

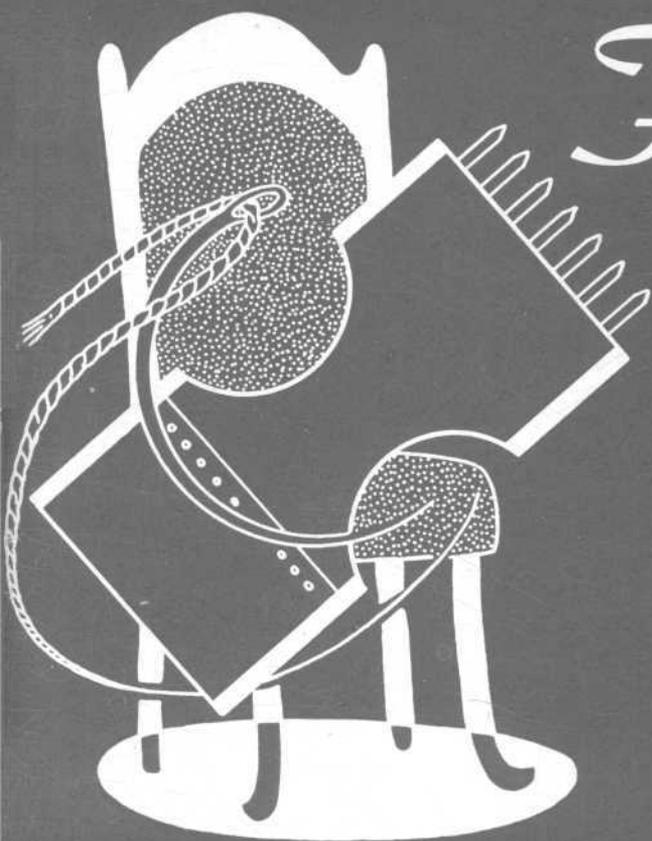
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Furniture Repair



● **Circular 136**

For Reference

	Page
Know What You're Doing.....	3
Select Your Tools.....	4
Begin With the Frame.....	5
Webbing Comes Next.....	8
Repair the Inner Springs.....	10
Grade Your Work.....	16

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Furniture Repair

By Grace Ryan
Home Management Specialist

Know What You're Doing!

Is your furniture worth repairing? Make this decision before you begin work.

Have you patience in abundance? Make this decision, too, before you pull the first old tack from a piece of furniture!

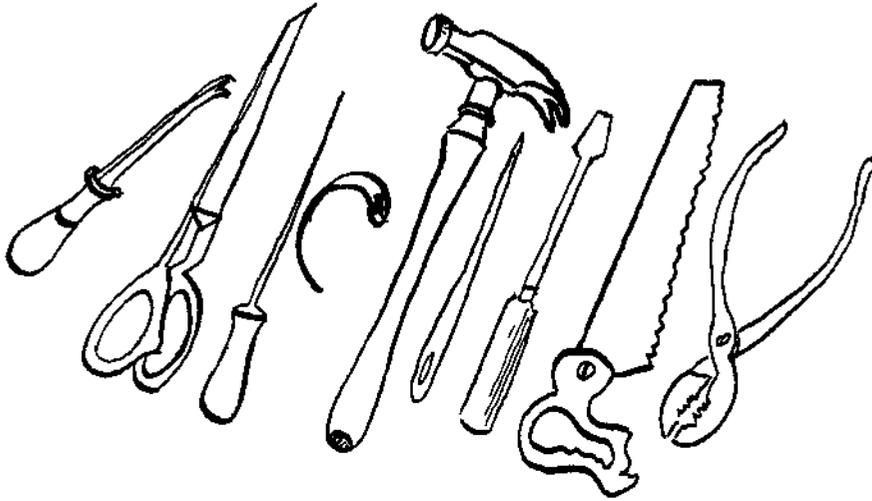
Inspect the article thoroughly to determine whether the repair and finishing require more time and effort than you can spare. Examine the outside—the legs, the rungs, the frame. Note the condition of

the wood, itself.

Do not overlook the "inside" portions of the furniture—the section that contains the springs, padding, webbing. Is it beyond repair? What parts can be reused?

If, after this inventory, you decide that the wood, frame, and interior parts are sound, you may safely begin spring repair, padding, and the general foundation work for slip-covering or upholstering furniture.

