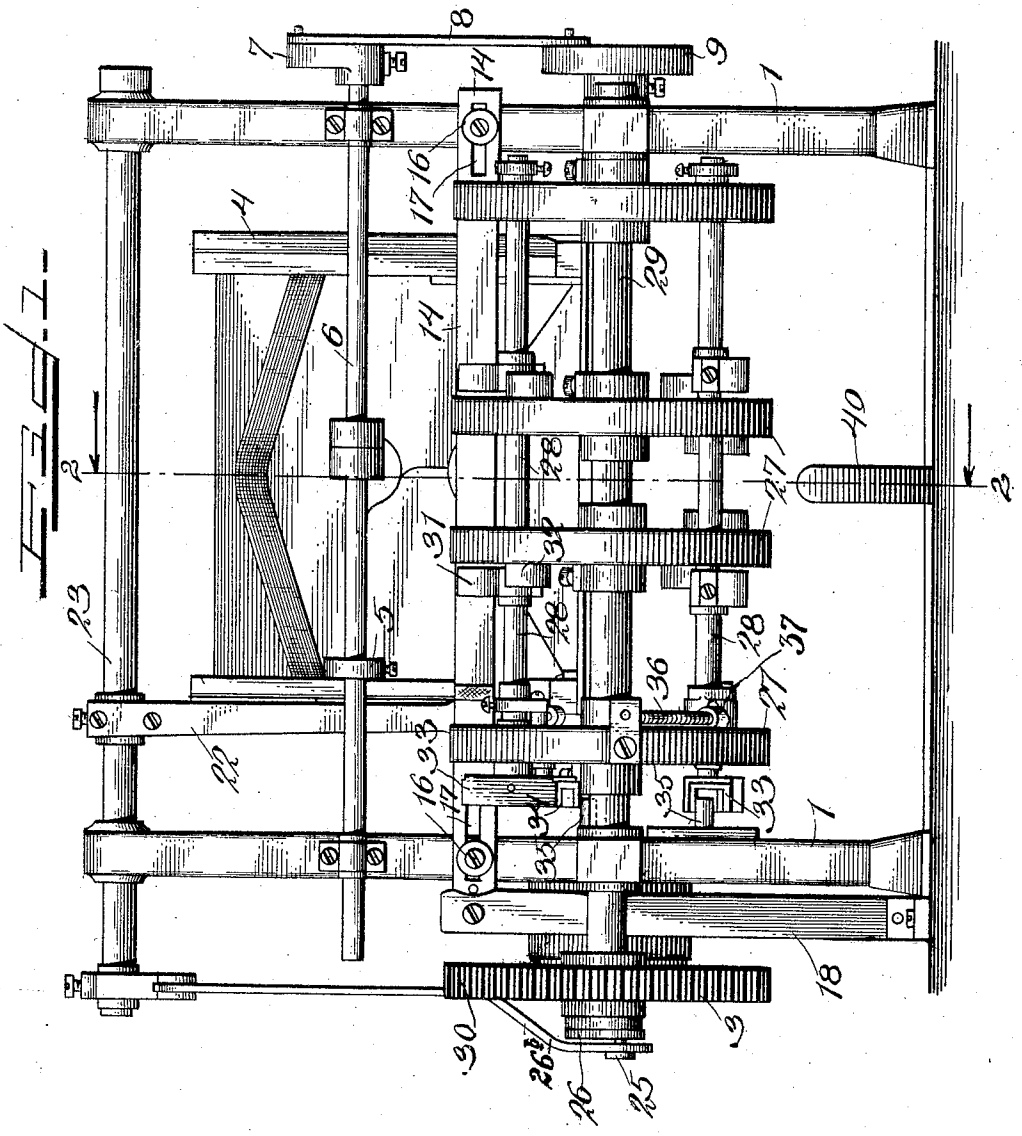
No. 768,475. PATENTED AUG. 23, 1904.

E. MEIER.

ENVELOP FEEDING MACHINE.

APPLICATION FILED NOV. 17, 1902.

NO MODEL. 4 SHEETS—SHEET 1.



WITNESSES:

Wm. A. Moore

Thos. J. Surplee.

INVENTOR

Emil Meier

BY

Ernest Hopkinson

his ATTORNEY.

