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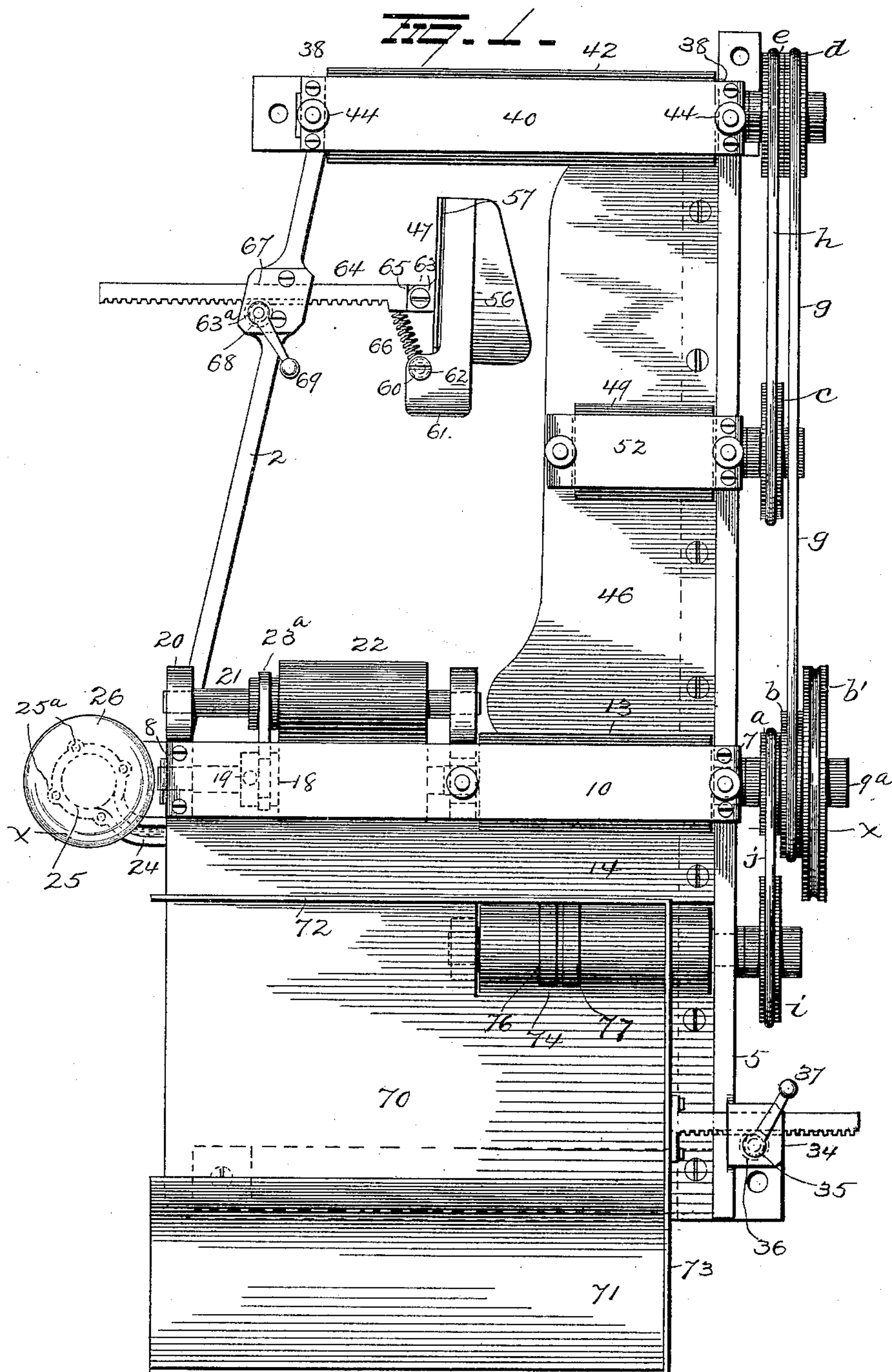
Patented May 14, 1901.

