

(No Model.)

3 Sheets—Sheet 1.

J. H. BATCHELDER.

FEEDING MECHANISM FOR EGG CASE MACHINES.

No. 362,482.

Patented May 10, 1887.

Fig. 1.

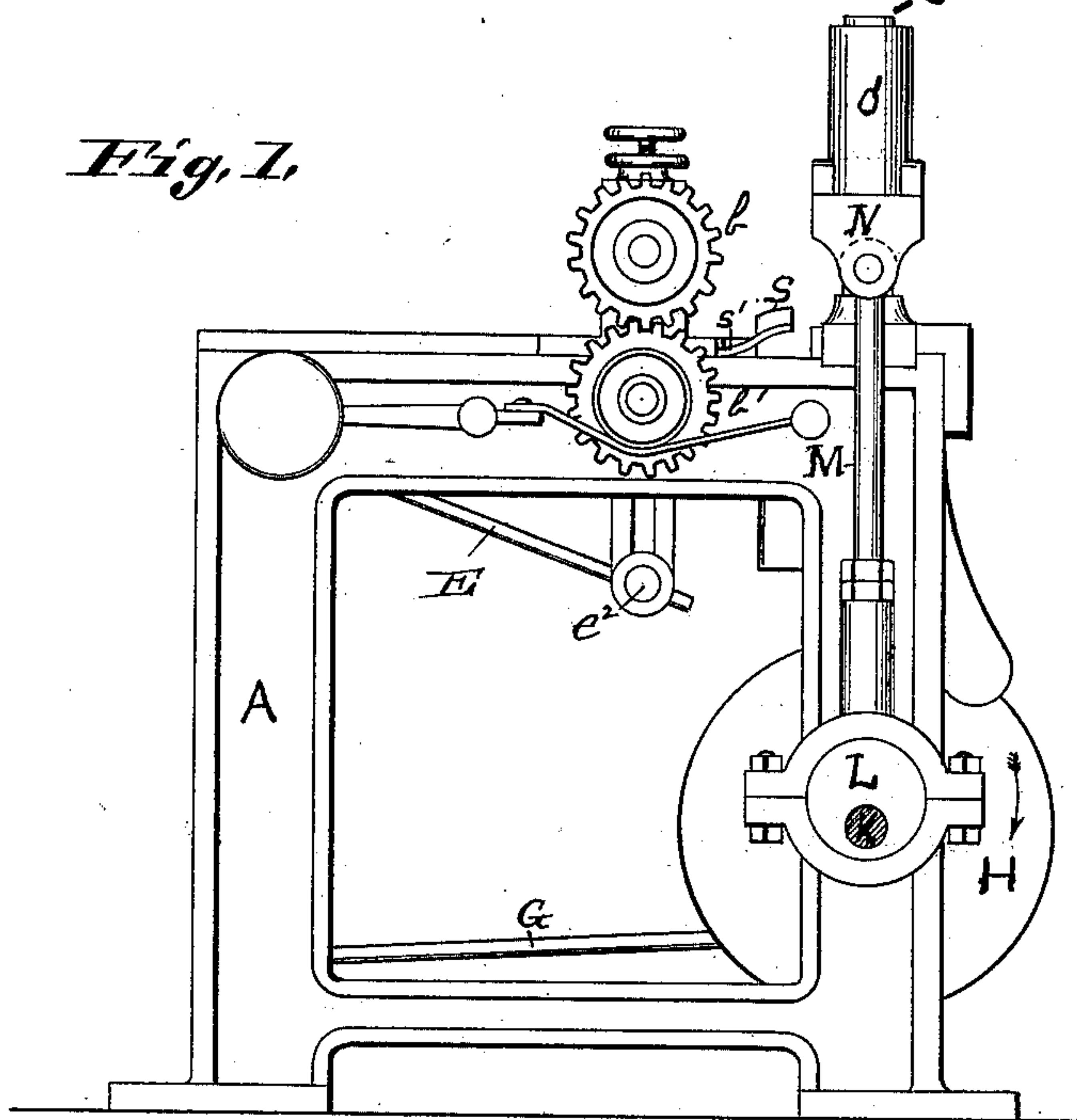
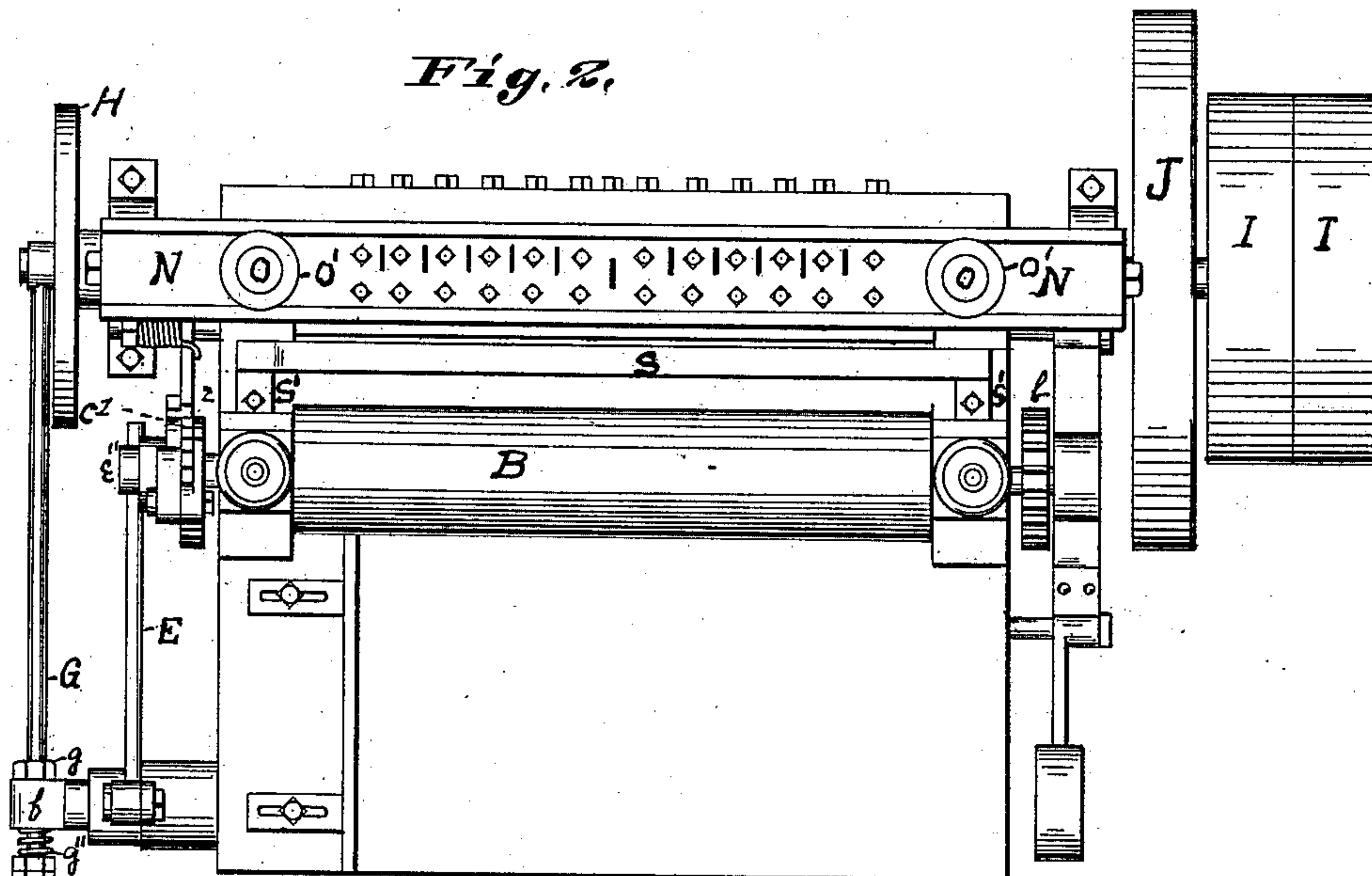


Fig. 2.



