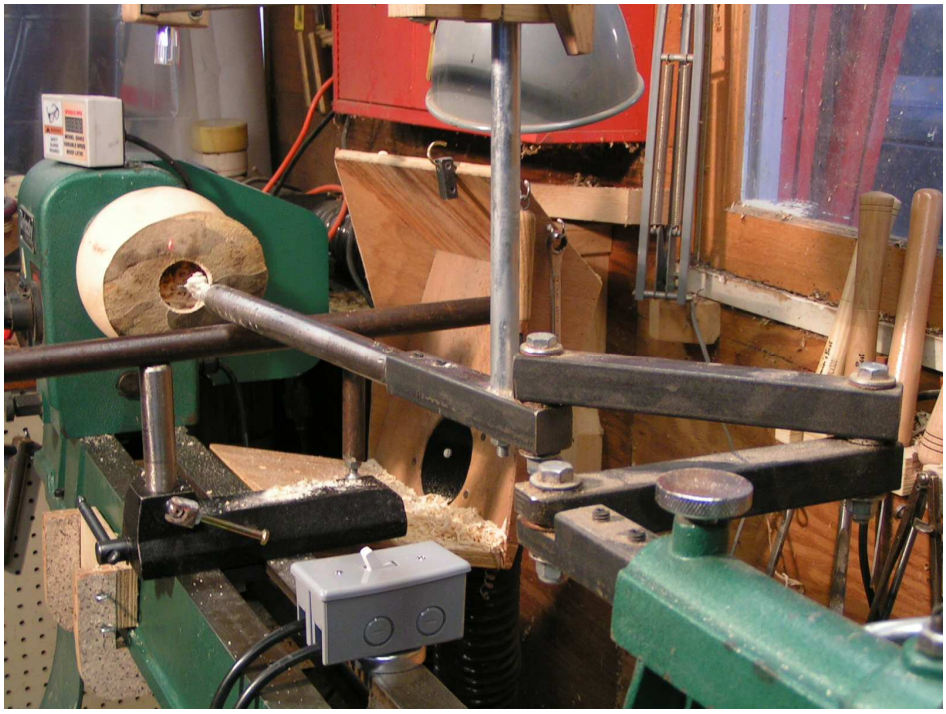
My Version of Capt. Eddies Steel Snake

Wayne Bower January 2009

Since this is not totally my design, I am listing where I got the information.
Here are the web sites.
http://www.bayouwoodturners.com/dece...steelsnake.pdf
Capt Eddies plans
http://www.sawmillcreek.org/showthread.php?t=80501 Fred Morton's version
http://www.sawmillcreek.org/showthre...apt+Eddies+Ste William Bolen's version

I combined ideas from the above versions and then adapted some of my own ideas to create my version. I did do some design work on the unit on a cad program to work out how all the pieces would work on the lathe. This saved me some time in experimenting. I also made a wooden mock up first to see how the rig would move on the lathe.



This is not a difficult project. Anyone with woodworking skills can build this snake.

The tools used were an angle grinder, drill press and file.

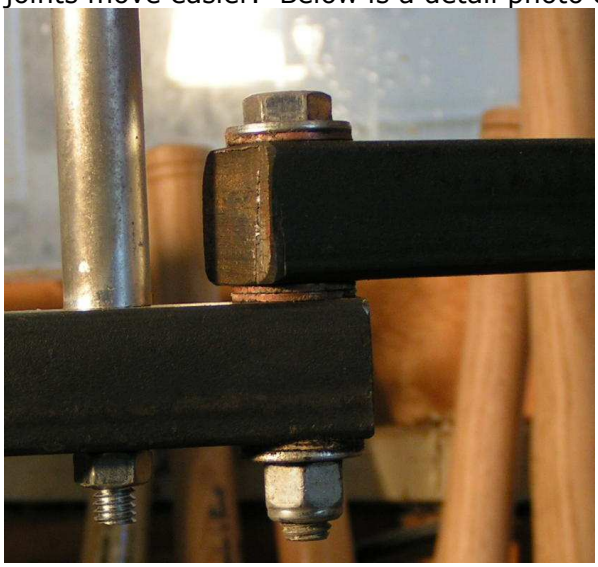
The 1” square solid steel was purchased from a local manufacturer and I was able to get it for scrap pricing as it was a cut off.

The step by step procedure is pretty simple, cut the 1” square solid steel to the correct lengths, drill the holes and put it together.

