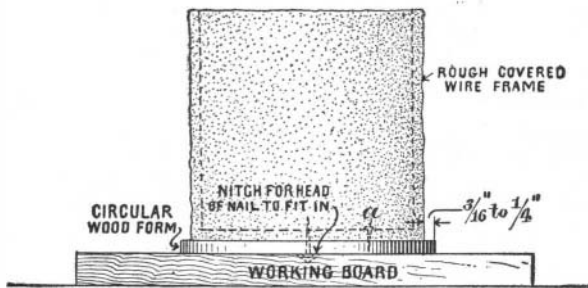




**HOW TO MAKE CONCRETE POTTERY.—II.**  
BY RALPH C. DAVISON.

(Continued from the issue of June 12th, 1909.)

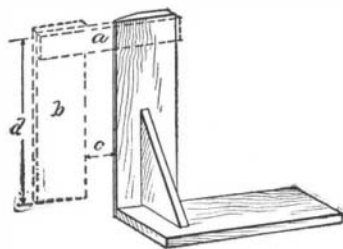
The next step is the covering of the forms with the cement mortar. The first operation is the application of a roughing or scratch coat. The mortar for the



**Fig. 4.—METHOD OF ATTACHING ROUGH-COATED JAR TO CIRCULAR WOOD FORM.**

scratch coat should be made of one part Portland cement and two parts of fairly fine, clean sand. This is known as a 1-to-2 mixture. The cement and sand should be thoroughly mixed together while dry; and to this mixture before wetting should be added enough plasterer's hair to bind the particles together. Goat's hair is the best to use. It can be procured at almost any plasterer's or mason supply dealer's. It comes in matted bunches, which should be picked apart and the hair separated before adding to the cement and sand. The whole should then be wet down with water and thoroughly mixed. Be careful not to get the mixture too wet, for if so it will not hang to the forms. The proper consistency is that of a stiff paste. Probably the best tool to apply this mortar to small work is an ordinary table knife; for large work a regular mason's trowel or float may be used. Take as much of the mortar as can conveniently be handled on the end of the knife, and commencing at the bottom of the sides of the frame, force the mortar well in between the meshes of the form. Continue this operation until the entire sides of the frame are covered. Then turn the frame bottom side up, and cover the bottom in like manner. The rougher the surface, the better. Do not do anything to the inside of the frame as yet. After having completely covered the frame as described above, let the mortar set or harden, so that it will be securely cemented to the wire frame. In about four or five hours the mortar will have hardened sufficiently, so that the form can again be handled with safety.

The finishing coat can then be applied. The mortar for the finishing coat can be made of a number of different ingredients, all of which will produce a different result as far as texture and color are concerned. The method of applying the finish coat, however, is the same in all cases. Therefore to start with, we will make the mortar to be used for the finish coat of the following mixture: 1 part of Portland cement and 2 parts of marble dust. This mixture will produce a fairly light surface when dried out, and one which is full of sparkle. It should be mixed to the consistency of a heavy paste as before. The method of applying the



**Fig. 5.—FORMER OR TEMPLATE FOR TRUING OUTSIDE OF JAR.**

finish coat and forming the jar to the desired shape is as follows:

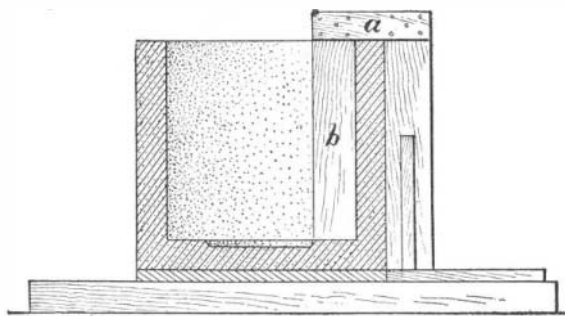
First cut a piece of wood, say  $\frac{1}{2}$  inch thick, into a circle having a diameter about  $\frac{3}{8}$  or  $\frac{1}{2}$  inch larger than the greatest diameter of the rough coat, which is already placed in the wire form. Now with a pair of dividers find the approximate center of the bottom of the rough-surfaced concrete frame, and put a small hole through the mortar at this point as well as at another point near the circumference. Take the circular piece of wood and drive a nail through its center, and in turn place this nail in the hole already made in the center of the bottom of the rough-covered form. Now turn the jar over, letting it rest on the circular piece of wood, as shown in Fig. 4, and you will note that the wood projects from  $\frac{3}{16}$  to  $\frac{1}{4}$  of an inch all around