J. T. WILKINSON.
MACHINE FOR SEALING ENVELOPS.

(Application filed Jan. 3, 1900.)

(No Model.)

3 Sheets—Sheet 1.



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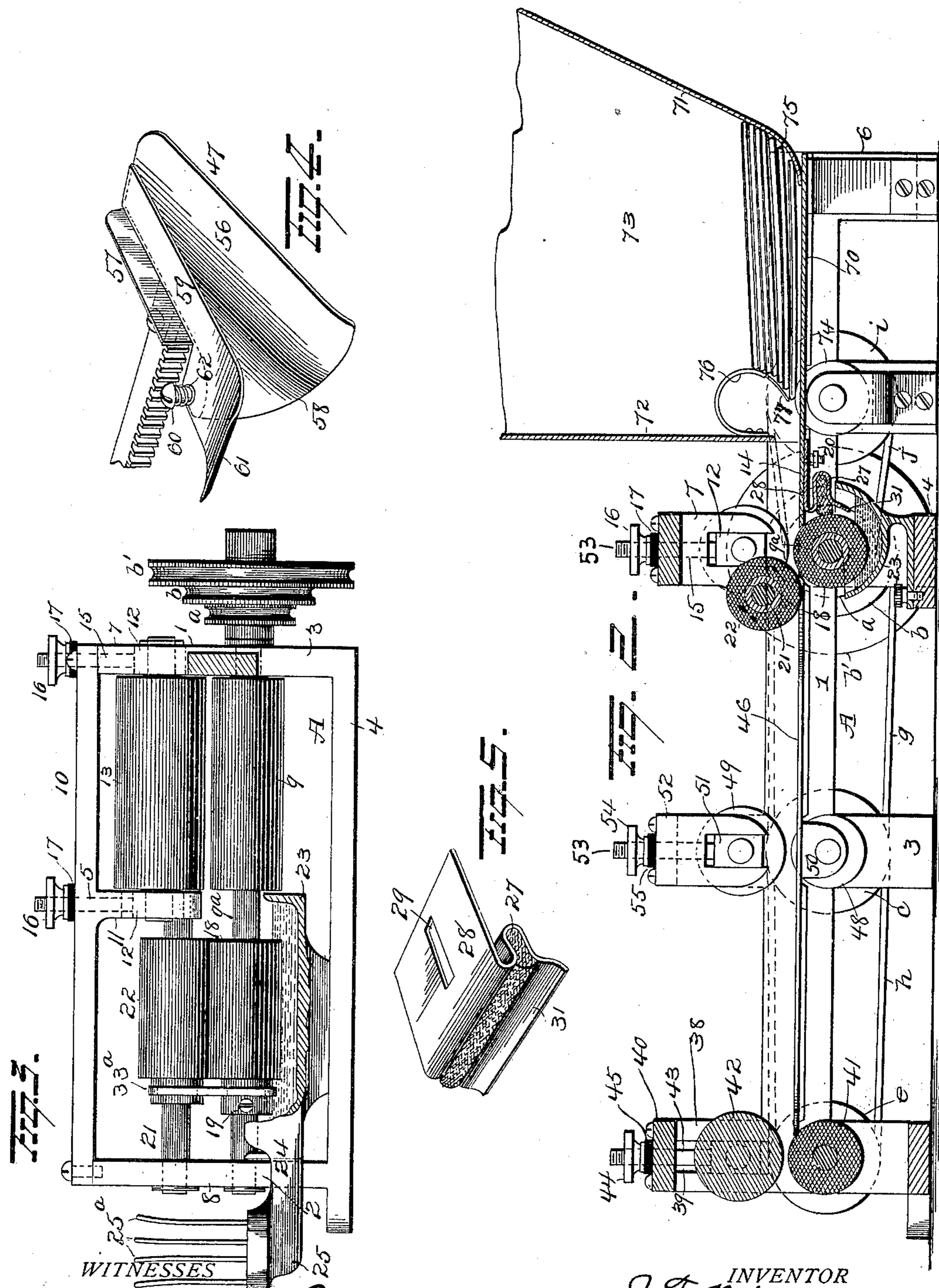
