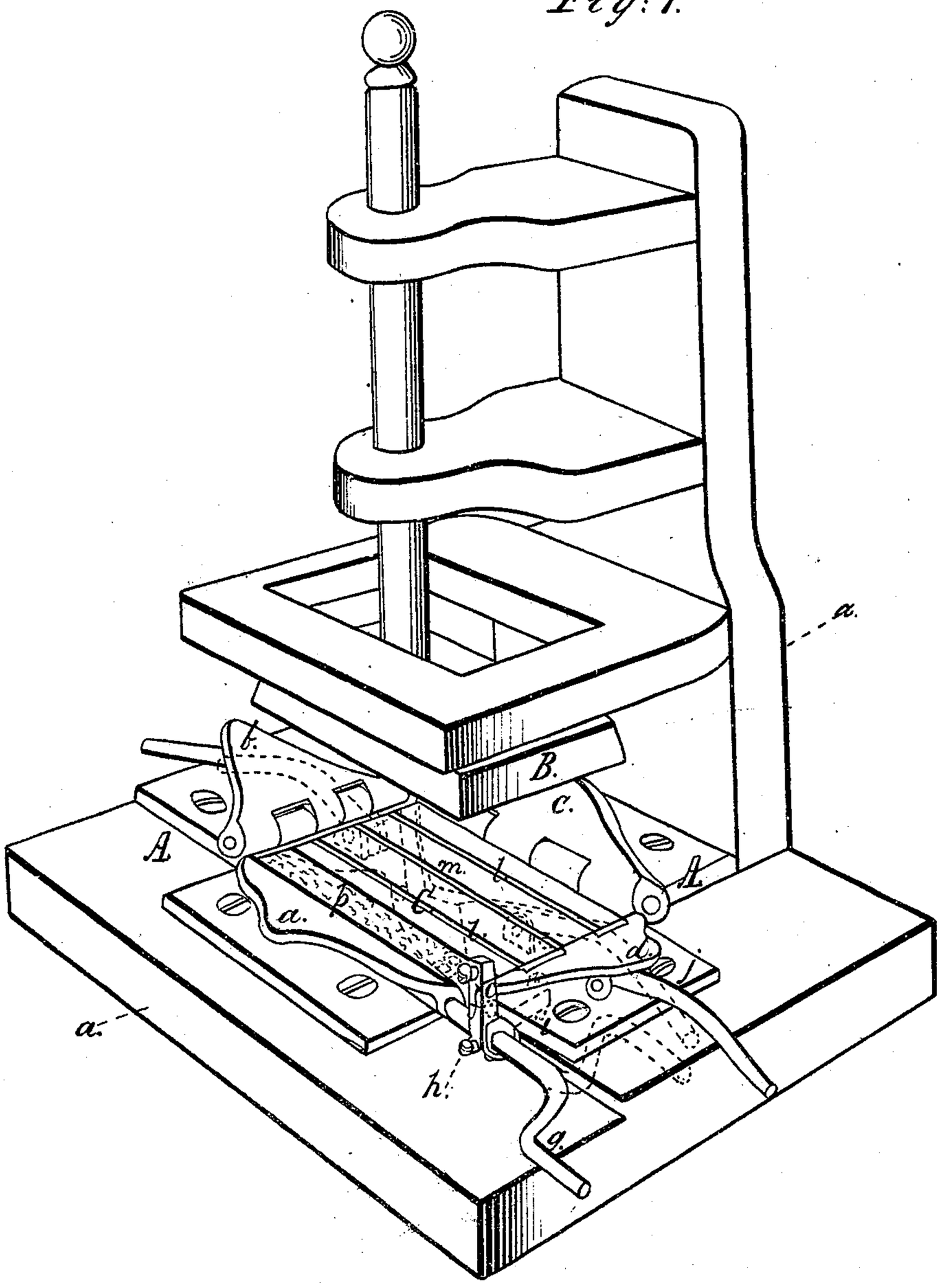
T. V. Waymouth. Sheet 1. 2 Sheets.

