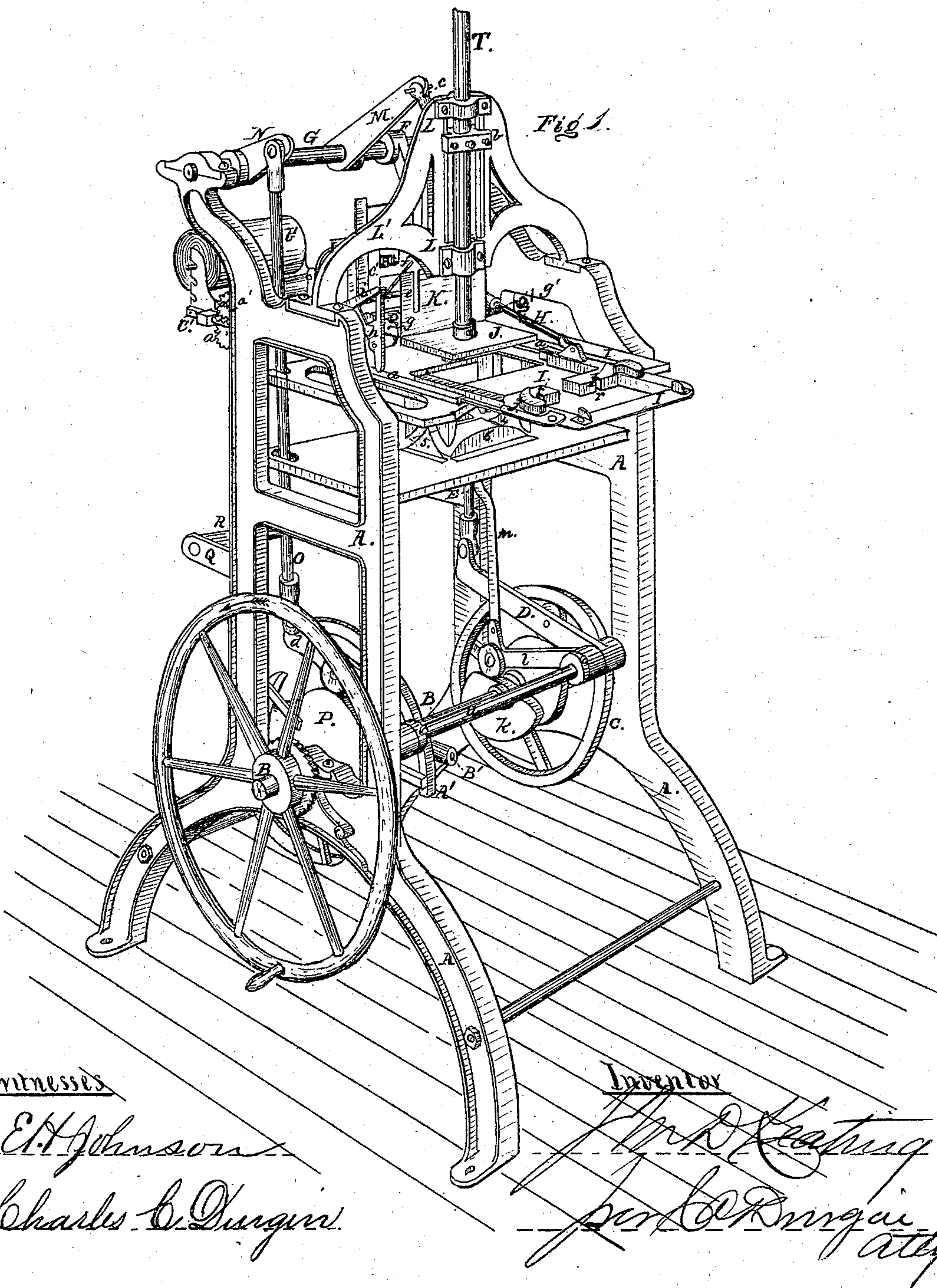


J. M. D. KEATING.  
Postal-Card Machines.

No. 138,028.

Patented April 22, 1873.



