Classic Bow Saw

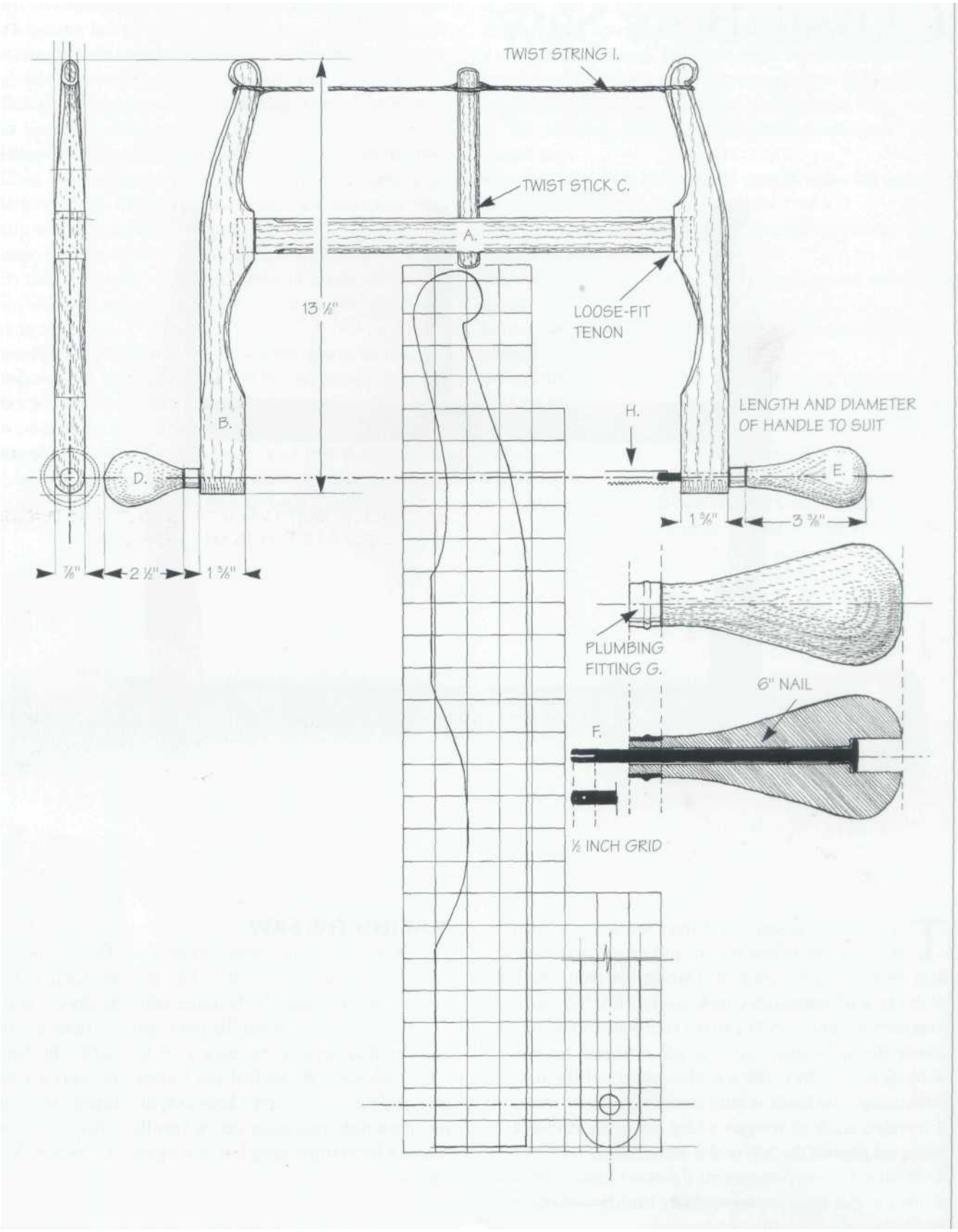
The classic bow saw, sometimes known as a Turner's saw, is a tool whose design and origins go way back into the dim and distant past. Though I've seen bow saws of this type illustrated on Greek vases, in English medieval manuscripts, in Albrecht Durer's etchings, and so on, the classic design is such that it is still as useful for curved work as it ever was. The actual workings of the saw are fascinating: The blade is held under tension by means of a wooden stick or tongue and a twisted twine that is wrapped around the top of the side cheeks.

