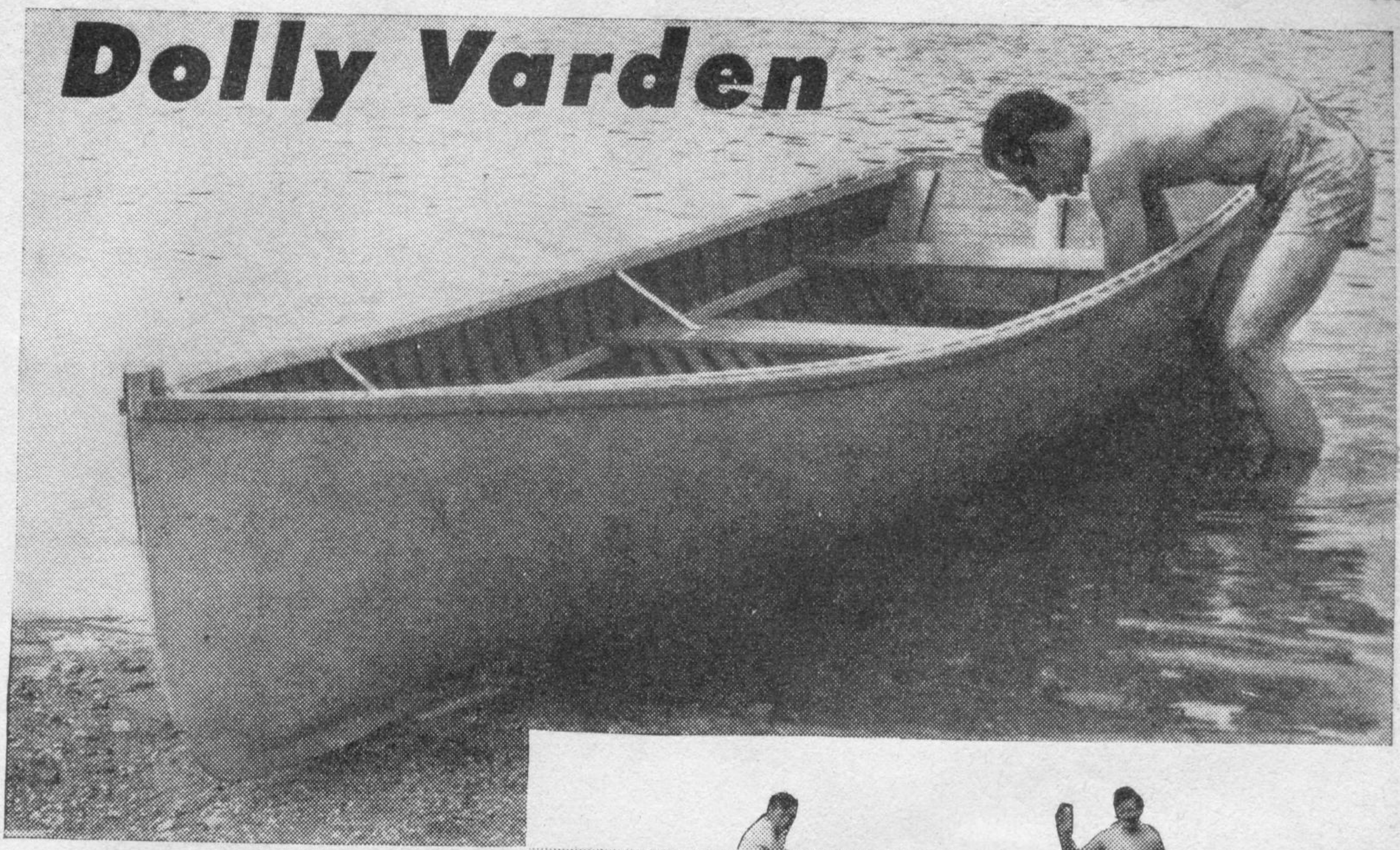
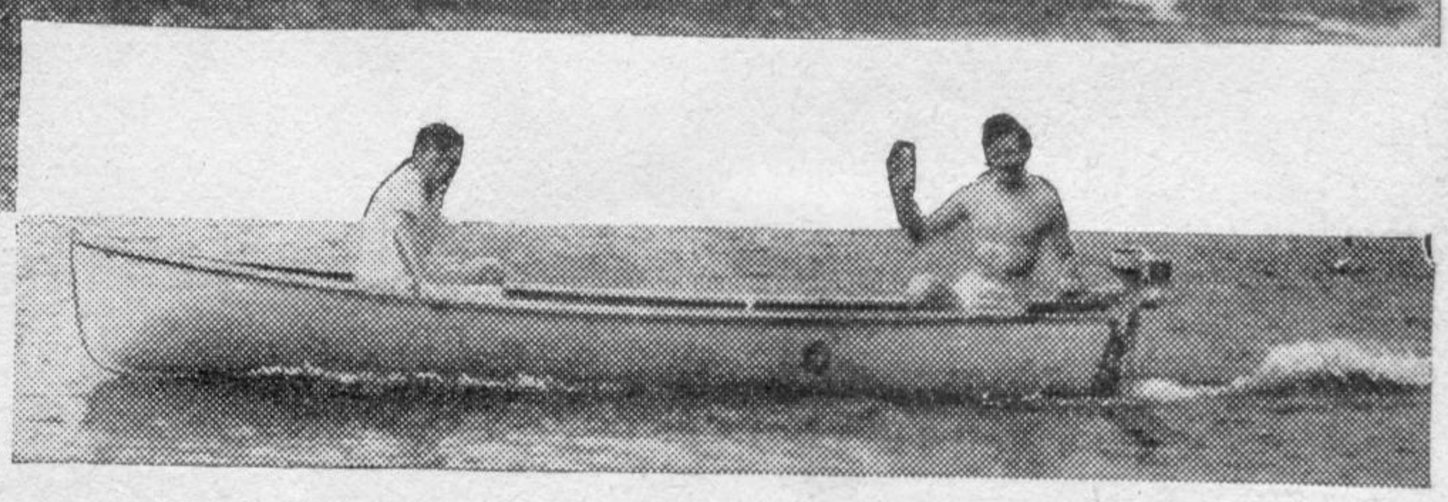




Strip boat that can be built in two lengths.

