

ATOMITE



Craft Print Project No. 6

You can't beat this tiny hydroplane for high-speed fun afloat

By WILLIAM D. JACKSON

Naval Architect

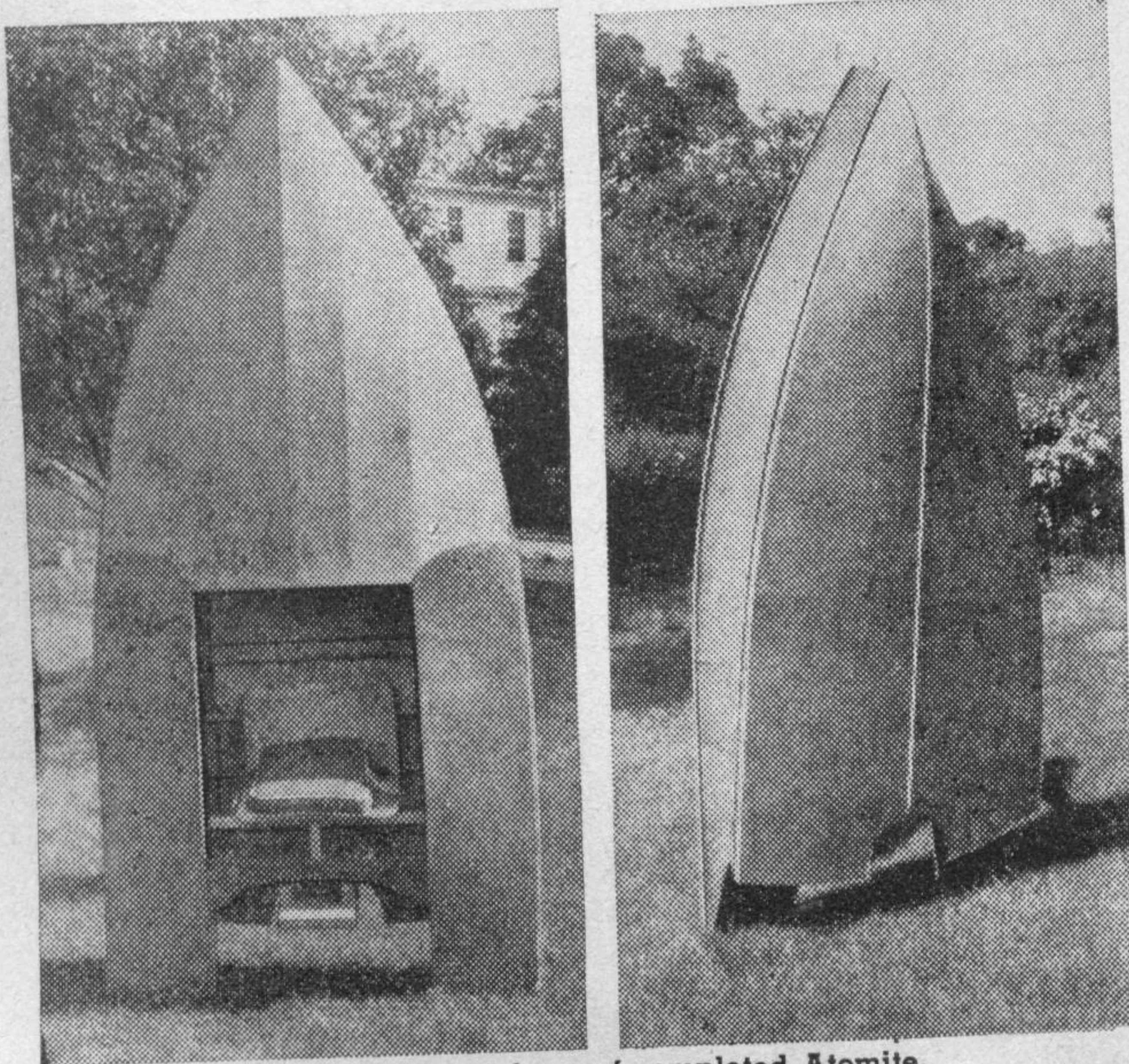
HERE is a fast and furious, but at the same time, highly maneuverable 9½ ft. outboard hydroplane, designed for outboard motors of 7½ to 10 hp or larger.

Your first step in building is to saw the form (on which *Atomite* is built) to shape from a 2 in. x 8 in. x 8 ft. plank. Mount the form on legs similar to a saw horse at a convenient working height. Next draw full-size paper patterns of the stem and frames #1, #2, and #2A and

