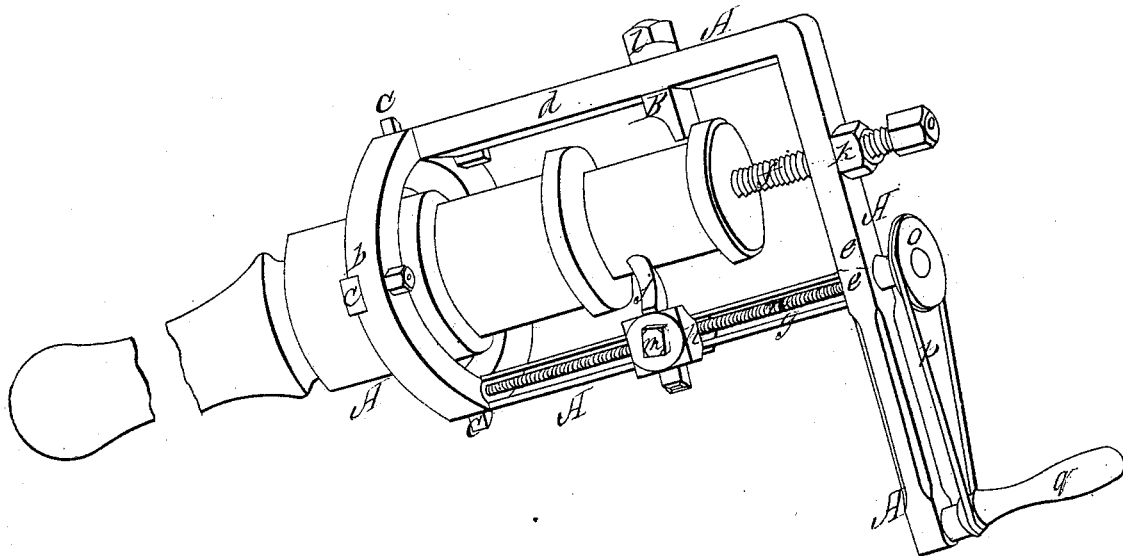


M. G. Wood.

Crank Pin Lathe.

N^o 113,959.

Patented Apr. 18, 1871.



Witnesses:

*Thos. Condit
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Inventor:

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MILTON G. WOOD, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 113,959, dated April 18, 1871.

IMPROVEMENT IN MACHINES FOR TURNING CRANK-PINS.

The Schedule referred to in these Letters Patent and making part of the same.

I, MILTON G. WOOD, of Boston, in the State of Massachusetts, have invented an Improved Crank-Pin Lathe, suitable also for turning journals or shafting at or near the ends, of which the following is a specification, which, with the accompanying drawing, being a perspective view of the apparatus in position and ready to work, will enable a competent mechanic to construct and operate a machine of my invention without invention or contrivance of his own.

The object of this invention is to turn the crank-pins of locomotives and other like articles, such as the journals of shafts made and designed for thrust-bearings, or any other shafts having collars upon them or buttons upon the end, or for any shaft where a button may be attached to the end by a screw-bolt having a center countersunk in its head when worn out of true.

It consists in organizing into a frame fitting over the crank-pin, shaft, or journal, a spur-center and a ring with adjustable gibs, so as to center the frame upon the axis of the crank-pin; and in mounting upon said frame a tool-stock and tool, with its feeding device; and in arranging upon the frame a movable or adjustable buttress, which presses one side of the collar or button, while the spur-center presses the other; and

It further consists in the arrangement of an automatic feeding device by means of a loose handle held from revolution during the revolution of the machine, and thus operating a belt, which connects such handle with the feeding-wheel and tool-screw, forming the feed.

Nearly all the journals used in locomotives or on cars have buttons on the end, such as the truck-wheels, the crank-pins, the coupling-pins for the parallel-rods when the engine has inside connections, and thus this lathe is invaluable in a railway repair-shop; while, if desired to turn a shaft not having a button, by tapping into the end of the shaft, a button may be temporarily screwed onto its end, and a countersink made in the head of the screw, holding it to the shaft, or at a point coinciding with the axis of the shaft, and this will answer every purpose.

Propeller-shafts, too, when they lie in the plummet-blocks, or other thrust-bearings, may be more readily turned true by this than by the means now in use.

The combination, it will be seen by reference to the accompanying drawing, can be reduced to very few elements.

A is a frame, formed of a single casting, the different parts of which, uniting to produce the desired effect, are as follows:

The ring *b*, carrying three adjustable gibs, *c*, to accurately center the ring *b* upon the unworn shoulder of the pin or journal, or on any collar or part of the shaft, which is turned to a true circle about the axis of the journal;

The bent arm *d*, which serves to complete the centering of the whole frame by means of the spur-center *f*, driven through arm *e*, and also serves as the actuating-arm; and

The tool-ways *g*, extending from actuating-arm *e* to the face of ring *b*.

The frame A is, then, composed of ring *b*, with its gibs *c*, adjustable on a radial line; of tool-ways *g* and arm *d*, perpendicular to the face of ring *b*; of arm *e*, uniting the arm *d* and tool-ways *g*, and extending beyond them, to serve as an actuating-arm; and of spur-center *f*, to be driven down on the axis of the pin or journal, and, when in place, held by check-nut *k*.

This constitutes the frame of the lathe, and is the first element.

Arm *d* of this frame is slotted, as shown, and an adjustable buttress, B, is placed upon it, which may be fixed in any desired position by means of screw *l* passing through said slot and clamping buttress B to the arm.

The frame being properly centered on a crank-pin or shaft, by means of the gibs and spur-center, the buttress B is fixed in place so as to press against the flange of the end button, and the frame may then be revolved about the axis of the shaft without difficulty, end play being avoided by the opposite pressures of spur-center *f* and buttress B on opposite sides of the same button.

Upon the tool-ways *g* I then mount a tool-stock, *h*, carrying a tool, *j*, fixed in its relation to the work by holding-screw *m*.

Through the bottom of the tool-stock is cut a nut, in which plays the feed-screw *n*, which is actuated by belt-wheel *o*, which last may, if desired, be used as a hand-wheel. But it is better to actuate belt-wheel *o* by a belt, *p*, which passes also over round handle *q*.

This handle is loose in the arm *e*, and, when feeding, the tool must be held from revolution with the arm, so that, relative to the socket in which it plays, it makes an inverse revolution with each revolution of the frame, while, relative to the medium plane of the shaft, it does not revolve at all.

A travel of the tool in either direction is at our command by changing from a straight to a cross-belt.

It is best to begin with the tool at the point of greatest wear—generally half way along the pin—and turn in each direction, finishing the work with a second thin shaving, taken by a round-nosed tool.

An apparatus of this sort, in eight hours, has turned off a set of four pins by one man's labor to turn the crank, and the whole cost of apparatus and labor was less than the cost of renewing a set of pins.

I disclaim the organization and arrangement of parts shown in P. Maltby's patent of December 15, 1868; and

I claim and desire to secure by Letters Patent—

The combination of loose handle *q*, belt *p*, either straight or crossed, belt-wheel *o*, frame A, and feed-screw *n*, operating substantially as described.

Witnesses: MILTON G. WOOD.

THOS. WM. CLARKE,
GEO. R. CLARKE.