

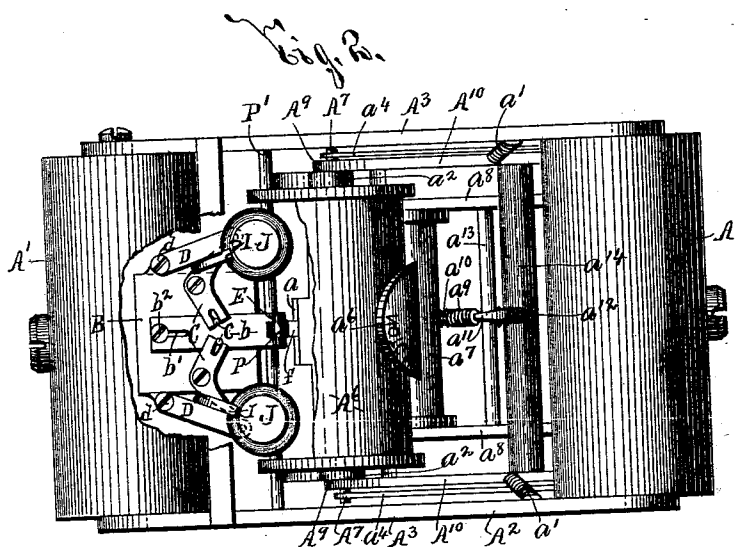
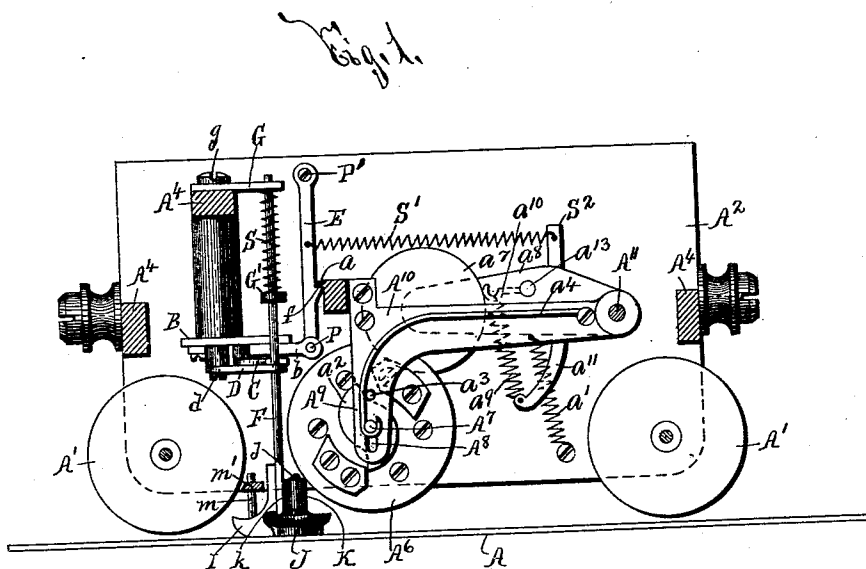
(No Model.)

3 Sheets—Sheet 1.

G. W. HEY.
MECHANICAL MOVEMENT.

No. 569,132.

Patented Oct. 6, 1896.



WITNESSES:

H. C. Chase.
M. D. Lewis.

INVENTOR

George W. Hey.

BY

Hey, Wilkinson & Parsons
ATTORNEYS.

