(No Model.) 3 Sheets—Sheet 1.

F. N. ETHRIDGE.

MAIL MARKING MACHINE.

No. 523,467. Patented July 24, 1894.

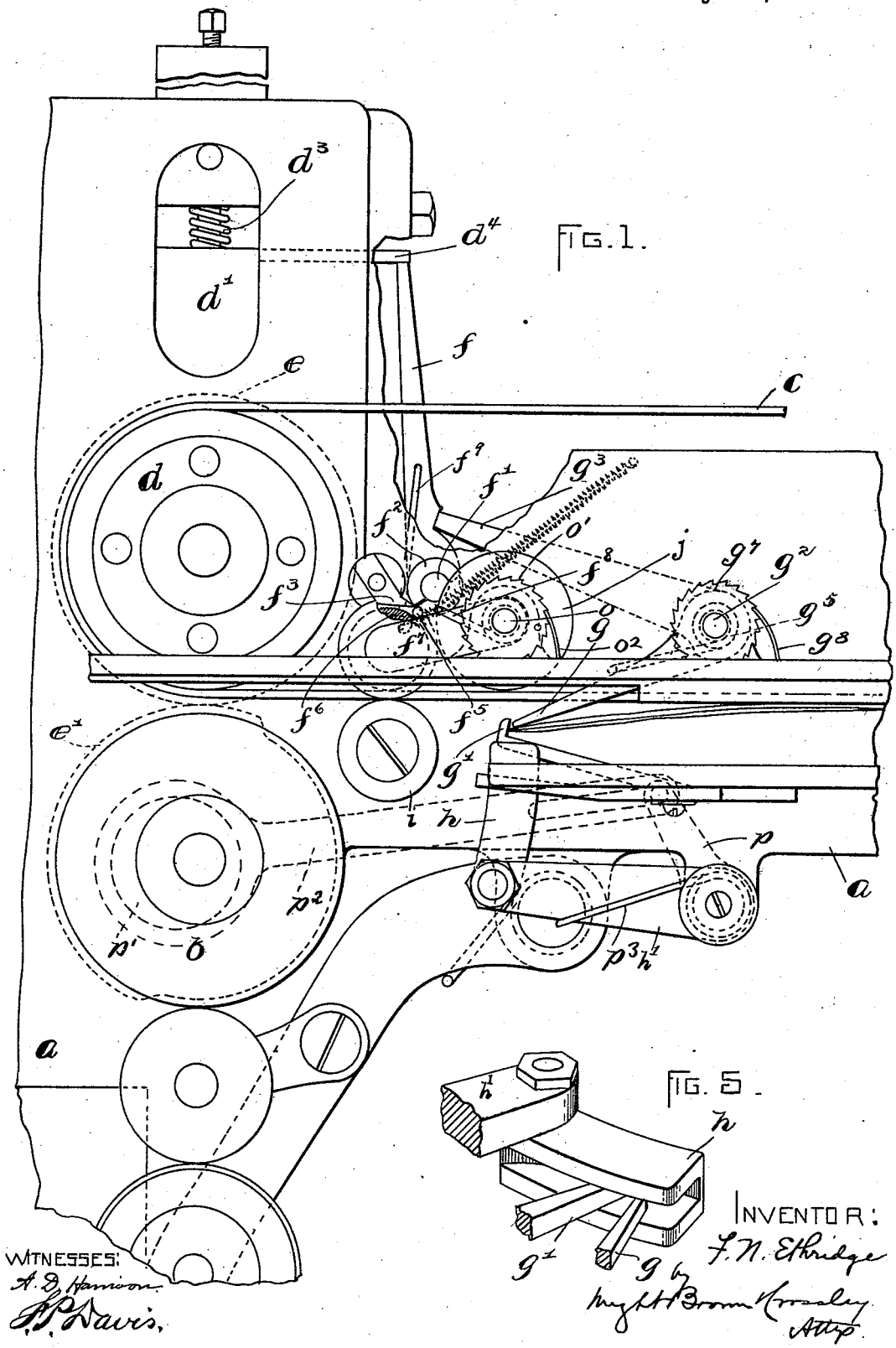

FIG. 1.

FIG. 5.

WITNESSES:
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A. P. Davis.

INVENTOR:
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by Wright Brown Quinby & Woodley
Attys.

