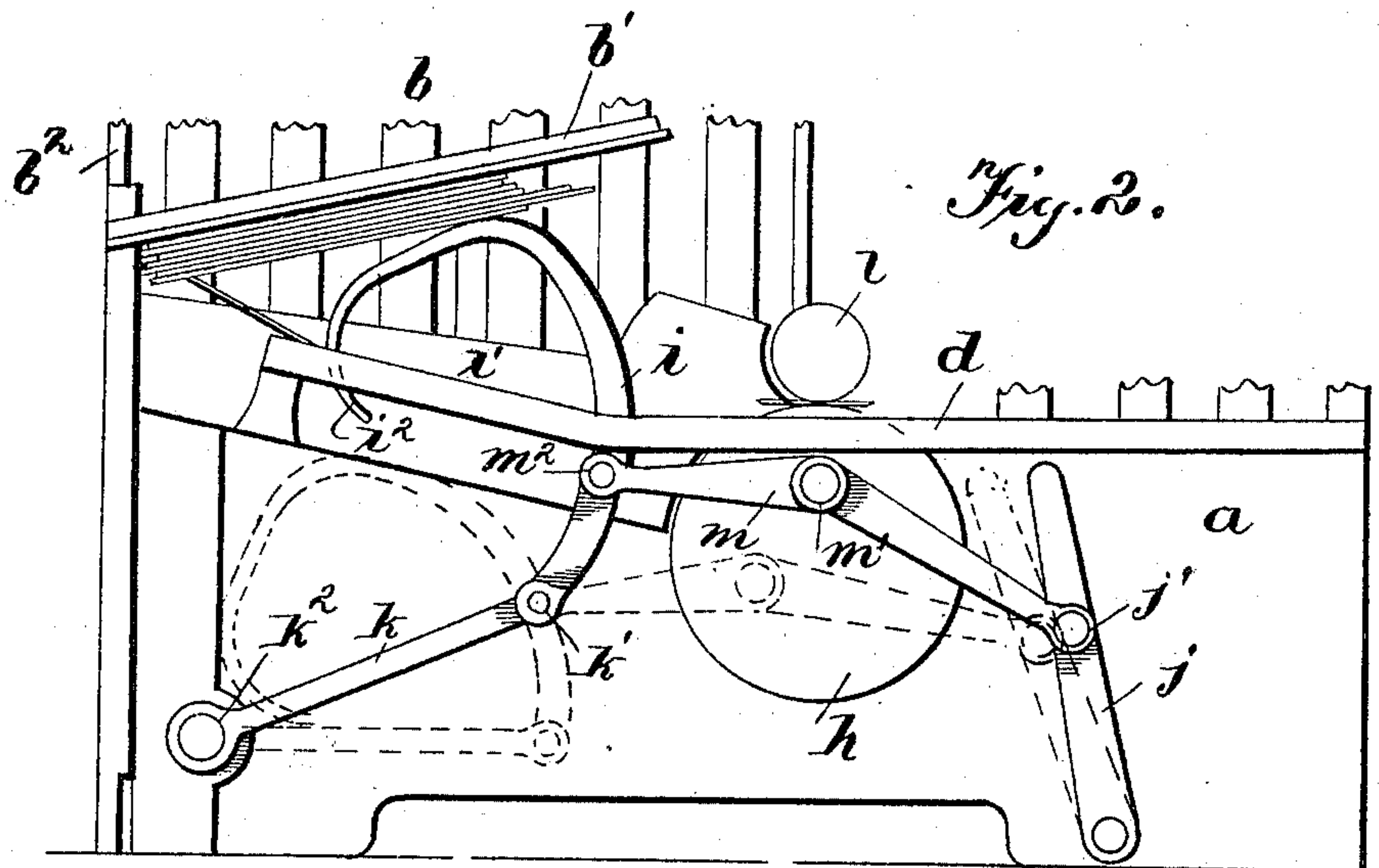
