

# Upside-Down Mystery Salt Shaker

by Billie Harding with Dennis Liggett

## SUPPLIES

**Wood:** four 3"-diameter pieces of *Paralam* or equivalent wood of choice

**Tools:** lathe with 4-jawed chuck, bandsaw, ball jig or large roundnose scraper or gouge, drill press with a 2" Forstner bit and 1/8" twist drill bit, groove jig or small parting tool

Assorted grits of abrasive paper

Wood glue

Thin cyanoacrylate glue (superglue or CA)

Finish of choice

Turquoise and pipestone inlay, crushed (optional)

Compressed air (optional)

*Please refer to all manufacturers' labels for proper product usage.*

What turning project requires no parts except the wood, works like magic, and meets the needs of your friends three or more times every day? Oh, and did I mention that there is only one critical measurement to worry about, and it's for inside finish cuts that no one will ever have to see? This is the turning that is almost too good to be true. Best of all, the design of the outside can be adapted to match all those pepper mills you gave everybody last year.

The upside-down salt shaker works very well. When you shake it, salt bounces off the ceiling of the chamber, and some falls into the hole in the central tube, and then onto your eggs, etc. However, if you are going to use this design for pepper or other spices, a larger hole is needed.

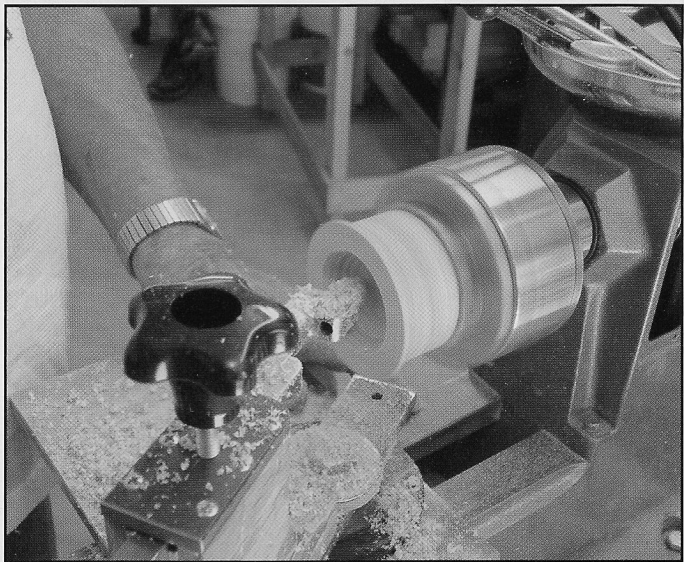
The upside-down salt shaker comes from a long line of table accessories that may have been designed centuries ago to keep bugs out of the water, butter, and salt. I've seen photos of a ceramic butter keeper that sits upside down in a saucer of water, and water pitchers that fill with a funnel upside down in the bottom. It is not certain when



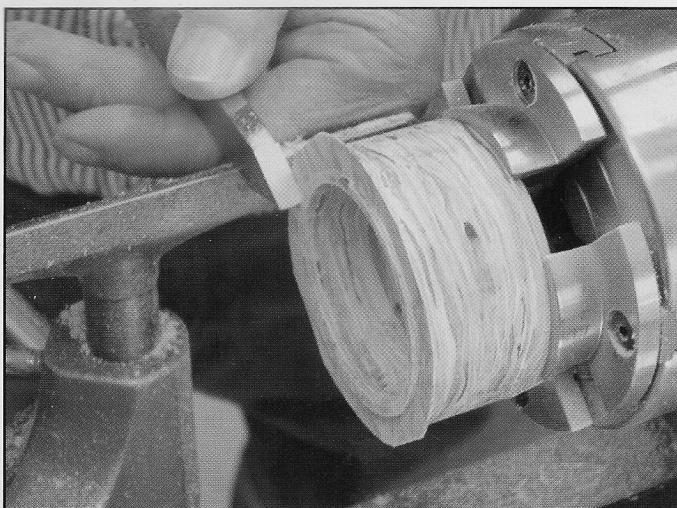
the design was first used for salt; some say it's an old Egyptian design. As far as I know, it has been handed down from father to son in the woodturning world for generations. The first one I saw was made by Keith Gotschall of Salida, Colorado.



