No. 735,814. PATENTED AUG. 11, 1903.

A. H. PITNEY.

ENVELOP SEALING DEVICE.

APPLICATION FILED FEB. 16, 1903.

NO MODEL. 3 SHEETS—SHEET 1.

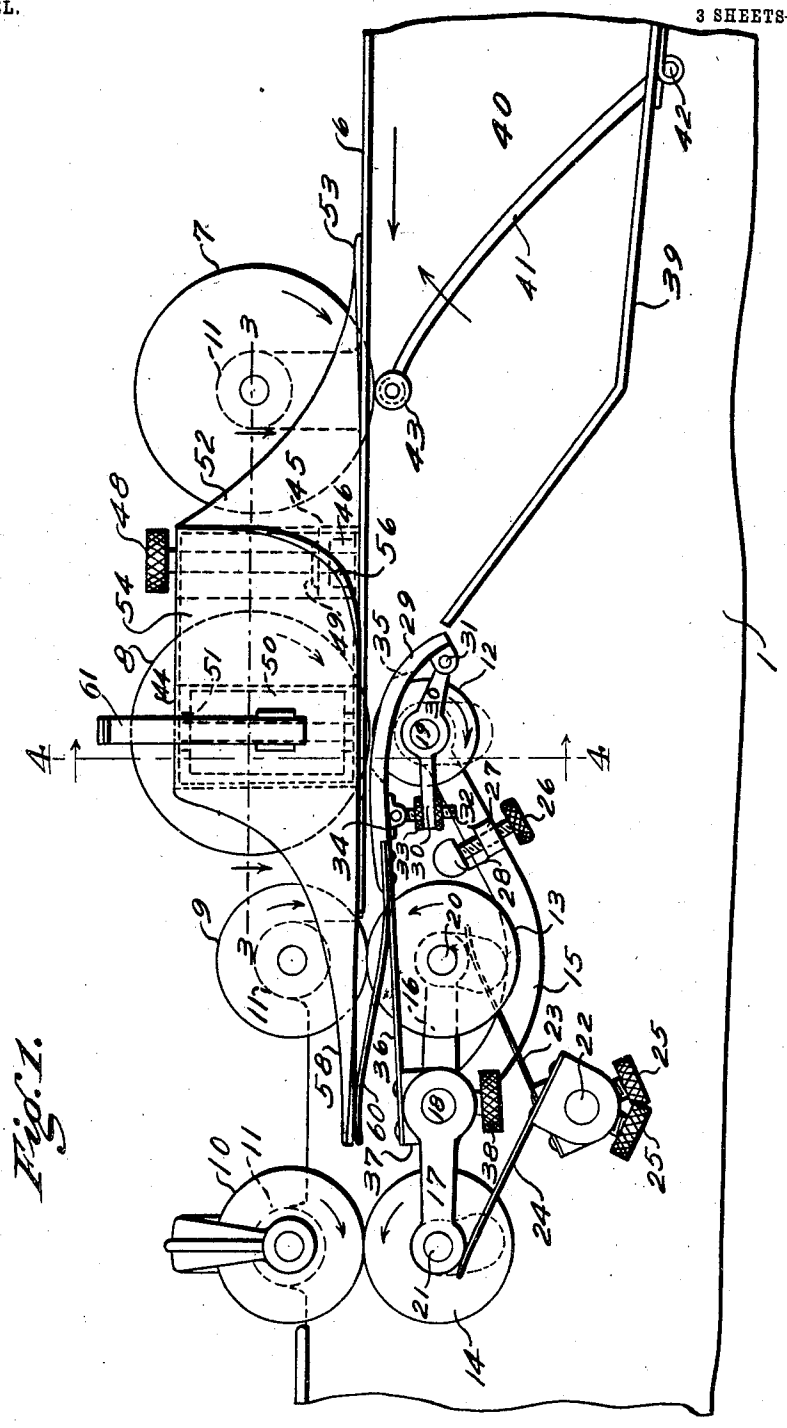


Fig. 1.

Witnesses:
Theodore Rummler
Blanche Michall.

Inventor,
Arthur H. Pitney
by Rummler & Rummler,
his Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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NO MODEL. 3 SHEETS—SHEET 2.

