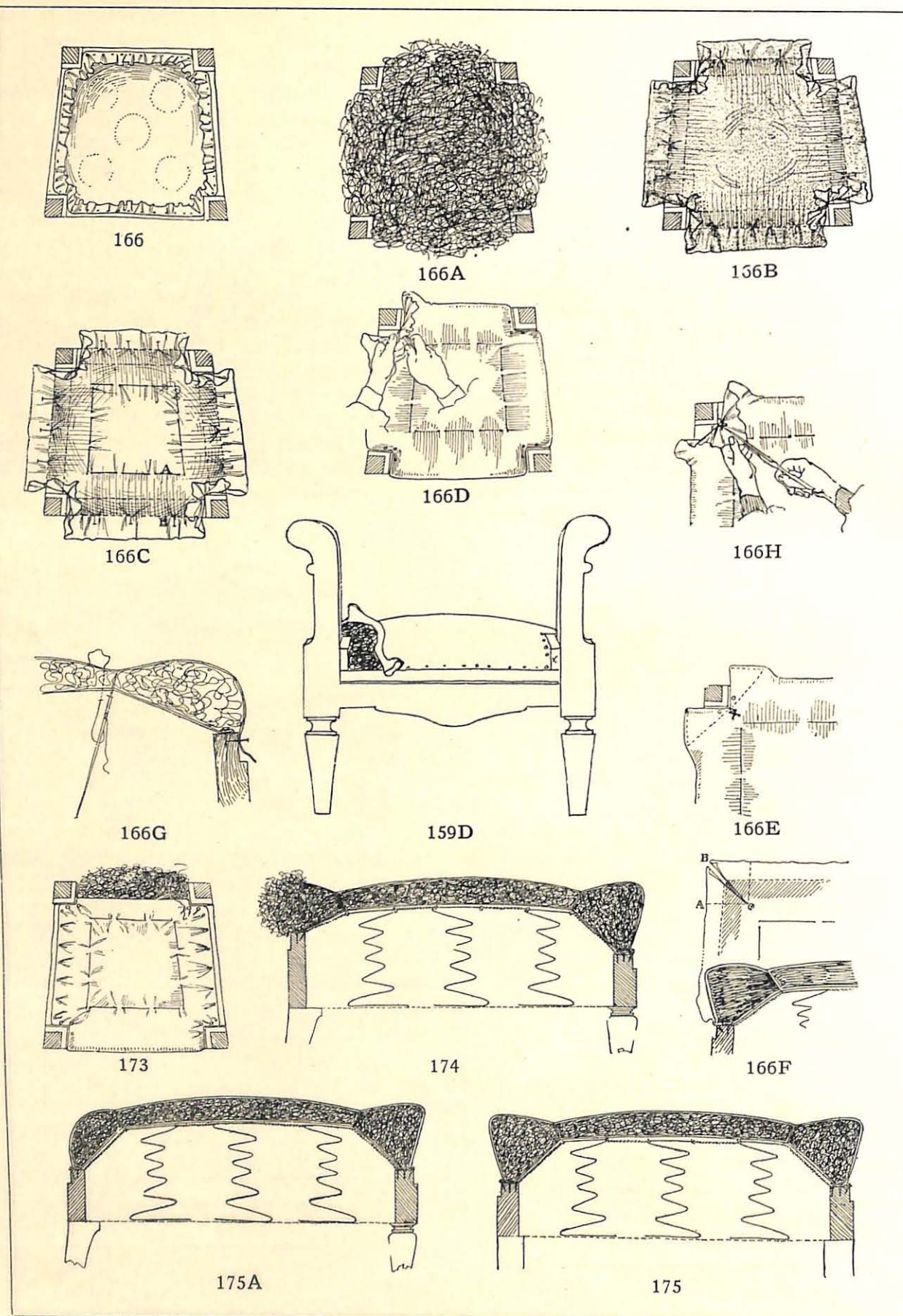
formed to dispose of the surplus and tacked in position, as indicated at B, Fig. 162D. This accomplished the roll is ready for regulating and stitching. The stitching of a hard-edged roll is in many respects similar to the stitching already described in connection with the side stitching of an imperial-edged mattress. Some upholsterers prefer a straight, double-pointed needle about six or eight inches long after the manner illustrated in Fig. 162H. For convenience, the first and second stitches are shown in the same illustration, but it will be understood, of course, that the first or bottom stitch would be completed across the front of the chair before the second stitch is started.

The illustration just referred to, Fig. 162H, shows the process of stitching. A straight or circular needle is entered from the face of the roll, brought out at the top, shifted over and re-entered at the top, pushed down through and out in front, thus enclosing a portion of the stuffing between the top and front burlaps. After the stitch has been made the twine is pulled tightly with one hand while the other assists in pressing the stitching into shape. After the first stitch is completed the roll is again regulated after the manner described and a second stitch is run across following the same method as was employed for the first stitch, only making very much shorter stitches and producing a finer edge.

In order to assist in the holding of the twine for the top stitch, a knot is formed in taking the stitch. See details 189A and 189B which together with detail 185 will assist in understanding the method of making the stitch. The front edge of the chair shown in Fig. 162F should, after covering, have the appearance of Fig. 162G.



DETAILS OF HARD EDGE UPHOLSTERING



DETAILS OF DOUBLE STUFFING

DOUBLE STUFFING

AN IMPROVEMENT over the ordinary hard edge is made by what is known as double stuffing. After the seat has been properly sprung up, as Fig. 166, which shows the top view of the sprung-up seat of armchair Fig. 161, a quantity of stuffing material, preferably tow, is picked free of lumps and is spread on the seat, as Fig. 166A, keeping the edges somewhat thicker than the center. Then a piece of light burlaps is slip-tacked over the seat, as Fig. 166B, taking care to keep the thread perfectly straight, as indicated by the illustration. The burlaps must not be pulled so tightly as to in any way depress the springs or cause a slackening of the twines which tie them down into position.

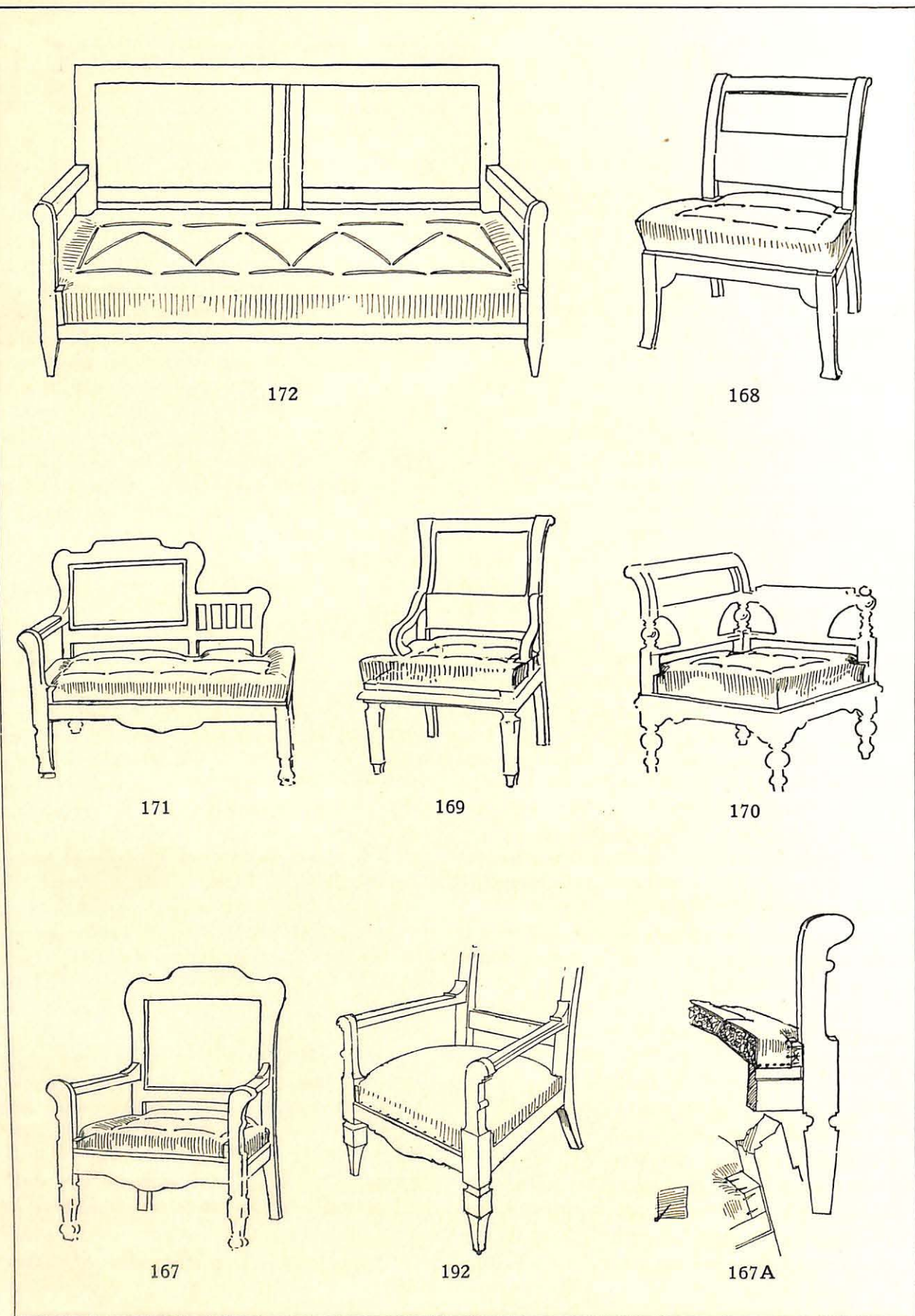
Next with a double-pointed mattress needle the burlaps is sewn down to the canvas which covers the springs by means of long stitches which follow around the center of the seat about four inches from the edge, as A, Fig. 166C. The needle is passed down through the top burlaps, tow, spring burlaps and webbing until the top point is free from the spring burlaps. This point is then shifted over about an inch, taking care not to enclose any part of spring or twine which does not lie close to the canvas, and forced upward again out through the top in line with the direction of the stitch. See detail, Fig. 166G. This is repeated until the entire seat has been stitched around, as Fig. 166C.

The slip-tacks which hold the burlaps on each side are now released and the stuffing which lies between the stitching, A, Fig. 166C, and the edge B is supplemented by a sufficient quantity to form the roll already described and illustrated in connection with Figs. 159A, B and C. This roll is repeated on all four sides of the chair, leaving the corners until the last. In the seat illustrated, which is chair 161, there are tack blocks in all four corners. The rolls must be rounded down to meet all of these blocks, to permit which the canvas is slit from the corner to a point approximately one inch from the inner corner of the chair leg, indicated by X, Fig.

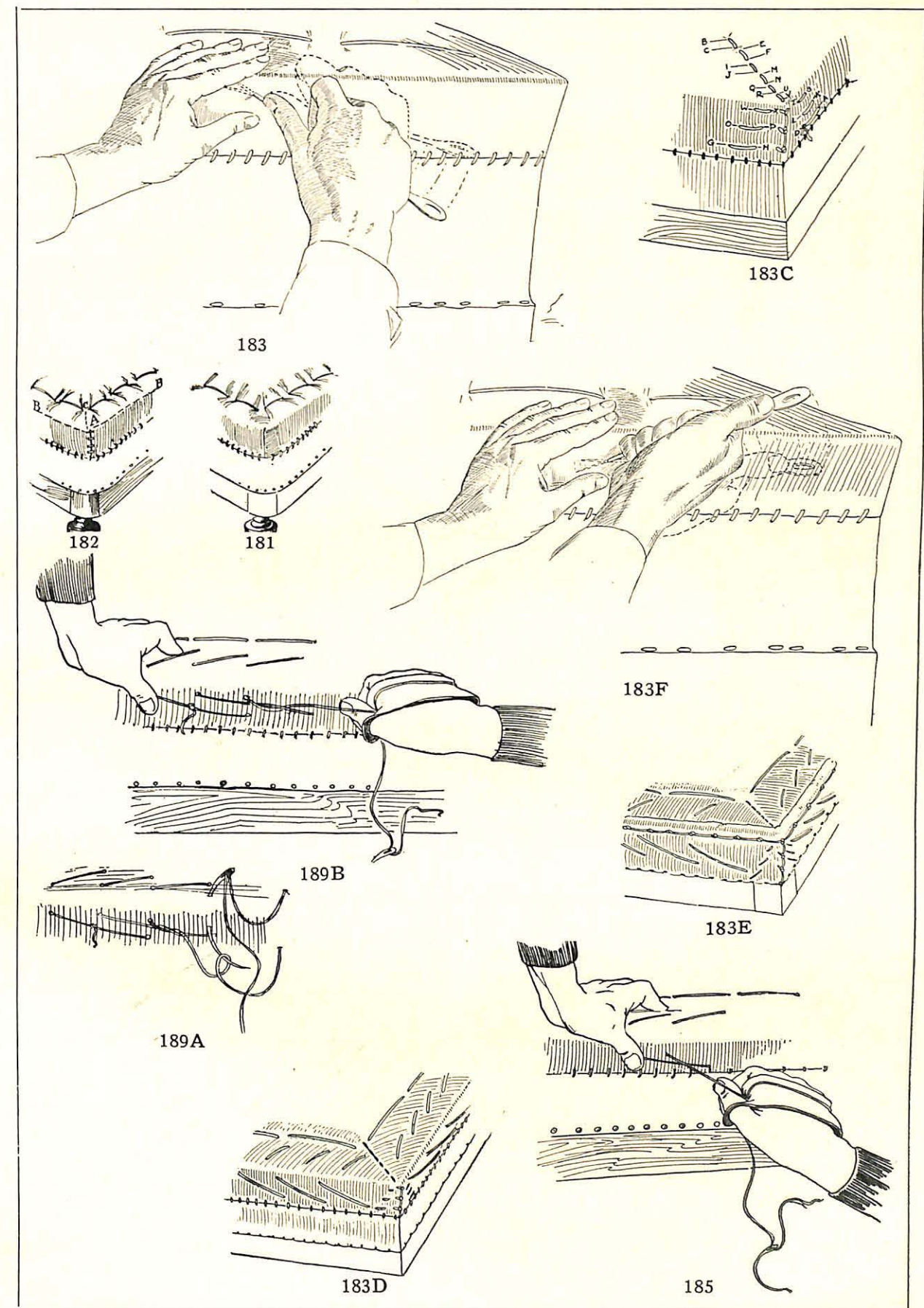
166E. Drawing the burlaps down to this point smoothly with one hand, the points of a pair of shears are inserted as Fig. 166D, so as to make the hole X, Fig. 166F, which indicates how far the slit B is to extend. Then turning up the burlaps cut diagonally from the corner B to X, the point marked by the shears, as Fig. 166H. The burlaps is then drawn down into position and the corner tacked to the block, as indicated at X, Fig. 166E, keeping the tow and the surplus fabric smoothly turned underneath so as to leave fully an inch of the tacking block clear. Figs. 167, 168, 169, 170, 171 and 172 show the appearance of the chairs, divan and sofa of Figs. 160 and 165, with the double stuffing completely tacked in position, with rolls formed all around ready for stitching. The roll at the back is seldom stitched and is made somewhat smaller on that account.

For very cheap furniture an imitation double stuffing is formed, as Fig. 173, the canvas which covers the double stuffing not being extended beyond the line of the tack blocks, the front only being built up for stitching and the sides only partially filled up and tacked on the top edge of the rail as indicated. The unconfined filling which extends beyond the back rail is confined later by the cotton which covers the entire seat. Fig. 174, which shows a cross section of a chair cut through from front to back, indicates the relative positions of the springs, spring burlaps, spring twine, stuffing and double stuffing burlaps. Fig. 175 shows a cross section (front view) and Fig. 175A a cross section (side view) of the armchair Fig. 167, double stuffed ready for stitching.

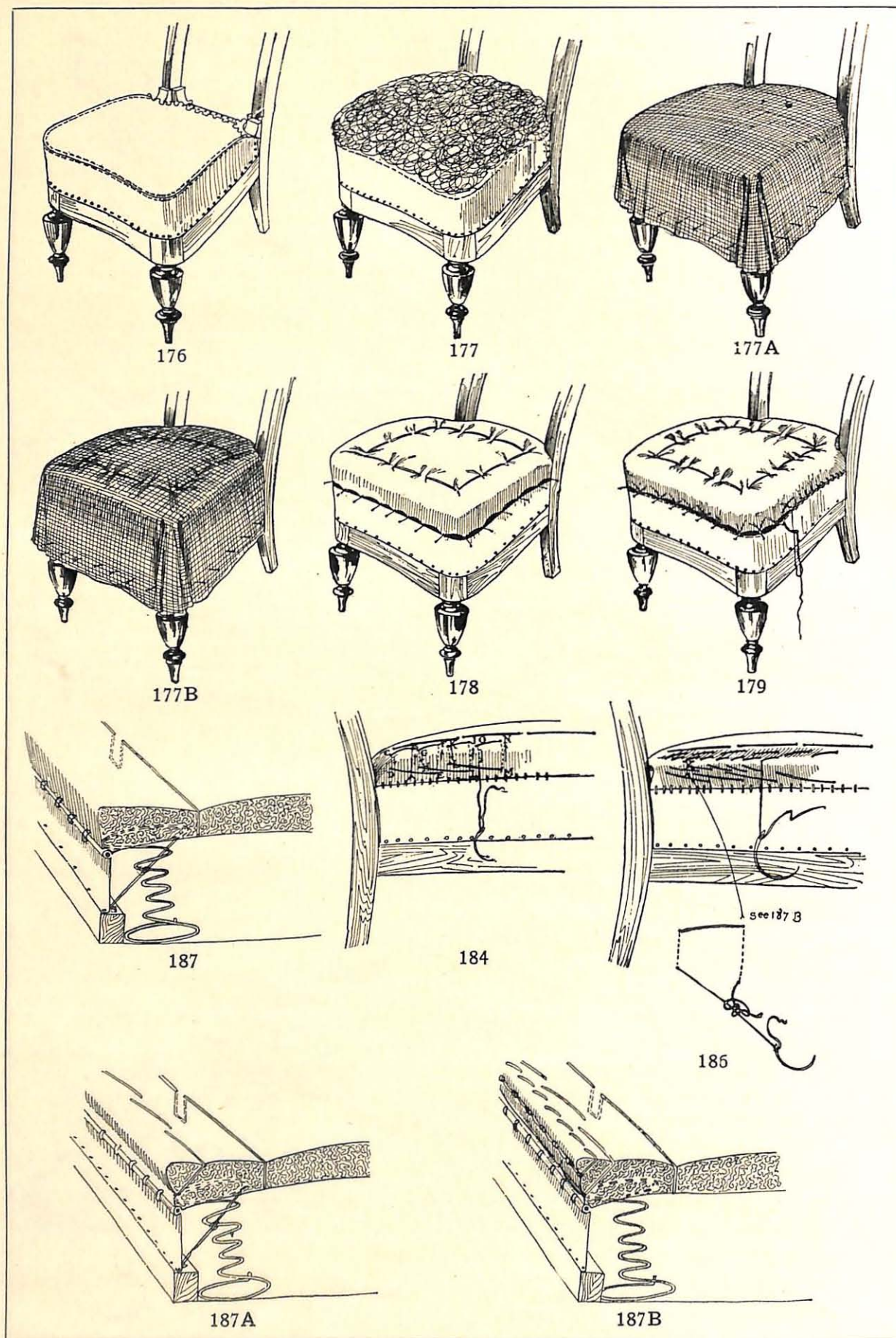
Spring-edged seats, after having reached the stage illustrated in Figs. 135 and 135B, described in a foregoing chapter, are double stuffed in a manner very similar to that already explained for hard-edged furniture. Commencing with the sprung-up chair of Fig. 176, a quantity of stuffing, preferably tow or moss, is picked free of lumps and laid upon the burlaps to form a thin layer, taking care to keep stray wisps of stuffing



DETAILS OF DOUBLE STUFFING



DETAILS OF DOUBLE STUFFING AND STITCHING



DETAILS OF DOUBLE STUFFING FOR SPRING EDGES

from going beyond the wire edge (see Fig. 177). A piece of thin burlaps about twelve inches larger than the seat each way, is stretched over the stuffing and slip-tacked, as shown in Fig. 177A. The thread of the canvas should be kept perfectly straight and at right angles to the frame, as indicated in the illustration. When drawing down the canvas for tacking, it should only be pulled sufficiently to keep the fabric smooth, without in any way depressing the springs.

Next, with a double-pointed mattress needle, the top burlaps is sewn down to the burlaps which covers the springs, by means of long stitches which follow the outline of the seat about four inches from the edge, as Fig. 177B, taking the same precautions as advised in connection with the illustration of Figs. 166C and 166G. The tacks which hold the burlaps to the frame are now withdrawn, the surplus trimmed away, and a roll approximately about one and one-half inches high is formed all around the spring-edged portion of the seat, additional stuffing material being inserted beneath that already in place until the roll attains the desired fullness and firmness. The burlaps covering the roll is pinned to the wire, temporarily, by skewers, as Fig. 178, and the roll is formed progressively, first the front, then the two sides, and lastly the corners, as already described and illustrated in connection with Figs. 162 B, C, D and E.

After the complete roll is formed and pinned in place, the burlap covering is sewn to the wire by means of circular needle, taking stitches about one inch apart, as shown in Figs. 179 and 180.

Where there is no spring-edge, as at the back of the chair, Fig. 135, and the back and sides of chair, Fig. 135B, the ordinary stuffed edge is formed for stitching, as described in connection with double-stuffed hard-edged furniture.

After the edge has been formed complete on all sides of the chair and tacked or sewn into position, the corner pleat, Fig. 181, is sewn to prevent it opening, as A, Fig. 182, and the rolls are ready to "regulate" into shape for stitching.

To regulate the stuffing into form for stitching requires a considerable degree of practice before a satisfactory smooth edge can be formed. Grasping the edge with the fingers and thumb

of the left hand, as illustrated in Fig. 183, the regulator is inserted (see dotted outline) and given a twisting motion, using the canvas as a fulcrum and the regulator as a lever, the point of which crowds the stuffing toward the front and forces the roll, with the assistance of the fingers of the left hand, to assume the square shape illustrated in Fig. 183. Another method of holding the regulator is illustrated in Fig. 183F.

The stuffing in the corner A, Fig. 182, must be drawn to a sharp point, while at the same time kept uniform with the line of the edge each way, indicated by dotted lines B-B, Fig. 182. A slight hollow will be caused in the direction of the dotted line C, Fig. 182, and a much more satisfactory corner can be formed if this is first stitched in the manner illustrated by Fig. 183C. Entering the needle at A, it comes out at B, is entered again at C, and out at D, and there tied with a slip knot, as detail Figs. 183A or 183B. Entering again at D, it comes out at E, is entered at F and out at G, and pulled tight. Holding the stitch with the left hand, enter again at H, out at I, in at J and out at K; pull tight and hold as before, and repeat as indicated by the letters until the corner is stitched out to a very fine hard point, as shown in the illustration, the twine being finally fastened by forming the last stitch into a knot. Sew all corners which are to be stitched in a similar manner and again regulate the rolls to correct any hollows that the sewing of the corners might occasion. The purpose of stitching out the corners in the way already described is illustrated in Fig. 183D which shows the spring-edge corner and in Fig. 183E a hard-edged corner. Both of these illustrations however show also the final stitching of the edges, Fig. 183D being single stitched and Fig. 183E double stitched, and will be better understood after having read the explanation of stitching which immediately follows this paragraph.

Most upholsterers stitch the edge from left to right, if right-handed, or from right to left, if left-handed. Commencing at the left extremity of the roll, as Fig. 184, the needle is entered at A, drawn out at B, again entered at C, drawn out at D, tied into the slipknot, already described, and pulled tightly. As the direction of the stitch is toward the right, instead of pulling

the twine straight out from the edge pull in the direction of the stitch, as shown in Fig. 185. Continuing again as indicated by the letters, the entire roll is stitched around and the twine fastened at the end.

It is not necessary that the entire roll should be stitched with one single twine. Indeed, for long rolls it is much better to use two or even three different twines, fastening each with a knot, than to attempt to stitch it all with one twine, which is bound to wear rough close to the needle. Should one stitching not produce an edge as small as is desired, the roll may be again regulated and a second row of stitching run around it as before. See detail figures 186 and 162H.

A cross section of the roll before stitching is shown in Fig. 187. The same roll with a single row of stitching is shown in Fig. 187A, and with two rows in Fig. 187B. A cheaper roll for hard-edged work is made by using, for the first row, the blind stitch already described in connection with Figs. 154A, 155A and 156A, after which a second stitch, indicated at X, Fig. 186, is made, as there illustrated.

To avoid the constant holding of the twine by the left hand, necessary to keep it from slipping back, a knot may be formed in the stitch, as indicated by details 189A and B, the formation of this knot serving to hold the stitch in place, however tightly it may be pulled. As a protection to the hand, which sometimes suffers severely from the pulling of the twine, a glove minus the fingers may be worn, or what is equally efficient, a band of leather having a hole on each end to hook over the thumb may be substituted. See illustrations 188A and 189B.

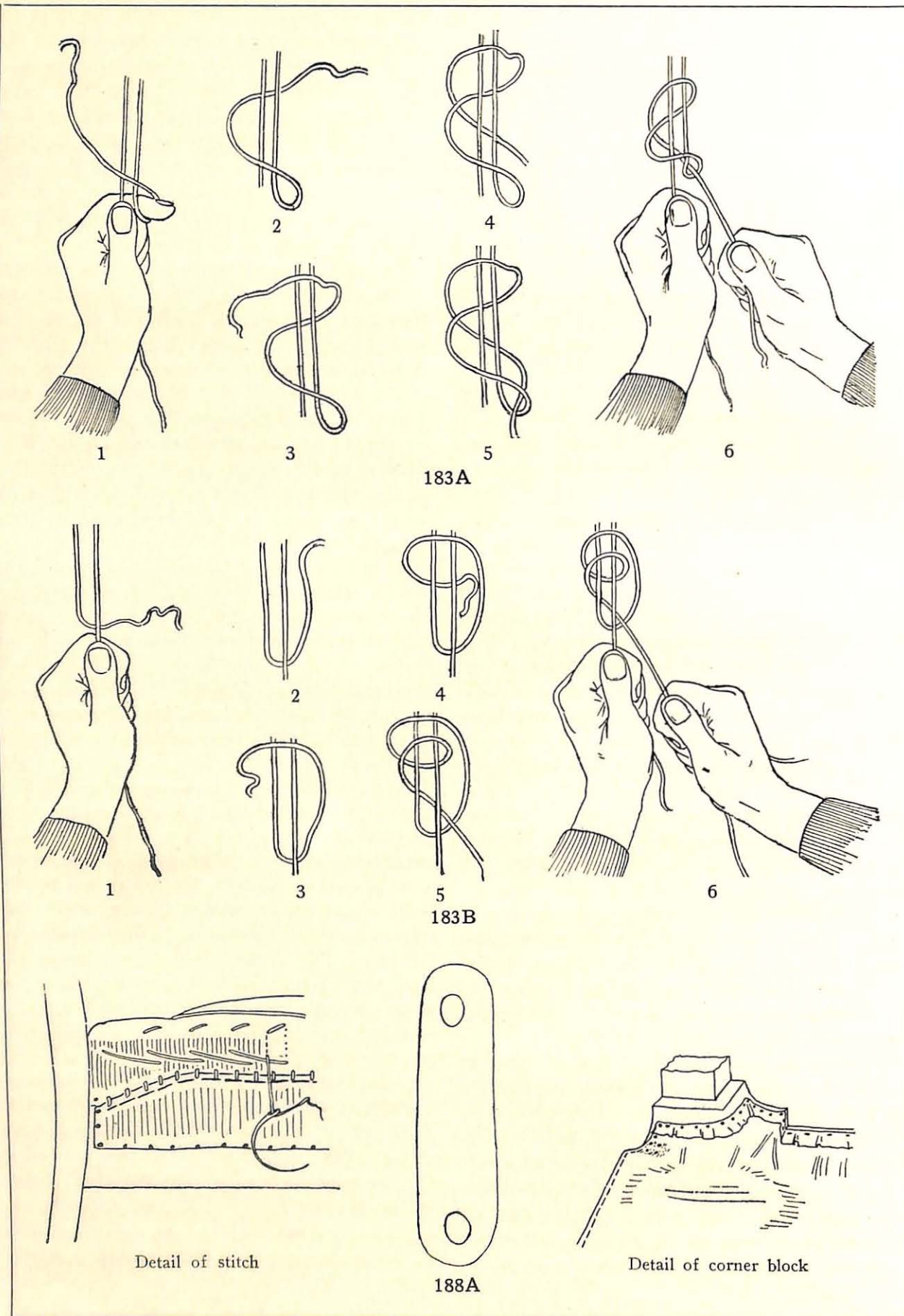
With the stitching of the edges, what may be termed the foundation work of the seat is completed, and the double-stuffed pieces should present the appearance illustrated in Figs. 190 and 191. These foundation forms are now bridled in a manner similar to that described in connection with the bridled edge, Figs. 145A, B and C, and a thin layer of tow, moss or hair is inserted beneath the bridling twine, as Figs. 190A and 191A, taking care to keep the material from projecting beyond the edge of the stitched roll. Successive layers of stuffing are now added over all the surface until the desired thickness is obtained. These layers of stuffing

should be kept thicker toward the center, rounding off down to the edges all around.

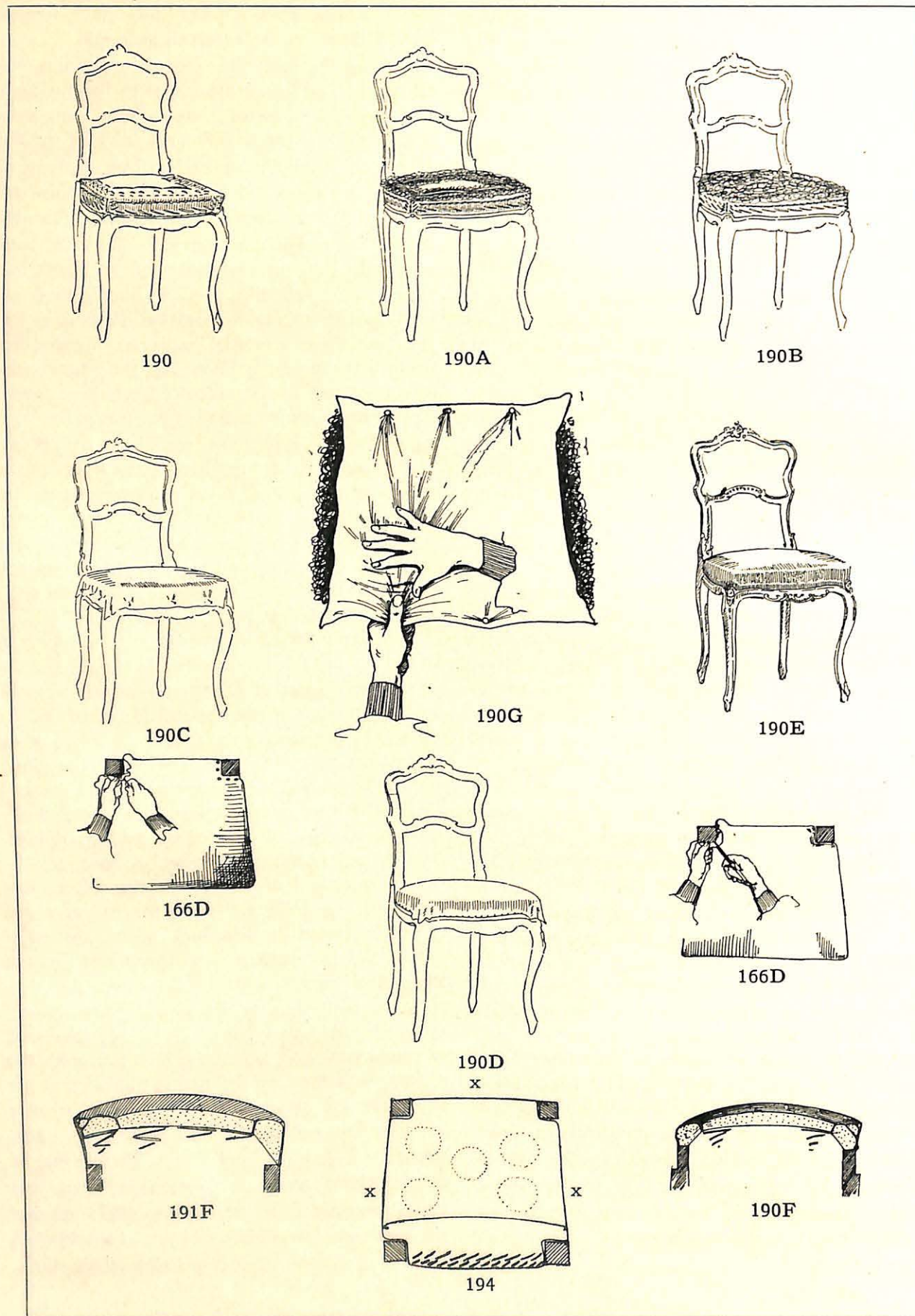
After the stuffing is placed in position and all packed and kneaded together to form a compact mass, a piece of cotton, large enough to cover the seat each way and reaching to the frame all around is slip-tacked over the seat in the manner explained for Fig. 177A. Now, removing the slip-tacks at the back, draw the cotton down into position with the right hand while the left presses the stuffing down into shape (see detail, Fig. 190G). Should there not be sufficient stuffing to keep the edge round and full, additional material must be inserted beneath that already in place until the desired fullness is obtained. The front edge is next tacked down into position, and then the two sides, leaving about three inches each way from the corners to the last. Next turn back the corner of the cotton and inserting a pair of scissors, as indicated in Fig. 166D, mark the corner of the tack block, then cut in from the point of the corner to the mark made by the shears, turn in the edges, and tack the corners down into position, as indicated at X, Fig. 166E.

With stuffed-over frames the cotton may be tacked on the flat surface of the frame, but for show-wood pieces it is best to tack the cotton on the top edge, where the roll is tacked, as the rabbeted edge usually requires to be left free of everything except the final cover and the gimp. Fig. 190F shows a cross section of hard-edged seat with the relative positions occupied by springs, spring canvas, double stuffing, double-stuffing canvas, top stuffing and cotton.

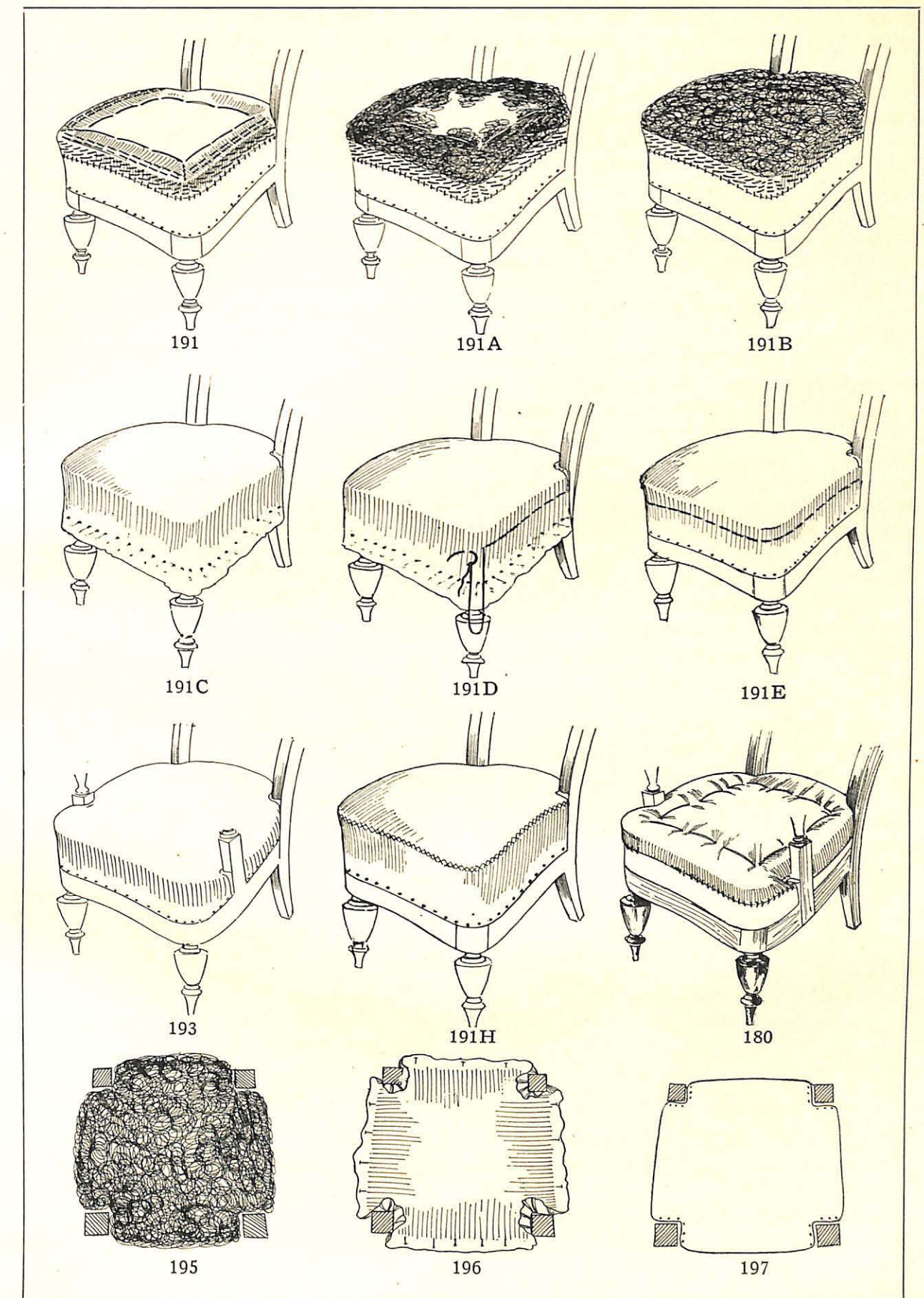
The method of putting on the cotton, just described, is followed with the spring-edged chair illustrated in Fig. 191 up to the point where the top stuffing is all confined by the slip-tacked cotton, Fig. 191C. Next the slip-tacks of each side are lifted, the cotton pulled down smoothly, and tacked as already described in connection with the chair, Fig. 190, with the exception that where the spring-edge occurs the tacks are not driven entirely in. The corners are next cut and tacked into position, as illustrated by Fig. 166D, and with a circular needle and stitching twine the cotton is sewn just above the wire of the spring-edge, taking stitches about an inch long and in and out of the stitched edge, as shown in detail Fig. 191D. This stitch-



DETAILS OF THE UPHOLSTERER'S SLIP KNOT



DETAILS OF DOUBLE-STUFFED SEATS



DETAILS OF DOUBLE-STUFFED SEATS

ing must follow the spring-edge, the twine being kept perfectly tight and securely fastened off at the end. The slip-tacks are then removed, releasing the spring edge so that it resumes its proper height. The surplus cotton is now turned underneath and tacked above the rail, as Fig. 191E, taking care not to pull the cotton so tightly as to depress the spring-edge.

For furniture that is to be exhibited for sale in the cotton a fancy appearance is presented by cross-sewing the cotton over the edge, as shown in Fig. 191H, using a very small circular needle and fine linen thread or silk twist, the advantage being that the cotton presents a neater appearance than is possible if sewn with twine in the way first described.

Fig. 191F shows a cross section of the chair, Fig. 191, which will materially assist in explaining the procedure above described. The armchair, Fig. 192 (page 54), not being double stuffed, but having a stitched edge on the front edge only will require to be bridled on the sides and back edges marked X in Fig. 194. The method of building up these edges is fully described in connection with Figs. 145A, B and C, and need not here be repeated.

If a more permanent or shapely seat is desired (on the three sides mentioned) than is furnished by the bridled edge these edges may be regulated and blind-stitched in the cotton, in which case the edge of the cotton should be turned over, so that the two thicknesses of cotton will prevent the heads of the tacks from tearing through. The various progressive stages in the upholstering of the armchair just referred to are illustrated in Figs. 195, 196 and 197. Armchair Fig. 193 is upholstered after the same manner as Fig. 191.

After having reached the stage of Fig. 180, page 48, the rolls of all four sides are stitched into shape, the bridling twines put on, and then the stuffing and the cotton, as illustrated in Figs. 191A, B and C. Release the slip-tacks on one side and draw the cotton down and tack it permanently. Repeat on the other side, then draw down the front smoothly, slip-tack again, and sew it, as Fig. 191D or Fig. 191H. Now release the slip-tacks which hold the cotton of the front edge in place, thus freeing the spring edge, and tack the back edge permanently, drawing out any fullness that may appear when the front slip-tacks are released.

THE PILLOW EDGE

SIMILAR in principle, though different in construction to spring-edged furniture, is what is known as pillow upholstering, a style, though not often used, that it is well for the upholsterer to understand. The springs for a pillow-upholstered seat are placed in position pretty much as they would be for spring edge, and are tied down after the same manner.

Taking, for example, the Turkish chair illustrated in Fig. 198, the springs are placed in the seat as shown in the top view of Fig. 199. Then commencing with center row (see A in cross section Fig. 199A), the spring twine is attached to the back rail, drawn through the back spring, knotted on the second coil, carried to the top C, knotted, and then to D, the top of the center spring, dropped to E, the second coil on the front of the center spring, drawn through the front spring and knotted to the coils encountered in a straight line from E to H. Care should be taken that when the twine is pulled tight and fastened the springs will remain in an upright position, as shown in Fig. 199A.

Now attach another piece of twine at A equal in length to the one first used, to be knotted progressively at I, C, D, J, K, L, G and K, as shown in Fig. 199B. Each row of springs is tied both ways in the same manner and the twine is also carried around the outside and knotted to each spring at the point G, as shown in Fig. 199D. A wire A—A, Fig. 199C, is attached to the edges of the outside springs in the same manner as if for the spring-edge already described in a former chapter.

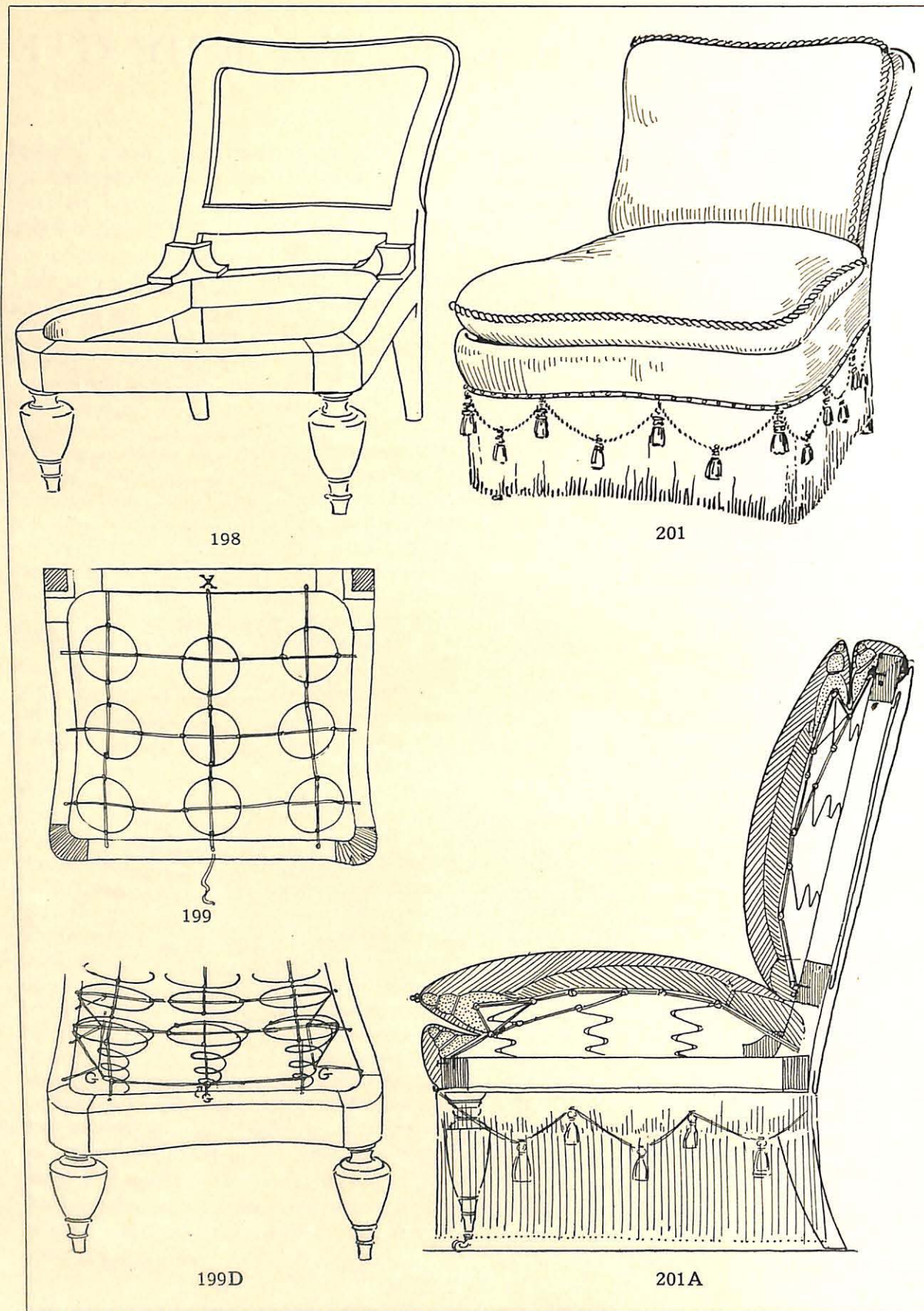
The seat may now be canvased in the regular way, the burlaps being first temporarily slip-tacked, sewn to the wire, as illustrated, drawn down to the twine at G, and there sewn in the same way and the edges finally drawn out to the frame, turned over and tacked, as 199C.

A more simple method is illustrated in Fig. 199E, a strip of burlaps there being first sewn to the twine G, using a separate strip for each side to allow for fullness at the corners, and tacked to the rail as illustrated. Next a piece

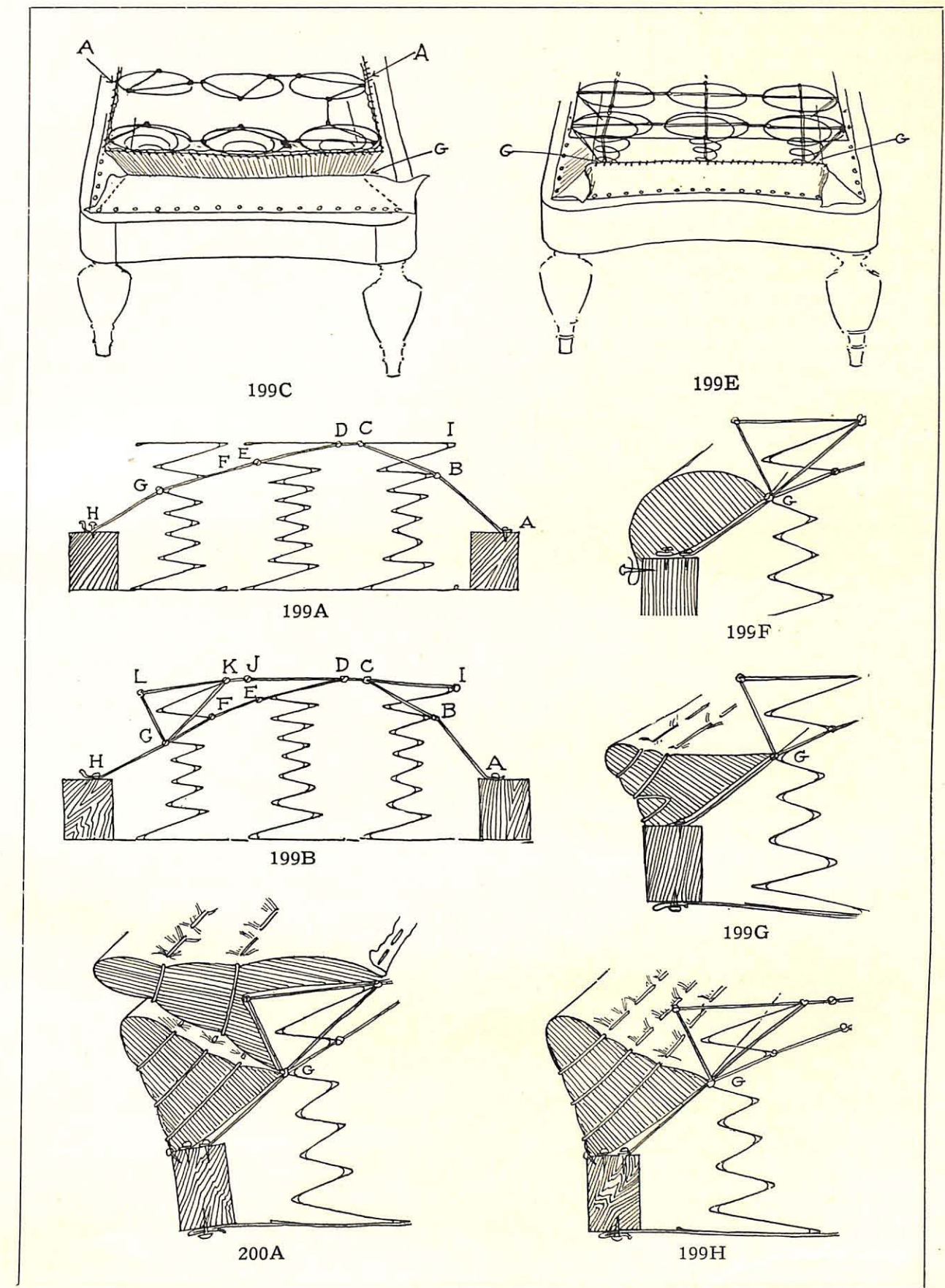
of thin burlaps similar to that already described for use in double stuffing or hard-edged work is also sewn at G, stuffed all around and slip-tacked, as Fig. 199F. Now, following the same principle as already described in connection with hard-edge work, this roll, for such it really is, is stuffed to the proper degree of firmness, regulated and stitched to the form shown in Fig. 199G or H, or it may be filled up hard as a round roll without stitching, in the form of Fig. 199F. A piece of spring burlaps should then be attached to the back rail, drawn smoothly over the springs and wire edge, temporarily pinned to the roll until the wire edge is stitched around, and finally turned under and sewn all the way round to the twine G already mentioned in connection with Fig. 199C. Now, sew the tops of the springs to this canvas catching each spring three or four times, and tying a knot each time, as illustrated in Fig. 199C.

Strips of burlaps twelve to eighteen inches wide and at least twelve inches longer for each side than the chair is wide are next sewn to the same twine G or to the extreme back edge of the roll, allowing the corners to overlap. Afterwards these strips are stuffed to form a roll over the wire edge around the two sides and front of the seat, the principle being just the reverse (i. e., building from the bottom up) to that described in connection with the chapter on the stitched edge. This canvas after being filled firmly and smoothly is first pinned to the top canvas about in line with the back edge of the first row of springs, or about four inches from the wire edge, and finally sewn permanently to the canvas, after which the filling is regulated out to a straight edge and stitched, as shown in Fig. 200A.

The variation of shape in the lower rolls as between Figs. 199F, 199G and 200A must be followed in the shaping of the top edge so that it may correspond. A light double stuffing is now placed over all the seat, confined by a piece of thin burlaps and sewn to the edge behind the back row of stitches, as Fig. 200C. Finally the top stuffing is bridled in position in the same



DETAILS OF PILLOW EDGE UPHOLSTERING



DETAILS OF PILLOW EDGE UPHOLSTERING

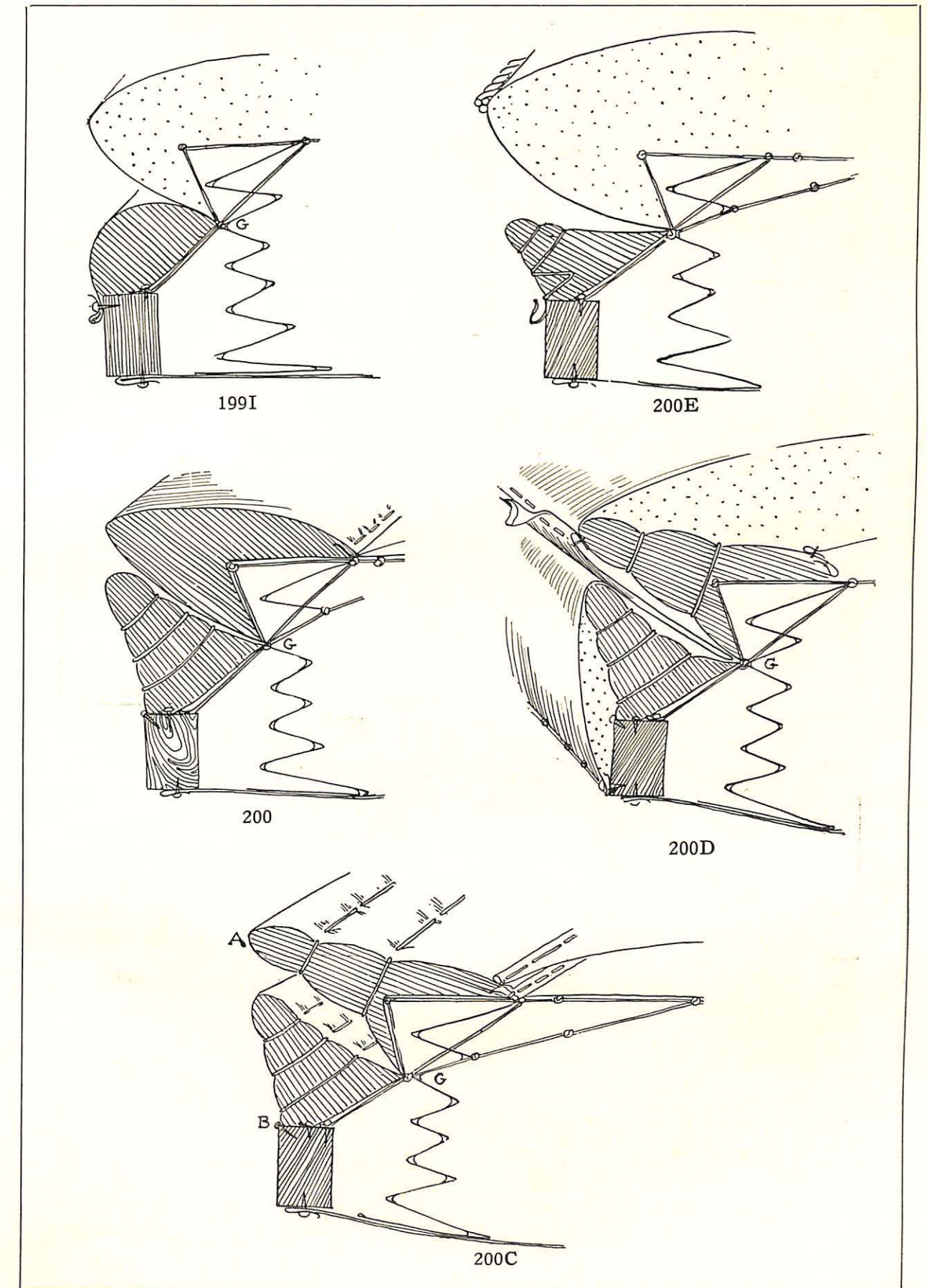
way as already explained for double stuffing, and confined by cotton slip-tacked and then sewn to the edge, as shown in Fig. 200D.

After the seat is covered by sewing the fabric to A, the edge of the roll all around, as Fig. 200D, a strip of fabric wide enough to reach from A to G and then out over the lower edge and down to B, is folded and sewn to the twine G all the way around, after which the upper portion is lightly stuffed and sewn, and the turned-in edge sewn at A all the way around, while the lower portion is pulled smoothly around the bottom roll and carried down to B, where it is tacked to the frame. The seam at A, where the two fabrics join, is hidden by a cord, see detail 200E, and also the completed chair, Figs. 201 and 201A.

The back of the chair is upholstered in precisely the same manner as the seat, pillow

springs being used, of course, instead of regular seat springs. It should not be construed that the rolls mentioned in connection with pillow upholstery are to be as hard as those used either for hard-edge or ordinary spring-edge furniture. On the contrary, they should be extremely pliable, and to obtain best results it is advisable that nothing firmer than curled hair should be used in the upholstery, while the top of the pillow is greatly improved by the addition of a layer of down.

Pillow upholstery is a most luxurious form of upholstery, and to obtain the utmost comfort oil-tempered springs only should be used in a size that will require very little tying down, as naturally the more a spring is tied down the less resilient will be the seat. Other forms of pillow or down-cushion upholstery are covered in a later chapter.



DETAILS OF PILLOW EDGE UPHOLSTERING

S I M P L E P A D B A C K S

THE pad-upholstered backs of chairs Figs. 202 and 203 are somewhat similar in construction to the pad seats illustrated in a former chapter, and to those who have followed the previous explanation the accompanying illustrations will be almost self-explanatory. A brief resumé of these instructions, however, will not be out of place.

Commencing with the chair Fig. 203, the back is first webbed vertically as Fig. 203A, the end of the webbing being first turned over and tacked to the bottom rail, then stretched up by hand and tacked under the top rail, as Fig. 203B. It will be noticed that the webbing is kept entirely within the frame, so that the rabbeted edge is left free for other purposes. (See detail Fig. 203C.) A cross webbing, if needed, is next put on. A piece of burlaps is tacked to the bottom rail the same as the webbing, see illustration 203D, and then stretched, and tacked, first vertically as Fig. 203E, and then across as Fig. 203F.

A layer of stuffing material about two inches thick is spread upon the canvas and kneaded into a compact mass slightly larger than the outline of the rabbeted edge, Fig. 203G. This material is stitched to the canvas through and through by long stitches, as shown in Fig. 203H, the stitches being first loosely put in with a mattress needle and afterwards drawn tightly, stitch by stitch, so that no slack remains. A final layer of stuffing material is then placed over all and the entire pad confined by a cotton cover, slip-tacked first at the bottom, as 203I, stretched smoothly each way, as 203J, and permanently tacked, leaving the corners to be finished last, as 203K. When drawing the edge of the cotton down for final tacking the filling should be forced to assume a square edge, as thick or as thin as the style of the piece demands. See detail illustration 203L. A still better edge may be formed by regulating the pad in the cotton and blind-stitching as 203M, after which a layer of fine wadding or cotton bats is placed over the cotton and the cover drawn over all.

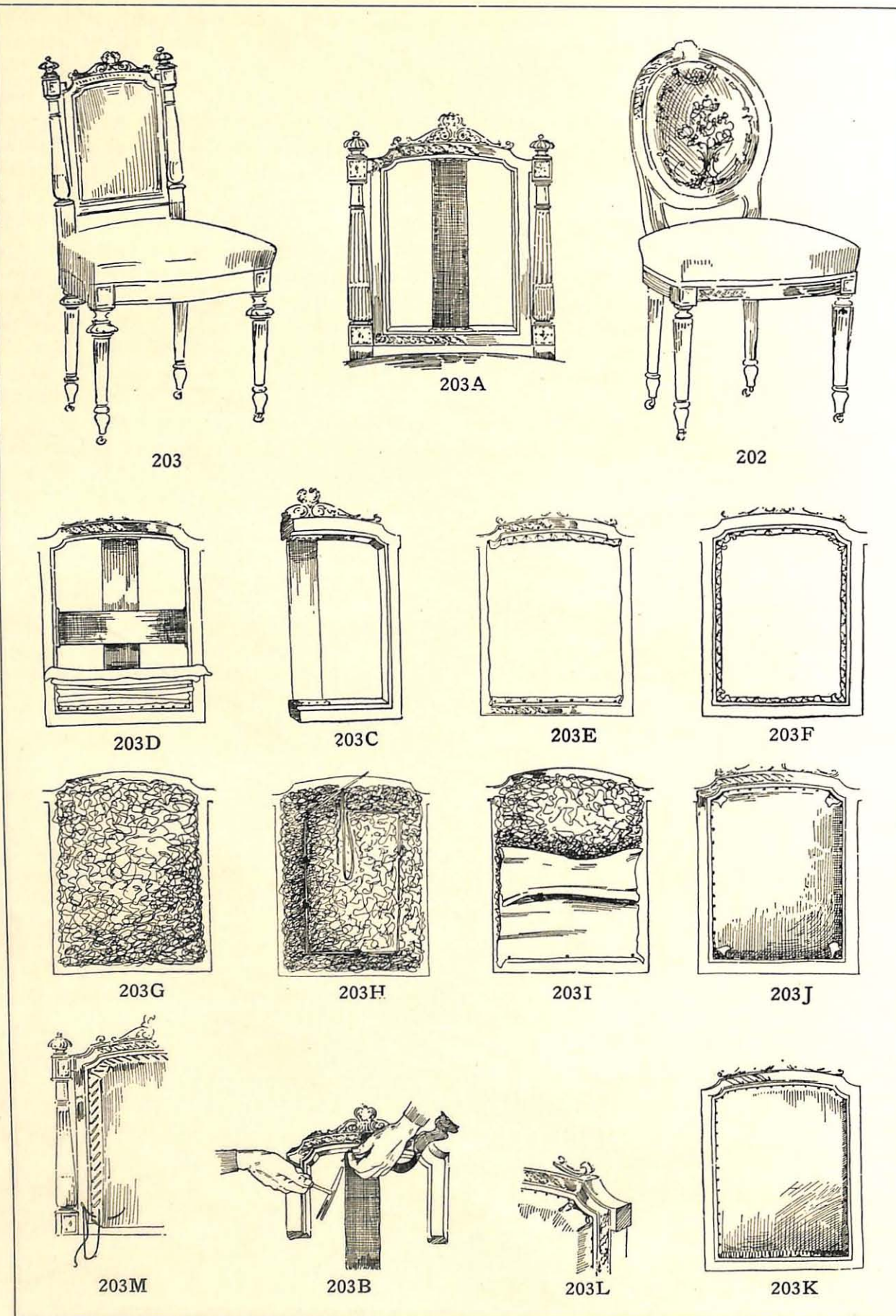
It will be noticed in these several illustrations that the tacks which confine the cotton are kept as near to the inside edge of the frame as possible so as to leave the most of the rabbeted groove free for the cover and gimp. Care should be exercised in tacking both canvas and cotton, so that neither the heads nor the points of the tacks project above the surface of the rabbet, where they would be a menace to the fingers of the workman.

The oval-backed chair, Fig. 202, is in all respects treated as Fig. 203. It is well to note that as there are no corners to the oval pad, pleats, as shown in Fig. 203L, are not permissible. The cotton is first tacked at the top and bottom, then at each side, leaving the four corners free, as Fig. 202D. Next draw down one corner, turn the surplus cotton in and tack it at a point midway between the tacks of the bottom and side, see Fig. 202E. Next take it midway between this corner tack and the last tack of the side, and again midway between these two tacks until all the surplus cotton is disposed of. (See detail illustrations Figs. 202 D, E and F.)

Somewhat different in method of construction, though similar in principle, are pad backs which shape into a concave form, as the back of the chair Fig. 204. It will be noticed in the cross section, Fig. 204A, that between points A—A the surface of the back, instead of following a straight line from point to point, follows rather the shape of the wood frame and is decidedly concave.

It is very necessary in shaped chairs that any concavity of the frame should be very closely preserved in the upholstering, as otherwise the effect will be completely spoiled. To preserve this concave surface the workman must commence at the very outset by webbing only vertically and by placing all of the strain on the burlaps from bottom to top, the lateral threads which run from side to side not being drawn more than sufficiently tight to prevent wrinkling.

After the stuffing is put on, the cotton



DETAILS OF PAD BACK UPHOLSTERING

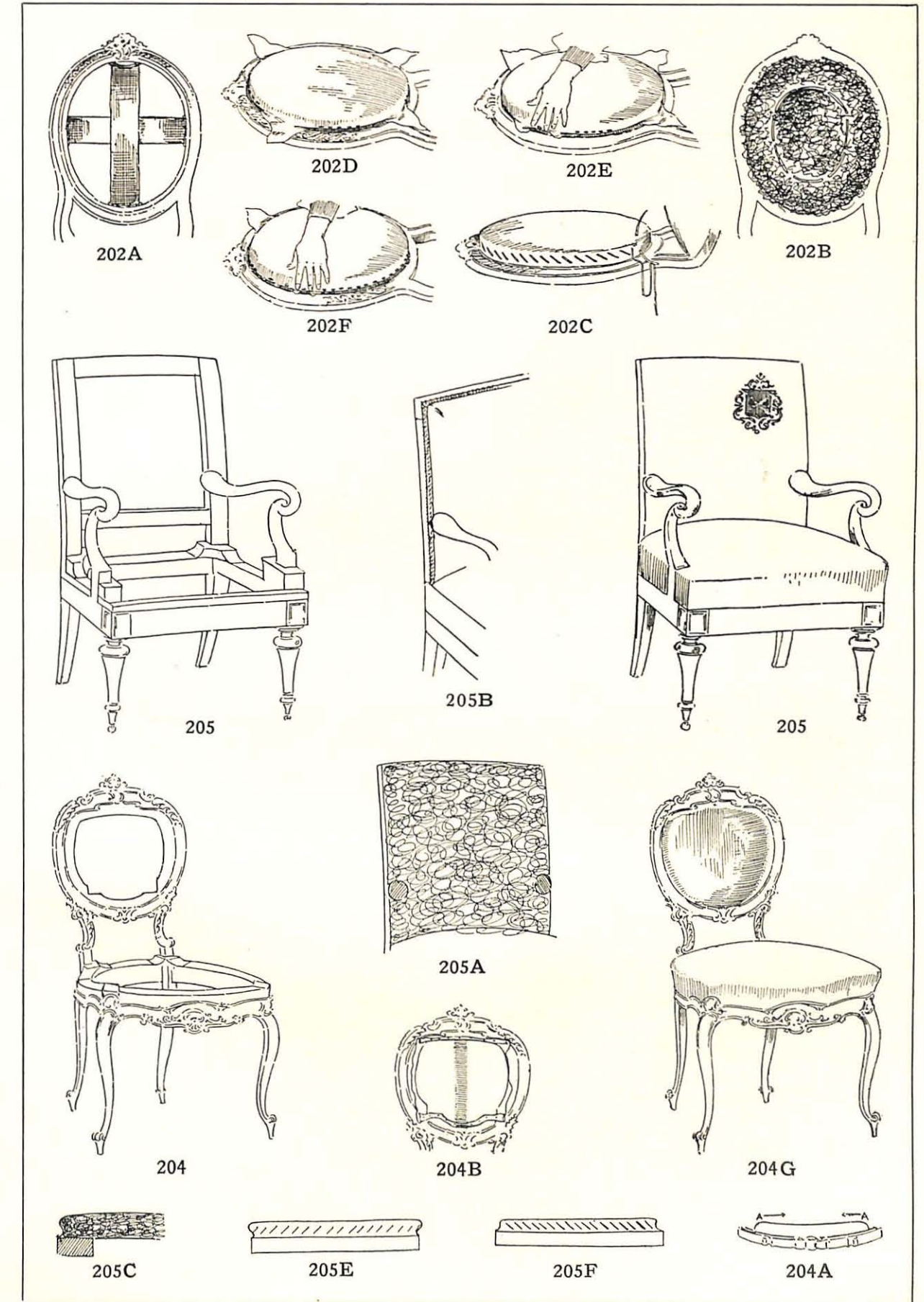
SIMPLE PAD BACKS

under-covering must be treated in the same way as the canvas, that is, so that the chief strain on the fabric is from bottom to top. It will be readily seen that to exert any very strong pull from A to A would tend to raise the center and flatten the edges. For this reason, therefore, as little strain as possible is placed on the lateral threads. A little experiment will quickly demonstrate the method here described.

The sides of these backs are sometimes blind-stitched in cotton, and when this is done it is necessary that the fabric should be left a little less tight across from side to side than would otherwise be the case. That is to say, the action of stitching the side tightens the cotton, and unless sufficient allowance has been made for this, the whole back will be flattened to that extent. A glance at the appearance of the finished chair

sketched in Fig. 204G will illustrate the effect to be sought; the rest must be acquired by practice.

Another form of pad-back chair is shown in Fig. 205. In this chair, however, there are no depressions to be allowed for. The back may therefore be webbed both ways, *i. e.*, upright and across, if desired. Both webbing and canvas are tacked upon the surface of the rails, and the cotton also is tacked just at the edge, as shown in Fig. 205B. The only feature of importance to observe peculiar to this style of back is to be sure and allow sufficient slack in the cotton when permanently fastened to permit of it being blind-stitched on both sides and top without the stitches drawing the cotton in beyond the edge of the frame. Fig. 205E shows the proper appearance of the stitched pad, Fig. 205F, the appearance of one in which this caution has not been observed.



DETAILS OF PAD BACK UPHOLSTERING

CIRCULAR BACKED CHAIRS

THE more simple forms of pad-upholstered furniture have already been covered in previous chapters of this series. By natural progression we come now to pad upholstery of a more intricate and difficult character, treating the subject in a series of grouped examples the upholstery of which follows similar methods.

For instance, the explanation applying to the upholstery of chair Fig. 208 applies also to Figs. 209, 210, 211 and 212, for though the construction differs with respect to general outline the method of working is exactly similar in all cases.

Fig. 206, the skeleton frame of chair 208, gives a very fair idea of the general construction of these and similar pieces. The seat may be upholstered, as already explained in other chapters, with either spring-edge or hard-edge, as the choice may be. In either case, however, care should be taken not to consume the entire top edge of the back and side rails in upholstering the seat, as with chairs of this character having a show-wood rail all around, all of the tacking except the outside lining must be taken care of on the top surface of these rails.

In forming the seat it is well to bear in mind that the central portion only of the seat is subjected to wear. That portion which will eventually be concealed by the upholstery of the back and arms may therefore be made to slope sharply down to the frame, as indicated by the shaded lines below the arm of chair, Fig. 206A.

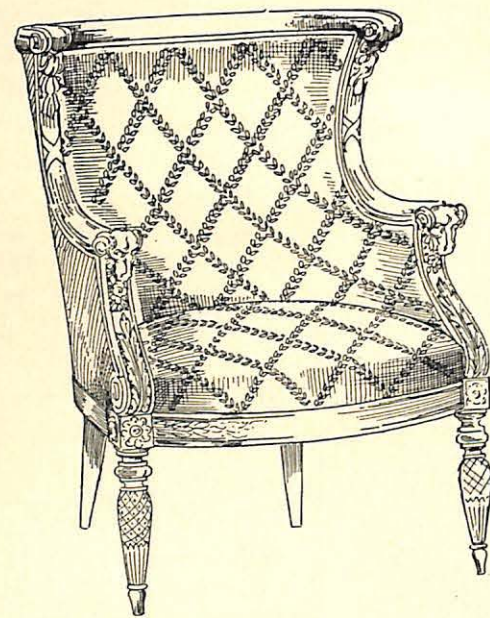
After the seat is upholstered in cotton, the next step is to canvas the back so as to support the flat pad which forms the upholstery; first a stiff wire about No. 6 gauge is bent so as to

form an outline around the inside of the frame and tacked solidly to the supporting uprights, as well as to the arms at a distance of about a quarter of an inch from the seat. See detail Fig. 206B. This wire is to serve two purposes. First to support the bottom of the canvas which forms the foundation of the back, and second to prevent the stuffing from shifting down out of position.

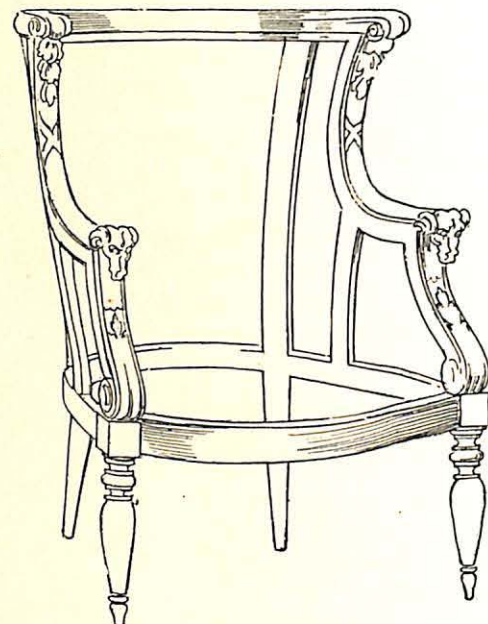
After the wire has been secured in position the back may then be canvassed, each section separately as Fig. 206D, the lower edge being passed around the wire and sewn with long stitches. Stretch the material first from bottom to top and then across so as to retain the hollow shape of the frame proper. It is possible to canvas these chair backs with a single piece of canvas, but the method is both wasteful and unsatisfactory. Too much emphasis cannot be placed upon the necessity of keeping the upright threads from A to B (206D) as tightly drawn as possible.

The outside or rear appearance of the canvassed chair should now appear as Fig. 206E. Now taking a piece of cotton sufficiently large to cover the entire back, cuts are made in the lower edge to escape the stretchers AA and BB, Fig. 206F, and the edge is drawn through between wire and seat and slip tacked, as shown at X in the same illustration. The surplus cotton is then stretched up over the seat and slip tacked to keep it out of the way, as shown at AAA, Fig. 206G. A layer of stuffing, as thick as the upholstery is desired to be, is now worked into shape around the entire surface of the back and arms and sewn to the canvas by means of long stitches. Care should be taken to keep this layer well distributed and free from lumps or unevenness, as it is difficult to add small portions to any particular place without rearranging the entire mass.

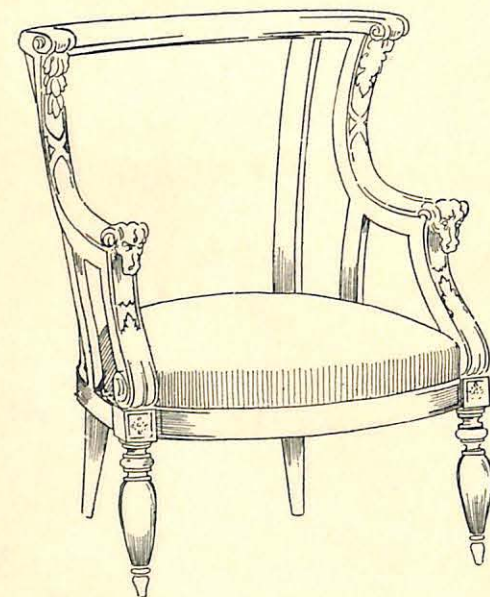
After the stuffing material has been arranged in position, the cotton is released from the slip tacks at the front of the seat AAA, 206G, and drawn up into position all around the back and slip tacked, as Fig. 206H. Then commencing at X, the center of the back 206I, the edge of the cotton is turned under, being careful to keep a



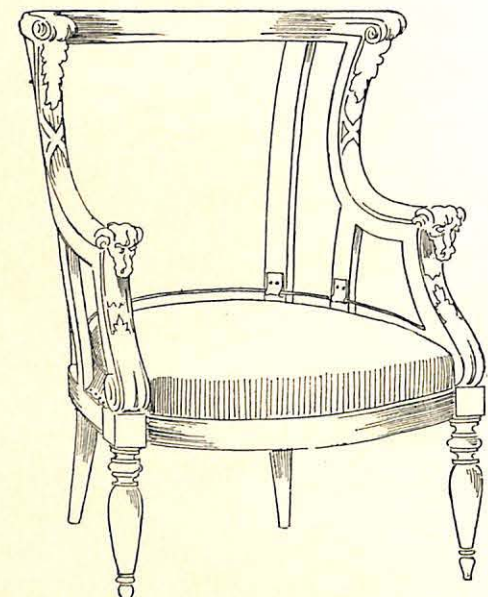
208



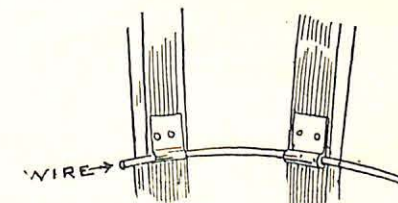
206



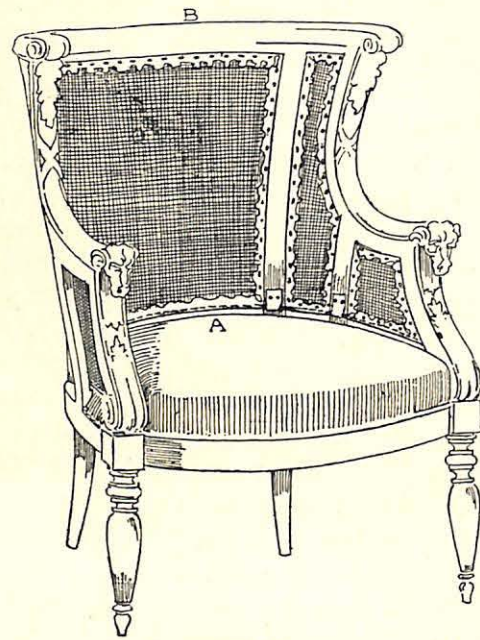
206A



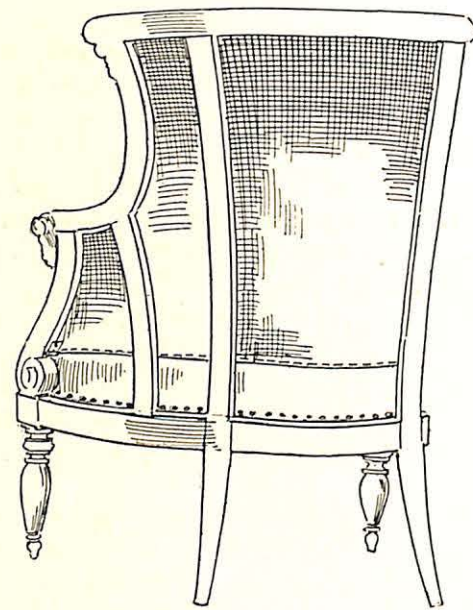
206B



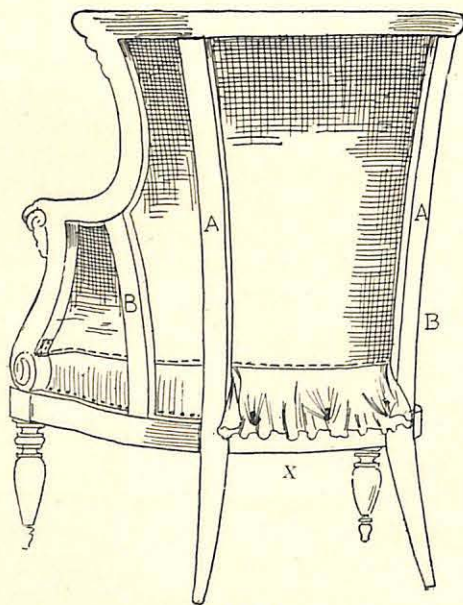
206B—Enlarged detail, showing how wire is attached.



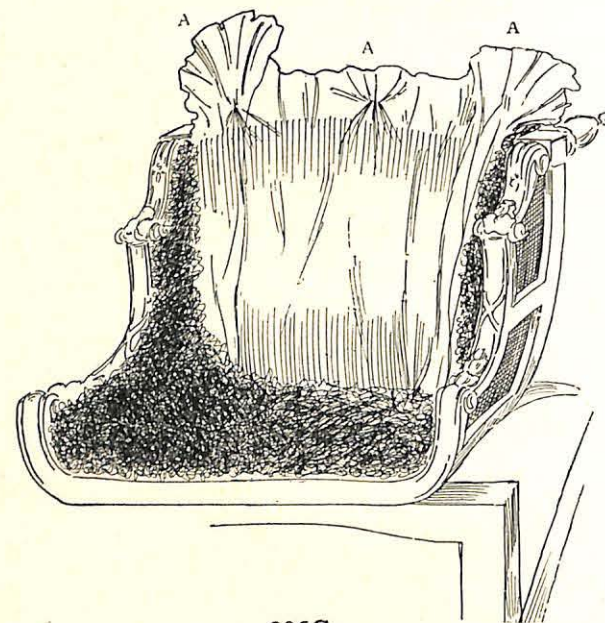
206D



206E

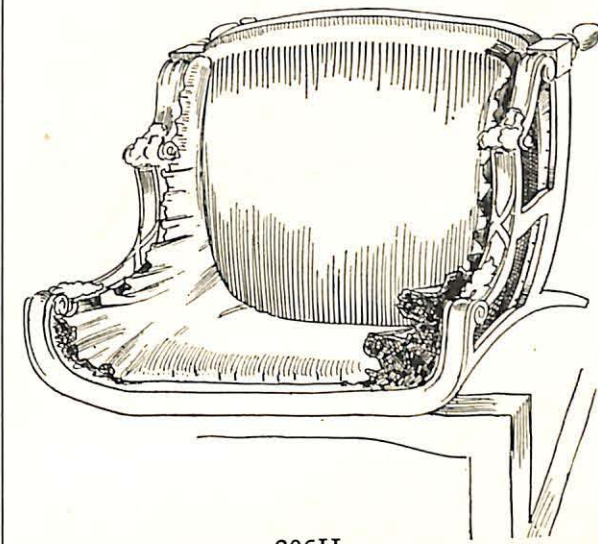


206F

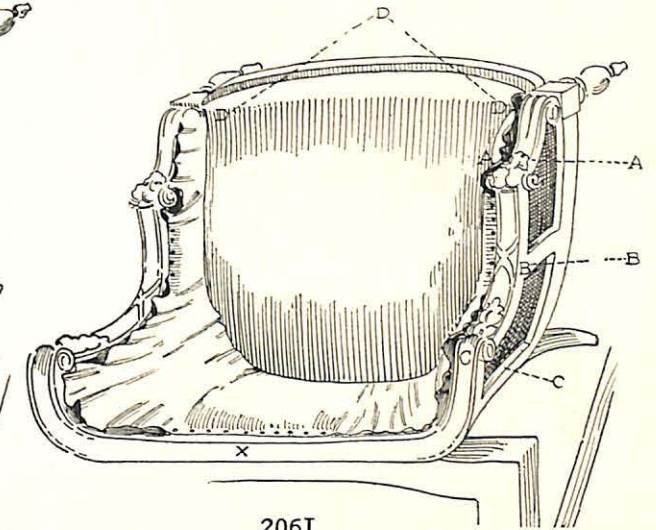


206G

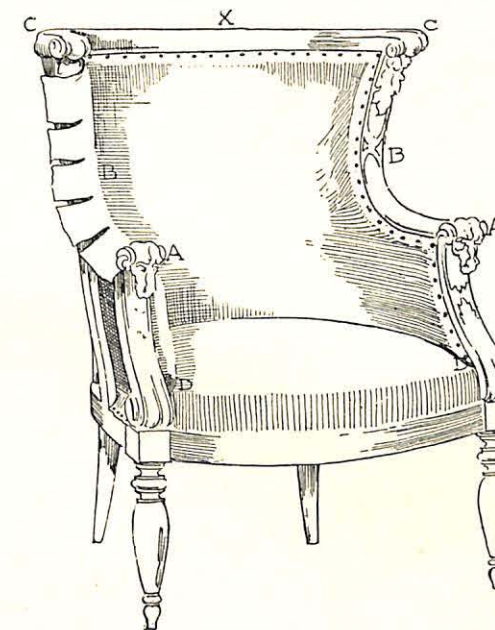
DETAILS OF CIRCULAR-BACKED CHAIRS



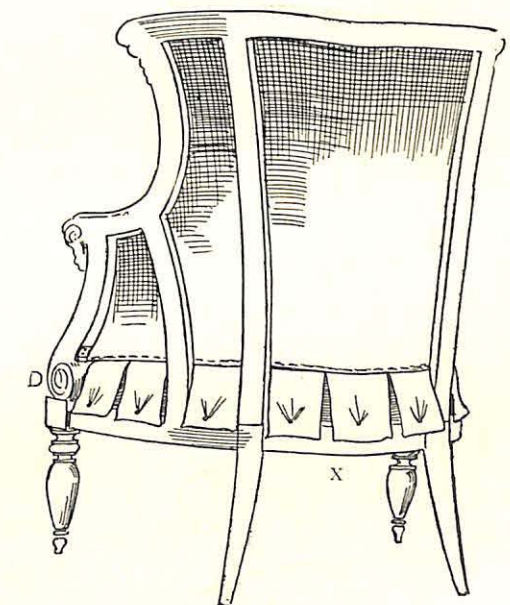
206H



206I

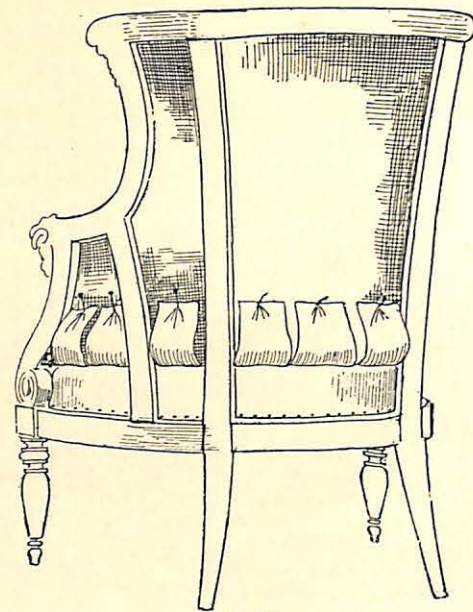


206J

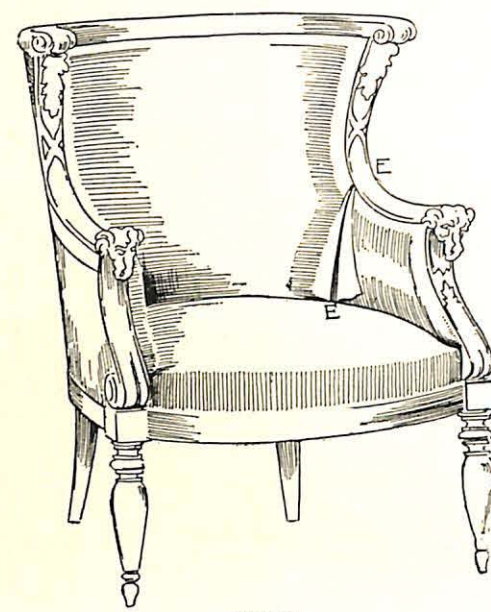


206K

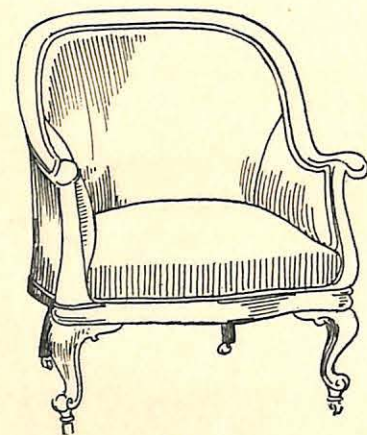
DETAILS OF CIRCULAR-BACKED CHAIRS



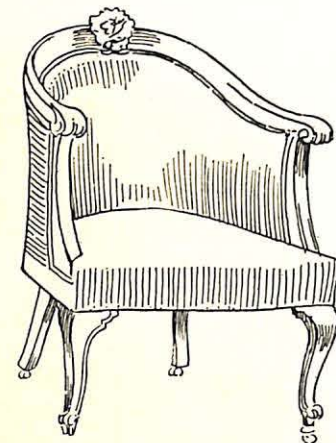
206L



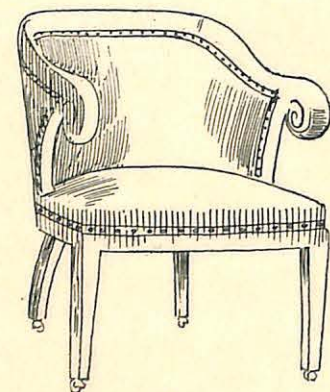
206M



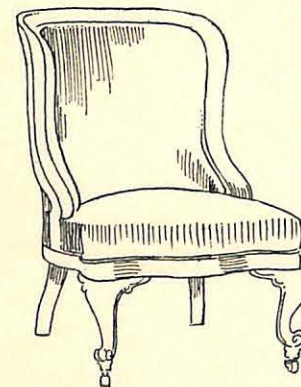
209



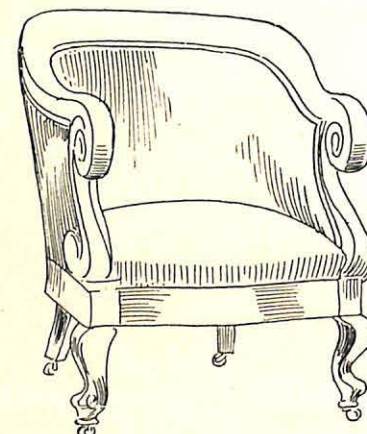
210



211



213



212

DETAILS OF CIRCULAR-BACKED CHAIRS

firm square edge to the pad, and tacked permanently, working each way from the center of the back, right around to CC, the two outside corners; then from BB to CC on each side and from BB to AA. Where the back hollows in at B, Fig. 206J, it will, of course, be necessary to slit the cotton at intervals, as illustrated at the left side of the illustration.

