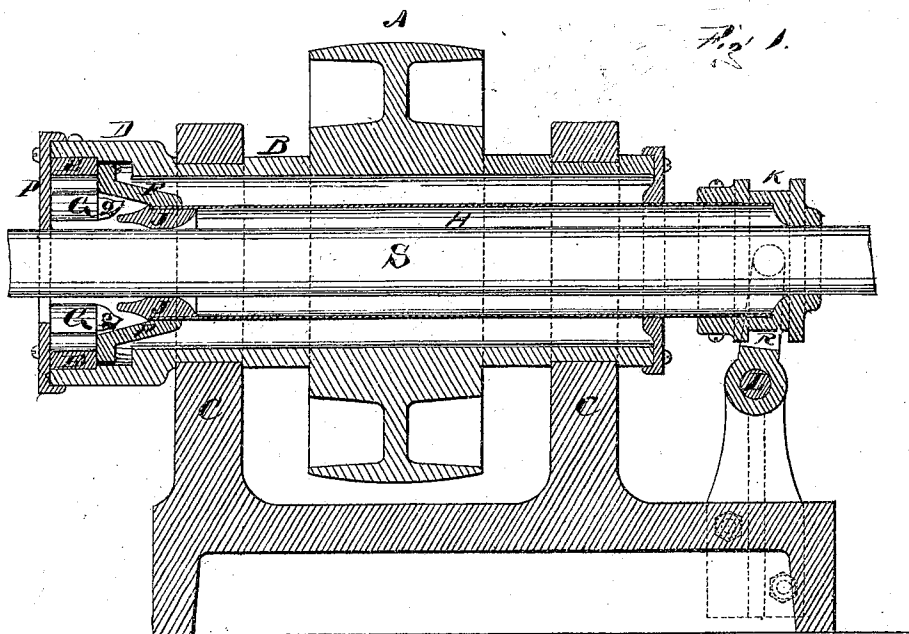
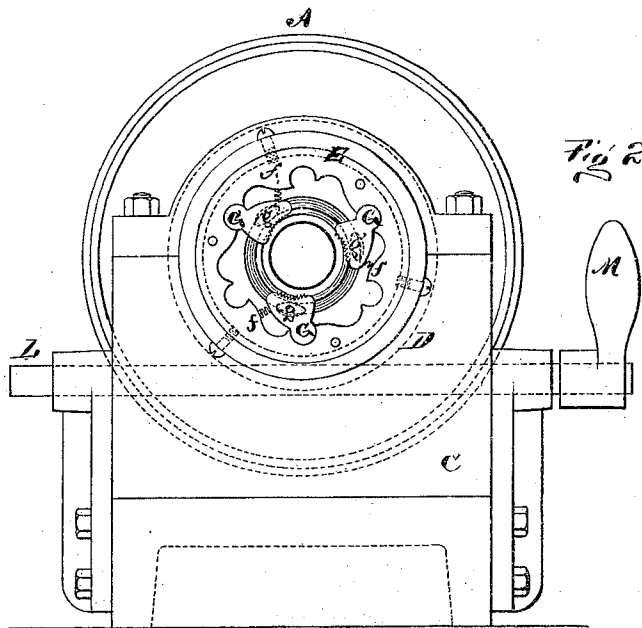


J. B. ROOT.

Machines for Chucking and Revolving Tubes, &c.

No. 141,593.

Patented August 5, 1873.



Witnesses
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att'y

UNITED STATES PATENT OFFICE.

JOHN B. ROOT, OF NEW YORK, N. Y.

IMPROVEMENT IN MACHINES FOR CHUCKING AND REVOLVING TUBES, &c.

Specification forming part of Letters Patent No. **141,593**, dated August 5, 1873; application filed January 4, 1873.

