(No Model.)

H. W. BARNES & G. H. BLAKESLEY.

NUT DRILLING AND TAPPING MACHINE.

No. 342,496. Patented May 25, 1886.

Fig. 1.

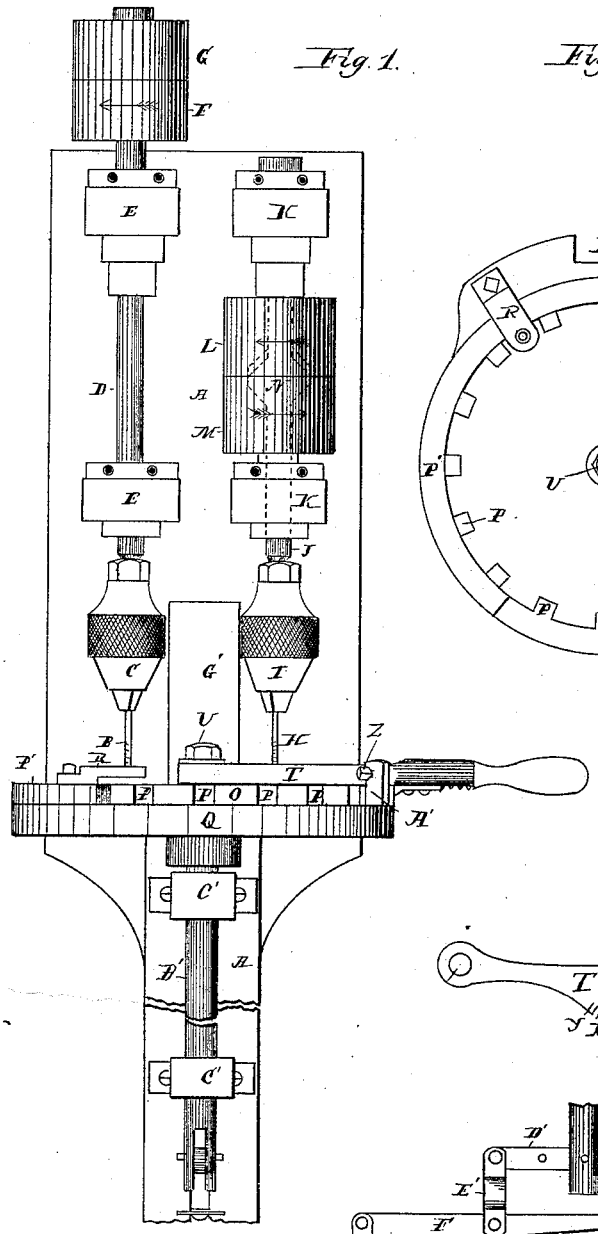


Fig. 2.

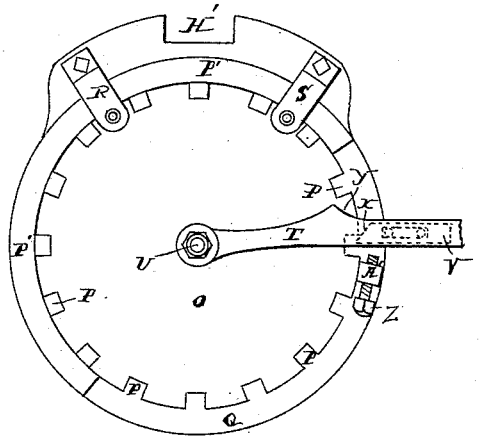


Fig. 3.

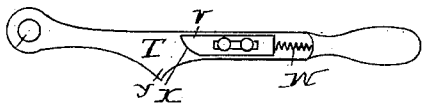
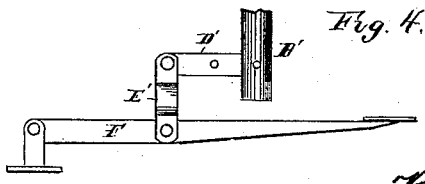


Fig. 4.



WITNESSES:

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HARRY W. BARNES AND GILBERT H. BLAKESLEY, OF BRISTOL, CONNECTICUT; SAID BLAKESLEY ASSIGNOR TO SAID BARNES.

NUT DRILLING AND TAPPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 342,496, dated May 25, 1886.

Application filed December 21, 1885. Serial No. 186,385. (No model.)

To all whom it may concern:

Be it known that we, HARRY W. BARNES and GILBERT H. BLAKESLEY, residing at Bristol, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Machines for Drilling and Tapping Nut-Blanks and similar Articles; and we do declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, which form a part of this specification.

Our invention relates to an improvement in machines for drilling and tapping nut-blanks and similar articles, the object being to produce a simple machine having a large capacity for work.

With these ends in view our invention consists in the combination, with a drill and tap and means for operating them, of a rotary dial-plate having pockets in its periphery to receive the work, and means for rotating the dial-plate, the drill and tap and the pockets in the dial-plate being relatively arranged for drilling a blank and tapping a drilled blank at the same time.

Our invention further consists in the combination, with a drill and tap and means for operating them, of a rotary dial-plate having pockets in its periphery to receive the work, and a lever adapted to rotate the dial-plate and eject the work therefrom, the drill and tap and the pockets in the dial-plate being relatively arranged for drilling a blank and tapping a drilled blank at the same time.

