



# UNITED STATES PATENT OFFICE.

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OF SAME PLACE.

## IMPROVEMENT IN LATHES.

Specification forming part of Letters Patent No. 55,412, dated June 5, 1866.

*To all whom it may concern:*

Be it known that I, L. L. CRANE, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Lathes; and I do hereby declare that the following is a full and complete description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of the lathe. Fig. 2 is a plan view.

Like letters of reference refer to like parts in the views.

My improvement relates to a lathe for turning a uniform standard taper, as hereinafter described.

A is the bed-plate or platform of the lathe, on one end of which is secured a head-block, B, and at the other end is an adjustable foot-block, D. In the head-block are arranged cone-pulleys C, the arbor of which may have its bearings in boxes in the ordinary way.

*g* is the live, and *e* the dead centers. *e'* is the mandrel or tail-screw. Between the centers *e* and *g* is hung a piece of metal, E, or other material to be turned tapering.

H is a slide-rest, on one side of which is a standard J, that supports the tool I, as represented.

On the bed-plate are slides or ways *m* and *n*. The ways *m* are parallel with each other and with the sides of the bed-plate. The ways *n* are likewise parallel with each other, but are in an angular position in relation to the ways *m*.

The head and foot blocks are in the same plane as the ways *n*, and the live and dead centers are in a direct line parallel with the ways *n*. Both sets of ways and the centers *e g* are in the same horizontal line, as seen in Fig. 2, so that the piece E is held in an inclined or angling position to the plane in which the tool

I moves, the tool being in the plane of the outside ways, *m*.

As the piece hung between the live and dead centers is thus angular in its position in relation to the tool, the point of the tool will be brought gradually nearer to the piece, from *a* to *a'*, the relative position of the ways causing the tool to be nearer at the live than the dead center, and as the rest with the tool is operated in the usual way, the piece E will be turned of a uniform taper from *a* to *a'*, as represented.

The same uniform taper will be obtained, whatever may be the length of the piece, for the ways *n* are inclined in the same plane from one end to the other, and the centers being at all times in line with them, no lateral movement is needed for the taper, as in the ordinary way.

The foot-block D can be adjusted nearer or farther from the head-block, according to the length of the piece to be turned, being moved along on the ways *n* and secured in the desired place.

A lathe constructed in accordance with my improvement, as herein described, may be operated by the usual devices and appliances required in machines of this class.

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

The ways *m m*, when arranged in the same plane, but in an angular or inclined position in relation to the ways *n n* and centers *g e*, the ways *n n* being in line or parallel to each other and the centers *g e*, all combined and operating conjointly in the manner and for the purpose set forth.

L. L. CRANE.

Witnesses:

W. H. BURRIDGE,  
A. W. McCLELLAND.