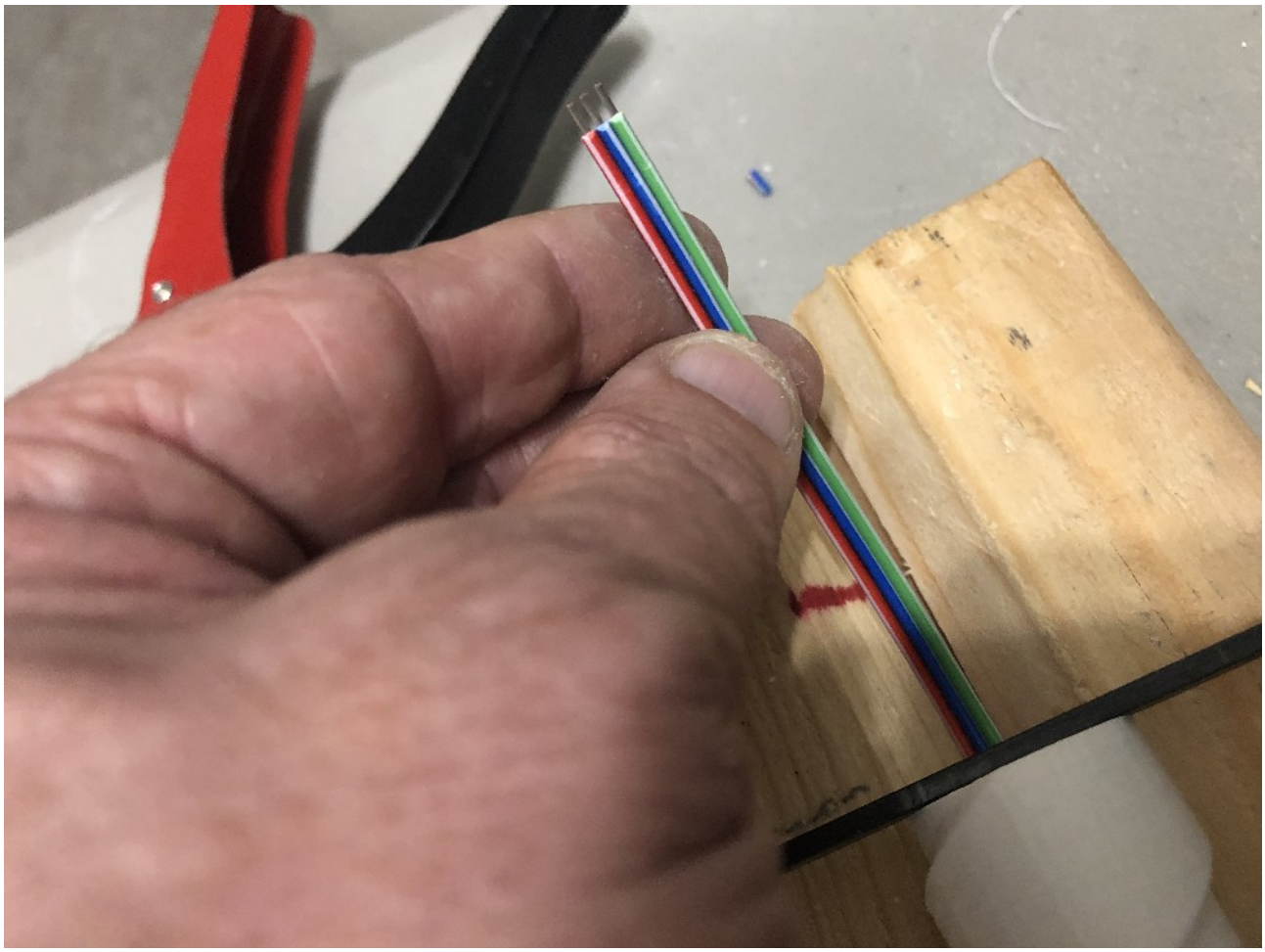
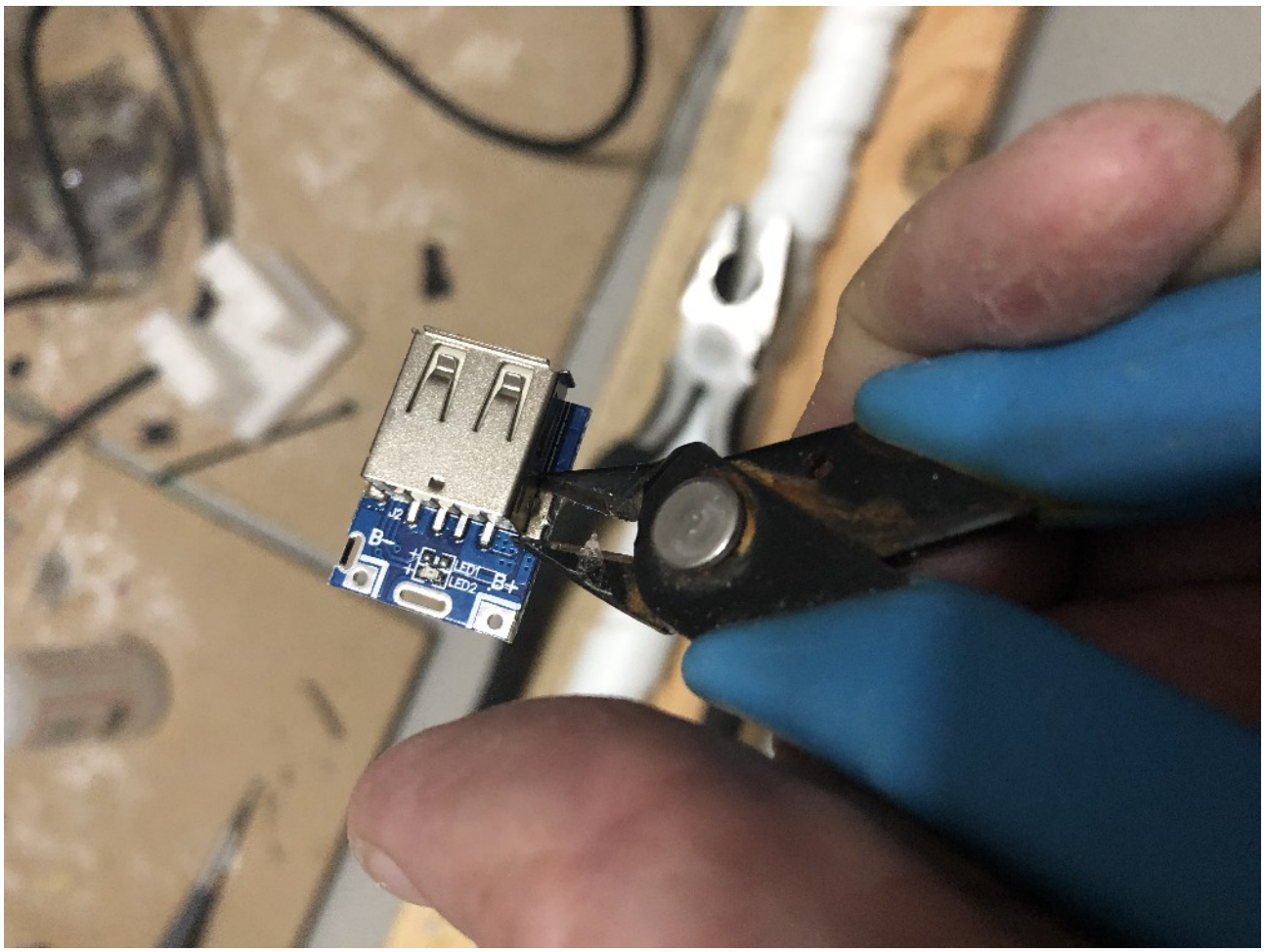
Swarm 2 build