Illustration 1



These simple tools are needed for home repair of furniture

Select Your Tools

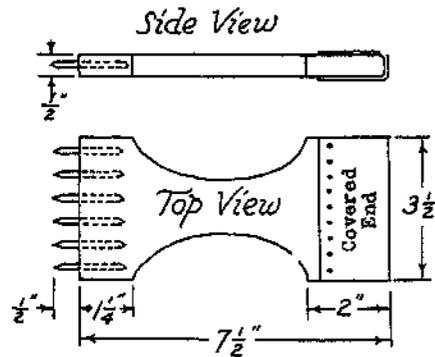
Expensive tools are not necessary for home repair of furniture. Most of them are found in the average home. Refer to page 6, Arizona Agricultural Extension Service Circular, No. 157, "Reupholstering a Chair at Home," for a good general list. (Also see Illustration 1, above.)

An ice pick can take the place of the "regulator" mentioned. With the pick you can lift and shift paddings, and regulate smoothness even after the muslin cover is in place.

You may wish to make, rather than buy, a webbing stretcher. Or you may prefer to use a pronged ice-shaver, with the prongs blunted, to do the stretching job. Some tool of this type is needed for a firm webbing job.

Make the stretcher by shaping a piece of $\frac{1}{2}$ inch wood as indicated in Illustration 2. Make the hand-

Illustration 2



You can make a webbing stretcher.

hold fit your palm comfortably. Drive ten-penny nails into one end. Cut the heads off, and file the ends into tapering points.

Cover the other end with a strip

of old felt, heavy woolen cloth, or old leather. This will protect the wood of the furniture and keep the stretcher from slipping under pressure.

Begin with the Frame

Begin your work by repairing the frame of the piece you choose to work on. A rickety furniture frame will ruin the best upholstery job.

Attempt only simple furniture repair at home. Legs, rungs, spindles, and arms with diagonal or lengthwise breaks or cracks can be glued. Find a workman with experience and tools to repair damage on the "cross" grain in woods. Take time to do good frame repair.

Remove Old Covering

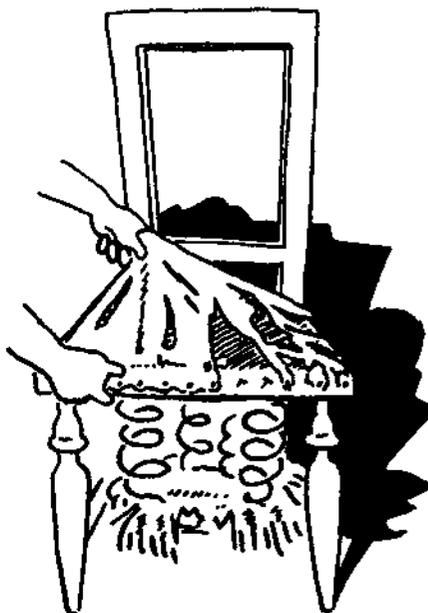
Remove old covering materials and padding. (See Illustration 3.) Save the old pieces for patterns for new parts. Strengthen weak parts of the frame of the piece by gluing, bracing, and repairing rungs.

Sort and inspect all discarded padding. Save the usable parts. Cotton, moss, and fiber paddings are usable if there are parts not matted, worn, or torn.

Such material is most serviceable when used for the under-surface layers of padding, to be smoothed

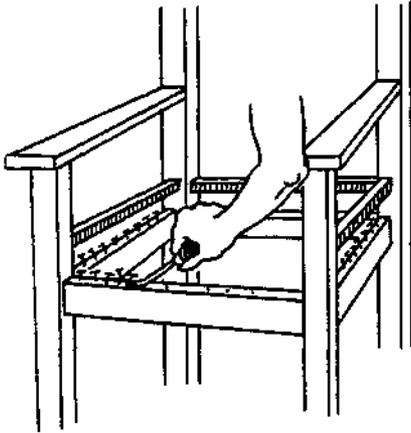
by a good layer of upholsterer's felt or comforter batting. Treat old materials with insect spray before reusing.

Illustration 3



Remove old material.

Illustration 4



Remove old nails and tacks.

Remove all old nails and tacks. (See Illustration 4.) They hinder the worker and make it impossible to do a smooth, satisfactory repair job. New nails must have a firm footing.

Do Gluing Work Carefully

Remove all old glue from broken parts. This is important. Scraping or chipping disposes of the thickest parts. Warm vinegar will loosen and dissolve the remaining glue. After using vinegar, rinse the wood and dry it thoroughly.

