

*Re-upholstering a Chair
at Home*

by

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OREGON STATE COLLEGE

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RE-UPHOLSTERING A CHAIR AT HOME

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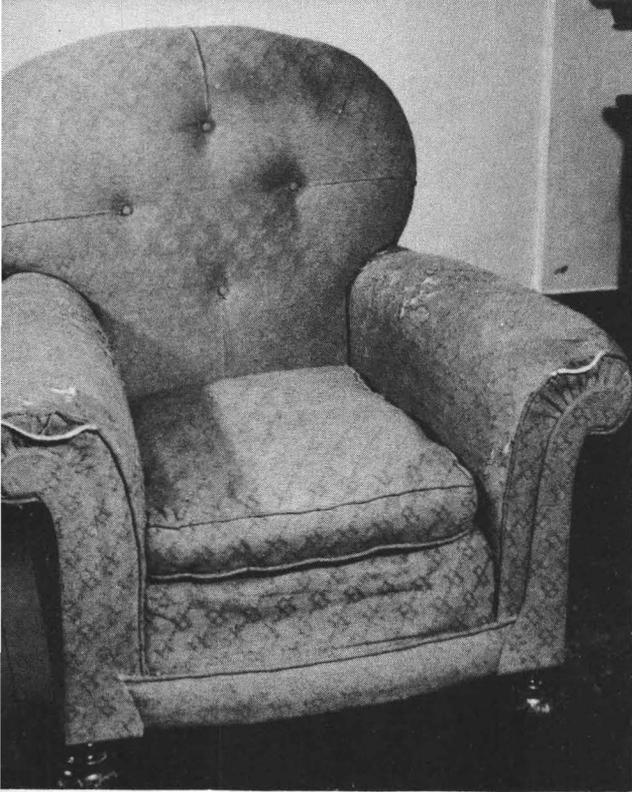


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TABLE OF CONTENTS

	<i>Page</i>
Introduction	5
What You Need	6
Steps in Re-upholstering	10
Replacing the Seat Webbing	10
Stripping the Chair	12
Seat Springs	14
Sewing the Springs to the Webbing Base	14
Spring Tying	15
Placing Burlap Over Seat Springs	19
Back Springs	21
Making the Edge Rolls	22
Completing the Seat Section	24
The Front Roll	24
The Padding and Cover	26
Completing the Arms and Back	30
Completing the Lower Front Seat Section	34
The Front and the Back	36
The Outside Arm Cover	38
Completing the Back	39
Covering and Attaching Loose Wood Panels	40
The Cushion	41
Renovating the Old Cushion	41
Re-covering the Cushion	44
The Completed Chair	47



A well-worn chair.

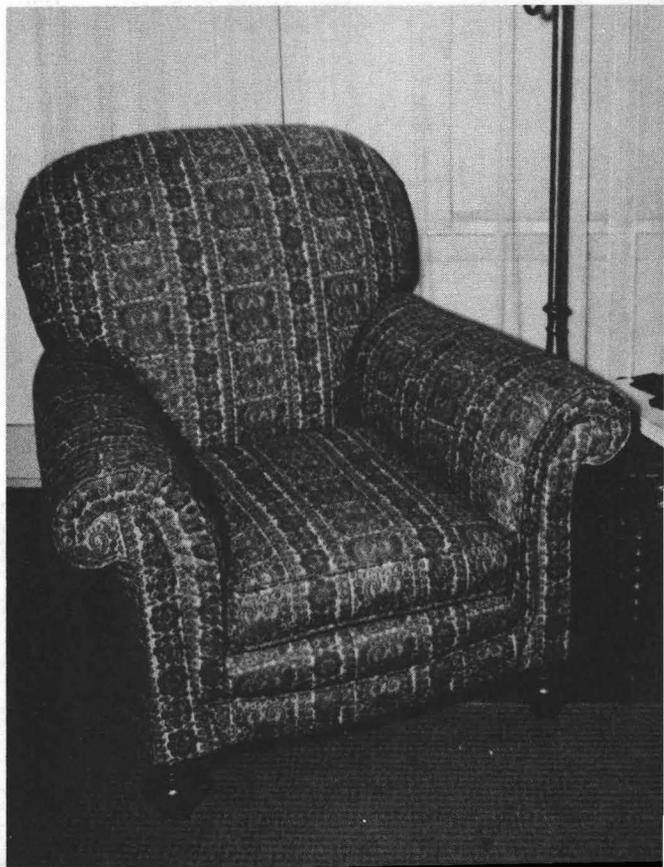
a *woman's viewpoint*, that is, for the homemaker who, without previous experience in upholstering, wants to re-upholster a chair in her own home without professional help. The methods presented here have proven successful in the Oregon Extension teaching program over a period of years.

Complete step-by-step pictures are shown for the one type of chair illustrated. With added experience in this type of work, the basic upholstery principles, as pictured, can be readily adapted to other types of chairs and davenports which may need repair about the home.

INTRODUCTION

*T*HIS bulletin is written for the homemaker. No attempt has been made to show methods used by the professional upholsterer. The emphasis is from

The same chair re-upholstered at home.



WHAT YOU NEED

THE CHAIR.

WORKPLACE:

A cleared space large enough so the chair may be easily moved. Good light on at least two sides of the chair. A convenient storage space for materials and tools.

EQUIPMENT:

A—Trestle arrangement for bringing your work to a convenient height and to give it support. A convenient arrangement for the home may be made by using two sawhorses, approximately 22 inches high covered with a sturdy board of sufficient size to support your chair and necessary working equipment. A piece of plywood, 33" x 48" placed over sawhorses was used for upholstering the chair pictured in this bulletin.

SEWING MACHINE:

B—A special attachment, known as the "cording foot," is needed for making the cording trim. It may be purchased to fit all well-known makes of machines. (Enlarged view shown here.)

A FLAT SURFACE for cutting materials.

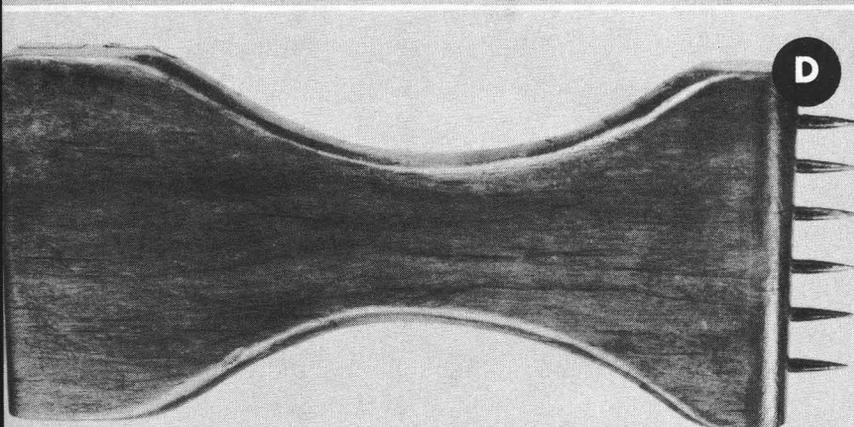
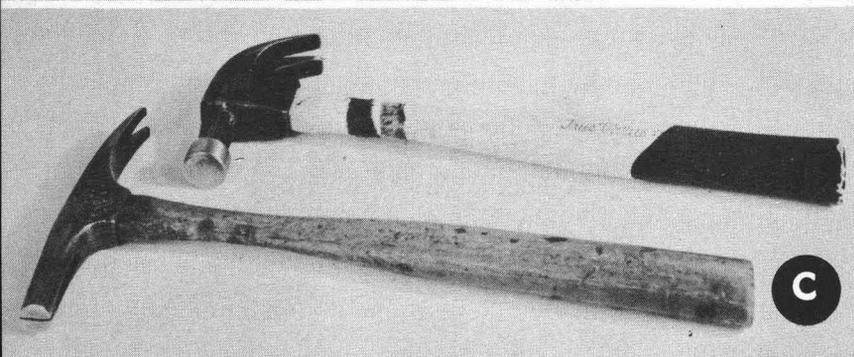
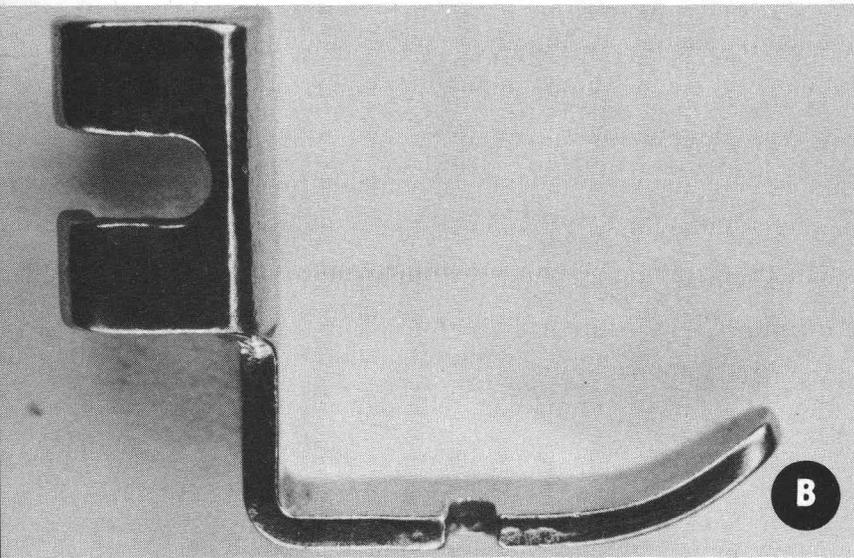
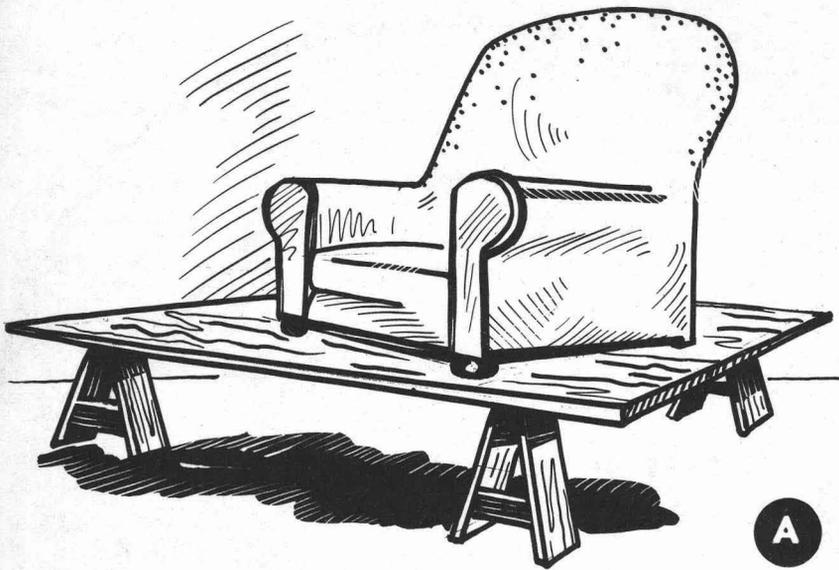
IRON AND IRONING BOARD.

TOOLS

Few tools are necessary. Most of these are a part of every homemaker's tool kit, or can be obtained easily.

C—LIGHT WEIGHT HAMMER

D—WEBBING STRETCHER



NEEDLES:

E—Curved upholstery needles:

Size 2½ or 3 for sewing outside cover
Size 4 for sewing burlap to springs
Size 6 to 8 for sewing loose moss to
burlap base

F—Double pointed straight upholstery needle—6 or 8 inch length for sewing springs to burlap and to make the stitched rolls. A coarse darning needle may be substituted for sewing springs to the burlap base.

G—Regulator (10" size), or ice pick, for perfecting irregularities in stuffing and to assist in shaping edges.

H—UPHOLSTERY PINS OR SKEWERS
—3½" length. Used to fasten covers temporarily in place while being worked or fitted.

Straight pins for cutting new fabrics.

I—RIPPING TOOL:

For stripping frame and pulling tacks.

A tack puller and a screw driver or chisel may be substituted for this professional tool.

SHEARS:

Heavy and sharp enough to cut twine and coarse fabrics.

PLIERS

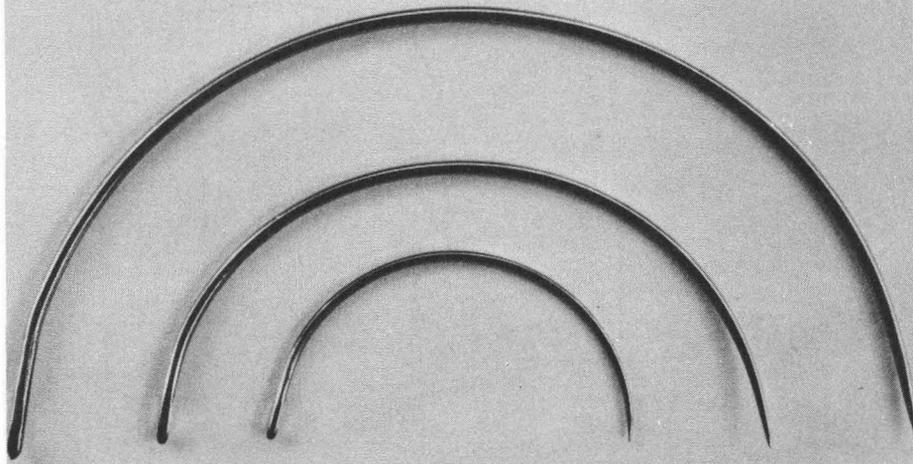
MEDIUM-SIZED SCREW DRIVER.

TAPES:

Firm cloth tape or yardstick

Flexible steel tape convenient for miscellaneous use

12" ruler



E

F

G



H



J—DRESSMAKERS' CHALK.

K—CHINA MARKING OR WAX PENCIL.

THIMBLE.

MATERIALS

The best supplies that can be found are the most practical for re-upholstering your chair. Supplies listed here are based on all *new* materials for the size and type of chair pictured throughout this bulletin.

L—WEBBING:

A total of 6½ yards was used for the chair pictured in bulletin (seat foundation and arm base only). More will be needed if webbing is used on the back section, or if there are over nine springs in the seat area.

Purchase a good quality by the yard or roll. In measuring for webbing allow 3 extra inches for each strip that is to be used either lengthwise or crosswise. Keep webbing in one long strip. Cut as you use it to avoid waste and labor.

STUFFINGS:

M—Moss: 12 pounds of XXX quality.
Fine tow (may be omitted) 1 or 2 pounds.

N—Cotton felt (Upholstery Cotton)
10 yards.

O—TWINES:

Cheap twine is poor economy. Be wise and buy the best quality available from an upholsterer.

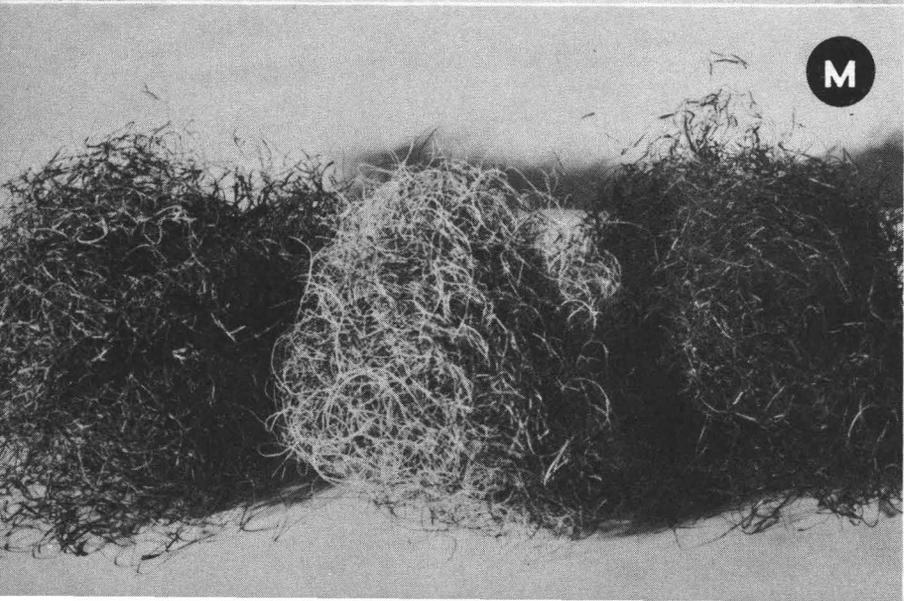
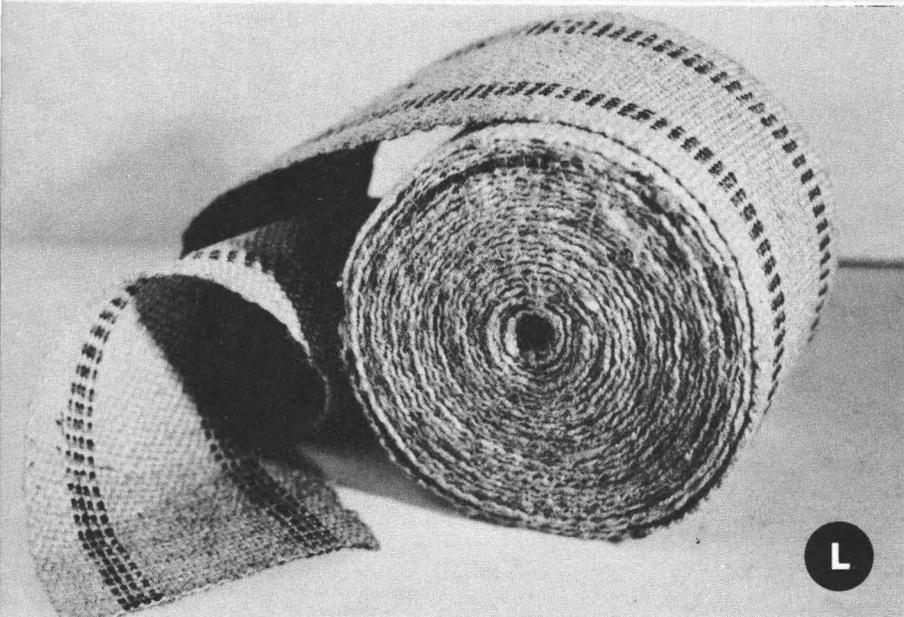
Seat Springs—One pound ball of six-ply Italian hemp No. 60.

Back Springs—½-pound ball four or five-ply jute twine.

Sewing—Approximately ½-pound ball of Elm flax sewing twine No. 252 (mattress twine).

SPRINGS:

If original springs are in good condition these should be re-used. Springs that are broken, very weak, or pulled entirely out of shape must be replaced with new springs. Buy these from an upholsterer.



TACKS:

Upholsterer's tacks are preferred to carpet tacks since they split the wood less. The size and quantity of tacks will vary with the individual chair.

The chair pictured required the following upholsterer's tacks:

No. 2— $\frac{1}{8}$ pound (for tacking cover on the front wood panels)

No. 4— $\frac{1}{4}$ pound (for tacking muslin)

No. 6— $\frac{1}{2}$ pound (for burlap, cardboard tacking strips, and outside cover)

No. 8— $\frac{1}{4}$ pound* (for webbing)

No. 12— $\frac{1}{8}$ pound (for seat spring tying cord)

No. 6 Gimp— $\frac{1}{8}$ pound (finishing work)

P—CARDBOARD TACKING STRIPS:

$\frac{1}{2}$ to $\frac{3}{4}$ " wide—cut from an 8-ply smooth poster cardboard or similar paper for invisible tacking of the final cover.

BURLAP:

Approximately $4\frac{1}{2}$ yards, $10\frac{1}{2}$ ounce burlap to cover seat springs, arms, the back, front edge roll, and frame edge rolls.

MUSLIN:

4 yards for covering padding on chair.

$2\frac{1}{2}$ -3 yards for cushion spring repair.

BLACK CAMBRIC:

1 yard.

Q—COTTON WELT CORD:

10 yards.

DENIM:

$1\frac{1}{2}$ yards to match cover.

THREAD:

4 spools *heavy* duty to match cover.

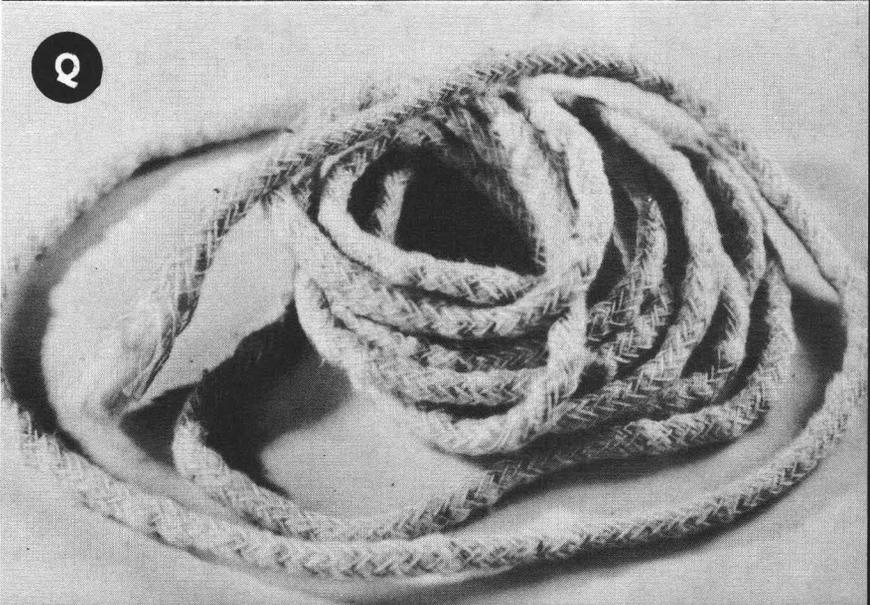
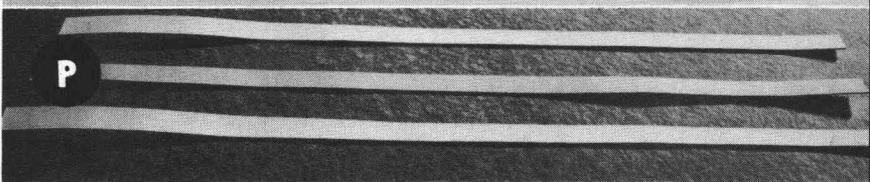
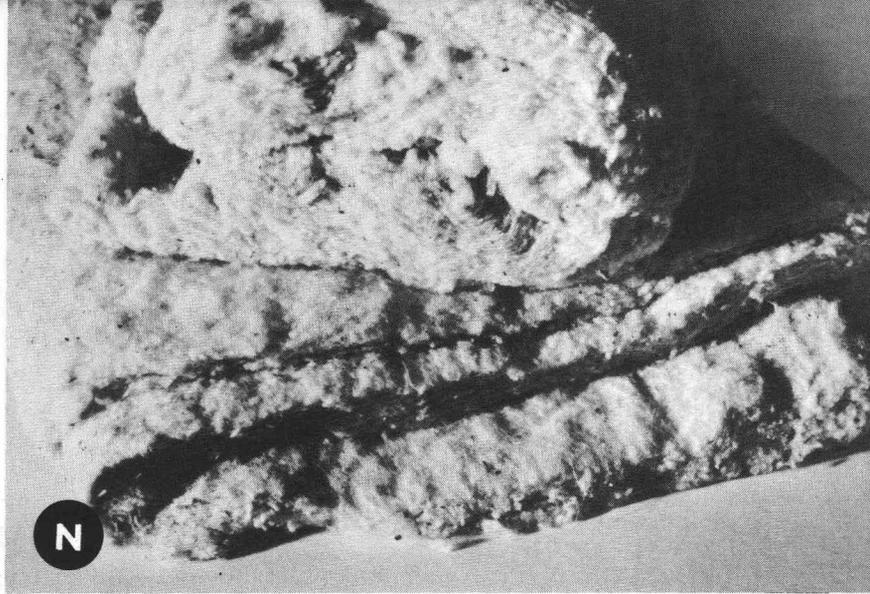
1 spool white cotton No. 50 for stitching cushion innerspring muslin pockets.

