

## Lidded Boxes

by Pam Reilly

Lidded boxes are a fun project that can have simple lines or highly decorative work. It can be a challenge to get a good fitting lid. This is one version of the box project that I enjoy creating.

### Wood Blank:

Straight grained wood turning square – 3x3x6” (box)

1/2x1/2x5” contrasting wood (example – ebony pen blank) (optional)

### Materials List:

Face Shield

Thin kerf hand saw (optional)

3/4” spindle roughing gouge

3/8” spindle gouge or detail gouge

1/4” parting tool

1/4” box scraper

1/2” skew – not oval, not radius edged

1/16” narrow parting tool

Vernier calipers

Wood glue (Titebond or yellow glue)

Sorby multi-tip tool with rounded bit (or other small hollowing tool)

Jacob’s chuck for tailstock

Finish – Danish oil, Mahoney’s walnut oil

### Directions:

1. Mount the wood blank between centers, rough into a cylinder, make tenons on both ends with 1/4” parting tool for mounting in chuck jaws



Figure 1

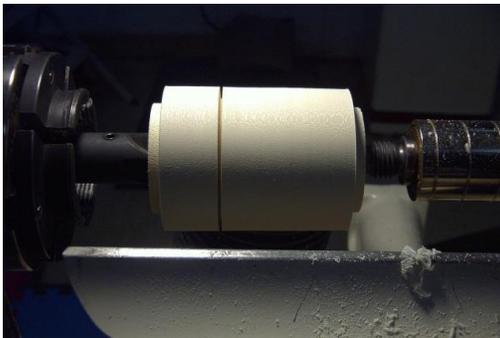


Figure 2

2. With the 1/16” narrow parting tool, make a parting cut approx. 1 1/2 - 2” from one end of blank – don’t make a deep cut and widen the cut slightly to keep the tool from being grabbed by the wood

3. Use the thin kerf hand saw to separate the pieces **WITH THE LATHE OFF** – rotate the piece by hand every few strokes to keep the wood from pinching the saw
4. Mount the smaller piece in the chuck – this is your lid – true up the sides with the spindle gouge and the face with the 1/4” part tool – make sure all saw marks are removed

5. Shape the outside of the lid – beads, v-grooves, burn lines are good for disguising the joint – partially shape the dome of the lid, but leave plenty of material to provide support while hollowing the lid

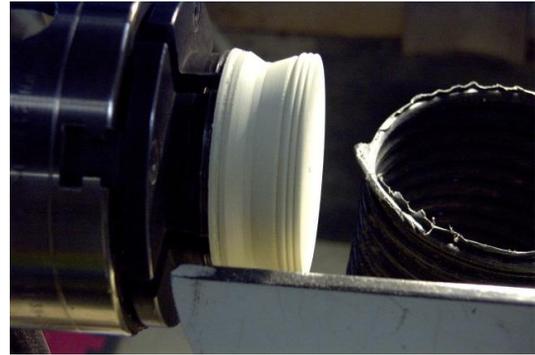


Figure 5

6. Hollow the lid – leave an oversized nub in the center to allow room to drill a hole for the finial in the other side – don’t make the lid too thin or it will break when the finial is pulled on to open the box.
7. Using the box scraper, cut a spigot near the inside edge of the lid – keep the sides parallel



**NOTE:** A finial adds a wonderful touch but if it is not desired turn the center of the lid as necessary.

Figure 6 and 7

8. Shape the dome of the lid leaving enough material to help support sanding
9. Sand outer rim and inside of lid – when done, part the lid, put aside
10. Mount the remaining piece of wood in the chuck – this is the box body – true up sides and face removing all saw marks

11. Cut the tenon on the box body – using the skew on it's side with the toe towards the headstock and the cutting edge at about a 45 degree angle to the lathe bed, cut an angled tenon – stop frequently to match up the lid – as soon as the lid fits over the very end of the tenon, it's time to straighten it out



Figure 11a

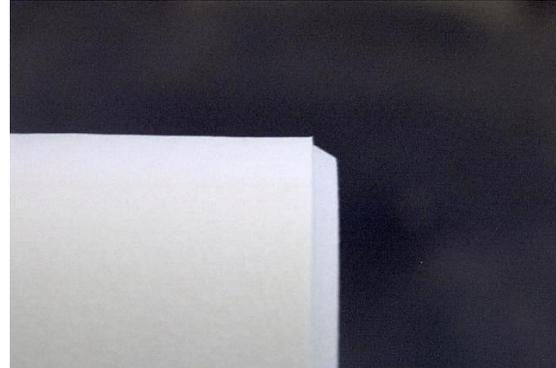


Figure 11b



Figure 11c

12. To straighten the tenon, use the skew with the toe towards the headstock and the cutting edge parallel to the lathe bed, cut straight forward until you reach the point where the lid fit over the edge of the tenon – it's best to stop frequently and keep testing the fit – make sure you keep the sides of the tenon perfectly straight



