Raising the Stone Nut - Nigel Harris

I thought readers might be interested in an elegant mechanism I came across for moving a stone nut in and out of mesh with the great spur wheel. Whilst researching the different mechanisms available for carrying out this process, Andy Selfe in South Africa sent me the attached photograph of a hand wheel arrangement he had come across at Elim Mill, Western Cape, South Africa. The hand wheel above the stone nut is turned to raise the pinion out of engagement. However, when I sat down and tried to produce a sketch of how this was actually achieved the task was not as easy as I had anticipated.

Going back to Andy, he provided me with a rough sketch, which John Brandrick has been kind enough to interpret and draw, see below. Inside the gear a tapered cone is machined with a keyway in it. On the stone spindle is a corresponding cone with a key insert. The pinion just has to move upwards far enough for the key to clear the inside taper in the gear for it to disengage.

Regarding the date and manufacture of the mill machinery: James Walton in his book 'Watermills, Windmills and Horse-mill of South Africa' on page 49, states that the original wooden machinery was replaced with iron machinery manufactured by I. Zimmermann of Danzig, Germany (now Gdańsk, Poland) in 1881.

Picture and information supplied with thanks to Andy Selfe, South Africa. Drawing with thanks to John Brandrick.

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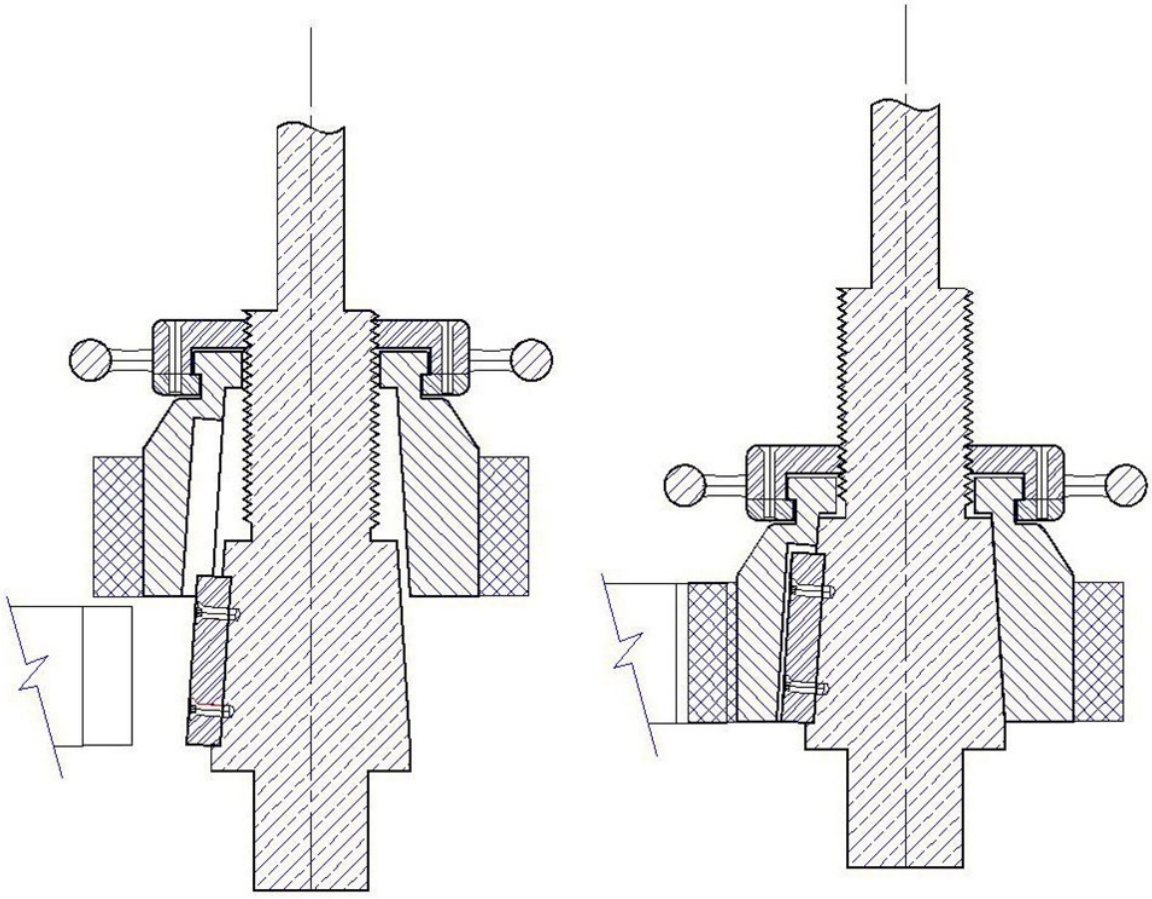
A hand wheel arrangement for lifting the stone nut in and out of engagement with the great spur wheel.



On the left it is shown disengaged, and on the right it is engaged.