May 15, 1923. 1,455,241

D. COLOSI

ENVELOPE DELIVERY MACHINE

Filed Aug. 19, 1921

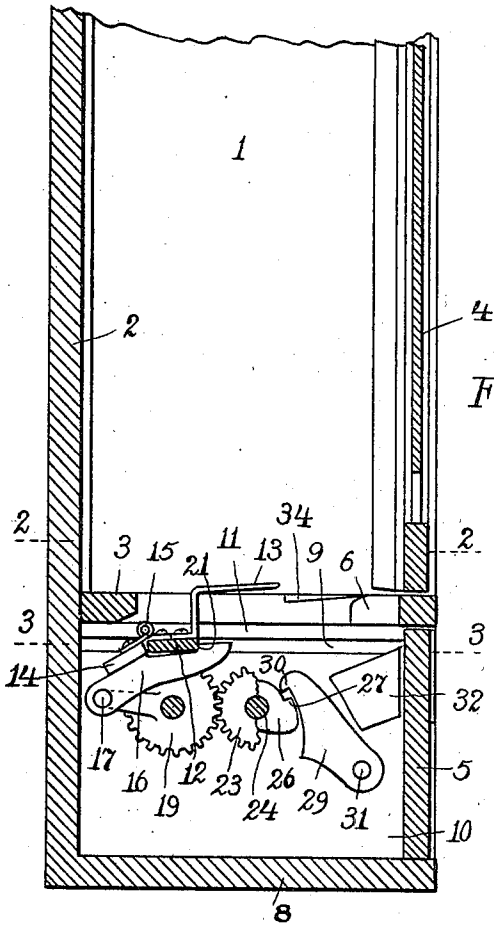


Fig.1

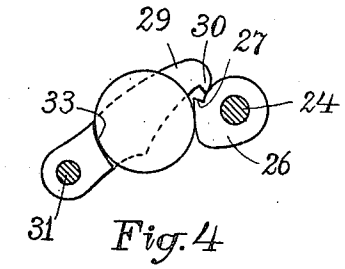
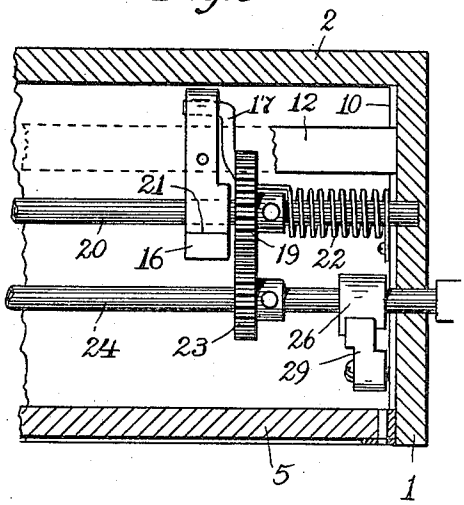


Fig.4

Fig.3



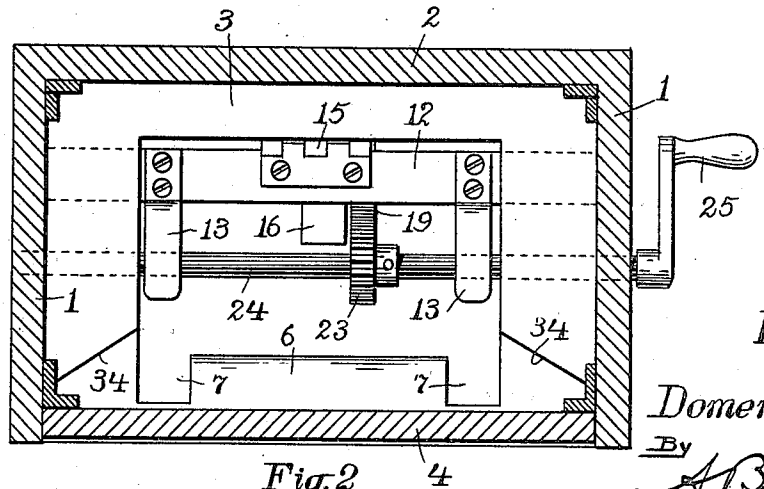


Fig.2

Inventor

Domenico Colosi

By A. B. Lepham,

Attorney.

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UNITED STATES PATENT OFFICE.

DOMENICO COLOSI, OF BOSTON, MASSACHUSETTS.

ENVELOPE-DELIVERY MACHINE.

Application filed August 19, 1921. Serial No. 493,642.

To all whom it may concern:

Be it known that I, DOMENICO COLOSI, a subject of the King of Italy, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Envelope-Delivery Machines, of which the following is a specification.

The object of this invention is the construction of an improved coin-controlled means for the individual delivery of envelopes and the like, and it pertains, first, to the construction of more certain and efficient means for engaging and delivering the lowermost envelope of a pile located in the case, and, second, to the construction of a simple and inexpensive coin-actuated device for locking the delivery device against actuation.

In the drawings forming part of this specification, Fig. 1 is a sectional side elevation of the main portion of a coin-controlled envelope delivering machine embodying my improvements. Fig. 2 is a sectional plan view of the same on the line 2—2 in Fig. 1. Fig. 3 is a sectional plan view on the line 3—3 in Fig. 1 of a part of the machine. Fig. 4 is an enlarged detail view of the coin-actuating device.

The case containing the mechanism of this delivery device consists of sides 1, back 2, bottom 8, shelf 3 dividing the case into two compartments, and removable doors 4, 5 for the two compartments.