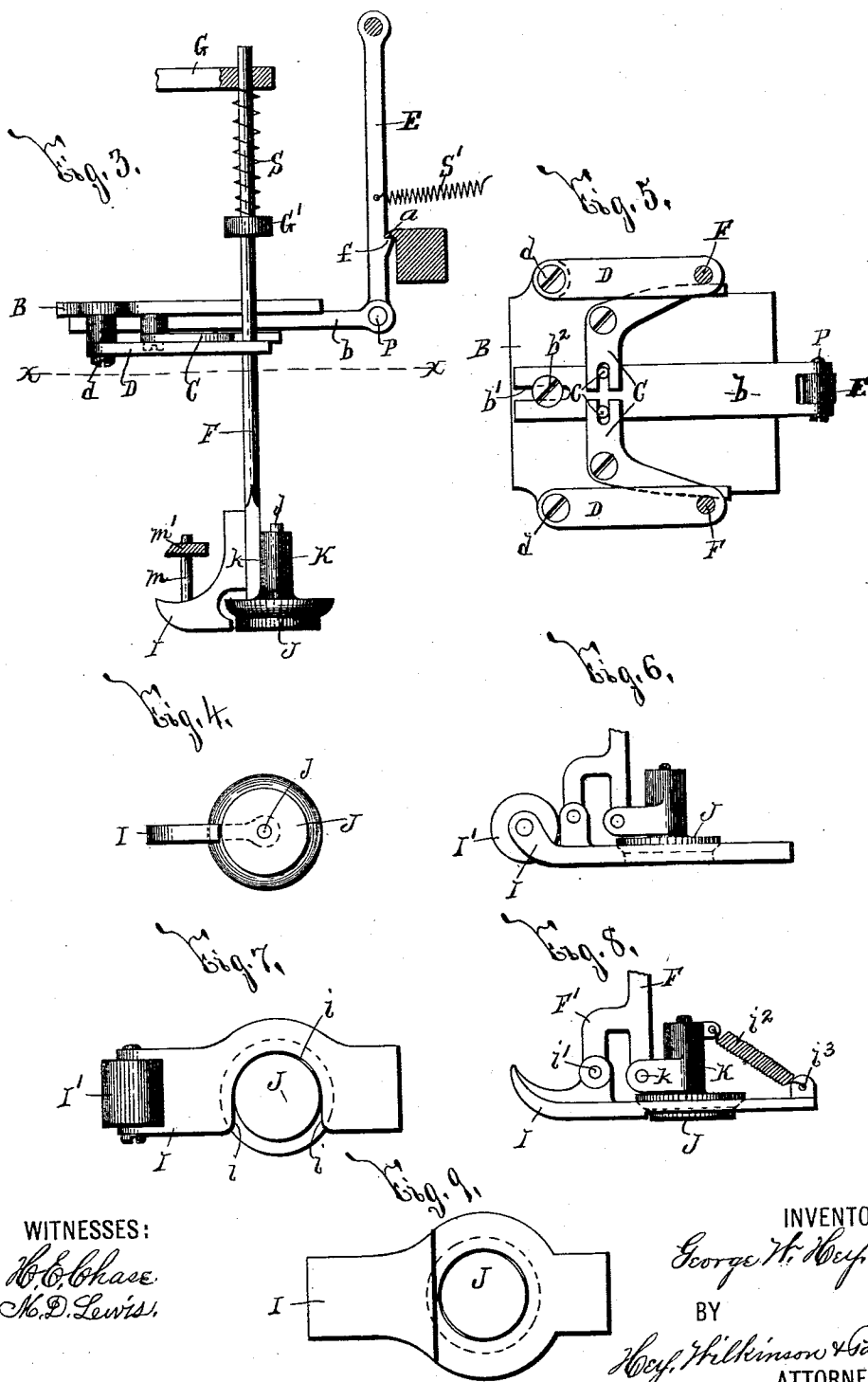
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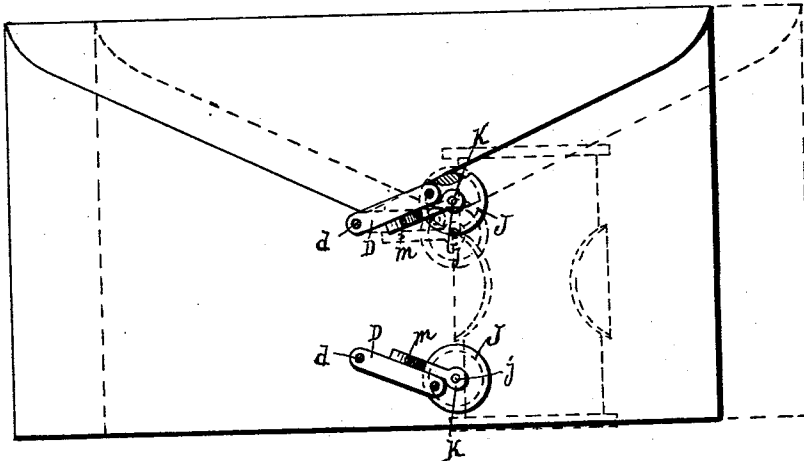
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Fig. 10.



WITNESSES:

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UNITED STATES PATENT OFFICE.

GEORGE W. HEY, OF SYRACUSE, NEW YORK.

MECHANICAL MOVEMENT.

SPECIFICATION forming part of Letters Patent No. 569,132, dated October 6, 1896.

