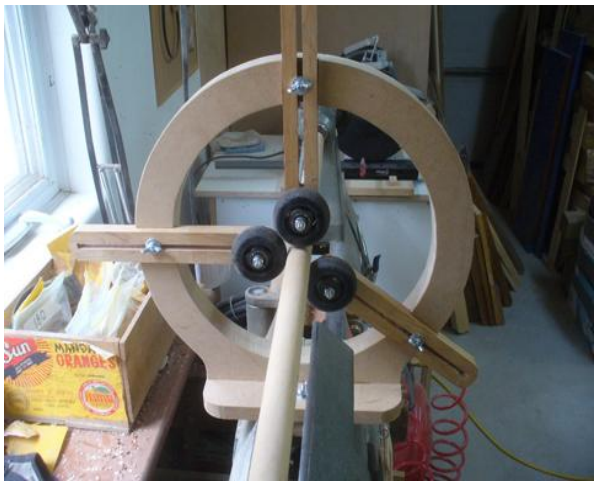
How To Make A Spindle Steady Rest

Ted Monk

For last year's Fun Turn I decided that I would turn a cane. To do this I required a spindle steady rest.



A spindle steady is used to steady a long spindle while turning. The smaller the diameter and the longer the spindle is the more likely it is to vibrate and 'whip' back and forth, making it pretty much impossible to turn. The spindle steady, using clamping pressure with a series of wheels, tames this erratic motion allowing you to turn your piece as normal. Basically it minimizes the distance of support on your workpiece.

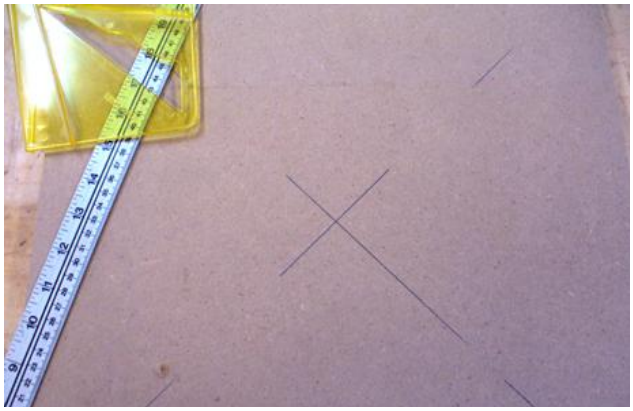
Making your own steady rest is rather straight forward and easily finished in a day, though an afternoon and a few hours the following morning is preferred since this will give time for the glued pieces to dry.

Here's how I built mine:

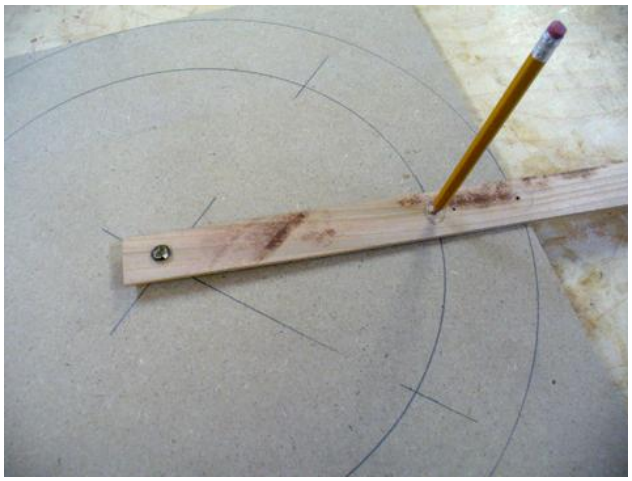
(1) I started with two pieces of 3/4″ MDF cut to 16″ square. The size may differ, depending on the swing-over bed capacity of your lathe.

(2)

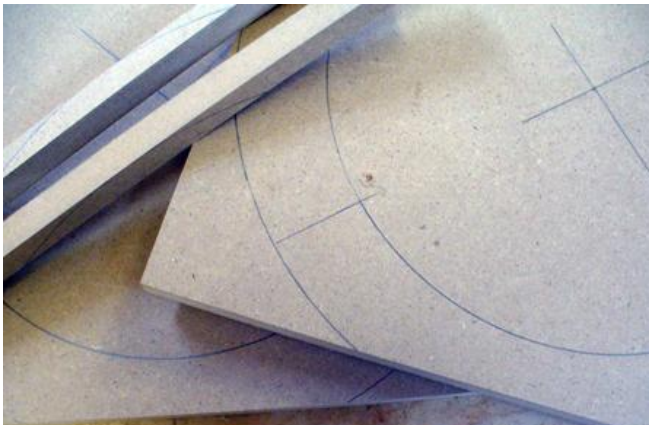
Next, I found the center of each of these pieces.



