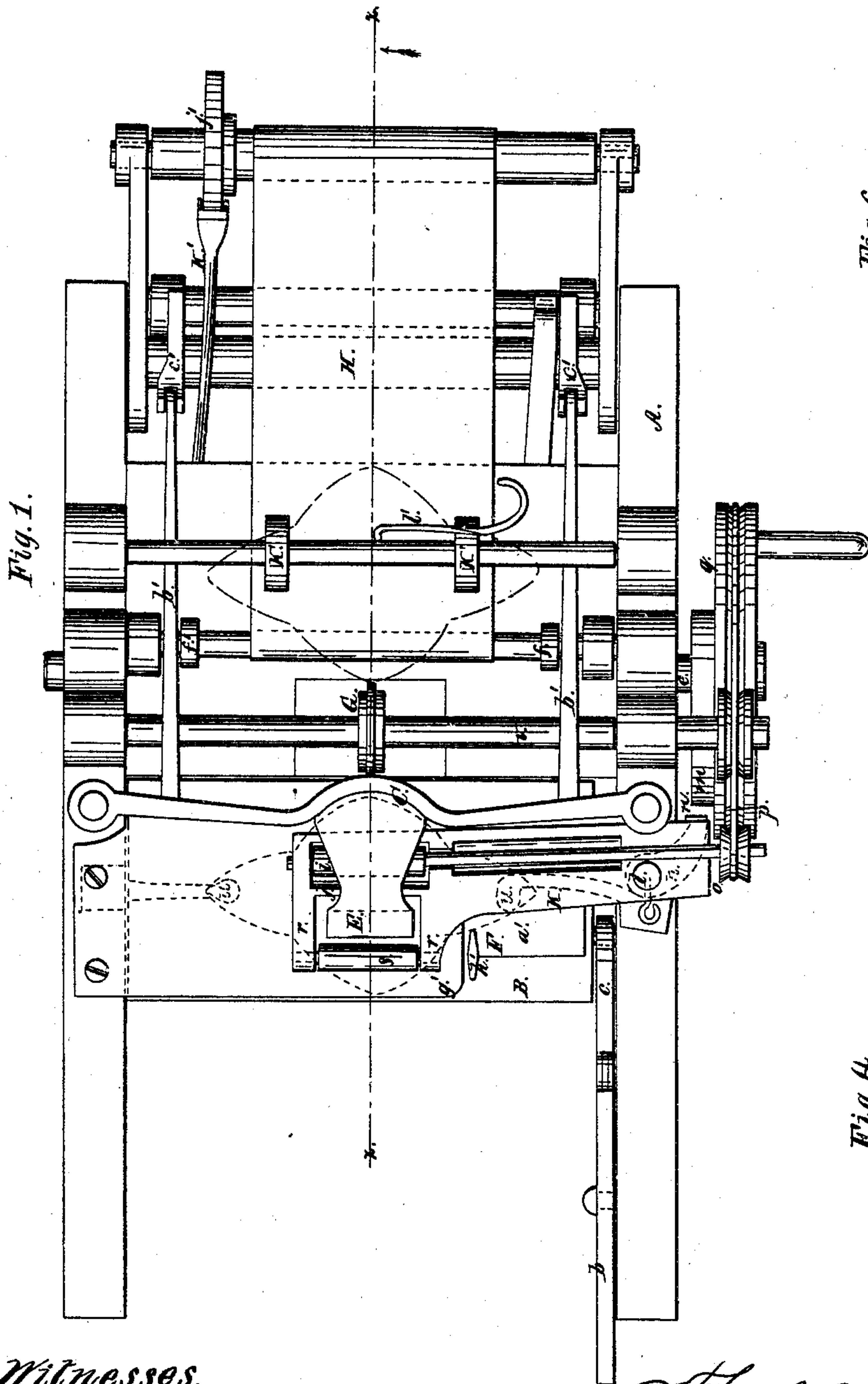
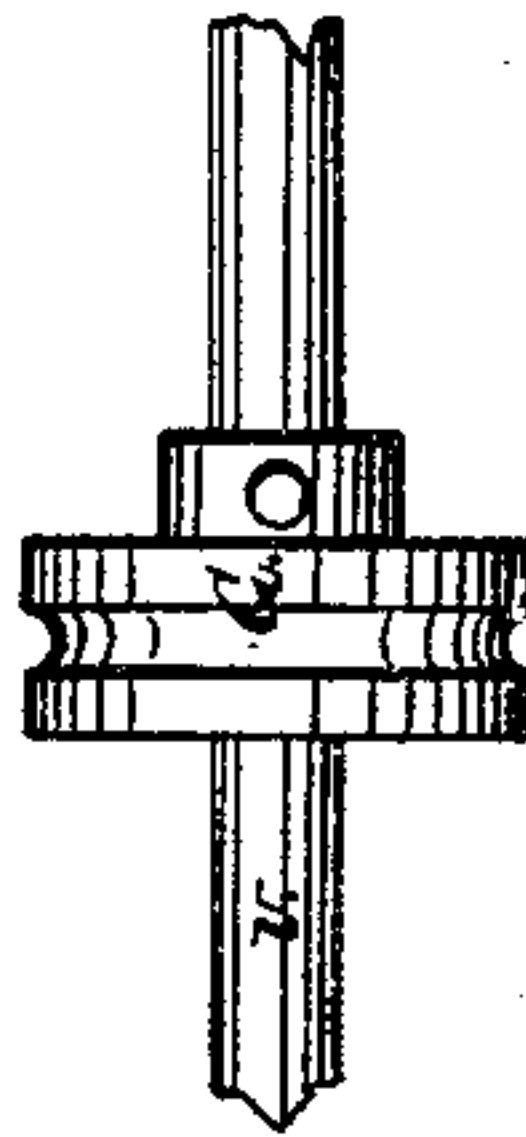


