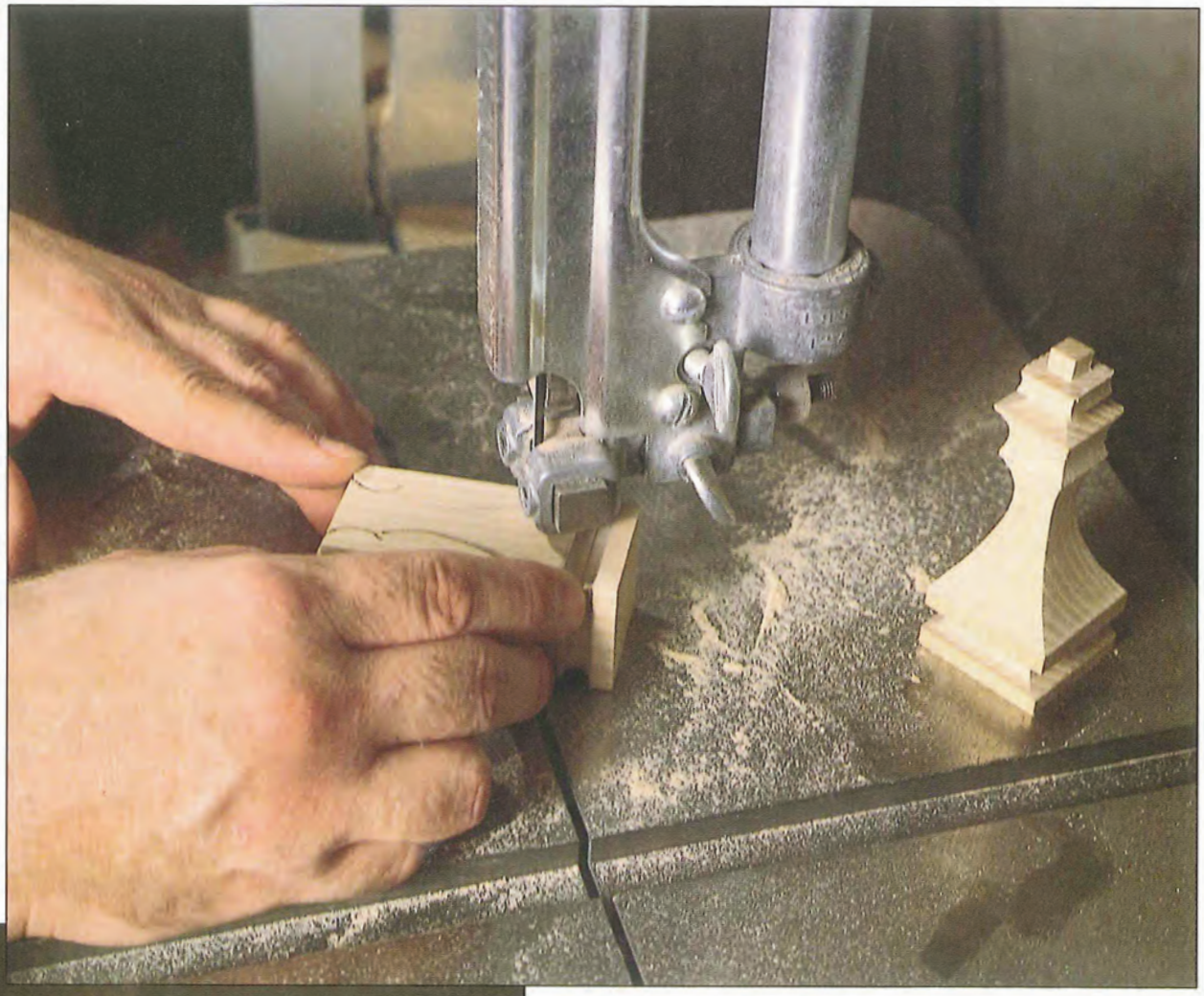
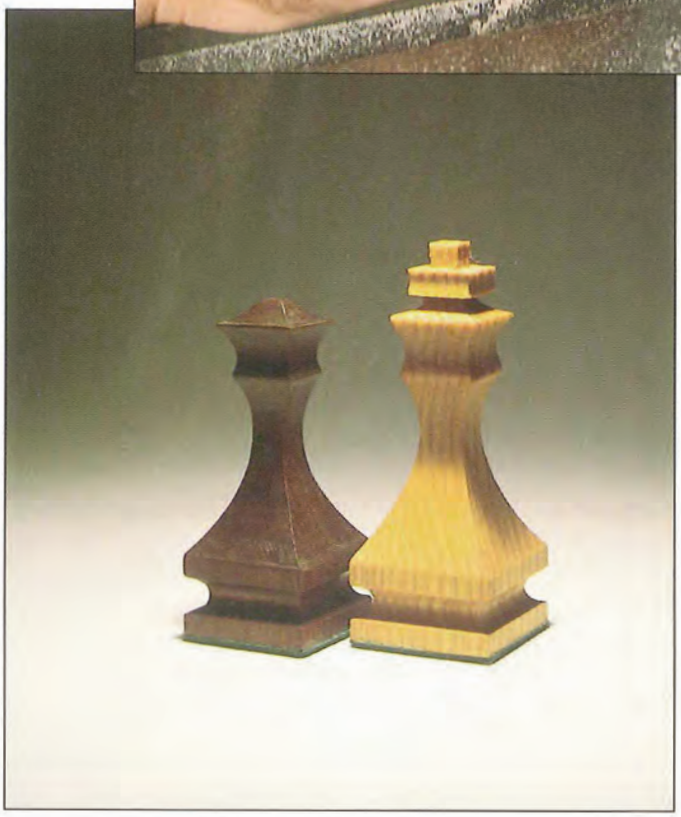