The shelf 3 upon which the pile of envelopes is placed, is centrally apertured to give room for the removing mechanism, but leaving a front marginal portion 6 between two notches 7. Beneath the shelf 3 and slidable in grooves 9 formed by metal plates 10, 11, is a thin bar 12 carrying a pair of flap-engaging fingers 13 which rise upward and then forward therefrom on a level slightly above that of the upper surface of the shelf, so that as the bar is slid forward the fingers enter between the flap and body of the lowermost envelope and then push the latter out from the case, just enough space being allowed between the lower edge of the door 4 and the top surface of the shelf 3 for the passage of the one envelope at a time.

For thus sliding the bar 12, a leaf 14 is hinged thereto at 15, and a dog 16 fastened to the under side of this leaf. The dog is mounted at one end on a crank arm 17 which is carried by a spur gear 19 fixed upon a spindle 20. By turning the spindle and gear, the crank arm swings the dog 16 forward, carrying with it the bar 12 and its fingers 13, while a partial turn in the opposite direction moves the bar and fingers back to their normal position.

As shown in Fig. 1, the dog 16 is formed with a notch 21 near its forward end for the purpose of engaging the bar 12 and thereby limiting further movement of the parts rearward. A further and most important function performed by such engagement is that of tilting the points of the fingers 13 upward when the parts are thus returned. This tilting is due to the fact that the spindle 20 being turned backward by a helical spring 22 mounted thereon, as shown in Fig. 3, and attached at its ends to the plate 10 and gear 19 respectively, the crank arm 17 presses the rear end of the dog 16 downward and hence its front end upward, since the intermediate point of the dog is fulcrumed by the hinge 15.

This tilting of the fingers 13 serves to ensure the separation of the flap from the body of the lowermost envelope, since the upward pressure given by the ends of the fingers close to the edge of the flap tends to flex the body away from the flap, and thereby to give ample space for the penetration of the fingers between the flap and envelope-body.

For the rotation of the spindle 20 and gear 19, I prefer to provide a smaller spur gear 23 meshing with the gear 19, and a spindle 24 on which the smaller gear is mounted, the spindle 24 passing through to the exterior of the case and provided with an operating crank handle 25 thereat. The spur gear 23 being smaller than the gear 19, less force is required for actuating the mechanism.

For locking the mechanism against actuation except upon the introduction of a designated coin, the spindle 24 is provided with a cam 26 having a shoulder 27 normally engaged by a detent 29 whose weight causes its hook 30 to rest upon the cam, the detent being pivotally supported at 31. When the proper coin is introduced through a coin chute 32, it comes to rest between the cam 26 and a shoulder 33 near the lower section of the detent, as shown in Fig. 4. Now, when the spindle 24 is forcibly turned, its cam presses the coin against the shoulder 33 sufficiently to swing the hook 30 out of the path

of the shoulder 27, and so permits the spindle and connected parts to receive the desired actuation for the delivery of an envelope. When the spindle 24 has turned far enough to present a smaller radius to the coin, the latter falls to the bottom of the lower compartment and leaves the mechanism free for subsequent action.

Without the interposition of the coin, the cam-shoulder meets the detent-hook and thereby locks the mechanism against delivery action.

A pile of envelopes being placed in the upper compartment with their flaps all beneath, and the flap-folds forward, whenever a proper coin is inserted and the crank handle 25 turned, the fingers 13 are pressed forward into engagement with the flap of the lowermost envelope, and the latter carried forward and far enough out from the case to be easily withdrawn therefrom by hand. To permit the flap to descend below the level of the shelf 3, depressions 34 are formed therein, as shown in Figs. 1 and 2.

What I claim is:

1. An envelope delivery machine comprising a case, a support therein for a pile of envelopes flaps down, fingers for engaging the lowermost flap, and means for actuating said fingers embracing a rotative spindle having a crank arm, a dog held by said crank arm, and a sliding bar hinged to said dog and carrying said fingers, said dog being adapted to tilt the said bar and fingers upward when the latter are at the beginning of their flap-engagement stroke, but to permit their slight depression after such engagement.

2. An envelope delivery machine comprising a case, a support therein for a pile of envelopes flaps down, substantially horizontal fingers for engaging the lowermost flap, a loosely slidable bar carrying said fingers, a rotative spindle having a crank arm, a dog pivoted at one end on said arm, and hinged means connecting the rear edge of said bar to an intermediate point of said dog, the latter having a notch near its free end for engaging the front edge of said bar and thereby both limiting the rearward movement of said parts and tilting the ends of said fingers upward, said spindle having resilient means turning it backward.

3. An envelope delivery machine comprising a case, a support therein for a pile of envelopes flaps down, fingers for engaging said flaps, and means for actuating said fingers comprising a spindle having a crank arm and a spur gear, a dog pivotally carried by said crank arm, a slidable bar connected with said dog and carrying said fingers, a spindle having a spur gear meshing with the first-named gear but substantially smaller than the same, and means exterior of the case for rotating the second-named spindle.

4. An envelope delivery machine comprising a case, a support therein for a pile of envelopes flaps down, fingers for engaging said flaps, and means for actuating said fingers comprising a spindle having a crank arm and a spur gear, a dog pivoted to said crank arm, a slidable bar hinged to said dog and carrying said fingers, a spindle having a spur gear meshing with the first-named gear, and means for turning the last named spindle, the free end of said dog being disposed to rest upon the last-named spindle during the conclusion of the delivery stroke of said fingers.

In testimony that I claim the foregoing invention, I have hereunto set my hand this 18th day of August, 1921.

DOMENICO COLOSI.