Cotton warp or string for sewing muslin rows of cushion springs together.

COVER:

54" width, $5\frac{1}{2}$ yards (Yardage will vary depending on size and type of chair).

* If available buy the *improved* upholsterer's webbing tacks. These have two nubs on the side of the tack which prevent the tack from working out of the wood. They do not split the wood.



STEPS IN RE-UPHOLSTERY

Replacing Seat Webbing . . .

The purpose of the webbing is to form a base on which to place the heavy seat springs. Since the webbing is an important factor in the foundation of the chair, you will find it poor economy not to replace it if it is broken or worn. Webbing should be taut and in good condition. In replacing webbing

be guided by the spacing and direction of the original webbing.

The *beginning* upholsterer will find it easier to replace or repair seat webbing before the chair is completely stripped. Turn the chair upside down and remove the cambric cover placed over the webbing. Using upholstery pins, or a substitute, pin back the chair cover to expose the frame base.

To replace webbing follow the directions shown in Figures 1 to 7.

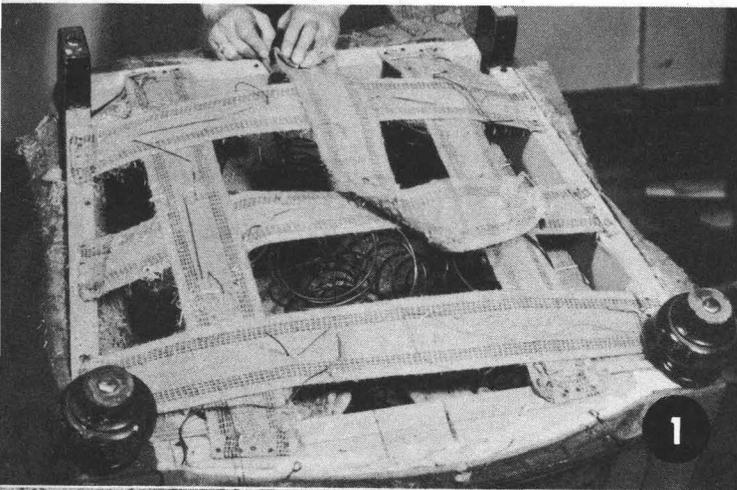


FIGURE 1. Mark the position of the old webbing with a pencil. Also mark the center front and back of the chair. Cut away any stitching thread on the webbing, and push the springs to one side. Remove the center strip of webbing.

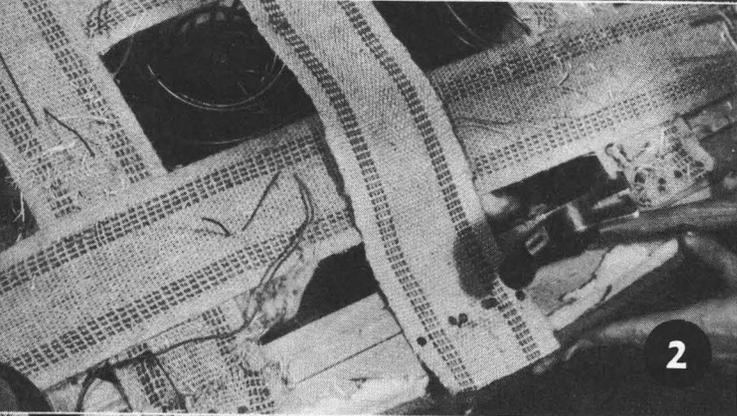


FIGURE 2. Using an uncut roll of webbing, replace the lengthwise center strip, starting at the front of the chair. Let one inch of webbing extend beyond the center of the frame edge. Place four No. 8 upholsterer's webbing tacks in wood as shown in Figure 2. Take care to avoid original tack holes. Drive tacks in place.

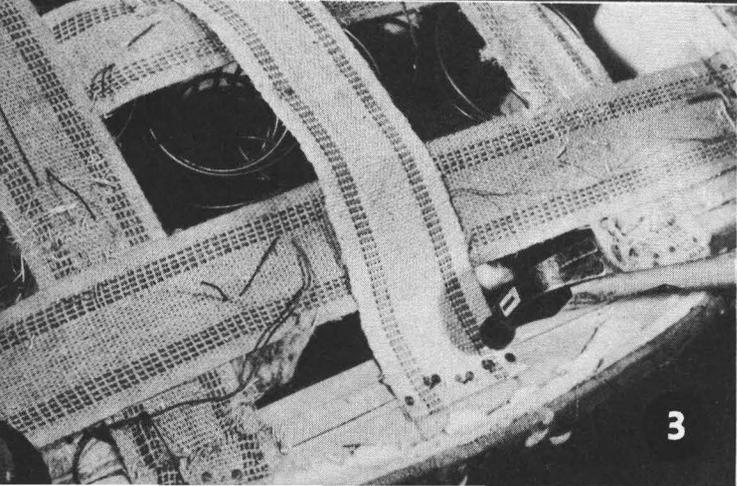


FIGURE 3. Fold the extra length of webbing back over the 4 tacks. Place a second row of 5 tacks slightly below the first ones. Stagger these tacks, as shown in Figure 3, to minimize splitting the wood.

FIGURE 4. Stretch the webbing before you nail it down to the opposite side with a webbing stretcher as shown in Figures 4 and 5. The position of the nails in the webbing must be determined through trial. Place them at such a point that when the stretcher is braced against the back frame of the chair and pushed down as shown in Figure 5 the webbing will be taut. Let the webbing be tight enough to snap if tested with your finger, yet not so tight that there will be a tendency to pull at the tack heads. The webbing should give slightly under pressure yet be firm enough to prevent any bulging when the springs are tied down.

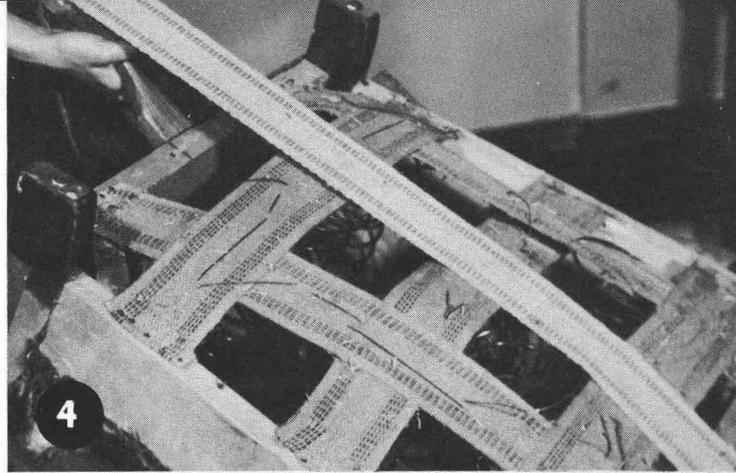


FIGURE 5. Put in the first row of 4 tacks. Place the tacks a safe distance from the frame edge to prevent splitting the wood, and tack in place. Cut off the webbing about 1 inch from the edge of the chair frame. Fold back and finish as in Figure 3.

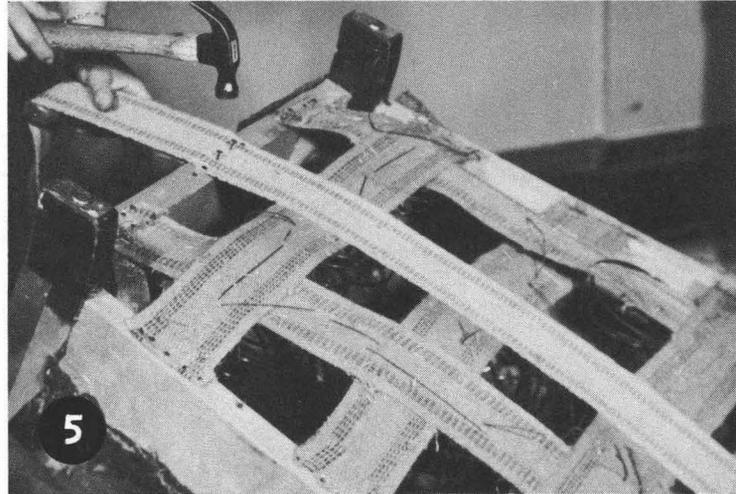
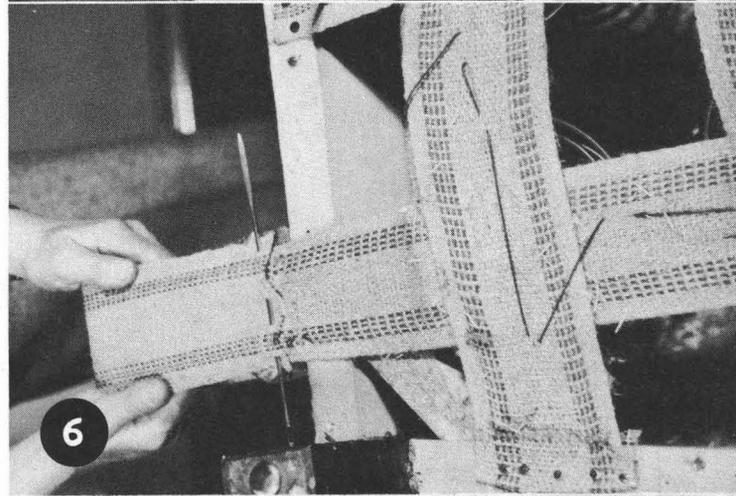


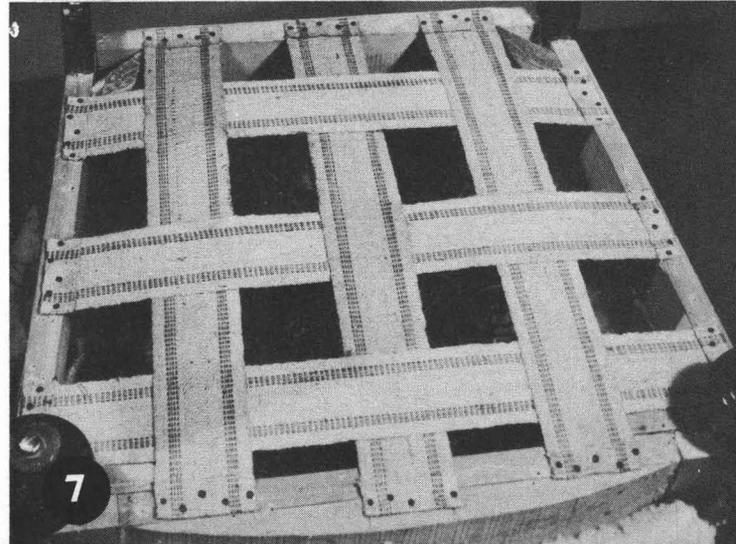
FIGURE 6. Method of stretching a short piece of webbing, or tightening a piece of webbing that you may find is in good condition, but is too loose to give good support to the seat springs.



Put on the remaining two strips of webbing from front to back following the method as shown for the center strip.

Now, replace those from side rail to side rail, starting from the center strip. Before tacking down the loose ends from side to side, interlace the strip over and under those from back to front as shown in Figure 7.

FIGURE 7. Webbing interlaced and completed.



Stripping the Chair . . .

If the chair is to be completely redone, carefully remove all the old covering and padding. A bumpy seat or a sagging arm or back are usual signs that the foundation of the chair needs repair. If the arm and back sections appear to be in good condition except for the outside covering, do not disturb the

padding on these parts. You will find it possible to repair seat springs without removing other paddings.

As you work, note the original construction of your chair. *Label and save all pieces for future use or reference.*

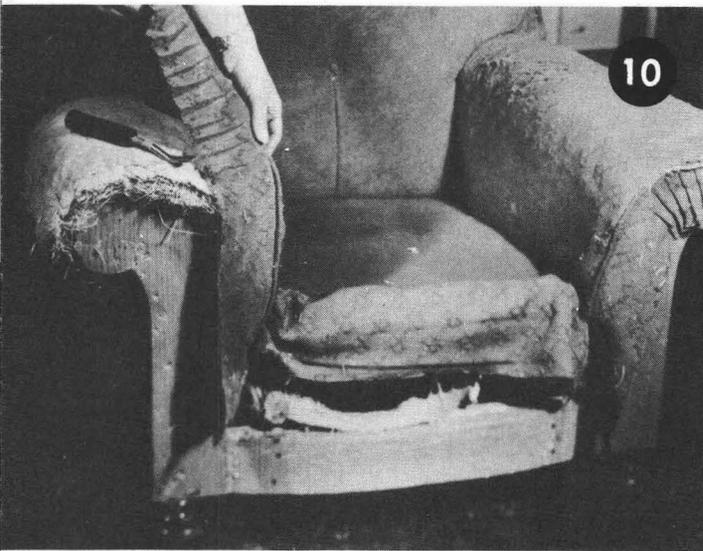


FIGURE 8. All construction steps are pictured here in the order of work for an overstuffed chair as shown in Figure 8. Other types of chairs will not necessarily follow this same order of work. Keep in mind that you will not need to re-do any section of your chair if that portion is still in good condition. The chair, as pictured, was stripped to the frame. This procedure was followed in order to show *each* step in the rebuilding of a chair.

FIGURE 9. Use a ripping tool and hammer to remove the old cover. Save each piece as a pattern for cutting the new cover.

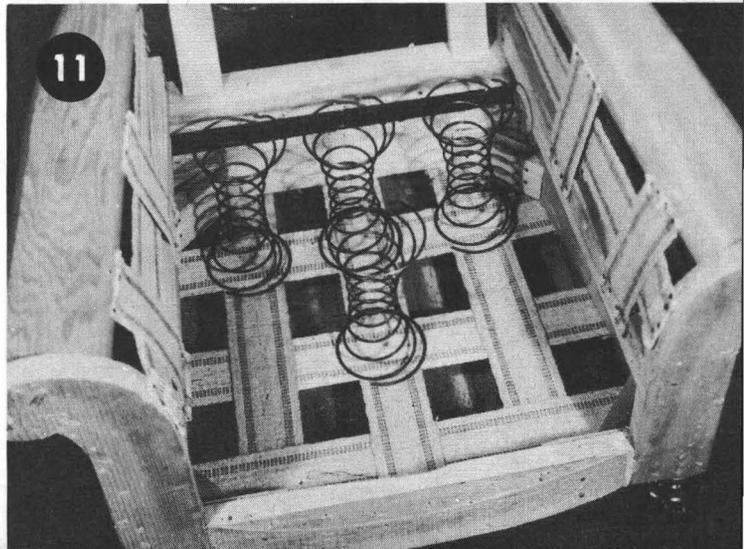


FIGURE 10. Remove the cover carefully. See that all tacks are removed from the frame or they will interfere with placing new tacks later. If it is necessary for you to remove stuffings, label each section and carefully lay it to one side. It may then be replaced without breaking up. When using new stuffing, save the old pieces as a guide to help you. If only minor repair work is necessary, inspect surfaces for hollows and flat spots. Build these up by placing small portions of stuffing material *under* the original stuffing. *Never add stuffing to the surface.* It will only result in lumpy work.



Now check the general condition of the frame. Clean, repair, and remodel the frame as needed. If any exposed wood needs refinishing, do this now.

FIGURE 11. When your chair is stripped, repair the webbing base on the arms, as shown in Figure 11. Here the webbing need not be as taut as that on the seat section. Complete this work before you place seat springs over the seat webbing.



SEAT SPRINGS

Sewing the Springs to the Webbing Base . . .

Place the springs over the sections where the strips of webbing cross each other. Note that there is a top and bottom to each spring. The end of the wire turns slightly downward at the *top* of the spring. Place and sew the springs to the webbing as shown in Figures 12 to 15.

FIGURE 12. Place the spring right side up on the interlaced sections of the webbing.

FIGURE 13. Seat springs ready for sewing. Note that each spring is so placed that the top end of the wire is not in line with the lengthwise and cross-wise spring ties which you are about to make.

FIGURE 14. A wire edge is attached to the front and side springs to give the seat a firm, more durable square edge. See that it is well anchored before you start tying the springs. If any of the metal clips anchoring the wire edge are missing or broken, use a mattress twine to fasten the edge wire to the springs. Weave as shown.

FIGURE 15. Thread a straight needle with a long strand of mattress twine. Beginning at the left front corner spring, sew the spring to the webbing. Stitch over the spring wire two times at four evenly spaced points. (See Figure 16 for stitching plan.)

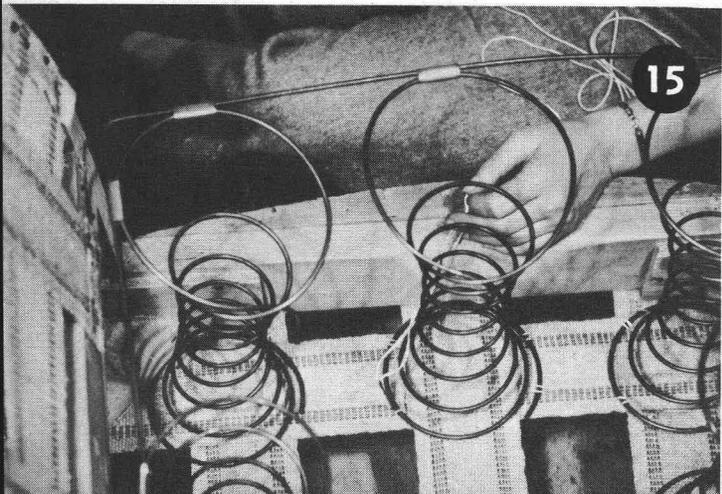
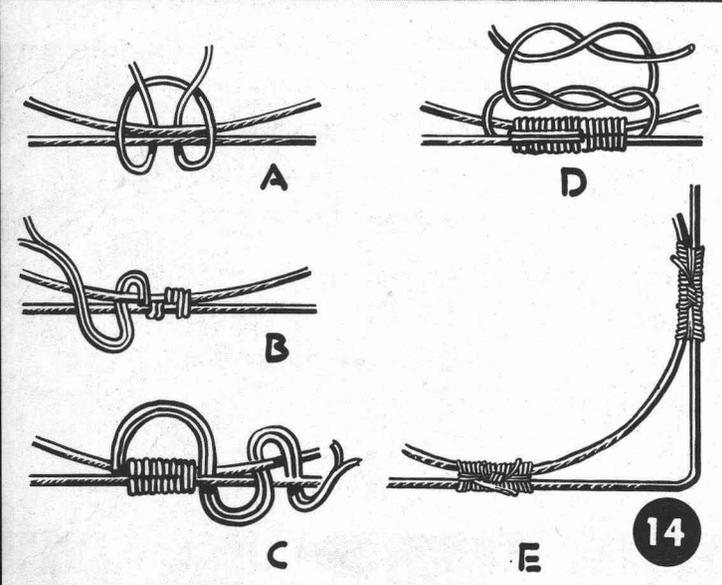
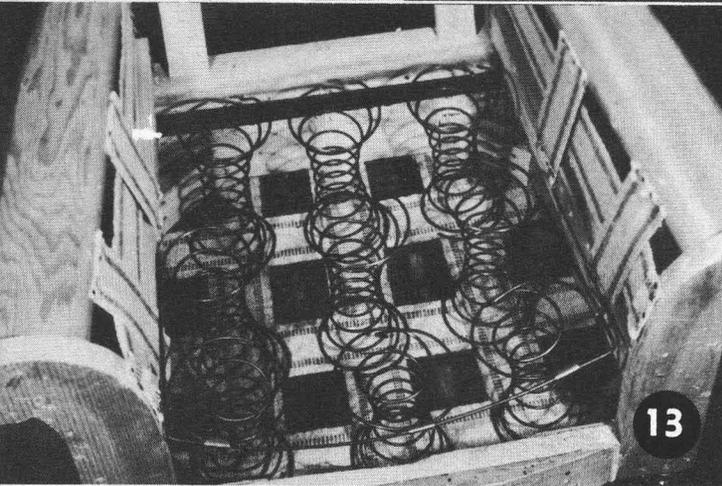
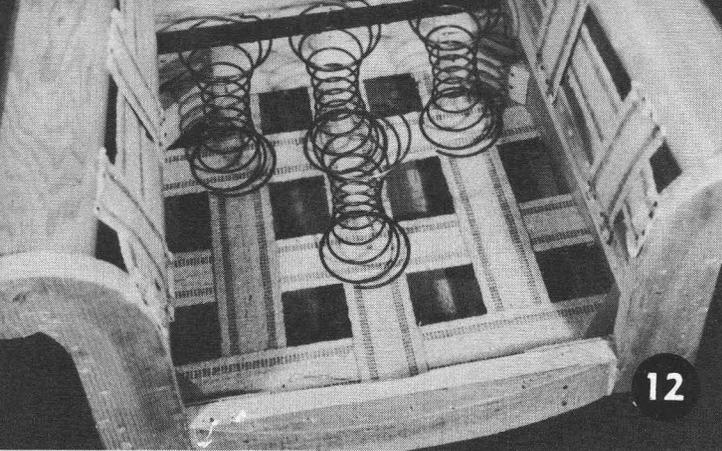
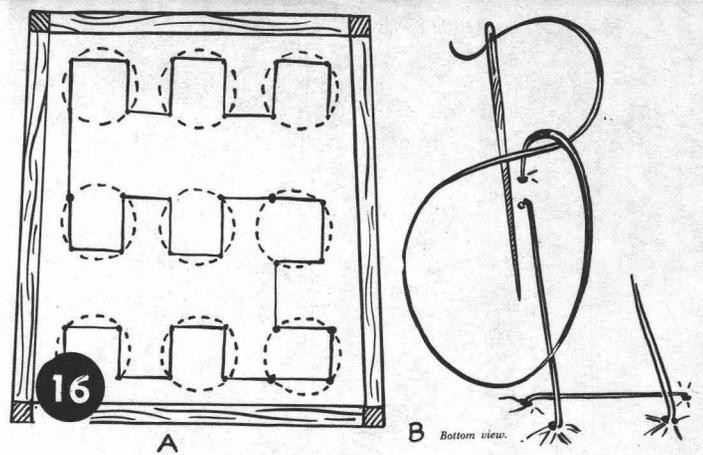


FIGURE 16. Plan stitching from the left to the right so that you may proceed from spring to spring without cutting the sewing twine. *Knot the last or 4th stitch* at each spring before proceeding to the next spring, as shown in Figure 16 (B). This knot is a precaution against a single break in the twine releasing the entire group. Fasten the beginning and ending stitches together with a firm knot.



