

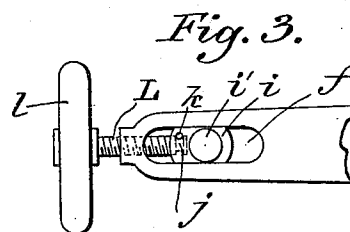
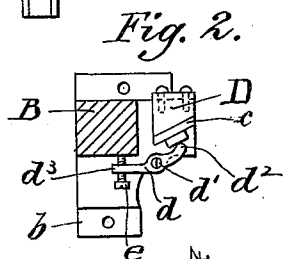
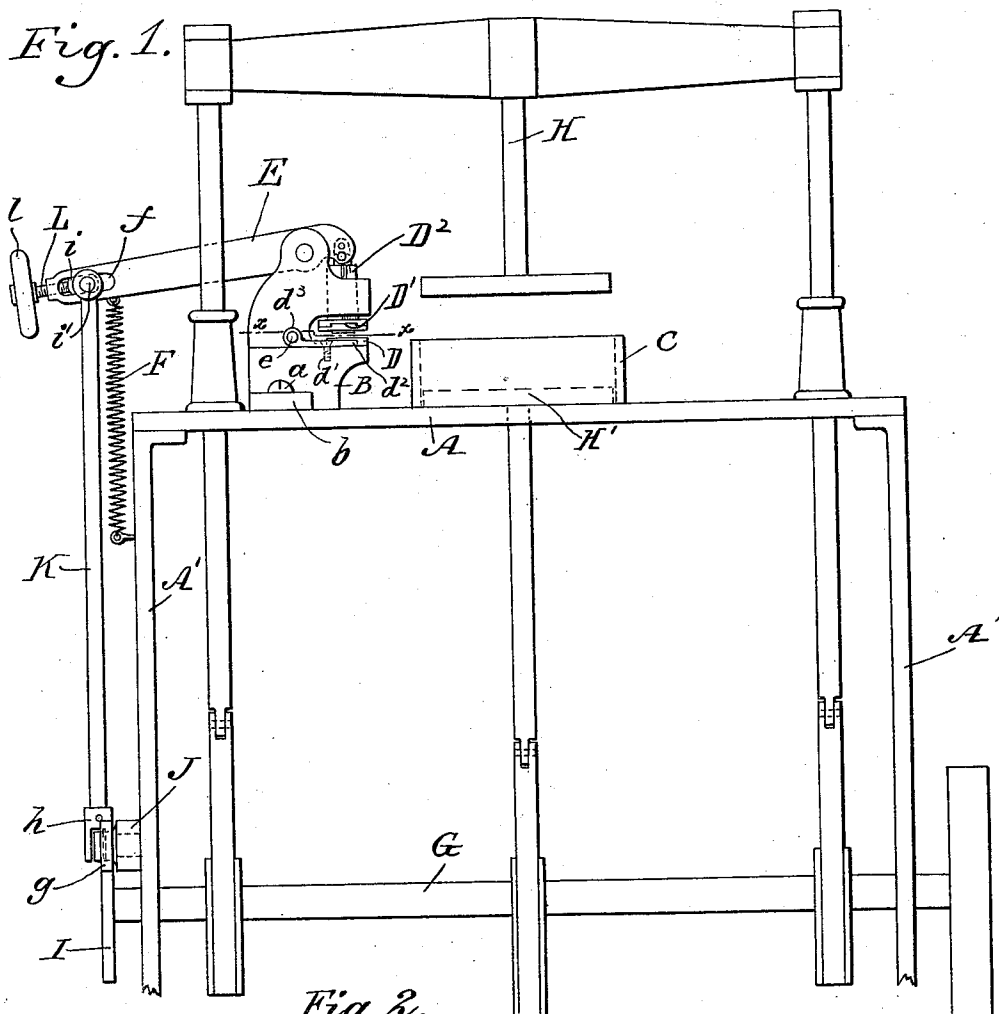
(No Model.)

J. M. TATE & G. A. BRUNE.

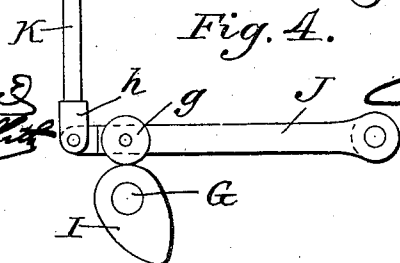
COMBINED ENVELOPE FOLDING AND EMBOSSED MACHINE.

No. 546,685.

Patented Sept. 24, 1895.



WITNESSES:
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UNITED STATES PATENT OFFICE.

JOHN M. TATE AND GEORGE A. BRUNE, OF NEW YORK, N. Y.; SAID BRUNE
ASSIGNOR TO SAID TATE.

COMBINED ENVELOPE FOLDING AND EMBOSsing MACHINE.

SPECIFICATION forming part of Letters Patent No. 546,685, dated September 24, 1895.