(3) Then I made two concentric circles, one at the maximum diameter and the second one 2″ smaller. I didn't have a traditional compass large enough so I just made a simple beam compass that consisted of a thin strip of wood, a tack and two small holes for trammel points that a pencil point fit through, which you can see here:

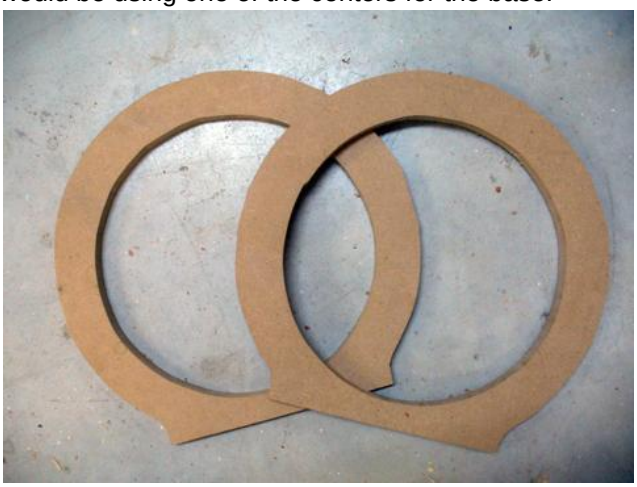


(4) Next I cut a 3/4″ strip off one of the sides of each of the squares. This side will become the bottom and removing this strip will allow for the 3/4″ base that will be put on later.

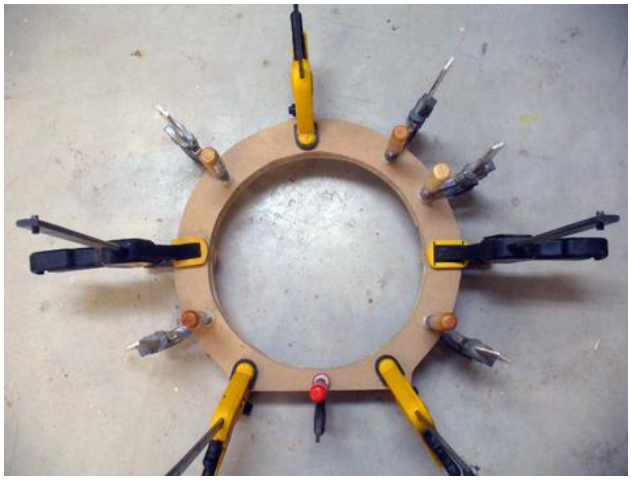


(5) Then, using an appropriate size circle (a large washer) I traced in a line that blended the outer circle into the bottom.

(6) Next, using a jigsaw I cut out each of the rings. I started the jigsaw with a hole large enough for the jigsaw blade as near to the ring as I could since I would be using one of the centers for the base.

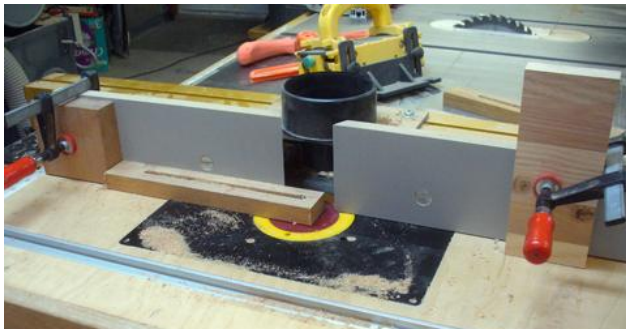


(7) Once this was done I glued the pieces together and clamped it well:



(8) While this was drying I cut 3 pieces of hardwood at 3/4″ X 1 1/2″ X 10″ for the wheel adjustment arms.

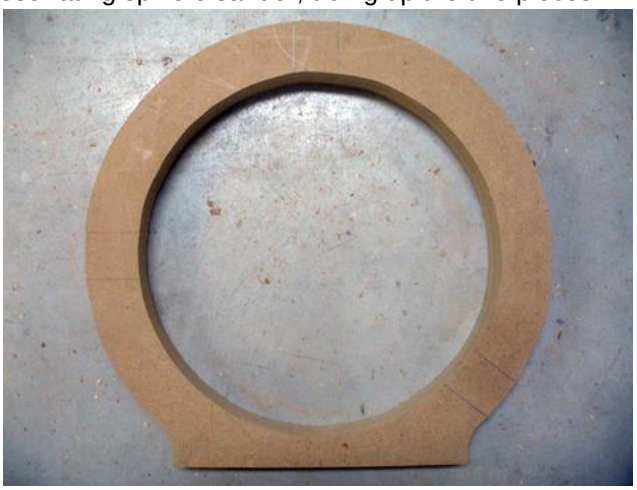
(9) To make the slot in the arms I used a 1/4″ spiral bit in the router and set up two stop blocks on the router table fence to only allow the wood to travel the distances for the slot, which was 2″ from one end and 1″ from the other.