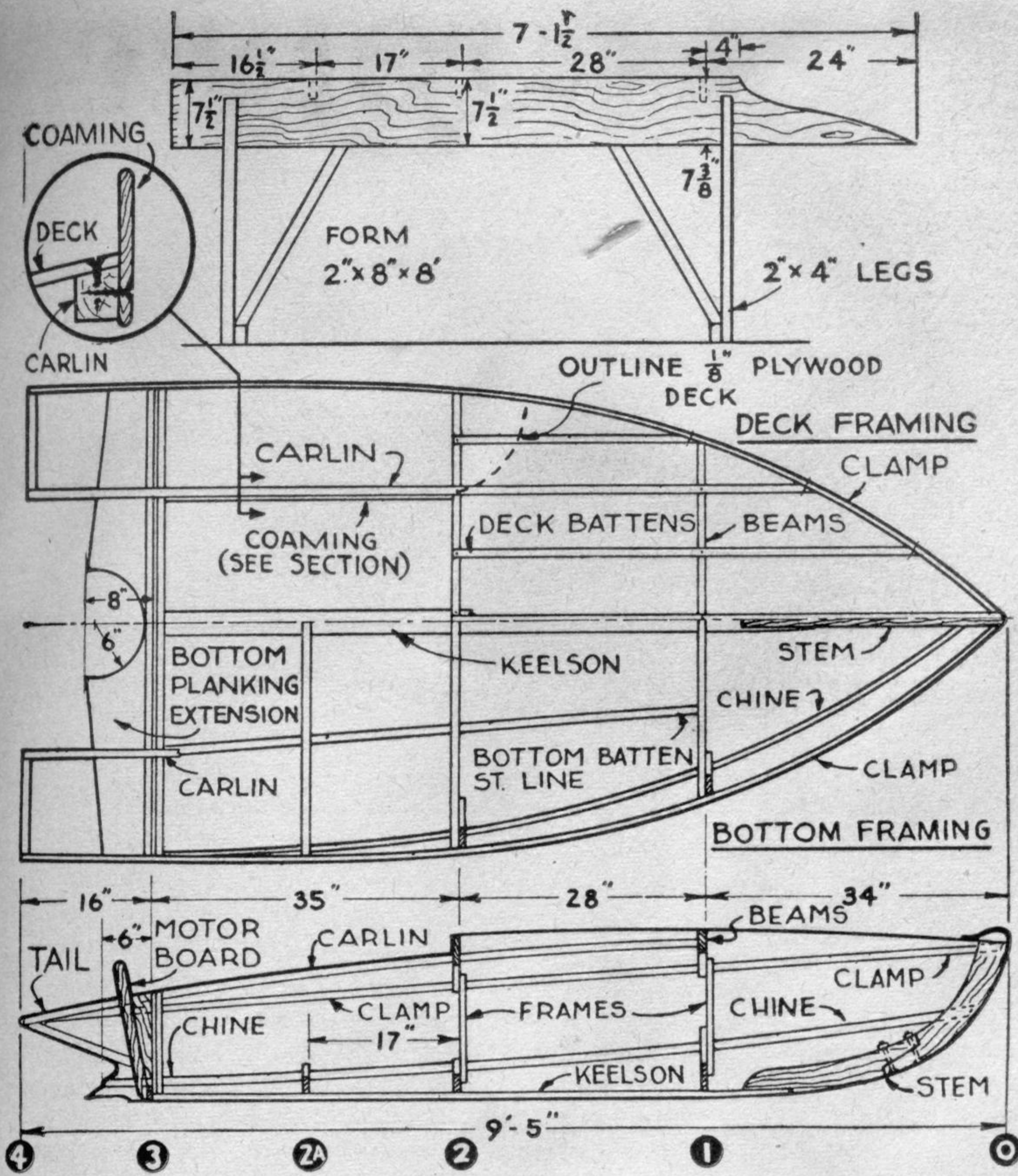
#3 transom. Starting with the stem, lay this pattern outline on the stem material, prick outline through and cut to shape. Then carefully fit stem joints together, coating contact surfaces with Weldwood glue, drilling for and inserting two ¼ x 3½ in. carriage bolts in the stem joint. Bevel the stem as shown and lay aside until frames are ready for assembly.

Now transfer pattern shapes to frame material and cut frames #1, #2, and #2A, and transom #3 to shape. Secure frame joints with Weldwood glue and two ⅜ x 2 in. rh (roundhead) stove bolts to each joint. Transom #3 consists of an outer shell of ⅜ in. plywood to which a frame is secured with Weldwood glue and ⅞ in. #6 fh (flathead) screws, inserted from the outside or plywood side as shown. Allow glue to dry and then notch frames for keelson, chines, and clamps. Also notch the form for the frames.

Now decide whether you want your version of *Atomite* with or without tails, which add to its streamlined appearance and do not affect its performance. If you decide to include the tails as was done with the boat shown here, go ahead and assemble frames and stem atop the form, holding parts in place on form by wedging or clamping. Then place keelson in keel notches and fasten in place to frames and stem with two 1¾ in. #8 fh screws to each joint. Next clamp the chines in place on both sides, and



Top and bottom views of completed *Atomite*.

