

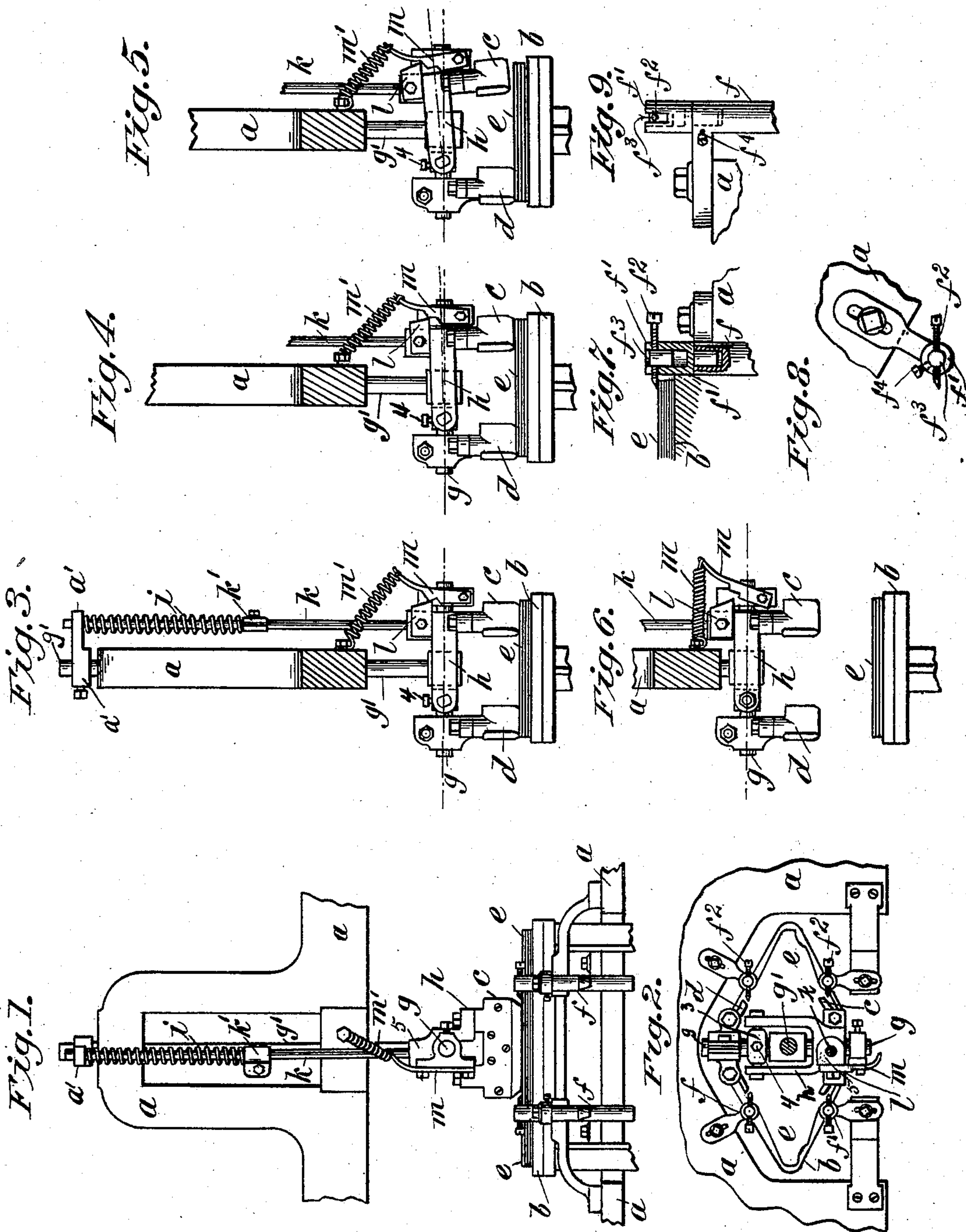
(No Model.)

J. BALL.

MACHINE FOR MANUFACTURING ENVELOPS.

No. 577,098.

Patented Feb. 16, 1897.



Witnesses:

J. A. Garfield
H. J. Clemons

Inventor
James Ball,

by Chapin &
Attorneys.

UNITED STATES PATENT OFFICE.

JAMES BALL, OF HYDE, ENGLAND.