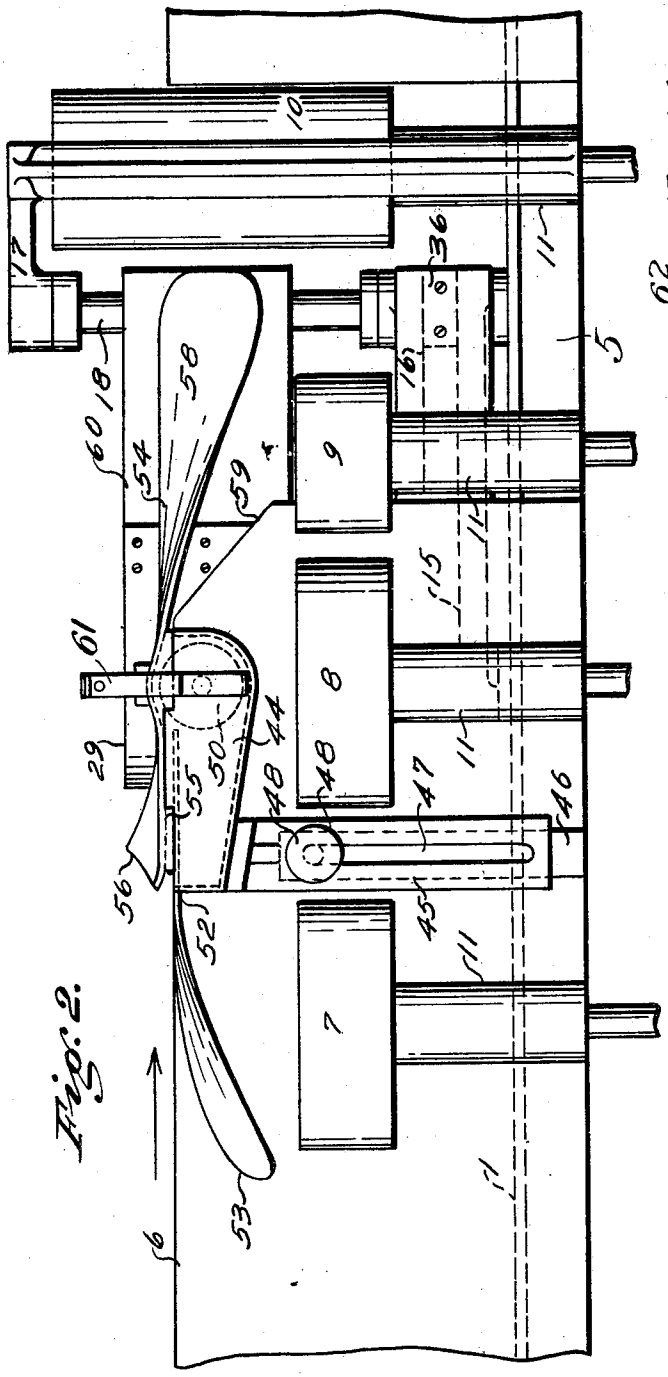


Fig. 2.

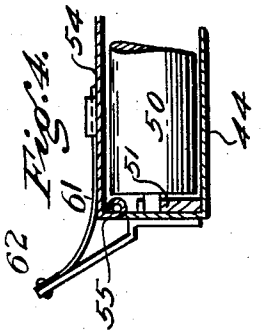


Fig. 4.

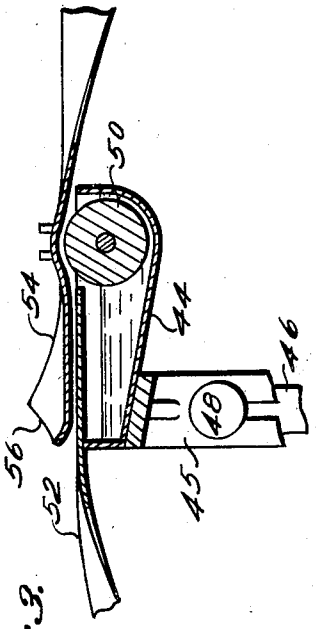


Fig. 3.

Witnesses:
Rudolf Rummler
Blanche Michael.

Inventor,
Arthur H. Pitney,
by Rummler & Rummler,
his Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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NO MODEL. 3 SHEETS—SHEET 3.

Fig. 6.