Dutch Turning

Band saw technique yields turned look without the lathe

There's no arguing the variety of work that can be produced with a lathe, or the exquisite beauty of a finely-turned piece. But many woodworker's don't have the luxury of a lathe, or the consummate skill that really fine lathe work demands.

Dutch turning has long been recognized as the poor man's substitute for a lathe. The technique—where profile cuts are made on adjacent faces of square stock—yields a well-shaped finished piece that captures much of the symmetry that defines lathe work, yet imparts its own very distinct look. Tradition-

ally, Dutch turning was a hand tool technique, utilizing fine-toothed coping saws. Today, the band saw simplifies and speeds the task.

But the technique of Dutch turning is hardly limited to projects where a lathe would have been a better choice, had one been available. You may not think of it as a Dutch turning technique, but the traditional method of crafting a cabriole leg is exactly that. Profiles are layed out on two adjacent faces of a stock, the first profile is cut out, then the stock is rotated 90 degrees and the adjacent profile is cut. Masking tape can be used to hold the waste pieces from the initial profile cuts in position, or better yet, by not entirely severing the waste pieces, they remain in place without the added fussiness of taping. Later, the narrow uncut bridges are severed to remove the waste. Files and sandpaper are then used to smooth the piece.

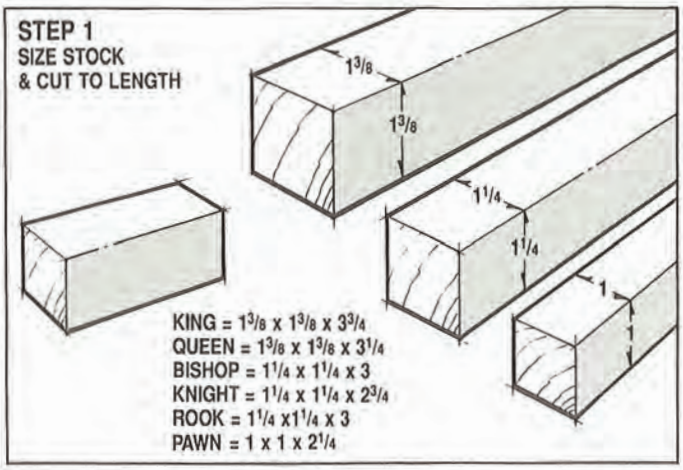
The Dutch turned chess set shown is a perfect project with which to try this interesting technique. The look of the pieces that the Dutch turning technique produces is quite distinct, sculptural in quality but with a clean and elegant simplicity. You may even prefer the look to that of more traditional lathe-turned chess pieces.

