(No Model.) 2 Sheets—Sheet 1.

T. DONAHUE & W. W. CONE.

MACHINE FOR PUNCHING LOCK PLATES.

No. 315,749. Patented Apr. 14, 1885.

Fig. 1.

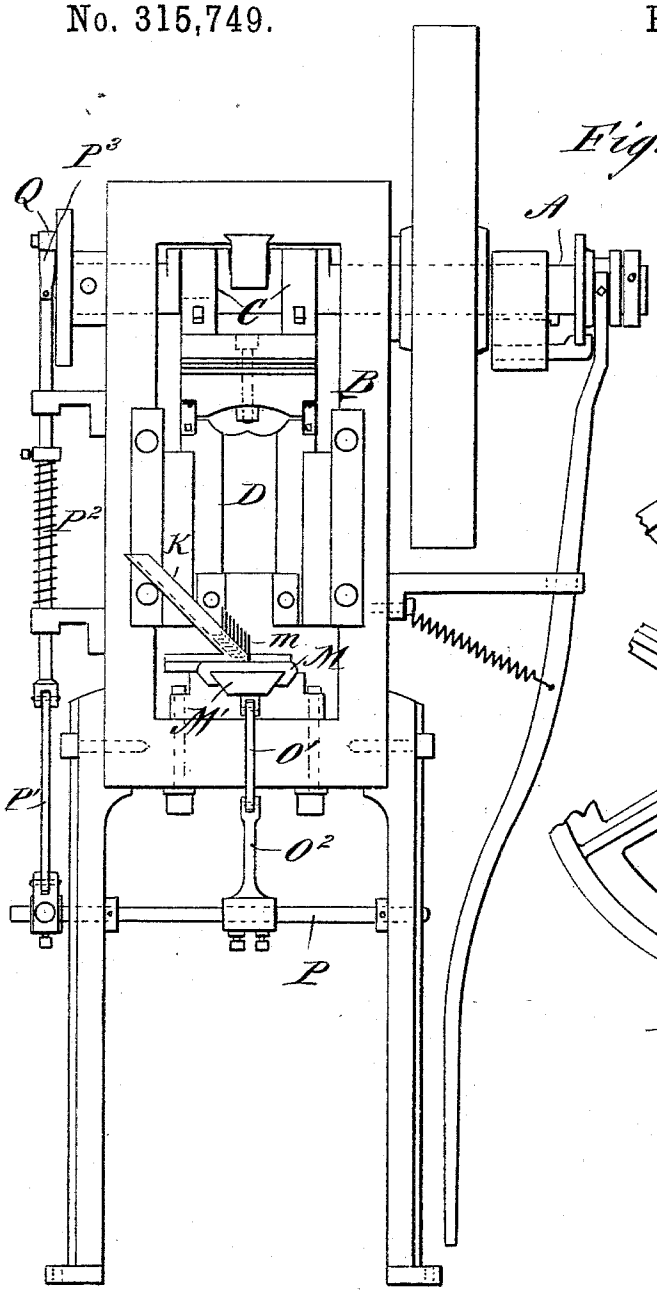
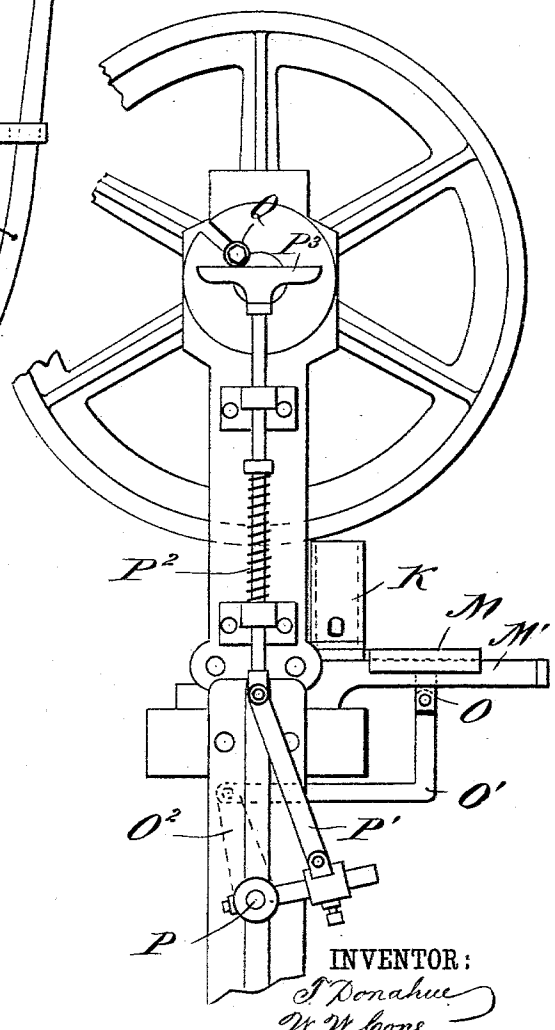


