No. 892,985.

PATENTED JULY 14, 1908.

F. F. FLAGG & G. W. SMITH.

GUMMING MECHANISM FOR ENVELOP MACHINES.

APPLICATION FILED MAY 4, 1907.

3 SHEETS—SHEET 1.

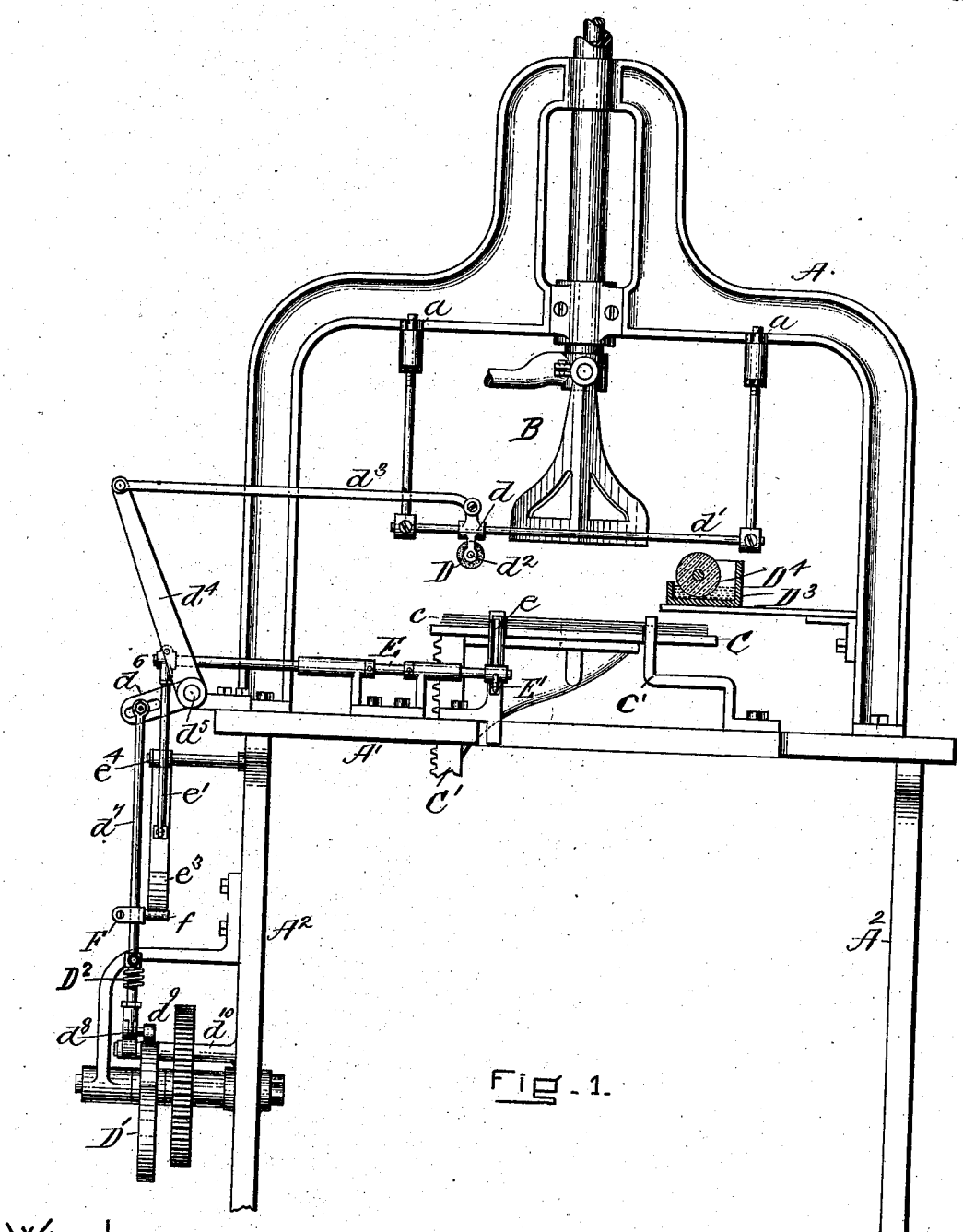


Fig. 1.