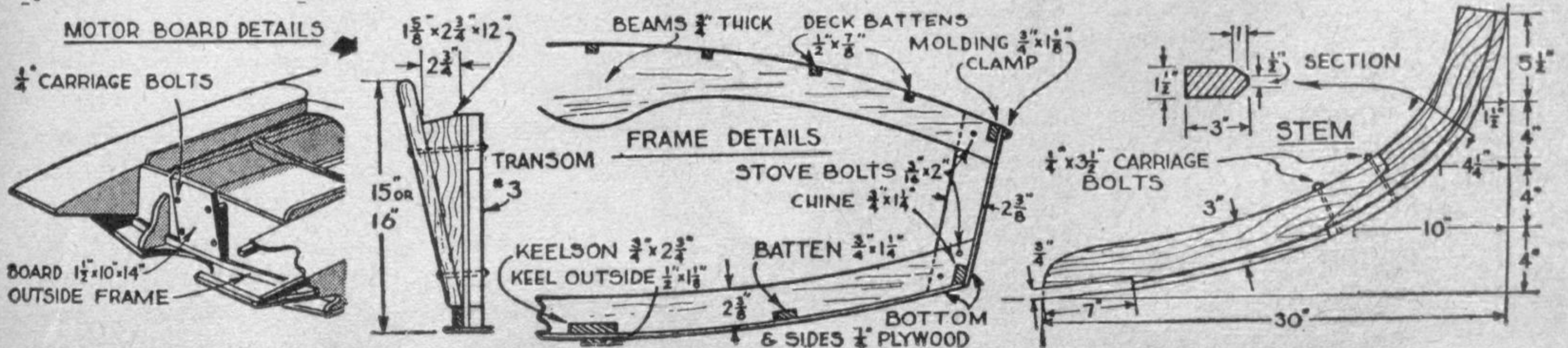
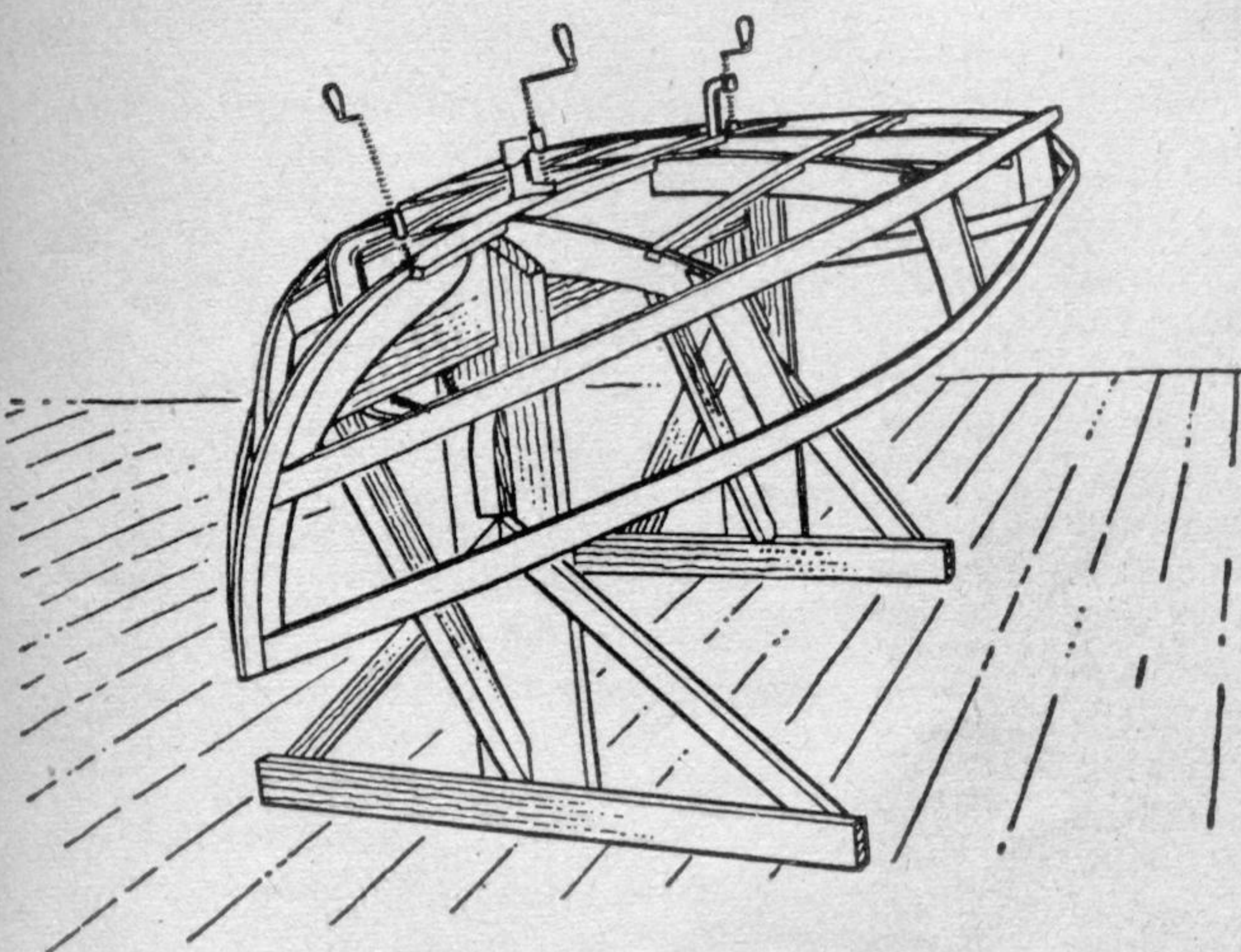


