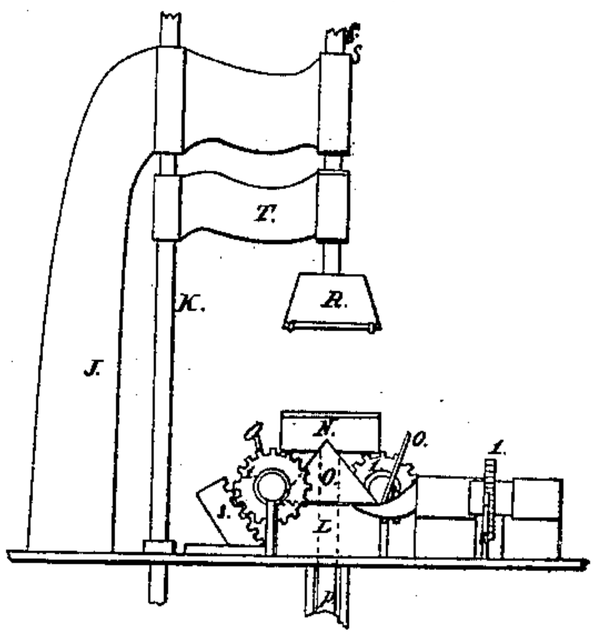
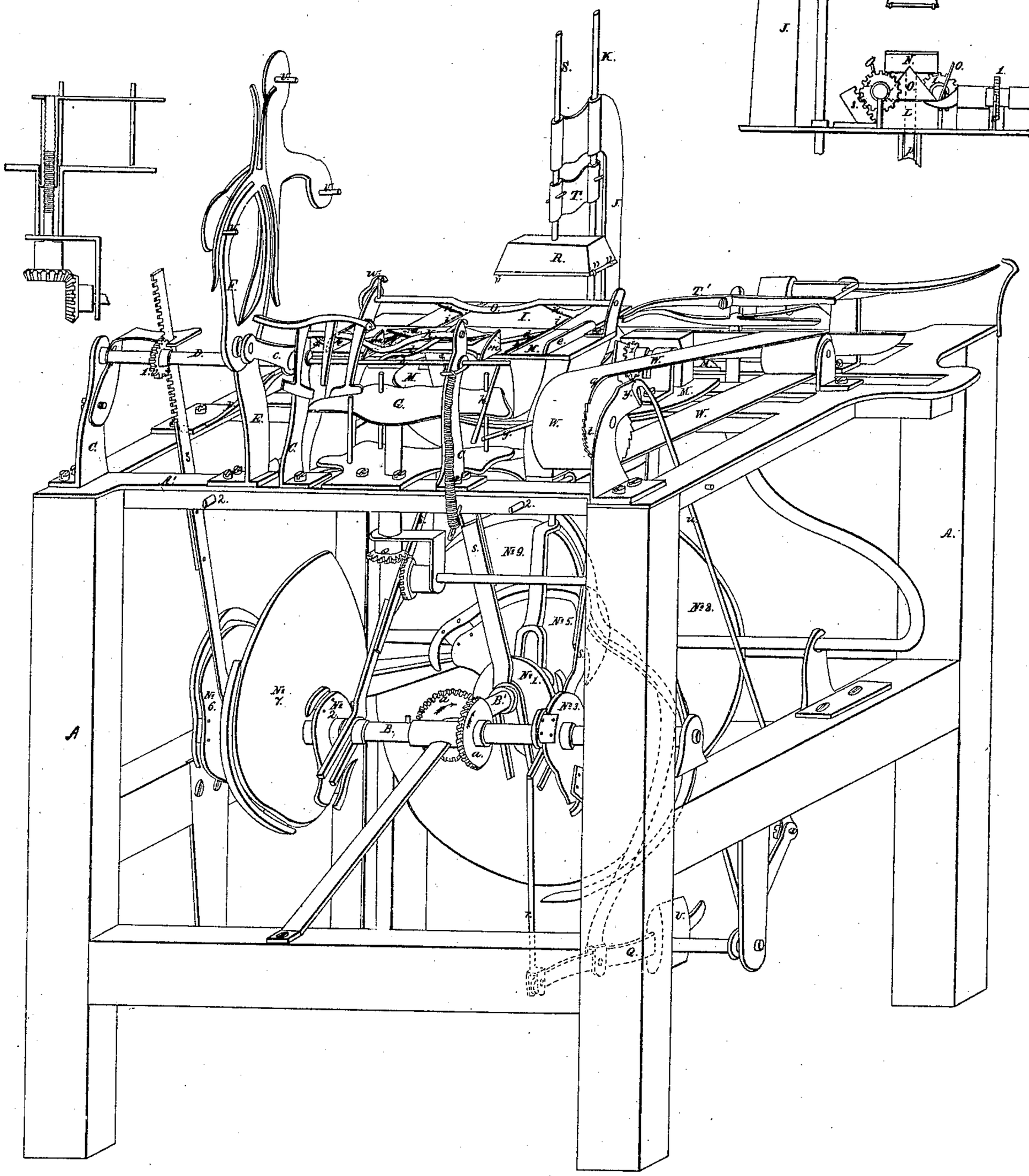
M. G. Puffer. Sheet 1. 3 Sheets.

