

Making a Small Mantle Clock



Sunland Village East Wood Shop

SVE Wood Shop

SVE (Sunland Village East) has one of the nicest, best equipped retirement-community woodshops in the East Valley of Phoenix. It's also air conditioned all summer long.

The Woodshop has power and hand tools. If we don't have it, you probably don't need it. And if there is a new demand, we usually fulfill it.

The Woodshop provides supplies, such as glues, sandpaper, screws, bolts and nuts, nails, finishes, stains, dowels, paint brushes, and other woodworking and woodturning supplies.

Email Address: WoodShopSVE@gmail.com

[SVE Wood Shop Website](#) The shop location, open times, and an overview of the shop can be found at the shop's website.

Lots of clocks



Overview of the Mantle Clock

Exterior size approx. - height 3", width 5 ½"

Clock insert diameter - 2"

Wood seen here: Alder with lapis inlay, finished with spray gloss lacquer

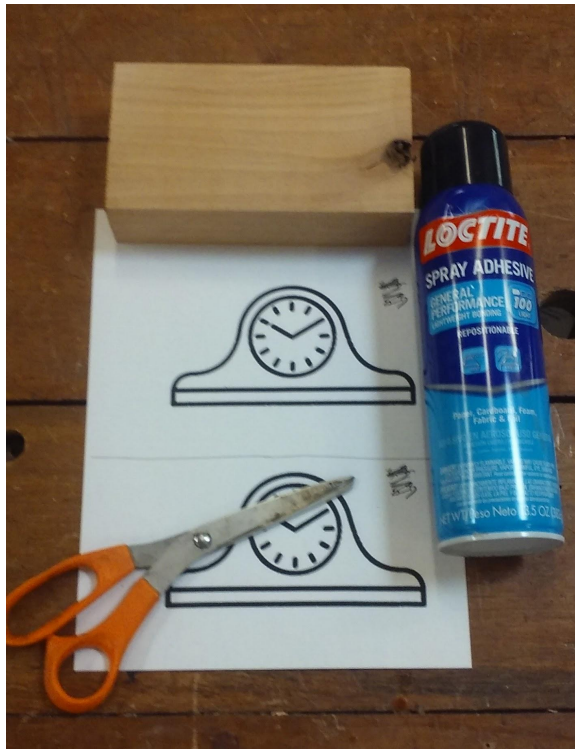


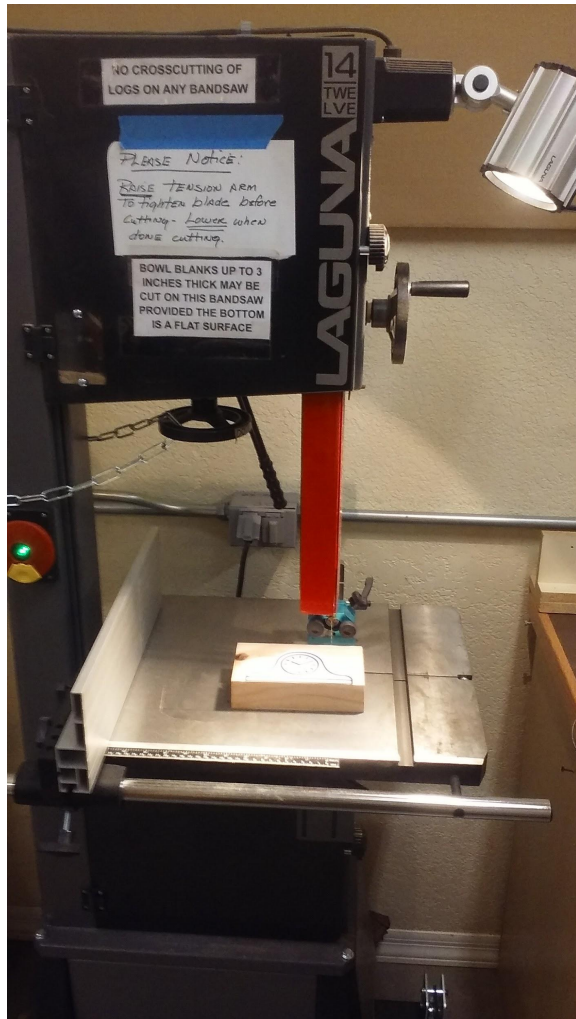
Begin with a Blank and a Template

Cut out the template. Leave a little room except along the bottom.