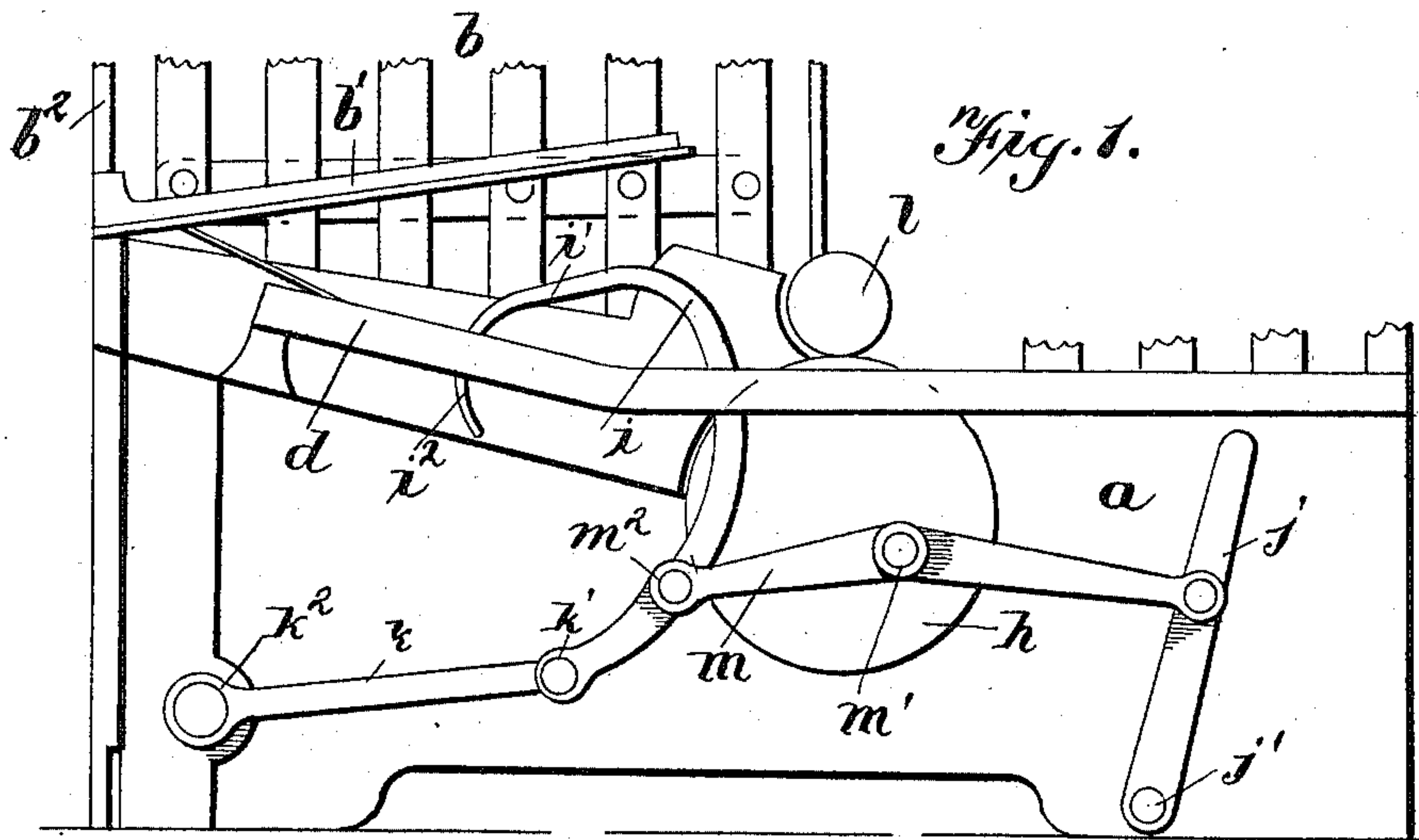