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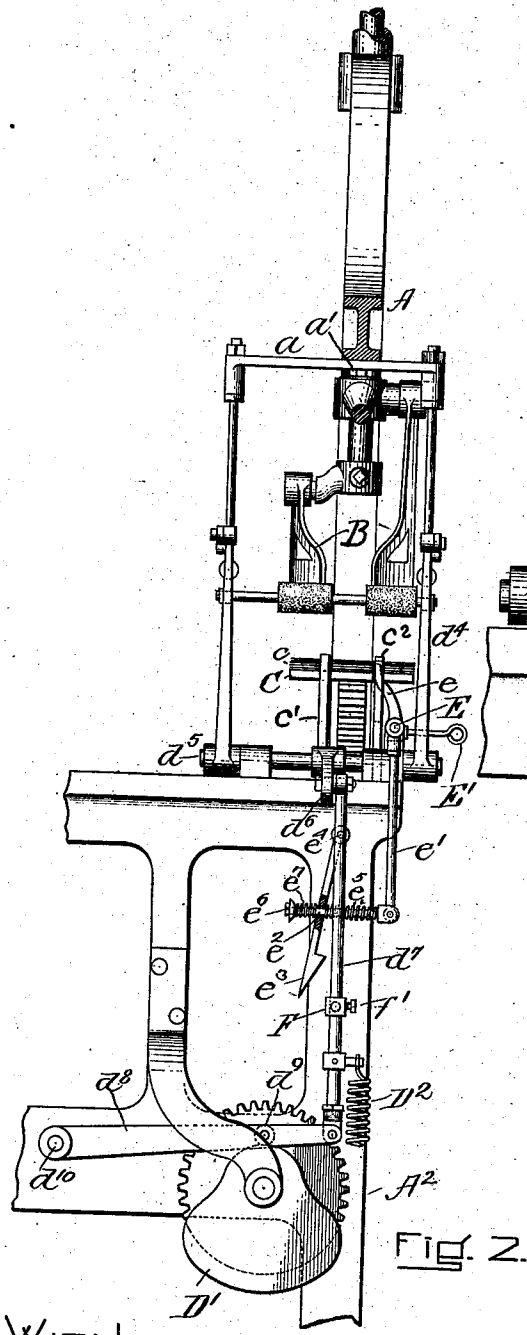


Fig. 2.

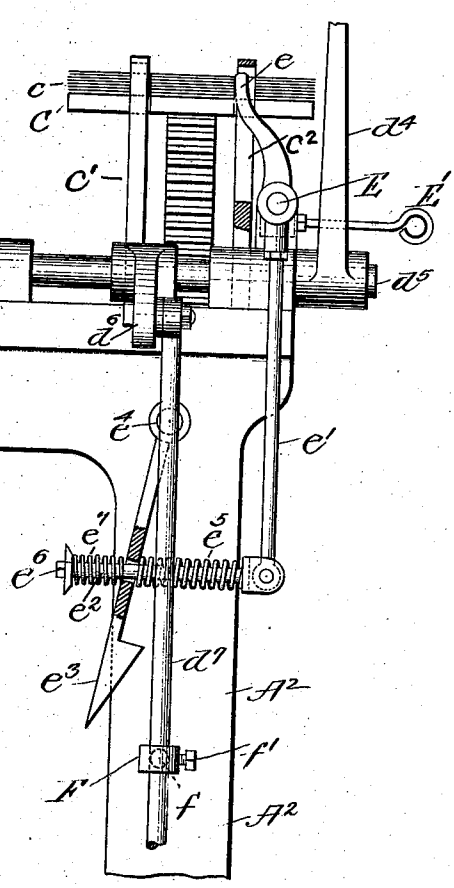


Fig. 3.

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3 SHEETS—SHEET 3.