*T. V. Waymorth. Sheet 1. 3 Sheets.*  
*Envelope Mach.*

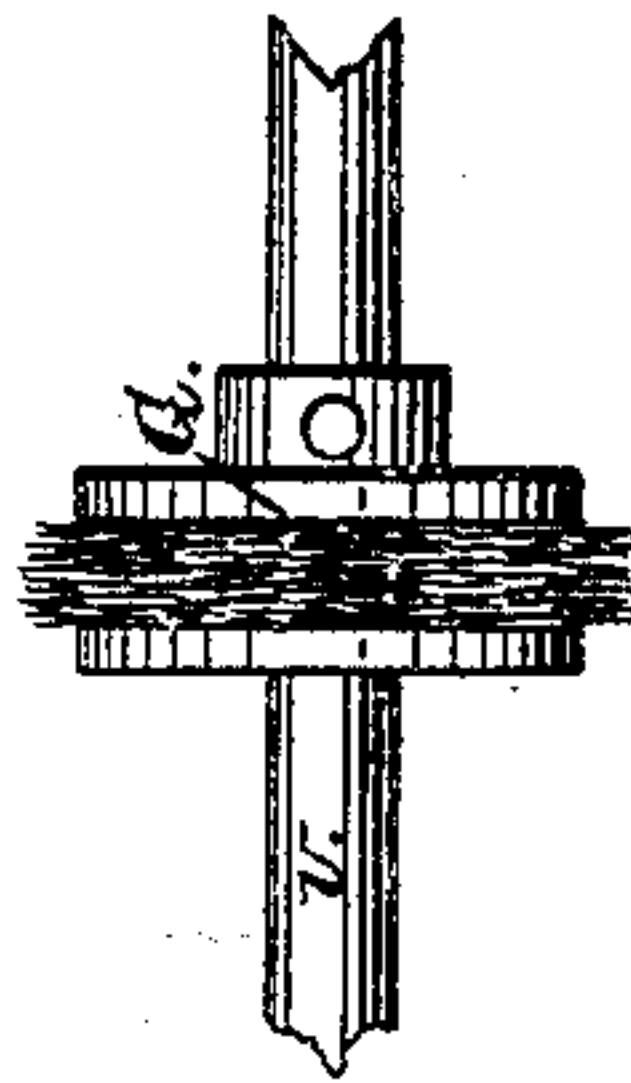
*N<sup>o</sup> 55,562. Patented Jun. 12, 1866.*