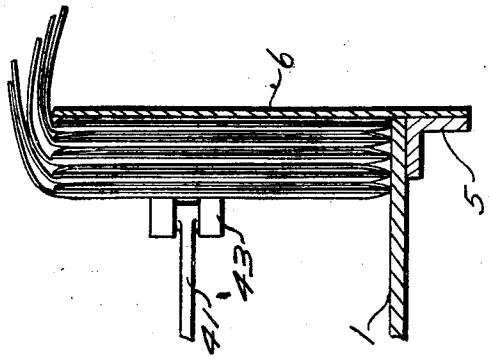
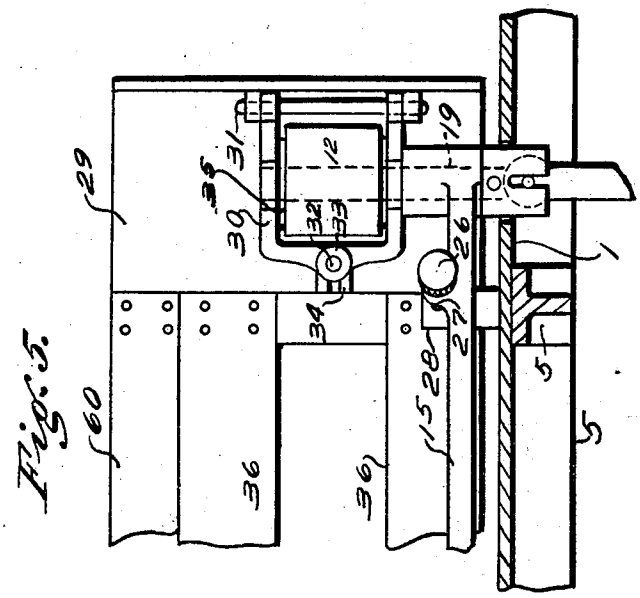


Fig. 5.



Witnesses:
Rudow Rummler
Blanche Michael.

Inventor:
Arthur H. Pitney,
by Rummler & Rummler,
his Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 735,814. Patented August 11, 1903.

UNITED STATES PATENT OFFICE.

ARTHUR H. PITNEY, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE PITNEY POSTAL MACHINE COMPANY, OF CHICAGO, ILLINOIS.

ENVELOP-SEALING DEVICE.

SPECIFICATION forming part of Letters Patent No. 735,814, dated August 11, 1903.

Application filed February 16, 1903. Serial No. 143,656. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR H. PITNEY, a citizen of the United States of America, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Envelop-Sealing Devices, of which the following is a specification.

My invention relates to mechanism for automatically sealing envelops.

The main objects of my invention are to provide improved construction in devices of this class whereby envelops fed to the device will be rapidly sealed without requiring much attention or skill on the part of the operator, to provide an improved form of flap-moistener together with improved means for guiding the flaps of envelops to and from such moistener, to provide improved means for adjusting the position of said moistener to suit envelops of various widths, and to provide improved feeding mechanism adapted to receive a plurality of envelops at a time and feed same singly and in succession to the sealing mechanism. I accomplish these objects by the device shown in the accompanying drawings, in which—

Figure 1 is a top plan, partly broken away, of an envelop-sealing machine constructed according to my invention. Fig. 2 is a side elevation of the same. Fig. 3 is a section of the moistening-roller and water-tank on the line 3 3 of Fig. 1. Fig. 4 is a transverse section, partly broken away, on the line 4 4 of Fig. 1, showing the spring for holding one of the flap-guides in position. Fig. 5 is a front elevation of the roller 12 and shield-plate 29. Fig. 6 is a transverse section of the platform 1 and wall 6, showing the relative position of the envelops and their flaps.

In the drawings only such parts of the device as are located above the working platform 1 are shown. The standards connecting the platform 1 with the bed-plate and the driving mechanism are omitted from the drawings and may be of any suitable form, the essential features of my invention being illustrated by the parts shown in the drawings. The small arrows on Fig. 1 indicate the direction of rotation of the feed-rollers. All of the feed-rollers are preferably driven by gearing located below the platform 1 and suitably arranged to drive the feed-rollers, so that same will operate in the manner hereinafter described. In the construction shown the platform 1 is supported by a frame 5, which is horizontally disposed and is connected to the bed-plate below by means of suitable standards. (Not shown.) A vertical wall 6 is secured to the frame 5 and extends along the platform 1 for a considerable distance.

