

(No Model.)

2 Sheets—Sheet 1.

C. H. HEYWOOD.
ENVELOPE MACHINE.

No. 516,813.

Patented Mar. 20, 1894.

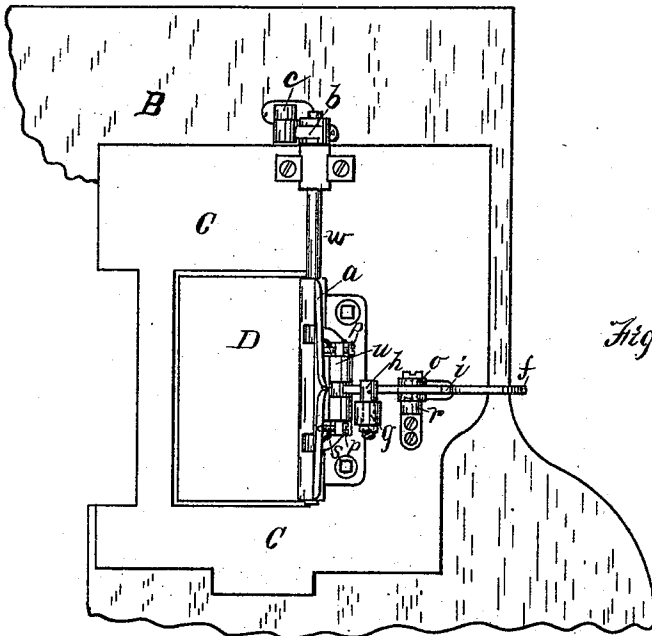


Fig. 1.

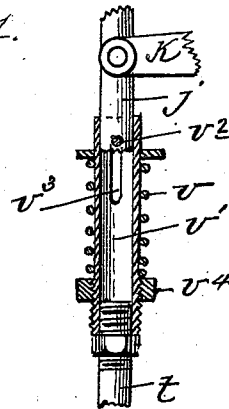


Fig. 4.

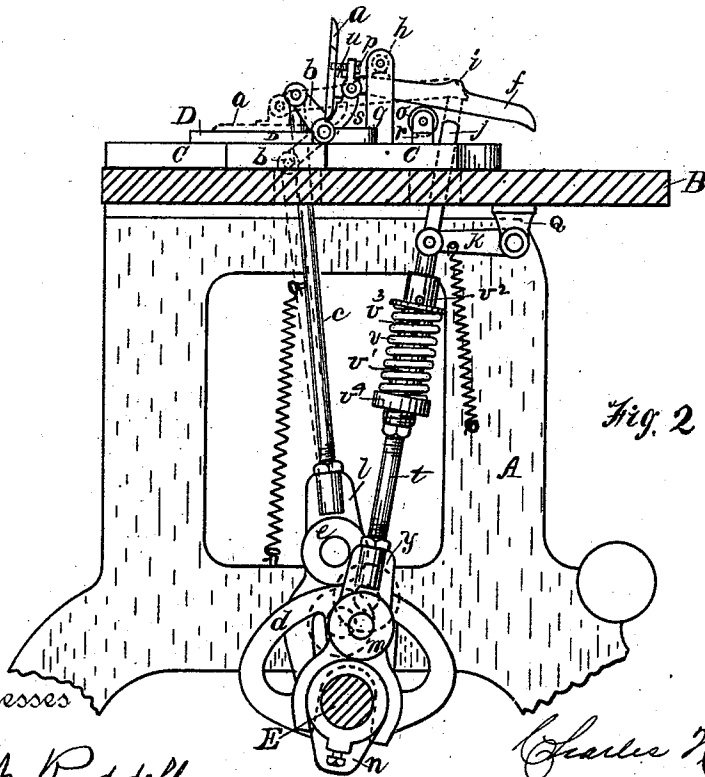


Fig. 2.

Witnesses

Robt. Ruddell.

Geo D. Dutton.

Inventor

Charles H. Heywood.

(No Model.)