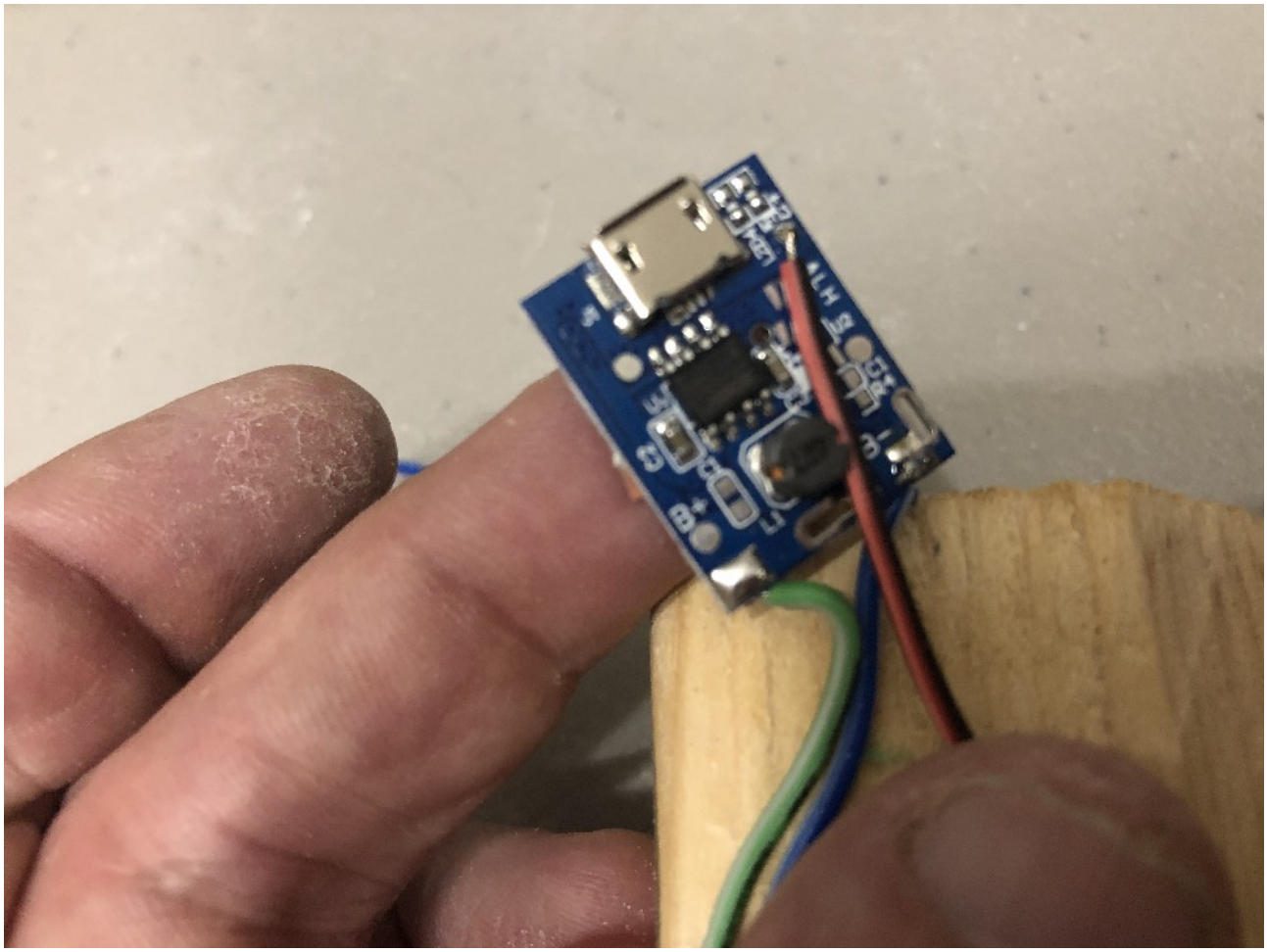
Chuck Sommerville
chucks@he.net



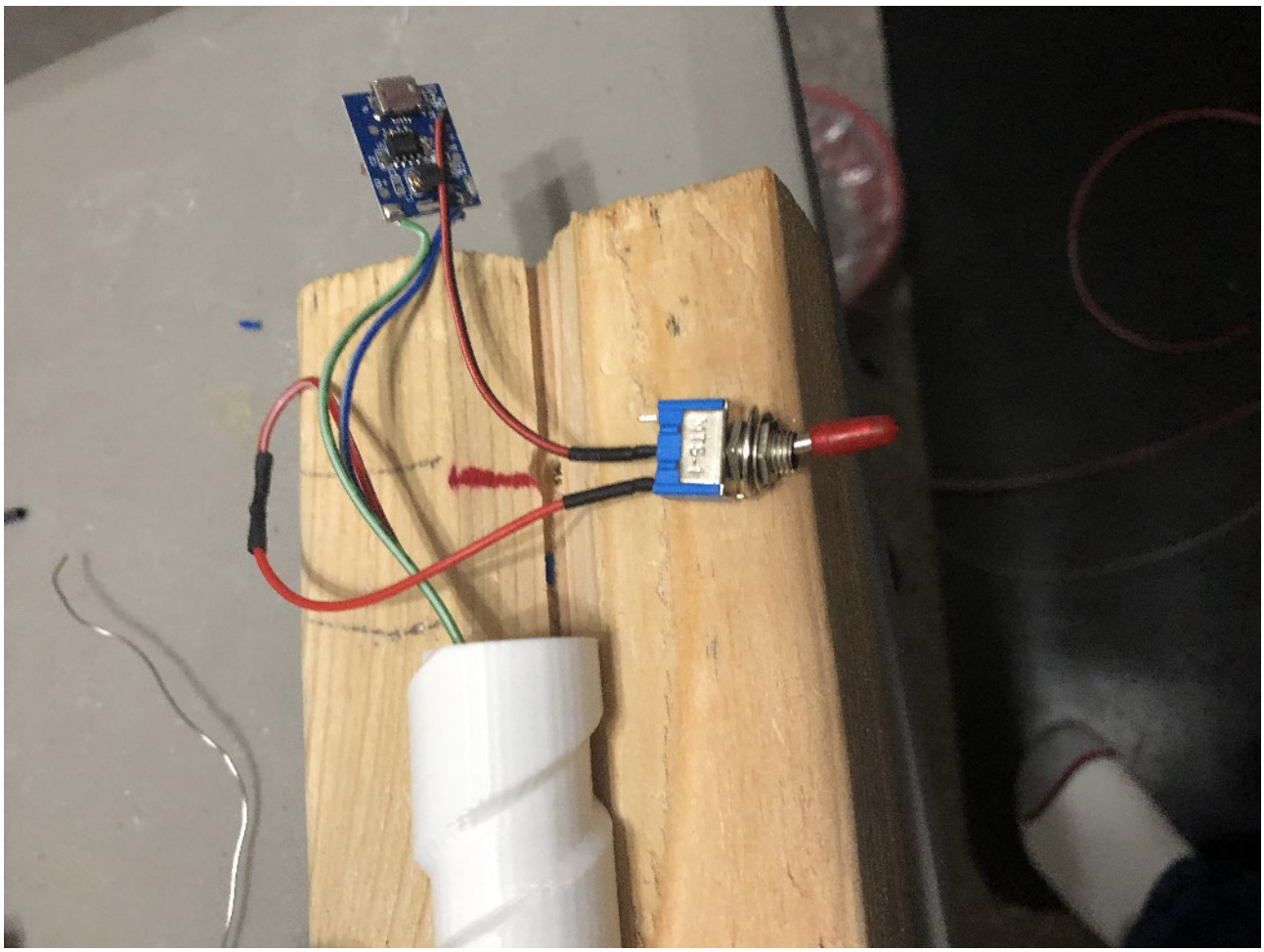
Cut the harness wire to about 3 inches and strip.



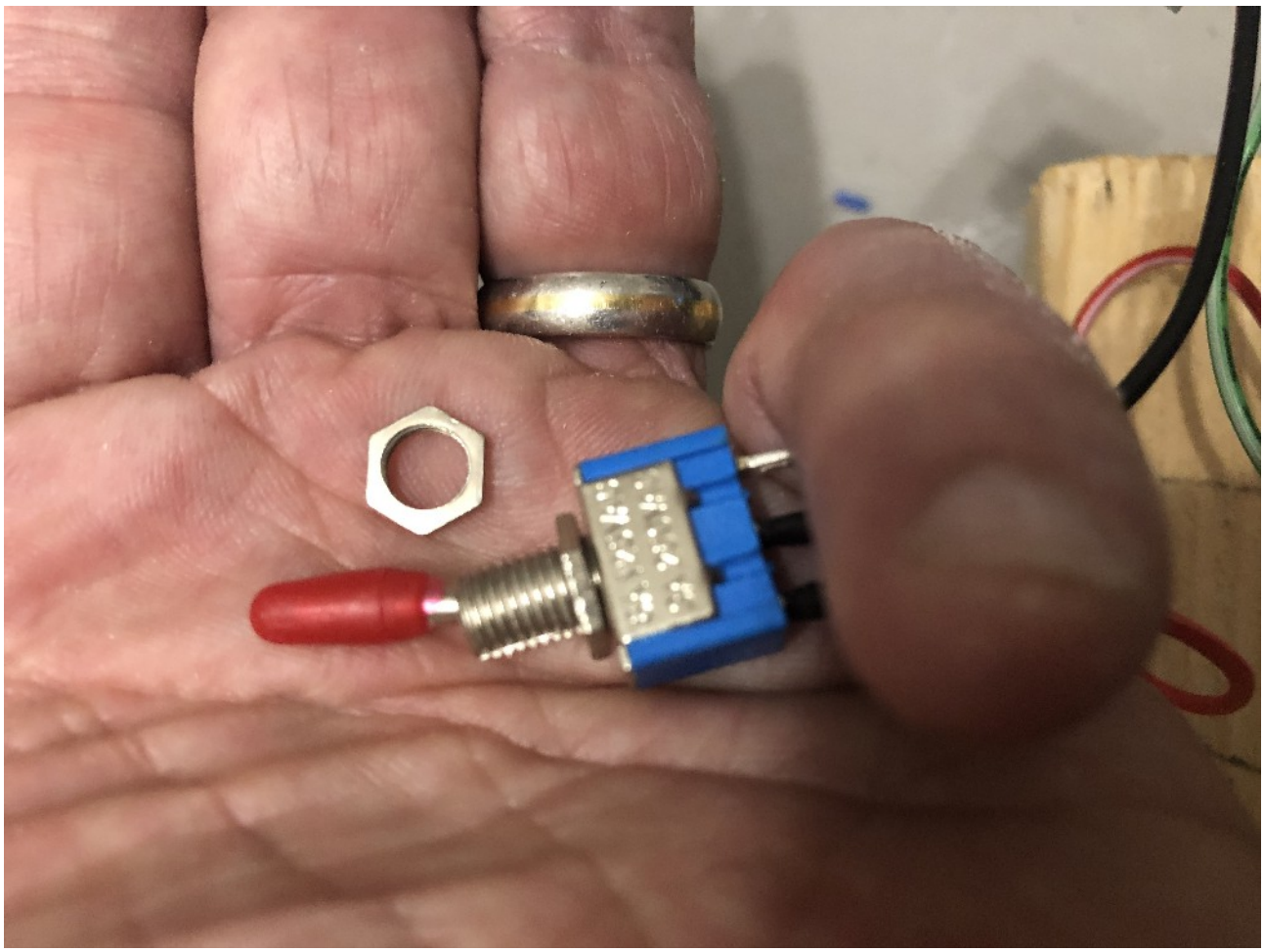
The USB charger board comes from a standard battery stick. We dont need the normal output connector, so cut it off.