Envelope Mach.

No. 22149. Patented Nov. 23. 1858.





M. C. Puffer. Sheets. 3 Sheets.

Envelope Mach.

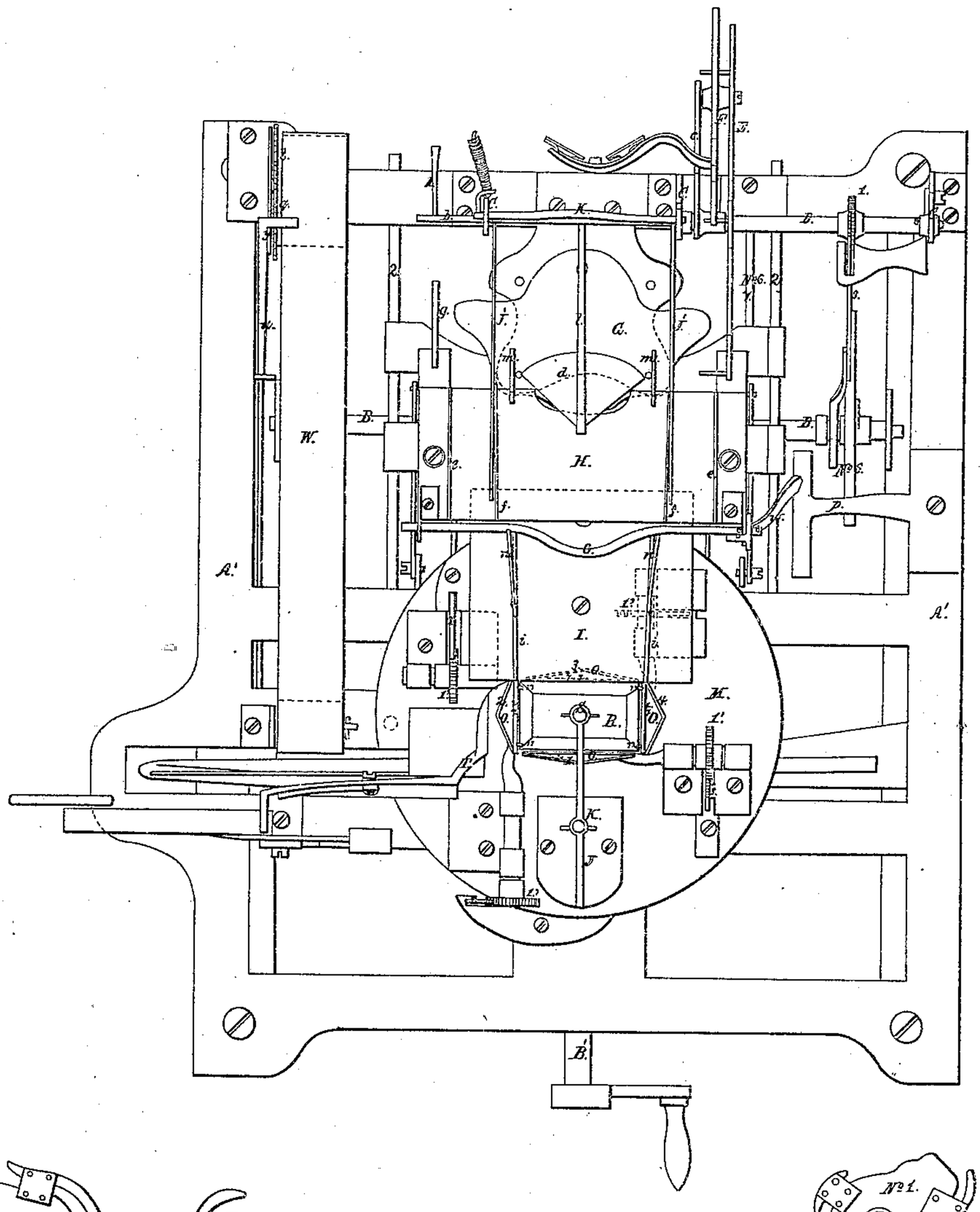
No. 22149. Patented Nov. 23. 1858.