(No Model.)

W. BARRY.  
STACKING DEVICE.

No. 584,842.

Patented June 22, 1897.



Witnesses  
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# UNITED STATES PATENT OFFICE.

WILLIAM BARRY, OF SYRACUSE, NEW YORK.

## STACKING DEVICE.

SPECIFICATION forming part of Letters Patent No. 584,842, dated June 22, 1897.

Application filed December 23, 1895. Serial No. 573,137. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM BARRY, a citizen of the United States, residing at Syracuse, in the county of Onondaga and State of New York, have invented certain new and useful Improvements in Stacking Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to certain improvements in stacking or packing devices.

The object of the invention is to provide a simple, durable, economical, effective, and practical stacking or packing device particularly adapted for employment in but not restricted to employment in mail-marking machines and which shall be composed of a minimum number of parts to accomplish the purposes of the device.

The invention consists in certain novel features of construction and in combinations and arrangements of parts more particularly described and pointed out hereinafter, and clearly illustrated in the accompanying drawings.

Referring to the accompanying drawings, Figure 1 is a top plan view of a portion of a mail-marking machine provided with the invention of this application. Fig. 2 is a corresponding view showing the movable parts in different positions and mail-matter stacked by the stacker herein disclosed.

In the drawings, *a* is a front floor or table of a mail-marking machine having a receiving-way *b*, closed at the front by the vertical wall *d*.

*b*<sup>2</sup> is a guide arranged longitudinally at the outer longitudinal edge of the letter-way *b*. *b'* is a follower in said way to hold up the body of letters arranged on edge therein.

The pieces of mail-matter are fed separately by suitable means to the two rolls *h* *l*, which grip the same and discharge the letters separately in their positions on edge transversely across the front end of the letter-way *c* and behind the vertical front wall *d*.

The vertical horizontally-rotating roll *h* is arranged above the floor *a* and in front of the wall *d*, but projecting inwardly through a slot in the said wall to approach to the proper

relative feeding position with the roll *l*, so that said two rolls coöperate to carry along the mail-matter as desired.

Suitable means (not here shown) can be employed to rotate the two rolls preferably in the direction indicated by the arrows on the rolls.

*j* is a lever arranged above the floor *a* and to one side of the roll *h* and fulcrumed at *j'* at its front end to said floor and, preferably, so as to permit its free end to swing toward and away from said roll.

The stacking or packing device is arranged to move up behind each piece of mail-matter as it is discharged by the rolls transversely across the front end of the letter-way *b* and to push each piece inwardly toward the outer end of the way and at the same time toward the outer longitudinal edge of the way, so as to aline the mass of letters in said way against said side guide *b*<sup>2</sup> and to push each piece out of the way of the next following piece.

The stacker here shown comprises a pusher *i*, swinging in an approximately elliptical path into and out of the receiving end of the way *b*, through a longitudinal slot in the vertical wall *d* in front of said way.

The pusher, as here shown, is approximately *J* or *L* shaped and swings in a horizontal plane above the front floor *a* and the bottom of the letter-way *b*, with its inner letter-engaging end *i'* (corresponding to the base or lateral extension of the letter *J*) rounded or curved at the ends, so as not to catch or offer any obstruction to the free passage of the mail-matter. The outer or free end *i*<sup>2</sup> of the pusher is curved back and forwardly so as to extend into the slot in the front wall when the pusher is operating in the letter-way and as the pusher is moving toward the rear end and outer edge of said way. Hence the front extremity of the forwardly-extending end *i*<sup>2</sup> of the pusher does not extend rearwardly through the wall *d* during the movement of the pusher, thereby avoiding danger of the letters being caught by said free end or extremity.

The shank of the pusher arranged in front of wall *d* is pivotally joined at *k'* to the swinging link *k* above the front floor *a* and fulcrumed to the floor at *k*<sup>2</sup>, so that its free



end or portion to which the pusher is joined can swing with said pusher toward and from the front end of the letter-way *b*.

*m* is a pitman, at one end pivotally joined to the lever *j* at a point between its fulcrum and free end, and from thence extending over the roll *h* and eccentrically and pivotally joined thereto by crank *m'* and beyond the roll to and pivotally joined to the shank of the pusher at *m*<sup>2</sup>. The pivotal point *m*<sup>2</sup> is so relatively arranged in respect to the pivotal points *k'* and *k*<sup>2</sup> that the desired movement, as hereinafter set forth, is imparted to the pusher by the swing of the pitman through its crank or eccentric driving means or connection.