Spring Tying . . .

FIGURE 17. Drive two No. 12 tacks side by side into the seat framework directly opposite the center of each outside spring (Figure 17). Leave approximately 3/8 to 1/2 inch space between the two tacks to allow the twine to be wound around each tack. Drive the tacks far enough into the wood to hold them firmly in place as the twine is pulled around them.

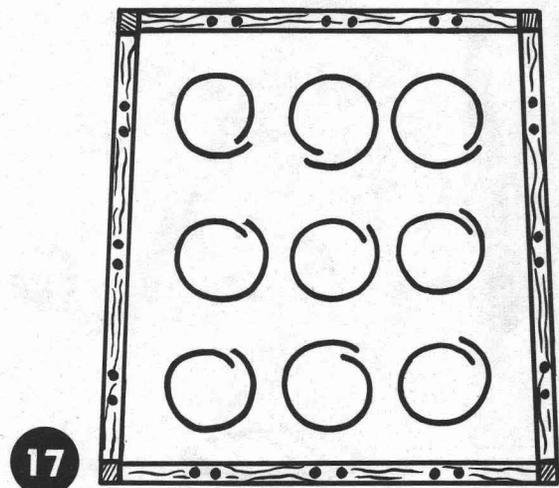


FIGURE 18. Lay the spring twine across the top of the center row of springs (Figure 18). Allow enough to reach from one set of tacks to the opposite set plus enough extra for fastening it around each set of tacks (see Figure 19). Take 3 times this measurement. Cut 3 lengthwise twines. Repeat for the 3 crosswise twines.

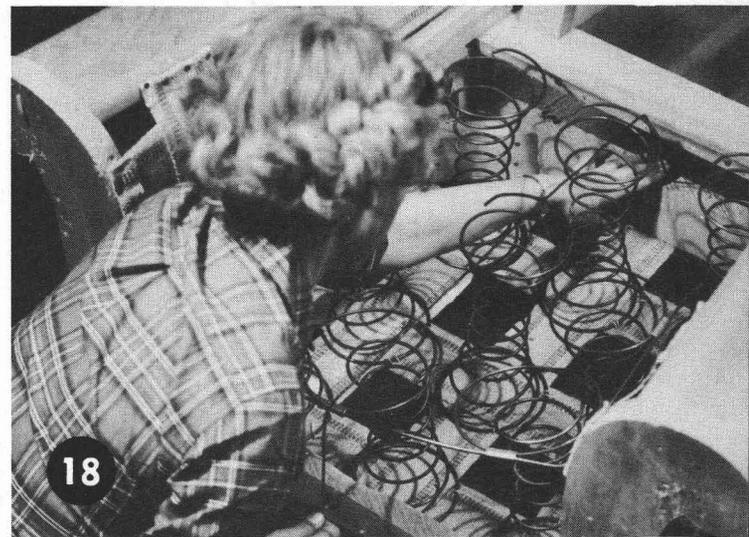
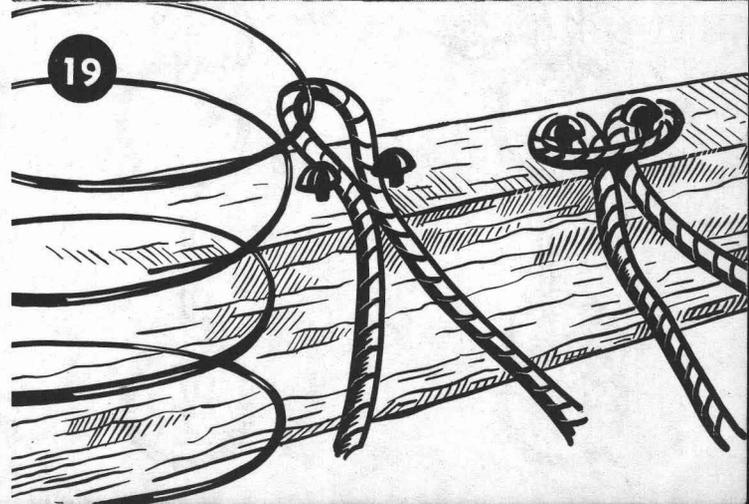


FIGURE 19. Knot a lengthwise twine to the center tacks, on the back rail to form the beginning bight. (See Figure 19 for details) Start the bight about 1/4 the length of the twine from one end. This leaves two twines hanging from the tacks, the longer one three times the length of the short twine.



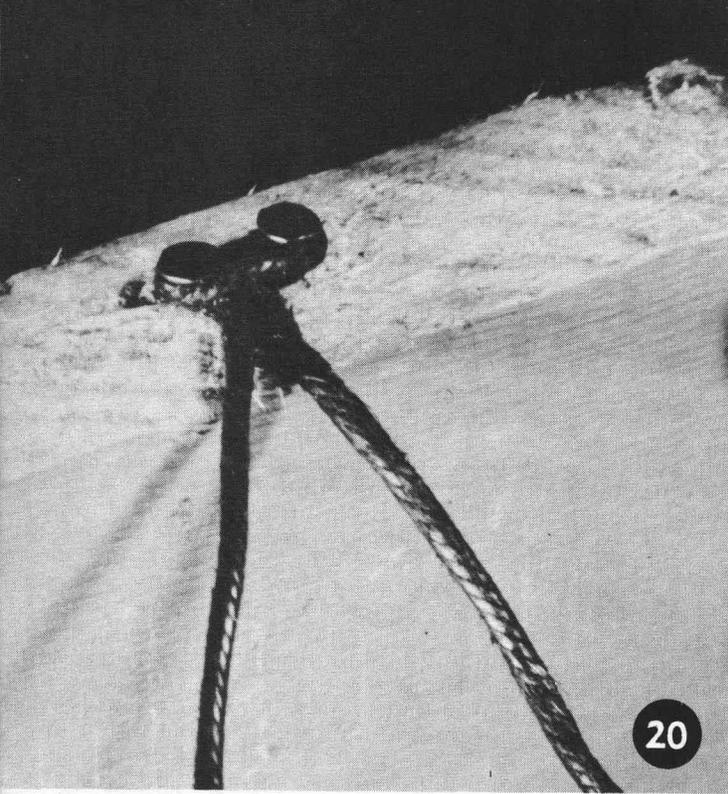


FIGURE 20. Drive the tacks securely in place.

FIGURE 21. Working with the long twine, make a knot around the nearest side of the 2nd or 3rd coil from the top of the nearest spring. Carry the twine up through this spring and loop around the far side of the top coil. Do not cut off the short end of the cord as this is to be used later for a reinforced tie-back. Tie all springs with the clove hitch knot.

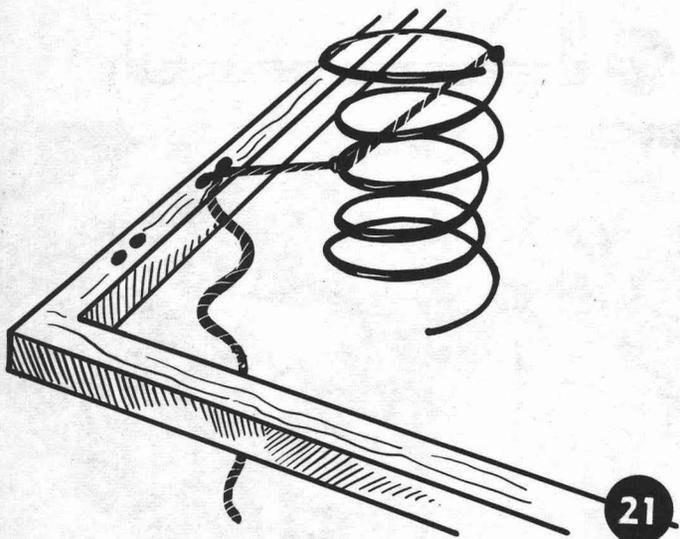


FIGURE 22. Steps in tying the clove hitch knot.

FIGURE 23. Continue tying the lengthwise center row of springs as shown in Figure 23. For a chair with padded arms and a removable cushion, as is picture here, compress the springs during tying so they are tied slightly lower than the lower arms and back stretcher. Adjust knots until the springs stand vertical.

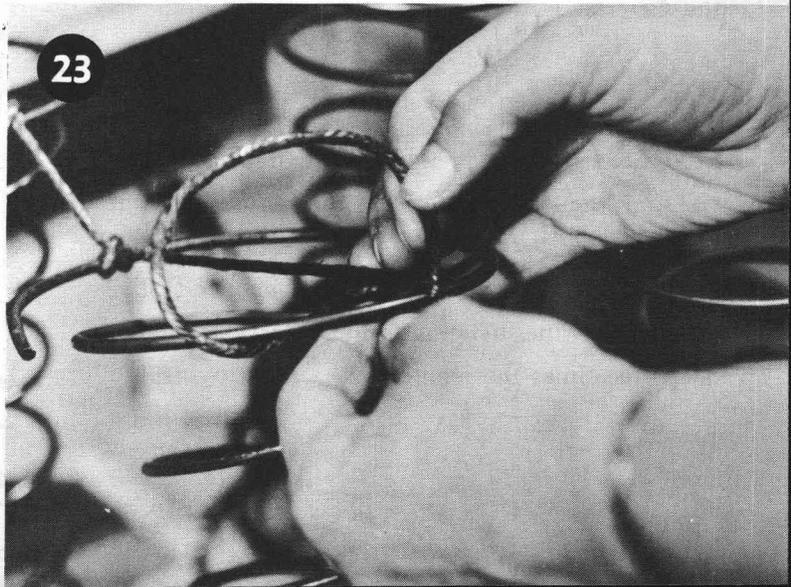
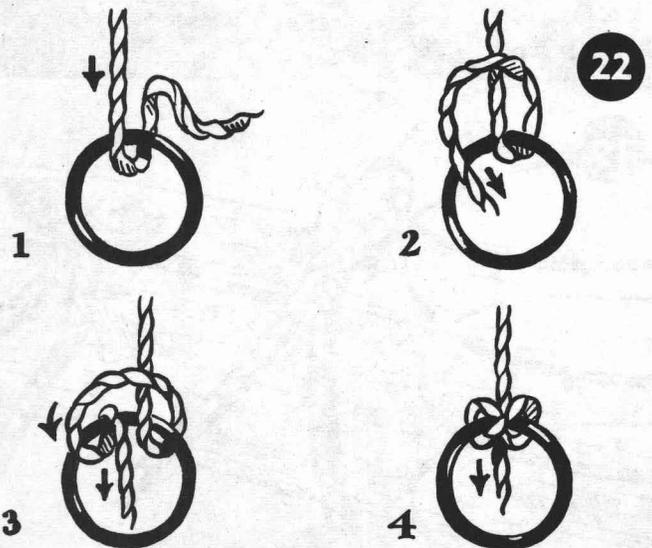


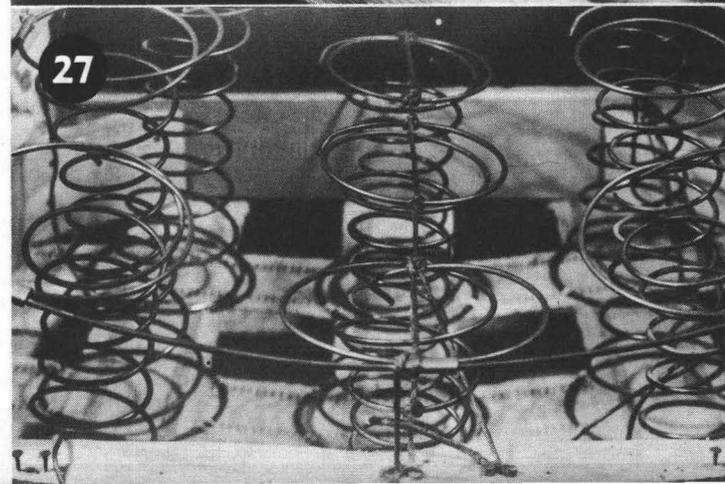
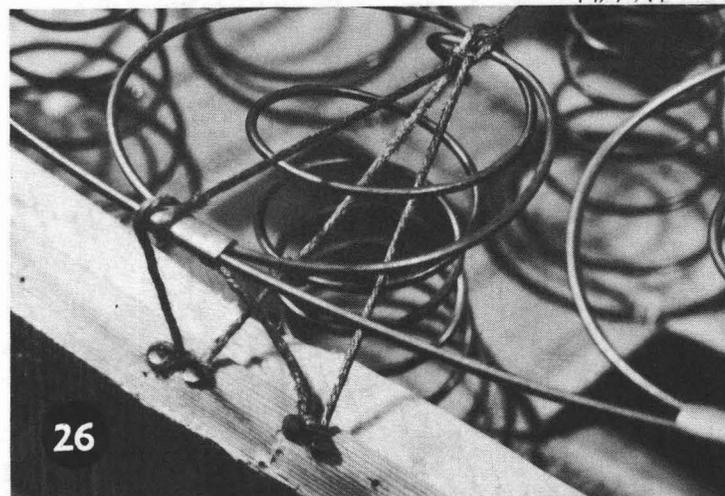
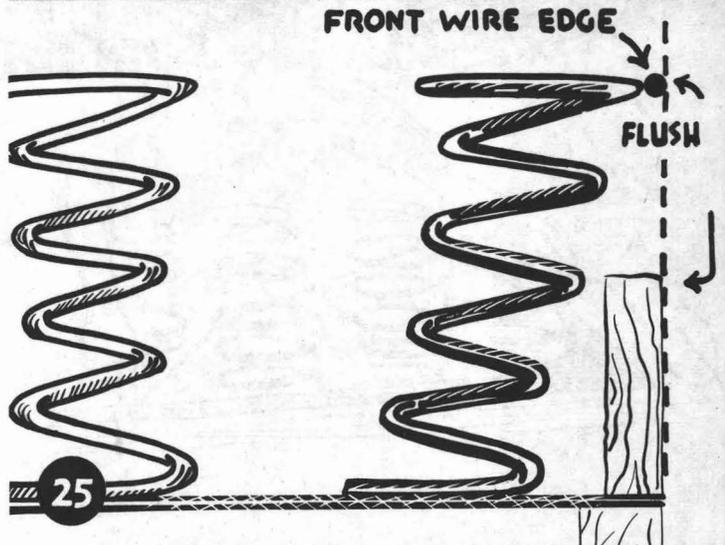
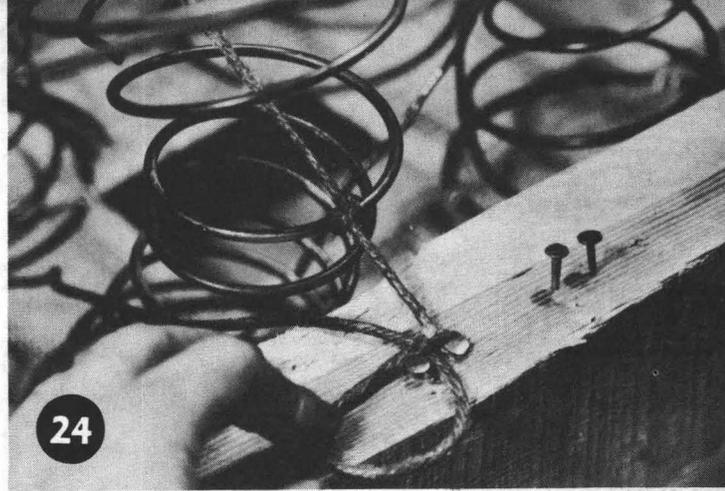
FIGURE 24. Complete the tying at the front of the chair as shown in Figure 24. Drop twine to 2nd or 3rd spiral and tie the clove-hitch knot. Loop the twine around the tack on the right side. Partially drive in this tack to hold the tension temporarily. Carefully recheck height of springs and make any necessary readjustment. Now, drive in this tack permanently. Complete the bight as shown in Figure 24 and drive in the tack securely. The wire edge supporting the springs should be approximately even with the frame edge at front of chair. This will pull the 3 front springs slightly forward.

FIGURE 25. Position of the front wire edge and the front springs.

FIGURE 26. Complete tying at the front with the return-tie. (For method see Figure 26.) If the twine was measured correctly, there will be a short length left in front to make the return-tie. Bring the twine back and loop it over the wire edge. Now, catch all the twines together on the far side of the top coil and tie with a simple knot. Pull the cord down diagonally and anchor it with a bight around two No. 12 tacks, placed in line with the diagonal pull. (See Figure 26.)

Complete tying the springs at the back with the return-tie as shown in Figure 26. Use the extra twine allowed for this purpose when you started your tying.

FIGURE 27. The first lengthwise tie completed with the return-ties at front and back of the row. Strive to keep the front springs pulled forward during tying so that the wire edge is approximately even with the front edge of the seat frame as shown in Figure 25.



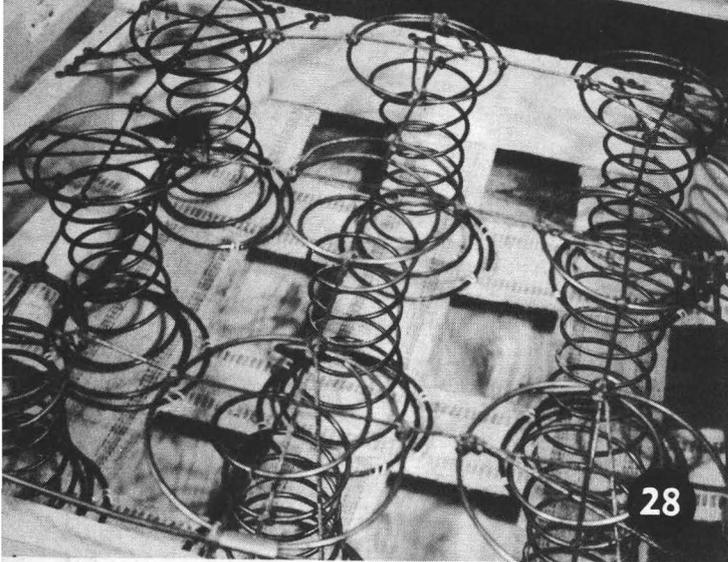


FIGURE 28. Using the center row as your guide, complete the tying of the other two lengthwise ties.

Make the 3 crosswise ties in like manner (Figures 20-27), starting from the center row.

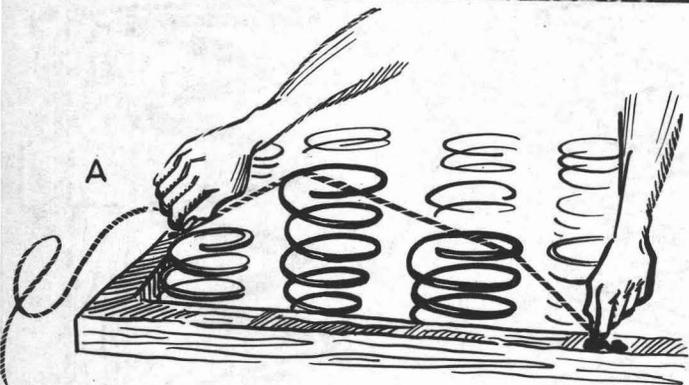
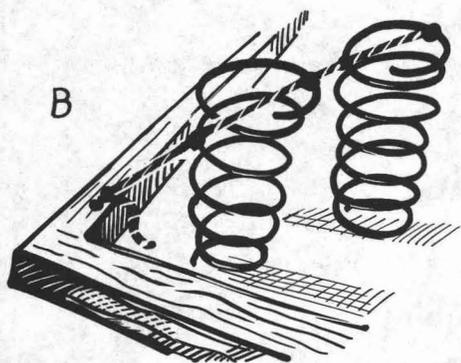


FIGURE 29. You are ready now to make the first diagonal tie working in one direction only. Measure twine as shown in Figure 29 (A) allowing 2 to 2½ times the row length. Cut 5 twine lengths. Place two No. 12 tacks in the frame in line with the direction of each diagonal row. Tie in the same manner as the cross ties *except* omit the return-tie back at either end. Start and end each diagonal row by tying a knot on the 2nd spiral of the nearest spring. Anchor permanently without the return-tie as shown in Figure 29 (B). Take care not to pull down the springs so that the other twines are made slack.



Measure the cord for the final diagonal tying, (opposite direction from above), allowing 2½ times the single measure. Follow procedure above. For this final tie, knot at all places where a cord crosses another one, as well as over the spring wires. (See Figure 30.)

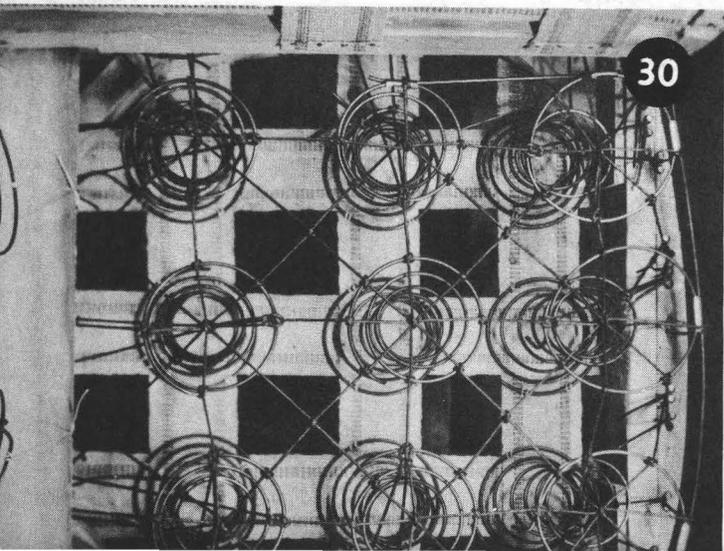


FIGURE 30. Springs completely tied with eight knots.

Placing Burlap Over Seat Springs . . .

Cover the seat area with a 32" x 32" piece of medium-weight clean burlap. Follow steps shown in Figures 31 to 37.

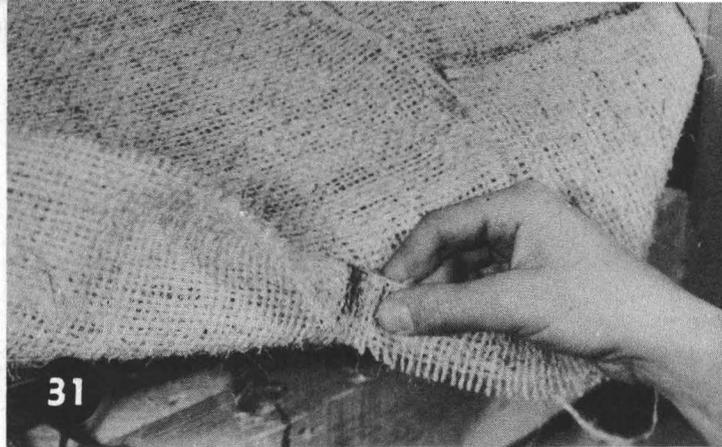


FIGURE 31. Mark and slip-tack (placing in tacks only partially for a temporary tacking) centers of burlap on all sides. Check that the grain of the fabric is straight. Fit and mark the burlap at each corner as shown in Figure 31.



