Machining Wheels *– Keith Jones*

A few days after returning from the Midland Show last year I made a start on the Aspinall's wheels.

Operation 1 was to hold the castings in a four jaw chuck and machine across the back face, then drill and fine bore the centre hole.

Operation 2 was to rough out the face and rim. I held the casting on the rim and roughed out the front face and the tread diameter, leaving about 020" for a finishing cut on both the face and on the diameter.

Operation 3 was to finish turning the face and the rim. For the first time I used Don Youngs method to finish turn the wheels. I first turned a spigot to fit into the morse taper in the lathe spindle, then I turned the other end of this spigot down to the bore size of the wheel. Now I fitted the face plate and located the wheel on the spigot and clamped it to the face plate. Photo 1 (below) shows the finishing cut been taken.

Operation 4 was to machine the crank pin holes. I used the rotary table for this job. After pitching out the throw I could rotate the table to get the hole in the centre of the web (this seems a lot better than making a drill jig as I find the jig always covers the web making it difficult to find centre). The holes were drilled and fine bored leaving about 003" for a reamer to bring to size. Photo 2 below shows the set up on the miller.

Operation 5 was to cut the keyways in the bore. It was back to the lathe to set up the wheels so both holes (pin hole and centre hole) were in line horizontally. I turned two pins with the heads the same diameter (one for the centre hole and one for the pin hole). I then clocked the heads until moving the clock from one to the other showed no difference. Adjustment was by turning the screw jack under the chuck jaw (note the bronze crankshaft bearing which is hanging on the chuck key - this keeps the weight on the screw jack - this is not a good time to switch the lathe on!). I then removed the pins and used my slotting attachment to cut the keyways in each wheel, see photo 3 below.

Photo 1

Photo 2

Photo 3

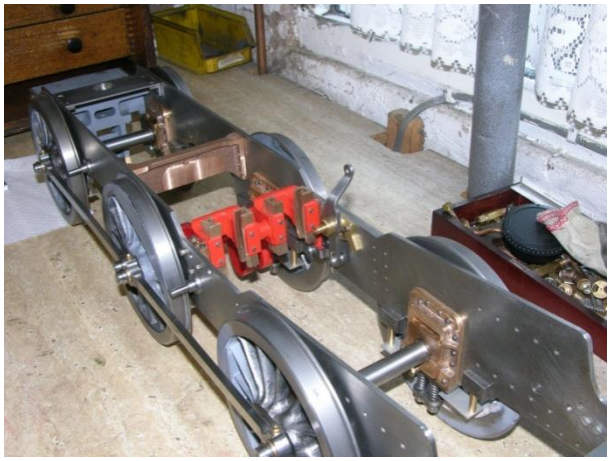

Photo 4

I hope these notes may be of help to some of our new members who may not have had a lot of machining experience.

P.S. Photo 4 shows the rolling chassis with the wheels fitted and with part of the Joy valve gear in place.