These slits, however, should be made only as needed and the cotton kept tightly drawn from tack to tack, smoothing the surplus out toward the corners. The bottom of the cotton which passes beneath the wire is next drawn into position, slitting the cotton at intervals to allow for the spread, and working from the center of the back at X, 206K to the outside of the chair at D. These tacks are only temporary tacks, but the fabric is pulled into the same position it will occupy when finally tacked so as to make sure that the bottom of the back on the inside of the chair is free from wrinkles.

After the lower edge of the cotton has been all slip tacked, as Fig. 206K, the arms may be finished off from A to D, turning in the surplus cotton and keeping the edge square, as shown from B to C, etc., 206J.

When ready to cover the chair, the cotton represented by the slitted portions A—A, Fig. 206K, is released where slip tacked, turned up and pinned to the canvas, as shown in 206L. This permits the covering of the seat and of the back to be tacked into position on the rail after which the strips are turned down and tacked permanently.

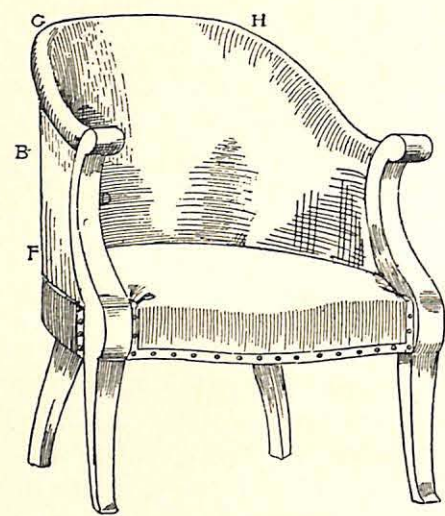
It will be noticed in the illustration, 206J, that the lines which indicate the thread of the cotton do not follow around the back parallel with the wire, but drop considerably as they reach the center of the back. This is caused by reason of the circumference of the seat line being very much less than the circumference on a line with the top of the arm and around the top of the back. The same feature is noticeable regarding the pattern of the cover, as illustrated in Fig. 208. The quantity required to permit of this deviation from the straight line around the wire naturally varies with different styles and can only be determined by actual measurement. A part of this bias, for such it really is, may be allowed for by piecing the goods with a seam at EE, pinning the fabric first in position on the cotton cover surface, as 206M, and trimming off all the

surplus except what is required for a seam.

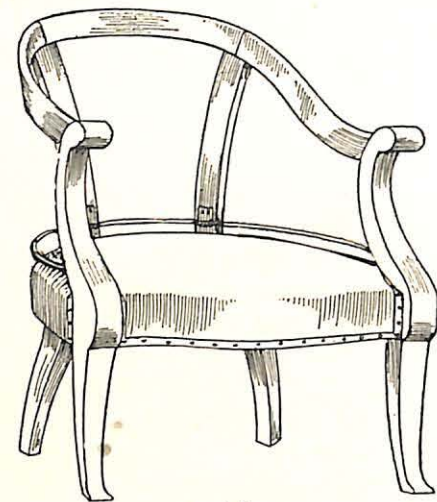
It will be observed that all of the chair frames illustrated in Figs. 207, 209, 210, 211, and 212 are of the show-wood variety. Somewhat similar forms are also made partially and completely overstuffed. Of this character are Figs. 214, 215 and 216, which are but types of a large variety of pieces similar in upholstering construction. It should be borne in mind that throughout this series we have sought only to teach general methods specifically applied rather than the selection of a complete series of upholstered pieces explained in detail.

Figs. 207 departs very materially from the method employed with Fig. 206 in that the back of the chair must be kept shallow throughout all parts, the upholstering firm and the entire surface smooth and uniform. It is seldom satisfactory to upholster such pieces as those illustrated in Figs. 213 and 216 directly in the cover, because the sweeps and curves of the frames demand an elasticity in the muslin that is seldom possible in the cover proper. Muslin by its loose-weave construction will stretch in certain places, where required to, and contract in others with little difficulty. For instance, the circumference around the outside edge of the top rail is manifestly greater than around the lower rail of the back from C to D, and the cotton, therefore, must possess certain elastic qualities. Taking the chair frame Fig. 207, the back is first canvassed, as Fig. 206D in the foregoing portion of this chapter, and will appear appear approximately as Fig. 207B. The top rail of the chair back from A to B is invariably rounded (see detail Fig. 207C), and where this is the case it is not necessary to add a pad for this purpose. Where, however, the rail is square or has only rounded edges, it is necessary to add a pad enclosed in burlaps which will soften and smooth the entire rail, as detail Fig. 207D. This accomplished the back is ready for the main stuffing.

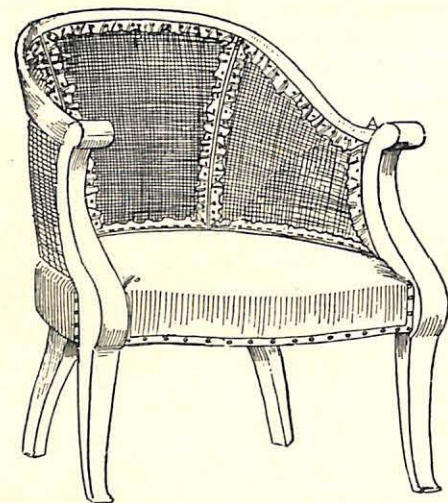
Draw the cotton through between the seat and the lower back rail on the line F—F and slip tack as indicated in Fig. 207E. Bridle the entire back, as previously instructed in connection with other pieces, and insert a light pad to form the edge all around the back, as 207F. The bridling twines are easily visible in the illustration. The top layer of the stuffing material is now kneaded into the bridled stuffing over all the back, taking care to keep the entire mass free from lumps and



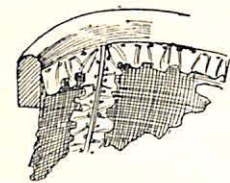
207



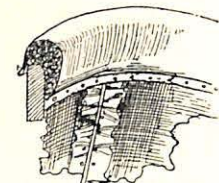
207A



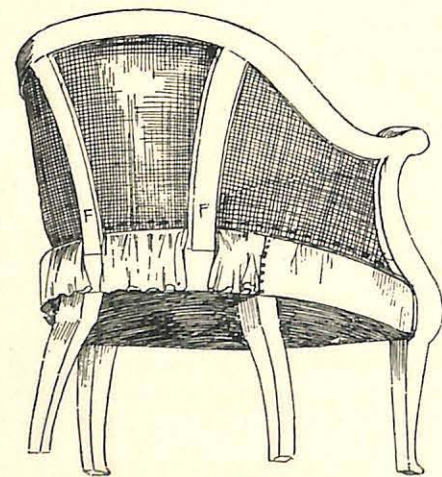
207B



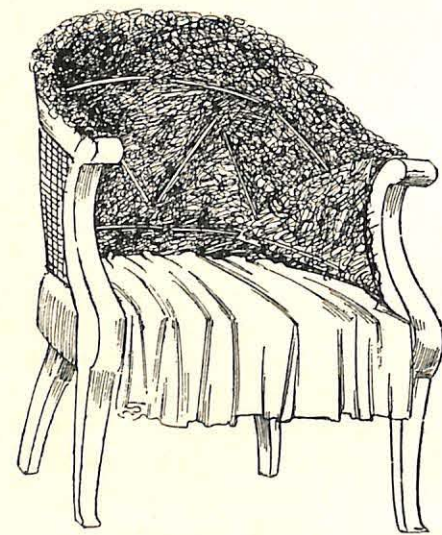
207C



207D

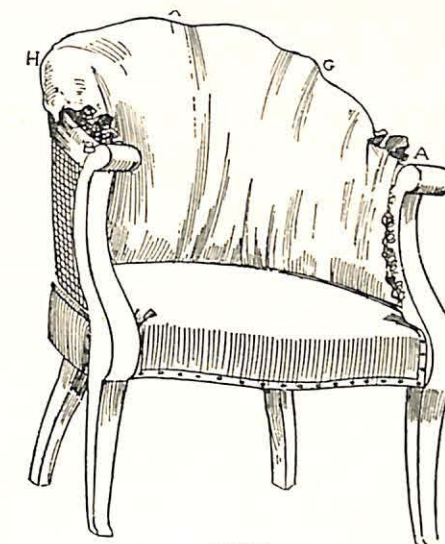


207E

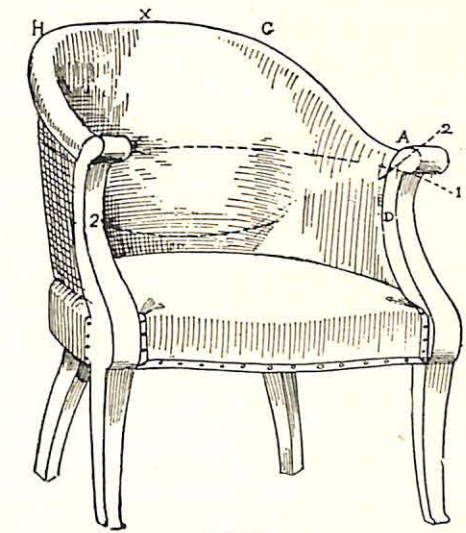


207F

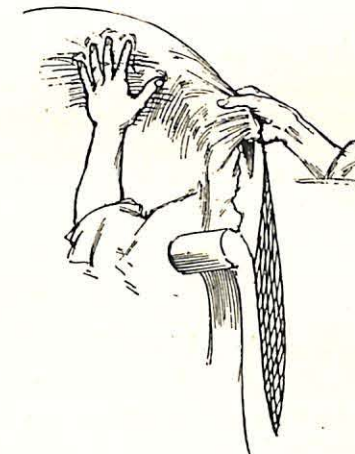
DETAILS OF CIRCULAR-BACKED CHAIRS



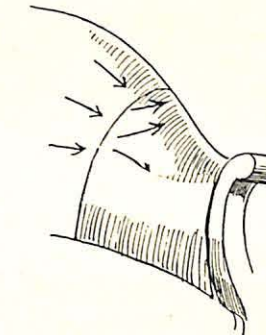
207G



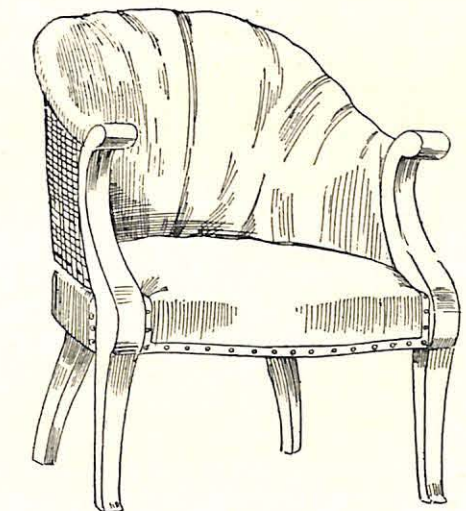
207H



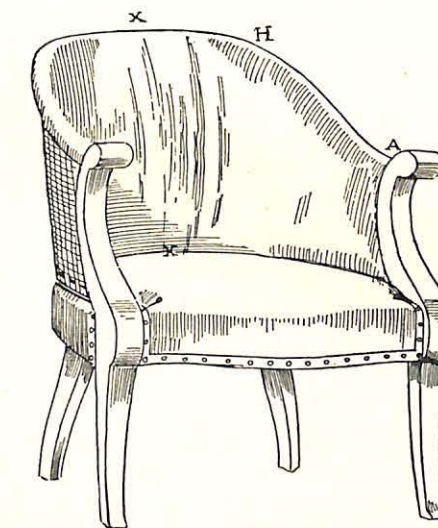
207I



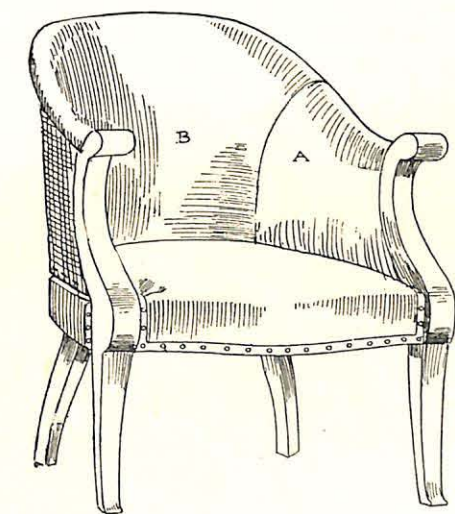
207M



207J



207K



207L

DETAILS OF CIRCULAR-BACKED CHAIRS

of an even thickness and density throughout. Next draw the cotton up over the back and slip tack, as shown in 207G, carrying the cotton well over so that the tacks are in the outer edge of the rail.

Because of the curve in this chair back it will only be possible to work the cotton from the center X to each of the outside extremities A and B, a very little at a time. As soon as the threads in line with the bottom blocks F and F, Fig. 207E, have been reached, which will be approximately at the points G and H, it will be necessary to proceed again with the bottom edge of the cotton, slip tacking from the left and the right, after which the slip tacking of the top can be continued from H to A and from G to B.

As the cotton is pulled into position it may be necessary to slit the top edge to allow for the increased circumference. If, however, instead of the lateral threads following a straight line, as dotted line 1...1, Fig. 207H, the extremities are permitted to draw up so that the lateral threads follow more the shape of dotted line 2...2, additional fullness will be created for the top edge; at the same time there will be less where less is needed, around the bottom of the back. The cotton is now entirely slip tacked all the way round and should display by its irregular surface any inequalities present in the stuffing, which must be remedied. Next in order the bottom of the cotton is tacked in semi-permanent position, that is to say it must be perfectly smooth on the face of the chair, though the tacks which hold it in position must be lifted later, as already shown in Fig. 206L, to allow for the insertion of the

cover. The top of the back is now drawn over the rail smoothly and tacked permanently from X to H and to G then to A and to B, taking care to keep the lateral threads smoothed tightly, and allowing no stray wisps of stuffing to protrude beyond the tacking line. Detail Fig. 207I shows the method of smoothing and pulling the cotton, while Fig. 207J shows the appearance of a badly smoothed piece of work. Unless the utmost care has been taken, or if the upholstering is extremely shallow, there may exist wrinkles from X to X, as shown in 207K. These are not always avoidable in the cotton, but if sufficient lateral strain is kept on the cotton when tacking there should be no difficulty.

To cover a back of this character with fabric of a pliable nature there should be no occasion for seams except to piece out goods that are too narrow. With leather, however, which is less pliable, it is necessary to resort to a seam to dispose of the fullness around the center of the back. This seam instead of being straight follows an arc, as indicated in 207L, the center portions B being first temporarily slip tacked in place and the side pieces A A accurately fitted and pinned thereto, then sewn, and all uniformly stretched into place. The radial lines of pull shown by arrows 207M indicate why the circular seam will dispose of the wrinkles. Care must be exercised, however, that the curve of the seam when tacked in position should be uniform and not zigzag. It is purely a matter of skilled manipulation, and the successful upholstering of a chair back in leather, such as the one illustrated, is no mean accomplishment.

PAD BACKS AND ARMS

THE chair illustrated in Fig. 214 is somewhat similar in general makeup to the chair, Fig. 207, with the difference that the curve of the back and arms is rather more rectangular than circular.

The frame of this chair, as shown in Fig. 214A, is usually but a mere skeleton on which the upholsterer may build a variety of different forms, according to his skill or fancy. With the form illustrated in the completed chair, Fig. 214, the object has been to keep the upholstering true to the shape of the chair and somewhat thin.

Commencing with the chair frame 214A, as on other occasions, the first consideration is the seat, which is upholstered either spring-edged or stitched-edged, as desired, and should appear when finished like Fig. 214B. The wire A...A has been referred to in connection with other chairs, and its function should now be understood. Sometimes these chairs have a stick dowelled into the frame between the arm and the back posts intended to receive the bottom of the arm canvas. Where these sticks do not suit the height of the seat they must be removed and another stick or the wire substituted at the proper height, care being taken to follow the shape of the frame in either case.

Next in order, after this wire is attached, the entire chair is canvassed as Fig. 214C and the first stuffing laid on the back and sewn through with long stitches, as Fig. 214D. Where the cotton passes between the wire and the chair seat at the back it must, of course, be slit to allow for the upright support in the middle of the back, as explained in connection with Fig. 206K. The first layer of stuffing (tow, moss or hair), in addition to being sewn to the burlap, must be thoroughly worked and kneaded together so that it follows the exact contour of the chair back. The more solid the stuffing materials are kneaded together at this stage and hereafter, the less difficulty will be experienced in causing the cotton to take proper shape and proportions.

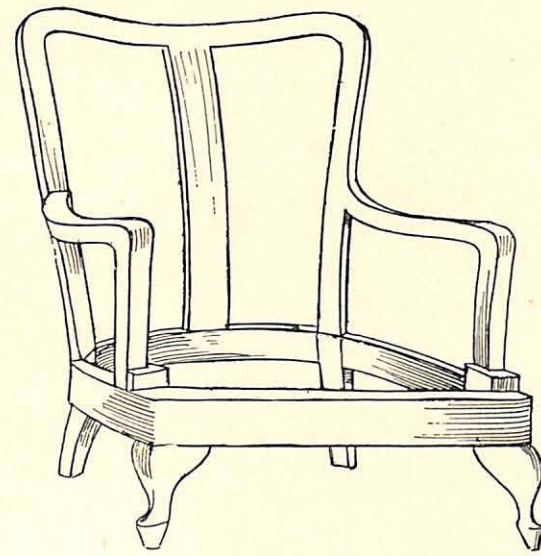
After the final layer of stuffing has been placed on the back, as Fig. 214E, taking care to keep the edges of the frame free from protruding

wisps, the cotton is drawn up and slip-tacked, as Fig. 214F, after which it is smoothed into position and permanently tacked, as Fig. 214G.

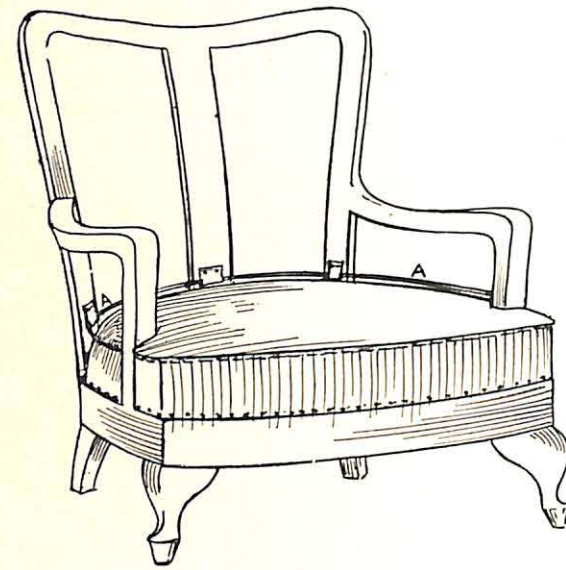
The arm is next treated in a manner similar to the back, the first stuffing being laid on and stitched, as Fig. 214H, and the cotton drawn up and slip-tacked, as Fig. 214I. It will be noticed that the point where the arm joins the back, at A, Fig. 214G, is very much higher than the outside extremity of the arm, therefore sufficient cotton must be allowed to cover this point. The back covering having been previously tacked to the rail, A to B, Fig. 214G, it will be readily seen that the cotton of the arm cannot also be tacked at this point without leaving a very wide crevice. To avoid this, therefore, the edge of the cotton from A to B, Figs. 214I and 214J is turned in between the stuffing of the arm and the face of the back so as to inclose the stuffing in the fold, this crevice being afterwards blind-stitched together, as Fig. 214K and enlarged detail 214L.

By referring to the completed chair illustration, Fig. 214, it will be noticed that the seam from A to B is finished by a piping of the same material as the covering. This piping is usually used only when the chair covering is of leather, fabric coverings being blind-stitched together at this point like the cotton, Fig. 214K, or fitted, sewn and the seam pressed open on the wrong side after which the whole is drawn smoothly into position on the chair. To cover the chair with leather the back piece and the arms must each be fitted into position, slip-tacking where necessary, as Fig. 214M, and the surplus between the points A...B trimmed away so that the two edges may come together with a small allowance for seam.

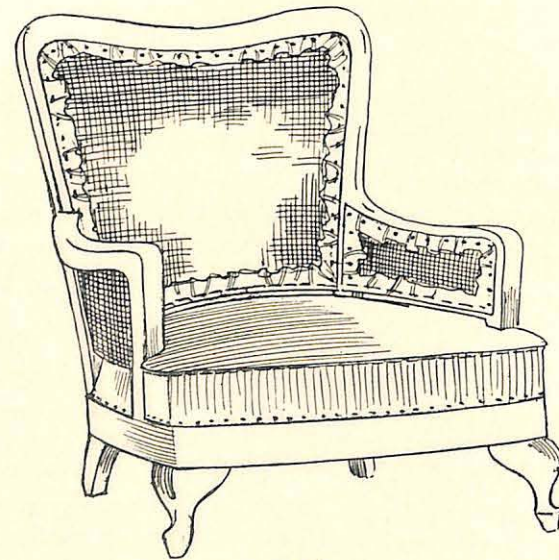
Each edge of the seam, that is to say, the edge of the back and the edge of the arm coverings, must be marked at different points, as 1, 2, 3, 4, Fig. 214M, so that they can be sewn together in the same relative position as when temporarily fitted to the chair. Prior to joining these two edges together a piping consisting of a piece of cord one-eighth to one-quarter of an inch in diameter is covered with leather or fabric, as shown



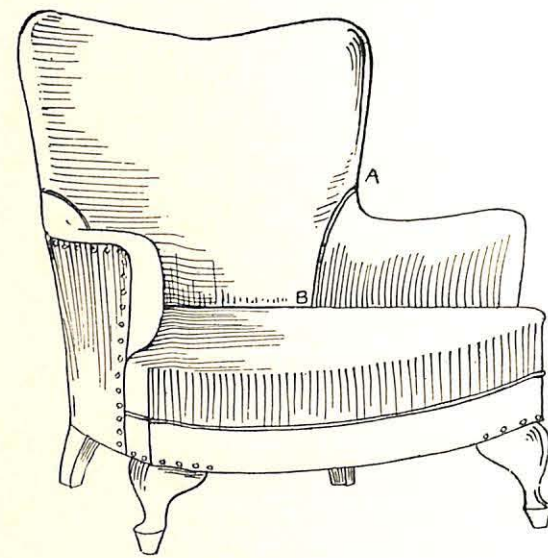
214A



214B

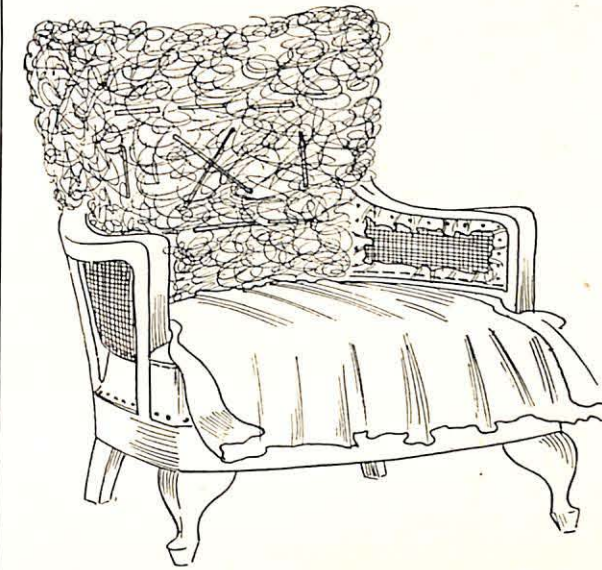


214C

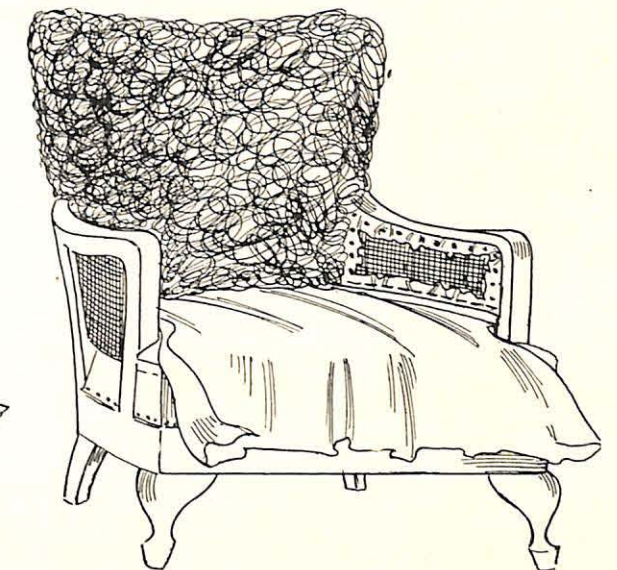


214

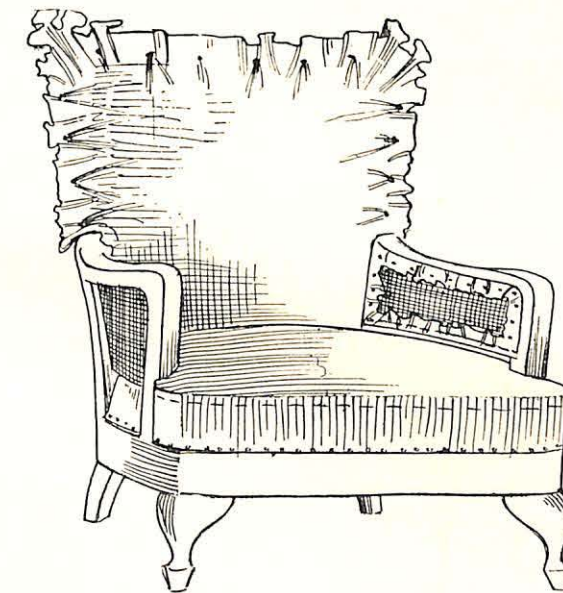
PAD BACK AND ARM DETAILS



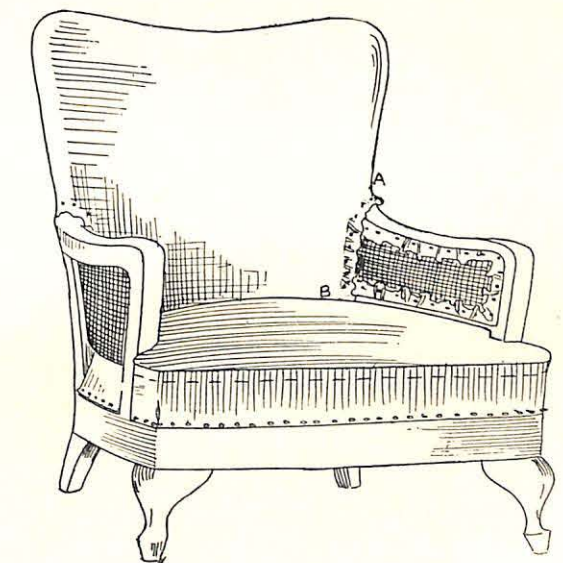
214D



214E

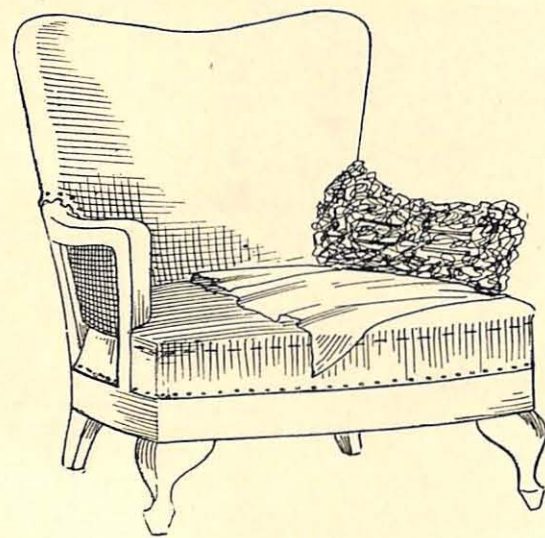


214F

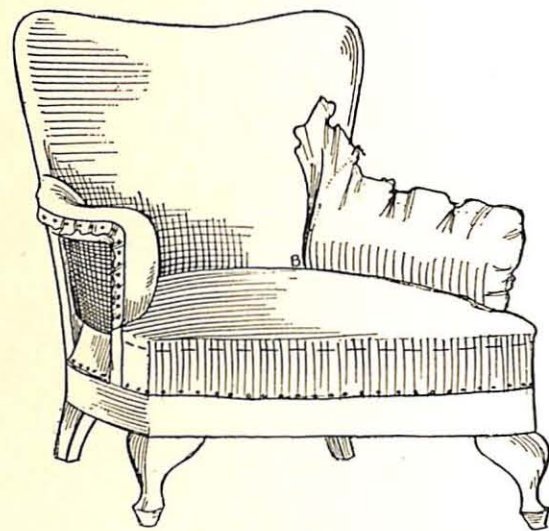


214G

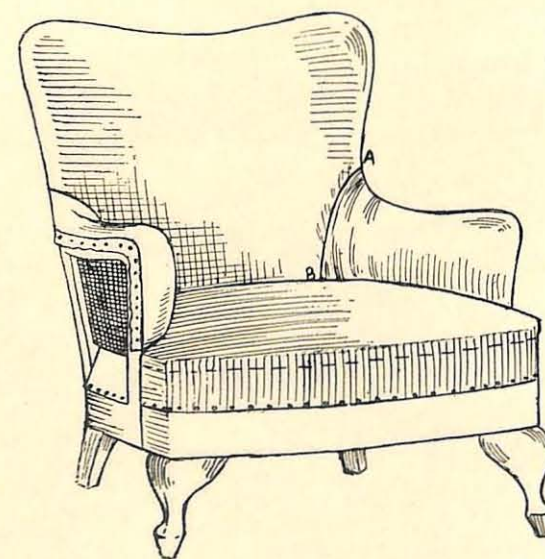
PAD BACK AND ARM DETAILS



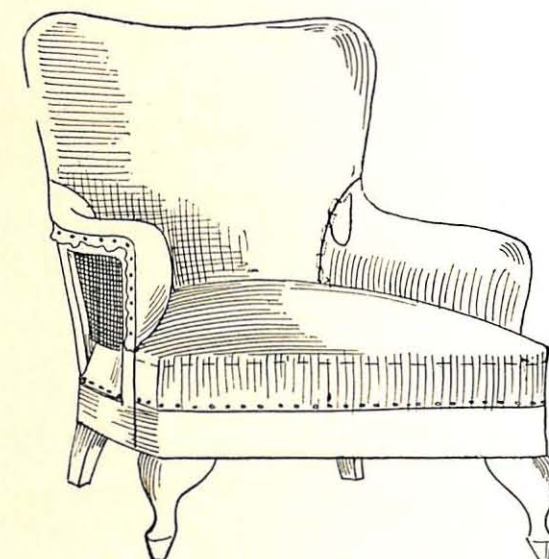
214H



214I

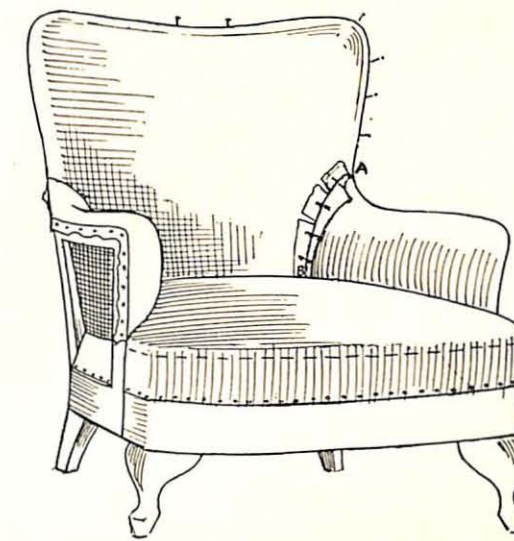


214J

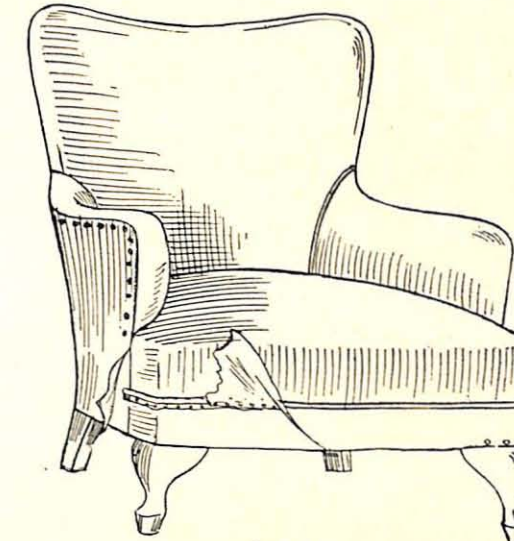


214K

PAD BACK AND ARM DETAILS



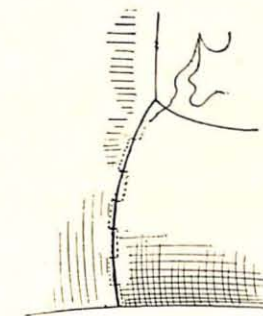
214M



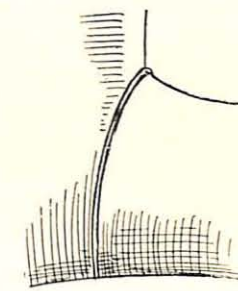
214Q



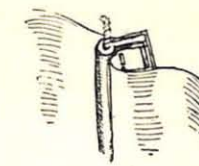
214O



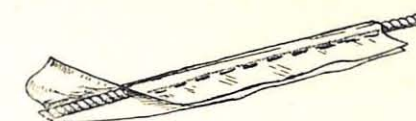
214L



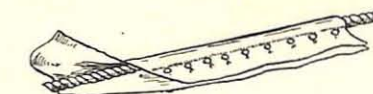
214N



214P



214R



214S

PAD BACK AND ARM DETAILS

in Fig. 214R, and this is inserted between the edges, 1—1, 2—2, 3—3, 4—4, etc., while the seam is made. (See diagram Figs. 214O and 214P.)

It is possible to sew both the welt and the two edges with one machine operation, but to do so requires considerable skill, and unless one is very proficient it is better to sew the welt separately, and even then the whole should be pinned together to avoid the danger of the edges becoming misplaced while on the machine. The edges protruding beyond the seam indicated at X, Fig. 214O, must be trimmed as close as possible to the seam, so that they do not bulge when pulled into place on the chair. The welt, of course, will project, but the rest should lie perfectly smooth, as detail Fig. 214N. A similar

welt, Fig. 214S, is tacked as a finish between the band which covers the rail and the tacks which hold the seat covering in position.

This welt need not be sewn (though it is an advantage to do so), the tacks which fasten it to the chair frame being sufficient to hold the welt in shape, and the tacks which hold the top edge of the band by following close up to the welt will hold it permanently in position. The band which finishes the chair is, as indicated, 214Q, tacked into position and then turned down and tacked around the bottom edge so that no tacks are visible except those at the tops of the legs and these are afterwards covered by leather-headed nails or fancy tacks.

SPRING BACKED PIECES

THOUGH somewhat similar in type to chair 214, the chair illustrated in Fig. 215 varies in certain essential points. It is a combination of the stuffed-over and showwood types in that the edge of the arms reaching from the seat well up into the side of the back are defined in polished wood and are uncovered. The back is of the knife-edge variety and in the frame is shaped to a very thin tapering edge. The frame of this type of chair is clearly illustrated in Fig. 215A. The seat is usually constructed with a spring-edge front, the wire returning at the corner well back under the arm to a point about equivalent to X, Fig. 215B.

After the seat has been upholstered in cotton to the stage illustrated in Fig. 215B, the back is next proceeded with. In the case illustrated it is desired to have the back sprung up so as to make a more comfortable form of upholstery. A rail, if not already provided for in the frame, is inserted between the posts of the back just above the line of the seat, as XX, Fig. 215C. This provides a wood surface around all the back on which the webbing may be tacked. This webbing may be stretched in two ways to obtain different results. If stretched rigidly with the webbing stretcher the back after springing up will be perfectly flat and the springs will therefore be no higher than the face of the back will permit. If stretched by hand just sufficiently to take up the slack, the springs will force the webbing to hollow back, thus providing a little bit deeper back and more play for the springs. This difference is illustrated in Fig. 215F, the straight line of the frame X showing the position of the webbing when tightly stretched, and the dotted line O showing the position it will assume if loosely stretched by hand.

Three strands of webbing, or more if desired, are placed each way on the back, the ends turned over and securely tacked. Nine pillow springs, light enough to provide the desired resiliency, are now sewn to the webbing on the face side of the chair and tied down all around as explained in former chapters. The chair will now assume the appearance of Fig. 215D. The back

is then canvased over the springs, as Fig. 215E, and the springs sewn to the burlap, as indicated by the dotted lines. It is possible to sew the springs to the burlap without first having tied them down, as shown in Fig. 215D. Where time is not a consideration, however, it is best that they be first tied before canvasing, though the twine that ties them be no larger than a stitching twine.

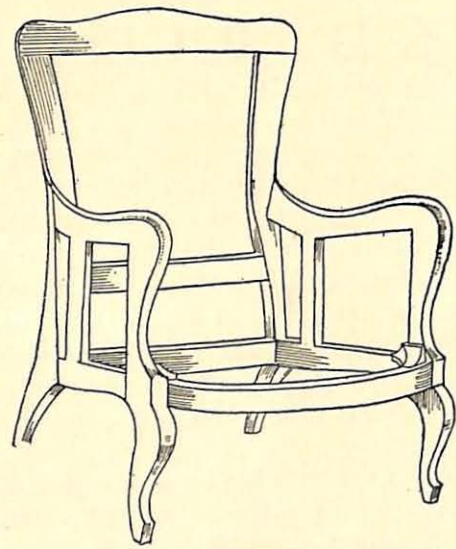
After the back has been canvased there will be an abrupt drop from the edge of the lowest row of springs down to the stick which crosses the frame just above the back of the seat, and which will hereafter be referred to as the lower rail of the back. This space is filled in with a light pad confined in burlap which passes between the seat and lower back rail and is tacked to the outside of the back rail at 2 and sewn to the canvas which covers the springs at 1, Fig. 215F.

On this foundation the stuffing material, preferably hair for a chair of this character, is picked out free from lumps and spread over all the back, confined by bridling twines, as illustrated in Fig. 214D. The same mode of procedure as explained in connection with illustrations Figs. 214E and F is now followed until the back is completely shaped in cotton, as Fig. 215G.

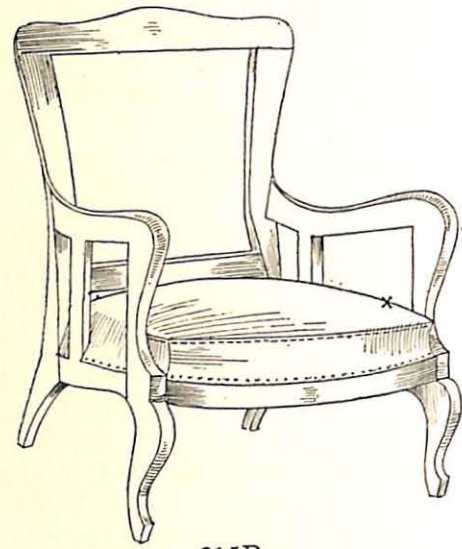
It will be noticed that this chair frame provides space through which the cotton may be drawn between the edge of the back post AA and the upright stick BB. The cotton must, of course, be cut around the arm at CC so as to keep the general contour flat and smooth. The top edge of the back must be kept thin and free from lumps, as the beauty of a chair of this kind depends very largely on the smoothness of the upholstery.

The arms are next canvased, treating the upright B as the back edge of the arm and tacking the burlap thereto, as illustrated in Fig. 215H. A wire may be stretched from D to D to hold the bottom of the arm burlap, but if the bottom edge of the burlap be doubled under and stretched perfectly tight it will invariably answer the purpose just as well as if it were sewn to a wire.

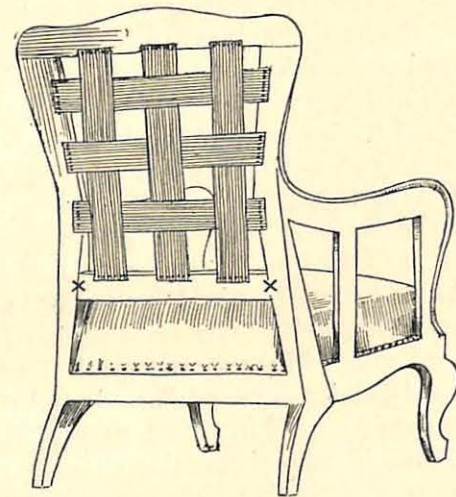
After the arms have been canvased, a layer



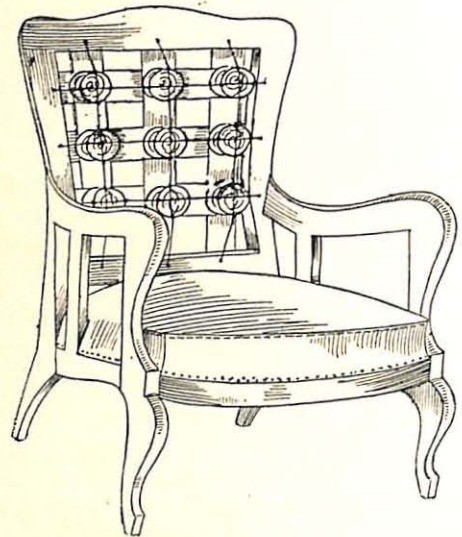
215A



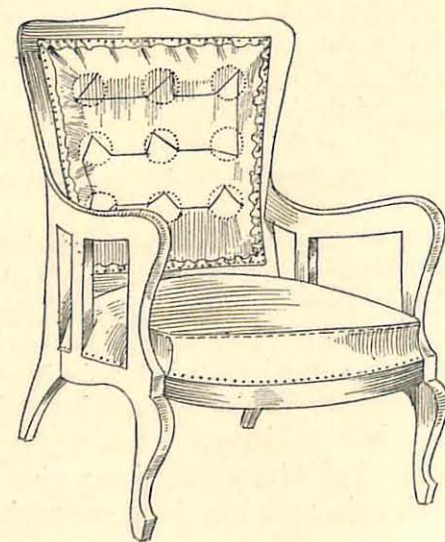
215B



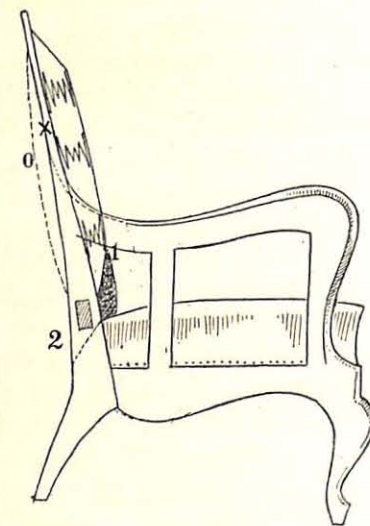
215C



215D

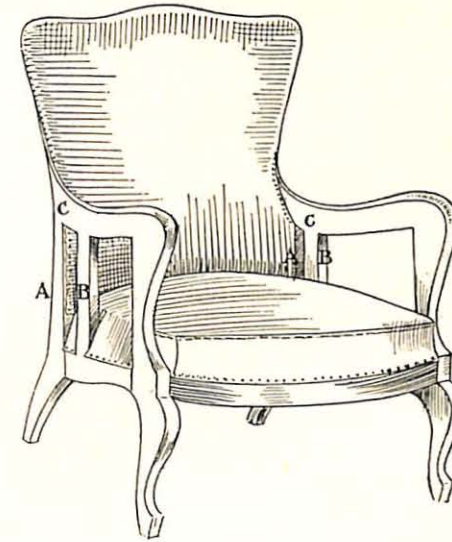


215E

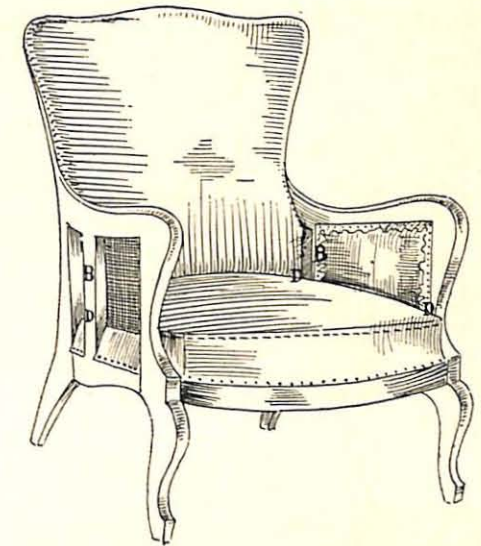


215F

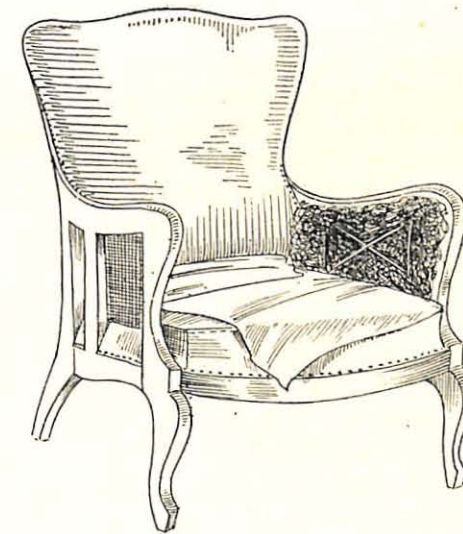
DETAILS OF SPRING BACKS



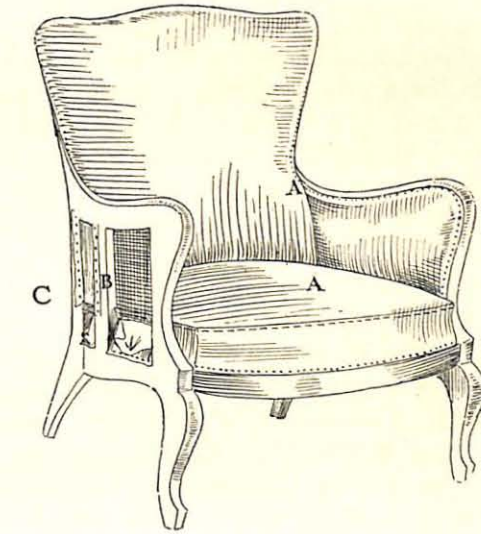
215G



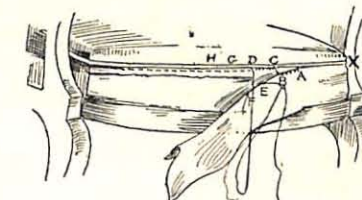
215H



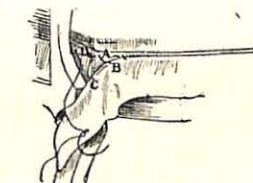
215I



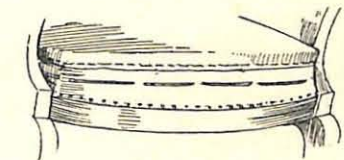
215J



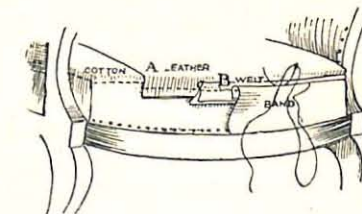
215L



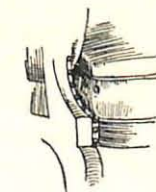
215M



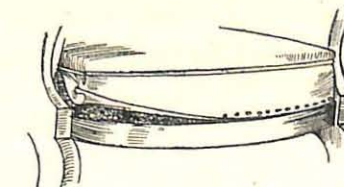
215O



215K

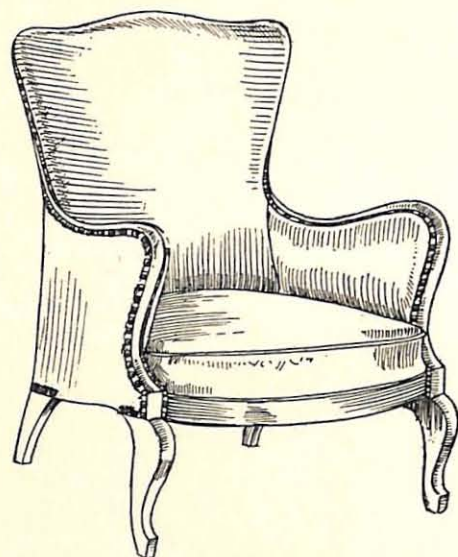


215N



215P

DETAILS OF SPRING BACKS



215

of stuffing material, as illustrated in Fig. 215I, is bridled into position and the cotton drawn up and tacked to the arm at the front and top, slipped between the upright B and the back, and tacked to the upright, and the bottom edge tacked to the seat. See illustration Fig. 215J. It will be noticed that in this illustration from A to A the space provided between the upright B, shown on left side, and the back has been entirely filled so that only the crease caused by drawing the fabric through for tacking is presented. Should the upright B be so far from the back as to leave a space of not more than half an inch no concern need be felt because when covering the arm in the cover by carrying the back edge to C instead of tacking it at B the space will be closed, and should it sink in too far the stuffing may be inserted between the stick B and the back to fill out any hollows.

After the chair has been completely covered in cotton, the next consideration is the fitting of the permanent covering. To the workman who has followed the instructions given in previous chapters the matter of covering the seat, arms and back of the chair shown in Fig. 215, should present no serious difficulties. This chair, however, introduces a form of band not hitherto explained.

The end of the leather or other covering is brought over the edge of the seat and pinned for sewing, as illustrated in 215O. In working leather it is best to use a diamond or spear-

pointed needle, especially if the leather is of close texture. After the cover has been sewn around the front edge of the seat, as illustrated in Fig. 215O, a welt made after the method explained in connection with Figs. 214R and 214S is sewn just beneath the edge of the seat. See B, Fig. 215K, the welt hiding the stitches which hold the edge of the cover.

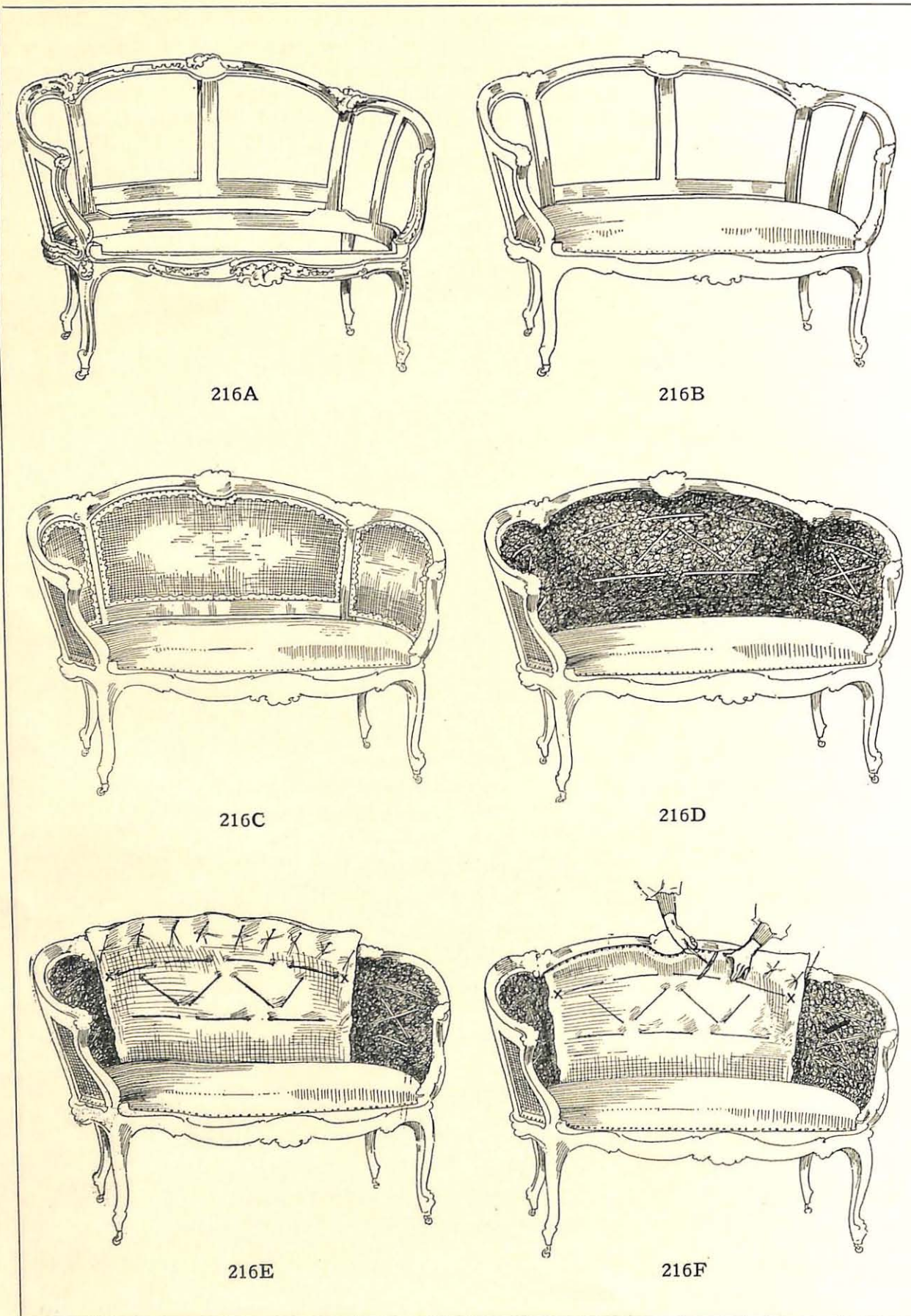
Next with a large circular needle sew a row of bridling stitches along the front of the chair midway between the top of the edge and the front rail. A band is now cut and joined up, long enough to reach from the tacking block on one side, X, Fig. 215B, out to the front, across the chair and back to the corresponding block on the other side of the chair. Commencing at the block on the right side, the top of the band is turned down about three-quarters of an inch and temporarily tacked to the corner of the block at X, allowing an inch or two surplus beyond the tack. Then with a circular needle blind stitch the band all round the front of the chair, following just beneath the welt and alternating first into the chair then into the band, with stitches about one inch long, as Fig. 215L. Following the letters A to G in this illustration, it will be noticed that the needle has entered the band at A, coming out at B, then enters the chair at C, coming out at D, and the next stitch being taken in the band entering at E and coming out at F, to be followed by a stitch in the chair which enters at G and comes out at H. This stitch is purposely shown between B and C and also where it enters the band at A, but after the twine has been pulled tight the stitch should not show at all. Care must be taken, however, to have the stitches running from the band into the edge and from the edge back into the band perfectly straight. At the corner of the seat, X, Fig. 215L, it is necessary to allow about an inch for fullness. This allowance is made by bringing the needle out from the corner A, Fig. 215M, entering the band at B, and coming out a half inch distant, and re-entering again about an inch farther on and coming out at C one-half inch from the last point of entrance. The needle again enters the edge at D, one-half inch from A, coming out at E, the length of the regular stitch, where it will be seen that by pulling this twine tightly all of the fabric contained between B and C will be pressed into the one-half inch space between A and D, thus forming a pleat which when straightened out

should appear as Fig. 215N. It requires a little practice to allow just the right quantity of fullness for such a corner, and the quantity is governed by the amount of stuffing to be inserted under the band, a full band requiring greater fullness at the corner, and a flat band less.

After the band has been entirely sewn around, as shown in Fig. 215P, the requisite amount of stuffing is inserted under the bridling

twines already referred to, and the whole is smoothed into place and tacked to the front rail, taking care not to exert sufficient pull to depress the springs of the edge.

After the band has been entirely tacked around, as Fig. 215P, a second band similar to the one mentioned in connection with Fig. 214O, is applied as a covering to the front rail, completing the chair front as shown in Fig. 215.



DETAILS OF DOUBLE-STUFFED PAD BACKS

DOUBLE-STUFFED PAD BACKS

THOUGH having shaped backs, the various pieces illustrated in Figs. 207 to 215 have all been treated as if single stuffed direct in the cotton under-covering. We now progress to a more substantial form, applying the double-stuffed principle to the back of a shaped settee.

While the piece illustrated in Fig. 216 might also be blind-stitched in cotton and not double-stuffed, better results in shape and durability are obtained by double stuffing, though it is, of course, more expensive.

Commencing with the frame, as illustrated in Fig. 216A, the seat is first upholstered, either spring or stitched edge, and covered in cotton, as Fig. 216B.

The three sections of the back are next canvased, as Fig. 216C.

Because of the sweep of the back it is advisable to divide the double stuffing into three distinct sections, doing the center of the back first and afterwards each end separately. For convenience, however, it is well to put all of the first layer of stuffing material on at once, which is sewn through to the burlap by long stitches, as Fig. 216D. Next a piece of coarse burlap sufficient in size to cover the central portion of the back, is slip tacked to the back of the seat, below the back rail, K, Fig. 216N, drawn up over the filling and slip tacked at the top, after which it is also sewn down through to the back burlap with long stitches, the top row of stitches following X—X, the outline of the rabbeted edge, and about four inches from it, Fig. 216E.

The process of filling up the edge to form the roll for stitching, Fig. 216F, has already been fully covered in former chapters, so much so that the illustrations here should suffice without explanation.

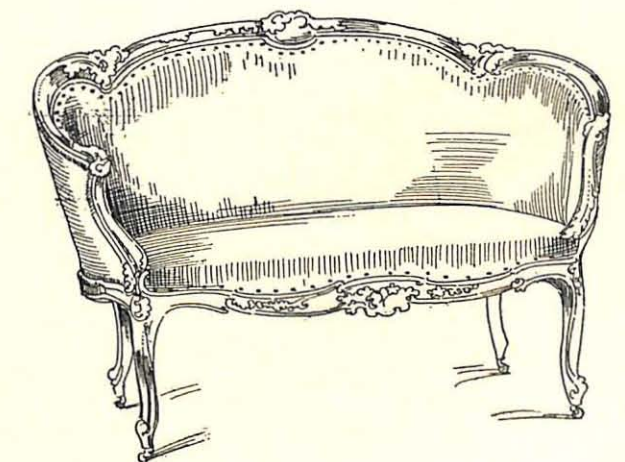
Fig. 216G shows in detail the roll after having been stitched in the canvas, the central portion being now completed and ready for the second stuffing.

The bottom edge of the double-stuffing burlap is not tacked to the seat but is drawn through and turned up and tacked to the back rail, as shown in Fig. 216N.

In Fig. 216H is shown another piece of burlap slip tacked over the stuffing on one end of the settee so as to continue the covering of the back around to the front of the arm. This burlap is sewn down by long stitches in a similar manner to that already followed with the center of the back, as 216I, and on the line XX, where the two edges of canvas come together, the surplus is turned in so as to leave but a crevice where the two meet. This crevice, after the roll has been completely stitched around, as Fig. 216J, is sewn together by means of a circular needle so that the burlap forms one continuous surface around all the back.

After all three sections of the back have been stuffed in the burlap and the rolls stitched around, as illustrated in 216J, a sufficient number of bridling twines to hold the stuffing distributed over all the surface are next put in place, as Fig. 216K, section A, and a light pad of stuffing is kneaded into place under the twines, as Fig. 216K, section B, after which another light pad, as Fig. 216K, section C, is spread over the whole surface, keeping the edges of the roll clear of stray wisps, and a piece of cotton is slip tacked over all, as Fig. 216L.

In slip tacking the bottom of the back care should be exercised to keep the fabric as free from wrinkles as possible, to avoid needing to slip tack this part a second time before the back



216

is completed. Some upholsterers after having once slip tacked the cotton, go over it all again with slip tacks to dispose of the wrinkles, working from the center to the outer extremities.

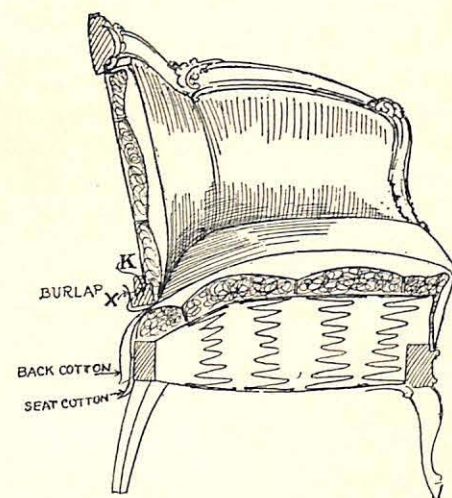
If the bottom has been carefully slip tacked in the first instance, however, it will not be necessary to go over it a second time, and the expert

workman can proceed, commencing at X, the center of the top back rail, Fig. 216L, to tack the cotton permanently in place, turning under the edge smoothly and working a little at a time from the center to each extremity.

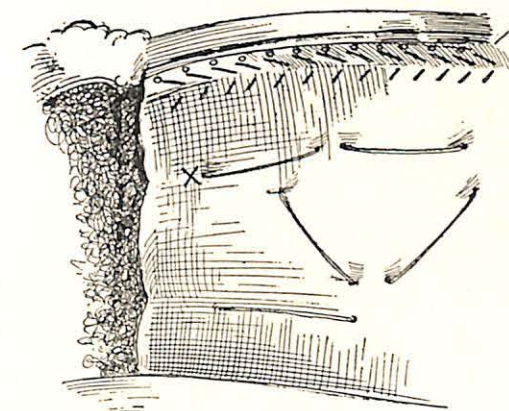
It will, of course, be necessary to notch or clip the edge of the cotton in some places to allow for the abrupt curves in the outline. The cotton must also be smoothed laterally, that is to say from center to end, in order to keep the whole surface free from vertical wrinkles.

A back of this kind would present serious difficulties to the novice, but for one who has followed progressively the instructions we have given from the beginning until the present, with practice in the various processes described, it should present no problem.

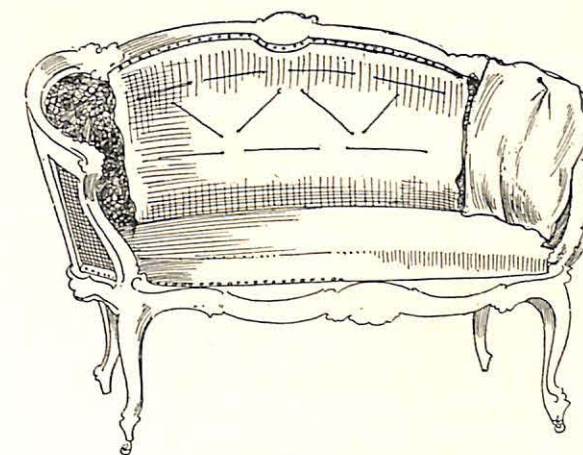
As a final illustration to make clear the entire appearance of the finished piece we show in Fig. 216N a cross section cutting through the center of the settee. This shows clearly the various layers of stuffing material, the different burlaps, the stitched edges and the final cotton. A close study of this illustration will go far toward explaining the other figures here mentioned.



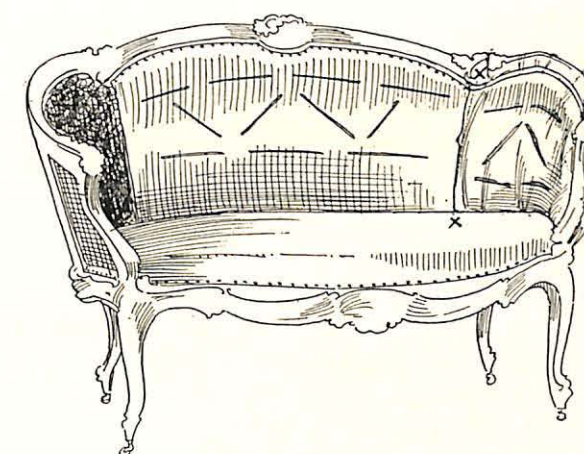
216N



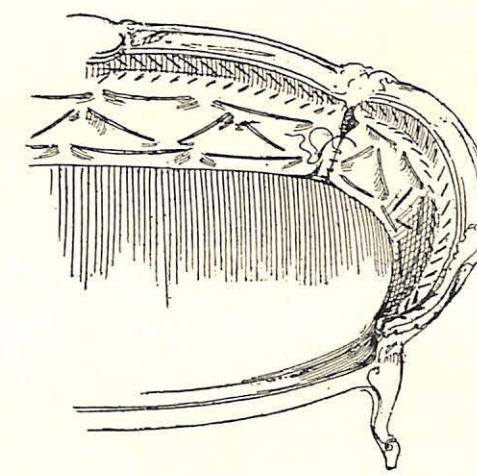
216G



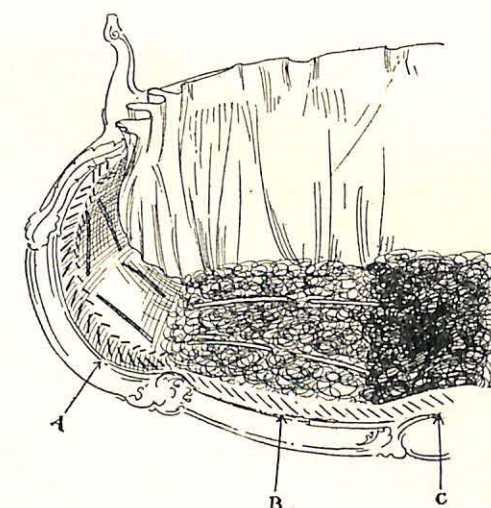
216H



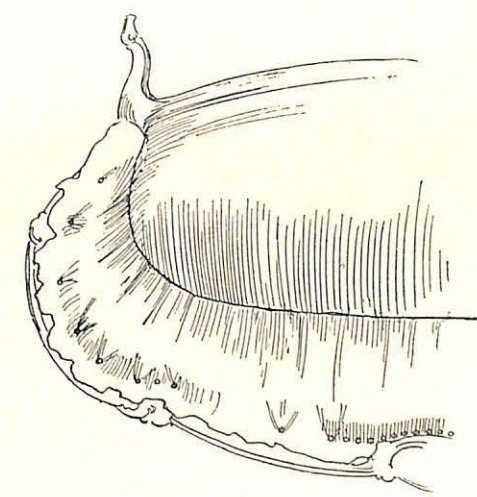
216I



216J



216K



216L

THE SPRING PILLOW

THE frame, as illustrated in Fig. 217A, may be taken as a typical frame for this kind of chair, although there is nothing particularly about it which would suggest the use of a pillow or roll. This chair serves as a good illustration, however, for the reason that it enables us to show the extent to which the upholsterer may build up a single type of frame to produce several different styles of chairs.

After the seat has been covered in cotton to the point illustrated in Fig. 217B, the outside of the back is webbed following the plan shown in Fig. 217C. The springs are then covered with burlaps, as shown in Fig. 217D. It should be borne in mind that the springs used in the back of a chair, such as the one under discussion, must be of a character to allow a considerable pliancy, as the chief object of using springs is to obtain a more comfortable effect than would be possible with the ordinary padded back. In the tying down of the springs, the shape of the back of the chair should be followed. (Note detail showing side view of springs, Fig. 217D). While it is not necessary to upholster the back of a chair of this type by the double-stuffing method, we show it here for purposes of illustration. A layer of hair is put over the spring burlap, as shown in Fig. 217E, and this is covered with a light burlap and stitched through, as shown in Fig. 217F. (See also detail showing cross section side view, Fig. 217G.) In the building up of the back the bottom portion is made to swell so as to fit the hollow of the user's back. (Note detail side view Fig. 217-I.) Another layer of hair is put over the burlaps and the covering of muslin put on as shown in Fig. 217H. It will, of course, be understood that the appearance shown in Fig. 217J could be obtained without the use of a double stuffing, but a more durable chair is produced by the double-stuffing method.

The next step in the upholstering of this chair is to provide a spring foundation for the pillow. A row of pillow springs is attached to the top rail at the back, as shown in Fig. 217J, and tied down to the proper height. The springs

for the pillow should be very soft and no higher than is required for the construction of the pillow. They may be tied down independently, before being attached, as shown in Fig. 217K, or tied down after being placed in position as indicated in detail Fig. 217L. The springs are next covered with burlap, as shown in Fig. 217M, and the filling material added sufficient to prevent the tops of the springs from being felt through the covering. We show in Fig. 217N the pillow in a double-stuffed condition. For all practical purposes, however, the pillow would be sufficiently substantial if covered with cotton and blind stitched.

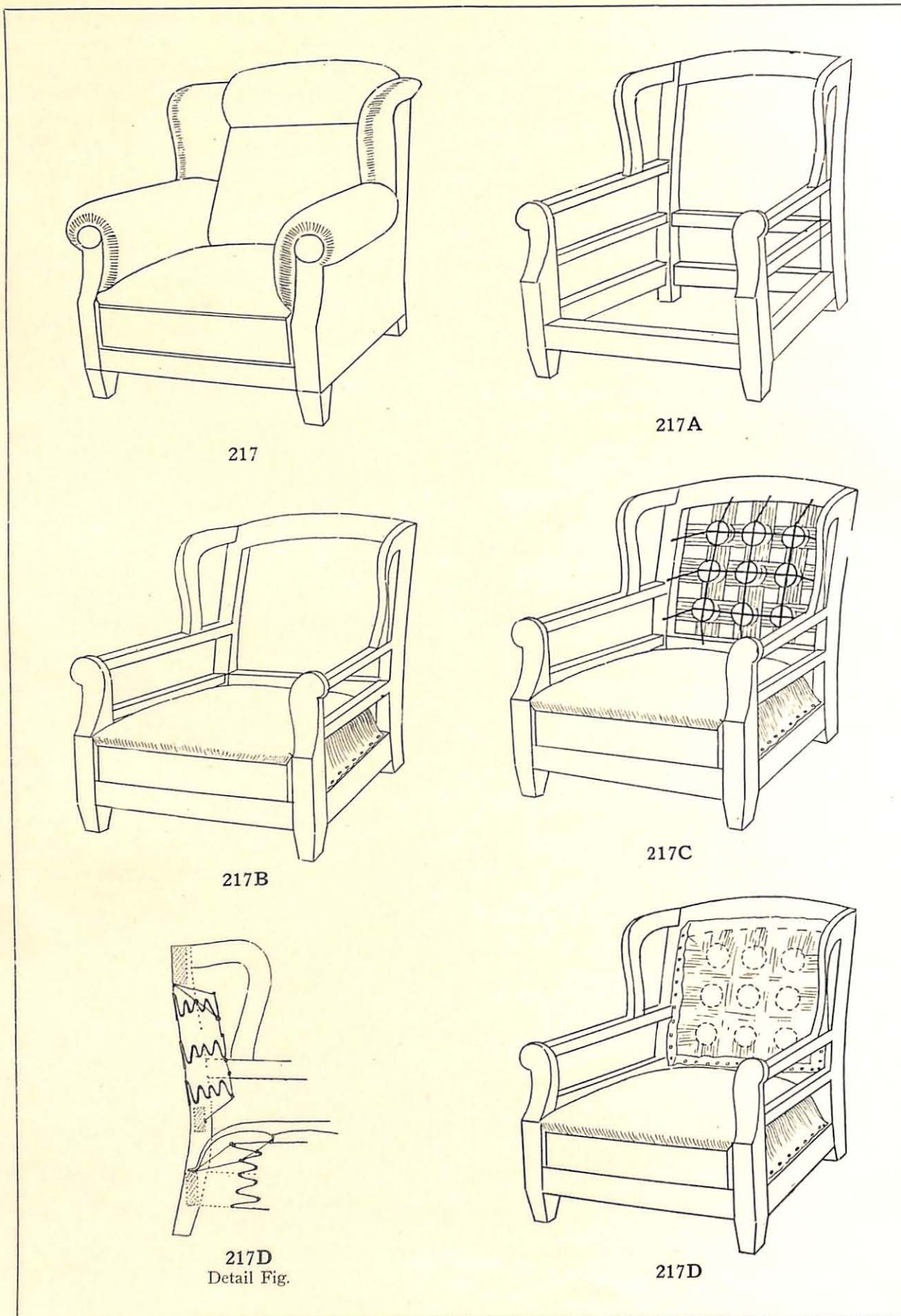
The crevice defined by the line where pillow and back meets, Fig. 217, may either be left free or closed by stitching the pillow to the back, the latter method being preferable if the line is to be defined by a cord.

The arms of this chair, though not difficult, require a certain degree of skill to keep them flat and square, which they must be in order to follow the general outline of the chair.

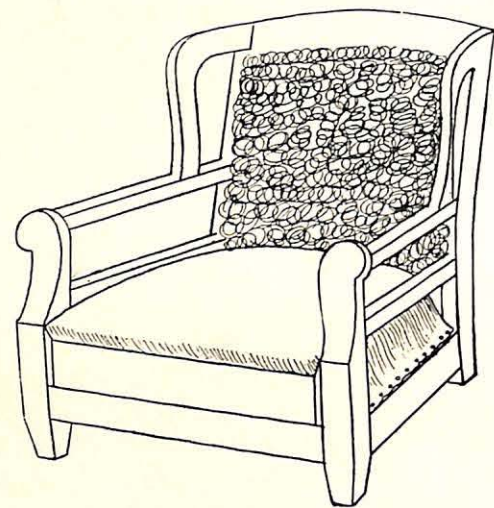
If the chair is not already provided with a stick marked X, Fig. 217O, one must be provided as here shown, leaving about one inch of space between it and the back post of the chair. The object of this stick is to provide a rail on which the back edge of the arm covering may be tacked. The covering is drawn through the crevice left between the stick and the back posts of the chair (see "A" Fig. 217O) and tacked on the outside square, as shown in Fig. 217P, it is well to sew the stuffing material to the burlap so as to form a compact pad before the cotton is put on. It is also well to tack, or sew, the filling to the arm rail "B," which forms the top of the arms, as indicated in Fig. 217O. A light layer of filling then distributed over all the arm will soften the surface so that when the cotton is finally tacked down and the front edge blind-stitched, it will appear as the left arm of Fig. 217P.

The wings at each side of the back of this chair are treated in later chapters of this book in detail, so that it is unnecessary to here repeat the same instructions.

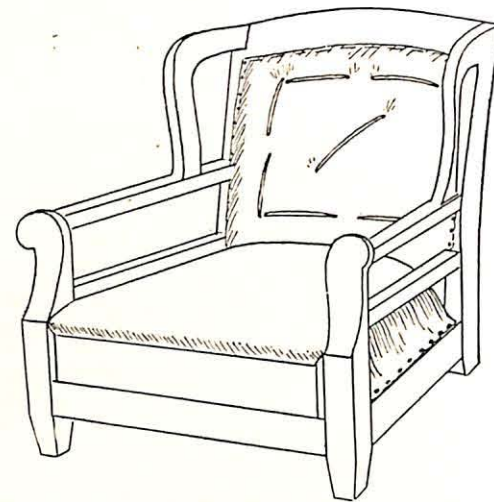
Instead of making a separate pillow, as has



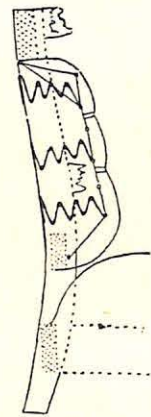
DETAILS OF THE SPRING PILLOW



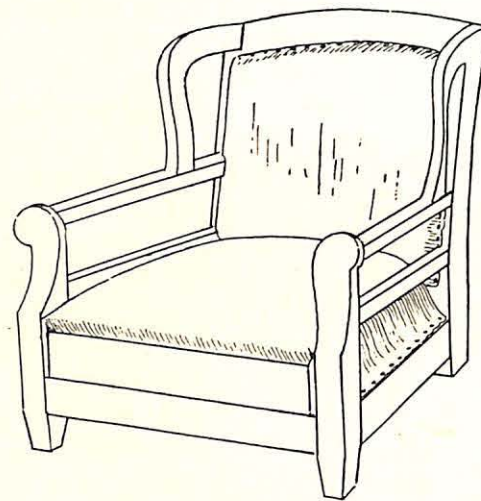
217E



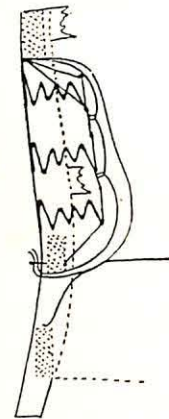
217F



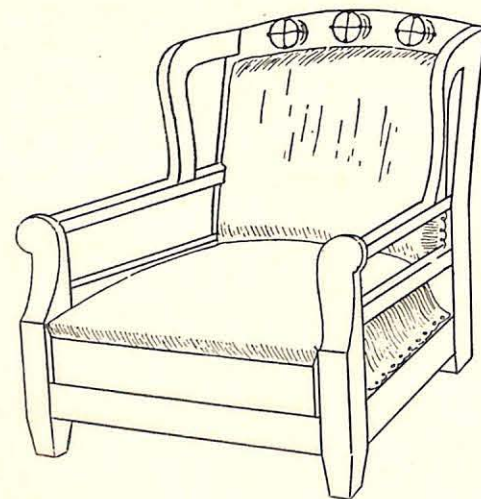
217G



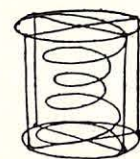
217H



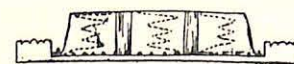
217I



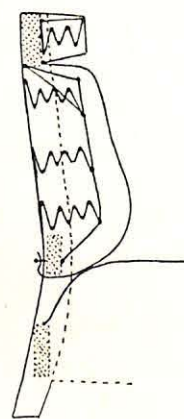
217J



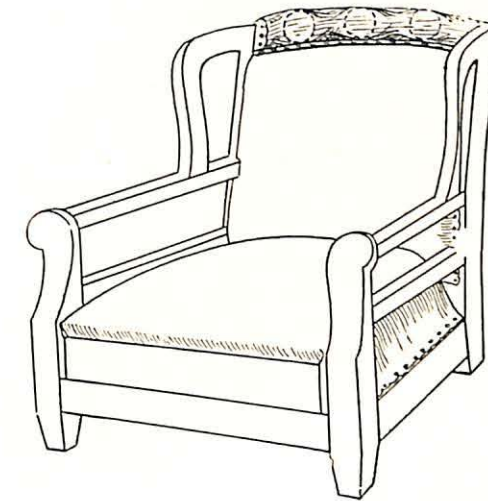
217K



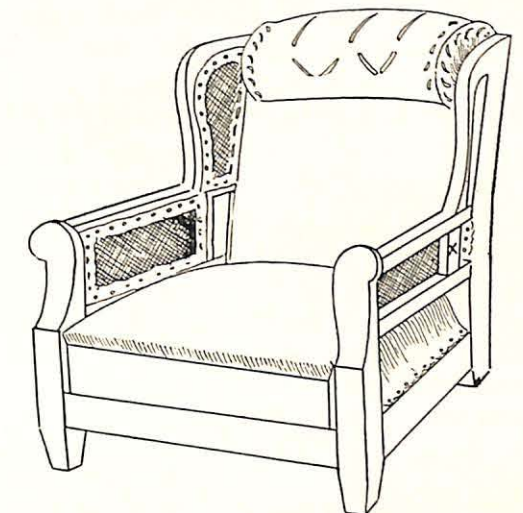
217L



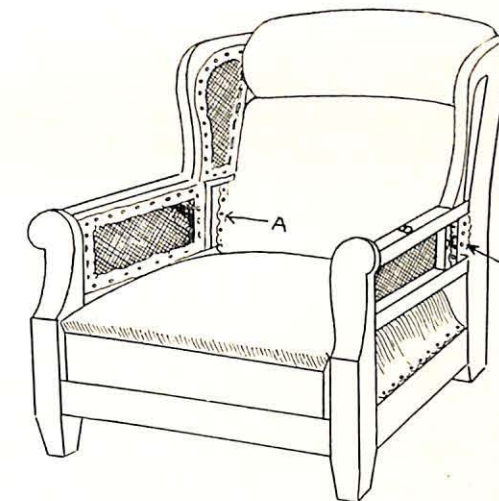
DETAILS OF THE SPRING PILLOW



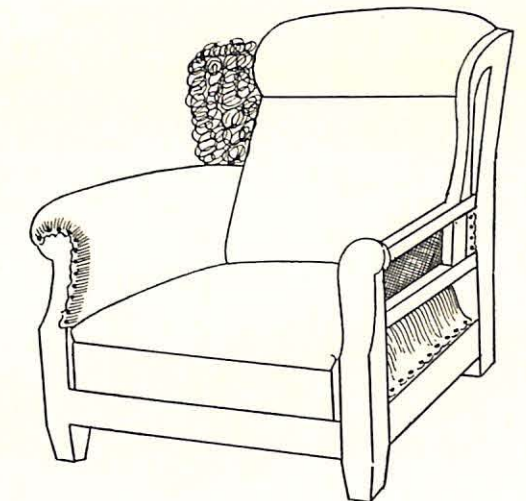
217M



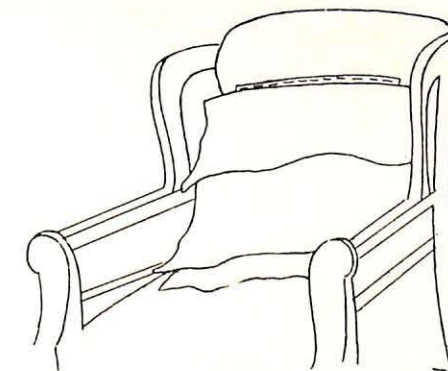
217N



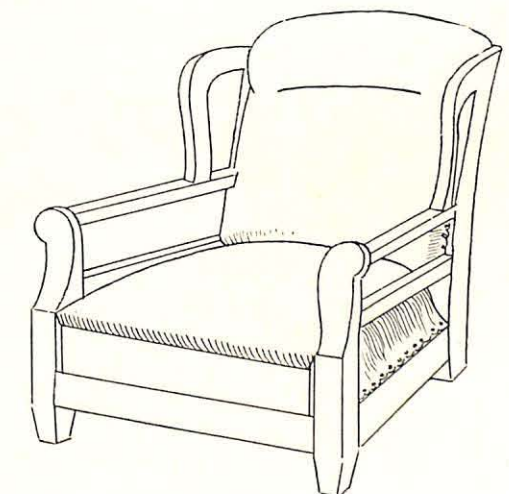
217O



217P



217R



217Q

DETAILS OF THE SPRING PILLOW

been already described in connection with this chair, the effect of a separate pillow can be obtained in a very simple way, giving the appearance shown in Fig. 217Q. In this illustration it will be necessary that instead of the crevice, which cannot be avoided when a separate pillow is used, the method in 217Q, shows a depression at the point where the crevice would normally occur, and the covering is continuous from the bottom of the back up over the top of the pillow. To accomplish this appearance, the whole back is upholstered in a single operation, but before the top of the muslin is permanently tacked, the upholstery is stitched through on the line where the depression appears in Fig. 217Q, being careful to confine only the filling material by the

stitching and not catching any of the springs or spring twine unless they lie close up under the burlaps. Before the covering is put on a tape is sewn to the back of the covering and this tape is stitched to the depressed line in the upholstery, as shown in the detail of Fig. 217R. The material is then tacked all around in the regular way, with the result that the chair has the appearance of having a pillow without one having been constructed separately. Another of the advantages of the depression in the upholstery, as indicated in Fig. 217Q, is that it assists in forming a hollow in the back to receive the shoulders of the chair's occupant, maintaining in this way an outline which follows the shape of the human back.

SIMPLE BUTTONING

IN recent years furniture upholstery styles have so changed that many old and favorite forms are no longer seen. These forms employed methods of upholstery that only the older tradesmen remember; methods that may be considered more or less obsolete, as for instance the one about to be described, but a complete explanation of the various kinds of button upholstery must include even the most simple forms.

The chair illustrated in Fig. 218 is in common upholstery parlance a "sleepy hollow" or "student's easy." The frame, as illustrated in Fig. 218A, represents one of the cheapest and simplest forms.

Commencing with the bare chair frame, it will be noticed in Fig. 218B that three strips of burlap nine or ten inches wide and folded to a strip of about four inches are tacked to the top of the front rail, turning the ends over and tacking again, as has already been explained in connection with the webbing of other pieces. A strip also is tacked across the back just above the arms, as shown in Fig. 218B.

The three seat strands should have sufficient elasticity to allow the bottom cross webs, which are shown in Fig. 218C, to draw them down to a point half way between the top and bottom of the rails, following the dotted line of Fig. 218D.

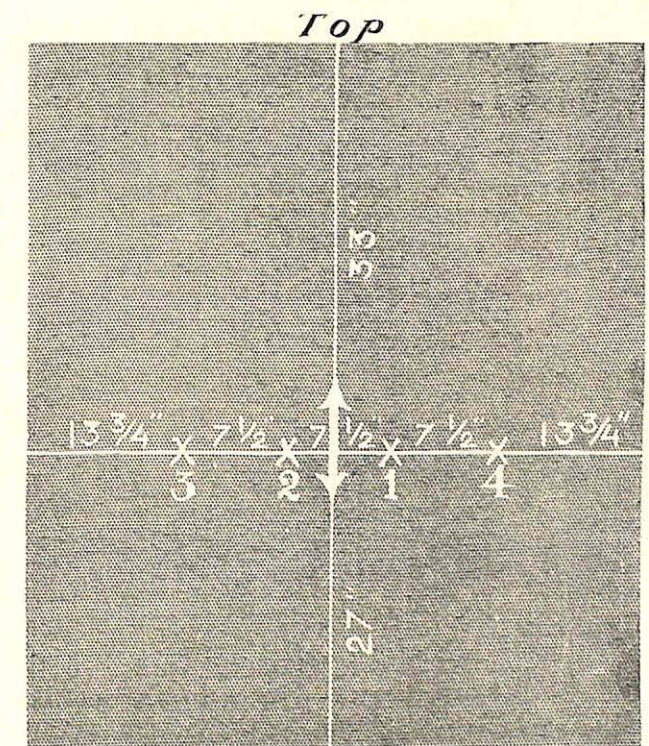
The bottom webs of Fig. 218C are interwoven with the burlap strips and stretched, by means of the webbing stretcher, tight enough to draw the burlap strips down into place, at the same time making them fairly tight.

Next a large piece of heavy burlap wide enough to reach from the top of one arm down to the webbing across the seat and up to the top of the other arm, and long enough to reach from the top of the back to the back rail and then out to the front, allowing for tacking and turnover, is stretched over the chair, keeping the thread straight, and tacked as shown in Fig. 218E. A strip of burlap folded to four thicknesses about an inch wide is also tacked along the top of the back rail to prevent the first tacks from pulling through. Next draw the burlap from the back rail to the top of the back and tack it there, from

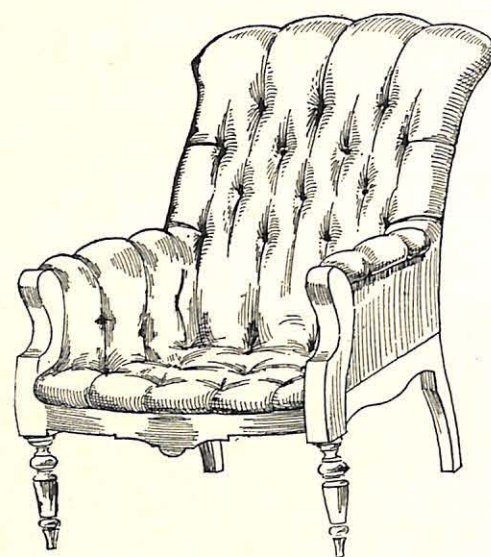
the back rail to the top of the front rail, and so on until the chair has been completely canvased, as shown in Fig. 218E, following throughout the lines indicated by the crosses on the frame of Fig. 218B.

The burlap is next sewn down to the webbing of the seat, as shown in Fig. 218E, and marked for buttoning, as Fig. 218F.