FIGURE 32. Starting at the corner, cut the burlap diagonally to the point marking the corner of the chair post where the burlap must divide.

FIGURE 33. Make two slashes at right angles to the diagonal slash following the grain of the fabric to within 1 inch of the end of the diagonal cut. This gives an allowance for turning under at each corner.



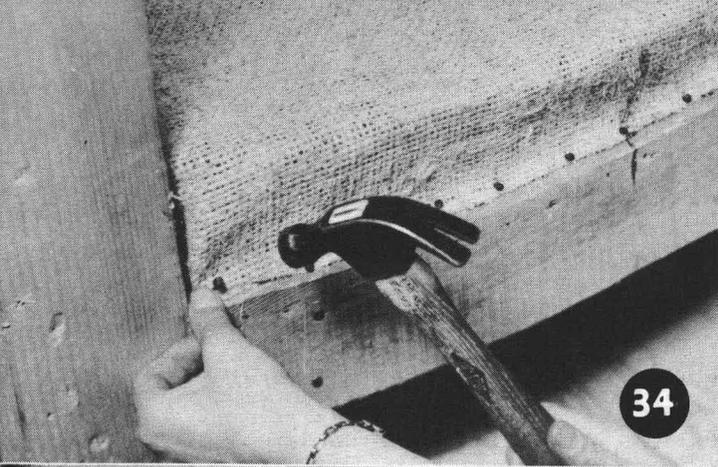


FIGURE 34. Starting from the center point on all sides fold back excess width of burlap. Tack to the seat frame with No. 6 tacks. Finish corners as shown.

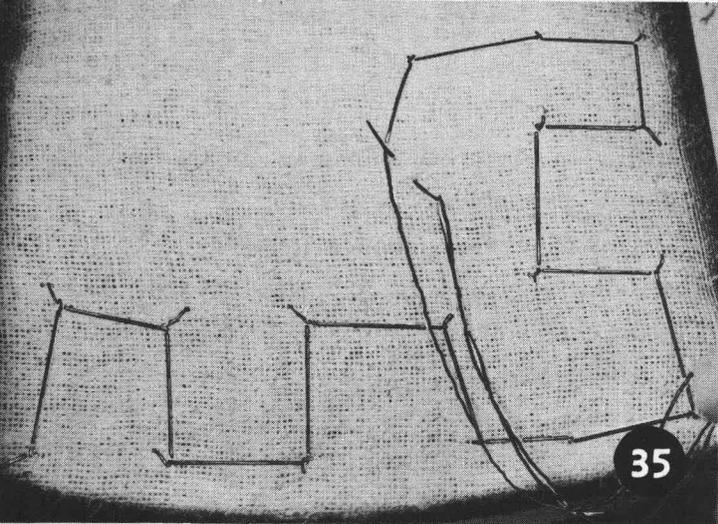


FIGURE 35. Thread a No. 4 or 6 curved needle with a long strand of mattress twine. Sew each spring to the burlap in four places starting with the left front spring. Follow the continuous stitching plan used in stitching seat springs to webbing (Figure 16-A). (Stitching indicated in black in this illustration.)

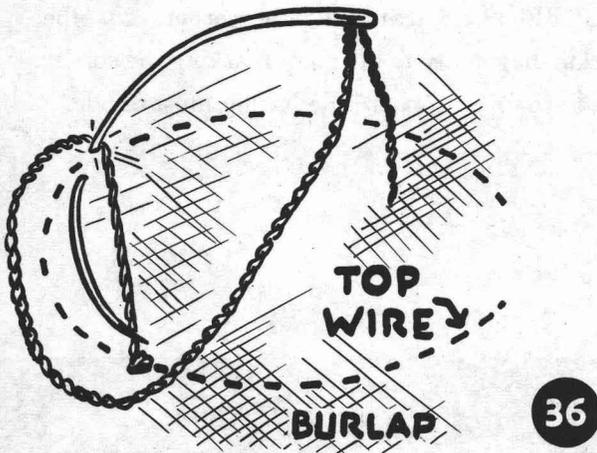


FIGURE 36. Bring the curved needle down through the burlap, under the top wire of the spring and up through the burlap again. Tie a slip knot as shown in each of the four stitches. Continue until all springs are stitched. Fasten threads securely.

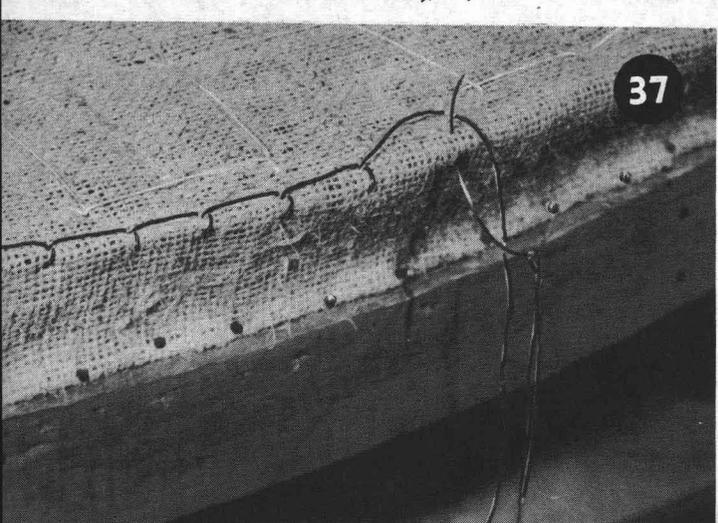


FIGURE 37. With mattress twine and a curved needle sew the burlap to the front wire edge. This is in preparation for making the heavy front roll.

BACK SPRINGS

If the back springs are placed on webbing, check the condition of the webbing. Replace or repair as needed, following steps given for seat webbing. Sew back springs to the webbing.

Back springs in the chair pictured are placed on metal bars.

FIGURE 38. Lay the chair, back down, on your working area. Place cotton between the spring and metal bar to act as a silencer. Using one or two strands of mattress twine, tie two ways only without a return-tie at the ends. Tie the springs to form a symmetrical curve as shown.

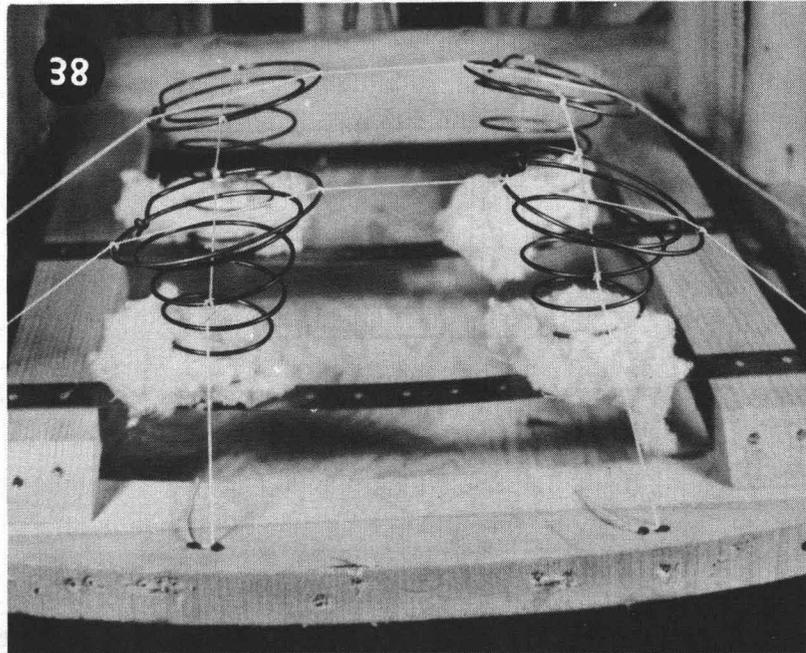
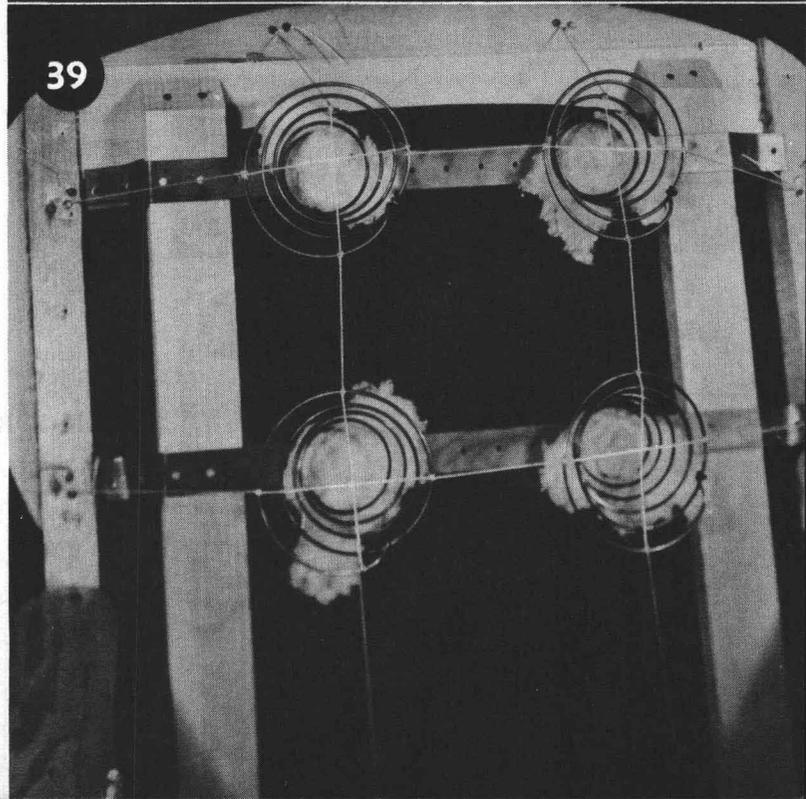


FIGURE 39. The two upper springs are compressed to approximately $4\frac{1}{2}$ inches at the middle of the back and $3\frac{1}{4}$ inches at the side of the back. Allow the lower springs to be slightly higher.



MAKING THE EDGE ROLLS

On a well-constructed chair edge rolls are made. If you do not find them across the front of the back

and arm sections of your chair (see Figures 40-42) you will want to add them for the following reasons:

- To eliminate sharp edges on the chair.
- To give a firm foundation to the final padding.
- To keep the stuffing from working away from the edges.
- To prevent the bare wood from wearing the cover.

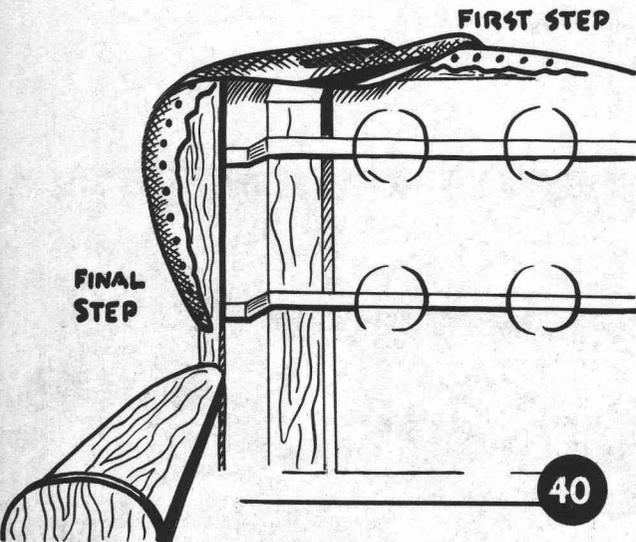


FIGURE 40. Cut a strip of burlap 5 inches wide. Using No. 6 tacks back-tack as shown to the face of the upper edge of the front back.

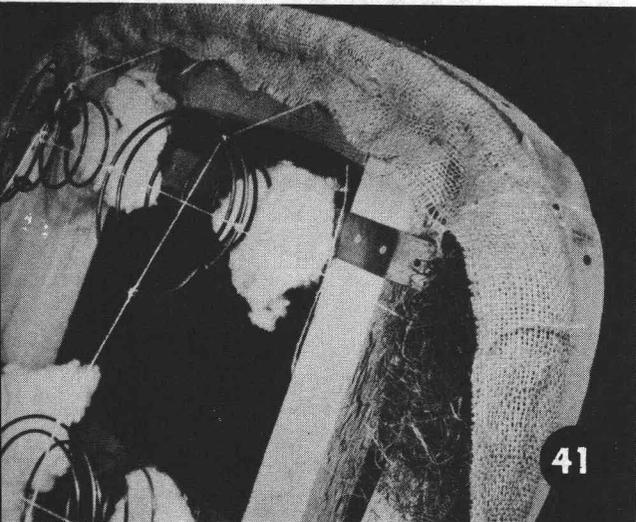


FIGURE 41. Stuff the roll with tow or moss to form a firm roll. Tow will make a firmer edge than will moss or hair. Let the roll be about 1 inch in diameter except at the extreme ends where it should taper off. Pull the burlap forward and tack down with No. 6 tacks as shown.

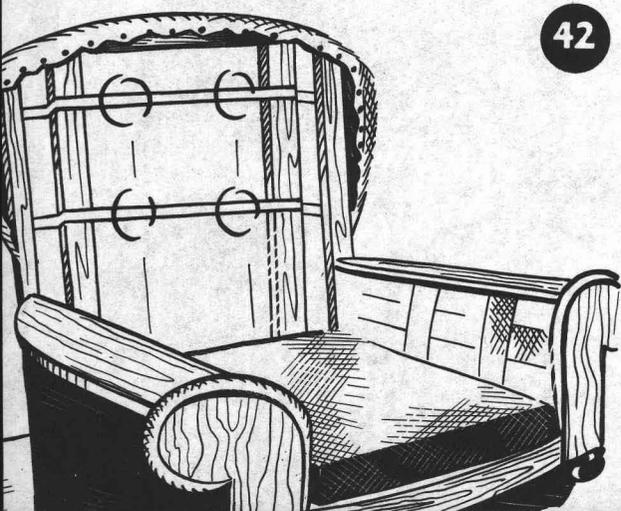
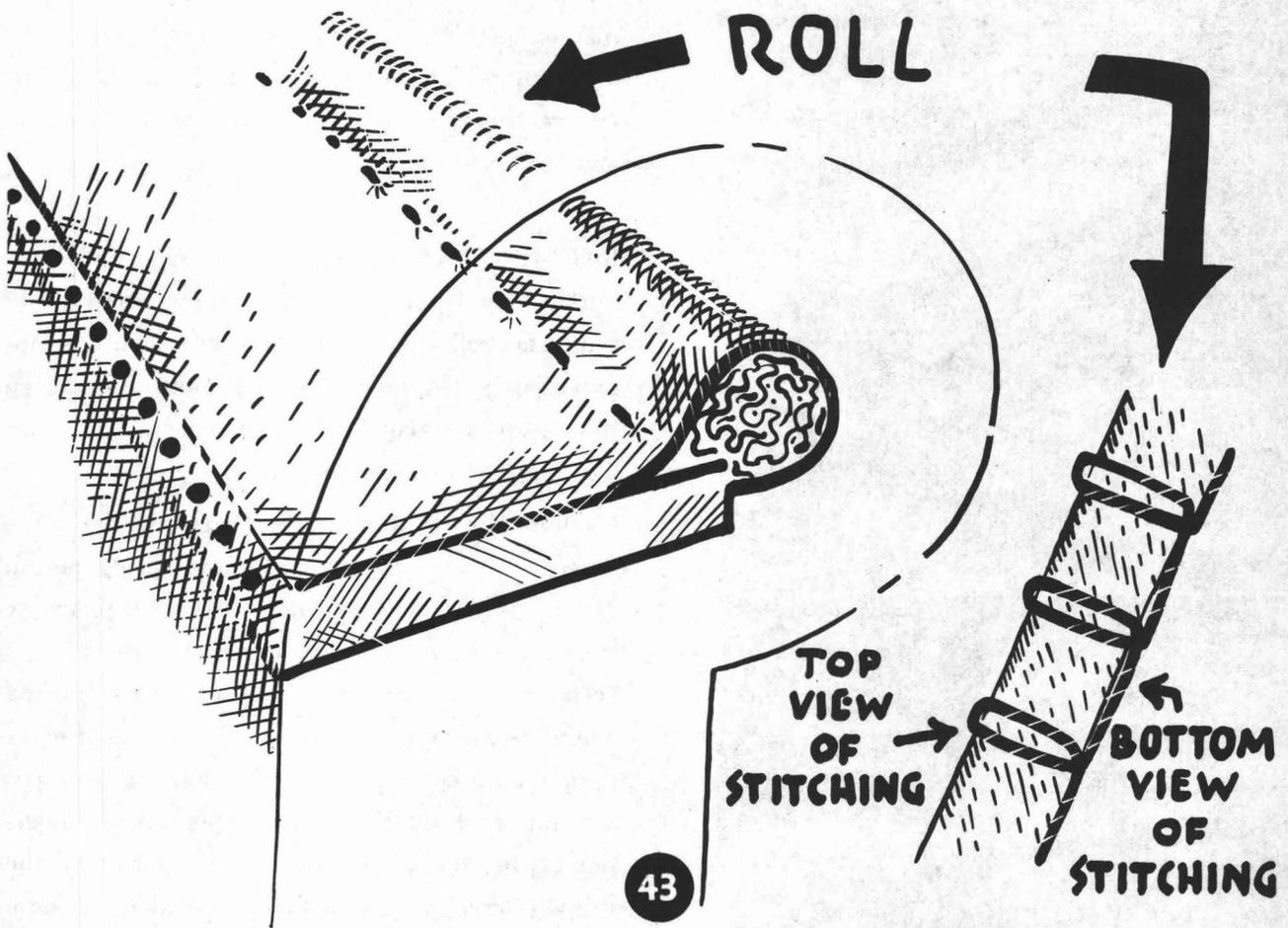


FIGURE 42. Make a firm roll around the top edges of each arm front as explained in Figure 40. Stuff the rolls so that the diameter varies from 1/2 inch at the bottom to 3/4 inch around the curve and tapers off at the outside of the top curve.

FIGURE 43. The arm construction may be improved if an edge roll is constructed along the top outer edge of the chair arms (not pictured in this chair). To do this, cover each inside arm with a firm piece of burlap. Let it be long enough to extend from the lower rail of the arm to the top of the arm, plus an allowance of 12 inches. This extra length is used to form the *arm pad* as shown in Figure 43. Tack the burlap along the lower arm rail. Now place a thin layer of tow or moss along the outer edge of the arm. Fasten the burlap down along the inside

of the arm with No. 6 tacks. Continue to add stuffing until you have a pad height of about 2 inches. Taper it slightly at the front and back. Pull the loose end of the burlap over the moss. Tack it to the outside edge of the arm as shown. Using the regulator, or an ice pick, distribute the stuffing until it is smooth. Now stitch the roll with a mattress twine using one row of stitches. The stitching detail is shown in Figure 43. This stitching holds the stuffing in place as well as giving shape to the outside edge of the chair arm.



COMPLETING THE SEAT SECTION

The Front Roll . . .

You are now ready to make the front seat spring edge roll. If the original front roll is in good condition, plan to re-use it rather than constructing a new one. Steps in making a new front edge roll are shown in Figures 43 to 49.

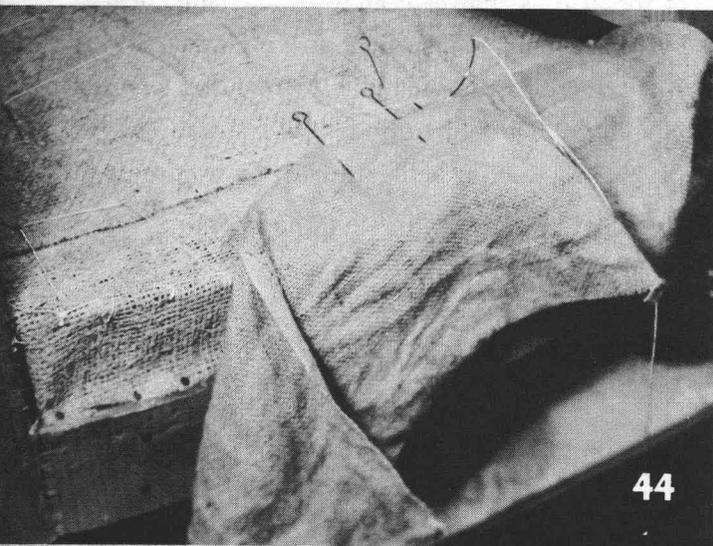


FIGURE 44. Mark a straight line across the seat burlap $2\frac{1}{2}$ inches from the front edge. Cut a straight strip of burlap 10 inches wide and 6 inches longer than the width of the front of the seat springs. Determine the center of this burlap strip. Turn under the edge and pin it to the center of the seat burlap directly over the marked line. Now, pin across the marked line. With a single strand of mattress twine and a curved needle sew the strip to the line, with an overcast stitch. Let the extra 3 inches at either end be free.

FIGURE 45. Place a quantity of moss under the burlap strip. Work the filling until it is smooth. The completed roll (firmed and stitched) should be approximately $1\frac{1}{4}$ inches high and extend over the front wire edge about $\frac{1}{2}$ to $\frac{3}{4}$ inches.

FIGURE 46. With upholstery pins, fasten the lower edge of the burlap strip to the spring burlap directly under the wire edge. Use a regulator, or ice pick, to perfect the stuffing as shown. Strive to keep the roll filled firmly. Add or remove stuffing where necessary to keep the work even. Fold extra burlap at each end under the stuffing and pin securely. Recheck the upholstery pins on the underside of the roll to see that they are placed on the straight thread of the burlap. These are to serve as a guide in placing your first stitching.

FIGURE 47. Thread a 6- or 8-inch straight upholstery or mattress needle with a long single strand of mattress twine. Begin stitching at the lower left-hand corner. Fasten the beginning twine to the next stitch with a firm knot. To make this special stitch, insert needle at A, just under the front wire edge, continue to B, C, and D. Continue stitching as shown, making each stitch 1 to 1½ inches long.

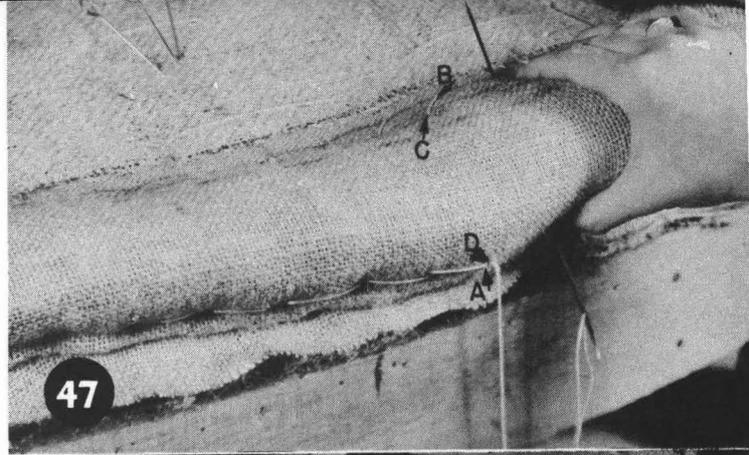


FIGURE 48. With the regulator and your hand force the stuffing forward as you proceed in your stitching. All stuffing must be encased between the top and bottom stitches. Strive to keep the roll even, firm and smooth.

