

T. LEAVITT.  
Post Marking and Canceling Machines.  
No. 219,586. Patented Sept. 16, 1879.

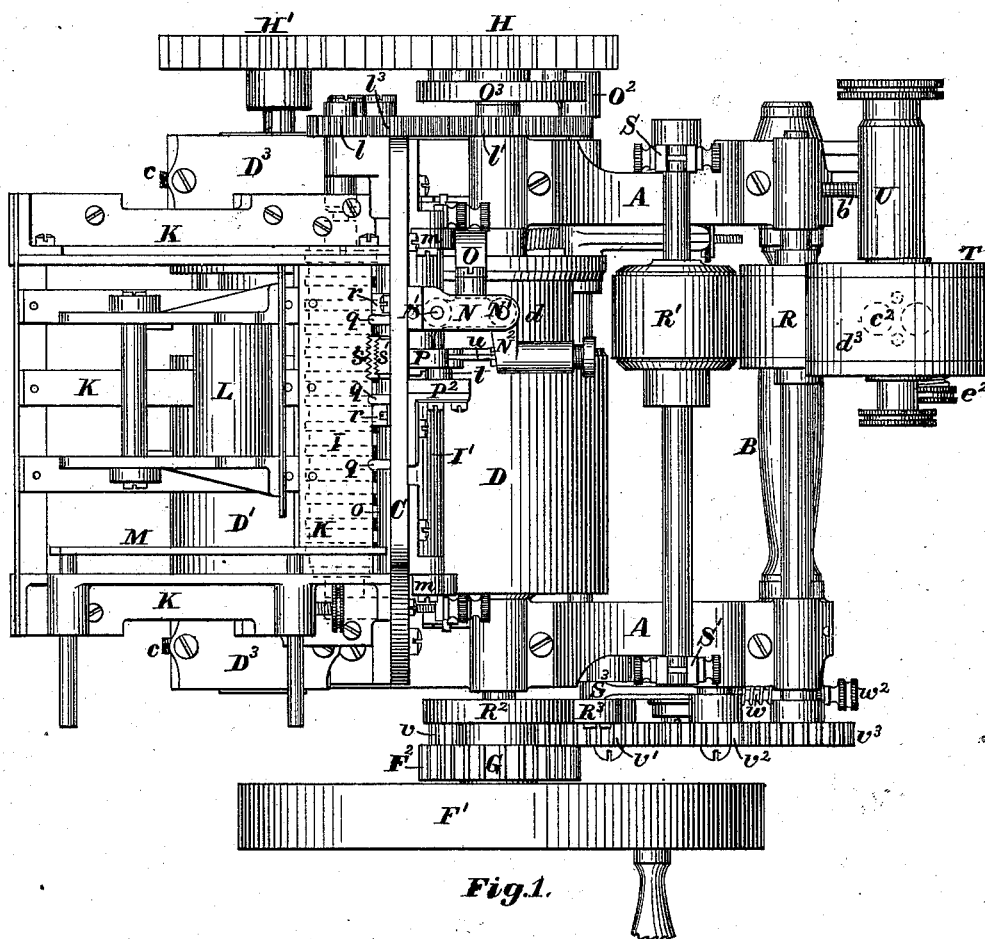


Fig. 1.

