

Checkered Bowls

Reinterpreting in wood the designs of the American Indian

by Irving Fischman

After turning bowls for several years, I have recently begun to explore the classic designs used since antiquity in pottery and basket making. I am now particularly interested in the pottery and basketry of the Indians of the Americas. Simple shapes—such as truncated cones or bells—are used to counterpoint intricate painted or woven patterns. I have tried to reinterpret this design approach into a different medium, wood.

One bowl in particular has a simple bell or trumpet shape and a checkered pattern of teak and black walnut, woods that are richly contrasting. To make this bowl, familiarity with lathe work and a supply of clamps, both band and deep throated, are essential.

Basically, the bowl is made of three layers of wood. A 15 or 16-inch square of one-inch walnut forms the top layer of the bowl and an 11-inch square of two-inch teak forms the bottom. In between is a checkered ring of teak and walnut one inch thick. Both the top and bottom pieces should be

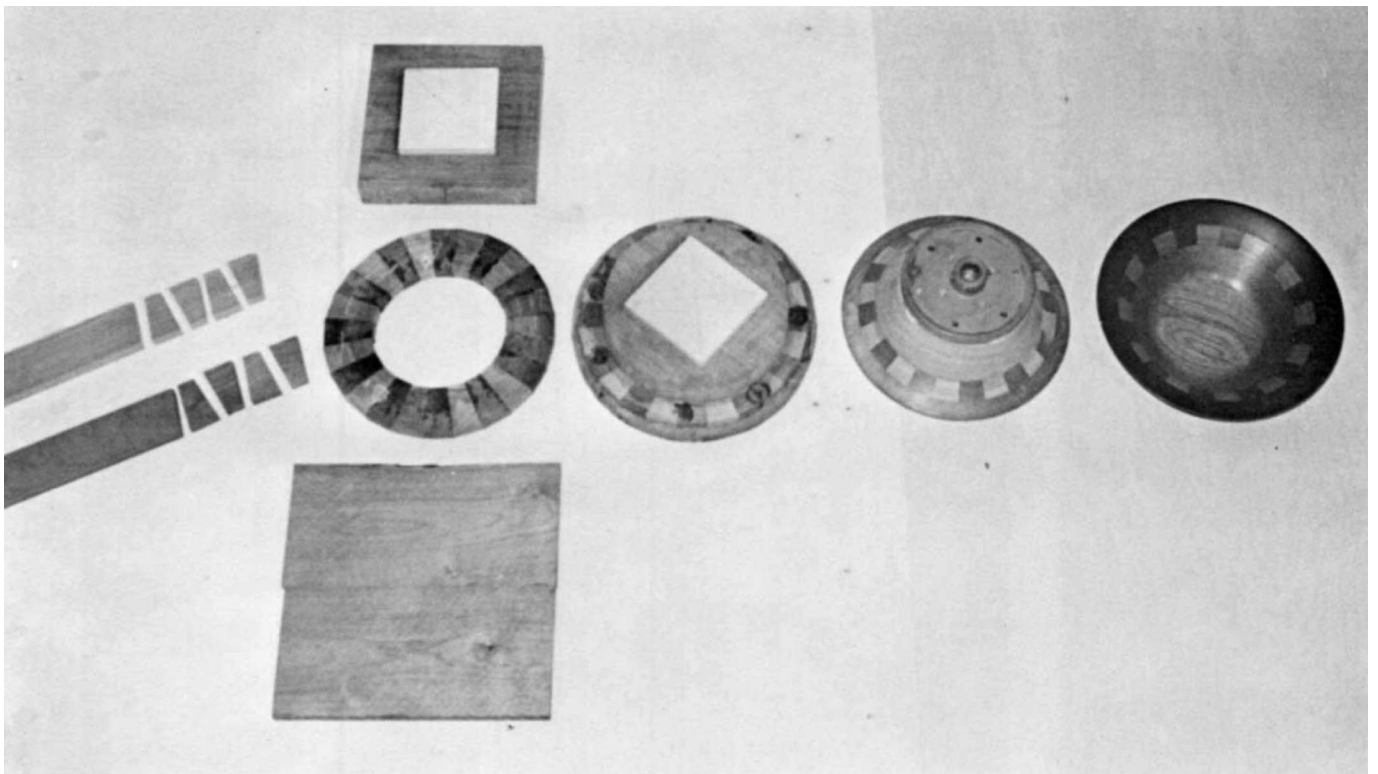
planed or sanded flat and cut into a disk shape.