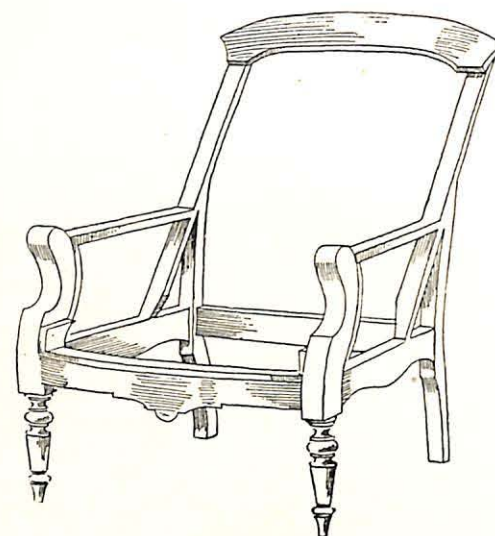
It will be noticed that the crosses which mark the places for buttoning in this diagram are numbered consecutively from 1 to 31. The first row, 1, 2, 3, 4, is about four inches forward of the back rail; the row 8, 9, 10, 11 is about seven inches from the front rail, while the row 5, 6, 7, is midway between; the row 12, 13, 14, 15, is about eleven inches from 1, 2, 3, 4; 19, 20, 21, 22 are from ten to fourteen inches above the lowest back row, while 16, 17, 18 and 23, 24, 25 are determined by ruling from point to point of the other rows. Thus 12, 13, 14, and 15 are each six inches apart, and the same distance lies between 19, 20, 21 and 22; by ruling from 13 to 19 and



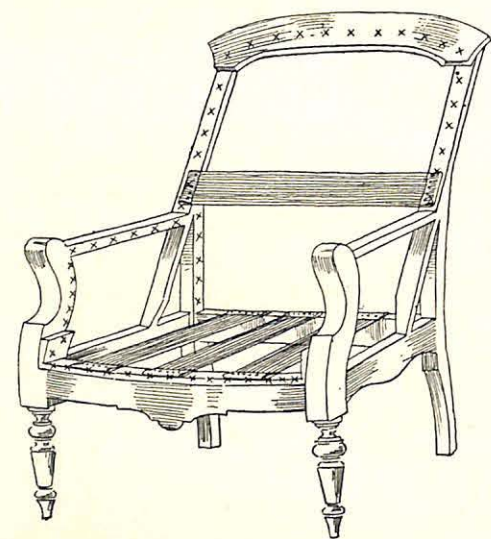
218R



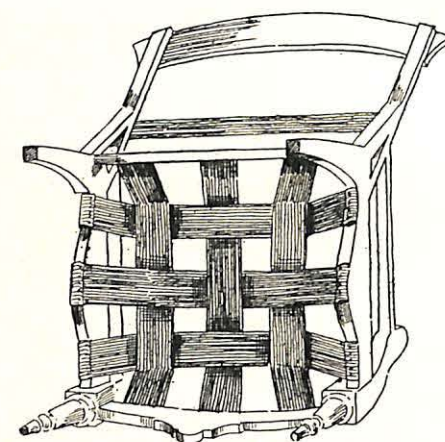
218



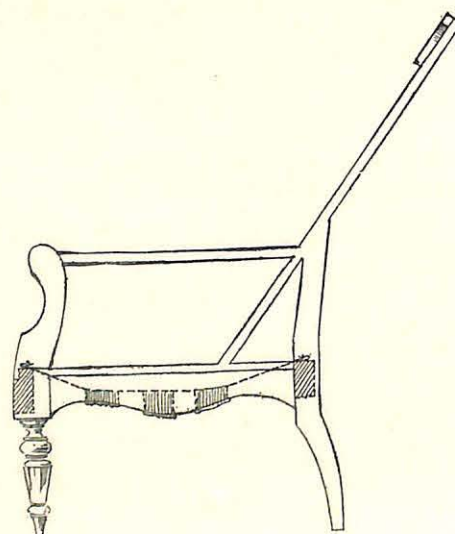
218A



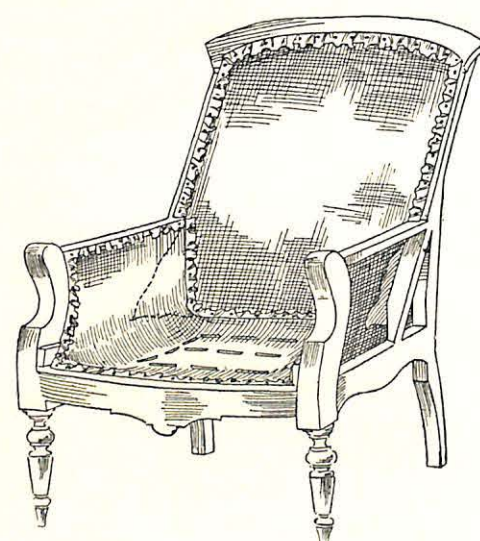
218B



218C



218D



218E

DETAILS OF SIMPLE BUTTONING

from 12 to 20 point 16 is determined, while the same lines continued mark 25 and 24.

It is impossible to give exact distances for these buttons as the sizes of the frames may vary considerably. We have, however, sketched them in the proper relative position, which should obviate the necessity for any detailed explanation.

The next consideration is the marking of the cover, which for the average chair will require to be full fifty inches wide and from sixty to sixty-three inches long. The exact length of the covering can be determined by passing a tape line from over the top of the back down to the second row of buttons, as shown in Fig. 218I. Pinch up the tape line so as to allow two or two and a half inches extra, stretch it tight from the second row to the fourth row down; pinch up another extra one and a half inches, and then draw the tape from the fourth row of the back to the back row of the seat, without any allowance. Stretch it from the back row of the seat to the front row; pinch up an inch and a half allowance; then over the top edge of the front rail, allowing two or two and a half inches extra.

Note should be taken of the measurement on the tape when it reaches the back row of the seat, indicated in Fig. 218F, by the numbers 1, 2, 3, and 4, as this is the line where the covering is first attached.

Supposing this measurement to have been thirty-three inches and the whole measurement sixty inches, the fabric is spread out, as shown in Fig. 218R, face down, and from the top, measure down thirty-three inches, at which point draw a line across the whole width of the goods. If the goods have been folded in the middle, the crease will define the center of the width, otherwise it must be found by measurement.

After this center has been determined, as marked by the double arrow in our diagram, presuming that the button marks 1 and 2 are six inches apart, a mark is made on the line already drawn across the goods three and three-quarter inches on each side of the double arrow, thus allowing seven and a half inches of goods to cover the space between buttons 1 and 2.

To the right and left of these marks again other marks are made seven and a half inches distant, to provide for buttons 3 and 4, leaving on each side of the outside buttons thirteen and three-quarter inches of surplus material to cover the balance of the space.

After these button marks have been determined, with needle and twine the buttons are drawn into place and tied securely, as shown in Fig. 218G. Next with a quantity of filling picked free of lumps the slack covering between buttons 1 and 2, 2 and 3 and 1 and 4, Fig. 218H, is stuffed up full so that the stuffing extends out to the next row of buttons, 5, 6, 7.

As no pleats are formed in this covering, the center of the fabric is next grasped at the point which will pull into place at button No. 5, and drawn down by the left hand, while the right hand with the packing rod forces a crevice leading back from the button to where it loses itself in the swell of the filled-out fabric between buttons 1 and 2, Fig. 218T.

Proceeding across to the right, button 6 is pulled into place similarly, and also button 7.

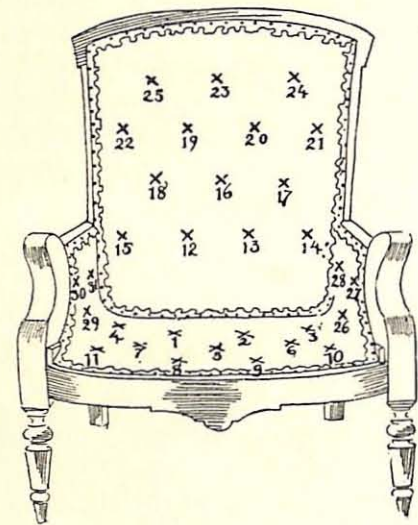
The slack of the goods from 7 to 5 is next stuffed up, using the packing stick in the right hand, while the left pinches up the mass between buttons 1 and 7 so as to form a ridge with a deep depression leading to the buttons. See Fig. 218U. By repeating this process between buttons 1 and 5, the ridge is continued into a V, and the same thing is repeated between 7 and 4, 5 and 2 and 6 and 2.

The crevices leading back from the buttons 5, 6 and 7 are carried forward also by using the packing stick as already advised, 218T.

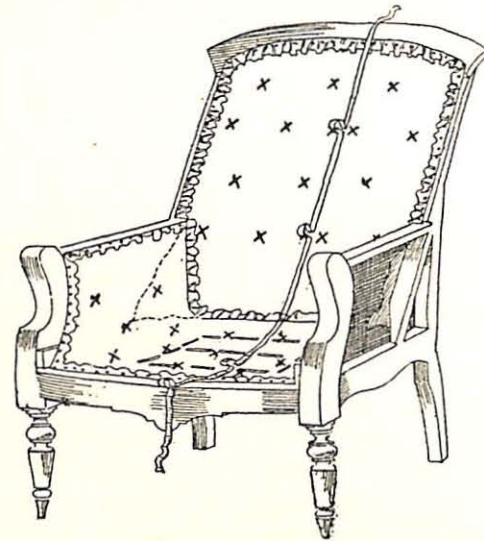
Commencing at the center again, the front row of buttons is inserted by the same procedure. Now, following the thread from button 8 straight out to the edge of the frame, the fabric is pulled tight and a slip tack inserted directly opposite the button, as shown in Fig. 218K. This is repeated with buttons 9, 10 and 11, after which the pipes formed between the slip tacks are stuffed up, as shown in Fig. 218Q.

Next the thread of the fabric from button 1 is drawn straight to the button mark 12, and the button inserted. The fabric is also drawn in a similar manner from 2 to 13, 3 to 14 and 4 to 15, thus forming three pipes, which are stuffed full, taking care to keep the filling from forming into awkward lumps, and keeping the whole mass smooth and uniform.

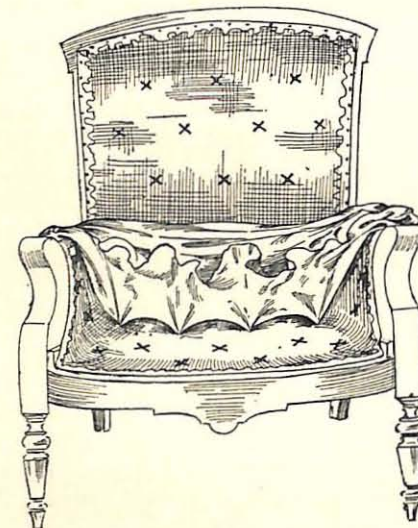
It is hardly possible for the hand to be inserted to the bottom of these pipes, and for this purpose the packing stick already mentioned is employed. These sticks or rods may be of wood or metal, spoon or chisel-shaped to suit personal



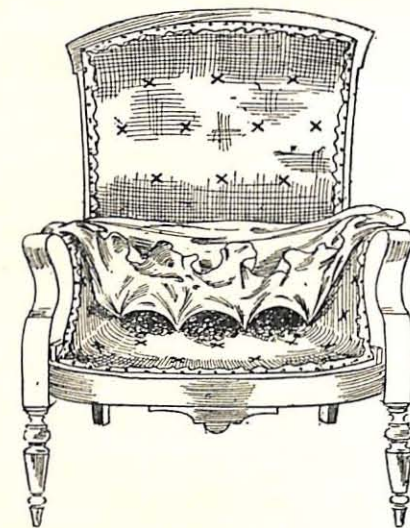
218F



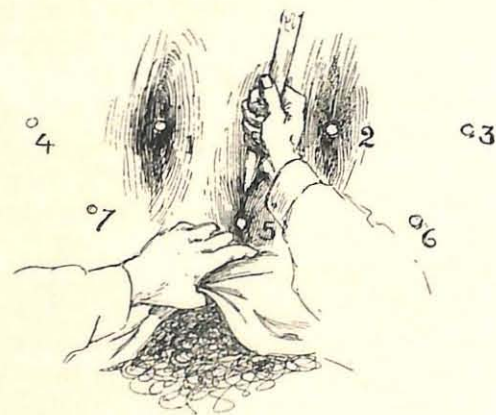
218I



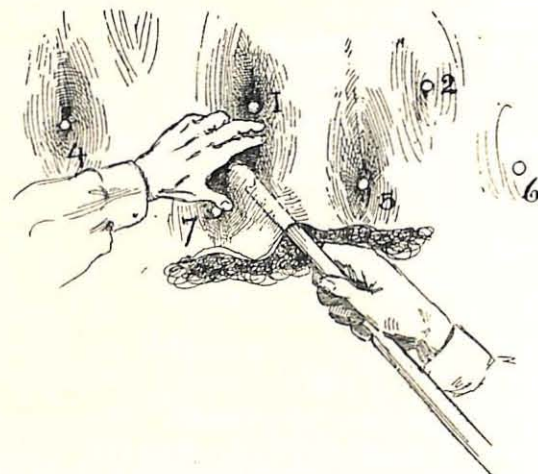
218G



218H

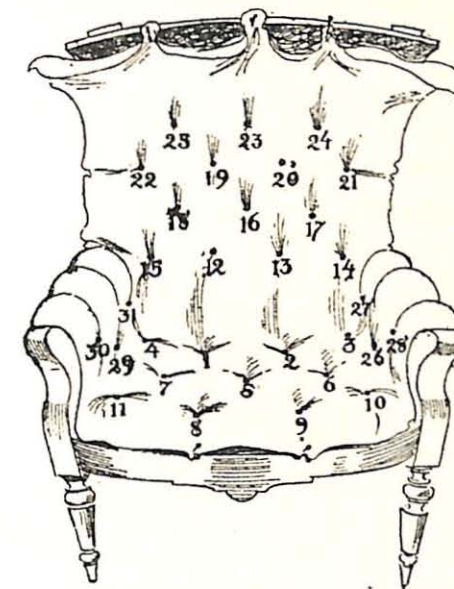


218T

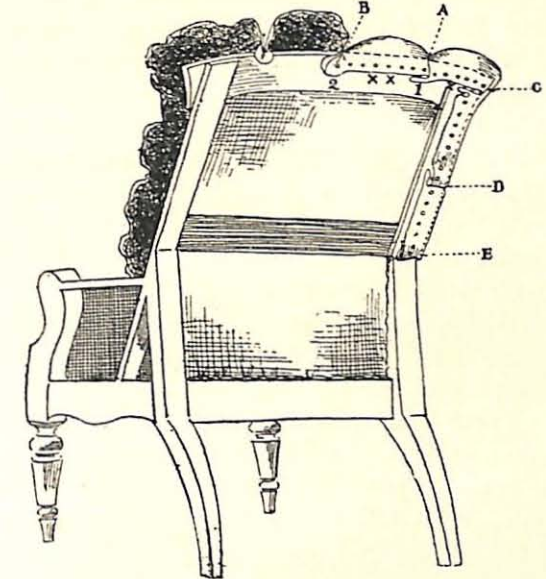


218U

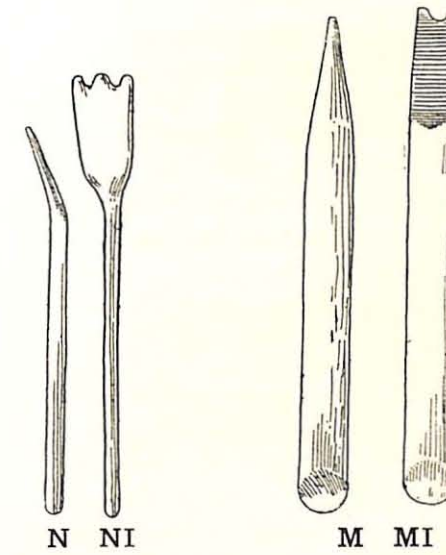
DETAILS OF SIMPLE BUTTONING



218K

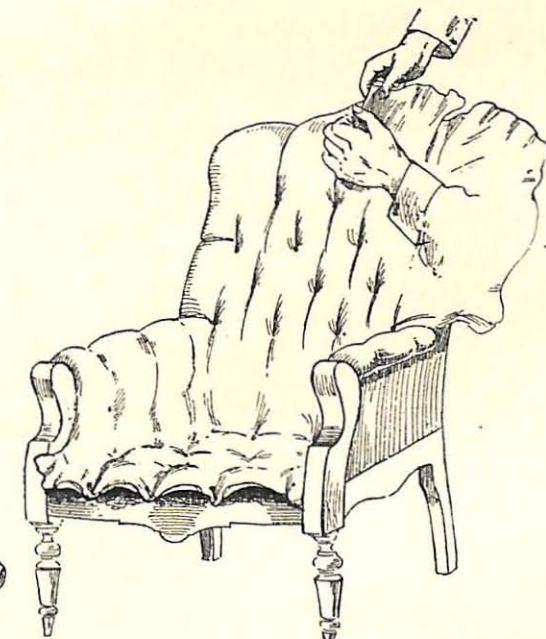


218P

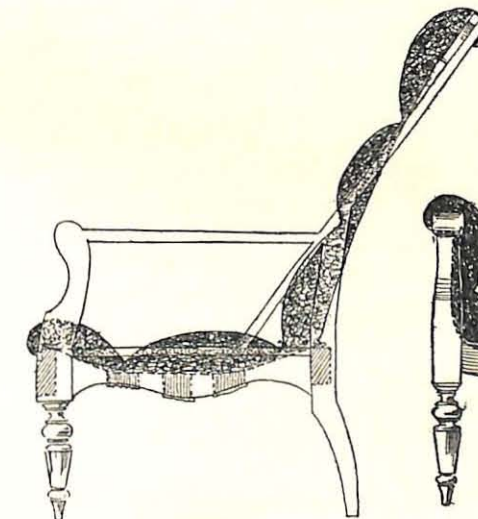


N NI

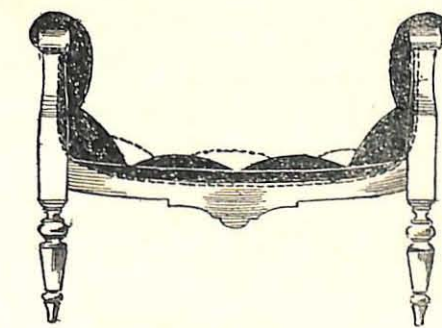
M MI



218Q



218R



218S

DETAILS OF SIMPLE BUTTONING

preference. The chisel-shaped wood rod is illustrated in Figs. M and M1, and the spoon-shaped metal rod in Figs. N. and N1, the toothed end being from one-half to three-quarters of an inch in width, and the rod approximately sixteen inches long. With practice these packing sticks may be manipulated for a great number of purposes, the most simple of which is that herewith described.

After row 12-15 has been pulled into place and the loose fabric filled out with the stuffing, the succeeding rows are drawn into shape, as already explained for the seat, and a row of slip tacks corresponding with the buttons 23, 24 and 25 is inserted in the top rail, as already explained for the front of the seat.

After the pipes which finish the top have been filled up, the slip tacks are loosed, one at a time, and a sufficient quantity of stuffing inserted beneath that already confined in the pipe-like divisions, so as to form the swelling pillow, shown in the diagram of the finished chair, Fig. 218. To dispose of the surplus fabric, pleats are formed running up from each of the top buttons, as shown in Fig. 218Q, the mode of progression being still further explained by Fig. 218P, the back view of the chair. Pipe X, the right-hand corner of the chair back, is first formed and tacked into place at 1, then a pleat which will dispose of the surplus is formed at 1A so as to overlap X slightly, and tacked into position.

The pipe XX is next tacked into position, drawn down at 2, and a pleat formed at B to dispose of the surplus as before.

Similar pleats are formed at C to dispose of the surplus at the corner, and at D and E, running from the side buttons 15 and 22.

The front of the chair is next stuffed up in a similar manner, forming pleats leading from the buttons to the front rail to dispose of the surplus, and the same process repeated with both of the arms. Wherever there is surplus fabric to dispose of it must either be stuffed full or formed into pleats so that the whole chair will be smooth and uniform, as shown in the diagram of the completed chair, Fig. 218.

The outline of the upholstering as related to the lines of the chair frame can readily be followed in the cross-section diagrams 218R and 218S, the former showing a cross-section side view, and the latter showing a cross-section front view. It will be seen by these illustrations that the upholstering is comparatively shallow, the chair depending largely for its comfort-giving properties on the shape, which gives the chair its familiar name of "sleepy hollow."

The lining of the outside arms and the back is a simple operation and the principles will be explained in connection with later pieces, although the chair here shows it to have been completed.

PLEATED BUTTONING

OUR last chapter covered the upholstering of one of the commonest forms of chair frames—a "sleepy hollow" or "student's easy." The same chair may be upholstered buttoned all over, but instead of indenting the filling away from the button, the surplus material from button to button may be formed into pleats, making a much more artistic form of upholstering, but at the same time considerably more difficult. As a matter of fact a "sleepy hollow" pleated all over is by no means a simple chair to upholster, and as the pleating principle is the same as that pursued in more simple pieces, we will not here explain the method of pleating the upholstering of a sleepy hollow, believing that the workman, having been enabled to master the intricacies of pleating through the explanation of more simple pieces, will, when occasion demands, be fully able to apply the same principles to a chair of this type.

The chair shown in Fig. 219 is a typical piece upholstered with a spring seat and buttoned back and buttoned arms. In a former chapter some of the principles of buttoning, including diamond, biscuit and bun tufting, were covered in connection with the making of cushions which have a wooden foundation, and some of the details may possibly be repeated in this chapter. This, however, will do no harm and will be much more convenient than to refer to a chapter so remote.

We have already explained the method of upholstering a spring seat both for stitched edge and spring edge, so that it suffices here to say that the chair as provided with a spring seat should appear as shown in Fig. 219A.

Three strips of webbing have been stretched across the back, midway between the seat and the back rail, as indicated.

Now a piece of burlap slightly larger than the dimensions of the back is tacked, as indicated in Fig. 219B, stretching the thread perfectly straight each way and drawing the canvas as tightly as it is possible to do by hand.

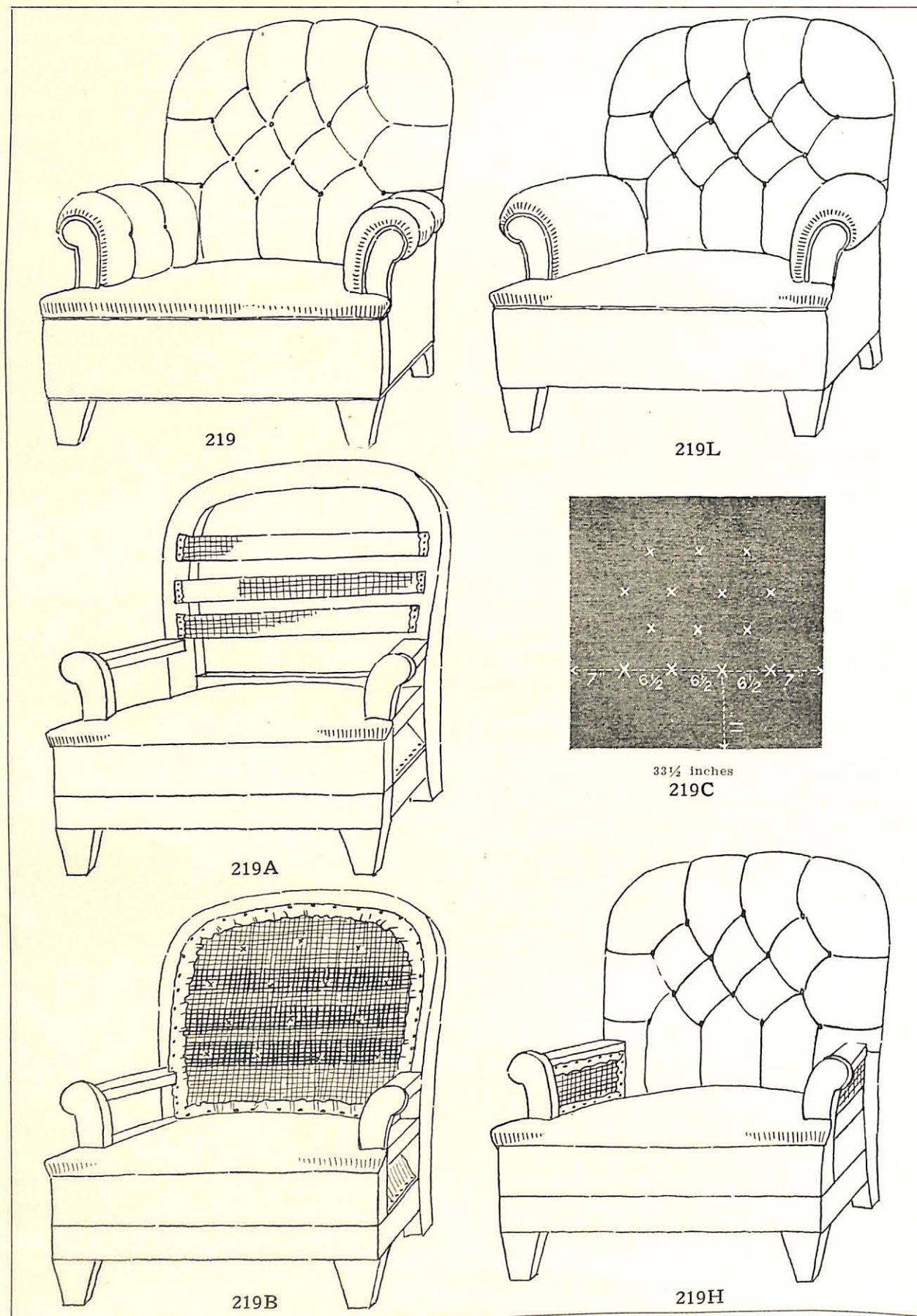
By referring to the illustration 219B it will be noticed that the canvas is marked for four rows of buttons, the row nearest to the seat con-

taining four, the next one three, the next one four and the top one three.

The first row of four buttons is planned to come just a little above the tops of the arms in the uncovered frame. In our illustrations this is approximately about nine inches from the seat, and they are about five inches apart, that is to say, the two center marks are two and a half inches from the middle of the back, and the two outside marks five inches from the mark on each side of the center. The next row above is from four to six inches away from the first row according to the height of the back, and the two remaining rows are kept similarly separated.

Where any quantity of chairs are to be upholstered, following the same identical form of buttoning, a deal of time can be saved by making a pattern through which the canvas may be marked for buttoning. To prepare a paper pattern for such a back it is only necessary to take a piece of tough wrapping paper and cut it the shape of the back, tacking it over the canvas temporarily so that the marks, as we have described them, may be made on the paper. After each point has been determined, the paper is punctured so as to make a hole about three-sixteenths of an inch in diameter. Then by laying this paper pattern over the canvas and with the end of a small stick forcing a drop of asphaltum stain or other quick-drying pigment through the pattern on to the canvas, an indelible mark is made which can be easily distinguished either from the front or back of the chair.

To measure the covering for the back, as marked for buttoning in Fig. 219B, the same method is followed as that already explained in connection with Fig. 218I. Taking a tape line from the top of the rail to the second row of buttons, pinch up two and a half inches to allow for fullness in buttoning, draw it tightly from the second row to the fourth row, pinch up one and a half inches, then draw it to the point where the back rail touches the seat, Fig. 219B, and noting the measurement, allow two inches extra, which will give you the length required for the back. The width is determined in the same way. Pass-



DETAILS OF PLEATED BUTTONING

ing a tape around the edge of the back on one side, stretch it around to a corresponding point on the other side, across the face of the back; allow one and one-half inches extra between each two buttons and between each outside button and the edge of the back, five spaces altogether, and add this to the measurement, thus determining the total width required. Thus, if the outside button is four inches from the edge of the back, allowing one and a half inches for the thickness of the edge, the total measurement shown by the tape would be twenty-five inches, and with an inch and a half extra for each of five spaces, the total would be thirty-three and one-half inches, as shown in the diagram, Fig. 219C.

The figures in this diagram are not intended to be absolute or representative of the actual chair, but are only shown to illustrate the method of marking.

Now to mark the covering, as shown in diagram, Fig. 219C, presuming that the first row of buttons is nine inches above the seat, draw a line across the back of the goods, eleven inches from the bottom; find the center of the line thus drawn and on each side of it, presuming that the buttons of the back are five inches apart, mark points on either side distant three and one-quarter inches from the center, thus defining a space six and a half inches to cover the space between the two middle buttons. On the outside of each of these make other marks six and a half inches distant; this, as shown in the diagram, leaves seven inches to cover the remaining space at each side.

The covering thus defined, however, does not allow for the material which will be required to reach from the front of the lower rail of the back down to the back of the seat. Excepting in the case of a very cheap covering, it is well to piece out the bottom of the fabric with some inexpensive material, such as ordinary cotton, to reach from just under the rail at the bottom of the back down to a point where it can be tacked on the back rail of the seat.

Instead of a strip of fabric a piece of stout twine may be used attached to the lower edge of the covering in line with each button, as shown in Fig. 219D. This twine is drawn through between the stick and the seat, after the first row of buttons has been put in, and, though it is attached only to four places in line with four buttons, it serves the purpose of holding down the whole bottom of the back.

After the covering has been all marked, the four points indicated by the crosses in Fig. 219C are tied down with button and twine to the corresponding four points in the bottom row of button marks of Fig. 219B.

Along the lower edge of the fabric, on a line straight down from each of the buttons, attach the twines already referred to and pull the fabric through between the rail and the seat.

The purpose of drawing the fabric in this manner is to form three distinct pipes of the material, to be stuffed up so that they round over nicely, leaving a deep depression from button to seat. All four of the bottom twines are pulled through and temporarily tacked before any stuffing is inserted.

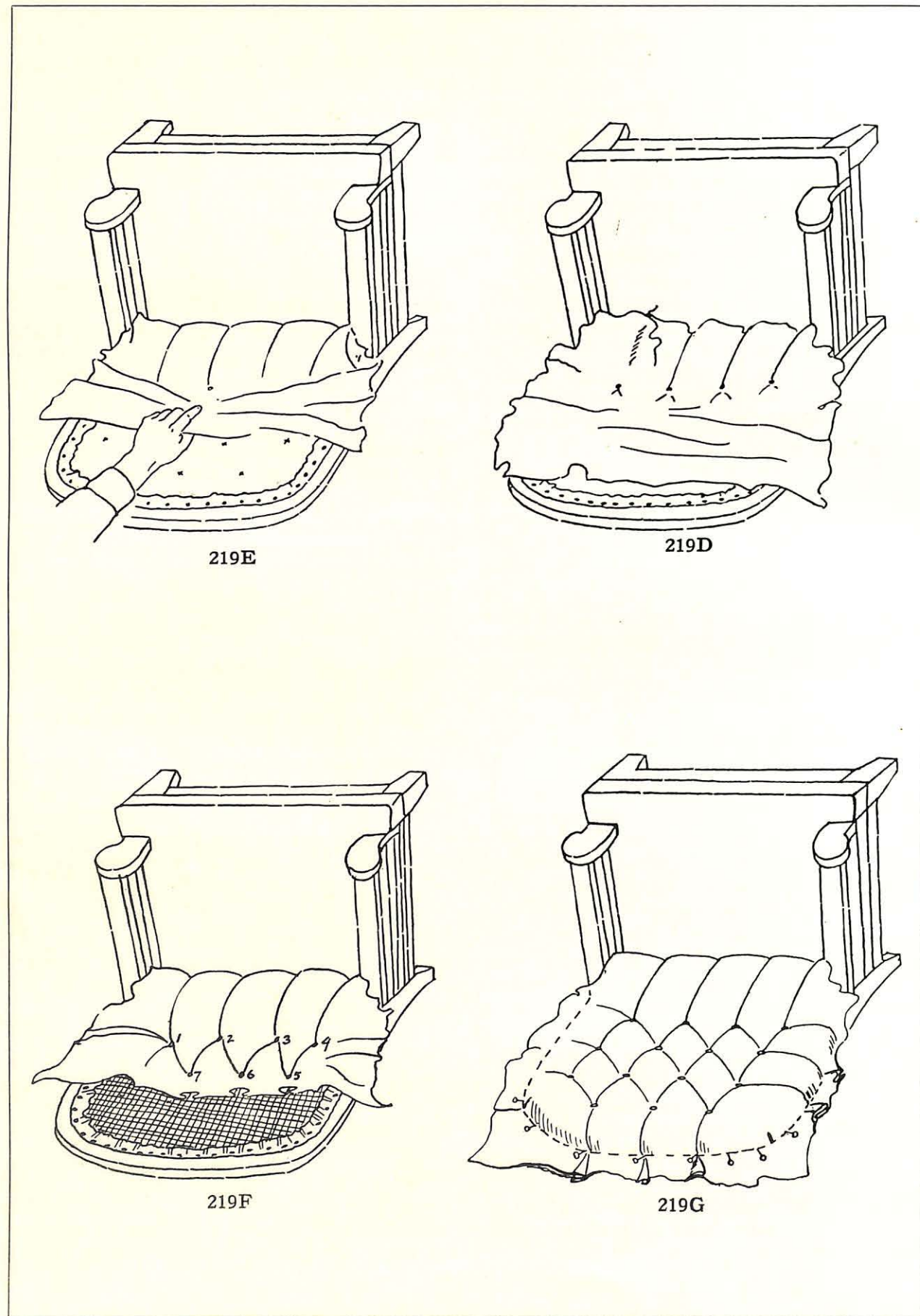
The manner of stuffing up the slack material and tying in the next row of buttons has been fairly well covered in connection with chair, Fig. 218. In that connection, however, the fabric, instead of being pleated from button to button, was indented away from the button by forcing a crevice with the end of the packing rod. It will be noticed that the crosses for the second row of buttons are each in line with the center of the space between two crosses on the bottom line, so that in drawing down the cover of the second row for buttoning one must be very careful to keep the thread of the covering straight.

Now grasping the covering at the center and noting the center cross of the next row of marks on the back of the covering, the covering is pulled down so that the button mark comes over the button mark on the line, Fig. 219E, and with needle and twine this button is pulled into place, and so on, until all the buttons of that row have been pulled in.

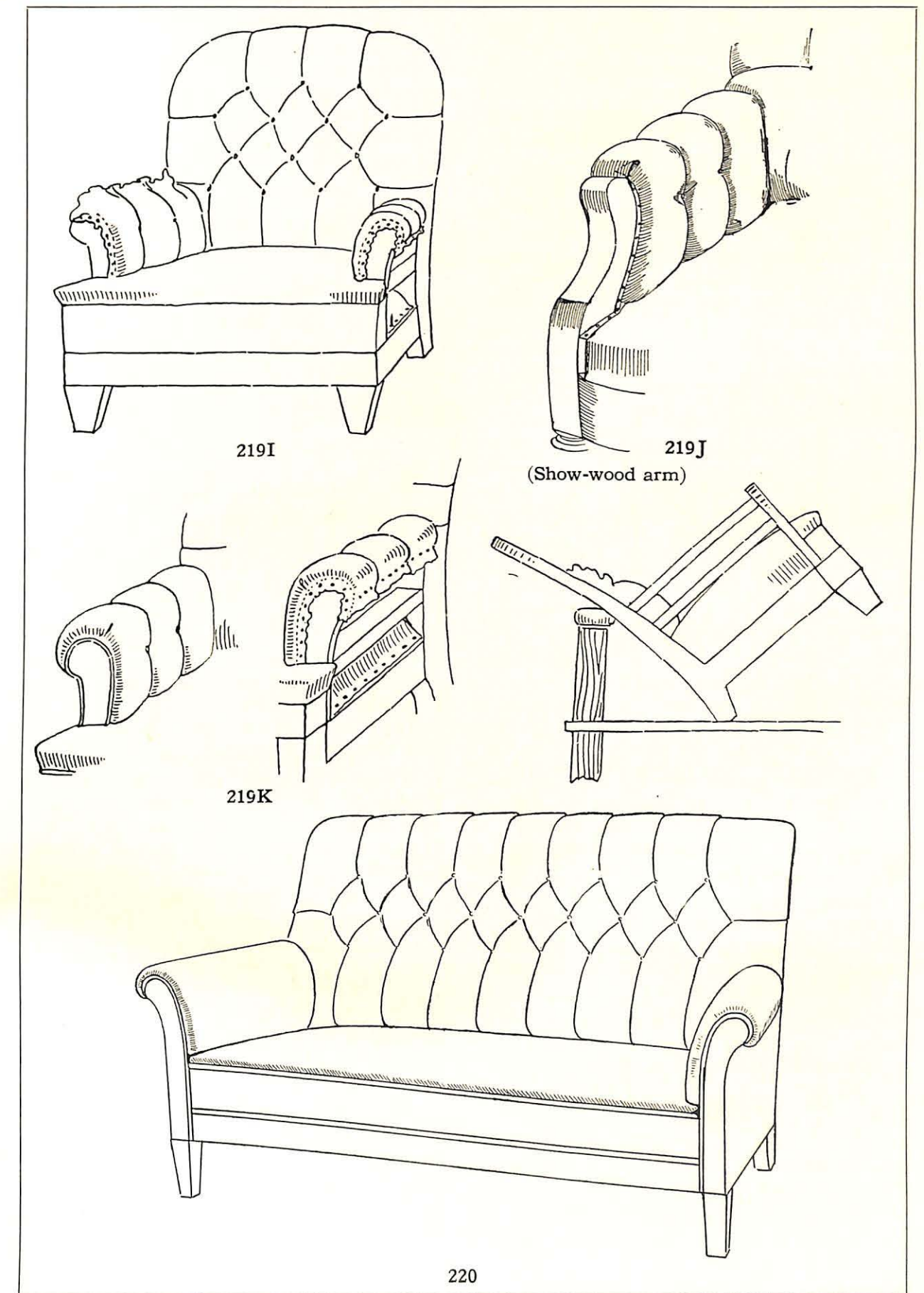
If, after the buttons are pulled down, it is found that the fabric is slightly slack, it is a simple matter to insert a little more stuffing under that already in place, to bring about the desired plumpness.

It will be noticed after this has been done that from button to button, Fig. 219F, there is a certain fullness of fabric which has not been filled up. This fullness is formed into pleats from button to button, if, indeed, they have not already been formed to a considerable degree by the pulling of the buttons into place.

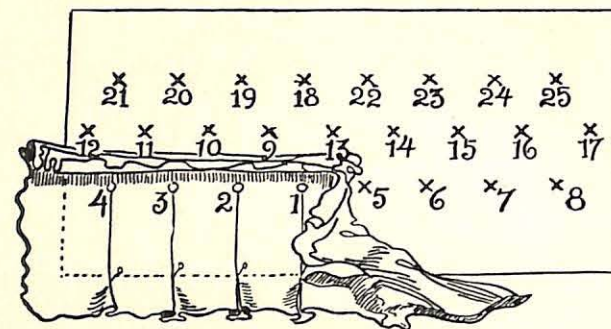
All pleats on the surface of a tufted back are turned so that the wear comes with the pleat, so that in this case the pleats from 1 to 7 and 2



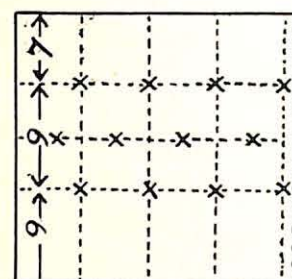
DETAILS OF PLEATED BUTTONING



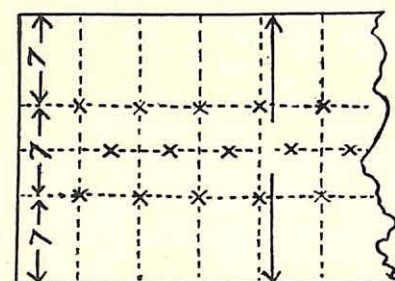
DETAILS OF PLEATED BUTTONING



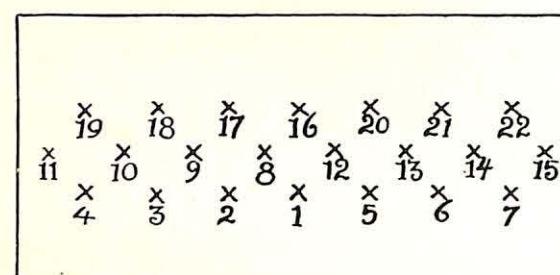
220E



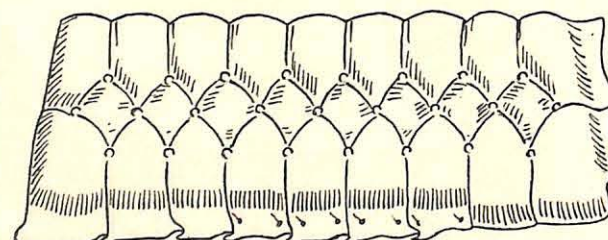
220A



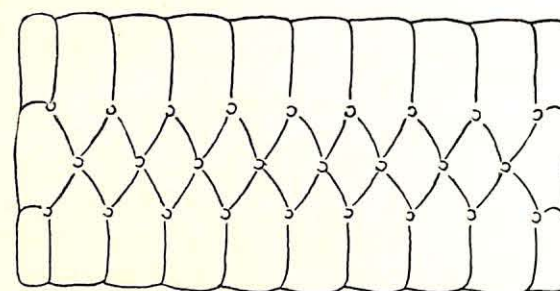
220B



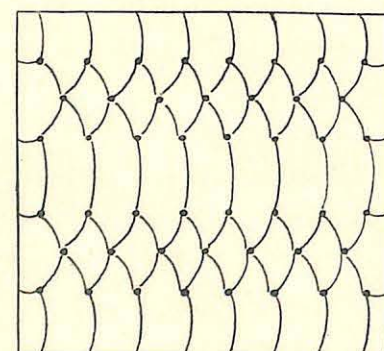
220F



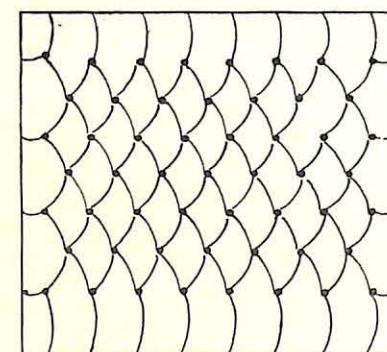
220G



220C



220I



220J

DETAILS OF PLEATED BUTTONING

to 7, Fig. 219F, face downward and toward each other. The third row and then the fourth row of buttons are pulled in in the same way and the top finished off with pipes, as explained in connection with the chair, Fig. 218.

Pleats are formed from the side buttons also and the whole back finished up to the stage indicated in Fig. 219G.

The arms are next canvased as indicated in Fig. 219H. Each arm is marked into three equal divisions to indicate place for buttons as shown in Fig. 219.

By marking for the buttons either just below the wood or in some instances on the wood, where tack buttons may be used, the covering for these arms is determined in the same way as already explained for measuring the back, taking the dimensions each way over all and adding tacking allowance, an extra inch and one-half between each two buttons for fullness, and an extra allowance, also of two or three inches over and above the measurement from the seat up to the frame and out to the outside edge.

After the covering has been cut and marked and buttoned into place, tacking twines are attached to the lower edge, as already explained for the back, forming pipes, the slack stuffed up full and the top of the arm finished by forming the surplus material into pleats, which extend from the button up and across the top of the arm, as indicated in Fig. 219I.

Where the arm joins the back, instead of inserting a button, the edge of the covering is turned under, stretched tight each way and fastened so that when stuffed up it forms simply a crevice where the two meet. At the front of the arm the fabric is first slip-tacked so as to form a pipe, and after the stuffing has been inserted, is permanently tacked into place with as few pleats as possible. It would be impossible to tack the covering along the front of the arm and across the top without having to have a pleat at the corner, and there is no need in attempting either to do away with it or disguise it. On the contrary, it is much easier to make this pleat as definite as possible so as to take in all of the slack in a single pleat, Fig. 219J.

The front of the arm is finally finished with a welted panel as shown in detail Fig. 219K.

An alternative treatment of this same chair with plain arms is shown in Fig. 219L.

The simple forms of pleated buttoning, such

as we have illustrated in connection with Figs. 218 and 219, are not hard to apply to different pieces of furniture once one has grasped the method. Within certain limitations the principles of diamond buttoning or tufting, as it is referred to in the abstract, may be applied to practically all kinds of upholstery, from the luxurious davenport to the delicate reception chair. Perhaps the most common form is that illustrated in the finished settee, Fig. 220, consisting of three horizontal rows of buttons which form diamond-shaped spaces across the back. The space to be upholstered on the back of a chair or settee of this type usually is not more than from eighteen to twenty-four inches high; for this reason it is not advisable to mark the buttons more than four or four and one-half inches apart horizontally.

To mark the back after having been canvased, as previously explained in connection with other pieces, three lines are ruled across the canvas on which points for buttons are marked, as shown in Fig. 220A. By comparing 220A with 220B it will be noticed that the first row of buttons on the former is nine inches from the lower rail, second thirteen and one-half inches from the lower rail, and the top one eighteen inches from the lower rail, while in 220B they are respectively ten and one-half, seven and fourteen inches from the lower rail. Either way would be correct so far as working is concerned, but 220A will be found to give a better appearance.

Fig. 220A shows the same distance left between the outside button on the lower row and the frame as is left between the buttons, making all the pipes across the back perfectly uniform, as is shown in Fig. 220E, in which the buttons have been numbered. It will be seen that button 17 is placed nearer the frame than button 8 of the bottom row in order to complete the diamond, eight buttons in the bottom row and nine in the center row, giving the finished effect of Fig. 220.

In Fig. 220C the center row of buttons has been evenly spaced but the position of things has been reversed, making nine buttons on the bottom row and only eight in the center row, making a small pipe at each end of the back between the last button and the frame, a method not to be recommended.

In Fig. 220F we show the method of marking the back so as to have an even number of buttons in the center row and an uneven number in the bottom row, but the same have been prop-

erly spaced by allowing a slightly larger distance between the buttons. To mark either of these backs after the lines have been ruled across one should follow the order of numbering on Figs. 220E and 220F. In the former, buttons 1 and 5 are equally distant from the center point of the back; 2, 3 and 4, etc. are measured the same distance and marked accordingly; then 18, 19, 20, 21, 22, 23, 24 and 25 are marked to correspond with the bottom row, after which by ruling from 1 to 19 and from 1 to 22 and following across the entire center row, all except 12 and 17 are located without any trouble. Buttons 12 and 17 are measured out on the center line and marked a corresponding distance.

In Fig. 220F button 1 is in the center and is the first point marked, after which the method of procedure is the same, the only difference in the two backs being that one has three buttons more than the other.

Fig. 220G shows the appearance of the back during the process of tacking down the top edge of the pleats and has been sufficiently explained in other connections to make nothing further necessary beyond the illustration.

For high backs, such as the back of a cosy corner or a high davenport, interesting variations may be made in the buttoning by simply dropping out one row of buttons. Note the difference between 220I and 220J. Both panels have been marked the same but in 220J the fourth row of buttons has been dropped and by drawing the fabric from the third row to the fifth row and stuffing the surplus to form pipes an elongated diamond is created that makes a pleasing variation to the straight diamond repetition, as is the case with Fig. 220I.

We have already in various other chapters described the entire principle of stuffing up the bottom row of pipes, forming the pleats and pulling in the buttons of diamond tufting so that explanation need not be necessary here. To show the order of progression, however, we have arranged Fig. 220E to emphasize the point that the easiest plan to follow is from the center to the outside edge; button 1 is followed by 2, 3, and 4; then 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 and so on in the order as they are numbered.

We have already covered in this chapter the matter of pleated buttoning for square-shaped backs, these having been covered in connection with Figs. 220 to 220J. We illustrate in further

explanation of pleated buttoning a number of pieces which show irregular backs; also two pieces which show over-stuffed tops. The actual upholstering of such pieces should in all respects follow the same procedure as that outlined in connection with Figs. 220 to 220J.

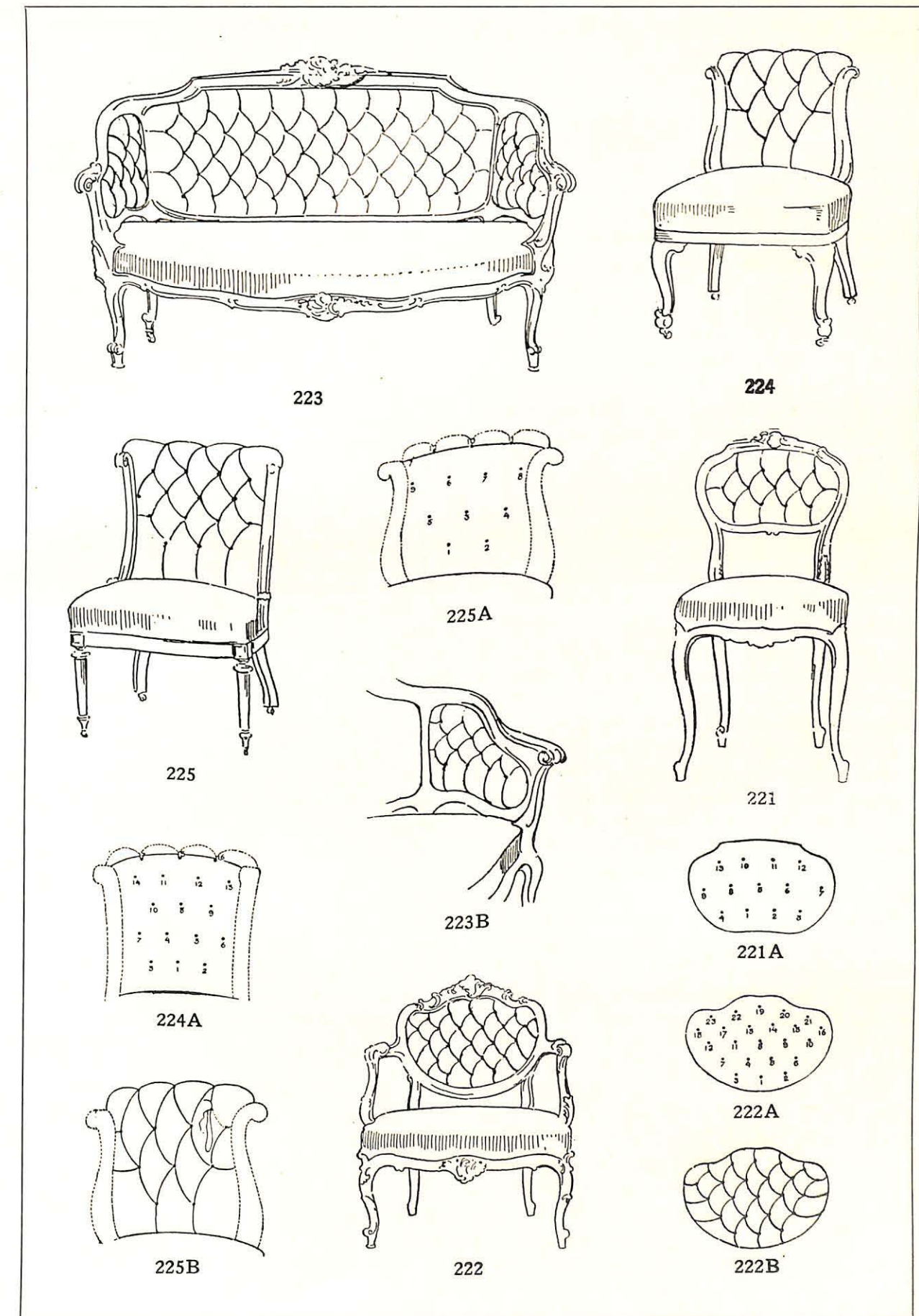
The fullness allowance between the buttons of Figs. 221, 222 and 223 is practically the same as that mentioned with Fig. 220, one to one and one-half inches extra. It should be borne in mind, however, that a thick covering requires more fullness than one that is very thin. For instance, plush will require the full one and one-half inches or maybe more, whereas a very fine satin damask will make a good appearance with one and an-eighth or one and a-quarter inches allowance for fullness.

The fullness allowance, moreover, governs the thickness of the upholstering, so that if the shape of a piece requires very shallow upholstering this should be borne in mind when marking the buttoning allowance. For very deep upholstering one and three-quarter inches might be allowed for fullness between buttons, but anything more than that, unless the buttons are widely apart, is apt to become "sloppy" in a very short time. There can, however, be no set rule any more than there can be a set rule regarding the number of buttons to be inserted within a given space. It can only be fixed according to the judgment of the upholsterer with the actual piece of furniture before him.

In 221A, 222A and 223A we show the outlines of the backs of Figs. 221, 222 and 223 marked for buttoning, the button marks numbered from 1 up to show the order in which they are inserted.

In Fig. 222 it will be noticed that a pleat is formed from button 10 down to a point on the frame corresponding with button 6; and the same is repeated in connection with button 12 and with buttons 16 and 18.

In Fig. 221 all the pleats have been carried straight out or straight down from the outside buttons because the shape of the back lends itself readily to the appearance this makes. To carry out this same plan, however, with Fig. 222 would make a very awkward appearing back, for the pleats from the buttons to the edge of the frame on each side would be at variance with the pleats from button to button, as shown in Fig. 222B. By comparing Fig. 222B with Fig. 222 it will be



DETAILS OF TUFTED BACKS

seen that the latter is much more to be preferred.

The arms of the settee Fig. 223 are also pleated in the same way, that is to say, from the buttons to the outside edge of the frame in line with the pleats from button to button.

In Fig. 223B we show a detail of the arm, and in Fig. 223C another detail showing the buttons numbered according to sequence, as they are put in.

Figs. 224 and 225, though somewhat similar in design and form, are yet sufficiently different to make it desirable that each be illustrated. The back of Fig. 224, though not so shown in the illustration, is slightly curving, following the shape of the seat; that of Fig. 225 is more nearly flat.

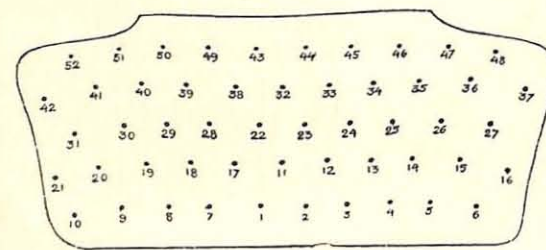
These chairs after having been canvased are marked for buttoning, as Fig. 224A and Fig. 225A, the top row in each case going on the top rail either as a tack button or sewn in through holes already bored in the rail to receive it.

It will be seen in connection with each of these chairs that the width across the top of the

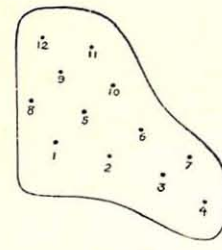
back is greater than at any other point, so that in measuring for the covering the width measurement is taken across the top rail, pinching up an allowance for buttoning as each mark is passed, while the upright measurement must allow for the covering going completely over the top rail and tacking underneath.

If it is found that because of the strain put upon the goods the pleats which go over the edge of the top rail open instead of lying flat, sew these pleats with a fine thread and circular needle, blind-stitching them, as shown in 225B.

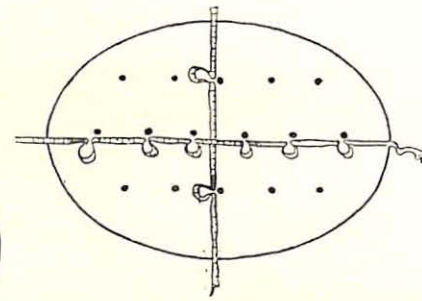
Fig. 226 shows an oval back somewhat similar to 221, the difference being that the increased height is provided for by elongating the diamonds instead of adding a fourth row of buttons. In this back, also, it will be noticed that the rows of buttons have been kept on straight lines instead of having the rows follow the shape of the frame, as has been the case with the others we have mentioned. Fig. 226 also shows the method of measuring for the covering.



223A



223C



226

BUTTONING CIRCULAR BACKS

THUS far the examples we have used in explanation of pleated buttoning have been those which presented a fairly flat surface for buttoning.

In Fig. 227, the first example here illustrated, we find a chair, the back of which is considerably rounded or concave. Also we notice that the chair back extends around to cover part of the sides, making an abrupt angle at each of the two back corners.

After the back is canvased if the bottom row of buttons is marked following around the chair, as shown in diagram 227A, the distance from button 1 into the corner angle and out to button 2 will be greater than the distance directly across from 1 to 2, as shown by the dotted line.

Presuming that the space from 1 to 3 is four and a-half inches, from 1 to the corner would be two and a-quarter, and from the corner to 2 also two and a-quarter; while the distance across the corner from 1 to 2 would be only about three and a-quarter inches, an inch and a-quarter less than the proper space. It will be seen also that if six inches is allowed for buttoning between buttons 1 and 3 there will be almost double fullness between buttons 1 and 2.

Were it not for the fact that button 5 comes right into the corner it would be a simple matter to make button 2 four and a-quarter inches away from button 1 across the corner in the direction of the dotted line and simply stuff it full as if it were flat; but in this way button 5 would be so deep that it would pull the other upholstery all out of shape. The better plan is to slightly increase the distance between 1 and 2, making it say, three and a-quarter inches, and mark the covering for a narrow pipe allowing only one and a-quarter inches for fullness instead of the inch and a-half allowed between the other buttons 1—3 and 3—4, etc., on the rest of the back. This will make a narrow pipe shown at X, Fig. 227, but the result will be satisfactory in the completed chair.

Fig. 228 in general form is somewhat similar to Fig. 227, the main difference being that the upholstery follows around, covering the entire

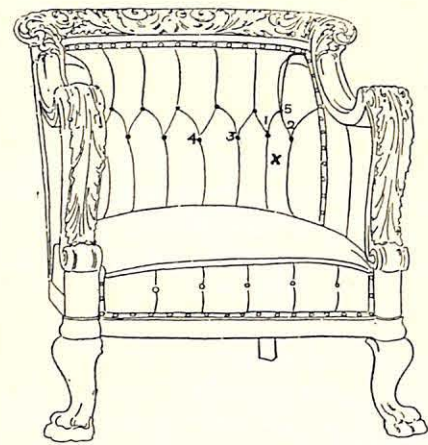
inside, and is stuffed over the top. The frames of these chairs are usually somewhat as shown in Fig. 228A and are canvased as 228B.

It will be noticed that instead of using a stick across the back as a bottom rail on which to tack the canvas a wire has been run around to which the bottom of the canvas is sewn, the reason being that the wire follows around instead of remaining flat across, as it would be if the stick were used.

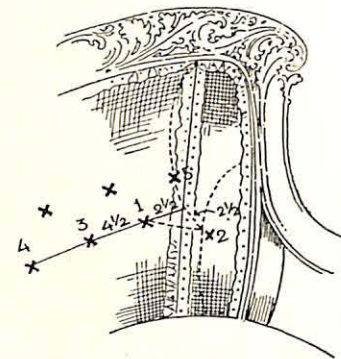
Chairs of this character are usually made with a very heavily over-stuffed top, adding very much to their luxuriousness. To assist in providing this appearance a soft pad is stuffed in canvas over the top of the chair, as shown in Fig. 228C, the pad being made to round over the entire top rail; then when the covering is buttoned over and the top finished with pipes it presents the appearance shown in the finished chair. Where the upholstery is very soft it is well to lead a twine from each button on the top row up over the upholstery so as to draw the fullness into a crevice. This assists in confining the stuffing material by dividing the covering into separate pipes, the depression or crevice taking up the fullness that would otherwise be formed into a pleat. See diagram of left corner, Figs. 228D and H and of back, Fig. 228G.

Chairs of this kind are usually covered by joining the arm covering into the buttoning of the back, thus in measuring the cover for the back the tape line will be started at X, Fig. 228D, allowing for fullness and tacking, then to 2, pinching up the fullness allowance, to 3, 4, 5, 6, 7 and 8, and then out to X, on the right of the frame with the fullness and tacking allowance added. The surplus to the left of button 1 is cut away, as shown in Fig. 228E. The arm is then joined into the back by turning in the back edge, and drawing it into position with the button and twine at mark 1, as shown in Fig. 228F, finishing from 1 to X by turning the corner of the fabric under to make a pleat.

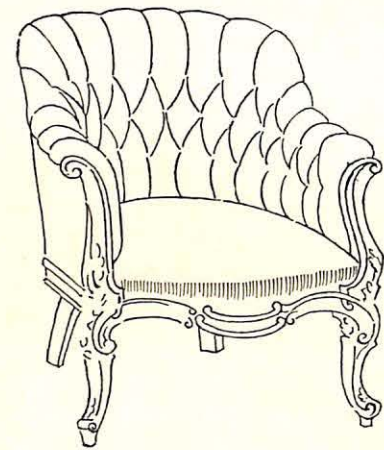
Where a more-heavily over-stuffed pillow is used, if made in leather it will be apt to wrinkle on a line with the buttons of the top row, so to



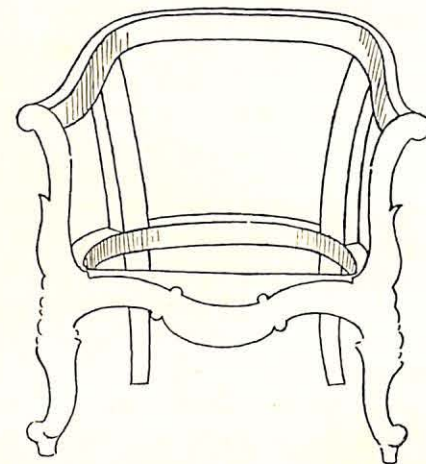
227



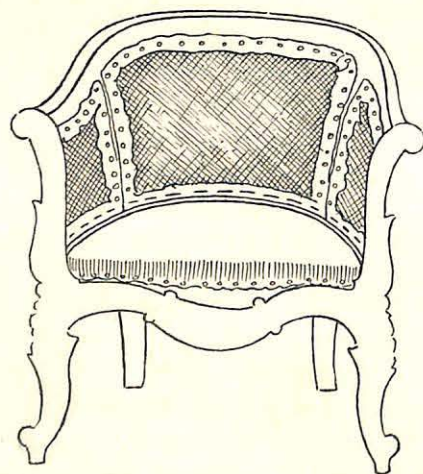
227A



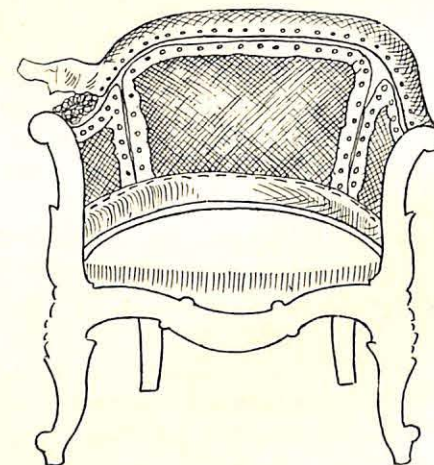
228



228A

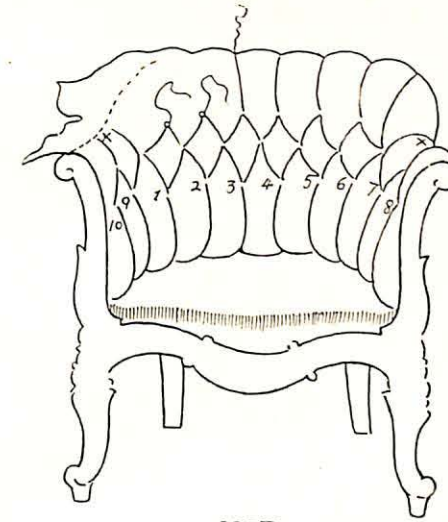


228B

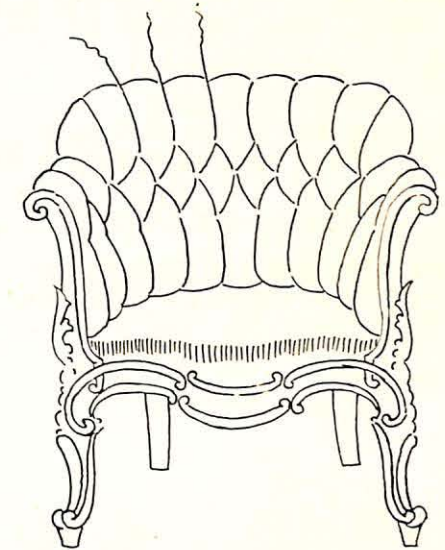


228C

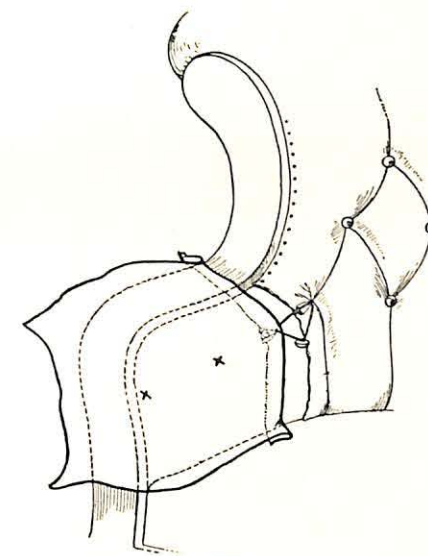
DETAILS OF CIRCULAR BACKS



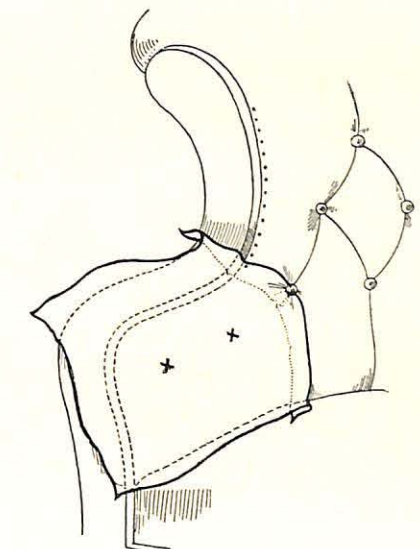
228D



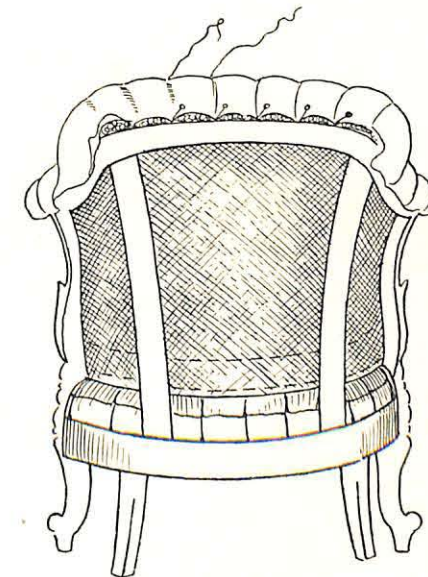
228H



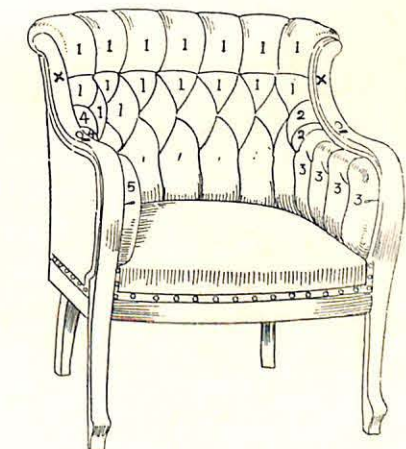
228E



228F



228G

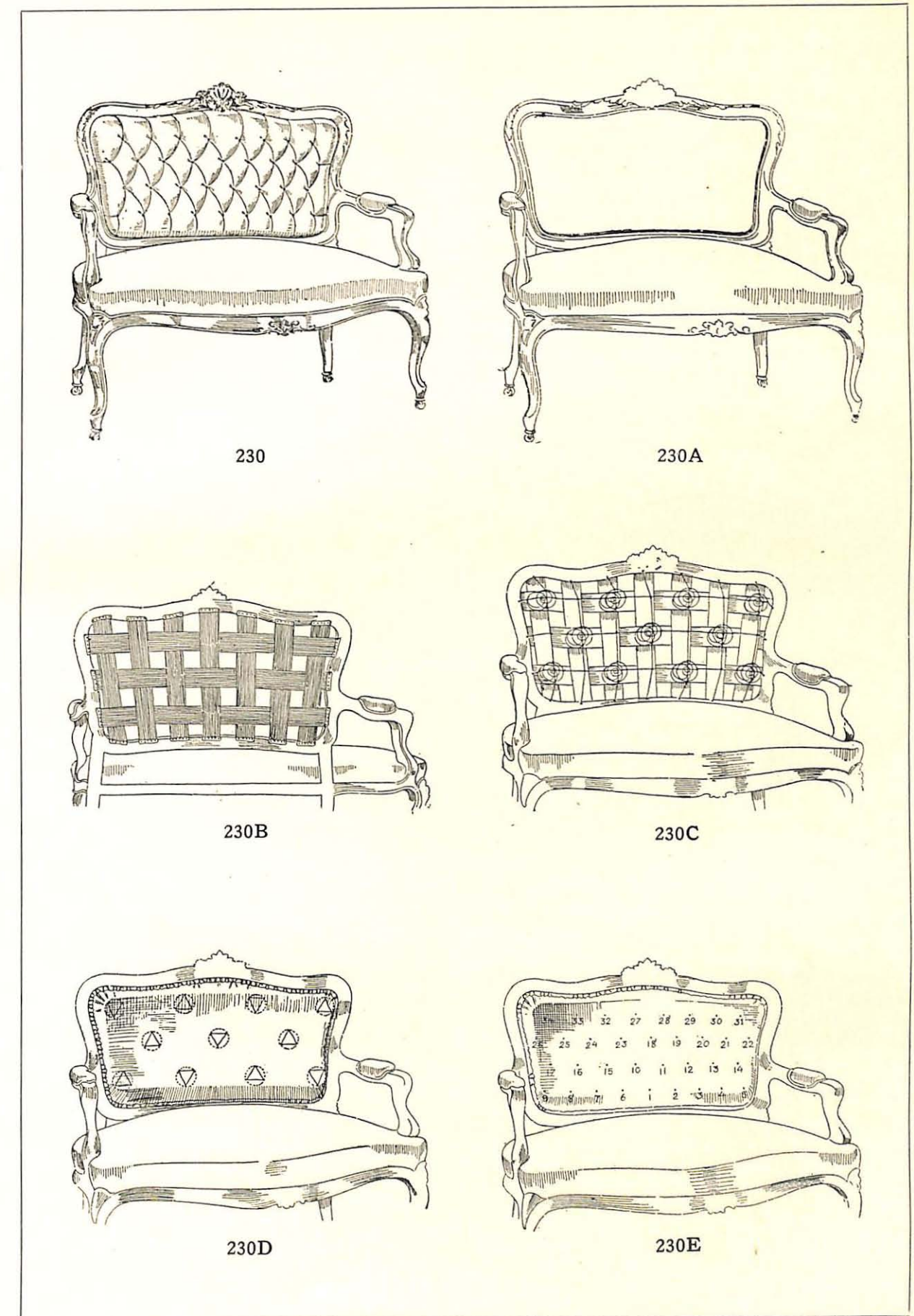


229

DETAILS OF CIRCULAR BACKS

avoid this the fullness on this line is made into a pleat which runs from button to button (see 4—2, Fig. 229). This Fig. 229 is somewhat different to the last mentioned chair, in that it is covered in five pieces, one piece providing for all the space marked 1, 1, etc., two other pieces providing for each of the arms, 3, 3 and 5, 5, and still two other pieces being used to fill in the small spaces marked 2, 4. The covering is divided thus simply as a matter of economy, for it is obvious that to cover the back from 3 on one side

around the back to 5 on the other side would call for a much greater width than is required for the top of the back. Too much care, however, cannot be exercised in joining these individual pieces, and where the fabric permits, it is much better to cut and sew these joins so that the seam is within the pleat rather than to leave the loose turned-in edges, though in the case of a tapestry or a damask the meeting portions can be blind-stitched with a circular needle.



DETAILS OF TUFTED SPRING BACKS

TUFTING SPRING BACKS

THE buttoned pieces thus far illustrated have all been stuffed up on a flat canvas surface and while buttoned upholstery on such a surface is much softer than plain pad upholstery, to obtain greater luxuriousness we must use a combination of buttoning with a resilient spring foundation.

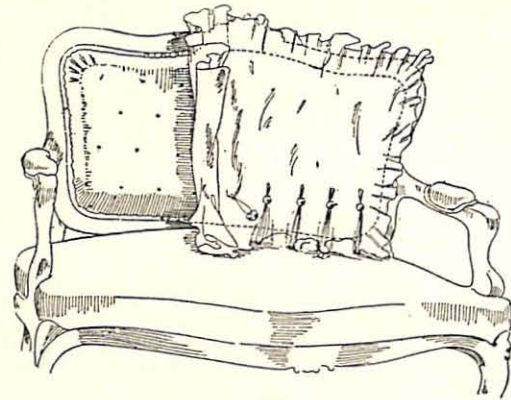
We have already in connection with other pieces, for instance Figs. 215 and 217, indicated the method of springing up chairbacks so that the drawing should be all that is necessary to show the application of the principle to a sofa like Fig. 230. The drawings, however, Fig. 230A to Fig. 230C, will refresh the memory and avoid referring back to the other examples mentioned. In Fig. 230D we start with the back of the sofa sprung-up and canvased. The burlap is now to be the foundation of the buttoning, so it is necessary that the top of each spring should be tightly sewn to the burlap, as indicated in Fig. 230D, but the stitches which sew the spring to the burlap should not catch more than the top coil of the spring and a knot should be tied at all three points on each spring. After this has been done the burlap is marked for buttoning just as if it were a flat level surface, as described in connection with Fig. 223, and the marked back allowing for four rows of buttons will now appear as Fig. 230E.

We have already in connection with other pieces explained the methods of dividing the space of a back for buttoning and of marking the cover with the allowance for fulness between the buttons, so that it should be sufficient here to say that exactly the same procedure is followed where the burlap is a spring foundation as if it were stretched flat and supported by webs to keep it in condition. It will be noticed in Fig. 230E

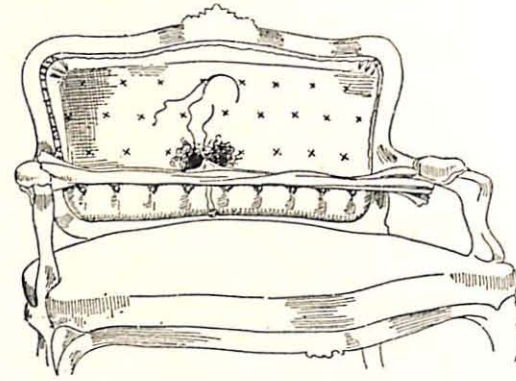
that we have again numbered the button marks as on former occasions and while we have commenced in the center of the bottom row this is not really necessary because after the covering is marked it is just as easy to commence at one side, Fig. 230F, as in the middle, but in all the other rows it is essential that the middle buttons be the first put in and then work from the middle to the outside each way, according to the numbers, till all the buttons have been inserted.

When buttoning on a flat burlap foundation without springs beneath the burlap the insertion of the buttons is a simple matter because all of the knots can be tied from the back and the straight slip-knot, mentioned in connection with the tying down of cushions, will answer our purpose. Where, however, the burlap is supported by springs which in turn rest on a close foundation of crossed webbing strands it is practically impossible to work from the back of the burlap.

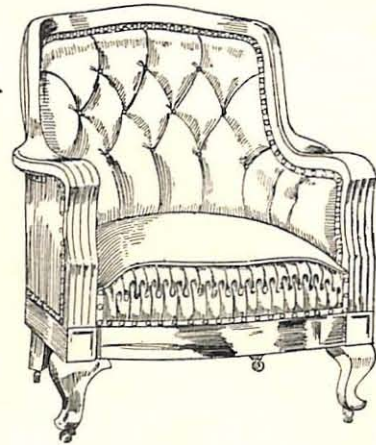
There are two ways in which the knots may be tied under the cover and practically the same methods may be employed on top of the cover but under the button. The first method is to use a circular needle, as indicated in Fig. 230H. The needle is first entered through the burlap as shown in Fig. 230G, then up through the covering and through the button, then down through the covering again and tied into the slip-knot as shown in Fig. 230J, pulled tightly into place and fastened off by additional knots around the short end of the twine. The other method of buttoning is to use a double-pointed straight needle which is passed down through the burlap, as shown in Fig. 230K, drawn partly out through the webbing so that the top point may be shifted over, and forced back up again through the burlap so as to



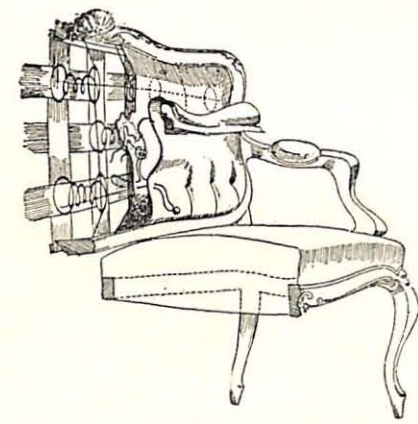
230F



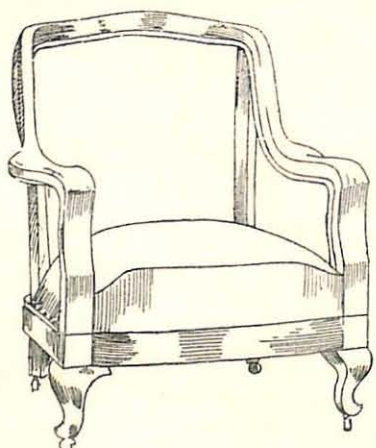
230I



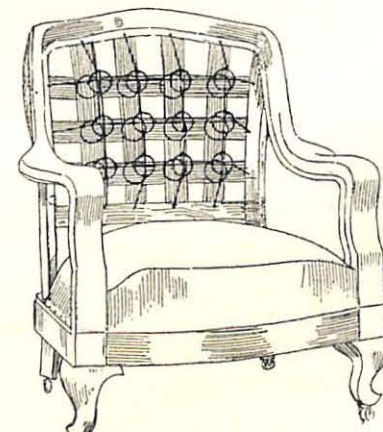
231



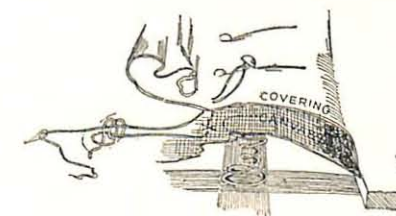
Side view of 230L



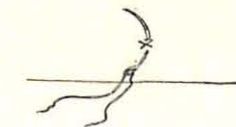
231A



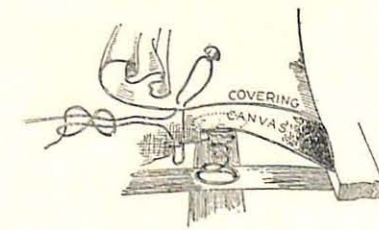
231B



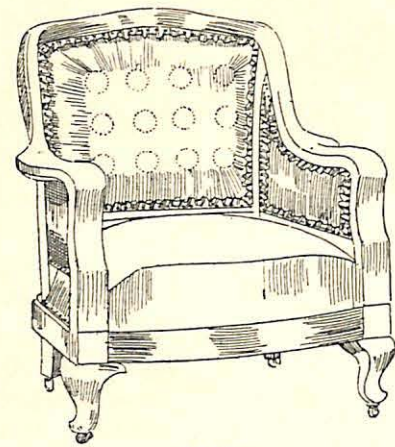
230H



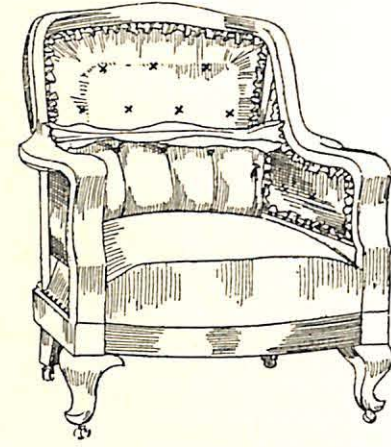
230G



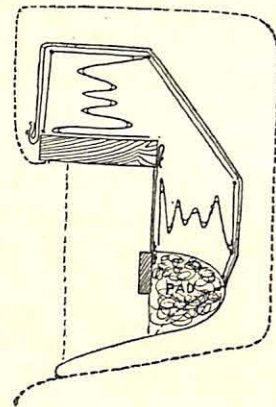
230J



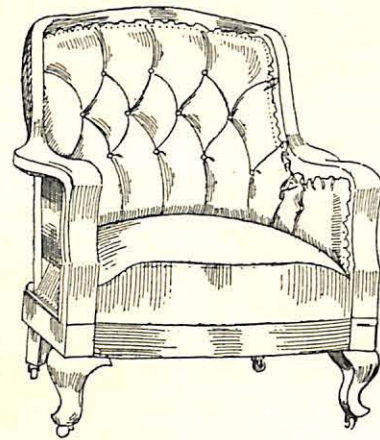
231C



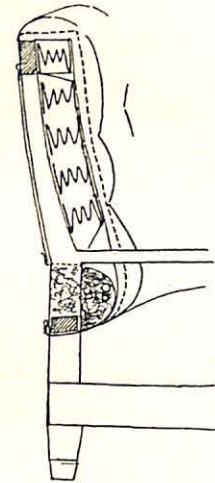
231D



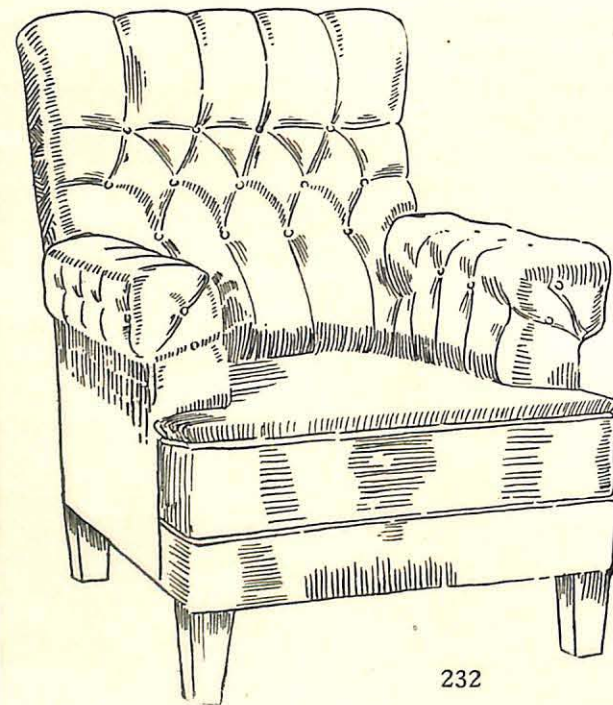
Arm detail



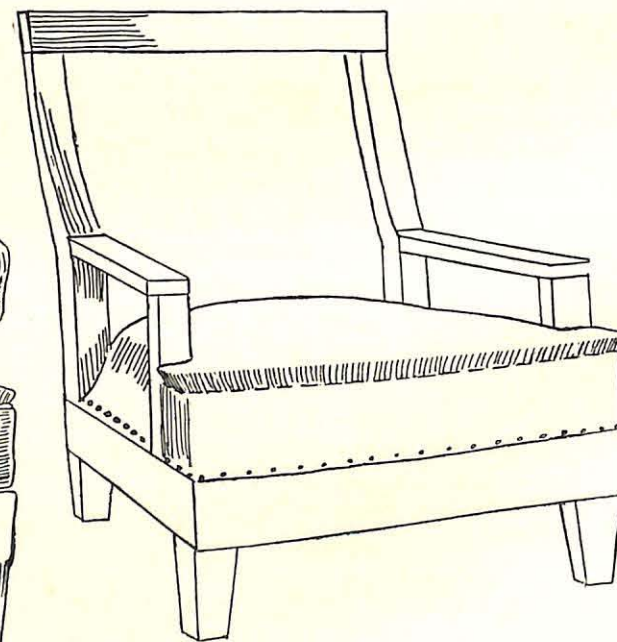
231E



232C



232



232A

DETAILS OF TUFTED SPRING BACKS

make a stitch on the under side, being careful not to catch a coil of a spring or a spring twine which does not lie close to the burlap. After the stitch in the burlap has been made, the needle is forced up through the covering at the place marked for the button, then through the eye of the button, back down through the covering and out, to be tied as described above following the course indicated by the dotted line of Fig. 230K. The other plan referred to, that of tying the knot between the button and the face of the covering, employing either a circular or straight needle, follows the same procedure as we have just described with the exception that the start is made from the top of the covering instead of from underneath. Thus the knot is tied after the needle has been passed through the button, as shown in Fig. 230M, and when the button is pulled into place the final knots are tied beneath the button, as Fig. 230O, and the ends clipped close. This latter method is not so satisfactory as the first methods described, but is preferred by some, and for that reason we include it. In all other respects the buttoning of simple backs which have a spring foundation follows the methods described in connection with Figs. 221 to 225.

Our instructions on the upholstering of furniture pieces have now progressed to the point where there must of necessity be a certain similarity between the treatment of the pieces mentioned. Thus, Fig. 231, though differing in general appearance from Fig. 230, follows identically the same principles. The back is webbed the same. The springs are used in the same way and the method of buttoning is the same. No explanation, therefore, should be required for Figs. 231 A, B, or C.

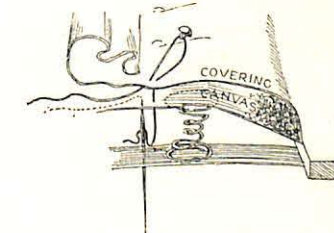
It will be noticed by examining Fig. 231 that there are five buttons in the bottom row across the back, the outside one on each side being at the juncture of the arm covering and the back. Therefore, in buttoning a back, as Fig. 231D,

instead of inserting buttons at the outside marks, right and left, the covering is simply confined by a twine stitched through and knotted so that when the arm covering is joined into place with a button the covering appears to be continuous and the join is concealed in the pleating, after the manner explained in a former chapter in connection with Figs. 228E-F.

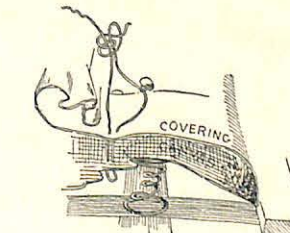
Thus far we have treated these buttoned-back pieces as if they were all upholstered directly in the cover. In the case of a chair such as Fig. 231, however, it would be very much more satisfactory to upholster it first in a fairly substantial grade of muslin or cotton following the method outlined in connection with Fig. 230, but allowing the knotted stitch of twine to hold the cotton in place without employing any buttons. Where this is done it is neither necessary nor desirable that the knots should be between the cotton and the canvas, as explained in connection with Fig. 230H, the knot above the cotton, as shown in Figs. 230M and 230O, minus the button, being perfectly satisfactory and much more easy to employ.

Where the chair is upholstered in cotton to be covered afterwards it will be found advantageous to turn under all the edges of the cotton, keeping the rabbeted tacking edge as unencumbered as possible, so that the final covering may be tacked, as indicated in Fig. 231E, trimmed off with a knife and gimped.

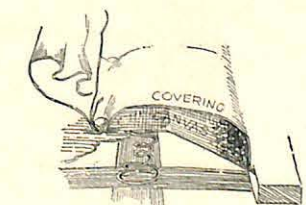
Though an entirely different chair to the last one illustrated, Fig. 232 shows but a single progressive step beyond Fig. 231. After the seat has been upholstered, as shown in Fig. 232A, the back and arms are canvased, as shown in Fig. 232B, and a pad stuffed with tow or other inexpensive filling is formed where the back and arms join the seat. The purpose of this pad is to assist in defining the outline of the upholstering and also to help fill in the depth of the bottom of the back, which, as will be seen in the cross section



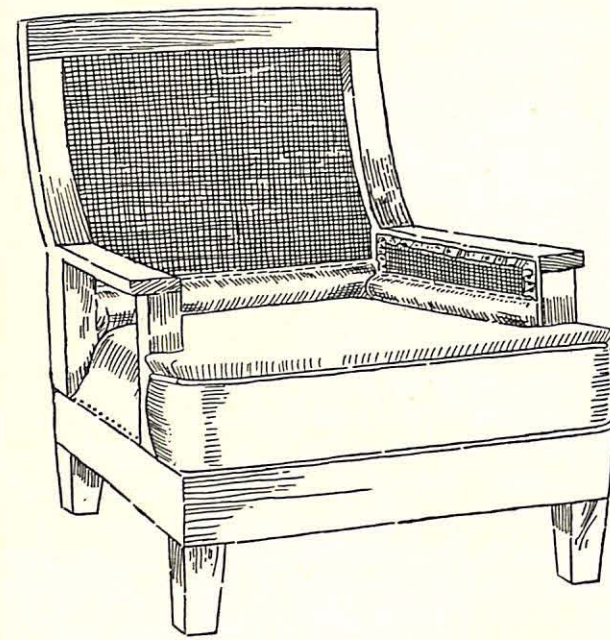
230K



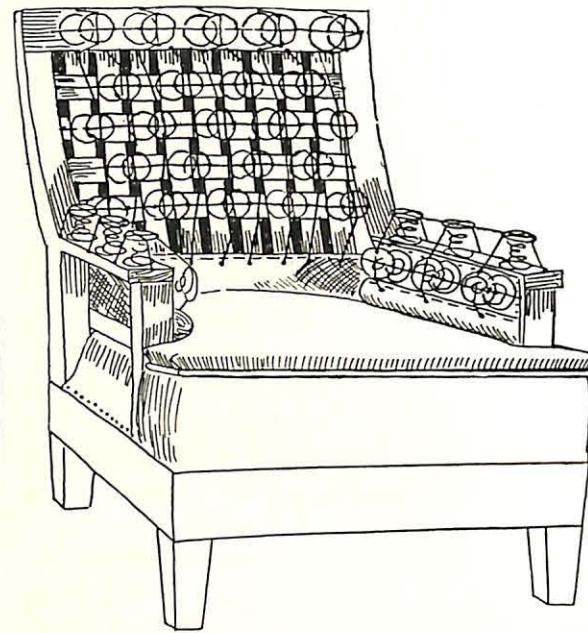
230M



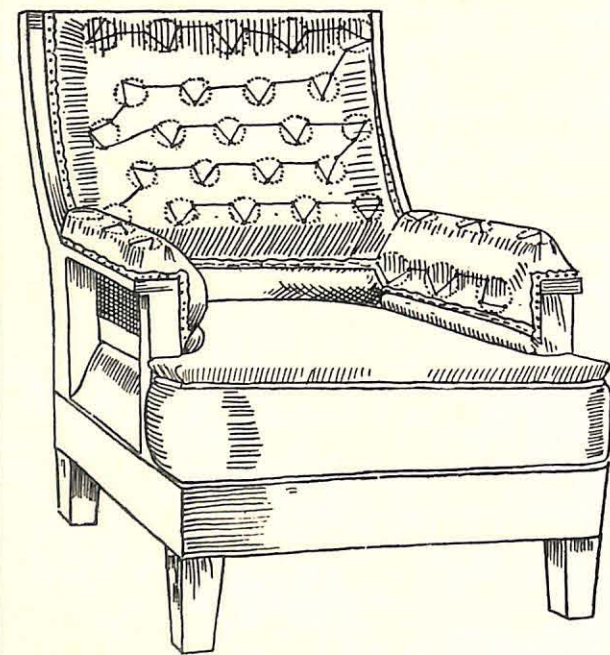
230O



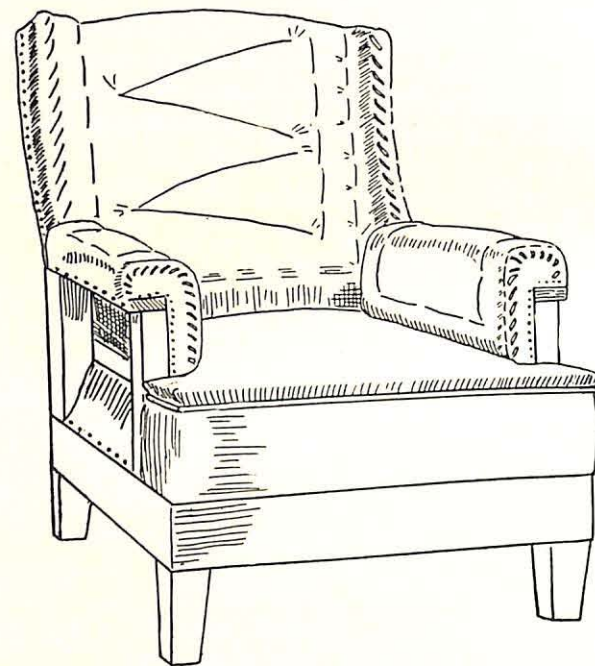
232B



232D



232E



232F

DETAILS OF TUFTED SPRING BACKS

diagram, Fig. 232C, is much deeper at the base than at any other part of the back to conform with the curve of the human back.

