A. Hathaway,

Tool Rest,

No. 41,889, Patented Mar. 8, 1864.

Fig: 1.

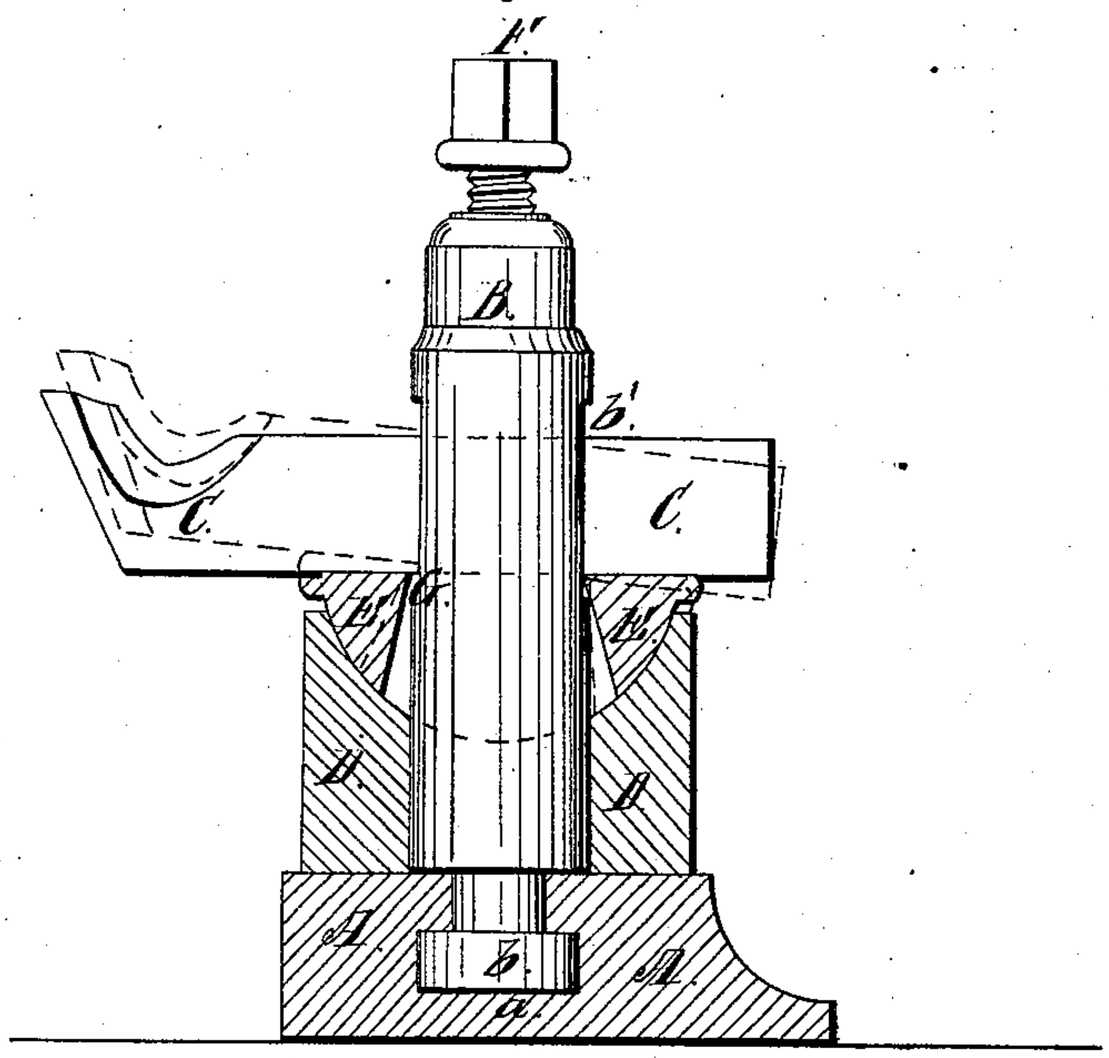
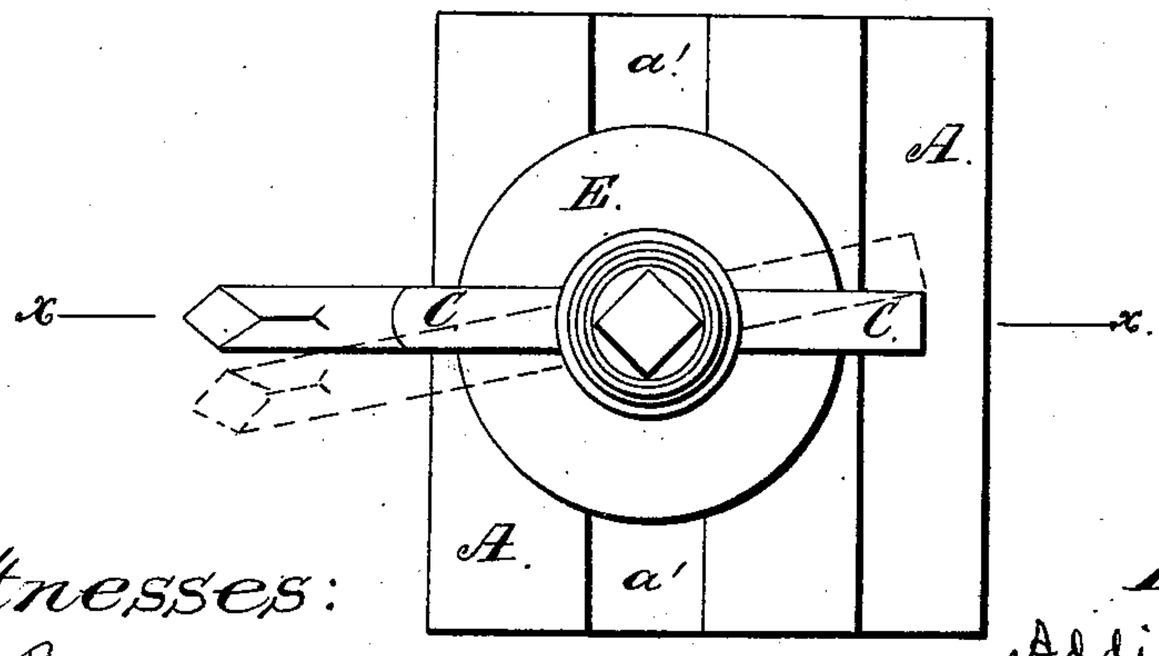