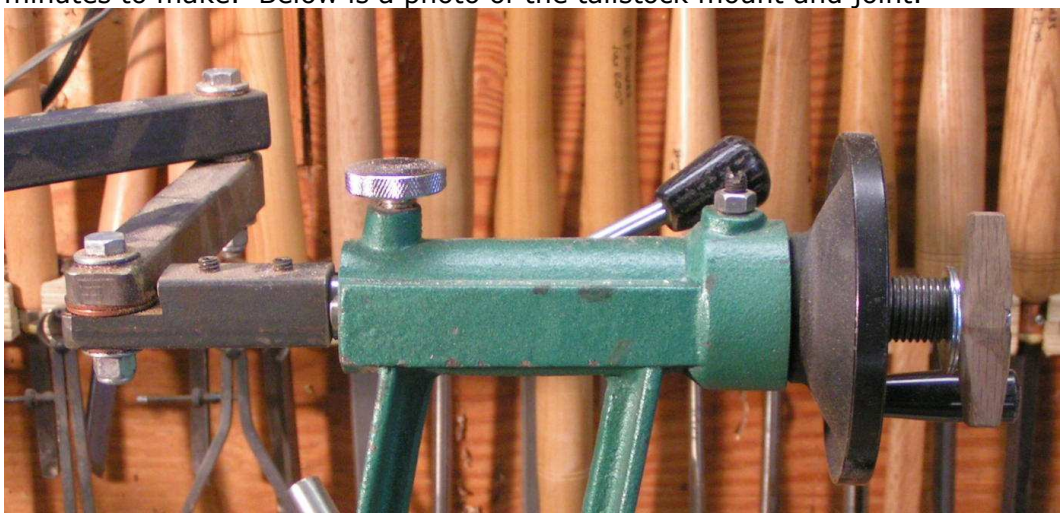
The holes drilled for the bushings are 1/2" in diameter. These holes must be drilled so that they are square with the square steel faces.

I used bronze bushings purchased at the local farm store. They are 1/2” outside diameter and 3/8” inside diameter. They did fit snug in a standard 1/2” drill bit hole. I used standard 3/8” bolts with lock nuts for the pins.

I used silicone bronze washers (thrust washers) purchased from “Fastenal” http://www.fastenal.com/web/products/detail.ex?sku=0179460 for the joints between the arms and on the top and bottom of the joints. I found that filing the area where the washers fit against the square steel arms made the joints move easier. Below is a detail photo of a joint.



The tailstock mount is by a #2 morse taper that I made on my wood lathe by using a home made chuck, my little 4” grinder and a file. This procedure took about 45 minutes to make. Below is a photo of the tailstock mount and joint.



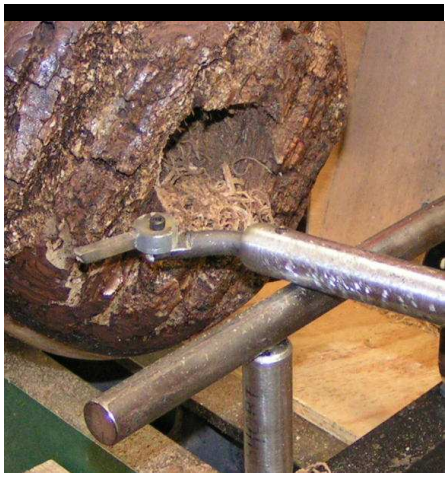
I drilled a 5/8” hole in the 1 x 1 steel stock and added a couple of 5/16” set screws to hold it in place. See photo of the tailstock assembly. The 5/16” set screws and the 3/16” cap screws for attaching the cutters both use the same size Allen wrenches. The morse taper was drilled on the narrow end and threaded for a 1/4” draw bolt. I made a wooden wing nut to hold the draw bolt. These parts are shown in the disassembled photo of the snake.

The half lap joint must be square and flat. This does take some care in cutting and drilling.

The front end is a 6” long piece of the 1x 1 stock with a 1/2" hole drilled 2” deep in from the end. 5/16” set screws hold it in place. This will allow me to use some other types of boring bars on the unit.

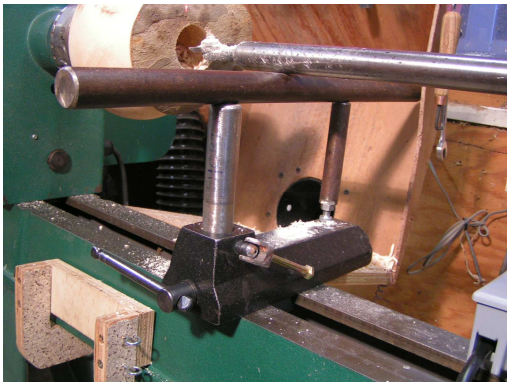
I have made several boring bars for the unit including the 1” diameter bar in the photos and cutter holders.

The straight cutter holder

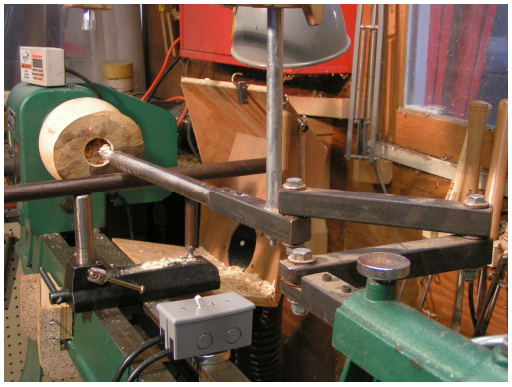


The bent cutter holder

I also have a 3/16” bit and several scrapers for the boring bar.



