TURNING GOLF BALLS
Lidded Boxes and Ornaments

First of all I must start out by giving credit to Sharon Ayres, Dallas, Texas for the idea. I stumbled upon her demo for the Denton Turners on YouTube. There are three parts: making the top, hollowing the golf ball and making the jig to hold the golf ball. The three links are given below (be prepared for some technical problems with her mike...apparently they were having battery problems):

https://www.youtube.com/watch?v=-hFOF98ozT8

https://www.youtube.com/watch?v=ESyvyGMk-Fc

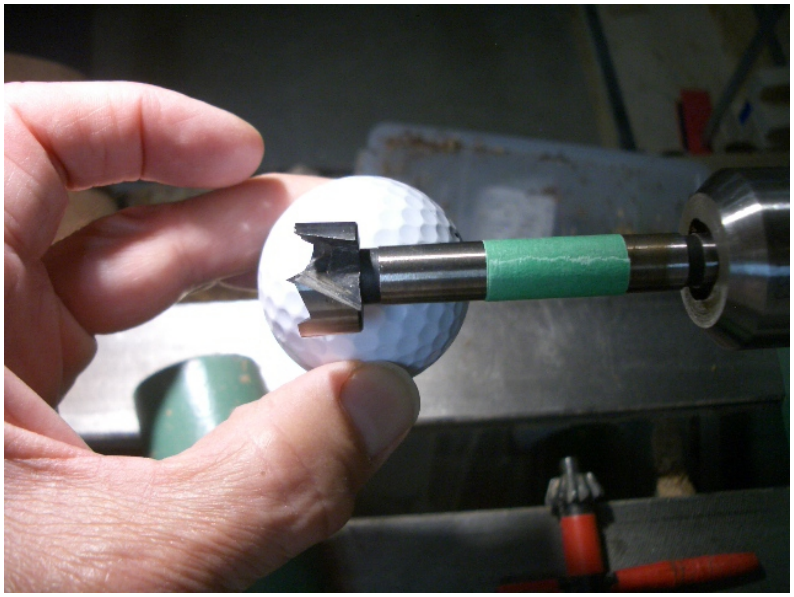
https://www.youtube.com/watch?v=u90SSDemnDw

If you make one of her jigs to hollow the golf balls she warns that some brands are smaller than others so if you plan to do a lot of these you should settle on those brands that fit the jig you make, or make jigs to cover the sizes you buy. Alternately, you could do as I report here and use a chuck with jaws.

I must admit that seeing her use the MDF jig she describes gave me some pause for concern. It appears that the MDF jigs are quite fragile, as you would expect from a material made from sawdust and some glue. So, in thinking about it, I wondered if I could just use my four jaw chuck with dovetail jaws installed. The following pictures document my attempt to do just that.

First of all I measured the outer diameter of the ball and determined that my jaws would open enough to hold the ball. So, first step was to place the ball in the jaws and hold it firmly enough to keep it from turning when cutting, but softly enough not to damage the cover of the ball. As extra insurance I wrapped painters' tape around the ball's middle. I also made an effort to align the trade name of the ball such that it would be perpendicular to the axis of turning for esthetic reasons when assembled.

This ball was to be drilled to make the globe part of an ornament. So to keep the top proportionate I opted to drill a 3/4 inch hole in the ball. The hole diameter you drill should match the top you plan on using though. Using a spare ball I gauged the maximum depth of the hole I needed to make to substantially reduce weight and then I put some tape on the Forstner bit to indicate desired depth.



The 3/4 inch hole was then drilled into the ball to the depth required. Remember, this hole was to accept the turned top of the ornament so keep it round when turning. As an aside, apparently the inside of golf balls can be just about any colour...but mine was just an ordinary grey.