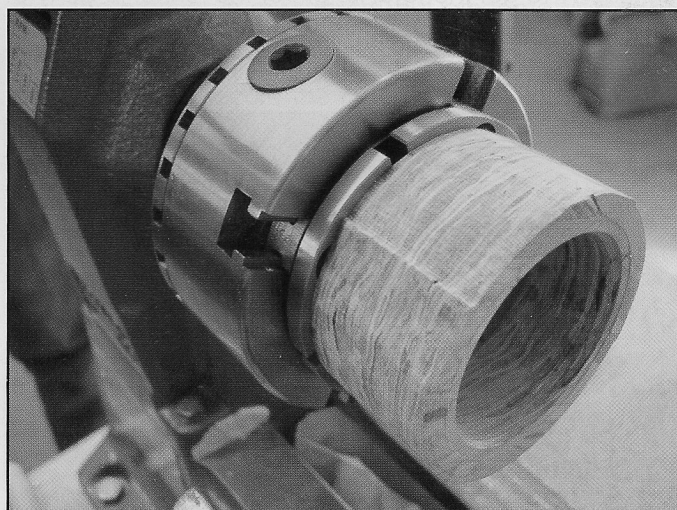
**Step 1.** I started with construction material obtained by dumpster diving at a nearby truss manufacturer. The use of construction grade chipboard rather than solid wood is for two reasons. First, it is very stable and does not move or distort. Second, and the main reason, it is very difficult to ascertain the glue lines once the blank has been glued together.



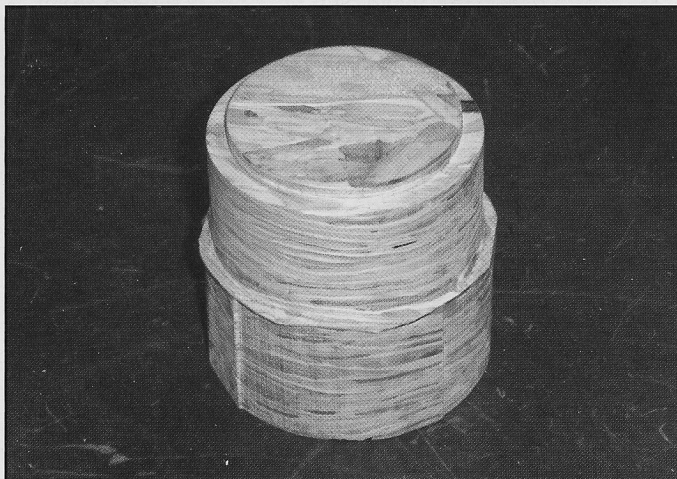
**Step 2.** Cut the material into 3" circles. Use four pieces to make the salt shaker. Mount one of the pieces on a screw chuck and cut a tenon for the 4-jawed chuck. Then mount that piece and dome the top using a ball jig. I could do this with a scraper or a gouge, but using the ball jig allows me to use some of the toys I have accumulated over the years—many of you can probably relate to that. Besides, the ball jig allows me to get a perfect dome which provides consistency between different shakers. I try to get the outside diameter of the dome to be 2".



**Step 3.** Cut a tenon on the side of the dome to align the next piece of material.



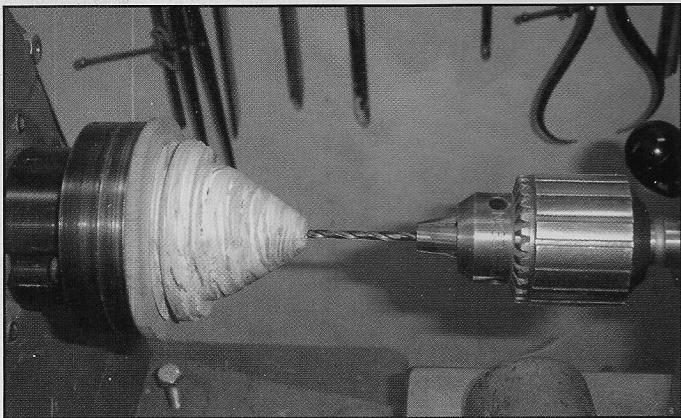
**Step 4.** Drill a hole in the middle of one of the circles of material on the drill press. This hole can be any size; it has to be just big enough to fit over the chuck jaws and 2" works well for mine. I cut the matching recess for the first tenon on the top and clean up the outside of the material.



**Step 5.** Glue the two pieces together to form the body of the salt shaker.



**Step 6.** Next, glue the last two pieces of the material together and mount them on a screw chuck. (*Note:* the spacer used to minimize the screw depth of the chuck.) Turn a taper that will eventually become the inside of the funnel. I try to get the total length of the funnel to be two-thirds of the depth of the domed opening in the other part of the salt shaker. I leave a flat top on the funnel of about 3/8" in diameter.