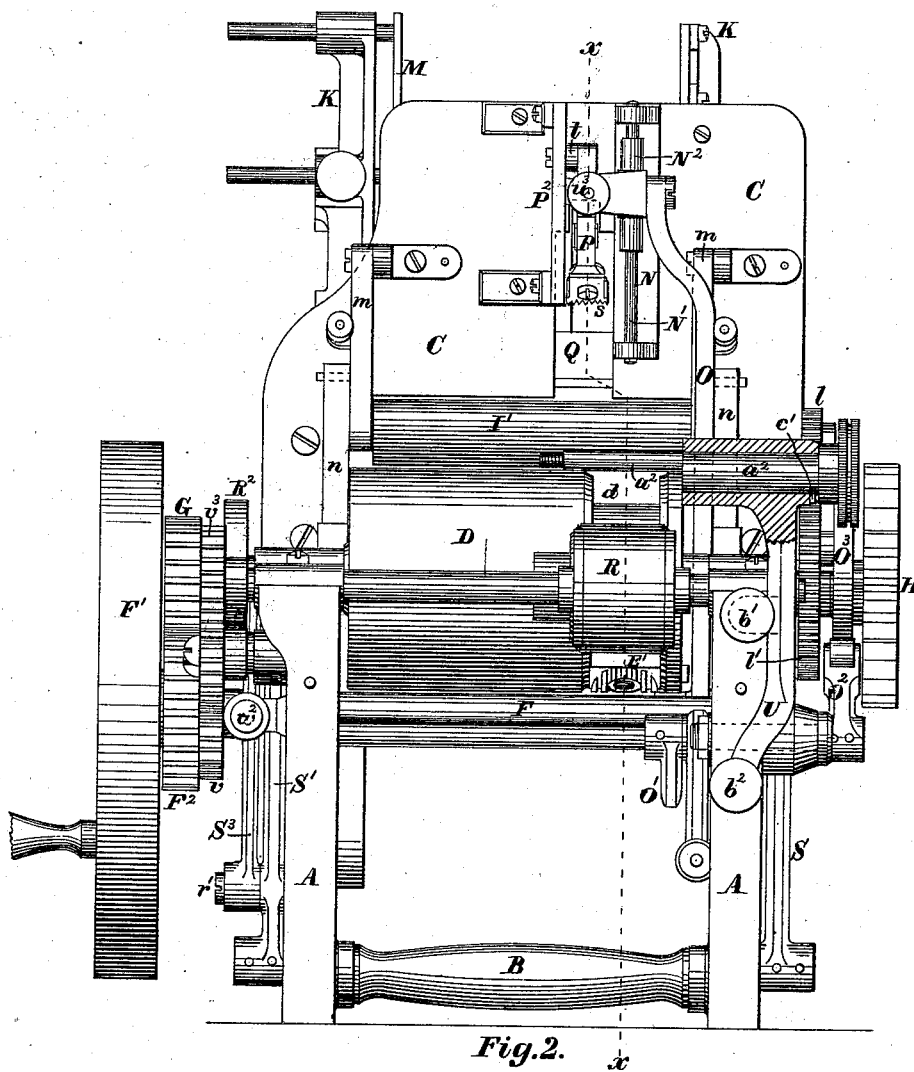
Witnesses:

E. A. Kemmenway.  
C. W. Dodd

Inventor:

Thomas Leavitt  
by N. C. Lombard  
Attorney.