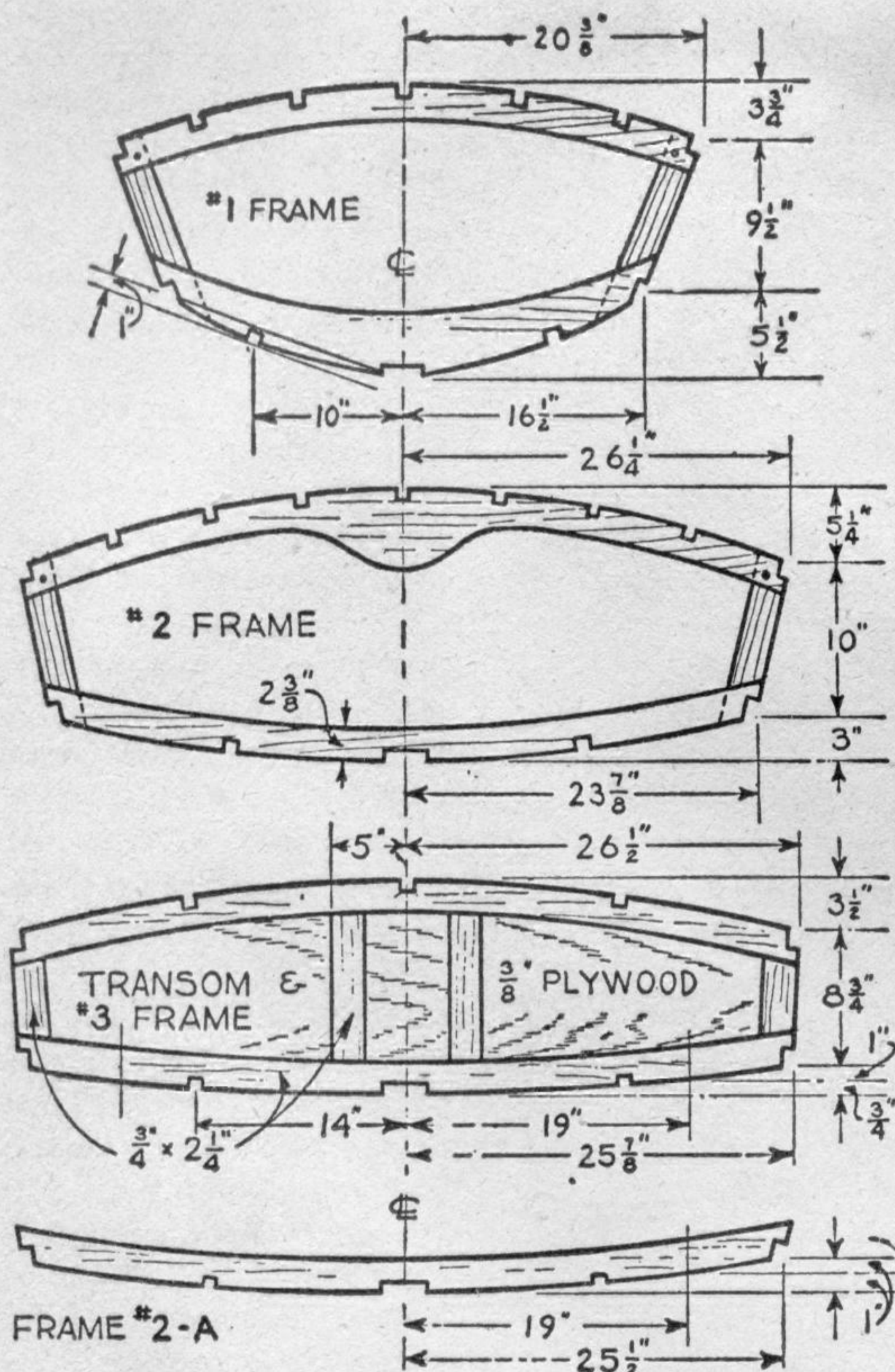
then run a saw alongside the chines to insure perfect contact surfaces between frames and chines. Then bevel ends of chines to fit stem and screw-fasten them with one 1 3/4 in. #8 fh screw to each joint. Let about 6 in. of the chines extend aft of the transom for bottom projection at this point. Next place clamps in position, letting 16 in. of clamp extend aft of the transom, beveling ends of clamps to fit stem and fastening clamps with one 1 1/2 in. #8 fh screw to each joint.