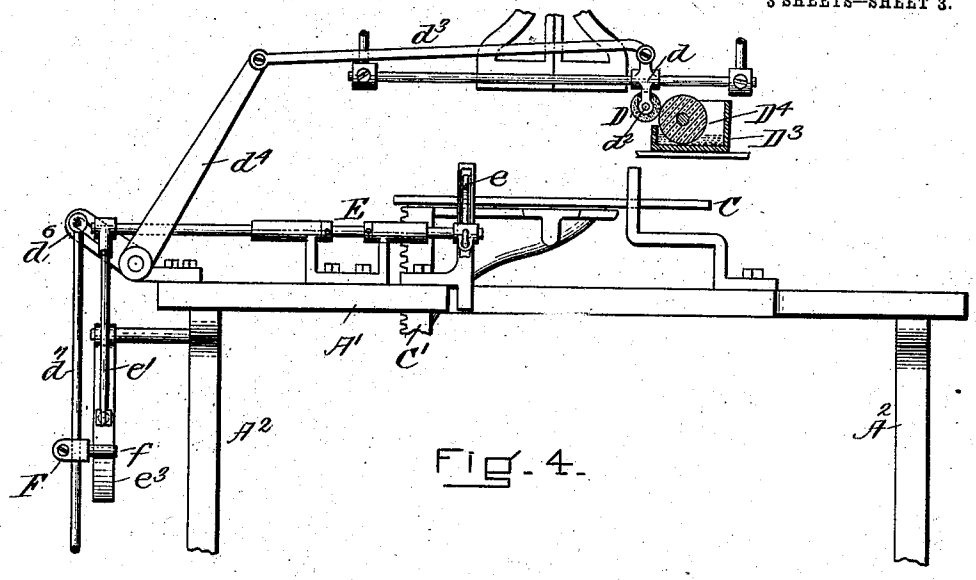


Fig. 4.

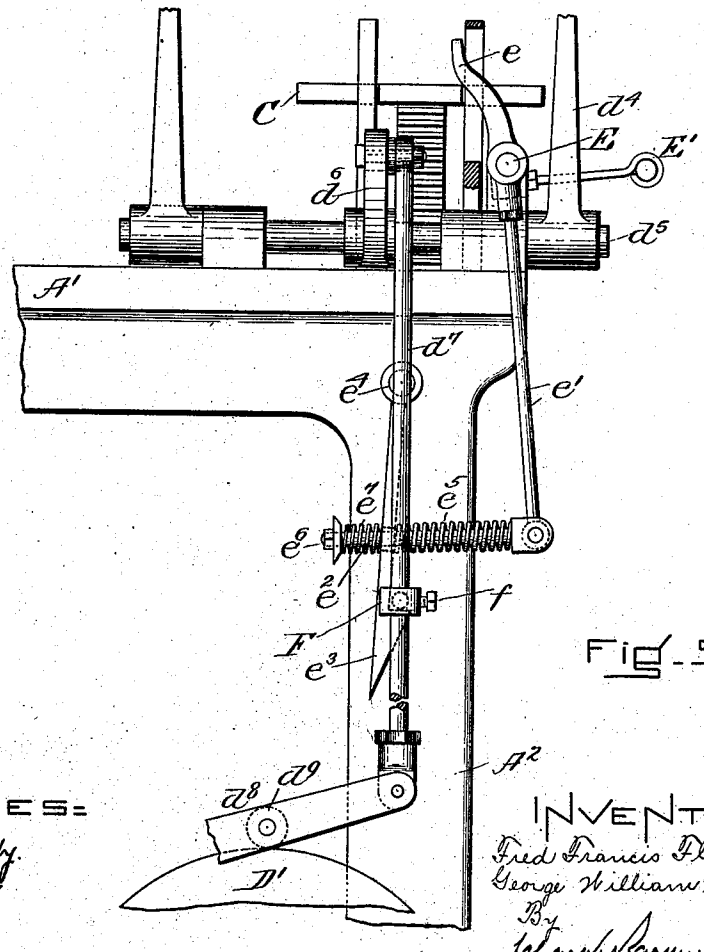


Fig. 5.

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UNITED STATES PATENT OFFICE.

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GUMMING MECHANISM FOR ENVELOP-MACHINES.

No. 892,985. Specification of Letters Patent. Patented July 14, 1908.

Application filed May 4, 1907. Serial No. 371,776.

To all whom it may concern:

Be it known that we, FRED FRANCIS FLAGG and GEORGE WILLIAM SMITH, both of Worcester, in the county of Worcester and State of Massachusetts, citizens of the United States, have invented a new and useful Improvement in Gumming Mechanism for Envelop-Machines, of which the following is a specification.

In envelop machines of the type now in general use the gum roll by which the picker is gummed constantly reciprocates backward and forward during the running of the machine, getting its gum from the gum box at one side of the picker where a roll is provided for this purpose, then moving across the machine under the picker and later returning to the gum box for more gum, gumming the picker each time it passes under it. The table upon which the blanks are supported below the picker is provided with mechanism by means of which it will be fed upwards automatically as the pile of blanks diminishes so that a blank will always be within reach of the picker. When the blanks are exhausted, however, the operator by means of a treadle or other suitable part drops the table-lifting mechanism so that the table falls into a position to receive a new pile of blanks, the gum roll continuing its reciprocations across under the picker, acquiring fresh gum each time it reaches the gum box and gumming the picker with each reciprocation. After a fresh pile of blanks has been placed upon the table and the table has been raised within reach of the picker the first envelop necessarily receives an oversupply of gum and generally spoiled owing to this fact, the pressure of the mechanism which folds the envelop squeezing the surplus gum out between the folds of the envelop and perhaps causing it to stick to the next envelop in the drier or to have a lumpy or unfinished appearance so that it must be discarded. These operations are so well known in machines of this class that it is unnecessary to inform those skilled in the art as to the details of the parts by which they are accomplished.