Spray the blank (the wooden block) and the template with the adhesive. A medium coat on both.

Stick the bottom of the template along the edge of the blank.





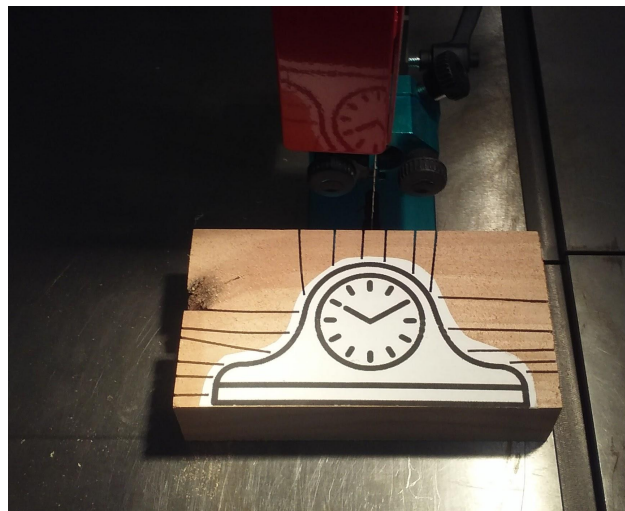
To the Bandsaw and Make Relief Cuts

After the glue has set a few minutes, locate the bandsaw. Think of it as a scavenger hunt.

This Laguna bandsaw is the “medium” sized saw. It's perfect for cutting straight lines.

There is a lever handle in back to tighten and loosen the blade. Tighten before cutting. Loosen when done.

Imagine how you will make the cut and where your hands and fingers will be during the entire process. The monitor will add more safety instructions.



Relief Cuts

A relief cut is a preliminary cut to prevent the saw blade from binding. Relief cuts are always made **prior** to cutting a curve in a piece of wood.

Make straight cuts from the outside toward the cut lines on the template. Then carefully draw the wood back from the blade. It is best to stop the saw before drawing the blade back out of the cut.

The more curvey the final cut, the more relief cuts are required.

Once complete here, find the small bandsaw.

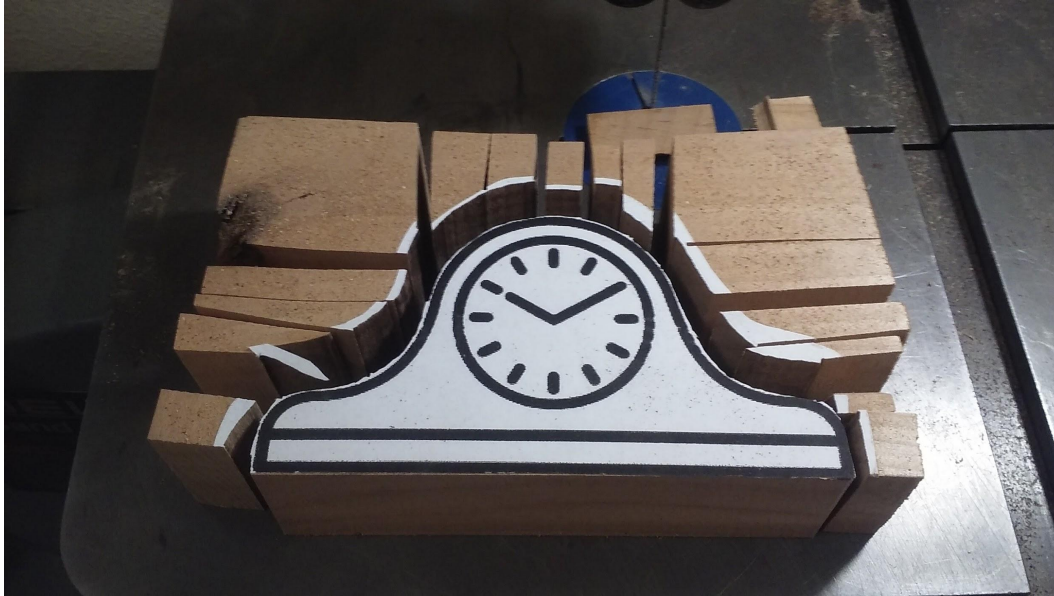
The Final Cut

Work your way around the template. As you cut off parts due to the relief cuts, push them aside, **NOT WITH YOUR FINGERS**, use a pencil or turn off the band saw.