The feed-rollers 7, 8, 9, and 10 are arranged in a series on one side of the center line of the machine and are journaled on vertical axes in the fixed bearings 11 of the frame 5. The feed-rollers 8, 9, and 10 are opposed by companion feed-rollers 12, 13, and 14, which are mounted in yielding bearings, so as to adapt themselves to envelops of varying thicknesses. The arms 15, 16, and 17, which carry, respectively, the rollers 12, 13, and 14, are journaled on a post 18, which passes through the platform 1 and is rigidly secured to the supporting-frame 5 below said platform. The shafts 19, 20, and 21, which drive their respective feed-rollers, are connected with the driving mechanism below the platform 1 by universal joints, so as to permit of the required movement of said feed-rollers. A second post 22, also rigidly secured to the frame 5, carries the springs 23 and 24, by means of which the rollers 13 and 14 are respectively urged toward their companion rollers. The springs 23 and 24 are secured against rotation around the post 22 by means of the set-screws 25. These set-screws afford adjustable means for regulating the tension upon the springs 23 and 24.

The separator-roller 12 is mounted on the shaft 19, which is journaled in the arm 15 and is driven by means of the gearing below, so as to rotate the roller 12 in the direction of the arrow and at a slower peripheral speed than that of the feed-roller 8. It will be noticed that the adjacent parts of the peripheries of the rollers 12 and 8 move in opposite directions, the roller 12 thus serving as a separator-roller and preventing more than one envelop at a time from being fed along the machine, as will be hereinafter described. The movement of the roller 12 in the direction of the wall 6 is limited by means of a set-screw 26, which passes through a lug 27

on the arm 15 and bears upon a post 28, rigidly secured to the frame 5.

In order to regulate the bite of the roller 12 upon envelops passing between said roller and the feed-roller 8, a shield-plate 29 is movably mounted in the position shown in Fig. 1. The shield-plate 29 is loosely mounted on the shaft 19 by means of a forked arm 30, which is pivoted to the plate 29 at 31 and adjustable with respect to the plate 29 by means of the screw 32 and the milled nuts 33. The screw 32 is preferably connected to the plate 29 by means of a clevis 34. The plate 29 is provided with an aperture 35, through which the roller 12 protrudes. The plate 29 is connected by springs 36 to the post 18. The tension of the springs 36 is adjustable by shifting the bosses 37 around the post 18 and clamping same by means of the set-screw 38.

A part of the platform 1 in front of the wall 6 is partitioned off by means of a second wall 39 to form a compartment 40 for receiving a plurality of envelops preparatory to the sealing of same. The envelops within the compartment 40 are urged toward the wall 6 and against the feed-roller 7 by means of an arm 41, which is pivotally mounted on the wall 39 at 42 and carries a small idler 43 at its free end. The arm 41 is normally urged toward the feed-roller 7 by means of a coiled spring on the pivot 42.

The moistening device consists of a receptacle 44, which is provided with a channel-shaped shank 45 and slidably mounted on a vertical post 46 on the wall 6. The shank 45 is provided with a slot 47 to receive a screw 48, which is threaded into the post 46 and provided with a shoulder 49 for clamping the shank 45 in position. A moistening-roller 50 is journaled on a horizontal axis within the tank 44 and is preferably supported by bearings 51 at its ends, so as to be readily removable from the tank 44. The top of the tank 44 is closed by means of a guide-plate 52, which is suitably twisted, so that its forward edge 53 will be vertical and close to the wall 6. A second guide-plate 54 is secured over the roller 50 and is preferably hinged at its rear edge 55 to the tank 44. The forward edge 56 of the plate 54 is preferably curled upward, so that the flaps of envelops passing along the wall 6 and guided into a horizontal position by the plate 52 will readily pass under the plate 54. The plate 54 extends a considerable distance beyond the roller 50 in the form of a tailpiece 58, which is gradually twisted, so that its free end is vertical and which serves to fold the flap of an envelop against the body of said envelop after said flap has passed the moistening-roller and just before the arrival of the envelop at the squeezing-rollers 10 and 14. The wall 6 is cut away at 59, so as to permit the flaps to pass through same at this point. A spring 60, secured to the plate 29, holds the envelop toward the tailpiece 58 and assists in guiding said envelop toward the squeezing-rollers 10 and 14. The plate 54 is urged into its normal position over the moistening-roller 50 by a spring 61, which may be turned on the pivot 62, so as to allow the plate 54 to be raised for the purpose of cleaning the roller 50 and adding water to the receptacle 44.

