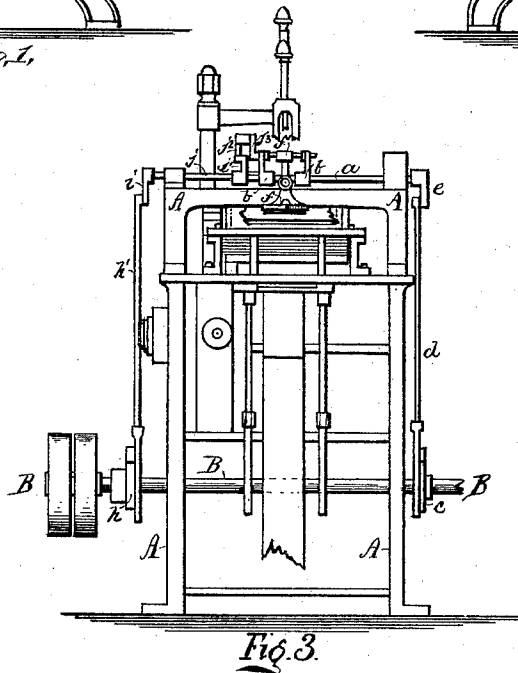
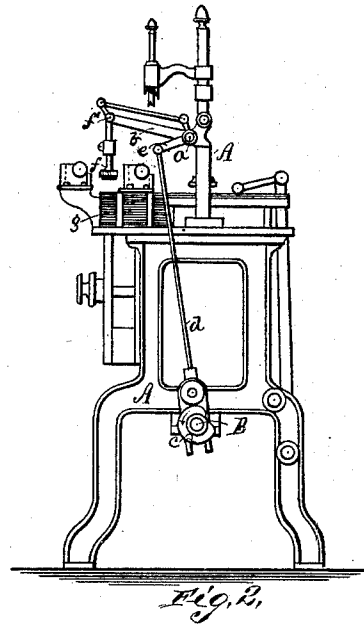
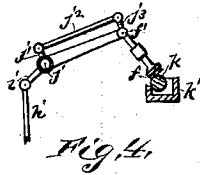
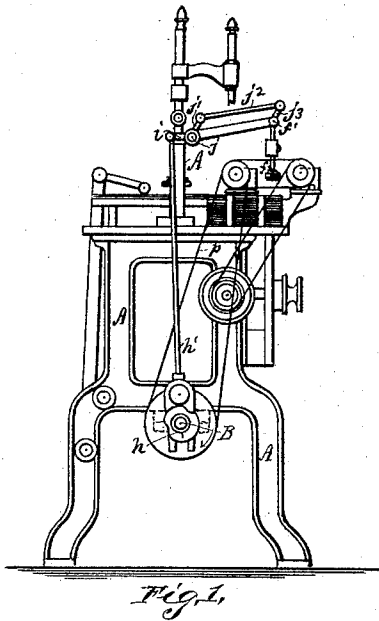


(No Model.)

W. PIPER.
ENVELOPE MACHINE.

No. 469,391.

Patented Feb. 23, 1892.



Witnesses
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UNITED STATES PATENT OFFICE.

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ENVELOPE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 469,391, dated February 23, 1892.

Application filed April 3, 1890. Serial No. 346,496. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM PIPER, a citizen of the United States, and a resident of Mamaroneck, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Envelope-Machines, of which the following is a specification.

My invention relates to the gumming devices and connections in envelope-machines; and it consists of the combinations of parts for raising and lowering the gummer vertically, also for giving it a forward and backward motion or swing when at its highest elevation to obtain its supply of gum, and also a forward and backward or sliding motion at the moment of its contact with the envelope-blank to provide a more rapid, thorough, and effectual distribution of liquid, as hereinafter more fully described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 represents a side elevation of a machine containing my improvements, showing the devices for operating the gummer and imparting the sliding movement and backward swing. Fig. 2 is an elevation of the opposite side, showing the devices for raising and lowering the gummer. In both of the above figures an end of the fountain is visible, showing its position. Fig. 3 is an elevation of the front of the machine, the front plate of the fountain shown as broken away to expose the front of the gummer. Fig. 4 is a side view of the gummer and immediate connections, also section of gum roller and fountain. This view shows the position of the gummer when taking gum from the supply-roller, illustrating the forward swing.