MACHINE FOR MANUFACTURING ENVELOPS.

SPECIFICATION forming part of Letters Patent No. 577,098, dated February 16, 1897.

Application filed April 24, 1896. Serial No. 588,849. (No model.) Patented in England, July 25, 1894, No. 14,286.

To all whom it may concern:

Be it known that I, JAMES BALL, a citizen of the United States of America, residing at Hyde, near Manchester, England, have invented new and useful Improvements in Machines for the Manufacture of Envelops, of which the following is a specification.

This invention relates to envelop-machines, the object being to provide improved flap-gumming and sheet-separating devices therefor; and the invention consists in the peculiar construction and arrangement of said gumming devices, all as hereinafter fully described and more particularly pointed out in the claims.

The invention described in this application has been patented by me in England, dated July 25, 1894, which patent is numbered 14,286.

In the drawings forming part of this specification, Figure 1 is a front view, and Fig. 2 a plan, of the gumming device of a machine for the manufacture of envelops constructed in accordance with my invention. Figs. 3, 4, 5, and 6 are side views of Fig. 1, showing the gummers in various positions. Fig. 7 is a vertical section, Fig. 8 a plan, and Fig. 9 a side view, of an envelop-pile guide-post constructed in accordance with my invention.

In the drawings, *a* indicates fixed portions of the frame of the machine, and *b* the table on a part of said frame, upon which are placed the envelop-blanks *e*. A vertical spindle *g'* is supported in a part *a* of the said frame, and in practice said spindle is suitably connected with operative mechanism of the machine, whereby vertically-reciprocating movements are imparted thereto, as is usual in the part of envelop-machines which carries and actuates directly the gummers thereof. A bar *g* is rigidly fixed near its central portion to the lower end of said spindle *g'* and extends in cross-form thereon, as shown. Said bar *g* extends above and over the pile of envelop-blanks *e* in convenient position to provide for attaching the below-described gummers—one for the lower and one for the sealing flap of the envelop—thereto, whereby, through said vertical movements of said spindle *g'*, the gummers shall be applied to and serve to lift the top blank of said pile in the usual manner. The lower flap-gummer *d* is securely clamped directly to one end of said bar *g*, as

shown. A collar 3 is carried on said bar *g* and is there secured by a screw 4. (See Fig. 2.) A bifurcated lever *h* is pivotally connected to said collar 3 by trunnion-bolts passing through the arms thereof into the opposite sides of said collar, as shown. The outer end of said lever *h* extends over the adjoining end of said bar *g* and is suitably grooved on its under side to permit it to swing vertically thereover from the position shown in Fig. 3 to that shown in Fig. 5, and vice versa. To the under side of said lever *h*, near its said swinging extremity, the sealing-flap gummer *c* is secured, as shown. Said spindle *g'* has an arm *a'* secured thereon, which serves as a support for the upper end of a vertical spindle *k*, and on said spindle is a spiral spring *i*, the upper end of which abuts against the under side of said arm *a'*. The lower end of said spring *i* is provided with an abutment consisting of the collar *k'*, which is adjustable on spindle *k*, to the end that the action of said spring to move said spindle *k* downward may be varying in force, or one capable of such adjustment as will permit the gummer *c* to swing upwardly and outwardly after striking the blank to be gummed thereby during the positive movement of the gummer *d* against the said blank, for a purpose below described. Said spindle *k* has its lower end extending through a block 5, which is secured thereto and which lies upon the upper side of said lever *h*, said lower end of spindle *k* entering loosely into a perforation in said lever *h*. A catch-piece *l* is secured on the side of said block 5. A pivoted latch-lever *m* is attached to the end of said bar *g*, which, as below described, is adapted to engage and release said catch-piece *l*. A spring *m'* has one end connected to said lever *m* and one end connected to said vertical fixed frame part *a*. The operation of the above-described gummer devices is as follows: From the foregoing description it will be noted that the movement of said lower flap-gummer *d* against the pile of envelop-blanks and striking the flap of the upper one is positive, and the downward movement of said gummer *d* serves to produce more or less of a blank-deflecting pressure upon said pile, whereby the opposite gummer is caused, as aforesaid, to swing upward in more or less of an arc of a circle, for the purpose above set

