E. CROFT.

Machine for Rolling Threads on Screws.

No. 219,073. Patented Sept. 2, 1879.

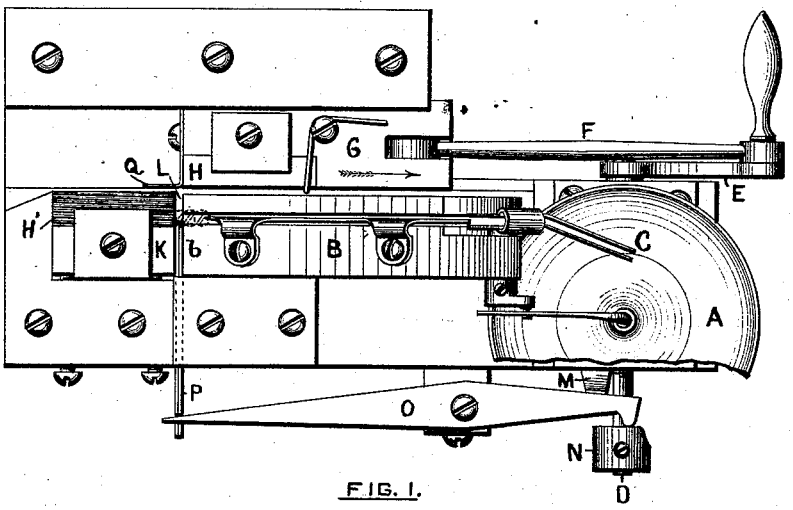

FIG. 1.

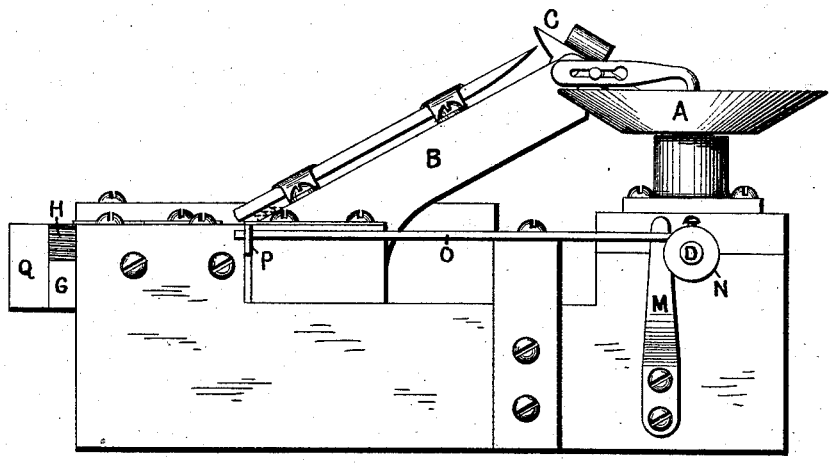

FIG. 2.

WITNESSES.

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EDWARD CROFT, OF WATERBURY, ASSIGNOR TO THE RUSSELL & ERWIN MANUFACTURING COMPANY, OF NEW BRITAIN, CONNECTICUT.

IMPROVEMENT IN MACHINES FOR ROLLING THREADS ON SCREWS.

Specification forming part of Letters Patent No. **219,073**, dated September 2, 1879; application filed May 7, 1879.

To all whom it may concern:

Be it known that I, EDWARD CROFT, of Waterbury, in the county of New Haven and State of Connecticut, have invented a certain new and useful Improvement in Machines for Rolling Threads on Screws; and I do hereby declare that the following specification, taken in connection with the accompanying drawings, forming a part of the same, is a full, clear, and exact description thereof.

The improvement which is the subject of this patent relates to that class of screw-machines in which the thread is formed upon the screw-blanks by dies between which the blanks are rolled, as distinguished from that class of machines which form the thread by the cutting action of a reciprocating tool or threading-dies.

Machines of this class have heretofore been provided with automatic feeding mechanism embodying a vertical tube and a rotating diametrically-drilled block or faucet, which, when semi-rotated, alternately presents its opening or passage to the vertical tube to receive a blank, and then to a rectangular tube or race, into and through which the blank is pushed by a sliding rod or pusher to the threading mechanism.