What else to say, except that if you are looking to make a unique gift for a woodworking buddy—something really special—then this is a beauty!

MAKING THE SAW

First things first—buy your blade. I say this because, if your blade is a different size than the one used in this project, you can modify the other material sizes to suit.

The bow saw is made in three parts. There are the handles that need to be turned on the lathe; the fancy frame sides or cheeks that are fretted out with a scroll saw, coping saw or even a bow saw; and finally, there are the metal parts that make up the handles. Okay, so it does sound a bit complicated, but don't panic, it's as simple as can be.



SHAPING THE FRAME

Having pencil-press transferred the designs through to the wood, fretted out the shaped ends, and used a straight saw to cut out the crossbar, use a small spokeshave and a plane to skim the three component parts down to a good finish. Cut chamfered edges on the crossbar and the cheeks and generally round over the curved shapes, all as shown in the working drawings.

When you come to cutting the mortise and tenon joints—meaning where the crossbar fits into the end cheeks—all you have to remember is that the joints both need to be a loose fit. The best procedure is to cut the joint for a good push fit, and then trim the ends of the tenon to a rounded finish so that they are an easy rocking fit in the mortise.

Establish the handle centers on the bottom ends of the cheeks. Then run them through with a hole that is a loose fit for your 6" nails. Finally, use a piece of offcut to make the twist stick, sometimes called a toggle or a tongue.

TURNING THE HANDLES

Having studied the working drawings and seen how the two handles are quite different in length, take your chosen piece of wood—we used maple—and turn the two handles in one piece. Make sure the stubs or spigots fit your metal ferrules, and then rub them down on the lathe and part off.

As to how you drill the holes through the handles, it really depends on your workshop and equipment. I found that the best way was to grip and support the handle in the four-jaw chuck—meaning the chuck on the lathe—and then use a drill chuck mounted on the tailstock end of the lathe. The good thing about this method is that it is a foolproof way of making sure that the holes are perfectly centered. All I did was drill the larger diameter recess hole and then follow through with a smaller diameter hole.

When you have made the handles, all nicely smooth and drilled, then comes the tricky business of fitting the metal parts. It's best to start by fitting the ferrules. Take your metal tube (I used two copper plumbing fittings, but you can just as well use a slice off the end of a brass tube) and cut it off so that you have two 1/2″ lengths or rings. Use a file and steel wool to polish the rings to a smooth, shiny finish, and then tap them in place on the turned handle stubs.

Finally, pass the 6" nails through the handles and the ends of the frame, cut them to length with a hacksaw, and cut slots into the ends of the nails so that they fit your chosen bow saw blades. Mark the position of the blade-end holes. Then run 3/32"-diameter holes through the nail ends, so that you can secure the blade ends with small nails or split pins.