Witnesses

E. H. Johnson  
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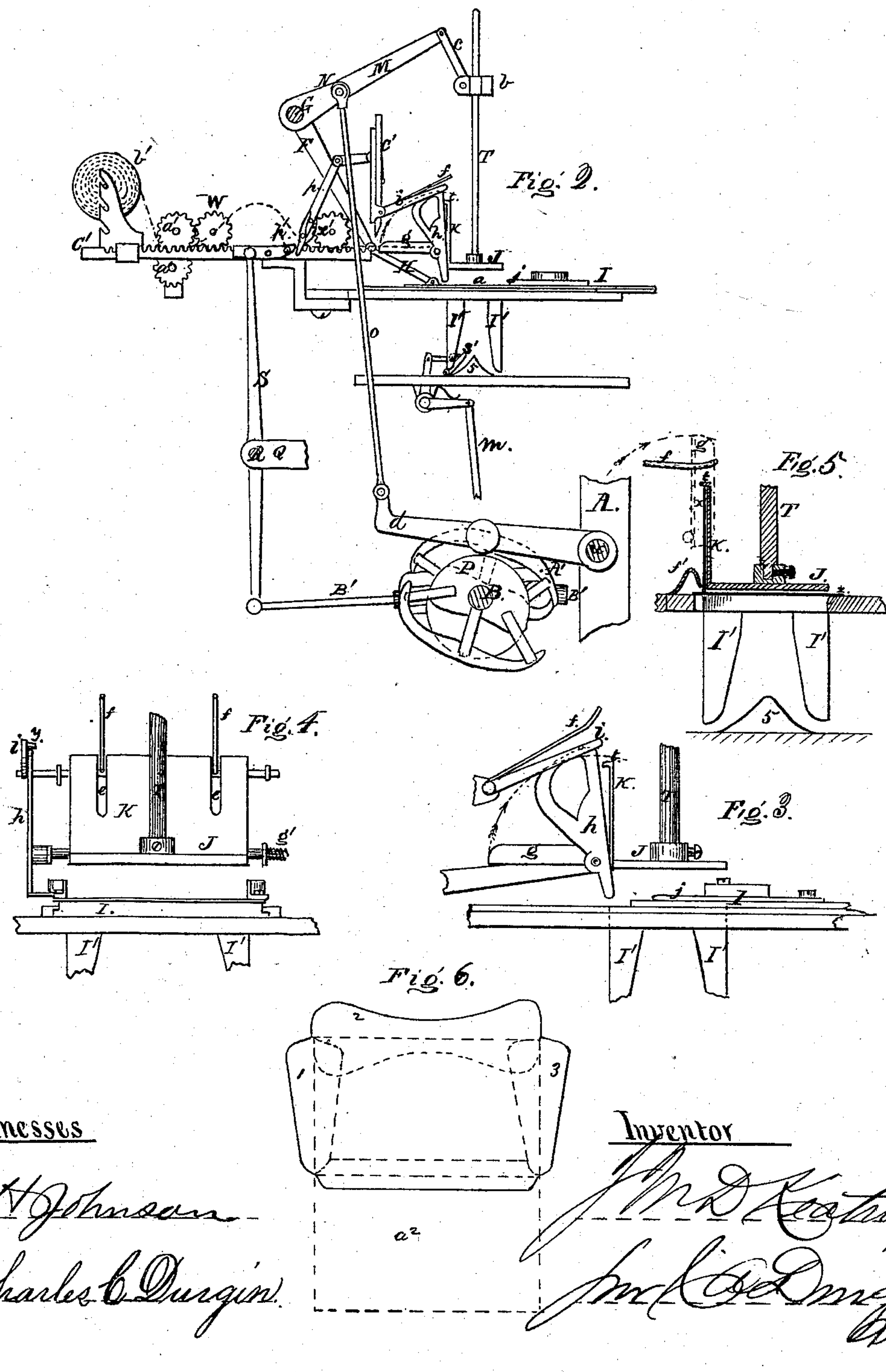
Inventor

J. M. D. Keating  
per C. B. Durgin  
atty

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*Att'y*



# UNITED STATES PATENT OFFICE.

JOHN M. D. KEATING, OF NEW YORK, N. Y.

## IMPROVEMENT IN POSTAL-CARD MACHINES.

Specification forming part of Letters Patent No. **138,028**, dated April 22, 1873; application filed July 3, 1872.