Our invention further consists in certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in front elevation of a machine embodying our invention. Fig. 2 is a detached plan view of the dial-plate, its bed, the lever, and the guards. Fig. 3 is a detached reverse plan view of the lever; and Fig. 4 is a broken view, in side elevation, showing the treadle-connections for the vertical movement of the dial-plate and its bed.

The frame A of the machine may be of any suitable construction. The drill B is held in a chuck, C, carried by an upright shaft, D, which is mounted in bearings E E, secured to the frame A, and provided at its upper end with a fixed pulley, F, through which it is driven, and with a loose pulley, G. The tap H is held in a chuck, I, carried by a shaft, J, mounted in bearings K K, secured to the said frame A, carrying pulleys L and M, respectively driven in opposite directions, and provided with a conical friction-clutch, N, through which it is engaged with the said pulleys and reversed in the direction of its rotation. The dial-plate O is provided at its periphery with square pockets P to receive the nut-blanks, the drill B, the tap H, and the said pockets being relatively arranged so that a blank will be presented to the drill for drilling and a drilled blank presented to the tap for tapping at the same time. While the pockets in the dial-plate are square, as herein shown, it will be understood that their shape may be varied to suit the work done upon the machine. The blanks are prevented from escaping laterally from the pockets in the dial-plate from the time of their introduction into them until after they have been drilled and tapped by means of a segmental guard, P′, secured to the bed Q, upon which the dial-plate rests. Guards R and S, also secured to the said bed Q, extending over the edge of the same, and respectively registering with the drill B and tap H, which they are perforated to receive, are provided for preventing the blanks from being vertically displaced from the pockets in the dial-plate while they are being operated upon and from being withdrawn therefrom by adherence to the drill and tap when the dial-plate is lowered, as will be hereinafter described. The dial-plate is rotated and the finished work ejected therefrom by a lever, T, working upon its upper face and pivoted by a bolt, U, passing centrally through it to the bed Q aforesaid. A reciprocating dog, V, actuated by a spring, W, and carried upon the under face of the lever, is engaged with the pockets in the dial-plate when the lever is drawn back away from the tap or toward the operator, and automatically disengaged through its beveled face X from the previously engaged pocket when the

lever is moved forward toward the tap and away from the operator. A beveled shoulder or nose, Y, located upon the lever is provided for engaging with and ejecting the finished work when the lever is moved forward for engaging the dog with another pocket in the dial-plate for rotating the same, and the beveled shoulder or nose being in advance of the dog, so far as the forward movement of the lever is concerned, it ejects the finished piece from the pocket, which is then ready to receive the dog. A set-screw, Z, mounted in a lug, A′, located upon the bed Q aforesaid, is provided to stop the lever as it is drawn back in position to register an undrilled blank with the drill and a drilled blank with the tap, and thus gages the movement of the dial-plate. The bed Q of the said dial-plate is mounted upon an upright spindle, B′, supported in bearings C′ C′, secured to the frame A of the machine. The lower end of such spindle is connected through levers D′ and E′ with a treadle, F′, by means of which it is operated to vertically reciprocate the bed Q and the dial-plate, the bed being guided in such reciprocation by an upright guide, G′, secured to the frame A of the machine and entering a slot, H′, formed in the bed, as shown.

In operating the machine the blanks are fed to the dial-plate with one hand, and the lever operated with the other hand. When the dial-plate has been rotated to bring an undrilled blank and a drilled blank, respectively, under the drill and the tap, the treadle is depressed to raise the dial-plate and press the blanks against the drill and tap, operating to lift the latter and engage the conical friction-clutch of its shaft with the upper pulley, which then drives the shaft and tap. The lifting of the bed and dial-plate is continued until the drill and tap have passed through the respective blanks, after which the pressure on the treadle is relieved to lower the dial-plate, which is followed by the engagement of the said conical friction-clutch with the lower pulley and the reversal of the tap. Then after the dial-plate has been lowered below the range of the drill and tap it is rotated by the lever, which ejects a finished nut and brings an undrilled blank under the drill and a drilled blank under the tap, and the operation described is repeated.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a machine for drilling and tapping nut-blanks and similar articles, the combination, with a drill and tap and means for operating them, of a rotary dial-plate having pockets in its periphery to receive the work, and means for rotating the dial-plate, the drill and tap and the pockets in the dial-plate being relatively arranged for drilling a blank and tapping a drilled blank at the same time, substantially as set forth.

2. In a machine for drilling and tapping nut-blanks and similar articles, the combination, with a drill and tap and means for operating them, of a rotary dial-plate having pockets in its periphery to receive the work, and a lever adapted to rotate the dial-plate and eject the work therefrom, substantially as set forth.

3. In a machine for drilling and tapping nut-blanks and similar articles, the combination, with a drill and tap and means for operating them, of a rotary dial-plate having pockets in its periphery to receive the work, and a lever for rotating the dial and ejecting the work, and provided with a spring-actuated dog and a beveled shoulder for such purposes, substantially as set forth.

4. In a machine for drilling and tapping nut-blanks and similar articles, the combination, with a drill and a tap and means for operating them, of a rotary dial-plate having pockets in its periphery to receive the work, means for rotating the dial-plate and ejecting the work, and guards to prevent the lateral or vertical escape of the work from the dial-plate from the time it is fed into the same until after it has been finished, substantially as set forth.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

HARRY W. BARNES.
GILBERT H. BLAKESLEY.

Witnesses:
CARLYLE F. BARNES,
WALLACE BARNES.