My new crankshaft

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As many know from the report in the last Link, the crankshaft in my Stirling Single wheeler failed when we went to the Chelmsford invitation day. I then learned that others have had the same thing occur, on Robert's Pansy it has happened twice. Andy then said that he had it happen on his A3 when he was at Brighton. When we went down to Canvey Island one of the Chelmsford members enquired how I was getting along with the repair, and that the same thing had happened to his loco. The decision was made to turn one from a solid bar of material, knowing that failure of built-up crankshafts was more common than I realized.

A piece of EN8 high tensile bar was obtained about 3" in diameter and of sufficient length to make the crankshaft, plus enough for centres to be provided at each end to turn the crank throws, which can be turned off when the crankshaft was finished. EN8 is a mild steel with some additional additives to make it about twice as strong as ordinary mild steel, but the penalty is that it is more difficult to turn, and a good finish is much harder to obtain. Someone on the Wednesday gang suggested that I weighed the metal blank before and after machining so that the amount of swarf generated was known. This was done, and the answer is below. Picture No. 1 shows the first stage of roughing out the crankshaft. The centres for turning the throws can be seen in the end of the material. Picture No. 2 shows the crank webs being machined off in the milling machine. Picture No. 3 shows the crankshaft finish machined and picture No. 4 when the split eccentrics have been fitted ready to put the wheels on. I started with a piece of steel weighing about six kilos and finished with a crankshaft weighing less than one kilo.