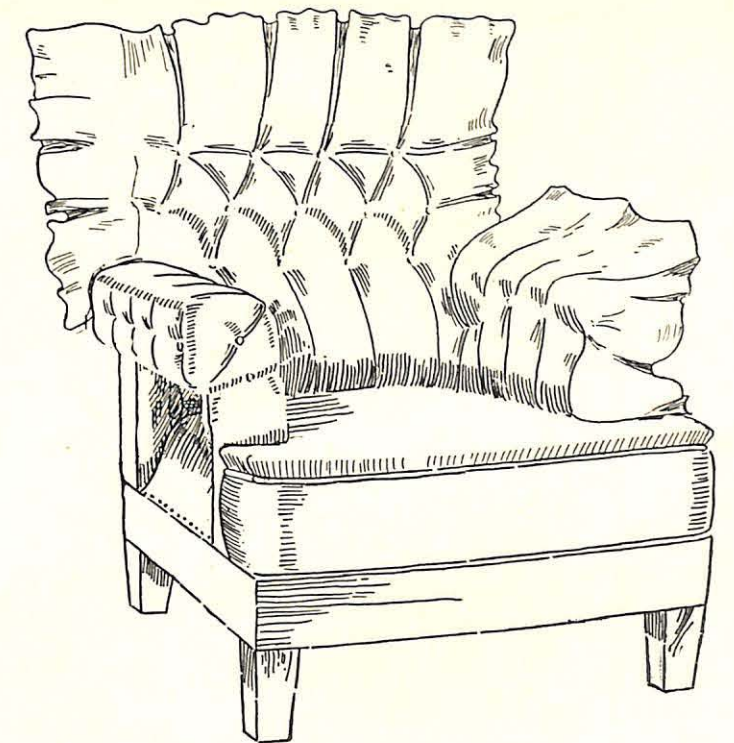
These pads also serve as supports for the twines which tie down the springs, and to them is fastened the bottom of the burlap by which the springs are covered. The pillow springs, which are used throughout the back, may be tied down independently as we have already explained in Fig. 231B, or they may be tied down in the chair after having been placed as shown in Fig. 232D. After the springs have been covered with canvas as shown in Fig. 232E, they are securely knotted by means of a circular needle and stitching twine and the whole back as well as the two arms lightly double stuffed and the edges stitched as shown in Fig. 232F.

Care must be taken in applying the double stuffing not to interfere with the resiliency of the springs and only a sufficient quantity of stuffing is used to give the required form. Moreover, great softness is provided if an extremely light and pliant filling be used, such as curled hair.

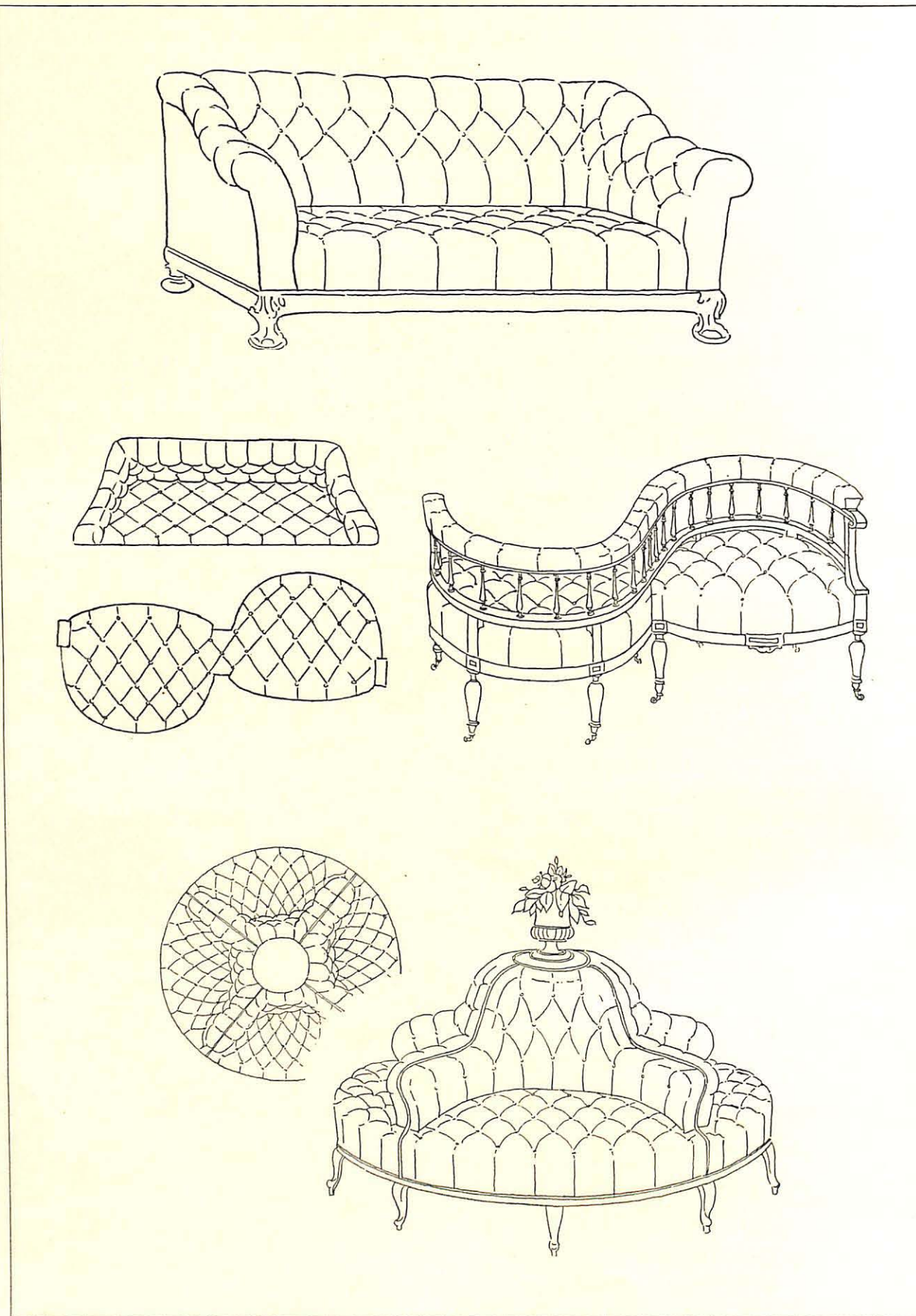
The double-stuffed chair is now marked for buttoning and tufted, either in cotton or directly in the cover, as has already been described in connection with other spring-backed buttoned pieces. It will be noticed that no attempt has been made to make either the arms or the back with spring edges. If this should be desirable, however, it is a very simple matter to accomplish and the reader is referred to the method described under the chapter entitled "Springing Up," which very fully covers all the necessary particulars.

Buttons do not appear in the illustration, Fig. 232G, because this illustration shows the appearance of the chair being upholstered in cotton, a simple twine knot being all that is necessary to hold the tufting. This is the method employed for all pieces of overstuffed furniture similar to the one we have illustrated. We have not, however, attempted to show the actual number of springs that would answer for all purposes, merely giving the number usually shown in standard pieces. A larger number could be employed or a lesser number, according to the value of the

piece and the desired comfort it is intended to give. The same chair might also be upholstered by dispensing with the springs on the top of the arms and on the top roll of the back and getting the same built-up effect by a stuffed-up roll, but this, of course, would not give the same soft surface nor the same durability, but the method is mentioned as a cheaper plan of producing a similar appearance. Davenports, Chesterfields and large over-stuffed sofas are upholstered in the same way as chairs of this type and it will therefore not be necessary for us to duplicate the instruction in connection with these other pieces, as it has been our purpose from the first of this book simply to explain methods rather than to show the actual treatments of a large number of individual pieces, believing that the workman who has thoroughly mastered the necessary methods will be readily able to apply his knowledge to any style of furniture which he may be called upon to undertake.



232G



EXAMPLES OF TUFTED SPRING SEATS

TUFTED SPRING SEATS

ALL of the chairs illustrated up to this point, with the exception of the "sleepy hollow" of Fig. 218, have been shown with plain seats but for greater comfort as well as for appearance it is desirable sometimes to tuft certain types of spring seats. In later chapters of this book, we show the method of confining the softest and most luxurious types of upholstery in the form of compartment filled down cushions.

Extremely soft seats can be constructed in the regular way following the methods we have described but leaving the filling more billowy than has been indicated in the sketches we have used. The trouble with this method, however, is that the upholstery soon goes to pieces, so to provide the requisite softness with the necessary degree of substantiality recourse is had to tufted seats, the tufting serving to prevent the soft filling from spreading and disintegrating.

In connection with Fig. 232 we have explained the method of tufting a typical spring back. We have also in connection with Figs. 65, 66 and 67 shown the details of bun, biscuit and diamond tufting. It should not, therefore, be necessary to repeat the instructions given already and an examination of the tufted seats shown on the opposite page, in connection with several different forms of tufted spring seats, reveals the fact that no new principles are involved.

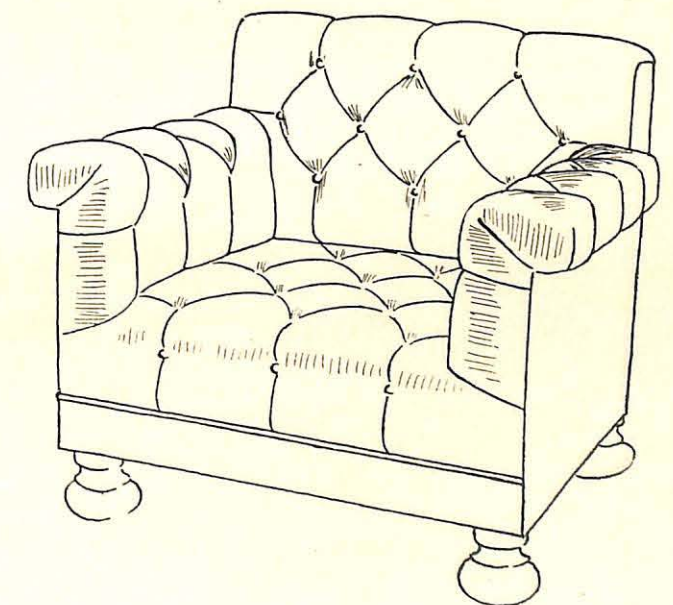
The tufted seats here shown, after having reached the stage where the springs have been covered with burlaps and the stitched edges built up and marked for tufting, either biscuit, bun or diamond are stuffed and tufted in the muslin exactly as we have described the building of the back of Fig. 232. More substantial seats can be provided by building up to the double-stuffed stage, then marking the double-stuffing burlaps for buttons and tying the tufting loops so that they catch the spring burlaps as shown in details Figs. 230H, J, K, M and O. It is customary to make a little less allowance for the tufting of seats than is usually made in connection with backs, $1\frac{1}{4}$ inches or even less being sufficient. It is sometimes necessary on the edges of seats to blind stitch the pleats into place. This, however,

is only resorted to where the shape of the seat makes it difficult to keep the pleats in place.

It will be noticed in the circular seat at the bottom of the opposite page that the buttons of the back row are very much closer together than those of the front row. The buttons are arranged in this way so as to create a uniform plan of buttoning.

Tufted spring seats are by no means simple to make but when to the ordinary difficulties of tufting is added the task of calculating rows which increase in diameter with each different row, the job calls for skill and dexterity, of the highest type.

Seats like those shown in the conversation chair and in the center ottoman are not common. Indeed, it is quite probable that the large majority of working upholsterers will never be called upon to make either of these styles but we give them here because they illustrate principles of buttoning which are not met with in the more common pieces.



CONTOUR AND FORM

WE HAVE now reached the point where we deem it wise to explain the principles which govern the formation of over-stuffed furniture.

The frame-maker cannot always be depended upon to provide a foundation that accords strictly with human necessities of comfort. He must by the very character of his business confine his efforts for the most part to standard types.

If all people had the same general proportions, height, weight, etc., standard types of furniture would be universally acceptable but humanity varies not only in its anatomy but in its preferences as well, and so the frame provided by the cabinetmaker has to be built up in such a way as to fit the preference and the form of its future possessor.

It is not our purpose to enter into a minute discussion of anatomy but simply to point out the general requirements of an upholstered piece of furniture. It would have been possible to have treated of this phase of upholstery at an earlier stage but up to now the pieces treated have to a large extent been such as were limited in their treatment to the design embodied in the frame, but with spring-back over-stuffed pieces there is hardly any limit to what the upholsterer may accomplish by building up the original frame to conform with his own conception of comfort.

As a model of comfort we can do no better than to refer the modern workman to the chairs and couches of the early Greeks and Romans. These were made in shapes that actually conformed to the recumbent body or were so soft that the body could sink into them and find its own comfort. The main things to consider, therefore, are the proportions of the seat and back and either a pliability that will give with the body or a contour that fits the human form.

Nothing is more tiring than a chair which supports the occupant in an uncomfortable position. As the average person is seated the line of the small of the back is very much in advance of the line of the shoulders, and support at the shoulders only, as is shown in Fig. 233A, is not sufficient. The small of the back needs support

also. Compare with this Fig. 233 which shows an outline detail of a piece which conforms to the position of the sitter, the outline of this chair being approximately the outline of the upholstering of Fig. 232 illustrated in a former connection. The arms also of such pieces must receive careful consideration and must be built up to such a height that they will provide a comfortable resting place for the elbows under ordinary use. In our illustrations the arms of Fig. 233 have been built up to support the elbow in a comfortable posture while those of Figs. 233A and 233B are much too low, necessitating a stooped position in order to be used.

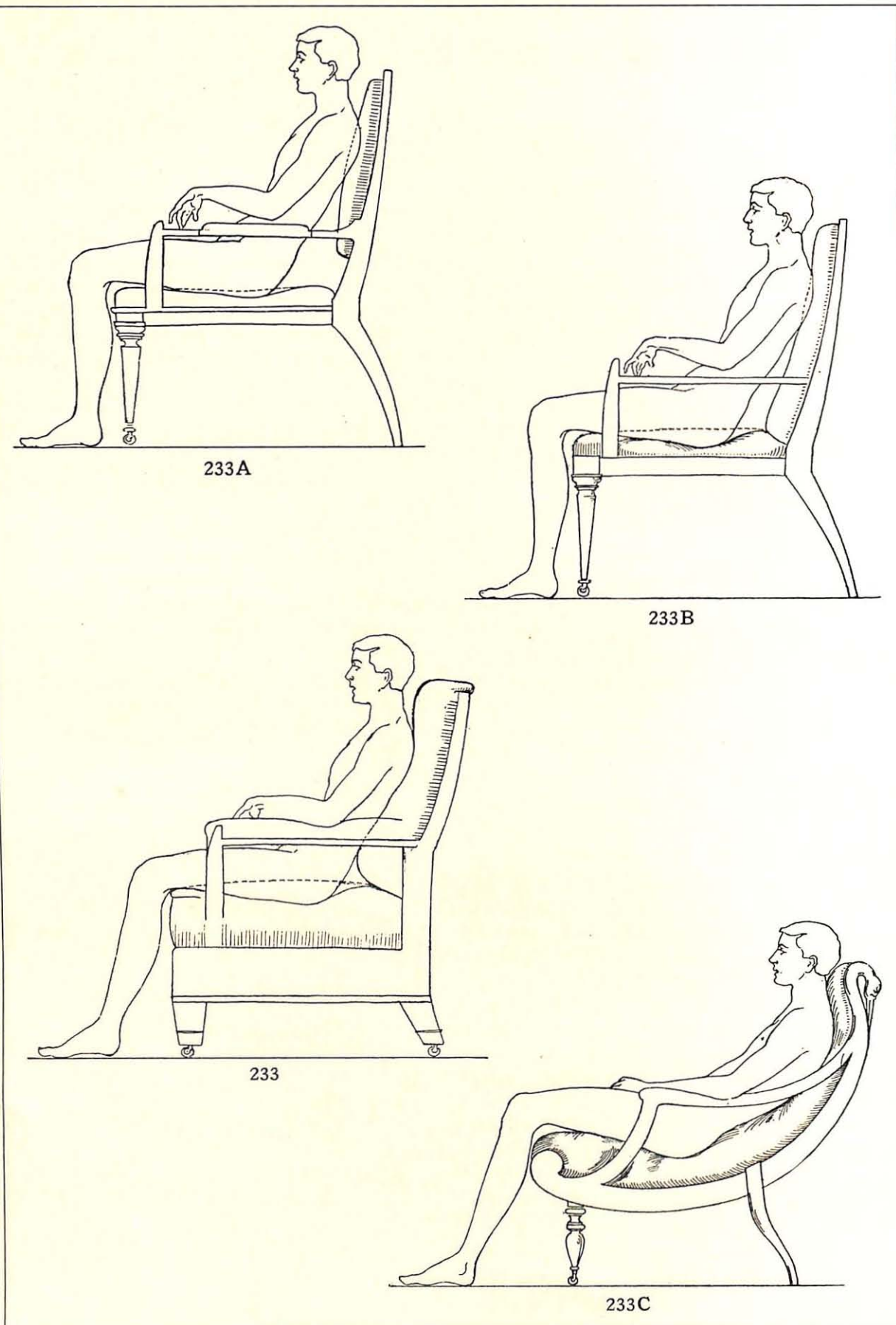
The old Greek chair shown in Fig. 233C was probably the prototype of our modern "sleepy hollow" and illustrates the type of upholstery that is soft enough to allow the body to sink into it as it conforms to the recumbent position of the user.

The earliest chairs of the Egyptians and Romans provided a back that was low enough to form an armrest as well as a back but with the Romans as with the Greeks chairs were only temporary resting-places, couches, beds and divans being more used than chairs.

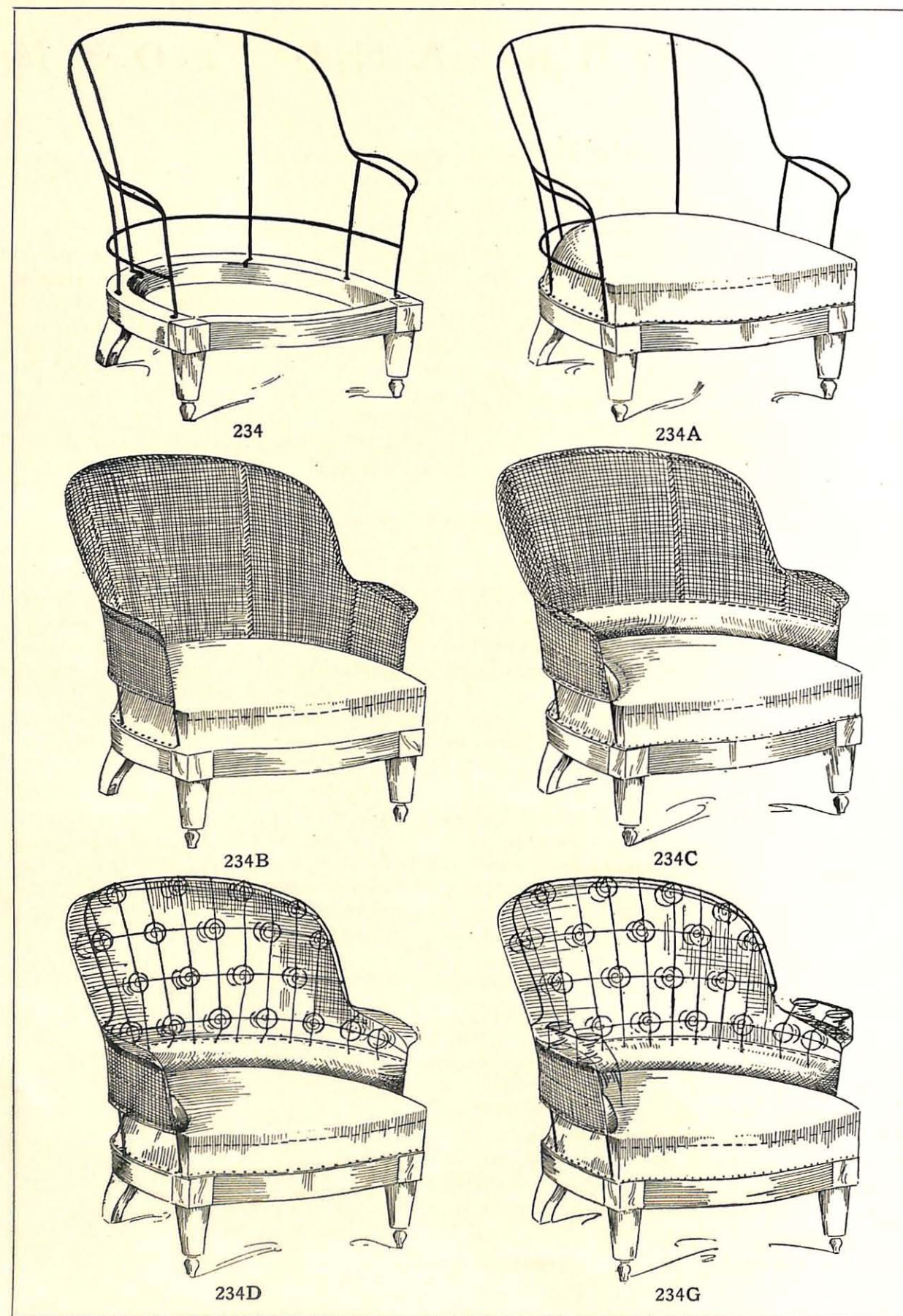
The illustrations showing the faults to avoid better indicate the points to be considered than any advice that we can give, and particularly where furniture is built for future sale and not made to order, anatomical comfort is one of the main considerations.



Early Greek chair.



A STUDY OF ANATOMY IN RELATION TO CHAIR FORMS



DETAILS OF IRON BACK PIECES

TURKISH IRON BACK PIECES

OUR next consideration relates to an entirely different type of furniture from anything hitherto described and while the ultimate result appears to be the same as some of the pieces already mentioned the method of upholstering is decidedly different.

As will be seen by referring to the chair frame, Fig. 234, this type of furniture has no other wood but the base, the entire upper structure being composed of iron rods. The seat is upholstered in the same way as the seat of any over-stuffed piece of furniture and will appear as Fig. 234A. The upper structure of the chair, that is, the back and arms, offers no place for tacking. Everything, therefore, that is attached to it must be sewn either to the iron or to burlap with which the iron is covered. In Fig. 234B the back and arms have been covered on the inside with burlap stretched tightly so as to conform to the shape of the frame and sewn to the iron in such a way that there is no possibility of its pulling out of shape because of subsequent manipulation.

It is intended that this chair should be provided with a spring back and it is made extra deep to allow for the depth of the springs. To assist in filling up the space from the bottom row of springs to the seat a pad similar to that described in connection with Fig. 232B is formed, as Fig. 234C, sewn at the bottom to the wire which goes around the back just above the seat while the top edge is sewn to the canvas with which the back is covered. This pad not only serves to fill the hollow space where the back joins the seat but it also provides a place to which the springs of the back may be tied. See Fig. 234D.

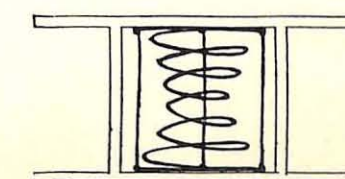
These pillow springs should first each be tied down to the proper height, about four inches, as described in a former chapter in connection with Fig. 132 and after being sewn to the canvas they are also tied by light over-twines as Fig. 234D, the edge springs being tied so as to form a spring edge around the back from one arm to the other.

We have already described the method of

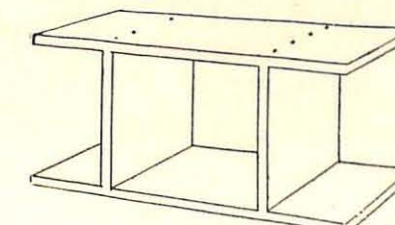
forming a spring edge by attaching an edge wire to the springs and the same procedure is followed in this case but a much smaller wire should be used than that generally employed for the spring edge of a seat.

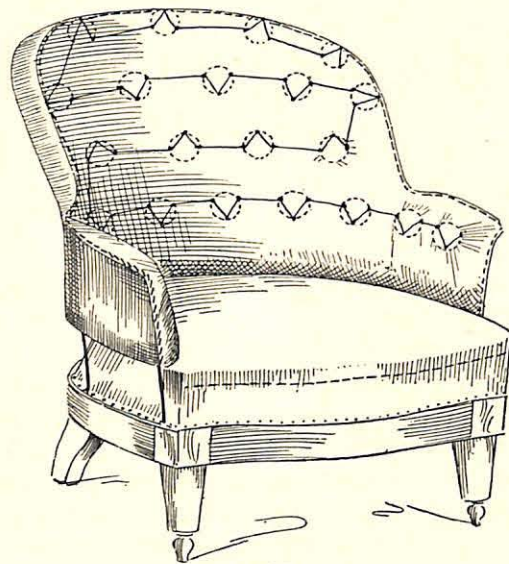
The next stage is the covering of the springs with the burlap shown in Fig. 234E, taking care in the sewing of the burlap to the edge wire and also in sewing the edge of the burlap to the solid iron frame of the back not to create a tension that will reduce the spring edge which should be from three to four inches high according to the size of the piece.

After the back is entirely covered with burlap the tops of the pillow springs are knotted to it as indicated in Fig. 234E. The bottom edge of the burlap which covers the springs does not show in this illustration but it is sewn either to the pad already mentioned or drawn through between the pad and the seat and sewn to the bottom wire of the back. The final upholstering of the chair, as shown in Fig. 234F, is carried out along the lines already described in connection with other spring-backed pieces, the only difference being that whereas in the others it is possible to tack the goods to the chair frame, in this case everything has to be sewn.

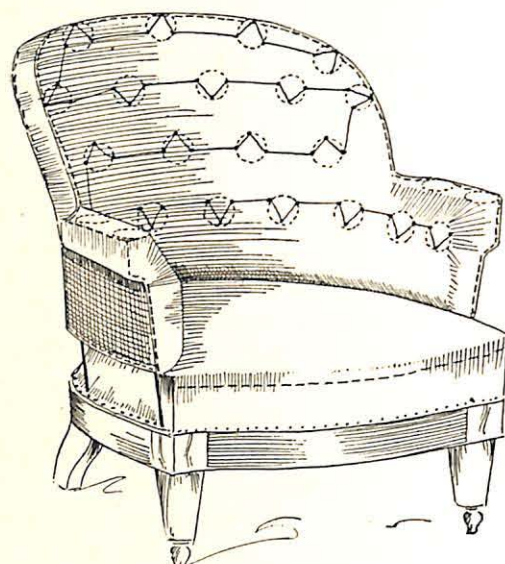


Method of tying pillow springs in box explained previously in connection with Figs. 132 and 132B.

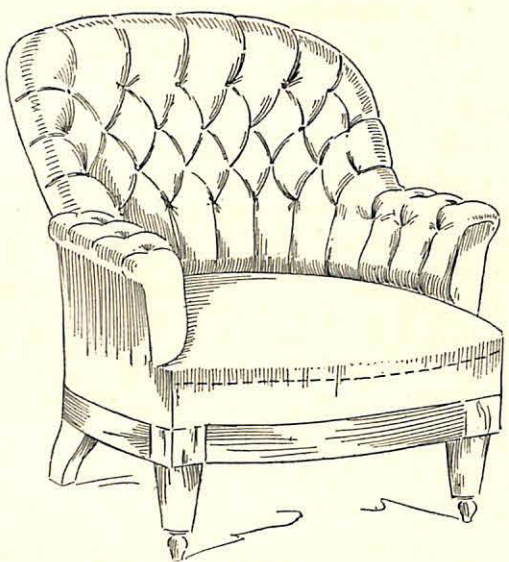




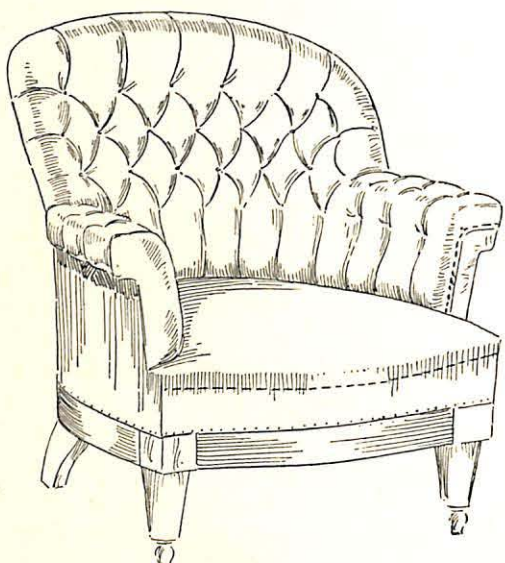
234E



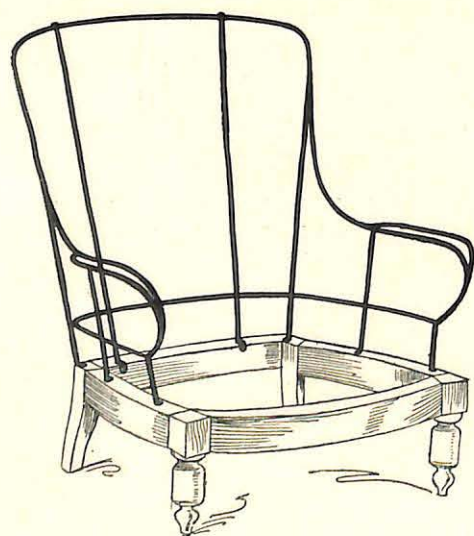
234H



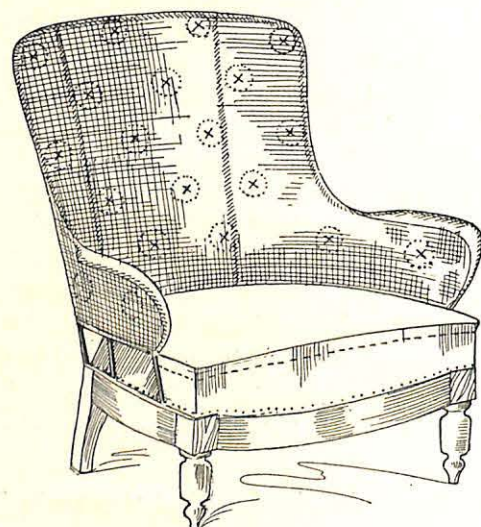
234F



234I

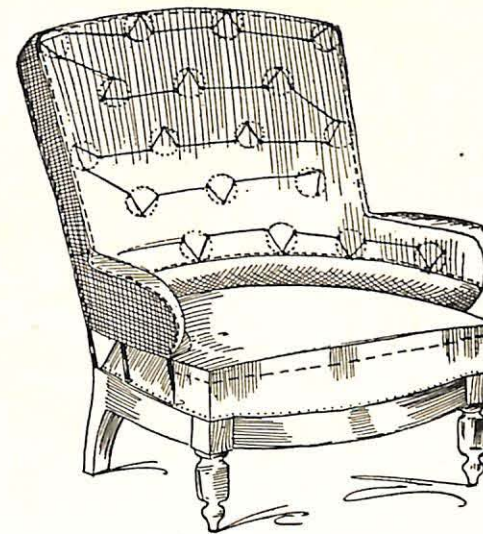


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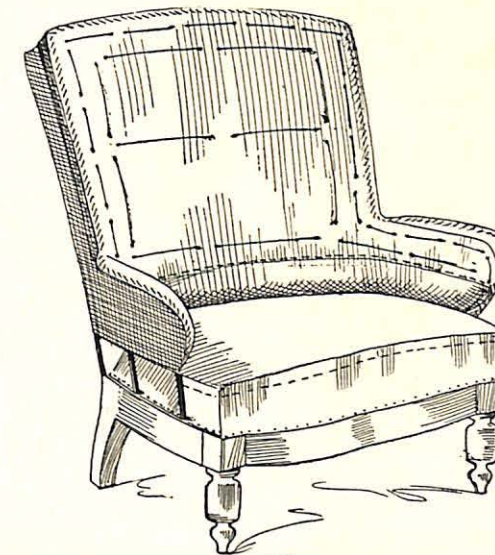


235A

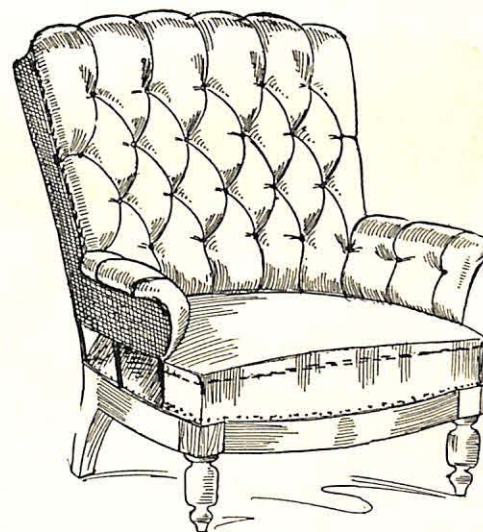
DETAILS OF IRON BACK PIECES



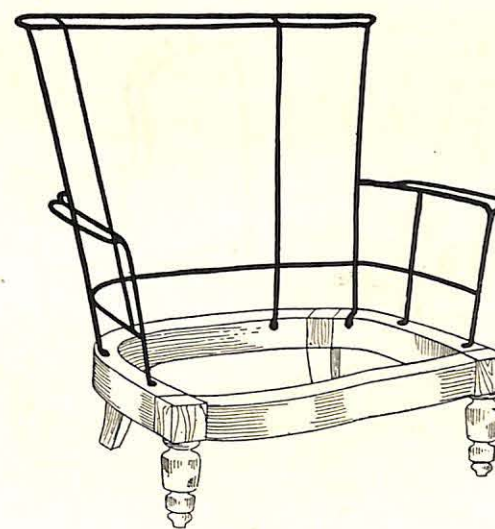
235B



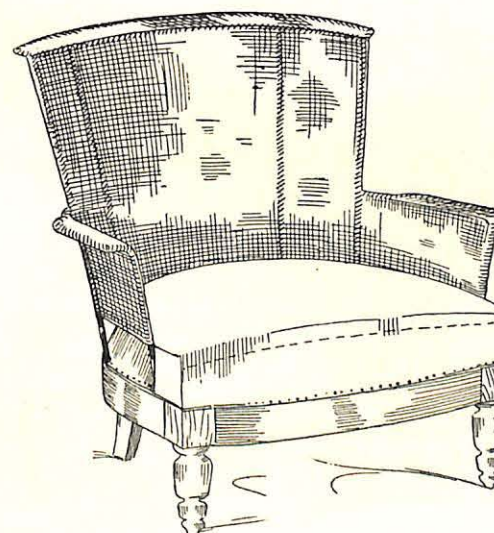
235C



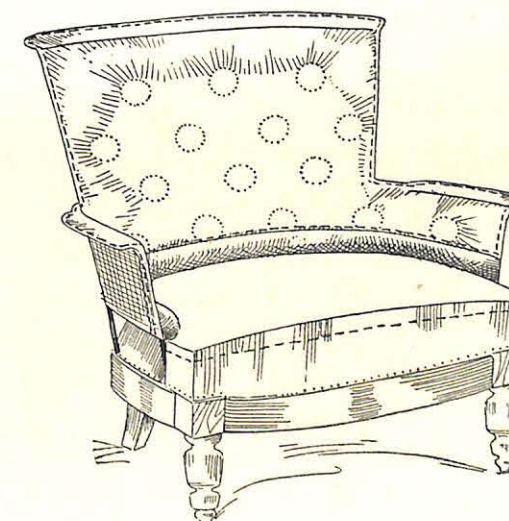
235D



236

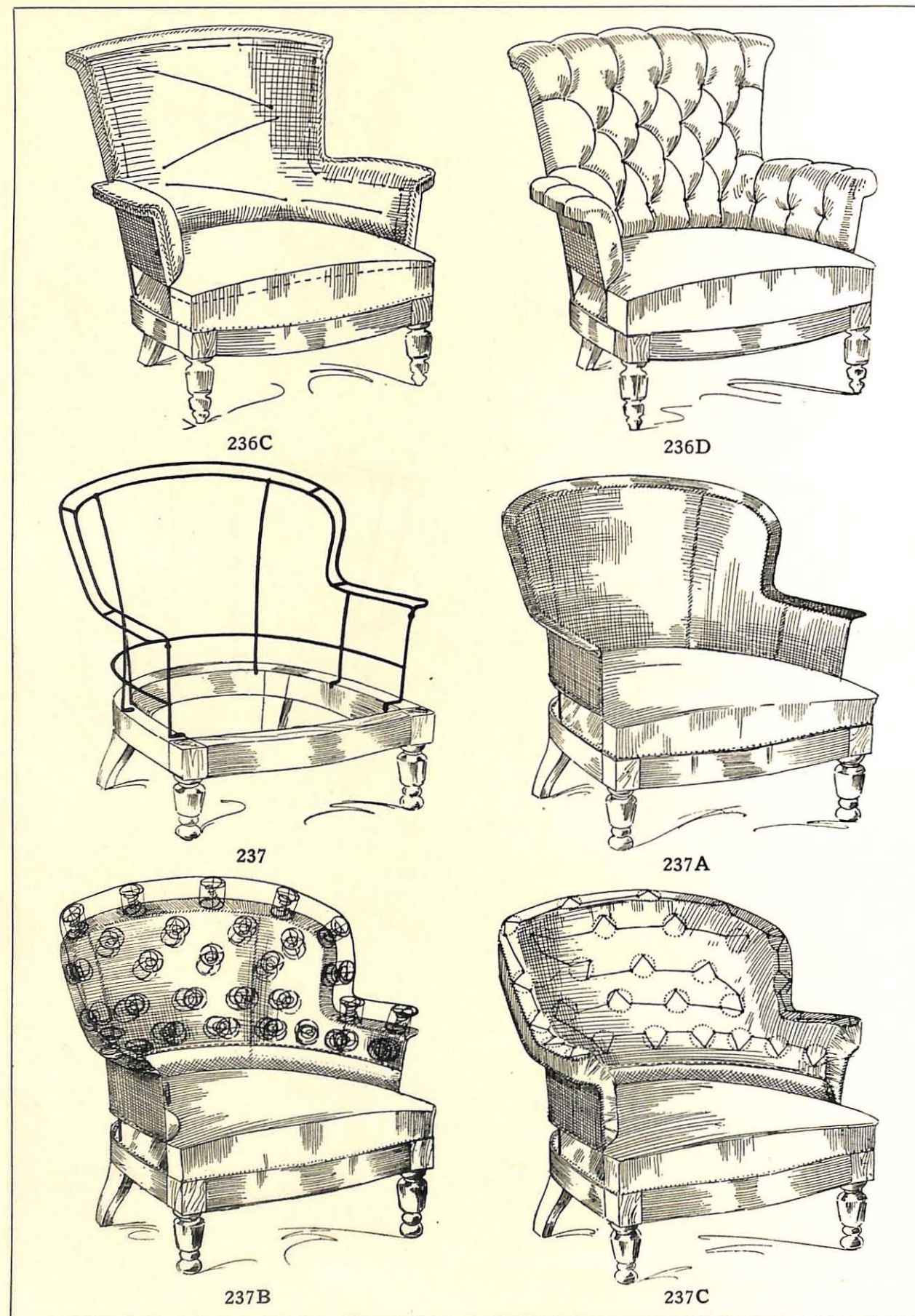


236A



236B

DETAILS OF IRON BACK PIECES



DETAILS OF IRON BACK PIECES

The same frame may be made more luxurious by springing up the top of the arms, putting two or three springs on each in such a way as to make the spring edge, shown in Fig. 234G, canvassing as shown in 234H, and then upholstering in the regular way, the finished chair having the appearance of Fig. 234I. The left arm of the last mentioned figure is shown upholstered only in the cotton, the stitches indicating how the edge is sewn to the canvas while the opposite arm shows that the covering is carried around the edge and sewn to the outside where the lining will cover it. It is possible to make a more finished appearance by sewing a separate band on the front of the arm but as all matters pertaining to banding will be covered in a subsequent chapter we will defer discussion of the method until we reach that point.

The upholstery of Fig. 235 follows very closely the method described in connection with Fig. 234. In the example now under consideration, however, we have suggested double stuffing the back, stitching the edge all around and also stitching the edges of the arms.

This double stuffing is, of course, for a chair of this kind, made in very soft material, preferably hair, as this type of chair is noted particularly for its comfort-giving qualities, and even though double-stuffed the aim throughout should be to keep the upholstery soft and yielding.

Fig. 236, a slightly different frame, follows a similar method of upholstery but instead of a spring edge around the back we have indicated double stuffing and a fairly high stitched edge as best calculated to retain the shape of the chair in the finished upholstery. What we have remarked concerning the double stuffing of Fig. 235 applies also to the double stuffing of this chair, particular care being taken to avoid creating a foundation that will be hard and stiff. These chairs are so much like those recently described that the illustrations require no additional text to elucidate the method of upholstery.

The chair shown in Fig. 237 is so like 234 and 235 as to be very easily comprehended without further explanation. Fig. 238, a stuffed-over chaise lounge, also follows the same principles of upholstery as the other stuffed-over pieces we have described. Fig. 239, though somewhat similar, introduces a combination of tufting, the main back and arms being diamond-tufted while the pillow is biscuit-tufted.

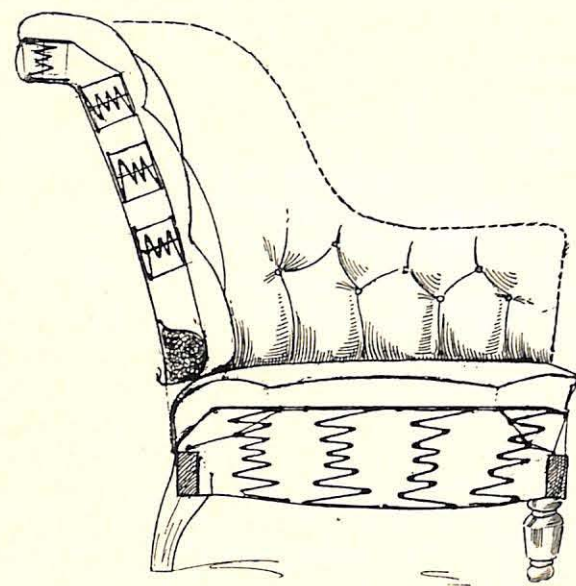
As will be seen in Fig. 239A, showing the chair with the back sprung up and canvased, there is no difference in the height of the springs under the biscuit-tufted pillow, and if desirable the diamond tufting could be carried right up over the back in the same manner as with the other chairs we have illustrated. The shape of the frame, however, lends itself to the variation of tufting that we have indicated, and by using a deep biscuit tufting a very pretty effect is produced. The details of biscuit tufting have been thoroughly covered in former chapters and need not here be described, but it is well to bear in mind that the more closely a fabric is buttoned the harder the upholstery will be, and with a biscuit-tufted pillow like the one illustrated, it will be necessary to use the softest of filling in order to maintain the general comfort of the chair.

There is a large variety of iron-back chair frames, but the form of upholstery is so definitely suggested by the shape of the frame that it is unnecessary to give further details concerning them.

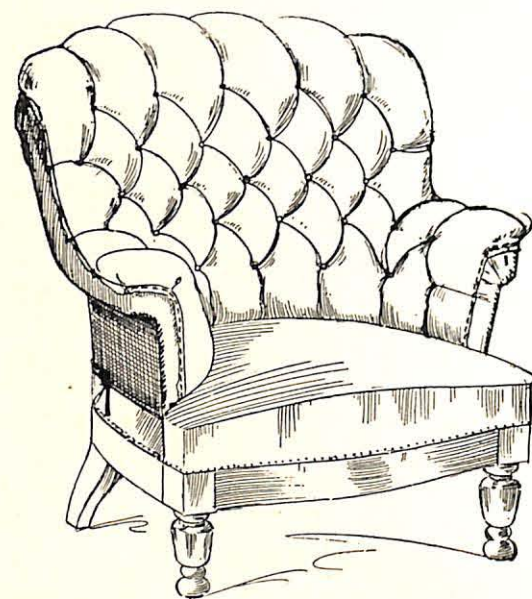
There is, however, another form of chair with the construction of which the upholsterer has a great deal more to do, the type of chair known as a wire-back or Turkish chair. To construct this type of chair the upholsterer starts with a plain wood base and on this he builds the superstructure of steel wire, which gives both form and support to his upholstery.

In Fig. 240 we show first the general outline of the wire-back chair. Each upright of the back superstructure is composed of steel wires cut to the definite length of the upright. In Fig. 240A, the method of attaching these wires is illustrated. Holes are bored in the top of the frame, the exact size of the steel wire, which after being cut to length is driven into the holes and the wood made to bind the wire by driving two or three stout tacks beside the wire. This causes the fibers of the wood to swell and crowding them against each wire holds it securely in place. In addition to these cut uprights there are longer uprights, one or two, according to the weight desired, and another long wire which passes through a hole bored in the side of the frame. This wire is bent up close to the frame as shown in Fig. 240B, and is used with other wires in the forming of the outline of the frame.

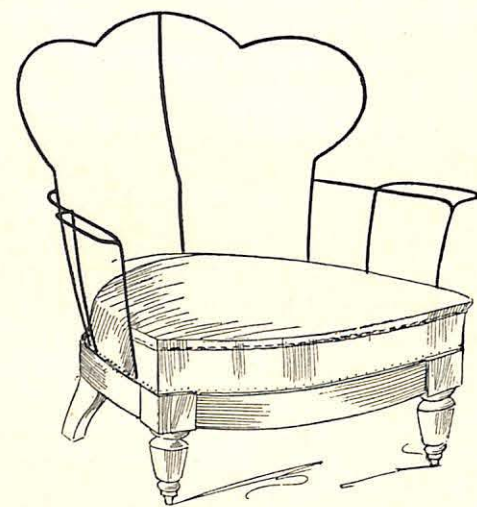
The building of chair frames of steel wire



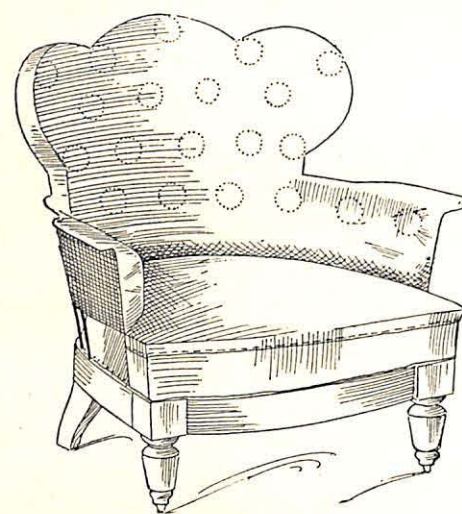
237E



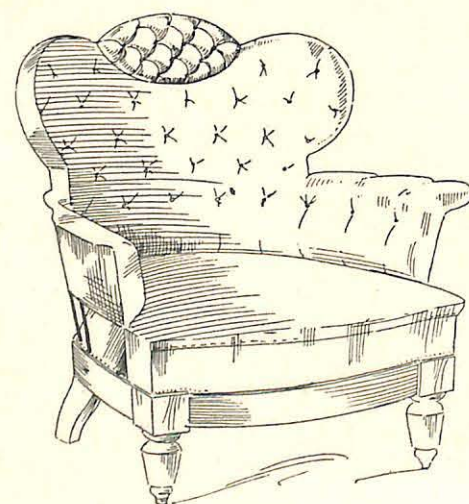
237D



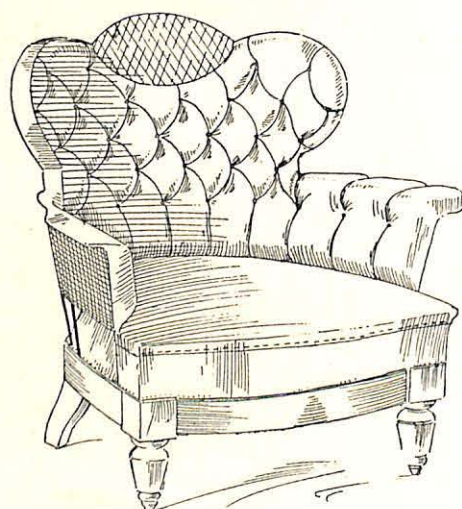
239



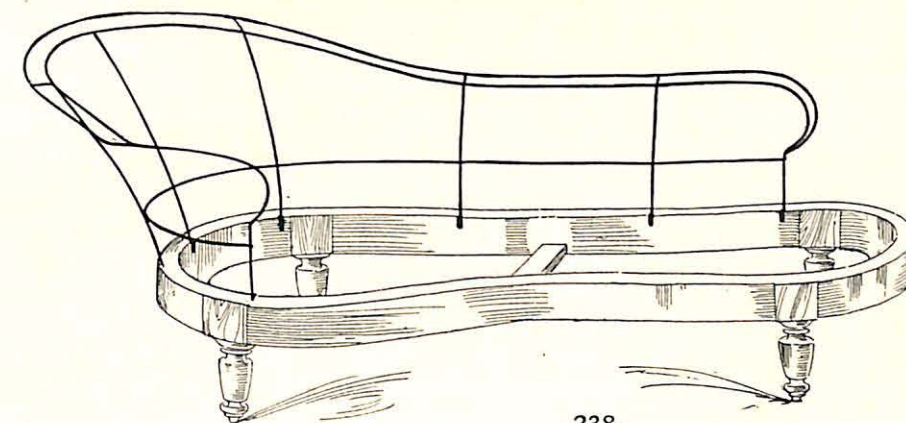
239A



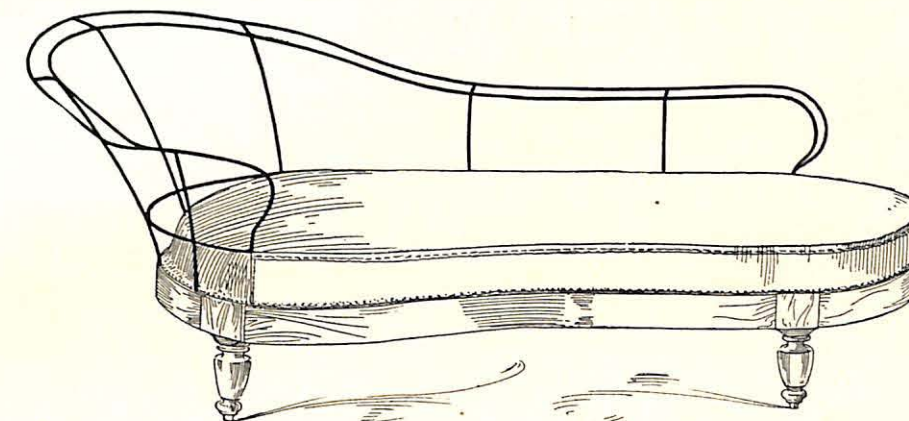
239C



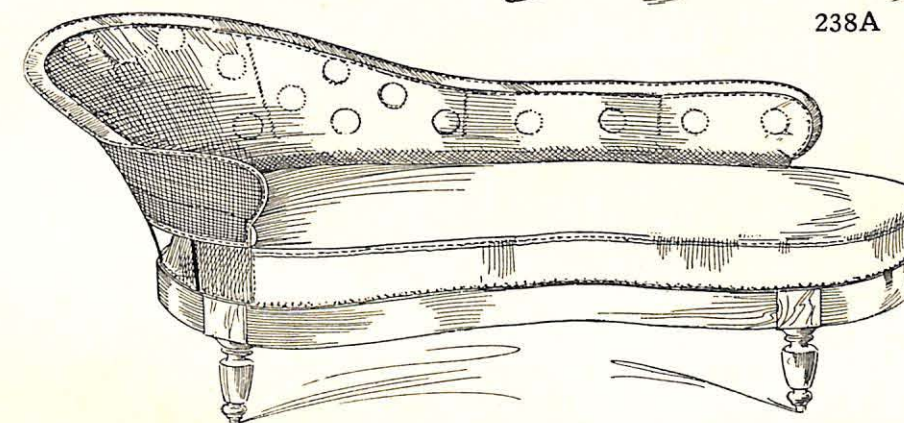
239B



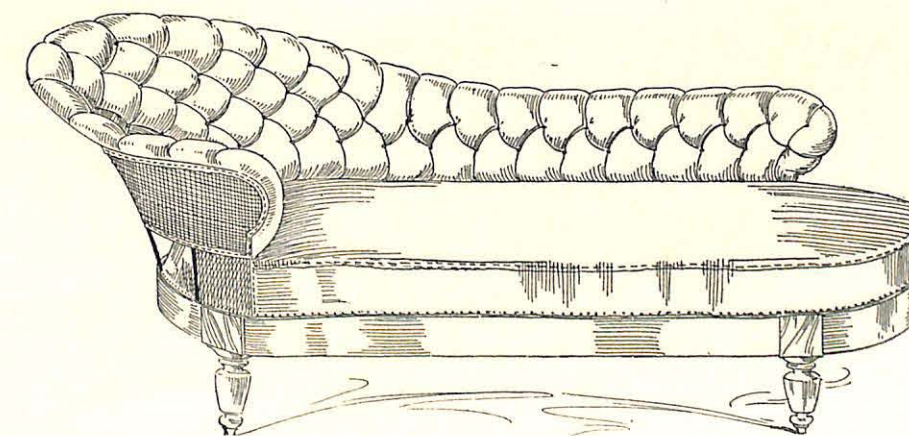
238



238A



238B

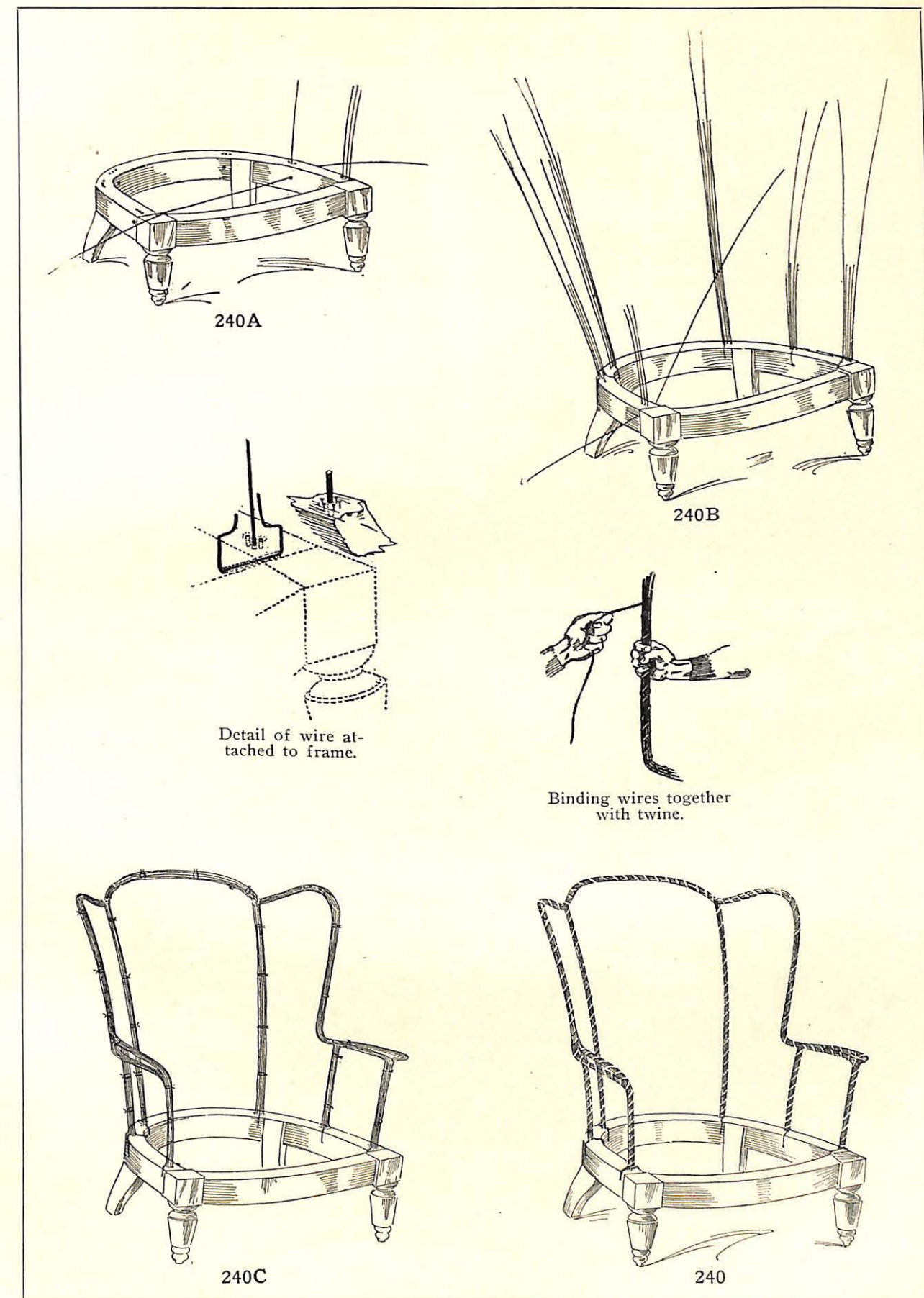


238C

is one of the most difficult things of the upholstering trade. The wire is not easy to handle, particularly if made of spring steel, and while soft iron wire is much easier to handle and will make a fairly satisfactory chair, there is not the same resiliency and comfort-giving quality produced by the steel. After the wires have all been bent to form, and such additional wires as may be necessary to make the edge of the required thickness have been put into place and tied at intervals, as indicated in Fig. 240C, the whole wire superstructure from beginning to end is tightly bound by wrappings of soft cord, wrapping, say, a half a dozen turns of the twine, and then holding it with one hand while the other

twists it tighter and tighter around the wires, binding them as close together as is possible.

The finished chair gives no indication of the semi-steel construction, and if properly balanced and well shaped so as to produce the correct pitch to the back, a splendid type of chair results. The upholstering of a wire-back chair follows in all respects the same method as for iron-back chairs such as we have described, and there is practically no form, no shape of stuffed-over furniture which the clever manipulator of wire cannot reproduce in the wire frame. Because of the strain on the wood base a specially constructed base is required, and the joints in some instances may even then be reinforced with braces.



SEMI SHOW-WOOD PIECES

THE chair frame shown in Fig. 241 requires a different character of treatment in the upholstering to any previously described, because of the shape of the arm support. This frame is made without tacking blocks and the arm support is widest at the base where it joins the frame. Furthermore, the arm being show-wood, and the way in which the support is attached to the frame makes it necessary that the upholstered seat should hug the finished wood at the point indicated by the dotted line A, Fig. 241A, without any unsightly gap.

Because of the shape of this chair the seat is best built up by the use of the method known as double-stuffing. After the springs have been placed in position as shown in Fig. 241B, tied down as in Fig. 241C, and covered with burlap as in Fig. 241D, a layer of hair is placed over the springs and the seat covered loosely with a piece of burlap slip-tacked into position as shown in Fig. 241E, but not cut at the corners or around the arms.

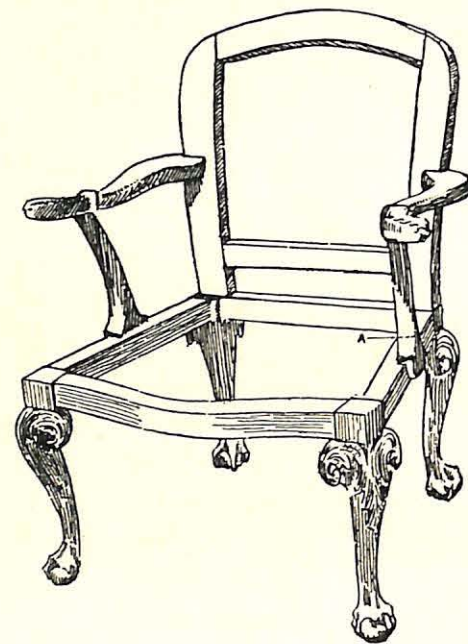
This outer burlap is next stitched through with long stitches to the burlap which covers the springs and the edges stuffed up and tacked as shown in Fig. 241F. The purpose of the stitches was two-fold—first, to keep the surface of the seat flat; and second, to provide a pocket around the outer edge which could be stuffed up firmly for stitching without interfering with the necessary resiliency of the middle of the seat.

By referring to the top view of the enlarged detail of the portion adjoining the arm, Fig. 241G, it will be noticed that additional stitches have been placed at the inner corners of the arm upright, these stitches being marked XX in Fig. 241F. These stitches go through to the under burlap, the purpose being to keep a sufficient degree of firmness at the opening which surrounds the upright, to enable the manipulation of the burlap in the forming of the edge. The method of cutting the canvas at the arm is indicated in the diagram Fig. 241H and in the enlarged detail, Fig. 241I, which shows the burlaps cut and turned up at the arm. For purpose of illustration the arm upright in Fig. 241G is shown cut

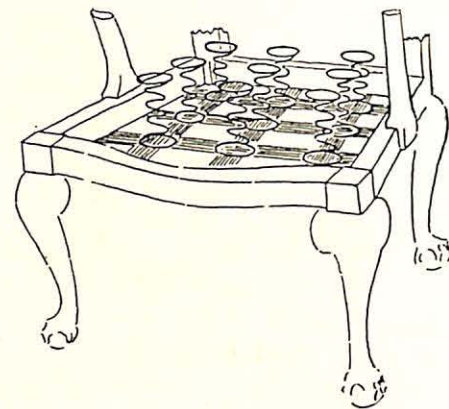
away to give an unobstructed view. One of the chief difficulties in the upholstering of this type of seat lies in the fact that the arm support is wide at the base and narrows sharply immediately above. This calls for very careful manipulation in order to prevent any unsightly gaps on the bias lines 1-1 and 2-2, Fig. 241H. The surplus burlap indicated by XX in Fig. 241I are not trimmed away but are stuffed in between the filling and the arm where they assist in holding the filling material in place, as shown in Fig. 241J.

After the edge has been stuffed up and the burlap turned in and tacked to the rail as shown in Fig. 241F, the next step is to regulate this stuffed portion into an edge and adding two rows of stitching as indicated in Fig. 241K. The extreme top edge of this double-stuffed portion is allowed to project slightly beyond the outline of the chair rail in order to provide a smooth edge unbroken from top of edge to bottom of rail as is indicated in the appearance of the finished chair, Fig. 241P.

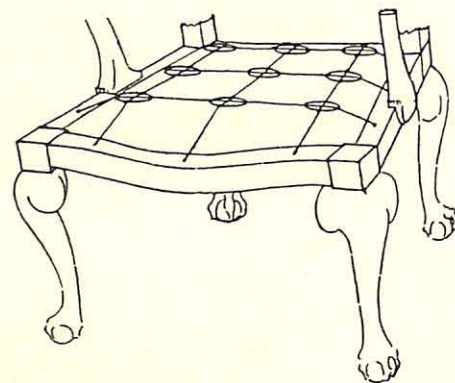
Following the stitching of the edges all around a sufficient coating of hair is placed upon



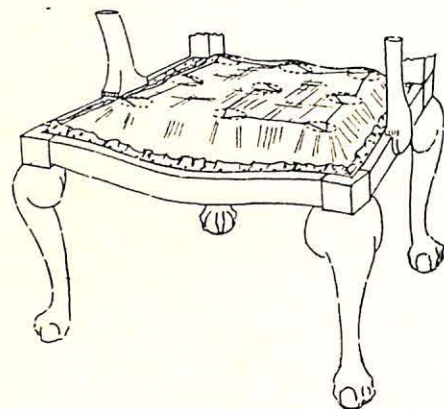
241A



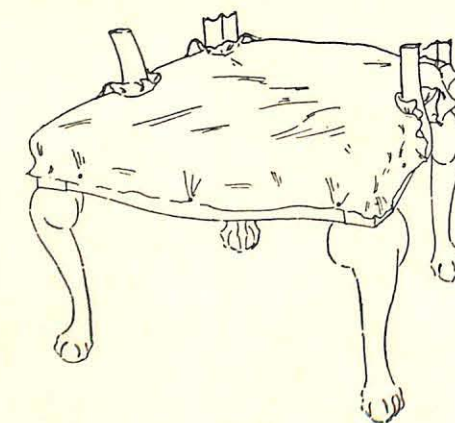
241B



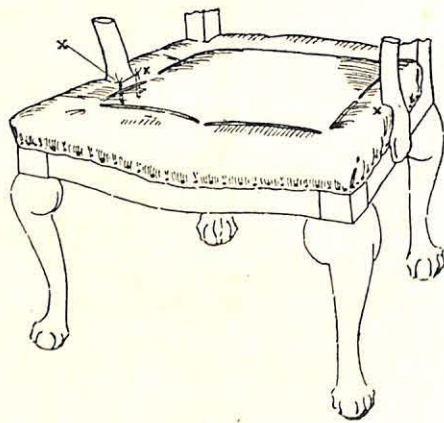
241C



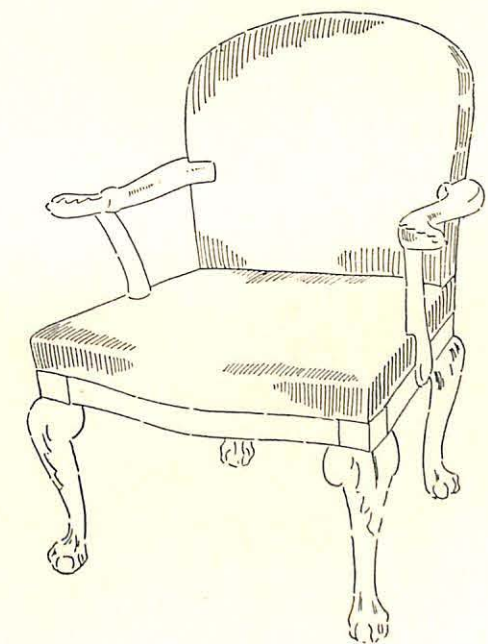
241D



241E



241F



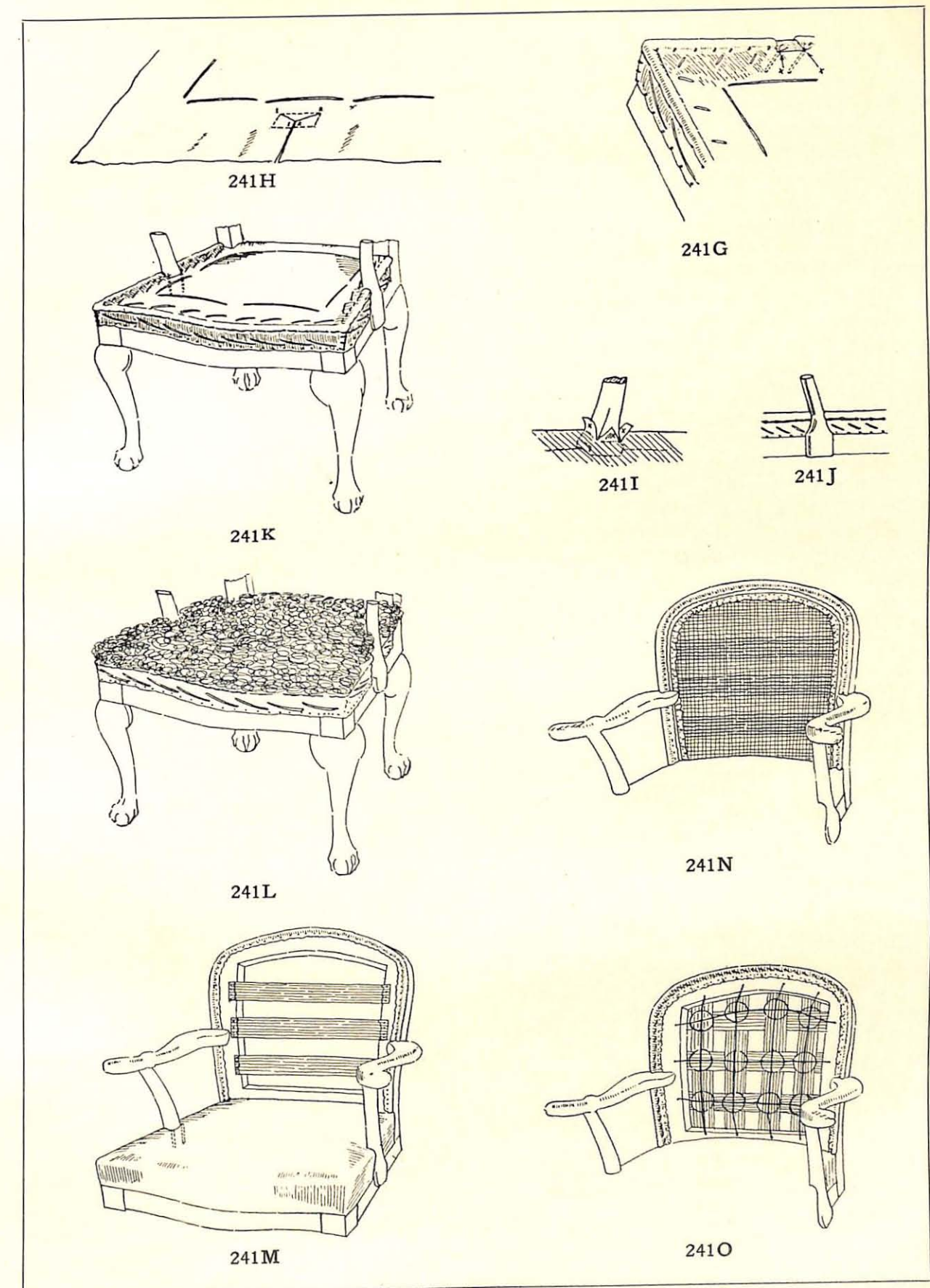
241P

the top of the seat to round over into the required shape as a second stuffing, Fig. 241L, and this is in turn covered with muslin, producing the finished appearance in Fig. 241M.

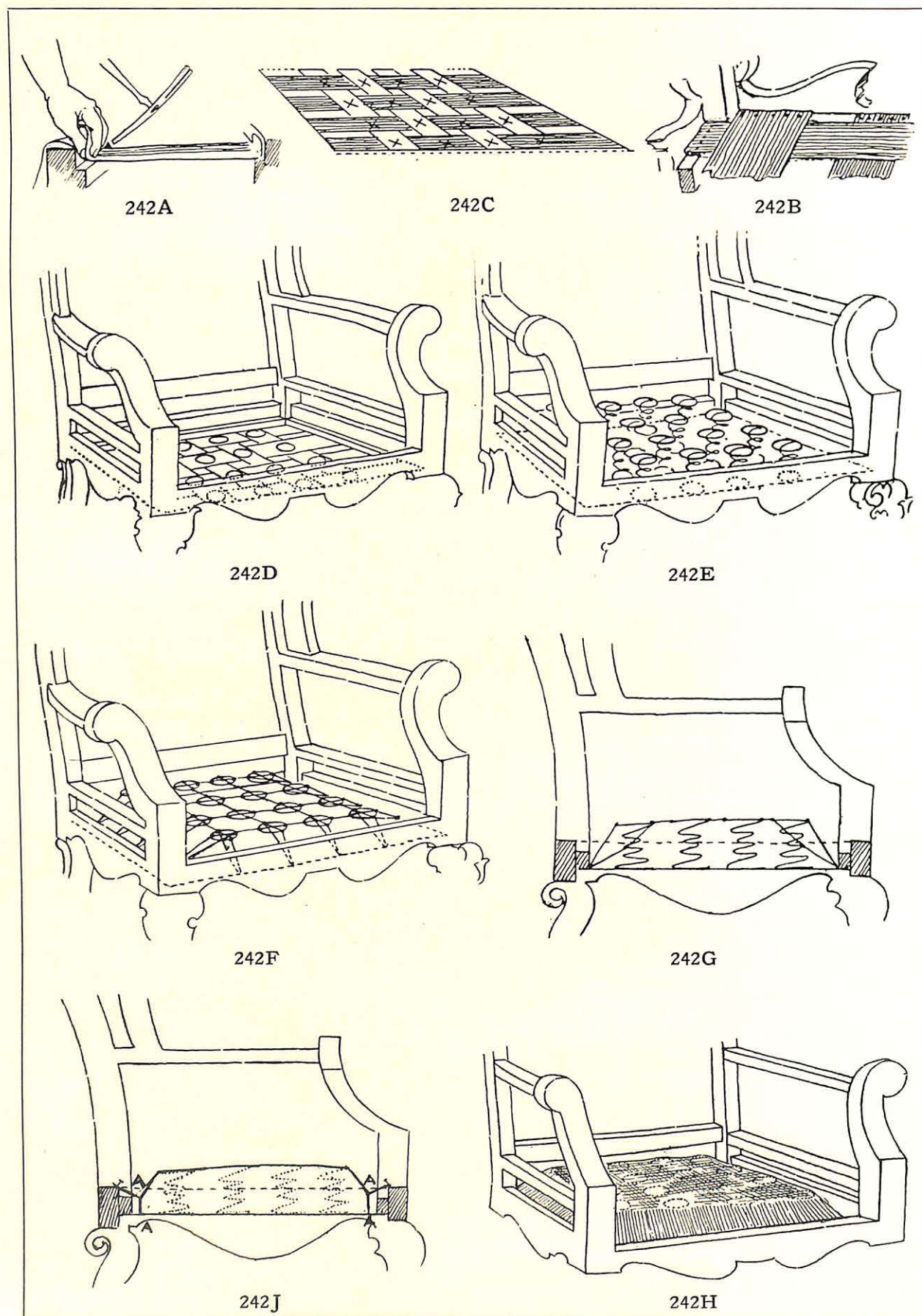
The back of this type of chair is capable of two different methods of treatment; using a nosing after the manner shown in Fig. 241M or a stitched edge as shown in Fig. 241O. The nosing is formed by back-tacking a piece of fabric on the flat surface of the back as close to the outer edge of the frame as it is possible to tack it. A sufficient allowance of extra material must be made at the corners and this strip of material, whether composed of burlaps or canton flannel, is stuffed with hair to produce a round roll one-half to three-quarters of an inch in diameter, filled with sufficient firmness to make stitching

unnecessary, but kept smooth and uniform throughout its length. It is intended to serve the purpose of an edge and the symmetry of the finished back will be largely influenced by the care exercised in its formation. See Fig. 241N and also details Figs. 242 to 243.

Should it be desired to upholster this chair with springs in the back, a webbing is put on the outside back as shown in Fig. 241M and the nosing in this case is built up to a height of about one and a half inches and given a stitch. The springs are then covered with burlaps in the regular way and a coating of hair added and the whole covered with muslin as has been already explained in connection with other pieces. The appearance of the finished chair is shown in Fig. 241P.



DETAILS OF SEMI SHOW-WOOD PIECES



DETAILS OF DOWN CUSHIONING

THE LOOSE SEAT DOWN CUSHION

THERE has probably been a greater development in the purely mechanical side of upholstering furniture during the last fifteen years than during any similar period since the invention of springs, this unusual development being largely due to the employment of down as a filling material.

Prior to the advent of down, extreme softness in upholstering could not be obtained with plain surfaces because the softest materials known, unless confined by tufting, would separate and sag, soon becoming unsightly and uncomfortable. This explains in a measure the tremendous vogue there was, in the latter part of the Nineteenth Century, for deep-tufted upholstering.

Various plans have, from time to time, been devised for the use of feathers and down, but the efforts to use these materials have been more or less experimental until the return to favor of the English and Colonial wing and cushion chairs about twenty years ago, which gave an impetus to the experiments of progressive upholsterers, and the down cushion as an adjunct to the upholstering of chairs and settees became a definite and permanent development.

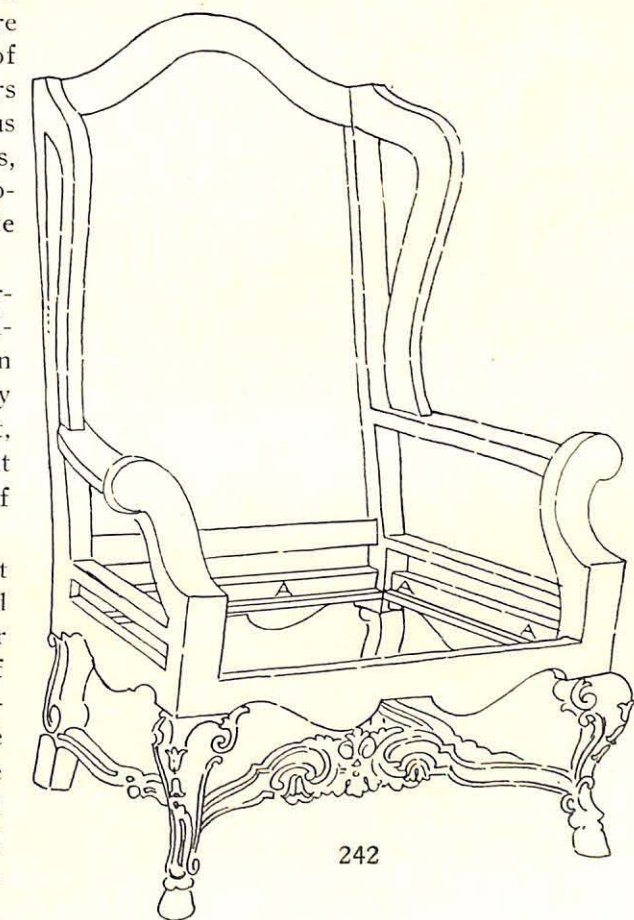
The application of down upholstering naturally varies with different types of furniture, although in many instances the frame construction of standard shapes seems to have been only slightly altered, and it is even possible to adapt, for loose-cushioned upholstering, frames that have not been made for that particular style of treatment.

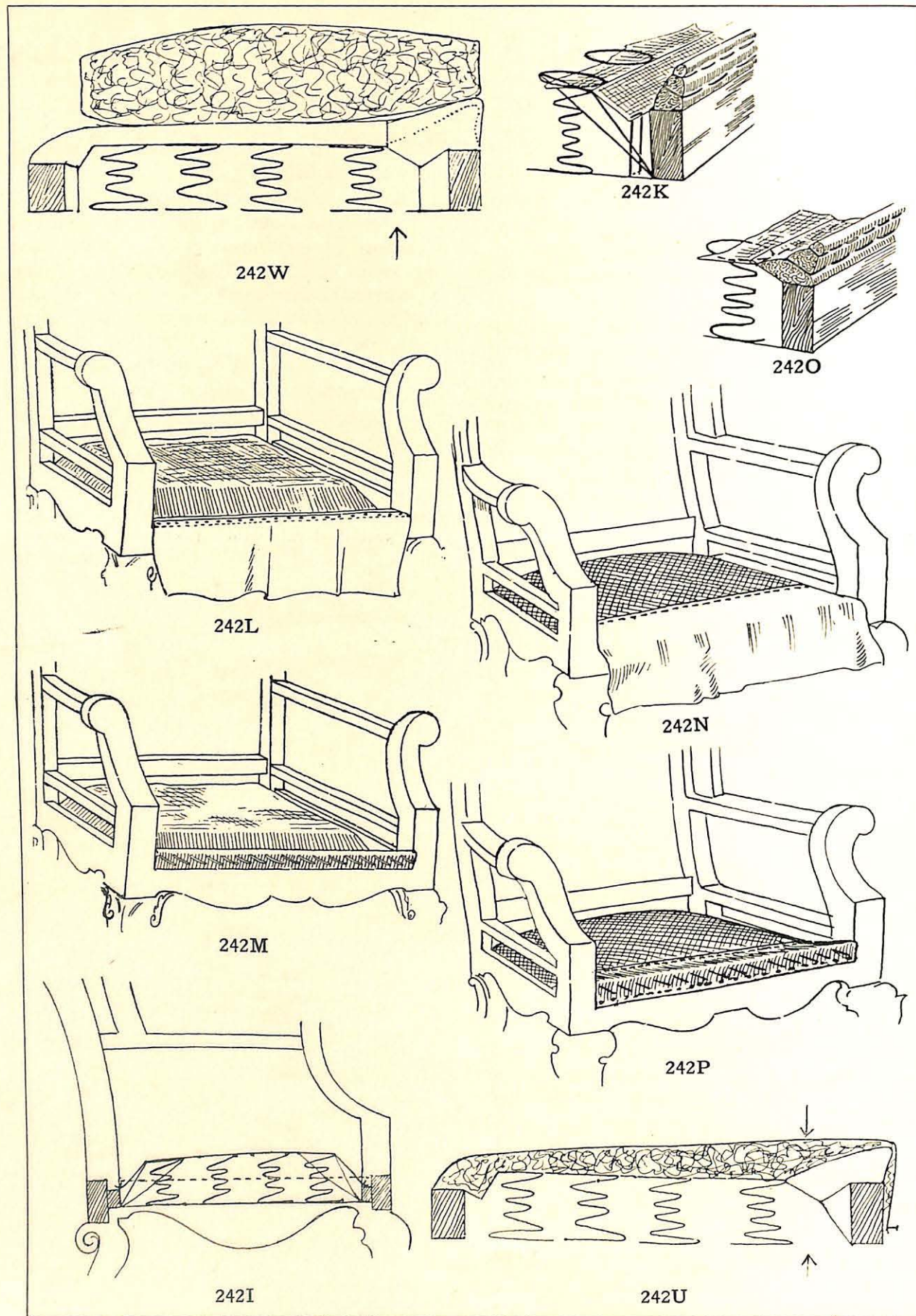
It should be borne in mind, however, that the limit of any type of cushioning is governed by the height of the seat of the chair, settee or lounge from the floor, this constituting one of the chief contributing factors toward the comfort of the article when in use. To define the governing factors of height in general terms, the distance from the top of the finished upholstered seat to the floor should not be more than $18\frac{1}{2}$ inches, and this only when the form of upholstering is very soft, such as down cushioning,

which in use sinks to a point two or three inches lower than its finished height.

Even a solid wood seat is sometimes made 18 inches from the floor, but greater comfort is obtained for continuous use in a much lower seat, and a chair recently designed for the use of industrial workers who are seated at their work measured 16 inches from the lowest curve of the seat to the floor.

The matter of calculating for the use of down in furniture upholstering begins at the very genesis of the treatment of any particular piece. Starting with the chair, shown in Fig. 242, the first consideration is given the webbing which supports the springs for the seat, this must be attached at a point as low as possible. This chair has a scalloped rail which precludes the possibility of employing a webbing stretcher. It





DETAILS OF DOWN CUSHIONING

should be made with the tacking strips indicated by A-A in Fig. 242, which enable the workman to tack the webbing at the bottom in the angle of strip and frame when stretching the webbing by hand, as shown in Figs. 242A and 242B. The webbing should be stretched as tightly as possible, with the chair upside down on the bench, and securely tacked with both ends turned over and double tacked.

The webbed seat of the chair will appear as shown in illustration Fig. 242C, the crosses indicating the position of the springs. The webbing is shown in this figure without the interference of the chair frame so as to illustrate clearly the relation of the cross webs to the location of the springs.

Fig. 242D shows the position of the springs on the webbing, the circles indicating the bottoms of the springs. The first row of springs are hidden by the front rail of the chair, therefore they are indicated by dotted lines.

Fig. 242E shows the position of the tops of the springs in their relation to the chair frame.

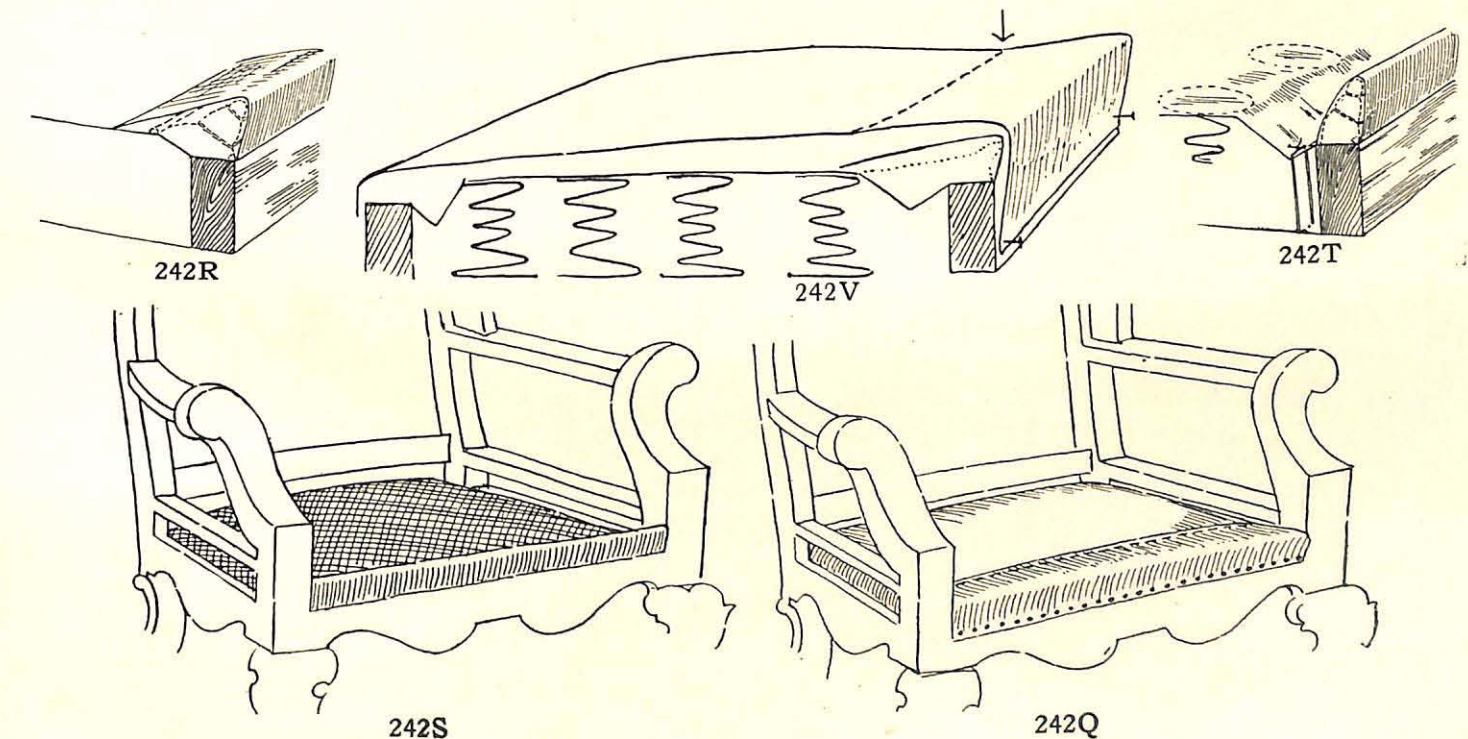
Fig. 242F shows the tops of the springs in their position after having been tied down. The tops of the springs are not usually permitted to be more than 1½ inches above the top of the rail, therefore, in order to give sufficient slack to the

twines when the springs are depressed, instead of being attached to the top of the rail, as in ordinary upholstery, the twines are pulled down to the bottom of the rail and there tacked, it being necessary, sometimes, to pierce the webbing in order to carry them on a straight line.