Envelope Mach.

No. 71,252. Patented Nov. 19. 1867.

Fig: 1.



Witnesses.
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Thomas K. Dodge

Inventor.
Thos. Waymouth

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Fig: 3.

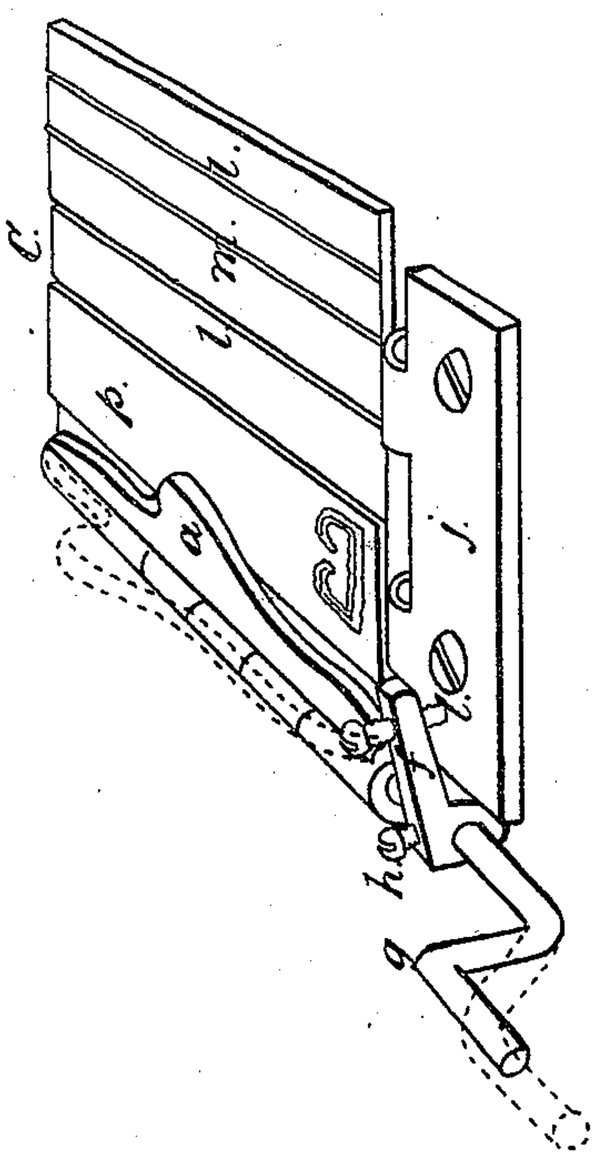


Fig: 4.

