W. Hamilton,

Lathe-Tool Rest,

No. 45,297. Patented Nov. 29, 1864.

Fig. 1.

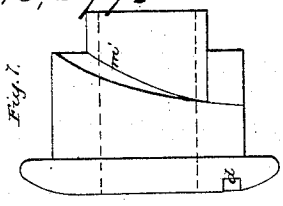


Fig. 5.

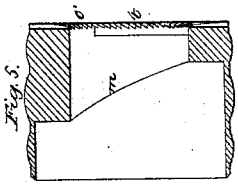


Fig. 3.

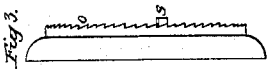


Fig. 6.

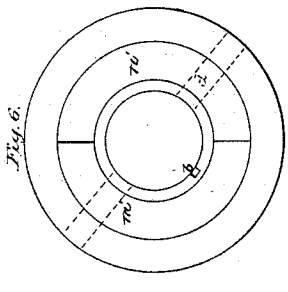


Fig. 4.

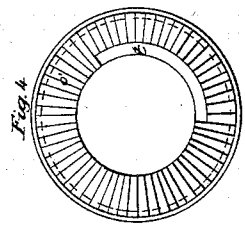


Fig. 2.

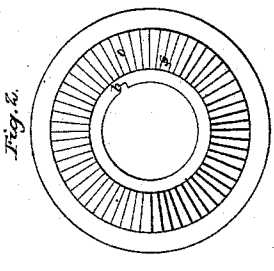
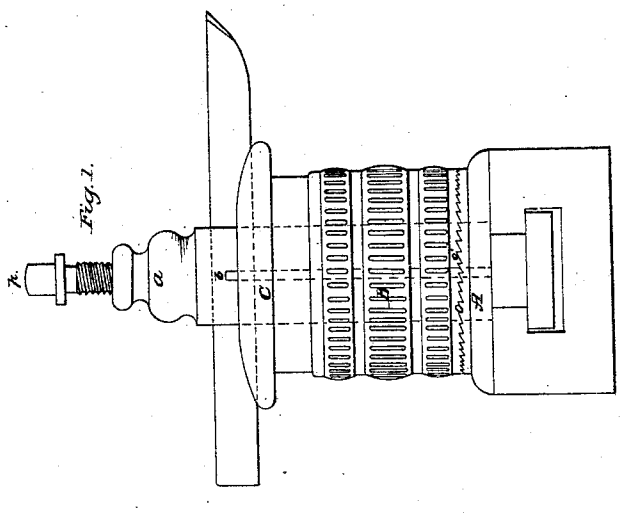


Fig. 7.



Attest:

J. B. Galdmer

Milton Bradley

Inventor:

William Hamilton

UNITED STATES PATENT OFFICE.

WILLIAM HAMILTON, OF CHICOPEE, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND JOSIAH B. FULLER, OF SAME PLACE.

IMPROVEMENT IN TOOL-ELEVATOR FOR LATHES.

Specification forming part of Letters Patent No. 45,297, dated November 29, 1864.

To all whom it may concern:

Be it known that I, WILLIAM HAMILTON, of Chicopee, in the county of Hampden, State of Massachusetts, have invented a new and Improved Tool-Elevator for Turning Lathes; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The utility of some arrangement by which, in a turning-lathe the tool could be raised and lowered expeditiously and accurately has long been understood and several have been devised. Other arrangements have usually failed from complicacy, want of firmness, or inadaptability to the purpose.

In my invention it will be seen at once I have a simple contrivance, working accurately and much firmer than the ordinary tool-posts, on account of metal which is used around the post to raise and support the tool.

I will now describe my invention.

In the drawings, Figure 1 shows the tool-post as ready for use. Fig. 2 is a plan, and Fig. 3 an elevation, of the part A in Fig. 1. Fig. 4 is a plan, and Fig. 5 a section, of the part B. Fig. 6 is a plan, and Fig. 7 an elevation, of the part C.

Around the tool-post *a*, provided with the spline *b*, I place the pieces A, B, and C, as shown in Fig. 1. The part A fits the post, and is kept from turning around it by the spline *b*. On the upper surface of this piece notches *o* are cut, forming a ratchet by fitting in similar notches, *o' o'*, in the piece B. The pieces B and C are each provided with two spiral surfaces, *m* and *n* and *m' n'*, which pass half way around the piece and at the same time rise a short distance. The outside of the piece B is roughened to enable it to be turned more easily. On the top of the piece C a slot, *d*, is cut parallel with the slot in the tool-post, in which the tool lies, and is kept always in one position in relation to the tool-post.

I will now describe the operation of my invention.

The post being arranged as in Fig. 1 it if, is required to raise the tool, the piece B is turned in the direction which the ratchet will allow. As this is turned, the spiral surfaces *m* and *n* on B are made to act on the similar surfaces, *m' n'*, on C, and the piece C being kept from turning around by the spline *b*, but free to move in an upward direction, it is forced up and can be fastened at any point by turning down the screw *p* on the tool, as in the ordinary post. The ratchet formed by the notches *o o* and *o' o'* can be graduated so that any required rise can be given to the tool at each part of a turn, so that the exact height the tool rises can be readily known.

If it is required to lower the tool, the screw *p* is loosened sufficiently to allow the pieces C and B to be raised far enough to disconnect the teeth of the ratchet, so that it may be turned back to any point, and thus (the mechanism acting in an opposite way from that before described as raising the tool) it is lowered as required.

The pin *s* on the piece A, working in the groove *t* on B, is used as a stop to prevent the piece B turning beyond the highest points of the spirals described, and thus letting the tool fall suddenly. When it, B, is stopped by this pin, it must be raised so as to clear the notches and lowered as described.

Having described my invention, what I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of the pieces A, B, and C, or their equivalents, when constructed and used substantially in the manner and for the purpose described.

2. The ratchet formed by the notches *o o o' o'* on the pieces A and B, when used in combination with the pieces B and C, substantially in the manner and for the purpose described.

WILLIAM HAMILTON.

Witnesses:

J. B. GARDINER,

MILTON BRADLEY.