2 Sheets—Sheet 1.

# J. R. BLAKESLEE.

## NUT-MACHINE.

No. 193,215. Patented July 17, 1877.

Fig. 1.

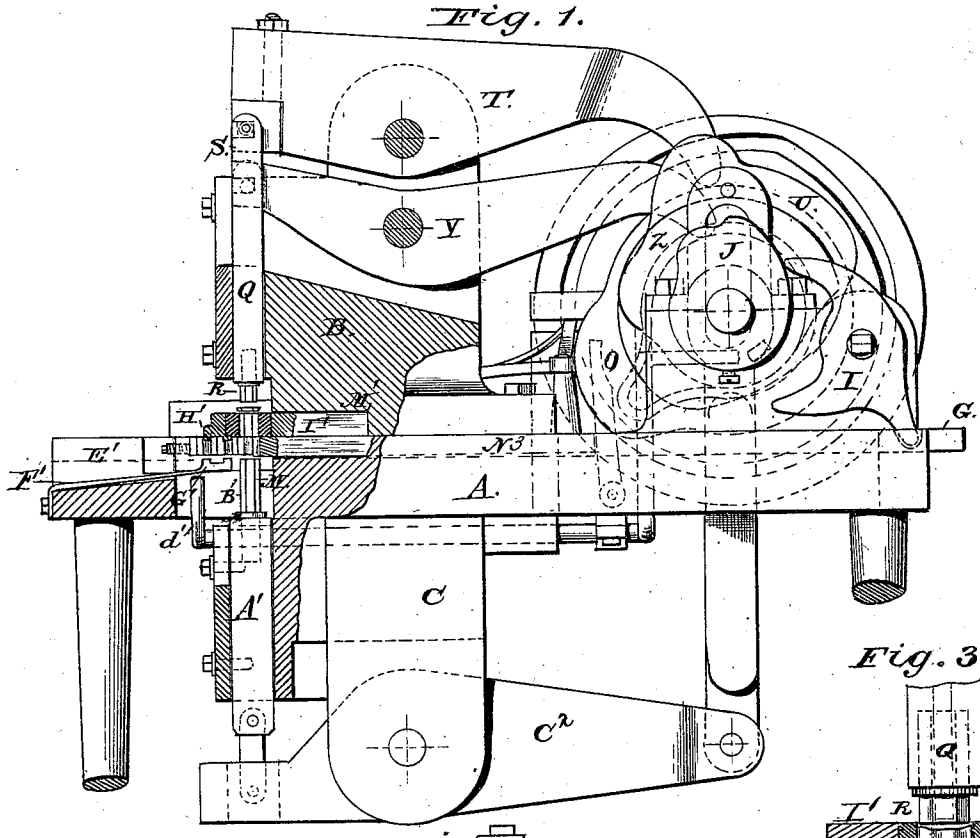



Fig. 3.

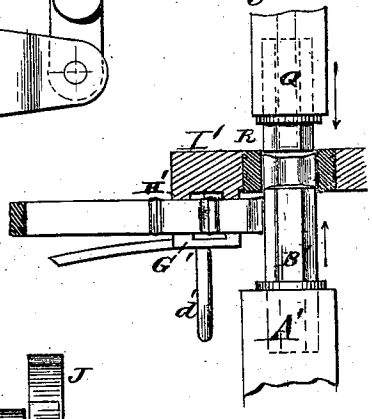
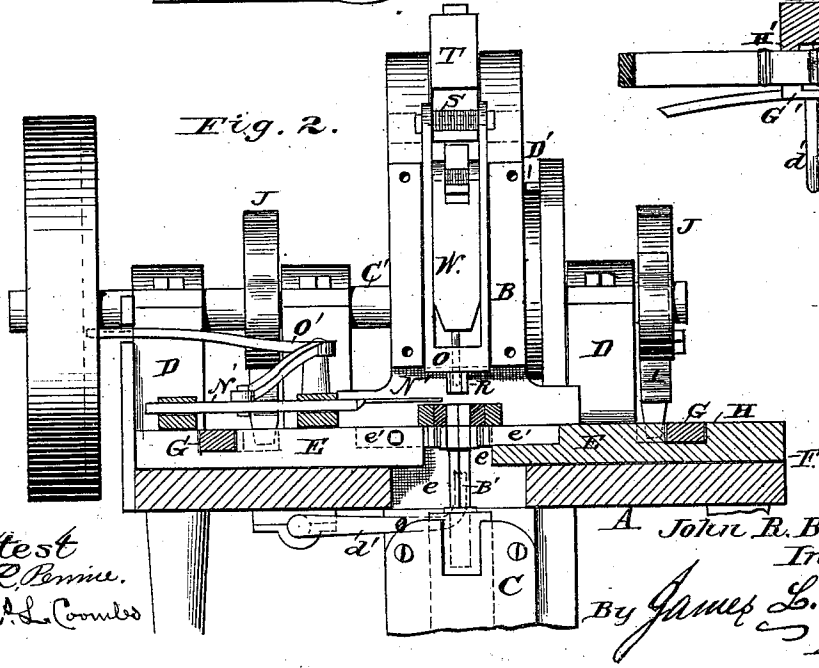