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NO MODEL. 4 SHEETS—SHEET 2.

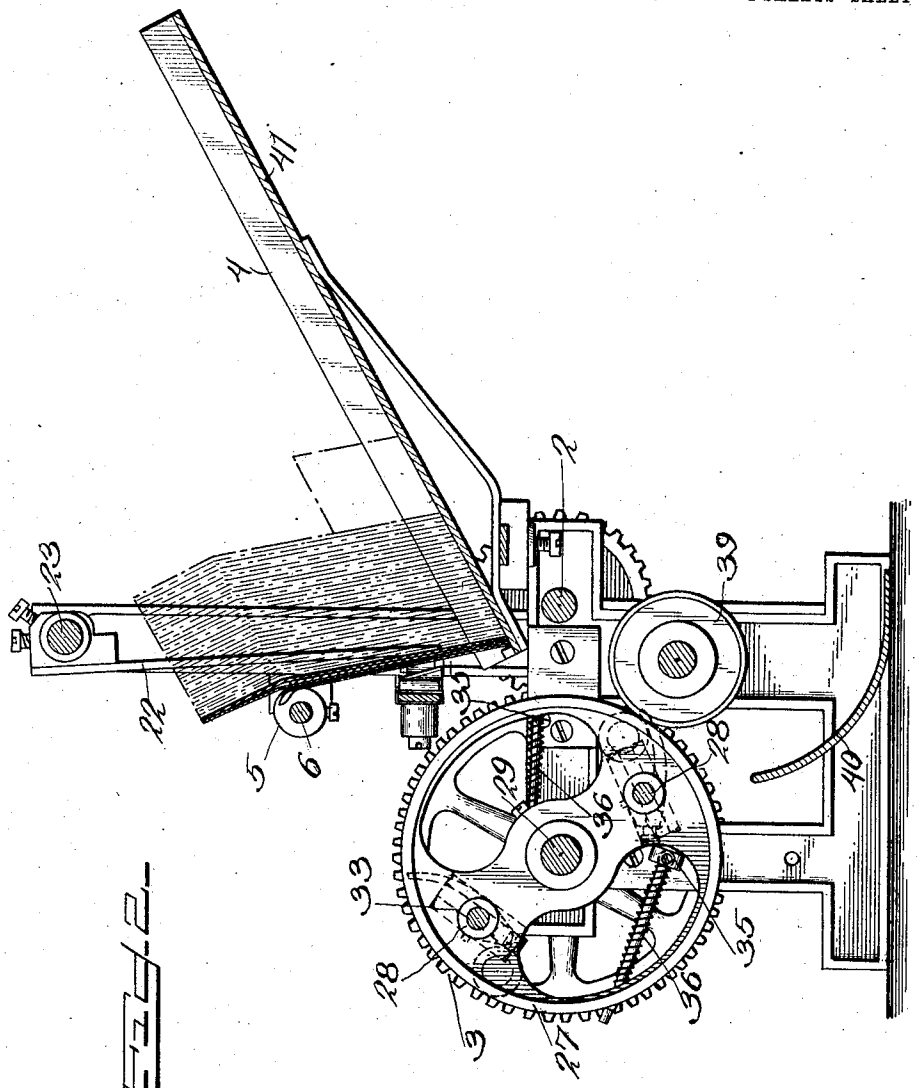


FIG. 2.

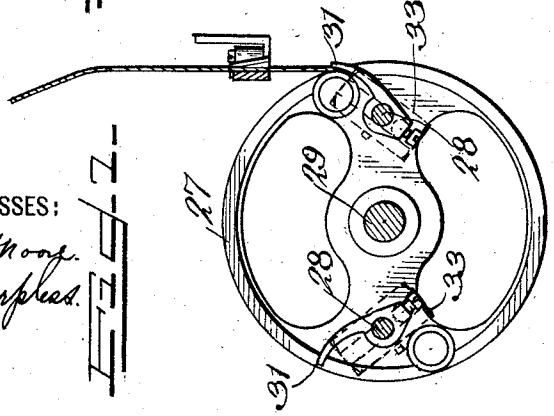


FIG. 7.

WITNESSES:

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No. 768,475. PATENTED AUG. 23, 1904.

E. MEIER.

ENVELOP FEEDING MACHINE.

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NO MODEL. 4 SHEETS—SHEET 3.