Wood to be glued needs open pores to absorb new glue. Open the pores by swabbing the parts in warm water. Dry well before gluing.

Take Up Slack on Worn Rungs

Joints in furniture may have holes worn too large for a good repair job. If the end going into the hole fits loosely, glue strips of cloth over the end to take up the slack.

"Flow" new glue around this padded end and into the hole. Clamp and let glue dry.

Repair Small Cracks

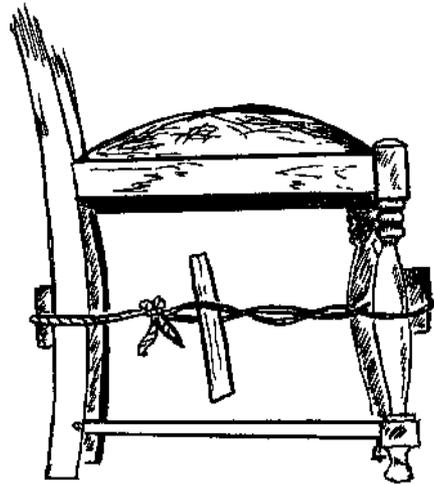
Force slight cracks open with small wedges of wood. Use care in order not to split the crack farther. Work the glue into the opened crack by using a slim stick or small brush. Take the wedges out and clamp the wood to dry.

All gluing processes require pressure at the point of repair. Use wire, clamps, rope, or sash cord with a spike or round stick for a tourniquet. Always protect the wood where pressure is applied. (See Illustration 5.)

Use Right Kind of Glue

Good furniture glues need to penetrate the pores of wood. There are several kinds and many trade names. As an amateur, you will

Illustration 5



Gluing requires pressure at point of repair.

have best results from a ready-prepared glue, rather than from animal glue soaked many hours and simmered in a double boiler.

Know the classes of glue. A reliable merchant will tell you about good grades and uses. Here are a few classes:

Fish Glue—Strong, ready mixed, and easy to use. Use cold.

Casein Glue—Made of milk products; strong and quick to harden. Discolors wood. Use cold.

Plastic—Resin glue; strong, easy to use, waterproof; does not dry out easily.

Cements—May be good for small areas but not strong enough for heavy pieces. Does not penetrate wood.

Brace the Framework

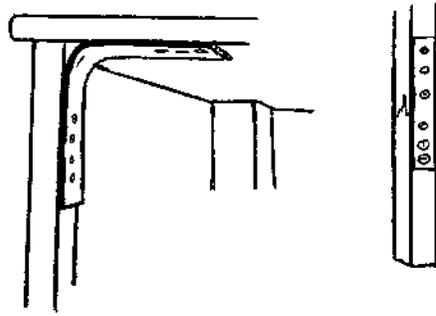
Bracing furniture can be done by the use of screws, angle irons, lengthwise metal strips, rung fasteners, and wooden blocks.

Decide what parts of the furniture will support screws and what size of screw is needed. Add "grip" to the screw by drilling the hole and filling with tile cement or plastic wood. Allow the filler to dry before inserting the screw.

Set screws at least $\frac{1}{8}$ inch below the surface. Fill this head-space with the cement or plastic wood. Allow the mixture to harden—then sandpaper it level with the surface. Stain or otherwise color the spot to match the furniture finish.

Place a bracket or angle iron at the point where chair legs meet the back and seat. (See Illustration 6.) Screw securely to the seat and leg

Illustration 6



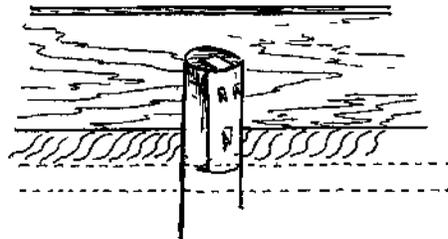
Left is shown a bracket or angle-iron brace on a chair leg. At Right, a metal strip mends a broken chair leg.

which needs bracing. Cover iron with enamel or varnish to match the color of the wood if the brace is not hidden by upholstering material or a slip cover.

Rung fasteners are small metal disks with grip teeth which penetrate the wood when the rung is forced back into place. Place them with the metal lip "A" resting on the top of the rung. (See Illustration 7.)