Don't saw right next to the black line. The clock will be sanded to the exact shape of the black line.

Don't throw away the big off cuts. Save them for finish testing.

Pretty cool looking with all the off cut pieces.



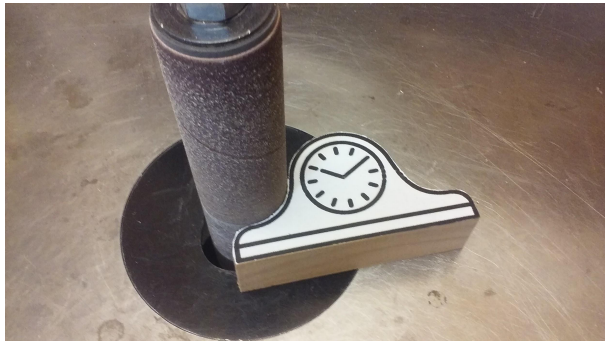
Start Sanding

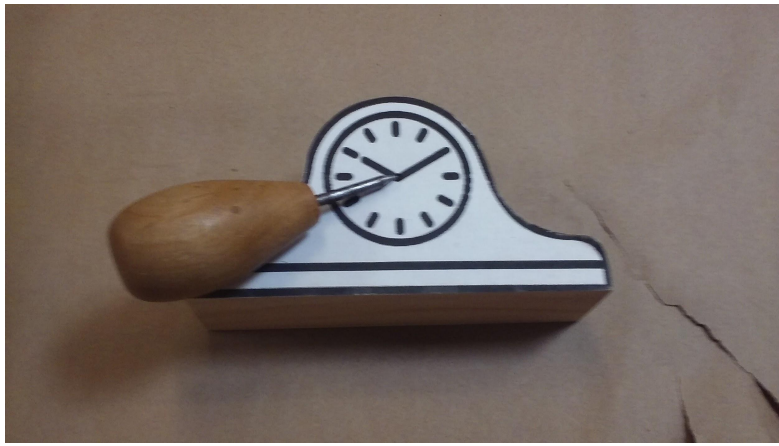
Find the oscillating spindle sander. Also locate the sander's dust gate and a timer for the dust collection system. Open the gate and turn on the dust collect system BEFORE sanding.

Have the monitor help you to install the correct diameter spindle. This will make sanding that inside corner much easier.

This sander rotates counter clockwise, so typically the part is held on the right side of the spindle.

The awl? Next slide please.





What's it awl about?

To properly insert the clock, the center on the clock face must be marked on the blank.

Use an awl, nail, or some other pointy thing to put a small hole into the wood. If you mark the center with a pencil, that mark will get sanded away. Don't use pencil.



Don't worry about marring the surface. The awl mark is where a big hole will be drilled later. Make it deep enough that it won't be sanded away.

This clock holder has been sanded to shape. There are many power hand sanders in the shop. Don't be afraid to try them all. Sanding is required and can be fun.

You gotta have grit



Sand paper is specified by a “grit” number. Smaller grit numbers are coarser sandpaper. Larger numbers are finer.

80 grit sandpaper is usually the beginning point. 80 grit is used to “shape” the object. Multiply the current grit by 1.5 to get the approximate next grit to use.

After 80, the next grit is 120. 120 grit begins to “smooth” the object.

Then 150, or 180, followed by 220. End grain is often sanded to the next higher grit, in this case, 320.

Once finish has been applied, the part can be sanded with 400, 600, and higher.