*To all whom it may concern:*

Be it known that I, JOHN M. D. KEATING, of the city, county, and State of New York, have invented certain Improvements in Machines for making Envelopes and Uniting Cards thereto, &c., of which the following is a specification:

### *Nature and Objects of the Invention.*

My said invention relates to machines for making and uniting the envelopes to cards used for correspondence, and called postal cards, in such a manner as to allow the envelope to be folded over the face of the card, thereby concealing the matter from view; and the machine has for its object to greatly facilitate the manufacture of such postal cards. My said invention consists in certain novel combinations and arrangements of parts which will be fully described hereafter.

### *Description of the Drawing.*

In the accompanying drawing, Figure 1 is a perspective view of a machine with my improvements. Fig. 2 is a vertical section of the machine without the frame. Figs. 3 and 4 are parts of the machine in detail. Fig. 5 is a sectional view of Fig. 3, and Fig. 6 is a plan view of the card and envelope folded and open.

Similar letters of reference indicate like parts in the drawing.

### *General Description.*

A A are side frames held in proper position by cross-rods passing through their legs and at the top by the head L'. This frame affords bearings for the main shaft B, which carries the cams giving motion to the various parts of the machine. The cam C on this shaft operates the lever D, and this lever, through the rod E and a short lever or arm on the rock-shaft G similar to the lever N, but on the other end of the shaft, gives a reciprocating motion to the arm F, and, as this arm F is linked to the form I, which slides in the grooves a a by the rod H, it will necessarily give it a similar intermittent reciprocating motion. It will be understood that the arm F and the short lever which is connected with the upper end of the rod E, are cast together on a sleeve which passes over and works freely on the shaft G,

so as to be entirely independent of whatever motion may be given to the shaft. On the main shaft B is another cam, P, which, through the medium of the lever d, rod o, and short arm N, produces a reciprocating motion in the long arm M, and, this being connected to the rod T by the link c and the cross-head b, it transfers its motion to it, and hence to the plunger J secured to the rod T, which rod reciprocates in the guides L L. On this former or plunger J is bolted or otherwise secured a plate, K, having slots e e cut vertically in it, and from the upper edge of this plate K small nibs or hooks t t project, and, as this plate K passes in close proximity with the form I during the descent of the former J to which it is attached, the nibs or hooks t t would naturally arrest its descent by striking against the form I, but this is provided for by the form having slots r r cut therein, which permit the nibs or hooks to pass it unobstructed. Immediately behind this plate K is arranged a fly, g, (see Figs. 2, 3, or 5,) shown in the drawing as made of one sheet, but which may be constructed as an ordinary printing-press fly. This fly has slots corresponding exactly to those in the plate K already mentioned. On the shaft to which the fly is attached is a cam or lifting-toe, h, plainly seen in Figs. 2 and 3. On this is a projection which lies almost in the track of the form I. The form I carries a projection, j, which, as it comes in contact with the one on the toe or cam h, throws it down and turns the fly g up against the plate K. At the same time the arm i, which is attached to a shaft carrying the rods f f, losing the support of the toe or cam h on which it rests by a pin, y, Fig. 4, falls by its own weight or is brought down by a spring, and the rods f f enter the slots e e in the plate K and the fly g. In Fig. 5 the plunger has descended nearly to the form, and therefore the rods f f rest only on the fly g. As the form is withdrawn from the plunger the projection j is also withdrawn from under the toe or cam h, and the spring g' returns the fly to its former horizontal position, and the cam, in resuming its place, lifts the arm i, and with it the rods f f. On the main shaft B is another cam, A', which gives motion to the rod B', and this to the lever S secured to the rock-shaft R, which lever reciprocates the



toothed rack C'. This rack gears with a wheel, W, and, by means of ratchets and pawls, turns it separately one way, but in the reverse revolves the gear  $a' a'$ , and, as rollers are provided on the shafts of this gearing, the rollers are consequently rotated intermittently. At the other end of this rack is a roller and gear,  $x'$ , which is operated intermittently in the same manner as the rollers  $a' a'$ . Situated in a proper position immediately behind the fly is a knife,  $c'$ , which is operated by the arm  $p$  and a lever on the shaft to which the arm is attached. At the lower extremity of this arm  $p$  is a pawl arrangement which allows the pin  $p'$  situated on the rack to pass in going forward or toward the front of the machine, but to strike against it and drive the knife down in its backward stroke. The cam  $k$  on the main shaft B reciprocates intermittently a lever,  $l$ , and bar  $m$ , which operate the bell-crank, as shown, and open and close the flap or creaser S'. (See Fig. 2.)