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(No Model.)

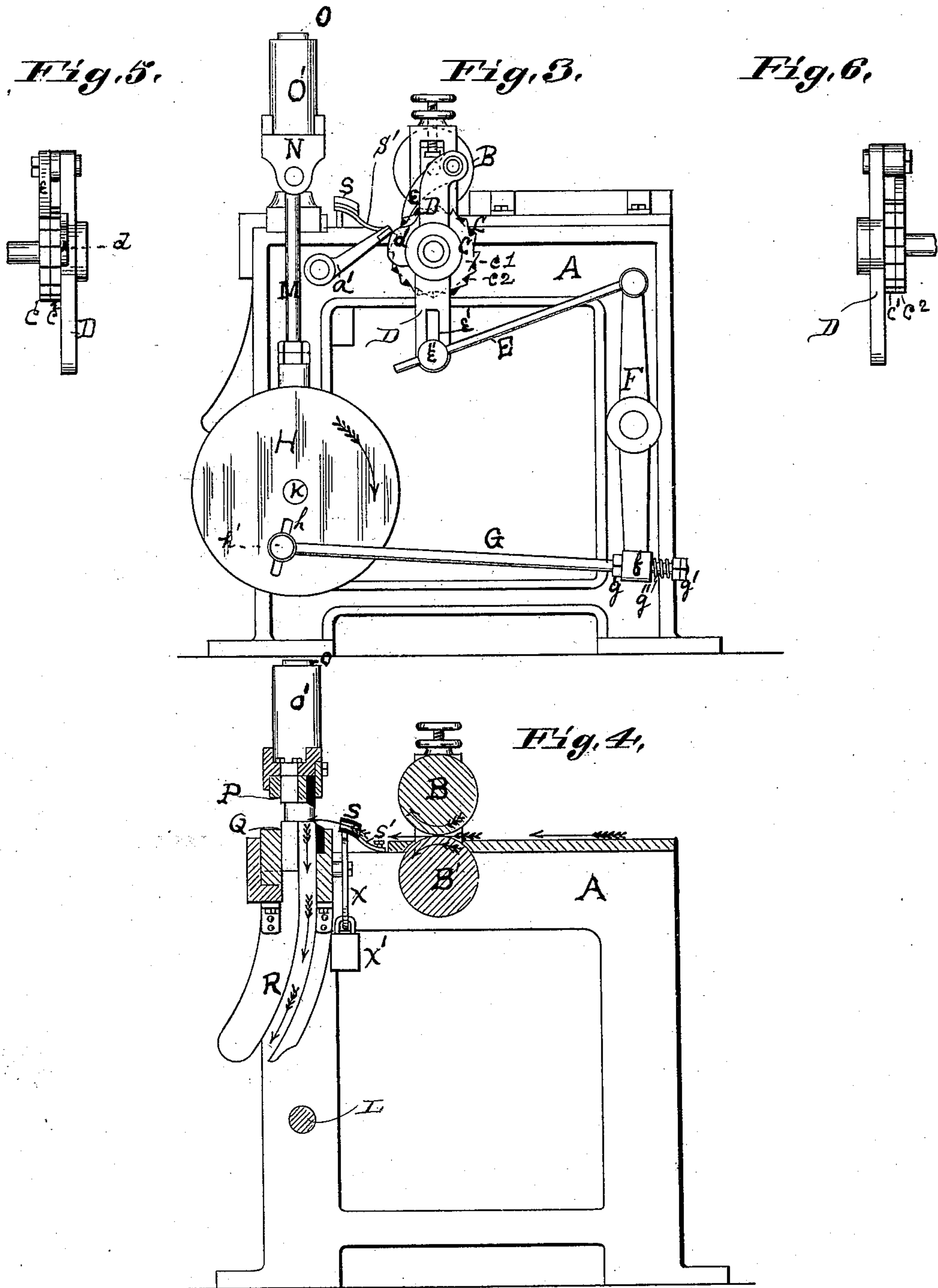
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