Fig. 2.




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2 Sheets—Sheet 2.

# J. R. BLAKESLEE.

## NUT-MACHINE.

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Fig. 4.

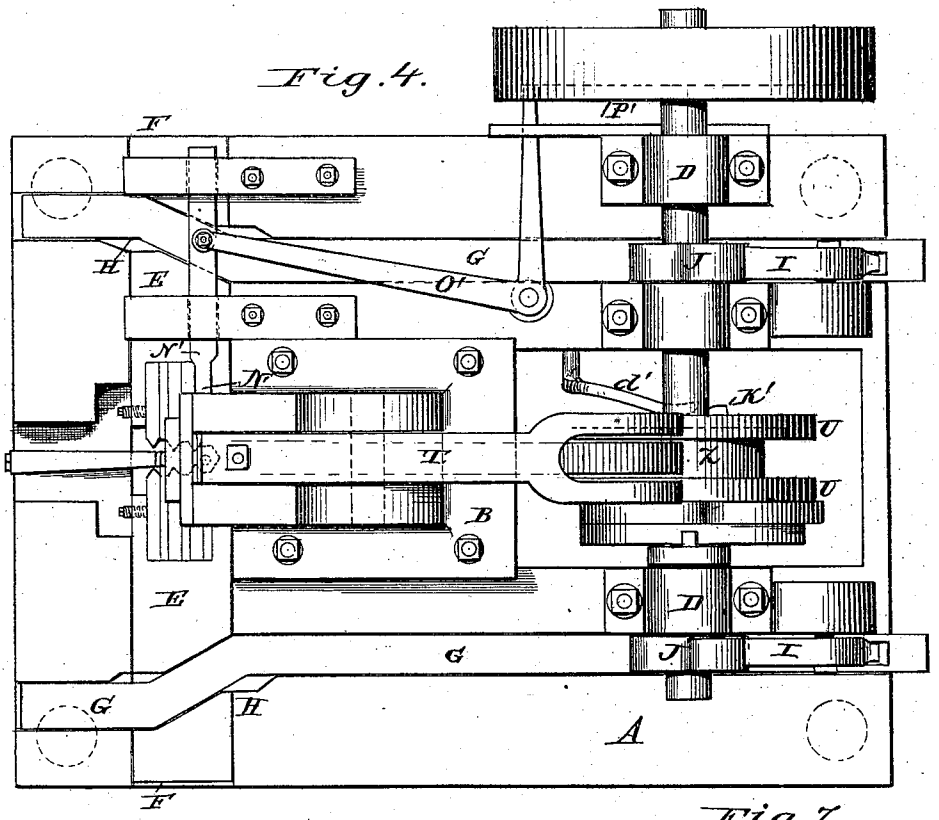



Fig. 5.

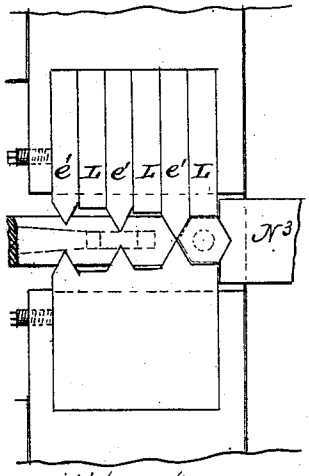



Fig. 6.