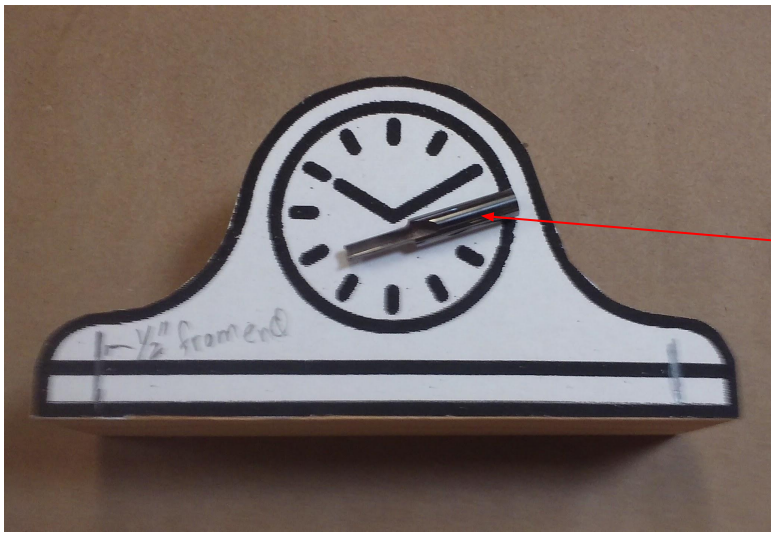


Sanding, it's just shaping and smoothing

This is a Powermatic vertical belt sander. It's used not only to smooth a surface, but to assure that one face is perpendicular to another face.

This picture shows the clock before the edges were sanded with the spindle sander. See the burn marks from the bandsaw. Oops.

The safest way to sand the clock is with the base of the clock on the sander's bed. Don't lift the clock off the sander's base, that's just not safe.

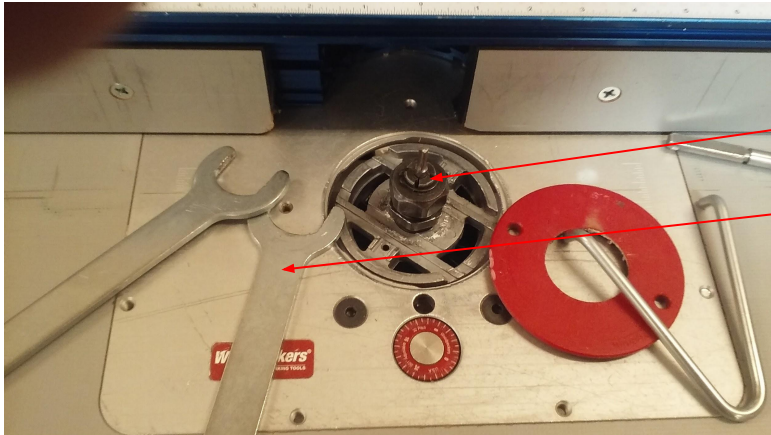


Cut to slot for the lapis inlay

These inlay steps are optional. The slot is $\frac{1}{8}$ inch wide and about $\frac{1}{16}$ inch deep. A router bit will be used to create the slot.

The router table is used to cut the slot.

The wrenches are used to loosen and tighten the collet for installing the router bit.



Collet

Collet wrenches

Setting up the router table

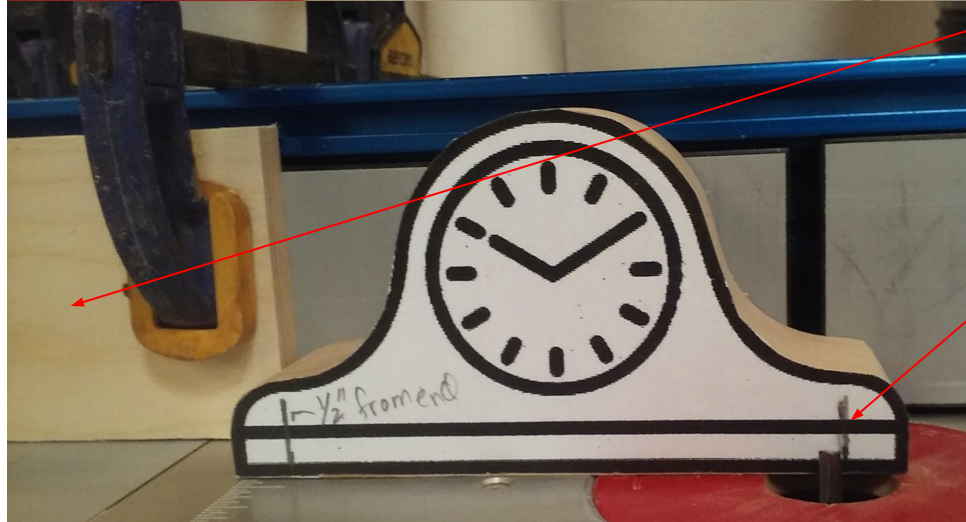
Start Block, clamped to the router fence.