In the drawings, A indicates the parts composing the frame-work of the machine.

B indicates the main driving-shaft of the machine, supplied with power by any of the usual means.

I do not confine myself to any particular machine; but design to use my improvements as attachments to any kind of machine to which they may be found applicable, and also

using any suitable material in their construction. The special parts comprising my invention are as follows:

a indicates a rock-shaft, upon which two arms *b* are fastened, their outermost points receiving a perpendicular reciprocating motion from the rocking motion of the shaft *a*, produced by cam *c*, (fixed to the driving-shaft B,) through a rod *d*, connected to the rock-shaft *a* by the short arm *e*.

At *f* is shown the gummer, hung or pivoted to the arms *b*, as shown at *f'*, so that as the outer ends of the arms *b* fall the gummer is brought downward upon the pile of blanks shown at *g* to deposit gum thereon, after which, as they rise to the position shown in Figs. 1, 2, and 3, the gummer is carried up also. When at or near the highest point, a cam *h*, affixed to the driving-shaft B, (opposite end to that before mentioned,) comes in play, operating through a rod *h'* and short arm *i*, attached to a rock-shaft *j*. To the said rock-shaft *j* is fixed a short arm *j'*, and extending from said arm *j'* is a connecting-rod *j''*, pivoted to the short arm *j'*, and also at its outer end pivoted to a short arm *j'''*, which latter arm is fixed to the pivot-shaft *f'* of the gummer *f*. With the rocking motion of the shaft *j* the connecting-rod *j''* is drawn backward, throwing outward or forward the lower end of the gummer, bringing its gumming-face to and upon the roller of the gum box or fountain to get a supply of mucilage or gum, the reverse motion (caused by cam *h*) of the rock-shaft *j* carrying it back to a vertical position to receive the downward movement caused by cam *c* to and upon the envelope-blanks again. Thus rising and falling, receiving gum and depositing it, the gummer proceeds as long as desired.

To provide for a perfect deposit and distribution of gum upon the envelope-blank, I form the cam *h* with a suitable depression or curve to its edge, as usual in similar movements, which comes into play when the gummer strikes the blanks, and by dropping the rod *h'* and rocking the shaft *j* sufficiently gives the gummer a slide forward and return

upon the blank, rendering its action more effectual than would result from a downward stamp alone, as the sliding motion leaves a more even and uniform deposit upon the surface of the paper.

K indicates the gum-roller, working in the gum box or fountain K'. The roller K is revolved by belt connection with the main driving-shaft B, as shown in Fig. 1, and supplies the gum to the gummer *f*. The cam *c* merely rocks the shaft *a* by running the rod *d* upward and downward; but the cam *h* is formed to rock the shaft *j* by running the rod *h'* upward and downward at the proper time to give a forward and backward motion to the connecting-rod *j*² when at its highest elevation, and a slighter motion at its lowest point to throw or slide the face of the gummer forward upon the blank to be gummed.

It must be understood that the rock-shafts *a* and *j*, although on a direct line across the machine, are independent. Their approximating ends may rest in the same bearing or

be provided with independent bearings, as found desirable.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination of cam *h* on driving-shaft B, rod *h'*, crank *i*, rock-shaft *j*, short arm *j'*, rod *j*², short arm *j*³, shaft *f'*, supporting-arms *b*, and gummer *f*, arranged to operate essentially as set forth.

2. The combination of driving-shaft B, cam *c*, rod *d*, crank *e*, rock-shaft *a*, and arms *b*, cam *h*, rod *h'*, crank *i*, rock-shaft *j*, short arm *j'*, rod *j*², short arm *j*³, shaft *f'*, and gummer *f*, all arranged and adapted to give the gummer an upward and downward motion and when at its highest elevation a forward and backward swing, and at its lowest also a forward and backward swing, essentially as set forth.

WILLIAM PIPER.

Witnesses:

D. S. PILLSBURY,

JAMES C. GORDON.