Now notch the bilge battens flush into frames (each batten forms a straight line between #1 frame and #3 frame, see dimensions on frame drawings) and fasten batten in place with one 1 3/4 in. #8 fh screw to each joint. Attach the bottom frame on the outside of the transom with 1 3/4 in. #8 fh screws after coating contact surfaces liberally with Weldwood glue. Cut and

bevel the 3/4 x 1 1/4 in. tail assembly frame pieces as shown and attach tail assembly framework with 1 3/4 in. #8 fh screws. Now trim and fair entire framework so plywood to be applied lies evenly at all points. Plank the tails first as you won't be able to do this after bottom planking is installed. To plank tail assembly, coat contact areas with Weldwood glue, clamp plywood in position and fasten with 7/8 in. #6 fh screws spaced about 2 in. apart.

To plank the bottom, first lay a plywood sheet in position with a joint exactly in the center of the keelson, then mark and cut to shape. Next coat all contact surfaces with



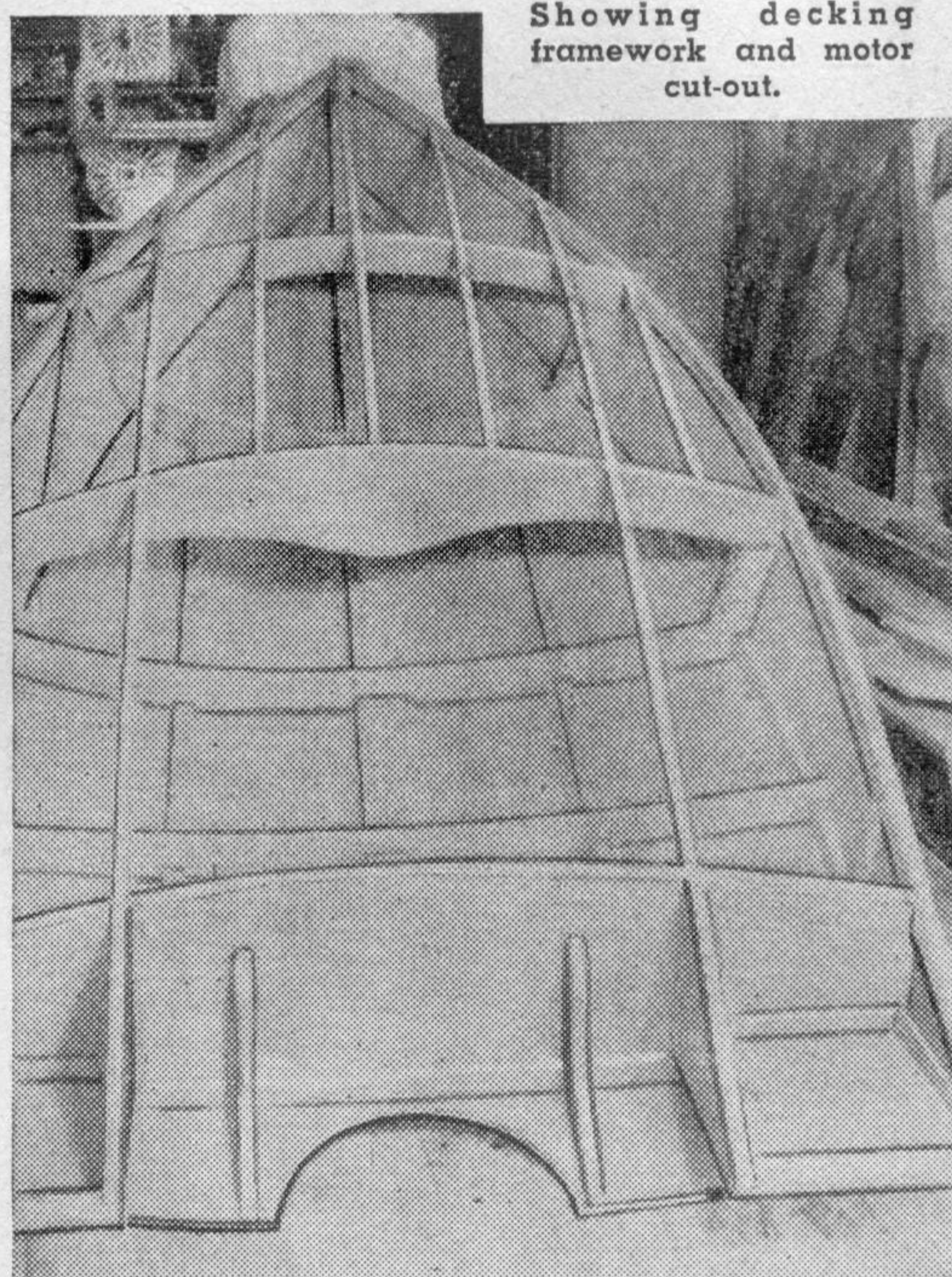


Weldwood glue, lay shaped plywood in position and fasten in place with $\frac{7}{8}$ in. #6 fh screws spaced about 2 in. apart. The portion of stem forward that the 8 ft. length of plywood fails to cover is now covered with a scrap of plywood and the joint is secured with a $\frac{1}{2}$ x $1\frac{1}{2}$ in. batten, joint glued and screw-fastened. At the transom the planking extends and is cut out to admit the motor as shown. Trim edges of plywood evenly along chines and prepare to cover the sides with the $\frac{1}{4}$ in. plywood.