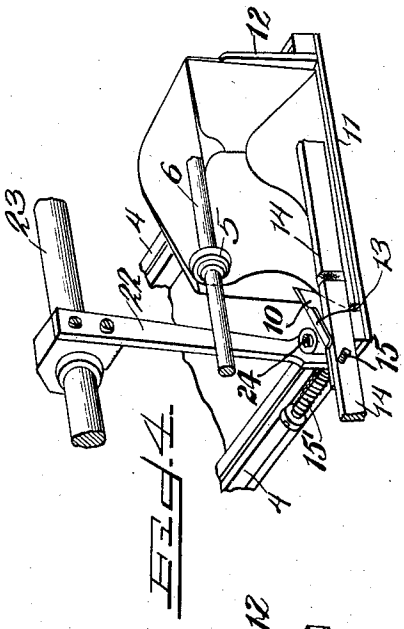


FIG. 4.

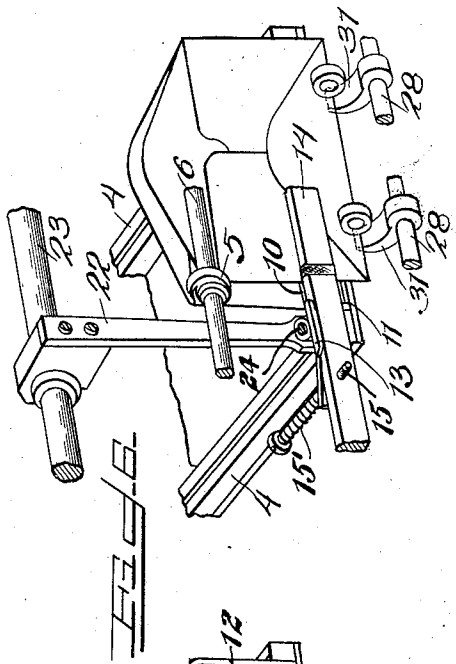


FIG. 6.

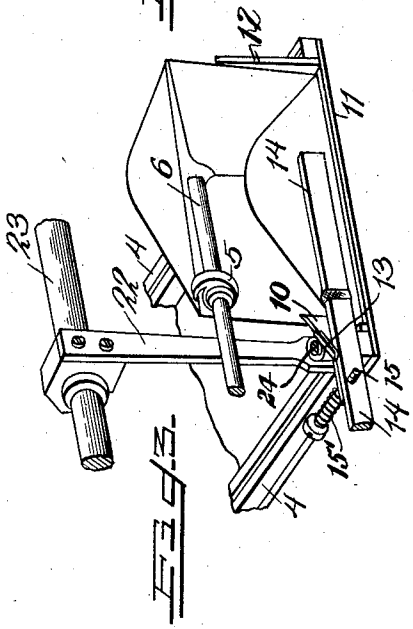


FIG. 3.

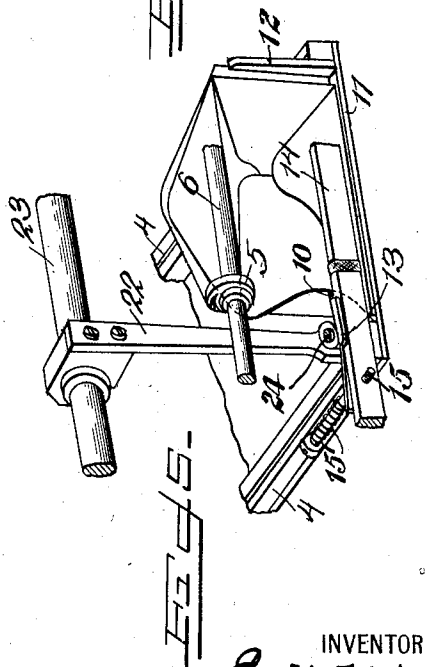


FIG. 5.

WITNESSES:

Wm A. Moore

Thos. J. Surplees.

INVENTOR

Emil Meier

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No. 768,475. PATENTED AUG. 23, 1904.

E. MEIER.

ENVELOP FEEDING MACHINE.

APPLICATION FILED NOV. 17, 1902.

NO MODEL. 4 SHEETS—SHEET 4.