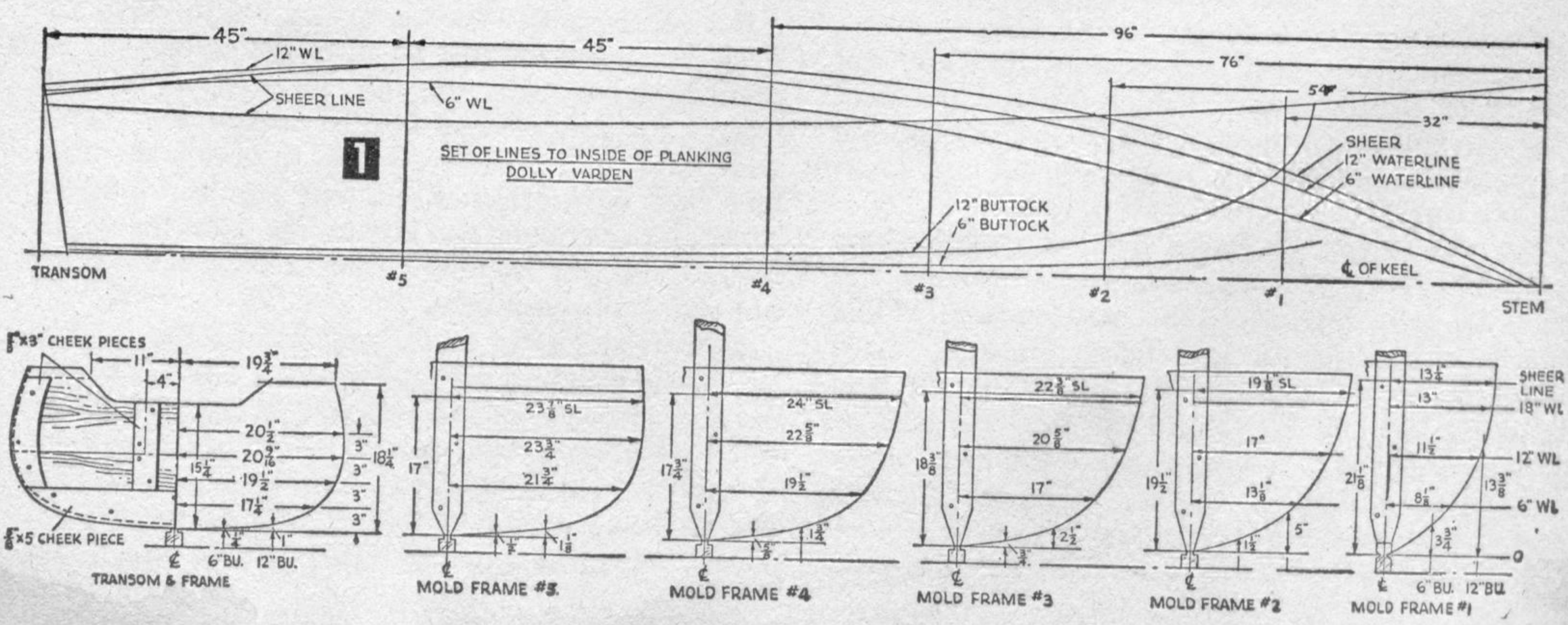
Dolly Varden

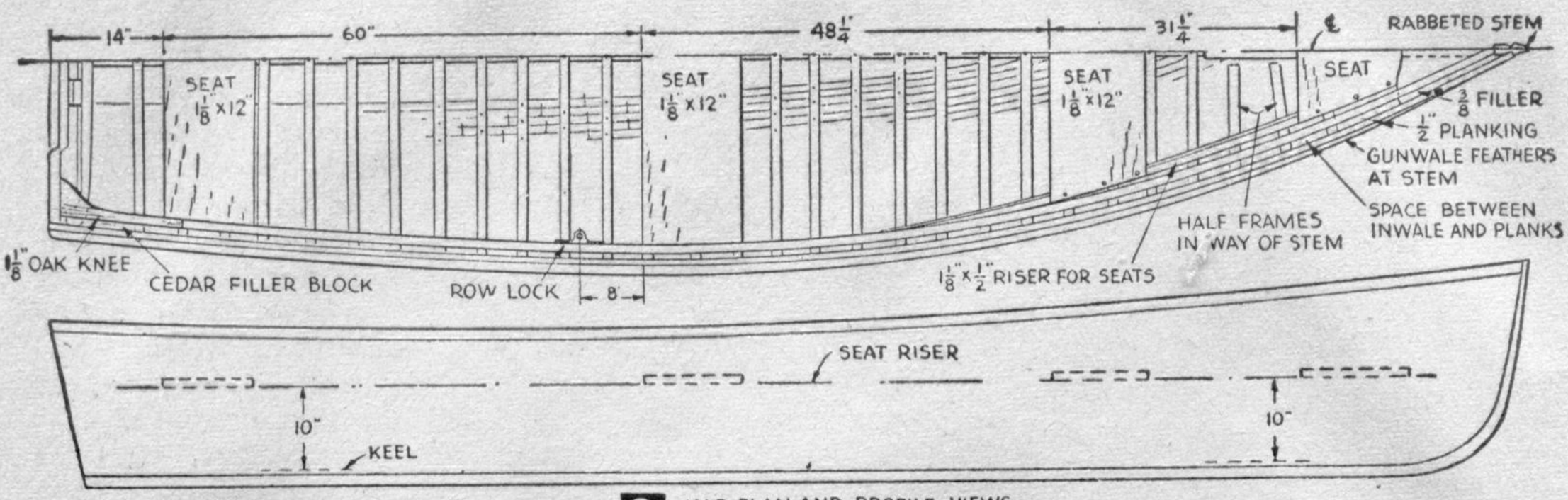
By WESTON FARMER

Craft Print Project No. 179

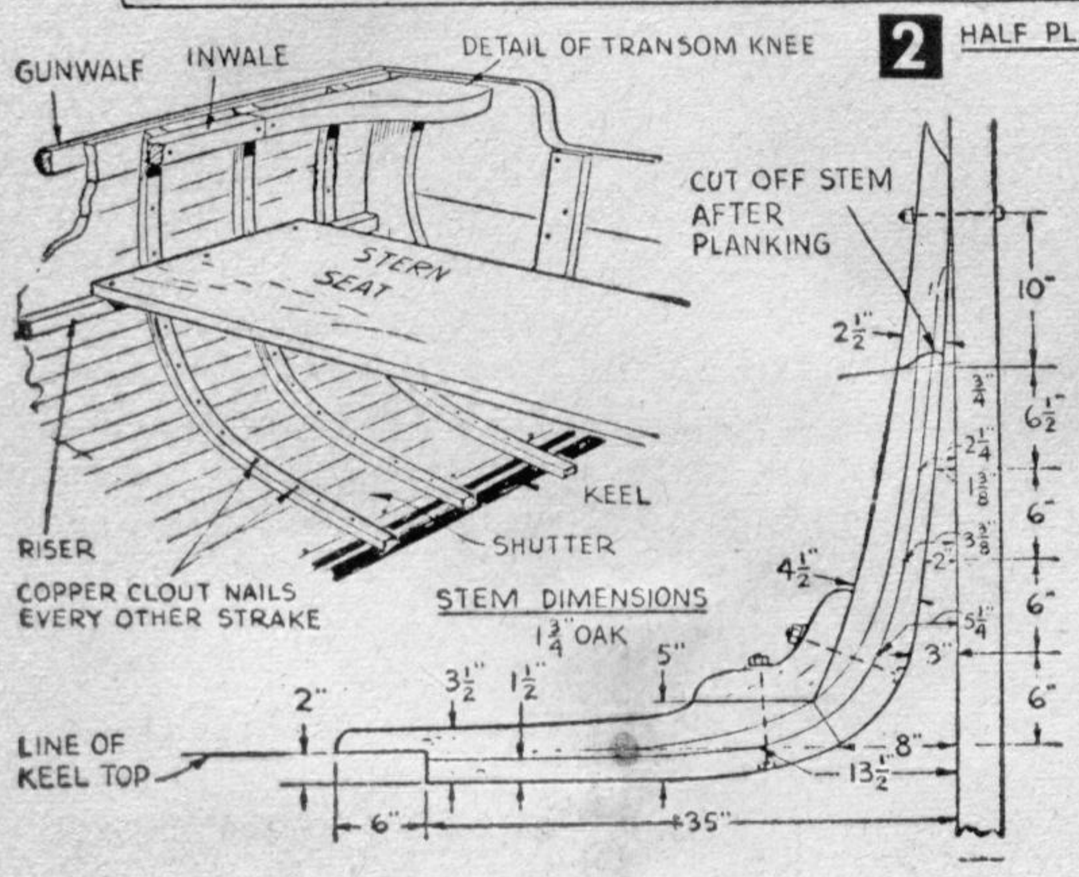
USE: Open utility outboard boat for fishing and general use on lakes and rivers with a variety of outboard engines.
LENGTH: 13′ or 15′6″.
BEAM: 4′2″.
DEPTH: 20½″ amidship.
WEIGHT OF HULL: 175 lbs. **CAPACITY:** 4 persons.
CONSTRUCTION: Strip planking and steam bent frames, round bottom.
SPEEDS: 1½-2 hp about 6-7 mph. 5 hp, alternate firing, 11 mph. 7 hp, 14 mph.
COST: 13′ hull $60. 15½′ hull $65 (approx.).