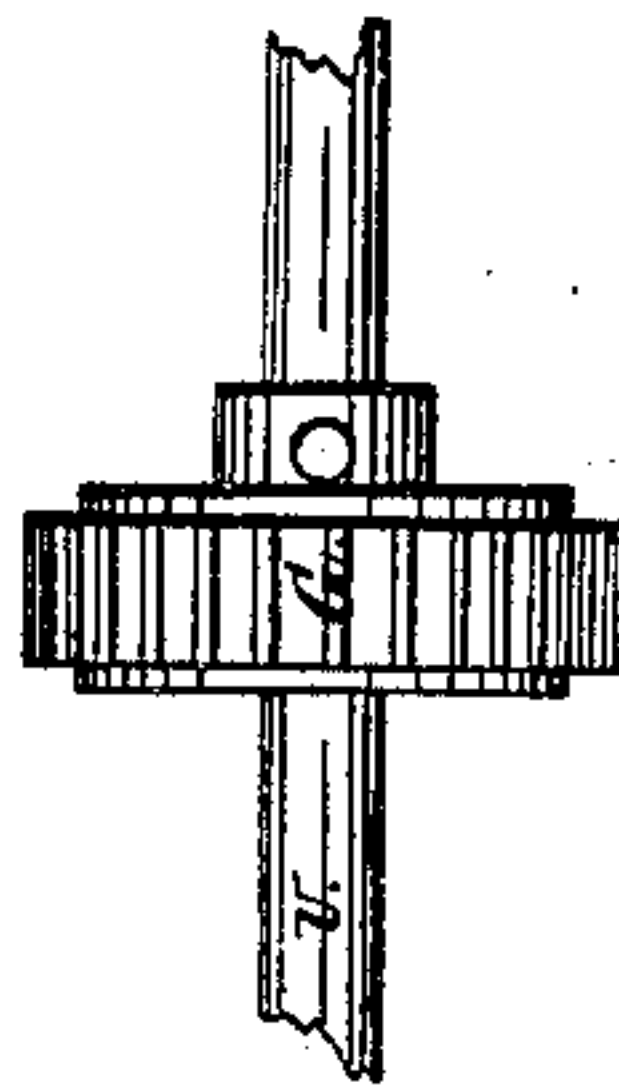
*Fig. 6.*



*Fig. 5.*



*Fig. 4.*

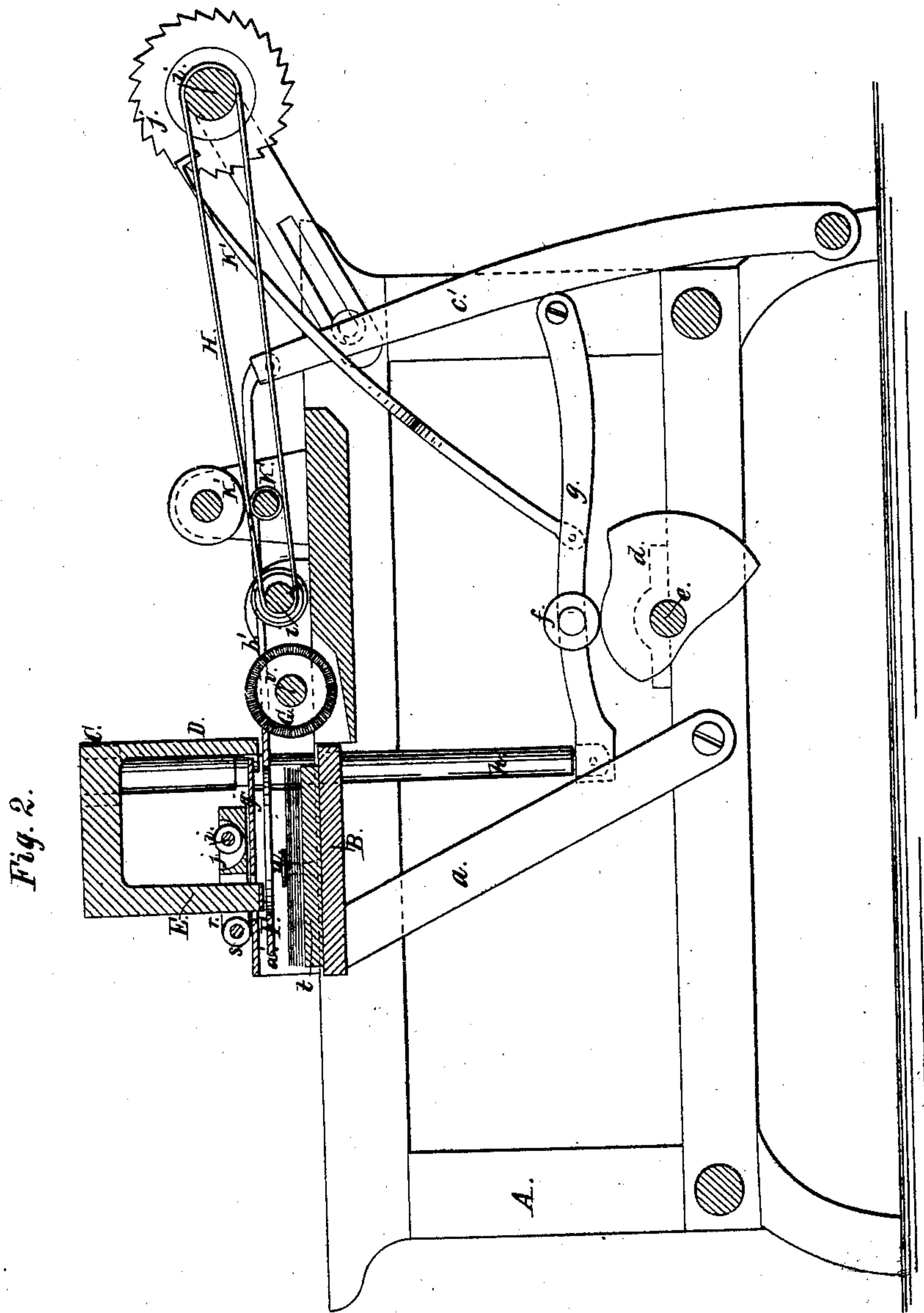


*Witnesses.*

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*T. V. Waymott. Sheet 2, 2 Sheets.*  
*Envelope Mach.*  
*N<sup>o</sup> 55,562. Patented Jun. 12, 1866.*