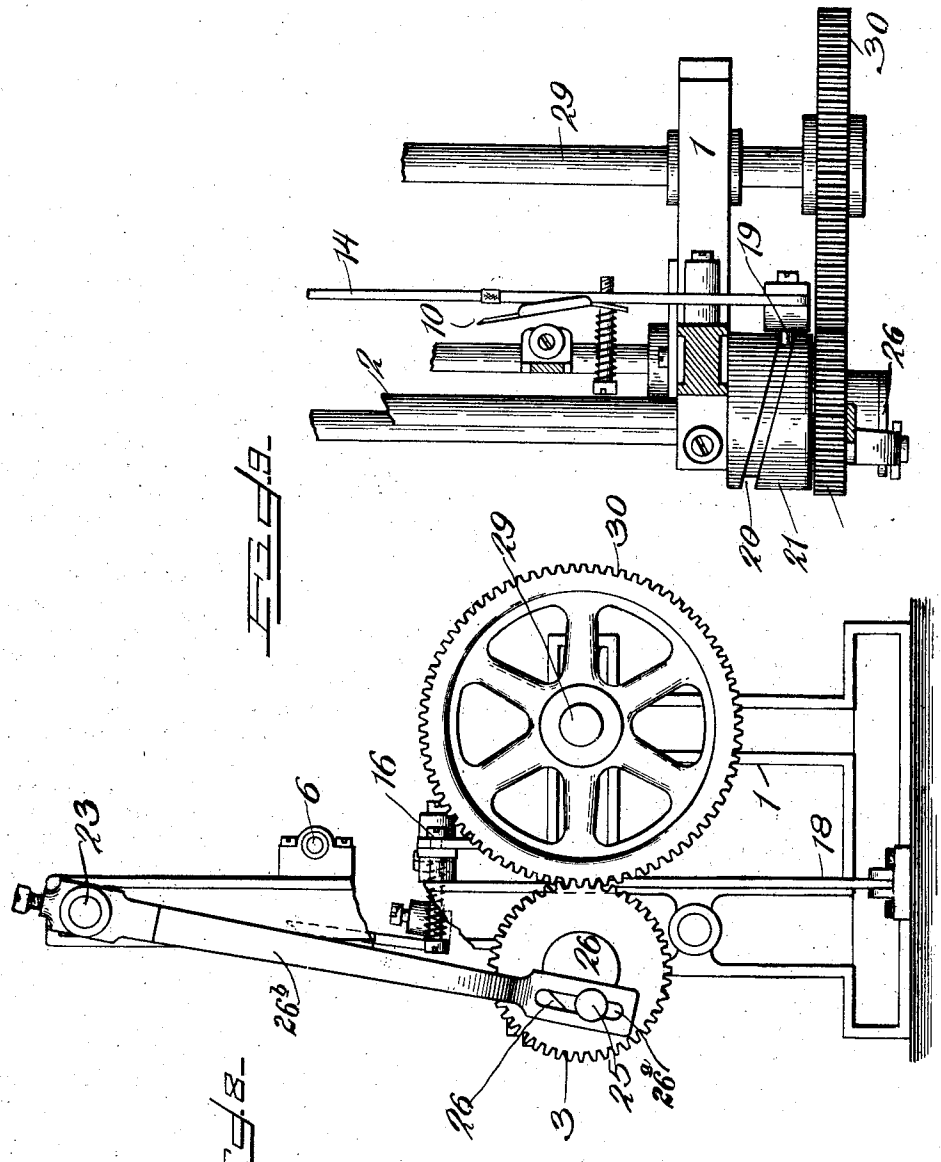


FIG. 3.

FIG. 2.

WITNESSES:

Wm A. Moore

Thos. J. Surplee.

INVENTOR

Emil Meier

BY Emil Hopkinson

his ATTORNEY.

No. 768,475. Patented August 23, 1904.

UNITED STATES PATENT OFFICE.

EMIL MEIER, OF NEW YORK, N. Y.

ENVELOP-FEEDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 768,475, dated August 23, 1904.

Application filed November 17, 1902. Serial No. 131,609. (No model.)

To all whom it may concern:

Be it known that I, EMIL MEIER, a citizen of the United States, residing at 303½ Adelphi street, borough of Brooklyn, county of Kings, city and State of New York, have invented a new and useful Improvement in Envelop-Feeding Machines, of which the following is a specification.

