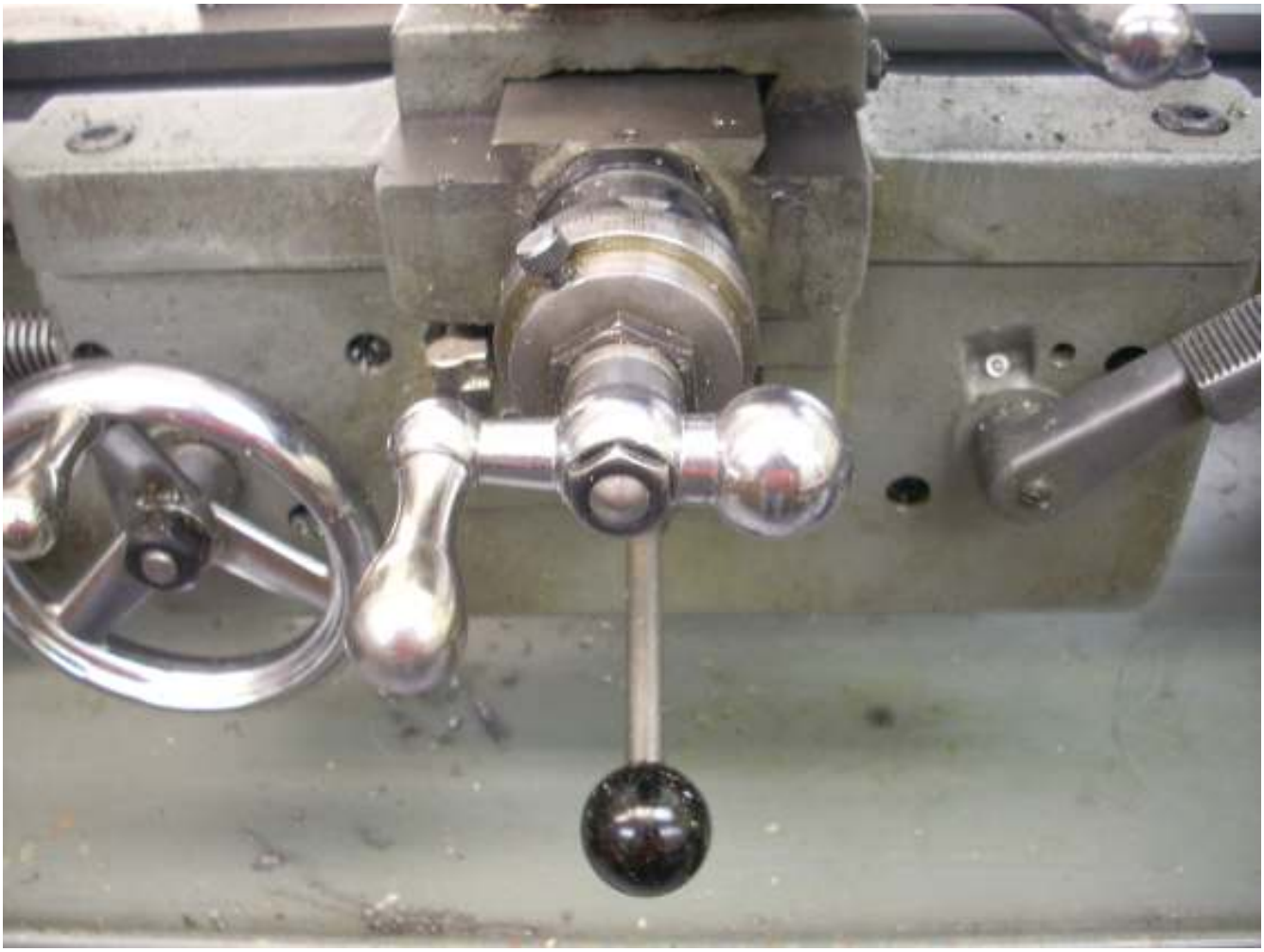
Casting A Ball Handle using Plastic Wrap

By "tiwonk" as told to R. G. Sparber

10/19/2008



In a past article I made two copies of this ball crank. They came out OK but there is an easier and better way to do it that involves plastic wrap.

The traditional way to make an impression of a 3 dimensional object is to first make a "false cope". This means ramming the cope up with nothing in it. You then push the object down in the false cope and ram up the drag. Turn the flask over, throw

away the false cope and ram up a “real” cope. The act of jamming the object into the false cope cause it to crack making it unusable for casting.

The following technique solves this problem in a rather elegant way.

