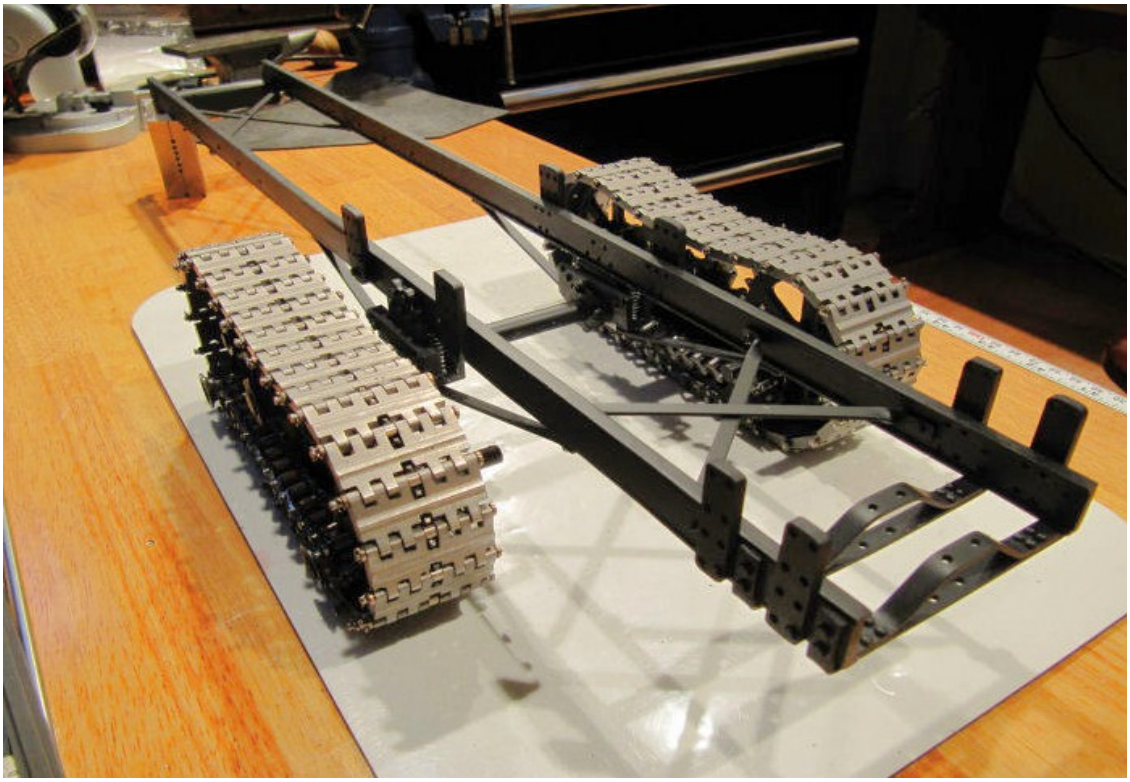
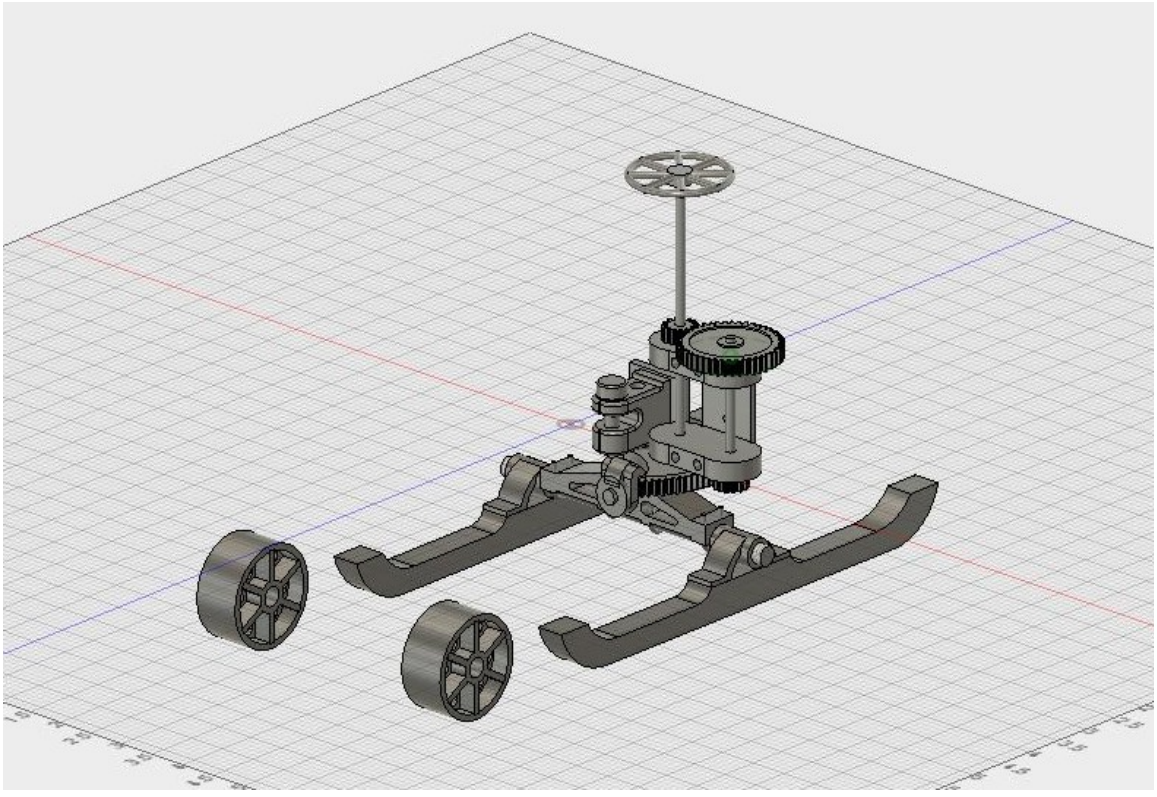
Making Lombard Steam Log Hauler Model Tracks