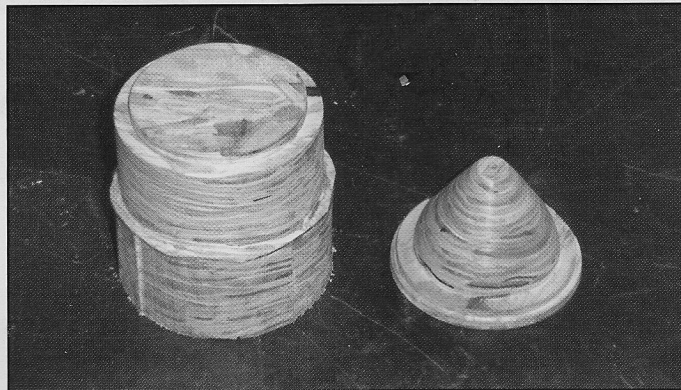
**Step 7.** Drill a 1/8" hole in the top of the funnel. This is done now so the hole will be in the center of the funnel. I also create a tenon on the bottom of the funnel that will mate snugly in the main body of the shaker. This last step is critical to the success of the next step.



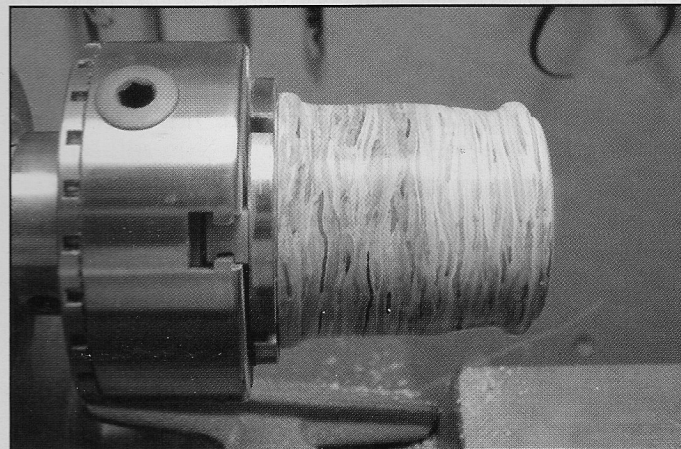
**Step 8.** Insert the funnel into the main body and begin to hollow out the inside of the funnel. This requires a very snug

fit with the body, so this can be easily accomplished. I also put a slight fillet on the bottom of the funnel to give the salt shaker lift. I use a blast of compressed air to get the funnel out and this pushes it out effortlessly.

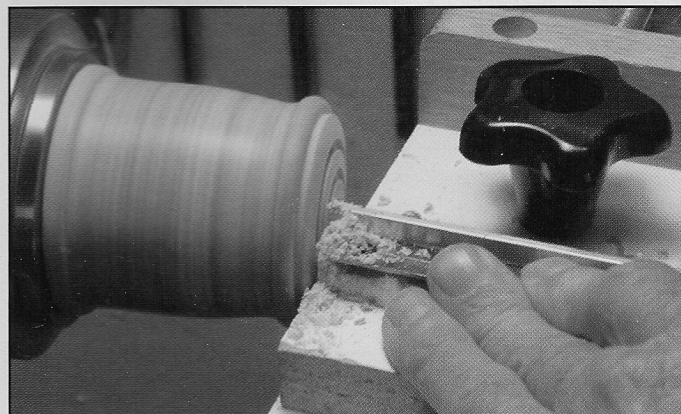
At this point, sand the salt shaker body and funnel, and finish the inside of the parts. Be careful using the finishing compound so as not to plug up the 1/8" hole in the funnel tube. This also goes double for sanding dust.



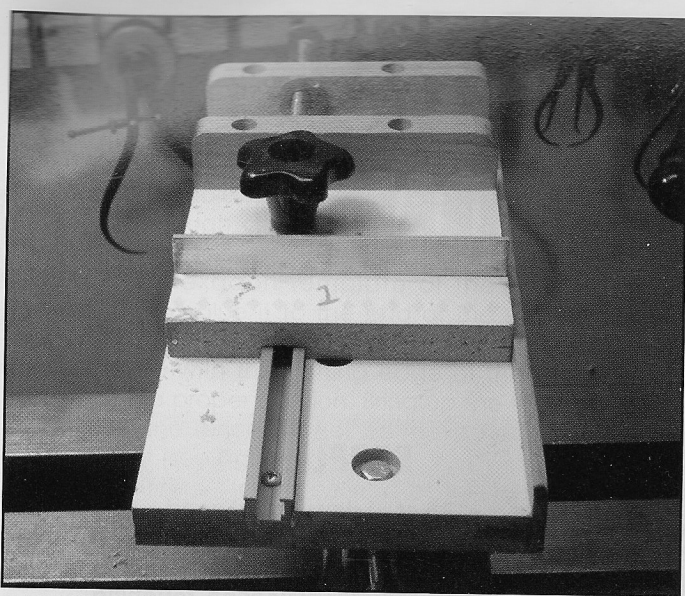
**Step 9.** This photo shows the two pieces that make up the shaker. **Diagram A** shows how the pieces fit together and how the salt shaker works.