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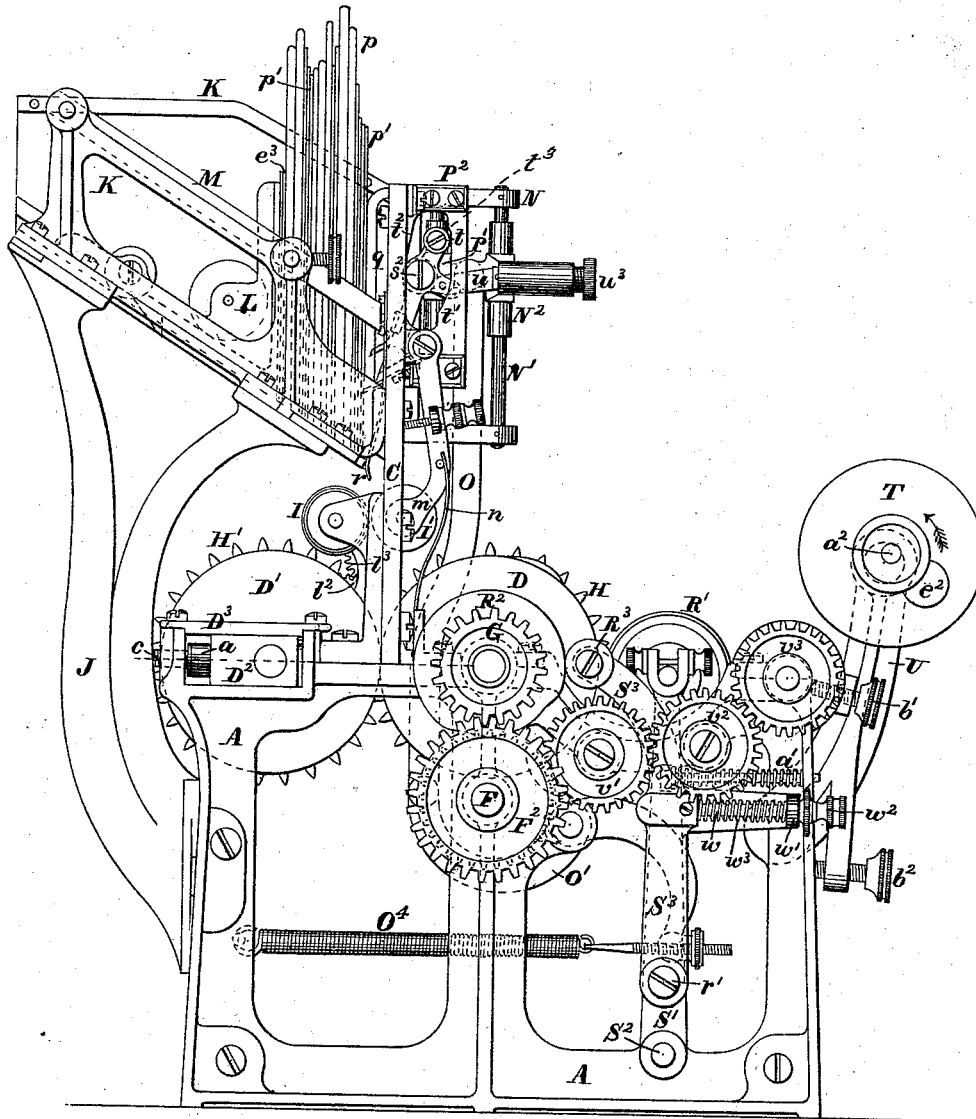


Fig. 3.

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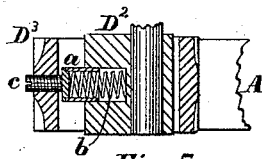


Fig. 5.

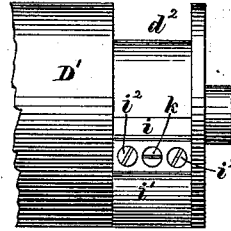


Fig. 6.



Fig. 8.

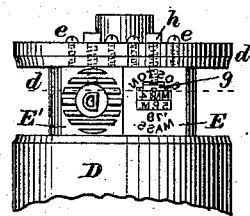


Fig. 7.