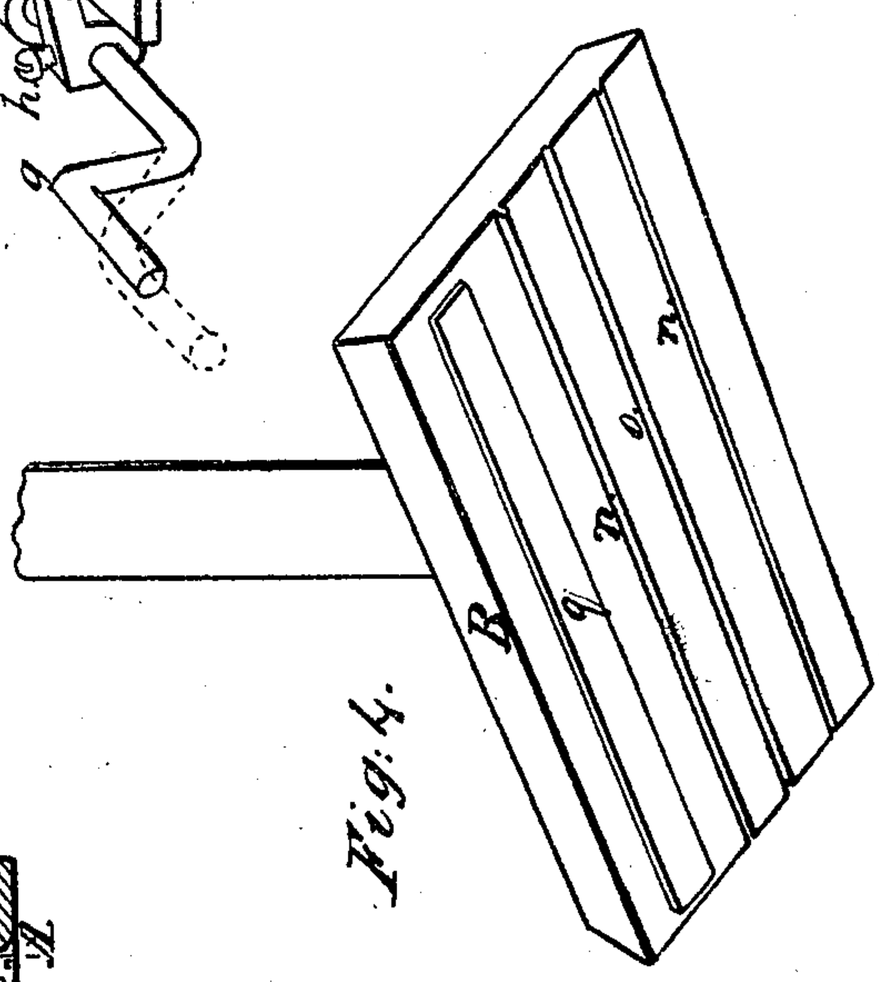
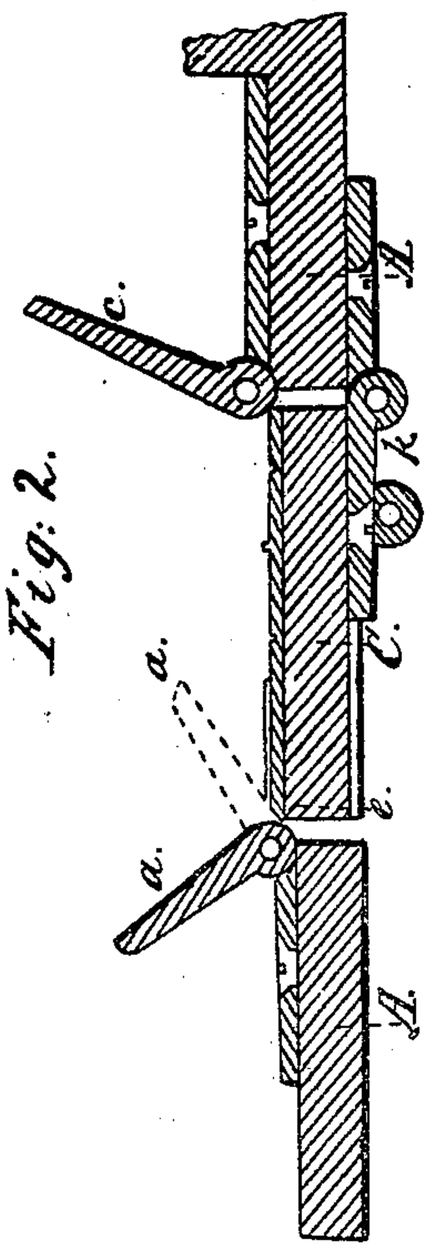


Fig: 2.



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UNITED STATES PATENT OFFICE.

THOMAS V. WAYMOUTH, OF NEW YORK, N. Y.

IMPROVED ENVELOPE-MACHINE.

Specification forming part of Letters Patent No. **71,252**, dated November 19, 1867.