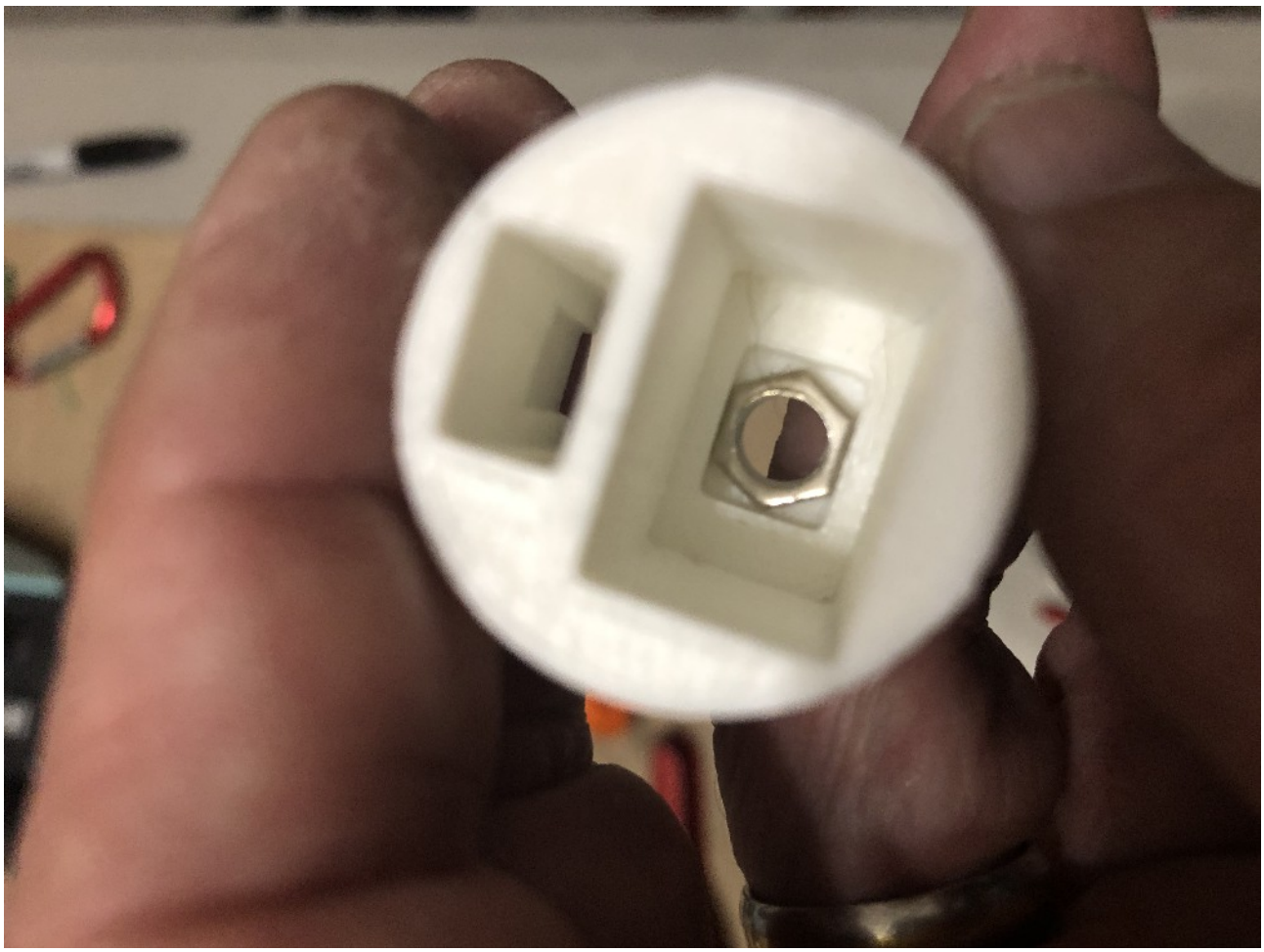
Look at this picture really closely. Solder a wire from the power switch to this solder point on the PC board. This is a 5V output.



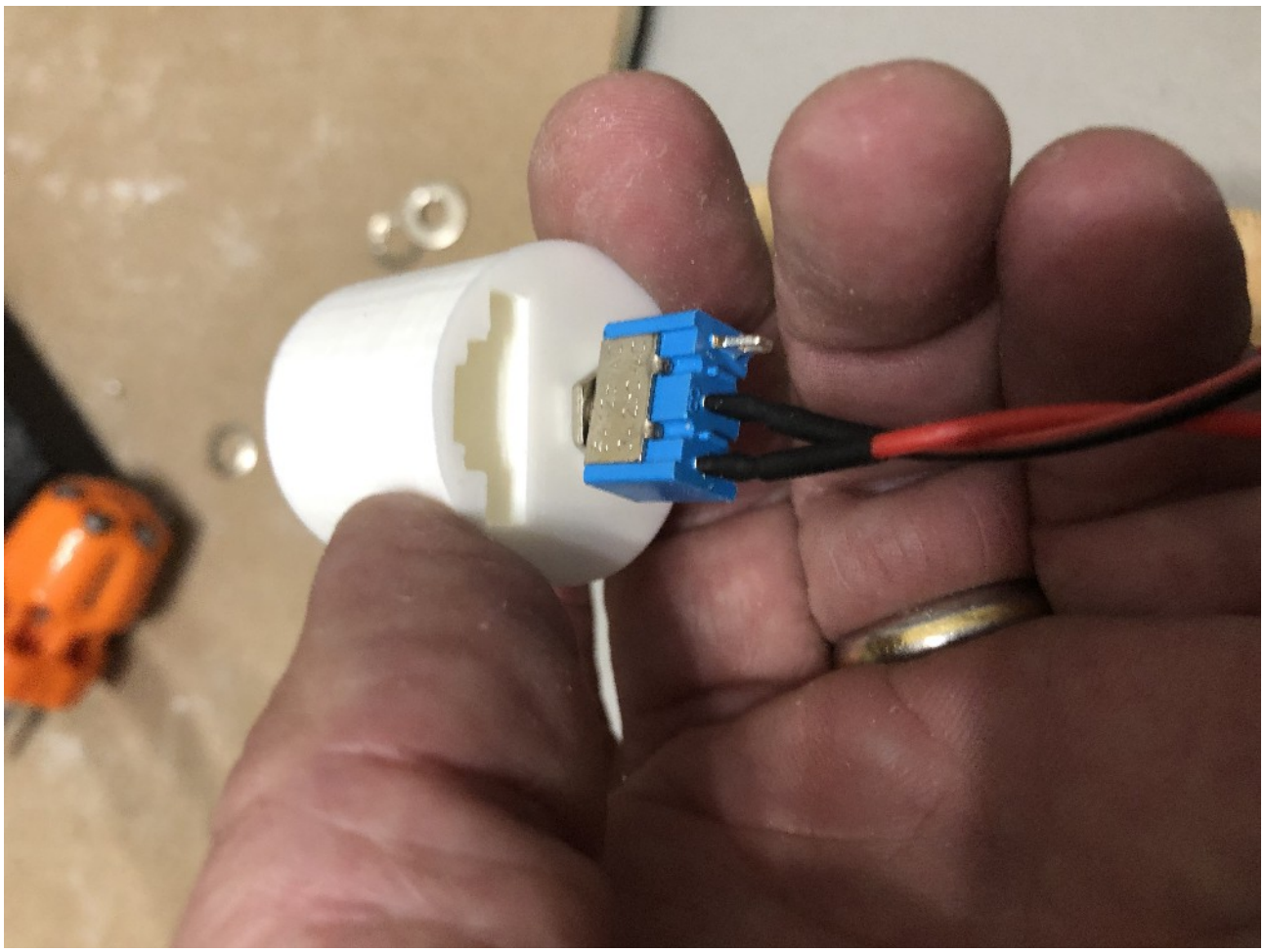
The green wire is power from the battery, and connects to the B+ terminal. The blue wire goes to the negative side of both batteries, and the ground of CPU board. It connects to the B- terminal. The switch is connected to 5V out on the charger board, and switches the power to the CPU through the red wire that passes over the batteries directly to the CPU board.



