



# Wooden Chisel Plane

Build this classic tool in an afternoon

BY NORM POLLACK

**T**ools are made to fill a need. That's why the chisel plane has been around for centuries in one form or another. It's able to do some things that other planes can't do as well—or at all.

What's unique about the chisel plane is the location of the blade. It extends ever so slightly out the front, allowing a planing cut right up to an inside corner. A bench chisel can do the same thing, but the plane provides more control. The chisel plane also is useful for trimming dowel plugs flush with a surface. And many woodworkers like to use this plane to remove glue squeeze-out along a joint line.

The construction is simple enough that you can easily make one in less than half a day. It's best to make the plane from a tight-grained hardwood. Beech is a good choice, so is hard (sugar) maple.

The chisel plane uses a steel blade (also called a plane iron) that's made to fit a block plane. If it's not available locally, a mail-order source for the blade and the other hardware needed can be found on the facing page.

I like to round the heel of the plane until it fits comfortably in my hand. You may want to round it more or less, depending on what feels best for you. A shallow groove for the fingers is added, one on each side of the body, for a better grip.

## Making the body

The body of the plane has two parts—a base and a heel—which are glued together. This construction lets you cut the 20° angle of the body in a single pass on the tablesaw before glue-up. And because the base and heel are ripped from the same piece of stock, the glueline hardly shows once the two parts have been attached.

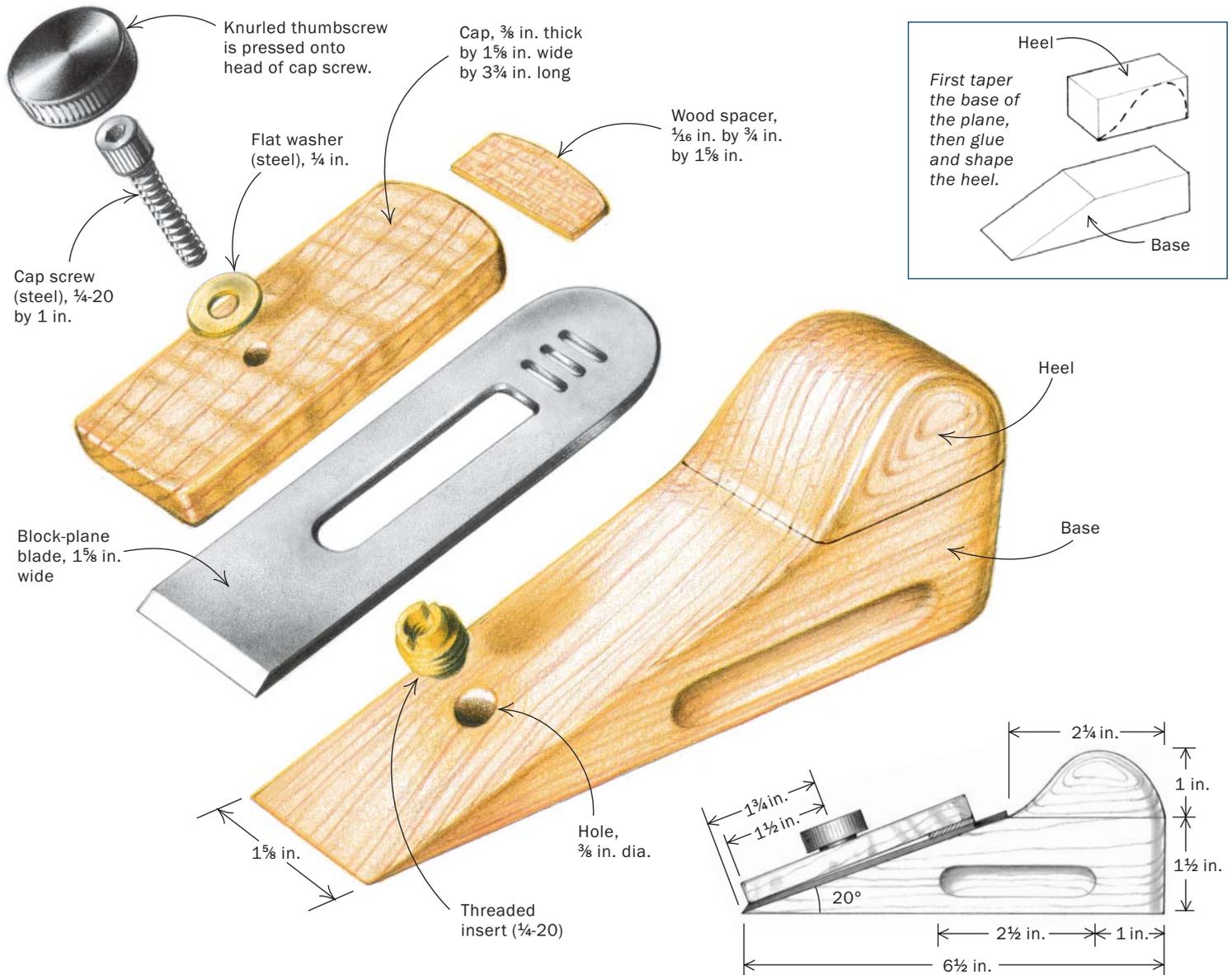
Start with a piece of 1½-in.-thick stock, measuring at least 3 in. wide and 10 in. long. Although the length here is almost double that of the finished plane, the extra material allows for some trimming that's done later. By the way, you can make two of these planes almost as fast as you can make one. If you want two planes, start with a 24-in. length of stock.