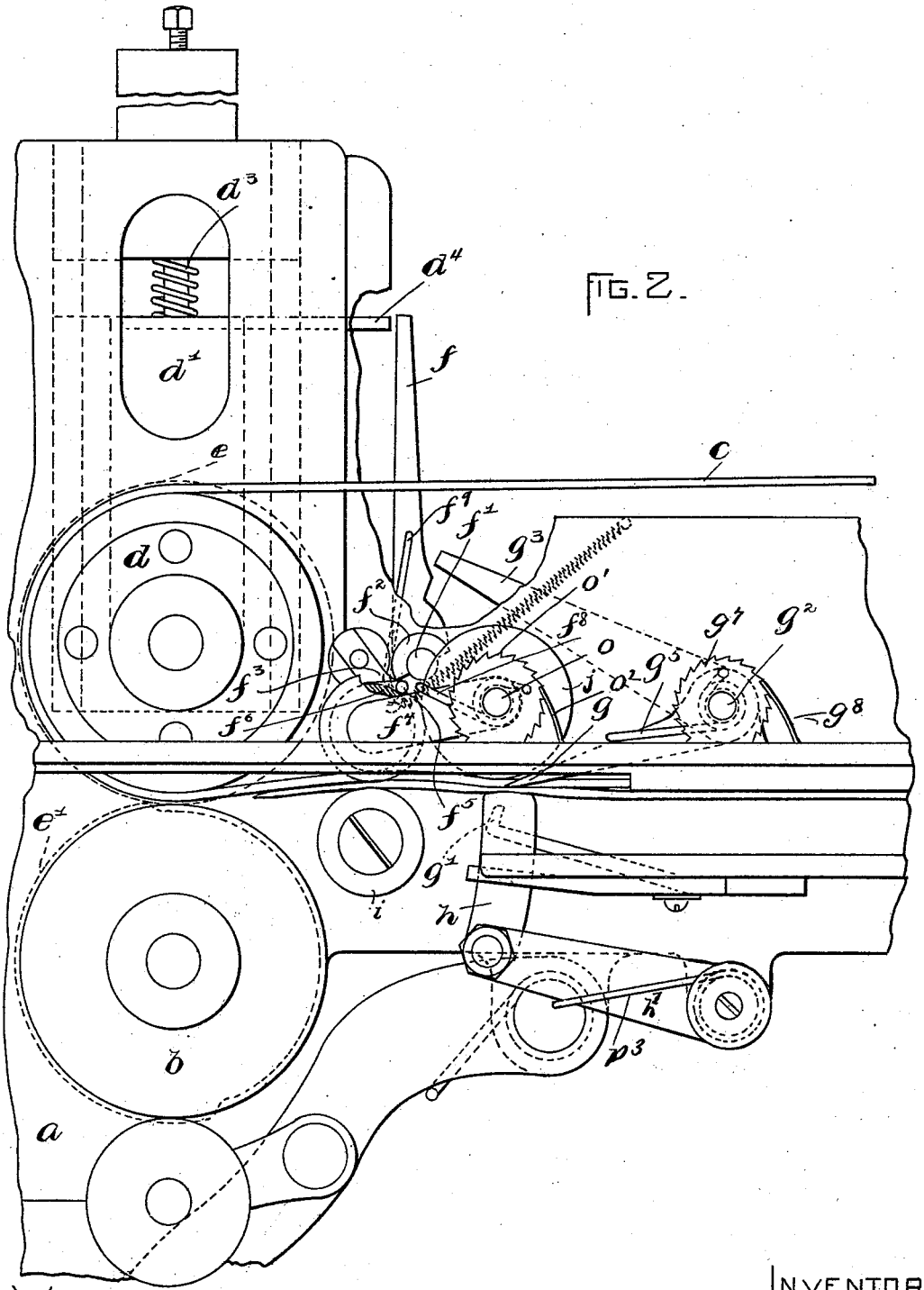
(No Model.) 3 Sheets—Sheet 2.

F. N. ETHRIDGE.

MAIL MARKING MACHINE.

No. 523,467 Patented July 24, 1894.

FIG. 2.



WITNESSES
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(No Model.) 3 Sheets—Sheet 3.

F. N. ETHRIDGE.

MAIL MARKING MACHINE.