*Witnesses.*

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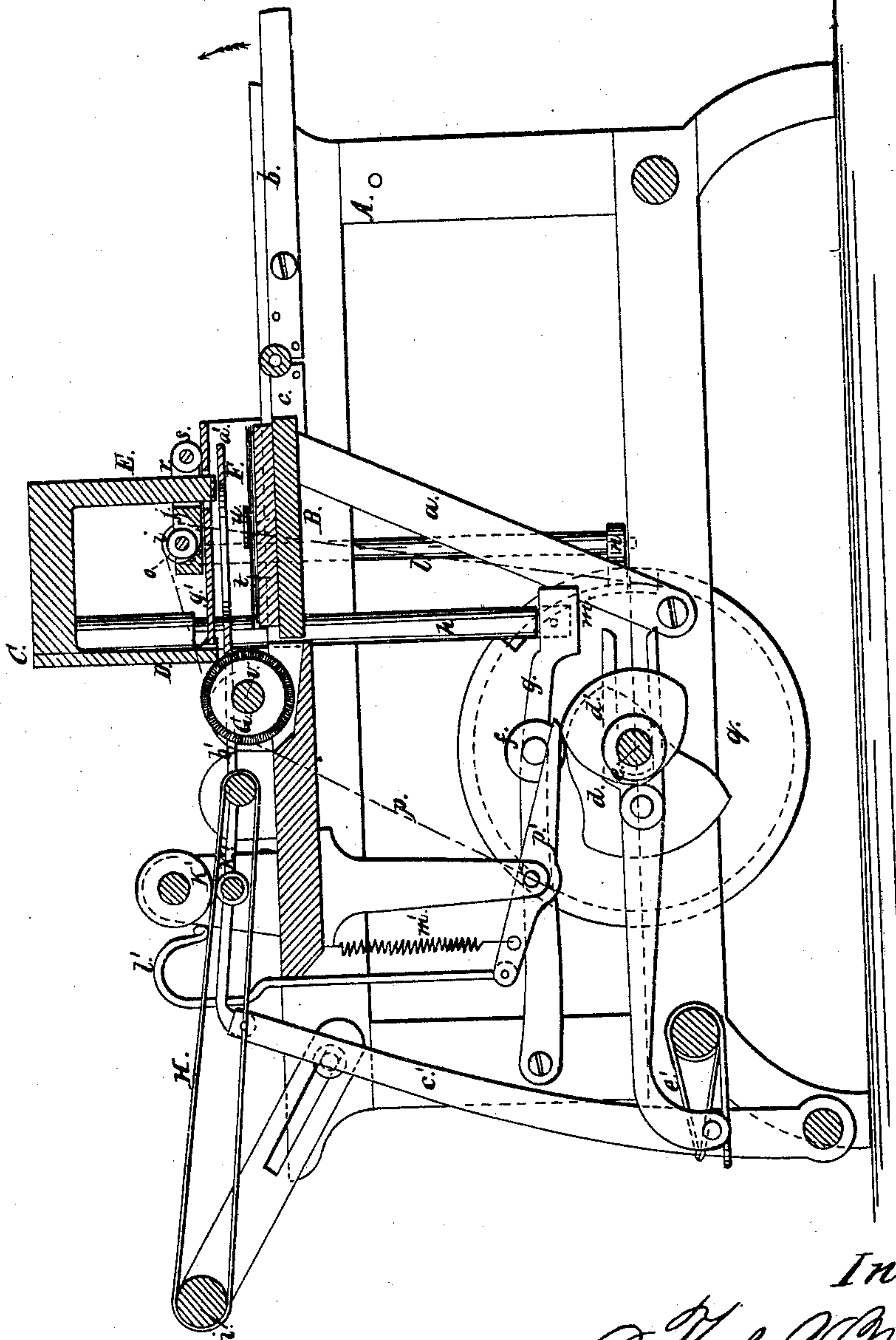
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Sheet 3, 3 Sheets.

T. V. Waymouth.  
Envelope Mach.

No 55,562. Patented Jun. 12, 1866.

Fig. 3.



Witnesses.

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# UNITED STATES PATENT OFFICE.

THOS. V. WAYMOTH, OF NEW YORK, N. Y.

## MACHINE FOR GUMMING AND PRINTING ENVELOPES.

Specification forming part of Letters Patent No. 55,562, dated June 12, 1866.

*To all whom it may concern:*

Be it known that I, THOMAS V. WAYMOTH, of the city, county, and State of New York, have invented a new and Improved Machine for Gumming and Printing Envelopes, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a plan or top view of this invention. Fig. 2 is a longitudinal vertical section of the same, taken in the plane indicated by the line *x x*, Fig. 1, and looking in the direction of the arrow opposite to that line. Fig. 3 is a similar section in the same plane, but looking in the direction opposite the arrow marked near the line *x x* in Fig. 1. Figs. 4, 5, and 6 are detached views of various modifications of my movable friction-separator.

Similar letters of reference indicate like parts.

This invention relates to a machine for gumming and printing the blanks for envelopes, wrappers, and other similar articles.

The invention consists, first, in the employment or use of a hinged table, applied, in combination with the pickers or gummers, in such a manner that said table, or at least that portion thereof which supports the pile of blanks, can be turned out from under the pickers and brought in a convenient position to receive a fresh supply of blanks without stopping the motion of the pickers; second, in the use of an elastic bed composed of india-rubber or other suitable material, to be placed under the pile of blanks on the table in such a manner that the operation of gumming, and particularly that of printing, the blanks is greatly facilitated; third, in combining with the gumming mechanism a type-case secured to the same or to a different arm, with the gummers and suitable ink-rollers, in such a manner that simultaneously, or nearly so, with the descent of the gummers upon the pile of blanks the faces of the types are brought down upon the uppermost blank in the pile, and the operation of printing is effected without loss of time or extra labor; fourth, in the use of a movable separator, applied, in combination with the gumming mechanism and with the pile of blanks to be acted upon by the gummers, in such a