Fig. 2.



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Fig. 3.

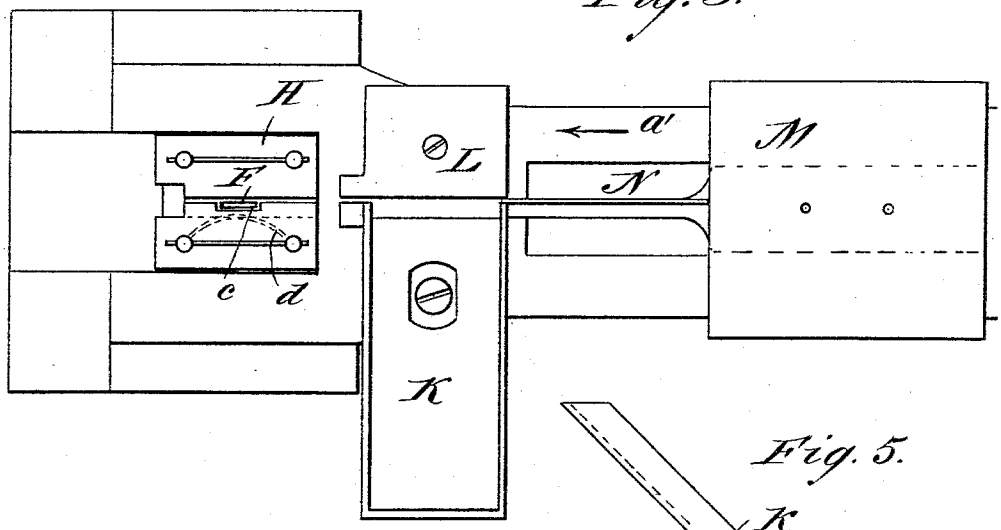


Fig. 5.

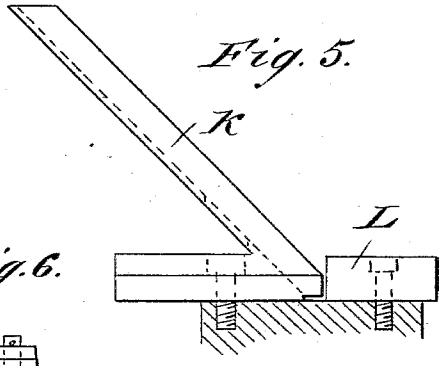


Fig. 4.

Fig. 6.

Fig. 7.

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UNITED STATES PATENT OFFICE.

THOMAS DONAHUE AND WILLIAM W. CONE, OF TERRYVILLE, CONNECTICUT, ASSIGNORS TO THE EAGLE LOCK COMPANY, OF SAME PLACE.

MACHINE FOR PUNCHING LOCK-PLATES.

SPECIFICATION forming part of Letters Patent No. 315,749, dated April 14, 1885.

Application filed July 15, 1884. (No model.)

To all whom it may concern:

Be it known that we, THOMAS DONAHUE and WILLIAM W. CONE, of Terryville, county of Litchfield, and State of Connecticut, have invented a new and Improved Machine for Punching Lock-Plates, of which the following is a full, clear, and exact description.

