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# RINGING CHRISTMAS BELLS

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The search for a new Christmas ornament recurs each year, long before anyone is ready to think about the season. This year, I am revisiting Robert Rosand's 1991 article (vol 6, no 3) that detailed the steps for creating a bell as a Christmas ornament. This article builds on Rosand's bell and adds a swinging clapper to create a bell that "rings" when shaken.

The bell can be scaled up or down to suit your preference. I have made bells as large as 4" (10cm) and as small as 1" (25mm) in diameter. A target size of 1¾" (45mm) is a good place to start. That size seems proportioned for an average-size tree.

## Step 1

Select a blank of clear wood 4" (10cm) long by 2" (5cm) square. Lighter-colored woods show up well against a green tree, and hard maple has all the favorable qualities for this project. Because the blank will be hollowed, avoiding knots and other imperfections in the wood makes the project easier.

Mark the center on each end, mount the blank between centers, and turn a tenon on one end to fit your chuck (*Photo 1*). I use a Oneway Talon chuck with the standard #2 jaws. Regardless of the chuck you use, the jaws should compress around the tenon. A square shoulder will help hold the blank solidly as the bell is hollowed.

## Step 2

Mount the blank into the chuck and bring up the tailstock for support. Turn the stock to a cylinder. My tool of

preference is a micro spindle-roughing gouge. Other suitable tools would be a ⅜" (10mm) bowl or spindle gouge, or a ½" (13mm) spindle gouge. It is important to size the tool to the task—large tools on small projects introduce an element of risk.

## Step 3

Mark the cylinder with layout lines (*Photo 2*). The proportions for this project are a ½" (13mm) for the flange, 1" (25mm) for the bell's body, ½" shoulder, and ⅜" (10mm) for the button. These dimensions need not be exact, but they provide a reference point for shaping the bell and determining the interior hollowing depth.

## Step 4

Remove the tailstock and true the end of the blank. Make a center point using the long point of a skew chisel (*Photo 3*).

## Step 5

Establish the internal depth by drilling 1⅝" (41mm) into the end of the blank (*Photo 4*). This hole eases the task of hollowing by clearing wood from the center. I usually use a ⅝" (8mm) handled drill bit with the target depth marked with tape. The center point—marked in step 4—keeps the drill bit from wandering. A Forstner bit, held in a tailstock-mounted Jacobs chuck, could also be used and would decrease the amount of hollowing required. But keep in mind that the interior of a bell has a curved shape; if the bit size is more than 1" (25mm) diameter, you will likely end up with a flat rather



than curved bottom, deadening the bell's tonal quality.

## Step 6

Begin shaping the exterior, starting with the flange. A number of tools will work well here, including a ⅜" or ½" spindle gouge, a ¼" (6mm) bowl gouge, or even a skew chisel. My preference is a ¼" bowl gouge.

## Step 7

After forming the flange, begin to define the shoulder of the bell (*Photo 5*). You still have to hollow the interior and need some mass left to reduce vibration or chatter, so don't remove too much material by completing the shoulder at this point. Use the layout line to gauge where the shoulder should start, and just begin to define its shape. Further shape the exterior of the bell by connecting the top of the flange with the bottom of the shoulder.

## Step 8

The key to hollowing the interior is to decrease the wall thickness in stages. Divide the depth of the bell roughly into thirds, establishing the final wall thickness in each third before hollowing deeper. This is an endgrain-hollowing exercise where a round-nosed scraper excels. A bowl or spindle gouge could be used, but an overly aggressive cut or catch could rip the blank from the

chuck. I usually reach for my ½" hollowing tools for this step—the heavier shaft allows a long reach over the tool-rest without excessive vibration and the small tip minimizes leveraging against the chuck (*Photo 6*). A ¼" round-nose scraper also works well.

### Step 9

The thinner the wall of the bell, the better the bell will sound when rung, and the more challenging the turning will be. A thickness of ⅜" (3mm) seems to be about right. Use your thumb and index finger to gauge the wall thickness all the way to the button. The goal is to turn parallel inner and outer walls all the way through to the shoulder of the bell.

After reaching the target depth on the inside, return to working on the outside of the bell. If the outside of the bell is going to be decorated with burn lines, now is the time. Cut a small groove with the point of a skew chisel, and then burn the groove using light pressure from a thin wire twisted onto wood handles (*Photo 7*).

### Step 10

Continue shaping the shoulder section. Typically, the shoulder ends up being a little thick—you can remove additional material on the inside, or take the easier approach and trim the shoulder on the outside (*Photo 8*).