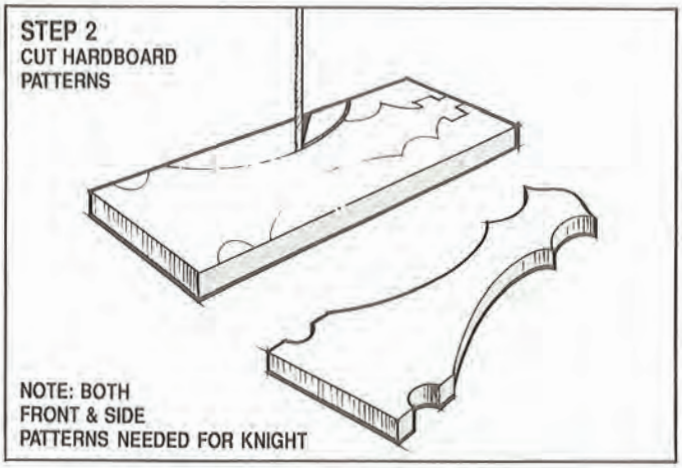
Step-By-Step

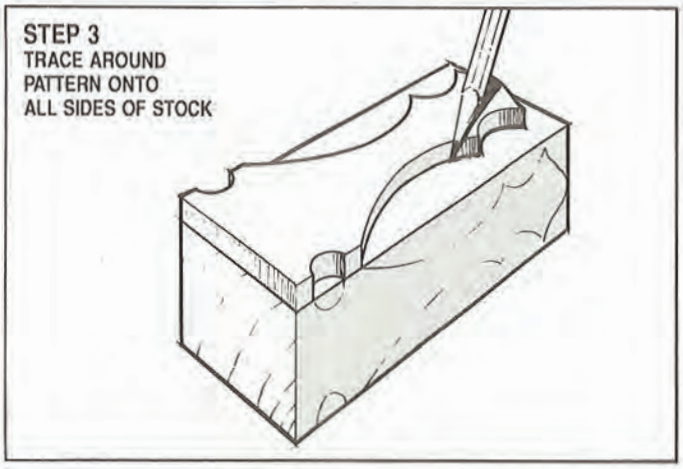
Step 1. Size your stock. Our set is crafted of ash and walnut. You'll need two 8 in. lengths (one ash, one walnut) of $1\frac{3}{8}$ in. square stock for the kings and queens, two 20 in. lengths (one ash, one walnut) of $1\frac{1}{4}$ in. square stock to yield the bishops, knights and rooks (castles), and two 20 in. lengths (one ash, one walnut) of 1 in. square stock for the pawns. Crosscut the stock to yield the required lengths. You should now have a total of 32 pieces (16 walnut, 16 ash), including 2 kings, 2 queens, 4 bishops, 4 knights, 4 rooks and 16 pawns.

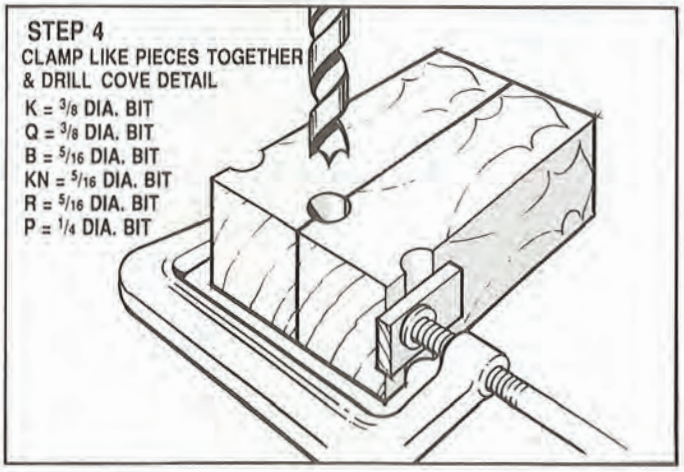
Step 2. Now make hardboard (Masonite) patterns of each piece. One pattern will do for all the pieces except the knight. For the knight you'll need both a front and a profile pattern.

Step 3. Transfer the patterns directly to the stock. It's best to transfer the patterns to all four sides of each piece. That way, no matter which side of the piece you are cutting on, the pattern will be there for you as a guide.