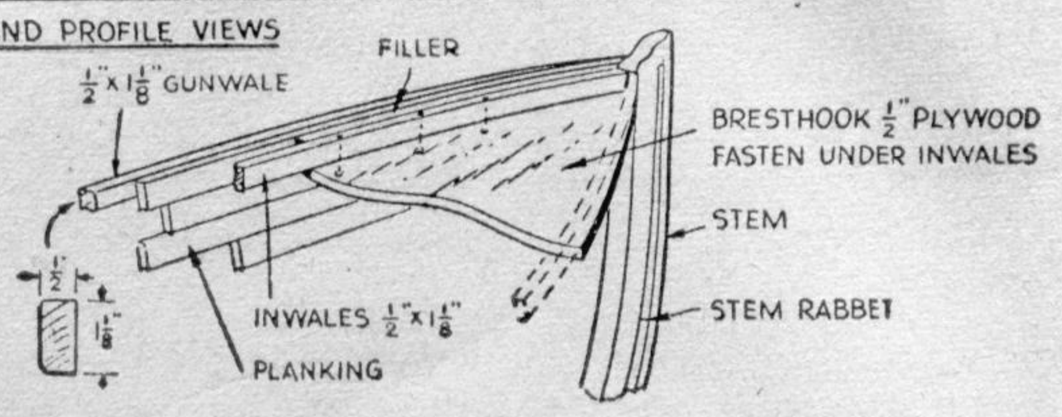
LAKERS will like the smooth lines of *Dolly Varden* that scoots along with any outboard in the under 7 *hp* class in choppy or smooth water. *Dolly* is a *strip* boat fashioned like the hundreds of similar boats built by craftsmen of the old school, and still being used because strip construction turns out a tight, durable, cheap and easy-to-build boat that has real water kindliness and handling ability. About $60 will pay for





2 HALF PLAN AND PROFILE VIEWS





MATERIALS LIST—DOLLY VARDEN

15½-foot model

No. of Pieces	Size and Material	Use
14	1x6"x16' rift sawn red cedar	Planking strips
1	2x2"x14' white oak	Keel
1	2x8"x4' white oak	Stem and forefoot
2	1x12"x4' mahogany	Transom
2	1¼x6"x16' white or red oak (Should be wet or green)	Frames
1	1x5"x16' oak, mahogany or fir	Wales and risers
1	1" redwood, fir or spruce as needed	Thwarts and breasthook

Note: For 13-ft. model, cut two feet from strips, keel and wales indicated above, as explained in the text.

materials to build either 13- or 15½-foot model and if you can part with her, she'll market for $225 to $350.

Building *Dolly Varden* is a good way to get acquainted with the blessing of steam bending frames—long considered a bugaboo. Actually, a steam box is a cheap and effective "tool" and anyone who can boil oatmeal can make a steam box say "Uncle."

Either the 13- or 15½-foot models will ride safely on top of a car as you take off for your favorite fishing grounds. The 13-footer handles easier on the ground, but the fifteen is better in the water. There's only about $5 difference in costs—so take your choice and let's get started.

Lay out the molds on either scab lumber or cast off ¼ in. plywood, according to Fig. 1. The molds merely serve to guide the shape of the strips. Since our keel is a straight line and the stealer or shutter planks which go onto the keel first determine the flow of the strips around the molds it is not strictly necessary to lay down *Dolly's* lines.