(10) Then I rounded both ends on the bandsaw:

(11) Then, on the end of each of the slider arms where I left the 2″ of unslotted wood, I drilled a hole and then bolted on a rubber wheel that I took off an old pair of roller blades.

(12) Once the ring was dried I sanded it a bit with an oscillating spindle sander, truing up the two pieces.



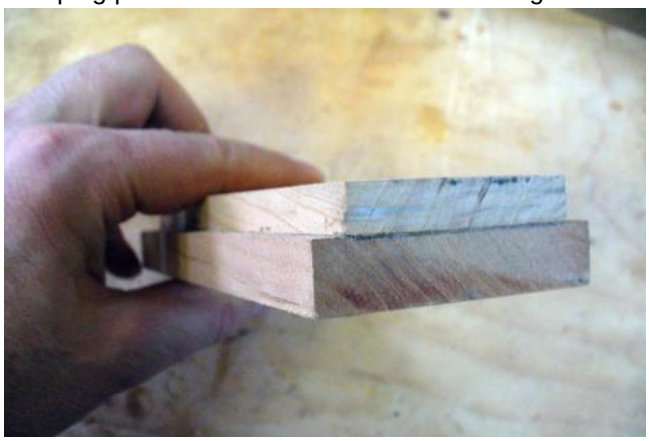
(13) Once this was done, and the sharp edges rounded a bit, I marked where I wanted the sliding arms to go. I determined the positions for these by laying the ring on my workbench and then placed the remaining center piece back in the center of the ring. This gave me a center point again. Then I arranged the sliding arms so that the wheels would meet in the center and then traced the width of the arm on the ring.

I wanted very little movement between the arm and the ring, just enough to allow them to slide, so I cut tight to the drawn line. I also cut to about a 3/8″ depth. I cleared away the waste with a bench chisel.

You can see this in the following two photos:

(14) I drilled the holes for the bolts that would hold the arms and added the 6″ X 10″ base cut from one of the centers with a couple of screws and some glue.

(15) I made the pinch bracket out of a couple of pieces of scrap hardwood. The pinch bracket is what holds the steady rest on to the lathe bed so this had to be sized for the distance between the ways and to allow clamping pressure when the base bolts are tightened.



Then it was just a matter of drilling a couple of holes in the base, matching them up with holes in the pinch bracket and adding the hardware.

Installing the sliding arms on the spindle steady completed the project which gave me 12″ maximum diameter:

As you can see this is quite an easy project and one that can be pretty inexpensive. I was fortunate enough to have everything I needed except for a few wing nuts. Probably the hardest thing to get would be the wheels but these can be picked up at yard sales and flea markets pretty cheap.

Here's a list of what I used:

2 pieces of 3/4″ X 16″ square MDF (for the rings and base)
3 pieces of 3/4″ X 1 1/2″ X 10″ hardwood (for the slider arms)
2 pieces of approx. 3/8″ X 3″ X 6″ hardwood for (the pinch bracket)
3 roller blade wheels
5 – 2 1/4″ X 1/4″ bolts (for slider arms and base assembly)
5 – 1/4″ wing nuts
5 – 1/4″ lock washers
3 – 2″ X 1/4″ bolts (for the wheel assembly)
3 – 1/4″ nuts (for the wheel assembly)
3 – 1/4″ washers (for between wheels and arm)

If I was to build another one I would place the sliding arms at an equal distance around the ring. In this version I wanted one that would be located behind my turning, giving support when force was applied with a tool. Doing so would have placed one of the arms in an awkward place (so I thought) and I would have been prone to bumping into it so I placed it straight at the top. The problem with this configuration is that when working on a very small spindle the top and back wheels can touch, causing them to reverse on each other. Now, although this is easily remedied by simply reversing either the top or back sliding arms it made for an unnecessary solution since I later found that had I placed the top one at an equal distance around the ring it would not have been in my way after all.

I hope that this article helps you if and when you decide to build your own steady rest.

Oh, and the cane that I needed it for? It came out looking like this: ☺