Henry Kellogg's Impt in Machine for Rolling Tapers.

[65.]

fig 1.

No. 119,521. Patented Oct. 3, 1871.

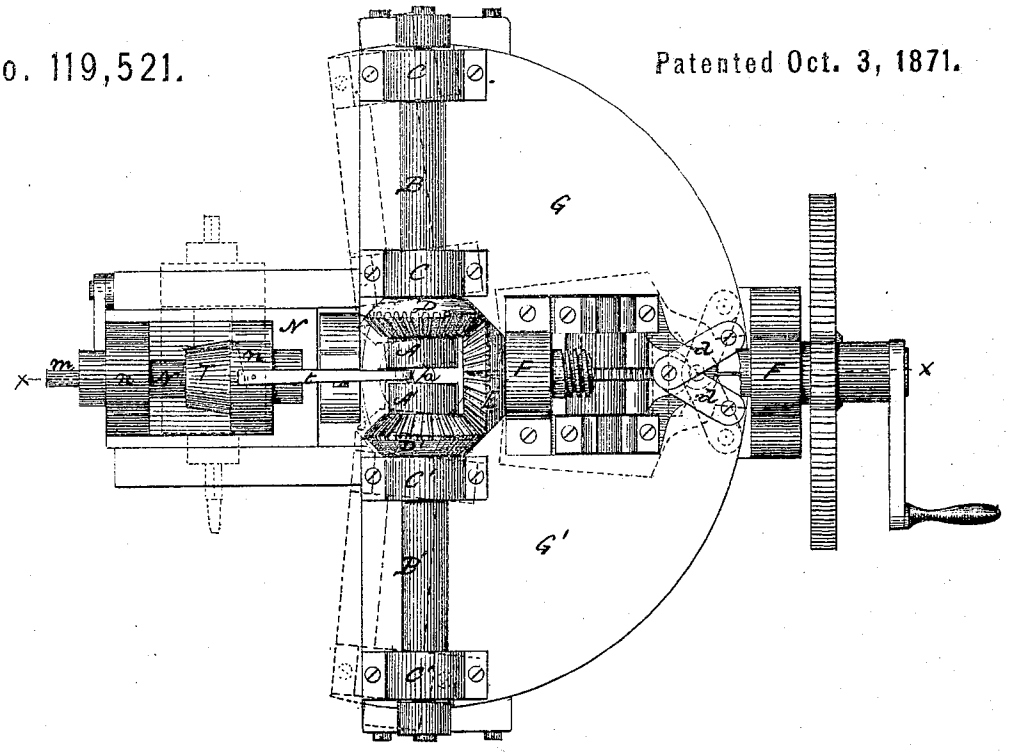
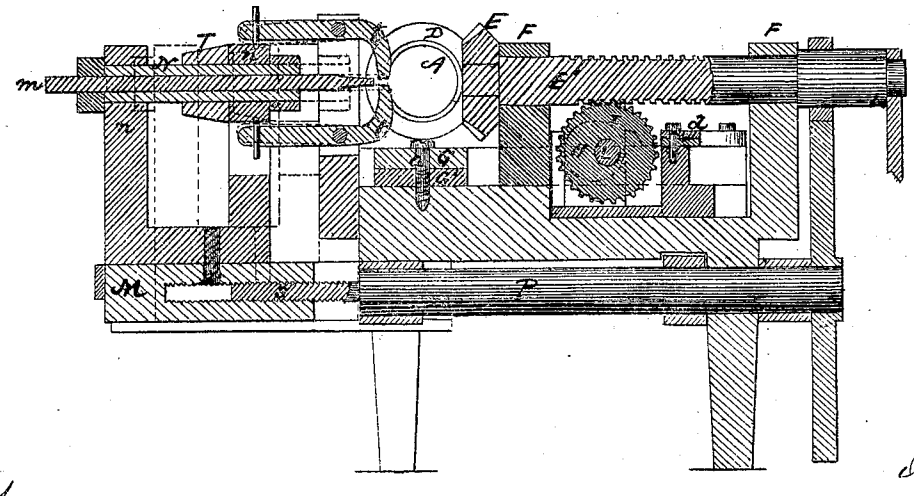


fig 2.



Witnesses
J. H. Shumway
A. J. Libbits.

Henry Kellogg
Inventor.
By his Attorney
John E. Earle

UNITED STATES PATENT OFFICE.

HENRY KELLOGG, OF MILFORD, CONNECTICUT.