the rough coat. The finish coat must be built out as far as this. Before going further drive a nail or tack lightly into the wood through the hole which was made in the bottom of the jar near its circumference, as indicated at *a*, Fig. 1. This will hold the jar to the circular wood form, so that it will turn with it. As shown in the illustration, the head of the nail in the center of the circular piece of wood should project beyond the bottom, and a niche should be cut in the working board for it to fit in. The head of the nail will then act as an axis around which the wood and jar can be revolved.

The next step is to make a template or forming strip for the outside of the jar. In this case the jar has perfectly straight sides, therefore all that is necessary is a straight piece of wood. It should be made one inch or more longer than the distance from the working board to the top of the finished jar, and should be mounted on a frame, as shown in the illustration, Fig. 5, so that it will be perpendicular at all times. The cutting edge of the forming strip should be beveled off as shown. After making this, all of the tools necessary for the forming of the jar are complete, and the putting on of the finishing coat can be commenced.

This is done as follows: First rough up and scratch with a sharp tool, such as the teeth of a saw blade, the rough-coated jar, and then thoroughly wash off with a brush and water any loose particles of cement that may be present. Then, as was done in placing the roughing coat, take as much of the already prepared finishing coat as can be held on the end of a knife blade, and commencing at the bottom of the jar build out to the edge of the circular piece of wood which acts as a guide for the forming template.

Cover the whole surface with the finishing coat, gradually building it out to the required thickness. Now hold the template firmly against the circular guide, and at the same time revolve the jar. By so doing, all surplus cement will be cut or scraped off by the edge of the upright template, thus giving a perfect-



**Fig. 6.—THE FORMER ARRANGED FOR TRUING THE INNER FACE OF THE SIDE WALL.**

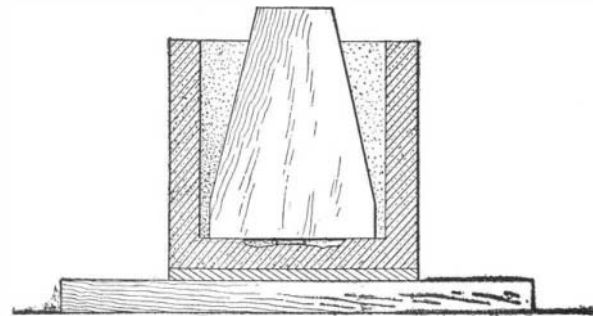
ly smooth and true surface to the jar. After this operation it will be found that the top of the sides of the jar are left in rather a crude, rough state. To even these up and to obtain a uniform height, nail a piece of wood, as indicated by the dotted lines at *a* in Fig. 5, to the upright template, and at the proper elevation to scrape the top of the sides to the desired level.

Again place the template in position against the edge of the circular wood guide at the bottom of the jar, and start revolving the piece. The projecting piece of wood *a*, which has been attached to the upright template, will strike the high spots and cut them off. Thin down with water the mortar used for the finishing coat until it is a little more of a paste than was used for the sides, and fill in the low spots on top of the jar. Keep revolving the jar and adding mortar until a perfectly smooth, even surface is obtained.