Our invention relates to means whereby the reciprocation of the gum roll may be stopped at will and will stop automatically without stopping the rest of the machine when the pile of blanks has been reduced to such a point that it is desirable for a fresh supply to be secured, or the blank table has been dropped so that the blanks are out of reach of the picker.

Our invention will be understood by reference to the drawings in which there is shown only so much of the machine as is necessary to describe an embodiment of our invention and its operation.

Figure 1 is a skeleton view showing the gumming mechanism and its relation to the picker, the table supporting the blanks and a specific means embodying our invention. Fig. 2 is a side elevation of Fig. 1, a portion of the frame, however, being in section. Fig 3 is an enlarged detail of a portion of Fig. 2. Fig. 4 is a detail showing the gum roll in its stationary position, and Fig. 5 is an enlarged detail corresponding to Fig. 3 with the parts in position to prevent the reciprocation of the gum roll from its position in Fig. 4.

A is the arch in which the pickers B reciprocate vertically. It is supported on a table A^1 having legs A^2.

C is the table carrying blanks *c*. It is supported upon the rack C^1 by means of which and other mechanism well known and hence not herein shown, it has a positive automatic feed upward so as to bring the top blank within reach of the picker when it descends. This feed may be disconnected from the table at any time by the operator so that the table drops into the position as indicated in Fig. 5. In Fig. 3 the table is shown in substantially the same position. In this case, however, the pile of blanks has been recently replenished.

D is the gum roll ordinarily made in two sections, one for each picker, as shown. It is mounted upon a carrier comprising sleeves *d* running upon cross-rods d^1 supported from cross-bars *a* each attached to the arch A by a bolt a^1. These sleeves carry hangers in which are journaled the ends of the shaft d^2 on which the two cylindrical surfaces forming the gum roll are carried, the whole comprising the gummer. Connecting rods d^3 connect the two sleeves *d* with rocker arms d^4 mounted on the ends of a rock shaft d^5 journaled in brackets on the side of the table A^1. To rock this shaft d^5 it carries an arm d^6 which is connected by a connecting rod d^7 with a cam

lever d^8, the cam roll d^9 of which rests on the cam D^1, the cam lever d^8 being mounted on a stud d^{10} carried by the frame.

D^2 is a spring to keep the cam roll d^1 against the cam D^1.

So far the mechanism is that ordinarily used for the operating of a gum roll.

D^3 is the gum box and D^4 the roll which runs in the gum box and supplies gum to the gum roll D when in contact therewith.

Our invention relates to means for arresting the reciprocation of the gum roll, and the particular embodiment of our invention which we have shown comprises means for engaging one of the connections between the cam roll d^9 and the gummer D so that the cam roll d^9 will be supported out of connection with its cam whereby the cam will no longer be effective. As a convenient means of accomplishing this result we have provided a rock shaft E suitably mounted on the table A^1 which carries at one end a finger e. The other end of this rock shaft carries a rocker arm e^1 which is connected at its lower end with a rod e^2 passing through a swinging hook e^3 supported from a stud e^4 on one of the legs A^2. A spring e^5 on the rod e^2 lies between the hook e^3 and that end of the rod e^2 which is connected with the rocker arm e^1 so that when the finger e is in the position shown in Fig. 3, where it is engaged by the pile of blanks c, the hook e^3 will be held out of vertical position as shown in Fig. 3. The outer end of the rod e^2 is provided with a nut e^6 and between it and the back of the hook e^3 lies a spring e^7 somewhat weaker than the spring e^5 but sufficiently strong to force the hook e^3 forward into a vertical position when the position of the rocker arm e^1 will permit.

Upon the connecting rod d^7 is mounted a collar F carrying a pin f. The position of the collar may be adjusted upon the connecting rod d^7 by means of a clamp screw f^1. This collar and pin are so located upon the connecting rod d^7 that when the connecting rod has been moved upward to throw the gum roll D against the roll D^4 it will be in position to be engaged by the hook e^3 if the hook is thrown into a vertical position as is shown in Fig. 5 so that it will be held up and hold the cam roll out of engagement with the cam as it rotates and consequently will no longer have the usual operating movement imparted to it and the gum roll.