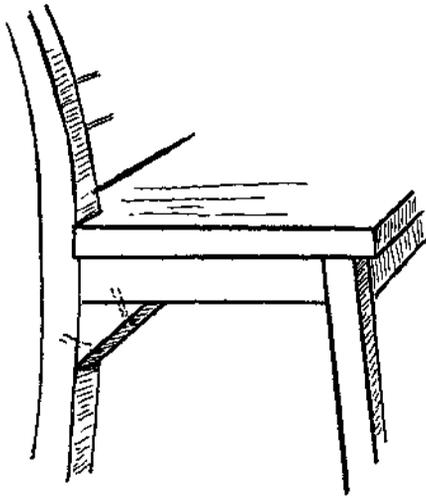
Force the loose rung into the socket of the chair and tap into

Illustration 7



The rung fastener tightens chair rung or leg by means of pressure on metal prongs.

Illustration 8



A chair leg can be braced with a wooden triangle.

place. The metal prongs (Illustration 7) will be forced into the wood of the socket, thus holding the rung in place.

Chairs are braced very satisfactorily by triangles or blocks of wood placed at the angle where the

leg of the chair meets the chair seat and back. (See Illustration 8). These are stained the color of the chair and screwed or nailed into place.

The block varies in size, but is usually a triangle $\frac{3}{4}$ " to 1" thick, and 2" x 2" on its bracing length. It should be of firm hardwood if possible.

Treat the Wood

Old furniture wood usually is scarred or soiled from use. Shabby wood detracts from the finished piece and will leave you with a feeling of dissatisfaction no matter how cleverly you have remodeled and upholstered it. Add the finish to the wood before upholstering.

Check methods of wood care and finishing in Agricultural Extension Service Circular 149, "The Finish Counts." You can produce either a "restored" old finish or create a modern one before you begin to place fabrics.

Webbing Comes Next

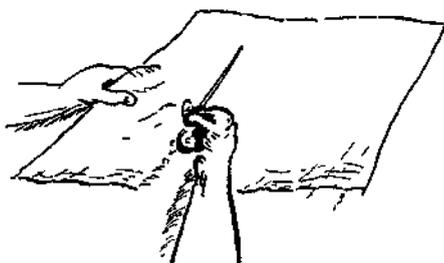
Webbing may need repair or may have to be completely replaced. It can be bought or made.

To make webbing, select strong pieces of burlap sacks, strong denim, or canvas strips. They provide good service if cut and stitched correctly as shown by accompanying drawings. (See Illustrations 9 and 10.)

Cut Strips

Cut strips from homemade webbing (See Illustration 9) 9 inches wide and long enough to replace the ones already on the seat or back of the chair, plus 4 to 5 extra inches in length to provide a grip when stretching webbing, and for a tacking allowance as well.

Illustration 9



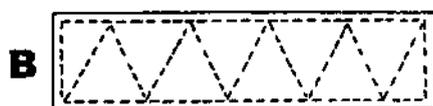
Cut burlap strips for webbing.

Make the Webbing

Fold strips lengthwise to make a finished strip 3" wide and three thicknesses, with a raw edge on one side.

Quilt the strips in 2-inch squares on the machine (Illustration 10-A), or stitch along the edges and diagonally. (Illustration 10-B.)

Illustration 10



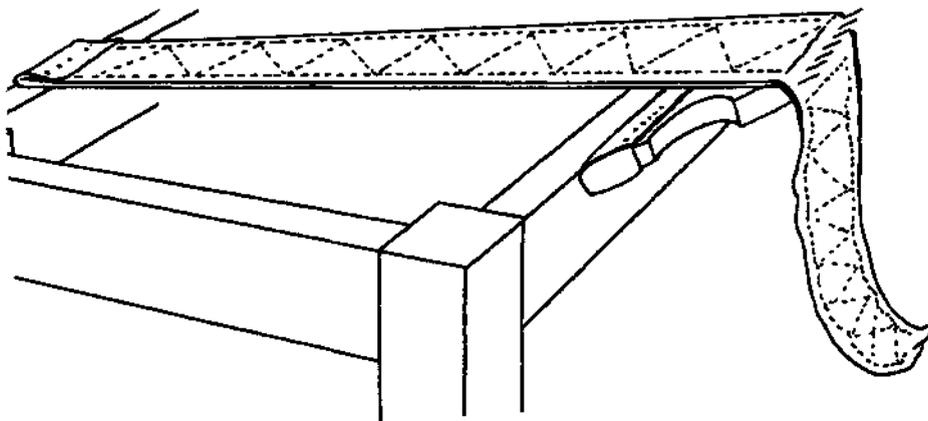
Quilt or stitch the strips.