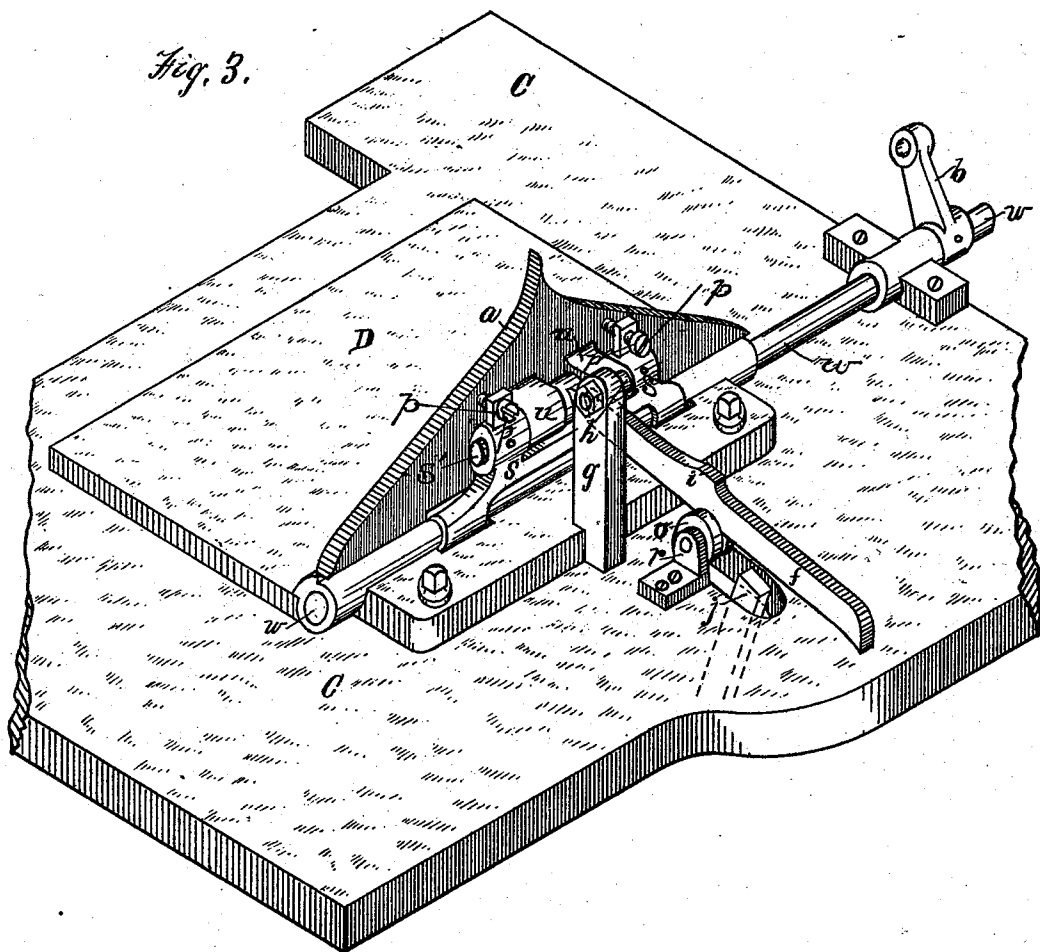
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Fig. 3.



Inventor

Charles H. Heywood

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Robt. Ruddell.

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UNITED STATES PATENT OFFICE.

CHARLES H. HEYWOOD, OF SPRINGFIELD, MASSACHUSETTS, ASSIGNOR TO
THE NATIONAL ENVELOPE COMPANY, OF NEW JERSEY.

ENVELOPE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 516,813, dated March 20, 1894.

Application filed February 16, 1892. Renewed December 18, 1893. Serial No. 493,983. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. HEYWOOD, a citizen of the United States of America, residing in Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Pressure-Applying Mechanism for Envelope and other Like Machines, of which the following is a specification, reference being had to the accompanying drawings and letters of reference marked thereon.

My invention relates more particularly to mechanism to be employed in applying pressure upon the lower flap in the manufacture of envelopes for the purpose of insuring its being thoroughly pasted or caused to adhere to the parts to which it is desired that the same be attached by adhesive material.

In the machines heretofore employed it has been found that if an attempt were made to give sufficient pressure a considerable and undue strain and wear upon the machine has resulted and a large percentage of power has been lost.