With the shoulder form established and all interior shaping complete, sand the interior, working through grits until the desired finish is achieved. I usually sand through 320 grit.

### Step 11

Next, complete the shoulder transition and form the button (*Photo 9*). I use a spindle gouge for these elements, and a skew chisel to clean the junction of the two curves.

### Step 12

Once the button is completed, sand the outside of the bell, and then part the completed piece off the lathe. I prefer ►



**1** Form the tenon with a peeling cut using a skew chisel.



**2** Mark the blank with the bell's key dimensions. Use these dimensions to determine the depth to drill the hole.



**3** Cut a small indentation to mark the center. Use the long point of a skew chisel.



**4** Drill a hole into the center of the bell to make hollowing easier.



**5** Begin to shape the shoulder of the bell.



**6** Hollow the interior of the bell. You are cutting endgrain, so cut from the center out.



**7** To decorate the bell, burn lines using a wire, held by wood handles.



**8** Form the bell's shoulder.



**9** Take clean cuts, working from the shoulder to the button, to create a crisp transition between the bell's shoulder and the button.



**10** Masking tape around the live center will help support the bell as you part it off.

using a narrow parting tool. If you bring up the tailstock and advance it into the bell (use light pressure), the live center will catch the bell as it is parted off. Masking tape around the live center will minimize bruising (*Photo 10*).

### Step 13

Proper wood selection and the right shape are the keys to a successful clapper. Dense wood is preferable and my choice is lignum vitae. The clapper should be thick at the top where it attaches to the top of the bell, thin in the middle, and have a ball shape on the end—picture a real bell clapper as you turn.

I use  $\frac{3}{8}$ " (10mm) square by 4" (10cm) stock for the clapper. Step jaws or pin jaws work well to hold this small blank. The key is to have the blank held securely so the ball end can be turned without using the tailstock. Form the ball before thinning out the stem.

A  $\frac{1}{8}$ " (3mm) hole will be drilled in the top of the clapper, so the wood needs to have sufficient diameter for drilling. Make the length of the clapper equal to the depth of the bell's interior, less  $\frac{3}{8}$ ". For this project, I aim for about  $1\frac{1}{4}$ " (30mm) long. Once hung inside the bell, the ball of the clapper will be able to strike the flange and be barely visible when looking at the bell from the side.



Once the clapper is turned, sand it to completion and drill the hole through its upper end (*Photo 11*).

### Step 14

Two loops of thin-gauge wire allow the clapper to swing. Create the first loop by threading a wire through the hole in the clapper and twisting it to form a small loop (*Photo 12*). I use 24-gauge wire from the jewelry section of a crafts-supply store.

### Step 15

Drill a  $\frac{1}{16}$ " (1.5mm) hole through the center of the button at the top of the bell (*Photo 13*). Take care to align the hole so the bell will hang without listing to one side.

### Step 16

Feed a thicker wire (20 gauge) down through the button's hole to extend

below the bottom of the bell by several inches. Thread this wire through the loop on the clapper (*Photo 14*), and then bring the free end back through the bell's hole. Draw the clapper back into the bell by pulling the wire from above the button. Check to see that the clapper is hanging in the right place, and if not, go back and adjust the size of the loops. Once satisfied, clip the wire and form a third loop above the bell by twisting the end of the wire just above the button (*Photo 15*). This is the loop from which the ornament will hang. Place a drop of glue in the button's hole to keep the wire from shifting position.

### Finishing

Finishing the bell can be as simple as applying a coat of oil or spray lacquer. This is also a point in the project to express a personal touch. Aniline dyes, pyrography, bleaching, painting—any of the magic tricks from the turner's hat can be used to produce a unique keepsake for ringing in the holidays. ■

*Images by Carl Cievro.*

*After a two-year hiatus that included moving from the Midwest to the North Carolina coast, Dennis Belcher is back at his favorite pastime, working with wood. Dennis' work can be seen at [SeaBreezeWoodworks.com](http://SeaBreezeWoodworks.com).*



**11**

Drill a hole in the clapper.



**12**

Form the first small loop of thin wire by threading the wire through the clapper's hole.



**13**

Drill a hole in the end of the bell for the second length of wire.



**14**

Thread the wire through the bell's hole, loop it through the wire on the clapper, and then bring the end of the wire back through the bell's hole.



**15**

Twist the wire into a third loop, which you will use for hanging the bell on the tree.