manner that by the action of said separator against the edges of the blanks, and by the current of air created by the motion of said separator, the gummers are prevented from raising more than one blank at a time from the pile on the table; fifth, in the arrangement of an endless apron to which an intermittent feed-motion is imparted, in combination with a reciprocating carrier and with the gumming mechanism, in such a manner that one blank after the other is first taken up by the gummer or gummers and then deposited on the carrier, and by said carrier it is brought on the apron, where the blanks arrange themselves in the proper order to allow the gum to dry without sticking to each other; sixth, in the arrangement of one or more rising-and-falling fingers, in combination with suitable pulleys and with the apron, which serves to carry off the blanks after they have been gummed and printed, in such a manner that by the action of the finger or fingers and of the rollers the blanks are securely held on the apron, and as soon as the apron begins to move the fingers rise and the blanks are compelled to move with said apron, causing them to arrange themselves in such a position in relation to each other that the gummed surface of each blank projects beyond the edge of the succeeding blank, leaving the gum free to dry and preventing the blanks from sticking together.

A represents a frame, made of iron or any other suitable material of sufficient strength to form the bearings for the various working parts of my machine. The blanks to be gummed and printed are supported by a table, B, which rests on two arms or legs, *a*, that are hinged to the frame A, so that the table can be raised up to a horizontal position, as shown in Figs. 2 and 3, or that it can be turned back to an inclined position.

Said table is operated by a lever, *b*, which is pivoted to the frame A, and the inner end of which connects by a link, *c*, with the table. If the lever and link are in line, as shown in Fig. 2, they form a brace which retains the table in its horizontal position; but by turning the lever up in the direction of the arrow marked opposite to it in Fig. 3 the table is made to swing back.

Above the table B rises the yoke C, to which a rising-and-falling motion is imparted by the action of cams *d* in the driving-shaft *e*, said



cams being arranged so that they act on roller-studs *f*, secured to levers *g*, which are pivoted at one end to the frame A, whereas their other ends connect with the guide-rods *h* of the yoke C. This yoke carries the picker or gummer D and also the type-case E; or, if desired, the type-case may be connected to a separate yoke. The face of the gummer is supplied with gum by means of a roller, *i*, the axle of which has its bearings in the ends of the gum-box *j*, and this box is secured to an arm, *k*, which is keyed to a vertical arbor, *l*, to which an oscillating motion is imparted by means of a cam, *m*, acting on a tappet, *n*, as shown in Fig. 3.

By the oscillating motion of the arbor *l* the roller *i* is made to sweep across the face of the gummer whenever said gummer reaches its highest position, and in order to enable the roller to transfer the requisite supply of gum to the gummer a revolving motion is imparted to it by extending its axle beyond the arm *k*, so as to obtain room for a small pulley, *o*. A belt, *p*, stretched over said pulley and over a pulley, *q*, on the driving-shaft, transmits the desired motion from this last-named shaft to the gum-roller *i*, and this belt may be made of india-rubber or other elastic material, which will act as a spring to carry the arm *k* and gum-box *j* back to their original position as soon as the cam *m* ceases to act on the tappet *n*; or, if desired, a suitable tightening-roller may be applied to the belt *p*, so that the same will be enabled to accommodate itself to the varying position of the pulley *o* on the axle of the gum-roller *i*.

The arm *k* is provided with two lugs or projections, *r*, which form the bearings for the ink-roller *s*, which is intended to transfer the requisite quantity of printing-ink to the types in the type-case E. This roller receives its supply of ink from a suitable ink-well, which is not shown in the drawings.

In order to facilitate the operation of transferring the gum from the gummer to the blanks, and particularly to facilitate the operation of printing, an elastic bed, *t*, made of thick india-rubber cloth or other suitable material, is placed on the table B, under the pile of blanks, and this bed may be cut out to correspond to the shape of the blanks, or it may be made in any other desirable form or shape.