The object of our invention is to provide a new and improved machine for punching lock-plates accurately, rapidly, and cheaply.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front view of our improved machine for punching lock-plates. Fig. 2 is a side view of the same, parts being broken out. Fig. 3 is an enlarged plan view of the die, the hopper, and the feed-slide. Fig. 4 is an enlarged sectional elevation of the same. Fig. 5 is a side view of the hopper. Fig. 6 is an end view of the die. Fig. 7 is an end view of the punch and gage.

The shaft A, which is journaled to revolve in standards B, is provided with a suitable fly-wheel, and on the shaft A eccentrics C are provided, which operate a vertical slide, D, secured to a cross-head, E, guided between the standards B, which cross-head is provided in its bottom with an aperture for receiving the punch F, on which a rectangular bent arm, F′, is secured, in the downwardly-projecting part of which the gage G is pivoted, and is pressed by a spring, G′, against a screw, G^2, held in the end of the downwardly-projecting part. The gage has its inner lower corner beveled. The die-block H rests upon the die-bed I, on the bed proper, J, and the said die-block is provided with a longitudinal vertical slot, *a*, at the base of which a horizontal slot, *b*, is formed. The die is also provided with an aperture, *c*, through which the punch can pass. A curved spring-strip, *d*, is held in one part of the die, and is adapted to press against the edge of a lock-plate to be punched in the die.

A hopper, K, is held at an inclination of forty-five degrees to the die-bed I, directly in front of the die, and at the base of the hopper a stop, L, is provided, between which and the lower end of the hopper K an L-shaped slot is formed, through which a lock-plate can be moved. A carriage, M, slides on an arm, M′, projecting from the die-bed I, and from the said carriage a tongue, N, projects toward the die, the said tongue being L-shaped in cross-section, and being in line with the bottom of the hopper K and the slot *a* in the die, so that when the carriage is reciprocated the tongue N can push the lock-plate into the die. The carriage M is provided with a downwardly-projecting lug or pin, O, which is connected by an angle-bar, O′, with an arm, O^2, on the rocking shaft P, connected by a connecting-rod, P′, with a vertically-sliding rod, P^2, having a head, P^3, on which a cam-pin, Q, of a disk on the shaft A acts. The rod P^2 is surrounded by a spring for pressing it upward. The arm M′ is preferably beveled, and the sides of the carriage M are bent down over the said arm for the purpose of guiding the carriage and holding it on the arm M′, which forms a track. Behind the die an inclined plate, R, is provided, down which the lock-plates can slide.

The operation is as follows: The lock-plates *m*, which are bent rectangularly, so as to have a selvage, are placed in an upright position on the inclined hopper K, in such a manner that the outer edge of the selvage rests on the base of the hopper K, as shown in Fig. 1. The carriage M is reciprocated from the rocking shaft P by means of the crank-arm O^2 and the angular arm O′. The end of the tongue N of the carriage M strikes the edge of the lowest lock-plate, and pushes the said lock-plate in the direction of the arrow *a′* from the lower end of the hopper K into the L-shaped slot *a b* of the die H. By this time the punch F is moved downward, the gage G, which has been previously adjusted in the proper position, strikes the edge of the lock-plate held in the die, and thus adjusts the said lock-plate in the proper position. The punch F is forced through the selvage of the lock-plate and provides the same with the required slot or hole. The punched lock-plate remains in the die until the next plate is forced into the die, and thereby pushes out the stamped plate. When the tongue is withdrawn, all the lock-plates *m* slide down the hopper.

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

1. The combination, with a punch and with a die having an L-shaped slot, of a sliding carriage provided with a tongue having an L-shaped cross-section, and of a hopper located between the sliding carriage and the die, substantially as herein shown and described.

2. The combination, with the die H and the punch F, of the inclined hopper K, the plate L at the base of the hopper, and the sliding carriage M, provided with a tongue, N, adapted to pass through the space between the lower end of the hopper and the plate L, substantially as herein shown and described.

3. The combination, with the punch F, of the die H, having an L-shaped slot, *a b*, and provided with a spring, *d*, substantially as herein shown and described.

4. The combination, with a die, of a vertically-movable punch provided with an adjustable gage held on an arm of the punch, substantially as herein shown and described.

5. The combination, with the die H, of the punch F, the pivoted gage G, the spring G′, and the adjusting-screw G^2, substantially as herein shown and described.

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Witnesses:
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