The present invention relates to machines for feeding envelops. It is particularly designed to provide means for feeding envelops to printing or addressing machines.

The features of improvement of the present invention consist of a device whereby envelops are positively engaged one by one and delivered to the grasp of feeding devices. Preferably the engagement of an individual envelop will be effected as illustrated in the accompanying drawings, where the envelops are fed with their flaps open and the engaging device is inserted into the envelop-pocket, this method insuring the single engagement and successive feed desired.

In the drawings I have illustrated a construction embodying my invention, in which—

Figure 1 is a front elevation. Fig. 2 is a view in section, taken along line 2 2 of Fig. 1 looking in the direction of the arrow. Figs. 3, 4, 5, and 6 are views illustrating the sequence of operation in the engagement and feeding of the envelop. Fig. 7 is a detail view of a portion of the rotary feeding device. Fig. 8 is an end elevation of the machine, certain parts being broken away. Fig. 9 is a partial plan view of one end of the machine, certain parts being shown in section and certain other parts removed.

Like numerals of reference refer to like parts throughout the several figures of the drawings.

Referring to the drawings in detail, 1 designates the frame of the machine, and 2 is the main driving-shaft. On this shaft 2 are secured all the means by which the several motions of the different parts of the machine are imparted. This shaft 2 carries a gear-wheel 3, to which motion is transmitted to operate the machine.

In the operation of engaging an envelop the procedure and devices by which such operation is carried out are as follows: The envelops are laid in a frame 4 in a substantially upright position with their flaps open, the rear faces of the envelops all facing toward the engaging device. The first action of the machine is to engage the pocket by means of a curved finger 5, fast on a rock-shaft 6, to which oscillatory motion is given by a crank 7, connecting-rod 8, and driving-wheel 9 on shaft 2. As the curved finger is turned down by the connections just mentioned it is inserted into the pocket of the first envelop presented, buckling it and drawing it away from the rear face of the next envelop. By this I mean to say that the first action of the device is to draw the front face of the first envelop substantially as a whole from the rear face of the succeeding envelop as distinguished from the operation of sliding the first envelop on the face of the next succeeding one, which has been done heretofore. It will be understood, however, that while in the operation of the machine illustrated in the present application it is desirable to effect the buckling of the envelop in the first instance I do not limit myself to this precise operation, as I believe I am the first to successively feed envelops by devices engaging the envelop-pocket. The next step in the operation of the machine after the buckling of the envelop just described is the insertion of the gripping-finger 10 behind the envelop to further push it forward and over the abutment 11, against which the bottom edge of the envelop impinges, at the same time said finger being operated to positively grip the envelop behind which it has been inserted. After the envelop is in the grip of the finger 10 the next step is its withdrawal by a lateral movement from behind the side abutting piece 12. The device by which these several movements are accomplished is as follows: The gripping-finger 10 has an angularly-shaped portion provided with side flanges 13, which by engaging the edges of the reciprocating bar 14 act as a guide to said finger 10. This finger 10 is mounted on a pin 15, secured to bar 14, said pin 15 being provided with a spring 15′, bearing against the face of the gripping-finger to maintain its forward end in position away

from the reciprocating bar 14. The bar 14, carrying the gripping-finger, is mounted upon the frame of the machine by two studs 16 passing through slots 17 formed in said bar, which is given its reciprocating motion by means of the pivoted arm 18, to the upper end of which it is pivotally secured, this arm 18 having a pin 19 projecting into a cam-groove 20 in the cam-roller 21, said roller being secured on shaft 2.

From an examination of the drawings, and particularly Figs. 3 to 6, inclusive, it will be seen that the envelop engaged in the grip of the finger 10 is farthest away from the face of the bar 14 at the commencement of the reciprocating motion of said bar, the cam-groove operating said bar being timed to commence its movement when the finger 5 is about finishing the withdrawing or buckling of the envelop. The said finger 10 moves forward and is inserted behind the envelop, and near the end of its forward reciprocating movement the oscillating arm 22, which is fixed on rock-shaft 23 and carries the friction-roller 24 at its lower end, brings said friction-roller in contact with the rear face of the gripping-finger 10, pushing it forward, drawing the envelop with it, and finally grasping the envelop tightly and pulling it laterally from behind the side abutting piece 12 on the return reciprocating movement of the bar 14. This completely withdraws the first envelop from the rest of the envelops and places it in position to be engaged by any form of feeding devices. The oscillating motion of rock-shaft 23 is given to it by means of a crank-pin 25 on a crank 26 on shaft 2, said crank-pin 25 working in a slot 26^a in one end of arm 26^b, the other end of which is secured to said rock-shaft 23. Of course it will be understood that all the envelop-engaging devices—namely, the feeding-frame, the engaging finger 5, the gripping-finger 10, and the actuating parts—are so constructed as to be capable of adjustment for different sizes of envelops.