M. G. Puffer

Sheet 3. 3 Sheets.

Envelope Mach.

No. 22149. Patented Nov. 23. 1858.



UNITED STATES PATENT OFFICE.

MILTON G. PUFFER, OF ROCKVILLE, CONNECTICUT, ASSIGNOR TO CYRUS WHITE AND LEWIS A. CORBIN, OF SAME PLACE.

MACHINE FOR MAKING ENVELOPS.

Specification of Letters Patent No. 22,149, dated November 23, 1858.

To all whom it may concern:

Be it known that I, MILTON G. PUFFER, of Rockville, county of Tolland, and State of Connecticut, have invented certain new and useful Improvements in Envelop-Machines; and I do hereby declare that the same are described and represented in the following specification and drawings; and to enable others skilled in the art to make and use the same I will proceed to describe their construction and operation, referring to the drawings, in which the same letters indicate like parts in each of the figures.

The nature of this improvement consists in so constructing a self feeding machine that when motion is given, it will take one sheet of paper at a time, paste, carry it forward, fold, press, and deliver it in the required number for a package separated from the others.

Plate 1, is an isometrical view of the front side and end of the machine. Plate 2, is a front side view occupied by the person attending the machine. Plate 3, is a top view. Plate 4, shows the shape of the cams to produce the required result.

A, is the frame work, A′ is a metallic plate, constituting the top of the frame, and to which the upper working parts are secured; B, is the operating shaft, crosswise the machine; B′ is a shaft, lengthwise of the machine, connecting the two, and operating together by means of bevel gears *a;* the darts upon the gears indicate the direction of motion. Upon these two shafts are arranged all the cams, and by them are produced all the motions and results of the machine; each occupying the position designated by their number in red ink, viz. commencing on the left hand side at the end of the shaft B.

No. 6, is the first cam and operates the pasting and paper lifting arrangement. No. 7 is the second cam and moves the carriage that carries the paper forward. No. 2, is the third cam and operates one of the folding flaps, marked 1. No. 3, is the fourth cam and moves one of the folding flaps, marked 3. Then commencing on the left, on the shaft B′, No. 1 is the first cam, and moves one of the folding flaps, marked 4. No. 5, is the second cam and lifts the envelop after it is folded and pressed, ready to be taken away. No. 9, is the third cam and operates the nippers that take the envelop after it is folded, and brings it forward and drops it on the apron. No. 8, is the fourth cam, and carries the paper down and forms the envelop. No. 4, is the fifth cam, and moves one of the folding flaps, marked II.

C, C, C, are three supports, in the boxes of which are placed shafts D, *b*.

E, is a stand having guide pins *v*.

F, is a jack which dips into the paste box and is steadied by the guide pins, *v*, and carried forward by the arm *c*, on the shaft, D, directly over the paper on the table, G, and over the fly *d*, (which is secured to the shaft, *b*, by an arm *l*, projecting therefrom).

H, is a paper carrier arranged and sliding back and forth upon rods I, I, having two ribs, *f*, guides, *e*, and wedge shape catches *m;* so that as it moves back, slides under the paper lifted by the jack they will catch the paper as laid down from the jack on to the table G, by the fly *d*, caused by the action of the pin *g*, striking the arm, *l*, in shaft *b*, in its backward movement.

I, is a fixed table on which the paper is placed before it is pushed forward to the former, having two grooves, *i*, which diminish toward the right, on the front end of the carrier, H, is a crooked shaft, *o*, having spring fingers, *n*, which drop into the grooves, *i*, and push the paper forward as the carrier, H, advances with another piece of paper on its bed.

j are arms projecting forward from the shaft, *k*, and resting on the edge of the table, I, so that as the jack lifts the paper and it is laid down on the carrier by the fly, caught by the catches, *m*, is carried forward on to the table, I, and held by the arms, *j;* as the carrier table returns, the fingers, *n*, are lifted by the dropping arm, *w*, loose on the end of the finger shaft, *o*, riding back over a stud, *p*, fixed on the opposite side of the machine so as to lift the fingers in the backward motion over the paper and drop them in the grooves just back of the end of the projecting arms, *j*, and taking the paper therefrom, and as they move forward gradually coming together true, the paper for the former.

