M. G. STOLP.

Improvement in Metal-Turning Lathes.

No. 126,758. Patented May 14, 1872.

Fig. 1.

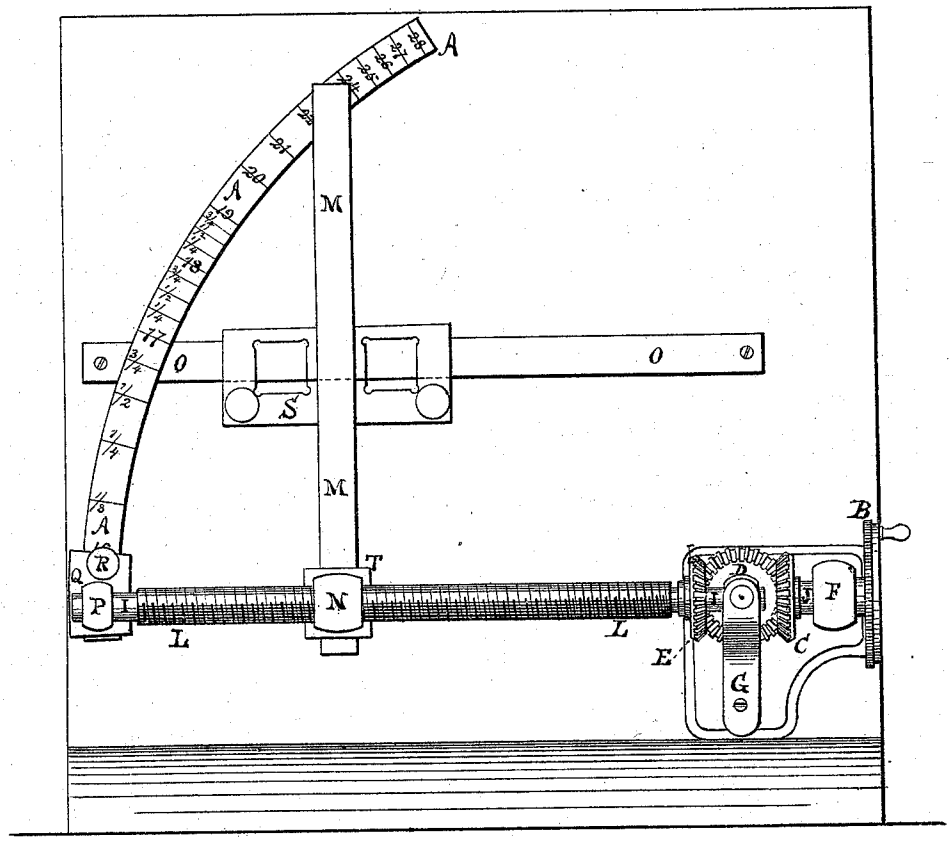
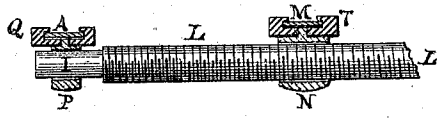


Fig. 2.



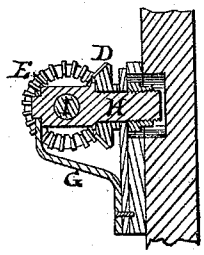


Fig. 3.

Witnesses.

F. W. Howard

E. A. Stansbury

Inventor.

Myron G. Stolp

By his Attorney

Chas. F. Stansbury

AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

UNITED STATES PATENT OFFICE.

MYRON G. STOLP, OF ITHACA, NEW YORK.

IMPROVEMENT IN METAL-TURNING LATHES.

Specification forming part of Letters Patent No. 126,758, dated May 14, 1872.

SPECIFICATION.

To all whom it may concern:

Be it known that I, MYRON G. STOLP, of Ithaca, in the county of Tompkins and State of New York, have invented a new and useful Improvement in Slide-Rest Motion for Lathes; and I do hereby declare the following to be a full and correct description of the same, reference being had to the accompanying drawing, in which—

Figure 1 is a front elevation of my improved slide-rest motion. Figs. 2 and 3 are details.

