



## Keeping on the Straight & Narrow

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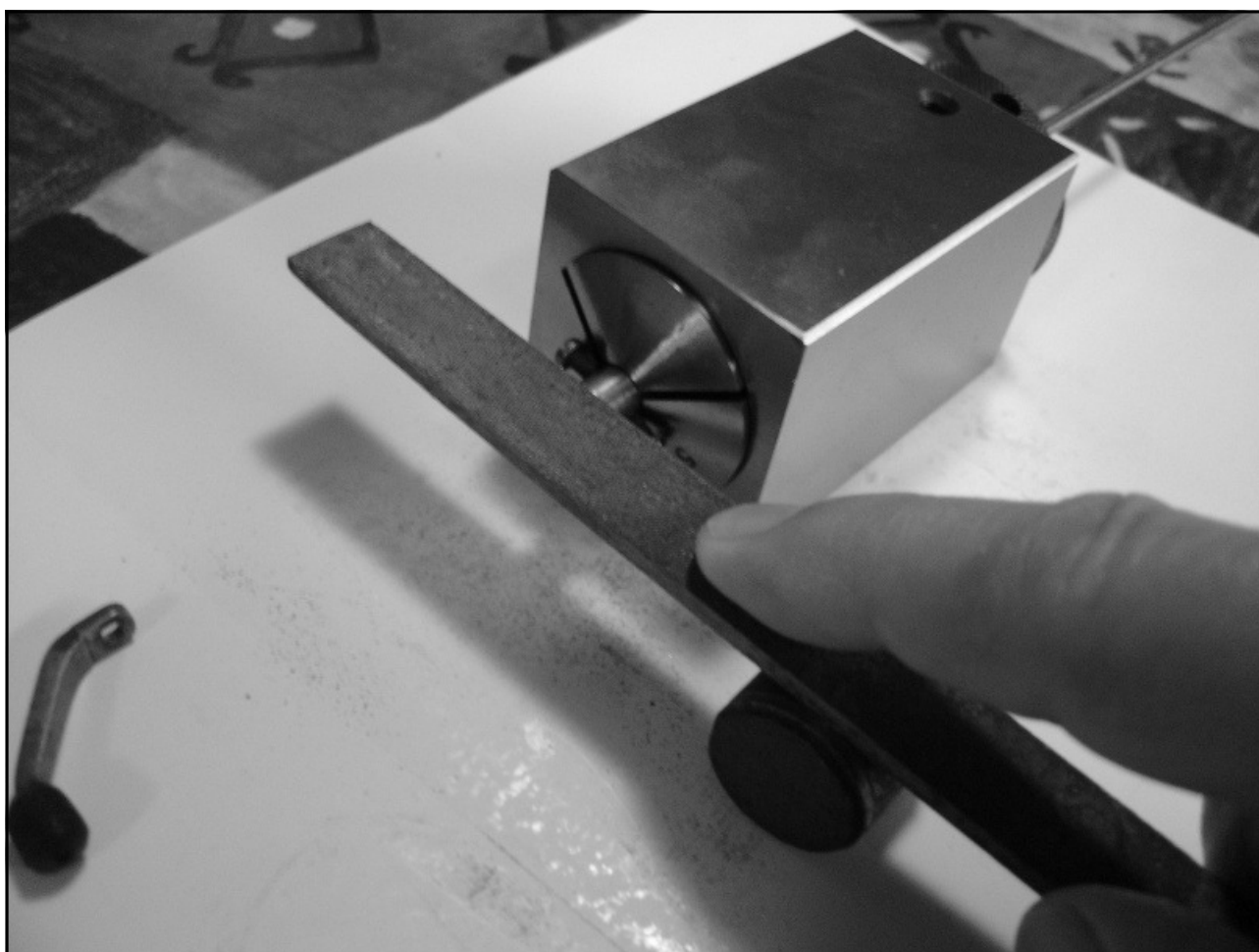
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I've been having problems with raising pressure on the Atlantic for some time now. After much hesitation I decided I had to strip the loco down and have a good look at what was causing the problem. This has been proven to be slow work, with the boiler and in particular it's regulator having been stripped several times over the winter.

One small issue noticed in this process was that the stainless steel regulator spindle was quite pitted where it came through the back head. On the first rebuild (not having any  $\frac{1}{8}$ " S/S rod) I fudged it by cutting the rod in half, reversing the pitted end and rejoining the two with a silver soldered copper tube (OK, I know, not wonderful but it worked). As part of this modification, I had to file a small square on the new 'handle' end. This seemed easy enough, but the end result was more like a 'broach' tooth than a square and the handle wobbled badly on it. I clearly could not file straight and level.



As it happened, the regulator didn't seal and so it was back to square one. However, I had by now ordered a replacement length of  $\frac{1}{8}$ " stainless rod to replace the modified one. One end was heated red hot and beaten to a flat to fit the regulator disk. So far, so good, but what should I do about my seeming inability to file the end square? I considered several options, each one getting more time consuming and frankly silly. Should I finally make that GHT filing rest for the lathe? I did consider it.

Fortunately, a much simpler answer occurred to me. I have a set of four & six sided 'blocks' that take 5C collets. I only have four collets (4, 6, 8 & 10mm) but they are still very useful. In this case, I had a short length of 8mm brass rod, which I drilled  $\frac{1}{8}$ " and then drilled and tapped two 4BA holes in the side. I was then able to hold the  $\frac{1}{8}$ " rod steady and turn it through 90 degrees accurately. So how did I then file it straight and level? Well that was really the easy part.

I found a short piece of round steel that was just over the centre height of the 5C fixture in diameter. By rolling the file on the cylinder and rotating the block every few strokes, I was able to get a perfect fit for the regulator handle.

This method of "roller" filing will work on anything held firmly (in a vice being the most obvious one) provided you can find a "roller" about the right height. Just about any "cylinder" will do. You can clean up 'edges' quite cleanly (without rounding them) or cut nice square slots with care. I've just cut a slot in a valve seating 'cutter' made out of silver steel that would have been awkward to machine.

Want to file four sides of a rod and don't have a 5C block? Why not get a piece of 25mm square mild steel (about 30-40mm long) and carefully mark & centre drill it. You can drill the block to the size of the rod you want to file or drill it through (say) 12mm and make 12mm adaptors as you need them. You can grip the block in the side of a small vice or simply raise it up with a bit with packing underneath.

By the way, I'm still working on the boiler but that's another story.....

