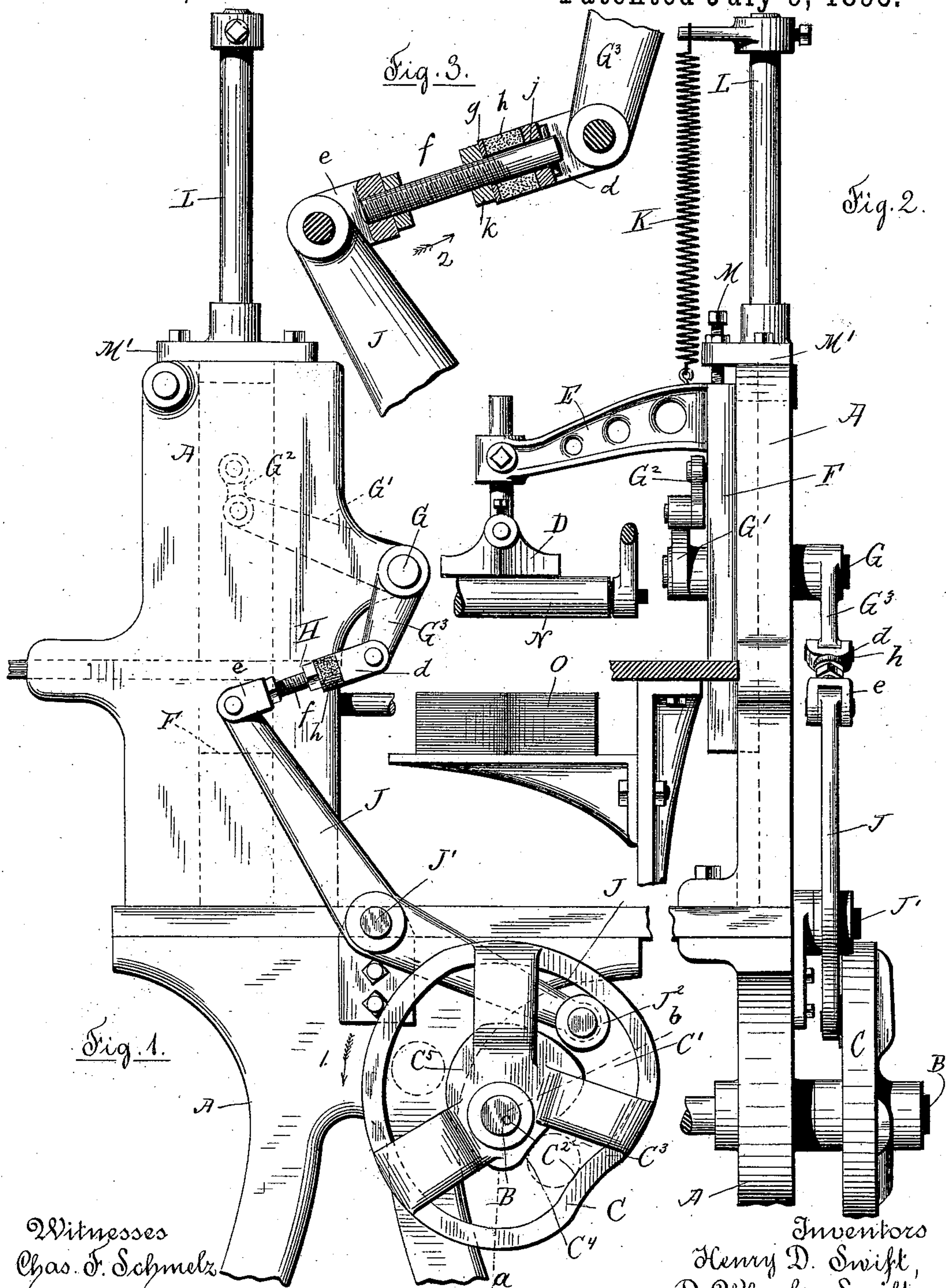


(No Model.)

H. D. & D. W. SWIFT.
ENVELOPE MACHINE.

No. 542,355.

Patented July 9, 1895.



Witnesses
Chas. F. Schmeltz
Arthur H. Swift

Inventors
Henry D. Swift,
D. Wheeler Swift,
By their Attorney
Rufus B. Fowler.