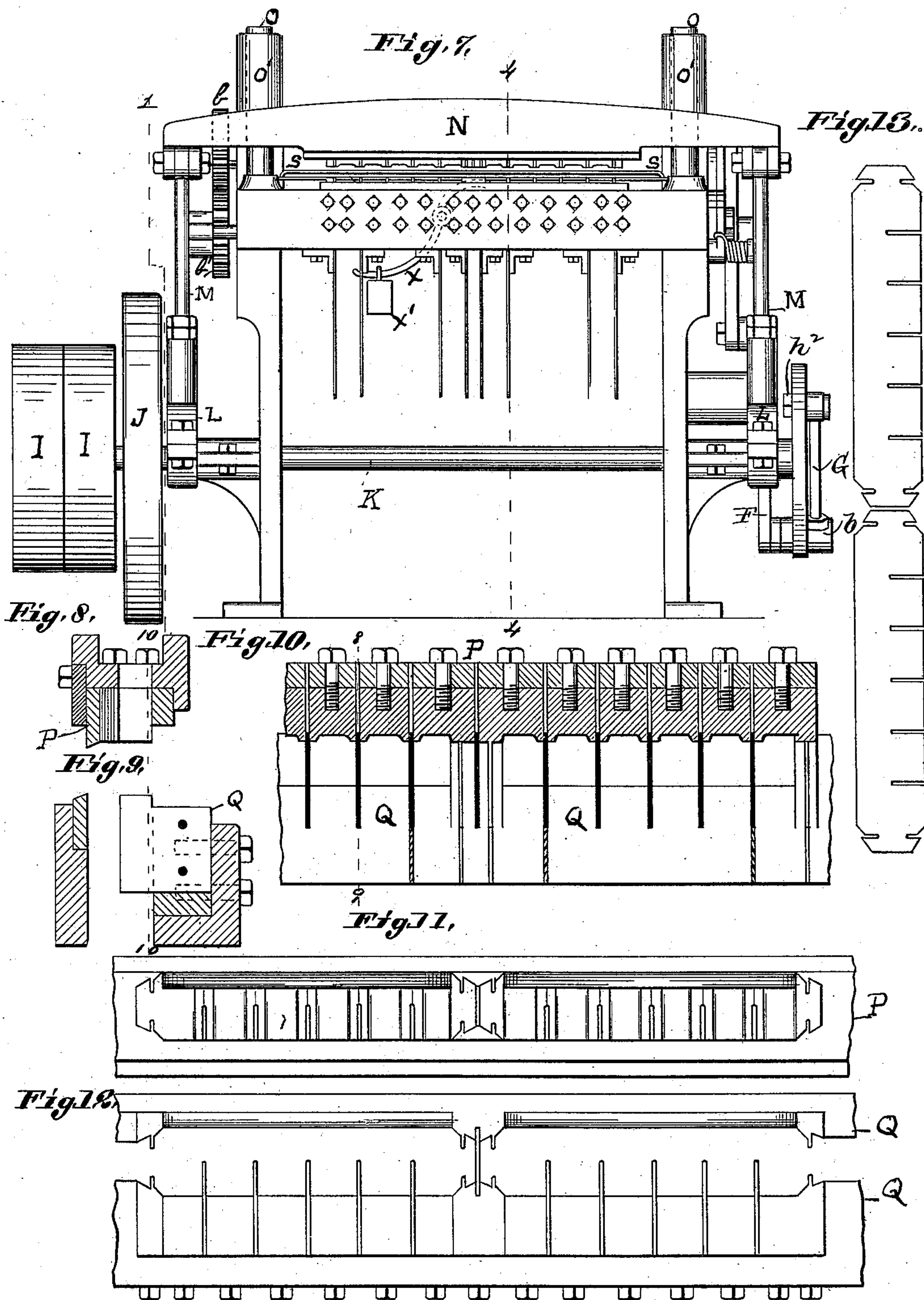
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UNITED STATES PATENT OFFICE.