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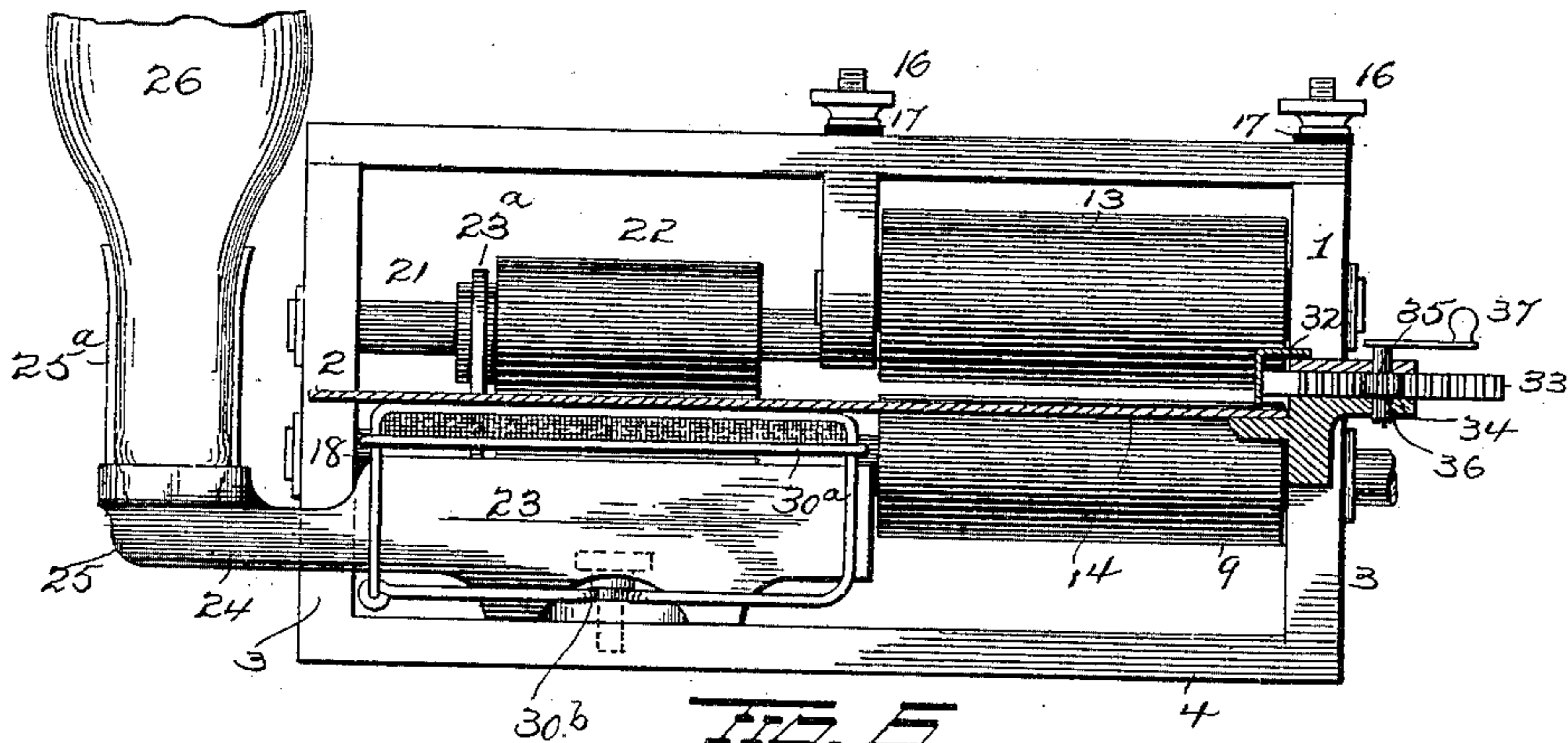
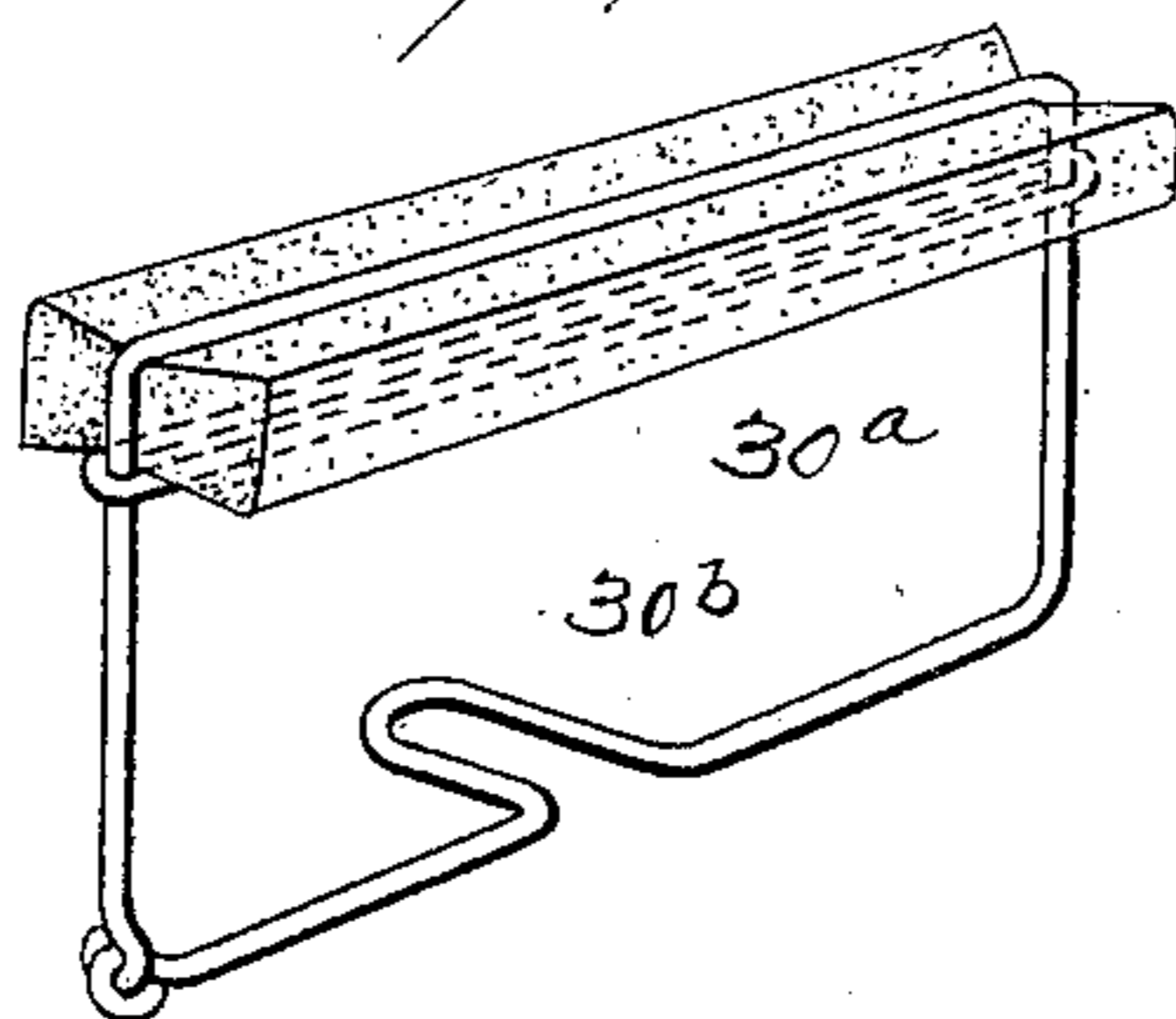