Stretch the Webbing

Consult your upholstery book (Circular 157, "Reupholstering a Chair at Home.") for pictures showing how to place and attach either commercial webbing or homemade strips.

Stretch webbing strips, as shown in Illustration 11, and tack securely. Attach with 3 tacks through one thickness; then with a second row on the folded edges, using 4 or 5 tacks in the second row. Folded end of webbing should be 1/2 inch back from the outside of the frame.

Illustration 11



Stretch the webbing strips.

Repair the Inner Springs

"Seat" the Springs

Springs are repaired by "seating" them on *webbing*, on *wood*, or on *metal frames*. Or they are "cased" in muslin or other strong cotton in what is called a "spring unit."

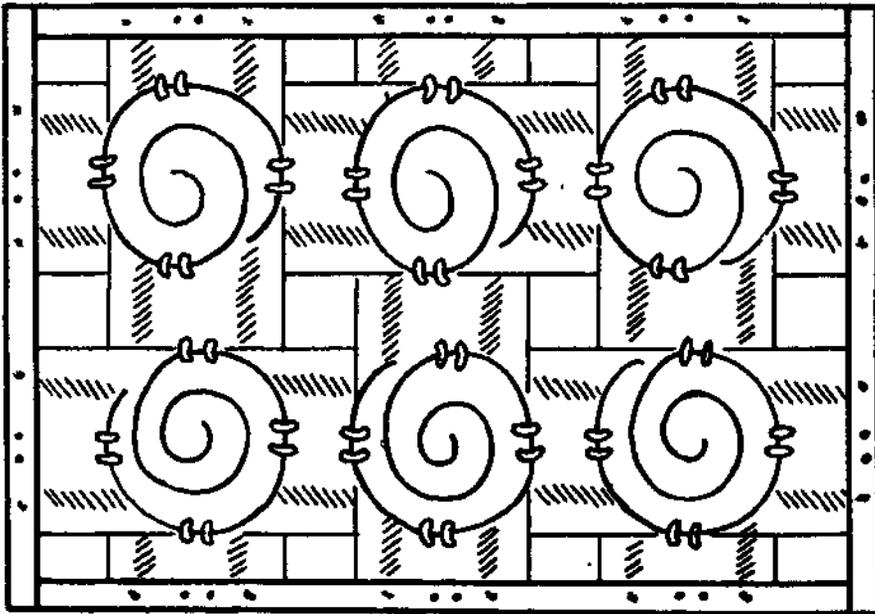
You may prefer to buy a "cased" unit rather than make one. The cost of units varies with the number of springs, but prices are reasonable. Such springs are used only in separate cushions or on the backs of lounge chairs.

Springs on Webbing

Consult Illustration 12 (below) for a diagram of placing springs on the webbing. Attach the bottom of each spring on crossed areas of the webbing, with at least 2 close stitches each at 4 places. Use mattress twine in a curved needle.

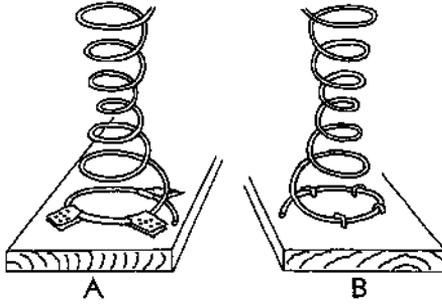
Knot the stitches on the fourth group of stitching on each spring before going on to the next. This is a precaution against a break in the twine releasing the whole set

Illustration 12



Attach springs to webbing this way.

Illustration 13



Attach springs securely to wood base

Springs on Wood

Usable and comfortable inexpensive hassocks and stools can be made by attaching springs directly to wood. The lack of "give" to the seat is overcome by added padding.

Illustration 13 (above) shows two ways of attaching springs to wood.

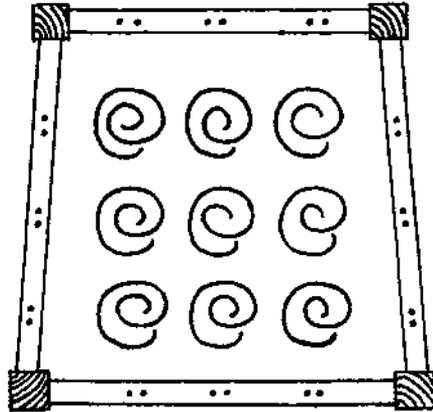
"A" shows the spring securely strapped to wood by means of straps made of ticking, denim, or canvas slipped over the spring base and fastened in place by 3 to 5 tacks. Make the straps 3-ply, 1¼ inches wide by 3 inches long, with ragged edges.