In finishing the inside, the rough surface should be scratched and washed as was the outside surface before starting to lay on the finish coat. Having the outside surface as a guide, it is an easy matter to true up the inside without any further tools than a thin straight edge or a long table knife. But if one feels that he cannot make a true enough surface, another strip of wood, as shown at *b*, Fig. 5, can be attached to piece *a*, which has already been secured to the upright template, in which case the distance *c* should be the same as the desired thickness of the finished walls of the jar, and the distance *d* should be the same as the desired inside depth. Then by placing the template or forming tool as shown in Fig. 6 and revolving the jar, a true surface will be obtained. It will be found that the lower end of the strip *b* while revolving in the jar has formed a ring at the bottom of the jar, from the surplus cement mortar which has fallen from the sides. This ring acts as an excellent guide for truing up the inner surface of the bottom. If there is not enough surplus cement in the bottom of the jar to true up the center portion of it, add a little more and tamp or tap it down until it appears about even with the ring around the sides. Then take a piece of wood with a straight edge and a trifle smaller than the inside of the jar. Let this rest on the ring at the bottom, as indicated in Fig. 7. Hold the template stationary, and revolve the jar. With a little coaxing and by filling up the low spots as they appear, with a thin mortar, a perfectly smooth surface

will be obtained. Having completed the inner face of the bottom, turn the jar over and let it rest on its top. Remove the round wood guide which is secured to the bottom by nails, and then scratch the cement surface which is now exposed and wet it down. Now add or lay on the finishing coat, and true it off by means of the same template and former as was used for finishing the top edge, only adjust the strip *a* so that it will allow of the desired thickness of finish to be given to the bottom of the jar.

Now, as far as the finish and form of the jar are concerned, it is complete. Having gone through the operations necessary for the completion of a round jar, it will be easy to build up a square or oblong piece, as the operation is practically the same, the only difference being in the forming and finishing. Here



**Fig. 7.—TRUING THE INNER FACE OF THE BOTTOM WALL.**

instead of using a round wood guide or form and revolving the piece, a square or oblong guide, as the case may be, is used and the template or former is held against it and moved along, thus cutting off the surplus cement mortar and giving a smooth surface to the sides.

(To be continued.)

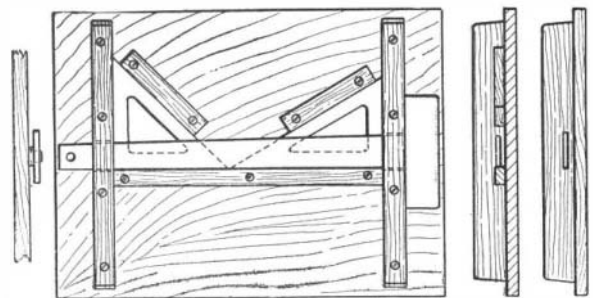
**A CONVENIENT CARRYING ARRANGEMENT FOR A DRAWING OUTFIT.**

BY I. G. BAYLEY.

The various instruction classes in drawing held at night schools, Young Men's Christian Associations, or institutes, necessitates some convenient manner to carry the drawing utensils used by those who attend. The general practice is to wrap them in a black cloth or large bag made of the same material, either of which is altogether unsatisfactory, the trouble generally being with the T square. To obviate this, the following arrangement was adopted by a student, which was voted a marked improvement over the others:

The illustration shows the under side of the board with T square and triangles secured in place for carrying. A narrow slot, shown in the end view, large enough for the T square to pass conveniently through, is cut in each batten. The slots can either be in the center of the batten or nearer one edge of the board, according to the location of the screws which hold the battens to the board; that is, supposing the carrying arrangement is being adapted to a drawing board already made. The slots must be high enough from the surface of the board to permit the triangles to pass between the blade of the T square and the board. A narrow strip of wood, deep enough to be flush with the surface of the T square when the latter is in place, is secured to the board with nails or screws. It should bear along the edge of the T square, so that the latter will not wear on the end walls of the slots in the battens, thus preserving the edge.

The triangles are put in position, the right-angle sides bearing along the edge of this strip, and against



**HOW TO SECURE THE T SQUARE AND TRIANGLES TO A DRAWING BOARD.**

the battens, when the short strips shown are placed along the hypotenuse edge of the triangles and secured to the board. To keep the T square in place, a round peg, having a shouldered end of the same diameter as the hole in the square, is secured to the board in convenient position with a fine long screw.

The cross-section view, taken through the center of the board, shows the strips of wood in relation to the slot in the battens.

The triangles are put in position first, when the T square is slipped over them, through the slots, the end being lifted and sprung over the shouldered peg, which should be nicely smoothed over for this purpose. The whole can be carried as it is with perfect safety, or wrapped in a convenient cloth for cleanliness,