UNITED STATES PATENT OFFICE.

HENRY D. SWIFT AND DANIEL WHEELER SWIFT, OF WORCESTER, MASSACHUSETTS, ASSIGNORS TO THE LOGAN, SWIFT & BRIGHAM ENVELOPE COMPANY, OF SAME PLACE.

ENVELOPE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 542,355, dated July 9, 1895.

Application filed August 10, 1888. Serial No. 282,473. (No model.)

To all whom it may concern:

Be it known that we, HENRY D. SWIFT and DANIEL WHEELER SWIFT, citizens of the United States, and residents of Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Envelope-Machines, set forth in the annexed specification, containing a full, clear, and exact description of the nature of our invention, accompanied by drawings showing such parts of an envelope-machine as embody our invention, which form a part of this specification, and in which—

Figure 1 represents a side view of a portion of the supporting-frame of an envelope-machine, together with the actuating-cam and intermediate mechanism by which the "pick-ups" are operated. Fig. 2 is a front view of the same; and Fig. 3 is a view, partly in section, of the intermediate mechanism by which a yielding pressure is imparted to the envelope-blank.

Similar letters refer to similar parts in the different views.

Our invention relates to that class of envelope-machines in which a reciprocating gumming-die is employed to raise the envelope-blanks successively from a blank-supporting table, and in which a gumming-roll having a reciprocating motion is made to pass beneath said dies; and our invention relates particularly to that part of the envelope-machine employed in actuating the dies or pick-ups by which the envelope-blanks are successively raised from their supporting-table; and it consists in providing an actuating mechanism for operating the gumming-dies or pick-ups, by which they are carried into contact with the envelope-blank with a positive motion, but with a yielding pressure, and by which the weight of the pick-ups is counterbalanced through a spring whose tension is applied to raise the pick-up above the gumming-roll, and, also, in providing a gage by which the aforesaid motion of the pick-ups is limited to correspond with the position of the gumming-roll.

As our present invention is concerned only with that portion of the envelope-machine by which the pick-ups are operated, we have only

shown in the accompanying drawings a pick-up with its actuating-cam and intermediate connecting mechanism by which the pick-up is actuated. We have also indicated the relative position of a gumming-roll as it passes beneath the pick-up. The mechanism, however, by which the gumming-roll is operated forms no part of our present invention, and the use of a pick-up having a gumming-roll with a reciprocating movement passing back and forth beneath the gumming-face of the pick-up is too common in envelope-machines of this class to require detailed illustration. We also show the relative position to the pick-up of the pile of envelope-blanks held upon a supporting-table; but the use of such a supporting-table being old we have not shown its construction in detail in the accompanying drawings, in which—

A denotes a portion of the side frame of an envelope-machine embodying our invention.

B is the main shaft, carrying a cam C, by which the pick-ups are operated.

D denotes the pick-up, with its under surface shaped to conform to the gummed surface of an envelope-blank. The pick-up is carried by an arm E, extending from a slide F, sliding in ways in the side of the frame A.

Journalled in a bearing in the frame A is a rocking shaft G, having an arm G' attached to one end and connected by a link G² with the slide F. Upon the outer or opposite end of the rocking shaft G is attached an arm G³, connected by a link H with a lever J, pivoted upon a stud J', held by the frame A. The lever J carries a cam-roll J², running in the cam-slot C' of the cam C. The inner surface C³ of its rim C³ serves to carry the cam-roll J² in toward the main shaft B, carrying the slide F downward and bringing the pick-up D in contact with the pile of envelope-blanks. The outer surface C⁴ of the center C⁵ serves to carry the roll J² outward and away from the shaft B and to raise the pick-up from the pile of envelope-blanks.

The cam-slot C', between the dotted radial lines a and b, is wider than the diameter of the cam-roll J², and the pick-up D is raised a short distance in excess of the upward throw of the cam by means of a spring K, having

one end attached to the arm E and the opposite end supported by the post L, attached to the frame A. The tension of the spring K is strong enough to slightly more than counter-
 5 balance the weight of the pick-up D, arm E, and slide F, and when the cam-roll J² is passing from the point c in the cam-slot, at which point the pick-up is in its lowest position, to the point a the spring K serves to counter-
 10 balance the weight of the parts D, E, and F. From the point a to b the cam-slot is widened and the spring K lifts the parts D, E, and F until the slide F is brought in contact with the screw M, held in the plate M', which is at-
 15 tached to the frame A.