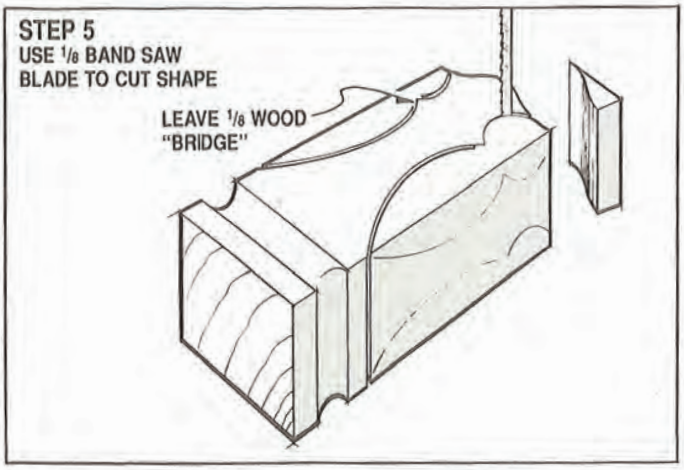




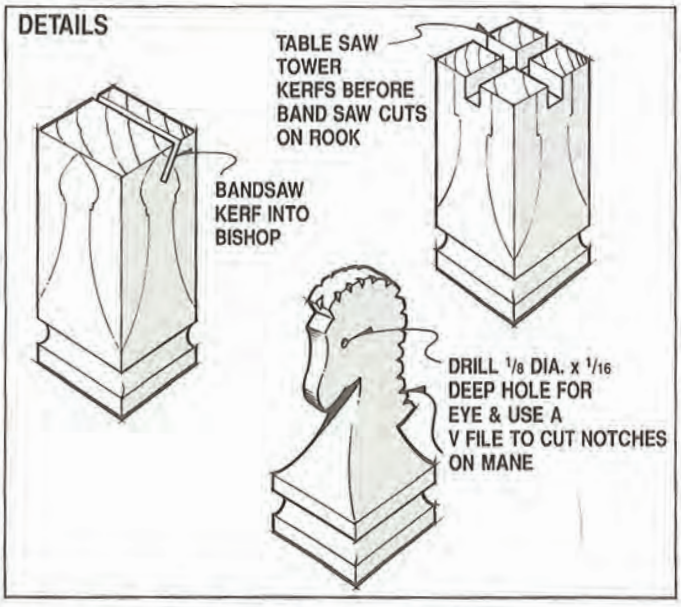




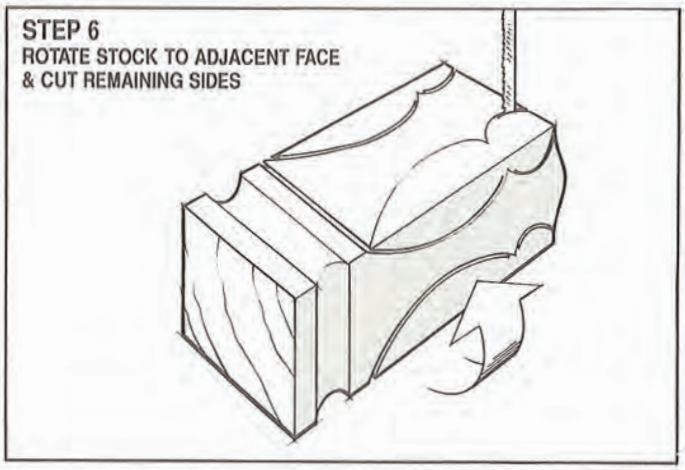
Step 4. Establish the cove detail. The easiest way to make the cove detail is to clamp like pieces side-to-side and then establish the cove using the drill press and an appropriately sized bit. Forstner or brad point bits will yield the smoothest cove, but sharp twist drill bits will be fine if that's all you have. A $\frac{3}{8}$ in. diameter bit is used for the kings and queens, a $\frac{5}{16}$ in. diameter bit for the bishops, knights and rooks, and a $\frac{1}{4}$ in. diameter bit for the pawns. Clamp a pair of like pieces as shown, then rotate the pieces to adjacent sides, reclamp and drill again until the cove is established on all four sides.