The same part is marked by the same letter of reference in the several figures.

The nature of my invention consists in securing, by simple and convenient mechanism, a range of adjustment of the relative motions of the slide-rest and the driving-shaft of a lathe much beyond what has been attained in the ordinary slide-rest motions, and by a different principle of construction, all as hereinafter more particularly set forth.

The source of motion is, as in ordinary lathes, as far as to the beveled gearing C D E, a shaft (not shown) communicating by means of gearing with the spindle driven from the line-shaft. In ordinary lathes the shaft is continuous throughout the length of the lathe, and within the limits of motion of the slide-rest is threaded, forming what is called the "leading-screw," which governs the motion of the slide-rest. This leading-screw cut on the shaft is dispensed with by my invention, and only a plain shaft, J, retained. The shaft J turns in standard F, and has on its end the bevel-gear C, which engages with intermediate bevel-gear D, communicating motion to bevel-gear E on the end of screw L. The journal I of this screw turns in a pivoted standard, H, (see Fig. 3,) which permits L to have a free radial motion around H as a center. The upper end of H turns in bracket G. The free end of screw L turns on a journal, I, in a standard, P, pivoted in a slide, Q, which moves on the fixed graduated arc A and is held at any desired point by a set-screw, R. Upon the screw L is placed a nut, N, pivoted to the guide T so as to turn freely upon it. The guide T slides upon the vertical bar M, to which is attached, at right angles, the guide S, sliding upon the fixed horizontal bar O. The vertical bar M is connected with the slide-rest carrying the cutting-tool by means of a rod (not shown) having a variable point of attachment to the slide-rest, in order that the rest may be set at any desired point in the length of the lathe.

From the construction described it obviously results that when the screw L is in line with the shaft J and the gears C E are of the same size the motion communicated will be the same and the slide-rest will receive the same motion that it does from the leading-screw of the common lathe. When, on the other hand, the screw L is moved so as to stand at a right angle to the shaft J, it is obvious that the rotation of that shaft will communicate no motion to the slide-rest. Between these extremes any desired fractional part of the motion of shaft J may be communicated to the slide-rest by fixing the slide Q at the proper position on the graduated arc A. Suppose, for example, that the screw L is cut sixteen threads to the inch. When in line with shaft J, the leading-gear E and spindle-gear C being equal, the tool attached to the slide-rest would cut sixteen threads to the inch. By setting screw L at the determinate point 17 of the arc the motion of the slide-rest will be shortened one-seventeenth for each turn, and the tool will cut seventeen threads to the inch, and so on without limit.

In order to avoid the oblique strain resulting from the use of the highest numbers on the arc, I prefer to make an approximate adjustment by changing the relation between the leading and spindle gears and by using screws of different numbers of threads to the inch. We thus obtain range, accuracy, and facility of adjustment with the least mechanical disadvantage.

I wish it to be understood that I have contemplated continuing the arc A beyond ninety degrees, by which a negative or reversed motion can be obtained and a reversed or left-hand screw can be cut, having the number of

threads indicated by the graduation of such additional part of the arc. A slight modification of the gearing, within the skill of an ordinary machinist, would be required to secure this additional radial movement.

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

1. The screw L, having a radial movement upon the graduated arc A, and connected with the slide-rest of the lathe so as to impart the required relative motion to the same, in the manner and for the purpose specified.

2. The combination and arrangement of the shaft J, gears C D E, screw L, nut N, guide T, bar M, guide S, bar O, standard P, slide Q, and arc A, substantially in the manner and for the purpose set forth.

The above specification of my said invention signed and witnessed at Ithaca this 14th day of February, A. D. 1872.

MYRON G. STOLP.

Witnesses:

SEYMOUR P. THOMAS,

WILLIAM C. CLEVELAND.