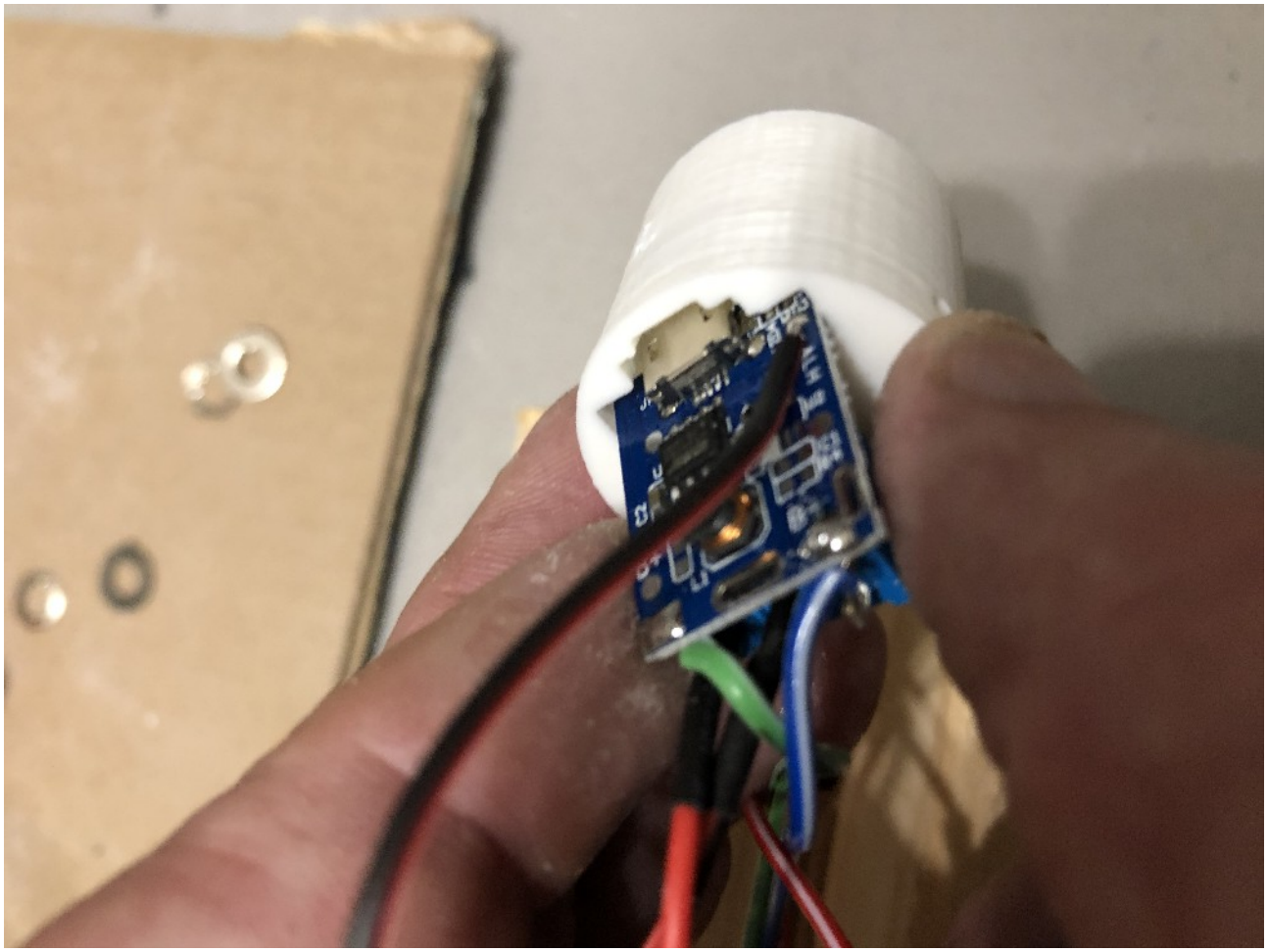
This is all you need of the switch



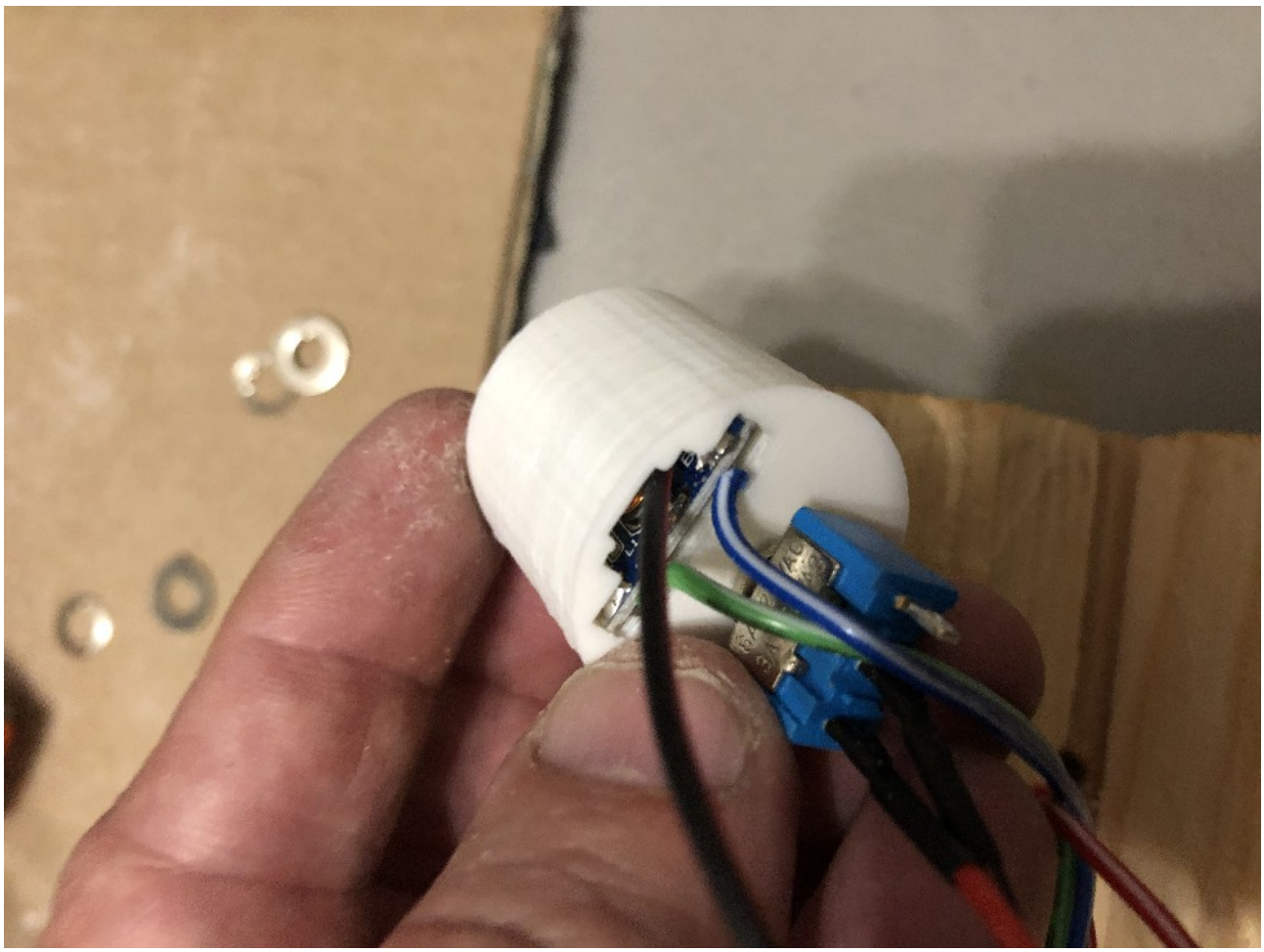
drop the nut in the charger holder.



