



Making a Musical Tapper

Joshua Friend

I am lucky enough to be both a stay-at-home father and an avid woodturner. These two roles have afforded me many interesting experiences and perspectives, and sometimes they overlap. Some years ago, I took one of my children to a YMCA playgroup where one of the weekly activities was a musical parade. Each child chose an instrument to march with—maracas, tambourines, drums, and triangles. One of the instruments was a musical tapper, or tone block.

Each section of the striking area of a musical tapper is a different size and, therefore, makes its own tone when struck with the ball of the tapper stick. The ones I saw

at the playgroup were production-made and were quite sufficient, but always having part of my mind in the woodshop, I decided before the parade even ended that I'd try to make one. Turns out they are great fun for music makers of all ages. And what I like is that this toy doesn't require batteries.

Making the body

Start with a block of dry wood, measuring about 2½" (65mm) square and 10" (250mm) long. I used ash that was glued up to reach the required thickness. Mount the block between centers of your lathe (*Photo 1*). Form a tenon at the tailstock end (*Photo 2*).

Remount the piece, grabbing the tenon with the jaws of a chuck. Using a 1½" (40mm) Forstner bit

Making the body – drilling the base



1 Mount the block between centers.



2 Form a tenon at the tailstock end.



3 Using a 1½" (40mm) Forstner bit chucked in the tailstock, drill a hole 3"–4" (80mm–100mm) deep.

chucked in your tailstock, drill a hole about 3"–4" (80mm–100mm) deep (the actual depth measurement is not critical) (*Photo 3*).

Insert a cone center into your tailstock and advance it into the just-drilled hole. This will supply additional support for turning the body of the taper (*Photos 4, 5*).

Beginning at the tailstock end, turn the striking area of the taper to a wall thickness of about $\frac{1}{8}$ " (3mm). You can see (and measure) the thickness of the walls where the wood meets the cone center (*Photo 6*). Once you reach the desired thickness at the end, proceed down the blank, toward the headstock, forming a cylinder, keeping the same wall thickness. I used a roughing gouge for this, but a spindle gouge or skew chisel would work well too (*Photo 7*).

Pull the tailstock away temporarily so that you can measure the depth of the interior space, or tone chamber. Measure the depth and then transfer that depth to the outside of the chamber to find the bottom. I took this measurement simply by inserting a stick to the bottom and digging my fingernail into the stick where it coincides with the end of the chamber, then laid the stick on the outside. Mark the depth with a pencil. Draw another line about $\frac{1}{2}$ " (15mm) to the left of that depth line—this is where you'll start the handle (*Photo 8*).

Advance the cone center back into the drilled hole, and turn the rest of the handle area to a cylinder; however, do not turn away the pencil lines just yet (*Photo 9*). At the left-most pencil line, begin to step down to your handle (*Photo 10*). Finish forming the handle (*Photo 11*).

At this point, I sand the taper to 150 grit, add burn lines (if the mood strikes me), and apply a friction polish at the lathe. This is a ►

Making the body – turning with the cone cylinder



4 Use a cone center inserted in the tailstock for additional turning support.



5 Here the piece is mounted, drilled out, and supported with the cone center.

Making the body – forming the cylinder



6 Begin at the tailstock end and turn the walls to about $\frac{1}{8}$ " (3mm) thick.



7 Form a cylinder keeping the same wall thickness.

Making the body – creating the tone chamber



8 Measure the depth of the chamber to determine where to begin turning the handle.



9 Turn the handle area to a cylinder but do not remove the pencil lines.



10 Begin shaping the handle at the left-most pencil line.



11 Form the handle and sand the taper.

Cutting the tone sections – cutting the slots



12
Make a simple jig for holding the taper while cutting the slots in the tone chamber.



13
Clamp the taper to the jig. Raise the table saw blade only high enough to cut through the jig and *only one side* of the taper. The cut should stop a bit short of the bottom of the tone chamber.

project that will receive some abuse, so I don't sand to a high grit, nor do I spend much time with a fancy finish. Part off the taper and hand sand the end of the handle.

Making the taper stick

Now that you have the body almost done, let's make the taper stick using the same species of wood. The photo below right shows some taper sticks I've made. They are turned between centers, sanded to 150 grit, finished with friction

polish, and parted off. You can make the taper stick as fancy or plain as you like, but I recommend putting a small striking ball at the end.

Cutting the tone sections

Make a T-shaped jig for holding the taper to cut the tone sections (Photo 12). You will need to use a table saw for cutting these sections. Secure the taper to the jig with a clamp. Raise the table saw blade just enough to cut through the jig and through *only one* side of the tone chamber (Photo 13).

Use a stop block or mark your rip fence to indicate how far to cut so that each cut is the same length. The cut should stop just short of the bottom of the tone chamber. Be careful here: Since a table saw blade is circular, the end of its kerf will have a curve also, with the outside of the taper being cut further than the inside. I learned this the hard way!

I make three cuts to the chamber and place them so that each section ends up being a different width. Each section will have its own tone—for kids, this is the magic of the instrument!

Using the same jig to hold the taper, drill a $\frac{3}{8}$ " (10mm) hole at the end of each cut line. Make sure the hole is centered on the cut line and that the bottom edge of the hole coincides with the bottom of the tone chamber (Photo 14).

Hand the taper and its stick to a child and enjoy the music! ■

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A variety of taper sticks.



Cutting the tone sections – finishing the taper



14
Drill a $\frac{3}{8}$ " (10mm) hole at the end of each cut line.