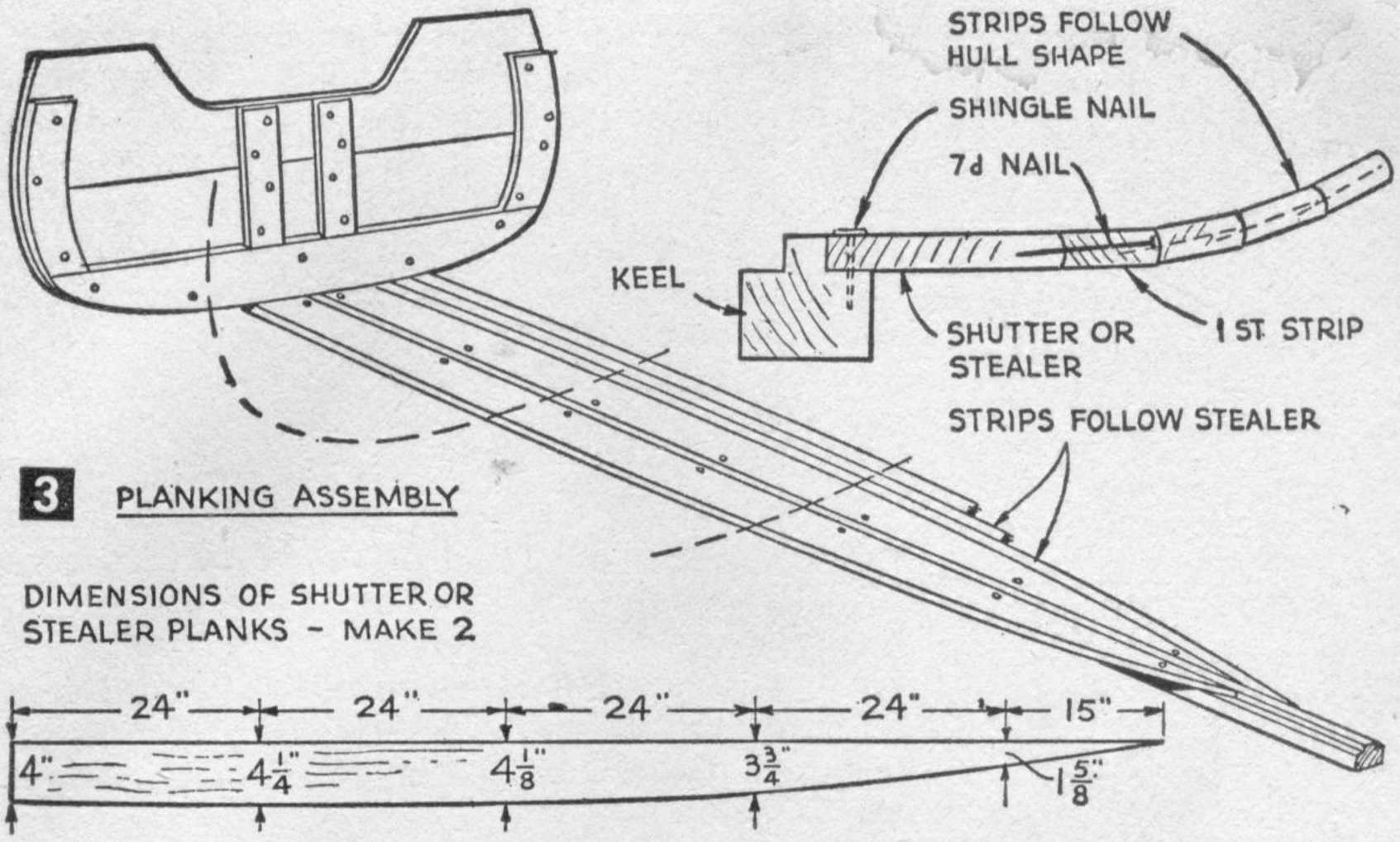
The molds can be made from the dimensions with sufficient accuracy. Despite all you do, the planking will not follow the molds exactly. The idea is to plank your hull using the molds as a close guide. In this 15½-ft. model, you'll find mold No. 1, mold No. 3 and the transom will be hard against the planking much of the time, while molds Nos. 2, 4 and 5 merely guide the shape—that is, they maintain symmetry from side to side.

With the molds done, attach them to a scab 1 x 4 material which will reach to a convenient floor joist in the ceiling above (if you build in a basement) or to rafters if in a garage. Erect some stocks (short lengths of 2 x 4) spaced at 2-foot intervals to raise the keel high enough for comfortable working room. The stocks in my shop are tee'd to the floor, but ordinary 2 x 4 posts, braced to a plank on the floor, will do.

If you have a circular saw and a jointer, the mill work necessary to cut and shape the strip planking and frames will present no problem. Otherwise, take the cedar and oak to a sash and door factory or to a well equipped lumber yard, and they will turn out the strips for you in a couple of hours.

Rip all the cedar boards to ⅝ x 6½ in. (Fig. 6). This will leave enough stock to get strong 7/16 in. planed strips. Rip up the 1 x 5 in. 16-ft. oak boards for frames into four ribbons a shy ⅞ in. wide, and re-saw these ribbons to divide the 1 in. face two ways (Fig. 8). Then run these strips through the planer, and if possible, rout the edges round. They'll handle better if routed, but it's not strictly necessary.

Now, if you go to a mill, and want a thoroughly professional job of strip planking, I'd make a concession to costs and to the possibility of turning out that second boat for re-sale more easily by investing in a shaper cutting head. I took this shaper head and two sets of blank knives to a local tool works and had them ground to a ¾ in.



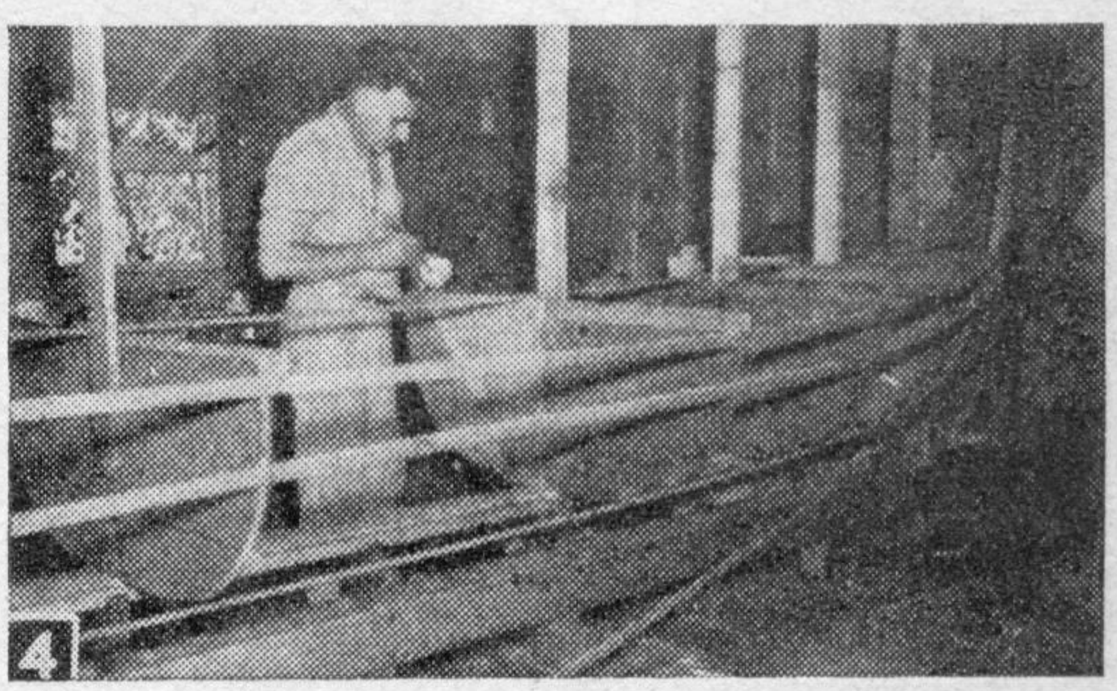
radius to produce a hollow and round edge to each strip plank. Hollow and round stripping is optional, but it pays off. I used it because the commercial builders use it and the nails center better, their heads are hidden without setting and you can use casein glue on the strips to get a perfectly tight boat that will not leak after long auto trips. However, the original builders of the *Dolly Varden* strip boat did not bother with hollow-and-round strips. They beveled their strips on a jointer when bevels were called for. On part of the hull, such as across the bottom and past the turn of the bilge up along the topsides, hollow and round strip planks won't help much in shaping the boat. But at the turn of the bilges, you won't have to stop and bevel the strips and work goes faster with hollow and round strip planking. I used the hollow and round. But as I say, you pays your money and you takes your choice—

Use the shaper head, as shown in Fig. 7 to cut hollows and rounds on the strip planks and rounds on the frames. These operations complete the mill work. On our boat this work was done in a small cabinet factory in 2½ hours at a cost of $4.