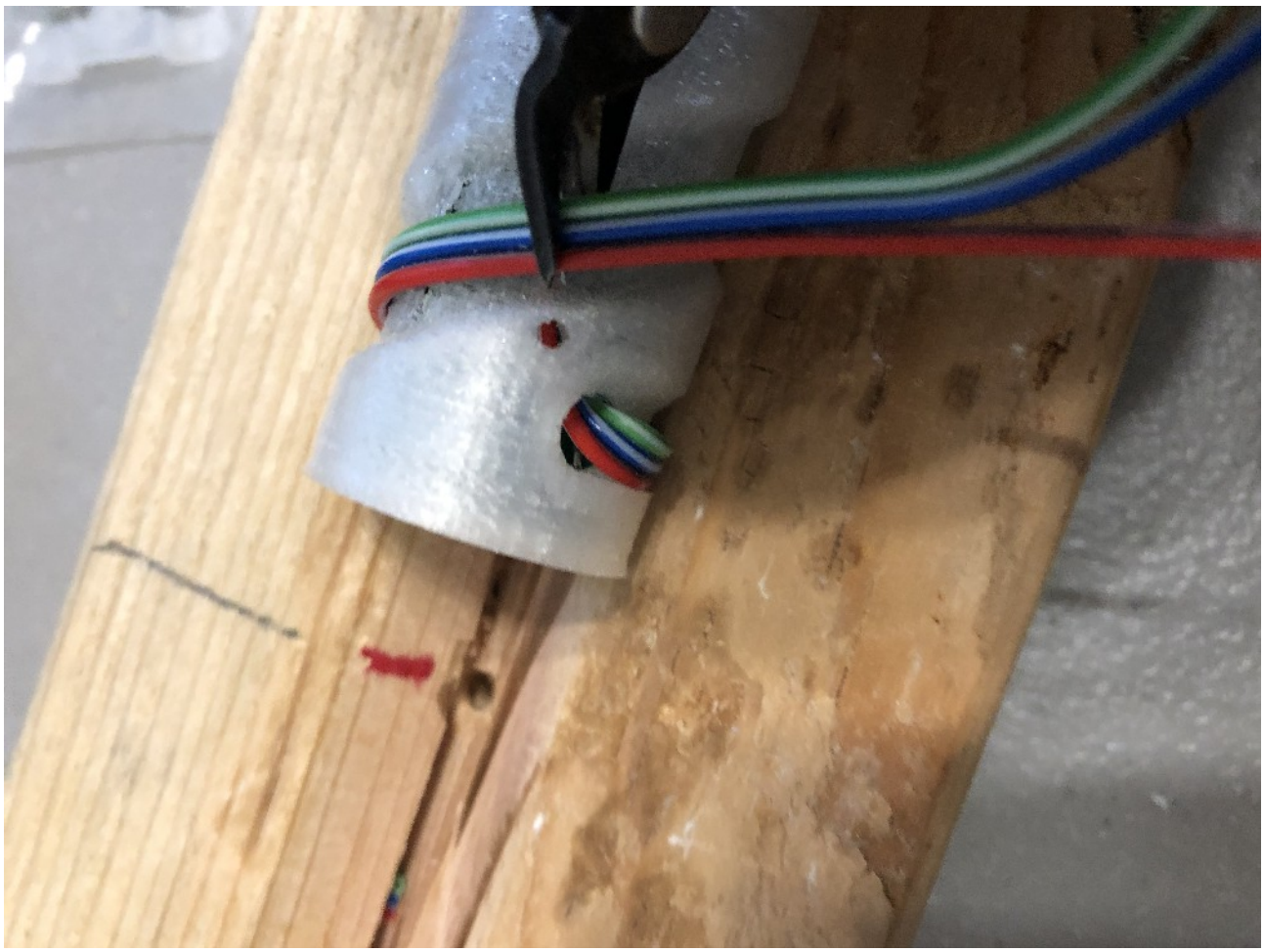
Screw the switch into it.



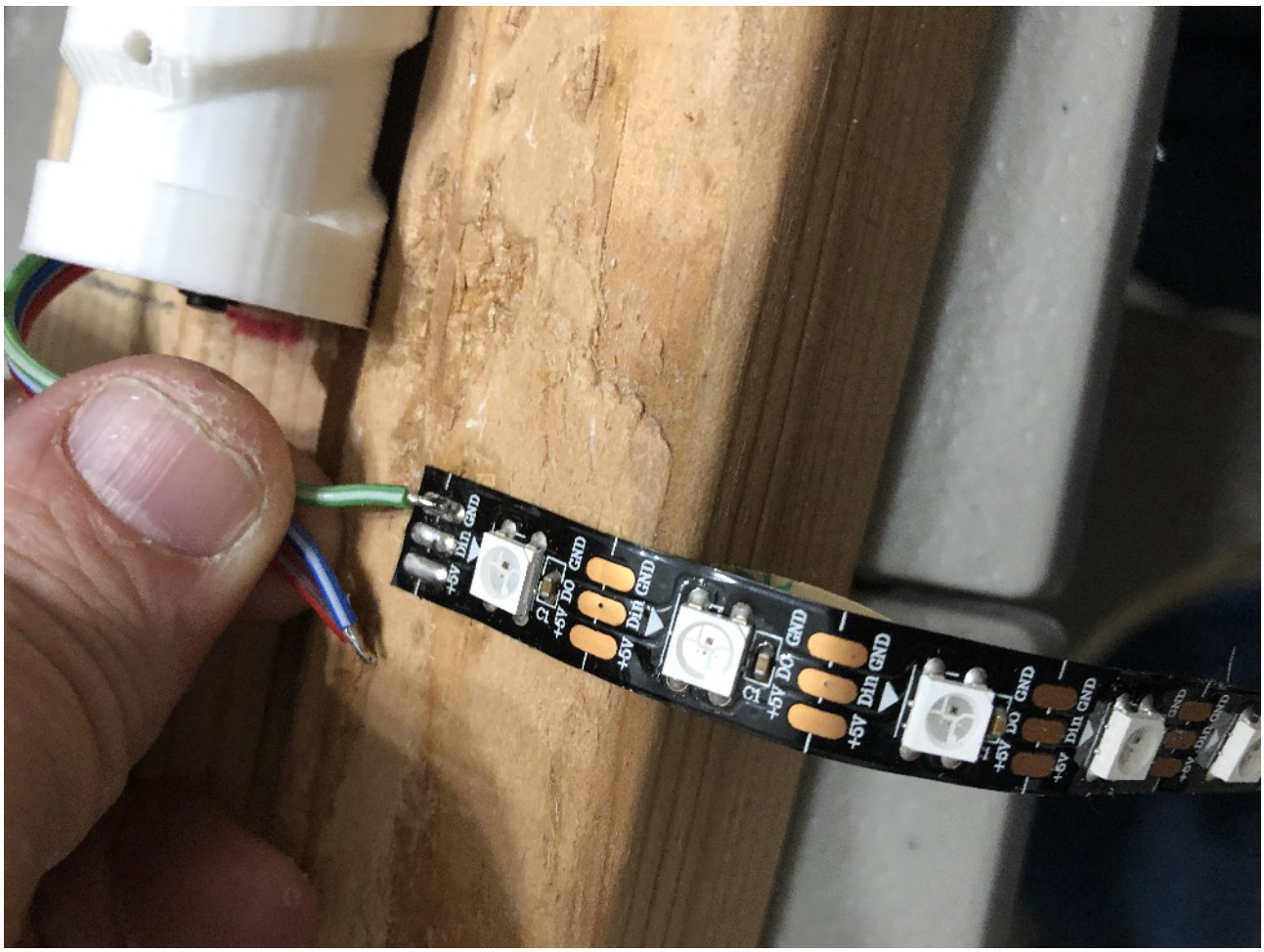
The charger board slides into the holder like this.