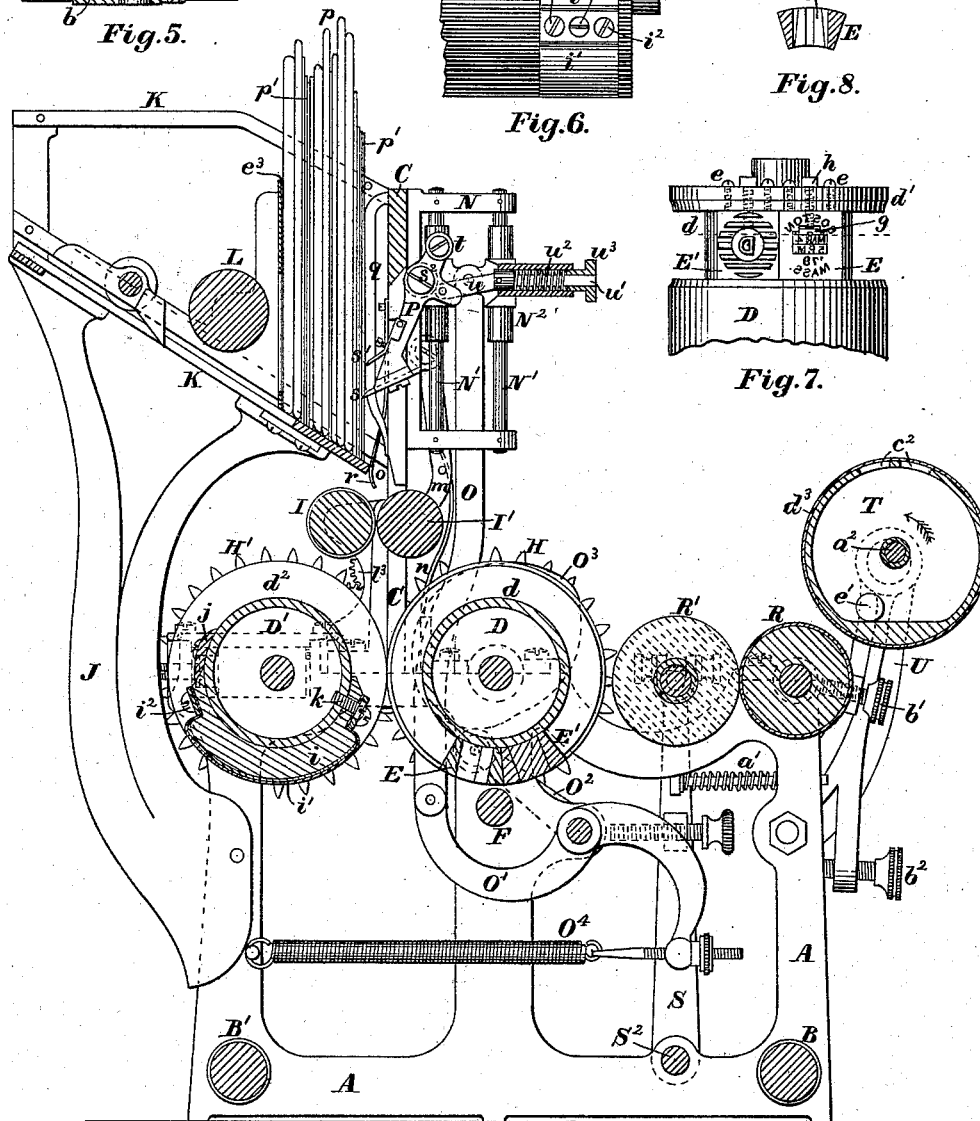


Fig. 4.

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# UNITED STATES PATENT OFFICE.

THOMAS LEAVITT, OF EVERETT, MASSACHUSETTS.

## IMPROVEMENT IN POSTMARKING AND CANCELING MACHINES.

Specification forming part of Letters Patent No. **219,586**, dated September 16, 1879; application filed June 21, 1879.

*To all whom it may concern:*

Be it known that I, THOMAS LEAVITT, of Everett, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Postmarking and Canceling Machines, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to a machine for postmarking and canceling letters and postal cards, and to that particular class of such machines in which the letters and cards are passed between a type-cylinder and an impression-cylinder; and it consists in the combination of an inclined chute or hopper, in which the letters and cards may be placed on end in a vertical position, and having its end which is lowest closed up by a vertical plate and provided with a throat in its bottom, through which the letters and cards may be fed in a vertical or nearly vertical direction into the bite between the type and impression cylinders, a weighted follower provided with a frictional surface for pressing the letters and cards into the lowest part of the chute or hopper, and a reciprocating feed-pawl adapted to engage with the front one of the letters or cards in the hopper and feed it out of the same.

It further consists in the combination, with a type-cylinder, an impression-cylinder, and an inclined chute or hopper arranged as above described, of one more vertically-arranged wires or rods placed in the front or lowest end of the inclined hopper, to limit the forward motion of the pile of letters or cards at a point where their lower ends will all bear upon the inclined bottom of the chute or hopper, with the front one near the edge of the throat in said bottom, and two or more light spring-fingers secured to the inner face of the front wall of the hopper, and extending downward and backward into the throat to close it up, and adapted to yield to the pressure of the lower end of the front letter or card as it is forced downward by the feed-pawl.