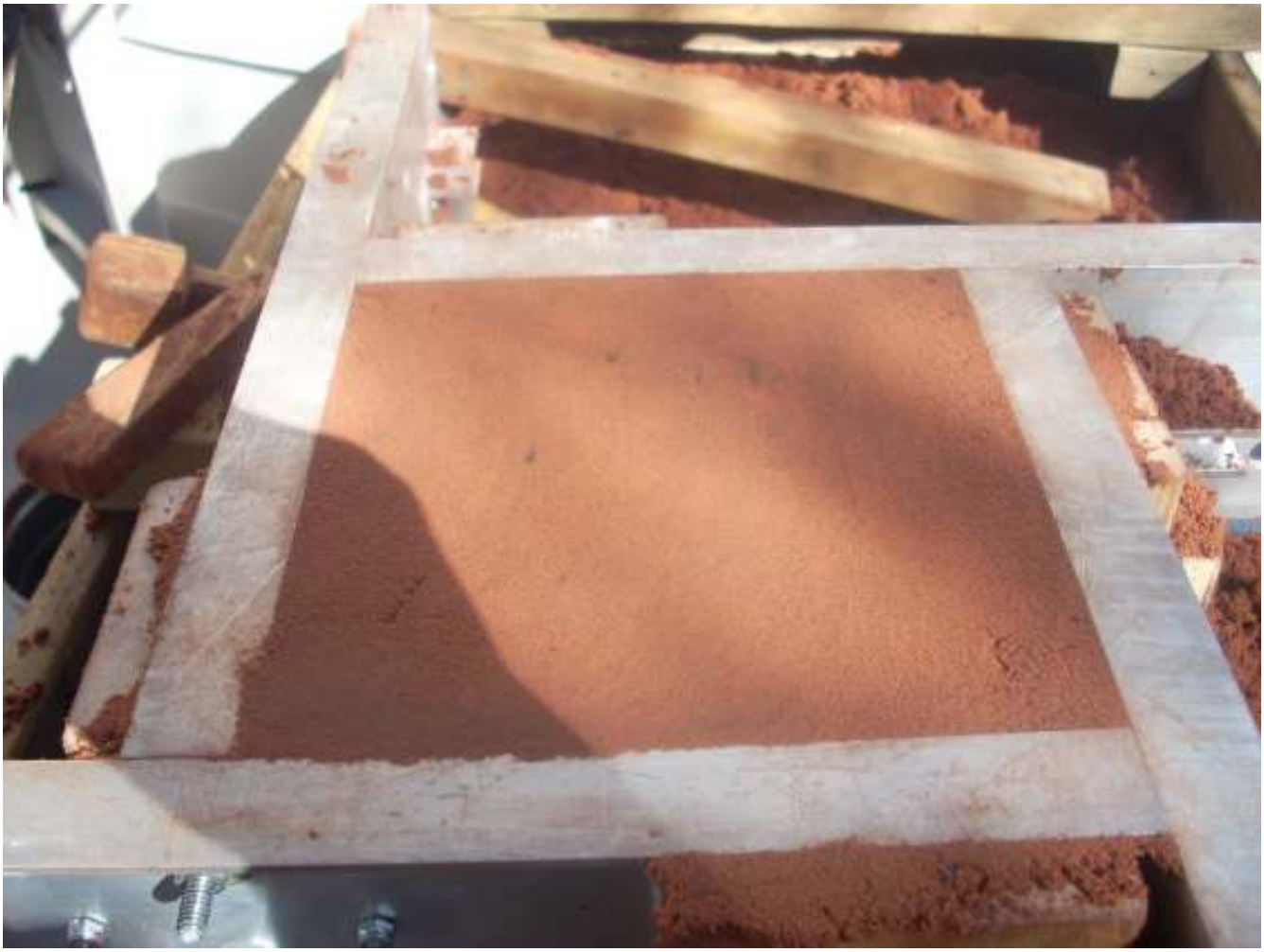
First you put down the drag and riddle in just enough sand to support the part after it is rammed.

The drag is lifted up and a sheet of plastic wrap is placed over the sand.

The drag is now placed over the plastic wrap capturing the sand.

The part is next pushed down into the sand until the top of the sand is at the parting line of the part. Sorry, but in all of the excitement, I forgot to take of picture of this step.

You then ram in the sand good and hard.



The drag is now full and struck off. A sprinkling of sand is added on top and the bottom board worked into place. The drag sandwiched between molding board and bottom board is turned over. I use a ratcheting strap to keep it all together.

With the molding board removed, you can see the small quantity of sand on top of the plastic wrap. It easily lifts out.

You are left with the part very solidly supported by the drag. I had to do a small amount of carving to get right down to the parting line but since the sand was rammed so hard, it carved easily.

When satisfied, dust the surface, add the sprue, and ram up the cope.

Well, this ***was*** my first try. When I lifted off the cope, the cope's sand stuck to the drag. I'm fairly sure this was because the parting line is not flat and smooth so there was a lot more adhesion. Lesson learned: don't ram up the cope as hard as the drag.

I was able to lift off this sand and still had a very solid drag imprint.

This time I tried to smooth out the surface a bit more. Then parting dust was applied and I tried again to ram up the cope. I rammed hard into the sides of the cope and hard directly above the part. The rest of the area was not rammed as hard. I don't know how to convey how hard to ram but experience should teach you.

This time it all worked. You can see the sprue pin's imprint in the drag. I have not cut in the gate yet.

The cope imprint came out nice and clean. All that was left was to pull the sprue pin and cut my funnel.

Here you see the tiny gate cut. I have not found that a riser is necessary.

The resulting casting came out fairly good except for an alignment problem I have with this flask. My alignment pins are not tight enough and I had about a 0.01” misalignment at the parting line. For a large casting this is not noticeable but this ball crank is small so it was obvious. A bit of work on the belt sander made things better. I plan to add better alignment pins before using this flask again.

Rick Sparber

rgsparber@AOL.com