Referring now to the devices by which the envelop is delivered to the printing or addressing machine after it has been separated from its fellows as heretofore explained, I would say that any construction may be employed, and I have illustrated for this purpose an ordinary press-feed, which I have found to operate very successfully. This feed consists of a number of pulleys 27, secured together and working in unison by means of transverse rods 28. These pulleys are mounted on shaft 29 and are driven by gear-wheel 30, meshing with gear-wheel 3. The gripping devices of this rotary mechanism will be readily understood. On the transverse rods 28 are secured gripping-fingers 31, which coact with projections 32 on the face of two of the pulleys 27 to engage and hold the envelop while it is being drawn down and delivered to any suitable transferring devices. The means by which the gripping and drawing of the envelop by this rotary device is accomplished are as follows:

The fingers 31 are fast on the transverse rods, and these rods are oscillated to bring the gripping-face of the fingers 31 in contact with the projections 32 to grip the envelop by means of a box-tumbler 33, having a groove 34 in its face adapted to coact with a pin 35. As the pulleys 27, with the transverse rods 28, revolve the groove in the box-tumbler engages a pin 35, (the grippers now being in open position.) The revolution of the pulleys 27 partially turns one of the rods 28, which being acted on causes the grippers 31 to come in contact with the envelop and grip it against the face of projection 32. The grippers 31 are held tightly against the envelop by means of the spring 36 acting on the crank extension 37 of fingers 31. The opening of the fingers is accomplished by a similar operation. The box-tumblers 33 coming in contact with a pin 38 throws the crank extension 37 on the opposite side of the center of the transverse rods 28 to open and hold open the fingers 31. It will be understood that the position of the pins which actuate the box-tumblers is such as to open the gripping-fingers 31 when the envelop engaged by them has been drawn down and entered the bite of pulleys 27 and rollers 39. These devices of course may deliver the envelop to any form of transferring device, simply a curved tongue 40 being shown for this purpose in the drawings.

What is claimed as new is—

1. In an envelop-feeding machine, means for initially engaging the pocket of the envelop to buckle the envelop, and means for subsequently engaging the buckled portion of the envelop and positively drawing the envelop to feed the same.

2. In an envelop-feeding machine, means for initially engaging the pocket of the envelop to buckle the same, means for positively engaging the buckled portion of the envelop and drawing the envelop laterally, and means for disengaging and transferring the envelop to suitable delivering devices.

3. In an envelop-feeding machine, means for holding the envelops in a substantially vertical plane, means for buckling one of the vertical edges of the envelop, a horizontally-reciprocating finger, and means for inserting the same behind the buckled edge of the envelop.

4. In an envelop-feeding machine, means for holding the envelops in a substantially vertical plane, means for buckling one of the vertical edges of the envelop, means for inserting the finger behind the buckled edge of the envelop, and means for causing said finger to positively clamp and draw the envelop.

5. In an envelop-feeding machine, a curved finger engaging the pocket of the envelop to

buckle the same, a gripping-finger and means for causing said gripping-finger to engage the buckled portion of the envelop and to positively hold and draw the engaged envelop.

6. In an envelop-feeding machine, a curved finger engaging the pocket of the envelop, means for oscillating said finger, a reciprocating gripping-finger, means for causing said gripping-finger to be inserted behind the envelop, means for causing said gripping-finger to hold the envelop, means for withdrawing the gripping-finger with the engaged envelop, and means for releasing the envelop from said gripping-finger.

In witness whereof I have hereunto set my hand this 11th day of November, 1902.

EMIL MEIER.

Witnesses:
ROBERT TRUSLOW,
WM. A. MOORE.