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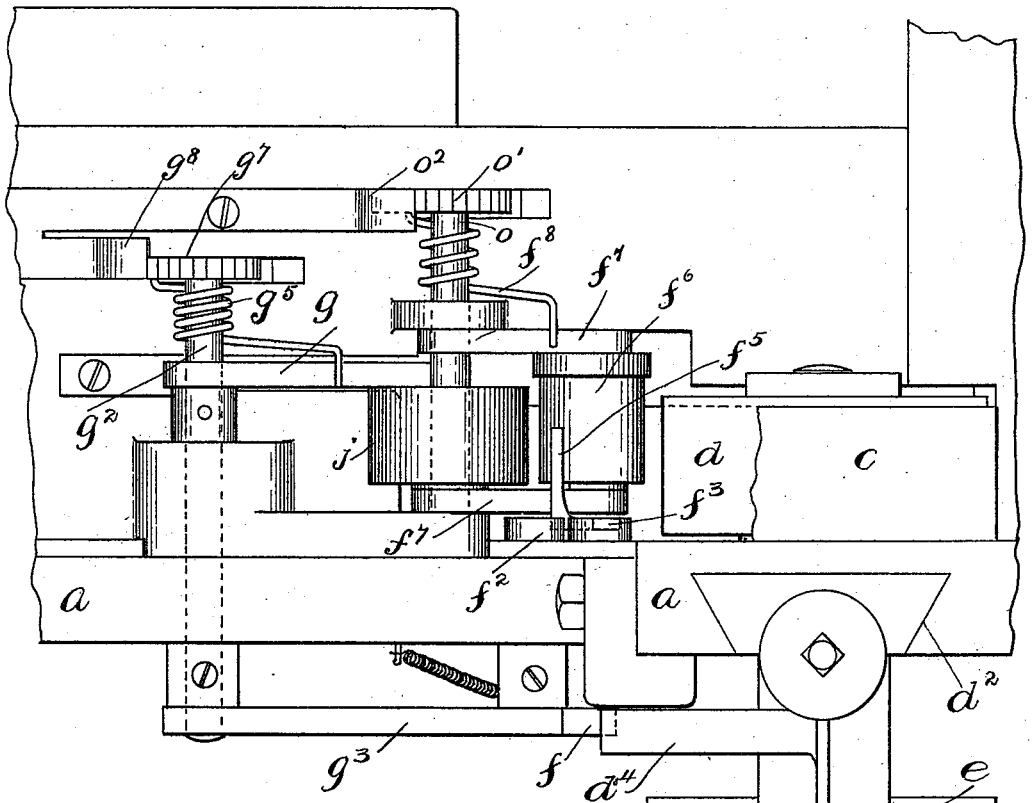

FIG. 3.

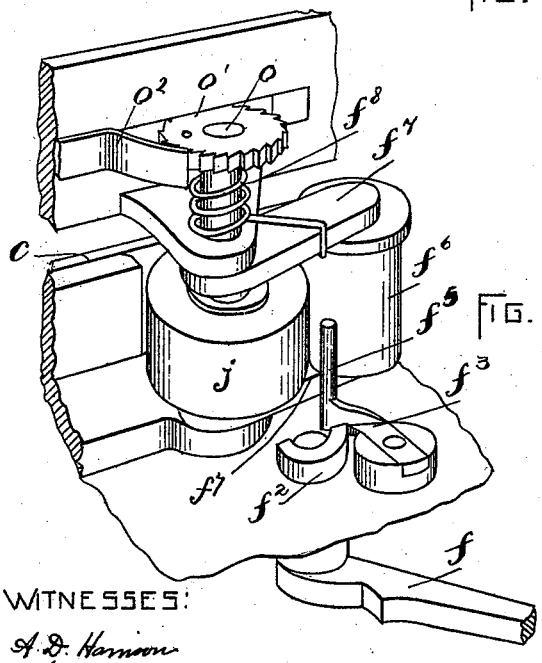

FIG. 4.

WITNESSES:
A. D. Harrison
H. Davis.

INVENTOR:
F. N. Ethridge
by Wright Brown Quinby & Atty.

UNITED STATES PATENT OFFICE.

FRANK N. ETHRIDGE, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO ALBERT LEAVITT, OF SAME PLACE.

MAIL-MARKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 523,467, dated July 24, 1894.

Application filed February 8, 1894. Serial No. 499,501. (No model.)

To all whom it may concern:

Be it known that I, FRANK N. ETHRIDGE, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Mail-Marking Machines, of which the following is a specification.

This invention relates to certain improvements in mail-marking machines which employ a rotating marker and an endless conveyer between which mail-pieces are taken to be marked.

The invention is directed toward providing improved means for controlling the operative relation of the marker and conveyer by the passing mail-piece, so that only when a mail-piece is passing does operative relation of these parts exist, such a provision being desirable to prevent marking of the endless conveyer in the absence of an interposed mail-piece.

To the above end the invention consists in certain novel arrangements and combinations of parts which are recited in the appended claims.

The invention is illustrated in the accompanying drawings, of which—

Figure 1 shows a plan view of the machine, with the parts in the relation they maintain when no mail-piece is between the marker and conveyer, a letter being represented as checked by the timing-stop, preparatory to passing between the marker and conveyer. Fig. 2 shows a similar view, illustrating the changed relation of parts brought about by the letter, which is shown as having passed the timing-stop. Fig. 3 shows a side elevation, as viewed from the upper side of Fig. 1. Fig. 4 shows a detail perspective view of letter-actuated devices. Fig. 5 shows a detail perspective of timing devices.

The same letters of reference indicate the same parts in all the figures.