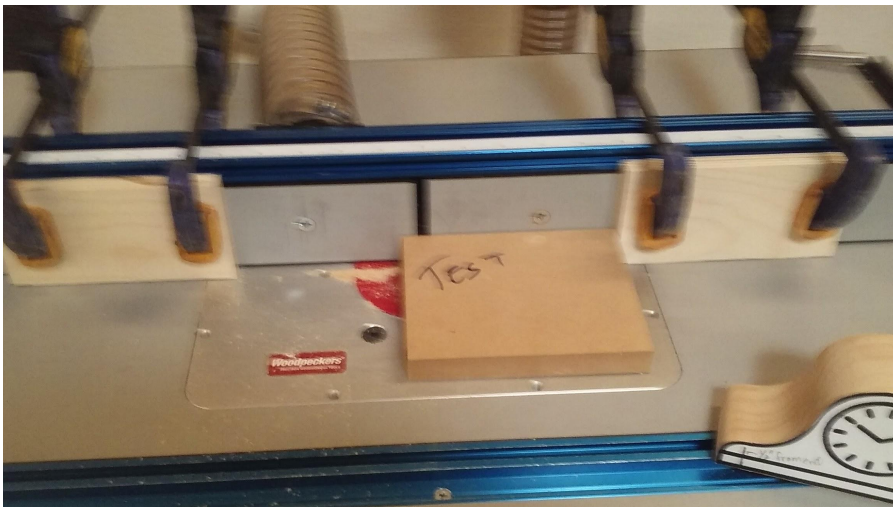
Point to start routing.

Stop Block, also clamped to the router fence.

Point to stop routing.

Start and stop are set, now the distance from the bottom of the clock.





Make a Test Cut

Start from the right and push the test board to the left. Don't forget about dust collection.

Compare the test cut to the template. Acceptable?

If not, adjust the stops and/or make another pass using the test board.

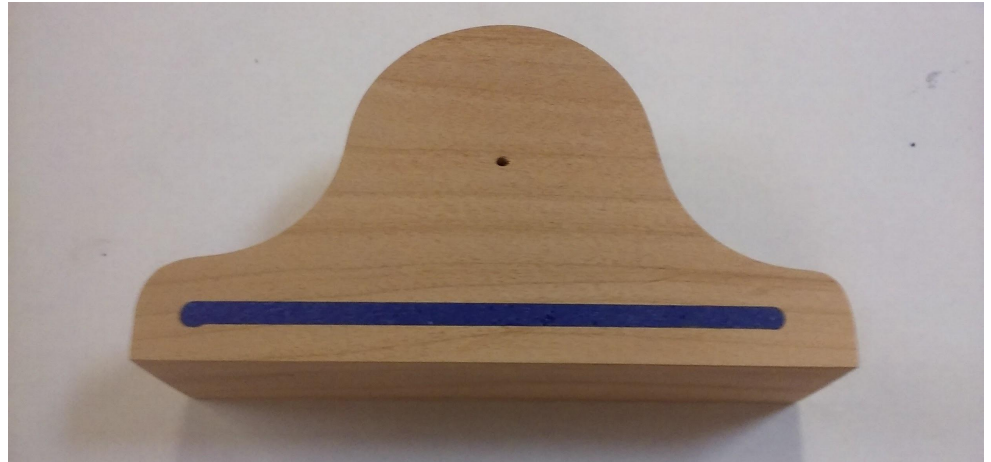
Inlay Some Color Begin by coating around the slot with shellac partially sealing the wood from glue. Put the inlay into the slot and cover with medium CA glue. Glue in more inlay if required.