The white oak keel is rabbetted to just the right depth for the stealer or shutter plank, and should be cut smooth for a close fit. Set up the keel on the stocks (Fig. 5). Assemble the transom out of mahogany, buttressed by white oak cheek pieces (Fig. 9). Glue and screw fasten the cheek pieces of ⅝ or ¾ in. oak to the transom. The bevel on the bottom edge of the transom is 20 degrees, fading around the turn of the bilge to 10 degrees top sides. If you cut this on a band saw, set the table to 20 degrees, and cut the bottom halfway up the turn of the bilge. Then set the table to 10 degrees, to cut the top sides and you can then fair off the bend by hand.

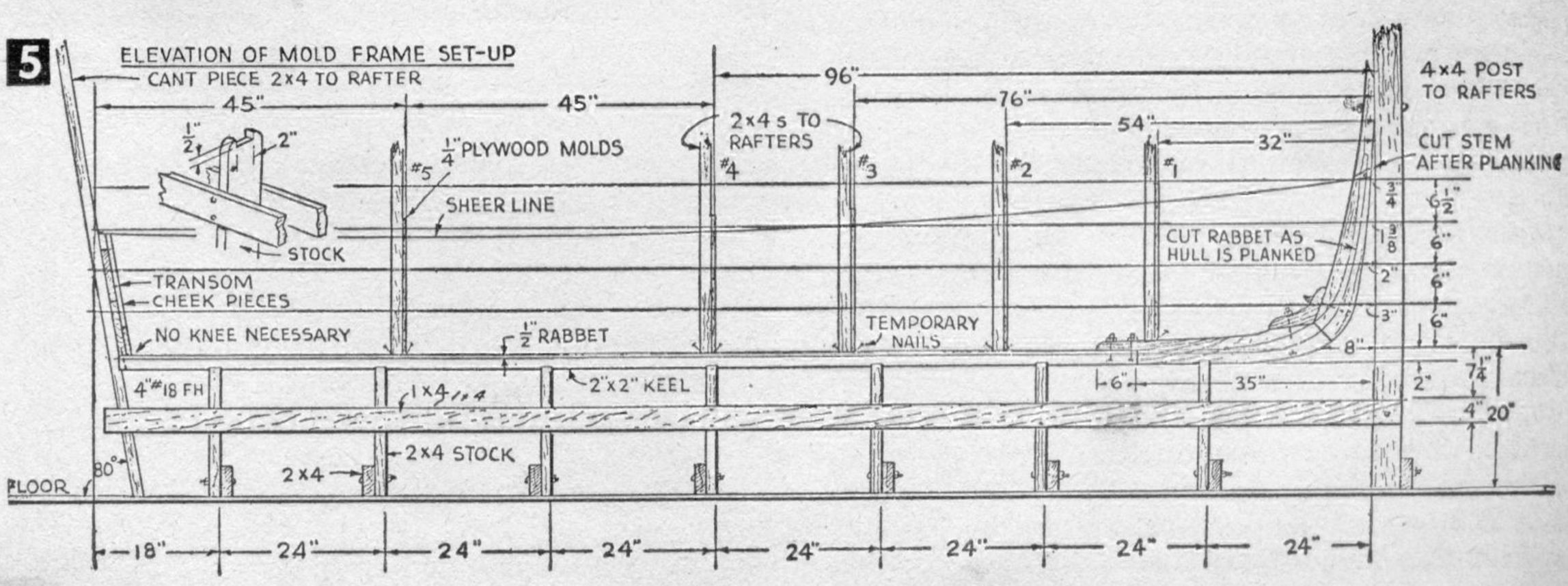
Erect this transom on the keel, using one No. 16 x 3 in. screw from the keel into the cheek piece, counterdrilled about 1 in. and plugged. Clamp or bolt the transom to the cant stock at the stern end of the stocks.

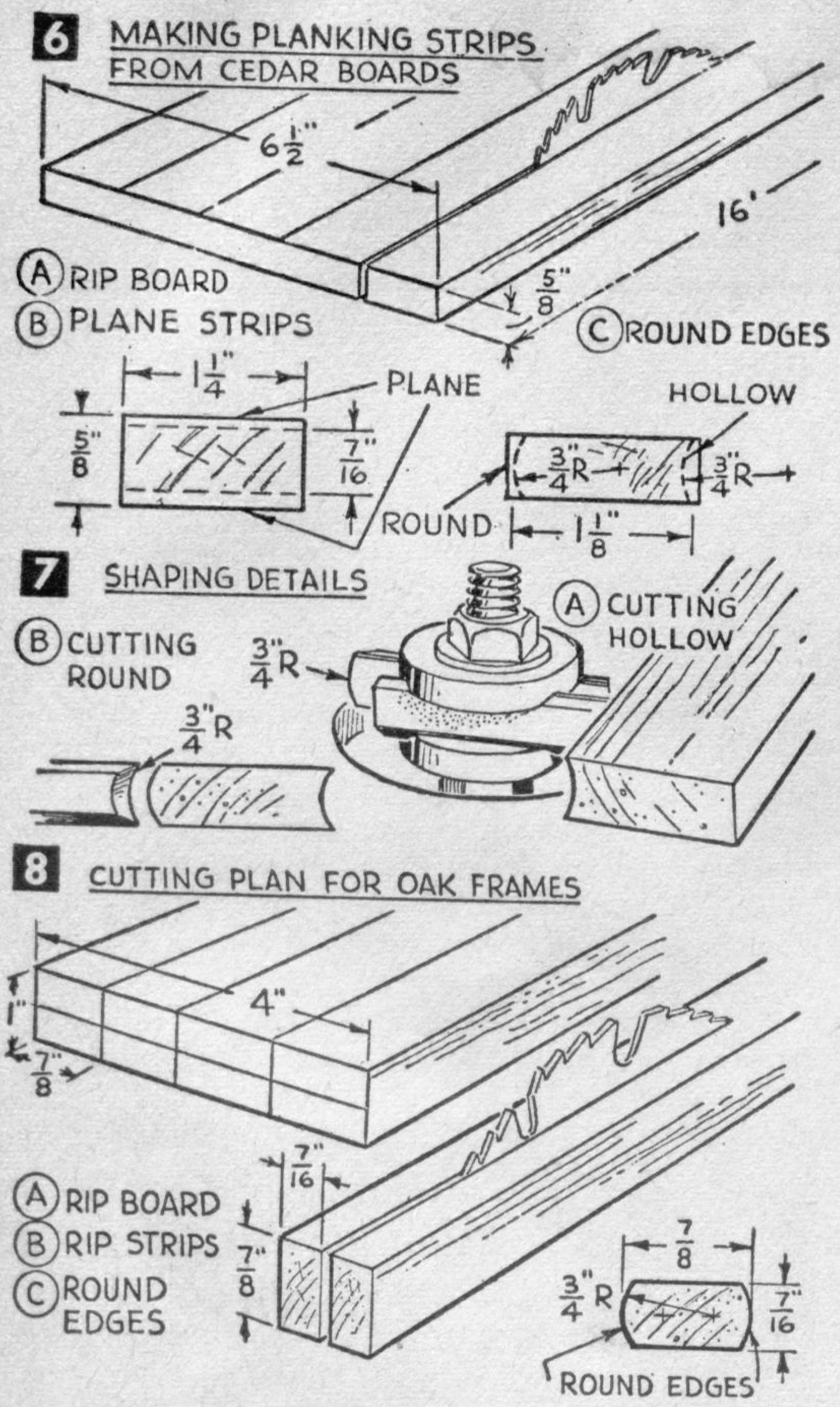
Fig. 2 shows the stem dimensions for the 15½-ft. boat. To build the stem for the 13-ft. boat,



4 Molds set up and faired in with light battens.

eliminate the lower horn end and land the knee right on the keel, 2 ft. shorter. Mark out the rabbet and take a light chisel cut along the rabbet line. The rabbet itself is best cut as you proceed with the planking, as the lay of each strip





plank will best show you how to bevel. Rabbeting one strip at a time is simpler, easier, more accurate and requires no more time.