Fig. 242G shows a cross section, illustrating the method of tying the twines in relation to a single row of springs. The object of dropping the twines and catching the third coil on the front and back springs is to keep the spring surface of the seat as flat as possible. It is necessary, sometimes, even to pull down the tops of the springs by long stitches to the webbing in order to maintain a flat surface.

Fig. 242H shows the seat of the chair after canvassing over the springs. The edge of the burlap being tacked as low as possible on the rail, as illustrated in cross section Fig. 242I, or tacked on top of the rail with a gutter allowed, as indicated in Fig. 242J, the gutter being sewed to the webbing as indicated by the stitches a-a-a.

The next step is the formation of the nosing, which may be made in two ways. When referred to as a "nosing" it means simply that a roll is built up on the rail itself, as in cross section Fig. 242K; when it extends back to a point



even with the springs, we will refer to it as an "edge."

Fig. 242L shows the first step in forming the nosing. A strip of canton flannel is back-tacked to the top of the rail. This strip is filled uniformly with hair so as to produce a fairly compact roll, and the back edge is tacked to the back of the rail, as indicated in Fig. 242K, a cross-section sketch. This nosing is given a single straight stitch after the manner of a regular stitched edge. See Fig. 242M. When the canton flannel is carried back onto the springs, it is stitched to the spring canvas, as indicated by Fig. 242N. This is stuffed into a regular edge, but kept low and shaped to about 1½ inches high in front, as shown in the cross section Fig. 242O. The stitched appearance of this edge is illustrated in Fig. 242P, while Fig. 242M shows the stitched appearance of a nosing, the front view really appearing very little different except that the nosing being low, requires practically a straight stitch.

The next step in the treatment of the seat is to cover the nosing with a layer of hair. Another strip of canton flannel is back-tacked to the top of the front rail, and carried back and tacked, if a nosing, or stitched, if an edge, so as to make the finished foundation, as illustrated in Fig. 242Q and cross section Fig. 242R, the stitched edge, covered, and Fig. 242S and cross section 242T, the nosing covered.

A light layer of hair is now placed over the spring canvas, and a covering of muslin is drawn over this hair pad and slip-tacked into position, the cross section of the chair appearing like Fig. 242U. Then, at a distance of about three to four inches from the front edge, a line is drawn on the muslin, as indicated in this figure by an arrow, and on this line the filling and muslin are stitched through and through. (See Fig. 242V.)

It should be borne in mind that the object of the nosing or stitched edge, and the stitching of the muslin, which we have just described, is all to provide a base which will allow for the ultimate shape of the down cushion, which is always thicker in the middle than at the edge, and the foundation must be made concave to allow for the convexity of the cushion. This is best explained by a reference to Fig. 242W, which shows the cross section and contour of the muslin foundation and the cross section of the down cushion.

After the muslin has been stitched down, as indicated by the arrow on Fig. 242V, the edges are tacked all around and the foundation is finished, ready for the covering.

The seat of the chair, having reached the stage where it is in muslin, is preferably left in this condition while the balance of the chair is brought up to the muslin stage. The back is, therefore, next to be considered.

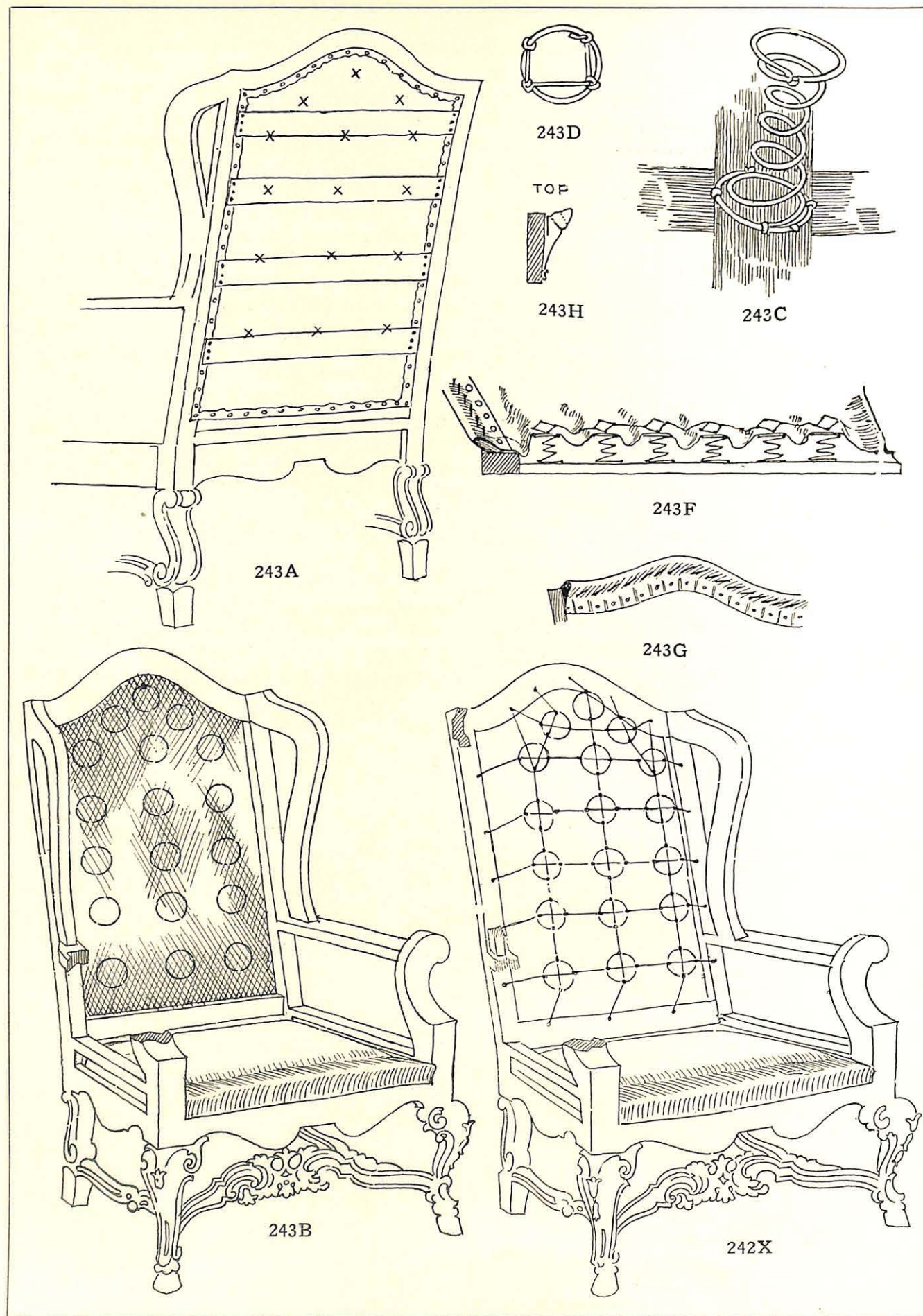
In connection with the chair under consideration, there are two ways of upholstering the back, either with springs, as shown in Fig. 242X, or as a plain, softly upholstered pad-back without springs, which will be described a little later in connection with Figs. 243Y and 243Z.

To produce the softest form of back, it is necessary to use a foundation of springs, and these must be kept quite low, it being sometimes necessary to cut a pillow spring in half in order that the upholstering of the back shall not be too thick.

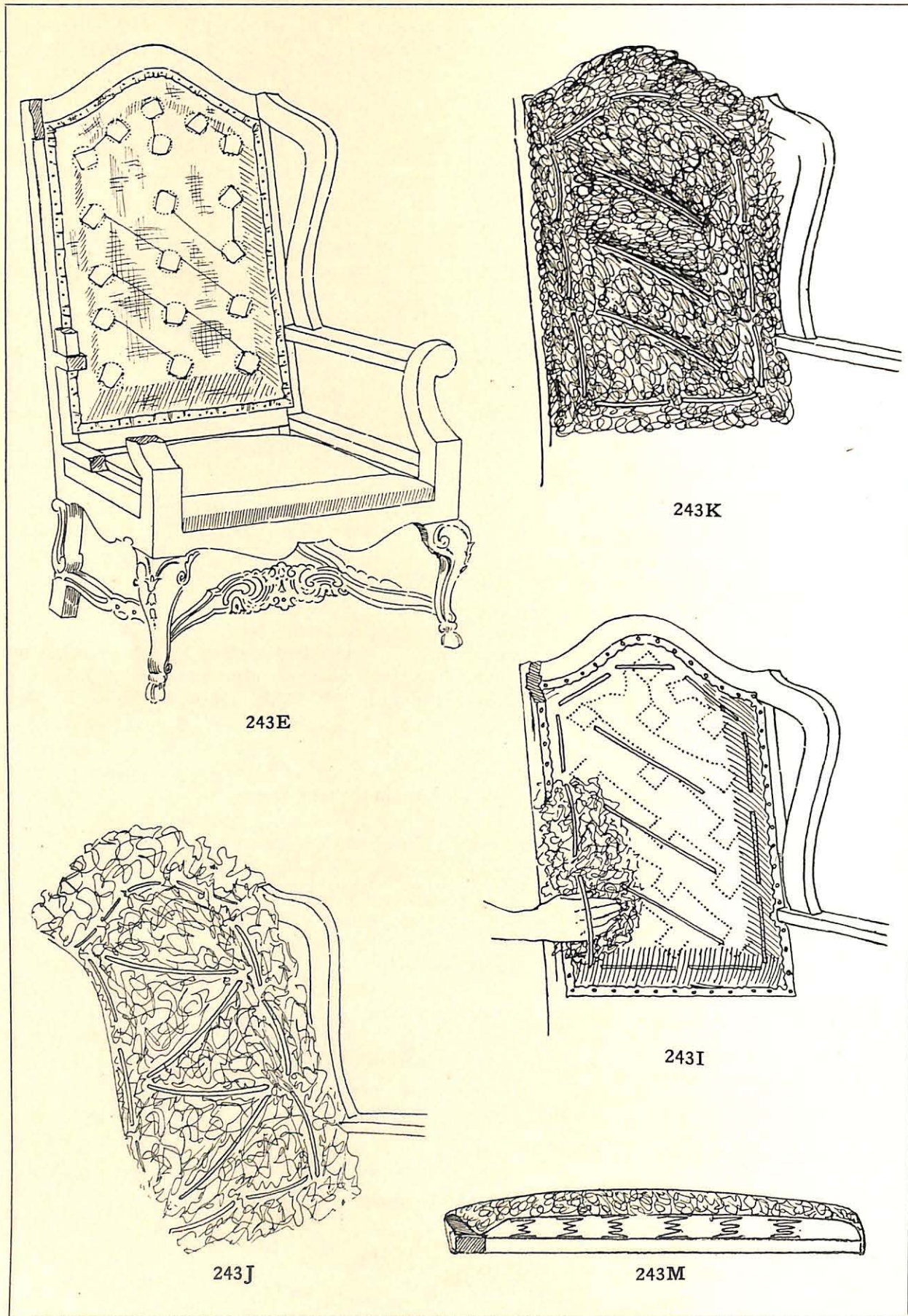
The first stages of the upholstering of the back of the chair we are describing are illustrated in Fig. 243A. A thickness of burlap is stretched over the entire outside back and across this four strips of webbing are stretched and tacked, as indicated in the figure just mentioned. This provides a foundation for the springs, eighteen in number, which are placed as indicated by the crosses in Fig. 243A, and by the circles in Fig. 243B. The springs are sewn to the canvas by four stitches, preferably knotted as shown in Figs. 243C and 243D, after which they are tied down in the regular way, as shown in Fig. 242X. A layer of canvas is next placed over the springs and tacked. The springs are sewn to this canvas covering also by four knotted stitches, as shown in Figs. 243E and 243F.

The next step, following the appearance of the chair in Fig. 243E, is to provide the top edge of the back with a roll similar to the edge or nosing which has been placed on the front of the seat, described in earlier paragraphs. This edging is built up something like the nosing illustrated in Figs. 242K, M, S and T, and is really a nosing, in that it is built up on the frame of the chair and is not sewn to the spring canvas. The flannel for this nosing is back-tacked on the top edge of the chair, as described for Fig. 242L.

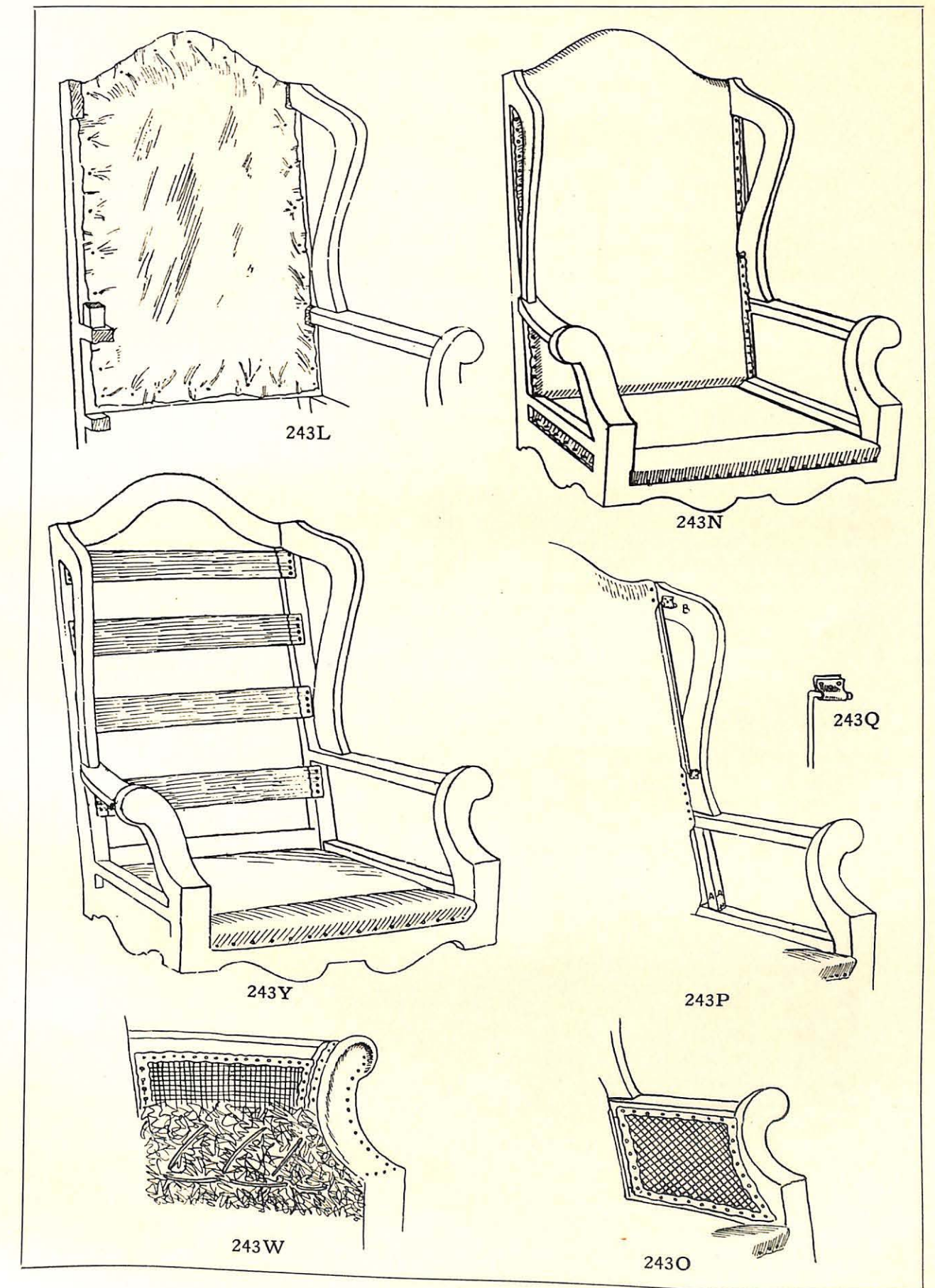
It is filled to a compact consistency with hair, tacked into position and stitched to form the shape indicated in Fig. 243G and in cross-



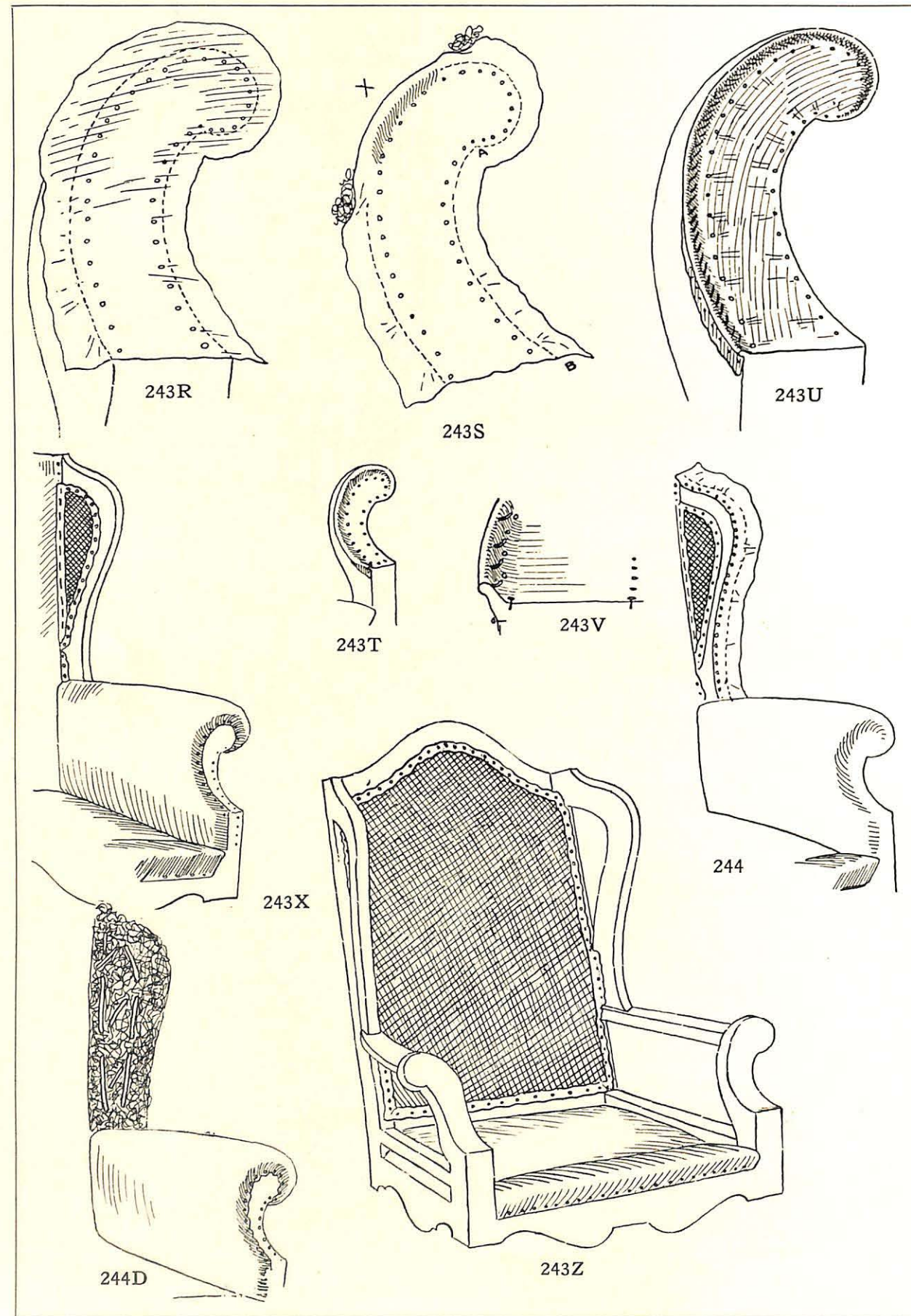
DETAILS OF DOWN CUSHIONING



DETAILS OF DOWN CUSHIONING



DETAILS OF DOWN CUSHIONING



DETAILS OF DOWN CUSHIONING

section Fig. 243H. The reason for back-tacking the flannel which forms the nosing on the edge of the top rail is that allowance is thus automatically made for the swell of the curve, and fullness is disposed of.

The next step is the laying on of the hair covering, which may be done in either of two ways: by the bridling method, shown in Fig. 243I, and by the stitching method, shown in Fig. 243J. The bridling method consists, as will be observed in the figure mentioned, 243I, of having long stitches of twine caught at intervals in the canvas, at a distance of about six inches from the outside edges of the back, also criss-crossed across the back.

The hair, already picked out so as to be free from lumps, is inserted beneath the twines in a compact mass, and woven together during the insertion by manipulating the fingers. (See Fig. 243K.) Over this another smooth layer of hair is worked into the first coating, so that the entire mass will be of the same thickness and consistency, after which a covering of muslin is drawn over and slip-tacked into position as Fig. 243L.

The other method of placing the hair, indicated in Fig. 243J, does away with the bridling twines. The hair is laid on the back to the required thickness and stitched through the canvas by long stitches which prevent the hair from slipping out of place. The softer the upholstering, the greater the necessity of the twines, which hold the first layers of hair in place, independent of the coverings.

After the muslin has been slip-tacked all around, as indicated in Fig. 243L, it is again very carefully and permanently tacked, covering the wood frame of the chair if it is to be shown for display in muslin, but not necessarily so carefully covered if it is to be sold in the cover.

Fig. 243M shows a vertical cross-section of the back as completed in the muslin.

As mentioned in a previous paragraph, there is a way of upholstering, without springs, the back of the chair we are describing. In such a case, four or five rows of webbing are attached to the face of the back, as shown in Fig. 243Y, and a stout canvas is stretched over the webbing, as Fig. 243Z. The webbing should not be stretched to its utmost possibility, but should be allowed to retain a certain amount of its natural elasticity, permitting the back to give slightly un-

der pressure, without creating an unsightly bulge at the outside back of the chair.

After the canvas is attached the chair is upholstered in the same way as described in connection with Figs. 243I, J, K and L. This gives the appearance of the chair now shown in Fig. 243N.

The next step in the upholstering of this chair is the treatment of the arms, which must be canvased, as indicated in Fig. 243O. Some support, however, must be provided for the back edge of the burlap so that, between the upholstering of the arm and that of the back, a crevice will be left through which the back edge of the arm covering may be drawn.

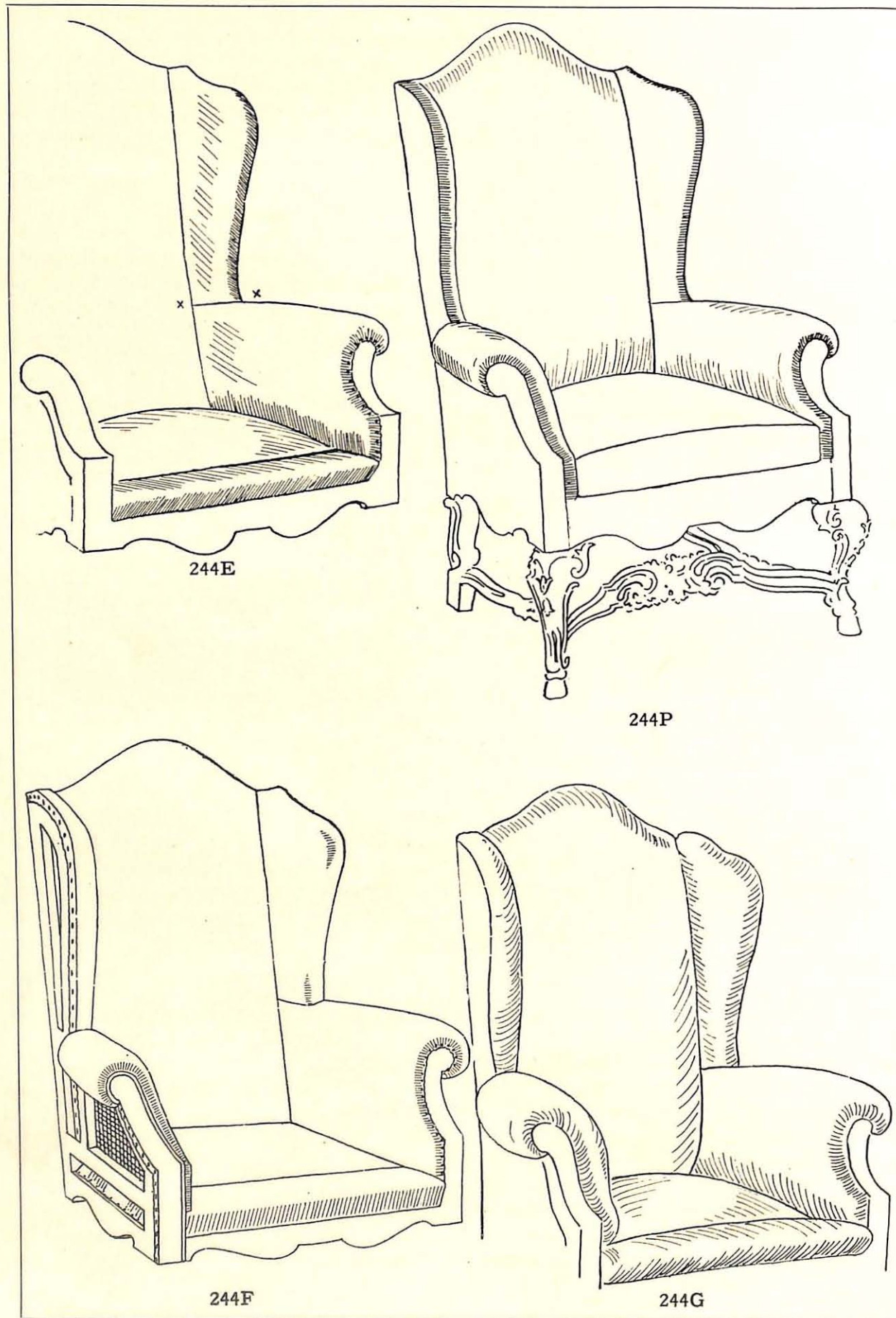
This support may be provided in either of two ways; by tacking a wire, as shown at *b* in Fig. 243P, or a block, as shown at *a* in the same diagram. The method of attaching the wire is shown in enlarged detail in Fig. 243Q. Where the wire is used the burlap is passed around and sewn with long stitches while the balance of the burlap is tacked in the regular way.

The next step is the formation of the nosing around the inner edge of the arm. A piece of canton flannel larger than the face of the arm is tacked, as indicated in Fig. 243R, keeping the tacks about one-half inch from the edge of the arm. The surplus material, which goes beyond the edge, is then stuffed up to form a nosing, as indicated at *x* in Fig. 243S. This diagram shows the commencement of the nosing. The stuffing is continued down on the inside edge of the arm to the point where it joins the seat and is continued also around the top curve of the arm, diminishing in size until it practically dies away at *a*. No nosing is provided on the edge between *a* and *b* for this type of chair, but the surplus material is carried around the edge and tacked to give a finish.

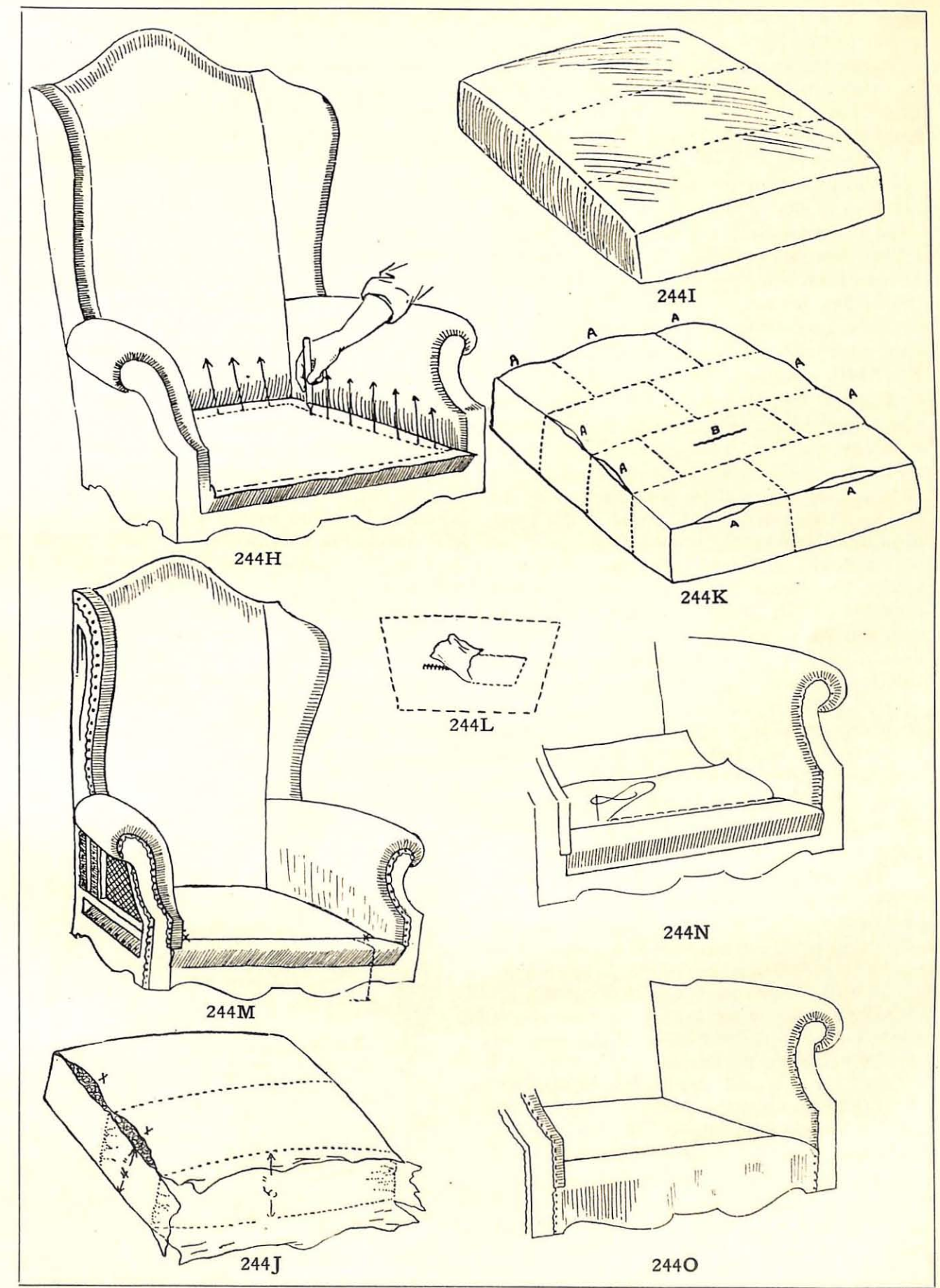
After the nosing has been entirely formed, it is regulated into shape and stitched so as to have the appearance of Fig. 243T. Note also the enlarged detail diagrams 243U and 243V, which give a clearer idea of the stitching.

The next step is the lacing on of the hair, as shown in Fig. 243W, the compact mass being kept uniform and carried up over the top of the arm smoothly, so as to produce, in the muslin, the shape shown in Fig. 243X.

After both arms are done, the wings are next in order, these being first canvased, as



DETAILS OF DOWN CUSHIONING



DETAILS OF DOWN CUSHIONING

shown in Fig. 243X. Then the flannel for the nosing is back-tacked on the edge of the wing, as shown in Fig. 244, and this also is stuffed up and tacked to provide a compact, smooth edge, as indicated in Figs. 244A and 244B, and in the stitched form shown in Fig. 244C.

The operation of forming the nosing can be reversed by tacking the inside edge of the flannel, then stuffing it and tacking the outside instead of back-tacking the outside edge, stuffing it and then tacking the inside, which is shown in connection with these figures, and an equally satisfactory job can be done either way.

The next operation is the lacing on of the hair, as already explained and here shown in Fig. 244D, and finally the covering with muslin to the stage illustrated in Fig. 244E. Where the muslin of the wing joins the muslin of the arm, it will be necessary to sew the two together on the line *x.x*, as shown in Fig. 244E. On the completion of the covering also, it will be found necessary to have the material seamed at this point in order to provide the proper shape.

With both arms and both wings covered in muslin, the chair will now have the appearance indicated in Fig. 244F. Just here it is well to point out the possibility of losing the symmetrical lines of the chair by upholstering that is too full or that rounds out over the edges of the frame. This possibility is indicated in Fig. 244G, where all of the sharp symmetrical lines of the chair have been lost, and bulbous, pillow-like outlines have been created. In this illustration the arms are too full, the front seat nosing too round, and the back and wings have lost the shapeliness which is characteristic of the original frame.

The chair is now completely upholstered in muslin, the outside arms and wings having been lined with muslin for display purposes, and the only upholstering yet remaining to complete the muslin stage is the making of the down cushion.

It used to be customary on chairs of this description to allow a recess at the bottom of the inside arms and at the bottom of the back for the down cushion to slip into. This is not, today, considered a good practice, but the arms and the back are finished straight down and the down cushion is made to just fit into the space between the arms. Therefore, a paper is smoothly laid over the seat, and with a pencil, held upright as indicated by the arrows in Fig. 244H, an outline of the cushion is marked on the paper and from

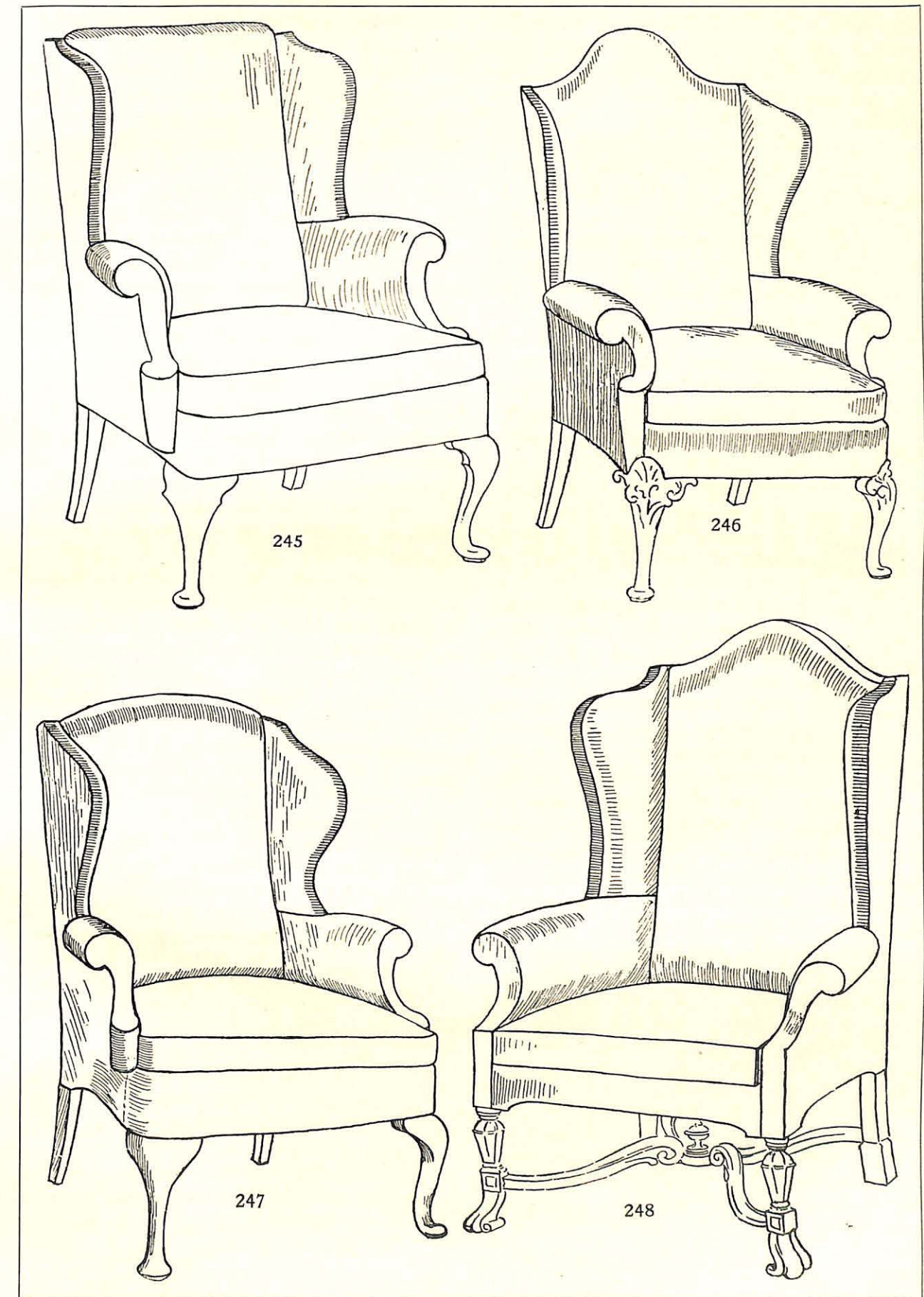
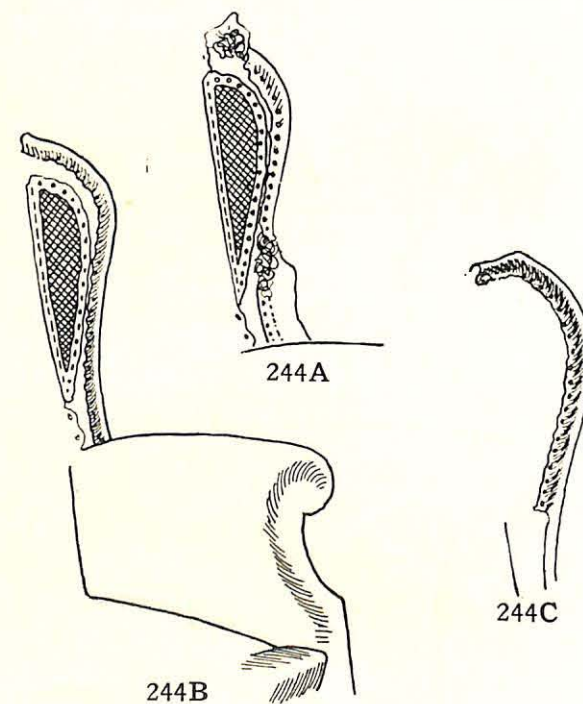
this pattern the cushion is made the exact size thus indicated.

Down cushions are not, like buttoned cushions, made larger than the finished cushion is intended to be. On the contrary, they are made the exact size of the pattern with only seaming allowances added beyond the lines indicated in Fig. 244H.

The filled cushion, as shown in Fig. 243I, must exactly fill the space allowed for it, so that it will lie in place without being crowded yet at the same time fill the seat without leaving any unsightly gaps or openings. Because of the nature of the down-filling material, it is necessary to divide the inside of the cushion by partitions which prevent the down from shifting its position when in use.

A cushion of the size indicated for the chair we are describing would have not less than two partitions, running crosswise of the cushion, dividing it into three equal divisions. These partitions are indicated by the dotted lines in Fig. 244I, also in Fig. 244J, which shows one end left open to more clearly show the location of the partitions.

These partitions, furthermore, are made on an average of one inch wider than the box edge of the cushion. Thus, in Fig. 244J, the edge shows a depth of four inches, while the interior partitions have a depth of five inches. These partitions are sewn to the top and bottom of the



TYPICAL CHAIRS WITH DOWN-CUSHION SEATS

case, but are not sewn to the edges. These divisions are filled, as indicated in Fig. 244J, by leaving an opening at one edge of the boxing (see *xx*), through which the down may be inserted, they are then pinned together and sewn.

Larger cushions call for a greater number of divisions. These divisions, as in the case of the cushion shown in Fig. 244K, must each be built separately. This cushion has partitions running in both directions, across and lengthwise of the cushion, as indicated by the dotted lines. It sometimes occurs, as it does in the case herewith illustrated, that it is not possible to fill all of the sections from the edges. The cushion shown in Fig. 244K has ten divisions, nine of which can be filled from the edges at the openings marked *aa*, etc. The tenth division, however, is an interior division and this can only be filled by a slit made at *b*, which is sewn together after filling and covered by what in trade parlance is known as "a plaster," consisting of a piece of the same material as that of which the casing is composed placed over the seam and sewn all around, as indicated in Fig. 244L.

With regard to the material used as a casing for down filling, the finest down-proof sateen or ticking only should be employed, and a simple test of any material may be made by determining the degree to which it resists an attempt to blow through it. If, by holding the material across the mouth so that no air can escape around it, and then, by blowing, force the pressure of your breath against it, real down-proof material will be found to be practically airtight. If the breath passes through it easily to an extent that would extinguish the blaze of a candle, it is a safe assumption that the material is not down-proof and should not be employed for casing purposes.

With the cushion completed and in place, the chair in muslin ready for covering will now have the appearance shown in Fig. 244P. If the chair is to be displayed for sale, however, the fronts of the arms would have a panel of muslin sewn on and tacked around the edge of the arms as a finish and the entire outside of the chair would also be covered in muslin.

These final details serve to present a better appearance when shown for sale, but the muslin linings require to be removed in the final covering of the chair, which will be described in a later chapter.

The previous paragraphs have carried the upholstering of this chair up to the point where it would be shown for sale, in the muslin, and subsequently covered. On the assumption that it would not be shown for sale in the muslin, the upholstering would stop when it reaches the stage shown in Fig. 244M, which is practically the same as Fig. 244F, except that the face of the arm is covered in the last mentioned diagram.

The first operation in the covering is, naturally, the seat. It is not customary to cover the entire seat platform with the furniture covering, but only that part which is likely to show under the edge of the cushion. For this reason, therefore, a piece of covering, wide enough to reach from the line *x—x* to the edge of the nosing and down to a point below the scallop, as indicated by the dotted line in Fig. 244M, is sewn to a piece of lining large enough to cover the seat, and after being sewn together the two are stitched from the wrong side of the covering, as shown in Fig. 244N, and eventually tacked into place as indicated in Fig. 244O.

The back, arms and wings are also covered in the regular way. The chair has now reached the stage where it must be determined how it is to be trimmed, a matter which will be discussed in a later chapter.

There are many types of down-cushioned chairs for which the upholstering instructions would be practically the same as for the chair, which, up till now, has been described in this series. This would include such chairs as Figs. 245, 245A, 246, 247 and 248, for while they differ somewhat in arm construction, the main body of the upholstering is executed after the manner already described in connection with Fig. 244.

On Figs. 245, 245A and 246 there is a scroll, which is a continuation of the curve of the arm. The covering for this is planned to be continuous with the arm covering, and a seam, which is concealed by the cushion, joins the two sections, allowing for a sufficient amount of padding on the block, so as to make a smooth surface to the body of the column. The scroll face of the arms being put on subsequently conceals the edges, while the lining of the outside arm and the covering of the front nosing and rail complete the operation.

Fig. 247 is not sufficiently different from Fig. 244M to require any extra explanation, the principle of upholstering being exactly the same.

BUILT UP DOWN-CUSHIONED BACKS

THE chair illustrated in Fig. 248 brings our study of down-cushioned upholstering to another stage and to a different type of chair from the one described in preceding chapters.

The frame of this chair, shown in Fig. 249, is exceedingly simple and gives little indication of the appearance it is to assume in the upholstering. For this reason we give, at the outset, a sketch of the finished chair in order that the workman may have in mind the object to be attained even in the preliminary processes which are first described.

It will be noticed first of all that the chair frame, Fig. 249, is provided with removable arm rails (see *A A* in diagram), which greatly facilitate the upholstering of the seat.

All of the preliminary processes with regard to webbing, placing, and tying of springs are practically the same in connection with this chair as were described in connection with the first chair shown in this series. Reference should therefore be made for these preliminary processes to Figs. 241 to 241F.

Following the canvassing of the springs, the subsequent processes are different and call for the use of a light, soft double-stuffing, indicated in Fig. 249A. The front edge of the double-stuffing is stitched up uniformly with a slight projection beyond the frame, but is kept very soft and pliant.

A very light coating of hair and wadding is placed on top of the double-stuffing and then a covering of muslin, giving the appearance shown in Fig. 249B.

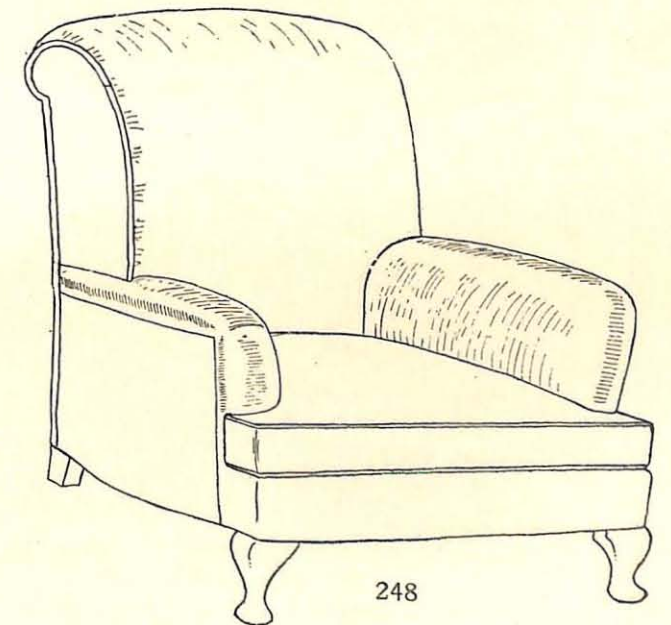
The arms are next in order for attention. The loose rails are nailed into place, as shown in Fig. 249C. On the tops and fronts of the arms a soft, double roll is produced by tacking a piece of canvas, as shown in Fig. 249D and detail. This is stuffed softly, as indicated in Fig. 249E, and stitched after the manner of Fig. 249F, taking care always to keep the edges uniform and avoiding hardness.

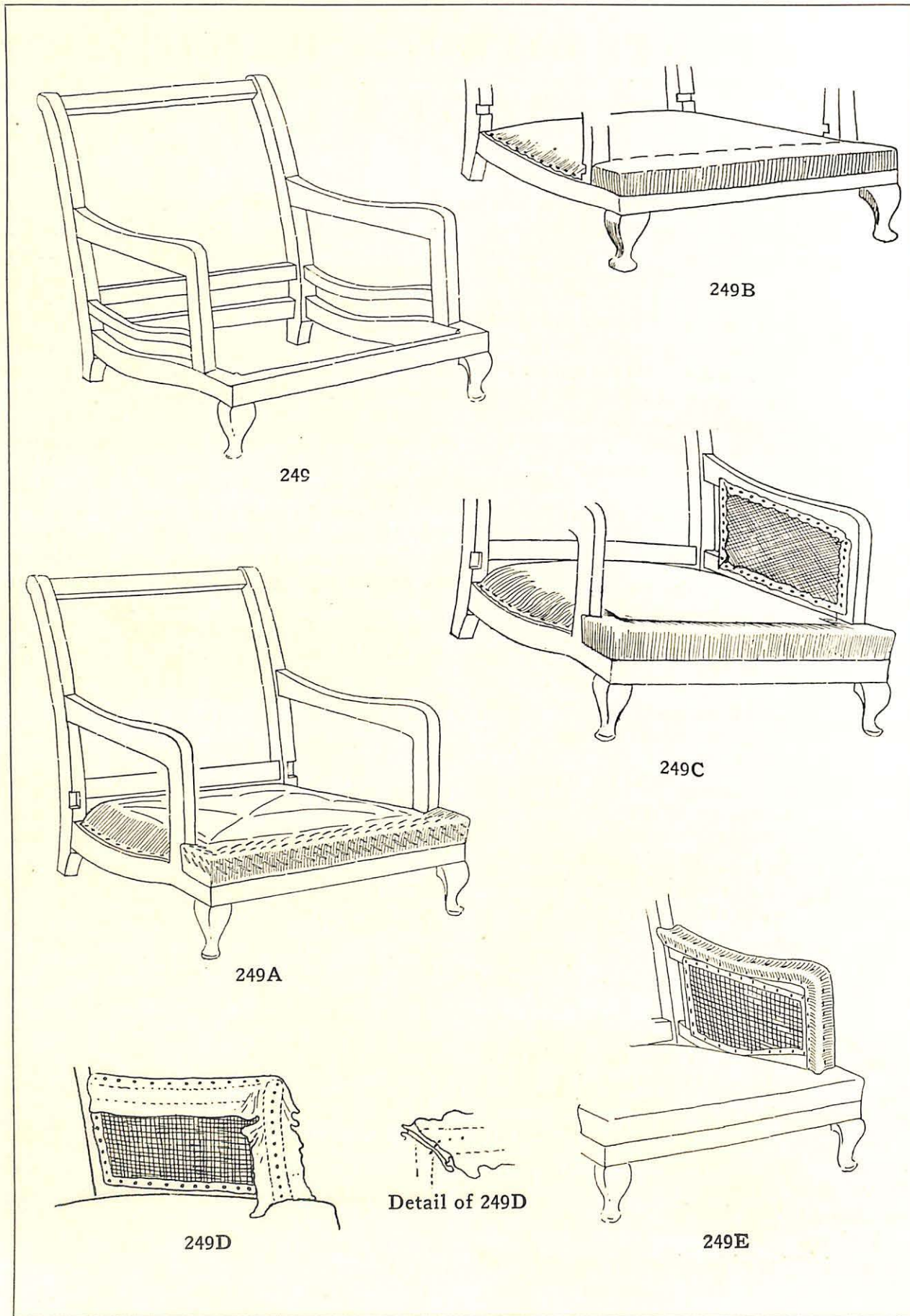
A soft filling of hair is now employed to fill

the crevice formed by the stitching of the two rolls, giving the entire arm a symmetrical shape, as indicated in Figs. 249G and cross section 249H. The other arm is treated in the same way and the chair will then present the appearance of Fig. 249J.

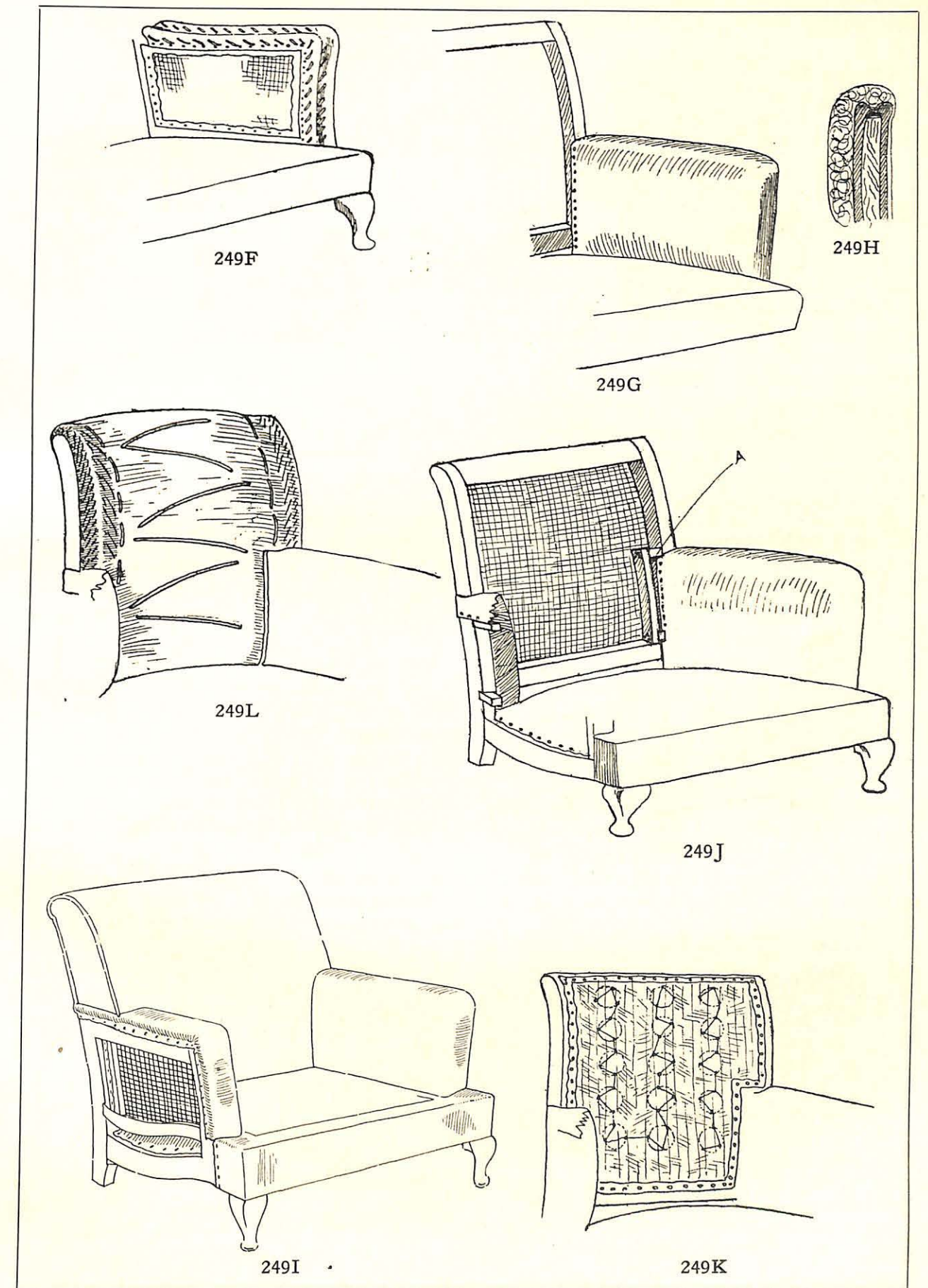
It will now be necessary to arrange for a block to be attached to each outside back post, as indicated at *A*, Fig. 249J, which will permit the covering of the back of the arm to be drawn through and tacked on the back, making a closed join. To better show the treatment of the back, one arm of the chair is indicated as if cut away.

The outside back is canvassed, as shown in Fig. 249J, and five rows of pillow springs, three to a row, are sewn to the canvas and tied down in the regular way, but kept as high as possible in order that they may be extremely soft. A piece of burlaps is then placed over the springs, drawn and tacked loosely and sewed to the tops of the springs, presenting the condition illustrated in Fig. 249K.

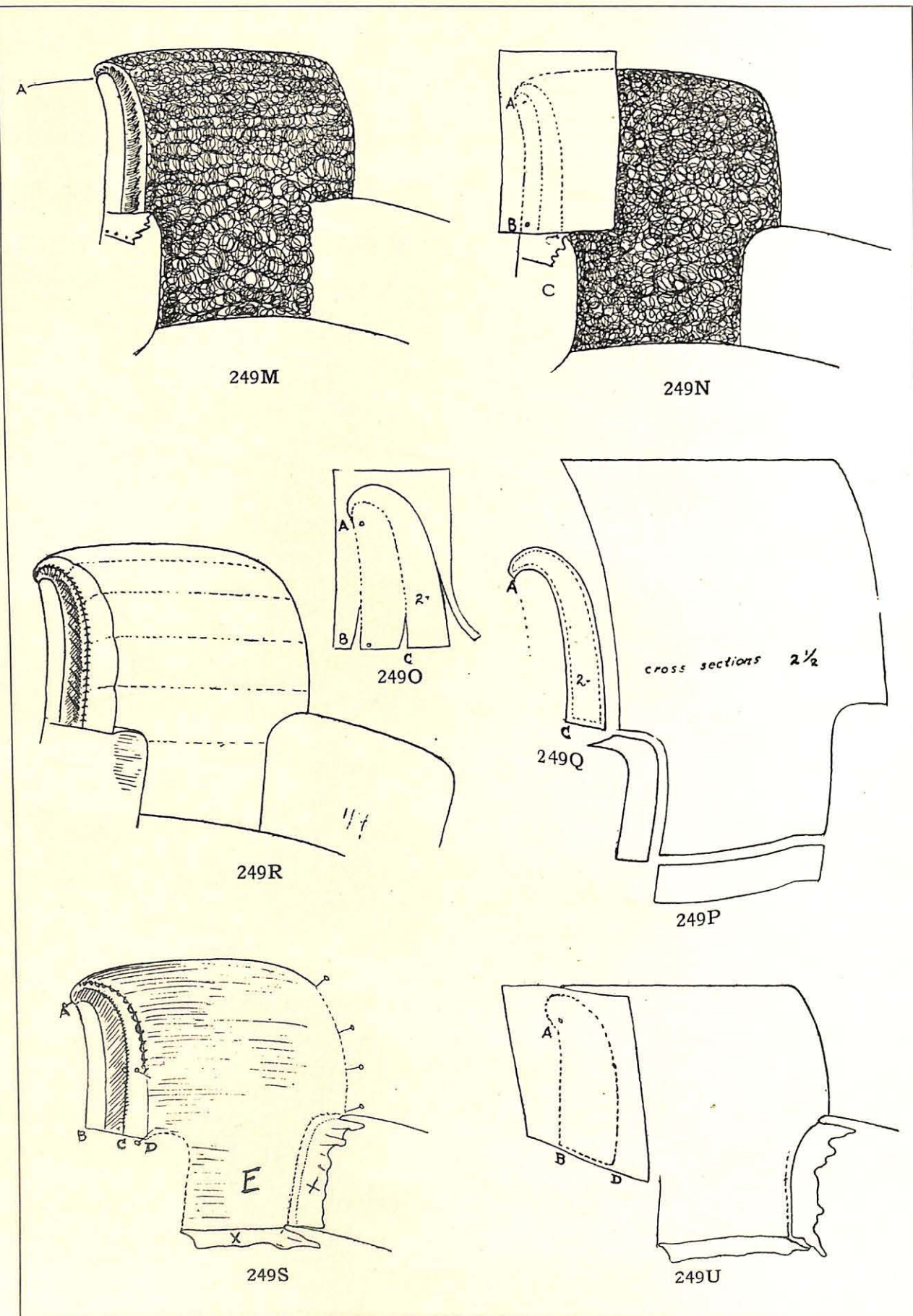




DETAILS OF BUILT-UP DOWN-CUSHIONED BACKS



DETAILS OF BUILT-UP DOWN-CUSHIONED BACKS



DETAILS OF BUILT UP DOWN-CUSHIONED BACKS

The back is then lightly double-stuffed with the edges shaped up and stitched, as shown in Fig. 249L. Following this, a layer of hair is placed over all the back and woven into a compact mass, as in Fig. 249M. The back at this stage may be covered with muslin if desired, but inasmuch as the down-filled cushion is sewn to the stitched edge, the under muslin may be dispensed with, allowing the cushion itself to provide covering for the hair. It is important that the shape of the stitched edge should be kept to a uniform curve, rounding off at the top of the chair and finishing just even with the curve of the side post at A, Fig. 249M.

This shape should be the same on both sides of the chair, and when the upholstering has reached the stage already described, a pattern of the outline of the back, from B to A, and of the stitched edge from A to C of the same figure, is drawn on a piece of cardboard, see Fig. 249N. The line A to C will be the under part of the down cushion and the side border of the cushion must follow this line without any deviation. Therefore, with the outline A—C drawn on the cardboard as a pattern, proceed to lay out the dimensions of the border of the cushion, as indicated in Fig. 249O.

In the case we are illustrating, the border of the cushion at its deepest part is two inches, and this dimension is marked off on the cardboard, Fig. 249O, and the edge of the cushion is sketched diminishing toward the top and finishing at A in a graceful curve, as shown in Fig. 249P.

The back and front of the cushion is cut to fit the curves of the pattern shown in Fig. 249Q, also the other borders indicated in this diagram. Interior partitions are provided at least a half inch deeper than the outside borders, and the down cover is assembled according to the dimensions determined in Fig. 249P.

The various sections of the cushions are filled, as already indicated in a previous chapter, and the completed cushion is sewn to the stitched edges, as shown in Fig. 249R.

Too much stress cannot be laid upon the importance of shaping the cushion in this way, because by no other plan is it possible to obtain a proper allowance on the borders of the down casing and at the same time avoid objectionable wrinkles when the filled cushion is attached to the stitched foundation.

Having reached the stage shown in Fig.

249R, measurements are taken of the back, and the covering planned accordingly.

The main covering indicated by the letter E in Fig. 249S is cut to shape and pinned into place with tacking strips of muslin sewn at the points where the covering must reach through to the back for attaching (see Fig. 249S), and the fullness of the rounding edge from B to A is taken up by overcasting the material with a stout stitching twine in such a way as to shirr the fullness on the stitches.

The tighter the twine is pulled the more closely the fabric will be shirred and in this way the surplus fullness will be disposed of without the necessity of pleats.

The fabric edge from D to A is pinned to the cushion temporarily while the shirring is being done to give it the proper shape.

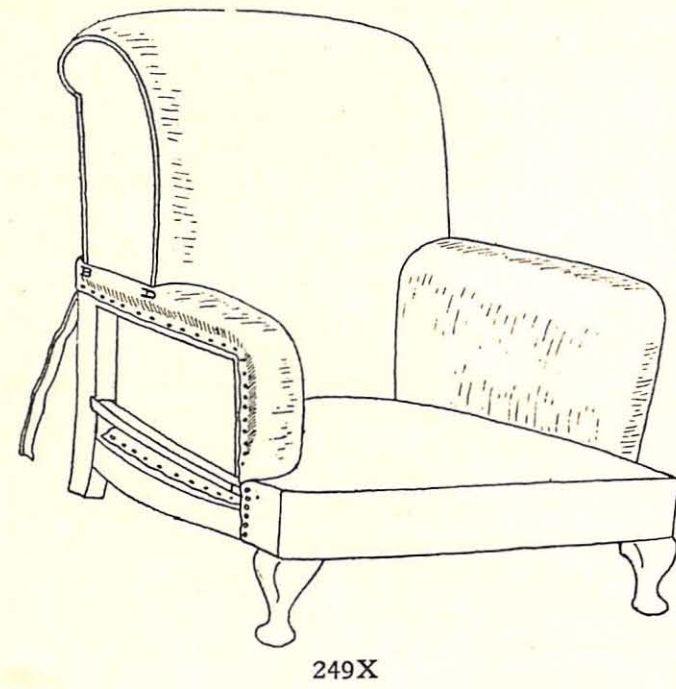
Another cardboard pattern of the back is now made, following the plan explained in connection with Fig. 249N, and this pattern must have the true shape of the back as now outlined by the lines A, B, and D in Fig. 249S, with tacking allowance added between A and B and stitching allowance between D and B. See also diagrams Figs. 249U and 249V.

The covering, E., is now removed, and the other parts indicated in Fig. 249V are attached with such tacking strips as are necessary to draw between the seat and back and the arms and back, and the covering assembled as a loose cushion cover shaped like Fig. 249W.

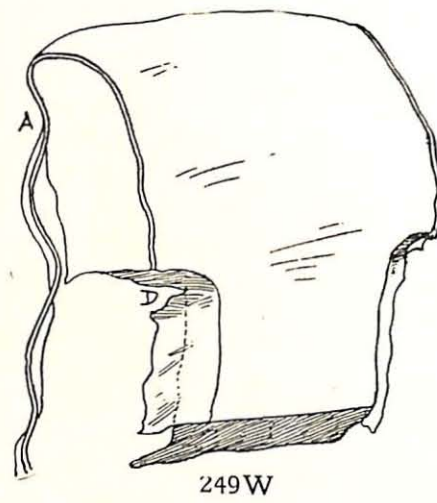
It will be noticed that the welt which is attached permanently from point D around to point A is made long enough to reach to the bottom of the chair. This extra length is provided so that the back of the chair may also be finished with a welt as indicated in our Fig. 248 and also in Fig. 249X.

The covering, Fig. 249Y, is slipped on over the top of the back and pulled down into place. After all the edges have been tacked, it is back-sewn from D to B, Fig. 249X. The outside arms are put on and the welt on the back edges carried down to the base of the chair, and finally the outside back is back-tacked to the top rail, even with point A of the various figures, and then sewn to the welt all around, making a finished appearance without any tacks being visible. See appearance of outside back in Fig. 249Z.

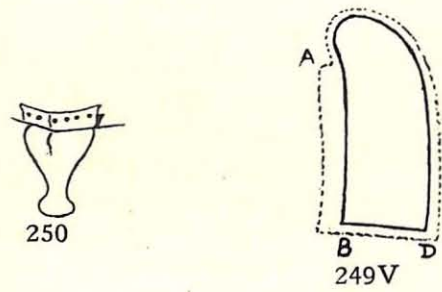
To avoid showing tacks above the shoulders of the front legs, a piece of material is back-



249X

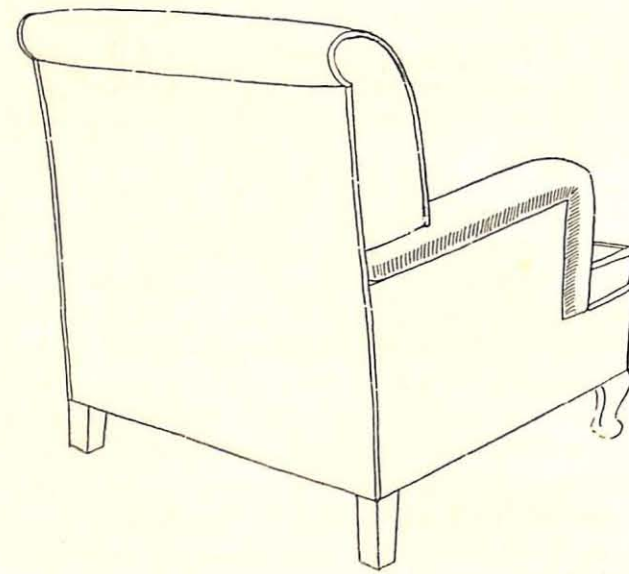


249W



249V

250

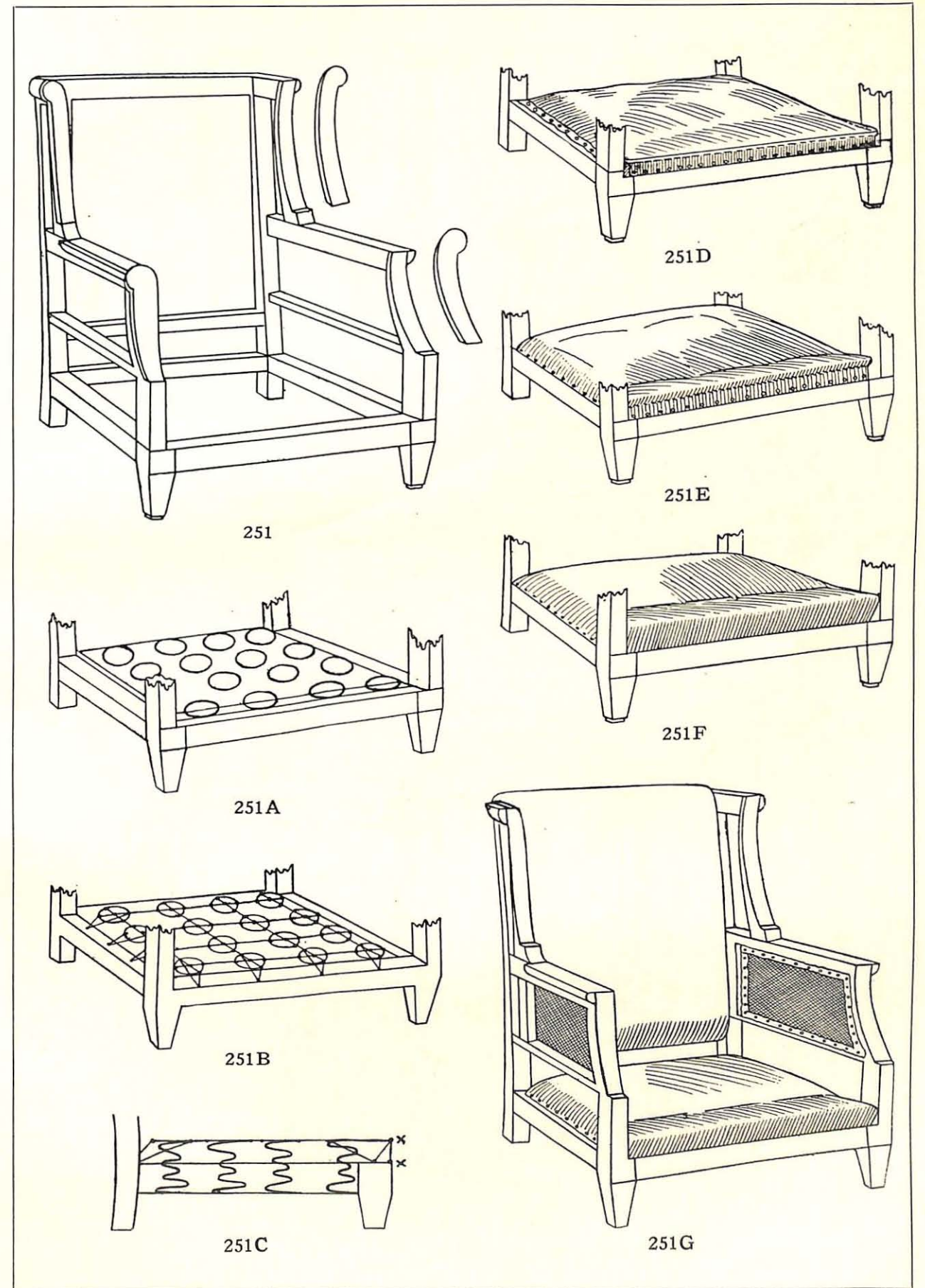


249Z

tacked above each leg, as shown in Fig. 250, and to this the bands are blind-sewn, the balance of the bands and linings being tacked beneath the rails.

The seat cushion of this chair is made, in all respects, the same as the cushion shown in the chair previously treated, with the addition that the front corners are shaped to fill out the spaces where the arms do not extend to the front edge of the seat.

We have already indicated in connection with the chair described in previous chapters the method of taking the pattern and the filling of the cushion, and space need not here be taken to repeat the same instructions.



DETAILS OF SPRING EDGES AND DOWN CUSHIONS

SPRING EDGES AND DOWN CUSHIONS

IN THE upholstering of any type of chair frame there has to be kept always prominently in mind the requirements of bodily comfort and any shape which does not conform to the dimensions of the human body, is a failure from the standpoint of serving its chief purpose as an article of furniture.

In the consideration of the frame represented in Fig. 251, the chair frame, which has purposely a very low seat, requires a different form of treatment from that which has been indicated for the chairs already covered in this series.

The frame of Fig. 251 has very short legs, enabling the upholsterer to provide a deeply-cushioned seat, in order to bring the finished height of the seat the necessary distance from the floor, which, as we have said elsewhere, is about eighteen inches.

For this reason, we suggest in the upholstering of Fig. 251, the employment of the spring-edged seat, and we have indicated in the first of the sketches, in connection with this chair, the details of forming a spring edge.

We have not attempted here to teach the rudiments of spring-edge work, because it is to be assumed that the upholsterer who is interested in the advanced methods of upholstering which we are describing in connection with these high-class types, has already mastered the rudiments of foundation work which are explained in earlier chapters.

Fig. 251A shows the placing of the springs; four rows of four springs each, the front row being preferably springs specially constructed for spring-edge work, having either a square front or finished with a large top coil, which makes it less difficult to bring the front edge of the top coil in line with the front edge of the chair rail, as indicated in Fig. 251B, and by X X in 251C, a cross-section of the chair which shows the placing of the springs.

Fig. 251D shows the seat sprung up and canvased, the wire or cane, enclosed by stitching, being about $1\frac{1}{2}$ to 2 inches above the rail.

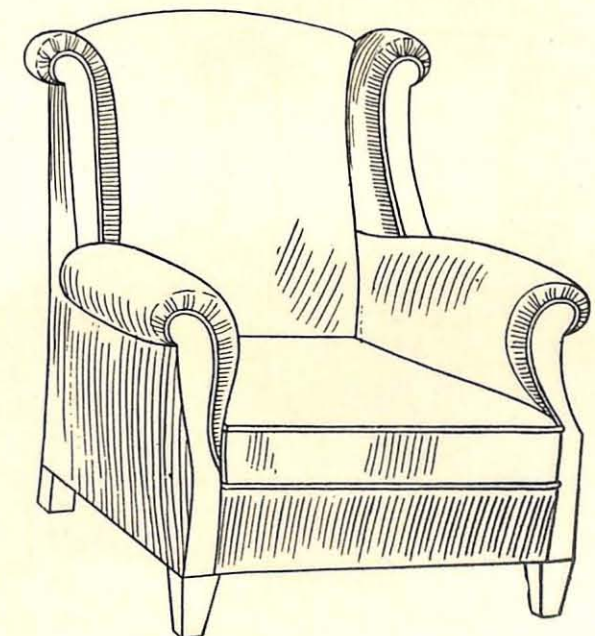
The next step in connection with the up-

holstering of this seat is the forming of the stitched edge, which is provided by double stuffing the seat, as indicated in Fig. 251E, which shows the edge ready for stitching. In the stitching of the edge, care should be taken to keep it soft and somewhat blunt, because it is necessary to have every part of the upholstering of the chair we are describing as soft as can be, and still retain sufficient firmness to hold its shape.

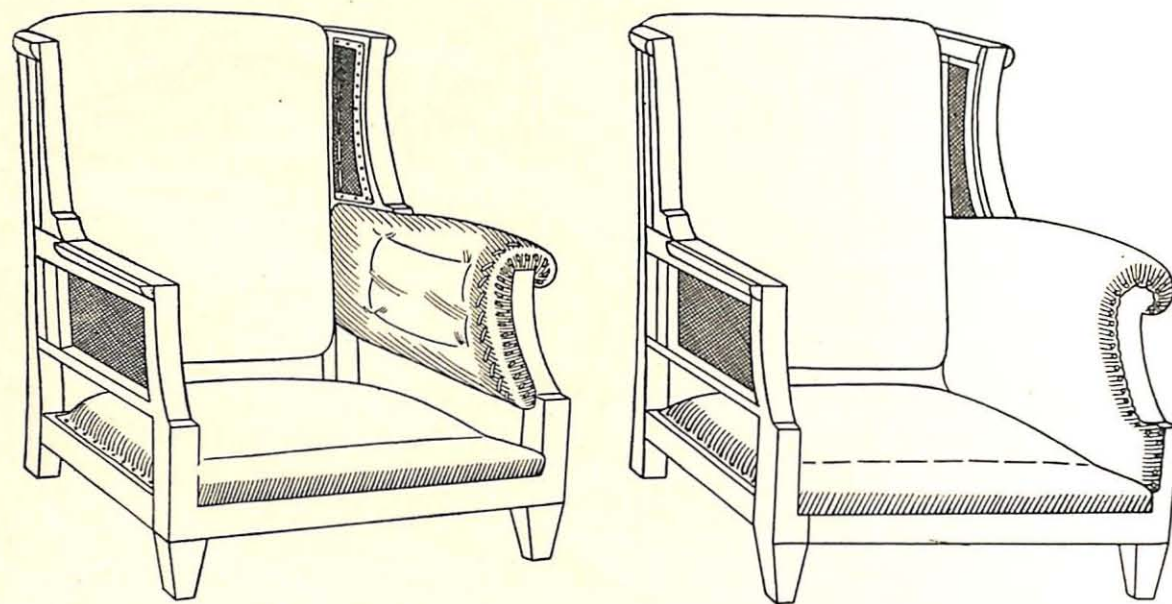
Following the stitching of the edge, the next process is the final layers of hair and the covering in muslin, bringing the process to the point indicated in Fig. 251F. It will be noticed that this chair is provided with loose strips which form the final finish of the arms and wings. These are removable for all the preliminary processes of upholstering, and are only used to promote uniformity in the completed appearance of the chair.

The back of this chair is upholstered with springs in the manner detailed in Fig. 242E, and then has the appearance indicated in Fig. 251G.

The next step is the building up of the arms and wings. The arms require considerable shaping-up, and for this reason it is best to double-

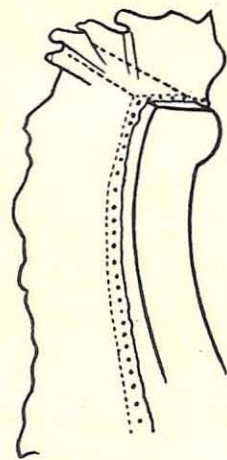


251O

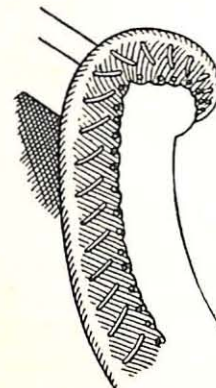


251H

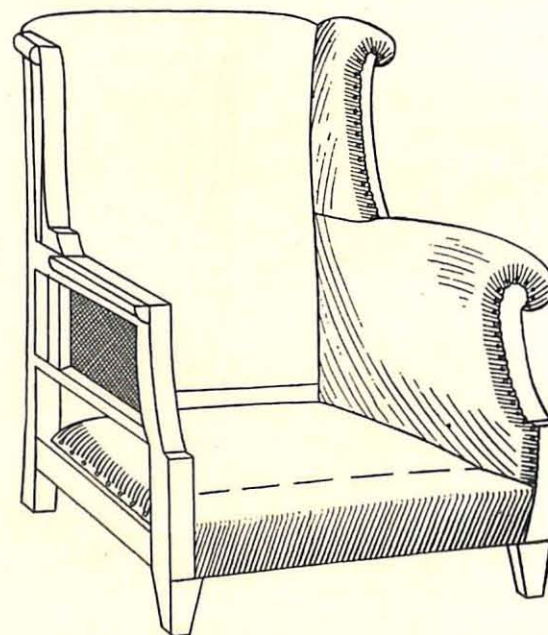
251I



251J



251K



251L

stuff them, keeping the stuffing soft and giving the edge a single stitch to create the foundation shape, as illustrated in Fig. 251H.

It is well to continue the upholstering of the arms up to the muslin stage before treating the wings, because the wings must be built out to the same thickness as the upholstering of the arms, so that the join, where the two meet, as shown at XX in Fig. 251M, must be absolutely smooth so that the covering may be continuous with a seam at this point.

The arm, as it appears in the muslin stage, is illustrated in Fig. 251I. It is possible to double-stuff the wings, but a stitched nosing answers for all practical purposes. The canvas for the nosing is back-tacked on the front post of the wing, as shown in Fig. 251J, allowing sufficient fullness for the corners, so that it may be stuffed up and stitched to form the symmetrical roll illustrated in Fig. 251K. This section is then lightly covered with hair and shaped up in muslin, as shown in Fig. 251M.

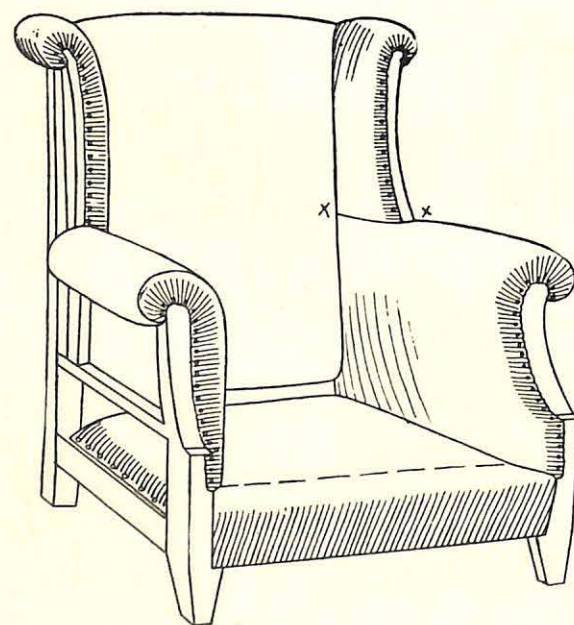
The join between the wing and arm is blind-stitched in the muslin so as to make a smooth continuous surface. When completely covered in the muslin, this chair now has the appearance

shown in Fig. 251M, and is then ready for covering.

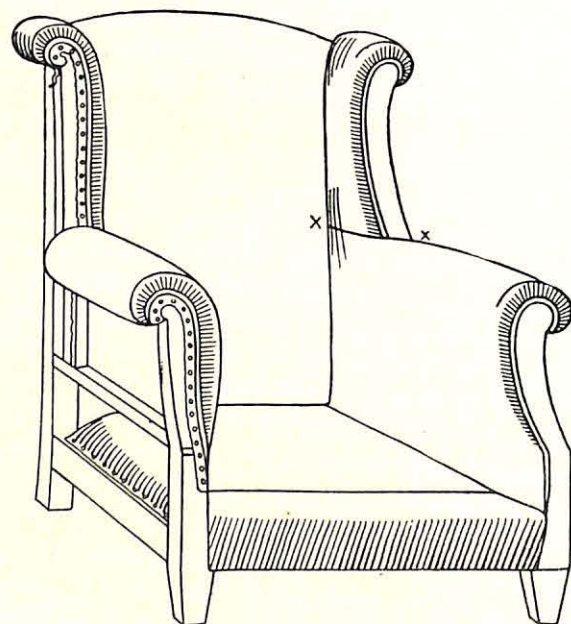
We need not here go into details with regard to the covering of this piece, because in all respects, the handling of the covering is the same as we have described for other wing chairs, the coverings for the arms and wings are fitted into position and pinned together so that the seam at XX Fig. 251N, may be machine-sewn and pressed, presenting a smoothly finished appearance.

The chair in the completed illustration, Fig. 251O, shows a welt surrounding the panels on the front of the arms and wings. This welt may be provided in either of two ways; it may be tacked to the face of the arms and wings, as shown on the left side of Fig. 251N, or it may be tacked to the back of the wooden panels and finished on the front of the arms and wings. These wooden panels are covered and the covering carried around underneath the outside linings after the panels have been tacked into position.

It is possible to do without these panels, but the chair we have illustrated is provided with them and therefore we have carried through the explanation of their use.



251M



251N

DEEP - SPRING SEATS

THE chair illustrated in Fig. 252, brings into our discussion of modern upholstering perhaps the most luxurious type in modern use. The deep spring upholstering of this seat does away entirely with chair feet and the chair rests directly upon the floor.

In addition to this feature, this chair is of unusually luxurious proportions which must be built up entirely in upholstering.

For this reason, the seat of the chair is double-stuffed, and a soft, stitched edge is provided above the wire of the spring edge, as shown in Fig. 252A. The stitching of the edge is intended only to give shape to the edge, not hardness. Over the double stuffing is placed a light coating of hair and the seat is covered in muslin and stitched down to form a depression about four inches back from the edge, as we have already explained in connection with other chairs, in order that the seat may be concave to receive the shape of the cushion.

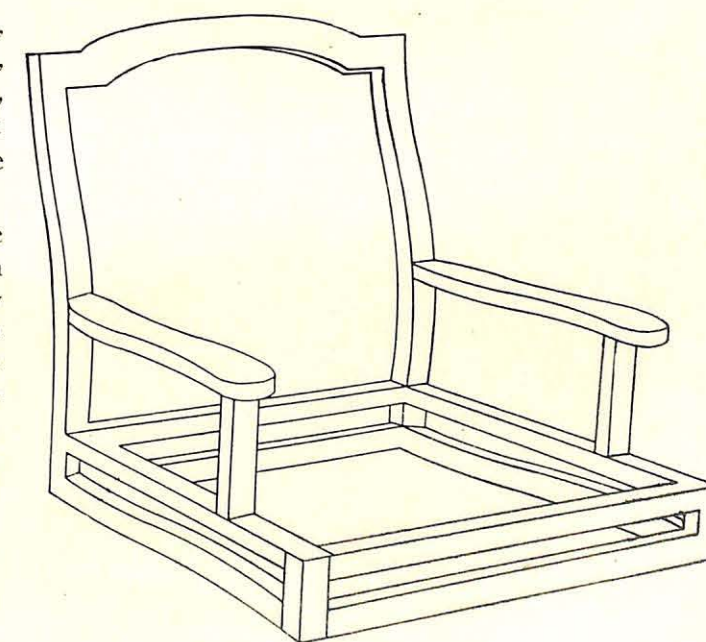
The next step is the upholstering of the arms, as shown in Fig. 252B. These arms, as will be observed in the illustration of the finished chair, Fig. 252C, serve only the purpose of elbow pads, but they are completely upholstered, because, when in use, the down cushion and soft, spring seat sinks with the weight of the occupant, exposing the inside of the arms. They must, therefore, be treated as if they were exposed at all times. Fig. 252B gives the appearance of the arms at this stage.

The next step is the springing up of the back, which has been thoroughly described in connection with other chairs. This is followed by the double-stuffing indicated in Fig. 252C, with its soft, stitched edge. The purpose of this edge and double-stuffing is to bring the depth of the upholstering of the back to about equal the thickness of the down cushion, in other words, the frame and stitched edge combined should equal about four inches, and the down cushion should also be four inches, so that the entire back, as shown in Fig. 252F, is about eight inches thick over all.

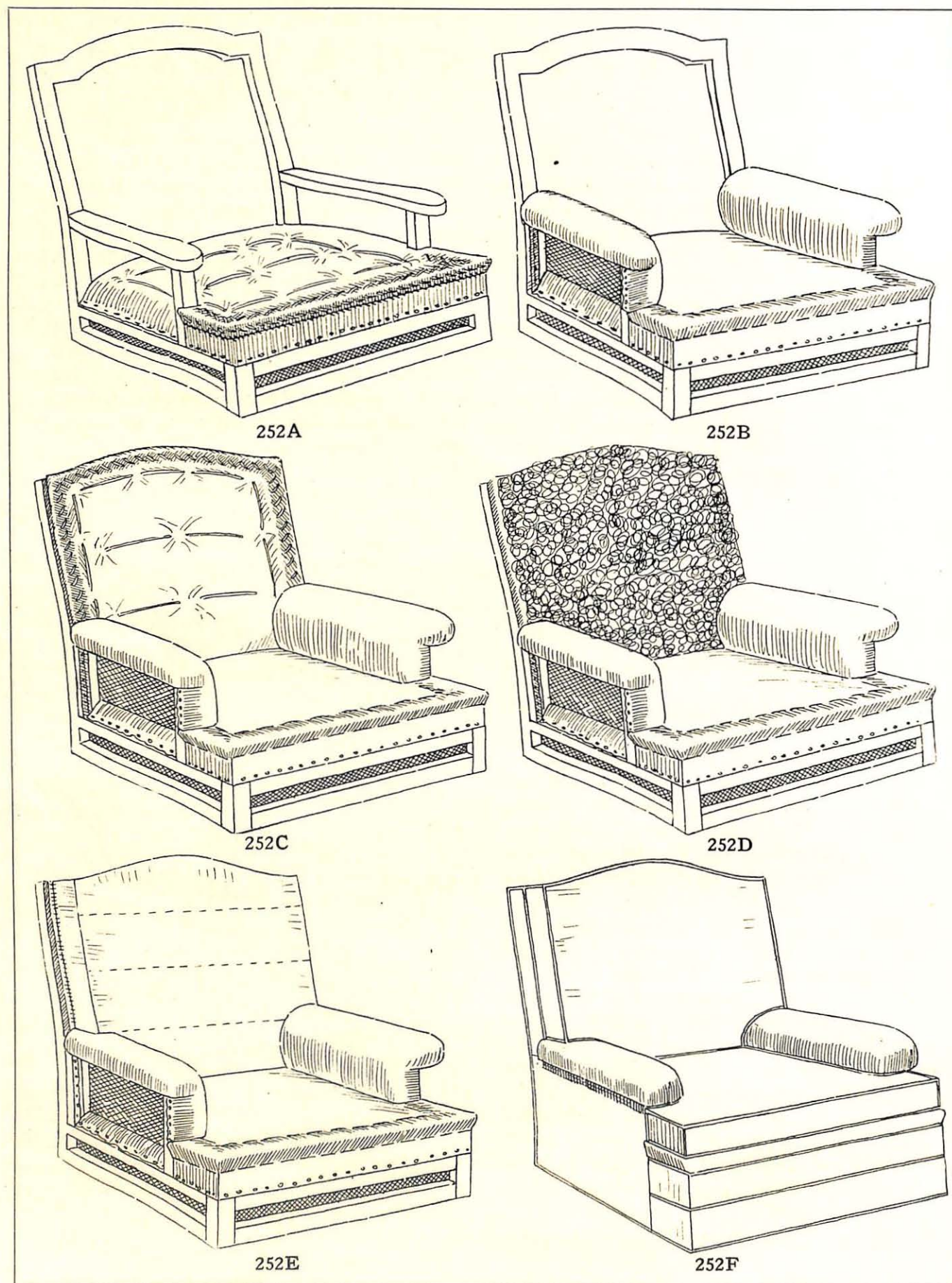
A soft coating of hair is laid over the entire

back, as shown in Fig. 252D, and this may be confined under a muslin covering or it may be kept in place by the down cushion, which, as shown in Fig. 252E, can be sewn to the stitched edge, it having been first fitted and filled in the manner already described in connection with other chairs.

