H. J. REYNOLDS.

ENVELOP SEALING MACHINE.

APPLICATION FILED FEB. 26, 1909.

945,419.

Patented Jan. 4, 1910.

2 SHEETS—SHEET 1.

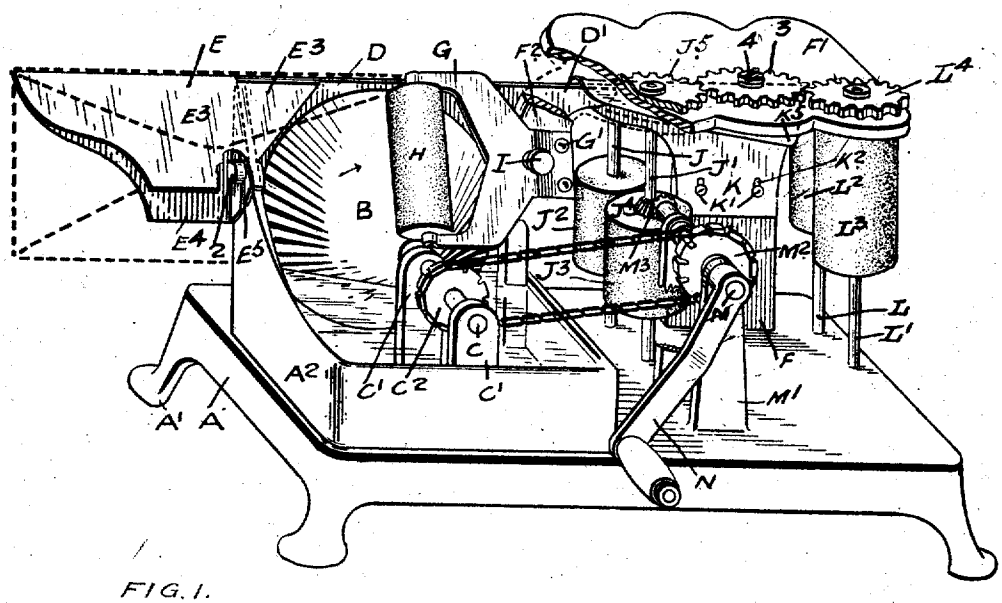

FIG. 1.

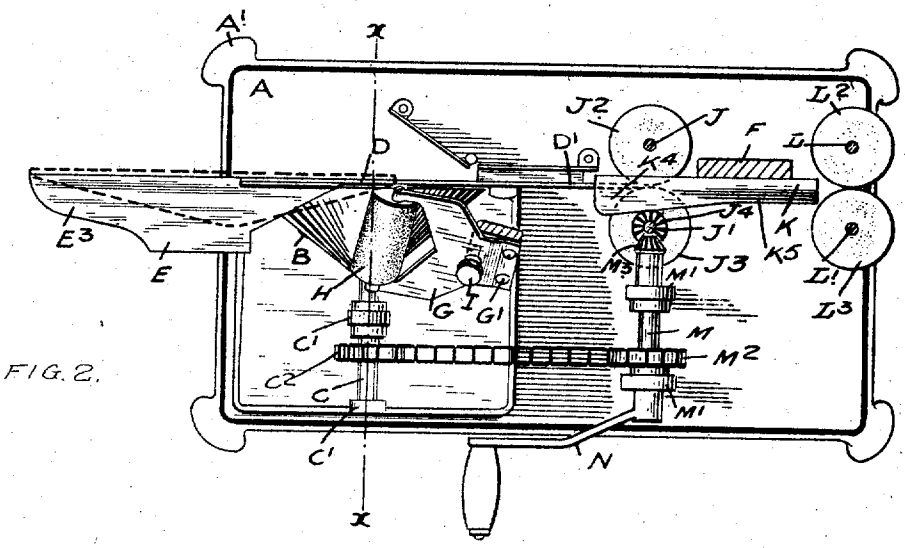

FIG. 2.

WITNESSES.

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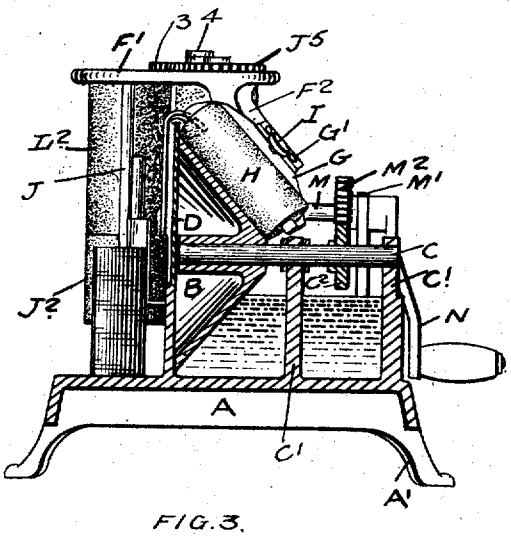

FIG. 3.

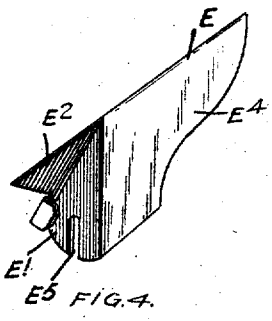

FIG. 4.