Clamp the stem to the fore post on the stock (Fig. 5) and bore two ¼ in. holes through the horn end of the stem into the keel. Run through two ¼ by 6 in. bronze, hanger strut bolts in casein glue. Countersink outside the keel for the heads. Locate the molds on the "backbone", toe nailing the bottom of the molds at the proper intervals from the stem post. Mold No. 5 divides the distance between the transom and mold No. 4 on both the 13- and 15½-ft. models. Otherwise there is absolutely no difference in the two boats, as the heights are all the same.

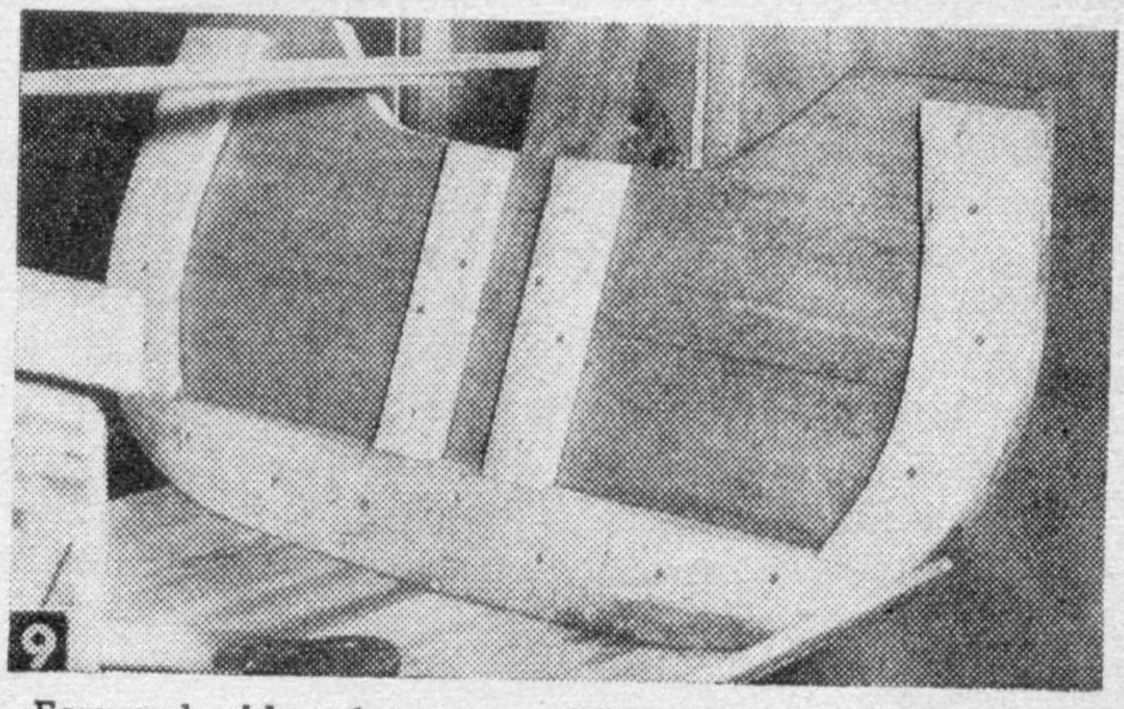
Start the planking by putting in the shutter or stealer planks (Fig. 3). Cut the first strips to length and bend them around the shutter and the molds. Use 3*d* or 4*d* galvanized shingle nails to fasten the strips into the oak cheek pieces on the transom, and 7*d* nails into the mahogany. Two nails of each size per 1¼ in. strip will do the job. Check the transom bevels frequently to see they are fair. A touch with a chisel or plane occasionally will keep them running fair. Nail two 8*d* shingle nails per hood end in the forward rabbet. Lay both ends of the strips in casein glue.

Each planking strip should be edge-nailed to the one already laid in place about every 10 in. with 7*d* galvanized nails. Pre-drill holes to prevent splitting and as they go in, mark the inboard surface with a pencil. Then, later, when framing, you can see where you have driven a nail. None of the strips used in planking requires any severe warping and will lay in nicely. If you get an occasional "stinker," try the old boat builder's dodge of wrapping the piece in a rag soaked with hot water to allow you to get the twist.

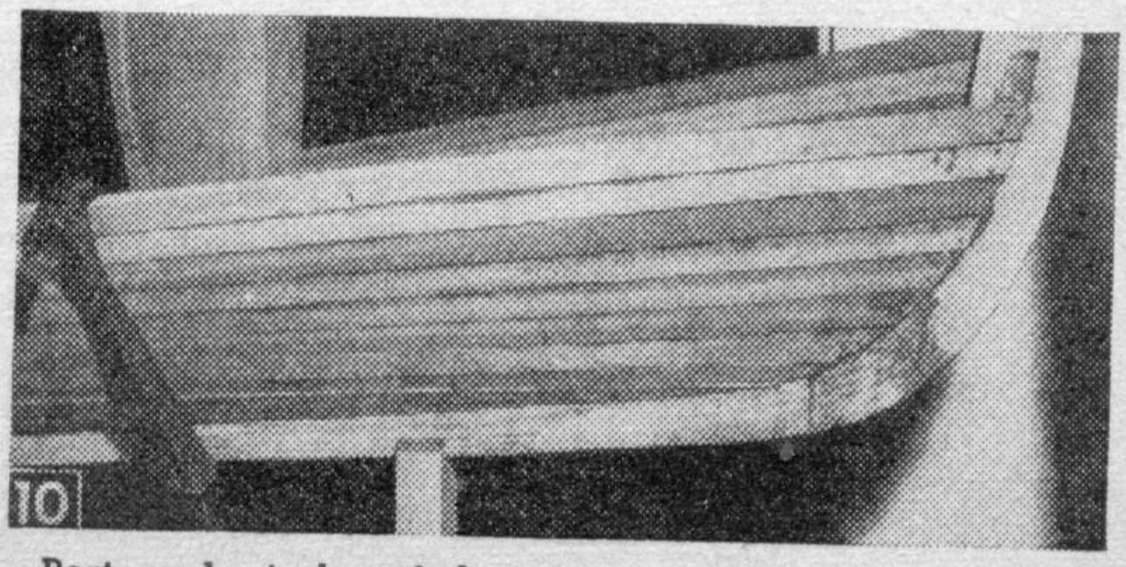
When you complete the planking and before removing the molds, nail several 1 x 4 in. pieces, called cross spalls, from one sheer plank edge to the other to hold the shape of the boat. These cross spalls are not removed until after the boat is framed and the wales, seat risers and seats are installed. Otherwise, the boat will belly out and lose shape.