"B" shows the spring attached to the wood by staples. The strap method is simpler and very satisfactory.

Springs in Cases

Refer to pages 41 and 42 in your upholstery bulletin (Extension Circular No. 157) for excellent directions about "casing" springs. Remember that the task may be a long one, but will increase service in cushions and on chair backs.

Illustration 14



Use pairs of tacks to "anchor" the tying cords.

Spring Tying Takes Care

Tying springs is a task requiring patience. It is simple, if you are careful. A good job of tying is a "must" if your finished product is to be sturdy and have an attractive, professional "touch."

There are four steps in tying springs. Learn them before you start.

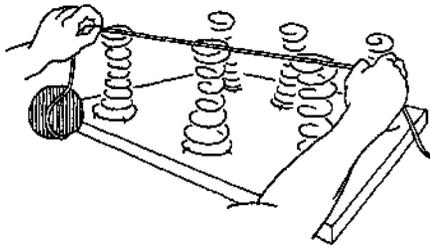
Step 1. Place "Anchor" Tacks

Place two No. 8 or No. 10 "anchor" tacks at the end of each row of springs on all four sides of the seat frame. (See Illustration 14.)

Step 2. Measure the Cords

Measure the cord needed to tie springs. The amount depends upon the number of springs in a row. If there are one, two, or three springs in the row, allow a generous three times the distance across the springs and down to the "anchor" tacks on the frame at each end of the row.

Illustration 15



Measure cord carefully for tying springs.

Measure loosely over the springs. (See Illustration 15.) Increase the amount of cord in relation to the number of springs. For diagonal tying, measure twice the distance to be covered.

Step 3. Learn the Knots

In general, it is easiest to learn to tie springs by studying Illustrations 16, 17, 18, and 19.

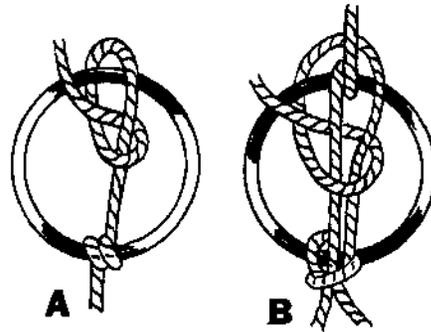
Begin by finding the center of the tying cord. Tie from the center of a row, after first fastening one end of the cord lightly to the "anchor" tacks. For the amateur, this braces the loose springs and makes tying easier.

In Illustration 16, "A" shows a loop of cord to begin work. And "B" is the strong knot which attaches one spring to another, or finishes cords in a final tie. The finishing knot (Illustration 16-B) is very important for strength and durability.

Tie springs lengthwise of the article, crosswise, and diagonally. Repair work on furniture is difficult, but it is a waste of time to do a careless job of tying springs.

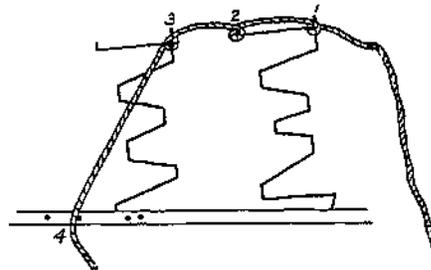
Make loops and knots *secure* and strong. Have the "pull" even from

Illustration 16



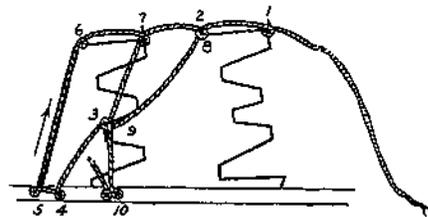
Use these loops and knots for tying springs.

