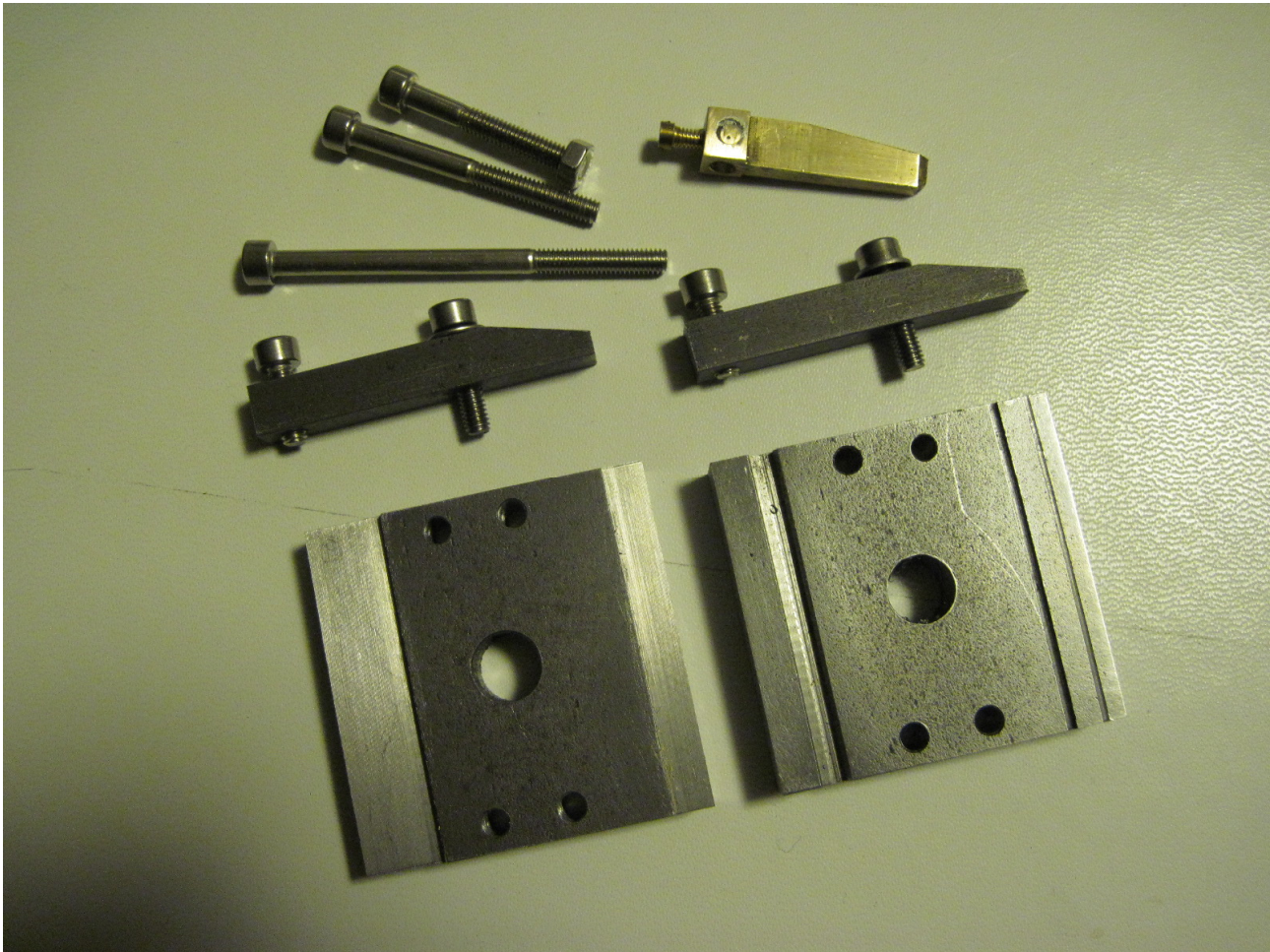


Occasionally Useful Things! – Part 2

A Lathe Table Saw

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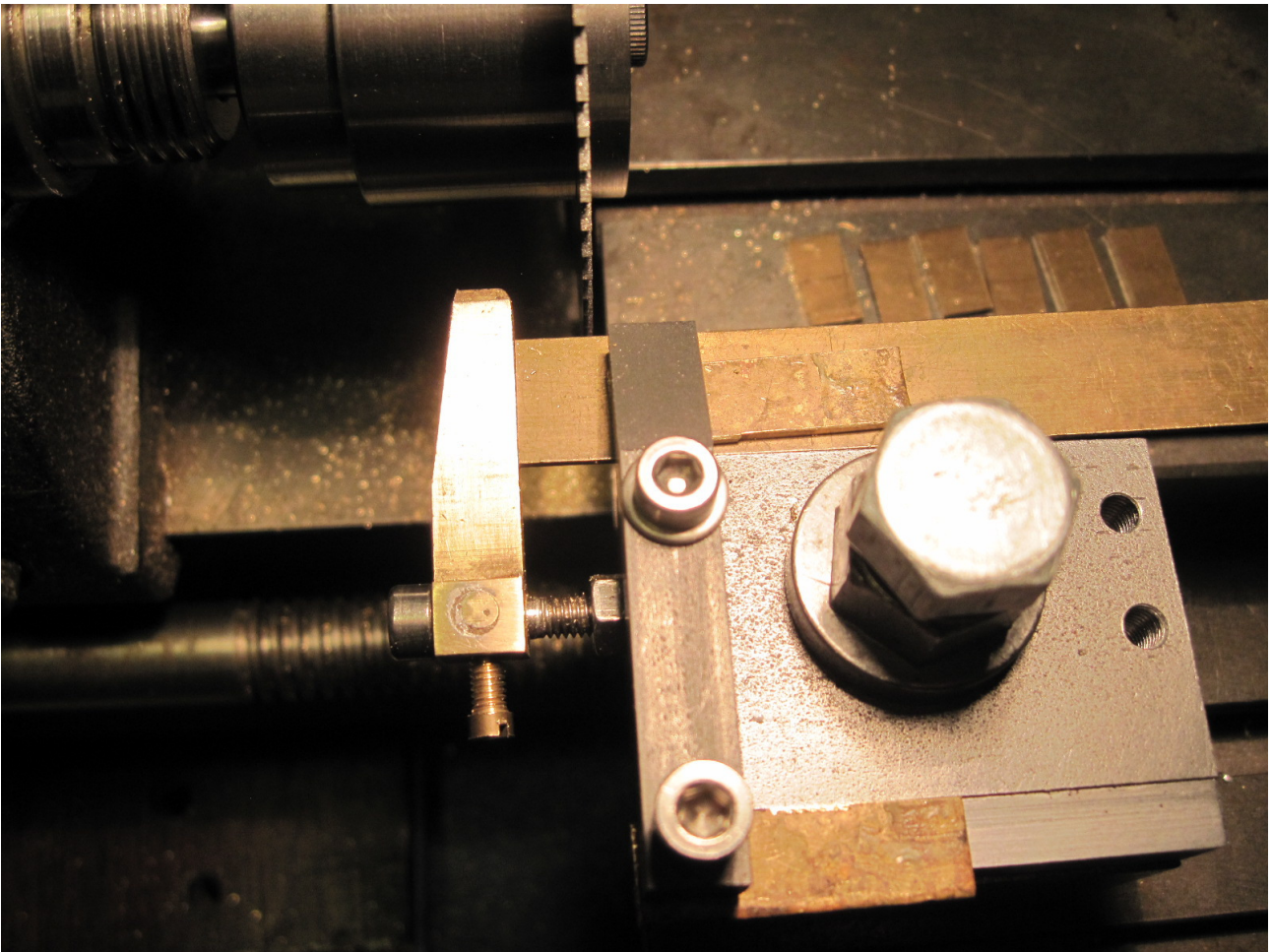
The two tables and their clamp arms - with setting gauge arm and assorted length M4 mounting bolts.

The thing about “Occasionally Useful Things” is that you only need them occasionally! The end result of this particular conundrum is that you also tend to put off making them!