To provide a means of attaching the faceplate, I glue a piece of 3/4-inch Baltic birch plywood directly to the bottom of the teak. No sheet of paper is used between them because the mass is so large that the paper might fail during turning. I use birch plywood because it is far stronger than either fir plywood or solid wood.

The checkered ring in the center of the bowl is not an inlay as first observation of the completed bowl might suggest. It is a separate layer composed of solid truncated-wedge-shaped pieces glued together to form a ring. This technique is much easier than inlaying on the curved surface of a turned bowl and the pattern can be seen on both sides of the bowl—in the manner of Indian baskets.

The ring has twenty-four pieces, the smallest number that I felt would have a pleasing visual effect. Larger numbers of pieces are possible, but the accuracy of the angles of the pieces becomes correspondingly more critical.

Bowls in various stages of construction are shown in a flow sequence.





With 24 pieces the base angle of the wedge is 82.5 degrees or 7.5 degrees from the vertical. If the outside edge of each wedge measures 1-7/8 inches, the ring will have a diameter of approximately 14 inches (from the formula circumference equals pi times diameter; the circumference in this case is 24 times 1-7/8 inches).

The wedges are cut from identical pieces of one-inch teak and walnut three inches wide by 27 inches long. In cutting the wedges on the table saw, the blade is kept vertical and the cross cut guide is set at 82.5 degrees. First, the end of the board is trimmed to this angle. Then the board is flipped over and the 1-7/8-inch base length is marked on the edge. This is used to set the distance between the fence and the blade. Because the crosscut guide is on the opposite side of the blade from the fence, using a fence for measuring each subsequent piece would cause the blade to bind. Therefore, we actually measure to a short hardwood block clamped at the front of the fence, which acts as a distance marker. Now we cut 12

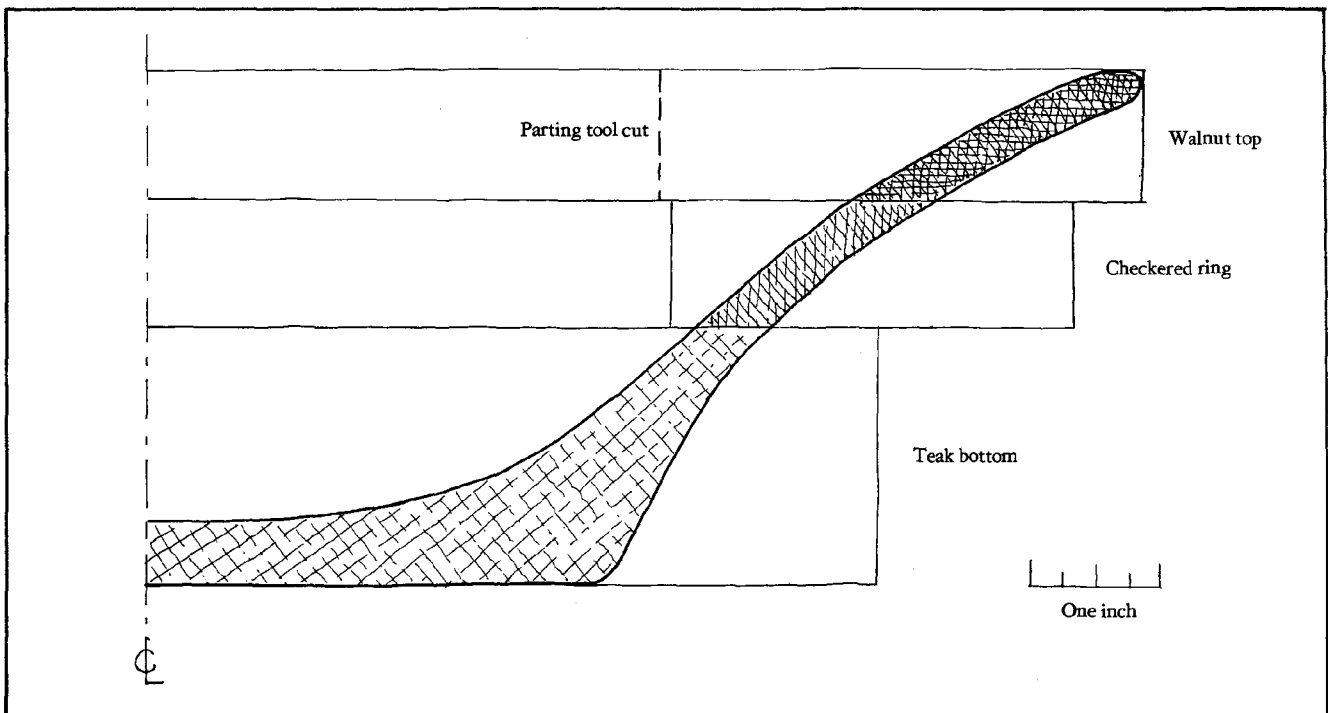
identical pieces each of teak and walnut, flipping the board after each pass to get the wedge shape.