By my invention the necessity of intermediate presenting mechanism between the stack of blanks and the pusher is obviated, and the blanks are delivered directly from a conveyer to the threading mechanism.

My improvement therefore consists in an arrangement and a combination of devices for automatically supplying the blanks, one at a time, to the thread-rolling dies.

The variety of the class of thread-rolling machines chosen to illustrate my invention is that which employs two dies parallel to each other, one die being stationary and the other having a reciprocating movement imparted to it, whereby, when a blank is introduced between said dies, it will have a thread rolled upon it by the adjacent faces of the dies.

Referring to the drawings, Figure 1 represents a plan of a machine having my improvements, and Fig. 2 shows a side elevation of the same.

The mass of screws is placed in the hopper, as at A, from which they are delivered to a channel-way in the inclined conveyer B by a fork, as at C, the screws forming a stack in said conveyer. The driving-shaft D of the machine is supplied with a crank, as at E, the said crank, by means of a pitman, as at F, being connected with a sliding carriage, as at G, for the purpose of imparting a reciprocating movement to said carriage and the die H mounted therein. The fellow die, H′, is secured to a block, as at K, an end of said die and block forming one wall of a transverse passage, L, the other wall of which is formed by the end *b* of the conveyer B.

The width of the passage L is a little greater than the diameter of a blank, and it connects the channel in the conveyer B with the space between the acting faces of the dies H H′, which are set apart a distance a little less than the diameter of the blank.

The blanks when in the conveyer B are suspended by their heads in a vertical position, the shank of the lowermost blank of the stack resting against the wall formed by the die H′ and block K, its head bearing upon the upper surfaces of the walls of the passage L. In this position it is ready to be fed to the dies and be acted upon, the feeding being accomplished as follows: Secured to the frame of the machine is a spring, as at M, and mounted on the shaft D is a cam, as at N, both of which operate upon one end of a lever, as at O, the other end of said lever being in engagement with a sliding plate, as at P, occupying a position in the passage L.

When the contour of the cam N allows the spring M to act, the latter produces, through the lever O, a forward movement of the plate P, which pushes the blank before it along the passage L and into contact with a guard-plate, as at Q, secured to the reciprocating die H, which at this time is approaching its fellow H′. The face of the plate Q is set a slight distance back from the face of the die H, which arrangement allows the blank to be seized on diagonally-opposite sides by the corners of the dies, and the die H continuing to advance, the blank is rolled between their acting faces and a thread produced thereon. When the thread is completed the screw is discharged off the

end of the die H′, the die H retreats and again advances to act upon another blank, the plate P in the meantime having retreated, engaged said blank, which has passed into the passage L, and pushed it forward to be acted upon by the dies.

No claim is made to the employment of dies for rolling the thread upon the blanks, as these may be of the well-known rotary variety as well as of the particular kind shown, or to the use of a hopper and fork in a machine of this character; but

What I do claim, and desire to secure by Letters Patent, is—

1. In a machine for rolling threads upon screw-blanks, the combination of a conveyer for conducting blanks in a row, a passage-way for a single blank at the end of the conveyer, arranged transversely to the line of blanks, and connecting the channel-way in the conveyer with the space existing between the planes in which lie the acting faces of the thread-rolling dies, and a reciprocating plate or equivalent device arranged to separate the lowermost blank from the row of blanks in the conveyer, push it to the end of the passage-way, and deliver it to the threading mechanism, substantially as described.

2. The combination of the reciprocating thread-rolling die H, the transverse passage-way L, the guard-plate Q, and the sliding plate P, substantially as set forth.

3. The combination, with the reciprocating thread-rolling die H and the transverse passage-way L, of a guard-plate, Q, the face of which is set back from the plane of the face of the reciprocating die, whereby the blank, when pushed into position by the sliding plate P, can be readily griped between the faces of the thread-rolling dies, substantially as set forth.

EDWARD CROFT.

Witnesses:

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