

A Different Way of Jam Chucking

by Jim Meier

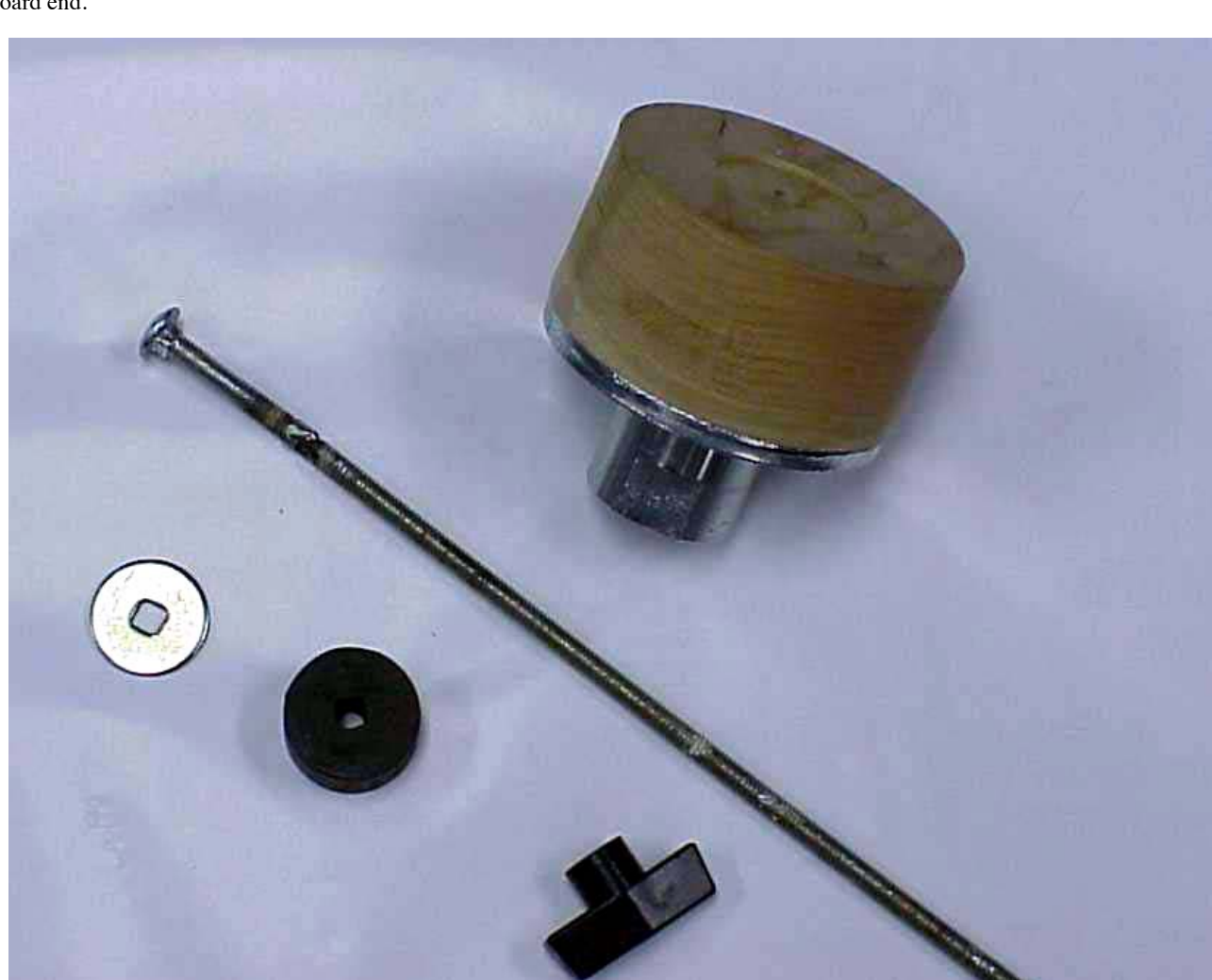
I often turn small oil candle holders that hold glass confetti oil bottles. These usually require a 1 1/2" diameter hole for the glass insert. After turning and parting off the holder, I like to reverse chuck the piece and finish turning the bottom. One method of doing this is to use a "jam chuck". There are other methods that could be used to hold the work piece for this including using various jaws available for a scroll chuck. I don't want to take a chance of marring the now almost completed piece. Vacuum chucking would be the ideal way to hold the piece. The problem is that there is only a small opening on the object. This presents problems because of the available surface area. Another problem with vacuum chucking is that I prefer to turn pieces that often include bark inclusions and small voids. These make a more visually stimulating lamp but presents major problems with vacuum chucking.



I have begun using a different method for jam chucking which allows me to avoid having to turn a jam plate for each individual piece. This method uses a rubber compression fitting – commonly available at the hardware store in either automotive or plumbing departments. These plugs come in various sizes and as they are compressed in thickness, they expand in diameter, creating a snug fit.