Rip the board to 1½ in. for the base. Then relocate the fence and rip the 1-in.-tall heel.

## Cut the taper using a trimming jig—

Now you can cut the 20° taper on the top edge of the base. This cut needs to be flat and square to the sides of the base. So to

## A USEFUL TOOL FROM A SMALL INVESTMENT



get a good cut, I made a jig that allowed me to use my tablesaw.

The jig is a piece of 3/4-in.-thick medium-density fiberboard (MDF) or plywood, with a notch for the base (see the top photo on p. 82). Cut the jig to size and mark the location of the notch, then bore a clearance hole at the corner to prevent dust buildup. Then cut out the notch with a bandsaw, staying slightly on the waste side of the line as you cut. Sand the sawn edge exactly to the line.

Next, bore a hole in the base to accept a 2 1/2-in. screw, which secures the base to the jig. That's important, because you don't want your hands near the blade here. Drill the hole about 5/8 in. from the end of the

### SOURCES OF SUPPLY

**REID TOOL (800-253-0421)**  
Hardware

**WOODCRAFT (800-225-1153)**  
Stanley block-plane blade

A complete parts list is available on our web site: [www.finewoodworking.com](http://www.finewoodworking.com)

base and 3/8 in. from the side. If you're concerned about ending up with a plane that has a hole in it, don't worry. The end with the hole gets cut off after the taper has been cut.

Now, place the base into the jig and drive the screw. Position the rip fence so that the

inside tooth of the blade is about 1/2 in. from the edge of the jig. Then use a long pusher to push the jig through the blade.

With the taper cut, the glue-up can start. First, though, trim the end of the base so that you end up with a 2 1/4-in. flat along the top edge. Then cut the heel to the same length and glue it to the base.

**Rout the finger grooves**—I cut the finger grooves on the router table with a 1/2-in.-dia. cove bit. Because each groove is hidden as you cut, you need guide lines on the body of the plane and on the fence.

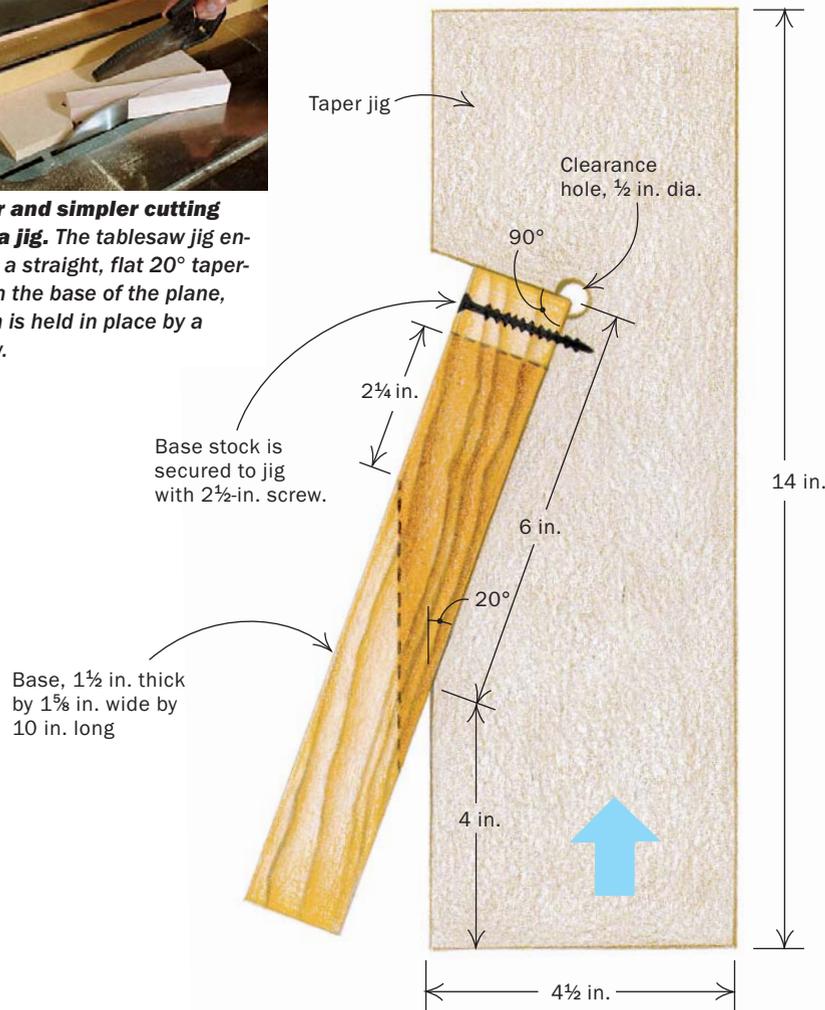
On one side of the body, mark lines to show where the groove begins and ends. Then extend the lines to the bottom edge,

## TAPER THE BASE, THEN ADD THE HEEL



**Safer and simpler cutting with a jig.** The tablesaw jig ensures a straight, flat 20° taper-cut on the base of the plane, which is held in place by a screw.