To cover the sides of *Atomite*, lay a plywood sheet in place, clamp and mark correctly, removing the plank and sawing to shape. Use the shaped plank as a pattern for the opposite side. For a flexible, waterproof joint at this point, coat chines from a point about amidships to transom with Kuhl's Aviation Glue, then lay cloth strips upon glued area and recoat with the same glue. Now from a point amidships to the stem, coat chines and entire length of clamps with Weldwood glue, clamp shaped side planks in place and fasten with $\frac{7}{8}$ in. #6 fh screws spaced about 2 in. apart. Trim planking evenly along chines and finish planking job by attaching outer keel and outer stem piece in place with $1\frac{1}{2}$ in. #8 fh screws spaced about 6 in. apart.

Now remove the hull from the form, turn it right side up and prepare to install the deck beams (which were previously laid out on our full-size patterns). Cut the deck beams to shape and fasten them in place with one $\frac{3}{16}$ x 2 in. rh

stove bolt to each joint. Now notch the deck carlins flush into the frames as shown and fasten them with one $1\frac{3}{4}$ in. #8 fh screw to each joint. Next notch the deck battens halfway into #1 beam and all the way into #2 deck beam as



Showing decking framework and motor cut-out.

MATERIALS LIST—ATOMITE

Exterior Plywood Required:

Sides and bottom	2 pcs. $\frac{1}{4}$ " x 4' x 8'
Transom	1 pc. $\frac{3}{8}$ " x 15" x 52"
Deck covering boards	2 pcs. $\frac{1}{8}$ " x 16" x 54"

Other Lumber Required:

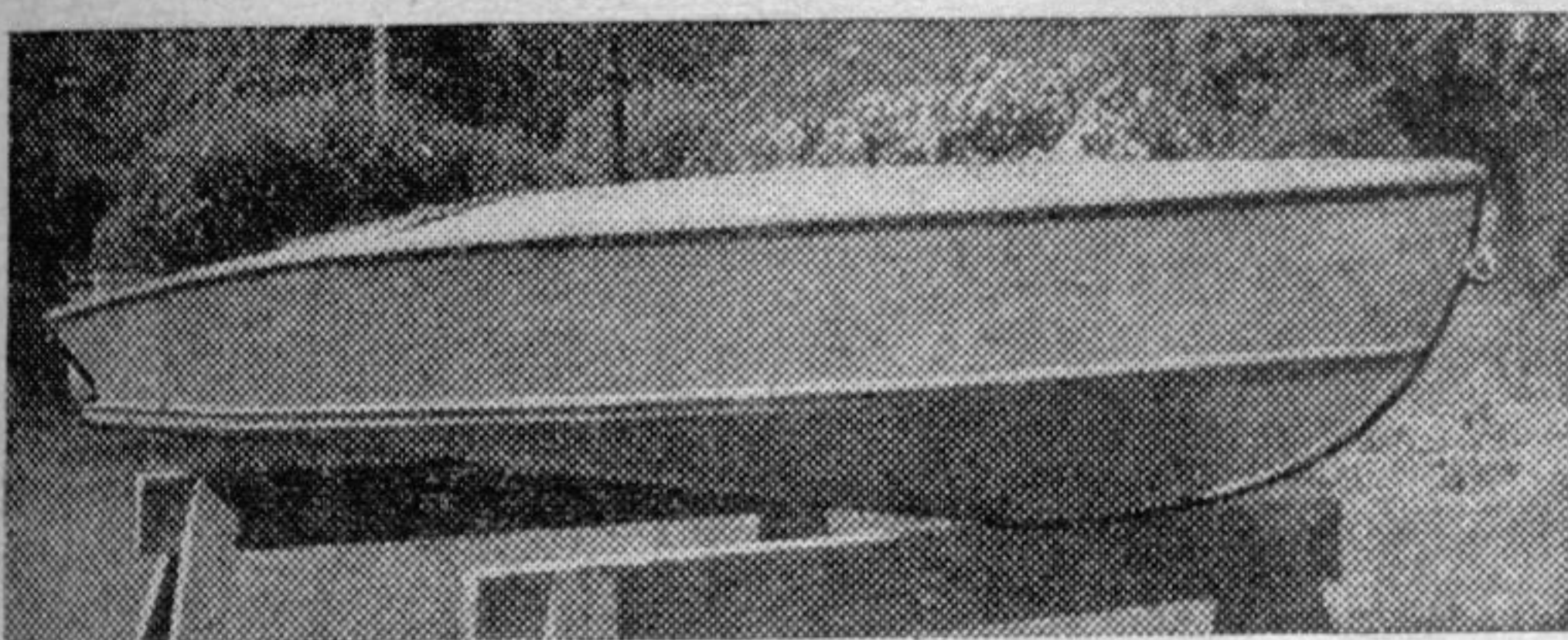
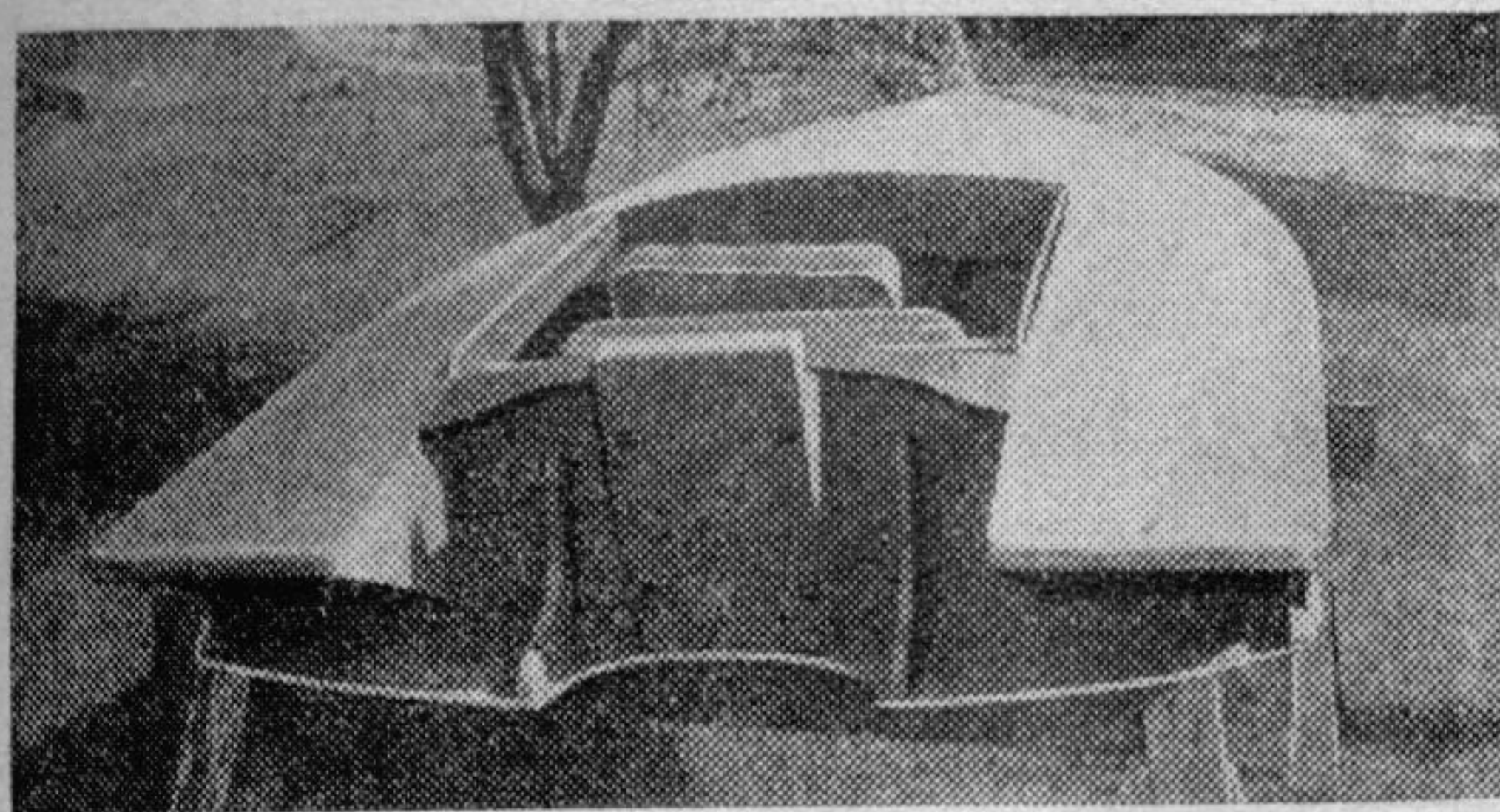
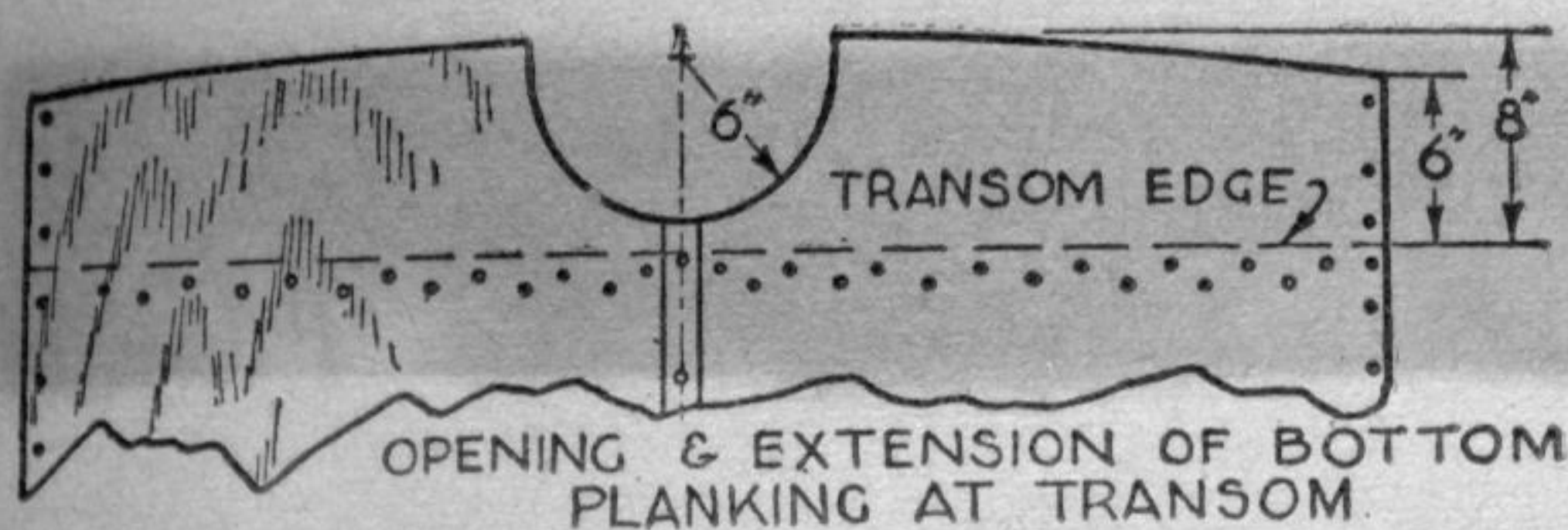
Carlin	2 pcs. $\frac{3}{4}$ " x $11\frac{1}{8}$ " x 7'
Chines	2 pcs. $\frac{3}{4}$ " x $11\frac{1}{4}$ " x 10'
Keelson	1 pc. $\frac{3}{4}$ " x $23\frac{3}{4}$ " x 6'
Keel (outside)	1 pc. $\frac{1}{2}$ " x $11\frac{1}{8}$ " x 7'
Clamps	2 pcs. $\frac{3}{4}$ " x $11\frac{1}{8}$ " x 10'
Battens (bottom)	2 pcs. $\frac{3}{4}$ " x $11\frac{1}{4}$ " x 6'
Battens (deck)	3 pcs. $\frac{1}{2}$ " x $\frac{7}{8}$ " x 10'
Moldings	2 pcs. $\frac{3}{4}$ " x $11\frac{1}{8}$ " x 10'
Frames (includes transom frame)	2 pcs. $\frac{3}{4}$ " x 8" x 10'
Stem	1 pc. $1\frac{1}{2}$ " x 8" x 40"
Form	1 pc. 2" x 8" x 8"
Motor board	{ 1 pc. $1\frac{1}{2}$ " x 12" x 14"
	{ 1 pc. $1\frac{1}{2}$ " x 3" x 12"