It further consists in the combination of a reciprocating carriage or cross-head, a feed-pawl pivoted thereto, and provided with one or more toothed feed-plates at one end and a stud or anti-friction roll at its other end, a

toggle-link connected at one end to said pawl and at the other end to a spring-actuated rocking or vibratory rod, and means of controlling the outward and inward movements of said feed-pawl, as will be hereinafter described.

It further consists of an ink-fountain of novel construction, which will be best understood by reference to the description of the drawings hereinafter given.

It further consists in the combination, with the type-cylinder provided with a circumferential groove, of a type-holding block fitted to said groove and provided with a mortise to receive the type, one or more set-screws screwed into the end flange of said cylinder, with their points pressing against said type-holder to secure it in position, and a set-screw passing freely through a hole in said end flange of the cylinder and screwed into the type-holder, with its point bearing against the type or a plate bearing thereon, as will be described.

Figure 1 of the drawings is a plan of my improved canceling-machine. Fig. 2 is a front elevation. Fig. 3 is a side elevation. Fig. 4 is a vertical section on line *xx* of Fig. 2. Figs. 5, 6, 7, and 8 are details to be hereinafter referred to.

A A are the side frames of the machine, connected together by the tie-rods B and B' and the vertical plate C, as shown.

D is the type-cylinder, and D' the impression-cylinder, arranged side by side, with their axes in the same horizontal plane, and mounted, the type-cylinder in fixed bearings in the frames A A and the impression-cylinder in boxes D<sup>2</sup>, which are fitted to housings D<sup>3</sup>, so that they may be moved therein, the rear ends of the boxes D<sup>2</sup> being chambered to receive the open end of a tube, *a*, between the closed end of which and the bottom of the recess in the box is placed the spiral spring *b*, the tension of which may be varied at will by means of the set-screw *c*, all as shown in Fig. 5.

The type-cylinder D has formed therein near one end a circumferential groove, *d*, to receive the type-holders E and E', which are secured in position therein by the set-screws *ee*, screwed into the flange *d'* of said cylinder, formed by

cutting the groove  $d$ , with their points pressing hard against the type-holders and forcing them against the inner wall of said groove.

The type-holders E and E' are each provided with a mortise cut through the same to receive the changeable type-blocks, the sides of said mortises being parallel with each other, as shown in Fig. 8.

The holder E has cut upon its face, surrounding the mortise formed therein, the name of the post-office and figures representing the year, or such other lettering as may be necessary, and that does not require to be changed oftener than perhaps once a year.

Within the mortise formed in said holder E are set three type-blocks, upon one of which is engraved the month, upon another the day of the month, and upon the third the hour of the day, and a clamping-plate,  $g$ , made tapering, with its narrowest end outward, and fitted to a correspondingly-shaped recess in the side of the mortise in said holder, in such a manner that said plate cannot be pulled out of the mortise with the type-blocks when the magnet is applied to said blocks for the purpose of removing them to make necessary changes.

The type-blocks are retained in position in the holder E by the set-screw  $h$ , which passes freely through a smooth hole in the flange  $d^1$  of the cylinder D, and is screwed into the holder E, with its point pressing against the plate  $g$  and forcing it against the two contiguous type-blocks, as shown in Fig. 7.

The mortise in the holder E' contains a single type-block, preferably cylindrical in form, upon which is cut a letter or character to designate "collection," "delivery," or the station or sub-office, while the holder itself has formed thereon a series of bars or lines for cancellation, as shown.