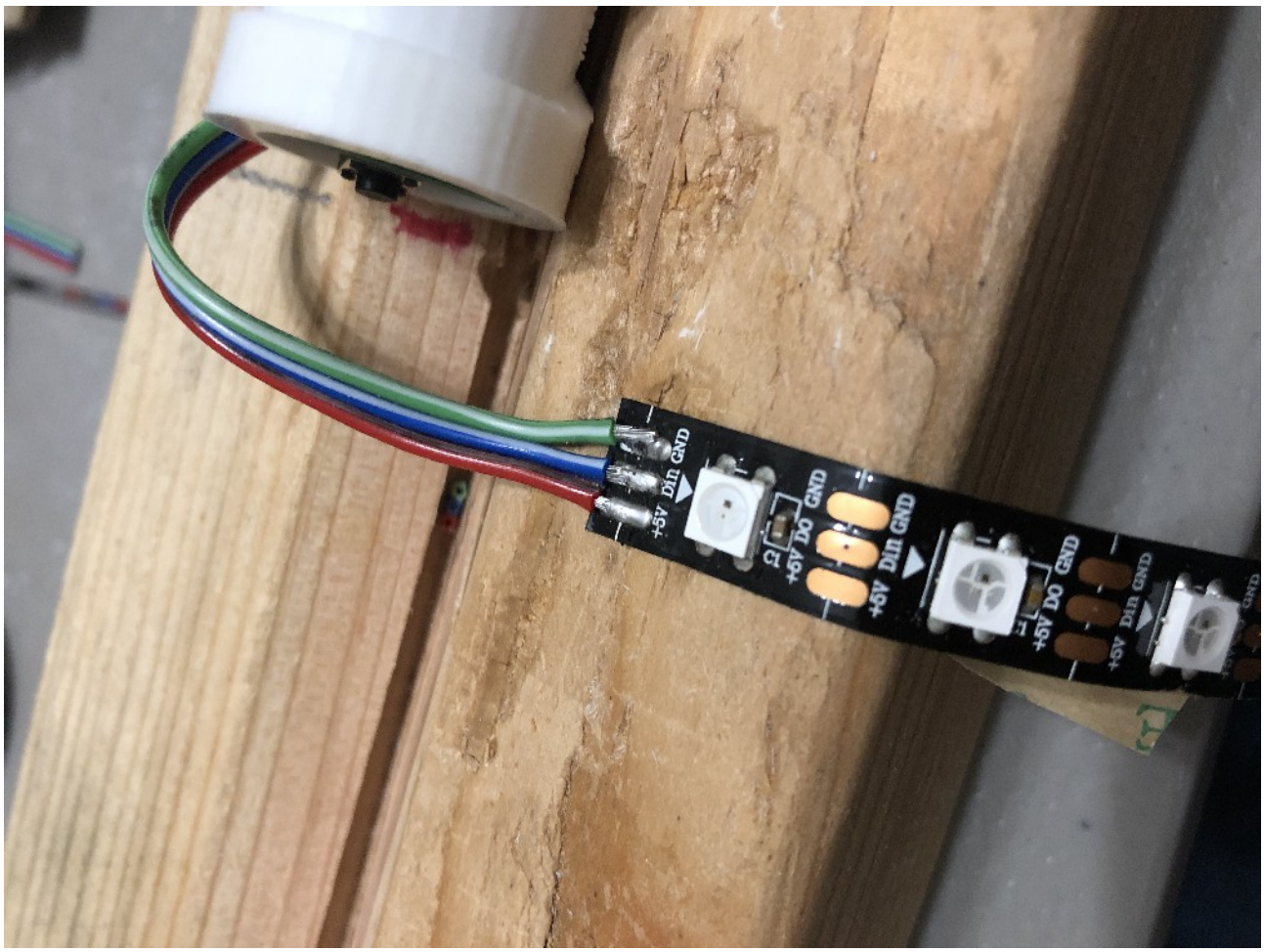
This is what is looks like before you glue it onto the tube. Sorry, I dont have a picture of gluing it on to the tube. The orientation doesnt matter, cause the LED notch ends at this point. Just fins a way to cram the wires into the tube and glue it on. I use the clamps to hold it all together till it all sets.



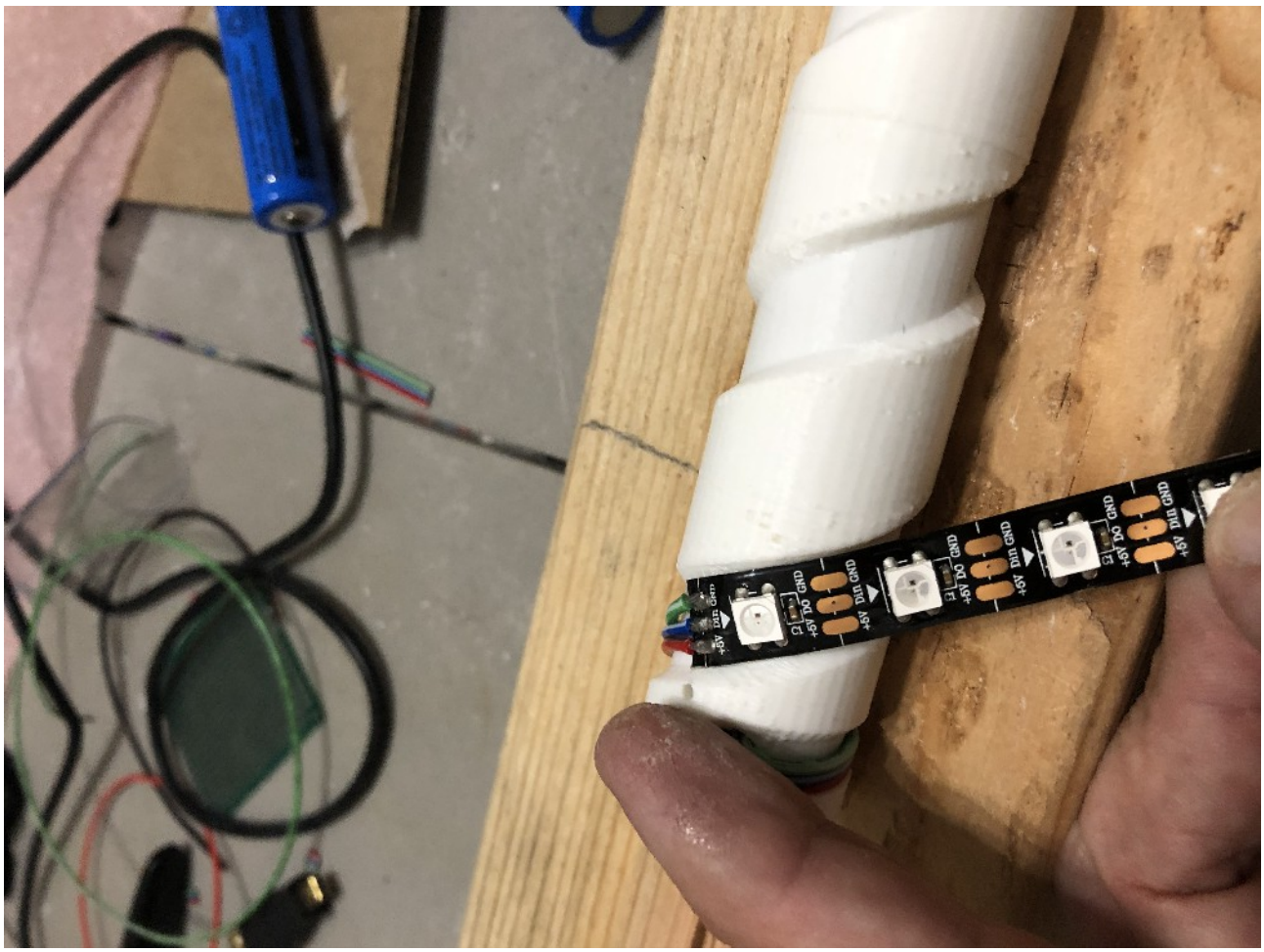
When you cut the LED wire, its going to wrap around to this point.



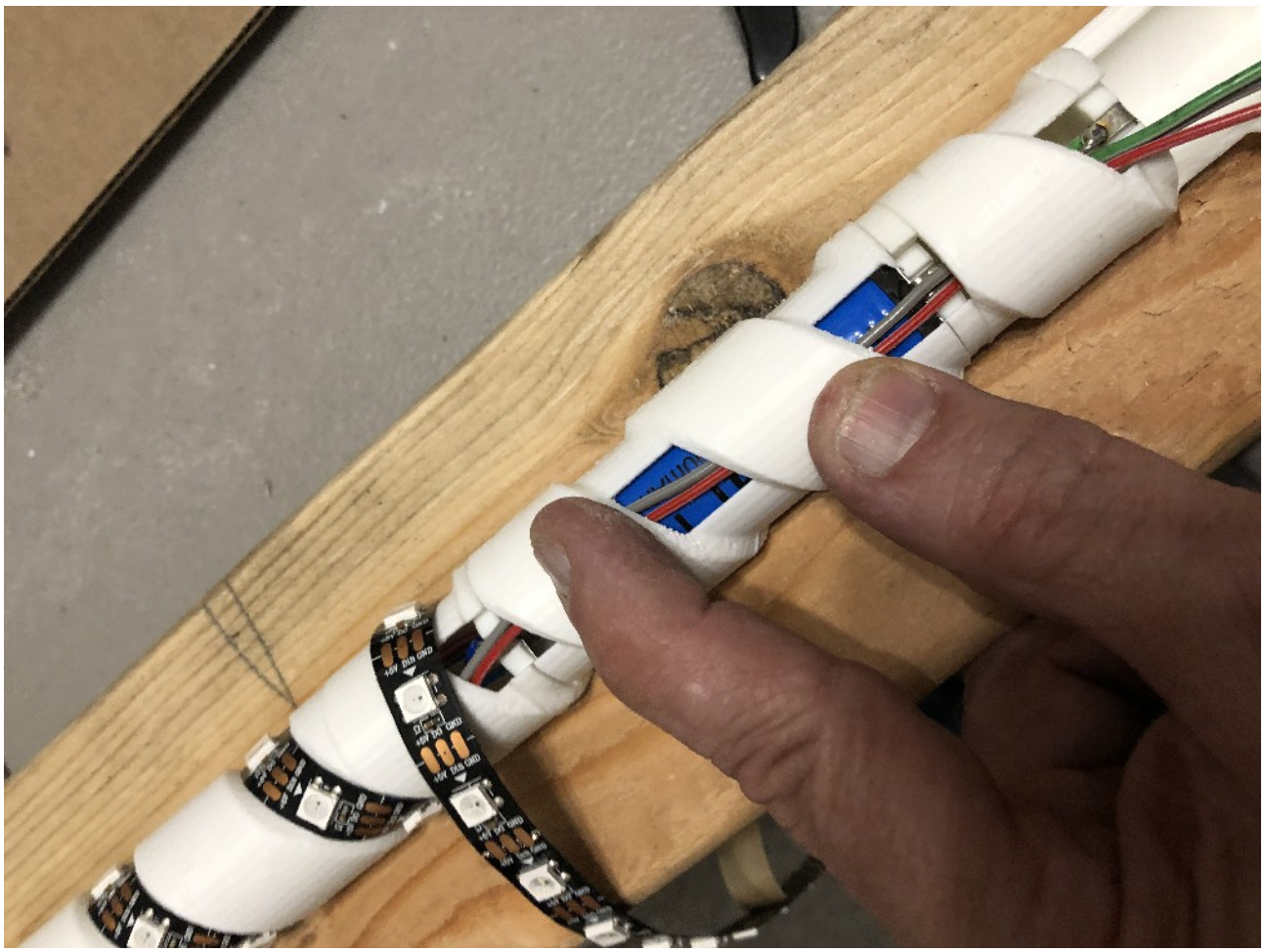
When soldering on the LED wires, get the polarity right, and remember the data wire is the same one that went undet the radio, and soldered directly to the end on the Teensy board.