By the action of the gummer one blank after the other is lifted off from the pile and delivered to the reciprocating carrier F.

The separation of each blank from the pile is facilitated by weak springs *u*, which bear down on the ends of said blanks, causing them to bend as the pickers raise them up, and a perfect separation of the blanks one from the other is insured by a movable separator, G. This separator consists of a brush or ratchet wheel mounted on a shaft, *v*, to which a rapid revolving motion is imparted by the belt *p*, which also serves to impart motion to the gum-roller *i*; or, instead of a brush or ratchet wheel, an endless apron or belt may be employed, which would be stretched over suit-

able pulleys, and which might be armed with suitable teeth or wings. Said separator moves in close proximity to the edges of the blanks, so that by its action and by the action of the current of air created by its motion the blanks are effectually separated one from the other, and only one blank at a time is lifted from the pile and delivered to the carrier.

The carrier F consists of a platform, *a'*, which is supported by two arms, *b'*, extending from upright levers *c'*, to which an oscillating motion is imparted by the combined action of cams *d'* and a spring, *e'*.

The arms *b'* are supported and guided by grooved rollers *f'*, and their motion is so timed that the carrier F is made to pass under the gummer as soon as the latter has been raised enough to admit the same. At that point the gummer stops, retaining the blank raised by it, so that the carrier can pass between the same and the pile of blanks on the table B, and after the carrier has reached its extreme position it stops for a short time, while the gummer reassumes its ascent, thereby bringing the blank in contact with the guard *g'* and causing it to disengage itself and to drop down on the carrier. Said carrier is provided with two hooks, *h'*, which catch over the edge of the blank and prevent it slipping off from the carrier.

Immediately after the blank has been deposited on it the carrier moves back from under the gummer and deposits the blank on the endless apron H. This apron is stretched over two rollers, *i'*, which have their bearings in suitable boxes or standards secured to the frame A, and on one of these rollers is mounted a ratchet-wheel, *j'*, and a pawl, *k'*, which engages with the teeth of said ratchet-wheel and imparts to it and to the endless apron an intermittent motion. Said pawl is pivoted to one of the levers *g*, which connect with the guide-rods of the yoke C, and to which an oscillating motion is imparted by the action of the cam *d*, (see Fig. 2,) or the requisite motion may be imparted to it in any other suitable manner.

As the carrier arrives at the back end of its stroke over the inner end of the endless apron the edge of the blank resting on the same is caught between two pairs of pressing-rollers, *l'*, situated above and below the apron in such a position that the same are compelled to revolve by the action of the apron, and that they compel the blank to move along with said apron without fail.

After the motion of the apron has been completed a finger, *l'*, descends and presses upon the blank just delivered, so as to prevent it from being disturbed in its position by the next succeeding stroke of the carrier.

A rising-and-falling motion is imparted to said finger by the combined action of a spring, *m'*, and cam *d'*, which act on a double-armed lever, *p'*, to one end of which the finger is connected, as shown in Fig. 3.

The motion of the apron H is so regulated



that the same travels a distance equal to the width of the gummed space on the blanks, after the delivery of each blank, and by these means the gummed surface of one blank will not be covered by or permitted to come in contact with the succeeding blank, thus preventing said blanks from sticking together and giving ample time to the gummed surface to dry.

By this machine the seal-flaps of the blanks for envelopes can be gummed in a simple, quick, and effective manner, and simultaneously with the operation of applying the gum any desired words or characters can be printed on the blanks.

The same machine may also be used with advantage for gumming and printing the blanks of newspaper-wrappers or of any other similar article.

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

1. The hinged table B, which swings back and forth on arms *a*, to operate in combination with the gummer D, substantially as and for the purpose described.

2. The movable separator G, in combination with the gummer D, substantially as and for the purpose set forth.

3. The endless apron H, in combination with a suitable mechanism imparting to it an intermittent motion, and with the reciprocating carrier F and gummer D, constructed and operating substantially as and for the purpose described.

4. The finger *l'* and rollers *k'*, in combination with the apron H and carrier F, constructed and operating substantially as and for the purpose set forth.

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