PUTTING IT TOGETHER

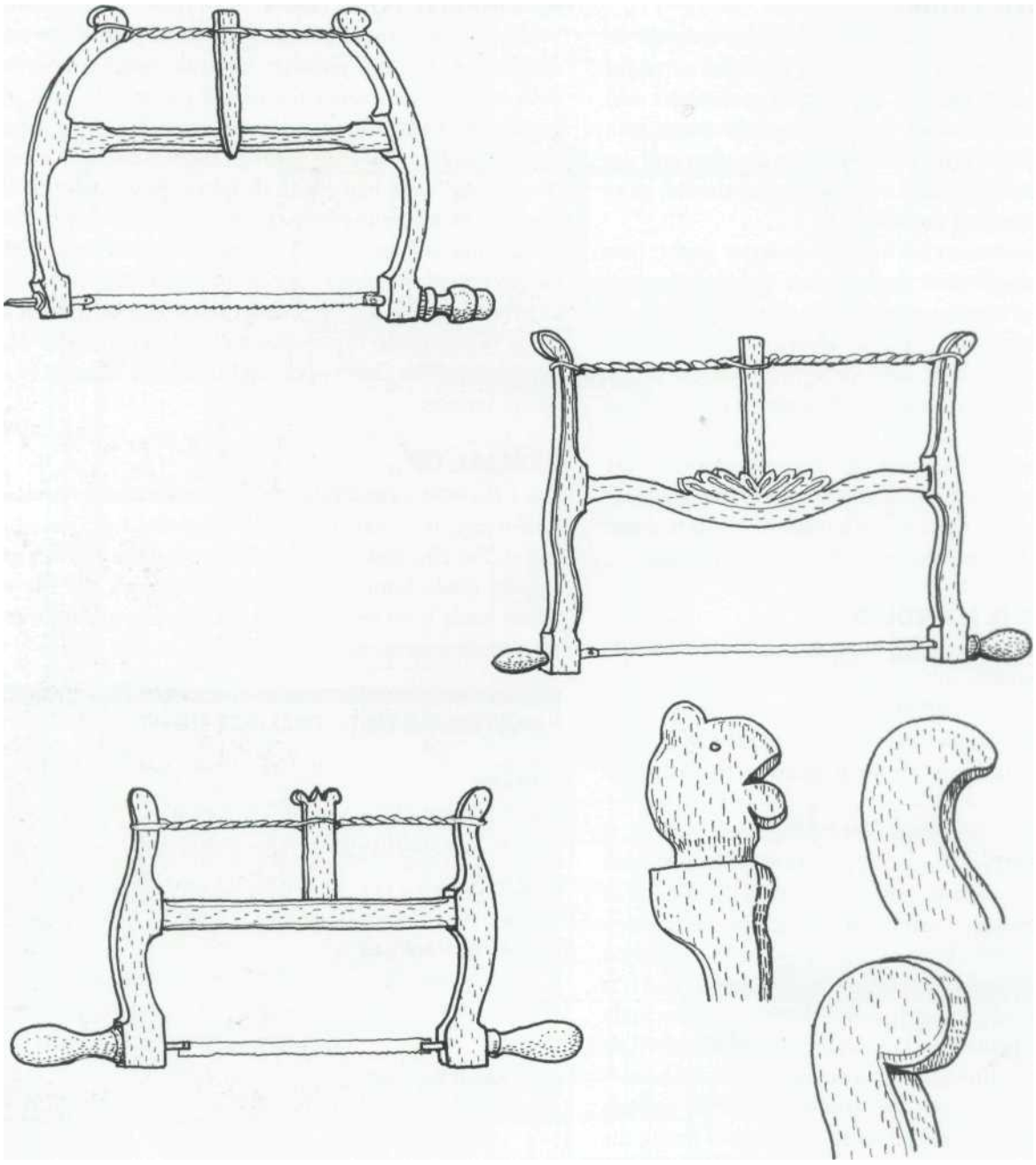
When you have made all six component parts—the two scrolled cheeks, the crossbar, the two handles and the twist stick—then comes the fun of putting the saw together. Start by fitting the H-frame together. This done, pass the slotted nail ends through the bottom ends of the cheeks and fit the blade with the pins. Make sure that the teeth are looking away from the largest of the two handles. Wrap three or four turns of strong twine/cord around the fancy ends of the cheeks and knot the ends of the cords together to make a loop. Finally, slide the twist stick in place between the turns of twine and twist it over and over so that the cheeks pull apart and the blade is held under tension.

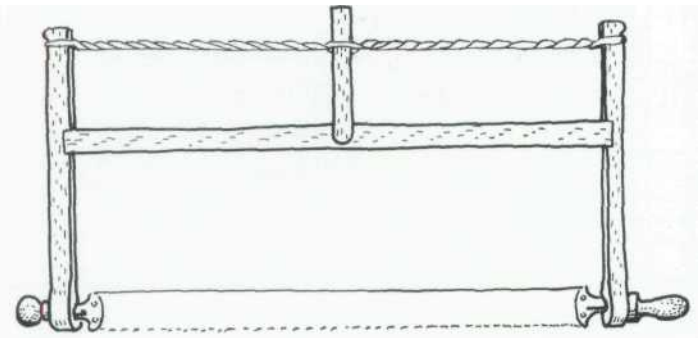
SPECIAL TIP

Since the bow saw cheeks are put under a lot of tension and stress, it's vital that you choose the best possible wood. I've checked around and seen that the handles are usually made from beech, maple or ebony, and the H-frame made from beech or ash. We have gone for an ash frame and maple handles.