In addition to the parts already named there are provided ordinarily on machines of this class guide fingers c^1, c^2 mounted on the table A^1, which serve to center the blanks upon the blank table C, and we prefer that one of these guide fingers c^1 shall be slotted as indicated in Fig. 5 and that the finger e shall swing in this slot.

It is believed from this description that the operation and value of our invention will be easily understood. Generally speaking, however, it is as follows:—When the blank table C is loaded with blanks and is in operative position as shown in Figs. 1, 2 and 3, the finger e being held back by the blanks on the table against which it rests, maintains the hook e^3 in its disengaged position. When, however, the finger e is allowed to fall forward into the position shown in Fig. 5, for example,—by the dropping of the blank table, and consequently the hook e^3 falls or is drawn into a position where at the next upward movement of the connecting rod d^7 the pin f will be engaged by the hook e^3, it and the connecting rod d^7 will be held in the highest position so as to disengage the cam roll from the cam until released. When the operator has provided a fresh supply of blanks the blanks will engage the finger e and the hook will be disengaged from the pin f and the cam roll and cam will again come into operative relation with each other and the gum roll will resume its reciprocations. The same thing becomes true at any time when the feed table is dropped. We have provided an arm E^1 attached to the finger e by means of which the finger e may be moved to bring the cam roll and cam into operative position and cause the operation of the gummer should such operation be desired while the table is free of blanks. The time when the finger becomes effective to stop the gum roll depends of course upon the shape of its surface which bears on the edge of the blanks. It is of course evident that the finger e tends to fall forward in the absence of the blanks because of its shape and also that the spring e^5 has a tendency to move it in the same direction.

It is obvious that our invention is not to be limited to the precise construction of parts which we have shown. Broadly speaking, it consists in providing a stop motion for the gummer which may be rendered effective by the absence of the blanks and it is obvious that this may be accomplished by means equivalent to those shown whether automatic or not.

What we claim as our invention is:—

1. In an envelop machine, in combination, a gum roll, a gum roll operating mechanism, a blank feed mechanism, a stop motion to disengage said gum roll and said gum roll operating mechanism comprising a part adapted to engage normally the blanks on said blank feed mechanism and when the blanks are missing to cause the disengagement of said gum roll from its operating mechanism.

2. In an envelop machine, in combination, a blank feed table normally carrying blanks, a gum roll, gum roll operating mechanism, and a stop motion comprising a finger normally engaging the blanks on said feed table, and in the absence of said blanks adapted to move across the edge of said feed table, and

parts connected therewith whereby the movement of said finger across the edge of said feed table will disconnect said gum roll and its operating mechanism, as described.

3. In an envelop machine, in combination, a gum roll, a cam adapted to operate said gum roll, a cam roll normally resting on said cam, means connecting said cam roll and said gum roll whereby the position of said cam roll will determine the position of said gum roll, a blank feed table, and means adapted to engage blanks on said table or in the absence of said blanks to engage said cam roll connecting means to hold said cam roll out of contact with its cam, as set forth.

4. In an envelop machine, a blank feed table, a gum roll, its operating means, a stop motion comprising a finger adapted to engage blanks on said table, a hook, a pin carried by said gum roll operating means, and connections between said hook and said finger whereby in the absence of blanks said hook will engage said pin and prevent the movement of said operating means, as described.

5. In an envelop machine, a gum roll stop motion comprising a rock shaft carrying a finger at one end and a rocker arm at the other, a hook operated by said rocker arm, a gum roll operating mechanism, carrying a part adapted to be engaged by said hook, in combination with a blank feed located in the path of said finger and when substantially empty adapted to allow the movement of said finger to cause the engagement of the hook with said part of said gum roll operating mechanism, as described.

6. In an envelop machine in combination a blank feed table normally carrying blanks, a gum roll, a gum roll operating mechanism and a stop motion comprising a finger normally engaging the blanks on said feed table and in the absence of said blanks adapted to move across the edge of said feed table and parts connected therewith whereby the movement of said finger across the edge of said table will disconnect said gum roll and its operating mechanism and means to reëngage said gum roll and said gum roll operating mechanism temporarily in the absence of said blanks, comprising an arm connected with said finger and adapted to operate it as described.

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GEORGE WILLIAM SMITH.

In the presence of—
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GUSTAF BERG.