The object of my invention is to provide a construction wherein the requisite degree of pressure may be applied without loss of power and without undue wearing of the parts, and my object is further to provide a machine which shall be of simple construction, positive in operation, readily adjusted and not liable to get out of repair. And to that end my invention consists in the construction and arrangement herein set out whereby the objects of my invention are attained.

In the accompanying drawings in which like letters of reference indicate like parts: Figure 1 is a plan view showing a portion of the top of an envelope machine having my device attached thereto. Fig. 2 is a side elevation of the same, and Fig. 3 is a perspective on an enlarged scale of the top plate and parts connected therewith. Fig. 4 is a sectional view showing the spring-connection between the parts of the thrust-rod.

In detail A indicates the frame of the machine, B the top plate thereon, C a plate supporting the folding mechanism and resting

upon the plate B, D the folding bed upon which the blanks are folded and E the main shaft.

a indicates the flap or folder, b a radial arm on the flap rock shaft, c a connecting rod extending from the radial arm b downwardly, d a cam on the main shaft for operating the folder, e a cam roll, f a pressure lever pivoted to the back of the flap, g a post mounted upon the plate C, h a pin mounted in the post g, i a fulcrum point upon the lever f, j the upper part or piece of the thrust-rod, k a radial arm, l head of connecting rod c, m cam roll, n cam, o supporting pulley, p adjusting screws, q hanger, r support for pulley o, s arms on the rock-shaft having the flaps hung to their ends, t lower portion of thrust rod, u lugs on the back of the flap, v pressure spring, w rock-shaft, x thrust rod retaining spring, y thrust rod head, and z connecting rod return spring.

The construction and operation of the machine are as follows: Mounted in suitable bearings upon the frame is a main shaft E having supported thereon a cam d, and vertically arranged is a rod c, the head l of which is provided with a forked end, and mounted on the head portion is an anti-friction cam roll e which traverses the periphery of the cam d when the same is revolved by the revolution of the shaft E. Mounted upon the same shaft is a cam n, and arranged to traverse the periphery thereof is the roll m mounted upon the head y of the thrust rod t. A rock shaft w is mounted in suitable bearings above the plates and mounted thereon, and to be rocked by the shaft, are the arms s, formed with bearings in their upper ends to take a pivot-pin s', projected through lugs u, on the back of the flap a; the inner end of the lever f, being also supported on the pintle s', between the lugs, substantially as shown in Fig. 3 of the drawings. Mounted also upon said rock shaft w is a radial arm b, to the free end of which is pivotally attached the end of the connecting rod c, so that as the main shaft E revolves and rotates the cam d the connecting rod c is given longitudinal reciprocating movement, and through the medium of the lever b, rocks the rock-shaft w and alternately

throws the flap *a* to its forward or closed position as indicated in dotted lines in Fig. 2, and again returns it to the position shown in full lines in the same figure.

5 Back of the pivotal connection referred to and mounted upon the plate C I arrange the post *g* and projecting from its face is the pin *h*, and mounted upon the same plate I arrange a post or stand *r*, within which is
10 mounted a pulley *o* which supports the lever *f* when reciprocated longitudinally.

The pressure lever *f*, as before stated, is pivoted at one end adjacent to the flap *a*, and as the flap is moved to it closed and lowered
15 position by the operation before described, the lever *f* is carried forward as indicated in dotted lines in Fig. 2, and again returned to the position as shown in full lines. The cam
20 *e* operates to carry the rod *t* upwardly causing the free end of the thrust rod extension *j* to bear against the extreme end of the pressure lever *f* forcing the same upwardly. The lever *f* is provided at a point about midway
25 between its ends with a slight projection *i* which operates as a fulcrum point and when the lever is carried forward by the closing of the flap *a*, as before stated, the point *i* upon the lever *f* will be carried below the pin *h*
30 upon the post *g*, and the upward movement of the thrust rod will force the free end of the pressure lever *f* upwardly, thus causing its fulcrum point to rock upon the pin *h* against which it bears, and thus force the end attached to the flap downwardly and give the
35 requisite pressure. The thrust-rod is made in two pieces adjustable and yieldingly connected by the spring *v*, and a sleeve *v'*. The upper part *j*, of the thrust-rod having its end inserted in the sleeve, and provided with a
40 cross-pin *v*², projected through the inserted portion, the projecting ends of the pin engaging in a slot *v*³, in the sleeve, and bearing on a sliding-collar *v*⁵, on the sleeve and over the upper end of the spring, as shown in Fig. 4
45 of the drawings.