Quick update on the Lombard model, have the tracks and main frame complete, about to start the drive chains/sprockets, then the front steering gear...
Chris Rueby

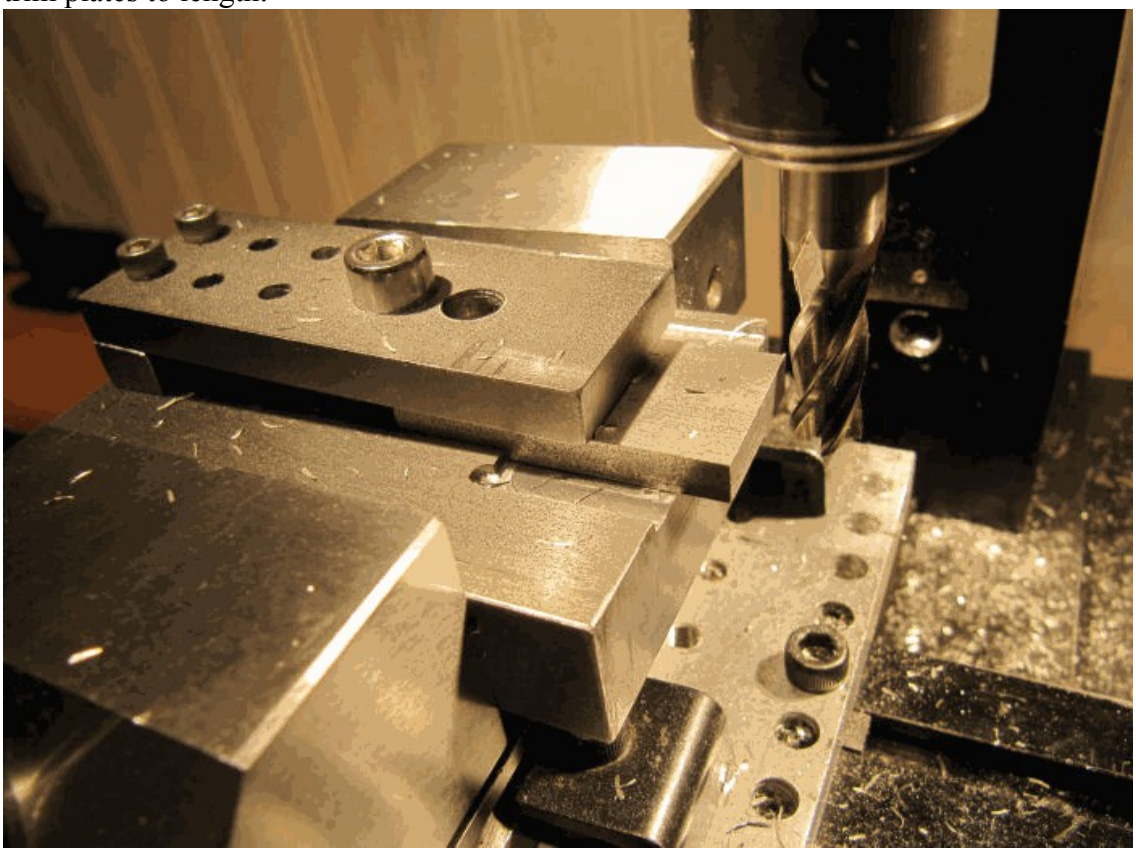




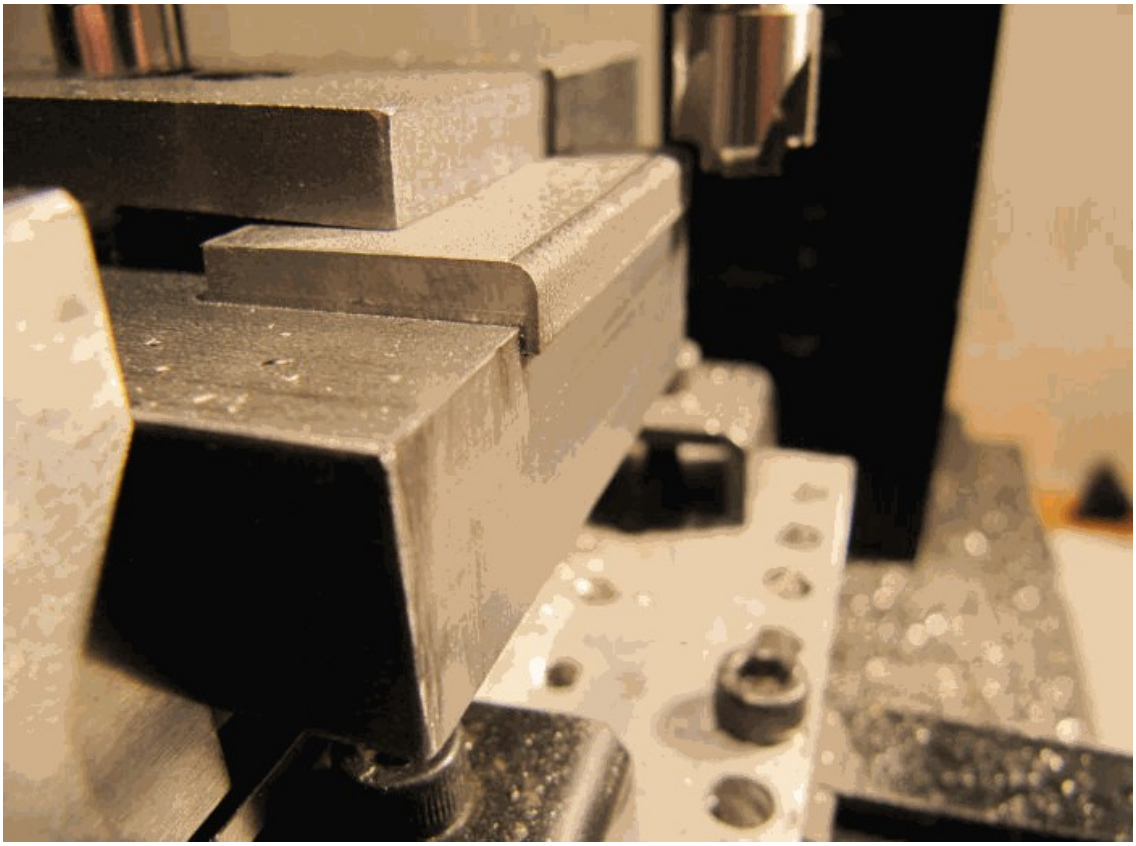
I am modeling it all up in 3d to generate the blueprints, but my lathe and mill are all manual, no cnc. For the tracks and chains I made jigs to hold the parts in a repeatable way, so I could do the same cuts over and over. My machines are Sherline brand tabletop ones, which work out well for all the small parts. I do have a rotary table attachment for cutting gears and drilling circular hole patterns. Attached is a picture of my model shop. I was a firmware engineer, not a machinist, so this has all developed as a hobby for building steam engines and the occasional clock. I've been building models since I was a kid, they are just getting more involved!