Fastenings:

4 gross $\frac{7}{8}$ " #6 fh screws
4 dozen $1\frac{1}{2}$ " #8 fh screws
2 dozen $1\frac{3}{4}$ " #8 fh screws
$\frac{1}{4}$ pound $\frac{1}{4}$ " tacks
2 $\frac{1}{4}$ " x $3\frac{1}{2}$ " carriage bolts (stem joint)
2 $\frac{1}{4}$ " x $3\frac{1}{2}$ ", 2 $\frac{1}{4}$ " x 5' carriage bolts (motor board)

Miscellaneous:

3 yards 36" width heavyweight muslin (sew with seam in center); $\frac{1}{2}$ gallon airplane dope; paint and varnish; 1 pint Weldwood resorcinol resin glue; $\frac{1}{2}$ pint Kuhl's Aviation glue



Note tail and bow construction in these photos of the completed but unfinished boat.

shown. Before covering the deck apply 2 coats of paint to the interior, allowing ample drying time between coats. Cover the fore part of the deck first with heavy-weight, closely-woven muslin, lapped over the sheer and deck beam edges

and tacked at 1 in. intervals with $\frac{1}{4}$ in. tacks. Now coat the cloth deck with 4 or 5 coats of airplane dope, allowing $\frac{1}{2}$ hour drying intervals between coats. This coating makes the deck drum-tight and waterproof and you may enamel it any desirable color afterwards. Now cut the $\frac{1}{8}$ in. thick plywood *after side deck planking* to shape and screw-fasten it in place with $\frac{7}{8}$ in. #6 fh screws spaced about 3 in. apart.

Screw fasten the plywood coamings shown (see drawings) in place and attach the moldings to the sheer edges on each side with $1\frac{1}{2}$ in. #8 fh screws spaced about 8 in. apart. Make the floor boards from $\frac{1}{4}$ in. plywood scrap and fasten them to keel and battens with a few $\frac{7}{8}$ in. #6 fh screws so they may be removed for cleaning and painting the interior. Finally make the motor board and angle pieces and bolt this board in place as shown. Optimum angle of 12° is recommended by Outboard Boating Club of America. You are then ready for the final paint or varnish coats and some fast-flying fun afloat.

● Craft Print No. 6 in enlarged size for building Atomite is available at \$1. **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. Now available, our new illustrated catalog of "186 Do It Yourself Plans," 10¢. Please allow three to four weeks for delivery.

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