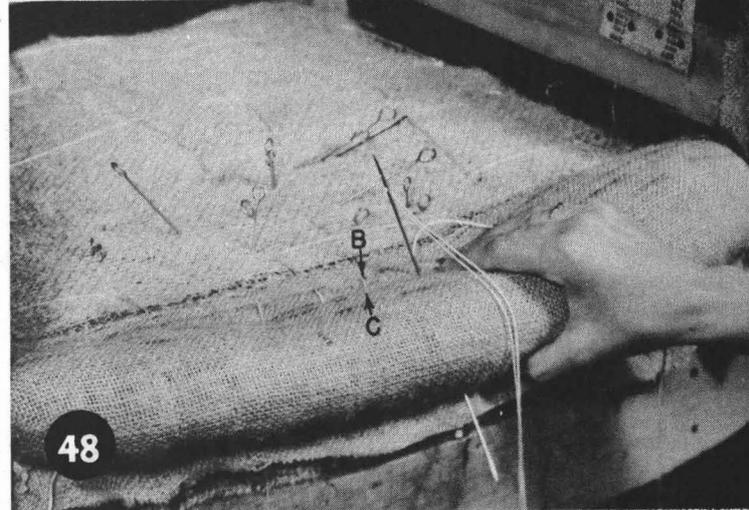


FIGURE 49. Since the main purpose of the front roll is to give support to the seat edge and to hold the separate cushion in place, a second row of stitches is necessary. This second stitching gives a firmer and higher edge to the roll.

Thread a large curved needle with a long single strand of mattress twine. Do not knot the end. Note that the second row of stitching is made just in front of the first row.

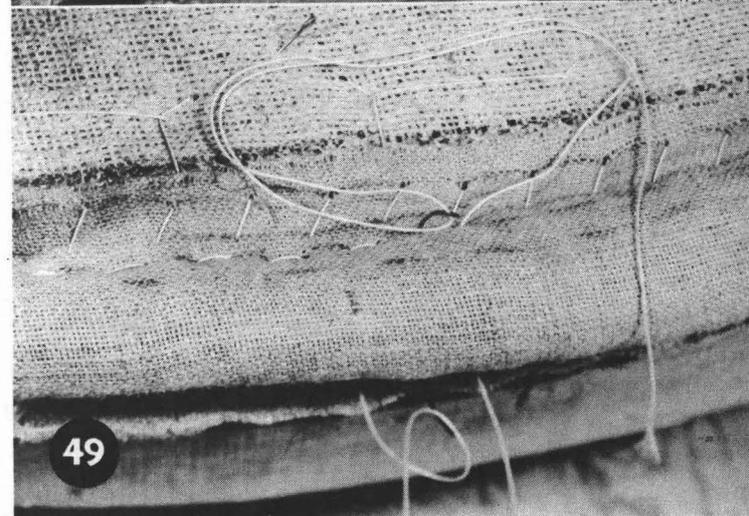
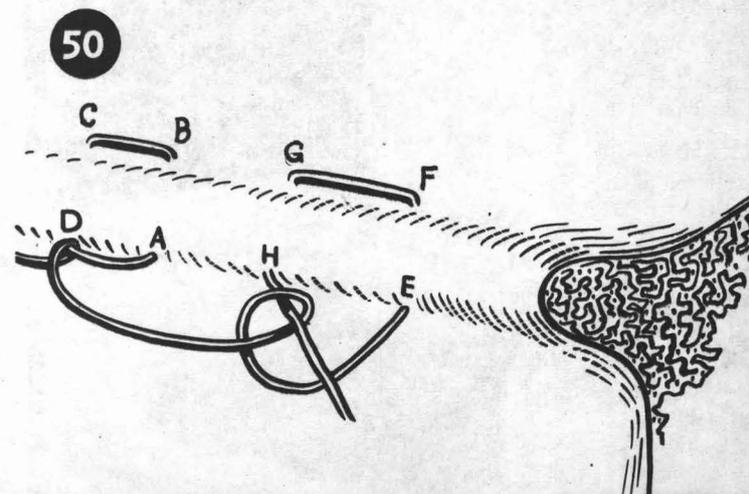


FIGURE 50. Place the needle at A and bring it out in back at B. Enter it again at C and bring it out in front at D. Now tie the loose end of the twine at A into a firm knot around the twine at D and tighten the stitch by pulling to the right. Let each stitch be ¾ to 1 inch long. Keep the needle at right angles to the roll to draw a larger quantity of stuffing to the finished edge. Continue stitching at E, bring the needle out at F. Insert at G and bring out at H. Loop the twine hanging from D around the needle at H as shown in Figure 50.

Loop the thread around the needle and pull firmly to the right. Continue the stitching across the roll, connecting each stitch as shown in Figure 50, and pulling to the right to tighten. Continue to regulate the stuffing as you work.

The shape of the roll may be controlled through the type of stitching. To make the roll edge higher, space the rows of stitching widely in the front of the roll; to make the top edge lean forward to overhang the wire, place the rows of stitching close together in front but widely separated behind the roll.

If necessary to perfect the roll add a third row of stitching.



The Padding and Cover . . .

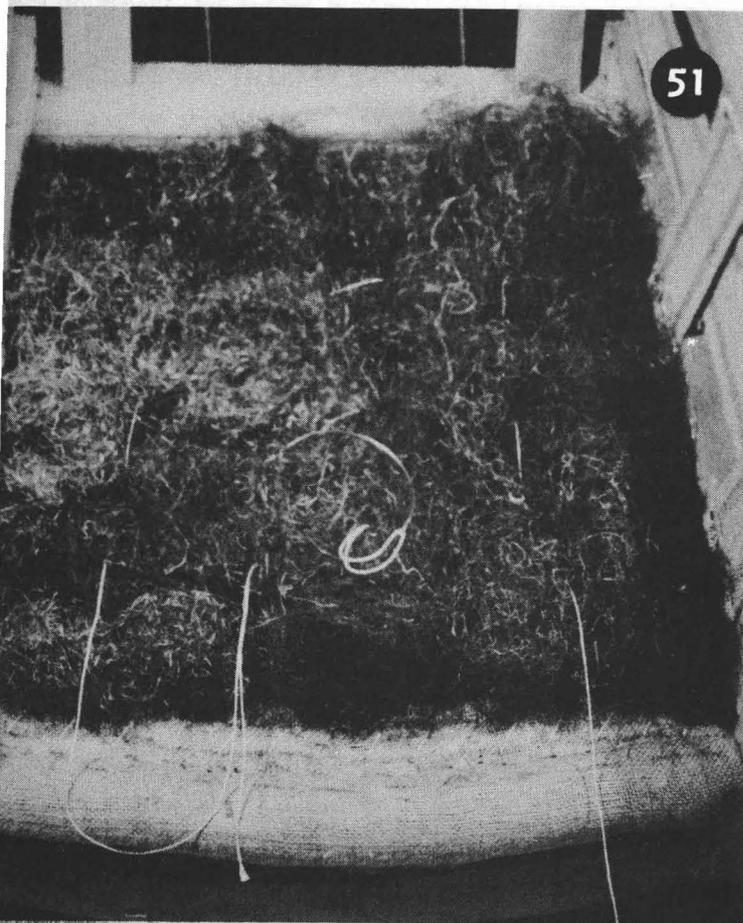


FIGURE 51. Place an even layer of moss, or other stuffing, approximately $\frac{3}{4}$ inch thick over the entire seat area as shown. Let the stuffing in front come only to the back of the stitched row as shown. With a large curved needle and a long strand of mattress twine stitch the loose moss to the burlap base, with two rows of stitching. Tighten the twine and fasten the beginning and final ends of the twine together.

Before completing the seat area apply a burlap base over the springs in the back. Stitch it to the back springs in preparation for the moss.

Cover the inside of each arm with a piece of burlap.

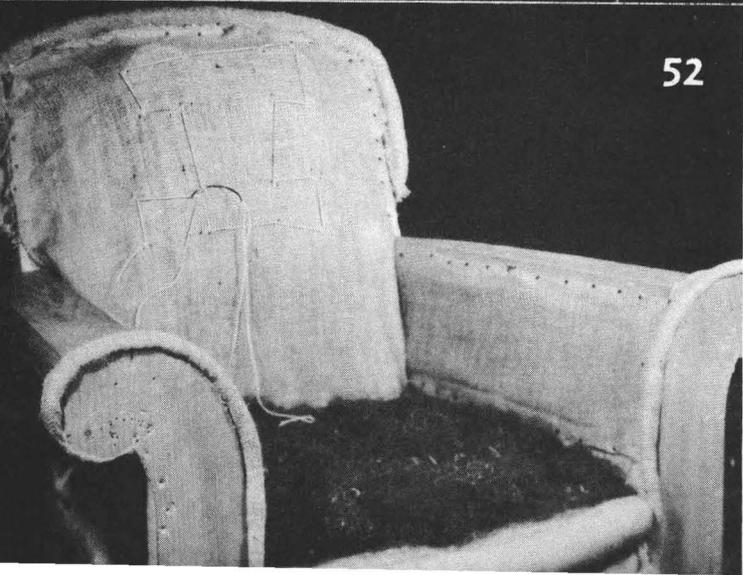


FIGURE 52. Cover the back springs with a piece of $10\frac{1}{2}$ ounce burlap. The burlap must be large enough to cover the entire back section plus sufficient around the edges to turn under. Tack in place with No. 6 tacks. Now stitch the burlap to the springs using your curved needle and mattress twine. Follow the stitching plan used for the seat springs.

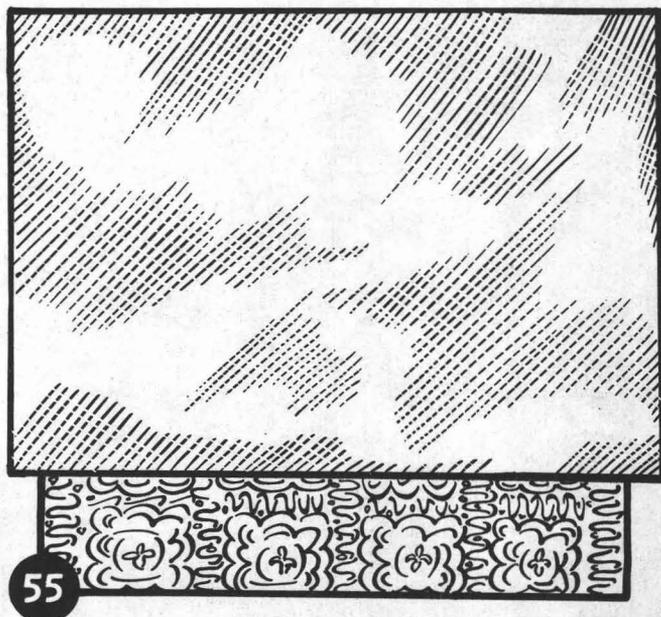
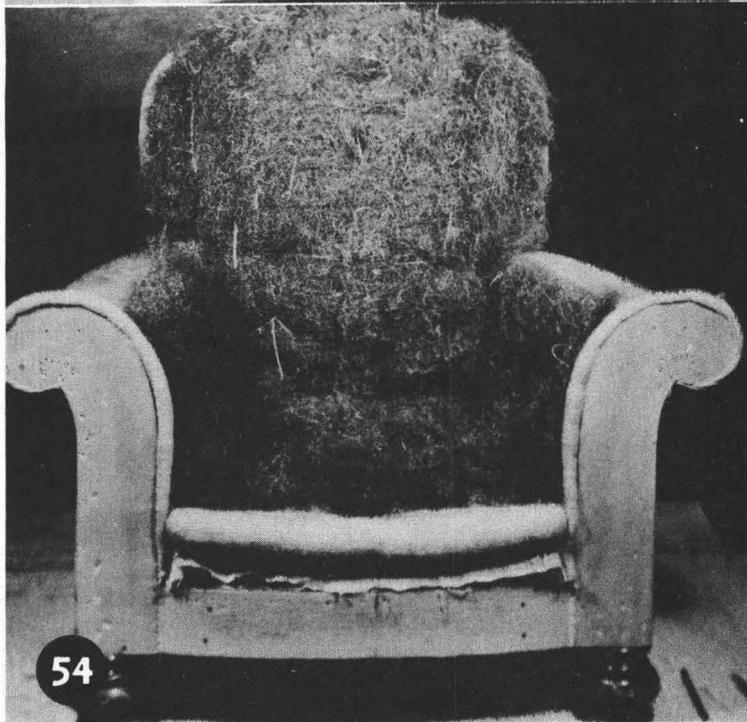
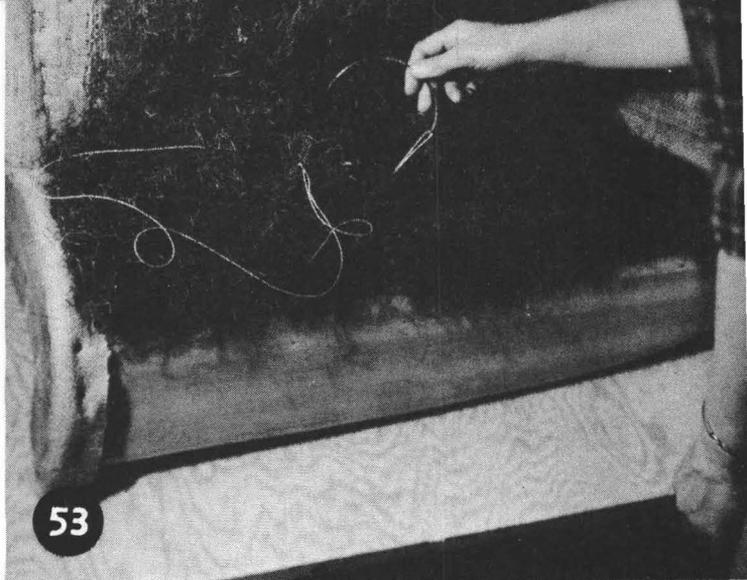
Tack a piece of burlap along the lower rail of the arm frame. Continue to tack as shown in Figure 52. If desired, extend the burlap over the top of the arm for the arm edge roll as explained in Figure 43.

FIGURE 53. If you are using all new padding, spread a thin layer of your loose moss, approximately $\frac{3}{8}$ inch thick, over the burlap on the inside of each arm. Hold the loose moss in place by stitching the moss to the burlap base. Stitch over the entire area with long stitches, using a curved needle and mattress twine.

FIGURES 54. Distribute an even layer of loose moss $\frac{1}{2}$ inch thick, over the back. Stitch with long stitches as you did for the inside arms.

YOU are now ready to complete the seat construction. The seat cover is made in two pieces. Cut a length of denim, sateen, or similar firm fabric for the section under the chair cushion. The cut size for the chair pictured here was 28 inches long and 31 inches wide. This size will vary for individual chairs. To determine size, measure from the back of the stitched row to the back and side tacking rails, where all fabrics are to be tacked permanently. To strengthen the tacking allow enough fabric to turn under on 3 sides. Cut a 10-inch straight section of your new chair covering to be used over the seat front roll (platform). Determine the necessary length by your old cover, allowing approximately 2 inches on either side for ease in handling. Note whether extra strips were attached on either side of the old fabric. The purpose of these is to form a tacking strip which may be fastened to the base of the chair. You will want to attach similar strips, or cut your fabric long enough to reach to the base of the chair. Mark and pin together the *center points* of the denim and platform cover. Pin the two pieces together with a full $\frac{3}{4}$ inch seam.

FIGURE 55. Using a heavy thread, machine stitch the two pieces together as shown.



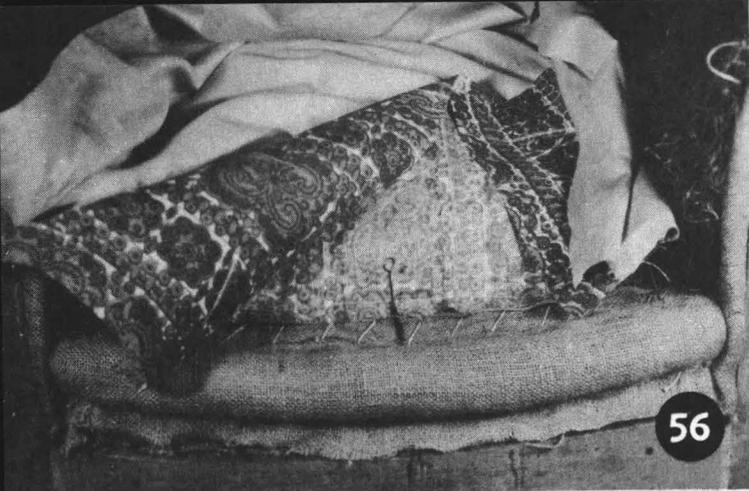


FIGURE 56. Turn the seam toward the front of the chair. Now pin the center of this seam to the center of the chair even with the back of the front edge roll.

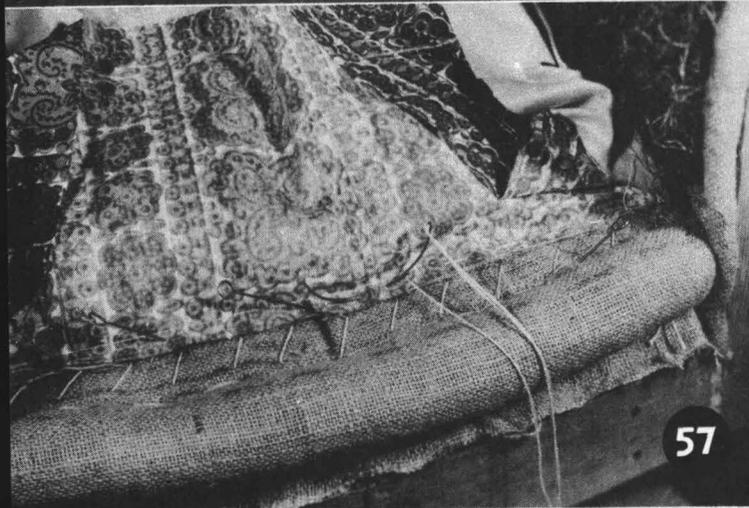


FIGURE 57. Pin and stitch the seam securely to the burlap base with a mattress twine and curved needle.

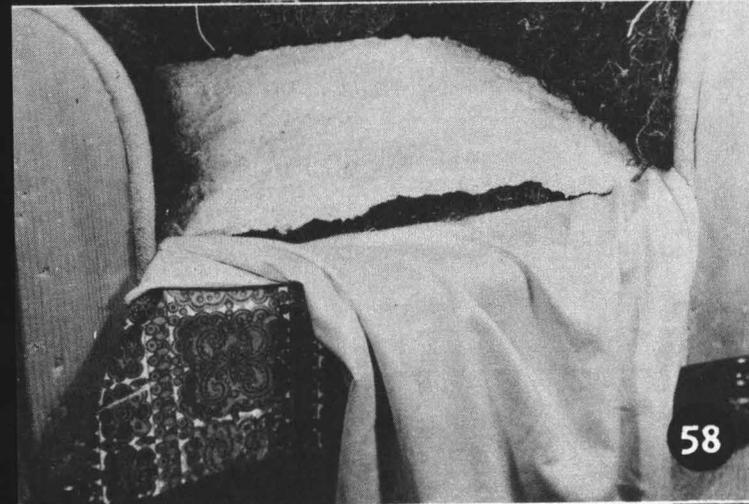


FIGURE 58. Pull the denim cover to the front of the chair as shown. Place a solid layer of cotton felt over the entire seat area. Let it be large enough to extend well over all edges of the seat springs and approximately even with the front stitched seam.

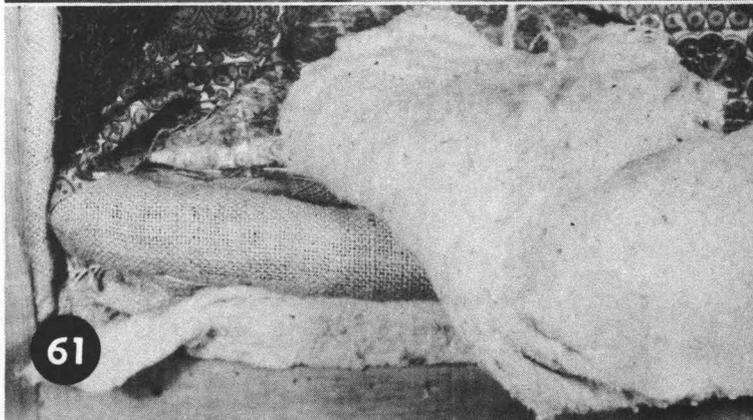


FIGURE 59. Draw the denim through the back opening of the chair as shown. Push and pull the fabric until it is very firm. You will need to watch that you do not pull the cotton felt away from the front of the chair. See that the denim is well stretched in order to firm the padding. Turn under the excess fabric and slip-tack with No. 6 tacks to the tacking rail. Tack first at the center of the back, then at the center of the sides. Finish tacking, always working from the center points to approximately 3 inches from the back corner posts of the chair. Leave the fabric free at the back corners for marking and cutting.

FIGURE 60. Fit the fabric at the back corners as you did for the spring burlap. (See Figures 31-33.) Mark, cut corners in diagonally, then at right angles to diagonal cut. Turn under raw edges and tack down. Place all tacks permanently.



FIGURE 61. Lay the upholstery fabric back over the denim. Cut a heavy piece of cotton felt wide enough to extend from the stitched seam anchored to the burlap at the back of the front roll to the top of the base board. Place this over the front roll. Insert a smaller strip of cotton felt just below the front roll as shown in Figure 61.



Now draw your upholstery fabric forward over the cotton felt. Pull it down firmly and slip-tack the fabric approximately 1 inch down from the top of the front base board. Do not tack the fabric close at the corners . . . let about 4 inches be free here. Check that your fabric is anchored on the true straight grain.

FIGURE 62. Miter the upholstery fabric at the ends of the front spring roll. Fold back the extra material at each corner between the arm section and the side of the seat. This extra material now extending above the seat must be folded together and pinned at each corner as shown in Figure 62.