IMPROVEMENT IN MACHINES FOR ROLLING TAPERING FORMS.

Specification forming part of Letters Patent No. 119,521, dated October 3, 1871; antedated September 30, 1871.

To all whom it may concern:

Be it known that I, HENRY KELLOGG, of Milford, in the county of New Haven and State of Connecticut, have invented a new Improvement in Machine for Rolling Tapers; and I do hereby declare the following, when taken in connection with the accompanying drawing and letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawing constitutes part of this specification, and represents in—

Figure 1 a top view, and in Fig 2 a central section on line *x x*.

This invention relates to an improvement in devices for drawing metal rods or bars into a taper or conical form, as for carriage-axles, spindles, and other purposes; and consists in the arrangement of a pair of disks to receive the rod or bar to be rolled between the faces of the two, and revolving in opposite directions; mechanism for gradually closing the dies while the rod operated upon is withdrawn; the rod and mechanism for withdrawing the rod so that a taper form proportionate to the velocity with which it is withdrawn and the disks closed may be given.

A A′ are the two disks arranged, respectively, on shafts B B′, the axis of each being in line with the other, and arranged in suitable bearings C C′; and to both a rotary movement is given, one in an opposite direction to the other, by means of beveled pinions D D′ through a driving-gear, E, which may be arranged in any convenient direction for connection to the pinions D D′, here shown to be at right angles and in the same plane with the shafts of the disks. The shaft E′ of the driving-wheel E is arranged in bearings F, and caused to revolve by the application of power thereto in any convenient manner. The bearings of the two shafts B B′ are arranged, respectively, on tables G G′, pivoted upon a common center, *a*, the said center being directly under the disks, as seen in Fig. 2. To these tables a reciprocating movement is imparted by a toggle, *d d*, (see Fig. 1,) actuated by a cam, H, caused to revolve slowly by a worm or endless screw on the shaft E′ working into a gear, I, on the shaft L, on which the cam H is arranged, so that by the turning of the said cam the toggles are thrown out or drawn back, causing the tables G G′, to which the toggles are connected, to turn, carrying with them the shafts B B′, as denoted in broken lines, Fig. 1. This movement of the tables causes the outer edge of the disks A A′ to gradually close together. When the shafts B B′ are in line with each other then the disks are open to their full capacity. The rod to be drawn is then introduced centrally between the two disks and in the same plane, the disks revolving, and the rod gradually withdrawn will, by revolving the disks in opposite directions, be gradually worked from its original diameter down to a diameter corresponding to the distance between the disks at the time the rod leaves; therefore, the length of taper, from the largest to the smallest diameter, depends upon the velocity with which the rod is drawn from the disks.

To thus present the rod, I arrange a hollow mandrel, N, in bearings *n n*, the said bearings being set upon a slide, M, as seen in Fig. 2, and through this mandrel the rod *m* to be drawn is placed. While the two shafts B B′ are in line with each other, the slide is thrown up to carry the rod between the disks, as denoted in broken lines, Fig. 2, and the slide put in connection with a shaft, P, connected to the slide by a screw, S, and the said shaft P caused to revolve, forces the slide back to draw the rod from between the disks, and the velocity with which the slide thus moves is dependent upon the velocity of the shaft P, which, by suitable gearing, may be adjusted to any extent. As a support for the rod while between the disks, I arrange a pair of vibrating-jaws, *t t*, and on the mandrel a cam or former, T, the taper of the said former corresponding to the taper to be given to the rod. The outer arm of the jaws *t* rests upon the said former, and when the mandrel is forced forward to carry the dies into the disks the jaws are opened by running down the incline of the former T, and gradually close upon the rod as it is drawn out, thus supporting the rod while the disks are operating.

For convenience, I arrange the bearings *n* so as to be turned around at right angles, as denoted in broken lines, Fig. 1, for introduction of the rod or examination of the work.

I claim as my invention—

1. The combination of the disks A A′, shafts B B′, pivoted tables G G′, and mechanism substantially as described for rotating said tables, substantially as set forth.

2. In combination with the subject-matter of the first claim, the reciprocating frame M and hollow mandrel N, substantially as set forth.

3. The combination of the reciprocating frame M, hollow mandrel N, cam T, pivoted jaws *t t′*, and the disks A A′, substantially as set forth.

HENRY KELLOGG.

Witnesses:

A. J. TIBBITS,

J. H. SHUMWAY.