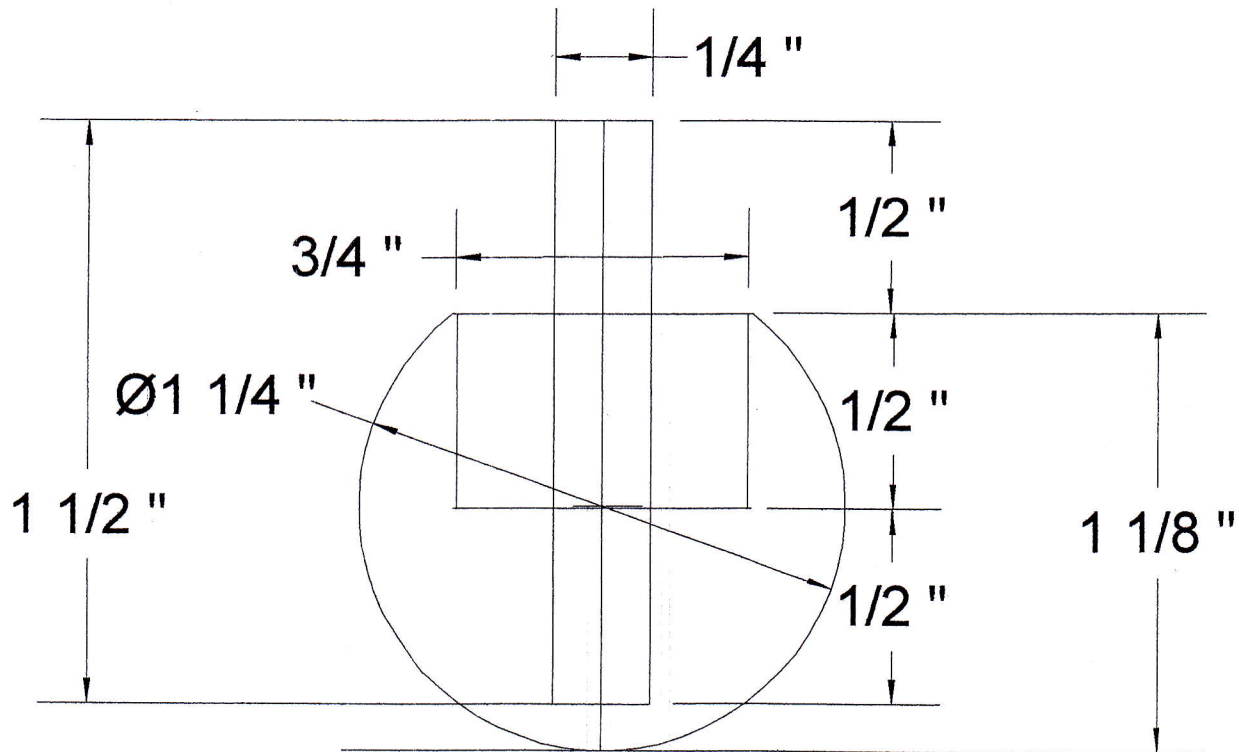


Tippi Top

The Tippi Top is a fascinating toy that when spun will slowly invert and spin on its stem. I'm told that it works because the center of mass is displaced from the center of the sphere by the hole drilled in it. I don't understand much of the why it works but what I do know is that if every proportion is not exactly right it will not invert. The first 8 or 10 that I made didn't invert. I finally got the proportions right and it worked. What is shown below is the dimensions for the successful one. One word of warning... if you deviate from any dimension or proportion it may not invert.



Instructions:

1. Chuck up a blank that is at least $1\frac{1}{2}$ " square and about 3" long.
2. Turn it round and to a diameter slightly larger than $1\frac{1}{4}$ ".
3. Square up the end and drill a $\frac{3}{4}$ " hole, $\frac{1}{2}$ " deep with a forstner bit.
4. Inside the $\frac{3}{4}$ " hole, drill a $\frac{1}{4}$ " hole $\frac{1}{2}$ " deep.
5. Have a $\frac{1}{4}$ " dowel $1\frac{1}{2}$ " long handy that will fit snugly into the $\frac{1}{4}$ " hole.
6. Measure $\frac{1}{8}$ " from the end of the blank and mark a line all the way around it.
7. Measure $\frac{5}{8}$ " from that line back toward the right end of the blank and mark a line.
8. The $\frac{5}{8}$ " line is the center of the $1\frac{1}{4}$ " sphere you are about to turn.
9. In a piece of stiff paper mark a $1\frac{1}{4}$ " circle. Cut out enough of it to make a templet that you can use to accurately turn a sphere to $1\frac{1}{4}$ " diameter.
10. Sand as much of the sphere on the lathe as you can.
11. Part of the sphere and sand the rest. Glue in the $\frac{1}{4}$ " dowel and see if it will invert.