A trimming jig supports the base of the plane during the tablesaw cut. The jig is made of ¾-in. MDF or plywood.



where the body meets the fence. Next, with the bit installed, butt the fence against the bit and make two marks on the fence, one aligning with the left edge of the bit and one with the right edge. Use a square to lengthen both of the lines so they can be seen when the body of the plane is against the fence. To complete the setup, position the bit to extend 1/8 in. above the table, and locate the fence 1/4 in. from the bit.

Now fire up the router. With the back end of the plane body on the table and the bottom of the plane against the fence, lower the body into the bit by pivoting the front end down onto the table. When the body is on the table, push it to the right until the left lines on the body and fence line up. Then push the body to the left until two right lines align. Repeat on the other side.

**Shape the heel in three steps**—First, after drawing the curve, cut the heel to rough shape with the bandsaw. Then fair the curve with rasps and files. And finally, sand the heel smooth.

**Mount the threaded insert**—The plane's cap is held in place with a knurled, plastic thumbscrew that fits a threaded insert in the tapered face of the body.

The 1/4-20 insert fits into a 3/8-in.-dia. through-hole. So you'll want to start the procedure by marking the center point of the hole on the taper.

Because the hole must be bored square to the tapered face, you'll have to tilt the drill-press table to match the 20° angle of the taper. Or, if you have a drill-press vise,

## GLUE UP AND SHAPE THE PLANE BODY



**Glue the heel onto the base.** The grain at the joint line matches nearly perfectly because the two parts are ripped from the same piece of stock.



**Rout the finger groove.** A shallow finger groove on each side of the plane is cut on the router table using a cove bit.



**Hand-shape the heel.** After bandsawing the rough shape, a few minutes with a rasp and file complete the rounding of the heel. Smooth out the file marks with sandpaper.

## DRILL AND INSTALL THE THREADED INSERT



**Bore the hole for the threaded insert.** The hole is drilled at a right angle to the tapered portion of the base. Use a vise and square to position the stock for drilling.



**Install the insert.** With the drill turned off, and with the help of a couple nuts, a threaded rod and a wrench, the insert goes in easier and straighter.

as I do, you can clamp the body into the vise and use a square to make sure the taper is 90° to the bit. Once everything is square, drill the hole.

A threaded insert has a slot that allows you to install it with a wide-bladed screwdriver. But it takes a fair amount of torque to turn the insert, so the slot quickly gets chewed up, making it harder to turn. And if that's not annoying enough, the insert likes to go in crooked. To make this job easier I put a couple of nuts on a short length of threaded rod. One end of the rod chucks into the drill press. On the other end, the nuts butt together, allowing about  $\frac{5}{8}$  in. of the rod to be exposed.

After threading the insert up to the first nut, raise the table just enough to start the end of the insert into the hole. Then use a wrench to turn the upper nut, which turns the insert. At the same time, lower the quill to feed the insert into the wood. Don't thread the insert all the way in. Instead, I like to leave about  $\frac{1}{16}$  in. extending above the surface to help center the blade slot when it's added later.

The process of turning and feeding gets the insert installed in no time with little effort. And it's always square. By the way, to prevent the entire plane from turning as you use the wrench, clamp a stop block to the table.

### Making the cap and adding a finish

You'll need  $\frac{3}{8}$ -in.-thick stock for the cap. After the stock has been cut to size, lay out and mark the center point for the hole that accepts the thumbscrew.

To concentrate more pressure along the front of the blade, add a thin wood spacer along the back of the cap. The added pressure in front helps keep the cap from twisting and prevents chattering of the blade. After the spacer has been glued in place, the back end of the cap and the spacer are sanded to an arch shape on a disc sander.

A penetrating oil makes a good finish for the plane. And if you take some extra time to add five or six coats, the finish builds to a nice luster. Once the finish dries, slip the slot of the blade over the end of the threaded insert. Make sure the bevel faces up.

Then add the cap and snug it down with the thumbscrew and washer.

### Adjusting and using the plane

Adjusting the blade is pretty straightforward. Loosen the thumbscrew just enough to allow the blade to move. Then, with the bottom of the plane on a flat, wooden surface, slide the blade forward. When the entire front edge of the blade just touches the wood, tighten the thumbscrew.

Because there's no support in front of the blade, a chisel plane can dig into the wood if you apply too much pressure at the front. The secret is to apply slightly more pressure at the heel. □

Norm Pollack, a retired electronic technician, lives in Woodbridge, Va., where he spends a lot of time making wooden planes.