Illustration 17



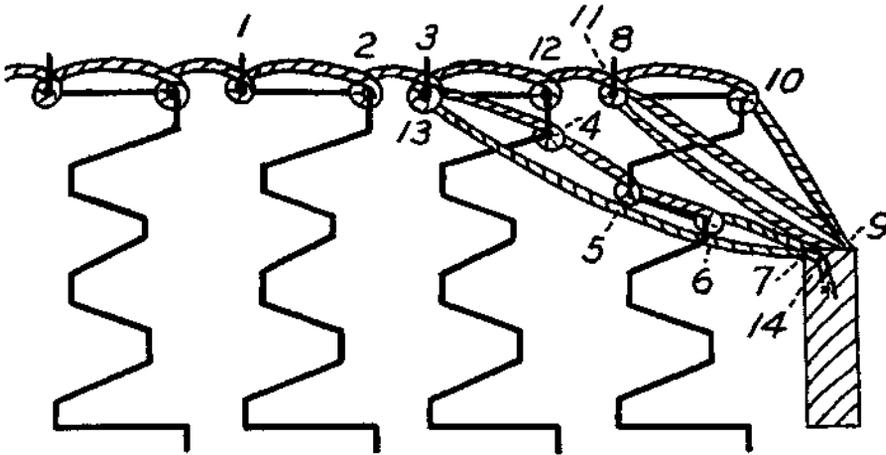
Cords pass from center spring of a 4-spring row to edges and to frame, to hold one side in position for the final tie.

Illustration 18



Cords return from "anchor" tack, to center, to brace springs.

Illustration 19



Use this method of tying four or more springs.

spring to spring, and from the springs to the edge of the seat or frame. Well-tied springs are evenly depressed and stand straight. Do not fail to drive the "anchor" tacks down flush with the cord as a final step and a finishing touch to the work.

Step 4. Follow the Tying Pattern

Illustration 17 shows the first passing of the tying cord. Begin with the center of the cord at point 1, which is the center of the group of springs. Tie firmly. Carry cord as follows: 1 to 2; 2 to 3; 3 to 4, which brings the cord to the "anchor" tacks.

The tying in Illustration 18 attaches springs sturdily to the wood, and each spring to its neighbor. (Points 1, 2, 3, and 4 are the same as in Illustration 17.) Continue tying by carrying cord from 5 to 6; 6 to 7; 7 to 8 (which also has a knot marked No. 2); 8 to 9 (which has a knot marked No. 1.) This means

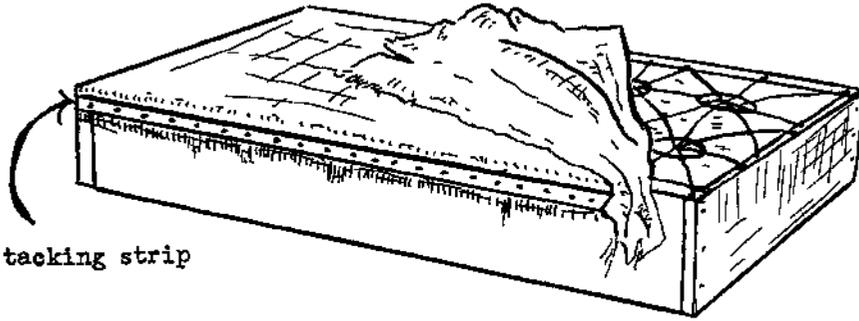
that there is a cord from 6 to 9, passing over the original tie at 1 and 2, when you finish. Repeat for the springs in the opposite direction.

Illustration 19 shows half of the tied surface of 4 or more springs in a row. The span is longer and the tying must be more secure. Carry cord from point 1 to 2; 2 to 3; 3 to 4; 4 to 5; 5 to 6; 6 to 7 (cord at 7 is attached to wood with tacks); 7 to 8; 8 to 9 (which is on wood); 9 to 10; 10 to 11 (this point is also numbered 8 where a previous knot occurs); 11 to 12; 12 to 13 (this is also number 3 for a previous knot); and, finally, 13 to 14, the end of the cord. Next, attach cord to wood by tacking at point 14.

If there are only 4 springs in the row, begin again at point 2, and tie to the left exactly as described above. Then tie to the right.

When there are more than 4 springs in a row, extend the process for the group of springs at the left. Then repeat to the right. This

Illustration 20



Tack burlap or heavy cotton cloth over springs through a tacking strip.

method is used in tying a davenport or similar piece of furniture, or a large chair.

Protect the Springs

Repaired springs in any type of furniture need covering, then padding, and finally a muslin or other cotton cover under the upholstering fabric.

Cover the Springs

Cover the repaired springs with a firm piece of burlap, sacking, or other strong cotton material. (See Illustration 20.) Stretch it tightly enough to create a smooth surface for future work, but not tight enough to depress the springs.

Attach to wood frame with No. 6 carpet tacks, placing a narrow strip of cardboard between cloth and tacks to prevent heads of tacks slipping through the sacking. This is called a "tacking" strip.