MATERIALS LIST

FRAME	
A Crossbar (1)	½″×⅞″×12″
B Frame cheeks (2)	⅞″×2″×14″
C Twist stick (1)	¼″×⅜″×6½″
TURNED HANDLES	
D Large handle	2″×2″×14″—this length allows for a good amount of turning waste
E Small support handle (1)	
HARDWARE AND EXTRAS	
F Metal rods to hold the blade	6″ nails (2)
G Metal ferrules	½″-diameter tube (2)
H Bow saw blade	12″ blade
	twist cord, 60″ long
I Strong waxed twine	8′ long
J Split pin	

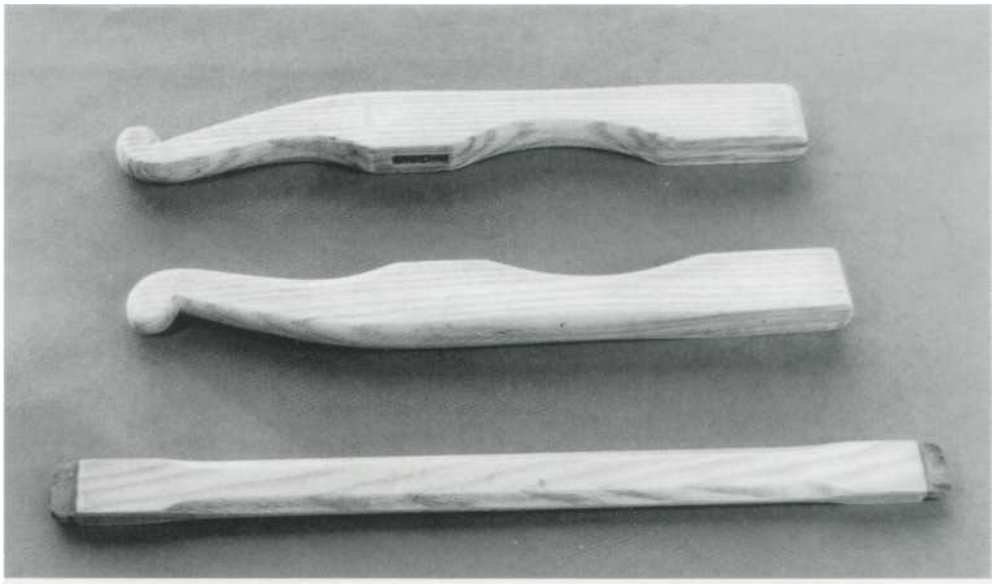




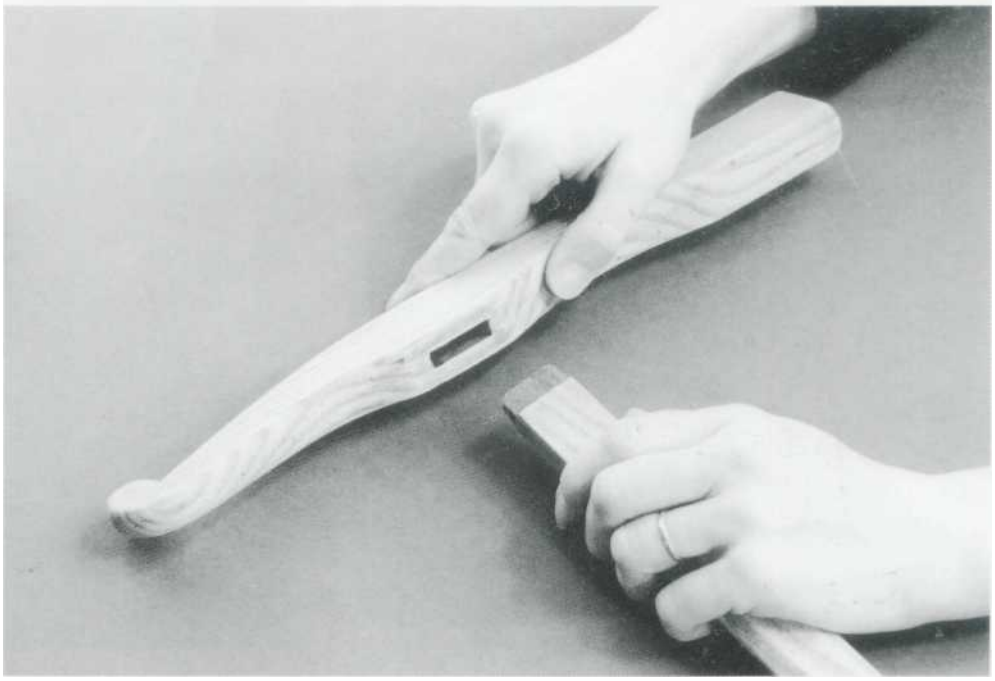
STEP-BY-STEP STAGES

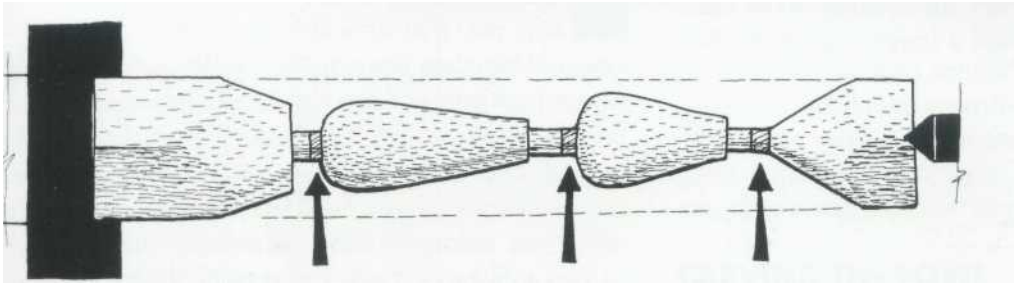
1 An old English bow saw with curved cheeks and stop-chamfered details is shown at top left; an old English bow saw with unusual carved