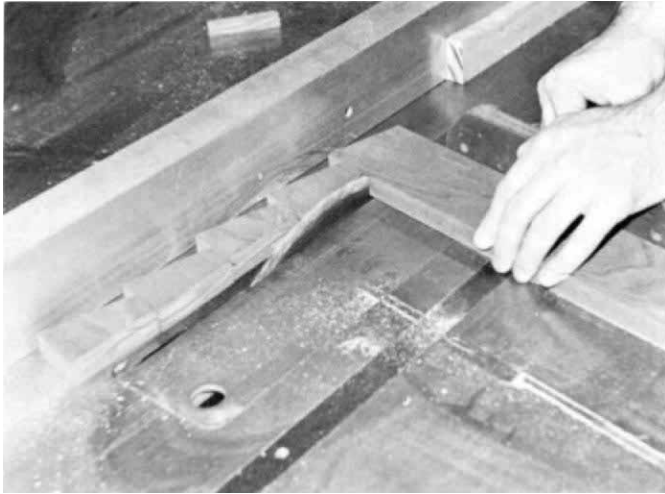
If the angle has been set correctly, the 24 pieces should form a perfect ring. This can be checked by clamping the pieces dry with the band clamp. Slight errors can be corrected by sanding.

Alternating the teak and walnut blocks, glue is applied to their edges and a belt clamp tightened around them. (A tourniquet could be used instead.) I simultaneously clamp the whole ring between two disks of 1/2 or 3/4-inch plywood, protected with wax paper, to assure that the ring is flat. I use yellow glue (aliphatic resin) throughout because it hardens and is stronger than white glue. Plastic resin, resorcinol, or casein are other possibilities. After allowing the glue to dry thoroughly, the ring is removed and touched with a sander or plane to make sure it is flat.

It should be noted we are gluing end grain which is not especially strong. However the ring will be glued between two

Approximate cross section of bowl showing placement of the layers. Bowls are turned by eye without templates.

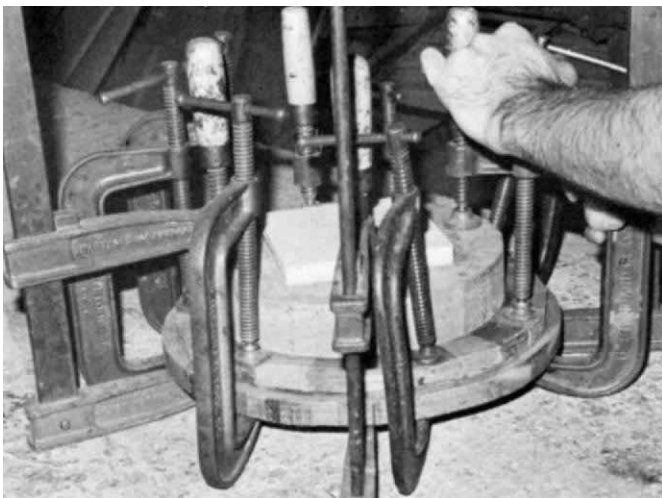




Truncated segments are cut with the cross-cut guide set at 82.5 degrees for 24-piece ring. Block clamped to rip fence safely eliminates need for measuring each piece.



Tourniquet clamp holds glued segments together while two plywood disks protected by waxed paper are clamped to hold checkered ring flat between them.



Checkered ring is touched with sander to make sure it's flat; then it's glued between the two-inch teak base block and the one-inch walnut board that will form the top rim.

solid layers and we have the advantage of not turning end grain.