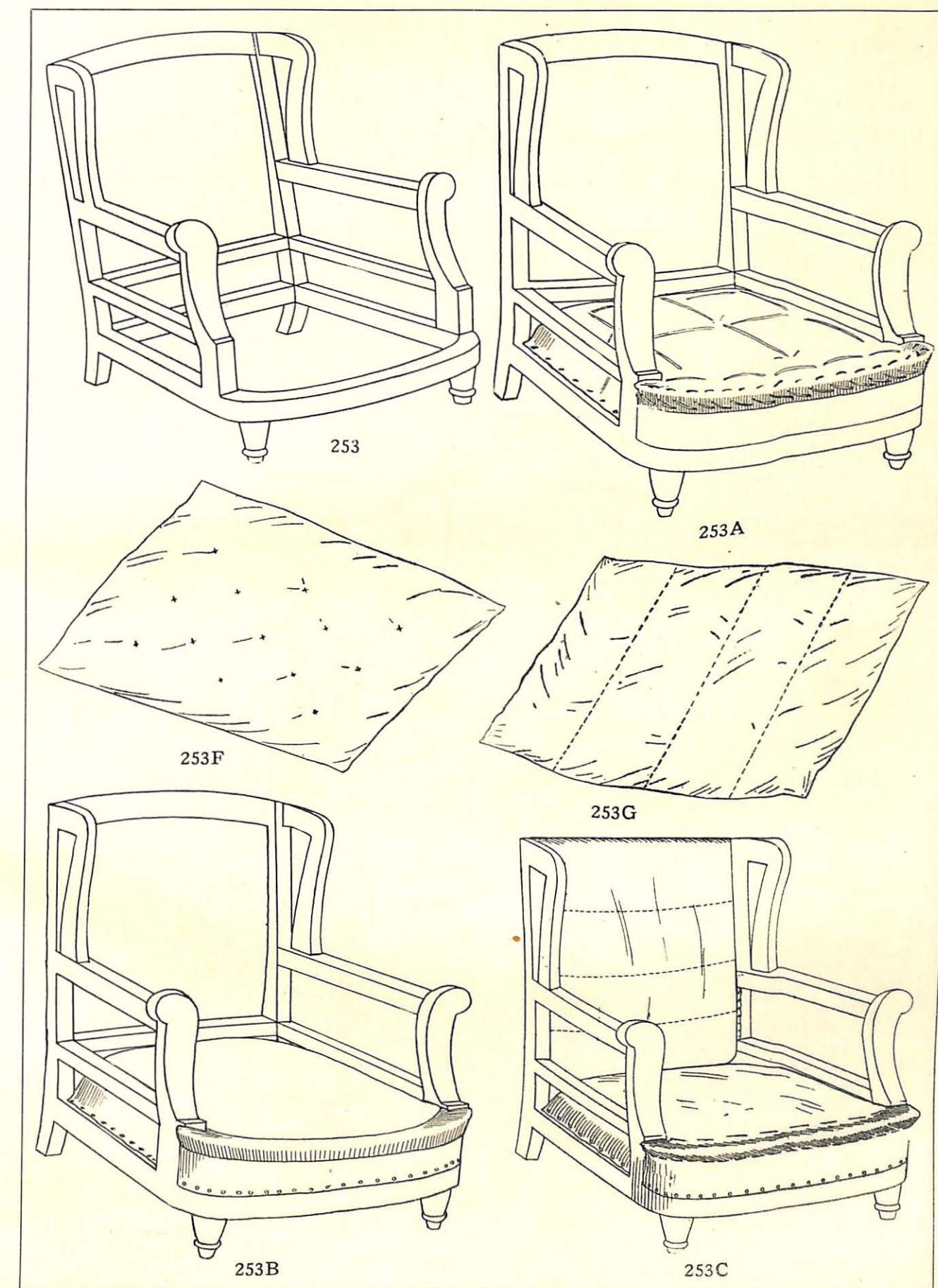
The completed chair, shown in Fig. 252F, gives the appearance of the chair finished by welting. The luxurious character of the upholstering is suggested by its appearance of double and triple cushioning as well as by its unusual size.



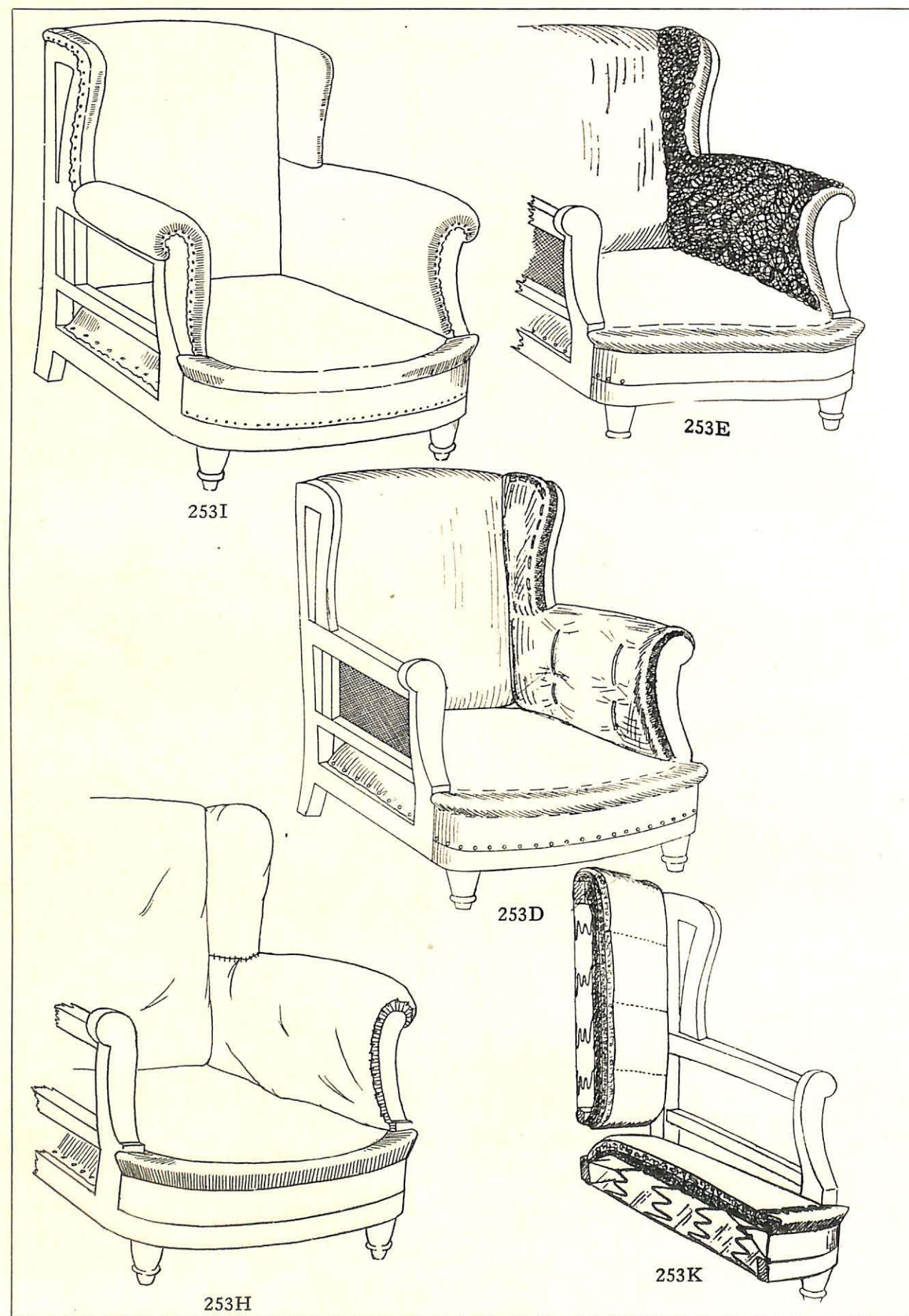
252



DETAILS OF DEEP SPRING SEATS



DETAILS OF DOWN PAD TOP STUFFING



DETAILS OF DOWN-PAD TOP STUFFING

DOWN PADS AS TOP STUFFING

THE chair frame illustrated in Fig. 253 introduces a new theory of comfort into our discussion of the application of down as a top stuffing. This chair is upholstered, in the early stages, in all respects the same as the one described in connection with Fig. 252.

The seat has a spring edge built up in the usual way, with a very soft stitched edge and hair under-stuffing. No description, therefore, need be given in connection with Figs. 253A and 253B, nor is it necessary to describe the placing of the pillow springs in the back and the soft upholstery of hair which overlays the springs.

Fig. 253C shows a quilted pad of down attached to the back as a top stuffing. This pad, which is thin, is made knife-edged, that is, without inserted borders, and is filled with a very light filling of down and either tied at intervals to prevent shifting of the down, as shown in Fig. 253F, or sewn across by means of a sewing machine with a very slack top-thread tension, creating a loose type of quilting, as shown in Fig. 253G.

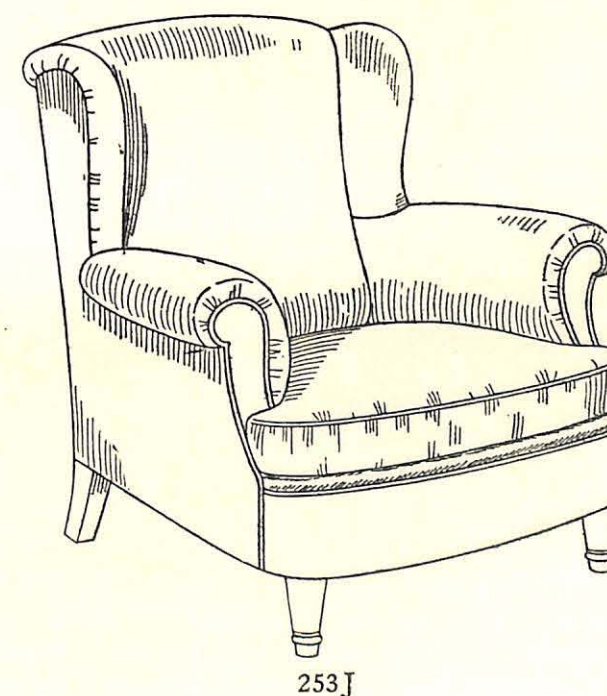
This pad, as indicated in Fig. 253C, is tacked over the under-stuffing to make a soft surface next to the cover. It goes without saying that for a surface of this kind the cover must be left fairly slack, so that the fluffing of the down will fill it comfortably, but always avoiding that degree of tightness which would nullify the advantages of employing the down pad.

The arms and wings are double-stuffed very softly and built up as shown in Fig. 253D. Over this is placed a light padding of hair, as shown in Fig. 253E. The down-filled pads similar to those shown in Figs. 253F and 253G, are made a little over size, that is, the pad for the wing would be made about one inch wider than the actual size of the wing, and that for the arm possibly two inches over size each way. These are then attached, as shown in Fig. 253H, in such a way that there shall be no wrinkles that will be perceptible under the covering but retaining so far as possible the full benefit of the down, when the covering is tacked into place, as shown in Fig. 253I.

The cross section of this chair, illustrated in Fig. 253K, assists in the explanation of the method of upholstering; the back showing first of all the springs, then two layers of hair and a top cushion of down, and the seat showing the springs and two layers of hair.

The completed chair, illustrated in Fig. 253J, gives little indication of the presence of down on the arms, wings and back, it merely carries the appearance of a soft, comfortable, stuffed-over type.

The down pads described in connection with this chair can be used on any chair of roomy dimensions and our use of them in connection with this chair is not intended to convey the idea that this is the only style we have illustrated for which this type of down cushioning would be suitable. We have merely chosen this particular chair for the purpose of explaining the method of utilizing down pads as a top stuffing.



TUFTING DOWN-PAD PIECES

THE chair frame illustrated in Fig. 254 introduces a new element in the handling of down upholstery, because this type of chair is best treated with a tufted back. The frame of this chair is of generous dimensions and permits of the employment of springs in the back, thus creating a more luxurious type of upholstery than is possible without springs. The same chair, however, can be made with pad back, and in order to make our description complete we show the preliminary stages of both methods.

In Fig. 254A we show the seat of the chair upholstered in the muslin, the front edge having been built up with a nosing as described in connection with previous illustrations, and the seat kept flat as a foundation for the down cushion. If springs are to be employed in the back as shown in Fig. 254B, the burlap to support the springs is tacked on the outside back of the frame. On the arms, where no springs are used, the burlap is on the inside of the arms as shown in this illustration.

The pillow springs, employed in the back, are lightly tied down to keep them in place by twines which reach from the bottom to the top, but are not cross-tied, as cross-tying would interfere with the free play of the springs.

A stuffed roll forms a base for the upholstery and is built up around the bottom of the back as shown in the last mentioned figure. To this roll the burlap which covers the springs is sewn, as shown in Fig. 254C. The burlap is also knotted to the springs, but is kept quite loose so as to prevent strain when the springs are depressed.

When the chair has reached this stage burlap for a nosing is back-tacked all around the edge of the frame, beginning at the lower extremity of one arm, circling around the back and coming down to the lower extremity of the other arm. This nosing is stuffed up as already explained in connection with other chairs, and lightly stitched so as to make a soft roll, square with the edge of the frame. The burlap at this stage is marked for buttons, as shown by the dots

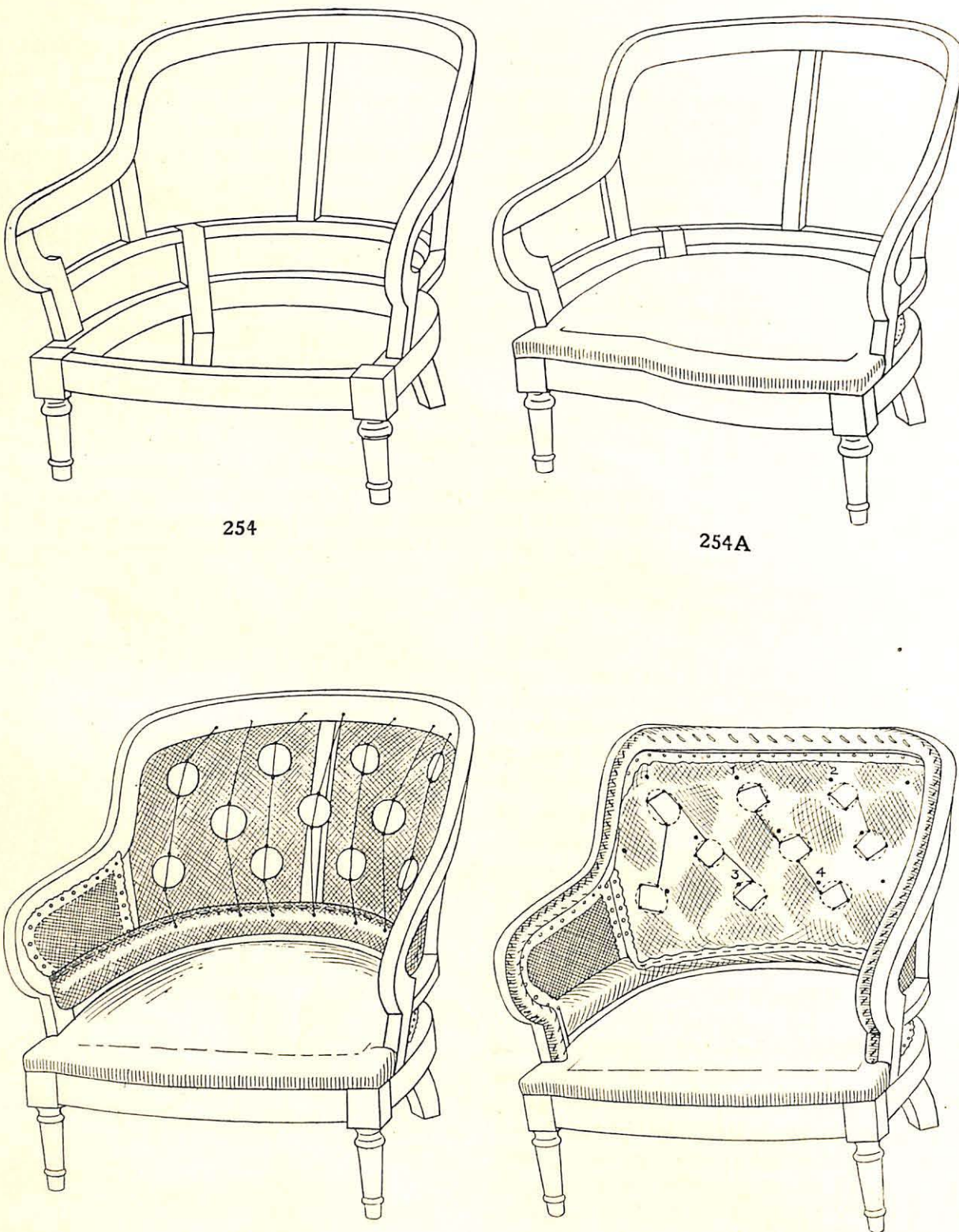
in Fig. 254C, and tying twines are threaded through these dots, both ends being left free for subsequent use as shown in Fig. 254D.

When the chair has reached the stage shown in Fig. 254C it is in condition to measure for the down pad which forms the top layer of filling. The down-proof ticking for the pad is cut the shape of the back, but an allowance of about three inches over all each way is provided for fullness. Note is made of the button marks on the burlap shown in Fig. 254C and similar marks are made on the pad covering, allowing an extra three-quarters of an inch between the marks for fullness. Thus, if the distance between marks 1 and 2 in Fig. 254C measured nine inches, the distance between the corresponding marks on the pad should measure nine and three-quarters inches and the distance between 1 and 3 in Fig. 254C would be increased about three-quarters of an inch on the down pad.

The entire back is next overlaid with hair between the twines, the twines being held upright during the manipulation of the hair so as to keep them free. The entire hair filling is applied by successive layers as shown in Fig. 254D, keeping the edges neat and the nosing free so that the down-filled pad can be sewn to the nosing without interference.

When the chair has reached the stage shown in Fig. 254D, the down pad which is made knife-edged (i. e., with no border), having previously been sewn and comfortably filled with about one inch of down, is pinned into place, as shown in Fig. 254E, for the final fitting of the arms, which are made separate and sewn together after filling and fitting.

The strings which projected through the hair in Fig. 254D are now brought into play and the down-filled pad being treated as if it were the covering muslin is tufted into place, the fullness being arranged into pleats and the edges sewn all around the nosing, as shown in Figs. 254F and 254G. Where the tufting is tied in it is advisable to use a small piece of cotton wadding beneath the twine, making the knot from underneath the pad rather than on top.

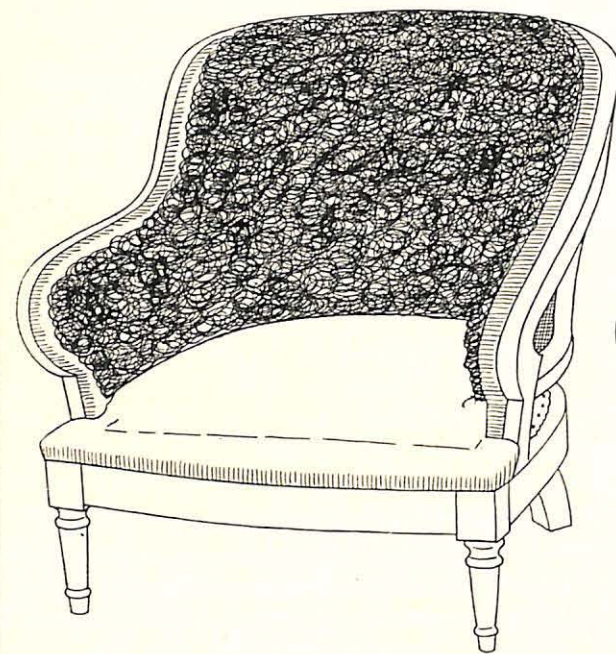


254

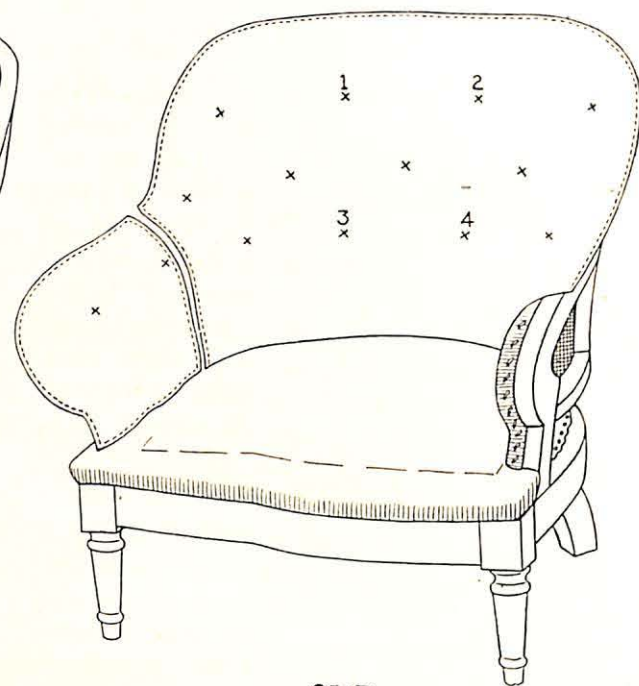
254A

254B

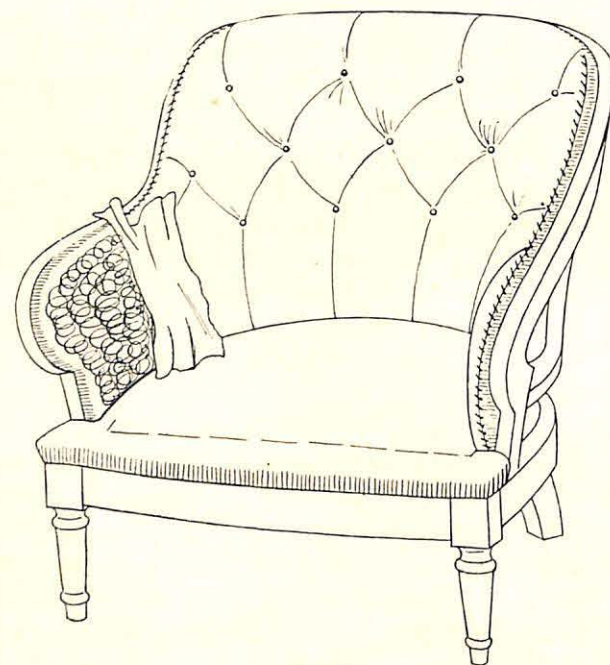
254C



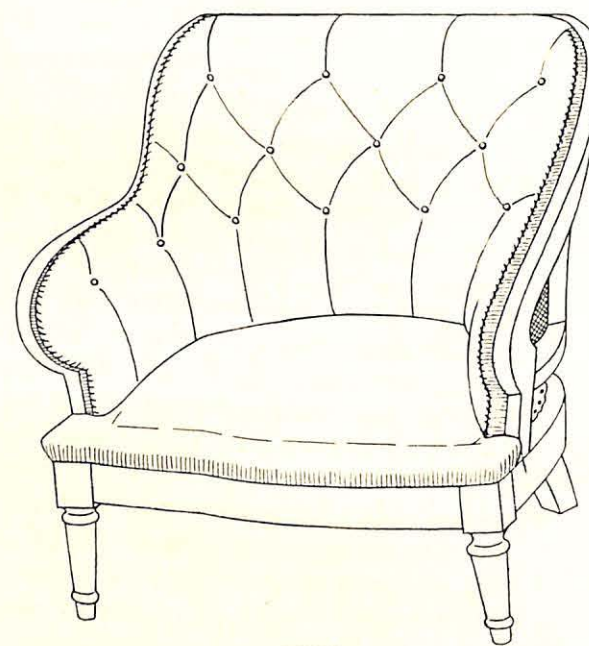
254D



254E

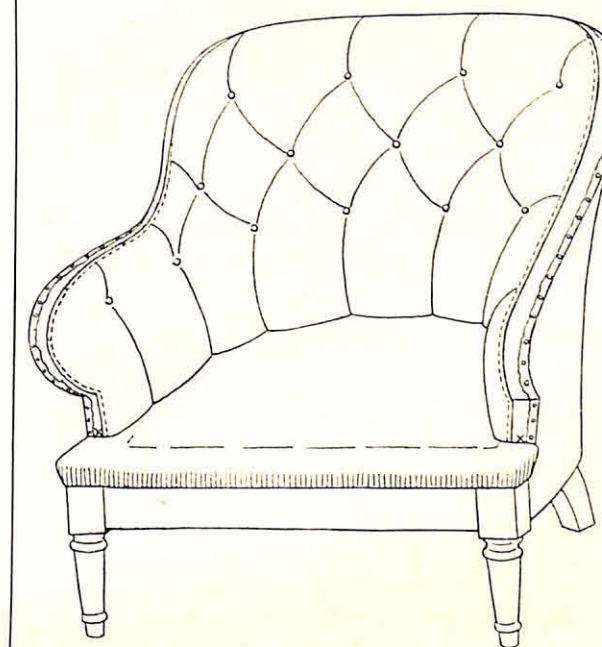


254F

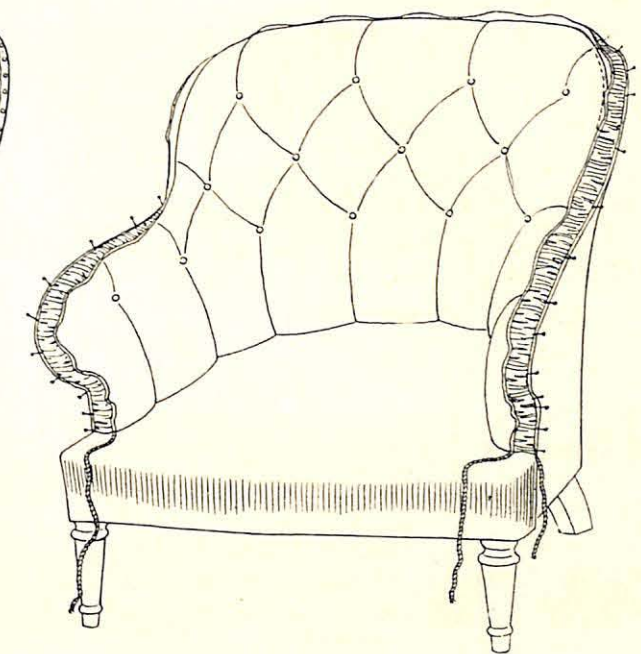


254G

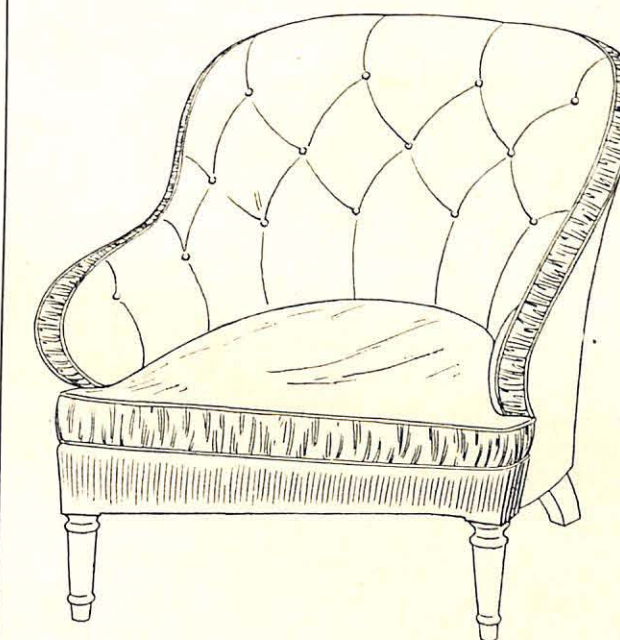
DETAILS OF DOWN-PAD TUFTING



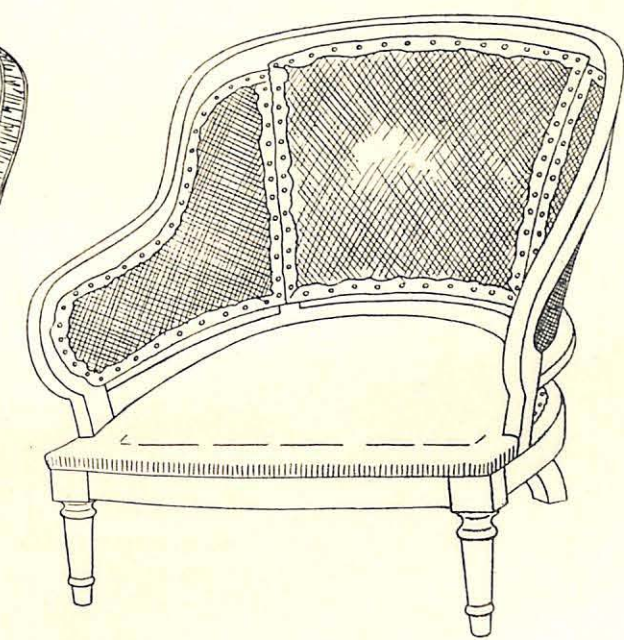
254H



254J

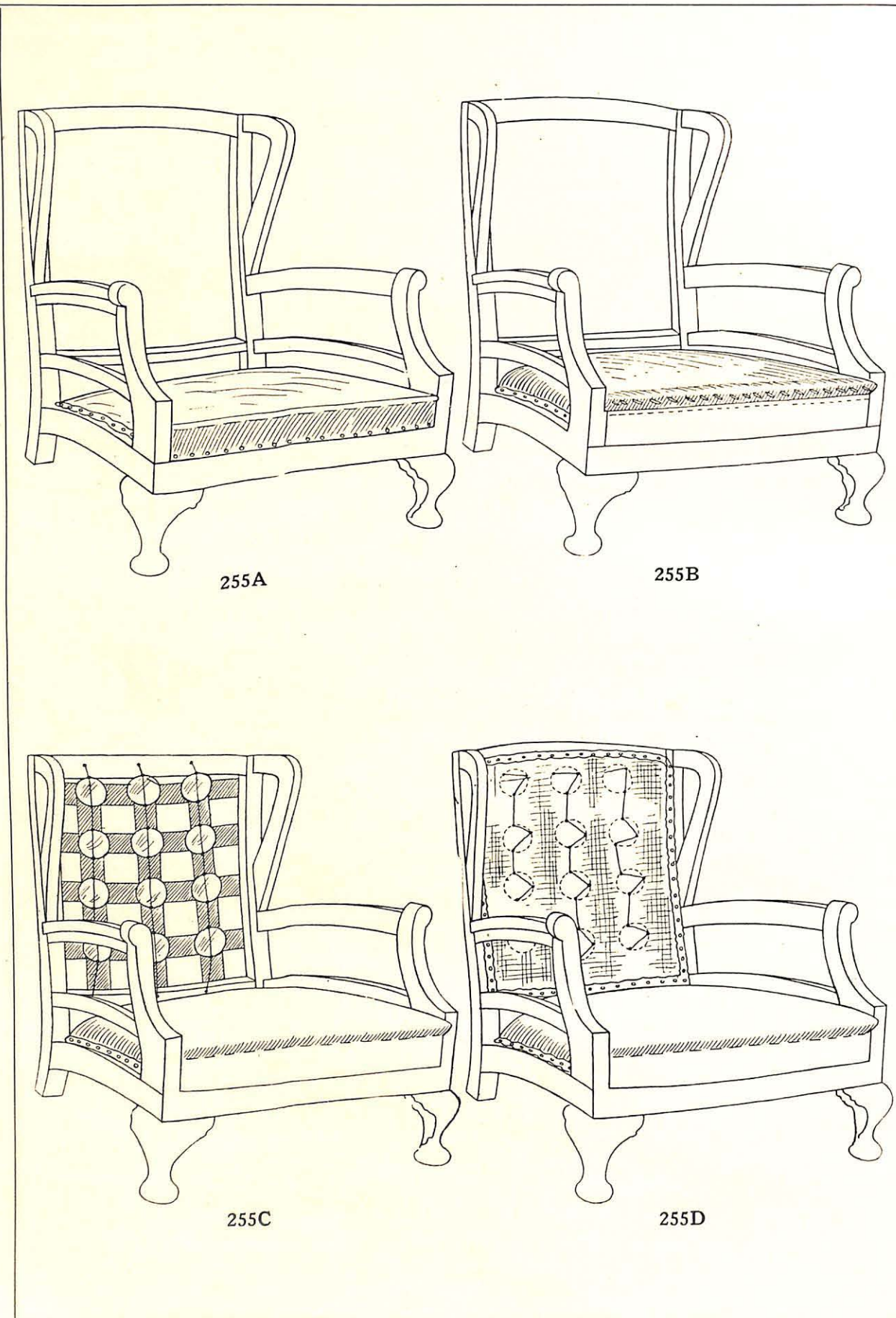


254L



254M

DETAILS OF DOWN-PAD TUFTING



DETAILS OF DOWN-PAD TUFTING

The next operation is the tufting on of the cover as indicated in Fig. 254H. Instead of using buttons on light-weight silks, it is a practice in the fine shops now to use a French knot, made up of a small piece of the covering, sewn in rosette shape and tied through after the manner of an ordinary button. The outside lining is also put on when the chair reaches the stage herein indicated and the final finishing of this particular chair consists of the application of a ruffled band which covers the top edge of the back and arms. This band is cut the proper width to cover the raw edge of the covering which is sewn to the nosing around the outlines of the arms and back and an allowance of 100 per cent. for shirring purposes is made over the quantity required by the chair's outlines.

The edges of the band are turned over a soft cable cord and sewn close to the cord but not so tightly as to prevent the fabric slipping freely along the cord. (See Fig. 254I.)

Having determined the measurement from X on the right hand side of the chair shown in Fig. 254H around the back to X on the left hand side of the chair, the band is shirred into this measurement, keeping the fullness evenly distributed. It is then pinned around the outside edge as shown in Fig. 254J and then on the inside edge. The band is pinned to the nosing (covering the edges of the cover in a straight line) manipulating

the fullness as the work proceeds so as to keep the pleats radiating always in a straight line from the center of the chair. The method of handling this fullness is indicated in Fig. 254K.

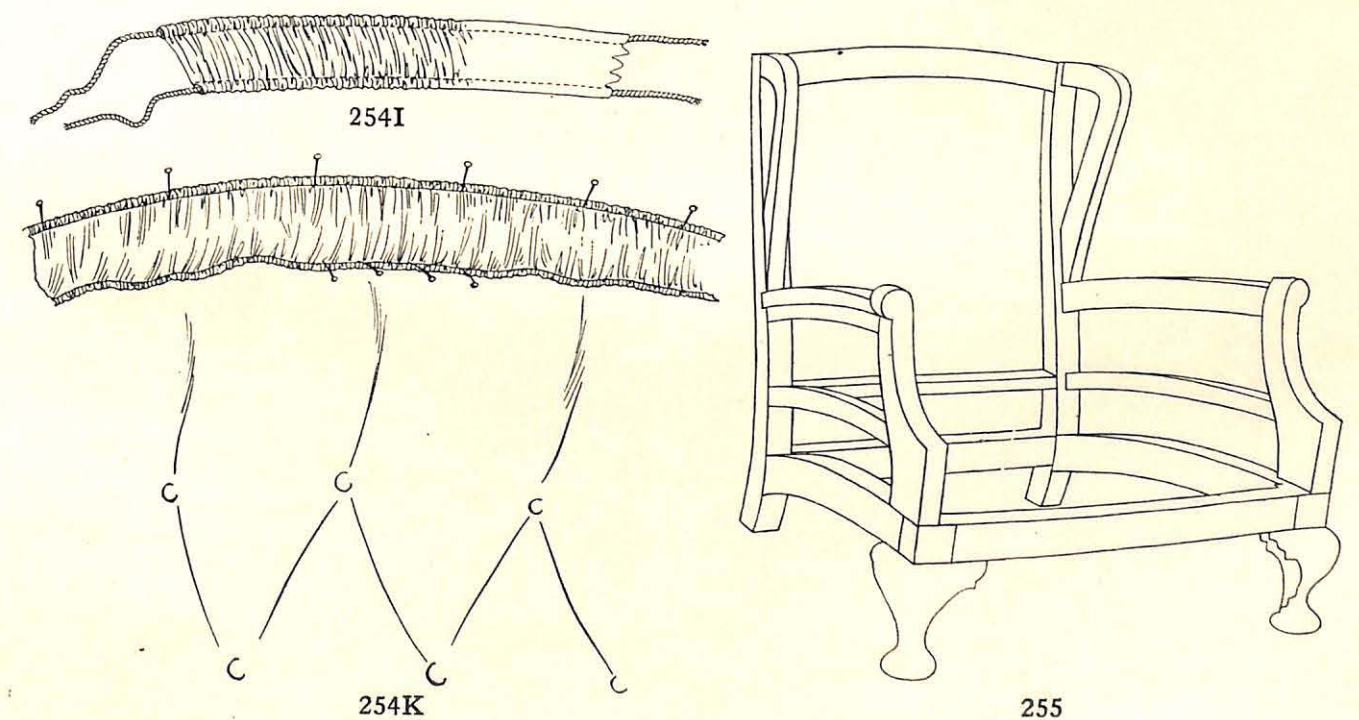
After the front edge of the seat has been covered with a band of the same material as the chair covering, the down cushion made and edged with a ruffle similar to the back ruffle, the chair will have the appearance shown in Fig. 254L.

If, however, this chair is to be made without springs in the back, as we have already mentioned, the canvas of the back is tacked to the face of the frame as shown in Fig. 254M and the subsequent manipulation of the piece is the same as we have described in connection with all figures subsequent to 254C.

The chair frame illustrated in Fig. 255 is usually made with a buttoned back, and in order to vary the explanation of the use of down upholstery we are treating the upholstering of this chair in a very different way from those already explained in this series.

The seat is upholstered with a spring edge, the wire of the spring edge being kept flush with the front of the frame as shown in Fig. 255A. The stitched edge, which forms part of the double stuffing, is allowed to project about one inch beyond the wire as illustrated in Fig. 255B.

The back of this chair is webbed on the out-



side for pillow springs which are lightly sewn to the canvas as shown in Figs. 255C and 255D. A light double stuffing is next brought over the back to act as a foundation for the buttoning. The back is marked for diamond tufting on a basis of about 7 by 9 inches as shown in Fig. 255E.

A down pad containing about one inch of down is made according to the size required for the back as shown in Fig. 255F. An allowance of one and a quarter inches is allowed for buttons between tufting points and one and a half inches all around for filling and tacking. This makes the pad about five inches wider than the back and about four inches longer, but these allowances are only approximate, actual measurements would have to be made on the chair itself.

Now, with the pad as a covering muslin, having been marked for buttons, the back of the chair is stuffed up in the ordinary way for diamond tufting, the pad forming a soft top stuffing but being handled just as a covering muslin would be handled, being careful to keep the top and bottom covering of the pad in their proper relationship.

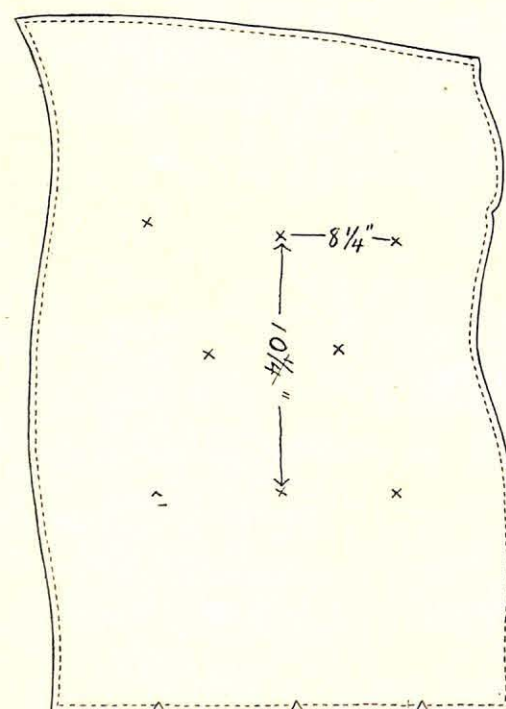
It is a good plan to mark the button points on both the top and bottom of the pad. This is

best done by punching the marks through with an awl while the pad is stretched out on the table for stuffing. This gives a mark on both the top and bottom which can be kept in line as each tuft is pulled into place. (See Fig. 255G.)

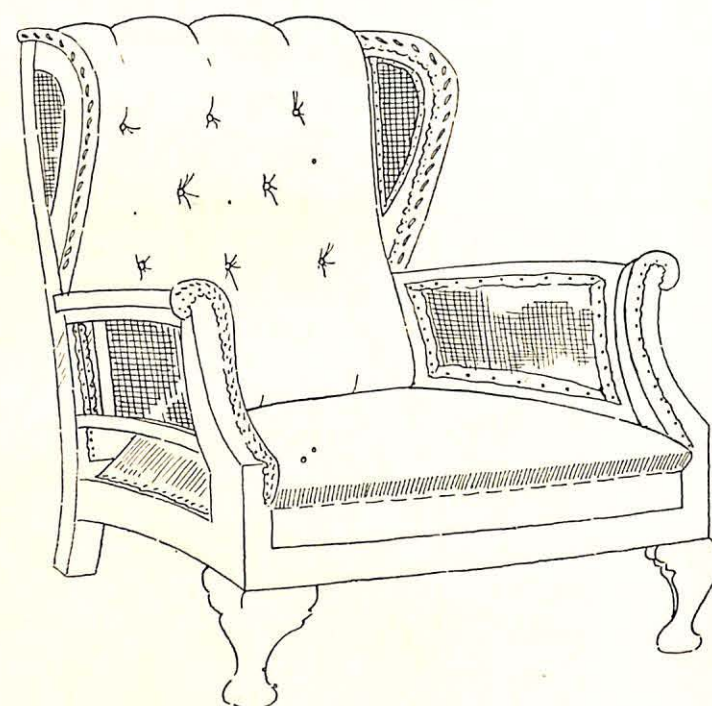
After the back has been completely tufted and the edges tacked as shown in Fig. 255H the arms and wings are canvased, leaving space where each joins the back so that the covering of the back can be brought through and tacked to the back post as indicated at the left of Fig. 255H. Blocks are placed between the top and bottom rails of the arm as shown at X in this figure and a wire is put in the back edge of the burlap of the wings and securely tacked.

The next step is the nosings for the arms and wings which are applied after the manner we have already illustrated in connection with Figs. 242S to 243C.

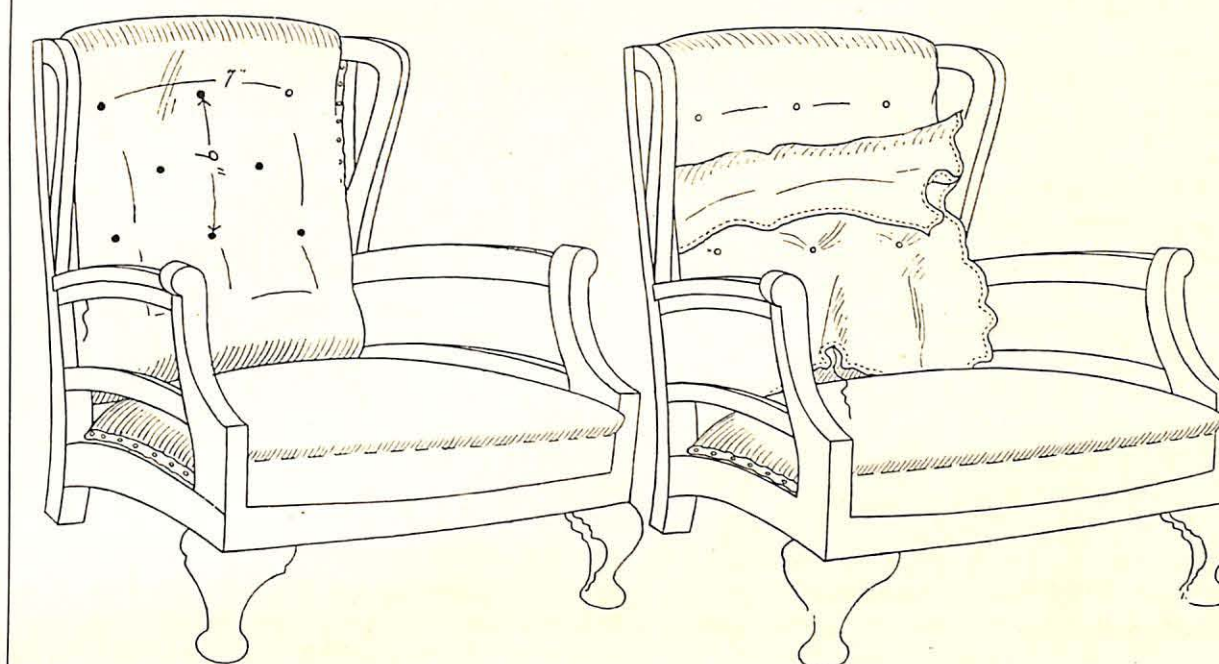
The chair will now have the appearance of Fig. 255I. The arms and wings are lightly stuffed so as to obtain the greatest degree of softness as shown in Fig. 255J and the completed chair trimmed with welts and panels is illustrated in Fig. 255K.



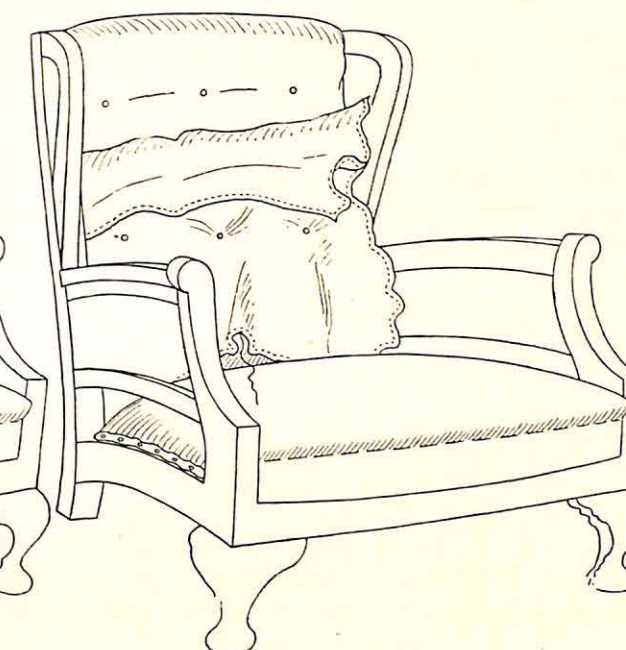
255G



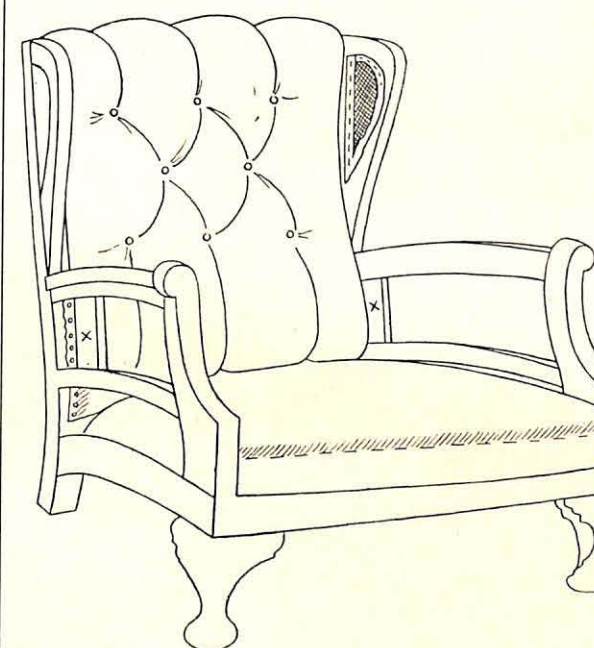
255I



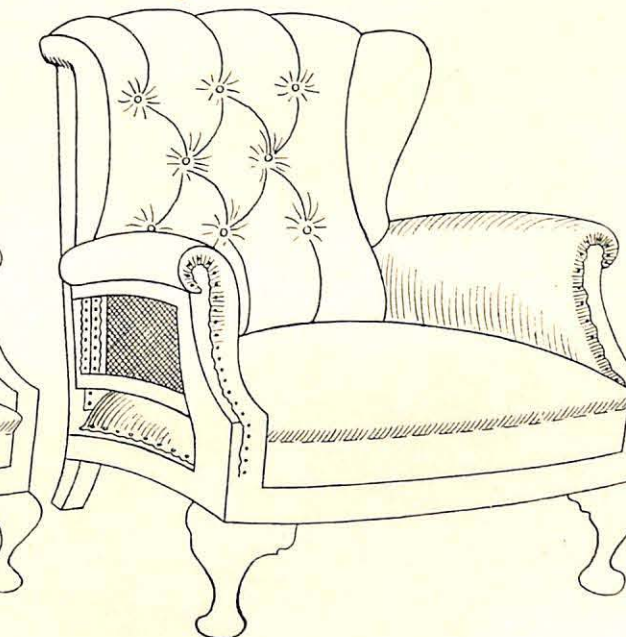
255E



255F



255H



255J

DOWN CUSHIONS ON SMALL CHAIRS

WHILE there is a great similarity in the treatment of all chairs with down cushions irrespective of their shape, there are certain individual pieces which require a treatment distinctly adapted to their own use and proportions. Of this description is the slipper chair, the frame of which is illustrated in Fig. 256.

This chair is particularly used for boudoir purposes and is kept always very low, the seat being not over fourteen inches from the floor. This chair is treated as an ordinary spring seat, being webbed in the usual way for five springs as shown in Figs. 256A, B and C.

Burlap or canton flannel for the nosing is next tacked around the front and two sides of the chair and back-tacked on the top of the rail close to the front edge, stuffed up and tacked on the top of the rail as shown in Fig. 256D. The edge thus formed may be stitched as indicated, after which a light coating of hair is placed over the springs and the whole covered in muslin as shown in Fig. 256E. In this figure it will be noticed that we have indicated that the muslin is stitched to the burlap so as to provide a dip or gutter about 4 inches back from the edge of the chair, which will compensate for the rounding of the bottom of the cushion.

A piece of covering, sufficient to make a complete border is back sewed at the point of this stitching as shown in Fig. 256F and the entire border covered in the usual way.

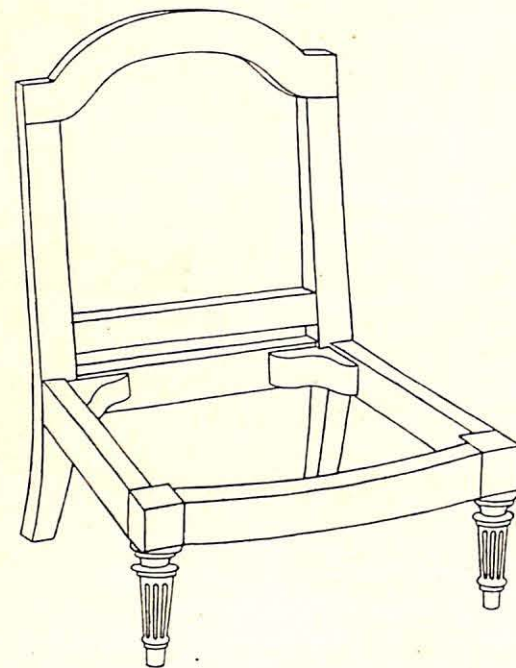
The center of the seat may be left in the muslin because for this chair, as will be shown in the next stage, the cushion is not intended to be removable. When the cushion has been made and covered after the method previously described in connection with down cushions, it is fitted into place on the seat and the bottom of the cushion is blind-stitched to the fabric which covers the nosing, as shown in Fig. 256G. The stitching should be 2 or 3 inches in from the edge of the cushion in order that the cushion may appear to lie on the chair of its own weight and not reveal the fact that it is confined by sewing. The border of the seat cushion is not over $2\frac{1}{4}$ to

$2\frac{1}{2}$ inches high, therefore stitching $2\frac{1}{2}$ inches in from the edge will be quite sufficient. See finished seat Fig. 256H.

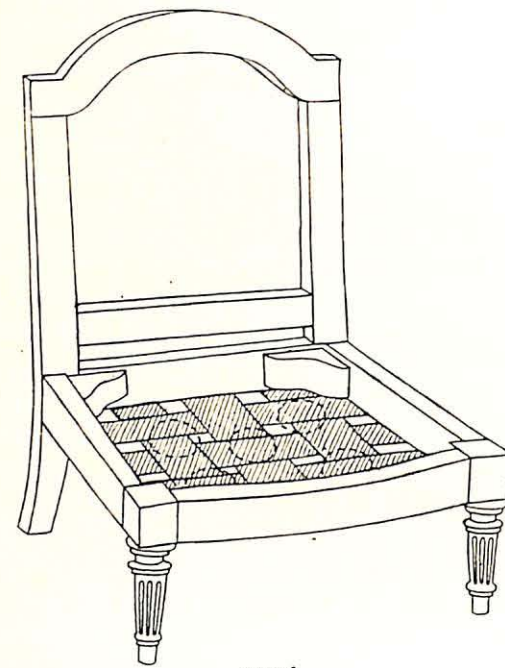
In Fig. 256G the back of the chair is shown canvased with three strips of webbing across, which provides the foundation for the back cushion, the webbing and burlap both being attached to the front or face of the frame. A piece of burlap or canton flannel is now back-tacked around the three outside edges and tacked in the same way as was suggested for the seat, and a nosing not over 1 inch high is stuffed up as indicated in Figs. 256I and 256J.

This nosing may be stitched or not, according to the way in which the nosing has been filled up. The back cushion is now made about 2 inches thick, a pattern of the shape of the back being taken so as to make a good fit. After filling it is sewn all around to the edge of the nosing as indicated in Fig. 256K.

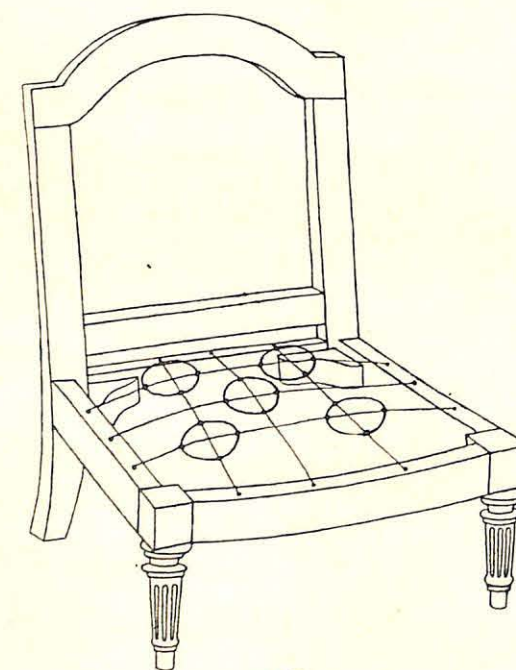
The cover is next constructed in the manner already explained in connection with other chairs, the border being piped. In addition to the width of the border, a strip about 3 inches is also pro-



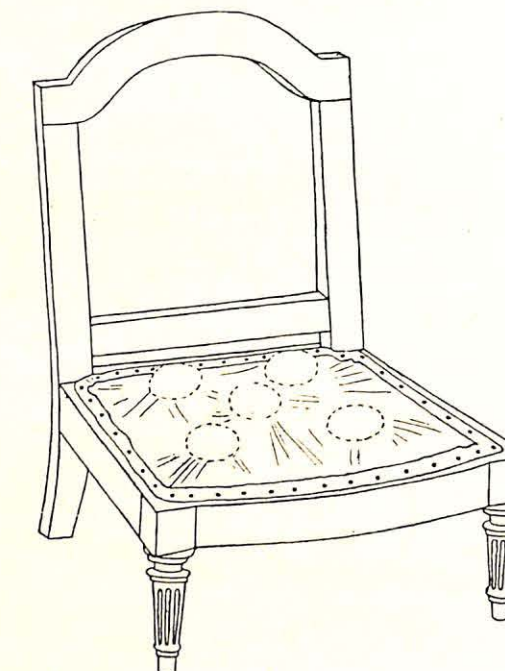
256



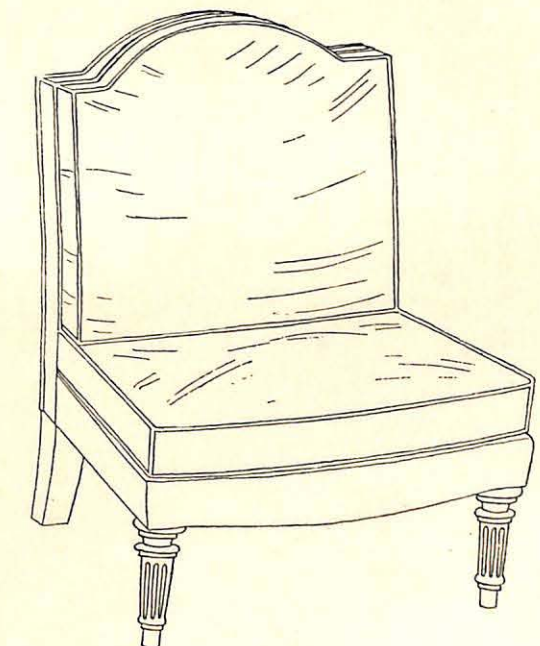
256A



256B

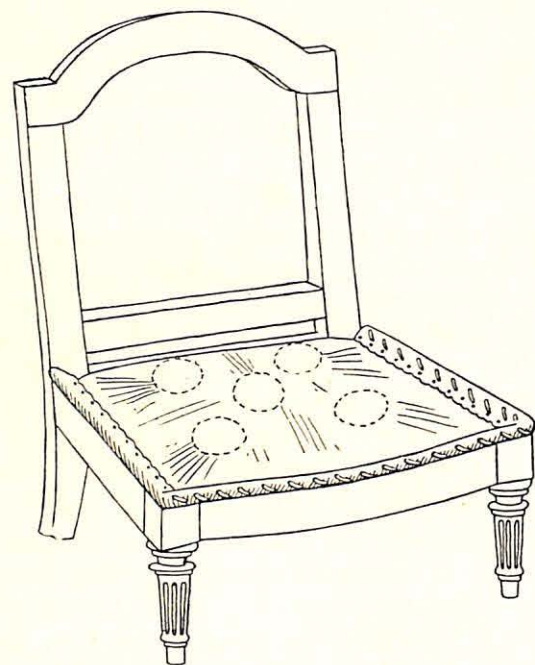


256C

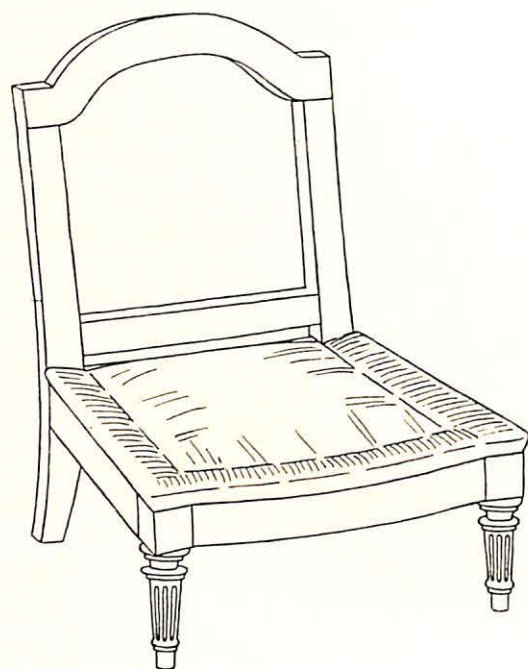


256N

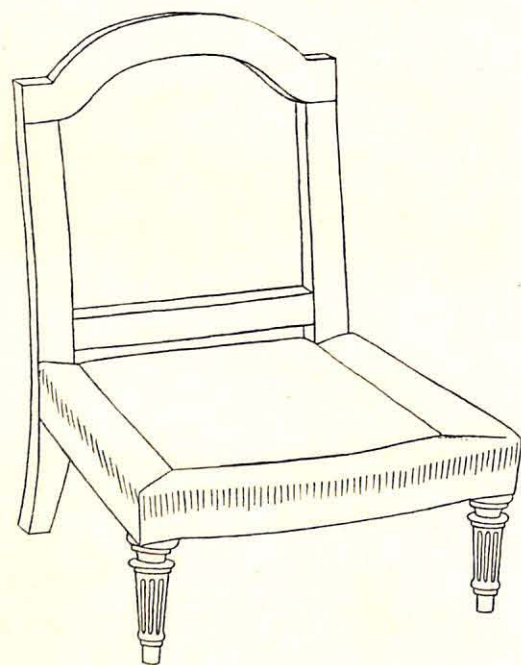
DETAILS OF SLIPPER CHAIR



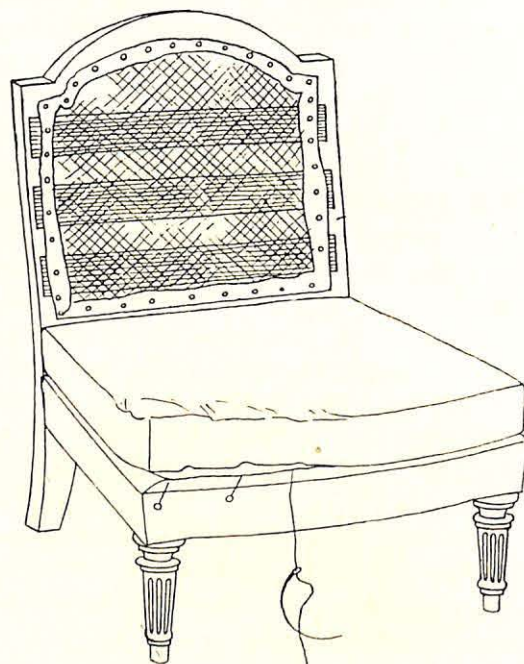
256D



256E

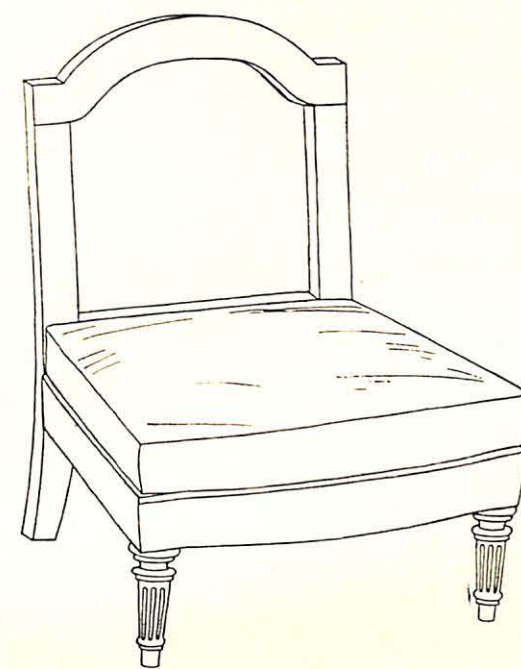


256F

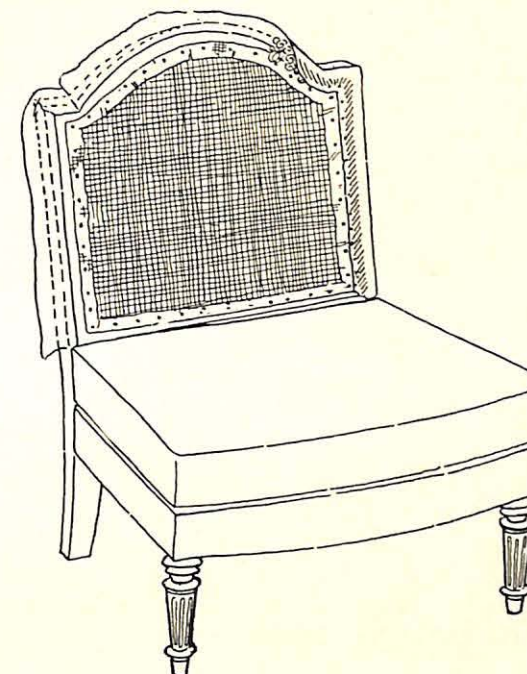


256G

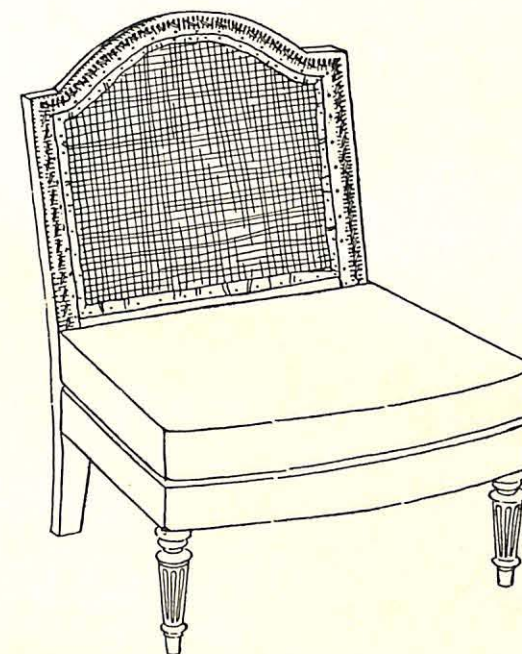
DETAILS OF SLIPPER CHAIR



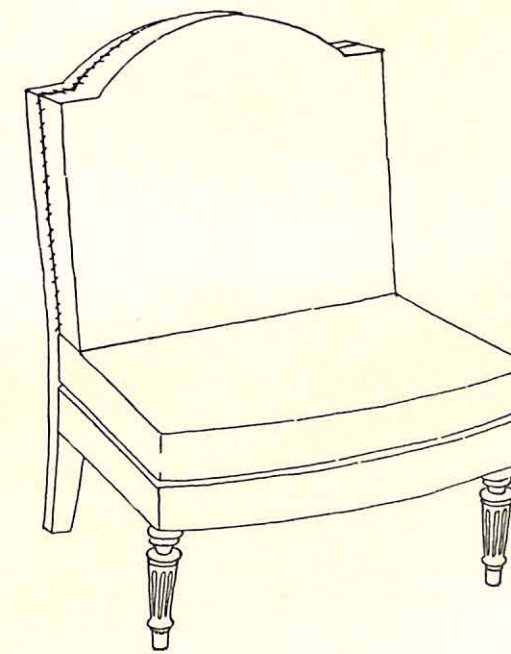
256H



256I



256J



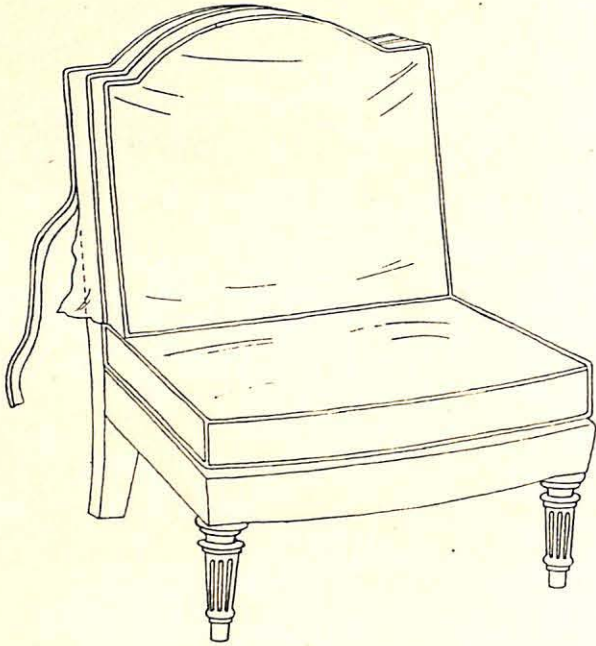
256K

DETAILS OF SLIPPER CHAIR

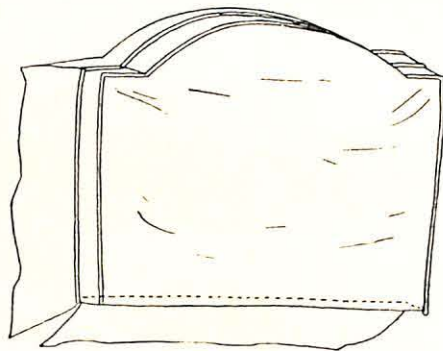
vided to act as a second border and cover the edge of the frame. (See Fig. 256L.)

A welt is provided where this extra fabric joins the cushions as well as a welt on the face of the cushion. The cushion cover is built into place over the cushion, and if desired may be very lightly attached to the nosing in the same manner as the cushion is attached, turning back the surplus cover of course and sewing from underneath.

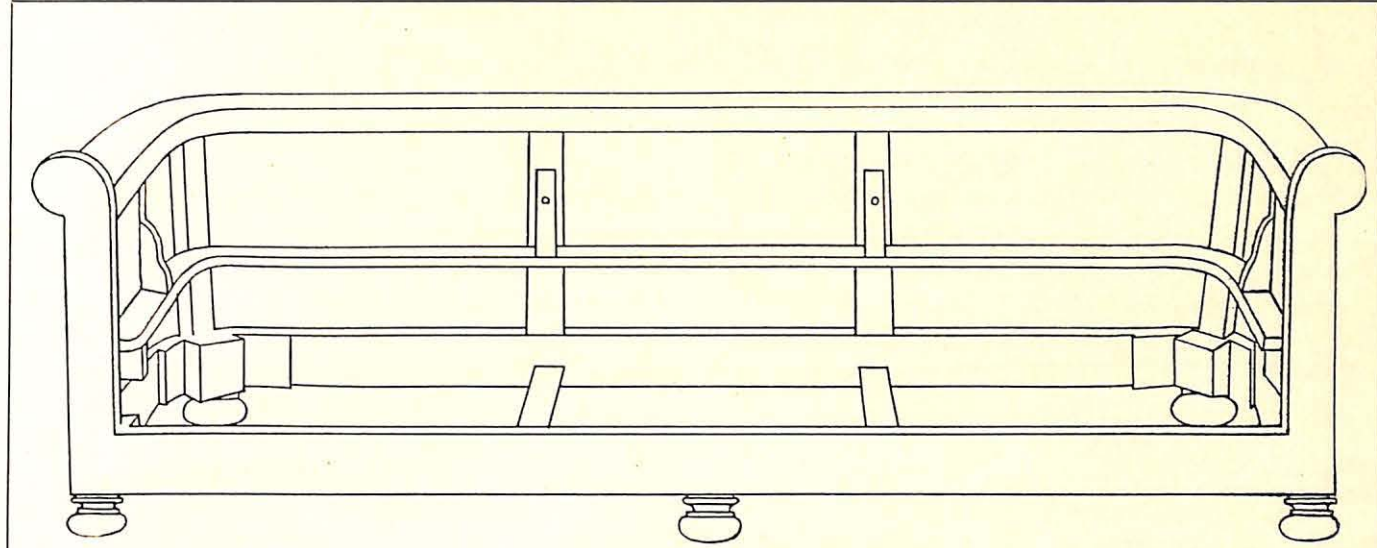
The final operation consists of padding the edge of the frame and nosing with a layer of wadding and the fabric which has been attached to the cushion for the purpose, serves as a back border and is now tacked into place and the cover welt is also tacked on the outside back at the edge of the frame, so as to give the appearance indicated in Fig. 256M of the double back cushion. The final finished appearance of the chair being as indicated in Fig. 256N.



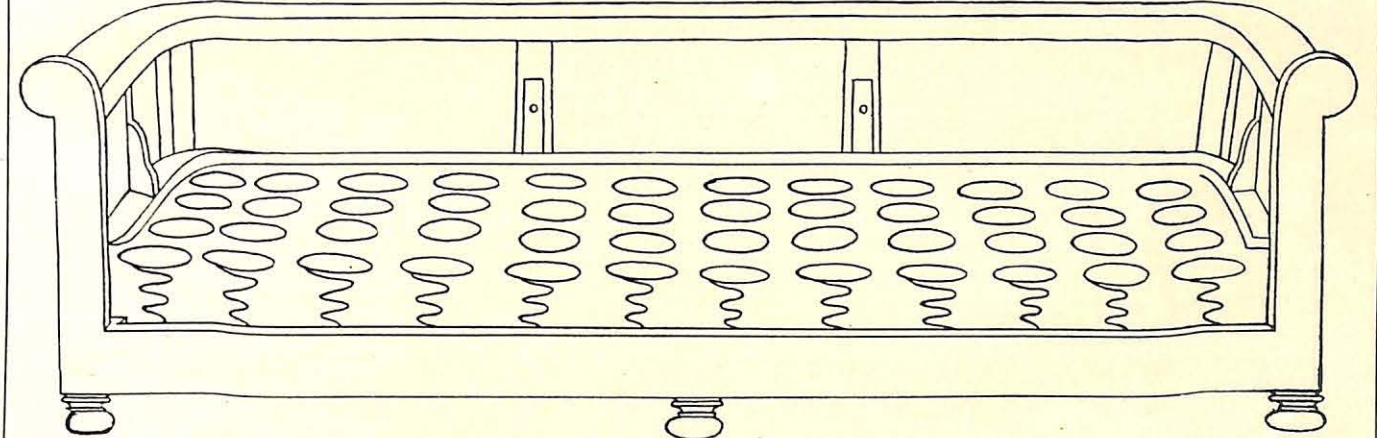
256M



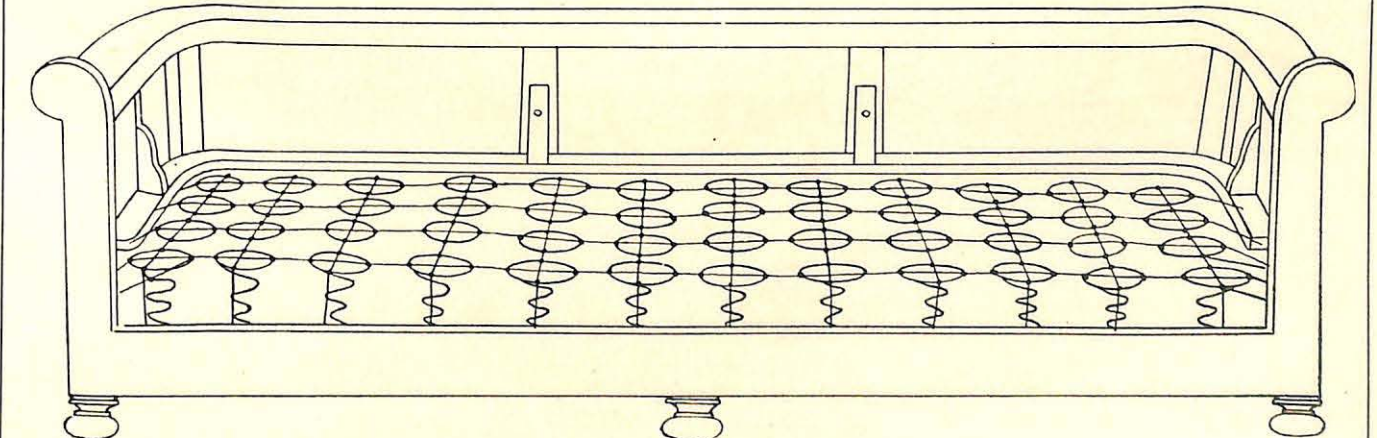
256L



257



257A



DETAILS OF CHESTERFIELD UPHOLSTERING

DIVIDED CUSHION BACKS AND SEATS

THE larger pieces of down-cushioned furniture add a measure of complication to the work of upholstering, but are treated in practically all respects after the same manner as the smaller pieces. The Chesterfield illustrated at the bottom of this page is a typical example of a large piece employing down-top upholstery for seat cushion, arms and triple back, making with its deep-spring seat, spring arms and spring back a most luxurious piece of furniture.

The frame illustrated in Fig. 257 shows the general construction of the piece in question. This frame is webbed in the ordinary manner for 48 springs, placed in 4 rows of 12, as shown in Fig. 257A. Prior to placing the first or edge row of springs, the top coil of each spring, which ordinarily appears as shown in Fig. 257B, is opened and shaped as a long coil as shown in Fig. 257C so that it will project over the front rail. The end of the wire is also bent so as to lock in as shown in Fig. 257C. This elongated top coil is also bent so as to tip up after the manner indicated in the cross-section, Fig. 257D.

The method of tying seat springs in spring-edge work has been covered in former chapters, but the details shown in cross-section Fig. 257E will serve to recall the explanation.

The next step is the attaching of the wire which forms the edge and in this case, as shown

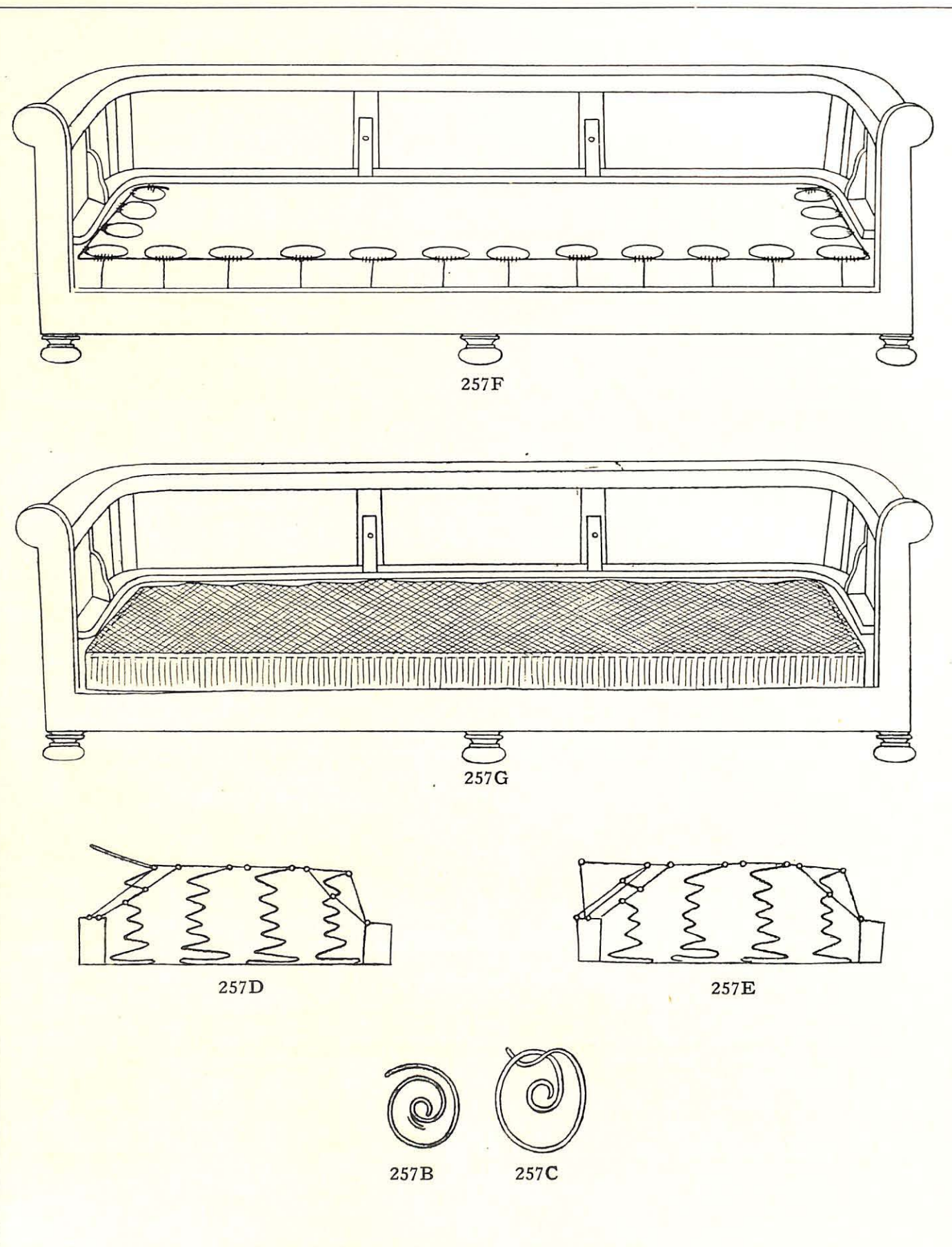
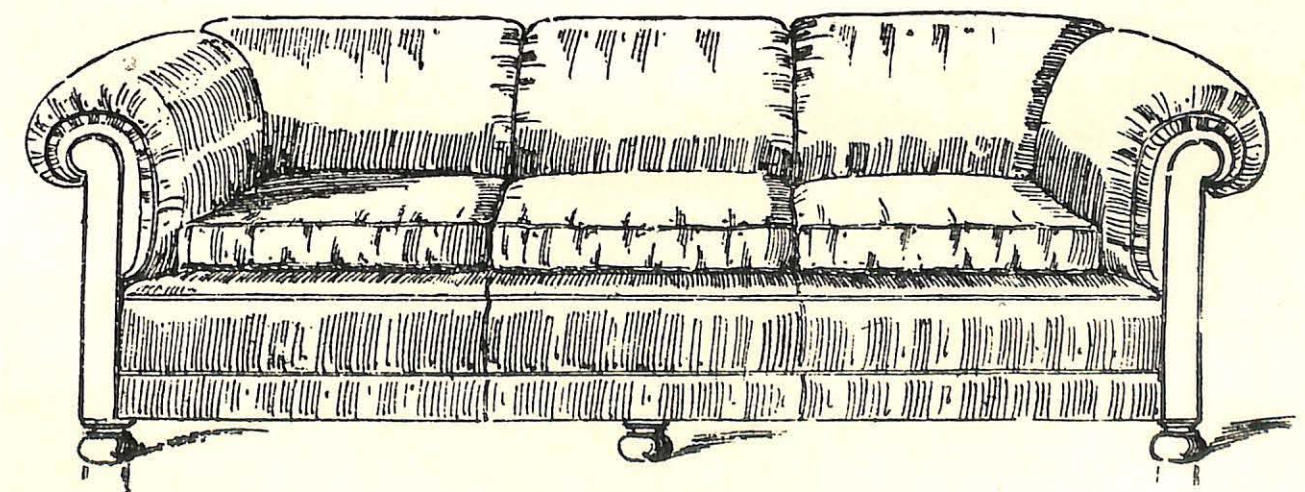
in Fig. 257F, the wire edge is carried back on both ends so as to complete the cushion platform. Fig. 257G shows the burlap applied over the springs and stitched through and through back of the wire edge on the front and ends.

Our illustration does not show the springs sewn to the burlap, but on expensive work, such as this, it is customary to sew the springs to the burlap, knotting the twine at each stitch. Illustrations showing this process have appeared in connection with the pieces illustrated earlier in the series.

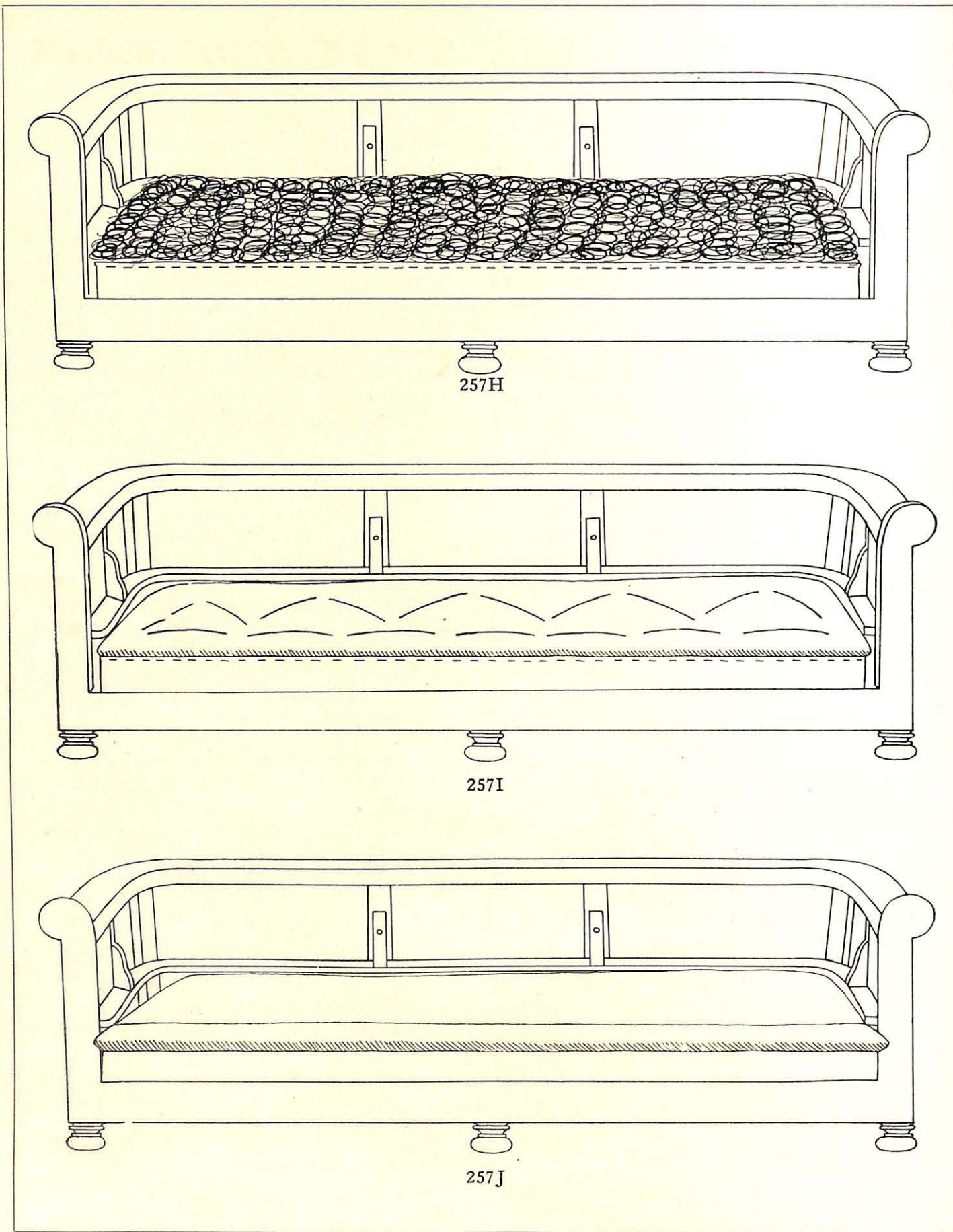
The seat of a sofa as large as the one we are treating is more substantially constructed if double-stuffed, because the stitching through and through of the hair top helps to flatten the seat into a platform on which the cushions may rest.

The hair is smoothly woven into a compact mass as shown in Fig. 257H. This is covered with burlap and then stitched through and through as shown in Fig. 257I and in the cross-section 257M. It will be noticed in this cross-section that the front edge projects about one inch beyond the wire. This edge is stitched to form a soft roll and the final coating of hair is then laid on and covered with muslin.