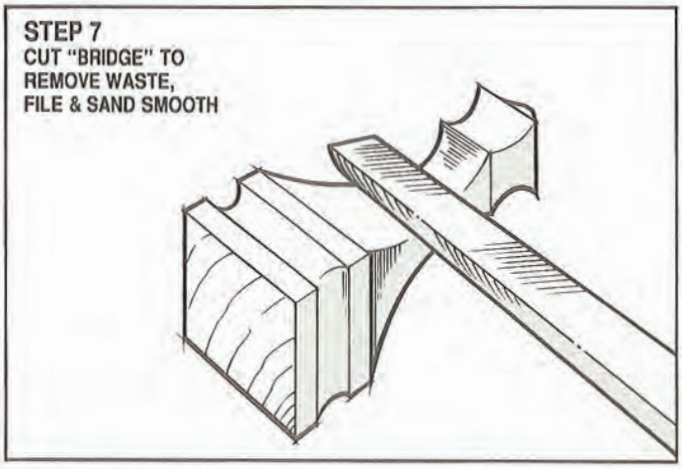


Step 5. Make the band saw cuts on one side. We used a 1/8 in. wide band saw blade, which was adequate for even the tightest curves. As shown in the illustration, for cutting the queen, you will cut away the top corner, and then make two sweeping cuts, one from the bottom and the other from the top, stopping each cut just a little short of where it would exit. By leaving the small bridge of wood connecting the scrap to the piece, you'll avoid the fussiness of having to tape the waste back in place. Note that the band saw technique will vary a little for the different pieces. For example, with the king, your initial cuts should be straight in from the side, establishing the bottom of the cross. With the bishop, as shown in the Details illustration, the first cut is to establish the kerf in the bishop's top. For the knight, you'll make the long cuts on the sides first, and the profile cuts next. For the rook, as also illustrated in Details, use the table saw to establish the kerfs in the castle tower before starting the band saw work.