FIG. 7.



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UNITED STATES PATENT OFFICE.

JOSEPH T. WILKINSON, OF WASHINGTON, DISTRICT OF COLUMBIA,
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MACHINE FOR SEALING ENVELOPS.

SPECIFICATION forming part of Letters Patent No. 674,050, dated May 14, 1901.

Application filed January 3, 1900. Serial No. 281. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH T. WILKINSON, of Washington, in the District of Columbia, have invented certain new and useful Improvements in Machines for Sealing Envelops; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in machines for sealing envelopes, one object of the invention being to provide means for so adjusting the feeding and sealing rollers as to accommodate them to well-filled envelopes and at the same time prevent noise, which would occur should the upper rollers be permitted to rise and fall a distance equal to the thickness of the filled envelop.

A further object is to provide simple and efficient moistening devices which shall be capable of adjustment for envelopes of different sizes.

A further object is to provide means for preventing an excess of water being carried up by the moistening-roller.

A further object is to provide simple and accurately-operating devices for automatically feeding envelopes to be sealed.

A further object is to improve a sealing-machine of the class to which my invention relates in various other respects, as hereinafter specified.

With these objects in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as hereinafter set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of a machine embodying my improvements. Fig. 2 is a longitudinal sectional view. Fig. 3 is a transverse sectional view on the line *xx* of Fig. 1. Fig. 4 is a detail view of the folder. Fig. 5 is a detail view of the wiper. Figs. 6 and 7 are views illustrating modifications.

A represents a frame comprising side bars 1 2, legs 3, and base connecting bars or plates 4. The side bar 1 is extended, as at 5, and

provided at its inner end with a leg 6. At the forward end of the portion 5 of the side bar 1 a slotted standard 7 projects upwardly, and at the inner end of the side bar 2 a standard 8 is provided. Below the standards 7 8 a shaft 9^a is mounted in the side bars 1 2, and on said shaft a feed-roller 9 is secured. A cross-bar 10 is secured upon the standards 7 8 and from said cross-bar a slotted arm 11 depends.

Boxes 12 are mounted to slide in the slotted standards 7 and arm 11 and receive the journals of a roller 13, disposed directly over the roller 9 and coöperating therewith to feed envelopes through the moistening devices from a platform 14, secured to the portion 5 of the frame, somewhat below the upper edge thereof, and extending from one side of said frame to the other.

The passage of envelopes containing a small inclosure between the feed-rollers will cause the upper roller to rise only a very limited distance; but when thick mail-matter (such as envelopes containing books or pamphlets) is passed between the feed-rollers the upper roller will necessarily be raised a considerable distance, and consequently when the package shall have passed the rollers the upper roller will drop some distance upon the lower roller and result in the creation of considerable noise, the rapid recurrence of which when the packages are fed rapidly is very annoying. To remedy this, I propose to provide means for adjusting the upper roller in accordance with the thickness of the mail-matter to be sealed. To this end, a rod 15 is attached at the lower end to each journal-box 12 and the upper screw-threaded end of each rod is passed freely through the cross-bar 10. A thumb-nut 16 is screwed on the upper end of the rod, and between said nut and the cross-bar a washer 17, of rubber or other suitable material, is disposed. When thick mail-matter is to be sealed, the upper roller will be first made to rest freely on the same, after which the thumb-nuts will be adjusted to prevent the roller from descending after the package shall have passed the rollers.

