

Tippy Tops

Making these amazing small toys

By

Eugen Schlaak





Materials and Tools required

These are the most common tools and materials I use for producing TippyTops

This of course is my suggestion and other variations are possible.

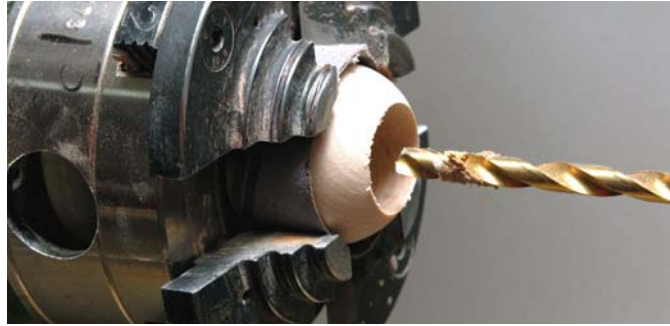
- 1) Wood Balls 1 ½" dia (Stockade # B150 @ \$.32 Ea).
- 2) Maple Dowel ¼" Dia. x 2 ¼" long.
- 3) "Oneway Talon" Chuck with #1 inserts.
- 4) Sleeve 1 ½" dia x ½ " wide made from stiff cloth backed sandpaper with the rough surface inside and the seam glued together with hot melt glue.
- 5) "Jacobs" Chuck with a #2 morse taper for holding a 7/8" forstner bit in the tailstock and the semi finished top in the drive spindle.
- 6) "Jacobs" chuck for holding a ¼" drill bit in the tailstock. Using two Chucks avoids having to change from the Forstner bit to the drill bit at the initial stage of making the top.
- 7) A small skew.
- 8) C.A. Glue.
- 9) A variety of "Prismacolor" artistic markers or any other alcohol based marking pens.
- 10) "Mylands" friction polish.



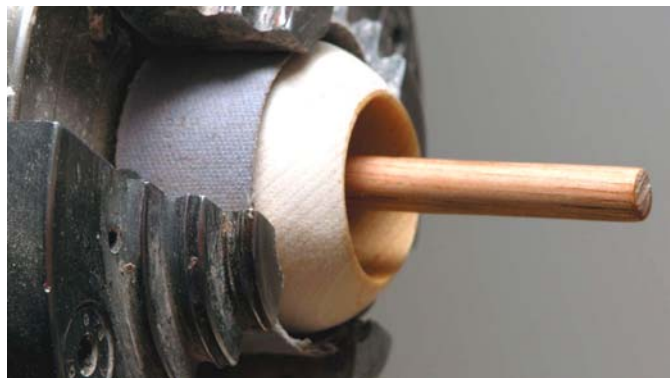
To make these Tops in an efficient way, it is best to make batch quantities of at least 10 pieces



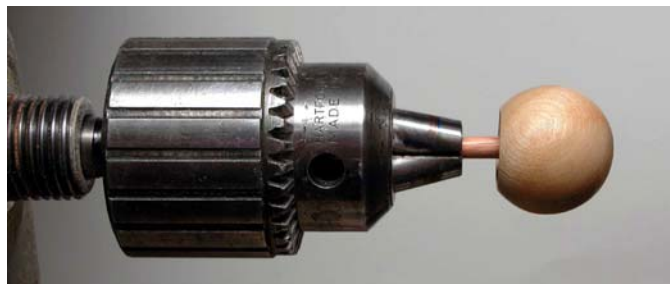
Drilling the ball with the 7/8" Forstner bit to a depth of 5/8". Because of the friction created by the sandpaper sleeve only a minimal pressure of the chuck jaws is required to hold the ball and only minimal marks are left on the surface of the wood.



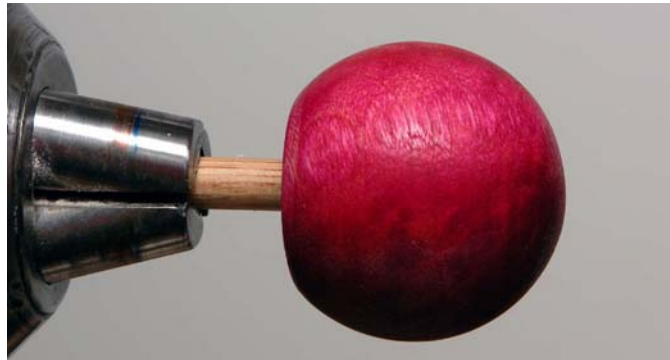
Drilling the hole for the $\frac{1}{4}$ " dowel to about $\frac{3}{8}$ " deep. If the drill is easy to push in, you have gone too far. At this stage you appreciate to have two Jacobs chucks, unless you have a key-less chuck where the changing from the Forstner bit to the drill is a very fast procedure.



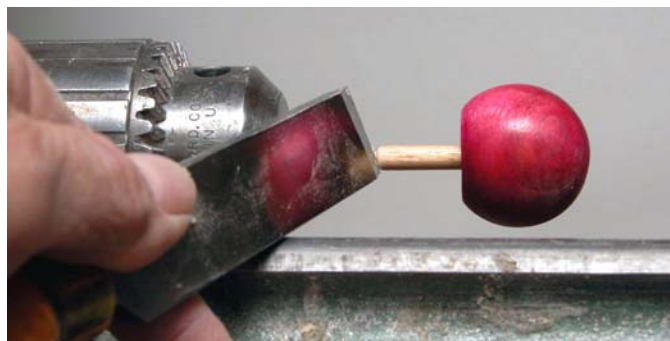
After the dowel has been glued in with a drop of CA glue the edges of the hole and the dowel a slightly sanded and one coat of friction polish is applied to only the inside of the hole and the dowel.



The whole batch should be ready at this stage for the next operation. The Jacobs chuck in the head stock spindle holds the top securely on the area of the dowel with is later cut off.



After a small amount of touch-up sanding with 220 grit paper you can let your imagination run wild: use solid colors or stripes applied with the Prismacolor markers, score small lines with the skew and wire burn, use alcohol based dyes, apply acrylic paint with a small brush, etc. The possibilities are endless but I get the fastest results in glorious color combinations using Prismacolor markers only.



After a quick coat of Mylands friction polish over the Prismacolors, the top is ready to be cut off with the skew. Leave about 5/8" of dowel protruding from the edge of the hole and ensure that the edges are slightly rounded and that the end of the dowel is smooth.



The batch is finished and it is now time to “test run” each one of these Tippy Tops. You soon get the knack of spinning these and the two in the front spun long enough to take this photo after giving them a good spin right side up and seeing them magically tip over, up-side-down . Believe me, it works..... one just has to practice .

The time for making this batch of 20 or so should take about three to five minutes each and no more than an hour for the lot ... unless of course you want to turn your own balls and with a bit of skill that should not be a problem at allbut at the cost of \$.32 each when you purchase them, why bother?

These can also be made in a smaller size using a 1 1/4 “ diameter ball, the same diameter dowel and drilling the same hole diameter, but the depth of the hole should only be 1/2”, with the dowel protruding only 1/2”.

Students of physics seem to find the tippy top a favorite subject, judging by the wealth of info available on the web with theories and multi-parenthetical mathematical formulas explaining it's principles.

For anybody who wants to read more about the principals, the following is a website with some excellent information:

<http://www.physik.uni-augsburg.de/~wobsta/tippetop/model.shtml.en>

Enjoy!

Eugen Schlaak
Woodturner
Niagara Falls, Ontario, Canada