The operation of the device shown is as follows: A plurality of envelops are placed on edge in the compartment 40 and with their flaps overhanging the wall 6, as indicated in Fig. 6. The arm 41 urges these envelops toward the wall 6 and into contact with the feed-roller 7. When the driving mechanism is now set in motion, the envelop which is nearest the wall 6 will be carried along by the feed-roller 7 and will pass between the rollers 8 and 12. Since the advancing speed of the feed-roller 8 is greater than the retarding speed of the separator-roller 12, the envelop will continue along the machine. The flap of the envelop will be raised to a horizontal position by the guide-plate 52 and will pass between the guide-plate 54 and the roller 50, its gummed surface being moistened by said roller 50. The envelop is then passed along the platform 1 by means of the feed-rollers 9 and 13, and the flap of the envelop is folded down and against the body part of the envelop by means of the tailpiece 58, the spring 60 meanwhile supporting said body part. The envelop is then seized by the rollers 10 and 14 and the flap tightly squeezed into position. The envelop is then taken care of by suitable stacking mechanism, which is not shown in the drawings.

In order to control the tendency of the separator-roller 12 from retarding the envelops, said roller is adjusted with respect to the feed-roller 8 by means of the set-screw 26. It is usual to have a slight space between the adjacent parts of the peripheries of the rollers 8 and 12. The amount of the periphery of the feed-roller 12 which projects beyond the shield-plate 29 is controlled by means of the nuts 33. The friction between adjacent envelops will tend to urge all of the envelops along the wall 6; but as soon as more than one envelop arrives between the feed-roller 8 and the separator-roller 12 the tendency of the separator-roller will be to move the second envelop back, thereby preventing more than one envelop from passing at a time.

It will be seen that numerous details of the construction shown may be altered without departing from the spirit of my invention. I therefore do not confine myself to such details, except as hereinafter limited in the claims.

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

1. An envelop-sealing device, comprising a frame; a moistening-roller journaled in said frame on a horizontally-disposed axis; suitable feeding mechanism adapted to receive an envelop and carry same on edge past said moistening-roller; a suitable guide for causing the gummed side of the flap of said en-

velop to pass in contact with said moistening-roller; and means for folding said flap against said envelop, substantially as described.

2. In an envelop-sealing device, the combination of a platform, mechanism for feeding an envelop on edge along said platform; a horizontally-disposed moistening-roller adapted to engage the gummed side of the flap of said envelop when said envelop passes such roller with its flap substantially at right angles to the body of said envelop; a guide for guiding said flap toward said roller; suitable means for folding said flap against the body of the envelop after same has passed said roller; and a pair of pressure-rollers adapted to squeeze said flap against the body of the envelop, substantially as described.

3. In an envelop-sealing device, the combination of a horizontally-disposed platform; a vertically-disposed wall extending along said platform; mechanism for moving an envelop on edge along said platform at one side of said wall, and with its flap overhanging said wall; a moistening device secured at the other side of said wall; a suitable guide for causing said flap to engage said moistening device during its passage along said platform; and means for folding the flap against the envelop after same has passed said moistening device, substantially as described.

4. In an envelop-sealing device, the combination of a horizontally-disposed platform; a vertically-disposed wall extending along said platform; mechanism for moving an envelop on edge along said platform at one side of said wall, and with its flap overhanging said wall; a moistening device secured at the other side of said wall; a suitable guide for causing said flap to engage said moistening device during its passage along said platform; and means for folding the flap against the envelop after same has passed said moistening device; said moistening device and guide being vertically adjustable above said platform to suit envelops of varying widths, substantially as described.

5. In an envelop-sealing device, the combination of a horizontally-disposed platform; a vertically-disposed wall extending along said platform; mechanism for moving an envelop on edge along said platform at one side of said wall, and with its flap overhanging said wall; a moistening-roller secured at the other side of said wall; a suitable guide for causing said flap to engage said moistening-roller during its passage along said platform; and means for folding the flap against the envelop after same has passed said moistening-roller, substantially as described.

