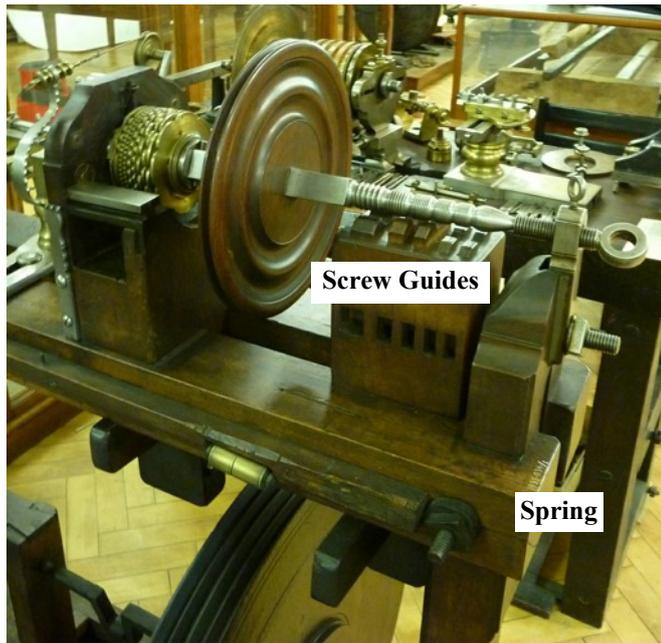# Q: A: How did the Early Rose Engines work?

The first development was the Swash Lathe. This had a traversing (floating) mandrel (spindle) which could be pushed towards the tailstock end by an angled plate pushing on a rubber against a spring; such that, when the angled plate was set-over away from the rubber, the mandrel would be on minimum traverse; but as the mandrel, and the angled plate fixed on it, rotated, so the plate would press increasing against the rubber until it was set-

Bronze Cage

Spring

Pivot bearing

Screw Guides

Swash Plate

(poppit) clamped onto the lathe bed. The rubber of the chosen pitch was engaged with the screw-thread guide on the mandrel tail and wedged into place; then, as the mandrel was rotated, so it traversed towards the tailstock end; such that a cutter held in a fixed position could copy the screw-thread onto a cylinder of wood or metal.
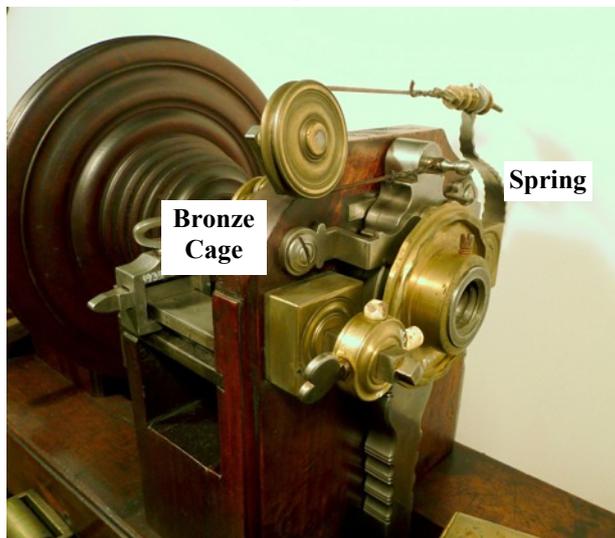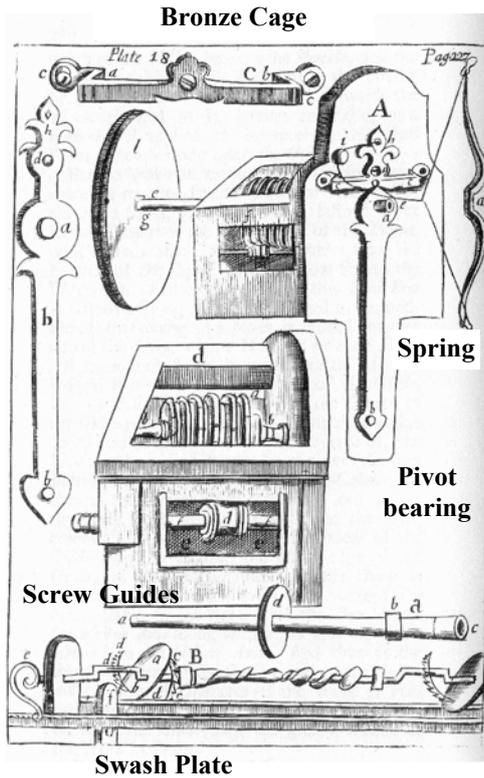

Screw Guides

Spring

over to the maximum traverse. The spring, at this time, was mounted on the left of the lathe frame, pushing the mandrel towards the tailstock end, but movement was limited by the rubber on the swash plate.

The second development was the screw-thread cutting system whereby, instead of an angled plate, a series of screw-guides of different pitches were cut into the tail of the mandrel with matching rubbers held in a block
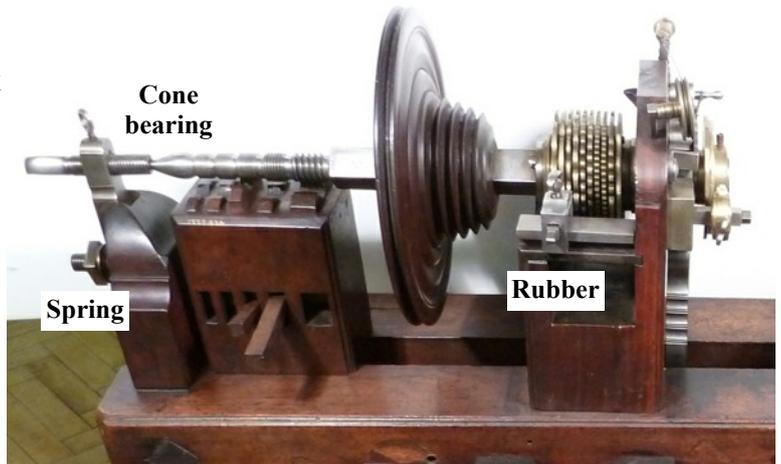
The third development was the substitution of a rosette for the swash plate to produce 'pumped' patterns and then the Rocking Frame was devised. It pivots on bearing below bed level. However, unlike modern Rose Engines, the headstock did not rock but was in the form

Cone bearing

Spring

Rubber

of two separate poppits clamped to the lathe bed; the iron rocking frame moved at right angle to the lathe bed, running in a bronze cage attached to the front poppit; under the control of the rosette and rubber. The tail of the mandrel was formed into a cone bearing, the cone running in a more obtuse socket so that it could swing from side to side as the front rocked and the tail-end did not.

Bronze Cage

Spring