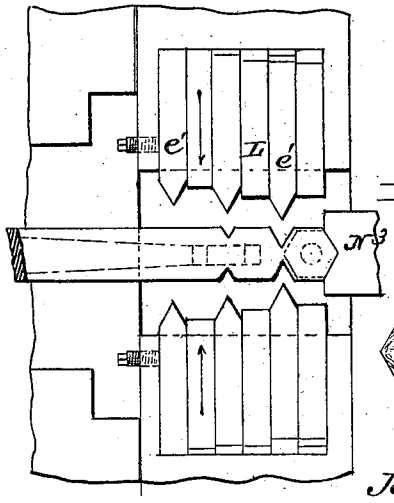



Fig. 7.

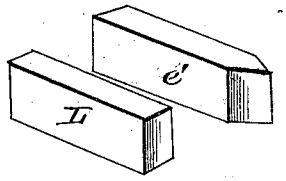
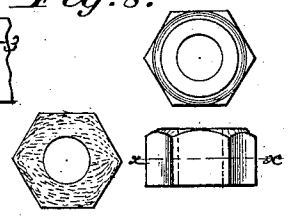



Fig. 8.



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# UNITED STATES PATENT OFFICE.

JOHN R. BLAKESLEE, OF CLEVELAND, ASSIGNOR OF ONE-HALF HIS RIGHT TO ERASTUS E. PIERCE, OF CUYAHOGA FALLS, OHIO.

## IMPROVEMENT IN NUT-MACHINES.

Specification forming part of Letters Patent No. **193,215**, dated July 17, 1877; application filed June 4, 1877.

*To all whom it may concern:*

Be it known that I, JOHN R. BLAKESLEE, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Machines for Making Hot-Pressed Nuts, of which the following is a specification:

This invention relates to certain improvements in the construction of nut-blanks and apparatus therefor.

The invention consists, first, in the combination, with the cutters, the mechanism for operating the same, and a gage at the rear of said cutters, of a finishing-die and two pressing-dies, and mechanism for operating the same, as more fully hereinafter set forth; second, in the combination, with the final cutters and the gage, of the series of angular cutters and a hammer located at the rear of each final cutter, for the purpose of squaring the sides of the blank before it is fed to the finishing-die; third, in the combination, with the cutters for cutting the nut-blanks, of a clamp and mechanism for operating the same, to prevent the blanks from cocking during the operation of cutting the nuts; fourth, in the combination, with the cutters and finishing-die, of a gage for holding the end of the blank, supporting it against the action of the final cutters, and retaining the nut when separated in position to enter the finishing-die, as more fully hereinafter set forth; fifth, in the combination, with the cutters and their operating mechanism, and the gage at the rear of said cutters, of the clamps for grasping the blank, and the finishing and pressing dies, and their operating mechanism, the whole adapted to operate together, as more fully hereinafter set forth.

In the drawings, Figure 1 represents a side elevation broken away, showing section; Fig. 2, a front view; Fig. 3, an enlarged view of die and plungers in act of compressing a nut; Fig. 4, a plan view. Fig. 5 is an enlarged plan view of cutters in act of cutting off a nut. Fig. 6 is a plan view of cutters opened ready to commence a new nut; Fig. 7, detached views of cutter and partition; Fig. 8, detached views of the nut.

The letter A represents the bed or frame of the apparatus, constructed of metal or other suitable material possessing requisite strength. B is a vertical standard upon the upper face of said frame, and C is a hanger below the bed or table for supporting the plungers and the levers by which they are put in motion.

The letter $C^1$ represents the driving-shaft of the machine, journaled in boxes D D at the rear of the frame or bed, having a driving-wheel mounted upon one end, by means of which motion is imparted to the various working parts through the medium of suitable cams mounted on the driving-shaft.

The letters E E represent two reciprocating slides adapted to move to and from each other in transverse ways F F in the upper face of the front of the frame or bed A, said slides being actuated by means of the inclined portions of the reciprocating bars G G, which set into and work in inclined recesses H H in the slides, the said bars being secured in longitudinal ways in the upper face of the table A, in which they have a reciprocating motion imparted through the medium of the rocking levers I I, pivoted to the journal-boxes of the driving-shaft, and operated by means of the cams J J, mounted on said rock-shaft.

The inner ends of the slides E E are provided with rectangular recesses *e e*, for the reception of the cutters *e' e' e'*, by means of which the blanks are cut. The cutting-ends of said cutters are angular in shape, and two or more of these cutters are employed in each cutter-slide. Three of these cutters are represented, in the present instance, in each cutter-slide. Said cutters are arranged at equal distances apart, being properly spaced to separate the blank at successive progressive cuts each time the cutters approach each other, severing one nut entirely, and making two partial cuts of unequal depths from opposite sides toward the center of the bar at the same time.