To all whom it may concern:

Be it known that I, JOHN B. ROOT, of the city, county, and State of New York, have invented a new and useful Improvement in Machines for Chucking and Revolving Tubes, Bars, &c.; and that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings and to the letters of reference marked thereon making a part of this specification.

This invention relates to certain improvements in revolving mechanism for holding tubes, bars, &c., while being cut or having screw-threads cut upon them; and the invention consists in constructing the axis of the pulley by which the tube is revolved in such manner as will allow the tube or bar to pass through the same and be held from turning while it is revolved by the action of the pulley against the cutting-tool.

Heretofore, when cutting tubes or round bars to desired lengths, or when cutting screw-threads upon such tubes or bars, it has been necessary to stop the revolution of the tube, &c., until it has been adjusted in the manner desired, and then hold it in position by means of a set-screw, when the tube, &c., is again caused to revolve against the cutting-tool, and so on from time to time, as each bar or tube was cut; every separate adjustment requiring the stoppage of the machinery, and the adjustment of a set-screw, which, as is obvious, resulted in loss of time and added to the expense. To obviate this difficulty is the object of my invention.

In the accompanying sheet of drawings, Figure 1 represents a longitudinal section of my machine; and Fig. 2, a front-end view of same.

Similar letters of reference indicate like parts in the several figures.

A represents a pulley secured in any desirable manner to the axis B, which revolves in the bearings C C. The front end of the axis B has secured to it a head, D, and within this head is secured an annular plate, E, having affixed to its inner side an annular guide, F. To the face of the plate E are attached three or more clutches, G. These clutches are attached in such manner as will enable them to slightly turn at the point of attachment, and

each clutch is provided with a spring, *f*. The inner edges or faces of the clutches G are serrated, and they are each provided with a beveled tongue or projection, *g*, and they are held in position by a face-plate, P. Within the axis B is placed a hollow cylinder, H, or its equivalent. The front end of this cylinder has secured to it a beveled head, J, and the rear end a head, K. To the head K is applied a fork, R, attached to a shaft, L, so that as said shaft is oscillated by the lever M the cylinder H will be forced in and out of the axis B.

My machine being constructed substantially as above described its operation is as follows: Power being applied by belt or otherwise to the pulley A it causes the axis B and cylinder H to revolve. Through the cylinder H is then passed the tube or bar S. It is designed to cut to a required length, or form thereon a screw-thread. This tube or bar is inserted through the cylinder H, or its equivalent, from its rear end until it projects beyond the face-plate P at such a distance as may be necessary to cut or form the screw-threads thereon, and against this projecting end is brought to bear the necessary screw or other cutting-tool, the tube or bar revolving with the axis B, but is tightly held by the serrations in the clutches G, the clutches being forced firmly against the exterior surface of said tube by the springs *f*. The position of the serrated faces of the clutches, as opposed to the surface of the tube, is such that the greater the resistance of the cutting-tool the tighter or more firmly the tube is held from turning within or independently of the shaft of the pulley. When the screw-thread has been formed on the tube or bar, or when it has been cut to the required length, as may be desired, the clutches G are released from clamping the bar or tube by simply pressing the lever M, which, by its action on the shaft L and the fork R, before referred to, forces in the cylinder H, bringing the beveled edge of the head J in contact with the beveled tongues *g* of the clutches G, by which means the said clutches are "tripped" or thrown clear from the surface of the tube, so that said tube may be withdrawn and a new one inserted, or it may be pushed forward to be again cut into a given length.

As will be seen the above operation is accomplished without the necessity of stopping the machinery which revolves the tube to be cut, the result being a saving in time, labor, and expense.

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

1. The combination of the revolving axis B, pulley A, clutch mechanism, and sliding cylinder H, when operating in connection with a screw-thread or other cutter in such manner

that the tube or bar can be adjusted longitudinally without stopping the machine, as herein shown and described.

2. The combination of the sliding cylinder H provided with a beveled head, J, with the clutch mechanism described, as and for the purpose set forth.

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