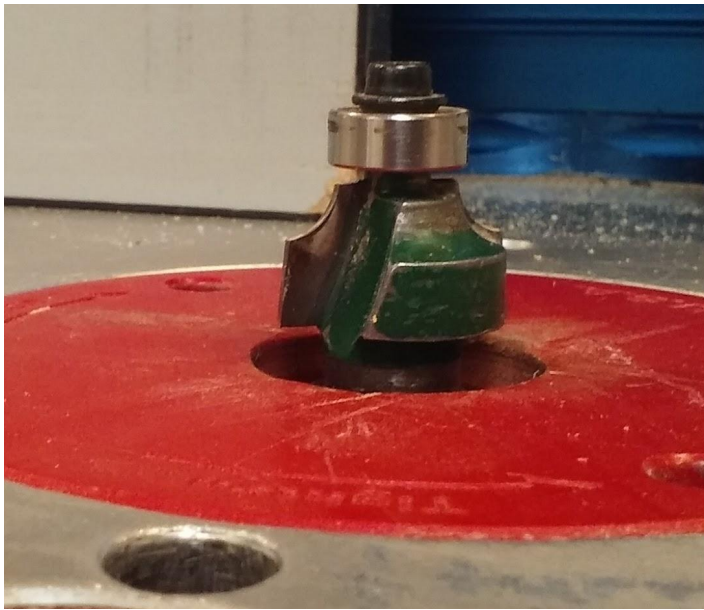


Sand off the Inlay

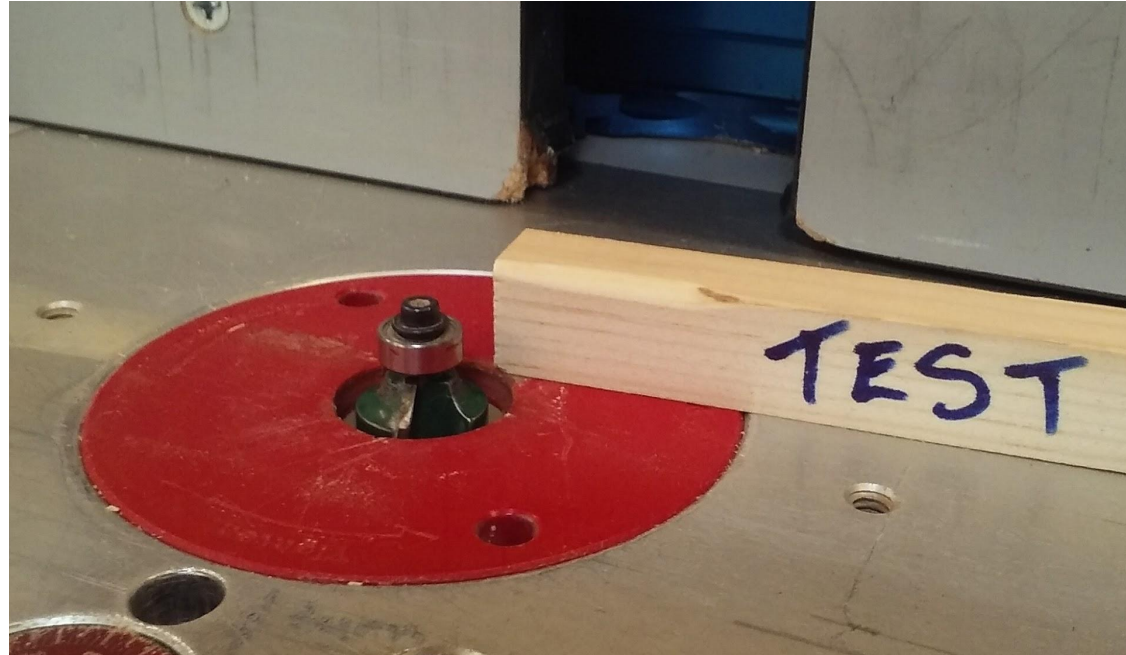
Gently push the clock against the belt and move the clock side to side. Listen for the change in sanding off only the inlay to sanding the clock face. Stop sanding then.

Add more inlay if holes are found. No holes, the inlay task is complete.