A moistening-roller 18 is mounted on the

shaft 9^a, on which the lower feed-roller is secured and is adapted to be moved longitudinally on said shaft to accommodate it to envelopes of different sizes, a set-screw 19 being provided for securing the moistening-roller to the shaft at the position to which it may be adjusted. Arms 20 project from the rear edges of the standard 8 and arm 11 for the reception of a shaft 21, on which a presser-roller 22 is loosely mounted, said presser-roller being so disposed that it will depend slightly below the plane of the moistening-roller and have its axis somewhat in-rear of the axis of the moistening-roller, so that as the flap of the envelop is fed over the latter it will be somewhat bent or curved partially around said moistening-roller and insure the adequate application of water from said roller throughout the entire extent of gummed surface of the flap. The moistening-roller receives water from a trough 23, secured to the frame under it, and said trough is made with an arm 24, having a channel therein to conduct water from a receptacle 25 at the free end of said arm. A series of spring-arms project upwardly from the edge of the receptacle and serve to hold an inverted reservoir 26 in place.

It sometimes happens (especially when the machine is run rapidly) that too much water will be carried up by the moistening-roller, a quantity in some instances sufficient to unduly wet the envelop. To prevent this, I employ a wiper 27, of felt or other suitable material, adapted to bear against the moistening-roller. The wiper 27 may be conveniently held by a clamp 28, having an elongated slot 29 for the passage of a set-screw 30, by means of which it can be secured to the under face of the platform 14. By the provision of the elongated slot 29 and set-screw 30 the clamp can be readily adjusted to regulate the pressure of the wiper against the moistening-roller, and thus control the amount of water carried up by the latter and applied to the flap of the envelop. The clamp 28 is also made with a lip 31, whereby the surplus water from the moistening-roller will be delivered to the trough.

Instead of constructing the holder for the wiper as above described it may be constructed of wire, as shown at 30^a, Fig. 7, and adjustably secured to the base of the frame by means of a screw passing through an elongated base portion 30^b.

As before intimated, the moistening-roller is adjustable longitudinally on its shaft to accommodate it to the width of the envelopes and their flaps. When the moistening-roller is thus adjusted, it is desirable to also adjust the presser-roller 22. For this purpose the journals of the two rollers are connected by a link 23^a, so that when the moistening-roller is moved longitudinally the presser-roller will be adjusted in accordance therewith.

To provide further adjustment for envelopes of different widths, I employ a gage 32, which

is disposed parallel with the side bar 5 of the frame and adapted to rest on the platform 14. The gage 32 is provided with an outwardly-projecting rack-bar 33, mounted to slide through an enlargement 34 on the part 5 of the frame. A short vertical shaft 35 is also mounted in the enlargement 34 of the frame and provided with a pinion 36 to mesh with the rack-bar 33. The upper end of the shaft 35 is provided with a crank-arm 37, by means of which to turn it for the purpose of quickly adjusting the gage to the width of the envelopes to be sealed.

At the rear end of the frame two standards 38 are located and provided with elongated slots 39, the upper ends of said standards being preferably connected by a cross-bar 40. Below the standards 38 the journals of a lower sealing-roller 41 are mounted, and in the slots 39 of the standards 38 vertically-movable boxes are disposed for the reception of the journals of the upper sealing-roller 42. The upper roller is sustained by means of rods 43, connected to the journal-boxes and provided on their screw-threaded upper ends with thumb-nuts 44, having washers 45 disposed between them and the cross-bar 40, through which said threaded rods pass, this construction and arrangement of parts being for the purpose of adjusting the upper sealing-roller for thick mail-matter, as hereinbefore explained in connection with the feeding-rollers. A platform 46 extends from the feed-rollers to the sealing-rollers. A folder 47 is attached to the frame near the sealing-rollers, and between the feeding-rollers and the sealing-rollers intermediate feeding-rollers 48 49 are located for the purpose of feeding the envelopes through the folder and to the sealing-rollers. The lower intermediate roller 48 projects through a slot in the platform 46 and has one journal mounted in a box or bracket 50, secured to the under face of said platform, the other journal of said roller being mounted in the side bar 1 of the frame. The journals of the upper intermediate roller are mounted in movable boxes 51, disposed in a bracket 52, secured to the frame, and to said boxes 51 threaded rods 53 are attached and passed upwardly through the bracket 52, being provided at their upper ends with thumb-nuts 54 and washers 55 for the purpose of adjusting the upper intermediate feed-roller to the thickness of the mail-matter being sealed, as has been hereinbefore explained in connection with the first feed-rollers.