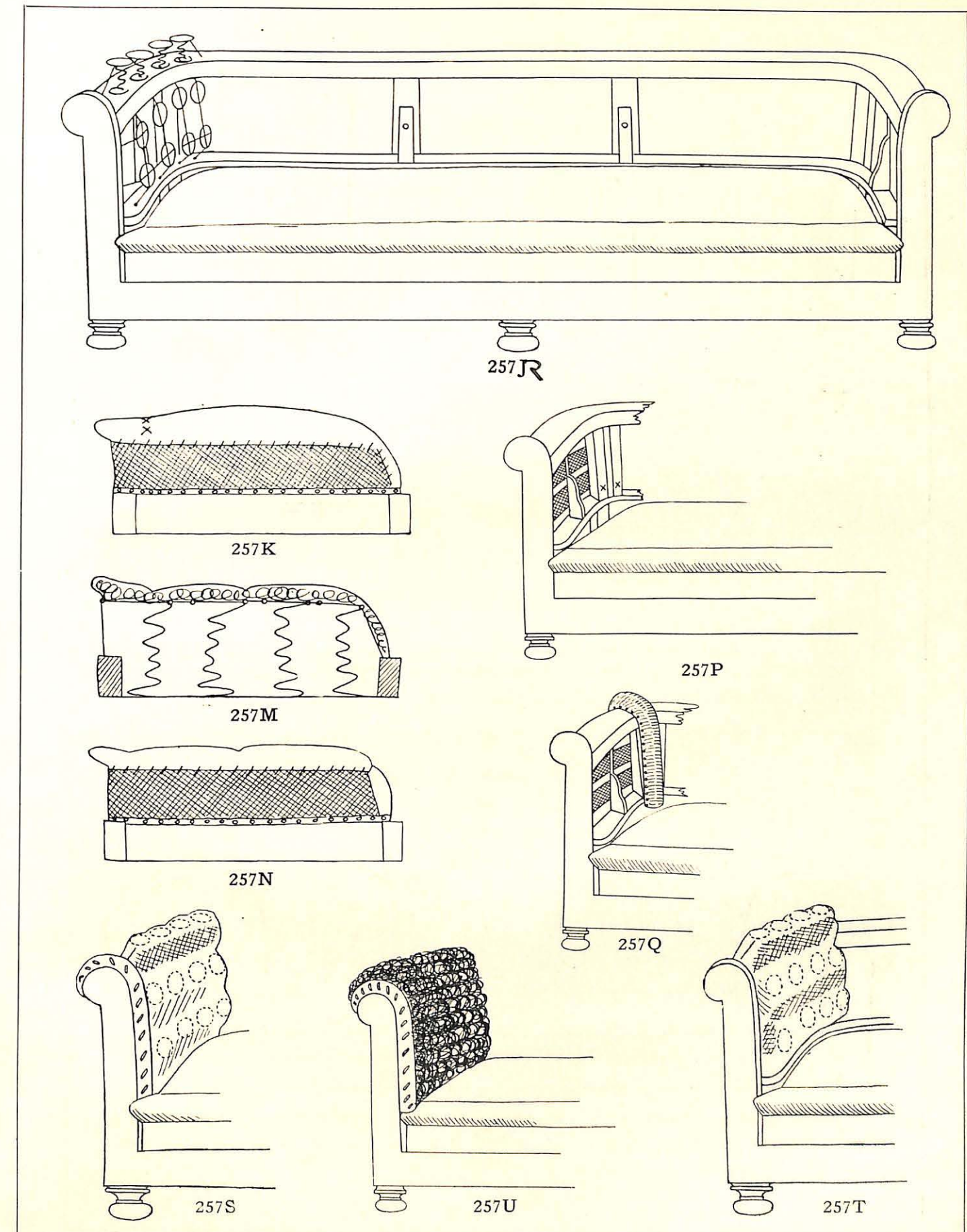
It will be noticed in cross-section 257N that both the burlap and muslin are sewn to the wire as there is no necessity for carrying these fabrics



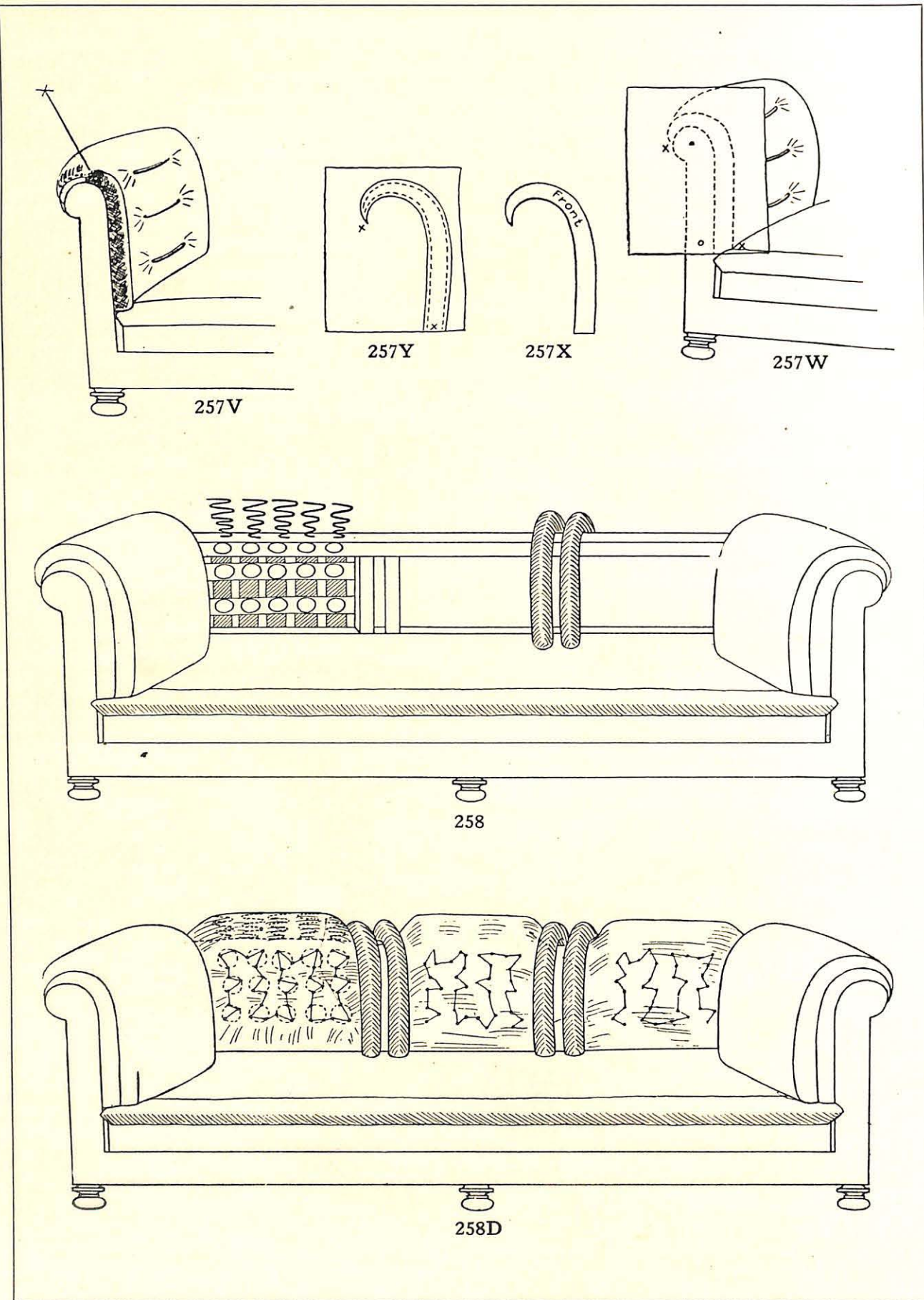
DETAILS OF CHESTERFIELD UPHOLSTERING



DETAILS OF CHESTERFIELD UPHOLSTERING



DETAILS OF CHESTERFIELD UPHOLSTERING



DETAILS OF CHESTERFIELD UPHOLSTERING

down to the frame for tacking as the wire at each end of the seat forms a solid place for attaching and this method avoids encumbering the space under the rail where the final coverings have to be tacked.

We have already explained that in conjunction with the use of down cushions for furniture seats the surface of the permanent upholstery which forms a platform on which the cushions may rest must be depressed so as to compensate for the bulge of the under part of the cushion. A line of stitching through muslin to spring burlap, five inches back from the front edge of the roll, creates a very definite depression at this point and from that point back the balance of the seat should be as flat as it is possible to make it.

The cross-section shown in Fig. 257K illustrates the shape to be avoided for even if a line of stitching forces a depression at the point XX the center of the seat is so high that the down cushion would never properly lay in place.

To save material, the platform is only covered for a space extending about five inches back from the nosing or for convenience back to the point where the seat has been stitched down to the spring burlap. The balance is covered with sateen.

When finally completed in muslin the piece has the appearance of Fig. 257J. Contrary to the procedure in the majority of cases the arms are next to be treated and in order to make them not too bulky and at the same time provide them with springs, the webbing foundation for the springs is attached to the outside arms. It will be necessary to provide supplementary tacking blocks, unless already provided in the construction of the frame, which will permit of a crevice

separating the arm from the back, the two blocks to which we refer being indicated by XX, Fig. 257P.

A narrow, wedge-shaped roll is built up with hair enclosed in burlaps on the face of these blocks as shown in Fig. 257Q. This roll is shaped to approximately the dimensions of the nosing which is shown on the front of the arm in connection with Fig. 257S.

Twelve springs are employed in the arm, placed as indicated in Fig. 257R, the two bottom rows being full-sized pillow springs and the top row being either small-sized pillow springs or half springs. After having been tied down the springs are covered with burlaps as shown in Fig. 257T and the nosing, which has been employed for the finishing of the arms of all of the pieces described in this series, is attached and stitched as indicated in Fig. 257S.

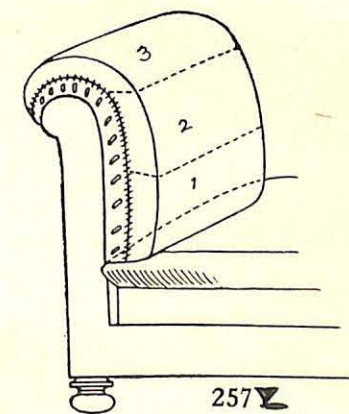
A coating of hair is next applied either by bridling or by stitching through to the spring burlaps and this is covered somewhat after the manner of a double stuffing, these two steps being indicated in Figs. 257U and 257V.

It will be noticed by the cutaway portion of the nosing in Fig. 257V that the burlap which confines the hair of the double stuffing is not attached to the nosing but goes down to the frame behind the nosing in order to give the greatest possible flexibility to the springs.

The down pad which covers the arm of the piece we are describing must be shaped to fit the double stuffing and give the proper form to the finished arm. The front border of the cushion therefore must be shaped to follow the nosing on the arm as it appears in Fig. 257S.

A piece of cardboard is placed in front of the nosing and tacked as shown in Fig. 257W and the outline of the nosing is traced on the back of the cardboard indicated by the dotted line X to X. This shows the shape of the under side of the cushion. The thickness of the cushion must be allowed for, 2 or 2½ inches at the bottom sweeping around and diminishing at the top outside of the arm.

This constitutes the pattern for the front of the cushion as shown in Fig. 257X. The pattern is now placed on the fabric and cut out with ½ inch allowance for seams as shown in Fig. 257Y. A similar piece is cut for the back of the cushion, the top, bottom and lower edge added with the partitions as shown in Fig. 257Z; the sections 1,



2, and 3 filled with down and the form sewn into place.

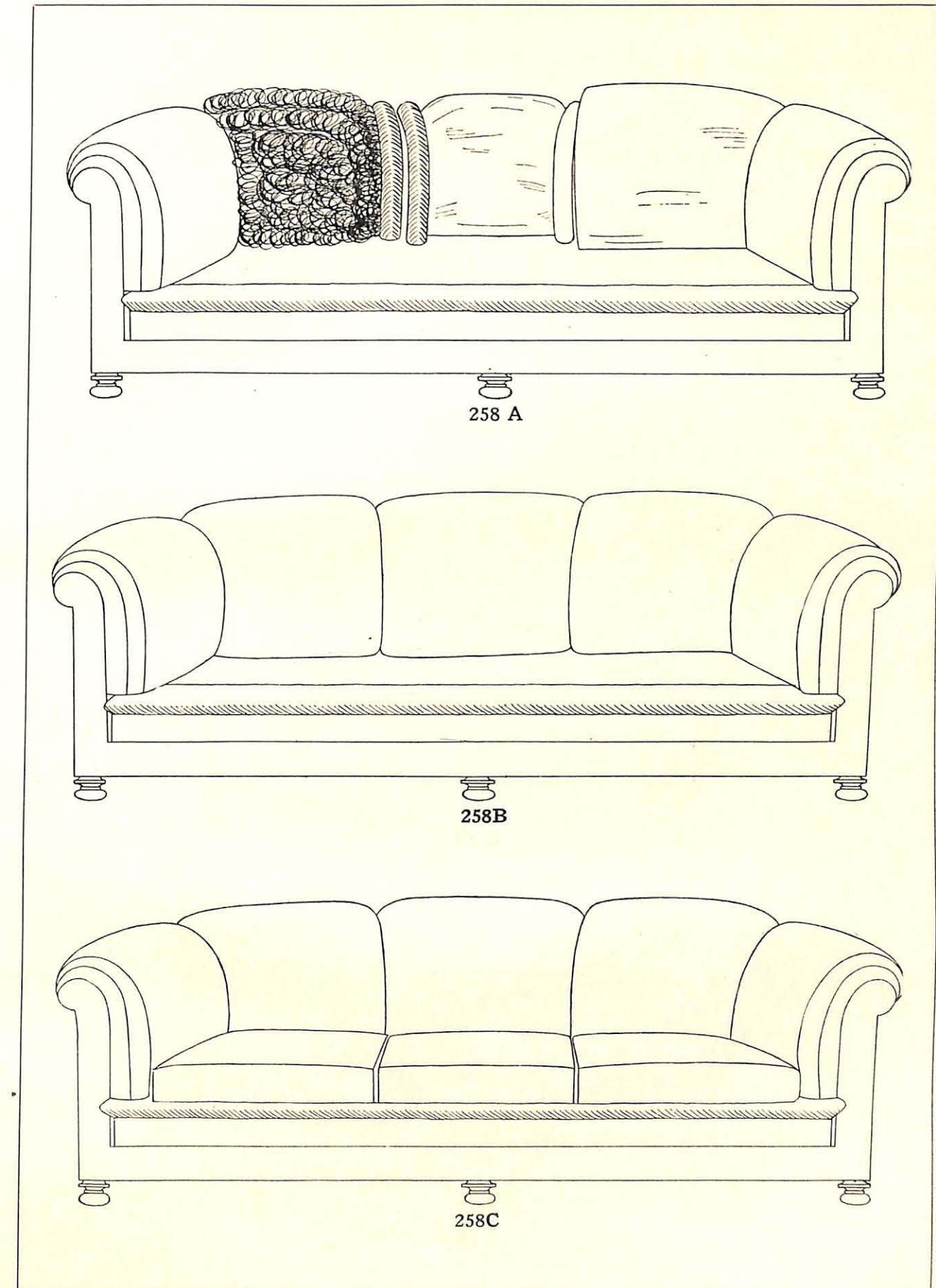
After both arms are finished in muslin the backs are next to receive attention. These are built up in three separate pieces divided by the wedge-shaped rolls already described. The outside back is webbed as shown in Fig. 258, small pillow springs placed in position, tied and covered with burlap as shown in Fig. 258D.

The same process is now followed in constructing the back cushions as has been already described in connection with the arms. The

down-filled cushions must each be shaped by making the pattern for the side borders and each one sewn in place to the built-up rolls which divide the back into three sections.

Fig. 258A shows the process progressively; the left hand section shows the hair understuffing, the middle section shows the hair covered with burlap and the right-hand section shows the down-filled cushions in place.

Fig. 258B shows the three backs and arms with all down-filled cushions in place and Fig. 258C shows the seat cushions added.



DETAILS OF CHESTERFIELD UPHOLSTERING

THE CHAISE LOUNGE

THE piece of furniture illustrated in Fig. 259 introduces into our consideration of the details of modern upholstery the chaise lounge, a type not yet referred to in the series, but embodying in its construction practically the same principles as have been explained in connection with pieces already described.

It will not, therefore, be necessary to carry the reader through the successive stages in the matter of upholstering the piece illustrated with the same minuteness of detail as has been followed where a new piece illustrated required instruction in upholstering methods not previously described.

The reader should be by this time familiar with the preliminary processes of upholstering, and in the case of the frame shown in Fig. 259A would know immediately how to accomplish the processes of webbing, springing-up, covering with burlap, building the stitched edge and covering with muslin up to the point indicated in Fig. 259B.

These processes are shown progressively in Fig. 259C, this latter figure being self-explanatory.

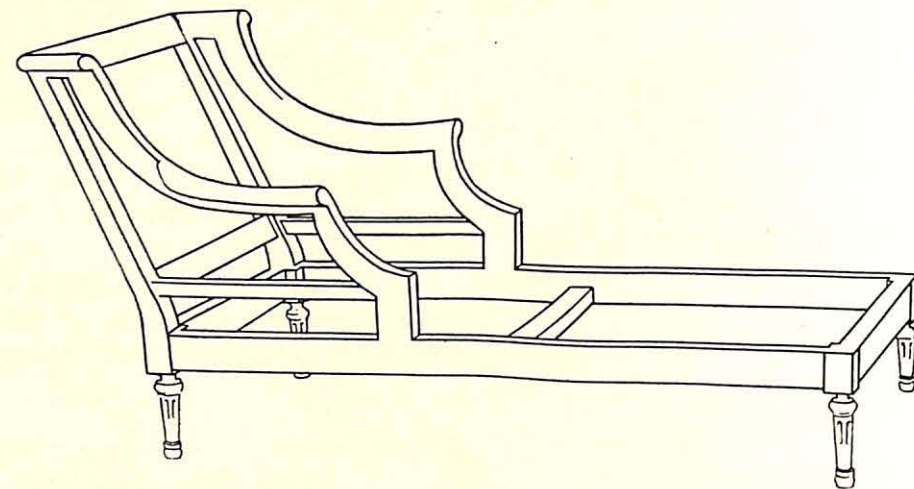
The upholstering of the arm and wing follows methods previously described in connection with wing chairs and is only superficially diagrammed here in order to recall the methods suggested.

Fig. 259D shows the frame construction in skeleton with one half cut away in order that the various stages of upholstering may be easily followed. The first operation is the construction of the nosing around the edge of the wing and the inner edge of the front post of the arm containing no new principles from those described in connection with Figs. 251J and 251K. A soft roll is also provided at the top rail as indicated in Fig. 259E.

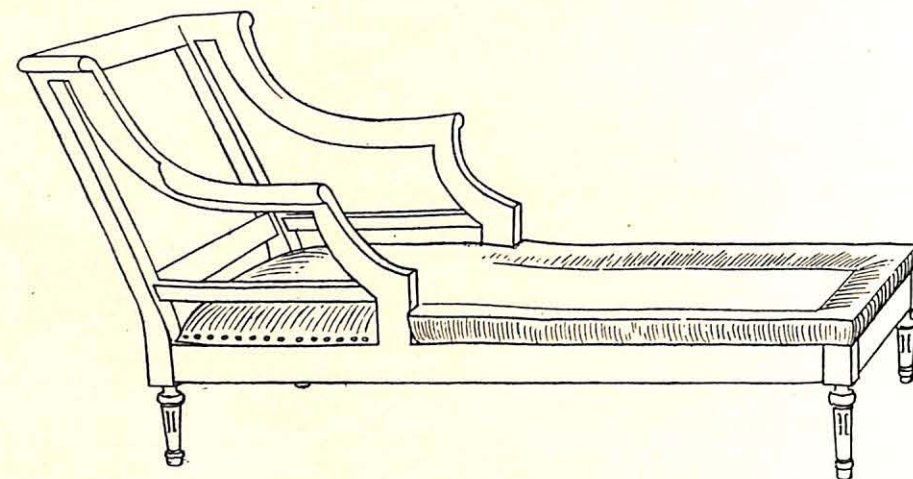
The next step is the upholstering of the arm and wing up to the muslin stage indicated in Fig. 259F. Fig. 259G also shows the webbing of the back for springs, this particular piece calling for three rows of three springs each, nine in all, and tied down to a height of about four inches, as shown in Fig. 259H.

The springs are then covered with burlap and over the burlap is laid a soft padding of hair which is covered with muslin, the muslin being stitched down across the line marked X in Fig. 259I, thus providing a slight swell over the pillow which fits the shape of the down cushion and prevents the leaving of a gap in the same way that the nosing of the seat is slightly raised so as to compensate for the curve of the under side of the cushion.

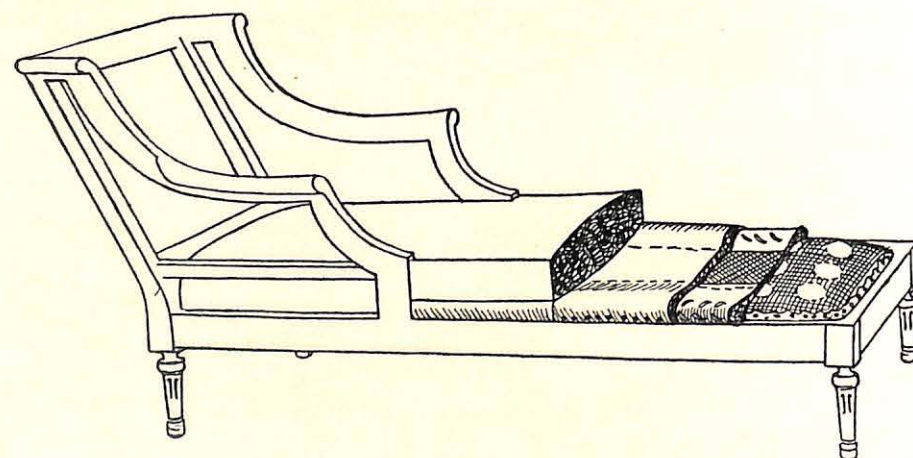
The construction of the down cushion for both seat and back follows the methods previously described in connection with this series, the seat cushion being loose and shaped to the space.



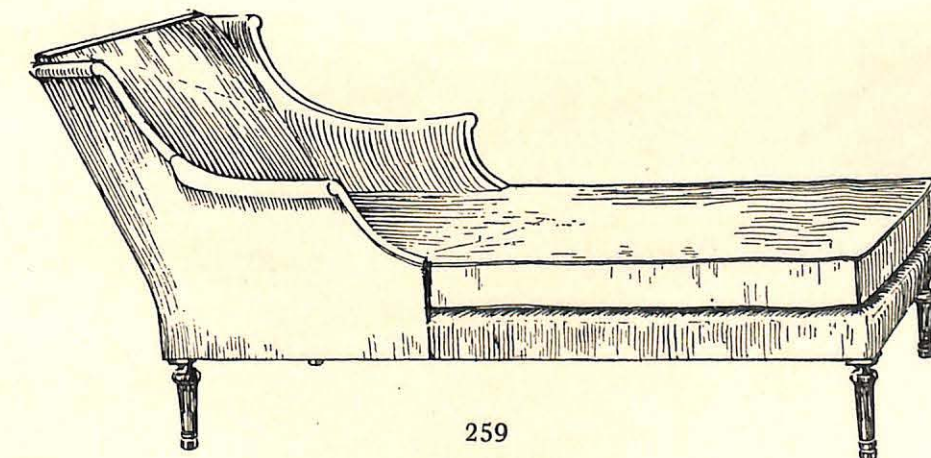
259A



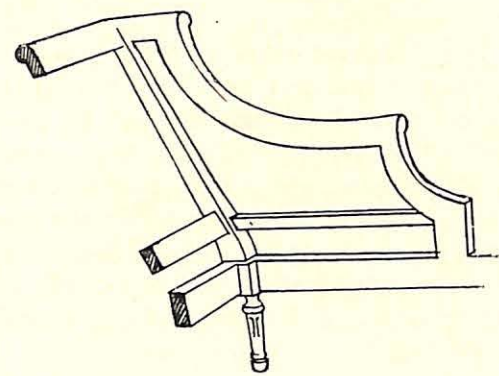
259B



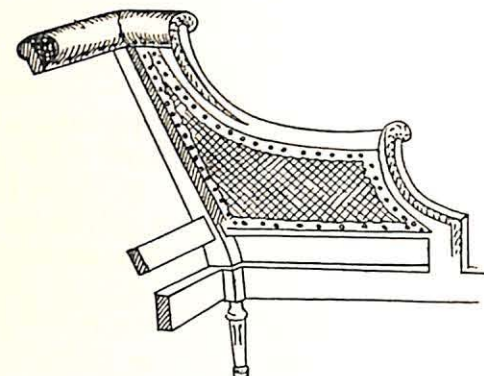
259C



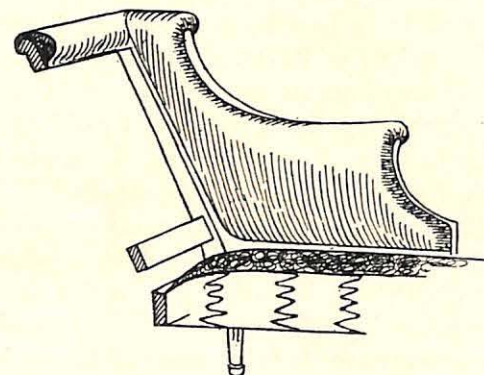
259



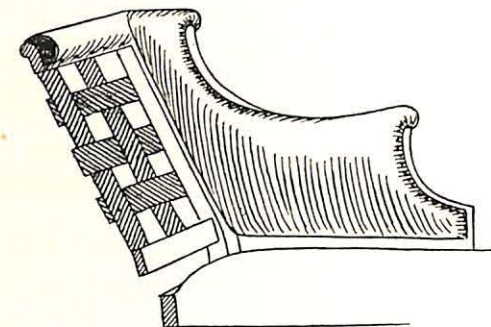
259D



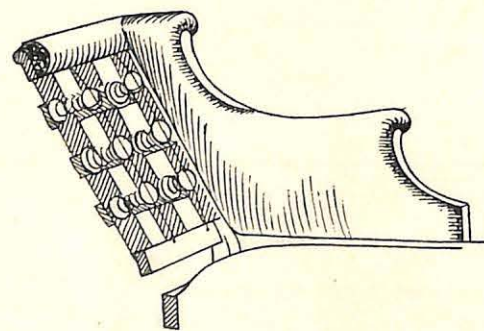
259E



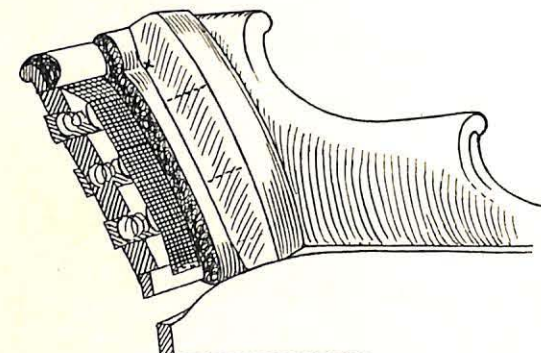
259F



259G

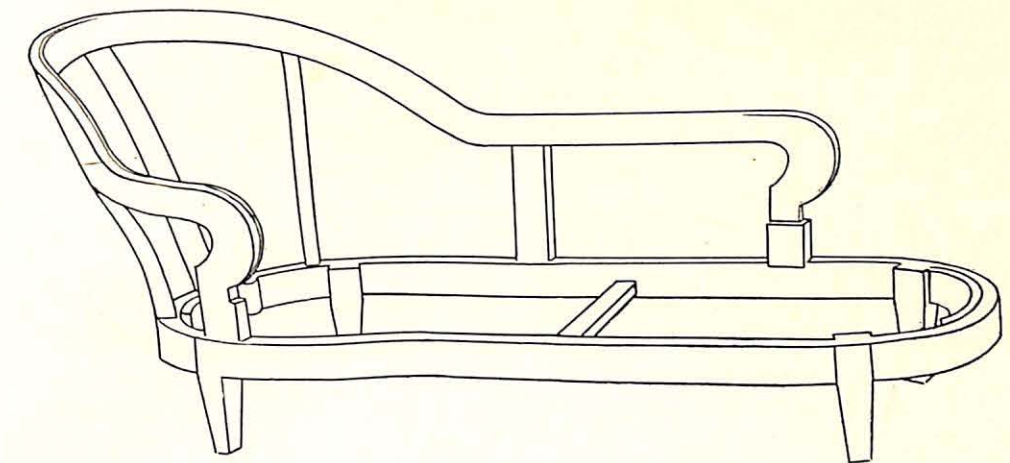


259H



259I

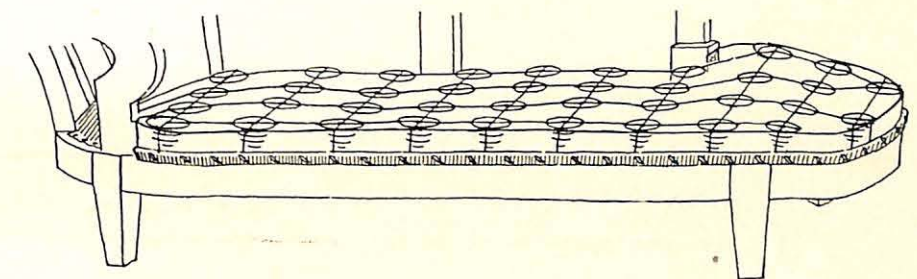
DETAILS OF THE CHAISE LOUNGE



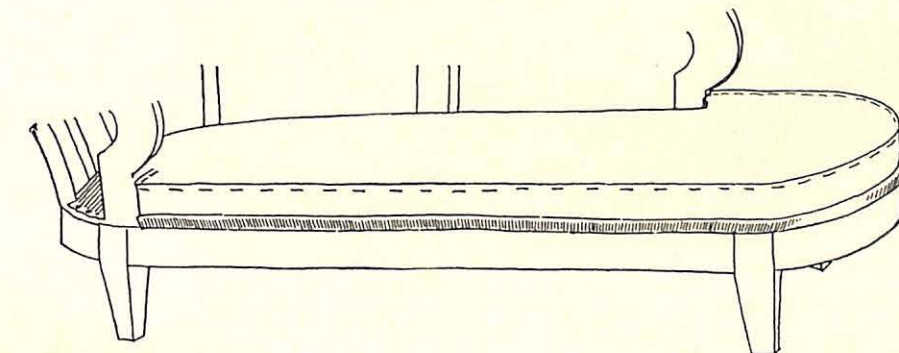
260A



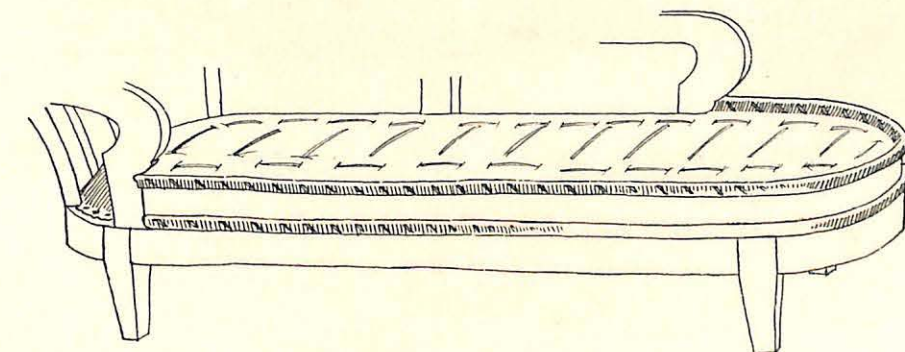
260B



260C

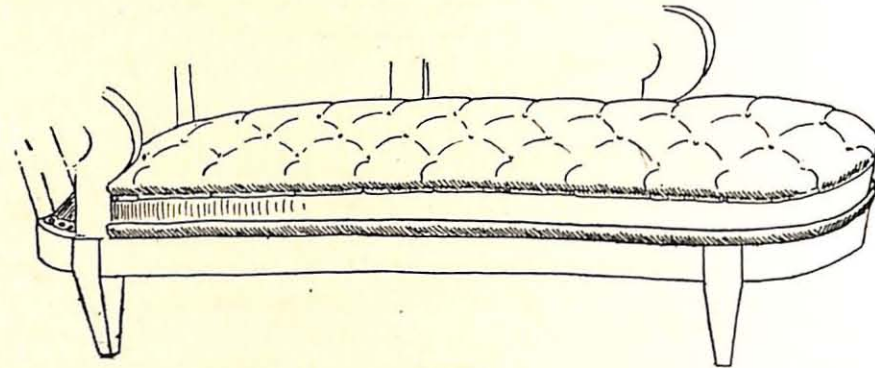


260D

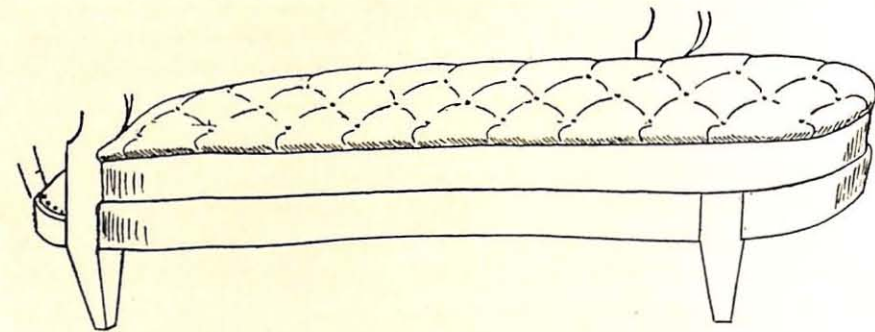


260E

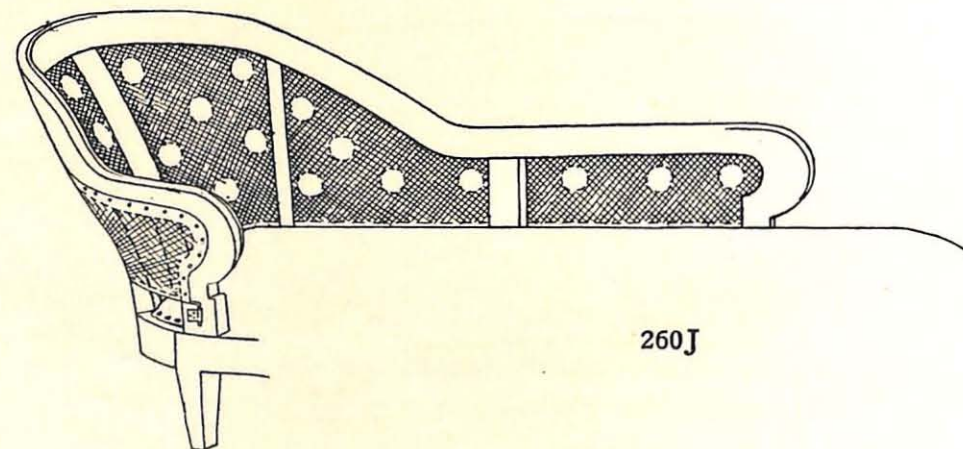
DETAILS OF THE CHAISE LOUNGE



260G



260H



260J

DETAILS OF THE CHAISE LOUNGE

between the arms while the back cushion extends down to the foundation of the seat and is back-sewn to the under upholstery on the depressed line marked X in Fig. 259I.

Too much emphasis cannot be laid on the necessity of keeping the upholstery of such pieces as the one here illustrated, soft and pliable in order that the greatest degree of comfort may be maintained. This does not, however, mean that what in trade parlance is termed "sloppy workmanship" is permissible. It is a nice accomplishment to maintain the requisite degree of firmness with the proper down resiliency and it should be borne in mind always that comfort in furniture of this type is of greater necessity than extreme, wear-resisting durability. Furniture of this type is seldom abused and is purchased for its luxury rather than for strict utility.

The upholstery of the chaise lounge shown in Figs. 260 and 260A is a little more difficult than the one described in connection with Fig. 259. Not only has this piece to be provided with a spring edge, but instead of the ordinary form of double banding the lower band on this piece is increased in width by the application of a nosing at the top of the frame.

This nosing is back-tacked on the upper edge of the frame, stuffed up to a height of $1\frac{1}{2}$ inches and given a single stitching. A cross-section showing the relation of the nosing to the frame and its spring edge is shown in Fig. 260B, the completed nosing being shown in Fig. 260C.

Fig. 260C also shows the placing of the springs and the wire edge; Fig. 260D showing the springs covered with burlap. A light double-stuffing is added over the spring burlap with a single stitching on the edge bringing the seat to

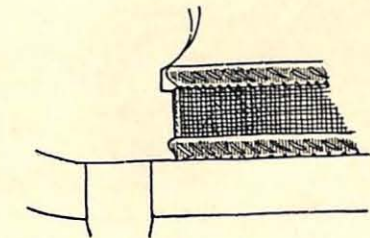
the condition shown in Fig. 260E. An enlarged detail of the stitched edge of the double stuffing and of the nosing above the frame is shown in Fig. 260F.

The burlap of the double-stuffing is now marked for tufting and from these marks and the dimensions of the seat, calculation is made for the construction of the down-proof bag which is to contain the down. Allow only about $\frac{1}{2}$ inch extra each way for fullness between the tuft markings on the burlap. That is, if the tufting marks on the burlaps are 8 inches apart, the corresponding marks on the down-proof bag should be $8\frac{1}{2}$ inches apart.

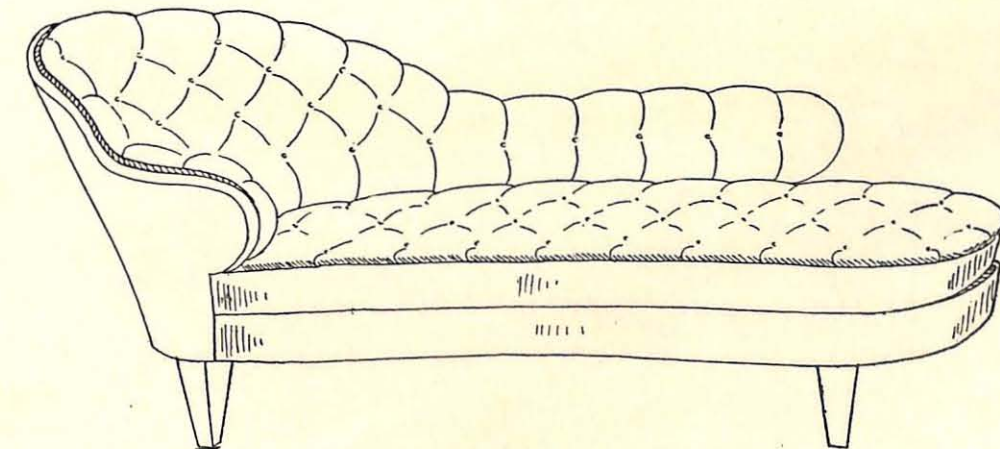
The bag is filled with a light layer of down and the various tuft markings tufted into place as indicated on the marking of the seat. In this way the down bag is used only as a covering muslin. The $\frac{1}{2}$ inch extra allowance for tufting does not permit of pleats, but the fullness will naturally fall into pleat-like semblance.

After the entire seat has been tufted as shown in Fig. 260 G, the surplus is turned in around the edges and sewn down as indicated.

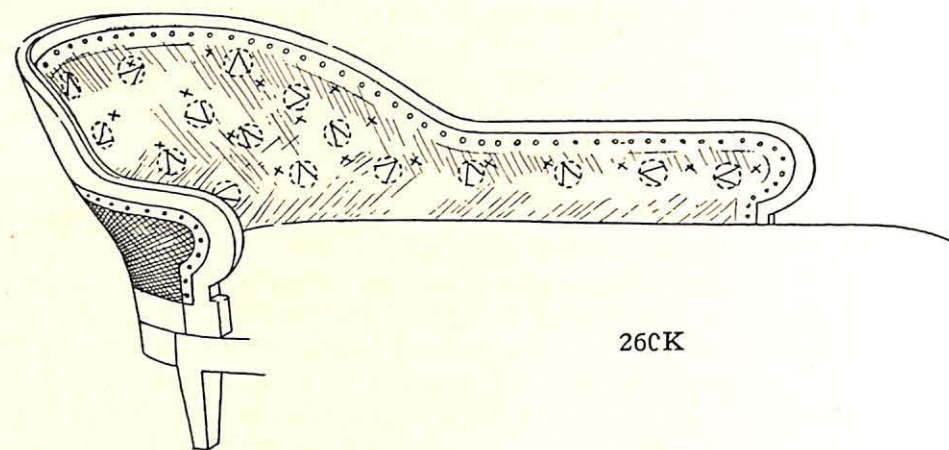
Two pieces of fabric sufficient to form the two bands are back-tacked behind the nosing on the frame, one intended for the covering of the



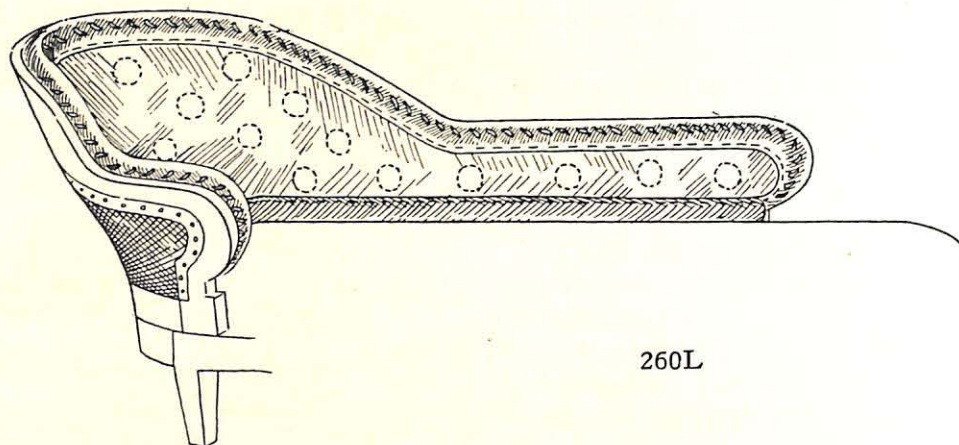
260F



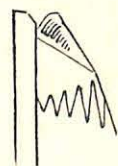
260



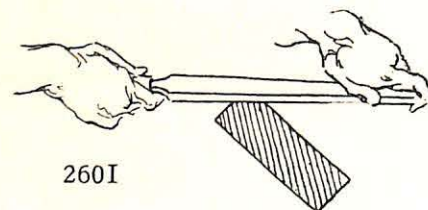
260K



260L

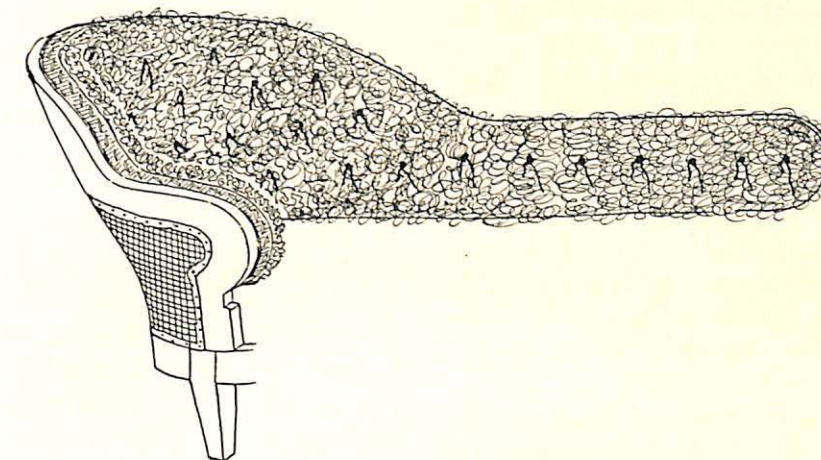


260P

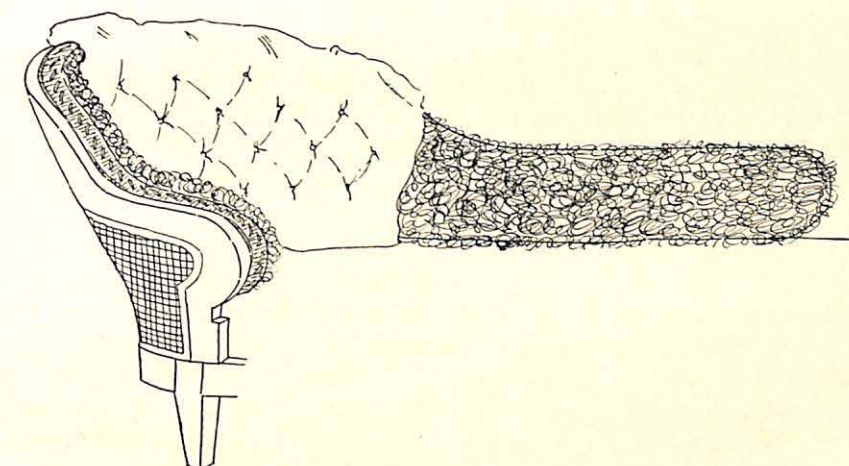


260I

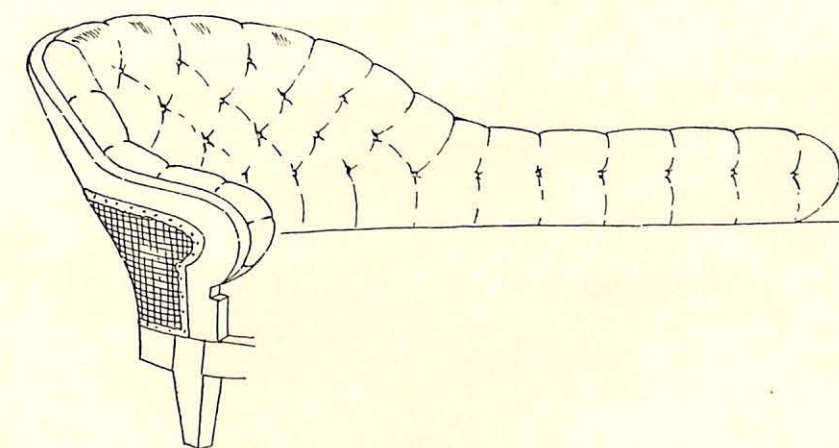
DETAILS OF THE CHAISE LOUNGE



260M



260N



260O

DETAILS OF THE CHAISE LOUNGE

bottom band and the other to be carried up as a finish for the seat. Under each of these a light layer of wadding is placed in order that they may lay smoothly and without wrinkles, giving the smooth appearance shown in Fig. 260H.

The next step is the preparation of the back for springs. First of all the sharp edge of the inside of the frame is removed with a rasp as suggested in Fig. 260I. A wire support for the bottom of the back is attached at a sufficient distance above the seat, and to this the bottom of the burlap which supports the springs is sewn. Webbing and burlap are placed on the outside of the back and a sufficient number of pillow springs sewn thereto as shown in Fig. 260J.

These pillow springs are tied down and the whole covered loosely with burlaps sewn to the tops of the springs as shown in Fig. 260K. Fig. 260K also indicates the marking for tufting.

Next, a stitched edge is constructed around the edge of the frame as shown in Fig. 260L. This edge is stuffed very lightly and given a single stitch.

Where the outer lines of the stitched edge attach to the frame a recess is provided as shown in the cross section, Fig. 260P. This recess is intended to give the appearance of a loose cushion, therefore this crevice must be kept uniform all around the back.

A roll is also placed around the bottom of the back as shown in Fig. 260L. It is a matter of choice whether this roll is put on before the springs are put in or after the springs have been covered with burlap. We show it here, after the springs have been covered, because it offers less interference with the action of the pillow springs.

A down cushion is next constructed, using the button marks of the back, as at present outlined in Fig. 260L, as the basis of calculation. A pattern is made from these calculations and the cushion planned out in two sections, one section

for the main back as shown in Fig. 260N and another section for the smaller part of the back. These sections are filled and marked for buttoning with the necessary allowance between buttons.

Where the back button marks are indicated on the burlap (Fig. 260L), sew through, at each mark, about a foot of stitching twine, leaving the ends loose so that they can be used eventually for the tying in of the down bag.

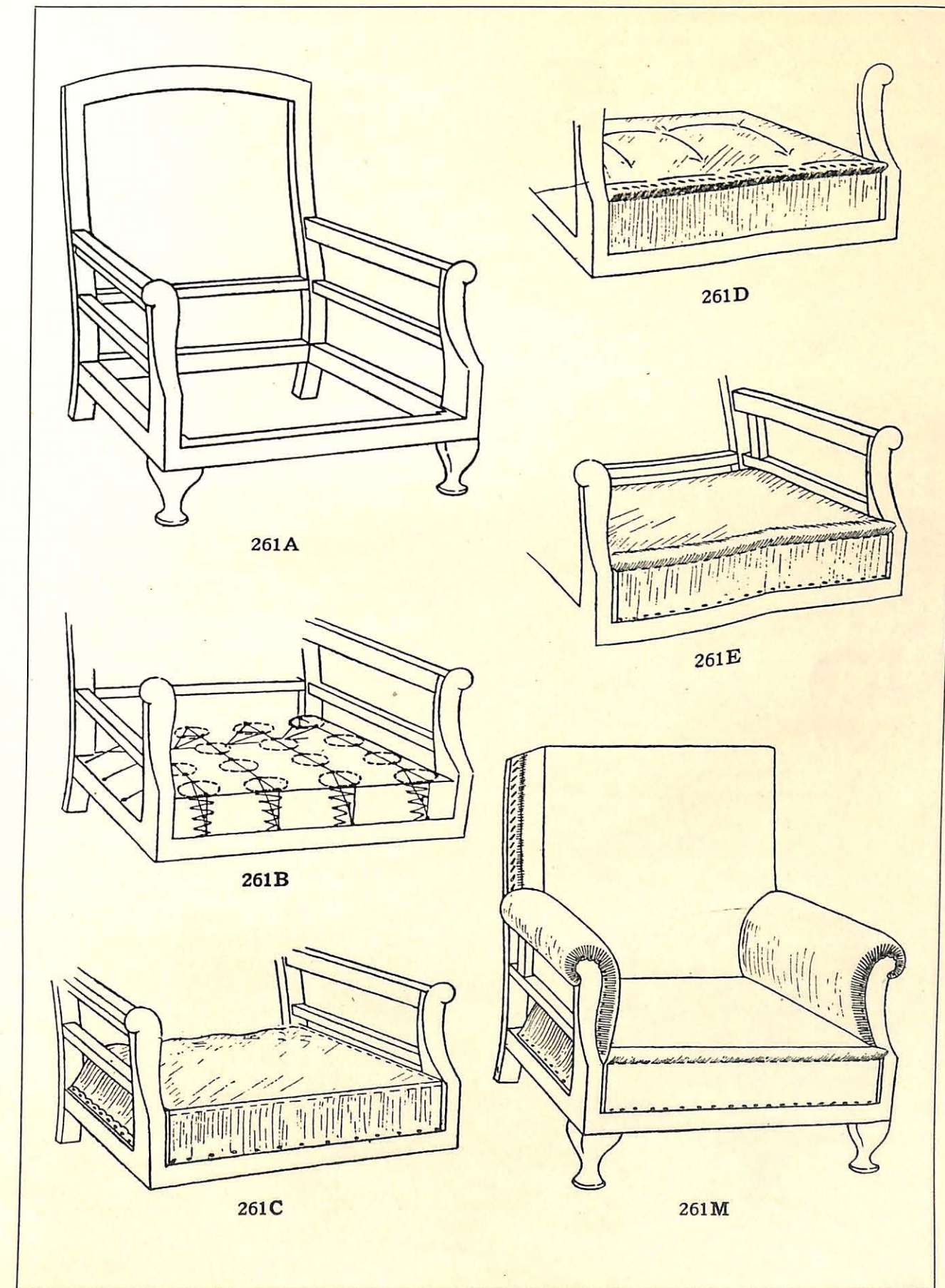
A hair filling is next applied between these twines, still leaving them free for subsequent use.

After the hair has all been put in place, Fig. 260M, the down cushion for the large section of the back is tied into place using the tufting twines that have been left projecting through the hair for that purpose. The allowance of one-half inch provided as an extra between the button marks on the down bag does not permit of the formation of complete pleats but is sufficient to indicate a semi-pleated condition which is all that this type of cushion requires.

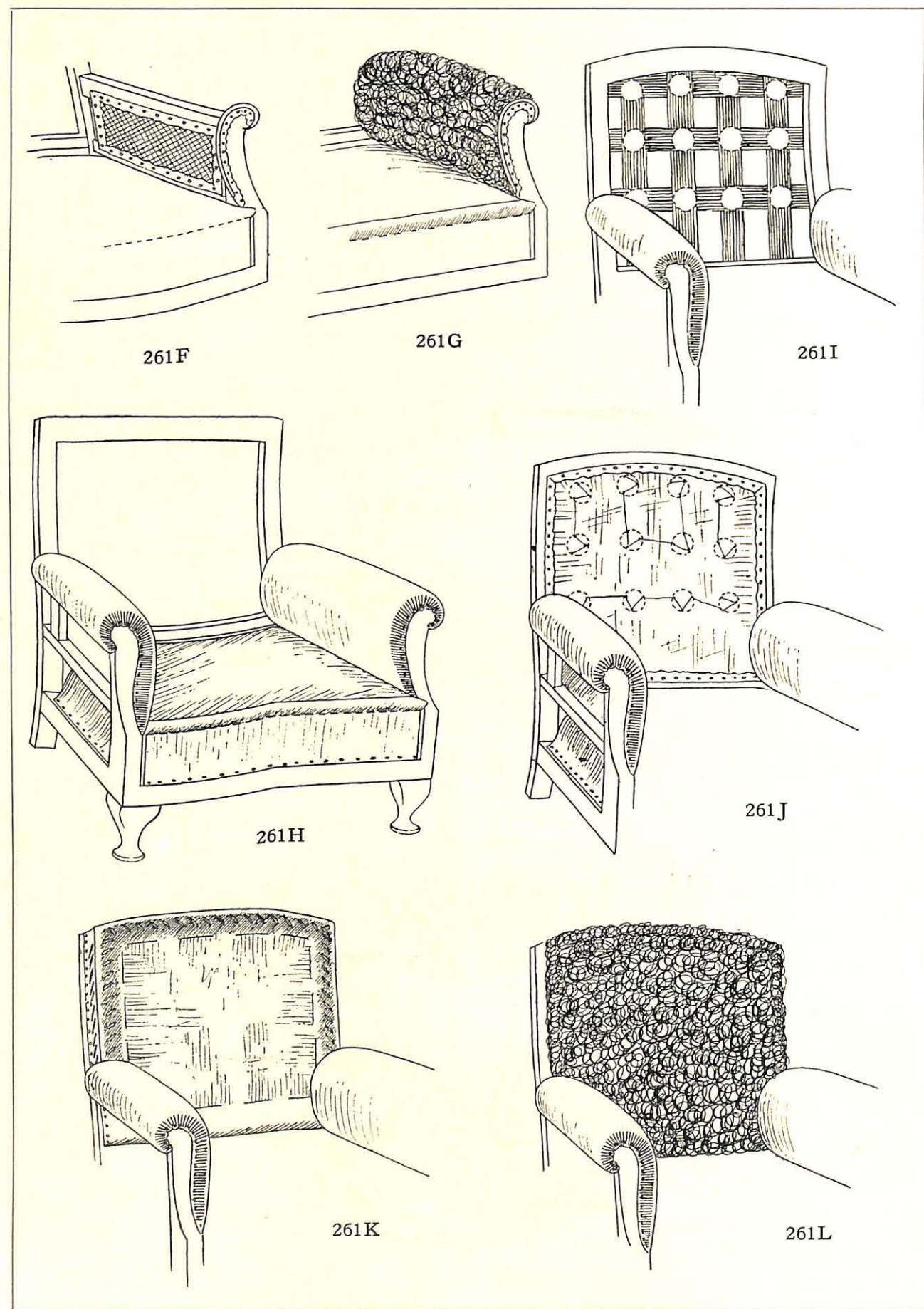
When the main section has all been tied into place the next section is joined thereto and the edges finally sewn down all around, creating the appearance shown in Fig. 260O.

In the finishing of this piece a heavy cord is inserted in the crevice left by the stitched edge around the back, also in the crevice between the nosing and the upper band around the frame, making a final finish as indicated in Fig. 260.

This type of upholstery is perhaps the most luxurious that can be conceived and particular care should be taken to keep the entire work as soft as possible without sacrificing uniformity of contour which is coessential with the matter of comfort. For this reason it is advisable not to use buttons for tufting but rather soft French knots made from the fabric of the covering. These are literally little pieces of gathered fabric sewn at the back and trimmed close.



DETAILS OF BUILT-UP DOUBLE CUSHIONING



DETAILS OF BUILT-UP DOUBLE CUSHIONING

BUILT-UP DOUBLE CUSHIONING

THE chair illustrated in Figs. 261 and 261A is a luxurious type having a seat of unusual depth and a back which simulates the appearance of a double cushion.

The seat is built with a spring edge platform, using 16 deep springs tied down for the spring edge as shown in Fig. 261B. It will be noticed in this figure that the wire edge goes back at each side even with the outside edge of the outer row of springs and is fastened to the top of the back corner spring, the object of this being to form a square spring platform as a seat base. Only one-half inch is allowed between the edge of the wire and the inside of the front arm post, as a wide crevice here would be objectionable.

This platform is next covered with burlap as shown in Fig. 261C, and a nosing similar in construction to those already described in connection with spring edges or a light double-stuffing is added so as to provide a stitched edge as shown in Fig. 261D.

The platform is now covered with a light layer of hair and wadding and the nosing also covered with wadding and covered in muslin or sateen as indicated in Fig. 261E.

The next step is the upholstering of the arms and this follows the plan described in connection with chairs of a similar character so that the detailed diagrams of Figs. 261F, 261G, and 261H are practically self explanatory.

Fig. 261I shows the preparation of the back by webbing on the outside of the frame as a foundation for 12 pillow springs and also indicates the pillow springs in place.

In Fig. 261J these springs have been tied down and covered with burlap and also stitched to the burlap. In Fig. 261K a light double-stuffing has been applied so as to form a soft, stitched edge, which will give the edge of the chair a thickness, as pictured, of about 3 inches including the frame.

A light layer of hair is now placed on the back as shown in Fig. 261L and the down-filled cushion, previously prepared, with a 3½-inch border, is sewn to the stitched edge as indicated in Fig. 261M.

A final band of muslin is added to the back

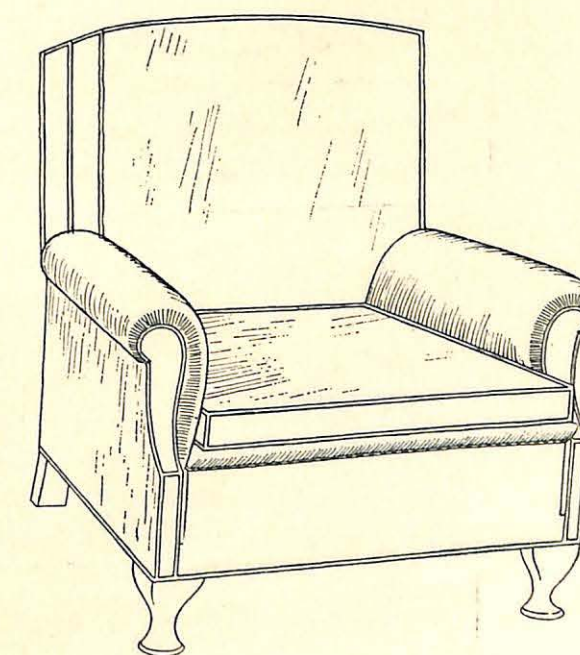
to cover the stitched edge so as to present the appearance of a double-cushion back, the border of each section being 3 inches wide and giving the appearance of two cushions which total 6 inches of back upholstery.

In making up the covering for the down cushion for the back of this chair, the semblance of a double cushion is carried out by a 6-inch border divided by a center welt, into two equal divisions of 3 inches each, and a welt also outlines the front edge of the cushion and another one the back edge of the frame. The chair is finished with welted edges at the bottom and at the corners as shown in Fig. 261.

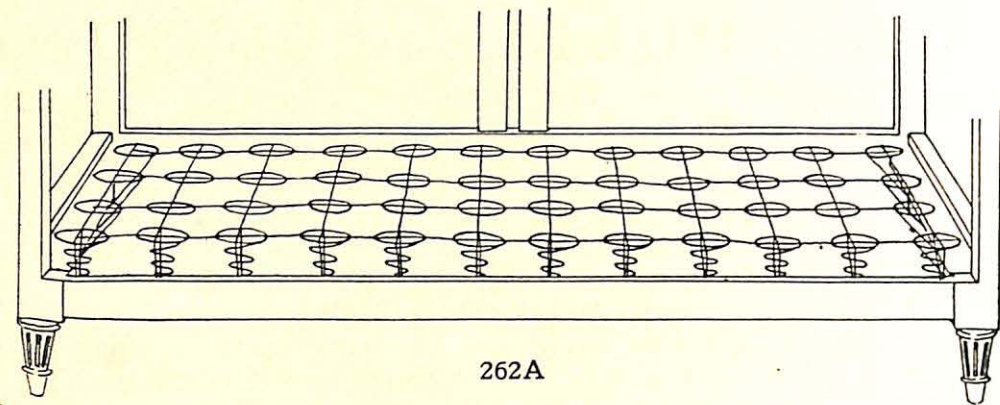
The panel which covers the face of the arm is surrounded by a welt, thus keeping the chair simple in trimming without sacrificing any of its comfort or its harmonious lines. Cords or moss gimps may be used in place of welts.

The upholstering of the piece illustrated in Fig. 262 brings into our discussion a new principle which will be noticed in connection with the illustrations with relation to the back.

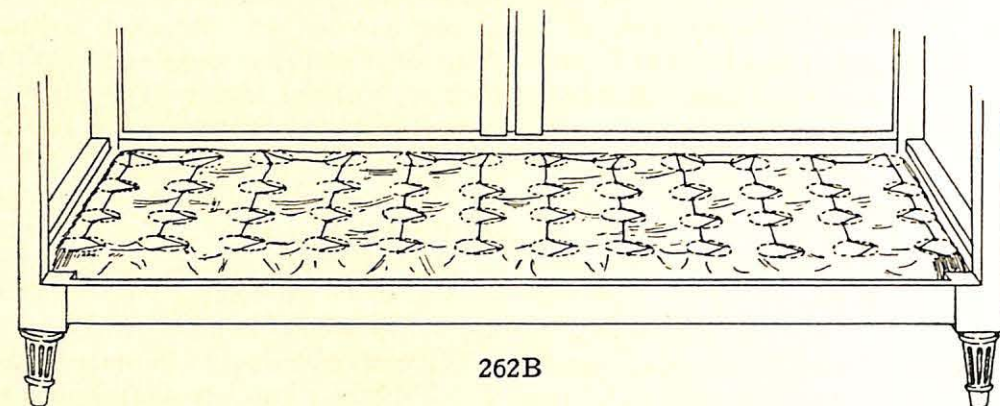
As will be seen in Fig. 262A the spring foundation of the seat is kept flat and when covered



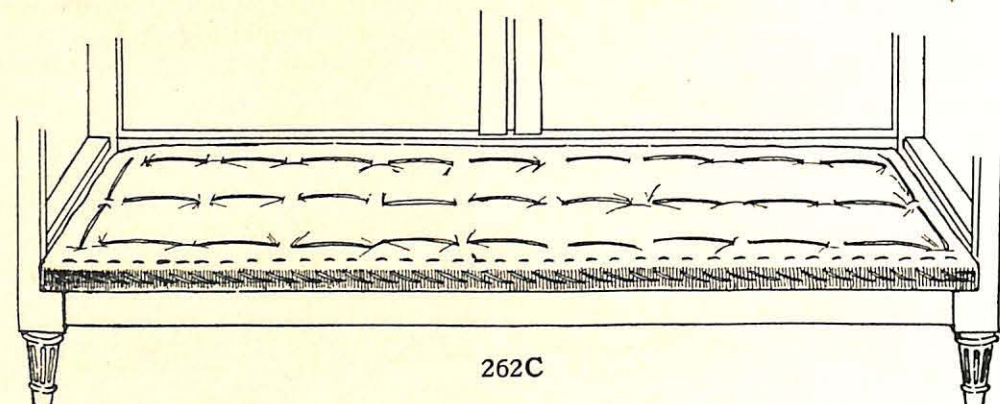
261



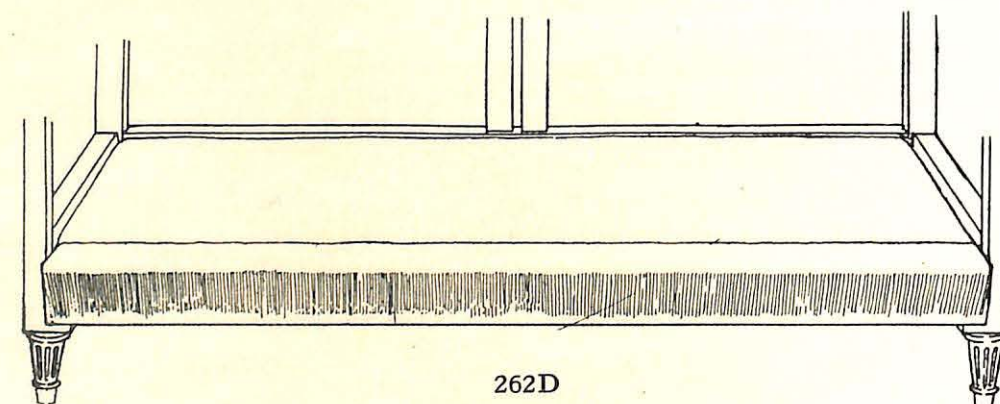
262A



262B

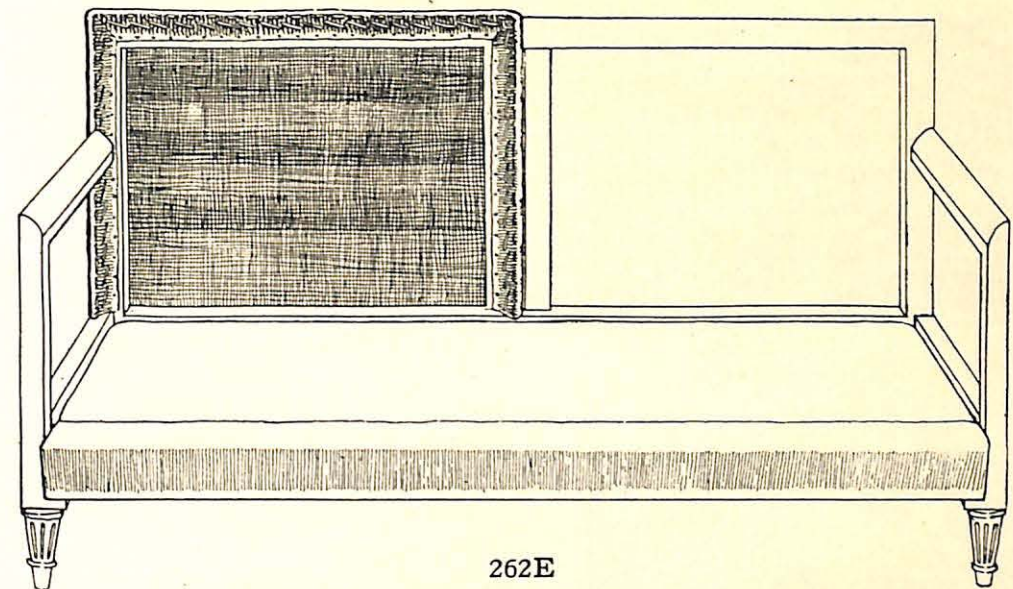


262C

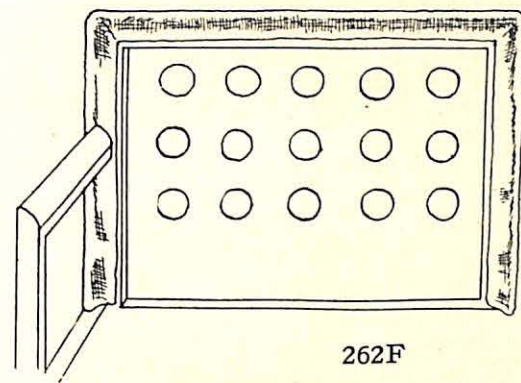


262D

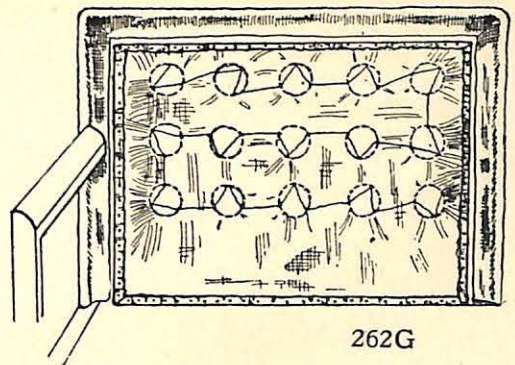
DETAILS OF BUILT-UP DOUBLE CUSHIONING



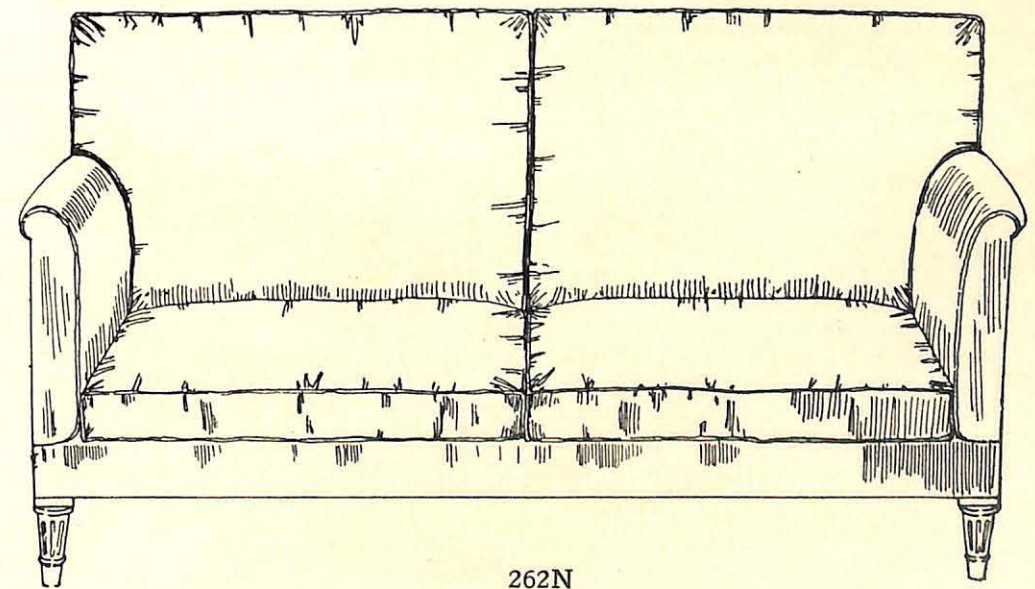
262E



262F

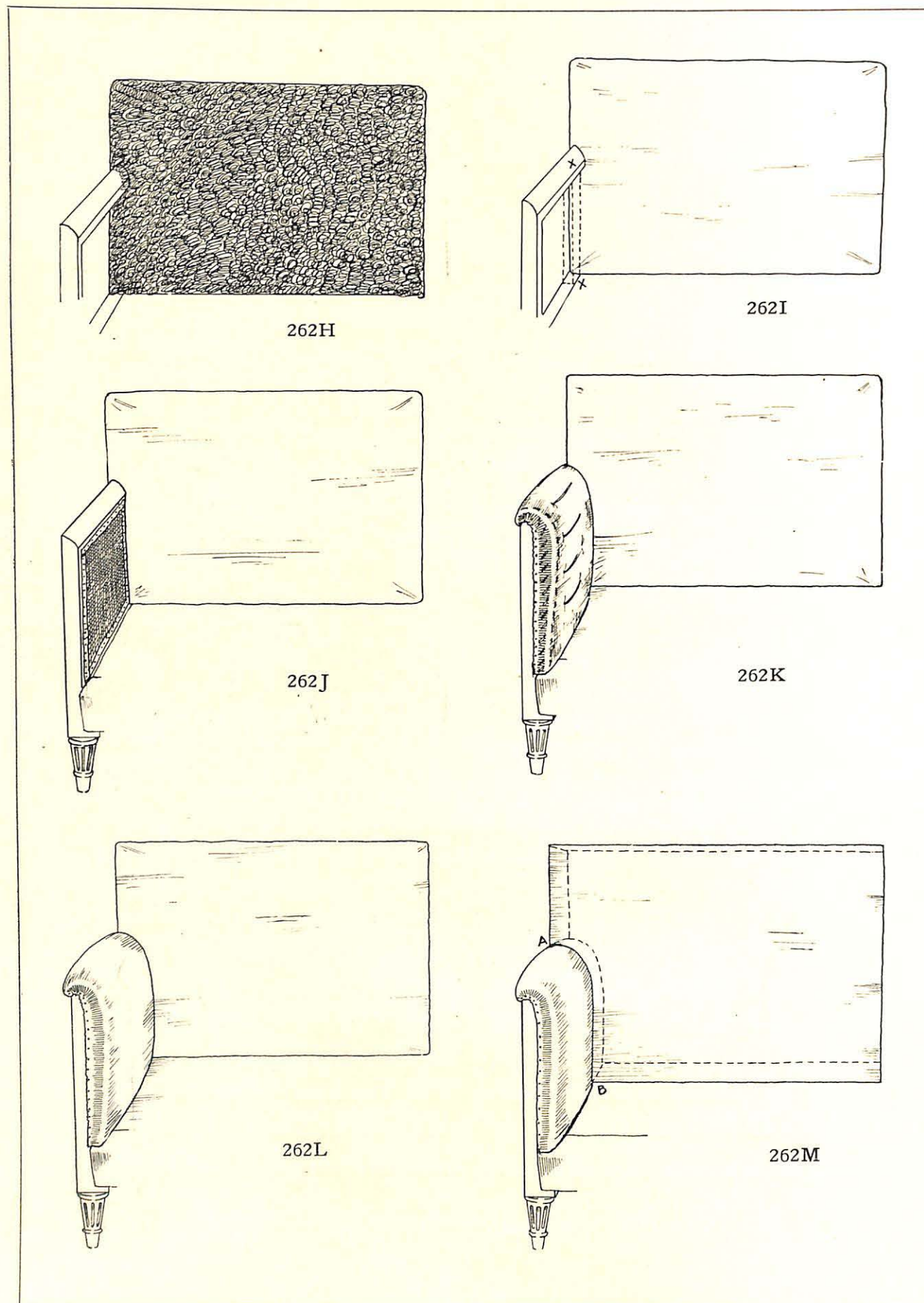


262G



262N

DETAILS OF BUILT-UP DOUBLE CUSHIONING



DETAILS OF BUILT-UP DOUBLE CUSHIONING

with burlap as shown in Fig. 262B, a level platform is provided as a base for the double-stuffing.

Fig. 262C shows the double-stuffing applied and the front stitched into an edge. In Fig. 262D a layer of hair has been applied above the double-stuffing and about four inches back from the front edge a line of stitching has been sewn through the hair padding to force a depression so that the platform will fit the shape of the under part of the cushion. In the finishing of the piece, the covering extends back to this depressed line so as to form a facing.

The next step is the building up of the nosing outlining the two back sections as illustrated in Fig. 262E. The nosing is about two inches high and is built up on the face of the frame and stitched as shown in the illustration.

The back of the frame is covered with burlap and webbed to support the springs, the placing of which is indicated in Fig. 262F. These springs are tied down into place and covered with burlap as shown in Fig. 262G. The burlap over these springs should not be drawn too rigidly and for that reason it is well to sew the burlap to the top of the springs, as we have indicated. There will be a considerable gutter between the nosing and the top of the springs because the edge of the burlap which covers the springs is carried down and tacked on the frame and not attached to any part of the built-up nosing. This plan is followed because it gives greater play to the springs and creates a more pliant foundation for the cushion.

The next step, as shown in Fig. 262H is the

application of a hair layer which is put in place and the whole covered with muslin as shown in Fig. 262I.

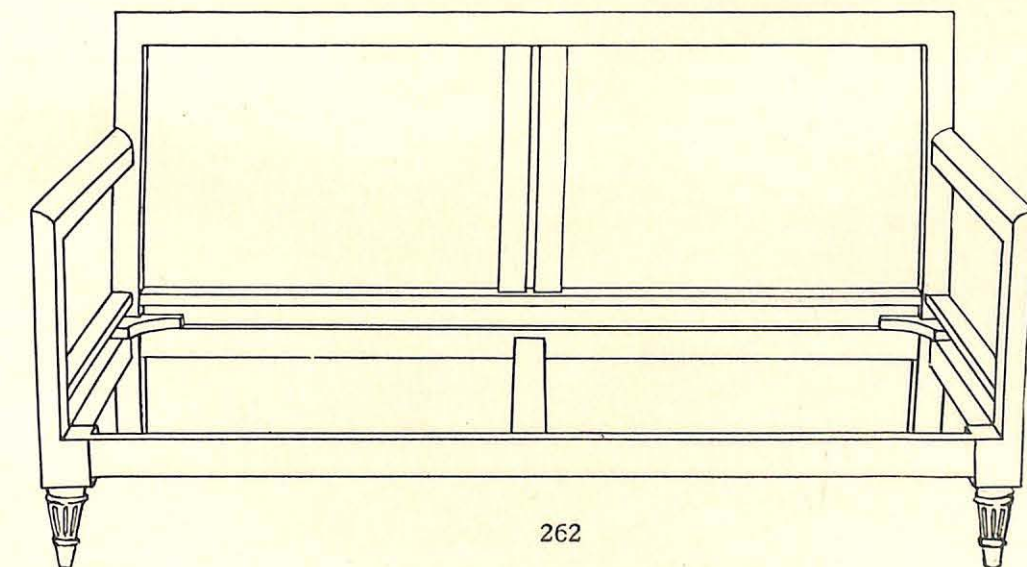
The arms are next to be treated and as the frame which we show is not provided with a tacking strip at the back of the arm, one must be provided as indicated by the dotted outline X-X in Fig. 262I. This strip is nailed into place, allowing just sufficient room between it and the covering of the back to permit of the insertion of the final covering of the arm and back.

After the burlap has been tacked on the arm as shown in Fig. 262J, the next steps are to build up the shape of the arm in double stuffing and stitch the front edge so that it rounds over nicely at the top, giving the shape shown in Fig. 262K. A final layer of hair is placed over the double-stuffing and the arm is covered with muslin as shown in Fig. 262L.

The back cushions, which in this instance merely stand in place, being unattached, are now prepared.

Proper measurements must be taken to determine the dimensions and a pattern must be cut to fit the shape of the arm so that the curve from A to B of the cushion will fit accurately to the curve of the arm as shown in Fig. 262M. The finished piece with all cushions in place is illustrated in Fig. 262N.

We have now followed progressively the upholstery of various pieces of furniture commencing with the most simple and gradually working up through the more difficult pieces to the most luxurious and complicated types.



TRIMMING OVER-STUFFED PIECES

SOME of the chairs we have just described were provided with removable wooden panels, which simplified the finishing of the arms and wings.

Fig. 263 shows a chair of the luxurious type the arm of which is finished with a welted panel. The welt in this instance outlines the panel and is put on after the outside lining has been attached. Furthermore, the panel is slightly larger than the woodwork of the face of the arm.

Fig. 263A shows a double enlargement of the arm, which is the right arm of the chair (as the chair faces the observer it appears at the left of the illustration) with the shape of the woodwork indicated by a broken line.

Fig. 263B shows the welt sewn into place following the shape indicated by the outline of the woodwork, but sewn to the upholstery and to the cloth of the outside lining. In order to get the proper shape for this welt, an outline is sketched on the upholstery in chalk, with or without a pattern, and the welt, which has already been stitched by machine, is sewn into place, as indicated. A piece of the covering is then pinned into position within the welt and blind-stitched into place, as indicated in Fig. 263C.

In the case of a very large welt and a heavy fabric, it is well also to blind-sew around the outside of the welt in order that it may be kept flat and shapely.

The arm shown in Fig. 264 is finished without a welt, a treatment sometimes desirable with a heavy plush fabric.

Fig. 264A, enlarged to double size, shows the contour of the upholstery of the left arm and the shape of the face of the arm is indicated by a dotted line. Fig. 264B shows the pattern attached to the face of the arm for the purpose of outlining the shape of the panel and a pencil or chalk line is drawn around the pattern where the panel is to be sewn. The panel is next pinned in place, Fig. 264C, the outside edge is tacked on the outside arm where it will be covered by the lining and the outline of the panel is blind-sewn where pinned, as indicated in Fig. 264D.

Fig. 265 shows a different type of chair hav-

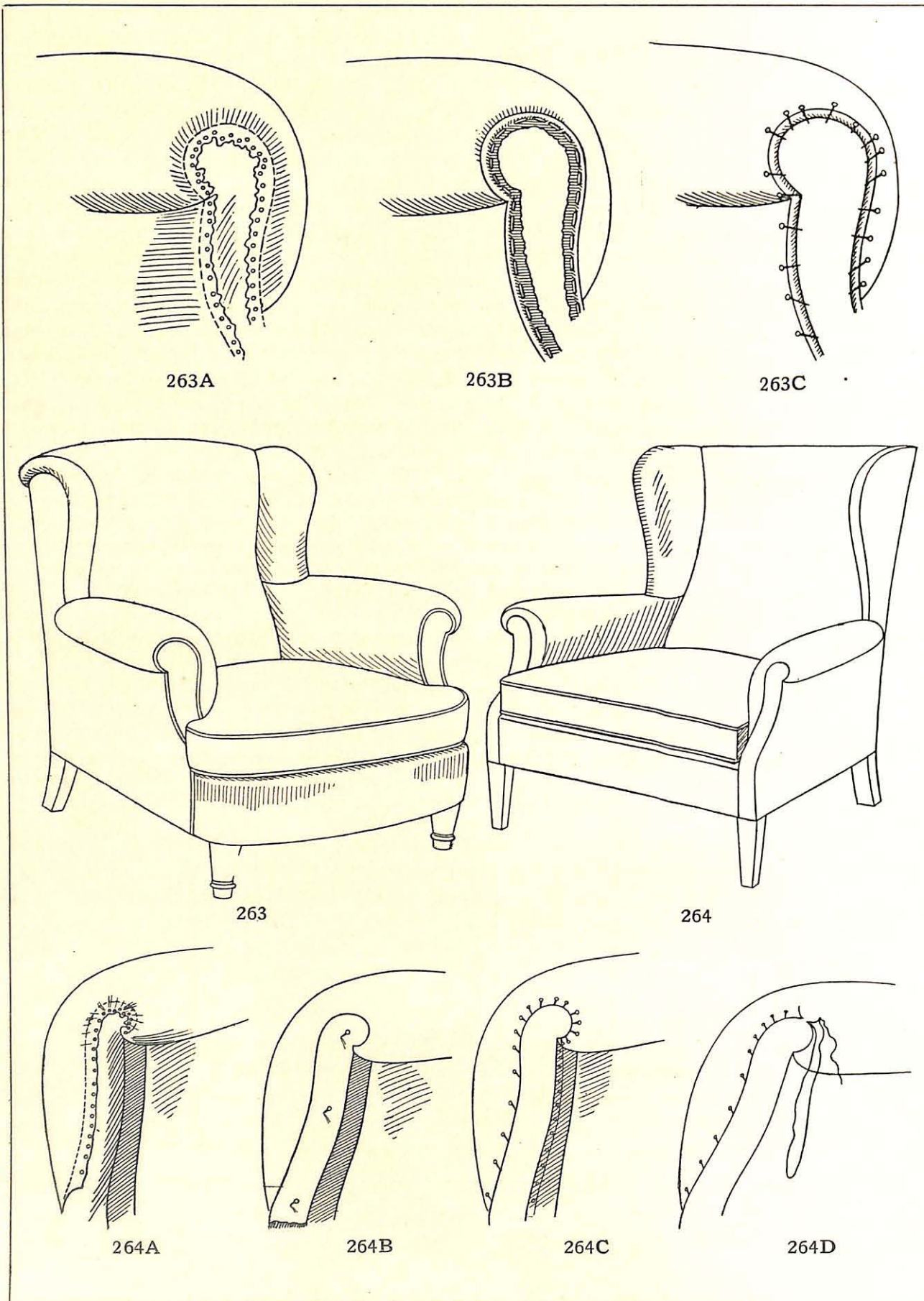
ing a continuous wing and arm which is treated on the face with a double welted band ending at the top of the wing in a gathered rosette. The welt, which follows the shape of the wing and the outside arm, is put on after the chair has been upholstered to this stage, and is carried around the circle of the roll, which finishes the top of the wing, as indicated in Fig. 265A. The rosette which finishes this circle is the last thing to be put in place, therefore the band which forms the panel on the face of the wing and arm is put on so that the welt which follows the circle in Fig. 265A comes over the band.

The band, at this outer edge, is tacked around the edge of the frame where the lining comes on the top of it, making a finished edge, as shown in the illustration. The fabric for the rosette may be either tacked or sewn into place, as indicated in Fig. 265B, in either case it is imperative that it follow closely the inside edge of the welt as no other trimming comes between the outside edge of the rosette and the welt.

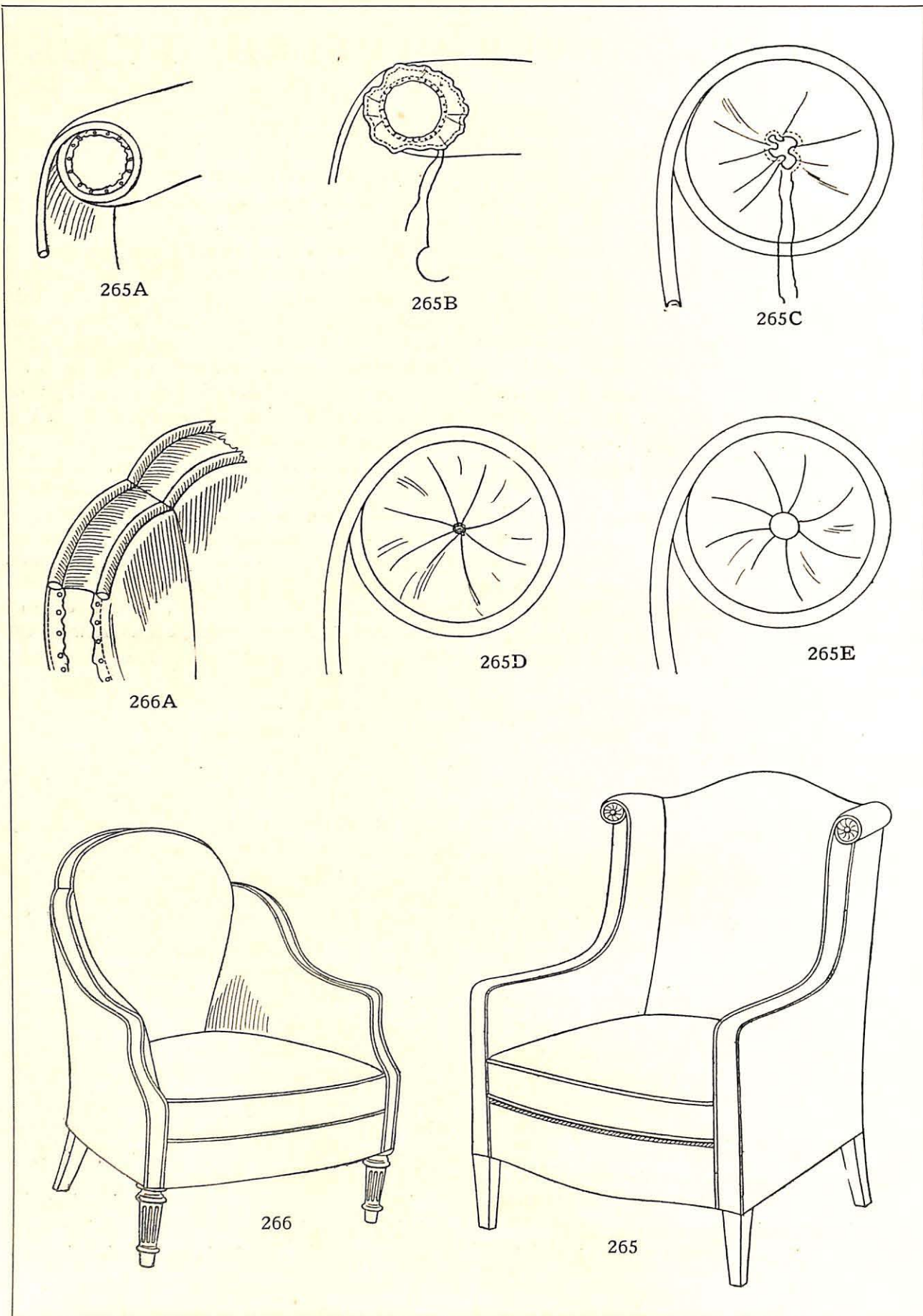
A gathering string is threaded through the flat edge of the fabric which composes the rosette and drawn tightly together, gathering the fabric into a close knot and completed by a button, as shown progressively in Figs. 265C, 265D and 265E.

Fig. 266 shows the type of chair which may be trimmed by a double welted band mitered at the angles to fit smoothly and blind-sewn on both edges, as indicated in Fig. 266A, to make the finished trimming. It will be obvious that in order for this type of trimming to be effective it must be very neatly made with welts that are absolutely parallel and neatly applied in conformity with the shape of the upholstery and the outlines of the chair. It is illustrated here not only as the method of trimming for the chair shown, but as an example of a treatment which may be applied to this type of chair and to others of a similar shape where one continuous band may be used for the back and arms.