Application filed July 19, 1894. Serial No. 517,978. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. HEY, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful
5 Improvements in Mechanical Movements, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to improvements in
10 automatic mail-marking machines, and has for its object the production of a simple and practical device for transmitting motion to the marker by the engagement of said device with the sealed flaps of the envelopes of
15 mail-matter; and to this end it consists, essentially, in the construction and arrangement of its component parts, all as hereinafter fully described, and pointed out in the claims.

20 In specifying my invention reference is had to the accompanying drawings, in which like letters indicate corresponding parts in all the figures.

Figure 1 is a side elevation, partly in section, of my invention provided with a marker
25 for making contact with the mail-matter and mechanism for holding the marker out of the mail-matter path when no mail is passing and releasing the same when the mail is present
30 for permitting registration of the marker therewith. Fig. 2 is an inverted plan view, part thereof being broken away, of the parts as illustrated in Fig. 1. Fig. 3 is an enlarged
35 elevation of the detached mechanism for normally holding the marker out of the mail-matter path and releasing said marker for permitting the same to register with the mail-matter. Fig. 4 is an inverted plan view of
40 the feeler and its tip shown at Fig. 1. Fig. 5 is a horizontal sectional view looking upward, taken on line $x x$, Fig. 3. Figs. 6 and 7 are respectively enlarged side elevation and
45 inverted plan view of a slightly-modified construction of feeler used in my invention. Figs. 8 and 9 are respectively enlarged side elevation and top plan view of a further modified
50 construction of feeler used in my mechanical movement; and Fig. 10 is a top plan view of a letter, the feelers, (one being partly broken away for illustrating its engagement with the envelop-flap,) the lower supporting-links for the feelers, and the die-carrying roller, (shown

by dotted lines,) the letter being illustrated by dotted lines as advanced and one of the feelers being shown by dotted lines as rocked
55 inwardly by the advanced letter.

A represents the mail-matter-supporting bed, which is here illustrated as a traveling belt, and A' mail-matter-feeding rollers journaled above said bed and normally in contact therewith in a frame A^2 , mounted on
60 suitable supports (not illustrated) and consisting of side bars A^3 and cross-bars A^4 . The marker A^5 consists of a pair of dies arranged diametrically opposite upon the periphery of a roller A^6 , having trunnions A^7 ,
65 journaled in normally vertical slots A^8 , provided in the depending arm A^9 of an L-shaped bracket or yoke A^{10} , having one extremity pivoted at A^{11} between the side-bars A^3 of the
70 frame A .

The bracket A^{10} is provided with a shoulder a , adapted to be engaged by a movable catch f , presently described, and when released from said catch is drawn into registration
75 with the mail by a spring a' , secured at one end to said yoke and at the other to one of the side bars A^3 of the frame A^2 .

When in registration with the mail which is being fed along the belt A , the die-carrying
80 roller A^6 is rotated by the moving letter, and one of the two teeth of a cam a^2 on said roller engages a pin a^3 on the yoke or bracket A^{10} and thereby raises the same into position to be again engaged with the catch-shoulder
85 f , which, as presently described, is returned to operative position before the passage of the mail. After the yoke or bracket A^{10} reaches its normal position and the highest point of one of the teeth of the cam a^2 , engaged with the pin a^3 , has passed said pin,
90 a spring a^4 , having one extremity secured to the bracket A^{10} and the other to the pivotal pin or trunnion of the die-carrying roller A^6 , returns said roller to its normal position, this
95 movement being permitted by the normally vertical slot A^8 , in which said trunnion is journaled.

The marking-die a^6 is inked by a roller a^7 , journaled in movable bars a^8 , pivoted upon
100 the rod A^{11} and is drawn into operative position by a spring a^9 , having one end secured to a shoulder a^{10} on a cross-bar a^{13} between said bars a^8 , and the other to an arm a^{11} , se-

cured at a^{12} to a cross-bar a^{14} between the arms or walls of the bracket A^{10} .

It will be understood that my invention is particularly applicable for use in the construction of machine just briefly described, but that it may also be used in other marking-machines and that the construction of the marker and its supporting-bracket may be greatly varied at will without affecting the scope of my invention.

B represents the supporting plate or frame, upon which the extension-bar b is guided and the cranks C C pivoted.

b is the main bar or lever, connecting with and transmitting motion to the mechanism to which it is applied. As shown at Fig. 1, it is pivoted at P to the bar E , pivoted at P' to one of the side walls A^3 of the frame A^2 , extends at right angles to the bar E in a horizontal plane in this example of my invention, and is provided with pins c c , resting in the forked ends of the cranks C C and connecting the said bar movably with said cranks. The outward or free end of the bar b is slotted part way its length at b' , as seen at Figs. 2 and 3, for the reception of a pin b^2 , secured in the plate or frame B and serving to guide the bar b in its movement.