JAMES H. BATCHELDER, OF ST. LOUIS, MISSOURI.

FEEDING MECHANISM FOR EGG-CASE MACHINES.

SPECIFICATION forming part of Letters Patent No. 362,482, dated May 10, 1887.

Application filed June 22, 1885. Serial No. 169,433. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. BATCHELDER, of the city of St. Louis and State of Missouri, have made a certain new and useful Improvement in Feeding Mechanisms for Egg-Case Machines, of which the following is a full, clear, and exact description, reference being had to the annexed drawings, in which—

Figure 1 is a vertical section on line 1 1 of Fig. 7; Fig. 2, a top view of the same. Fig. 3 is an elevation of one side, showing the feeding mechanism. Fig. 4 is a vertical section on line 4 4 of Fig. 7. Fig. 5 is a front elevation of the ratchet-gear. Fig. 6 is a rear elevation of the ratchet-gear. Fig. 7 is a front elevation of the machine. Fig. 8 is a vertical section through upper dies, on line 8 9 of Fig. 10. Fig. 9 is a vertical section of lower die, on line 8 9 of Fig. 10. Fig. 10 is a vertical section on line 10 10 of Figs. 8 and 9, with dies together. Fig. 11 is a bottom view of the upper die. Fig. 12 is a top view of the bottom die. Fig. 13 is an elevation of the cut blank.

My invention relates to machines for cutting blanks to form trays for egg-cases; and it consists in the improvement in such machine, hereinafter described, and specified in the claim.

Like letters refer to like parts wherever they appear in the drawings.

The construction of my improved machine is as follows: Mounted upon a suitable frame-work, A, are two horizontal feed-rollers, B B'. These rollers are arranged one above the other, as shown in Figs. 1 and 3 of the drawings. They are provided with cog-wheels *b b*, gearing into each other, by means of which rotary motion is imparted from one roller to the other. At the opposite end the lower one of these rollers is provided with two ratchet-wheels, *c' c'*, hung together, but with their teeth pointing in opposite directions. (See Fig. 3.)

Pivoted to the neck of the lower roller, B', is a rocking lever, D, having a cam, *d*, and a pivoted pawl, *e*. In the lower arm of the lever D is a longitudinal slot, *e'*, fitting loosely in which slot is a pin, *e''*, which is secured to the connecting-rod E, which rod is at its other end pivoted to the one arm of the rocking lever F, which lever is pivoted to the frame A. At the end of the other arm of the lever F is an eye, *f*, fitting loosely in which is the

connecting-rod G, having nuts *g g'* on each side of the eye *f*, and a spiral spring, *g'*, encircling the rod between the eye and the outer nut. Secured to the other end of the rod G is a pin, *h'*, which fits loosely in a slot, *h*, situate eccentrically in the wheel H. The rotary wheel H is keyed to a main driving-shaft, K.

Motion is imparted to the shaft K, in any suitable manner, as by the belt and belt-wheel I.

J is the fly-wheel attached to the driving-shaft K. Keyed to this driving shaft K, preferably at both ends of the same, are two eccentric cams, L L. Surrounding these cams are collars on the ends of two vertical rods, M M, and at their upper ends these vertical rods are pivoted to a horizontal beam or frame-work, N. This beam N, to which the vertical rods M are attached, has a vertical movement imparted to it by the rods M along the line of the vertical pillars O O, which are firmly attached to the frame A, and which pass through frame N, thereby acting as guides to the frame. This frame N is preferably provided with collars O', and it is made to contain female dies P. (Shown in Figs. 8, 10, and 11.)

Firmly placed in frame A, beneath the line of motion of the beam or frame N, and in a position correspondingly opposite to the position of the female dies P, are male dies Q. These dies P and Q are made so as to cut paper or other suitable material into blanks of the shape shown in Fig. 13; but I do not desire to limit myself to this particular form of the dies, as it may be desirable to cut blanks of a different shape. The upper or female dies, P, are attached to the beam or frame N, preferably as shown clearly in Fig. 10, by a screw attachment, which connects them with the body of frame-work or beam. The lower or male dies are secured to the frame A, and are connected therewith preferably by bolts, as shown in Fig. 9.