detail at top right. An English bow saw with a whittled twist stick is shown at center left; a selection of carved cheek scroll designs at center right. Shown at bottom, a European bow saw tends to be bigger, with straight cheeks and a much wider blade.

2 The three parts that go to make the H frame: the two scrolled cheeks and the crossbar. If you look closely at this photograph and compare it to the finished project, you will notice that I had to shorten the crossbar to fit the only available blade.

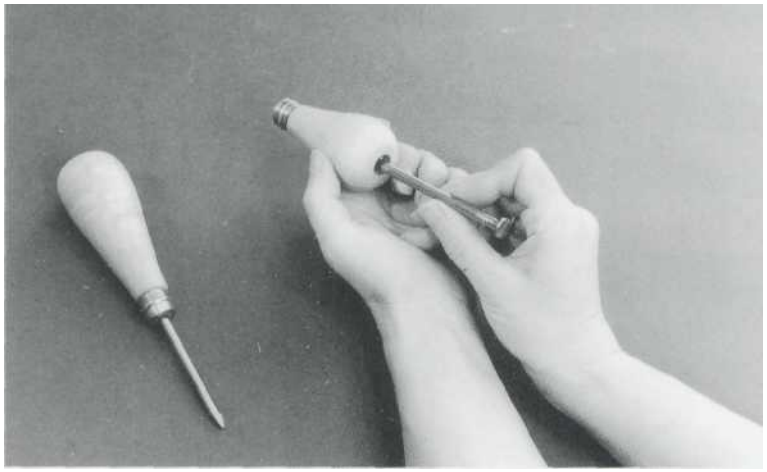


3 Trim and adjust the tenon so that it is a loose rocking fit in the mortise. Notice how the corners of the mortise need to be nipped off at an angle.