Bars or rods F F , which carry feelers J , are mounted and vertically guided in links D and G , pivoted, respectively, at d to the plate B and at g to a cross-bar A^4 of the frame A^2 , and bear against the cranks C C , being yieldingly forced toward the mail-feed bed A by a spring S , interposed between the link G and a shoulder G' , rigidly secured on said bar F for allowing the feelers to yield vertically to letters of different thickness.

Upon the pivoted bar E is a shoulder f , adapted to engage the shoulder a on the yoke A^{10} for the marking-roller A^6 . A spiral spring S' , secured at one end to the bar E and at the other to an arm S^2 , secured to the rod a^{14} , serves to keep the shoulder f and shoulder a in engagement and also to return bar b to its normal position after it has been moved, as presently described, by the engagement of the feelers J with the letter.

When the mail fed by the belt A and the rollers A' encounters the feeler, it is raised vertically against the action of the spring S , being guided through openings in the links D and G , and, as presently described, the feeler adjacent to the flap of the envelop is rocked inwardly upon the pivots d and g , as shown by dotted lines at Fig. 10, thus rocking the adjacent arms of the lever C inwardly, retracting the bar b , withdrawing the catch f from the shoulder a , and permitting the spring a' to draw the marker into registration with the mail, as previously described.

As soon as the widest part of the envelop-flap passes the feeler the spring S' draws the catch-carrying lever E backward into position to be again engaged by the shoulder on the marking-roller frame when said frame, as previously described, is restored to its nor-

mal position, and thereby forces the feelers to their normal position outward, and by the action of the spring S the same are forced against the feeding-belt A . The longitudinal edges of the mail-matter from which the flaps project are not always similarly arranged adjacent to one edge of the belt A , and consequently I use two feelers, one of which is engaged by the flap of each of the passing letters.

The engaging feeler consists of a circular disk of metal J , having a circumferential catching or engaging edge, as best shown at Figs. 2, 3, and 4, and a spindle j , which rotates freely in a bearing K , secured at k to the lower end of the rod F .

In order to prevent the sharp engaging edge of the disk from catching on the ends of passing letters, I provide a tip-piece I , which may be connected to the disk-support, either as shown in Figs. 1 and 3 or as shown at Figs. 6 and 8.

The tip I (shown at Figs. 1 and 3) is guided in its movement by means of an upwardly-extending projection m , formed thereon and movable in a guide m' on the frame A^2 .

The purpose of the feeler being to engage the edge of the flap at the back of the envelops of letters or other mail-matter, it is highly important that it may pass freely over any other portion of the letter, as its advancing end, and thus engage only said rear flap.

This result I obtain at Figs. 1 and 3 by attaching the tip-piece to the bar F so that the lower surface of said tip-piece is flush with the bottom of the disk, and by forming said tip of much less width than the diameter of the disk, thus exposing only the sides of said disk to the flap and preventing the engagement of its edge, except by the curved or diagonal edges of the rear flap of the envelop. It will thus be understood that as the letter passes the flap constantly increases in width, and thus rocks the feeler and its supporting-lever inwardly, as previously described, until the point of greatest width is passed, and that all tearing of the flap is obviated by the free rotation of the feeler.

At Figs. 6 and 7 I have shown a tip I , consisting of a plate of greater width than the feeler J , which is formed with a cut-out i for exposing one side of the feeler, and is provided at its front extremity with an anti-friction-roller I' .

At Figs. 8 and 9 I have shown a tip I of similar shape to the one illustrated at Figs. 6 and 7, with the exception that it is unprovided with a cut-out in its side edge, the side edge of the feeler being exposed by extending the same beneath the lower face of the rear portion of said tip, and the feeler being prevented from engagement by the front of the letter by depressing the front portion of said lower face to a plane substantially parallel with that of the lower face of the feeler. In this modified construction the tip I is pivoted at i' to an extension or arm F' of the bar F ,

and the feeler-frame K is pivoted at *k* to the lower extremity of the bar F and secured at one extremity to a spring *i*², having its opposite extremity secured at *i*³ to the rear extremity of the tip I.

The operation of my invention will be readily understood from the foregoing description and upon reference to the drawings, and it is evident that motion is communicated from the flap of the letter to govern the registration of the marker with said letter.