#### Operation.

The parts being arranged substantially as described, the machine will operate as follows: A roll of paper,  $b'$ , is placed on the bearings at the back of the machine, and is passed in between the rollers  $a' a'$  and the main shaft B turned till the paper has reached the roller  $x'$ ; but this roller being, for the present, stationary—for as the rack moves backward the ratchet-wheel and pawl behind the gear  $x'$  allow it to turn without the roller—the paper is formed into an arch, as shown by the dotted lines. A blank envelope, as shown by the whole line in Fig. 6, having been gummed on the lower edge, is now placed on the form I I by the ordinary means, as in the box-machine patented to Thomas V. Weymouth and myself June 8, 1869. The main shaft B, still turning, brings the rack C' forward and revolves the roller  $x'$ , and takes up the slack of paper formed by the arch, introduces it on the fly  $g$ , bringing it up against the plate K, which serves as a gage to determine the width of card; and the rack, on returning, strikes the pin  $p'$  against the lever  $p$  and operates the knife  $c'$ , which severs a card from the strip. This card is now left on the fly  $g$ , ready for use; and by the time this operation has been completed the form with its blank envelope is nearly under the plunger, and a slight turn suffices to bring it there, and, as it begins to get fairly under, the projection  $j$  on it strikes against the cam or toe  $h$  and upsets the card on the envelope at right angles to it, as shown by the heavy lines  $x z$  in Fig. 5, the stop  $f'$  preventing the card from taking a wrong direction and tending to keep it up against the plate K. The arm  $i$ , simultaneously with the upsetting of the fly  $g$ , losing the support of the cam or toe  $h$ , falls, and the rods  $f f$  press the card down on the envelope to insure its fall, for although it would generally fall by

its own weight, yet these rods compel it to settle squarely on the envelope under any circumstances, and, at the same time, they keep it, by their slightly bent-up ends, against the side of the plate K and under the nibs  $t t$  to insure its being carried down under them along with the plunger. As the main shaft revolves the plunger is driven down, carrying the envelope and card with it, and turning up the flaps of the envelope against the form I I and guides I' I', and keeping the card in proper relation to the envelope and under the nibs on the plate K. As the plunger ascends the card and envelope are left below and the flaps or creasers 4 5 6 fold the three flaps or sides of the envelope in their proper position. These flaps are shown in the drawing stationary, the one that folds the card with the envelope being thought the only one necessary to be shown as capable of operation; but in practice the other three flaps will receive a similar motion by suitable mechanism and accomplish their office. These sides or flaps of the envelopes having been folded, the flap or creaser S' folds the card with the lower edge of the envelope together, and thus the card and envelope are brought in contact, pasted, and folded together.

It is unnecessary to describe the mode of pasting and feeding the blank envelopes, as it will be substantially the same as in ordinary envelope-machines.

It may be desirable, in the manufacture of postal cards, to leave off the overlapping parts 1 2 3, in which case it would only be necessary to disconnect the folding plates 4 5 6 and turn them back out of the way.

Having fully described my improved machine and its operation, what I claim is—

1. The combination, with the plunger J and plate K, of the fly-plate  $g$ , for receiving and delivering the card in proper position to be united to the envelope or flap, substantially as described and specified.

2. The hooks  $t t$  or equivalents upon the plunger-plate K, to insure the cards being carried downward with the envelope or flap as the plunger descends, substantially as described and specified.

3. In combination with the plunger J, plate K, and fly  $g$ , the finger-bars  $f f$ , constructed and operating substantially as described and specified.

4. In combination, a reciprocating carriage to convey the envelope-blanks under a plunger, a feeding device and cutting mechanism for feeding and cutting the cards, a mechanism for receiving and delivering the cards, and a mechanism for uniting the cards by adhesion, all co-operating together substantially in the manner described and specified.

JOHN M. D. KEATING.

Witnesses:

E. H. JOHNSON,  
J. P. CRAWFORD.