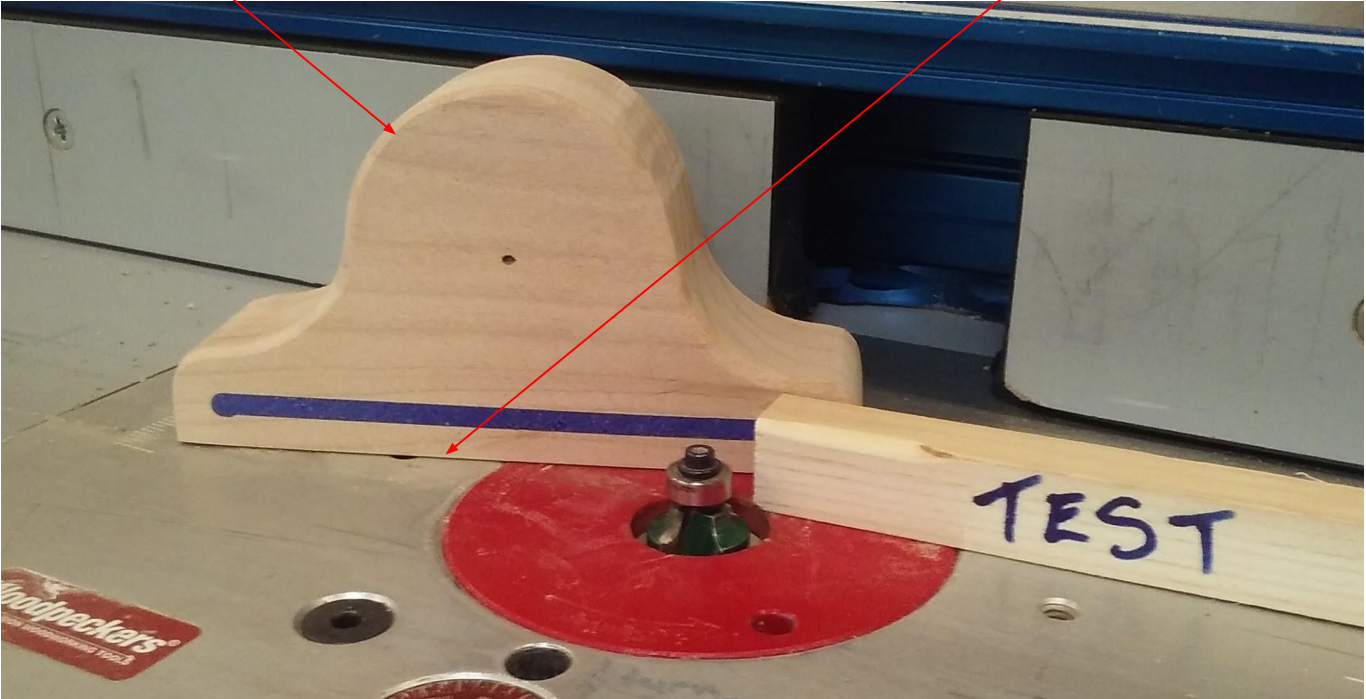
Round over the edges. Use a round over bit with a small radius on a test board. Adjust the vertical setting to get a nice cut.



Round over some of the edges The “top” edges on the front and back are rounded over. Don’t round over the bottom.