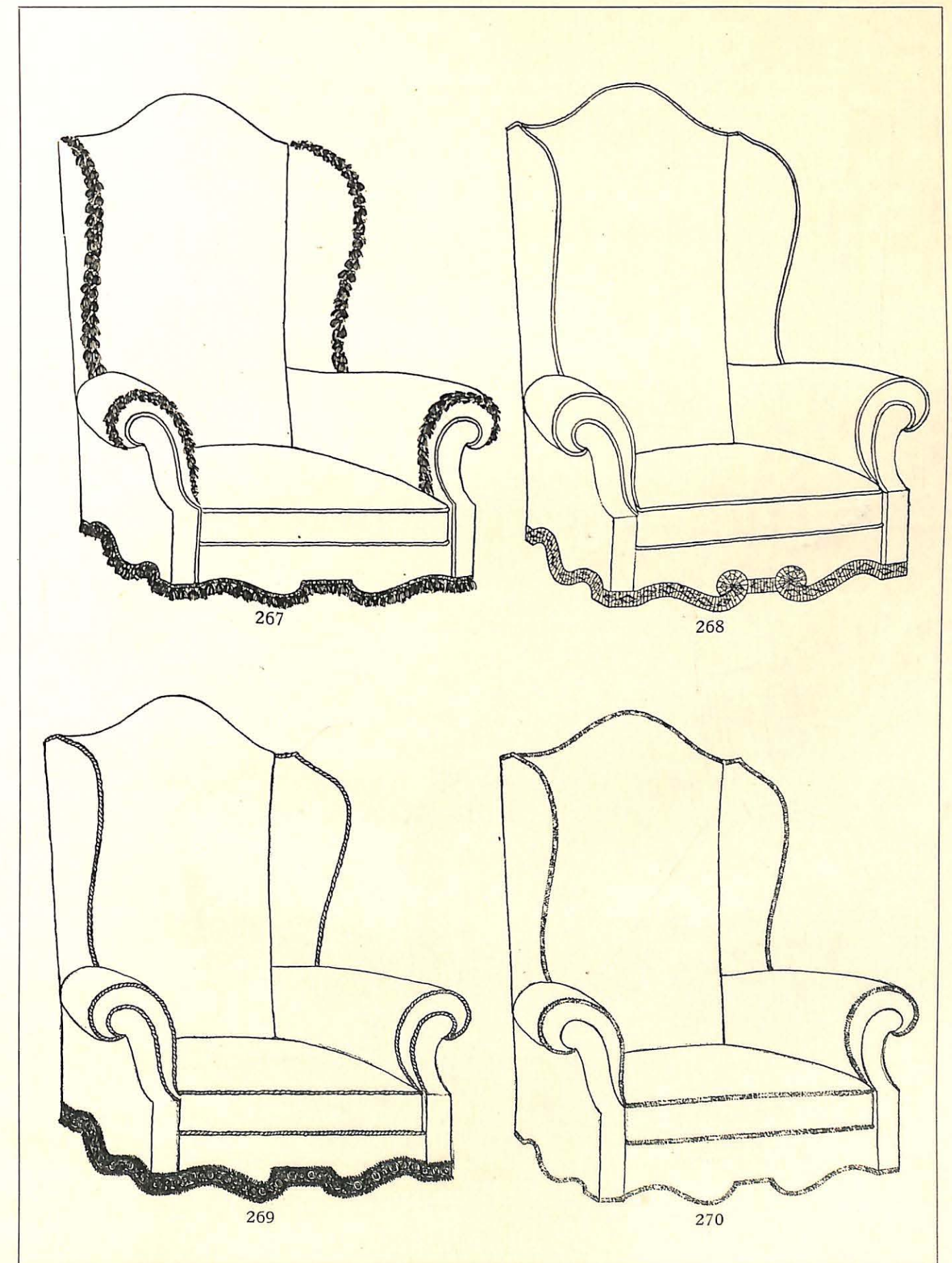
There are various ways of trimming the chair illustrated in Figs. 242 to 244, and in some cases the character of the intended trimming not



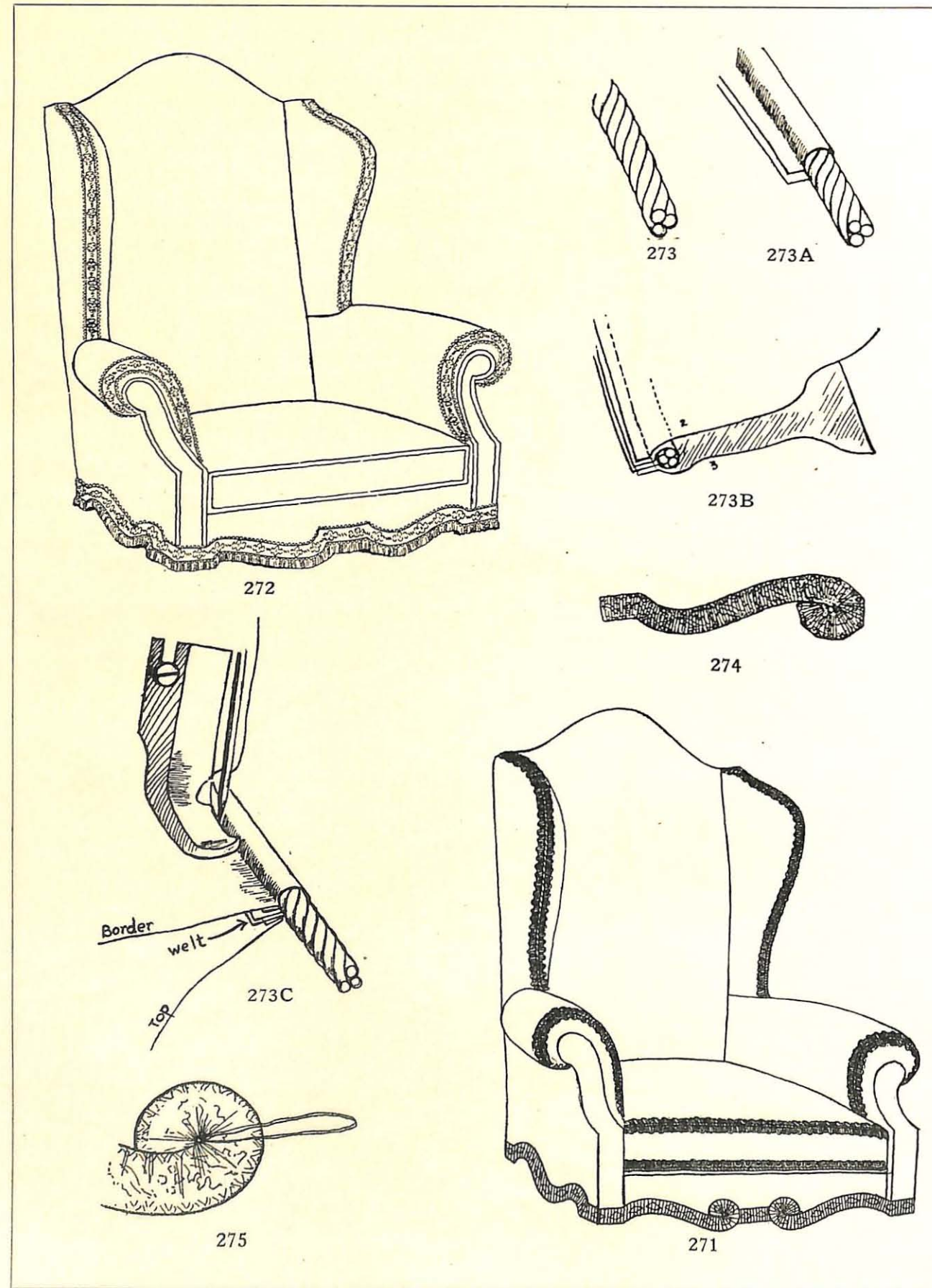
DETAILS OF TRIMMING OVER-STUFFED PIECES



DETAILS OF TRIMMING OVER-STUFFED PIECES



DETAILS OF TRIMMING OVERSTUFFED PIECES



DETAILS OF TRIMMING OVER-STUFFED PIECES

only determines the final appearance of the chair, but has much to do in indicating the preliminary upholstery. This occurs particularly with regard to the finish of the edges. If the wings and back are finished to a knife edge and intended to be trimmed with a stubby fringe as indicated in Fig. 267, the knife-edge upholstery must be determined upon before the chair is started. In like manner, if the chair is to be finished with double welts, like Fig. 268, the edges and nosings, which form the foundation of the upholstery, must be kept square at the top of the back and on the edges of the wings to create a proper foundation for the welting.

Fig. 269 shows a cording treatment where a separate silk cord replaces the welt. Fig. 270 shows a moss edge as another variation in the trimming. Fig. 271 shows the same chair treated with a wide galloon on the outlines of the chair, while a double French gimp, with a cord center, is used on the cushion. Fig. 272 illustrates a fancy band trimming in combination with a cut fringe.

Loop edge fringes and tassel fringes on the base of a chair such as this are objectionable if they conceal the carving of the upper leg. A stubby fringe, meaning by this term a fringe, the tassels of which literally stick out straight from the heading, may be used with good effect particularly if it is attached a little above the bottom edge of the frame, so that the carving of the woodwork is not hidden.

Where the welts are made of the goods, it is possible to sew the welt into the covering of the cushion at the same time the cushion is made, thereby saving time and material. The welt is formed by a soft cord, similar to Fig. 273. A strip of covering, long enough to reach the distance around the cushion and wide enough to cover the welt, is cut like Fig. 273A, and the border of the cushion, the top of the cushion, and the covered welt are sewn together by a single stitch from the wrong side, as in Fig. 273B. The cushion cover is then turned right side out, and with a sewing machine, equipped with a special welting foot, a second stitch is run around the cushion just inside of the welt in the manner in Fig. 273C.

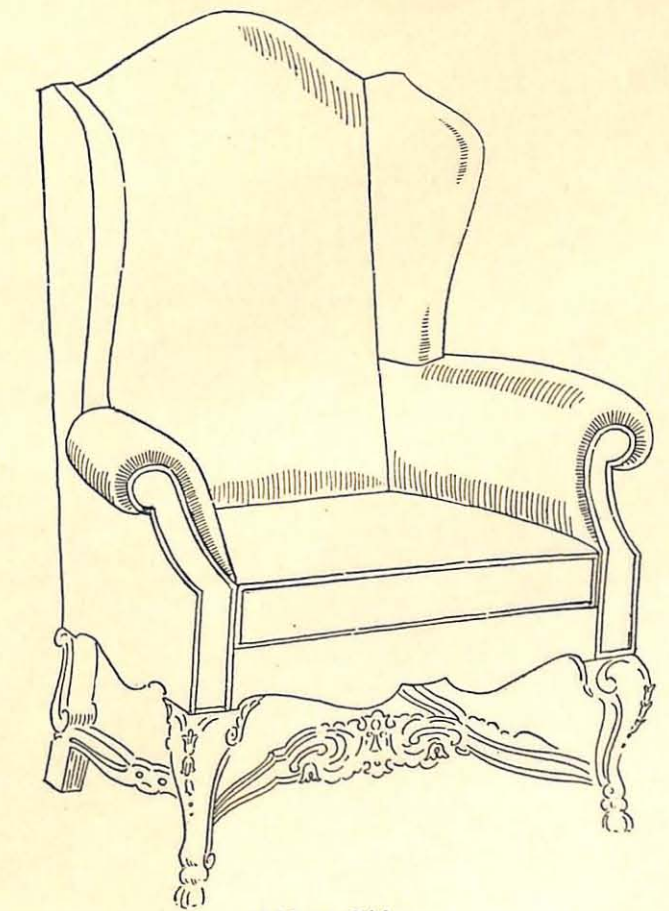
A variation in welting is sometimes created by making the welt of a contrasting plain color; in this case it has the appearance of a piping. This method, however, is not recommended be-

cause, in unskilful hands, it is apt to produce a garish effect. We mention the custom, however, to have our description complete.

In the better shops, where a double French gimp is used as a trimming for the cushion, as indicated in Fig. 271, it is a practice to welt the edges of the covering in the manner we have here described in connection with Fig. 268. The double French gimp has a cord which creates an edge, and the welt is used to make the cord of the gimp fill out instead of sinking into the cushion.

In using a flat galloon, as in Fig. 271, whether it is as wide as indicated in Fig. 272, which covers the face of the wings, or is merely a one-inch galloon as is indicated on the base of the chair in Fig. 271, the character of the appearance will be very largely determined by the way in which the galloon is put on. Neatness is a prime requisite and an important element of neatness consists in the way the pleats are formed in the method of attaching the galloon to the chair.

The point we are endeavoring to emphasize is best explained by a reference to two examples.



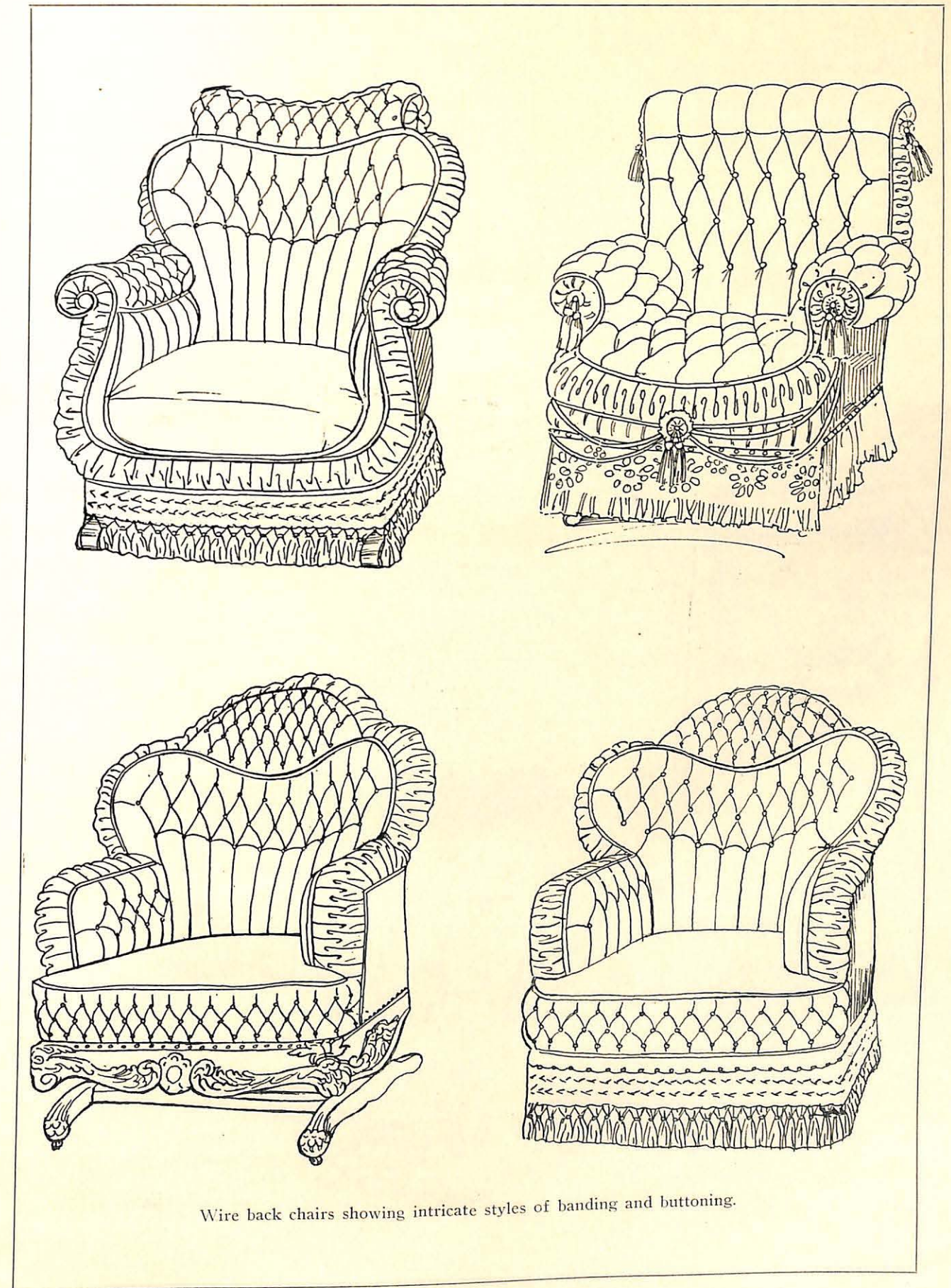
242 to 244

In Fig. 274 we show a section of the base of this chair with a one-inch tinsel galloon tacked into position, the fullness of the curves being disposed of by pleating. As an alternative, Fig. 275 shows a combination of glueing and sewing. The lower edge of the galloon is glued all along the base of the chair, being held with tacks until the glue hardens. This method leaves the upper edge of the galloon unattached. In all galloons there are fairly stout warp threads which form the selvage. With a pin, it is possible to draw two or three of these warp threads through the edge of the selvage and utilize them as a shirring string to dispose of the fullness in the manner indicated in Fig. 275. This not only disposes of the fullness equally, but it also creates smooth curves which are finally sewn to the covering with a small circular needle and thread, which matches the cov-

ering, thus creating the appearance shown in Fig. 268.

Glue is employed frequently for attaching the trimming to the hard base of the chair, but on the edges of the arms, the wings and the back it is always better to sew the trimming in position, whether it consists of fringe, cord, moss gimp or welted paneling, and it is a practice in good shops, wherever there is a flat trimming of any kind, to have the same pinned into position complete before sewing, as only in this way is it possible to maintain a uniform appearance between the right and left sides of the chair.

Cording, such as is shown in Fig. 269 is usually sewn on free hand, but care should be taken to chalk the line of sewing so that an accurate and symmetrical outline will be presented in the finished job.



Wire back chairs showing intricate styles of banding and buttoning.

DETAILS OF BANDING AND BUTTONING

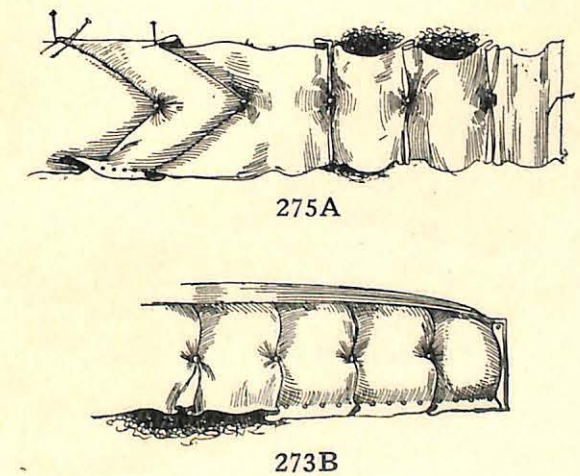
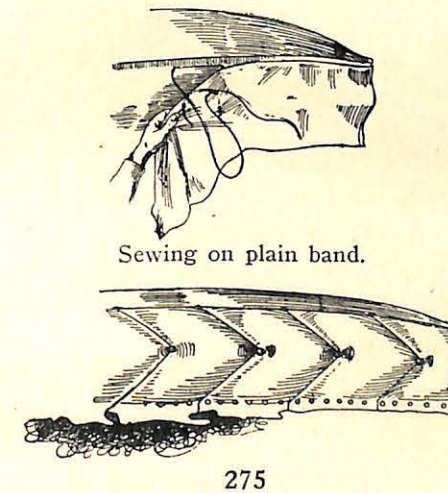
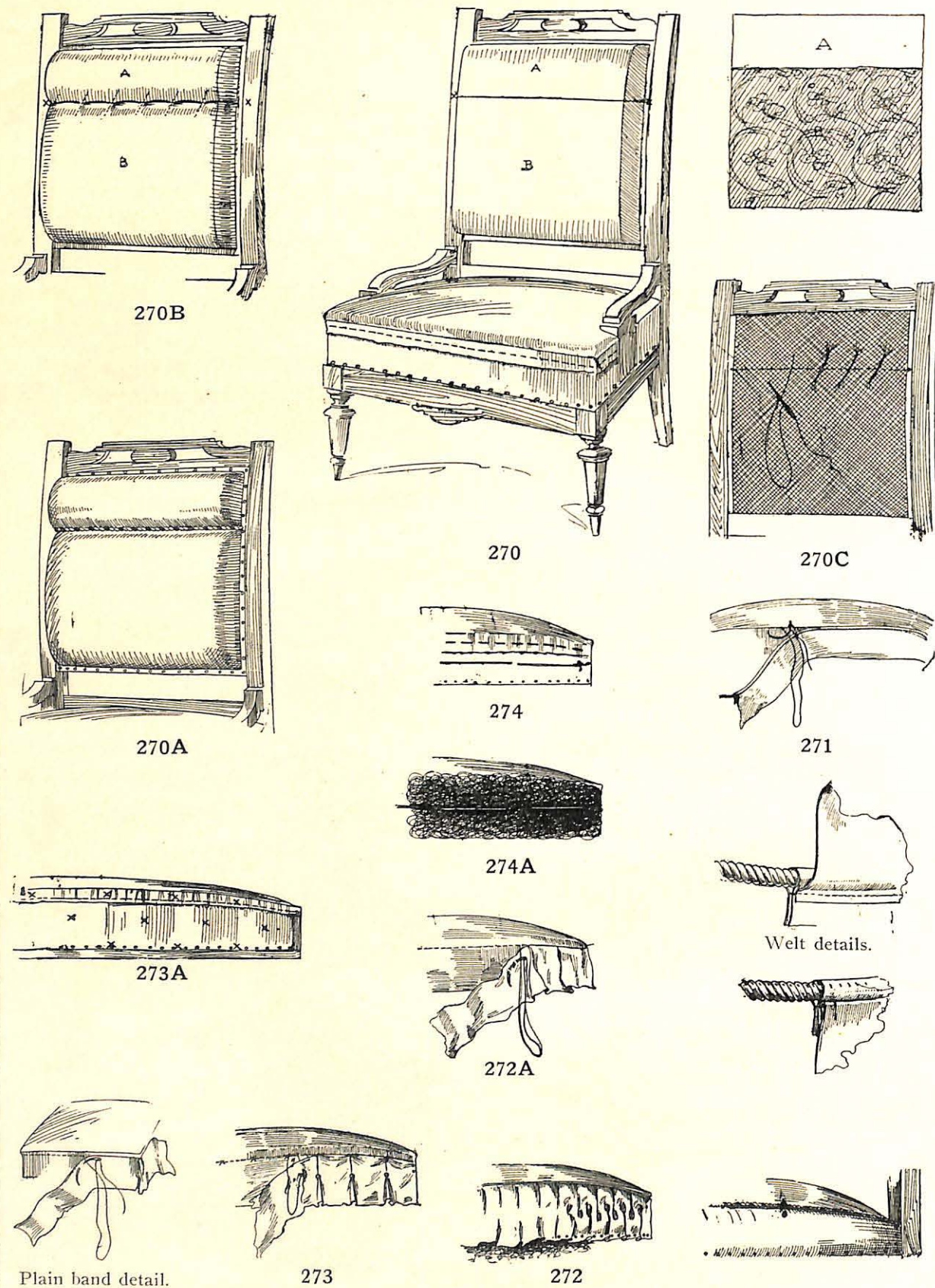
BANDS AND BANDING

BANDS, so called because differing either in color, material or form from the main body of an upholstered piece, are of two different kinds, those joined to the main covering and attached at the same time, as the band on the back of the chair shown in Fig. 270, and bands which are applied separately, being of various sorts, as described hereafter. The band shown in Fig. 270A is planned with the covering of the back. It is simply a strip of different color or of a different material joined up with the main material so as to cover the entire back, and whether the back is first covered in cotton or is upholstered direct in the covering, it is necessary that the seam which joins the band to the covering should follow a straight line across the back. This is easily governed by measuring down on each side of the frame the distance to be covered by the band and by keeping the seam rigidly to the marks thus indicated. If it is desired that the seam across the back should be sunken, this is accomplished by stitching through the back with a long needle, as indicated by Figs. 270B and 270C, straight stitches on the face of the back and cross stitches on the back of the canvas, as indicated in Fig. 270C. These are pulled tight while at the same time the face of the back is pressed or pounded so as to form a depression along the line of the stitches which are later covered by a cord.

Applied bands are usually stuffed, and the

main classes are known as shirred, pleated or buttoned. The shirred band is used in connection with thin fabrics and has been explained in connection with Fig. 254. It is shirred independently and then sewn into position as indicated. The plain band shown in Fig. 271, made with a welt to avoid the use of cord, is sewn to the welt independently on a machine and then applied with a needle by hand, but the band shown in Fig. 272 is pleated at the same time it is sewn into position on the front of the chair. This is accomplished by taking the stitch first into the edge of the chair the length the pleats are to be apart, then pass the needle into the material of the band so as to come through again to the surface, skip a portion and again pass and repass through the material so as to form the pleat shown in Fig. 272A. Of course, it will be appreciated that the pleats must not be more than about $1\frac{1}{2}$ inches apart if sewn in this way, as if farther apart than this another stitch would need to be taken between the gathering stitches.

The buttoned band, details of which are shown in Fig. 273, is a better band to employ on a deep front than the pleated band for the reason that the buttons help support the stuffing. The front of the seat is divided off into equal spaces, usually from four to six inches, as shown in Fig. 273A, making a mark where the button is to go and also other marks on the edge of the seat and on the edge of the frame immediately above and



below the button marks. The mark on the edge of the seat indicates where the pleat is to be turned, similar to the pleat made in sewing on a pleated band, and the mark on the edge of the frame indicates where the lower pleat is to be made in the finishing of the band. By referring to Fig. 273, it will be seen that in addition to the stitch which confines the pleat where the mark is indicated, another stitch is required to be taken between the marks, and in taking this intermediate stitch the goods are allowed to turn out a little so as to provide a greater fulness. Thus, for instance, if at the pleat mark a half inch is turned under, only a quarter of an inch of goods is turned under when the next stitch is taken, then at the next pleat mark the goods are turned in a full half inch again, this manipulation helping to provide fulness which is required in making the necessary swell from button to button.

In stuffing up pleated bands, a soft stuffing must be used and the band is only sufficiently filled to hold the pleats in shape. They are not rigidly pressed down but by making the bottom pleat in the goods half way between the top pleats, a peculiarly loose and soft appearance is produced, as indicated in Fig. 272.

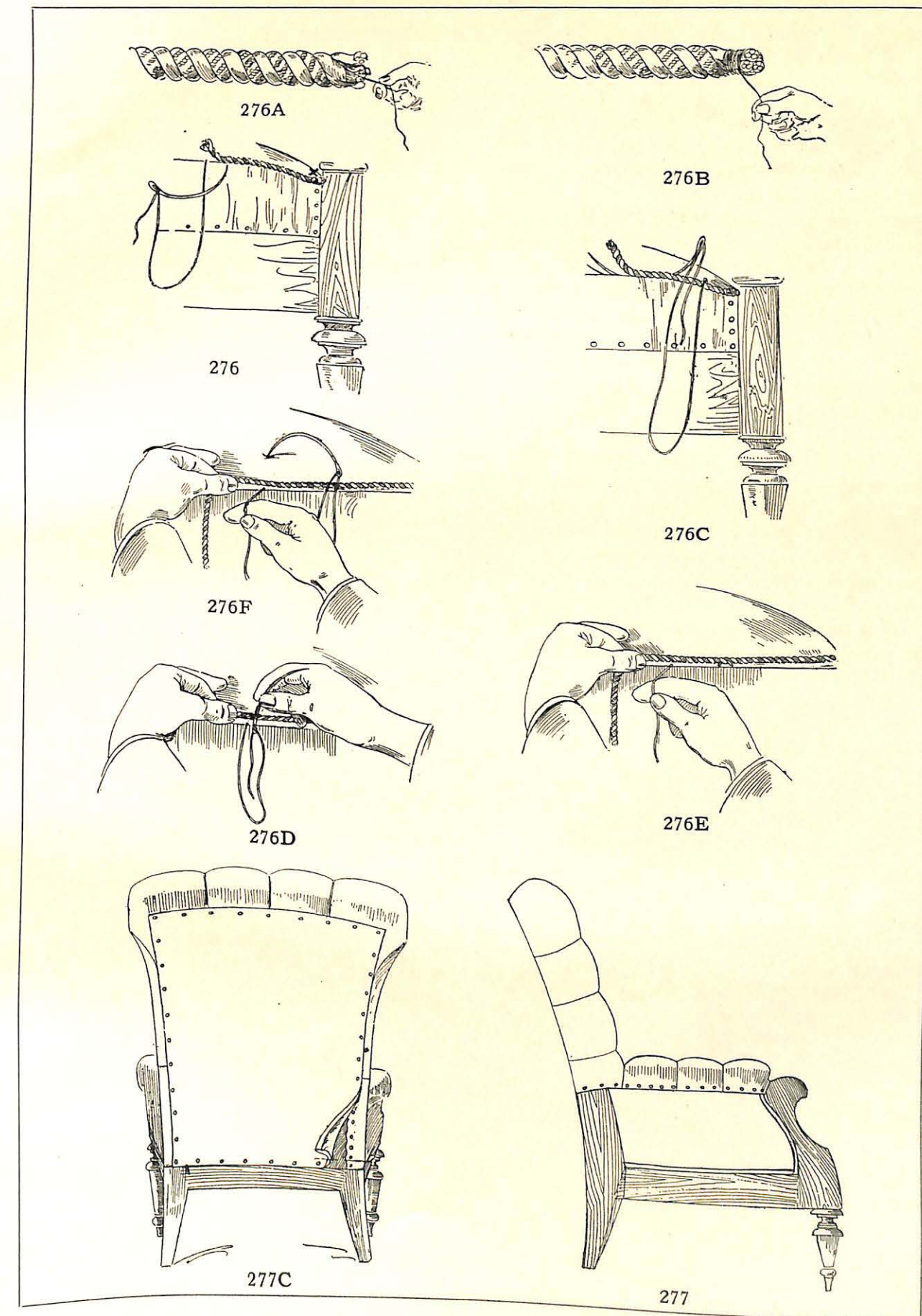
In stuffing up a buttoned band, on the contrary, the band is filled sufficiently to swell out all

of the fabric between the buttons, while the pleats are tightly turned and pulled smoothly down to the tacking edge.

After the band has been entirely sewn along the edge of the seat, the fabric is pulled tightly where pleated and the buttons sewn in one by one on the marks indicated, after which the band is stuffed and finished, as shown in the detail 273B.

All bands that are stuffed up without buttoning should have the bridling stitch shown in Fig. 274 as a help in confining the stuffing. The purpose of the bridling stitch has been explained in former chapters and the illustration should be sufficient here to show its use.

The herring-bone band shown in Fig. 275 is also a buttoned band and is marked in much the same way as the one illustrated in Fig. 273. The buttons, however, are closer together and there is this difference that the buttons are the first things put in. The goods are marked, allowing about $1\frac{1}{2}$ inches extra for fulness between the buttons and the buttons sewn into place forming a series of pipes. These pipes are stuffed up and instead of the pleats being straight up and down from the buttons they swing over at top and bottom to the mark above the next button. The illustration Fig. 275A shows the various stages.



DETAILS OF CORDING AND LINING

CORDING AND LINING

IMEDIATELY following the banding of furniture, the next consideration will be the concealing, by means of a furniture cord, of the place where the band is sewn to the seat. Furniture cords are made for the most part in standard styles and sizes and wherever the cord is used on the surface of upholstery where it is liable to receive any considerable amount of wear, it must be firmly sewn to the upholstery itself by concealed stitches. The illustration of the chair seat, detail Fig. 276, shows the commencement of the process of cording the front of a chair.

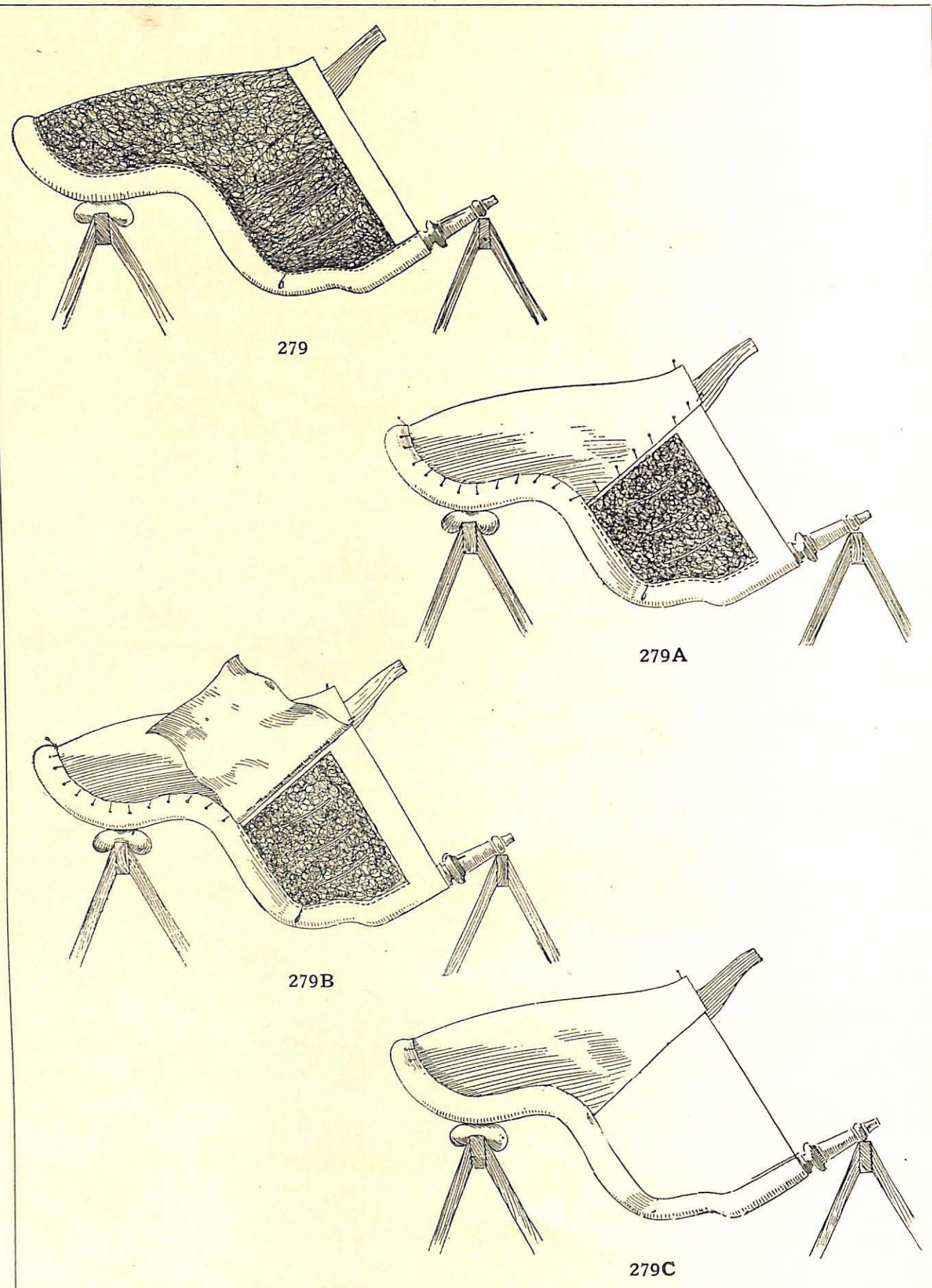
When the cord was cut by the scissors after it had been previously used, a knot should have been tied in the ends of the cord. If this has been done the knot can now be untied, the strands of the cord straightened out and the ends bound together by some of the silk wrapping which can be easily unraveled from one of the cords. This process is indicated in Figs. 276A and 276B. Now a tack is driven through this bound part of the cord and the cord attached to the tacking block at the corner of the chair as at X, Fig. 276. Next, with the twine and circular needle a stitch is taken in the front of the chair just above the band so as to bring the needle out about one inch distant from the tack which fastens the cord. A knot may be tied in the end of the stitched twine which will be concealed by the cord, or a very common practice is to tack the end of the twine also to the tacking block and then by taking a close stitch into the band and out through above it as shown in Fig. 276C the twine is securely fastened and the tack concealed later by the gimp. After the first stitch has been taken in the seat the cord is slightly untwisted at the point where it will cover the stitch and the needle passed between two strands of the cord so as to take a stitch around one of them, as Fig. 276D. Care must be taken not to pierce the strand nor to unravel any of the silk by which the strand is covered. Next the needle is re-entered into the edge of the seat at a point about $\frac{3}{16}$ of an inch from where the twine emerges and brought out $1\frac{1}{2}$ inches distant, making the stitch in the seat as shown in Fig. 276E. As the twine is then pulled

so as to tighten the previous stitch the cord is twisted to its natural condition and also pulled taut, at the same time the stitching twine is pulled as indicated in Fig. 276F. If this is carefully done, the cord will be attached firmly without there being any visible stitches to indicate that it is sewn. It requires a little practice to know just where the twine should pass around one strand of the cord but this can readily be acquired and it soon comes natural.

Where it is necessary for the cord to follow a curved line instead of running straight across, stitches will have to be taken more frequently than we have indicated and it may be necessary for greater security to enclose two strands of the cord in each stitch. These are things, however, which can readily be worked out by following the instructions we have already given.

In a deep recess across a soft back or where cords are used to draw a soft pillow into scallops it is not usually necessary to stitch the cord as the fact that it is recessed and drawn taut in such cases serves invariably to hold it in place. Care should be exercised to make sure that all the ends of cords whether tacked or sewn, are securely fastened so that subsequent wear will not be likely to dislodge the fastening.

Following the finishing of a piece of furniture in sequence next to the cording comes the lining and for the explanation of the lining of the outside backs and arms we have chosen a student's chair as the simplest piece with which to commence. As indicated in Fig. 277 the outside arm of the student's chair is not a difficult part to line. It is only necessary that the lining should be cut sufficiently large to cover the space and that it should be pulled smoothly each way and tacked into position. It is not, however, practical to run a gimp across the arms, so the lining where it attaches to the upper arm is back-tacked as indicated in Fig. 277A, and by tacking through a narrow strip of heavy cardboard, leaving a straight edge at the top where the cover will turn down over it a very neat effect is made possible, as indicated in Fig. 277B. This same method of using cardboard may be used in a great many other cases where a fabric is to be back-tacked



DETAILS OF LINING

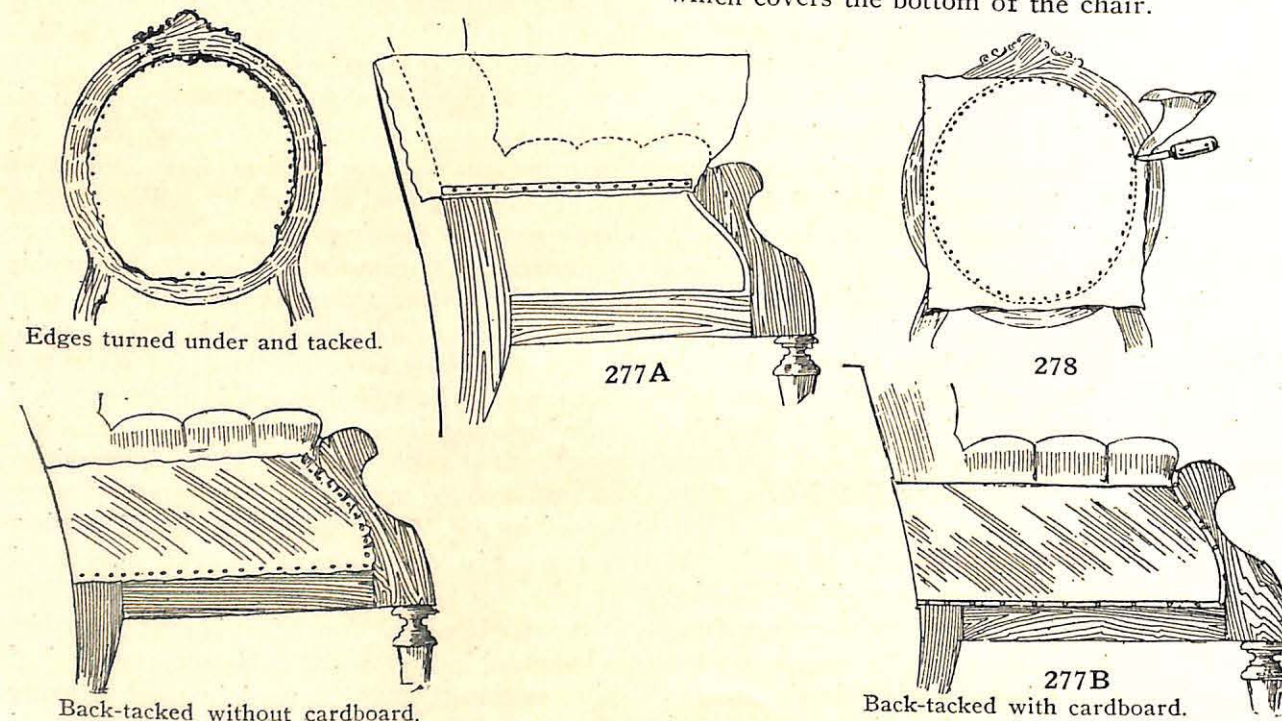
and afterwards turned down to make a finished edge. The cardboard prevents the covering from drawing between the tacks and maintains an even edge where the fabric is turned. The outside arm of the chair under discussion is gimped after the lining has been trimmed and the gimp finished under the lining of the outside back. The outside back of a cheap chair is not usually gimped, the fabric being simply turned neatly under all around and stretched reasonably tight so as to conform to the shape of the back. (See Fig. 277C.)

Where the outside of a show-wood back follows a curving, circular or otherwise irregular shape, it may be difficult to turn in the edges of the lining, in which case the tacks are inserted sufficiently close to smooth out all wrinkles and the surface trimmed off as shown in Fig. 278, after which the raw edges are covered with gimp. It is not practical to turn under the edges of very thick covering or of leather, but it is false economy to spread the tacks too far apart, trusting to the gimp to cover any fraying threads which may develop.

On all of the better class furniture pieces it is well to insert a stuffing material between the inside upholstery and the lining, both to insure a round contour in conformity with the shape of the chair and also to prevent the perforation of the lining in the event of an accidental pressure against it.

Where a filling material is used it is generally picked out very lightly and laid into position, either confined with bridling twines or not, as desired, worked smoothly into shape by the hands and secured by an under covering of muslin or by the lining itself. There are no peculiar difficulties to the lining of a piece of ordinary furniture but the lining of wire and iron-backed furniture requires considerable manipulation. The chair is disposed face downward on trestles, as indicated in Fig. 279, the filling material laid on and secured in place and the lining or under-muslin of the back temporarily secured in position. Where it is not possible for the entire outside lining to be taken from the single width of material, the arm linings must be joined to the back lining by sewing.

It is usual to pin all together in place on the chair in order to determine just where the seam will be required and to secure the proper shape of the lining. The process can be readily followed from the illustrations, showing the various stages from Figs. 279 to 279C. After the lining has been fitted into place, then removed and the seams sewn on the machine, it is again pinned into position on the chair, all the edges which follow the upper frame turned neatly under and sewn into place by blind stitching. The bottom around the frame of the chair is tacked on the under side of the frame and afterwards covered by the lining which covers the bottom of the chair.



CHOOSING FURNITURE COVERINGS

IN THE choosing of upholstery coverings either for new furniture or for reupholstering it is essential that the workman should consider the type of furniture on which the coverings are to be used.

Where a piece of furniture has distinct period character there is practically no choice left except to follow period dictates, but for the vast bulk of everyday upholstered furniture possessing little in the way of period style it is largely a matter of suiting the fabric to the general form and style of the furniture itself.

Large upholstered surfaces do not lend themselves well to the use of stripes or of intricate small patterns. They look well in plain fabrics, in unobtrusive diapers or in massed florals. The small dainty piece with slender woodwork is simply smothered if covered in massed florals, but looks well in small diapers or in well-balanced stripes.

Tufted furniture should not be covered with a pronounced pattern that would be confused by the tufting, nor with a clearly defined stripe, because no matter how carefully the tufting is done the pleating will make the stripes appear crooked and the work will always be unsatisfactory. On

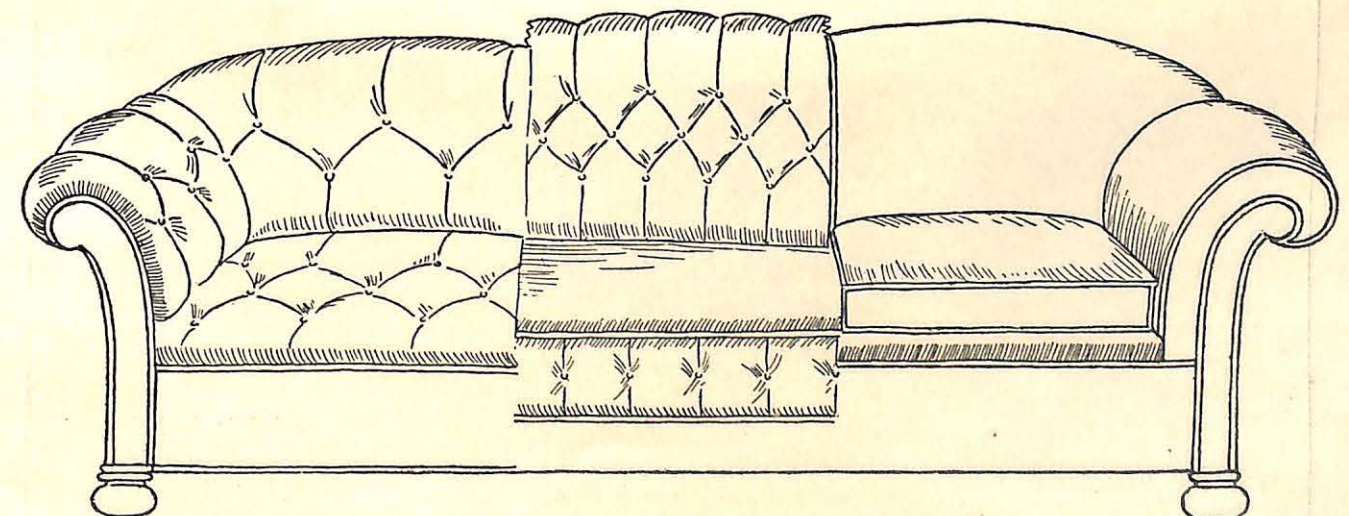
the other hand, a small diaper pattern looks fairly well on a large tufted piece, or a large floral so thoroughly covered that the pattern, though lost in the pleating, still retains its general color effect and balance.

Large pieces apparently lose size by being covered with large-patterned fabrics and look larger in plain fabrics or those having little repeated figures over all their surface.

These considerations are not easy to explain to a customer unless one has something tangible which will show comparisons, the chair itself with different coverings, or, failing in that, illustrations which show the different applications.

We have taken a number of everyday pieces of furniture and have applied to them different styles of covering in order to show the effect. An examination of these illustrations will not only show the workman the absurdity of picking certain patterns for chairs which they do not suit, but the series will form a handy reference for the purpose of advising his customer and obtaining her preference. We have not illustrated plain fabrics, as it may be taken for granted that they are suitable for all kinds of furniture.

The illustration below shows three different ways of upholstering a Chesterfield frame; all-over tufted, plain seat and tufted back, or cushion seat and plain back and arms. In choosing the covering for a piece like this, unless it was intended to use perfectly plain material, it would be necessary first of all to determine which way it was to be upholstered.





The pattern being small is not destroyed by the unholstering. A plain fabric would be very much better.



Pattern too large and too much broken.



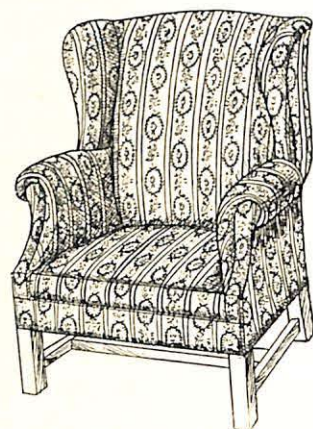
Pattern decidedly too large.



A fairly good choice; the stripes lend themselves to the form of the chair, not destroying its outline.



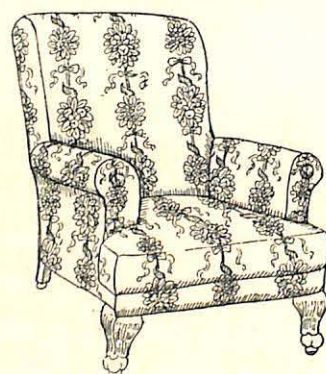
Too light in appearance for such a heavy form of chair. Not desirable.



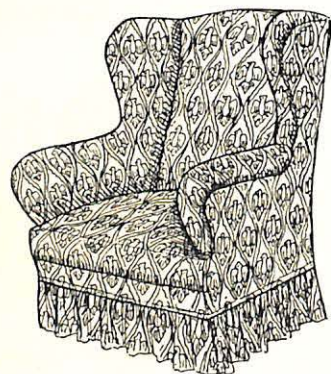
Suitable for bedroom; a good choice.



Pattern too large, badly broken by lines of chair.

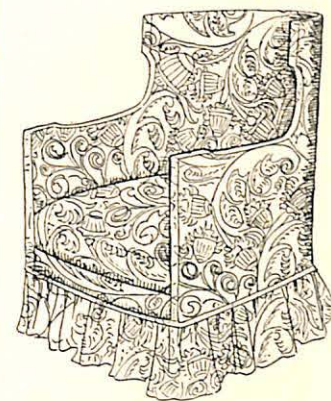


Not a good choice. Too scattered and spotty looking.

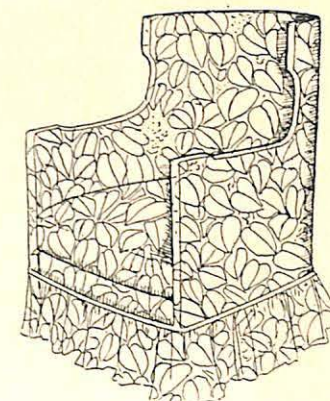


Also a good choice for bedroom in cretonne or lightweight texture; for living-room or library in heavy tapestry and dark colors.

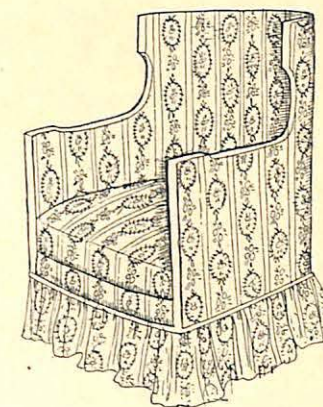
A COMPARISON OF FURNITURE COVERING TYPES



An undesirable combination. Pattern too large and broken, spoiling form of chair.



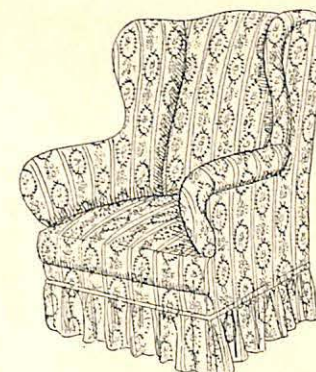
In heavy fabric suitable for a library or living-room.



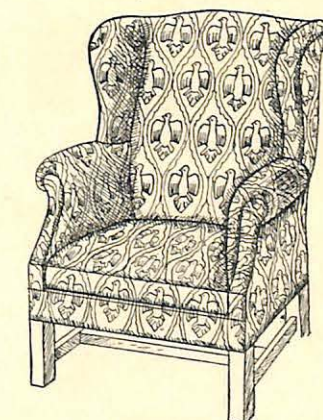
A desirable combination for a bedroom. Not at all suitable for diningroom or library.



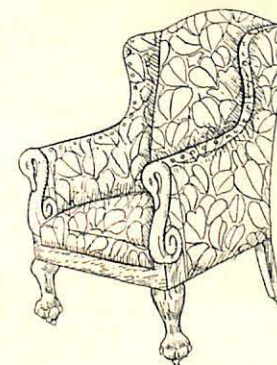
In dark related colors an all-over pattern of this character might be desirable, but in light colors of sharp contrast it would be impossible.



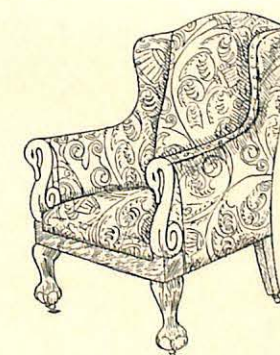
Slightly better but still too much broken.



Pattern too much broken.



Pattern too light and too much broken.



Pattern too large, completely overmastering the shape of the chair.



A running pattern of this description which seems to go every way, is more desirable for a chair with many broken lines of upholstery such as this than any of the other patterns we show.

A COMPARISON OF FURNITURE COVERING TYPES



A STUDY IN COVERING RELATIONSHIP

PLANNING THE COVERING

THE planning and cutting of furniture covering are important branches of the business which every upholsterer should master. Considering that materials are handled which very frequently run up to \$25 a yard, the waste of even a half inch on each cut may mean considerable loss. To measure for the covering of a show-wood seat, a tape line is held at the back of the frame, as X, Fig. 280, drawn up across toward the front and, if the seat is to be covered without banding, down to the front rail and the measurement noted. The width measurement is taken in the same way and it is best to transfer these measurements to paper and not trust to memory for the cutting. Arm and back measurements are taken in the same way, allowing only a sufficient surplus to insure the possibility of the covering being tacked securely so as to prevent the fraying out of the edges.

Where the front of a seat is to be banded, naturally the covering is cut so as to cover just nicely over the front edge as Fig. 281. In the measurements shown by the tape line, Fig. 280A, the chair seat measures 28 by 28 inches. Thus it will be seen that a twenty-seven-inch fabric will be too narrow as will also the half width of a fifty-inch fabric. To avoid wasteful cutting, therefore, the fabric may be pieced out to twenty-eight inches wide by joining small strips on each side of the main portion and as the seams do not show on the top of the seat they are not objectionable. See illustration, Fig. 282. Where the covering is a patterned material, the seams must absolutely match, otherwise the join would be conspicuous because of the broken pattern.

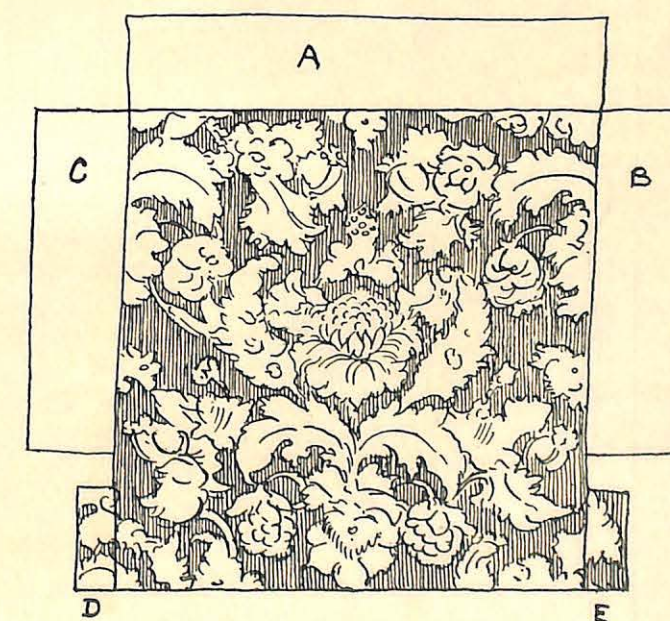
On over-stuffed pieces like the chair shown in Fig. 285, the covering of the seat, back and arms can be pieced out in all places where there is a deep recess, making it unnecessary to have the covering itself the full size required for the seat, arms and back. For instance, the arms may be pieced out on the line K, the back on the line G and the seat on the lines K, K and G. Pieces of ordinary cloth attached to the coverings can be used for tacking purposes in these deep, recessed spaces.

Thus, the seat for the chair, Fig. 285, when

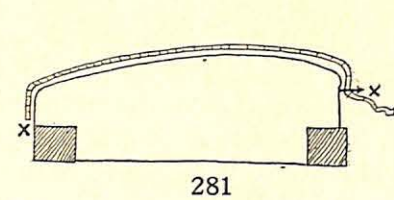
joined up with strips for tacking would appear as Fig. 285A, the portions A, B and C representing the attached strips of inexpensive cloth, D and E being the pieces of the seat covering matched and joined to allow for the extra width of the front of the seat. Fig. 285 also shows the method of measuring a chair of this type for covering, the tape line for measuring each section following the arrow lines indicated and making sufficient extra allowances for tacking and for seams.

Wherever seams on plain material are necessary, and it is impossible entirely to avoid them, particular care should be taken that they be properly sewn and thoroughly pressed so that they will be as inconspicuous as possible. Where the material carries a definite figure the fabric should be matched at the seams on plain upholstery while for tufted upholstery the seams are less conspicuous if made where the fabric is pleated, as described in connection with Fig. 229.

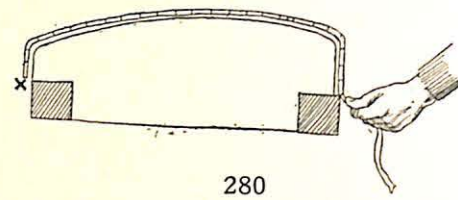
Where certain portions of the seat of a chair are covered for a considerable distance by the upholstery of the back and arms, it is customary to cover with the real covering material only the portion of the seat which is exposed, piecing out the balance under the arms and under the back



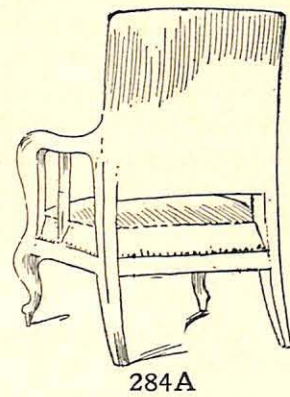
285A



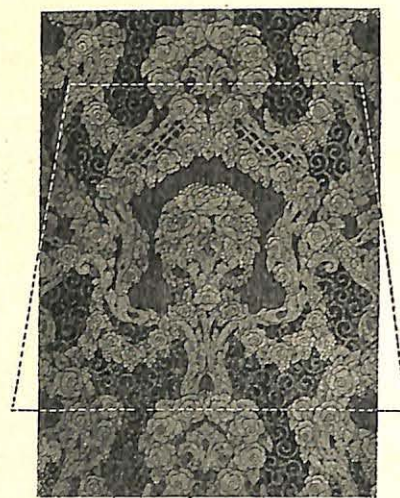
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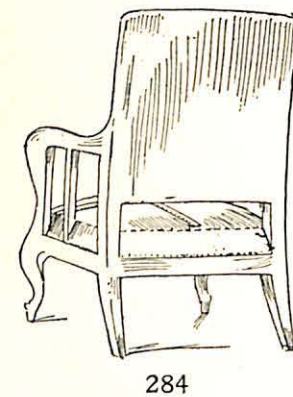
280



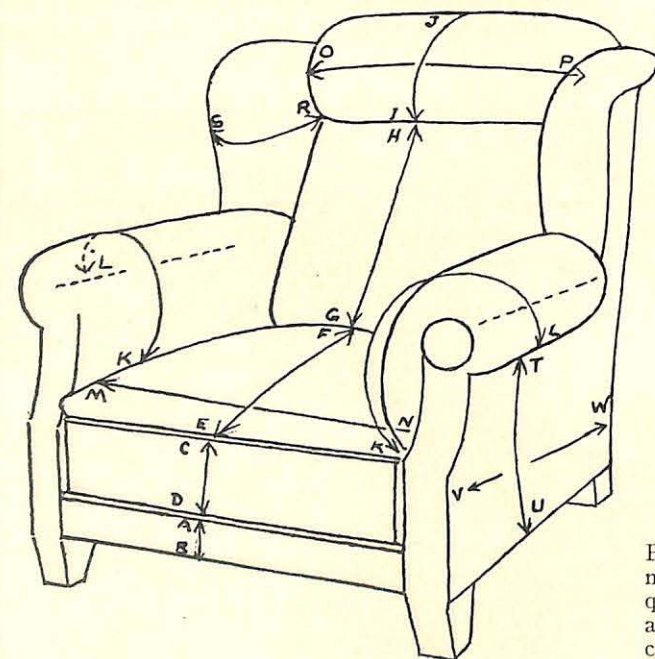
284A



282



284



285

For plain chairs like the two shown above, simple measurements each way are all that the cutter requires, but for the chair shown on the left, it is an advantage sometimes to have a rough sketch of the chair on which the various measurements may be written for reference.

with a cheaper material. In measuring for the covering an allowance is made for these parts that are to be pieced out and a considerable saving effected in the material used. Illustrations, Figs. 284 and 284A, indicate the method of allowing and of piecing out the covering.

In planning for the covering of a seat or back the covering is cut so that the pattern will come in the center of the seat and in the center of the back. This is imperative because otherwise the balanced appearance of the furniture would be destroyed. Where the pattern is a medallion or floral bouquet or any other form of motif which has a definite top and bottom, the pattern must be so disposed on the seat that the pattern runs toward the back of the chair and the covering of the back is arranged so that the pattern shall run toward the top. This is advisable not only because of appearance but because the majority of fabrics are woven so that the warp threads run lengthwise of the goods and these warp threads are invariably the stable threads of the material, not only possessing the greatest tensile strength but also representing by far the larger portion of the weight of the material. By running the warp threads from front to back and from bottom to top on a piece of furniture, the wear is in the direction of the warp threads and is very much less destructive than it would be if it were across these threads, as would be the case if the warps ran from side to side instead of as we have suggested. Where there are small pad arms, for instance on an arm-chair or on a sofa, in the effort to economize, the upholsterer sometimes runs the covering across the arm rather than from front to back. This is false economy, for while it may save in the first covering of the piece the material so disposed soon wears out and the entire piece has to be recovered.

Plain material is sometimes put crosswise as well as lengthwise, but the greatest service is produced by following the plan suggested, of running the warp threads with the direction of greatest wear; viz., from front to back and from top to bottom.

There is one character of covering which contradicts this plan and we believe one only, hair cloth. By reason of the limited length of the hair fibers it is only possible to make hair cloth in certain widths from ten inches up to about thirty-

two. The warp threads of cotton can, of course, be any length but because of the stiffness of the hair weft and because of the nature of the weaving the cotton warp threads are allowed to lie to the back of the fabric and as the principal wear comes on the hair, hair cloth is cut so that the warp threads run crosswise and the weft hair threads from front to back.

Pile fabrics such as velours, velvets, plushes, etc. are cut and put on so that the nap of the goods inclines or brushes down and to the right. By brushing we mean that the natural lay of the nap is in this direction. In some materials, particularly in fine mohair plushes, the nap may not show any tendency to lie in any direction but may appear to be perfectly upright. Where there is any difficulty in determining the direction of the pile, spread the fabric out on a table, the seat of a chair or other smooth surface, place a dime flat down on the surface and strike the cloth several quick, sharp blows with the open palm of the hand. It will be noticed that the coin is made to travel because of the vibration, but instead of traveling in a straight line with the thread of the fabric it seems to travel in two directions, or rather, slightly on the bias. This is the direction in which the nap lays. Therefore, we say that the nap should brush down and to the right because this will be found to be invariably the case. Where there is any doubt about its brushing to the right or to the left, it is not an important consideration, but it should in every case brush down.

A coin will only travel in the direction in which the nap brushes and it is a safe rule to follow in testing for furniture covering.

The theory of brushing pile goods to the front on the seat and from top to bottom on the back is sometimes contradicted because it brings about a slight variation in shade due to the light striking the fibers at different angles and in the attempt to bring the shades into better harmony the upholsterer sometimes is persuaded to depart from the rule concerning the direction in which the pile should run. This is not advisable, for while there may be a slight difference in shade, particularly when the goods are new, the difference of shade becomes less noticeable as the furniture is used and the fabric will wear considerably better if the rule we have quoted is followed.

G I M P I N G

THE last operation of the upholstering of a piece of furniture is generally the gimping, which, on show-wood pieces, is sometimes left until the frames have been cleaned up and polished after the other upholstering operations. There is little of a technical character concerning gimping that needs to be explained, but in order to make our treatise complete we give the principles which may be readily followed.

Care should always be taken so that the gimp, where it is intended to cover tacks that join finished wood, should lie wholly within the rabbet, as Fig. 285 and not overlap as shown in 285A. Round-headed gimp tacks are sometimes used but a much neater job can be made by using glue or some other permanent adhesive. Temporary tacks are used with glue and except where the gimp is intended to follow a curve, the tacks are placed in the center of the gimp and at distances of about three to six inches.

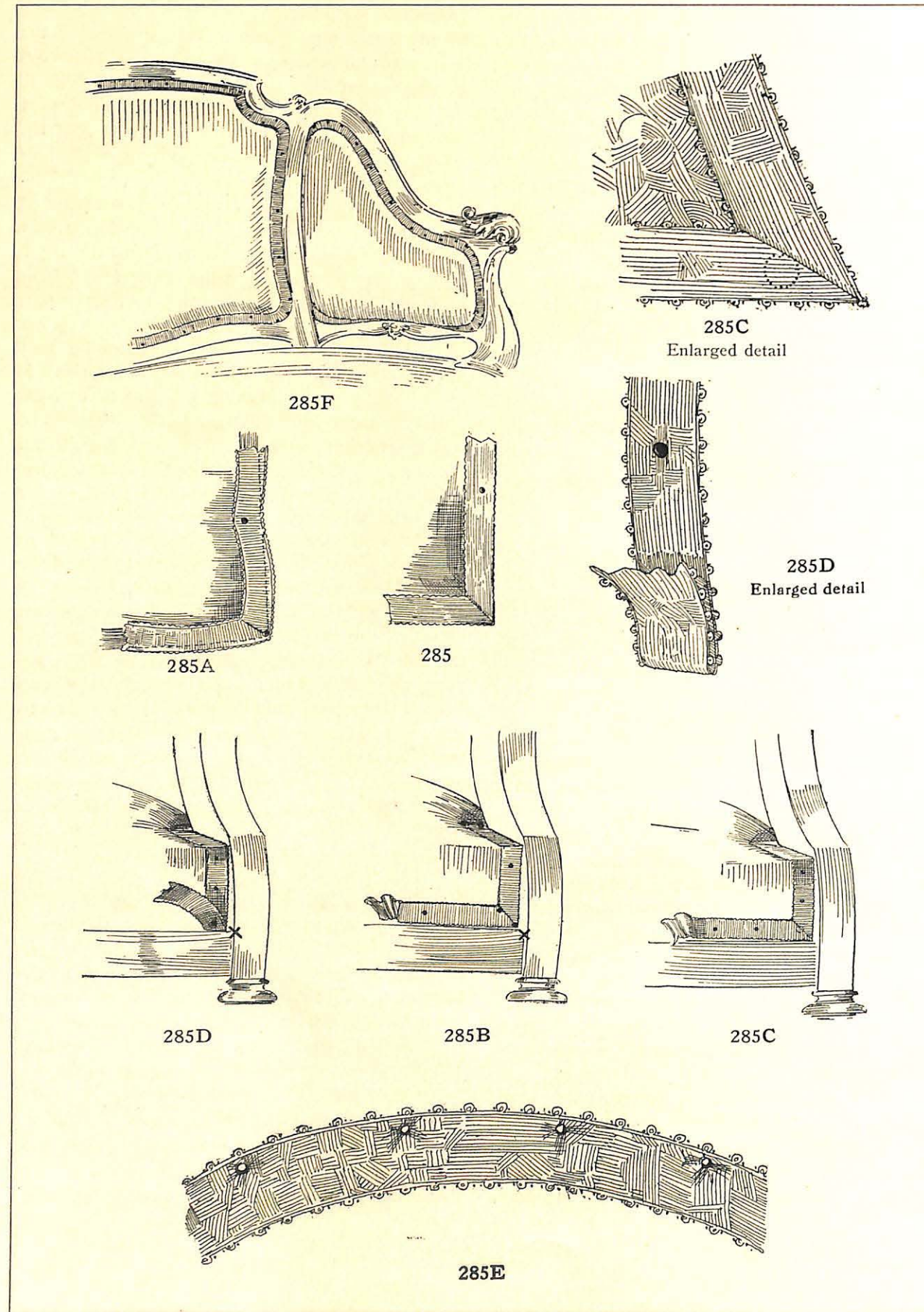
Where a square corner is to be turned, as shown at Fig. 285B, the most desirable method is that shown in Fig. 285C. The gimp is carried out to the corner and turned back so that the doubled portion just reaches the bottom of the rabbet at X, 285D, then a small, flat-headed tack, say two ounce, is driven through the doubled portion in such a position that when the gimp is drawn the tack will force the material to turn a biased pleat, running down to the corner as shown in Fig. 285C, enlarged detail.

With a little care one is soon enabled to determine the position for the flat-headed tack and no other tack is necessary to hold the pleat firmly in position, the strain of the gimp being all that is required.

Where gimp is required to lie flat around a curve like, for instance, the back of Fig. 278, it will be necessary to keep the gimp tacks near the outer edge of the gimp so that the inner fullness caused by swinging the gimp around a curve will be disposed in very small pleats which will not be conspicuous. See 285E. It will be necessary to keep a fair tension on the gimp from tack to tack but not sufficient to cause it to draw away from the curve of the rabbeted edge.

Where there are reversed curves, a condition which is very frequently found on carved sofa backs, it is necessary to dispose the gimp tacks so that they will follow the outside edge of each curve, crossing the gimp from one side to the other as the curve changes, as indicated in Fig. 285F.

Where an adhesive substance is employed, however, we have found it best to use a smooth, slender tack that will make a very small puncture. Four-ounce shoe tacks are excellent for the purpose, being both sharply pointed and of good metal. It is hardly necessary to say that the adhesive should be spread very thinly and it should be of such consistency that it will not run through the gimp and show on the surface.



DETAILS OF GIMPING

REPAIRING AND POLISHING

THE retail upholsterer finds that a considerable portion of his work has to do with old furniture rather than with new and while it is possible to strip an old piece of the upholstery and reupholster it complete, there are sometimes ways of economizing both in time and in material. For instance, when an armchair such as Fig. 286 requires reupholstering because the webbing of the seat has given way, it need not always be necessary to strip the entire seat. In the illustration mentioned, the appearance of the chair would indicate that the covering is in good condition and that the webbing only requires replacing, the bottom of the chair usually presenting the appearance of Fig. 286A.

The first operation is to cut the twines which sew the bottoms of the springs to the webbing. This leaves the springs free from the webbing but yet tied at the top by the spring twines which were first used to tie them down. The old webbing is now stripped off, giving the appearance of 286B, and the bottoms of the springs are tied exactly as has been described for the tying down of springs in the earlier chapters of this book. Spring twines are tacked just inside the bottom of the rail so that the entire bottom surface of the rail is still left free for webbing. It should be understood that these spring twines are merely temporary and are intended only to hold the springs in place while the webbing is being stretched across the bottom of the chair and during the process of sewing the springs to the new webbing.

It would be possible to web the bottom of the chair without first tying down the springs, but as will be seen in Fig. 286C, there is considerable interference from the loose springs which makes the tying not only an advantage but almost a necessity. After the chair has been webbed both ways as it would be for a new job, a circular needle is passed through the webbing around each spring and back to sew the springs into their proper position on the webbing, giving the appearance shown in Fig. 286D. Of course, it is only advisable to reweb a chair in this way when the upper structure is in good condition. If the canvas over the springs is broken or if the twines

which tie down the springs are broken it is more economical in the end to strip the entire chair and build the seat again.

Where the straightening up of the springs in the manner we have just indicated does not completely restore the contour of the seat, it is possible to undo the covering at the back of the chair or at the front and by raising the stuffing material which has matted into position in the seat of the chair another layer of stuffing can be inserted beneath the original stuffing in such a way as to thicken the padding and restore the rounding appearance of the seat. See diagram Fig. 287.

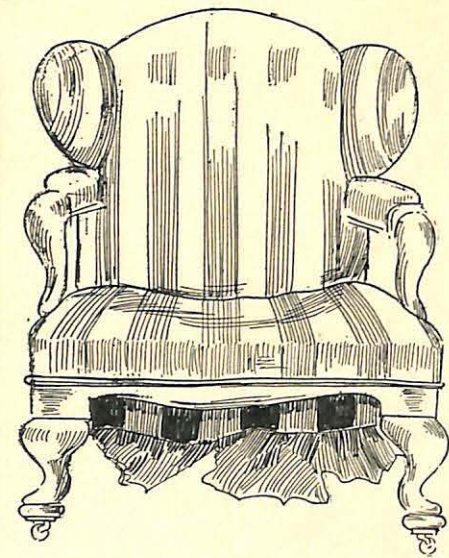
While the repairing of cabinet-work does not lie strictly within the province of the upholsterer, there are many small repairs which he can very well make without having to wait until the cabinet-maker can be secured.

In Fig. 288 we show a very simple plan of gluing up loose joints without the aid of the cabinet-maker's cramp. Generous pads of paper are wrapped over the finished parts of the frame and a stout rope is tied so as to draw the loose joints together. By inserting a short stick between these ropes and twisting them, a shrinkage is caused which will draw the joints tight while the glue is setting. All surplus glue must be wiped away as soon as the joints are closed and the chair is allowed to stand until the glue has thoroughly hardened.

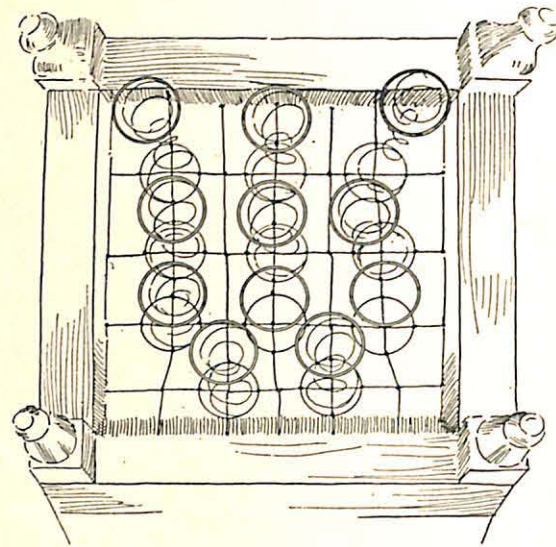
It is a mistake to think that an excessive amount of glue will hold better than a thin coating. As a matter of fact the less glue that is used the better the joint will be but the woodwork should be accurately fitted so that a minimum quantity of glue is required.

Where these simple repairs are not sufficient, it is a mistake to go to the expense of reupholstering a piece before the cabinet parts have been thoroughly repaired because in most instances the frame will soon go to pieces and the upholstering will have to be done over again, whereas the proverbial stitch in time would have made unnecessary the second reupholstering.

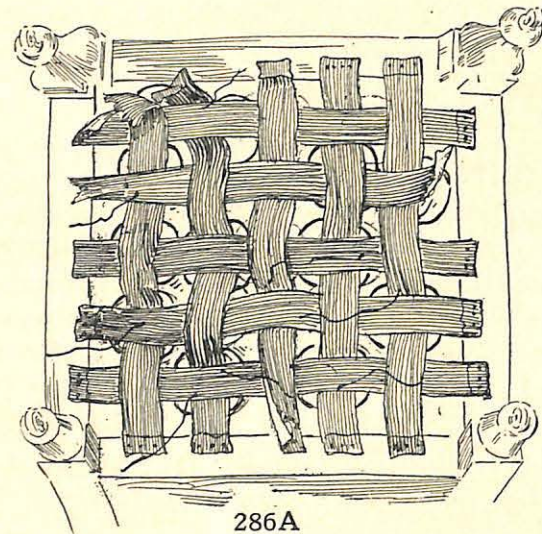
It not infrequently happens that the new chair frames and other pieces of furniture do not



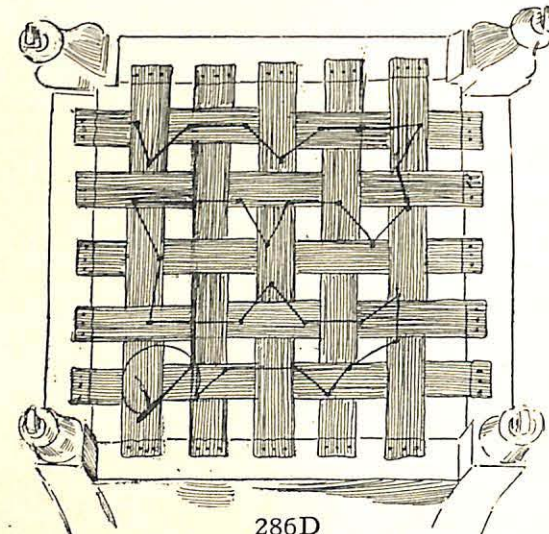
286



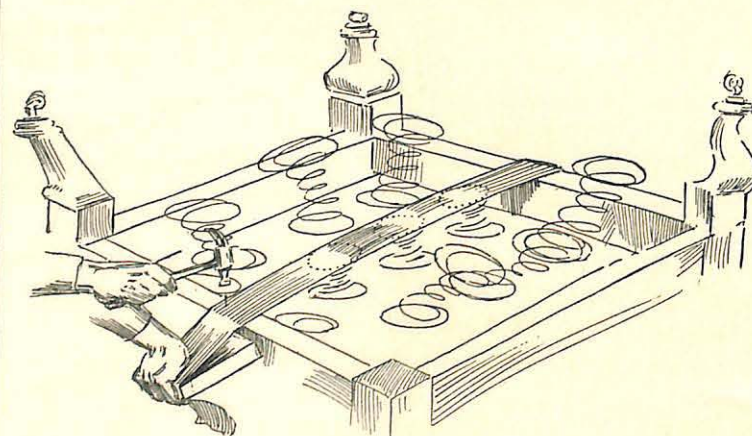
286B



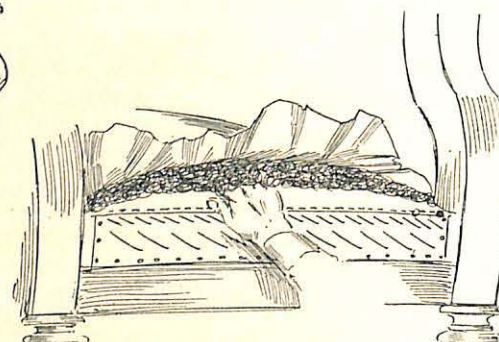
286A



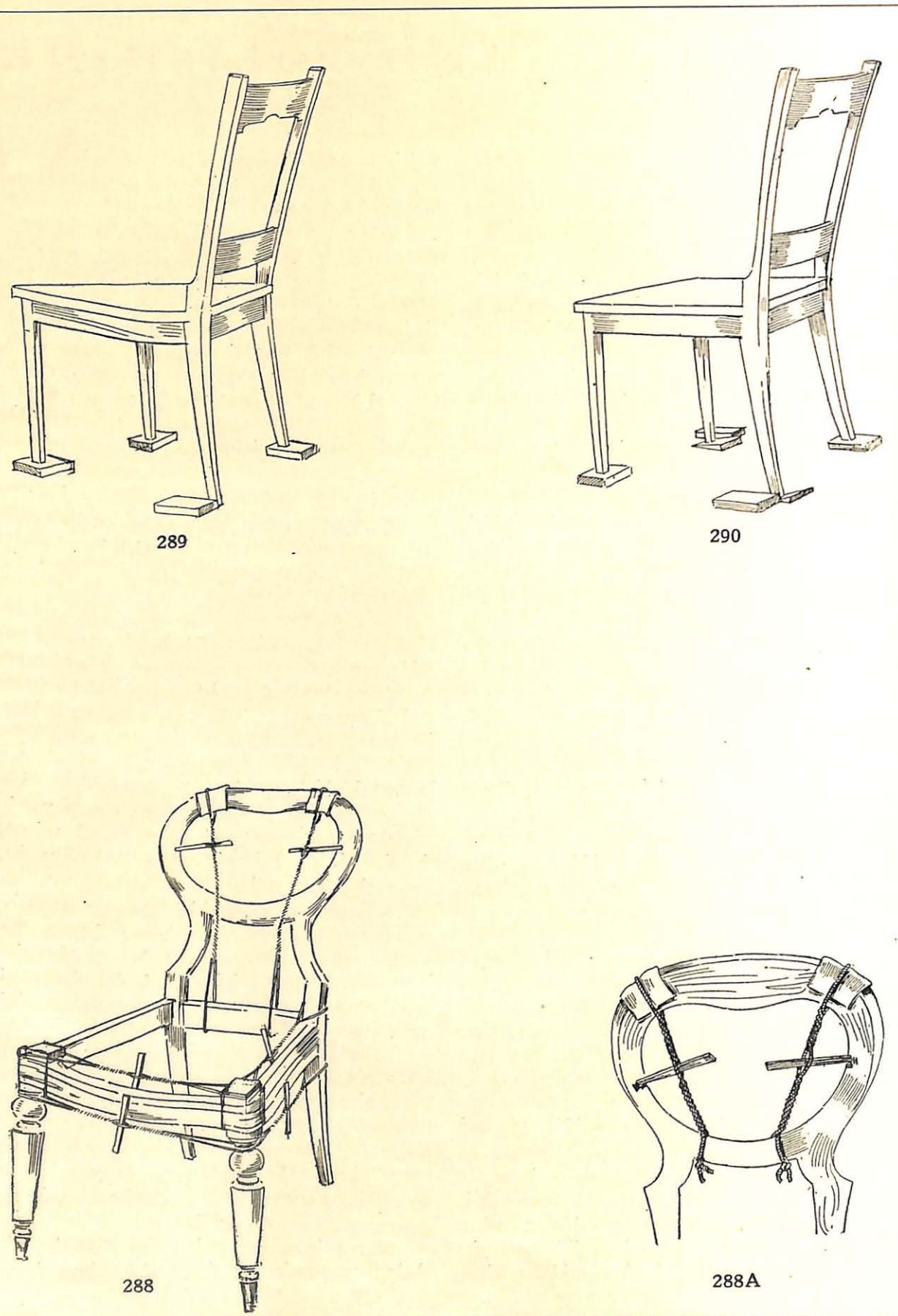
286D



286C



287



DETAILS OF SIMPLE REPAIRING

stand level on the floor, all of the legs not being the same length. This causes a rocking or teetering of the piece that is very annoying. By moving the piece about in different positions on a perfectly level floor it can readily be determined which legs are too short or too long. Where one leg is found to be longer than the other three, the easiest way to level would be to cut a piece off of the long leg so as to make all four legs equal. Where two legs are longer and the shape of the leg will not be spoiled by cutting the surplus off the bottom of them, it is also easier to level the chair by cutting, but in the event of one leg being shorter than the other three, where the difference is a very small fraction, it is sometimes easier, particularly where casters are used, to add the needed length by a pad under the caster. To determine how much to cut from the bottom of a chair or table leg, a very simple plan is illustrated in Fig. 289. Having found a level part of the floor, four blocks of equal thickness are placed under the three shorter legs, then by placing the block beside the fourth leg the amount to be cut off is indicated by the height of the block. Where two of the legs need cutting the same plan is followed but it will, of course, be necessary to support the longer legs by wedges to prevent teetering while the measurements are being taken. The method is illustrated in Fig. 290.

The all-round upholsterer in a small town has to know a great deal more than is called for literally in the upholstering trade. He must know drapery principles*, window-shades, be familiar with cabinet-making, and be more or less proficient in the principles of furniture finishing. Simple cabinet repairs we have already covered. The matter of furniture finishing is, of course, a trade in itself and it would be impossible to condense all of the principles into a brief chapter. A few of the basic principles, however, can be given here and these the upholsterer will find it worth his while to know.

Practically all furniture wood is either stained or filled with a staining filler. Therefore, when new wood is joined to old finished wood, the new wood is always considerably lighter. To bring the new wood up to the color of the old, a staining filler is mixed up, using pigment to get the desired shade. Fillers are composed of a

filling substance, a drier, an oil and a color. For filling substances there are several alternatives. Perhaps the cheapest and the easiest to procure for small jobs is corn-starch, being a very finely ground powder which is easily penetrated by the oil and the stain. Very finely calcined plaster-of-paris is also used, a quality known as dental plaster is best, and patent fillers are largely made of a compound of barytes, oil and color. The principles of mixing all of these various substances are about the same, so the following explanation with regard to corn-starch will be sufficient for all.

To a handful of corn-starch, for a small job, sufficient boiled linseed oil is added to make a thick, pasty mixture. The lumps must all be broken and the mixture stirred until the oil has penetrated the entire mass. While in this state, a pigment (dry paint) is added to color the mass to the desired shade of the woodwork to be finished. Allowance must always be made for the change of color that occurs in drying, the wet filler always being darker in shade than it will be when it is dried out. The pigment must be thoroughly mixed into the pasty mass, a little Japan dryer added and the mass then thinned to a thick, creamy consistency by the addition of turpentine. No rule can be defined as regards the quantities of the different substances to be used in the mixture, but a little practice and experiment will soon enable one to arrive at satisfactory results.

The filler is spread thickly with a coarse brush over all the surface of the furniture, allowed to dry to the condition where it will not wipe out of the pores of the wood and then rubbed off with a piece of coarse canvas, rubbing across the grain and being sure to remove all of the substances from the surface, it usually requiring two or three different cloths to accomplish this. As the purpose of the filler is literally to fill the interstices of the open grain up to the level of the wood, it will be seen that the rubbing must not defeat this purpose and care should be used accordingly.

After the filler has been allowed to dry thoroughly, a light coating of shellac is brushed on and this again allowed to dry thoroughly. The whole surface is next smoothed over with very fine sand-paper, no coarser than 0-0, from which the coarse particles have been removed by rubbing two sheets together. Care must be taken not to cut through the shellac where there

*For the principles of drapery work and window-shades the reader is referred to the author's book on those subjects: "Cutting and Draping," Clifford & Lawton, publishers.

are sharp edges on the furniture, and no more rubbing should be given the surface than just sufficient to smooth any roughness that the shellac may have caused. The surface is then dusted off and for dull-finished furniture, a coating of wax applied. If a polish is required one or two coats of hard-oil finish or rubbing varnish will be necessary. After the hard-oil finish has been allowed to dry for at least a week in an even temperature, it may be rubbed down with a felt pad moistened in water and dipped in powdered pumice-stone, to cut down all irregularities of the surface, then with another felt pad, raw linseed oil and powdered rotten-stone, the surface can be polished to a lustrous, smooth appearance. These methods are only suggested for simple repairs but after one has had considerable experience and has acquired facility, it would not be difficult to finish entirely a new piece following the methods we have described.

For the cleaning up of furniture there are various polishes on the market which have more or less merit and are intended to obviate the necessity of mixing one's own polish. For those who prefer to mix their own, however, we give the following formulas which have been recommended by their users:

1. To a half pint of 98 per cent. alcohol, add one-quarter ounce each of resin and gum shellac. After the gums have been dissolved in the alcohol add a half pint of linseed oil, apply with a soft cloth and rub dry.

2. One and a-half ounces of alcohol, half an ounce of muriatic acid, eight ounces of linseed oil, and an ounce and a-half of butter of antimony; mix well together and add half a pint of best vinegar; apply same as above.

3. To one pint of linseed oil add two ounces spirits of camphor, half an ounce of spirits of hartshorn, one ounce of butter of antimony and four ounces of vinegar. This polish needs to be well shaken each time it is used. It is applied with cloths as directed above and must be well dried off.

4. A simple polish is made with half a gill of vinegar, one gill spirits of wine and one drachm of linseed oil.

It will be noticed that many of these polishes are very similar, the difference in quantity of the various ingredients being the formulas preferred by different workmen. It should always be borne in mind that where there is a preponderance of alcohol there is a danger of cutting the original varnish unless the application is made very quickly and lightly. When a new lot of polish is mixed up it would always be well to try it on an unimportant piece of finished wood in order to determine just what strength it has. If after an application of the polish the varnish is tacky (sticky) to the touch there is too much alcohol and there should be added more oil and other ingredients until an application no longer softens the varnish.

AUTOMOBILE UPHOLSTERING

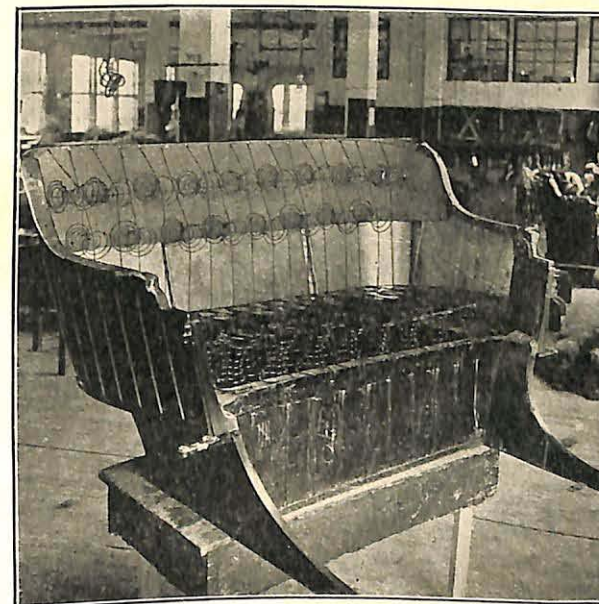
THESE has been always a certain similarity between the methods employed in the upholstering of furniture and those employed in the trimming of carriages or automobiles; the general handling of springs, of burlaps and of filling materials is identical and embodies no processes or treatments other than those we have explained in connection with tufted pad upholstering. It would, therefore, be superfluous to repeat in this chapter the principles which have been explained in earlier chapters but we include for the benefit of those who may be called upon to turn their hand to this other branch of upholstering two excellent photographs which show in detail the processes involved in upholstering the back of an automobile seat.

In Fig. 291 we show an illustration of the back of an automobile seat, the springs being attached to a stiff burlap foundation and tied as springs have been tied in furniture practice for

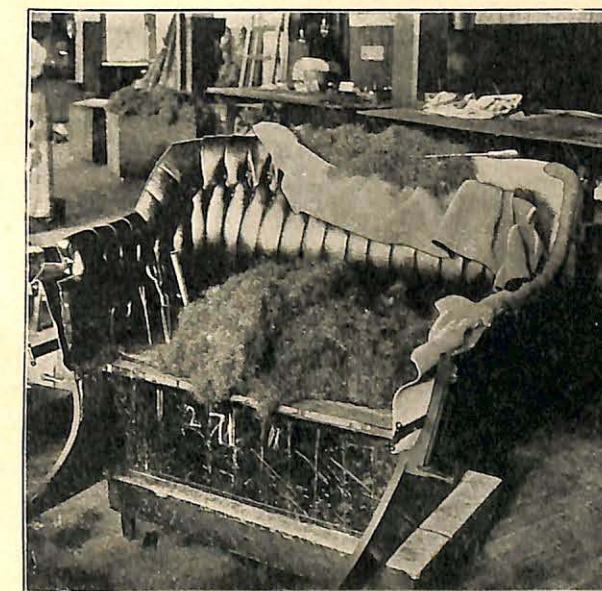
many years. In Fig. 291A the same back appears, the springs having been covered with burlaps and a shaping roll in canvas applied to the arm as an understuffing. The upholstering in this case is done direct in the leather or leather substitute as is indicated in the finished state of the back at the left of this illustration.

The seat cushion, the springs for which are a definite unit made up like a spring mattress is a simple problem in upholstering for those who understand the rudiments of the trade. Except for the fact that the tufting is deeper and that the pleats are machine stitched on the underside of the covering before it is applied, these cushions are made in practically the same way as an upholstered box spring.

Apart from upholstering, there is the retopping of cars, the making or installing of new curtains and the repairing of curtains, and tops which also resemble in character the type of work to which the upholsterer is accustomed.



291



291A

e Due

TT
198
.S8
1923

Stephenson, John W.

TT
198
.S8
1923

Stephenson, John W.

Modern furniture
upholstering.

Wm. C. Jsten
Delaware State College
Dover, Delaware 19901