## A chimney for the Aspinall – Keith Jones

I could have used a casting for the chimney, but I decided to make it out of a solid cast iron bar (see fig~1). First, on the Lathe I turned two diameters one 2 5/8" dia. and the other 1 5/8" dia. (see photo~1). Then onto the miller, I fly cut the large radius on the bottom of the chimney to suit the smoke box diameter. I then removed it from the vice and scribed a vertical line with the tool bit on the centre line (this is for later). Back on the lathe, I drilled the bar with a good size centre drill, and then supported it with a centre. I then turned left to right the smallest outside diameter, and then the  $\frac{1}{2}$ " radius at the base (see fig~2 and fig~3). Fig~3 shows also the form tool with the  $\frac{1}{2}$ " radius.





Fig 1 Fig 2

Then at 90 degrees to the  $\frac{1}{2}$ " radius with the scribed line horizontal, I filed a 1" radius to blend with the  $\frac{1}{2}$ " rad. I then turned the chuck through 180 degrees and filed again. Here you need need a good half round file and, yes, it is a slow job most of it been done by eye with a paper template. However, I find cast iron a good metal to work with. Yes, it is dirty but the fine grain it machines well.

Next was the 4 degree included taper to be bored up the centre. After looking at the drawing for the inside of the smoke box it was clear that there was no way the super heater elements where going to come out without first removing the petty coat pipe, in full size this is bolted into the chimney. I could not see how to get at these bolts in service especially as most of the older type of loco such as the Aspinall only had a small smoke box door. I decided to make the petty coat a screw fit into the base of the chimney. Therefore I counter bored the bottom of the chimney and cut a fine thread in it. The thread is 26 T P I or 1m m pitch (as I have a metric lathe so I can drop the nut in on the lead screw and cut the internal and external threads in minutes). The petty coat pipe is screwed up to a shoulder inside so the threads should stay clean. *Fig 4* shows the petty coat pipe and *Fig5* shows the final assembly. The small holes round the base of the petty coat are for a C spanner with a small pin in it to unscrew the pipe







Fig 3 Fig 4 Fig 5