How to construct a tippe top

The tippe top is quite easy to construct once you have the few necessary materials.

Materials:
1. Wooden balls, 24mm in diameter, and with a hole through the center.
2. Wooden rod that fits in the hole of the ball.
3. Wood glue.
4. Sand paper.
The wooden balls and rods can be bought in specialized craft shops (e.g. in Denmark the “Panduro Hobby” shops).

Constructing the top:

1. Fasten the ball using a clamp in such a way that the hole is vertical.
2. Drill an approximately 8mm deep hole, 16mm in diameter, using the original hole as center.
3. Cut of an approximately 30mm long piece of the rod.
4. Glue the 30mm rod in the hole through the ball in such a way that a small portion (about 1mm) of it sticks out on the other side.
5. After the glue has dried, use sand paper to remove the piece of the rod that is slightly sticking out.

Using this approach I constructed 30 tops, 20 of these worked perfectly as tippe tops. When comparing a working tippe top with a nonworking ditto I have not been able to find out what distinguishes them. If you know of a way to construct wooden tippe tops with more success than this method, please let me know.