My tool rest: 1” diameter round stock with a 3/4" extra post.



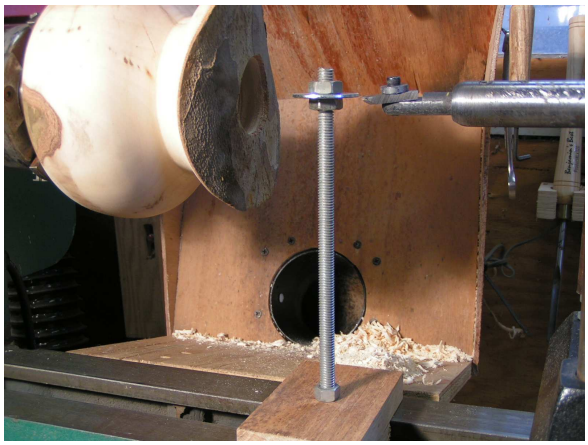
From the tailstock end. The remote On/off switch is shown in the bottom of of the photo. The laser mount is the the vertical shaft on the snake.

My remote switch is in the bottom right photo (grey box with white switch). This switch is very handy when hollowing as you do not have to reach around the spinning form.

The bottom photo is part of the snake disassembled.

The deepest hollowing that I have done is approximately 10” deep. This unit works very well for me and I hope this tutorial helps other do the build.

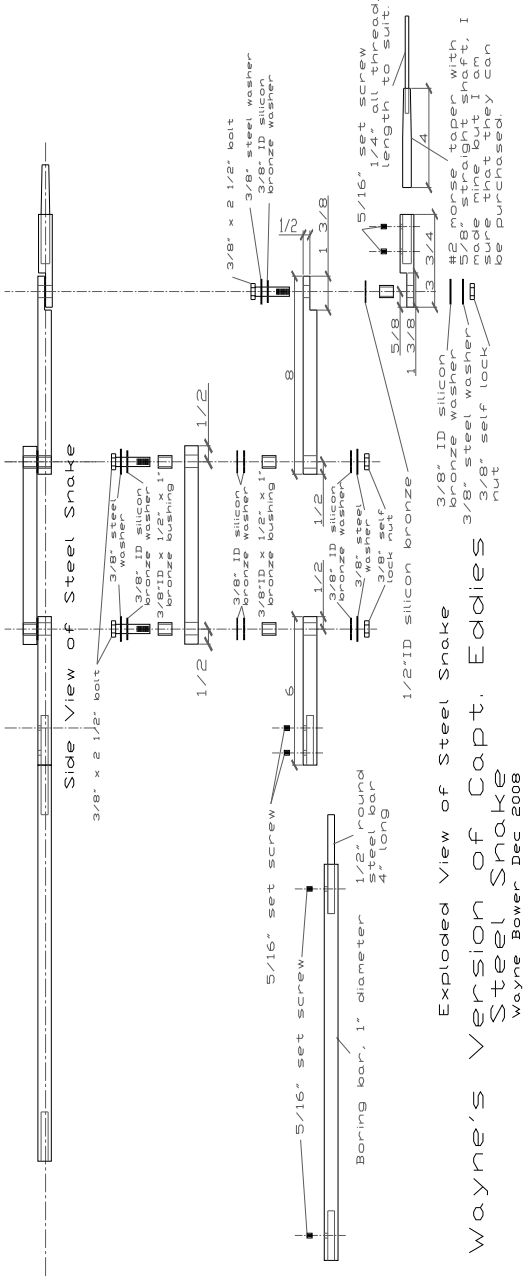
One other little item is a rig to get the cutter set to the correct height. This idea came from this web site http://www.laymar-crafts.co.uk/tip26.htm My version took only about 15 minutes to build. The washer is adjusted to the center line of the headstock and the cutter adjusted to just below the center and tilted down some.



Here is my website if you are interested - http://wpbower.weebly.com/index.html

The drawing on the next sheet shows the parts and dimensions for the snake.

Have fun with the build.


Wayne's Version of Capt. Eddies Steel Snake
Wayne Bower Dec 2008
Side View of Steel Snake
Exploded View of Steel Snake
3/8" x 2 1/2" bolt
3/8" steel washer
3/8" ID silicon bronze washer
3/8" ID x 1/2" x 1" bronze bushing
1/2
3/8" x 2 1/2" bolt
3/8" steel washer
3/8" ID silicon bronze washer
1/2
1 3/8
8
3/8" ID x 1/2" x 1" bronze bushing
3/8" ID silicon bronze washer
1/2
3/8" steel washer
3/8" self lock nut
1/2"ID silicon bronze
5/16" set screw
1/4" all thread, length to suit.
3/4
3
5/8
1 3/8
3/8" ID silicon bronze washer
3/8" steel washer
3/8" self lock nut
#2 morse taper with 5/8" straight shaft. I made mine but I am sure that they can be purchased.
5/16" set screw
6
5/16" set screw
Boring bar, 1" diameter
1/2" round steel bar 4" long