It is evident that considerable change may be made in the detail construction and arrangement of my invention without departing from the spirit thereof.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a printing device and a catch for holding the printing device out of the path of the mail-matter; of a vertically and laterally movable rotary feeler provided with a tip-piece for engaging the flaps of the envelopes of the mail-matter, connected to the catch for forcing the same from operative position, and a feed for feeding the letters to the feeler, substantially as and for the purpose described.

2. The combination with a printing device and a catch for holding the printing device out of the path of the mail-matter; of a vertically and laterally movable bar F having a rotary feeler provided with a tip-piece for engaging the flaps of the envelopes of the mail-matter, a feed for feeding the letters to the feeler, a crank C operated by the bar F, and a movable bar *b* connected to said crank and catch for forcing the catch from operative position, substantially as and for the purpose specified.

3. The combination with a printing device and a bar E carrying a catch for holding the printing device out of the path of the mail-matter; of oppositely-arranged vertically and laterally movable bars F F having rotary feelers provided with a tip-piece for engaging the flaps of the envelopes of the mail-matter, a feed for feeding the letters to the feelers, cranks C C operated by the bars F F, and a movable bar *b* connected to said cranks and bar E for forcing the catch from operative position, substantially as and for the purpose set forth.

4. The combination with a printing device and a catch for holding the printing device out of the path of the mail-matter; of a vertically and laterally movable bar F having a rotary feeler for engaging the flaps of the envelopes of the mail-matter, a feed for feeding the letters to the feeler, a pivoted link D connected to the bar F, a crank C operated by the bar F, and a movable bar *b* connected to said crank and catch for forcing the catch from operative position, substantially as and for the purpose described.

5. The combination of a printing device

and a bar E carrying a catch for holding the printing device out of the path of the mail-matter; of oppositely-arranged vertically and laterally movable bars F F having rotary feelers for engaging the flaps of the envelopes of the mail-matter, pivoted links D G connected to the bars F F, a feed for feeding the letters to the feelers, cranks C C operated by the bars F F, and a movable bar *b* connected to said cranks and bar E for forcing the catch from operative position, substantially as and for the purpose set forth.

6. The combination with a printing device and a catch for holding the printing device out of the path of the mail-matter; of a vertically and laterally movable rotary feeler for engaging the flaps of the envelopes of the mail-matter, connected to the catch for forcing the same from operative position, a tip projecting in advance of the feeler for engaging the mail-matter, and a feed for feeding the letters to the feeler and tip, substantially as and for the purpose described.

7. The combination with a printing device and a catch for holding the printing device out of the path of the mail-matter; of a vertically and laterally movable rotary feeler for engaging the flaps of the envelopes of the mail-matter, connected to the catch for forcing the same from operative position, a tip of less width than the feeler projecting in advance of the feeler for engaging the mail-matter, and a feed for feeding the letters to the feeler and tip, substantially as and for the purpose specified.

8. The combination with a printing device and a catch for holding the printing device out of the path of the mail-matter; of a vertically and laterally movable bar F having a rotary feeler for engaging the flaps of the envelopes of the mail-matter, a tip projecting in advance of the feeler for engaging the mail-matter, a feed for feeding the mail-matter to the feeler and tip, a crank C operated by the bar F, and a movable bar *b* connected to said crank and catch for forcing the catch from operative position, substantially as and for the purpose described.

9. The combination with a printing device and a bar E carrying a catch for holding the printing device out of the path of the mail-matter; of oppositely-arranged vertically and laterally movable bars F F having rotary feelers for engaging the flaps of the envelopes of the mail-matter, a tip projecting in advance of the feeler for engaging the mail-matter, a feed for feeding the mail-matter to the feeler and tip, cranks C C operated by the bars F F, and a movable bar *b* connected to said cranks and bar E for forcing the catch from operative position, substantially as set forth.

10. The herein-described feeler provided with a tip-piece projecting in advance of its engaging edge, substantially as and for the purpose set forth.

11. A feeler provided with a tip-piece projecting in advance of its engaging edge and formed of less width than said engaging edge, substantially as and for the purpose set forth.

5 In testimony whereof I have hereunto signed my name, in the presence of two attesting witnesses, at Syracuse, in the county

of Onondaga, in the State of New York, this 17th day of July, 1894.

GEORGE W. HEY.

Witnesses:

CLARK H. NORTON,
K. H. THEOBALD.