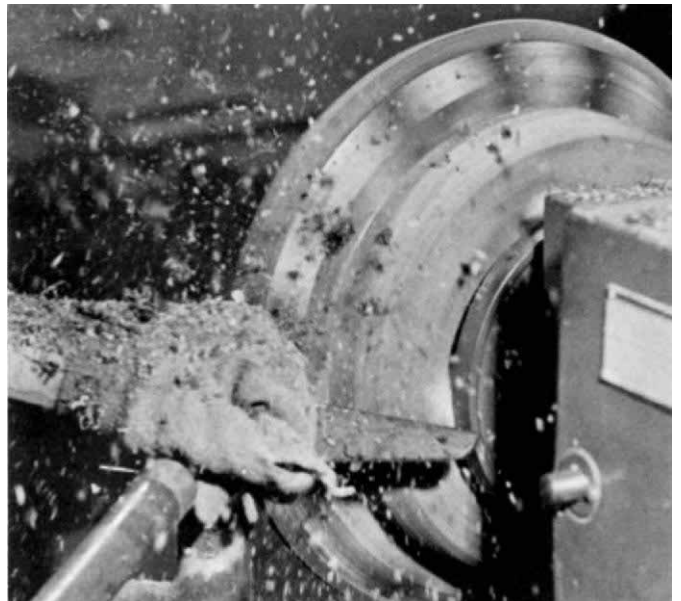
The entire turning block can now be assembled. The teak base (with birch plywood block already attached), checkered ring, and walnut top are glued together and clamped using many clamps to assure good contact. Concentric alignment is important and either circles or crossed diameter lines drawn on the blocks will help. The block is allowed to sit one or two days to assure that the glue in the interior is dry.

A faceplate is now attached to the birch plywood on the completed turning block. Because of its large size, the block must be mounted securely on the outboard side of the lathe. I use a heavy duty lathe with four speeds—600 and 1200 rpm for faceplate turning—2400 and 3600 rpm for spindle turning. The handrest is mounted on a moveable tripod.

With the lathe at its lowest speed, a heavy scraper is used to round the walnut top disk, both for balance and to determine the final dimension of the bowl. Then a gouge is employed to rough the outside shape. Starting at the bottom, material is removed from each of the three layers until there are no gaps between the layers and the tool cuts solid material throughout its path. Keep in mind that the three layers will cut differently—the easiest is the teak and the hardest the walnut. Also, teak is notorious for dulling tools and frequent sharpening and honing will be necessary. Final outside shaping is accomplished with a scraper, taking very light cuts. Any small tool can be used to apply the radius on the bottom edge.

At this point I usually sand the outside of the bowl completely since I can apply as much pressure as I like to the still solid block. In other words, I don't tackle the inside until the outside is completely finished.

The inside of the bowl is tackled with the handrest facing the top of the bowl. First I remove with a parting tool a central disk of walnut eight inches in diameter. This disk



Outside of bowl is turned and finished first with lathe set at low, 600 rpms. Top walnut board gives the bowl stability during this stage. The handrest is on a moveable tripod.

matches the hole in the checkered ring and has not been removed until now to assure rigidity during both the gluing and the outside turning process. Because the parting tool is not coming in from the side, be sure to widen the groove that it makes so that it doesn't get caught. When the cut is completed, the central disk is easily removed.

Now I usually remove some material from the center of the bowl, so that the handrest can be moved in to act as guide for roughing out the inside. I prefer the scraper for this operation so there is no chance of the tool catching in the wood.

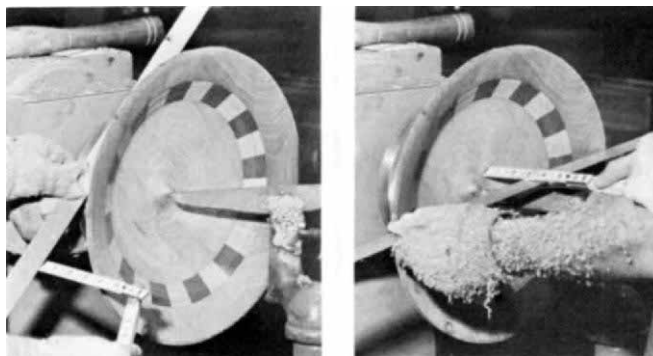
The bowl takes shape very quickly now. The sides, completed first, are made parallel to the outside and between 1/4 and 3/16-inches thick. Don't make the sides any thinner or stability becomes a problem with these laminated bowls. The sides taper slightly at the rim and gradually increase in thickness at the base. A higher lathe speed should be used to finish the bottom. The bottom is left between 3/8 and 1/2 inches thick to give the bowl a solid feel.

The interior and rim of the bowl are now sanded. Teak sands very nicely, and I use only grits 60 to 120, wetting the surface occasionally to bring up the grain. The entire bowl can now be burnished with a clean rag if desired.