The impression-cylinder D<sup>1</sup> also has formed therein a circumferential groove,  $d^2$ , to receive the impression-pad, composed of the metal segment  $i$ , having one or more thicknesses of suitable elastic material,  $i^1$ , secured thereon by the screws  $i^2$ , said pad being secured to the cylinder by means of the bevel-edged lip or plate  $j$ , screwed firmly to the cylinder within the groove  $d^2$ , its beveled edge overlapping the contiguous edge or end of the segment  $i$ , and the single screw  $k$  passing through the opposite end of said segment and screwing into the cylinder, all as shown in Figs. 4 and 6. This method of attaching the impression-pad to the cylinder is of great advantage, as it obviates entirely the necessity of removing the cylinder from the machine to renew the pad, as has heretofore been practiced.

F is the driving-shaft, mounted in bearings on the frames A A, and having secured thereon the fly-wheel F<sup>1</sup> and spur-gear wheel F<sup>2</sup>, which meshes into and imparts motion to the gear-wheel G, secured upon the end of the shaft of the cylinder D, upon the opposite end of which shaft is secured the gear-wheel H, which meshes into and imparts motion to the

gear-wheel H', secured upon the end of the shaft of the cylinder D<sup>1</sup>, whereby said cylinders D and D<sup>1</sup> are made to revolve toward each other or in opposite directions and at the same speed.

I and I' are a pair of feed-rolls, located side by side above the cylinders D and D<sup>1</sup>, the roll I having formed upon its surface a series of circumferential bands, the peripheries of which are roughened to produce frictional surfaces to assist in the proper feeding of the letters and cards presented to said feed-rolls.

The roll I is mounted in fixed bearings in the frames A A, and has secured to the end of its shaft a gear-wheel,  $l$ , by means of which and the gear-wheel  $l'$ , secured upon the shaft of the type-cylinder D, and intermediate gears  $l^2$  and  $l^3$ , rotary motion is imparted to said roll.

The roll I' has a smooth cylindrical surface, and is mounted in bearings in the lower ends of the pendent arms  $m$   $m$ , and is forced into contact with the roll I by the tension of the springs  $n$   $n$ , which yield to permit the passage between said rolls of a letter or card.

In the rear of the plate C, and supported thereby and by the stands or brackets J, is the hopper K, made preferably of a skeleton frame, and having its bottom inclined, with the end toward the plate C the lowest, but not extending quite to said plate, an open space or throat,  $o$ , being left between the front edge of said bottom and the plate C, through which the letters  $p$  and cards  $p'$  may be fed from said hopper into the bite of the feed-rolls I and I', or to the cylinders D and D<sup>1</sup>.

To the back side of the plate C are secured in a vertical position two or more wires or rods,  $q$ , which serve as stops to limit the movement of the pile of letters and cards toward the plate C as they are forced toward it by the weighted follower L, and also to reduce the resistance to the downward movement of said letters or cards. Two or more light springs,  $r$   $r$ , are also secured to the back side of the plate C, and extend downward and backward so as to close the throat  $o$  and press against the front edge of the hopper-bottom, as shown in Fig. 4, said springs being of just sufficient stiffness to prevent the accidental passage of a letter or card through the throat  $o$ , and to yield to allow such passage when the letter or card is forced downward by the feed-pawl.

M is an adjustable bar forming one side of the hopper K, designed to adapt the hopper to different widths of letters by moving said bar nearer to or farther from the fixed side of the hopper, which is always to be used as the gage in placing the letters or card therein.

N is a stand secured to the front face of the plate C, and provided with the two guide-rods, N<sup>1</sup> N<sup>1</sup>, upon which is mounted the cross-head N<sup>2</sup>, adapted to be reciprocated vertically thereon by means of the link O, levers O<sup>1</sup> and O<sup>2</sup>, cam O<sup>3</sup>, and spring O<sup>4</sup>.

P is a three-armed lever, provided upon its long arm with one or more toothed feed-plates,

s or s', adapted to engage with the front letter or card in the hopper, and pivoted at s<sup>2</sup> to the cross-head N<sup>2</sup>, as shown in Fig. 4.