The folder 47 comprises an inclined plate 56, having a flange 57 at one edge, the inner ends of said plate and flange being preferably provided with lips 58. A horizontal spring-finger 59 is attached near one end to the flange 57 by means of a screw or pin 60. The inner end of the finger 59 is made with an upturned lip 61, and the forward portion of the finger is disposed alongside the flange 57. A spring 62 is disposed between the head

of the screw or pin 60 and the finger 59 to permit the latter to yield upwardly to accommodate itself to thick mail-matter, and the finger will be prevented from turning on the screw or pin by the flange 57, which projects some distance above it. The folder 47 is provided with a lug 63, pivotally attached to one end of a rack-bar 64 and adapted to engage a shoulder 65 thereon to prevent the folder from turning in one direction.

A spring 66 is attached at one end to the folder and at the other end to the rack-bar to permit the folder to yield and accommodate itself to slight unevenness of the feed of the envelops.

The rack-bar is adapted to slide through an enlargement 67 on the side bar 2 of the frame. A vertical shaft 68 is mounted at one end in said enlargement and carries a pinion 63^a, which meshes with the rack-bar 64. The upper end of the shaft is provided with a crank-arm 69, by means of which to turn the shaft and effect the quick adjustment of the folder to the width of the envelops to be sealed.

The journal of the lower feed-roller is extended beyond its bearing and provided with pulleys *a b b'*, the latter larger than the two former for the reception of a belt from any convenient source of power. The journal of the lower intermediate feed-roller is also extended beyond its bearing and provided with a pulley *c*. The lower sealing-roller is extended beyond its bearing and provided with pulleys *d e*. A strap *g*, passing from the pulley *b* to the pulley *d*, transmits motion from the former to the latter, and a belt *h* transmits motion from the pulley *e* to the pulley *c* on the journal of the lower intermediate feed-roller.

It now remains to describe the means employed for automatically feeding the mail-matter to the feeding and moistening devices.

My improved automatic feed mechanism comprises a receptacle consisting of a base or platform 70, an inclined end portion 71, a vertical end portion 72, and a movable side 73, the lower end of the latter serving the functions of the gage (which will be omitted when the automatic feed is employed) and having the adjusting means hereinbefore described in connection with the gage connected with it. The base or platform portion 70 of the receptacle is disposed upon and secured to the platform 14 and is provided with an elongated slot, through which a roller 74 projects. This roller has bearings under the platform and has a covering of soft rubber. One journal of the roller is extended beyond its bearing and provided with a pulley *i*, larger than the pulley *a*, and receives motion from the latter through the medium of a strap *j*. The lower edge of the side 73 of the receptacle is recessed for the accommodation of the roller 74. Between the base or platform 70 and the inclined portion 71 the receptacle is curved, as at 75, so that the lower envelop will pass unobstructed to the platform and before

reaching the roller will bridge the said curved portion 75, and thus result in relieving the lower envelop from the excessive weight of the body of envelops above it, the envelops being maintained in the position shown in Fig. 2, with the lower envelops successively in advance of each other, by means of spring-fingers 76 77, secured to the vertical wall of the feed-receptacle. The spring-finger 76 is somewhat stout and terminates a distance from the platform equal to the thickness of several envelops, while the finger 77 is quite flexible and terminates a distance above the platform equal to the thickness of a single envelop. By this construction and arrangement of spring-fingers a number of envelops will be maintained in position to bridge the rounded portion 75, with the envelops successively in advance of each other from the bottom of the pile up, so that very little weight comes upon the bottom envelop.