The letter *a* designates the supporting-frame of the machine; *b*, a cylinder carrying the canceling-bars and post-marking stamp, and designed to be continuously rotated; *c*, an endless conveying-belt, one end of which is supported by a pulley *d* arranged opposite the marker *b* and carried by a slide d' which fits a slide-way d^2 and is actuated toward the marker by a spring d^3. The journals of the pulley *d* and the marker *c* carry respectively a plain-peripheried disk *e* and a cam e', said cam e' having a raised part designed to separate the conveyer and marker while the canceling-bars and post-marking stamp of the latter are not positioned for co-action with the conveyer, and a low part to permit such co-action while said marking-devices traverse the operative portion of their path.

The slide d' has a lateral arm d^4, adapted to be engaged by a detent-lever *f*, which, when engaged with said arm, prevents movement of the pulley *d* toward the marking-cylinder and operative relation of these elements which would be permitted by the cam e'. It is the design to control this detent by the passing mail-piece, so that it will be tripped thereby to permit movement of the conveyer into operative relation with the marking-cylinder, and to this end the following construction is employed: The detent-lever *f* is affixed to a stud f', which carries a semi-circular collar f^2, and a short lever f^3 is arranged to act against one end of this collar. Said lever f^3 has a pin f^5, which projects up alongside of a roller f^6, supported by pivoted arms f^7 and yieldingly held in the letter-path by a spring f^8. The arms, f^7, are affixed on a spindle, *o*, which journals in a fixed support and has loosely mounted on its upper end a ratchet, o', engaged by a pawl, o^2, fastened to a fixed part of the machine's frame. The spring, f^8, is fastened at one end to said ratchet and surrounds the spindle, *o*, and has an arm with a bent end taking over the edge of the upper one of the arms, f^7. It will be seen that by turning the ratchet the tension of the spring can be adjusted. A finger *g* is arranged to deflect the letter against a timing-stop g', and said finger is affixed to a stud g^2, which also carries a detent g^3, engaging a shoulder on the detent *f* and holding the latter in engagement with the arm d^4. The finger *g* is yieldingly held in the letter-path by a spiral spring g^5, which surrounds the stud, g^2, and has one end fastened to a ratchet, g^7, loose on said stud, and the other end engaged with the finger, g^4. The ratchet is engaged

by a pawl, g^8, affixed to the machine-frame, and it will be seen that by turning the ratchet the tension of the spring can be adjusted. A push-piece h is constructed to embrace the finger g and stop g', and is periodically actuated toward the conveyer and pushes the letter clear of the stop, and also pushes the finger g back, whereby the detent g^8 is moved out of engagement with the shoulder of the detent f, and as the letter passes on, it may then disengage said detent f from the arm d^4, by acting against the roller f^6 and moving it back, causing it to move the lever f^3 by acting on the pin f^5, and said lever to free the detent by acting against the half-collar f^2.

A spring f^9 restores the detent f and lever f' to normal position when the letter has passed. An idle roller i is arranged on a fixed bearing in juxta-relation to the roller f^6, and an idle roller j is mounted on the pivot of the arm f^7 in juxta-relation to the push-piece h. The latter is carried by a horizontally swinging arm h' which is vibrated by suitable means, such as those shown in a pending application filed by me November 7, 1893, where the same arrangement is shown, except that the swinging arm carries a roller instead of the push-piece. This arrangement comprises an arm, p, fastened to the journal of the arm, h', an eccentric, p', on the journal of the marking cylinder, and a slotted pitman, p^2, connecting said eccentric with the arm, p, as indicated in broken lines in Fig. 1. Through these means the push-piece is swung back away from the belt. A spring, p^3, impels the arm, h' toward the belt.

It will be seen that, by my arrangement, the marking-cylinder and endless conveyer can come into operative relation for marking only when a mail-piece enters between them.

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

1. In a mail-marking machine, the combination of a rotary marker, an endless conveyer, one of said elements being movable toward and from the other and yieldingly actuated toward the same, a cam for separating the marker and conveyer, a detent for holding them apart, and having a shoulder a lever with provisions for acting against the shoulder of said detent to displace the latter, a swinging letter-actuated mover arranged to act on said lever, and a letter-actuated detent for locking and releasing the first-named detent.

2. In a mail-marking machine, the combination of a rotary marker and a conveyer, one of which is movable into and out of operative relation with the other and yieldingly impelled toward the same, a cam for separating the marker and conveyer, a detent holding them separated, a letter-actuated detent holding said former detent, a roller in the letter-path on a pivotal support, and a lever arranged to be acted upon by the said roller to displace the first-named detent.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 31st day of January, A. D. 1894.

FRANK N. ETHRIDGE.

Witnesses:
C. F. BROWN,
A. D. HARRISON.