The end of the pawl-lever P opposite to the feed-plates s and s' is provided with an anti-friction roll, t, which travels up and down in the cam-shaped slot P<sup>1</sup>, formed in the stand P<sup>2</sup>, secured in a fixed position on the face of the plate C, and provided with the inclined surfaces t<sup>1</sup> and t<sup>2</sup> and the projection t<sup>3</sup>, with which the roll t engages as it is moved up and down in said slot. The office of the projection t<sup>3</sup>, in connection with the pawl-lever P, is to prevent the feed-plates s and s' from being thrown in contact with the letter until the lever P commences its downward movement, the inclined surfaces t<sup>1</sup> and t<sup>2</sup> serving to move the lever P about its axis, and thus move the feed-plates s and s' toward or from the letters, a slot, Q, being cut in the plate C to permit said feed-plates and the lever P to pass through the plate to reach the letters or cards in the hopper. The third arm of the pawl P is pivoted to one end of the toggle-link u, the opposite end of which is pivoted to the inner end of a rod, u<sup>1</sup>, fitted to a bearing in the cross-head N<sup>2</sup>, and surrounded by the spring u<sup>2</sup>, the tension of which may be adjusted by means of the tubular screw u<sup>3</sup>.

The action of the inclined surface t<sup>1</sup> of the cam-slot P<sup>1</sup> upon the truck t as the cross-head N<sup>2</sup> and the feed-pawl P are moved downward causes the lower end of the feed-pawl P to be thrown outward or away from the letters or cards in the hopper, and as a consequence the toggle-link u is brought in a horizontal position, and thus holds the lever P away from the letters during its upward motion till the truck comes in contact with the inclined surface t<sup>2</sup> of the cam-slot P<sup>1</sup>, when the direct line of the toggle is broken, and the tension of the spring u<sup>2</sup> causes the lower end of the pawl-lever P to be suddenly thrown inward against the letters or cards and the points of the teeth of the feed-plates s and s' to engage with the surface of the front letter or card in the hopper, and as the pawl P is moved downward the letter or card is moved endwise through the throat o, compressing the springs r r sufficiently to allow the passage of said letter or card, said downward movement of the pawl-lever P continuing until the end of the letter or card is seized by the feed-rolls I and I', which carry it onward till its lower end enters between the type and impression cylinders.

R is the ink-distributing cylinder, mounted in bearings in the frames A A, and receiving motion from the driving-shaft by means of the gears v, v<sup>1</sup>, v<sup>2</sup>, and v<sup>3</sup>.

R<sup>1</sup> is the inking-roll, mounted in bearings in the upper ends of the levers S S', firmly secured upon opposite ends of the rocker-shaft S<sup>2</sup>, having its bearings in the frames A in such manner that said roll may be intermittently moved from a position in contact with the ink-distributing roll R, where it receives ink, to a

position in contact with the type-cylinder or the type contained thereon. This vibratory motion of the roll R<sup>1</sup> is obtained by means of the cam R<sup>2</sup> acting upon the truck R<sup>3</sup>, mounted on a stud set in the end of the lever S<sup>3</sup>, pivoted at r<sup>1</sup> to the lever S<sup>1</sup>, and connected to the lever S<sup>1</sup> at a point between said pivot and the truck R<sup>3</sup> by means of the rod w, which passes through the ear w<sup>1</sup> on an arm of said lever S<sup>1</sup>, and is provided with an adjustable nut or head, w<sup>2</sup>, said rod being surrounded by the spring w<sup>3</sup>, of sufficient tension to overcome the tension of the springs a<sup>1</sup> a<sup>1</sup>, which tend to hold the inking-roll in contact with the type-cylinder, the purpose of said spring being to force the levers S<sup>3</sup> and S<sup>1</sup> apart to the limit allowed by the adjustable head w<sup>2</sup> of the rod w, and to yield slightly when the inking-roll R<sup>1</sup> is brought in contact with the distributing-roll R.