**Step 10.** Mount the shaker body on the 4-jawed chuck and do the final shaping of the outside. You can pretty much use any shape you want as long as you don't cut through to the inside.



**Step 11.** On most of my shakers, I add some decoration to the top of the body with a crushed stone inlay.

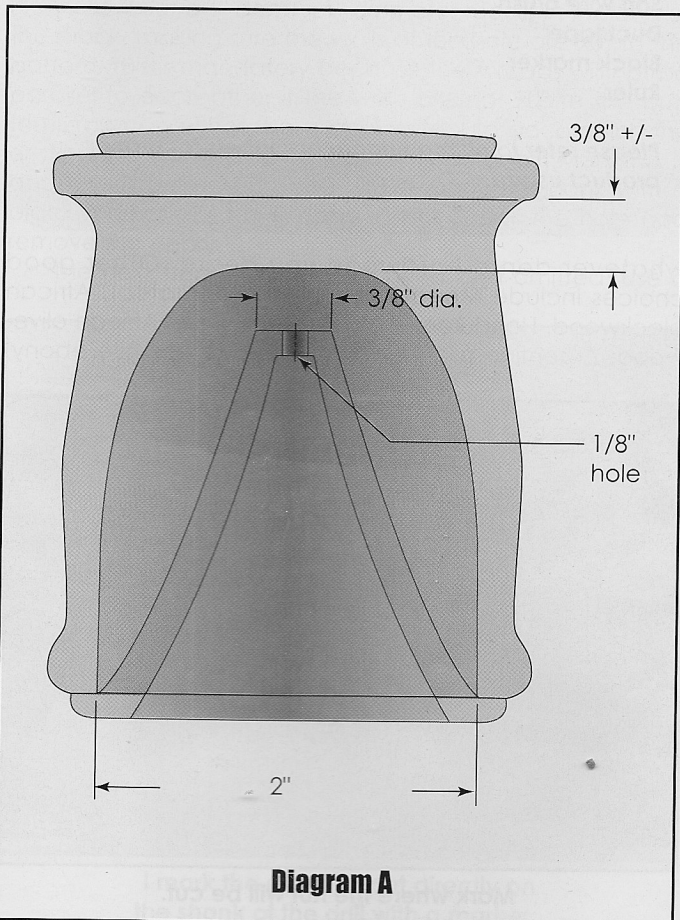


**Step 12.** Uniform spacing of the grooves makes a big difference in how the decoration appears, so I use this jig to ensure that the grooves are even. At sixteen threads to the inch, each complete turn of the handle gives me 1/16". With the jig, I can keep the grooves even across the top. I put the grooves 3/16" apart which I've found gives the top a nice appearance. However, you can use a parting tool to accomplish the same thing; you just have to be a bit more careful.



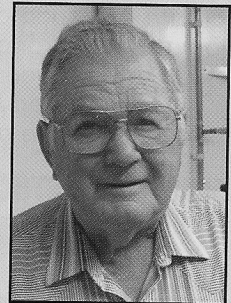
**Step 13.** Crushed turquoise and pipestone were used to inlay the grooves in my shakers, but other material would work just as well; experiment a bit. The stone is inlayed one color at a time and thin cyanoacrylate glue (CA or superglue) is used to secure the material. Sand the stone flat. Once the inlay is sanded smooth, put the final finish on the outside of the shaker.

I've found that most people are surprised and fascinated by the salt shaker. I will keep working on this technique to find out how it can work with pepper and other spices.



### Billie Harding

As the founder of Harding Nursery in Colorado Springs, Billie Harding has planted enough trees for generations of woodturners yet to come. An expert welder and machinist, Billie has developed a sphere-cutting jig for his brother, Barry Harding, as well as a machine to shape solid spheres from semiprecious stone. Billie takes delight in creating puzzles for his fellow woodturners (including his two brothers), and he has particularly enjoyed introducing the upside-down salt shaker to Dennis Liggett, who helped with this article.



### Dennis Liggett

Dennis Liggett is an English-trained woodturner from Colorado Springs who demonstrates and teaches twist work, thread-chasing, and stone inlay.