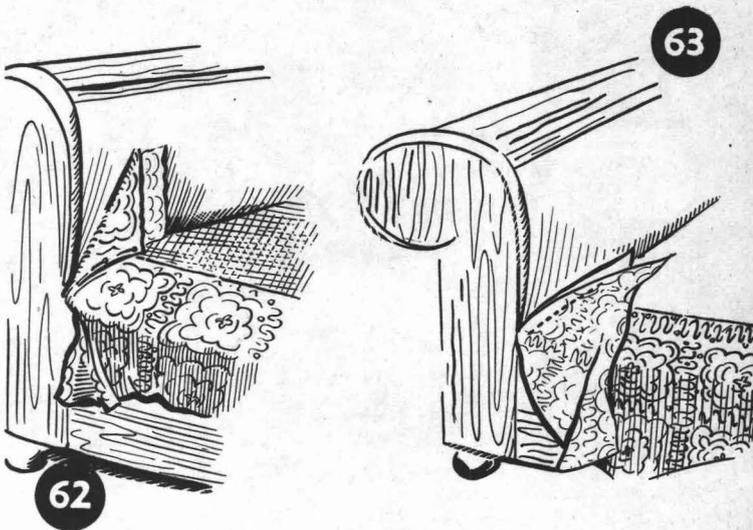
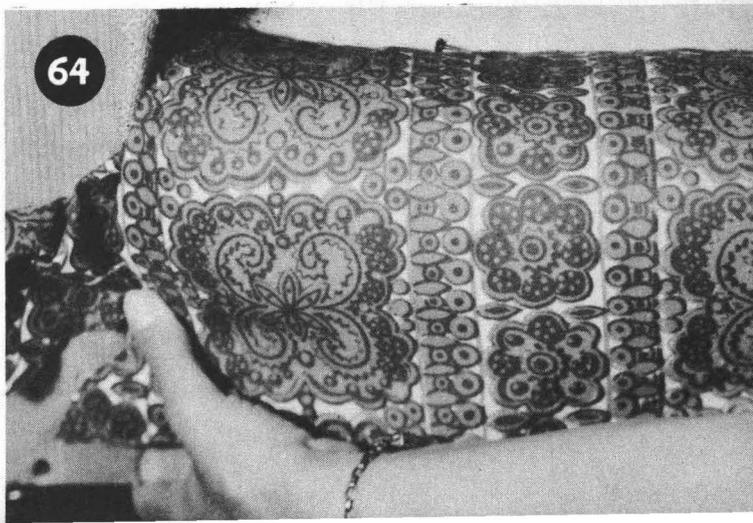


FIGURE 63. Now mark your fitting line, remove the pins, and transfer the seam to the wrong side. Sew and cut away excess fabric if the cover is bulky.

FIGURE 64. Recheck the tautness of your front cover. Tighten if necessary. Mark exact point on each corner where the fabric must divide. This will be where the front base board and the arm post meet. Cut in diagonally as shown. The longer strip is to be pulled back and through the side opening on the chair. If the strip is too short sew on a piece of denim or like material. Pull the strip to the back and slip-tack to the back of the front arm post. Place tacks in permanently after making any necessary readjustments.



COMPLETING THE ARMS AND BACK

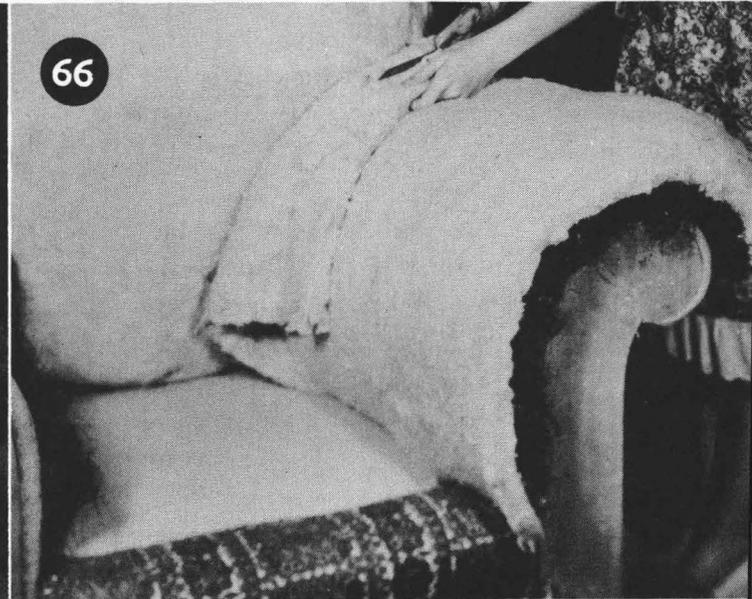
FIGURE 65. Cover the inside and top of each arm with a layer of new moss. Build it to a height of about 2 inches on the inside surfaces, and to approximately 3 inches on the top. Taper the moss slightly at the front and at the back.

Build up a layer of moss on the chair back to an even height of approximately $2\frac{1}{2}$ inches. Work the moss into a compact mass. Cover the entire back area with a firm piece of muslin. Using No. 4 tacks, slip-tack the center points at the top and bottom of the chair. Pull the muslin very taut and continue to slip-tack around it. You will need to slit the fabric at the inside corners of the arm and at the lower

corners. Pull the muslin through to the back and slip-tack along the bottom rail. Do not put in tacks permanently at this time.

You will find it easier to tack on a piece of muslin over each arm following the procedure explained for the back. (The muslin cover on the arms is not pictured here.) This cover helps to firm the moss and will make it easier for you to work out imperfections in the padding.

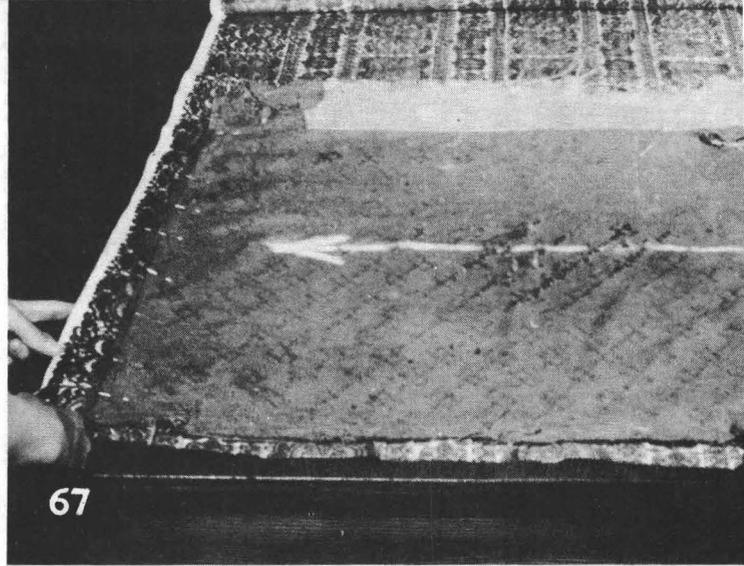
FIGURE 66. Cover the arm with a layer of cotton felt. Trim off the excess around the back arm curve as shown.



YOU are now ready to cut the new fabric for the arm sections. Each arm cover must have 3 pieces — a rectangular section cut 29 x 32 (size will vary with chair), a front facing 31" x $3\frac{1}{2}$ ", and a covered welt or cord approximately 36" long. Using the old pieces as a pattern, cut the new covers one to two inches larger to give you greater ease in handling. Steps in cutting are shown in Figures 67 and 68.

FIGURE 67. Lay out your new upholstery fabric on a large cutting surface. Pin the old arm cover on the true lengthwise and crosswise grains of the new material as shown. Chalk the outside cutting line, allowing a minimum of 1 extra inch on all sides. Cut out. If the padding has been changed on the chair *do not cut slashes in* like the original cover. New padding may easily affect the placement for these slashes. Mark them only with a chalk line. Later check these on the chair before slashing.

If you wish to conserve your material, cut and sew on a piece of denim or similar fabric at the bottom of the arm. This section is used for tacking at the base of the chair and will not be seen.



CUT the second arm in like manner. *If the fabric has a stripe or design, make sure that both arms are cut to match.*

Now cut the front facing by your old pattern, allowing extra for length and ample for a stitching seam.

FIGURE 68. To make the cording, fold a section of your fabric to form a true bias. Cut and mark bias strips $1\frac{1}{2}$ inches wide. Machine stitch the bias strips together. Spread and press all seams.

For any straight lines on your chair the fabric need not be cut on the bias. However, bias is preferred for all curved areas.

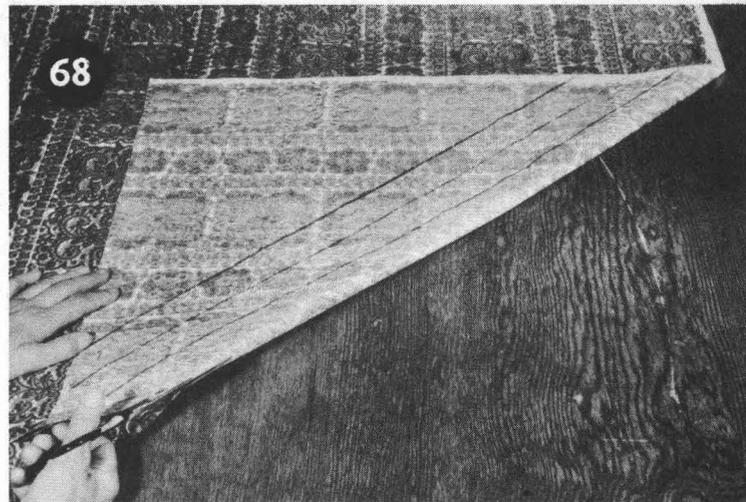
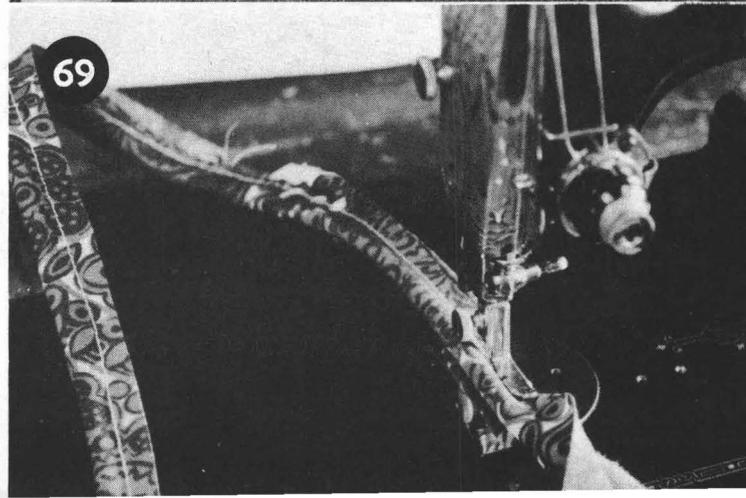


FIGURE 69. Attach a cording foot to your sewing machine. Stitch the continuous bias strips over the cotton-welt cord stitching fairly close to the cord as shown.



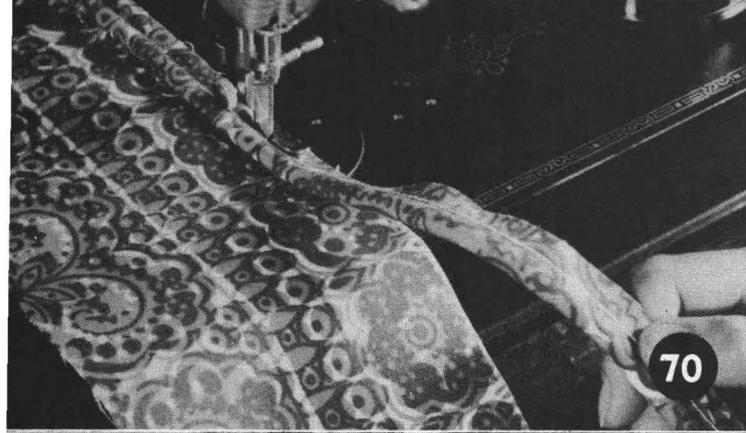


FIGURE 70. Pin and machine stitch the covered cord to the side of the front facing as pictured.

Pin the corded side of this facing to the front of the rectangular arm section. Machine stitch as close to the cord as possible. Check before placing the arm cover on the chair that the cord appears even at all places.

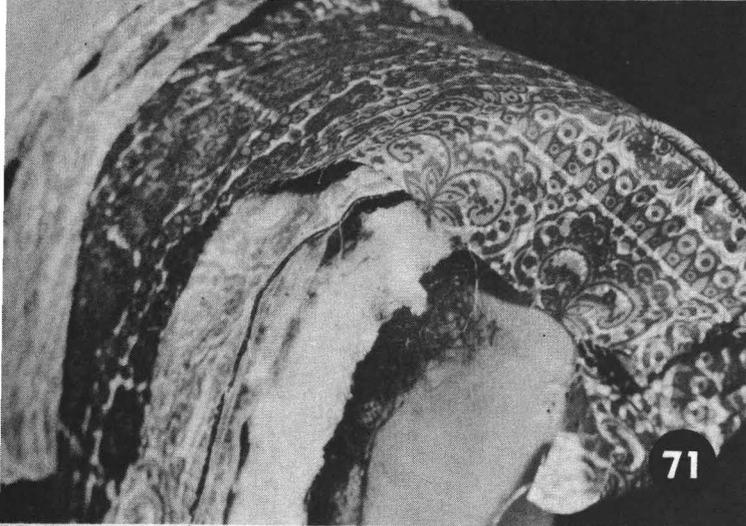
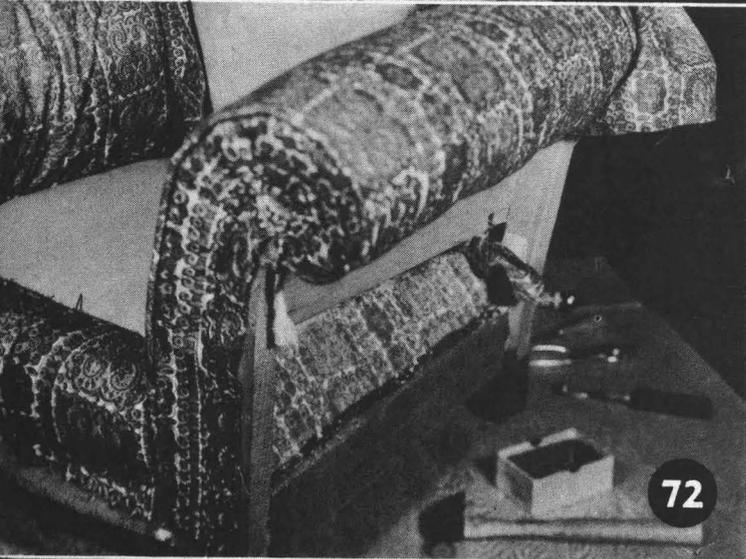


FIGURE 71. Press the piece, if necessary, and place it on the arm of the chair.

FIGURE 72. Begin to tack by slip-tacking the front facing in place. Strive to place the corded section directly on the edge of the arm. Do not attempt to perfect the front pleats at this time. Slip-tack the bottom edge of the cover to the side of the seat frame, and temporarily anchor the top edge to the underside of the arm board.



You must slash the underarm section, slightly back of the front arm facing. The reason for this is that the front facing is tacked to the front of the arm post yet the rest of the arm must be tacked to the side rail of the seat. Slashing the fabric will allow it to fit smoothly around the front arm post.

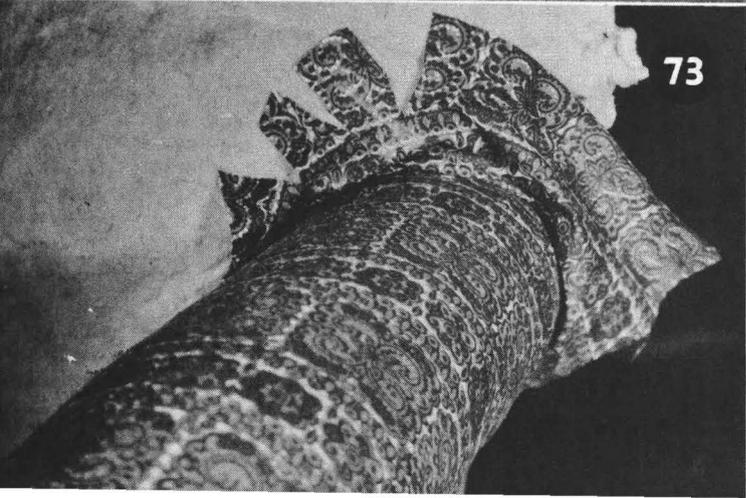


FIGURE 73. Now work the arm cover to the back of the chair. Check the original chalked lines for slashing at the back. Test these on the chair to make sure the fabric will be cut correctly. The inside of the arm must be pulled through the back of the chair as shown in Figure 74. Make any necessary adjustments and slash where needed, taking care not to cut the fabric too deeply. Slash around the upper curve of the arm as shown.

FIGURE 74. Pull the fabric until it is very taut, and slip-tack it to the inside and outside of the rear frame as shown. You may need to add extra moss *under* the cotton felt at the outside back of the arm to get a smooth effect.

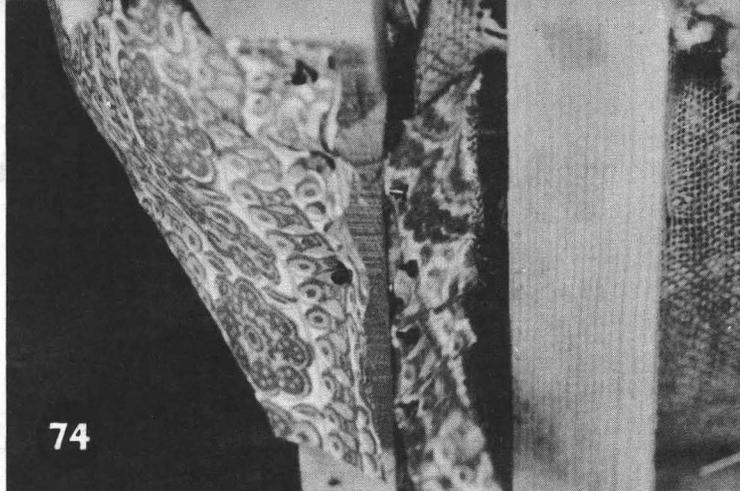


FIGURE 75. If you have used all new padding, it is desirable to let the arms and back stand overnight before placing permanent tacks. This will help to firm the loose padding. Retighten the cover as shown. If imperfections in padding are visible, smooth them out as needed. Add any extra stuffing *under* the solid layer of cotton felting. Now place the tacks in permanently, except along the front facing

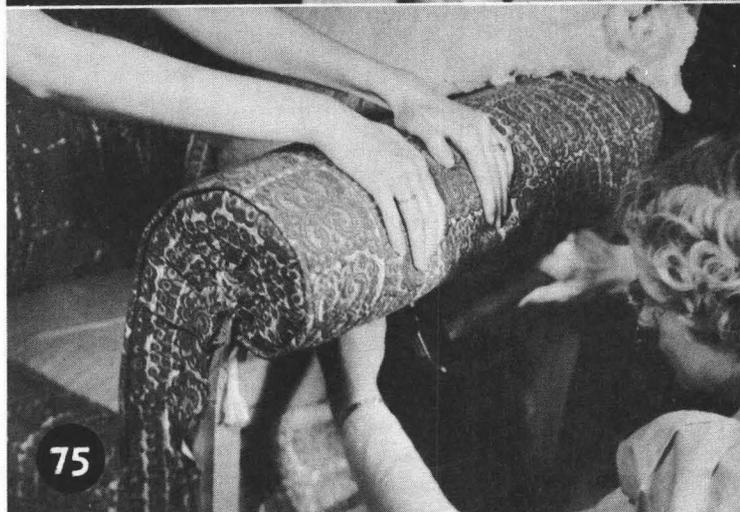


FIGURE 76. Perfect the pleats at the front facing. see that they are turned downward and that they are evenly spaced. Pull each pleat tautly and slip-tack with No. 4 tacks. Place a tack *under* as well as on top of each pleat. When all the pleats are perfected place the tacks permanently.

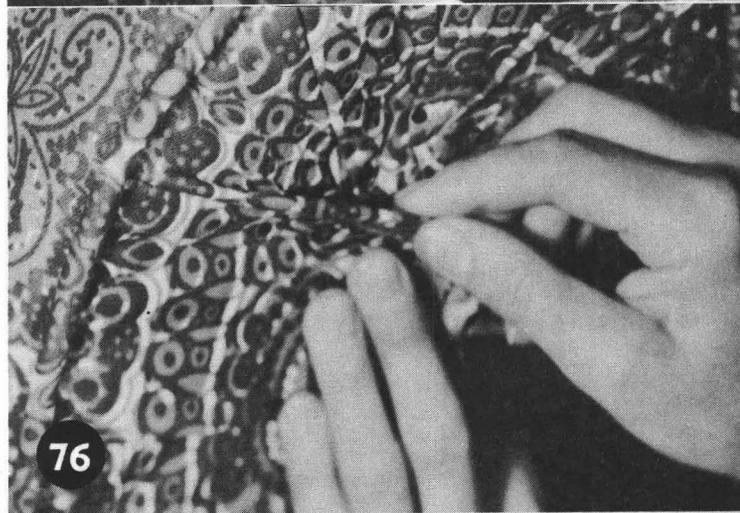


FIGURE 77. The front facing is completed on the one arm.



You are ready now to complete the second arm.

COMPLETING THE LOWER FRONT SEAT SECTION

BEFORE you complete the arm and back construction on the chair, you will need to finish the front seat section as shown in Figures 78 to 81.

Cut a straight piece of your upholstery fabric. This must be long enough to extend from the top to the bottom of the horizontal board along the front of the chair, plus a generous seam allowance at the top and approximately 1½ to 2 inches along the bottom. Let the piece be wide enough to reach from the cut edge of each front facing attached to the arms. *Match any design to the platform fabric.*

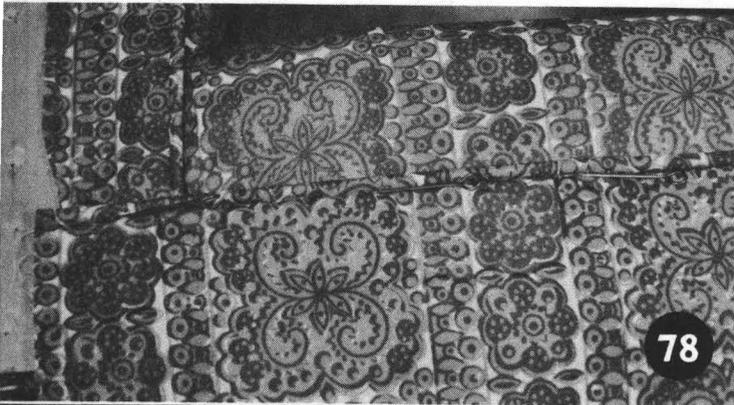
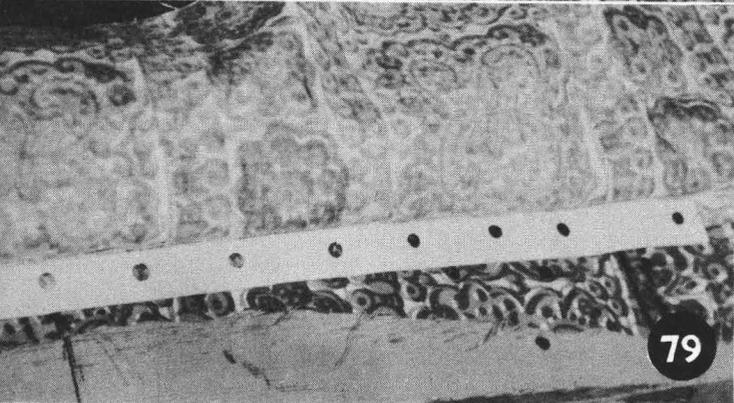


FIGURE 78. Using a very few tacks, tack a strip of the covered welt cording straight along the top of the horizontal board. Turn under a seam allowance of 1/2 or 3/4 inch at the top of the cut straight piece of fabric. Pin it on the right side along the base of the cording as shown. Take special care that the design is exactly matched and that you pin only on the fold of the fabric. This avoids interfering with placement of the cardboard tacking strip (see Figure 79). Make sure that the piece is pinned so that the grain of the fabric is straight.