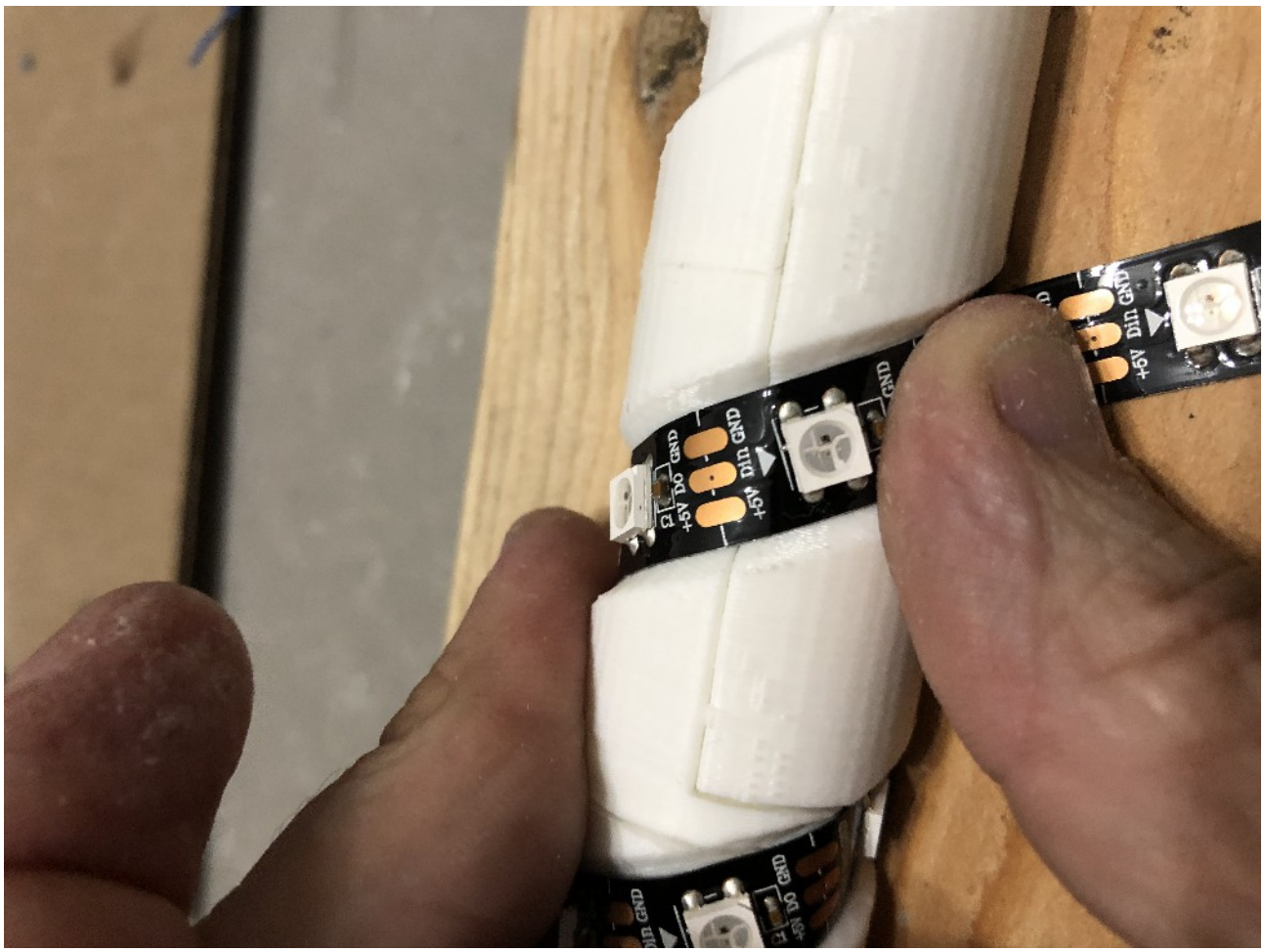
Here it is ready to wrap. Now is a good time to test the setup. Program the board, an see if the strip works. Put in the batteries, and see if power works. You might find it easier to wrap the led strip with the batteries removed until right before the covers go on, so I recommend removing the batteries before starting the led wrap.



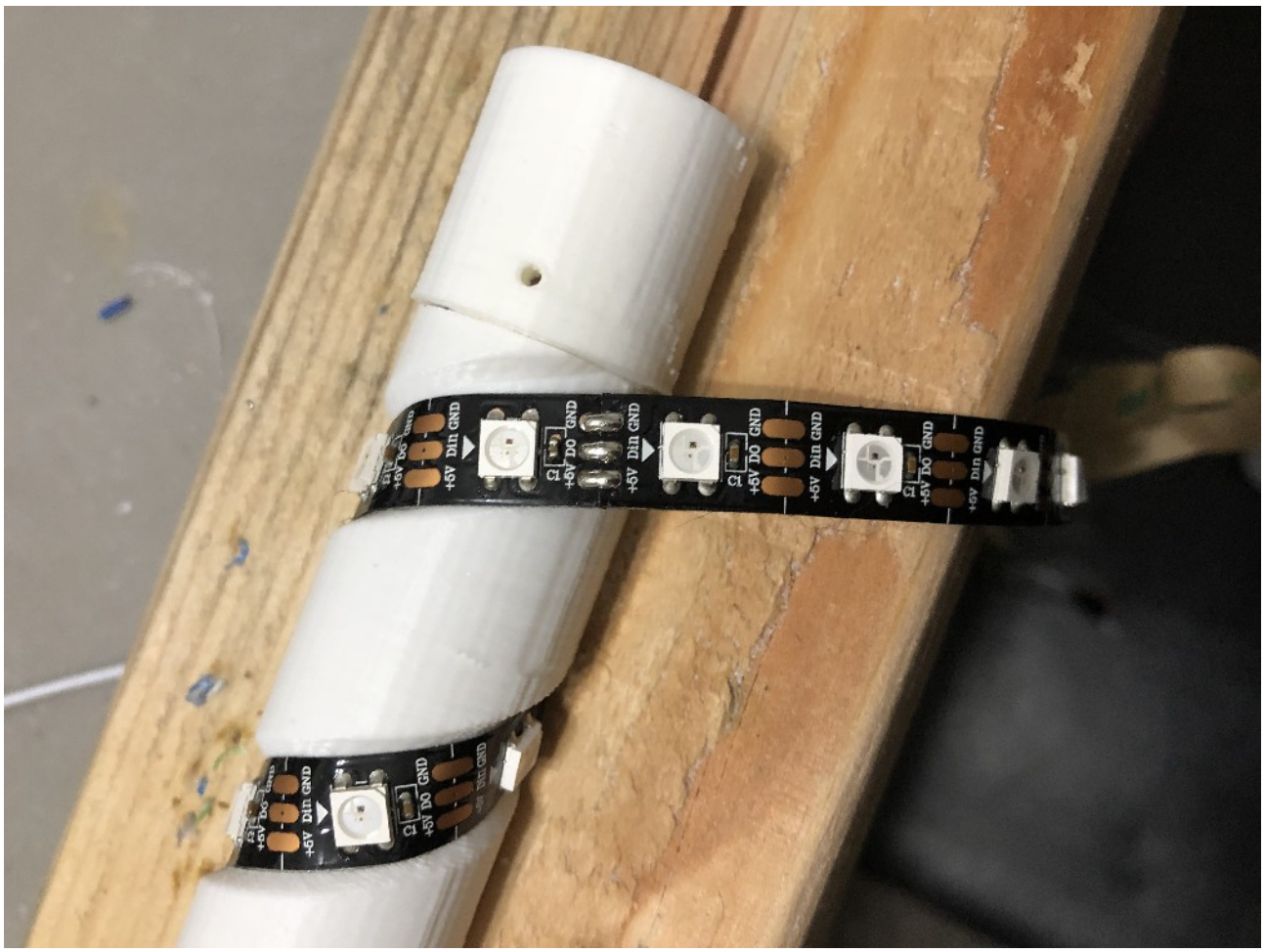
wrap it around the tube. Its doesnt have to be really tight, but make it secure. I remove the tape from the back of the strip as I go so it stickes to the tube. If you wrap it too tight, there will be extra at the end you have to cut off. This will be 150 pixels at 60 pixels per meters , or 2.5 meters of strip.