You are now ready to frame the boat. Starting at the transom end 5 in. from the transom landing, and every 5 in. thereafter, mark the space each frame will occupy using a thin ⅛ in. oak batten. On every other plank strip as you go forward, drill a pilot hole from inside to outside. From the outside tap the 1¼ in. copper clout nails (available at boat shops) in these holes, to save time when you're ready to fasten in the frames. Using the marking batten, determine the lengths of each frame. From your green ripped oak strips cut the proper length frames, and number them with *indelible* pencil starting from the transom with No. 1.

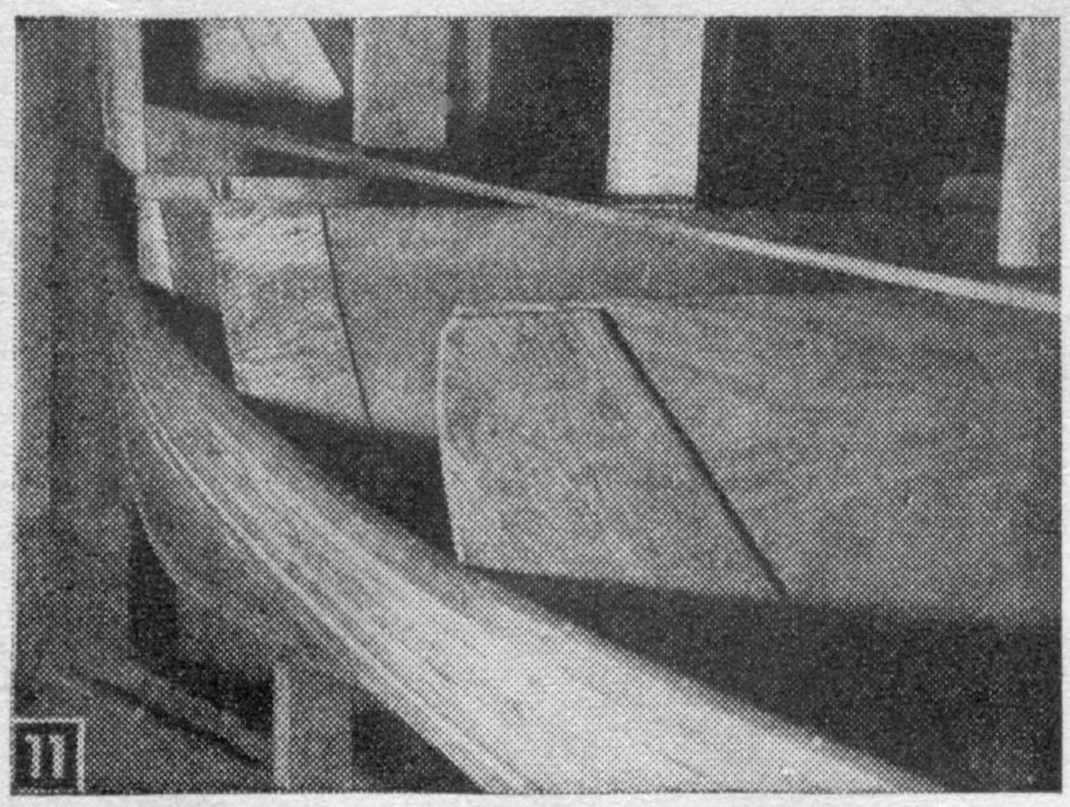
Now for a word about steaming. Any means of getting the oak *hot* for fifteen minutes will do



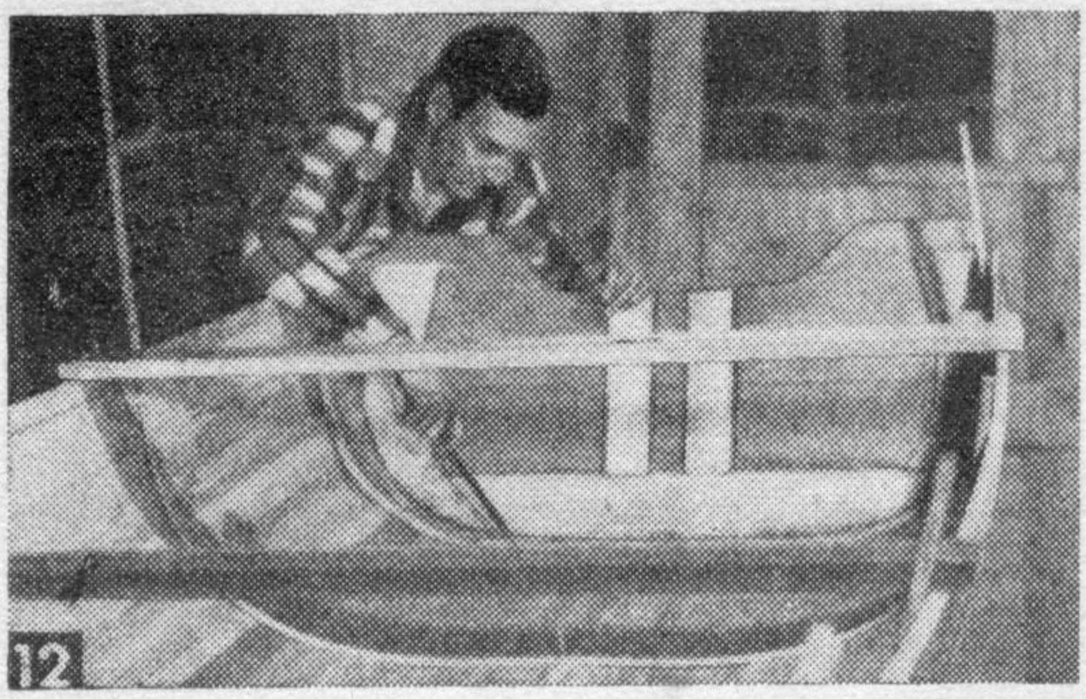
Forward side of transom. Note cheek pieces and strip planks bedded in casein glue around edge.