The point of connection *m*<sup>2</sup> is here shown at an intermediate point between the fulcrum *k'* and the inner letter-engaging portion of the pusher. However, I do not limit myself to such specific arrangement, as the same end can be attained by other arrangements of these pivotal points.

It should be noted that the pitman, by reason of its crank or eccentric driving connection, moves the pusher through the wall *d* at the inner side of the letter-way *b* behind the letter just discharged into said way and then moves in toward the rear end of said way and at the same time transversely out of the way toward the outer longitudinal edge of the way, so as to press the letter usually in a somewhat inclined position in against the pack of letters and so as to leave a free space to receive the next letter entering the way. The pusher usually enters the inner side of the way, for instance, as shown in Fig. 1, and moves transversely of the way toward the outer edge in an inclined position, as shown in Fig. 2, so as to be effective in aligning the letters against the outer side guide of the way. The pusher starts on its return stroke approximately as the operating-crank *m'* passes to the left beyond the plane embracing the axes of the two rolls *h* and *l*, (see Fig. 2,) and said pusher on its return stroke swings outwardly on its fulcrum *m*<sup>2</sup>, which fulcrum moves forwardly until the pusher assumes the position shown by dotted lines, Fig. 2, entirely out of the way. As the crank continues around, the pusher is swung to the right and into the way at the inner side thereof immediately behind each letter as it enters the inner side of said way.

By a reference to the drawings it can be readily understood that as the pusher starts in entering the receiving-way on its feeding stroke its letter-engaging edge is approximately parallel with the flat face of the letter and thus first engages the letter flatly approximately throughout the length of its flat face and pushes the letter inwardly, and then as the rotary actuating means revolves said letter-engaging edge gradually assumes an inclined position and moves transverse of the way as it moves toward the outer end thereof and moves the letter laterally as well as in-

wardly to aline the same against the side guide or with the other letters in the way.

It should be observed that the pusher has a movable or shifting fulcrum attained by fulcruming the pusher to the swinging link *k* and that the crank or eccentric operating means for the pusher is provided with controlling means to carry the pusher in the proper path and to maintain it in proper positions throughout its movements. In the present instance the controlling means of the operating device comprises the swinging lever *j*; but I do not limit myself to such peculiar controlling means, as various other arrangements can be provided within the scope of my invention to maintain the pusher in its proper path; also, I do not limit the stacker herein disclosed to employment in a mail-marking machine, as the invention can be employed in other connections and machines; nor do I limit myself to a pusher of the peculiar shape herein disclosed, as many other shapes and forms can be employed to attain the same ends without departing from the scope of this invention; nor do I limit myself to the peculiar constructions, arrangements, and combinations of parts as specifically described herein for the sake of clearness, but consider myself entitled to all such constructions, combinations, and arrangements as fall within the spirit and scope of my invention.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. A stacker comprising a pusher having a movable fulcrum, a crank or eccentrically-driven actuating-pitman for the pusher, and movable means pivoted to the pitman controlling the path of movement of the pusher, substantially as described.

2. A stacker comprising a swinging pusher having a movable fulcrum, a crank or eccentrically-driven pitman arranged to swing the pusher, and a swinging lever pivotally connected with the pitman to control the swing thereof and consequently the path traversed by the pusher, substantially as described.

3. A receiving-way into one end of which the letters are discharged, in combination with a swinging pusher arranged to move into and out of the path of the letters entering the way and having a movable fulcrum, an actuating-pitman connected to the pusher, rotary driving means eccentrically connected to the pitman, and controlling means for the pitman on the opposite side of the driving means from the pusher, substantially as described.

4. In a stacker, the combination of a swinging lever, a letter-engaging pusher held to move in a fixed path, a pitman pivotally joining the pusher and lever, and rotary driving means applied to the pitman at an intermediate portion of its length, substantially as described.