6. In an envelop-sealing device, the combination of a horizontally-disposed platform; a vertically-disposed wall extending along said platform; mechanism for moving an envelop on edge along said platform at one side of said wall, and with its flap overhanging said wall; a moistening-roller secured at the other side of said wall; a suitable guide for causing said flap to engage said moistening-roller during its passage along said platform; and means for folding the flap against the envelop after same has passed said moistening-roller, said moistening-roller and guide being vertically adjustable above said platform to suit envelops of varying widths, substantially as described.

7. In an envelop-sealing device, the combination of a horizontally-disposed platform; a vertically-disposed wall extending along said platform; mechanism for moving an envelop on edge along said platform at one side of said wall, and with its flap overhanging said wall; a moistening-roller journaled on a horizontal axis on the other side of said wall; means for supplying moisture to said roller; a suitable guide for causing said flap to engage said moistening-roller during its passage along said wall; and means for folding the flap against the envelop after same has passed said moistening device, substantially as described.

8. In an envelop-sealing device, the combination of a horizontally-disposed platform; a vertically-disposed wall extending along said platform; mechanism for moving an envelop on edge along said platform at one side of said wall, and with its flap overhanging said wall; a receptacle for water secured at the other side of said wall and being vertically adjustable; a moistening-roller journaled on a horizontal axis in said receptacle; a suitable guide for causing said flap to engage said moistening-roller during the passage of the envelop along said wall; and means for folding the flap against the envelop after same has passed said moistening-roller, substantially as described.

9. In an envelop-sealing device, the combination of a horizontally-disposed platform; a vertically-disposed wall extending along said platform; a compartment on said platform adapted to contain a plurality of envelops and hold same on edge with their flaps overhanging said wall; feeding mechanism adapted to remove envelops singly and in succession from said compartment and move same on edge along said platform; a moistening device secured at the other side of said wall; a guide adapted to cause the flaps of the envelops to engage said moistening device during their passage along said platform; and means for folding the flaps against the envelops after same have passed said moistening device, substantially as described.

10. In an envelop-sealing device, the combination of a horizontally-disposed platform; a vertically-disposed wall extending along said platform; feeding mechanism for causing an envelop to pass on edge along said platform on one side of said wall and with its flap overhanging said wall; a moistening-roller journaled on the other side of said wall; a guide-plate adapted to unfold the flap of the envelop to a position suitable for engaging

said roller; a second guide-plate adapted to hold the flap into contact with said roller during the passage of the envelop, said second guide-plate having a part extending therefrom and adapted to fold the flap against the envelop after same has passed said roller, substantially as described.

11. In a machine of the class described, the combination of a feed-roller; a separator-roller opposed to said feed-roller and journaled in yielding bearings; a shield-plate adapted to regulate the bite of said separator-roller; an arm loosely mounted on the axis of said separator-roller; said arm having one end pivoted to said shield-plate and having its other end adjustably connected to said shield-plate; and a spring secured to said shield-plate and adapted to prevent same from turning with said separator-roller and to urge same toward said feed-roller, substantially as described.

12. In an envelop-sealing device, the combination of a horizontally-disposed platform; a vertically-disposed wall extending along said platform; mechanism for moving an envelop on edge along said platform at one side of said wall, and with its flap overhanging said wall; a receptacle for water secured at the other side of said wall and being vertically adjustable; a moistening-roller journaled on a horizontal axis in said receptacle; a plate hinged to said receptacle and adapted to cause said flap to engage said moistening-roller during the passage of the envelop along said wall; yielding means for holding said plate in its normal position over said moistening-roller; and means for folding the flap against the envelop after same has passed said moistening-roller, substantially as described.

13. In an envelop-sealing device, the combination of a horizontally-disposed platform; a vertically-disposed wall extending along said platform; mechanism for moving an envelop on edge along said platform at one side of said wall, and with its flap overhanging said wall; a receptacle for water secured at the other side of said wall and being vertically adjustable; a moistening-roller journaled on a horizontal axis in said receptacle; a plate hinged to said receptacle and adapted to cause said flap to engage said moistening-roller during the passage of the envelop along said wall; a spring adapted to urge said plate toward its normal position over said moistening-roller; and means for folding the flap against the envelop after same has passed said moistening-roller, substantially as described.