Here are a sequence of pics of how the machining jig worked for making the tracks - it has a screw down clamp to hold the parts in position, and a recess to hold the track blanks in place. For each operation I positioned the jig once, then ran all the parts through that operation before moving on to the next operation:

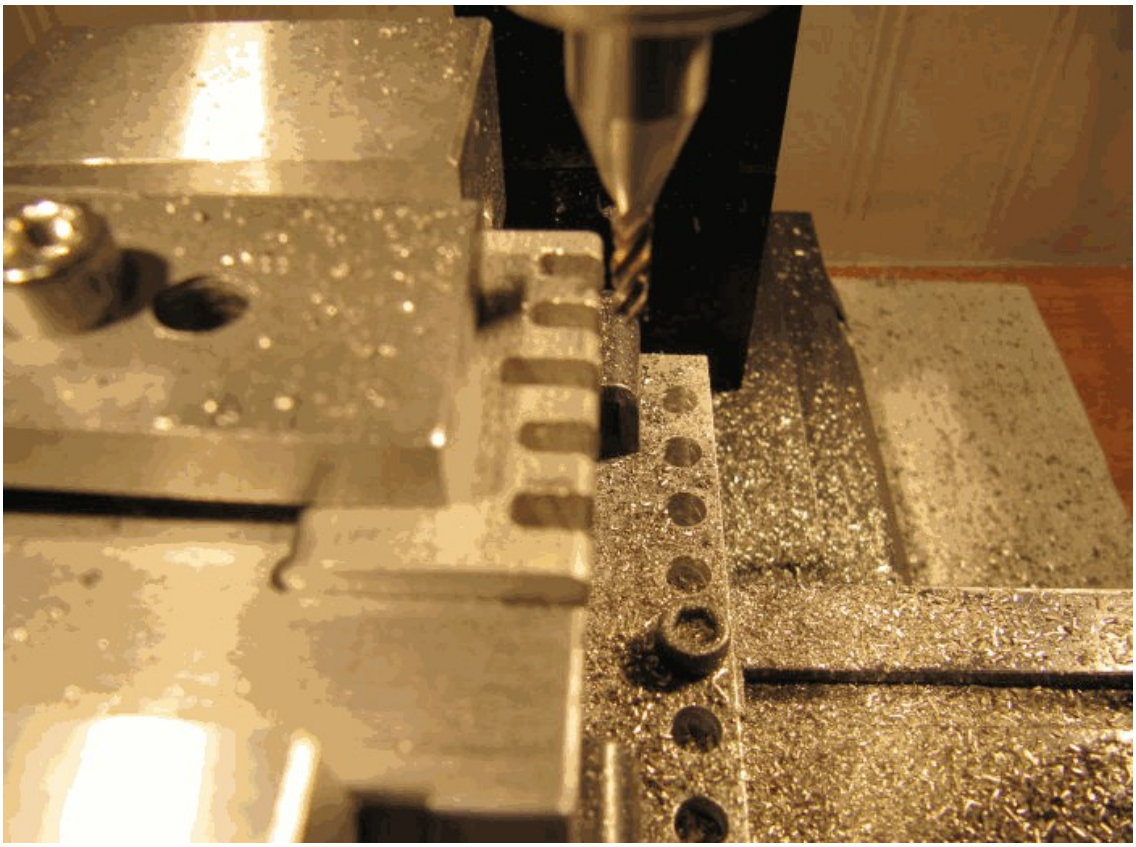
trim plates to length:



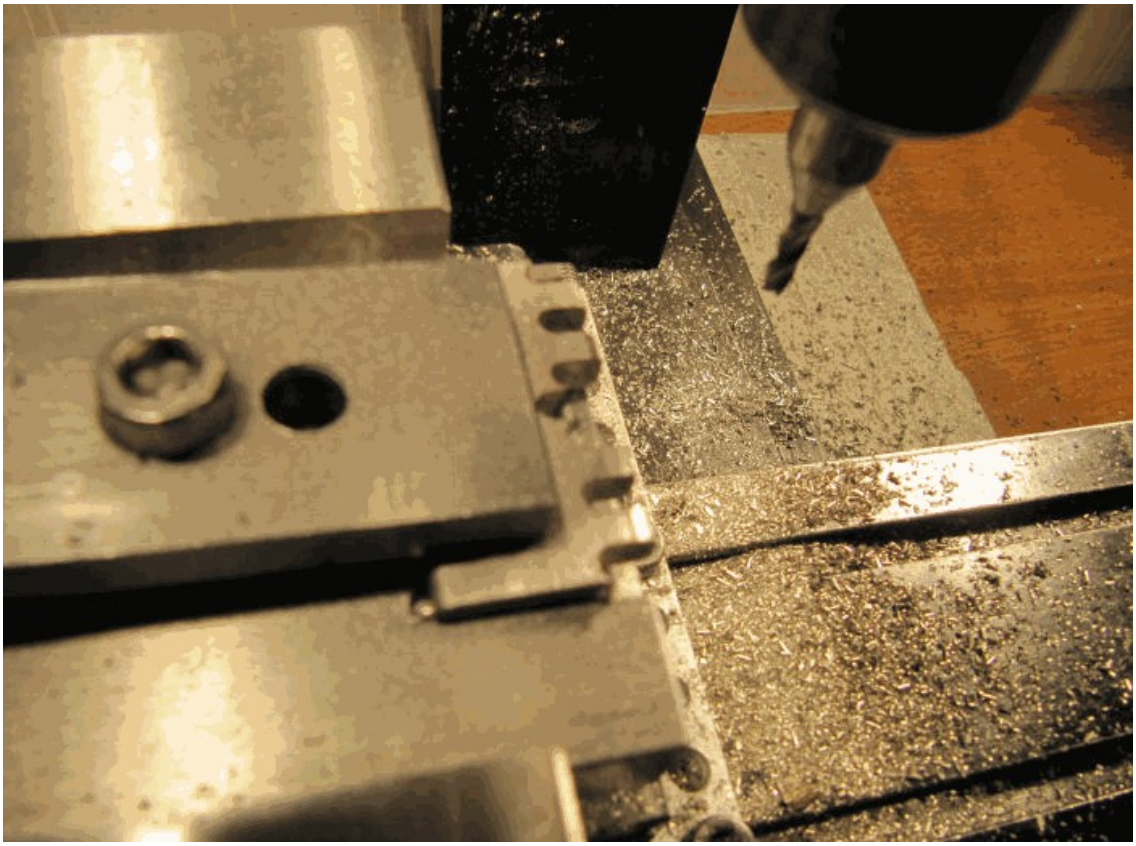
round over sides



cut slots

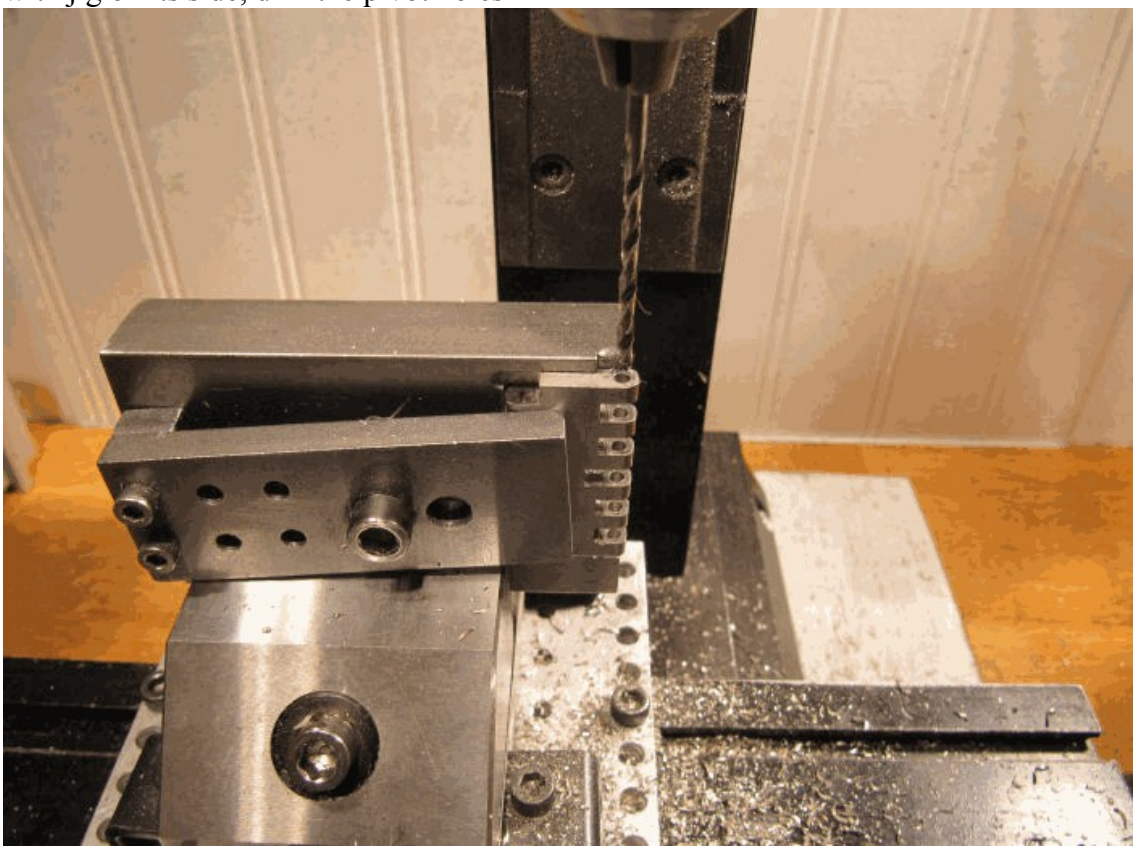