Application filed December 15, 1894. Serial No. 531,888. (No model.)

To all whom it may concern:

Be it known that we, JOHN M. TATE and GEORGE A. BRUNE, citizens of the United States, and residents of New York, county of New York, and State of New York, have invented certain new and useful Improvements in a Combined Envelope Folding and Embossing Machine, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar letters of reference indicate corresponding parts in all the figures.

This invention relates to combined envelope forming and embossing machines, and has for its object to provide a simple, cheap, readily-constructed and perfectly-operating device which may be initially formed upon or attached to the ordinary envelope-forming machines to diagonally or otherwise emboss the edge of the side flaps of the envelopes (usually the left hand) with the name of the maker or other matter at or immediately before the time of their being pressed or folded. It has been frequently endeavored to construct or devise an envelope-forming machine by means of which the envelope may be embossed without the separate use of a hand-press; but by reason of the complication of the mechanism employed in such devices the same have never as yet resulted in successful practical use, there being to our knowledge no even measurably simple device of this character, nor one which could be applied to the numerous envelope-machines now in use.

The invention consists in the novel construction and arrangement of parts and in the mechanism hereinafter fully described, whereby the above-mentioned and other desirable results are attained.

In the accompanying drawings, Figure 1 is a front elevation of an envelope-folding machine having our improved device attached thereto. Fig. 2 is a sectional plan of the lower portion of the embossing-press, taken upon the line *xx*, Fig. 1. Fig. 3 is an enlarged view of the rear end of the actuating-lever which is pivoted in the top of said embossing-press. Fig. 4 is a side elevation of the counter-shaft and portion of the levers for reciprocating the said actuating-lever of the press.

In the practice of our invention we secure

upon the table A of the envelope-blank pressing or folding machine an embossing-press B, secured to said table by means of bolts *a*, extending through flanges *b* thereon. This embossing-press is of any suitable construction, and of such size and so arranged upon said table that the jaws thereof substantially align with the upper surface of the mold C of the machine. The lower die D of the embossing-press is supported against the diagonally-edged block *c* thereof, as shown in Fig. 2, whereby it aligns with the upper edge of the envelope-flap, and is secured tightly in place by means of a lever *d*, centrally pivoted to the press upon a horizontal plane by means of a pivot or screw *d'*, said lever having a head *d²*, which bears against the die D, and upon its opposite end a bearing *d³*, internally tapped, through which extends a flat-pointed screw *e*, bearing against the frame of the press B.

In the top of the press is pivoted a lever E, adapted to swing vertically, the inner end of which is pivotally secured upon the plunger D³, which carries the upper die D'. The opposite end of the lever E is extended to project beyond the table A, which end is provided with a longitudinal slot *f* and is maintained in the depressed position and the jaws of the press normally opened by means of a spiral spring F secured thereto and to the side of the machine-frame A'.

Upon the end of the counter-shaft G, which operates the plunger H and ejector H' of the envelope-machine, we secure an oval or elliptical cam I. Above this shaft G, and appreciably to one side thereof, is mounted a lever J, pivoted at one end, and having a friction-roller *g*, journaled near the opposite or free end thereof, which said roller rests upon the cam I, whereby the revolution of the shaft G alternately raises the lever J and depresses or permits the same to drop. The free end of the lever J is connected to the operating-lever E of the embossing-press B by means of a pitman K, having a fork *h* mounted upon its lower end, which clasps and is pivoted to the end of said lever J. The upper end of the pitman K is pivotally secured upon a block *i*, sliding longitudinally within the slotted end of the lever E, having a laterally-projecting

shoulder or boss *i'*, extending through the slot *f*, and to which said pitman is secured. The extreme end of said lever *E*, beyond the slot *f*, is longitudinally tapped and has journaled therein an externally-threaded spindle or adjusting-screw *L*, the inner end of which is revolubly mounted within the block *i* and provided with a peripheral groove *j*, with which engages a pin *k*, inserted transversely through said block. Upon the outer end of the screw or spindle *L* is mounted a circular head or handle *l*, by means of which it is turned.