5. A receiving-way, in combination with a stacking device comprising a swinging pusher portion guided and confined to move in an



encircling path into and out of the end of the receiving-way, rotary actuating means, and an actuating connection from said means pivotally joined to said pusher portion to swing the same, and movable controlling means pivotally joined to said connection independently of the pusher portion, substantially as described.

6. A supporting-frame, and a receiving-way, in combination with a horizontally-rotating roll exterior the way, a pusher arranged in front of said way to move into and out of the same, a swinging lever at the opposite side of the roll from the pusher, and a pitman pivotally joined to both the lever and pusher and eccentrically joined to and actuated by the roll, substantially as described.

7. In a mail-marking machine, the combination of a supporting-frame, a receiving-way, a swinging link arranged in front of the way, a pusher at its outer portion fulcrumed to the free end of the link and having a letter-engaging portion arranged to move across the path of the letters in the way, a rotary driver, a connection eccentrically connected with and actuated by the roll and connected with said pusher to actuate the same, and a swinging member fulcrumed to the frame and pivotally joined to said connection to control the same to move the pusher in a fixed path, substantially as described.

8. A receiving-way having its front end provided with a longitudinal opening transverse the way, and a frame, in combination with a stacker comprising a horizontally-disposed single approximately J-shaped pusher-bar, the inner edge of which forms the letter-engaging portion and which is movable in an approximately elliptical or encircling path in and out of the way through said opening, and actuating and controlling means, substantially as described.

9. A receiving-way, and a frame, in combination with a stacker comprising a single horizontal approximately J-shaped pusher-bar arranged in front of the way and movable in an approximately elliptical path horizontal and transverse of the plane of the way and into and out of the front end of the way, and actuating and controlling means carrying the letter-engaging portion into and out of the way, and transversely in front of the way and transversely across the way above the floor thereof and in an inclined position, substantially as described.

10. A horizontally-disposed receiving-way, a pair of rolls adjacent thereto and feeding the letters into the way in an upright position, and a frame extending forwardly in front of the way, in combination with a stacking device comprising a link in front of the way and pivoted to said forward extension of the frame

to swing horizontally, a horizontally-swinging pusher movable into and out of the way and having a return stroke in front of the way over said forward extension of the frame, said pusher formed of a bar bent laterally at its inner portion to form the letter-engaging portion, with its outer portion fulcrumed to the free end of said link, and an actuating and controlling connection from one of said rolls to said pusher, substantially as described.

11. A receiving-way into the front end of which the letters are discharged in an upright position, and a supporting-frame extending forwardly from the front end of said way, in combination with a stacking device comprising a horizontally-swinging movable member pivoted to the frame in front of the way, a horizontally-movable pusher-bar moving into and out of the way over the floor thereof and over said forwardly-extending frame and having its inner end bent laterally and forming a letter-engaging edge moving in the way transversely thereto, and at its outer portion fulcrumed to the free portion of said member, and actuating and controlling means applied to the pusher to one side of said fulcrum, substantially as described.

12. In a mail-marking machine, the combination of a horizontally-disposed receiving-way, a frame, a horizontally-rotating roll, and a horizontally-movable pusher-bar having its inner end extended laterally forming the letter-engaging portion at the outer edge of said lateral portion, said pusher arranged in a horizontal plane above said roll and having a movable fulcrum and controlling means and eccentrically connected with and actuated from the roll to move into and out of the path of the letters entering the way, substantially as described.

13. In a mail-marking machine, the combination of a receiving-way, a frame extending forwardly from the way, and a stacker comprising a pusher-bar having a movable fulcrum, and intermediate actuating means pivotally applied thereto, said bar having its inner end extended laterally to form the letter-engaging portion, and said bar being so controlled and actuated as to move in an encircling path of movement into and out of the front end of the receiving-way and to enter the way with its lateral end approximately flat against or parallel with the letters and to gradually rock to assume an inclined position as it moves into and transversely of and leaves the way, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM BARRY.

Witnesses:

ELEONORE M. LANGERMAN,  
JOHN A. CORBIN.