I’ve had an MT2 slitting-saw arbor for my Myford for some years and have generally clamped work under the tool-post. More recently, I needed a saw arbor for my small EW and (as there seem to be few MT1 accessories available commercially these days) I made one. I purchased a ‘blank’ MT1 arbor and then bored and Loctited a 1.5” diameter extension piece of mild steel onto it. This assembly was then mounted in the lathe, and the business end faced and bored out to 1” inside diameter (my saws are all 1” bore). A matching cap was turned and with the addition of a 6mm cap screw (which screws into the arbor inside) I was in business. You will need a draw-bar to hold it in the taper of course.

Now, it may be my imagination but the smaller the part, the more I usually need of them. My favourite work-holding ‘weapons’ of choice for all things “small” are my 2” Tool-Makers clamps (Eclipse No 410’s). Small work clamped in their jaws can be sawn, drilled and filed, whilst the clamps themselves can be held in a larger vice or bolted directly to the work table. However, there are times when things start getting in the way (or you simply don’t have enough hands).

Some small fabrications being worked on needed 48 triangular ‘gussets’ cut from 1mm brass.

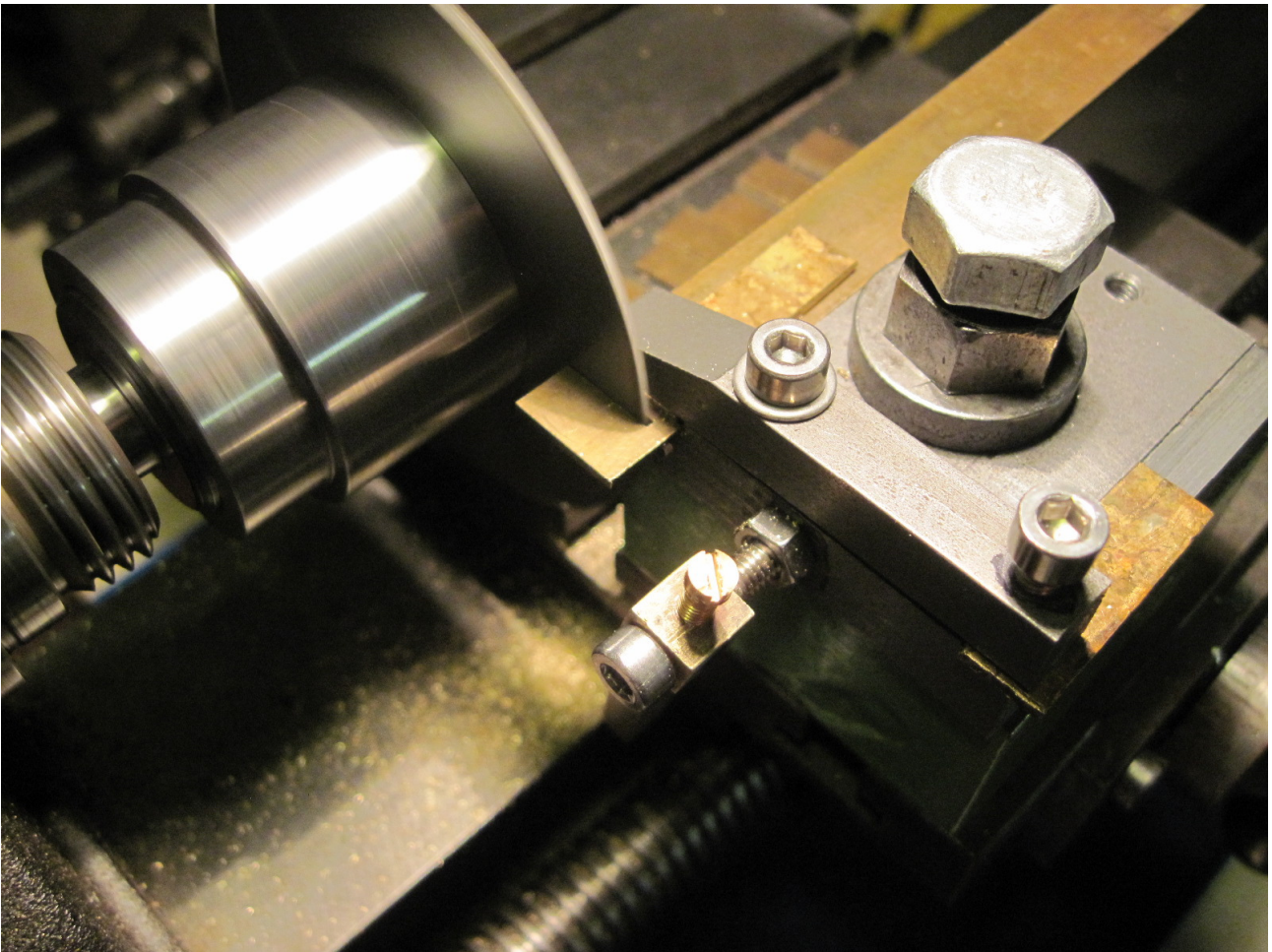


*The material is slid up to the setting arm and the clamp tightened.
Scrap brass packing prevents the work and table being marked.*