If desired, the covered cord may be machine stitched along the top of this lower piece of fabric.

FIGURE 79. You are now ready to use the first cardboard tacking strip. Cut a 1/2 inch strip from an 8-ply weight, smooth, poster cardboard, or any similar weight paper. Place the cardboard firmly against the cord and tack at intervals of 1 inch with No. 6 tacks. Place the tacks along the top of the cardboard. Let the cardboard end where the loose front panel will begin.



FIGURE 80. Cut a strip of cotton felt the width of the front base board and place as pictured.

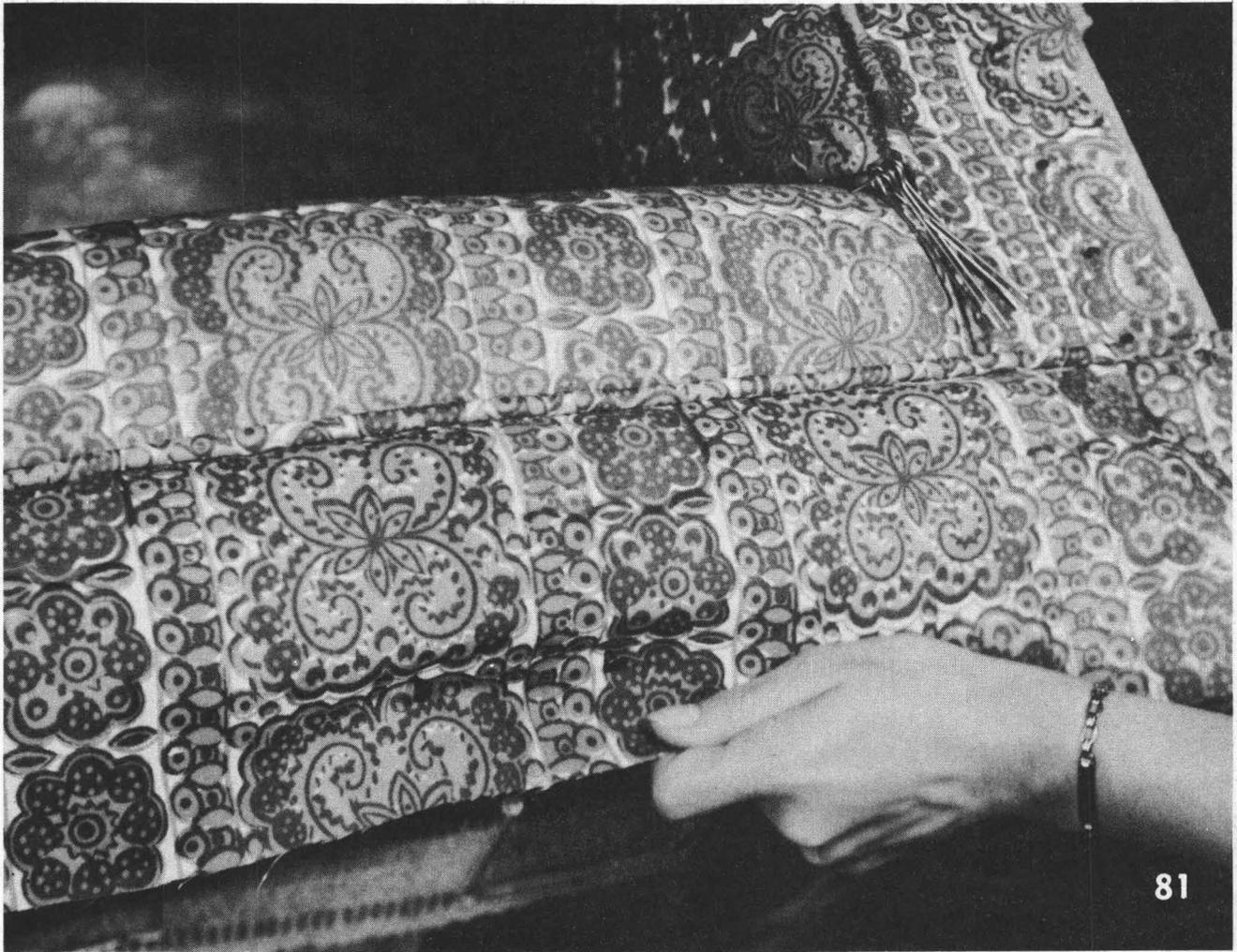
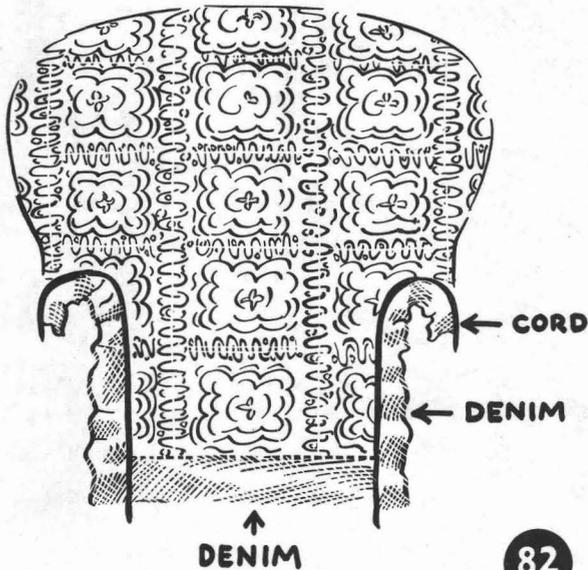


FIGURE 81. Pull the fabric down until it is very taut. Tack it underneath the chair, working from the center to the sides of the chair. Slash the fabric, if necessary, at the corner of each leg before completing your tacking.

THE FRONT OF THE BACK

WORKING directly through the muslin cover on the back, use the regulator tool to work over the padding. Be sure all lumps and hollows are removed.



Then apply a solid layer of cotton felt directly over the muslin cover. Fit it around the curve of the arm. Cut away excess cotton.

Using the old back section as a pattern, cut out the new cover slightly larger than the old one. Again chalk the slashes, rather than cutting them at this time. Be sure to cut on the true straight grain of the fabric, and to match any stripe or special design to the finished front seat piece.

FIGURE 82. If you wish to conserve your upholstery fabric, a separate piece of denim or similar fabric may be stitched to each arm section and along the lower back. These give necessary length for tacking. A covered welt cord may be inserted in the arm seam. Place the cord carefully so that it will be visible from the front of the chair. Construct the pieces as explained for the front arm facing. (See Figure 70.)

Separate arm pieces were not used on the chair which is pictured. The fabric was cut in a continuous piece. This simplifies fitting the arms for the beginning upholsterer.

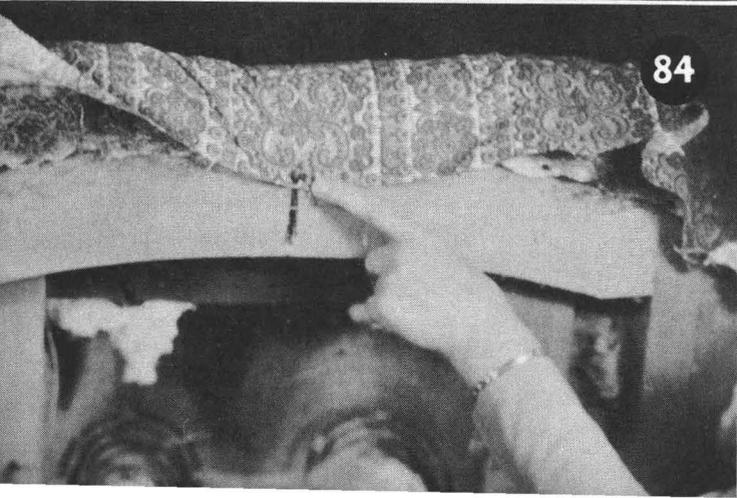
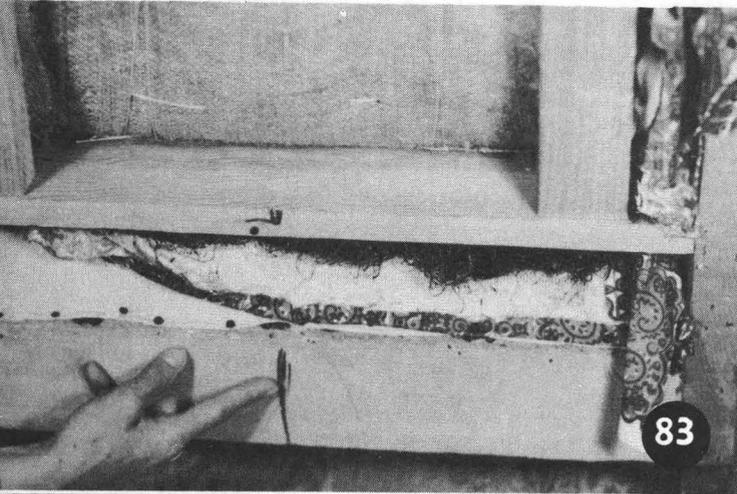


FIGURE 83. Place the new back fabric over the cotton felt. Now release the slip-tacks along the muslin cover, and tack both fabrics together across the lower rail as shown, starting from the center point of the chair.

FIGURE 84. Slip-tack the center points at the top of the chair.

FIGURE 85. With the help of a second person tighten and slip-tack the cover along the upper-back. Your helper should push up on the padding as shown. Do not tack close to arm curve at this time.

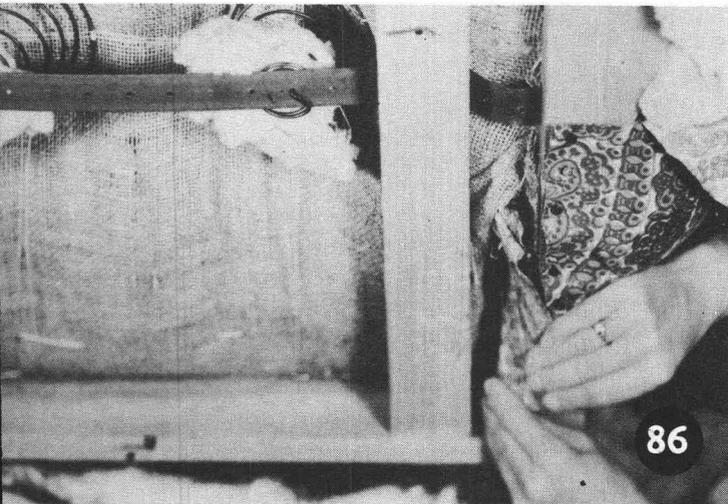
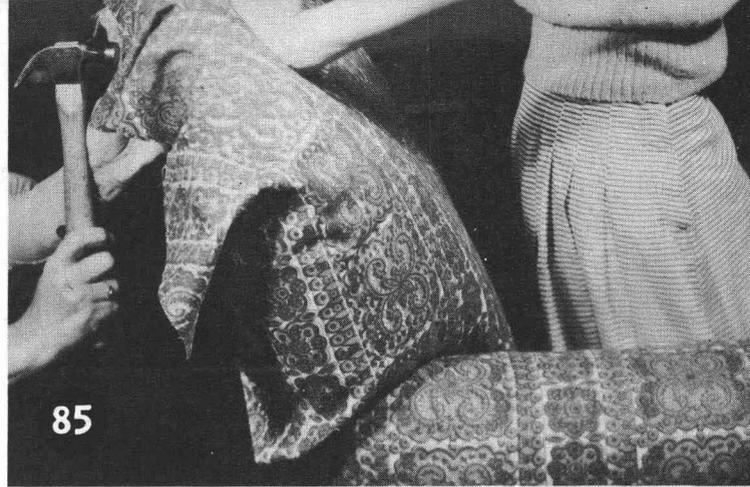
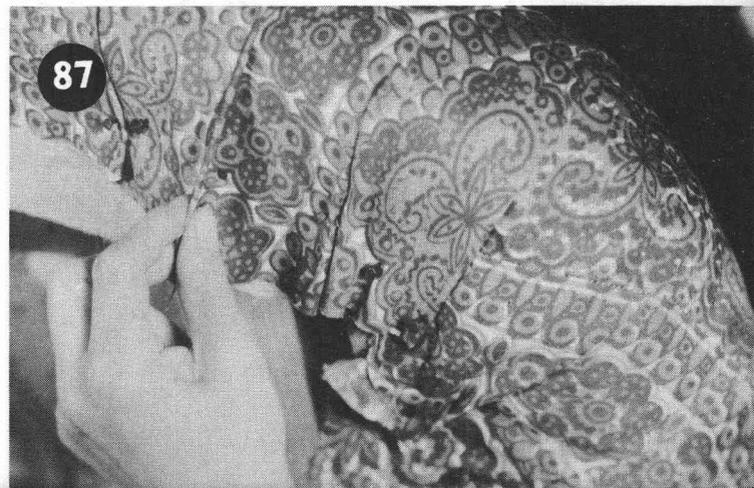


FIGURE 86. Check and slash back arm section as you did for the main arm (explained in Figure 73). If the back padding has not been disturbed you will find it safe to slash this section like your original cover.

Pull the fabric through the back opening. Now fit the back until it is smooth around the entire arm area. Slip-tack along the back side opening. Complete the fitting of the arm and finish tacking the cover to the back. Remember to place the tacks in permanently only *after* all adjustments are made.

FIGURE 87. Work out the fullness over the shoulders of the chair. This is done by laying pleats that face downward. Stretch them out until they are evenly spaced and you have the same number over each shoulder. Pull taut and tack permanently.



THE OUTSIDE ARM COVER

CUT the new underarm pieces on the straight grain of the fabric approximately 1 inch larger than your old cover. Take care that any design matches the arm cover as shown in Figure 89.

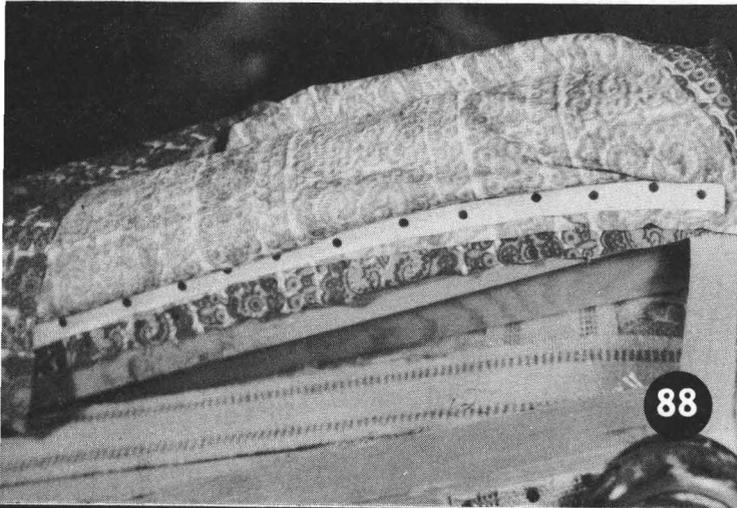


FIGURE 88. Turn under the seam allowance and pin the fabric to the underside of the arm. Use a 1/2 inch cardboard tacking strip for blind-tacking the fabric. Check that the fabric grain is straight when the piece is pulled forward before you tack it down permanently.

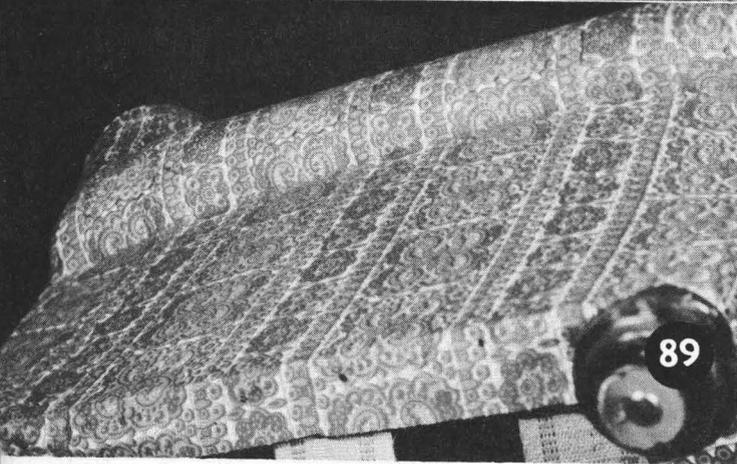


FIGURE 89. Draw the arm lining firmly down in place. Slip-tack the cover on the underside at the center.

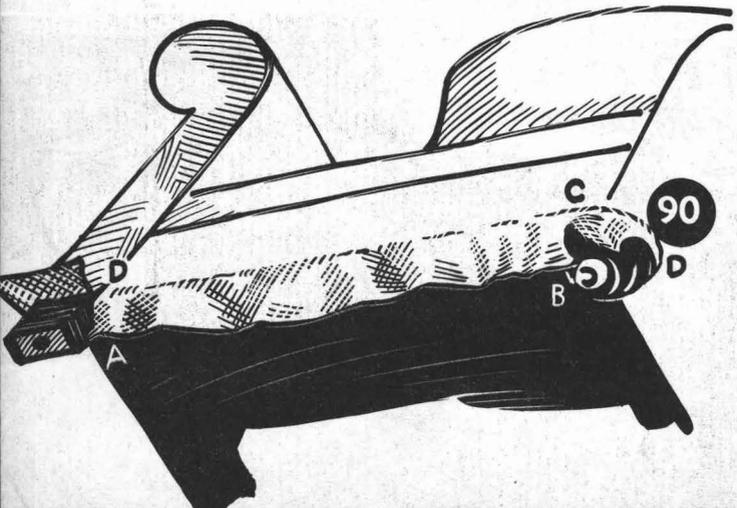


FIGURE 90. Now carefully slit the fabric around the legs as shown. Trim off fabric at C and D to allow approximately 1/2 inch to turn up around each leg. Tack down the cover. If necessary use a few gimp tacks to hold the fabric along the top of the legs at C-D. The fabric at A and B is drawn under the chair before tacking. Tack the cover at the front of the frame in like manner.

COMPLETING THE BACK

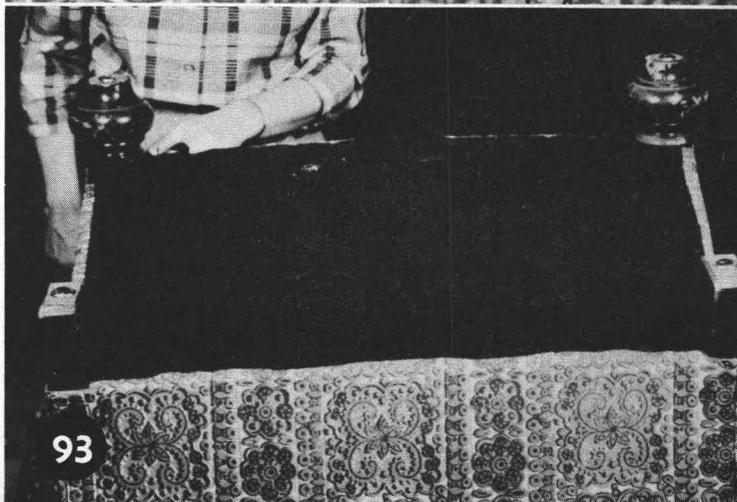
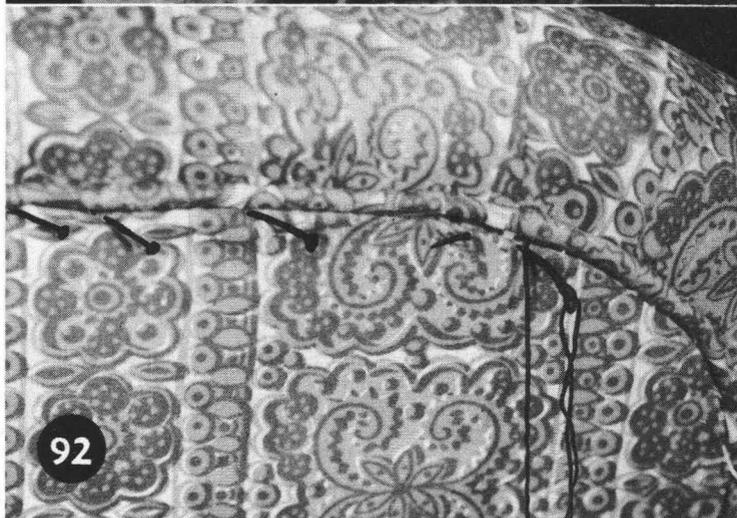
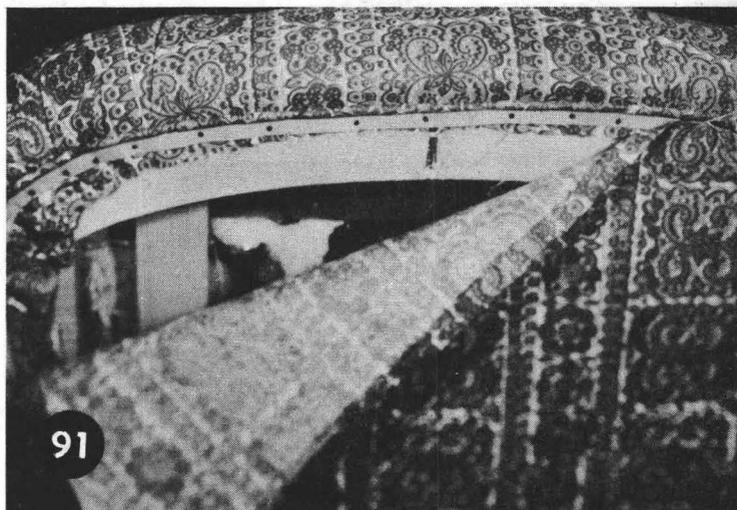
Cut the new back cover matching any design at center points.

FIGURE 91. Pin on a continuous strip of covered welting around the entire back area. Place a 1/2-inch strip of cardboard over it and tack as shown.

Anchor the back piece securely at the center points, top and bottom. Turn under the raw edges until the fabric grain hangs straight. Avoid fullness on the curves by cutting away any surplus material.

FIGURE 92. Blind stitch the back to the corded line with a strong sewing twine and curved needle, or tack it with gimp tacks.

FIGURE 93. Tack back cover along the underside of chair. Cut and finish the fabric around the legs as shown in Figure 90. Tip the chair, and tack a black cambric dust cover to the bottom of the seat frame as shown.



COVERING AND ATTACHING THE LOOSE WOOD PANELS

CUT two identical pieces of the cover 1 inch larger than the wood panels. Lay a *very thin* layer of cotton felt over the face of each panel, ending it at exactly the outside edges of the wood. Place the panels face down, on the inside of the panel cover. Pull the fabric over until it is very taut, and tack in place with No. 2 tacks. Cut fabric at the corner until it fits smoothly.