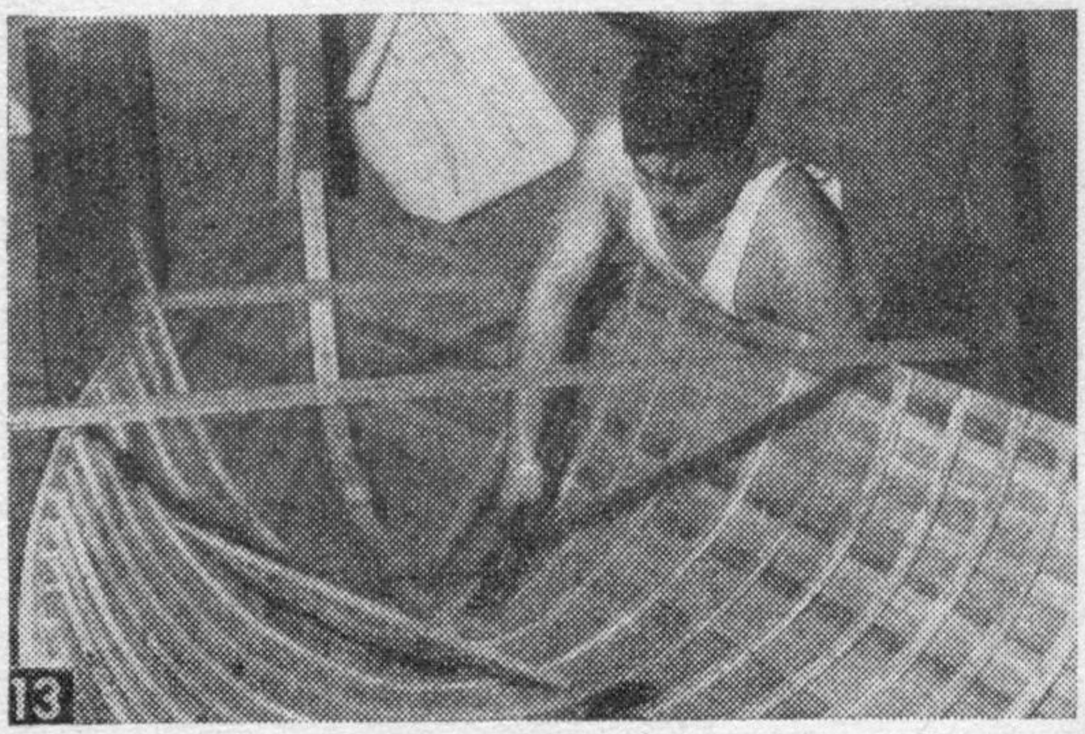
Port and starboard bottom strip planking applied around forefoot and up the stem.



Each strip of planking is edge-nailed in place. Strips flow smoothly around molds.



Frame positions are marked out by pencil with thin batten at 5 in. centers. Spring batten from sheer to sheer.



An auto body bucking tool with handle helps in clinching the 1¼ in. copper clout nails.

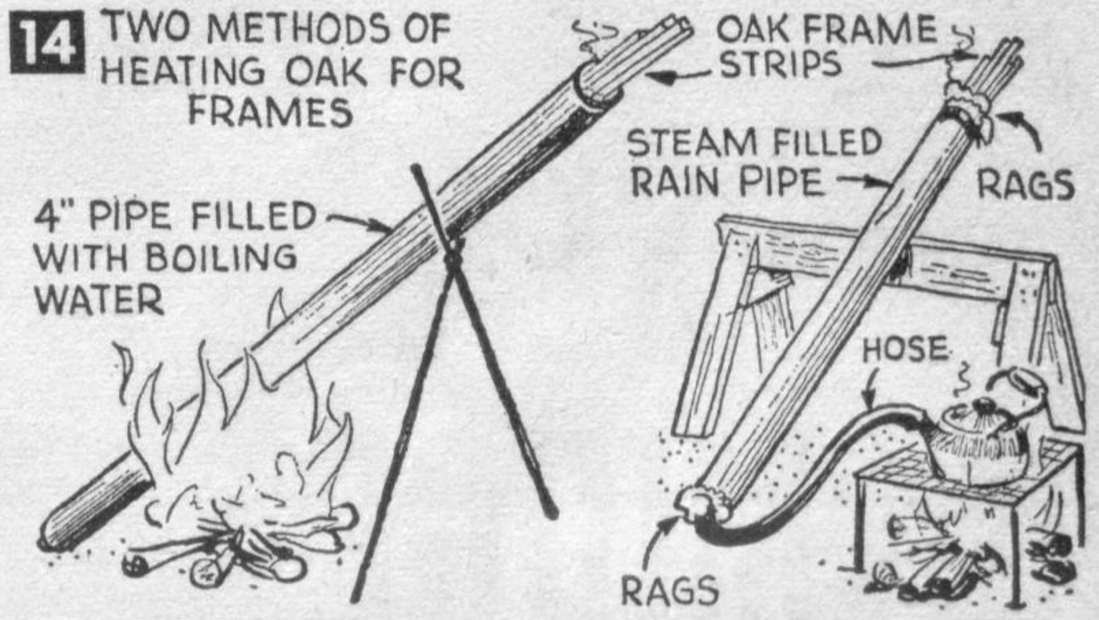
the job. A pipe with boiling water or an old rainspout with a tea-kettle and a rubber hose to induce the steam will also do the trick. Steam bending is probably the most useful tool in boat building. A combination of moisture and heat does the trick. Oak to be bent is usually cut green and kept wet, but well soaked oak stock will bend well if thoroughly saturated and heated. Any oak can be bent permanently to unbelievable shapes by a child after fifteen minutes of steaming. The wetness of the wood allows heat to penetrate the fiber more quickly.

With steam bending, you just wear a pair of gloves, grab a hot frame out of the box, tack the center down to the keel, bend the frame to shape, clamp the top edge to the sheer plank, and proceed to clinch nail the frame in place. All bevels are pressed in, and when the frame is cold, it is stiff; the devil himself couldn't pull the nails out.

When the frames are hot and ready to bend, tack the center to the keel in position on the marks. Overbend the frame, pull it back to the sheer and clamp it. Set up a few 1¼ in. copper clout nails in the bottom of the hull and around the turn of the bilge. Go to the other side that is now cooler, overbend, clamp and clinch nail the whole works (Fig. 13). Return to your original hot side and finish clinching. Set the copper nail heads well below the outside surface to allow later planing or sanding over them.

Saw off the frame ends and tack on the gunwales with galvanized nails, from inner plank face outboard. Put in the inner wales and the seat risers with #10 x 1½ in. *fh* screws, one in every other frame.

Shape and install the breasthook and the stern knees. The seats are spaced as shown in Fig. 2. Turn the hull over and plane with very light strokes any sharp edges. After smoothing with a plane, sand off and paint. Set the nails at the rabbet transom ends of the plank strips and plug the holes with putty mixed with varnish. One final sanding and you're ready to paint. Try varnished wales, buff hull and green interior.





Cross spalls retain Dolly's shape until wales, seats and breasthook are installed and during planing.

● Craft Print No. 179 in enlarged size for building Dolly Varden is available at $1.00. SPECIAL QUANTITY DISCOUNT! If you order two or more craft prints (this or any other print), you may deduct 25¢ from the regular price of each print. Hence, for two prints, deduct 50¢; three prints, deduct 75¢, etc. Order by print number. To avoid possible loss of coin or currency in the mails, we suggest you remit by check or money order (no C.O.D.'s or stamps) to Craft Print Dept. B58, SCIENCE AND MECHANICS, 450 East Ohio Street, Chicago 11, Illinois. See coupon on page 192.

Dolly Varden