Now cutting one or two small pieces with a hacksaw is bearable but still needs some care to get right. I usually err on the side of 'too big' when hack-sawing and then spend time making them the right size (in the lathe or by filing). So it wasn't really a surprise that my mind turned to the saw arbour. The main problem was going to be holding the work. After trying various bodes I decided that perhaps the time had once again come to make something that would be "Occasionally Useful".

When I removed the top-slide from the EW, I had to make a simple block to mount my QCTH on the boring table. This block seemed to be an excellent starting point for a sawing solution and so I made a simple square 'table' that would fit on top of this block. My tool block is just under 2" square so I made my table to fit but obviously it should match the tool-post of the lathe you are using. I used scrap 3/8ths thick mild steel (because I had some) which also brought the "table-top" to EW centre height. From here it was easy to see that a 'fitted' version of a tool-makers clamp would be useful too, so a 'clamp-arm' was made. The block has different sized work guides on each side, so M4 tapped holes were added so the clamp could be mounted on either edge of the table. A second clamp can also be fitted at the rear if required. This clamp is useful to hold secondary guide plates (for making angled cuts for instance) or securing longer material.

I then started thinking about accurate/repeatable cuts and came up with several (complicated) schemes. The one I settled on is simple and works well. M4 cap-bolts (of various lengths) screw into the side of the table and can be locked in place with a locknut. The 'arm' that goes with them is an earth pin from a broken 13A plug. I initially just ran a 4mm drill through the existing hole,