J, is a standard or support for the shaft K, having bearings in the upper end and in the bed, to guide it in an upright position.

L, is a box just the size of the envelop required to be made, secured upon the bed plate, M; N, is a rising bed, fitted into and just fills the box, L.

O, are folding flaps formed on the end of the shafts, secured in boxes having pinion gears on said shafts, by which they are operated, said flaps are made of such shape as will allow them to turn down upon the bed at, or nearly at, the same time, without coming in contact with each other, and having a half circle *x x*, formed on the back edge of the surface of the flaps in exact line with the center of the shaft, and planed upon the center on which the bearings are turned, so that the surface of the half circle *x x* will turn closely up to the bed N, and as the flaps turn down onto the bed N, the angle between the half circle *x x*, and the face of the flaps O, will nicely fit to the corners of the bed N. Thus when the plunger R, carries the paper down between the half circles *x x*, and as it rises, the folding flaps turn over the folds of the envelop and press them down between the half circles *x x*, thus giving the envelop a perfect form. The shaft P, is secured into the bed, N, thence by another connection to the cam No. 5. A lever *q*, connection, *r*, balancing weight, *u*, are employed to aid in the lifting of the bed, N.

R, is a plunger having a shaft, S, (and connected to the shaft, K, by an arm, T,) passing up through an arm projecting from the standard, J, and is thereby kept in exact line with the bed below, and is of the same size. Said plunger is provided with springs ″, so that they will be just even with the surface when pressed down on the bed below, and will separate the paper therefrom as the plunger rises before the folding and pressing is finished; thus by a connection from the shaft K, to the cam No. 8, the plunger, R, is operated.

Now as the fingers are pushing the paper forward, and the bed N, is rising, and the plunger descending, catches the paper in exact time and manner and together, and carries it down, forms, and the plunger rises; the folding flaps, *o*, by means of the rack arms, *s*, pinions, 1′, and connections to the cams Nos. 1, 2, 3, and 4, as described, operate just in time, fold and press, and the bed rises with the finished envelop to nearly the starting point, and is caught by the nippers, T′, and taken out on to the apron, W, arranged with a catch wheel, *t*, and guard, *y*, so that it will move one tooth only at a time until a package of twenty-five is counted off, when the moving lever, *u*, which always rides back on the guard, *y*, over several teeth but does not move but one tooth until one revolution of the wheel, *t*, which brings up one tooth, *q*, longer than the others; consequently the wheel receives the full motion of the lever, *u*, which separates twenty-five from the others; the platform, G, upon which the paper is first placed is moved by a common arrangement for such purposes, moving one tooth of a wheel at a time, thus keeping up a slow rise of the bed as the paper is taken therefrom.

I am aware that slight variations in the shape, arrangement, and construction of this machine, may be made without essentially changing its principle of operation. I do now, intend to change somewhat the shape and arrangement of some of the parts, so as to increase the speed, work off more envelops in a given time; as I have for a long time been at work perfecting, so I expect still to make some slight changes and improvements without materially altering the principle of operation as herein described. Thus by this arrangement of mechanical movements I am enabled to produce a perfectly formed envelop in the most rapid manner and with the least possible waste of stock.

What I claim therefore and desire to secure by Letters Patent is—

1. The shape essentially of the cams Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, for the purpose set forth.

2. The employment of the jack, F, arm, *c*, operating as described to paste and lift the paper, and the fly, *b*, to separate it therefrom on the carrier, H, as described.

3. The carrier, H, shaft, *o*, fingers, *n*, arm, *w*, stud, *p*, catches, *m*, and arms, *j*, for the purpose as described.

4. The combined action of the bed, N, with the plunger, R, for the purpose as described; also the employment of the springs ″ in the plunger, R, for the purpose as described.

5. I claim the folding flaps O, projecting from the center, or nearly so, from the end of a shaft, or shafts, and having their bearings on one end, or on each end thereof whether with or without the half circle *x x*, substantially as shown and described.

6. The construction and arrangement of the catch wheel, *t*, with a long tooth, *q*, and guard, *y*, for the purpose as described.

7. The arrangement of the nippers, T′, operating in the manner and for the purpose described.

MILTON G. PUFFER.

Witnesses:
EDWARD M. BLISS,
JEREMY W. BLISS.