The operation of the device will be readily understood from the foregoing description, taken in connection with the accompanying drawings. The shaft *G* being operated, the envelopes are fed by any suitable means to rest upon the upper surface of the mold *C*, with the left-hand flap thereof entering between and the upper edge thereof aligning with the dies *D D'* of the embossing-press *B*. As the plunger *H* of the machine is started upon its downward stroke by the rotation of the shaft *G*, with which it is connected in the ordinary manner, as shown, the cam *I*, revolving with said shaft, engages the friction-roller *g*, thereby forcing the lever *J* upwardly, and through the agency of the pitman *K* similarly raising the outer end of the lever *E*, consequently depressing the upper die *D'* and embossing the flap of the envelope-blank within the same. By reason of the shape of the cam *I* this operation is effected by a half-revolution of the counter-shaft *G*, and therefore the envelope is embossed before the plunger has descended farther than to the top of the mold *C*, and as the rotation of said shaft further depresses the plunger the cam *I* ceases to bear against the friction-roller *g*, thereby permitting the lever *J* to drop and the jaws of the press *B* to open, which is immediately effected by means of the spiral spring *F*. As the envelope is forced into the mold *C*, the embossed flap thereof at the same time withdraws from the press *B* and the envelope is folded in said mold and removed therefrom by the ejector *H'*, as ordinarily. It is of course essential that the embossing of the flap be completed and the jaws of the press commence to open before the plunger *H* bears upon the envelope-blank to force the same into the mold, and particularly is this the case where the machine is being rapidly operated. The adjusting-screw *L* is therefore turned in either direction from time to time, as desired, through the agency of the head *l*, to regulate the position of the block *i* within the slotted end of the lever *E*, and consequently, by adjusting the pivotal connection of the pitman *K* therewith, to regulate the throw of the lever *E* and the rapidity of operation of the press. By this means the whole device is caused to operate evenly and smoothly, with both accuracy and precision. It is also to be noted that by adjusting the screw *e* the head *d'* of the lever *d* may be caused to bear with

greater force against the lower die *D* to tighten the same upon the block *e*, thereby insuring the immobility of said die under the comparatively heavy strain caused by the continued and rapid operation of the press.

The advantages resultant from the use of the invention will be manifest to all who are conversant with the general class of devices to which the same appertains.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a combined envelope folding and embossing device, the combination, with an envelope folding machine which comprises a mold and plunger, and a shaft actuating the same, of an embossing press mounted upon said machine adjacent to the mold, whereby the envelope flap enters the same as the blank is fed upon the mold, a lever pivoted in the top of said press and carrying the upper die, means, substantially as shown and described, for tightening and adjusting the lower die, a cam mounted upon the shaft, a lever pivoted in engagement therewith and adapted to be raised thereby, a pitman pivoted to said lever and to the end of the operating lever of the press, means for adjusting the pivotal connection of the pitman with said operating lever, and the throw thereof, and means whereby said lever is normally depressed and the jaws of the press opened.

2. In a combined envelope folding and embossing device, the combination, with an envelope folding machine which comprises a mold and plunger, and a shaft actuating the same, of an embossing press mounted upon said machine, having its jaws in substantial alignment with the top of the mold, whereby the envelope flap enters the same as the blank is fed upon said mold, a lever pivoted in the top of said press and carrying the upper die of the same, a substantially elliptical cam mounted upon the end of the shaft, a lever pivoted above said shaft, having a friction-roller thereon near its free end, which bears upon said cam, a pitman pivoted to the end of said lever and to the end of the operating lever of the press, whereby they rise and fall in conjunction, a screw adapted to adjust the said pitman longitudinally upon said lever, and a spring secured to said lever and to the frame of the machine, to normally depress the same and open the jaws of the press, substantially as shown and described.

3. In a combined envelope folding and embossing device, the combination, with an envelope folding machine which comprises a mold and plunger, and a shaft actuating the same, of an embossing press mounted upon said machine adjacent to the mold, and having its jaws in substantial alignment therewith, whereby the envelope flap enters the same as the blank is fed upon the mold, a lever pivoted in the top of said press and carrying the upper die, and longitudinally slotted

upon the opposite end thereof, the lower die of said press being adjustably secured therein by means of a lever pivoted upon said press, having a head thereon which bears against the same, and a screw in the opposite end thereof, bearing against the press and adapted when turned to tighten and secure said die, a substantially elliptical cam mounted upon the end of the shaft, a lever pivoted to the frame of the machine above said shaft, having a friction-roller near the opposite end thereof which rests upon the cam, whereby said lever is alternately raised and permitted to fall by the rotation of said cam, a pitman pivoted to the end of said lever and having its upper end pivotally secured to the slotted end of the operating lever of the press, a block sliding within said slotted end, projecting there-through, and having the pitman mounted thereon, a screw journaled in the end of said lever, revolubly engaging said block, and a head or handle thereon to actuate the same to adjust said block and regulate the throw of the lever, and a spring secured to said lever and to the frame of the machine to maintain the same normally depressed and the jaws of

the press open, substantially as shown and described.

4. In an auxiliary attachment for envelope folding machines, embodying a mold, a plunger and a shaft actuating the same, an embossing press B, provided with jaws aligning substantially with the upper surface of the mold C, a block *c* having a diagonal edge, the lower die D supported against said edge, whereby it aligns with the upper edge of the envelope flap, a lever *d* pivoted on the press and bearing against the die at one end to secure said die in place, and a flat pointed screw *e* passing through the other end of the lever and bearing against the frame of the press to maintain the lever in its proper position, substantially as described.

In testimony that we claim the foregoing as our invention we have signed our names, in presence of two witnesses, this 14th day of December, 1894.

JOHN M. TATE.
GEO. A. BRUNE.

Witnesses:

PERCY T. GRIFFITH,
M. KNOWLES.