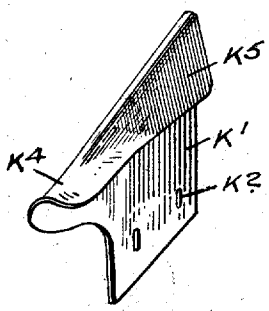

FIG. 5.

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UNITED STATES PATENT OFFICE.

HENRY JAMES REYNOLDS, OF CHICAGO, ILLINOIS.

ENVELOP-SEALING MACHINE.

945,419. Specification of Letters Patent. Patented Jan. 4, 1910.

Application filed February 26, 1909. Serial No. 480,166.

To all whom it may concern:

Be it known that I, HENRY JAMES REYNOLDS, of the city of Chicago, in the county of Cook, in the State of Illinois, one of the United States of America, have invented certain new and useful Improvements in Envelop-Sealing Machines, of which the following is the specification.

My invention relates to improvements in envelop sealing machines, and the object of the invention is to devise a simple, cheap and effectual machine of this class, which will moisten, close and seal any sized envelop from a small pay envelop to a large official sized envelop without the necessity of any adjustment.

A further object is to make such a machine as may be manipulated by hand and yet feed, close, seal and deliver the envelops with great rapidity.

My invention consists of a suitable base, a water well superimposed thereupon at one end, a conical moistening wheel secured on a spindle journaled in bearings at the top of the well, a guiding plate located in advance of the disk, a suitable standard provided with feeding and delivery rollers, one of which co-acts with the conical measuring wheel, a folding plate extending between the spindles of two of the feeding rollers, and a suitable driving gear and handle operating the rollers all constructed and arranged as hereinafter more particularly explained.

Figure 1, is a perspective view of my improved envelop sealing machine, portion being broken away to more clearly exhibit the construction thereof. Fig. 2, is a plan view. Fig. 3, is a cross section looking toward the forward end of the machine and on a plane substantially on a line *x*—*y* Fig. 2. Fig. 4, is a detail of the advance guiding plate. Fig. 5, is a detail of the folding plate for the envelop flap at the opposite end of the machine.

In the drawings like characters of reference indicate corresponding parts in each figure.

A is the base of the machine, which is of any suitable form and is provided with feet A′.

A^2 is a water well located toward one end of the base A and designed to be partially filled with water.

B is a hollow cone-shaped wheel having the base of the cone innermost. The wheel B is secured on a spindle C, which is journaled in bearings C′ extending upwardly from the well B.

D is a plate secured to the back of the well close to the back of the hollow conical wheel B.

E is the advance guiding plate, which is substantially reverse V-shape in cross section being provided with an end E′ and projecting wing E^2 lying flush with the inclined face or side E^3 of the plate E. The other face or side E^4 is preferably vertical. A slot E^5 is made in the end E′ and through this slot extends a fastening bolt 2 (see Fig. 1) whereby the plate E is fastened, so that the top edge is on a line with the top edge of the plate D.

F is a standard attached to or forming part of the base A and carrying at the top the bearing plate F′.

F^2 is an arm depending from the front end of the plate F′.

G is a spring fork, which is fastened to the arm F^2 by screws G′. The fork G carries between its jaws the roller H, which is preferably formed of rubber or other suitable yielding material and normally presses against the upper portion of the cone-shaped wheel B.

In order to adjust the tension of the roller H upon the cone-shaped wheel I provide a set screw I, which is shouldered and extends through the spring plate G into the arm F^2. The shoulder abutting against the plate will serve to press the plate inwardly or allow it to give outwardly in order to obtain the desired pressure of the roller H upon the cone wheel B.

J J′ are spindles journaled in bearings in the base A and in the plate F′.

J^2 and J^3 are yielding rollers preferably of rubber, which are located toward the lower portion of the spindles for a purpose, which will hereinafter appear.

K is the folding plate, which is fastened to the standard F by means of screws K′ extending through slots K^2 in the plate. The plate K is reverse V-shape in cross section and has a flaring lip K^4 at the front end, which serves to guide the open flap of the envelop and aid in its depression into the vertical or folding position by the time it reaches the substantially vertical portion K^5 as will

hereinafter appear. The slots K^2 are designed to set the plate K in its proper position, so that it extends slightly above the level of the extension D′ of the plate D, which forms a track along which the angular corner of the envelop to the inner side of the flap passes.

L L′ are spindles journaled in the base A and plate F′.

L^2 and L^3 are yielding rollers also preferably made of rubber and designed to seal and deliver the envelop. The rollers H J^2 J^3 and L^2 and L^3 are also preferably made of rubber, but may be made of any other suitable material.

It will be noticed that the rollers J^2 and J^3 are in proximity as also the rollers L^2 and L^3.

M is a spindle journaled in suitable bearings M′ and carrying a sprocket wheel M^2.

N is the crank handle by which the spindle M is turned.

N′ is a sprocket chain extending from the sprocket wheel M^2 to a sprocket wheel C^2 on the spindle C.