To all whom it may concern:

Be it known that I, THOMAS V. WAYMOUTH, of the city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Mechanism for Folding Envelopes; and I do hereby declare that the following is a full, clear, and exact description thereof, and of their mode or manner of operation, reference being had to the accompanying drawings, and to the letters of reference marked thereon and making a part of this specification.

This invention relates to improvements in mechanism for folding envelopes, which are designed for use in connection with suitable mechanism for gumming the flaps of the envelope-blanks, though some of such improvements may be used without the gumming mechanism, if so desired.

Figure 1 is a general view of the folding mechanism, the folding-wings being thrown back and the creasing-plunger in position to descend. Fig. 2 is a cross-section of Fig. 1 through the line *a a*. Fig. 3 is a detached view of the folding-press. Fig. 4 is a bottom view of the creasing-plunger.

The several wings *a b c d* are hinged to the bed of the press A, and are operated, through the rods attached thereto, by means of cams, in the usual way, or by any convenient and suitable mechanism so arranged as to cause such wings to fold down upon the blank, and then turn back again, at the proper times.

When opened or turned back, as shown by the heavy lines in Fig. 1, the hinged part of such wings forms a sort of a box or recess, which is to be the size of the envelope when folded and into which the creasing-plunger B enters, thereby creasing or bending the envelope-blank in the lines on which the several flaps are to be folded. After the plunger B has risen a little distance the folding-flaps begin to turn down, as required, to fold the envelope.

The end wings, *b d*, first turn down into the position shown by the dotted lines, flat upon the press C, carrying and pressing down the end flaps of the blank, after which the back wing, *c*, is turned down, folding over the back flap, and pressing it down upon and causing it to adhere to the end flaps; or the back wing may turn down before the end wings, and then the front wing, *a*, turns over.

In envelope-machines as heretofore constructed, in which the envelopes are folded while the gum on the seal-flap is moist, or before it has had sufficient time to dry, it has been necessary, in order to prevent the seal-flap, while being folded, sticking to the other flaps, to place projections upon the top of or at the points of the wings *b c d*, or use some equivalent device or mechanism against which the edge of the seal-flap will come in contact, and thereby prevent such flap being pressed down upon the other parts of the envelope.

By my improved folding mechanism I am enabled to dispense with the necessity for such projections, or their equivalents, to catch the seal-flap, and at the same time the seal-flap is prevented being pressed upon the other parts of the envelope. This I accomplish by a particular arrangement in position of the seal-flap or front wing, *a*, with respect to the other folding-wings, and also by so governing the movement of the seal-flap wing that it can be turned down more or less, as desired, or be held stationary, and not turn at all.

The end and back folding-wings, *b c d*, are hinged to the upper surface of the press A on the same level or horizontal plane with the upper surface of the folding-press C, so that when such wings are folded down, as shown by the dotted lines in Fig. 1, they will lie flat upon such press C. The front wing, *a*, however, is hinged to the part A on a lower level than the other wings, as shown in Fig. 1, and more plainly in section in Fig. 2.

When the press C is in proper position, and the folding-wing *a* is turned down, such wing will not, as do the other wings, turn down flat upon the press C, but will only turn against or upon the edge or corner of the press, the upper end of such wing standing above the press, as shown by the dotted lines in Fig. 2.

The front edge or corner of such press, against which the wing *a* turns, may also be beveled or chamfered off a little, as also shown in the same figure.

By thus placing the seal-flap wing a little lower than the other folding-wings, and lower than the upper surface of the folding-press C, the pressure of such wing *a*, when it is turned over, is applied wholly on that part of the seal-flap on or near the line of the bend or creasing produced by the plunger B, and no pressure is applied which can cause the gummed

edge of the seal-flap to come in contact with the other parts of the envelope; and, on the contrary, by confining the pressure of such wing *a* to or near the line or place of the bend of the seal-flap, the tendency of such action is to throw up and back the edge of the seal-flap, and prevent the gummed part, during the folding process, coming in contact with the other parts of the envelope.