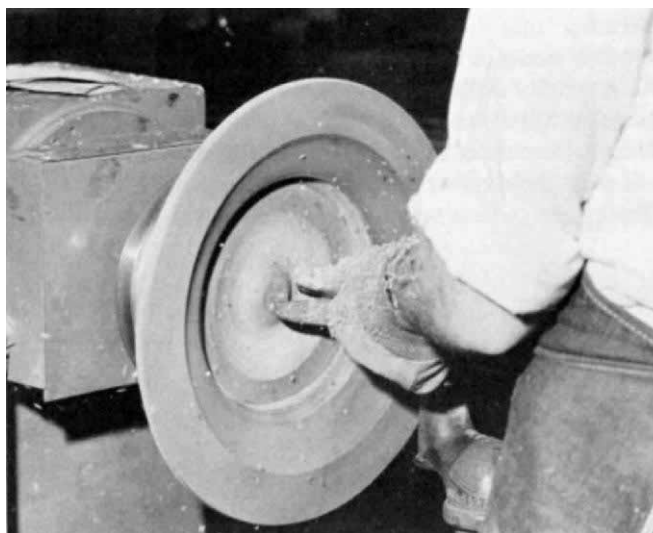
The completed bowl is split from the Baltic birch backing and the bottom is hand planed or sanded flat. Finally, I prefer to give the bowl a rich oil finish, but a glossier finish can be tried.

The finished bowl takes five hours to complete and about \$10 in materials. The present design can readily be seen as a jumping off point for many variations. Contrasting veneers could be placed between the layers to form stripes in the finished bowl. Different numbers of pieces and different woods could create other patterns.

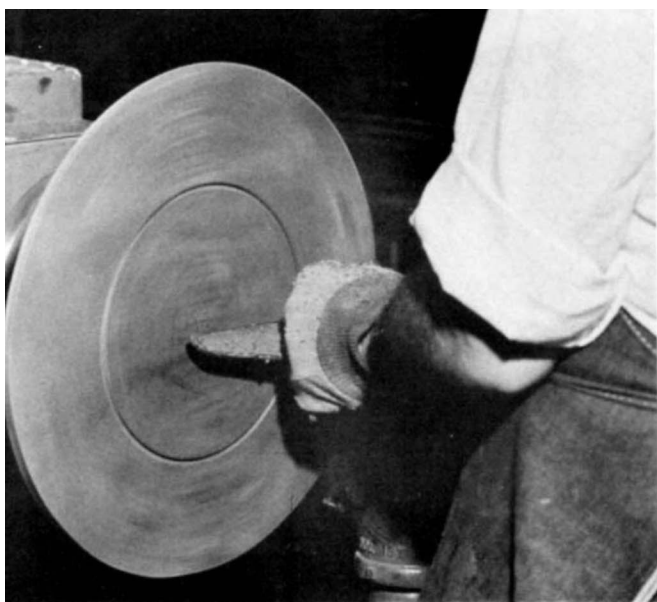
However, I feel that the basic design approach—using a simple shape to compliment intricate patterns—is essential to a satisfactory finished product.



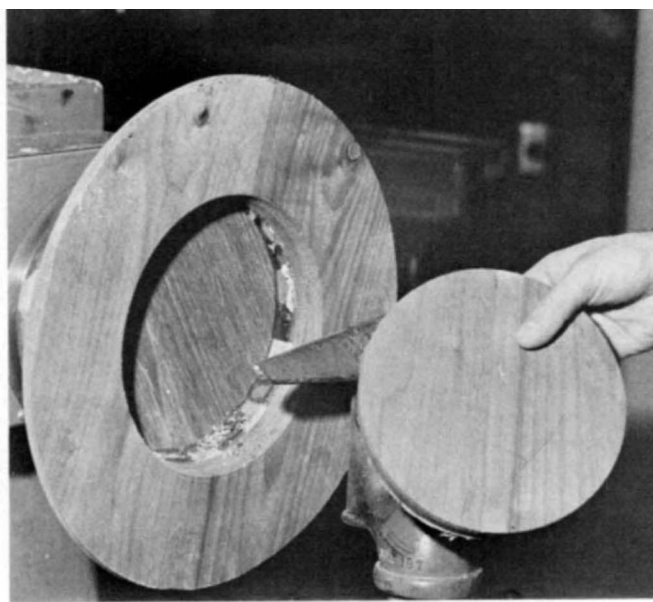
Thickness of bottom is measured and kept between 3/8 and 1/2 inches to give bowl a solid feel. Use a higher lathe speed for bottom. Author sells the bowls for about \$80.



Inside of the bowl is now turned and completed. Sides are turned first parallel to the outside and no less than 1/4 to 3/16 inches thick in the interest of stability.



Once outside is completed, a parting tool is used to cut the central disk from the walnut top. Widen the groove so the tool doesn't get caught.



When cut is completely through, centrifugal force holds disk in place until lathe is stopped. The disk should be made smaller than the inside of checkered ring.