The cutters are preferably separated by means of a series of blanks or partitions, L L L, which are made of gradually-decreasing length, the last or final ones, at the rear of the final cutters, serving as hammers to square

the sides of the nut, which become rounded by the action of the cutters previously to the nut being fed into the finishing-die.

The letter $N^3$ represents a gage located at the rear of the cutters, the object of which is to hold the nut up closely to the action of the final cutters.

The letter Q represents a vertically-reciprocating plunger, carrying at its lower end a die, R, said slide traveling in ways in the front of the standard B, and actuated therein by means of a link, S, secured to its upper end and to the forward end of a lever, T, which is operated by means of the cams U U on the driving-shaft in one direction—in the other by means of a spring or other suitable device. Within said reciprocating plunger Q is a reciprocating bar, W, which carries a punch at its lower end, and is actuated by means of the lever Y and the cam Z on the driving-shaft of the machine.

The letter A′ represents a vertically-reciprocating plunger, moving in ways in the hanger C, and provided with a die, B′, at its upper end, and is actuated by a lever, $C^2$, which is, in turn, operated by means of a reciprocating bar put in motion by the cam D′ on the driving-shaft of the machine.

The letter E′ represents the feed-opening of the machine, within which is located a spring-clamp, F′, having jaws G′, which are adapted to act in conjunction with similar jaws H′ on the under side of the finishing-die I′, to clamp and hold the blank bar, and prevent it from cocking during the operation of cutting a hexagonal nut-blank.

The clamp is operated to seize the blank at the proper time by means of a lever, *d′*, extending under the table to the rear of the machine, and operated by means of a stud, K′, on the cam U.

The letter I′ represents the finishing-die, which is adjustably secured in a recess, M′, below the standard B and $N^1$, the clearer consisting of a reciprocating rod operated by the lever O′ and cam-groove P′ in the driving-wheel of the machine, to throw the finished nut-blank from the finishing-die.

The operation of my apparatus is as follows: In commencing, the blank bar is cut in any convenient manner, by hand or otherwise, properly at the end to subject it properly to the action of the cutters. It is then fed into the machine, with its end resting against the gage, and the machine is put in operation.

The cutters coming together sever the end of the blank, forming the two final sides of the nut, which is separated, and the two initial sides of the succeeding nut on the end of the bar at the same time. This severed blank is then, by the action of the lower plunger, carried up into the finishing-die. The upper plunger then advances, and, acting with the lower plunger, presses the nut in the finishing-die, while the punch within the upper plunger forms the hole in the nut.

At the next succeeding operation, the nut previously made is forced out of the finishing-die, and is thrown off by the clearer. While the cutters are advancing on the blank bar and cutting into the same, the clamp will be pressed up against it, holding the bar, and preventing any cocking from the action of the cutters in the formation of a hexagonal nut, or the forcing of the bar backward, and the beveling of the end of the same, in case a square nut is being cut.

The nut-bar being cut from each side toward the center, the fibers of the finished nut will, by the action of the angular cutters, be forced or upset around the sides of the nut in the direction of the length of the bar, whereby it will be materially strengthened, and all tendency of the nut to burst at right angles will be prevented.

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

1. The combination, with the cutters, the mechanism for operating the same, and the gage at the rear of said cutters, of the finishing-die and the compressing-dies and mechanism for operating the same, substantially as set forth.

2. In combination with the final angular cutters and the gage, the hammers located at the rear of said cutters, for the purpose of squaring the sides of the nut-blank before it enters the finishing-die, substantially as set forth.

3. In combination with the cutters for cutting the nut-blanks, the clamp for grasping the blank, and the bent lever and cam for actuating the same, for preventing the bar from cocking during the operation of cutting and severing the nut, substantially as described.

4. In combination with the cutters and finishing-die, the gage for holding the end of the blank, supporting it against the action of the final cutters, and retaining the nut, when separated, in position to enter the finishing-die, substantially as set forth.

5. The combination, with the cutters, their operating mechanism, and the gage at the rear of said cutters, of the clamps for grasping the blanks, finishing-die, and the compressing-dies and their operating mechanism, all constructed to operate together substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of the subscribing witnesses.

JOHN R. BLAKESLEE.

Witnesses:

JAMES L. NORRIS,

J. A. RUTHERFORD.