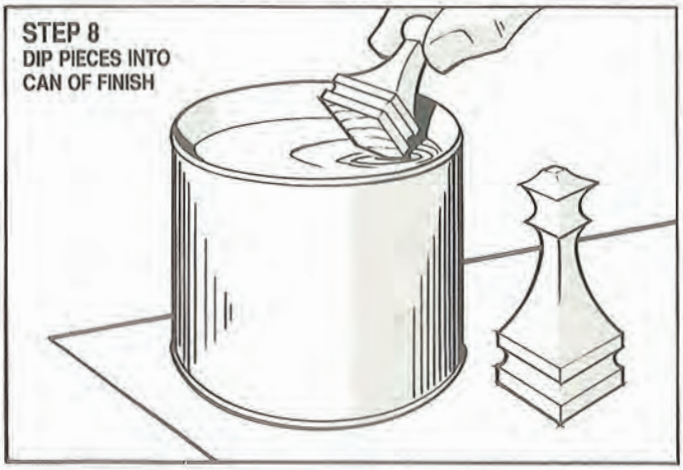


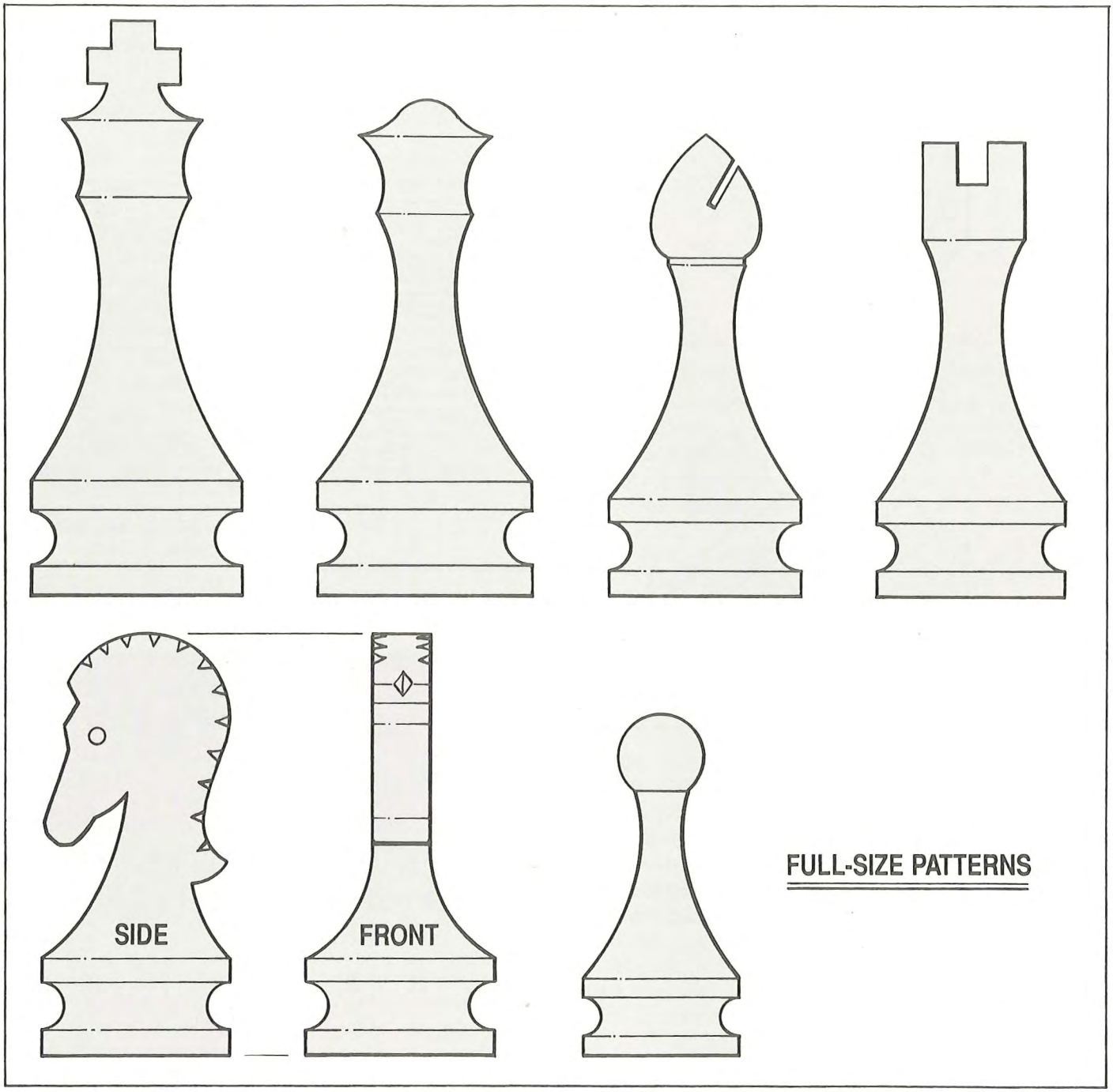
Step 6. Once the cuts are made on one side, flip the piece to an adjacent side and make the same series of cuts. Note that with the knight, the cuts made now will not be identical to the cuts made in Step 5, but will instead be of the horse's profile.





Step 7. Cut through the bridges to remove the waste, then use files and sandpaper to smooth the various pieces. You can easily cut through the bridges on three sides of each piece with the band saw, but for the final cut you'll need to slip one of the waste cutoffs under the piece for support and in order to keep the piece square to the band saw table. A half-round and round file will make short work of most of the smoothing, but if you have a set of needle files, you'll find they come in handy for some of the finer work. The amount of smoothing and sanding will depend on the care you take with the band saw work.





Should the cove details require sanding, wrap appropriately sized dowels with sandpaper to make an accurate sanding tool.

Now is a good time to finish the detail work on the knight. Use a 1/8 in. diameter drill bit to establish the eye holes as shown, and a triangular file or a sharp knife to make the decorative V-notches along the mane.

Step 8. We finished our chess set followed by an application of wax. Fill a coffee can with finish, then immerse each piece for about 15 minutes. Several pieces should fit into the can at the same time. Use a weight to keep the pieces totally immersed. Once dry, clean off the excess finish with 00 steel wool, then immerse the pieces for another 15 minutes. When dry, use 0000 steel wool to remove any excess finish.

Next, apply a coat of wax. Butcher's wax is fine for the ash pieces, but for the walnut pieces use a brown shoe polish (the wax variety, sold in tins). The brown shoe polish helps even out the tone of the walnut and eliminate any blotchiness from the various different grain directions that are exposed on the shaped sides of the pieces. Take care not to get any wax on the bottom, since that's where you'll glue the felt.

The green felt and the glue that we used to glue the felt to the bottoms of the pieces were both purchased at a craft store.