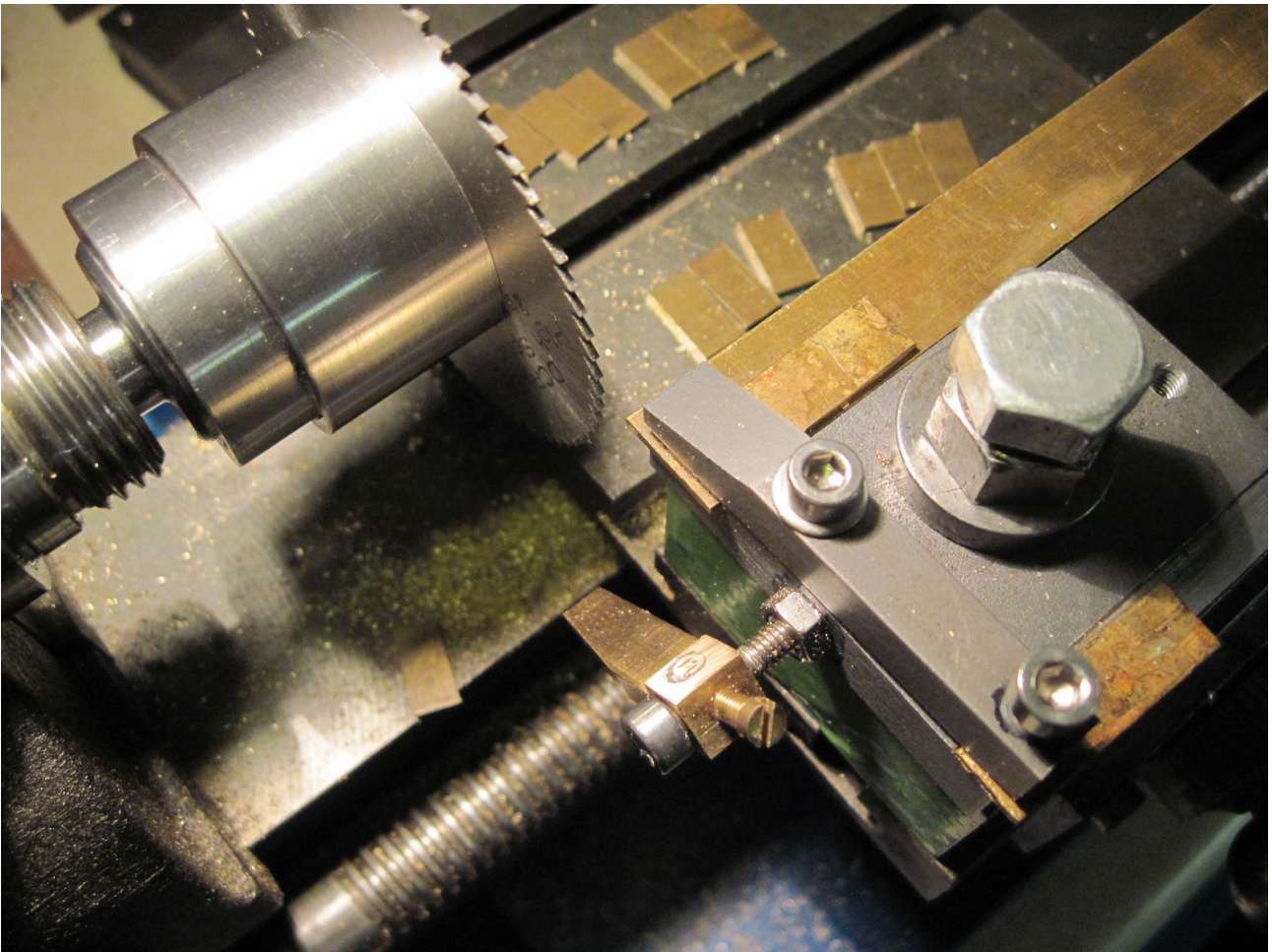


*The setting arm is swung down and the cut applied with the cross-slide.
The saddle has been locked.*

which worked but it was too loose and frankly looked a bit naff. So I turned it through 90 degrees, drilled a smaller hole and machined a slight angle off the back. Now it's a good fit and looks more 'engineered'. The arm is set (using callipers) to the front of the saw by simply screwing the bolt in (or out).

The table has two guides machined in it. One is 1/4" wide x 1/32nd deep and the other 3/8ths wide x 1/16th deep. I had intended to machine a 'V' groove in the wider guide (for round materials) but the steel left over from the first table was almost the same length, so I made a second table instead. I've just used one of the tables to accurately cut a dozen 6.5mm wide pieces of brass which (including table set-up) took well under 30 minutes. The slitting saw I generally use is 2.75" diameter and 35 thou thick. I have thinner saws (down to 12 thou) but would not advise using them for this kind of application. A blade with fine teeth is also preferable, especially when cutting thinner materials. The tables (when turned through 90 degrees to the norm) can be used to 'end-slot' materials and a suitably tapped block (held under the clamps) can be used to cut screws to length.

So if you have a saw-arbor but still use work-holding 'workarounds', then this simple device will occasionally be very useful. In its most basic form, a table with a single clamp arm on one edge will still beat many 'temporary' alternatives in terms of set-up and safety for smaller work. This brings me to my final comment. I've never seen a slitting saw fitted with a safety cover or guard. Provided you have the discipline to make sure the lathe is powered off before making any adjustments or getting your fingers anywhere near the saw, then everything will be fine. However, some



A finished clean cut. To repeat the cut - the setting arm is swung back up, the clamp loosened, the material slid forward in the guide, clamp re-tightened – and we are ready to go again.

form of guard would still make good sense and shouldn't be too difficult to implement. I've added it to my list of "To-Do's"