T is an ink-fountain in the form of a hollow cylinder mounted upon a stud, a<sup>2</sup>, having an eccentric bearing in the upper end of the stand U, pivoted to the frame A and provided with the adjusting-screws b<sup>1</sup> and b<sup>2</sup>, by which the position of said eccentric bearing may be varied, to insure contact of the fountain with the distributing-roll R when the eccentric stud a<sup>2</sup> is partially rotated in the direction indicated by the arrow.

The movement of the eccentric stud a<sup>2</sup> about its axis of motion is limited in either direction by the pin c<sup>1</sup> set therein and working in a segmental recess cut in the end of the hub of the stand U.

The barrel of the ink-fountain is provided with one or more holes, c<sup>2</sup>, through which the ink placed therein passes to and is absorbed by the cloth or felt covering d<sup>3</sup> whenever said fountain is revolved by being brought in contact with the distributing-roll R.

The fountain-cylinder T is weighted upon the side opposite to the opening or openings c<sup>2</sup> in such a manner that when not in contact with the distributing-roll said fountain shall always remain the same side up, or with the the opening c<sup>2</sup> uppermost, as clearly shown in Fig. 4.

In the interior of the ink-fountain is placed a short cylinder of metal, e<sup>1</sup>, which rolls around the inner periphery of the fountain, or, perhaps more properly, the inner periphery of the fountain rolls around it when said fountain is revolved, and thereby prevents an accumulation of ink upon the walls of the fountain-chamber. The ink is introduced into the fountain through an opening in its end, which is closed by the plug e<sup>2</sup>.

The front face of the follower L is covered with a thin sheet, e<sup>3</sup>, of leather, cloth, or suitable material, to increase the frictional surface in contact with the rear letter or card, to prevent the last two letters being fed through the throat together, as is liable to be the case if a smooth metal surface is used.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The inclined chute or hopper herein described, in combination with the follower L, provided with a frictional surface, and the feed-pawl, as and for the purpose described.

2. In combination with a pair of printing-cylinders and a hopper arranged above said cylinders, and having an inclined bottom, a vertical abutment at its lowest end, and a throat through its bottom, two or more vertically-arranged rods or wires,  $q$   $q$ , and the two springs  $r$   $r$ , said wires and springs being secured to the plate C, and adapted to operate substantially as and for the purposes described.

3. The combination of the reciprocating cross-head  $N^2$ , the pivoted feed-pawl P, provided with one or more feed-plates,  $s$  or  $s^1$ , and the anti-friction roll  $t$ , the stand  $P^2$ , provided with the cam-slot  $P^1$ , the toggle-link  $u$ , rod  $u^1$ , and the spring  $u^2$ , all arranged and adapted to be operated substantially as and for the purposes described.

4. The cylindrical ink-fountain T, weighted upon one side and provided with one or more openings,  $c^2$ , upon its opposite side, in combination with the absorbent covering or envelope  $d^3$ , substantially as described.

5. The combination of the cylindrical ink-fountain T, weighted upon one side and provided with one or more openings,  $c^2$ , upon the

opposite side, the absorbent covering  $d^3$ , and eccentric journal  $a^2$ , all arranged and adapted to be operated substantially as described.

6. In combination with a cylindrical ink-fountain, weighted upon one side and adapted to be revolved about an axis by contact with the distributing or other roll, a loose cylinder or roll,  $e^1$ , placed within said fountain, substantially as and for the purposes described.

7. The combination of the cylindrical ink-fountain T, eccentric journal  $a^2$ , and the pivoted adjustable stand U, all arranged and adapted to operate substantially as described.

8. The combination, with the type-cylinder D, provided with the circumferential groove  $d$ , of the mortised type-holder E or  $E^1$ , one or more type or type-blocks set in said mortised holder, one or more set-screws,  $e$   $e$ , screwed into the flange  $d^1$  of the cylinder D, to secure the type-holder, and a single set-screw,  $h$ , passing freely through a smooth hole in said flange  $d^1$  and screwed into the holder to secure the type-blocks, substantially as described.

Executed at Boston, Massachusetts, this 18th day of June, A. D. 1879.

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