cut slots on second side

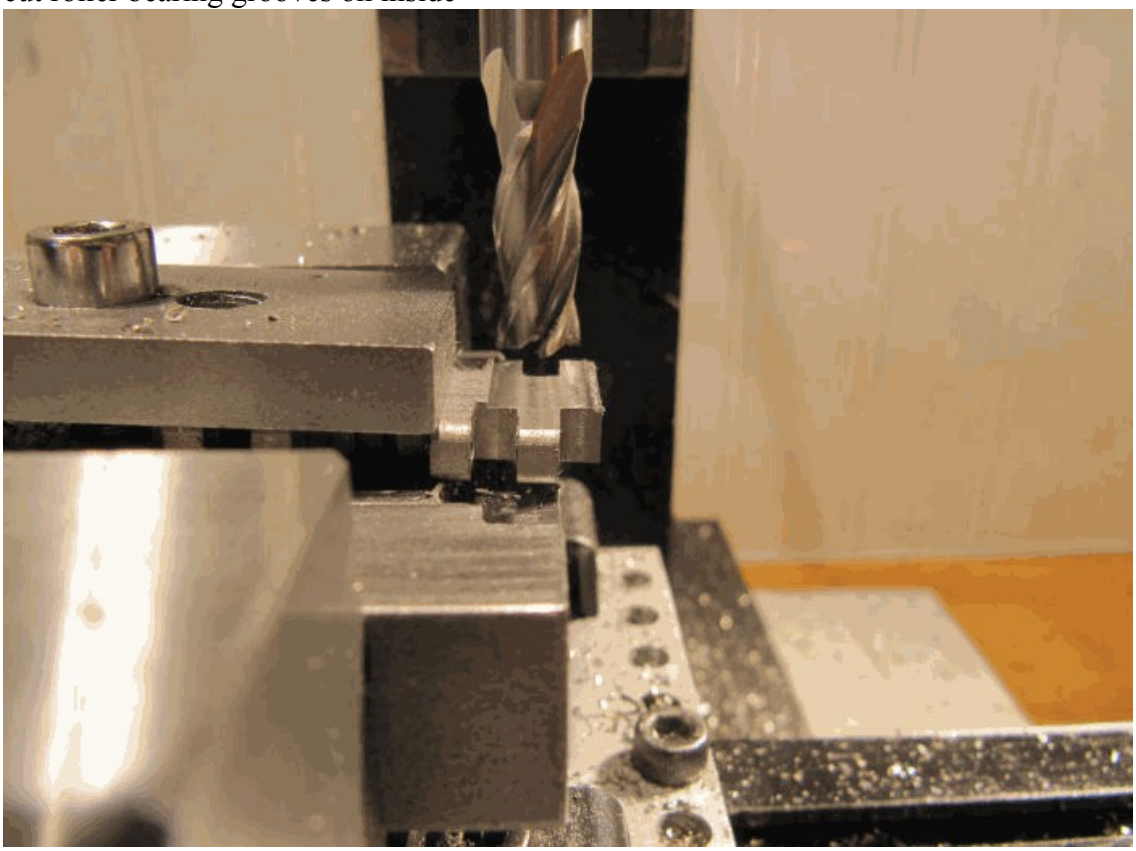


with jig vertical, square up