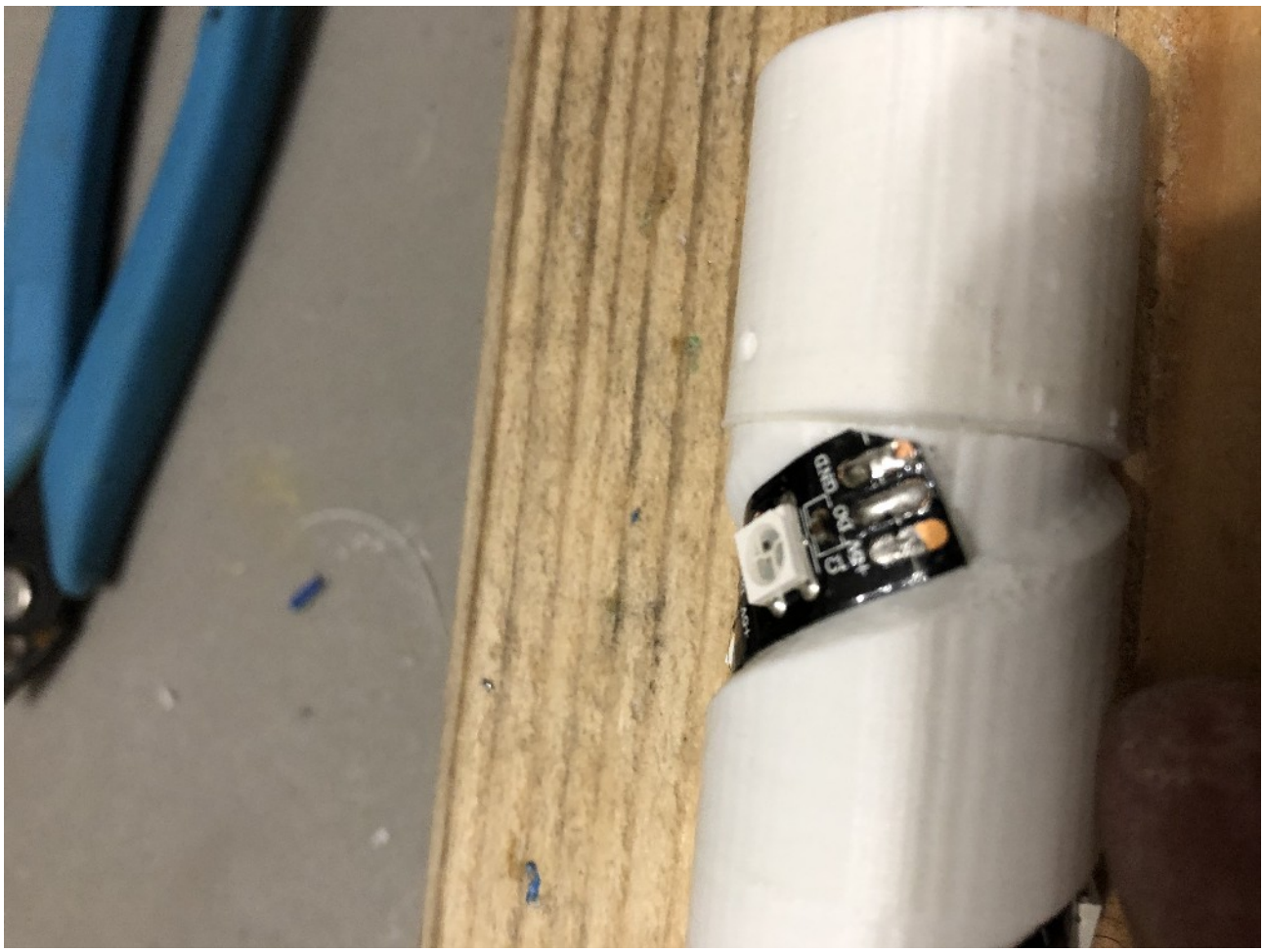
When you get to the battery box, put in the battery cover on. Make sure the wires fit into the cut out and dont get pinched between the battery and the cover. Wrap the strip a little tight around the battery to help it squeeze down for fitting in the outer shief. Dont break the strip, just make it snug here.



Try to close the gap on thebattery cover.



When i built this one, I was rolling the strip off a 5 meter roll, and had to desolder the strip to seperate the 2 per roll I was using.

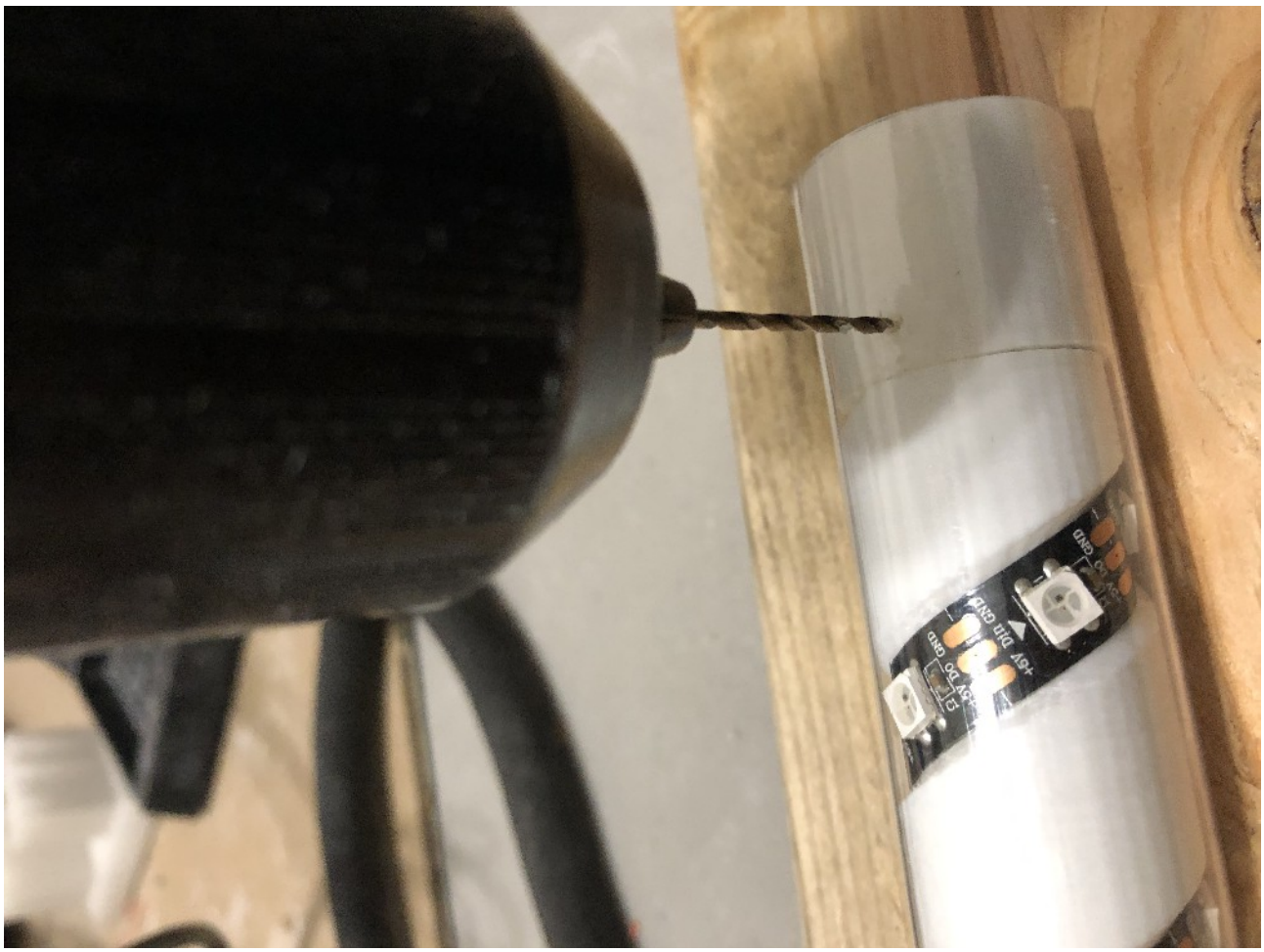


I was also just a littl too tight, so had to clip the corner of the board.

Start sliding the outer shief starting with the CPU end.

It tends to get caught up around the battery holders and covers. Ease it over these areas with a little gentle pressure on the ridges that it gets hung on.

The final push makes it flush with the charger end.



There are 4 holes for tiny screws that keep it from sliding out.
You can drill these out and put in the screws.

There will be excess at the CPU end, cut it off.

And finally, you can put the end caps on. Thats it, fully assembled.