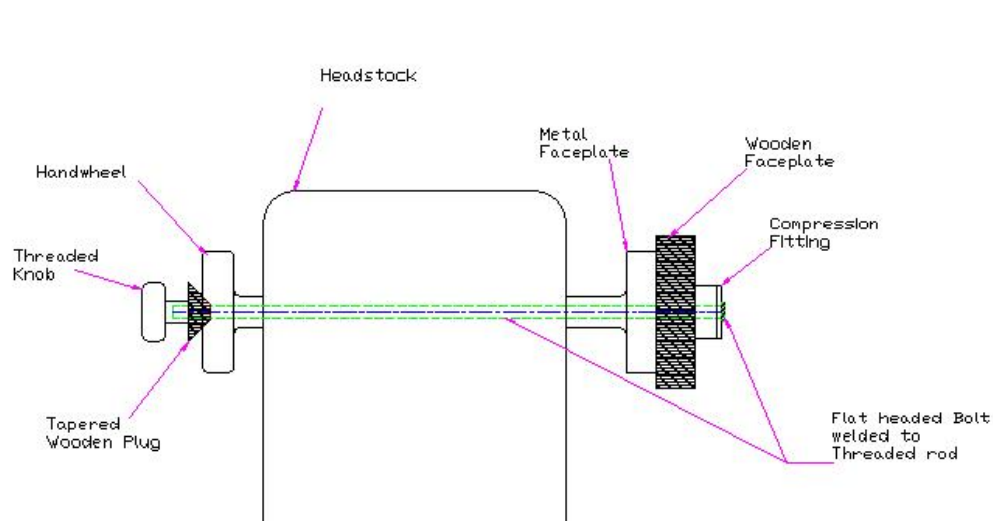
I screw a 1" to 2" wooden scrap piece to a faceplate. Hopefully, you have a few extra small faceplates allowing you to dedicate one of them to this function. Turn the piece round and square off the face. Next, taking the bolt from the compression fitting, I had a piece of threaded rod welded onto the end. I made it long enough to easily pass through the wooden faceplate, metal faceplate, and the headstock, leaving a couple inches out the outboard end.



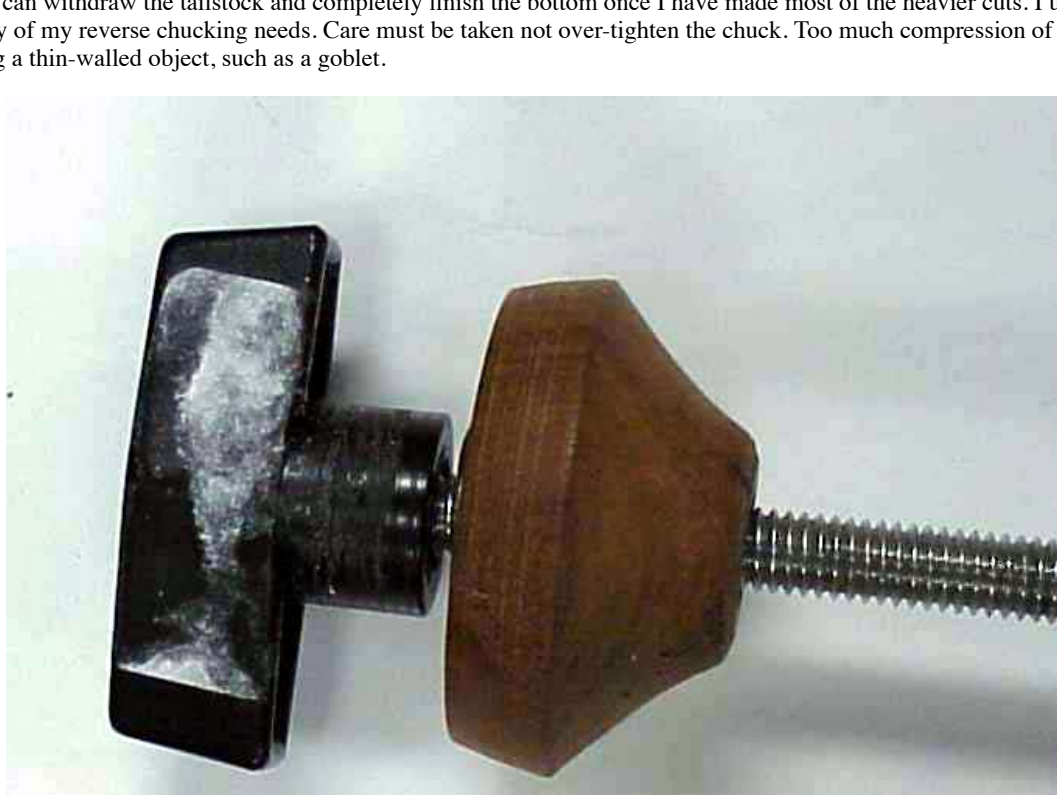
I have a hand-wheel on my lathe, and the center is tapered slightly. I turned a wooden plug to fit that taper, and extend out about a 1/2". The threaded rod should be just long enough to pass through this plug by about a 1/2 to 3/4" when the compression plug is "uncompressed". The faceplate and plug are center bored for the diameter of the threaded rod, centering the compression plug when in use. A threaded knob is threaded on the rod as it extends through the handwheel side tapered plug.



To use the jig, mount all the hardware in place. Fit the work piece over the compression fitting. It should be just slightly snug at this point to just sliding on. Bring up the tailstock with a revolving center to support the piece and hand turn to test the piece to make sure it is centered. Reposition as necessary. Once the work piece is centered, tighten the knob, compressing the plug. This expands it on the inner diameter of the work piece, giving it a firm hold. I have a variable speed lathe and start the lathe off slowly. Once I am sure the piece is revolving accurately, I can ramp the speed up to my desired working speed. The bottom of the piece can now be finished with ease.



With most pieces, I can withdraw the tailstock and completely finish the bottom once I have made most of the heavier cuts. I use the compression chuck idea for many of my reverse chucking needs. Care must be taken not over-tighten the chuck. Too much compression of the plug has the potential of splitting a thin-walled object, such as a goblet.



Photos by Jim Meier