Fig: 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

ADDISON HATHAWAY, OF CHICOPEE, MASSACHUSETTS, ASSIGNOR TO THE AMES MANUFACTURING COMPANY.

IMPROVED TOOL-REST FOR TURNING-LATHES.

Specification forming part of Letters Patent No. **41,889,** dated March 8, 1864.

To all whom it may concern:

Be it known that I, ADDISON HATHAWAY, of Chicopee, in the county of Hampden and State of Massachusetts, have invented a new and useful Improvement in Tool-Rests for Turning Lathes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which make part of this specification, and in which—

Figure 1 represents a vertical central section through my improved tool-rest at the line *x x* of Fig. 2, which shows a plan of the same.

My invention consists in making a tool-rest of a hemisphere or segment of the ball of a ball-and-socket joint, (or of the moving portion of a universal joint,) so that while the post always remains perpendicular to the plane of the lathe, the tool can be turned freely in a horizontal plane, or be so inclined at an angle to the post as to permit its point or cutting-edge to be elevated or depressed, to turn varying diameters, without elevating or depressing the post.

In the accompanying drawings, A represents a plate which is intended to rest upon the horizontal ways of the engine-lathe, and to be traversed by a screw or toothed ratchet in any suitable or well-known way.

A mortise, *a'*, of the dovetailed or rectangular form usually employed, is cut in the plate A to receive the collar *b* of the tool-post B and hold it truly in a vertical position, while it can be traversed along the mortise and clamped in any desired position.

A slot, *b'*, is cut in the tool-post to receive the tool C, which slot I make to exceed in depth the width of the tool. A set-screw, F, working through the top of the post into the slot clamps the tool and also the post in position. A collar, D, is made to surround this post and fit it so neatly that while it supports the post vertically it leaves it free to turn on its axis. The upper part of this collar is turned out to a true semi-circle and of a diameter sufficient to receive the rest E. The bottom of the collar has a plain surface to correspond with its bed-plate in order to give it a firm base. The rest E, in like manner, forms a collar which surrounds the post B. Its under side is hemispherical and made to fit truly the semicircular portion of the collar D, and to turn freely therein, both vertically and horizontally. The top of the rest E must be high enough above the edge of the collar D to prevent the shank of the tool from striking against the collar when the point of the tool is raised or lowered.

The top of the collar or rest E may be grooved to receive the shank of the tool and hold it steady while cutting. The hole in the rest E, through which the post B passes, is gradually enlarged on two sides from top to bottom, thus forming an elongated slot in the plane of the cutting-tool, so as to permit the tool to be set at any desired angle to the perpendicular.

The shank of the tool C may be nearly of the thickness of the width of the slot *b'*, but not so deep as the slot, in order to vary its angle relatively to the upper and lower sides of the slot. The point of the tool may be of the usual cutting form.

The following is the operation of the device: The tenon on the foot of the post B being placed in the mortise *a'*, the collar D is dropped over the post and rests upon the plate A. The rest E is, in like manner, placed on the post, its convex bottom resting in the concave of the collar D. The shank of the tool C is then inserted into the slot in the post, so as to lie in the groove in the rest D. The set-screw F is tightened, by which means the whole of the parts are clamped firmly together, and the cutter is held in any plane, either horizontal or vertical, in which it may have been adjusted, as shown by the red lines in the drawings.

It will thus be perceived that by my invention I secure a cheap, simple, and useful tool-holder, as the entire adjustment and connection of the parts is regulated by a simple turn of the set-screw F. The ball-and-socket movement of the rest permits of any required adjustment, either vertical or horizontal, while the tool-post always remains perpendicular to the bed-plate.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of a ball and-socket joint with a stationary post to form an adjustable tool-rest for engine-lathes, substantially as described.

2. The combination, in a tool-rest for lathes, of a stationary post, a rocking and a rotating rest, and a set-screw, arranged and operating as set forth, for the purposes specified.

3. The combination of a stationary post with the ball of a ball-and-socket joint having an elongated slot to vary the vertical position of the tool while the post remains stationary, as and for the purposes set forth.

In testimony whereof I have hereunto subscribed my name.

ADDISON HATHAWAY.

Witnesses:
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