Figure 12

13. Finish the lid by fitting it over the tenon – finish shaping the dome and sand

14. Put the Jacob's chuck in the tailstock to drill the hole in the lid for the finial – 5/32" drill bit works fine, about 1/8" deep – be careful not to go through the lid – sand off any burrs from drilling and put the lid aside

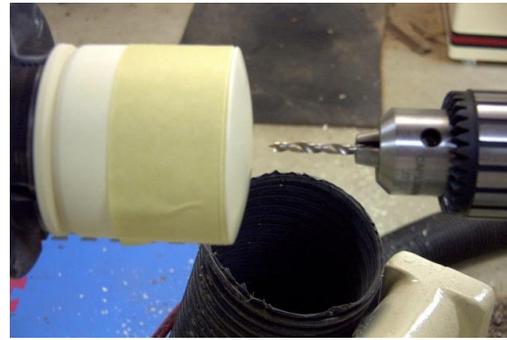


Figure 14

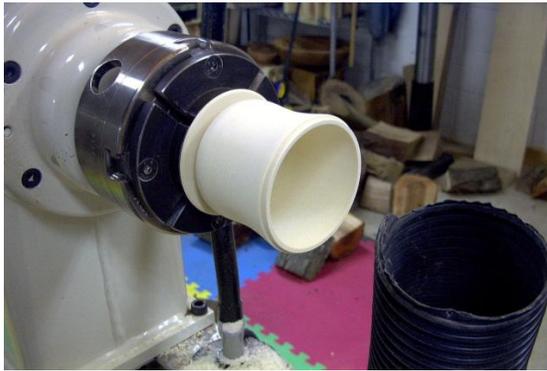


Figure 15

15. Shape the outside of the box and hollow the inside – be sure to leave approx. 1/4" thickness in the bottom of the box for finishing the outside of the bottom – sand inside and outside – part off box body

16. Remove waste from chuck and mount the box body tenon in the chuck – do not over-tighten or box will crush – make sure you can't wiggle the box by hand with minimal force

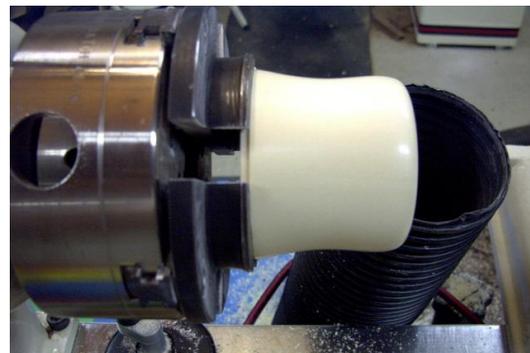


Figure 16

17. Using very light cuts, finish shaping the bottom of the box – make it concave so the box only sits on the outer edge – don't use a lot of force with the tool or the box will pop out of the chuck – add v-grooves or chatter work to dress up the bottom – sand – remove from chuck
18. Using #1 jaws (pin jaws) in the chuck, mount the pen blank – it doesn't need to be rounded, just be sure the jaws grip it solidly – the blank can be inserted into the chuck to reduce chatter on the end

19. Turn the finial – start at the tailstock end of the blank and make that the top of the finial – don't make the finial too big or tall. If you put a flare at the bottom it will better hide the hole in the lid – be sure you leave a tenon on the headstock end of the finial to be inserted into the lid – measure with the vernier calipers set at the drill bit size used to drill the hole in the lid
20. Sand the finial and part off – if the tenon on the finial is a little too long, just touch it to the grinder to make it shorter
21. Add a drop of glue to the hole in the box lid and put the finial in place – let dry before adding finish
22. Finish the box – a few coats of danish oil (wipe on, wait 30 minutes, wipe off) on the outside of the box works well – walnut oil works best on the inside of the box as there are no solvents to evaporate so the inside of the box will smell nice – one coat usually works fine



**Tips:**

- a. Straight grained wood makes it much easier to match the grain between the lid and the body – another way to best match the grain is to remove as little material between the pieces as possible, which is why I use the 1/16" parting tool and narrow kerf saw
- b. Straightening the tenon (step 12) can make the tenon very hot thereby swelling the wood a little – use compressed air to cool the wood before test fitting the lid to get a more accurate fit
- c. If the lid fits slightly loose on the box body tenon (step 13), you can wet the tenon to swell the wood fibers which will hold the lid better, or wrap masking tape or blue painters tape around the joint to hold the lid on the box body – don't block any areas on the lid you need to sand
- d. When reversing the box body be very careful of the chuck jaws as they are often extended beyond the chuck body and can cause serious injury if you come into contact with them

- e. The type of finish you use is dependent on the type of wood you select – danish oil works very well on most domestic (US) woods – if you turn an exotic wood like cocobolo or bocote, oil finishes very often don't cure on woods with natural oils – in that case, wax or no finish at all is good