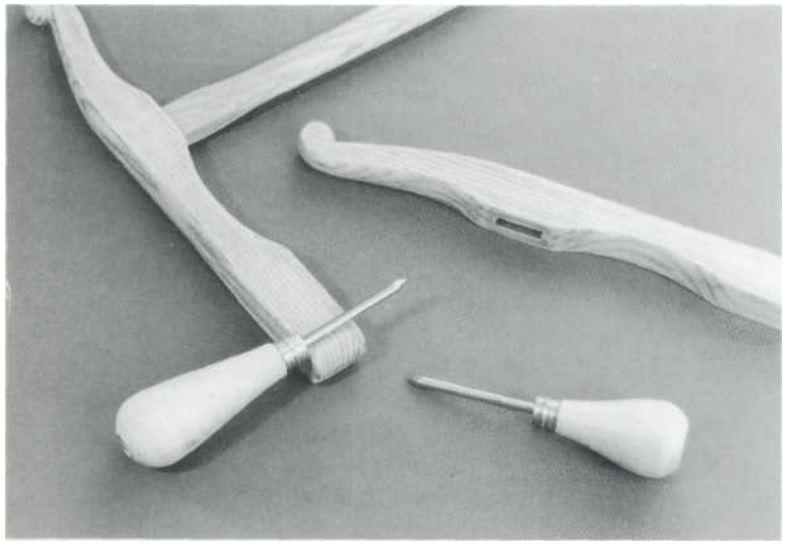




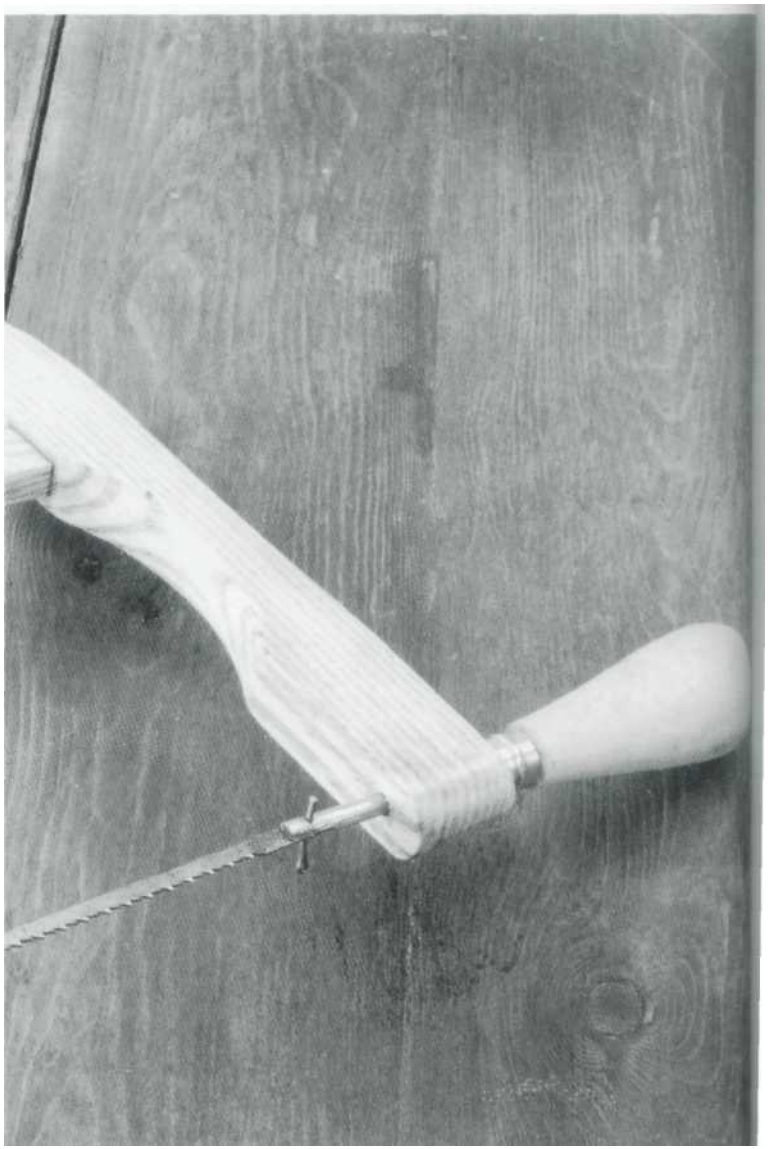
4 The on-lathe sequence—from left to right—the headstock waste, the parting waste, the large handle, the ferrule stub, the parting waste, the small handle, the ferrule stub, and finally the parting and tailstock waste. Note that the arrows indicate the parting waste.



5 Bend the nail slightly and pass it through the handle for a tight captured fit. See how the nail head fits snug and flush in the recess.



6 Check the length of the nail against the width of the frame and then mark the position of the blade slot accordingly. If you need a longer nail stub, then deepen the recess hole.



7 Slide the blade in the slot and fix it in place with a split pin. If at some time you need to fit a slightly longer blade, then you can slide washers on the nail between the ferrule and the cheek.