Under the part of frame A which holds the male dies Q in position is a conduit, R, into which the cut blanks drop as they are cut. Also attached to frame A is a pawl, *a'*, so situate as to come into engagement with the ratchet-wheel *c'*. A horizontal strip, S, slotted along its entire length, serves as a guide for the paper in directing it between the dies. It is shown in section in Fig. 4 of the drawings. It is also shown in full lines in Fig. 2. This

guide S has a certain amount of play by being connected with the frame A by a spring attachment, S', which allows of a slightly upward and downward movement, the purpose of which is to compensate for the movement of the paper as it is fed from the rollers in between the dies in the cutting, for the dies have a certain tendency to bear upon the paper and carry the paper up against the frame-work N.

To further insure the position of the guide S, opposite to the opening between the dies, at the time the paper is fed, the lever X is fulcrumed to the frame A, so that its short arm will bear up under the guide S, and its long arm, being preferably provided with a weight, x' , this lever will have a constant tendency to counteract the influence of the cutting-dies upon the paper being fed in to be cut, and will constantly bear upon the guide S, keeping it in a position opposite to the dies, as shown in Fig. 4.

Having thus described the construction of the apparatus, the operation of the same is as follows: Power being imparted to the main driving-shaft K, the shaft revolves in the direction of the arrow shown on wheel H. (See Fig. 3.) The effect of the rotation of wheel H is to cause the rod G to draw upon the lever F and to drive the upper end of the lever F (see Fig. 3) toward the right, consequently carrying with it rod E, which is connected, as herein stated, to the lever, which, being loosely journaled on the central axis of the lower roller, B', the upper and lower rollers, B B', being geared together, as before stated, causes the rollers to revolve, as I will describe. The rollers, however, do not by this motion make a complete revolution, but only a partial one. After the upper arm of the lever F has been thrown to the right by the motion just recited, the cam d on the lever D has lifted the pawl a' out of engagement with the teeth on the near ratchet c' , the pawl e bears down on a tooth of the inner ratchet-wheel, c^2 , thereby partially rotating the ratchet-wheels and imparting motion to roller B', which roller, after making a partial revolution, is stopped by the pawl a' dropping into engagement with a tooth on near ratchet-wheel c' as the cam passes away from the pawl, (see Fig. 3,) and thus the revolution of rollers B B', when the lever is driven to the right or back again to the left by the

revolution of wheel H imparting motion to the rod G, is only partial and only the distance measured by the length of one or two of the teeth of the ratchet-wheels $c' c^2$. At the same time that the driving-shaft K is imparting motion to the rollers B B' it is also imparting a reciprocating motion through eccentrics L to rods M M. This motion carries the beam or frame N along the line of its guides O O, thus moving the female or upper dies, P, up and down upon the lower or male dies, Q, which results in the operation of cutting or stamping out the blank shown in Fig. 13. Paper placed upon the upper part of the frame, at the point shown by the arrow in Fig. 4, is fed into the rollers B B', and through the opening into guide S. The paper being thus fed to this point of the opening between the dies, the next movement of the machine results in the movement of the upper die, through the movement of the eccentrics L and shaft M, to the position shown in Fig. 4, the rollers remaining stationary while the upper die is brought down, cutting the paper and forcing the blank into conduit R. (See Fig. 4.) At the time the upper die is driven down the rollers B B' remain stationary, and the tendency of the downward pressure of the upper die would be to press the paper in the guide S below the opening in the die, which tendency, however, is overcome by the lever X and weight x' bearing up against guide S, so as to present the paper at the next instant immediately in front of the opening between the dies as the paper is again fed forward.

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

In a paper-cutting machine, the combination of feed-rollers connected by cog-wheels, a double ratchet-wheel, $c' c^2$, and pawls $a' e$, and cam d , a rocking lever, D, having a slot, e' , and a lever, F, connected by a rod and pin with the slot e' , and by a rod and pin with the slot h in the driving-wheel H, substantially as and for the purpose described.

In testimony whereof I have affixed my signature, in presence of two witnesses, this 22d day of May, 1885.

JAMES H. BATCHELDER.

Witnesses:

PAUL BAKEWELL,
J. L. HORNSBY.