On the lower end of the sleeve *v'* is a threaded-nut *v*⁴, and between this nut and the sliding-collar is arranged the spring *v*. To the lower end of the sleeve is secured the lower
50 part *t*, of the thrust-rod, as shown. It will be perceived that this connection affords a yielding and resilient function to the upper part of the thrust-rod, and that the resistance or force thereof on the lever *f* can be
55 regulated and adjusted by turning the nut *v*⁴ to increase or diminish the resistance of the spring on the part *j*. An arm *k* is mounted in a hanger *q* at one end, and at its opposite end is pivotally connected with the rod *j*,
60 in order to maintain it in its proper position, and a spring *x* is attached at one end to the arm *k* and at its opposite end to the frame A to maintain the rod *j* normally in its lowered position, and a spring *z* is arranged
65 in like manner and connected at one end to

the connecting rod *c* to normally maintain it in its lowered position, so that the functions of the cams are limited to the upward throw of these rods, thus simplifying the construction of the operative portion of the cam mechanism. 70

The extension *j* of the thrust rod may be constructed as before described, but I prefer that the extension portion *j* be pivotally
75 mounted at the joint where the radial arm *h* is pivoted to the end of the body of the thrust rod, thus avoiding any tendency to force the end, which is in contact with the lever *f*, to move sidewise.

It will readily be seen that various modifications may be made without departing from my invention. 80

Having, therefore, described my invention, what I claim as new, and desire to secure by Letters Patent, is— 85

1. In an envelope machine the combination of a folder flap, a lever pivoted thereto, a fulcrum point for the lever to bear against, and a thrust rod brought into contact with the pressure lever at each revolution of the machine to produce the pressure, substantially as set forth. 90

2. The combination with the folder of an envelope machine, of a lever pivotally attached to the folder flap, and moving horizontally therewith, a bearing for the lever to fulcrum against, and a thrust rod to engage the free end of the lever at each revolution of the machine and produce pressure upon the envelope, substantially as set forth. 95 100

3. The combination of a supporting frame, a rock-shaft journaled thereon, arms *s* projecting from and rigidly secured to the rock-shaft, a presser-flap *a* pivotally hung to the arms *s*, a longitudinally arranged lever *f* having one end pivoted to the presser-flap, a post *g* having a lateral fulcrum-pin *h* therein extending in the vertical path of the lever, a resilient thrust-rod to lift the lever to fulcrum on the pin *h*, and means as described to operate the rock-shaft and the thrust-rod. 105 110

4. The combination of a support, a rock-shaft journaled thereon, arms fixed to the rock-shaft, a presser-flap pivotally hung on the said arms, a presser-lever pivoted to the presser-flap, a fulcrum-pin over and above the lever, a thrust-rod to lift the lever against the fulcrum-pin, and a supporting pulley journaled on the support under the presser-lever, whereby the lever is supported when reciprocated longitudinally. 115 120

5. The combination of a suitable supporting frame, a rock-shaft *w* mounted thereon, a radial arm *s* mounted upon said rock-shaft, a flap *a* mounted upon the arm *s*, a radial arm *b* secured to said rock shaft, a connecting rod *c* attached to said radial arm, a cam *d* mounted upon a rotatable shaft, a head *l* secured to the connecting rod *c*, an anti-friction roll *e* mounted upon said head, a pressure lever *f* 125 130

pivotaly attached adjacent to the flap *a*, a post *g* provided with a pin *h* projecting from its face, a thrust rod arranged with its free end to bear against the free end of the pressure lever *f*, a cam *n* mounted upon a rotatable shaft, and a friction roll *m* mounted upon said thrust rod to bear against the cam *n* all in combination, substantially as and for the purposes stated.

CHARLES H. HEYWOOD.

Witnesses:

ALLEN WEBSTER,
E. M. TOWER.