The motion of the wing *a*, or seal-flap wing, may also be governed and its extent of motion regulated by an adjustable stop, *f*, which may be attached directly to the wing, or to the crank or rod through which motion is given to such wing, or to the connection between the cam and such crank; or the cam may be so constructed as to so control the motion of such wing.

The drawings show such stop-bar or lever *f* as fixed near the wing *a*, and striking or coming in contact with the fixed plate *j* of one of the wings attached to the press A. Such stop-bar *f* passes loosely over or about the rod *g*, which actuates the seal-flap wing *a*, and is fastened in any position desired upon such rod by means of a screw, *h*.

In Fig. 1 such stop-bar is shown so fixed to the rod *g* that the wings *a*, when turned down, will be in about the position shown by the dotted lines in Fig. 2, and by the heavy lines in Fig. 3. Such stop-bar can also be so arranged as to keep the wing *a* in a vertical position, as shown by the dotted lines in Fig. 3—that is, not permitting it to turn down upon the flap, but allowing it to have free motion in the opposite direction.

An adjustable screw, *i*, may be placed in the outer end of such stop-bar *f*, by which the motion of the wing *a* may be somewhat controlled without moving the stop-bar *f* on the rod *g*. By so governing the movement of the seal-flap wing by a stop, *f*, or its equivalent, the seal-flap can be folded more or less, or it can be retained in a vertical position, leaving the seal-flap unfolded, but creased by the descent and pressure of the plunger B.

In the manner of ordinary envelopes it is found not necessary to fold down the seal-flap at the time the other flaps are folded, and that the creasing produced by the plunger is sufficient; or the envelopes may be passed between rollers, after the seal-flap has become dry, if desired.

The folding-press C, as soon as the folding is completed, drops, turning on hinges *k*, so as to discharge the envelope folded, and then rises again to its proper position to receive another blank.

The action of the creasing-plunger B may also be taken advantage of to mark or line the face of the envelope suitably for endorsing the direction thereon. This may be accomplished in the following manner: On the upper surface of the press C there are made narrow shallow grooves *l l*, or slightly-projecting lines *m* and corresponding lines *n n*, or grooves *o* in the bottom surface of the plunger, so that as the plunger descends the face of the envelope will be acted on by the projecting lines *m* or *n*. Such grooves should only be of such a depth and the projecting lines stand forth sufficiently to make on the face of the envelope a faint impression or line, similar to that which is produced by drawing lightly the edge of a thin paper-cutter over the surface of a sheet of paper.

The surface of the envelope may also be roughened, similar to the present styles of wedding note-paper, by the same operation of the plunger B that creases the blank. To effect this the surface of the folding-press C should be made rough, as by being covered with sand-paper, as shown at *p*, and the bottom of the plunger should be covered with a sheet of thin india-rubber, as shown at *q*. If such surface *p* has smooth portions corresponding in form with letters, mottoes or words may be at the same time impressed on the envelope, and by removing the roughened surface *p* in straight lines there will be corresponding smooth lines across the face of the envelope, to serve as guides in directing the same.

To so line or emboss the surface of the envelope, the plunger B is to be brought down upon the press C with a positive motion, and with force sufficient to secure the pressure required.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. Attaching the wing used for folding the seal-flap of envelopes to the machine or frame at a lower level than the upper surface of the bottom of the folding-press, for the purposes set forth.

2. So arranging the front wing, *a*, called the "seal-flap wing," in combination with the folding-press, by means of the adjustable stop *f*, or any suitable device, that such wing can be turned upon the press at different angles, or can stand vertically, as desired.

3. The arrangement and combination, substantially as described, with the plunger B and folding-press C, of the projecting lines *m n* and grooves *l o*, for the purposes set forth.

4. The combination, with the plunger B and folding-press C, substantially as described, of the roughened surface *p* and yielding cushion *q*, for the purposes set forth.

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Witnesses:
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THOS. K. DODGE.