Rounded over

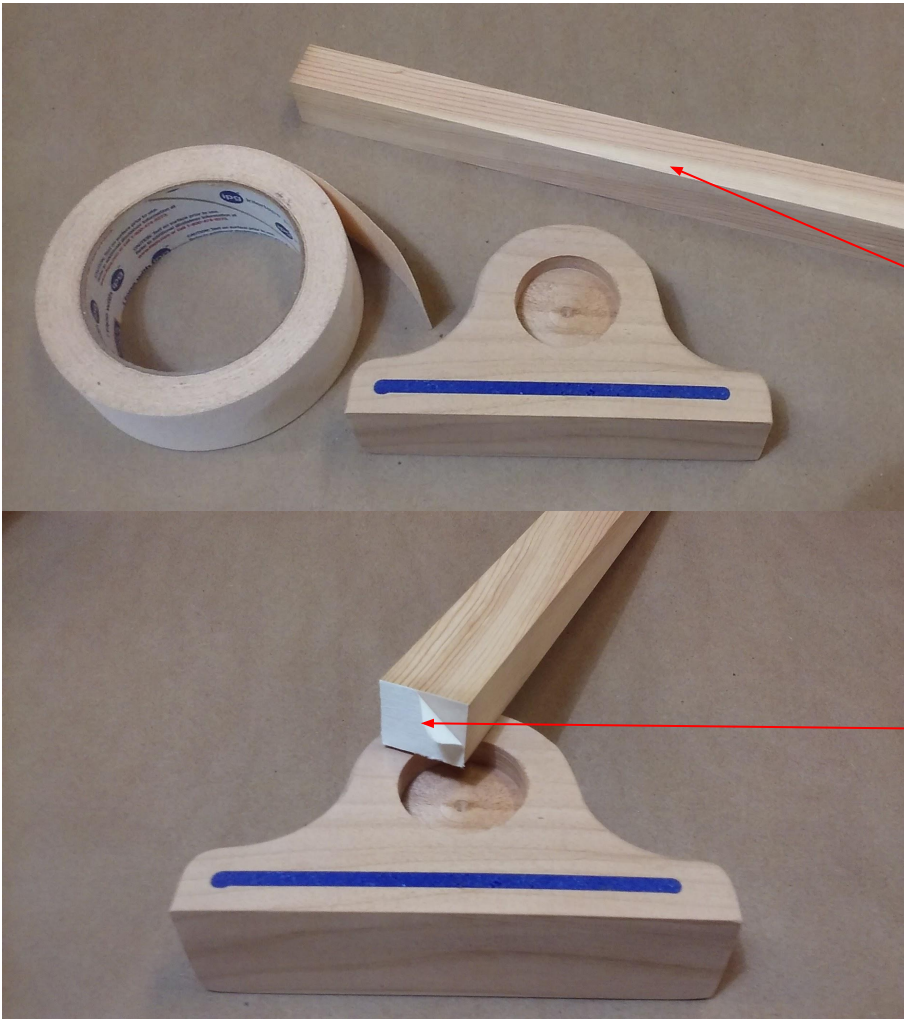
Not rounded over



Let's Drill

A Forstner bit creates a hole with a flat bottom. Determine the diameter and depth of the hole from the “suggestions” with the insert instructions AND by testing on scrap material. Use clamps when drilling.





Prep for Finish

Sand and remove any dust.

This project gets a spray lacquer finish.

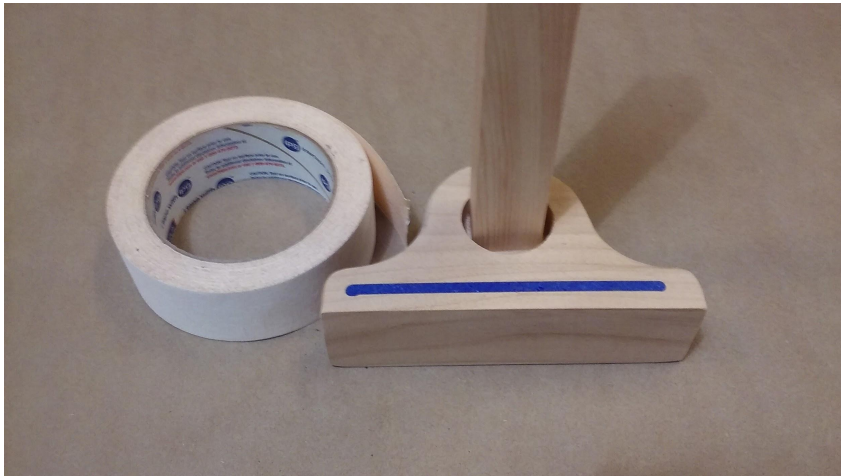
Get scrap with a flat end about 15" long.
This scrap is dimensioned to fit into the hole just drilled. Get some help if needed.

Put some double sided tape on the end of the stick.

Make the Handle

Press the scrap with the tape into the hole.

Add a clamp to the end and start spraying.



Finishing

Summary: spray lightly, wait, light sanding with fine grit, remove dust, repeat.

At least four coats.

Check out other finishing documents for more details.



Woodworking, having the time of your life



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