FIGURE 94. The back of the completed front panel ready to be fastened to the chair.

Insert a regulator through the cover in the front of the panel at 2 or 3 different places. Turn the regulator to make an opening between the threads of the fabric. Now, remove the regulator carefully and insert small-headed nails (brads).

FIGURE 95. Place the panel accurately on the chair. Note that the outside edge of the panel is even with the side and bottom of the chair. Drive the brads in firmly. Again use the regulator to pick back the threads of the fabric, as shown in Figure 95. This will conceal the spot where the nails entered.



THE CUSHION *

Renovating the Old Cushion . . .

Repair the cushion springs if the cushion appears to be lumpy. Usually the old springs and cotton padding may be used again after they are cleaned and straightened. New cotton at the top, bottom, and sides may be necessary.

Open the cushion cover and remove the filling.

Cut cover and seam lines so the old cover may be a guide in cutting your new one.

Remove the springs. Straighten any crooked or bent ones and arrange them in rows. Be guided by the imprint left on the inside of the cotton padding for correct arrangement and the number of rows used in the original cushion.

FIGURE 96. Measure across the widest part of the coil with a firm tape measure or ruler. Proceed as shown in the following example:

Width across widest part of coil . . . 3 inches
Add 1 inch for seam 4 inches

Add 3 inches for boxing 7 inches
Double this amount 14 inches

Fourteen inches is the width of the muslin strip needed for each row for this particular size of spring.

Tear enough similar strips to make the required rows of pockets.

FIGURE 97. Fold torn edges of the strip together and stitch in $\frac{1}{2}$ inch from the selvage on one end. Measure across the widest part of the coil again and add $1\frac{3}{4}$ inches. Pin a seam this width parallel to the selvage. Now flatten the spring and slip it into the pocket you have just made. Pin pocket closed with a seam 2 inches from the raw edge.

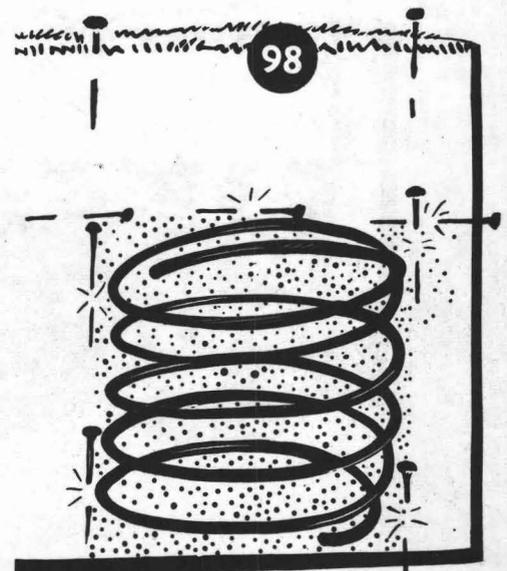
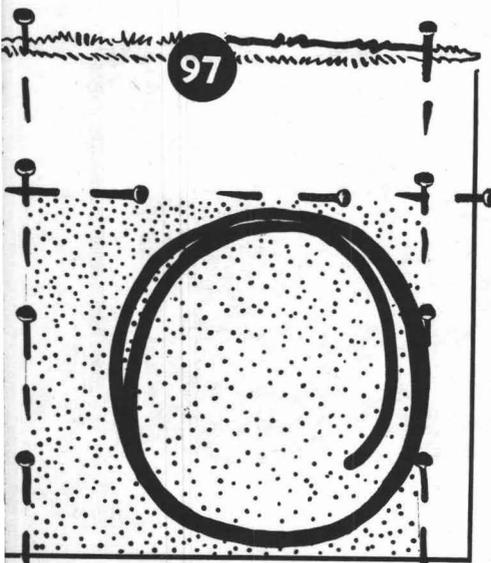
FIGURE 98. Turn the spring inside the pattern pocket. Let the spring stand $2\frac{1}{2}$ to 3 inches high. Re-pin the top seam of the muslin as needed until the height is correct.

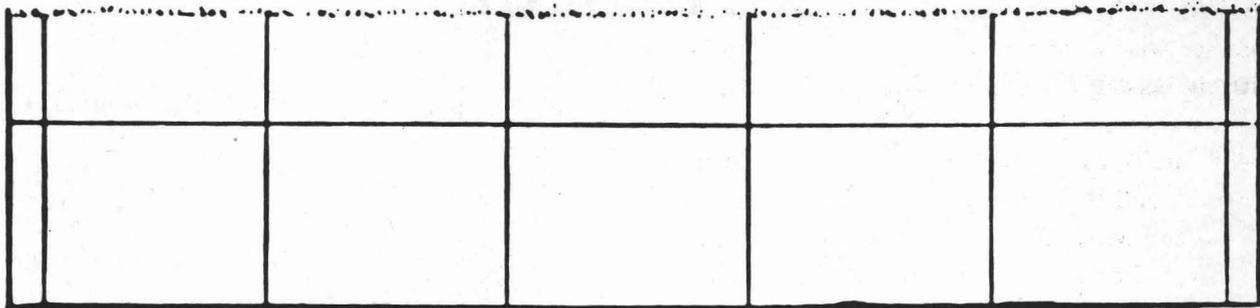
Let the spring sides touch the pocket easily. If it is too tight and stretches against the wire, it will cut the material. If the pocket is too loose the spring will tend to turn in the pocket. Reset the pins until the spring remains in the correct position.

Remove the pins along the top of the pocket and take out the spring. Reset pins along the side seam so they follow the thread of the goods.

Remove the pins along the top of the pocket and take out the spring. Reset pins along the side seam so they follow the thread of the goods.

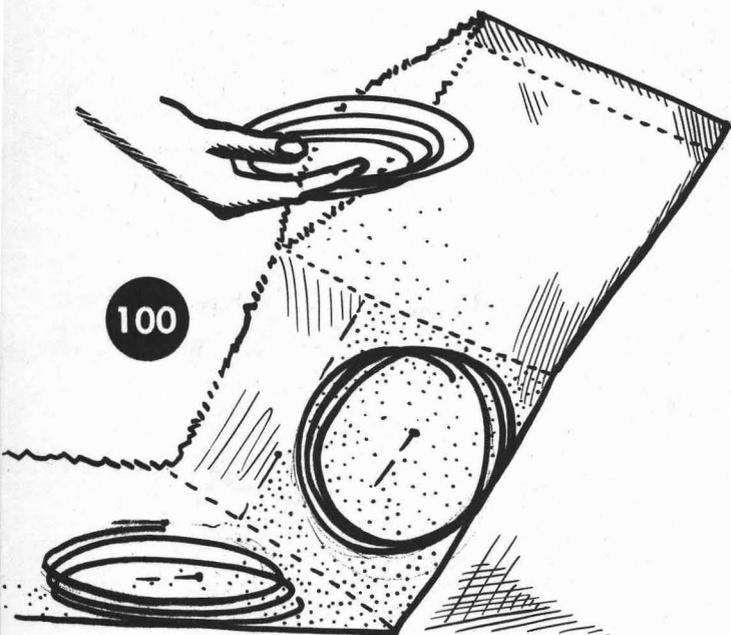
* For parts of this section the author is indebted to Lois A. Lutz, author of "Renovating Innerspring Cushions," Oregon State College Extension Bulletin 643.





99

FIGURE 99. With a pencil and ruler mark along the pins. Now remove the pins. Make a measure guide and mark all the pockets required in each pocket strip. Leave all pockets in a series with one row of stitching to separate each two pockets. Follow the thread of the fabric when marking and stitching.



100

FIGURE 100. Fill all the pocket rows. Crush a spring and slip it as far into a pocket as possible. Place one pin close to the spring and one pin in the center to hold each spring in place until the pockets are stitched closed. Pin all of the springs in place. Stitch pockets closed along the line marked, 2 or more inches down and parallel with the torn edges of the pocket strips.

FIGURE 101. Remove the pins and turn each spring around inside its pocket. The filled rows will seem much shorter. They should be firm and straight.

Arrange the completed rows into a unit with all the 2 inch seams up (see Figure 7). This will be the top side of the unit. Clip seams to 1 inch.

101

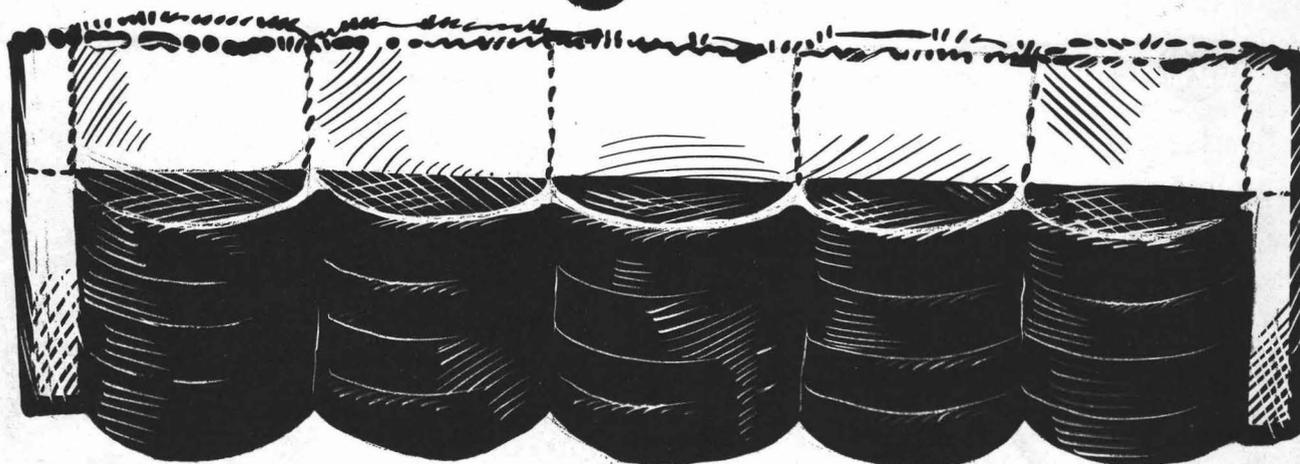
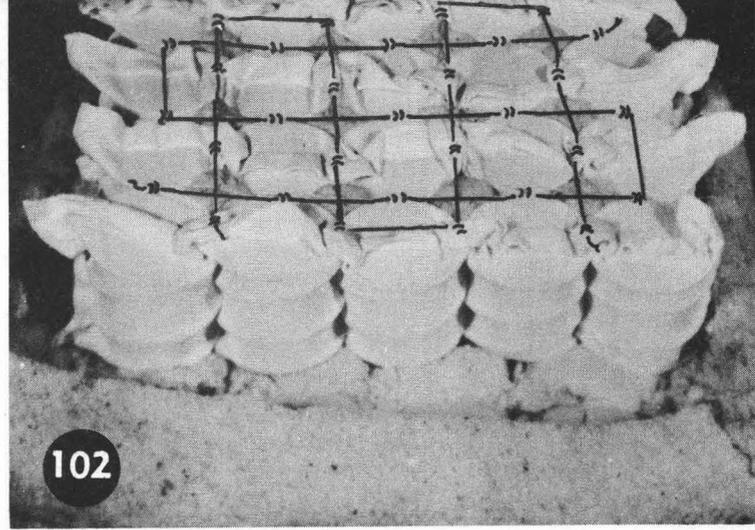


FIGURE 102. With twine or warp sew the rows together with a curved needle, a sack needle, or a darning needle. Sew with a short stitch, taking up the top wire in the two rows that touch. Pass the needle under each wire, draw up the thread until it is taut, and tie it firmly. Now make a stitch over the two top wires. Draw the stitch rather tight, then sew two stitches over the top wires in adjoining springs. Continue along the row to the end.

For the other rows, make a long stitch across the top of the spring to the new two rows, and sew back. Continue until all rows are sewed together. Sew in opposite direction so the springs may be held in position.

Turn the unit over and sew the rows together the same way. Tuck a small ball of cotton in each space formed between the springs. This will help to prevent the springs from overlapping.

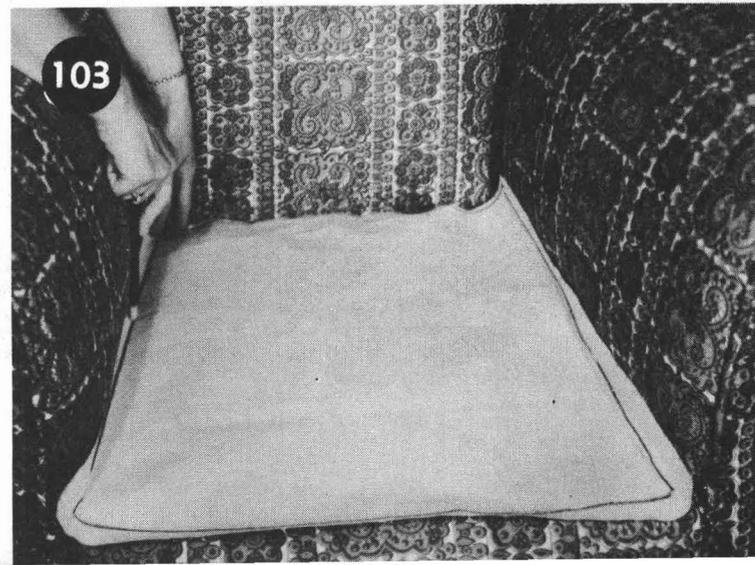


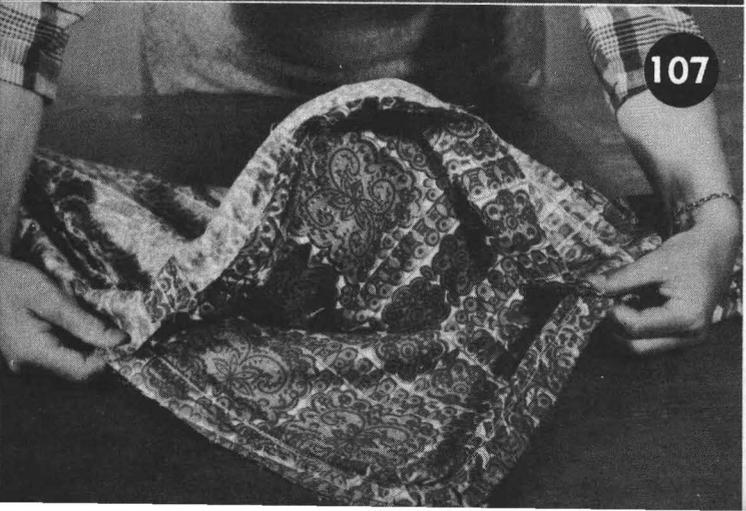
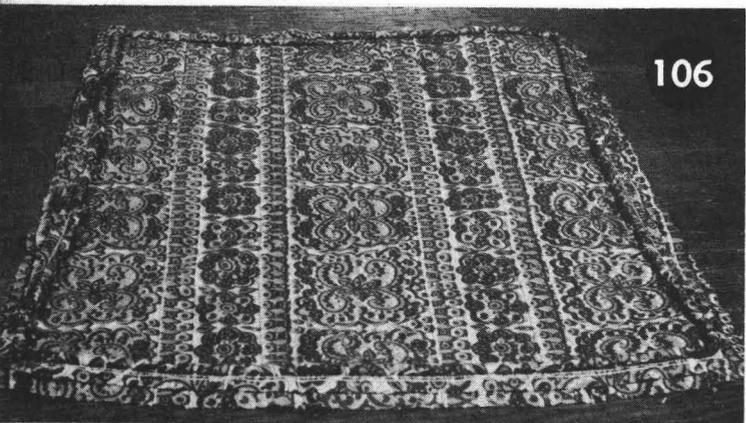
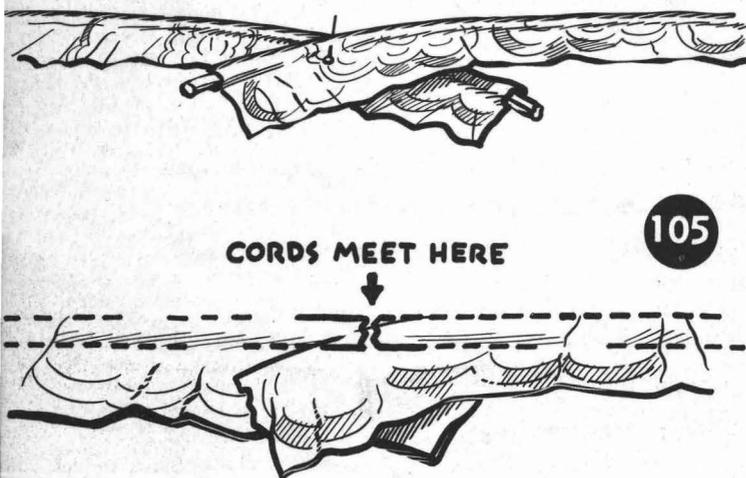
The cushion inner-spring stitched in muslin pockets, with cotton felt on the bottom and sides. The size of the inner-spring should be about 2 inches smaller than the outside casing, to allow for the cotton along the sides.

Place cotton over the top of the springs, and reinforce the stuffing in the corners as needed. Place any moss or hair used in the original cushion *under* the solid layer of cotton felt.

FIGURE 103. If all new padding has been used in repairing your chair, do not cut the new cushion casing (cover) by the old one. You may find that the size of the cushion will vary slightly with the change in padding. It is safe to cut your new cover by the old one if the padding in the arms and back has not been disturbed in any way.

Using a firm paper, mark the cushion top for shape as shown in Figure 103. Now, use this pattern, allowing ample for seams, to cut your new cover. *Match any design to the back and front seat section.* Lay the fabric piece in the chair, and chalk the exact new stitching line. Cut the cushion boxing the width of the original one, adding a seam allowance.





Re-covering the Cushion . . .

FIGURE 104. Make and apply a covered welt cord to the top and bottom sections of the cushion following steps given for the arm construction (Figures 68 to 70). Place the final stitching line on the cord *exactly* over the chalked stitching line on the cover. A variation here will effect the final size of the cushion. Clip the corners as shown.

FIGURE 105. To avoid bulkiness do not let the cord overlap and extend down into the seam. With a pin, mark the point where the cord should meet at the back. Measure the length of each cord extending beyond this point. Now pull the cord out from the bias cover. Measure and cut it back to the pin so that the cords will just meet.

Seam boxing strips together and press the seams open. Avoid placing any seams along the front of the cushion. Match any design along the front boxing.

FIGURE 106. Smooth out the fabric. Let the raw edges of the bias strips extend down into the seam as shown.

The cover is ready to be applied to the boxing.

FIGURE 107. Match the four center points of the boxing to the cover as shown. Pin and baste the boxing to the cover, working from the center to the corners. Ease any extra fullness around each corner.

FIGURE 108. Machine stitch the boxing very close to the cording. Trim off any excess fabric until the seams are even.

Stitch the boxing to the bottom cover along the front and around each front corner. Leave the two sides and back open to get the cover around the loose padding. Restitch close to the cording around this loose section if the cording seems loose.



FIGURE 109. Place the spring unit in the new cover, taking care not to tear the cotton.



FIGURE 110. Turn down the seam allowance along the loose section of the boxing. With upholstery pins, close the cover as shown. The cover should fit snugly.

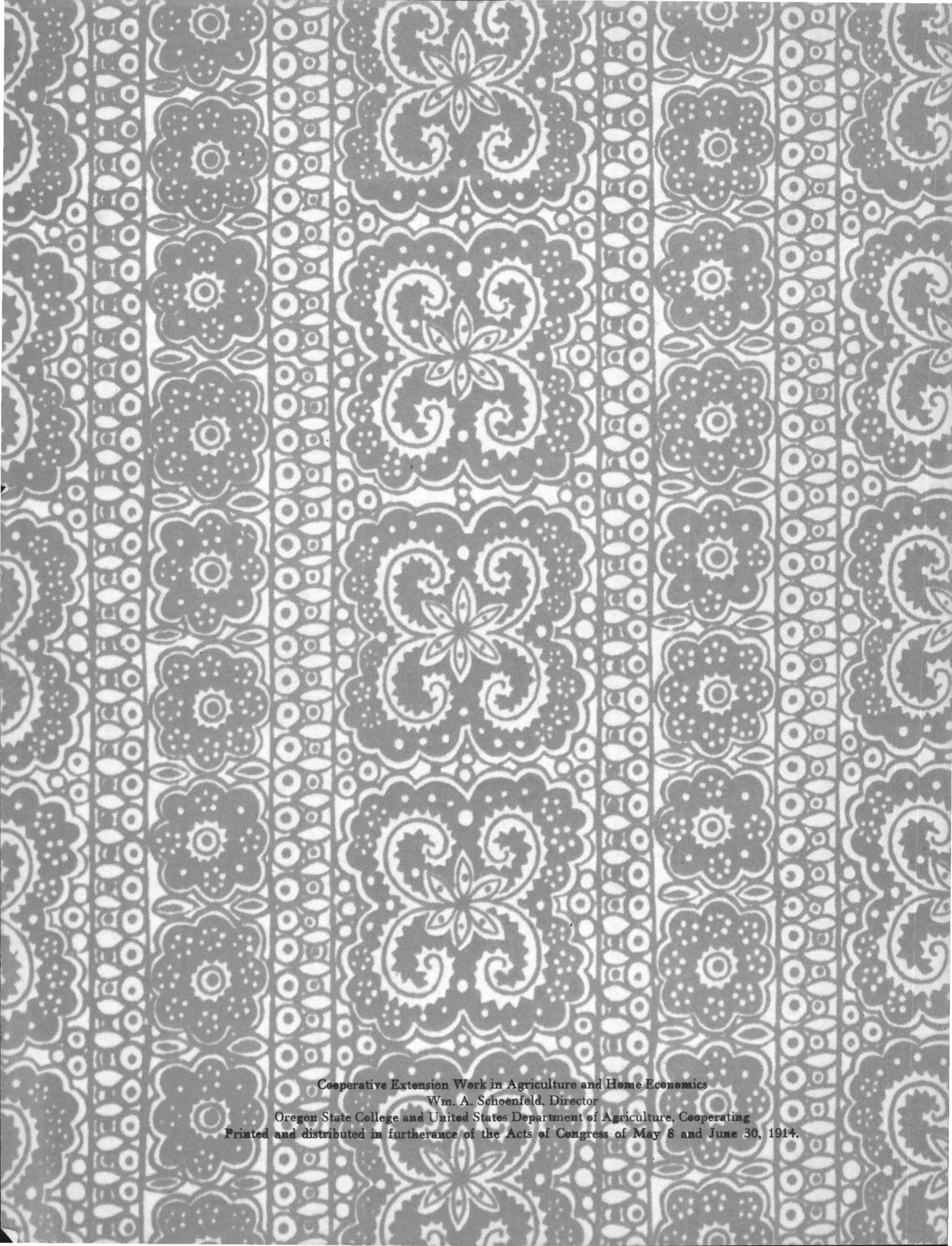


FIGURE 111. Place the upholstery pins 1 inch apart, easing in any fullness at the corners. With a curved needle and strong thread, sew with long slanting stitches.





FIGURE 112. The completed chair.



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