forth. Thus the degree of pressure of said gummer *d* against said pile *e* is greater than that exerted against the seal-flap of the blank by the gummer *c* by the action of said spring *i* through said spindle *k*, which action is only to effect a light contact of gummer *c* with the blank. Therefore the end of the lever *h*, on which said gummer *c* is carried, after being lightly carried against said seal-flap is caused to swing upward in more or less of the arc of a circle, as in Fig. 5, until said catch-piece *l* becomes automatically engaged with said spring-actuated catch-lever *m*. The said swinging movement of the gummer *c* against and off from said flap results in a degree of abrasive movement of the gummer toward the border of said flap as the gummer is about to be separated therefrom, and thereby a better disposition of gum on the seal-flap is effected. Consequent upon a succeeding upward movement of the spindle *g'* and the gummers *c* and *d* the spring *m'* is brought to a horizontal position, as in Fig. 6, thereby disconnecting the lever *m* from said catch-piece *l* preparatory to bringing both gummers again to a position to receive gum from a suitable gumming-roller.

In lieu of forming the guide-posts *f* in one piece I form the upper end thereof with a circularly-adjustable socket *f'* (see Figs. 7, 8, and 9) and with a separator-pin *f²*, adapted to rest loosely on the envelop-blank *e*, being carried by a block *f³*, adapted to slide in the circularly-adjustable post-socket *f'*. However, in lieu of using a plain separator-pin *f²* I form the same with a thread, so as to be readily adjustable in its block *f³* horizontally. It will thus be seen that the post-socket *f'*, which receives the block *f³*, can be readily adjusted circularly in the post *f* by means of the screw *f⁴*, and that the blanks will be held in position by the weight of the separator-pin *f²* and block *f³* only.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In an envelop-machine, gummer-supporting devices comprising a vertical gummer supporting and actuating spindle, and a bar fixed to said spindle and extending horizontally over the blank-table of the machine, combined with two gummers carried on said bar, and means connecting said gummers with said bar, whereby upon the descent of said gummers against a pile of envelop-blanks held on the machine, the contact pressure of said gummers is unequal, and one thereof has an upwardly-swinging movement induced by said contact and by the deflecting pressure of the opposite gummer upon said blanks, substantially as set forth.

2. In an envelop-machine, gummer-supporting devices comprising a vertical gummer supporting and actuating spindle, and a bar fixed to said spindle and extending horizontally over the blank-table of the machine, combined with two gummers carried on said bar, means whereby upon the descent of said gummers against a pile of envelop-blanks held on said table, the contact pressure of said gummers is unequal, and one thereof has an upwardly-swinging movement induced by said contact and by the deflecting pressure of the opposite gummer upon said blanks, and means for engaging said upwardly-swinging gummer and temporarily retaining the same, substantially as set forth.

3. In an envelop-machine, gummer-supporting devices comprising a vertical gummer-supporting spindle, and a bar fixed to said spindle and extending horizontally over the blank-table of the machine, combined with a gummer secured on one end of said bar, a lever pivotally attached to said bar for vertical vibratory movements, a second gummer secured on the free end of said vibratory lever, and a spring controlling the pressure of said second gummer against an envelop-blank, substantially as set forth.

4. In an envelop-machine, gummer-supporting devices comprising a vertical gummer-supporting spindle, and a bar fixed to said spindle and extending horizontally over the blank-table of the machine, combined with a gummer secured on one end of said bar, a lever pivotally attached to said bar for vertical vibratory movements, a second gummer secured on the free end of said vibratory lever, a spring controlling the pressure of said second gummer against an envelop-blank, a pivoted latch-lever engaging a part attached to said lever thereby retaining the gummer thereon temporarily in an upwardly-swung position, and a spring interconnected between said latch-lever and a fixed part of the machine for actuating said latch-lever, substantially as set forth.

5. Devices for holding and permitting of the separation of the envelop-blanks one by one, comprising the guide-post *f*, having a socket in its upper end, and suitably supported on a fixed part of the machine, the socket being revolvably adjustable on said guide-post, combined with the block *f³*, adapted to slide in said socket, and the sheet-separating pin *f²*, screwing through said block, substantially as set forth.

JAMES BALL.

Witnesses:

H. A. CHAPIN,
K. I. CLEMONS.