The cam-roll J² passes around from the line a to the line b out of contact, while from a to c the roll J² is carried in and the pick-up D moved down into contact with an envelope-
 20 blank.

When the pick-up is raised to its highest point a gumming-roll N may pass beneath it, imparting a coating of gum to the under surface of the pick-up, and it is important that
 25 the pick-up be raised uniformly to a determined position at each upward movement in order that the gumming-roll N may pass beneath it with an equal pressure upon the surface of the pick-up. This uniform upward
 30 movement is determined by means of the screw M, serving to stop the upward motion of the spring-actuated slide F. The screw M also allows an adjustment of the motion of the slide and pick-up to correspond with the po-
 35 sition of the gumming-roll or the amount of pressure required upon the pick-up.

The edge C⁴ of the cam-center C⁵, between the points a and b, would serve to raise the pick-up sufficiently to allow the gumming-
 40 roll to pass beneath it in case the spring should fail to act, and the spring would raise the pick-up above the roll N should the cam C fail through the breaking of the intermediate mechanism.

The pick-up is forced down upon the pile of envelope-blanks O by the cam C through the link H, which consists of the bifurcated blocks d and e, pivoted to the arm G³, and lever J. To the block e is attached a rod f,
 50 which passes through a washer g and through the elastic washer h and hole j in the block d. The rod f is screw-threaded and carries a nut k resting against the washer g.

The power exerted by the cam C in carrying the pick-up D upon the pile of envelope-blanks is in the direction of the arrow 2 and the force will be communicated from the rod f to the block d through the elastic washer h, and as the rod f is capable of sliding in
 60 the block d, any resistance greater than the elasticity of the washer h will cause the washer h to be slightly compressed and a yielding pressure to be imparted to the pick-up upon the pile of envelope-blanks.

65 We are aware that a yielding connection between the pick-up and its actuating-cam is

not new, and we do not claim such broadly. By the device above described we secure a more convenient means of adjustment, as the pressure of the elastic washer h is received
 70 by the nut k, which allows an adjustment by simply moving the nut k along the screw-threaded rod f without requiring a change in the position of the rod itself.

What we claim as our invention, and desire
 75 to secure by Letters Patent, is—

1. The combination with a reciprocating pickup for gumming the envelope blank, and a gumming roll for distributing gum upon the under surface of said pickup, of a spring with
 80 its tension applied to raise said pickup, and operating mechanism by which said pickup is carried upon the pile of envelope blanks with a positive motion, substantially as described.

2. The combination with a pickup having a reciprocating motion and a gumming roll for distributing a coating of gum upon said pickup, of a spring whose tension is applied
 90 to said pickup to raise it above the gumming roll, and a gage by which its upward motion is determined, substantially as described.

3. The combination with a vertically reciprocating pickup, of a spring with its tension applied to counterbalance the weight of said
 95 pickup and an actuating cam, by which said pickup is raised and lowered, through intermediate operating mechanism, substantially as described.

4. The combination with a reciprocating
 100 pickup of an actuating cam by which said pickup is reciprocated in one direction and carried upon the envelope blanks and partially reciprocated in the opposite direction, and a spring whose tension is applied to said
 105 pickup to complete the reciprocating motion of the pickup in one direction, substantially as described.

5. The combination of a pickup for gumming the envelope blanks, and having a re-
 110 ciprocating motion, an actuating cam by which said pickup is reciprocated in one direction and partially in the opposite direction, a spring with its tension applied to said pick-
 115 up to complete its reciprocation, and a gage to limit its motion as actuated by said spring, substantially as described.

6. The combination of the pickup D having a reciprocating motion, an actuating cam C, provided with a cam slot by which said pickup
 120 is carried upon the envelope blanks, a spring K applied to said pickup to complete the motion of said pickup, and an adjustable stop to limit the motion of said pickup as actuated by said spring, and intermediate mechanism
 125 between said cam and said pickup, substantially as described.

HENRY D. SWIFT.

D. WHEELER SWIFT.

Witnesses:

RUFUS B. FOWLER,
 CHAS. F. SCHMELZ.