14. In an envelop-sealing device, the combination of a horizontally-disposed platform; a vertically-disposed wall extending along said platform; feeding mechanism for causing an envelop to pass on edge along said platform on one side of said wall and with its flap overhanging said wall; a moistening-roller journaled on the other side of said wall; a guide-plate adapted to hold the flap into contact with said roller during the passage of the envelop; said guide-plate having a part extending therefrom and adapted to fold the flap against the envelop after same has passed said roller; and a yielding member opposed to said extended part and adapted to urge the envelop toward said extended part, substantially as described.

15. In an envelop-sealing device, the combination of a horizontally-disposed platform; a vertically-disposed wall extending along said platform; feeding mechanism for causing an envelop to pass on edge along said platform on one side of said wall and with its flap overhanging said wall; a moistening-roller journaled on the other side of said wall; a guide-plate adapted to hold the flap into contact with said roller during the passage of the envelop; said guide-plate having a part extending therefrom and adapted to fold the flap against the envelop after same has passed said roller; and a flat spring disposed along the path of the envelop, opposed to said extended part, and adapted to urge the envelop toward said extended part, substantially as described.

16. In a sealing device, the combination of a frame; a horizontally-disposed platform secured to said frame; a vertically-disposed wall extending along said platform; a compartment adapted for holding a plurality of envelops on edge at one side of said wall and with their flaps in a horizontal position; means for urging the envelops toward said wall; a feed-roller projecting through said wall into said compartment and adapted to move the nearest envelop along said wall; a second feed-roller projecting beyond said wall near the end of said compartment; a separator-roller opposed to said second feed-roller and adapted to prevent more than one envelop at a time from passing along said wall; a moistening device secured at one side of said wall in suitable position to engage the gummed side of the flap of an envelop passing along said wall; a guide for directing the flap against said moistening device; means for folding the flap against the envelop after same has passed the moistening device; and a pair of pressure-rollers adapted to squeeze the flap against the body of the envelop, substantially as described.

17. In an envelop-sealing device, the combination of a horizontally-disposed platform; a vertically-disposed wall extending along said platform; mechanism for moving an envelop on edge along said platform at one side of said wall, and with its flap overhanging said wall; a moistening device secured at the other side of said wall; a suitable guide for causing said flap to engage said moistening device during its passage along said platform; means for folding the flap against the envelop after same has passed said moistening de-

vice; and a pair of pressure-rollers adapted to squeeze said flap against the body of the envelop, substantially as described.

18. In an envelop-sealing device, the combination of a moistener; a feed-platform adapted to hold a stack of envelops; a feed-roller adapted to engage one of the envelops and move same along the platform with its flap toward said moistener; a second feed-roller adapted to engage said envelop and continue to advance same; a separator-roller opposed to said second feed-roller and adapted to prevent more than one envelop at a time from being advanced by said second feed-roller; means for holding the flap of the envelop against said moistener; and means for folding the flap against the envelop after same has passed said moistener, substantially as described.

19. A sealing device, comprising a support for a stack of envelops; a moistener; feeding mechanism adapted to have frictional contact with one of said envelops and to carry same along said moistener; means traveling oppositely to said feeding mechanism and adapted through frictional contact to prevent said feeding mechanism from carrying more than one envelop at a time along said moistener; means for holding the flap of the envelop against said moistener; and means for folding the flap against the envelop after same has passed said moistener, substantially as described.

20. A sealing device, comprising a support for a stack of envelops; a moistener; feeding mechanism adapted to have frictional contact with one of said envelops and to carry same along said moistener; means traveling oppositely to said feeding mechanism and adapted through frictional contact to prevent said feeding mechanism from carrying more than one envelop at a time along said moistener; said moistener having journaled therein a moistening-roller adapted to engage the flap of an envelop carried by said feeding mechanism when the flap is at an angle with the body of the envelop; means for holding the flap of the envelop against the moistening-roller; and means for folding the flap against the envelop after same has passed said moistening-roller, substantially as described.

Signed at Chicago this 6th day of February, 1903.

ARTHUR H. PITNEY.

Witnesses:
RUDOW RUMMLER,
EUGENE A. RUMMLER.