ends of the slots

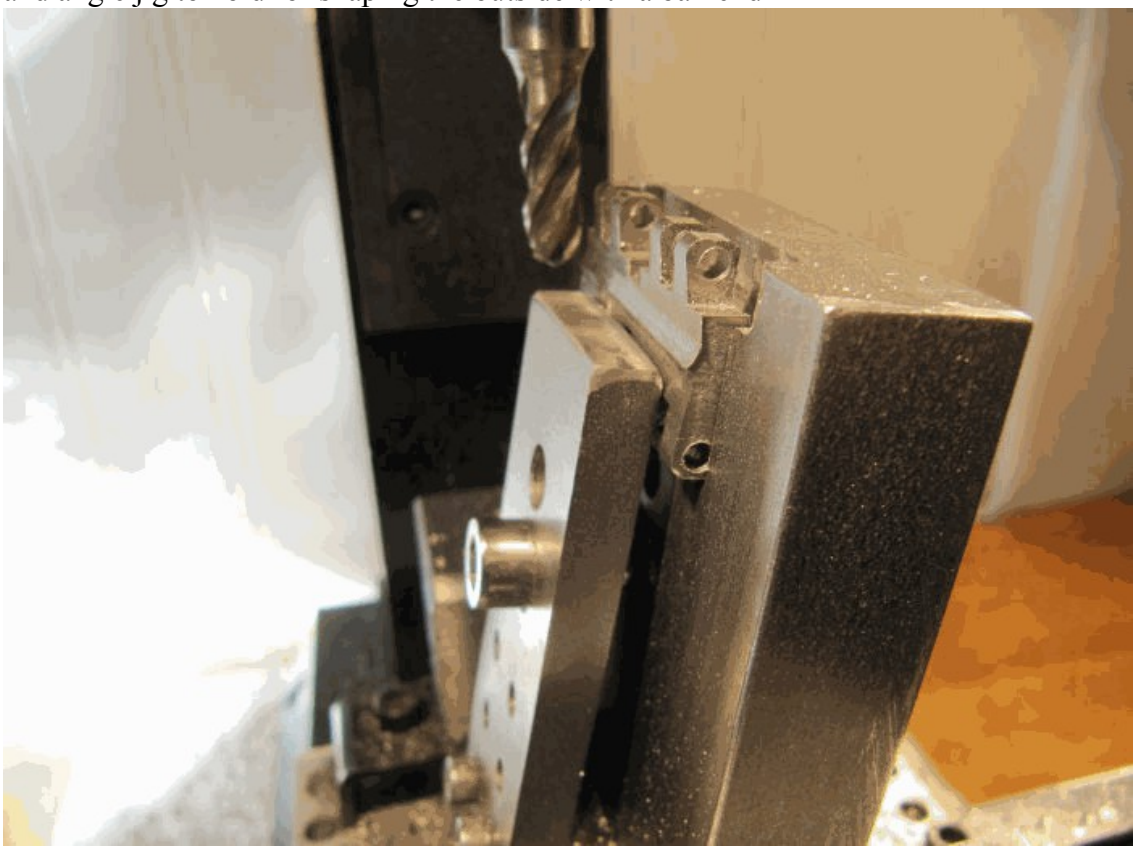
with jig on its side, drill the pivot holes