The inner end of the spindle M carries the bevel gear pinion M^3, which meshes with a bevel gear J^4 on the spindle J′.

J^5 is a gear wheel secured at the upper end of the spindle J′. The gear wheel J^5 meshes with a gear wheel 3 journaled on a stud 4 in the plate F′ and the gear wheel 3 meshes with a gear wheel L^4 at the upper end of the spindle L′.

It will now be seen by turning the crank wheel N the main wheel B will be turned as also the yielding rollers J^2 and J^3 and L^2 and L^3.

The envelop is placed in the position shown in dotted lines astride the substantially V-shaped plate E, so that it may be taken hold of by the roller H. The flap of the envelop extends over the cone-shaped wheel and the roller H as the cone-shaped wheel is rotated as hereinbefore described carries the envelop forwardly by its flap over the plate D and extension D′ and under the plate K. The gummed under portion of the flap is moistened by means of the film of water, which is maintained constantly on the cone wheel B in its rotation in the water in the well. The moistened envelop is carried by the roller H until the lower portion of the envelop passes between the rollers J^2 and J^3, which press upon the lower portion of the envelop and serve to carry it still forwardly through the machine.

The flap of the envelop as it passes underneath the lip K^4 is turned outwardly until by the time it passes to the end of the plate K the vertical side K^4 has turned the flap of the envelop into the substantially vertical position. The rollers L^2 and L^3 now grip the envelop and effectually seal the same as it passes between them, such rollers L^2 and L^3 serving to deliver the envelop.

The envelops may be fed in over the plate E and delivered very quickly through the machine, and it will be seen that on account of the construction of my machine, that the smallest class of envelop can be fed and delivered with equal facility to the larger sized envelop.

It will be noticed from what has been before described that the rollers J^2 and J^3 catch the lower part of the envelop and this is for the purpose of allowing the flap to pass downwardly into substantially the vertical position as otherwise if the rollers extended upwardly there would be a tendency to prevent the flap lying smoothly as it is passing from the inclined to the vertical position, the distance being short.

Although I have shown and described my machine with great particularity it will, of course, be understood that various changes may be made, which will embody my invention without departing from the spirit thereof.

What I claim as my invention is:

1. In an envelop sealing machine, the combination with a base and a water well superimposed thereon at one end and provided with a high back, of a spindle journaled in suitable bearings in the water well, a coacting cone-shaped wheel secured to the spindle and having the base located in proximity to the back and its periphery extending below the level of the top edge of the back, an advance guide attached to one of the walls of the water well and having the top edge substantially level with the top of the back and in alinement therewith, and means for pressing the flap of the envelop as it advances on to the cone-shaped wheel as it rotates as and for the purpose specified.

2. In an envelop sealing machine, the combination with a base and a water well superimposed thereon at one end and provided with a high back, of a spindle journaled in suitable bearings in the water well, a coacting cone shaped wheel secured to the spindle and having the base located in proximity to the back and its periphery extending below the level of the top edge of the back, an advance guide attached to one of the walls of the water well and having the top edge substantially level with the top of the back and in alinement therewith, and a yielding pivoted fork a roller journaled in suitable bearings in said fork and inclined to correspond to the incline of the cone-shaped wheel over which it fits as and for the purpose specified.

3. In an envelop sealing machine, the combination with a base and a water well superimposed thereon at one end and provided with a high back, of a spindle journaled in suitable bearings in the water well, a coacting cone-shaped wheel secured to the spindle and having the base located in prox-

imity to the back and its periphery extending below the level of the top edge of the back, an advance guide substantially reverse-V-shape in cross section having the one side substantially vertically disposed and on the same plane as the back wall of the water well, and the opposite sides inclined and provided with a wing extending toward the cone-wheel, and means for suitably fastening the advance guide in position as and for the purpose specified.

4. The combination with a base and a water well having a high back, an advance guide and a cone wheel secured on suitable spindles journaled above the water well, of a standard attached to the base and a folding plate substantially reverse V-shape in cross section as and for the purpose specified.

5. The combination with a base and a water well having a high back, an advance guide, and a cone-shaped wheel secured on suitable spindles journaled above the water well and an inclined pressure roller coacting with said cone shaped wheel, of a standard attached to the base and a folding plate substantially reverse V-shape in cross section supported on said standard and suitable vertically disposed delivery rolls in advance of and to the front of the folding plate as and for the purpose specified.

6. In combination a base, a water well provided with a high back, an advance guide, a cone-shaped wheel located in proximity to the back and suitably rotated, a pressure roll inclined and journaled in suitable bearings above the cone wheel, lower delivery rolls located beneath the level of the path of the flap of the envelop, a folding plate located in alinement with the back of the well and the delivery rolls, and means for driving the cone wheel and delivery rolls as and for the purpose specified.

7. In a device of the class described, an advance guide, a well having a high back, a cone wheel located in proximity to the back and suitably rotated, a folding plate in alinement with the back plate of the well, means for delivering the envelop to the folding plate and means for delivering the envelop from the folding plate as and for the purpose specified.

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Witnesses:
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R. COBAIN.