Put on the Padding

Place padding material in an even layer over the springs. Use sufficient material to "bury" the springs and cover their edges. This is for comfort in use, and for pro-

tection of the outside covering material.

Attach padding through to burlap which covers springs. (See Illustration 21.) Use mattress needle and heavy twine. Tacked padding will not slip or shift.

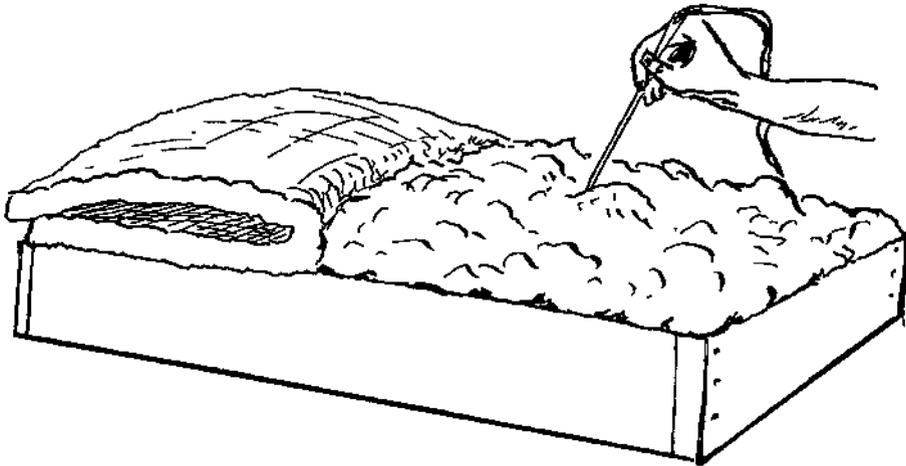
Cover With Muslin

The final step in inner repair of furniture preparatory to placing the fabric covering is to cover the springs with muslin. Place a light layer (about 1½ to 2 inches) of cotton batting, cotton felt, or beaten cotton over the padding. This "smooths" the job. Cover with a piece of firm muslin or feed sacking, stretched and tacked to the frame at 1-inch intervals with No. 3 tacks.

Trim the uneven edges of the cloth. The article is now ready for the outer cover. (See Illustration 22.)

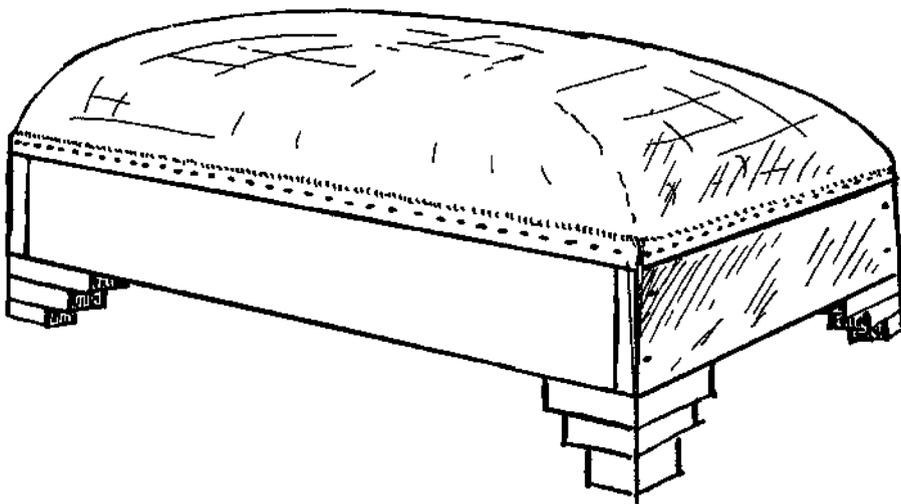
Placing the outer cover is an upholstering job. Refer to Circular 157, "Reupholstering at Home."

Illustration 21



Adjust padding over springs.

Illustration 22



Cover the padding.

Grade Your Work!

Does the piece "wobble"?

Is the frame neatly repaired?

Are webbing strips tight and secure?

Are springs upright, even in height, and firm?

Can you feel the springs through the padding?

Is the padding lumpy?

Is the final muslin covering smooth, well-tacked, and firm?

Acknowledgments:

Simple Upholstering Methods—Bulletin No. 167
Tullier—Agricultural Extension Service—Montana
Upholstering at Home—Circular No. 64
Brooks—Agricultural Extension Service—Vermont
How to Glue Furniture—Bulletin No. 684
Robinson—Massachusetts State College Extension
Service