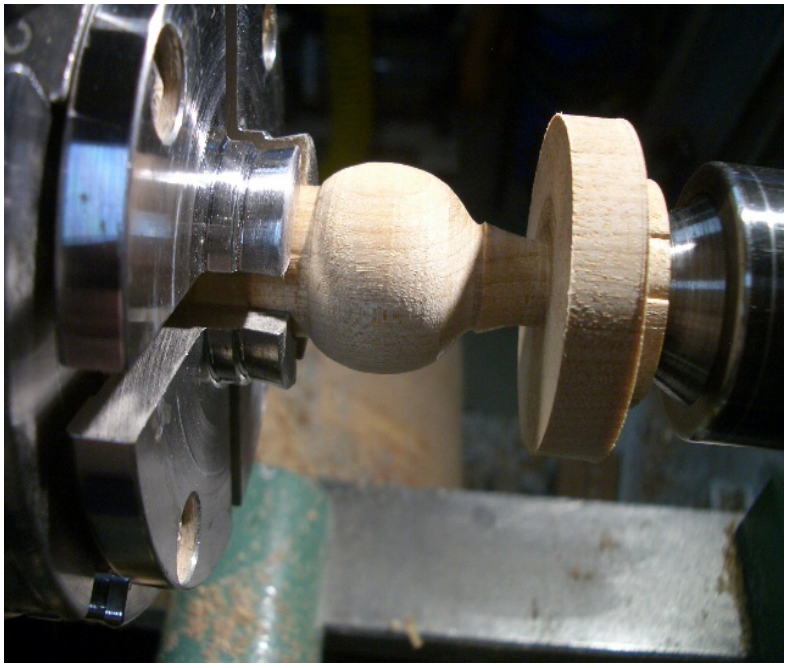
Now, I had to make provision for the 'icicle' part of the ornament to be mounted. Figuring that the Jacob chuck that just drilled the 3/4 inch hole was still concentric to the hole in the ball, I installed a 1/4 inch Forstner bit in the chuck and drilled through the remaining thickness of the golf ball, making a hole to receive the turned icicle. If everything went well this should ensure the top and the icicle are in alignment.

The ball was now hollowed. Just about any type of tool with appropriate reach to under cut inside the ball can be used. Finish is not important here, reducing the weight is. I opted to use a round carbide cutter and removed as much of the interior as I dared. Final weight of the golf ball was less than 30g.

The result was as shown below:

A finial top (maple) and an icicle (mahogany) were then turned (as shown below). Since these pieces are secondary to the intent of this report I will not describe the steps in detail. Many of the necessary steps have been described in other reports and shown in numerous demo videos.

In the photo immediately above (finial top) I turned the tenon to fit into the golf ball (several tests) then reversed it in the jaws for completion, as in the photos below:

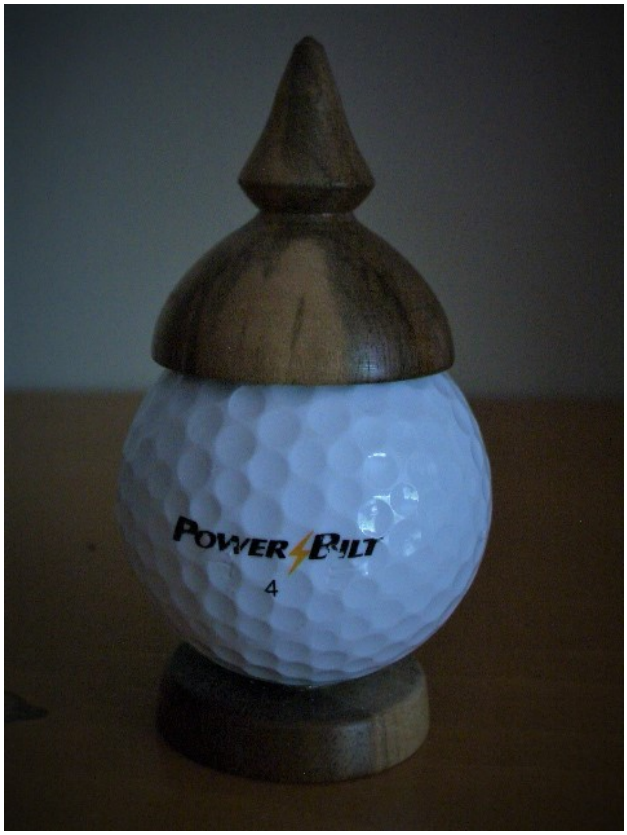


All sanding done under low speed and finish applied (Myland High Friction Polish) at high speed.

Assembly, using cyanoacrylate (CA) glue, was done and put under pressure until cured. Photo of completed ornament below:

As a preliminary test I had made a ring box out of a golf ball and pieces of walnut (friction fit top and a bottom foot). The results were crude but gave me some input as to what I had to improve when turning these golf balls. Also, in these items with removable tops, I found one has to take care to sand the visible inside much better than is required for an ornament. See photo below:

One lesson learned was to ensure as much as possible that the hole for the top and the hole for the bottom's tenon are concentric. This was the major reason for me trying to use a chuck and jaws when making an ornament. This is even more of a problem making a box because you cannot through-drill but must remove, reverse and replace the ball after the first hole is drilled. This may necessitate a jig in the Jacob chuck for placement of the ball in the dovetail or spigot jaws. If not planned for, the top can look 'cocked' to one side (as may be apparent in the photo below). The second lesson was to be careful when placing the ball in the jaws. If care is not taken (i.e. painters' tape) the logo(s) may be marred as can be seen below ('BILT' is marred).



Gary Landry
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