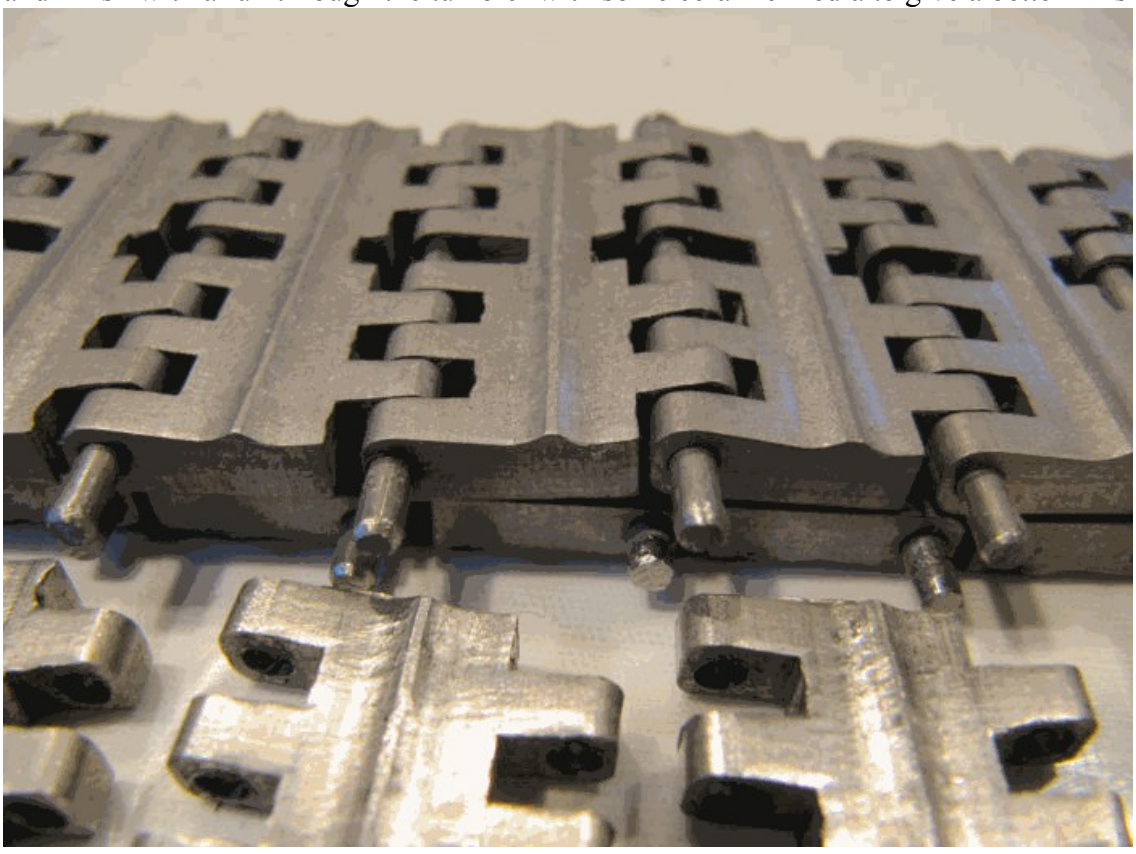
cut roller bearing grooves on inside



and angle jig to hold for shaping the outside with a ball end mill



and finish with a run through the tumbler with some ceramic media to give a better finish:



Similar jigs were made for making the chains, riveting, and drilling the pivot pins for the cotters.

My model is 1:12 scale, and will have a butane fired boiler. Almost all the parts so far are 303 stainless steel, boiler will be copper with bronze fittings. I have used a combination of Bill Lynch's plans and scaling off the photos of the restoration to build from, first 3d modeling in Autodesk Fusion360 to generate the blueprints from. I started the model in October, and am hoping to have it running by the July event at the museum. I'll be bringing it up for the May run also, in whatever state of completion its at by then. If there is interest, I could also bring my 3/4" scale Shay locomotive:
https://youtu.be/X8jAA0I_Tjg
Any questions, please let me know! Hope to meet you guys this spring.

Chris Rueby