The rubber-covered feed-roller 74 will by frictional contact with the bottom envelop feed the same to the feed-rollers, by which it will be carried through the moistening devices and afterward delivered to the folding and sealing devices, as before explained. The rubber-covered feed-roller 74 is driven at a slower speed than the feed-rollers 9 13, so that the envelops will pass more rapidly through the latter than they will pass over the feed-roller 74. In this way overlapping of envelops is effectually prevented. When an envelop reaches the moistening-roller, (with the gummed face of the flap down,) it will be fed past the moistener by the action of the rolls 9 13, and it will be caught and fed on by the rollers 48 49. After the envelop leaves the moistener its flap will project laterally beyond the edge of the platform 46, and as the envelop is fed forward by the rollers 48 49 the flap will engage the curved lip 58 of the inclined plate 56 of the folder, and as the envelop moves forward the flap will be moved into position for sealing and be held in such position by the spring-finger 59, after which the flap will be pressed against the body of the envelop and sealed by the action of the sealing-rollers 51 52.

My improvements are simple, but are important in enhancing the usefulness of envelop-sealing machines of the class to which my invention relates.

Slight changes might be made in the details of construction of my invention without departing from the spirit thereof or limiting its scope, and hence I do not wish to limit myself to the precise details herein set forth.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an envelop-sealing machine, the combination with a frame, and moistening and folding means, of pairs of rollers, movable journal-boxes for one roller of each pair and means connected to and movable with said journal-boxes for adjusting said journal-

boxes to limit the approach of one roller to the other according to the thickness of material passing between said rollers.

2. In an envelop-sealing machine, the combination with moistening and folding devices, of pairs of rollers, movable journal-boxes for one roller of each pair, a rod attached to each movable journal-box and movable with the same and passing upwardly through holes in the frame, thumb-nuts screwed on the free ends of said rods and movable with the same and with the roller and soft washers between said thumb-nuts and the frame to prevent noise when the roller returns to its normal position after material has passed between the rollers.

3. In an envelop-sealing machine, the combination with a frame and moistening and sealing means, of a folder in advance of the sealing means, a horizontally-disposed rack-bar to which said folder is pivoted, a bearing on the frame for said rack-bar, a shaft carrying a pinion meshing with said rack-bar and a crank on the free end of said shaft.

4. In an envelop-sealing machine, a folder comprising an inclined plate, a flange at one edge of said plate, a vertically-movable spring-finger alongside said flange and disposed below the upper edge thereof, a headed screw or pin connecting said finger to said flange and a spring on the screw or pin between the head thereon and the finger.

5. In an envelop-sealing machine, the combination with a frame, and feed-rollers, of a moistening-roller in line with one of said feed-rollers said moistening-roller mounted to move longitudinally toward and away from said feed-roller, and means for moving said moistening-roller toward and from the feed-rollers for the purpose of accommodating the moistening devices to envelops having flaps of different widths.

6. In an envelop-sealing machine, the combination with a frame, of a shaft mounted transversely therein, a lower feed-roller on said shaft, an upper feed-roller, a moistening-roller mounted loosely on said shaft and movable longitudinally thereon, a shaft above said first-mentioned shaft, a presser-roller loosely mounted on said upper shaft and movable longitudinally thereon, means connecting said moistening and presser rollers so as to cause them to move together longitudinally, and means for securing said moistening and presser rollers at any desired adjustment relatively to the feed-rollers and according to the width of the flaps of the envelops being sealed.

7. In an envelop-sealing machine, the combination with a frame and feeding-rollers, of a moistening-roller, means for supplying water to said roller, a presser-roller mounted above and beyond the axis of the moistening-roller, said moistening and presser rollers mounted to move longitudinally and means

for permitting a movement of said moistening and presser rollers longitudinally toward and from the feed-rollers to accommodate various widths of flaps of envelops, substantially as set forth.

8. In an envelop-sealing machine, the combination with a frame and feed-rollers, of a moistening-roller, means for supplying water thereto, a presser-roller having its axis above and beyond the axis of the moistening-roller, both of said rollers being adjustable longitudinally toward and from the feed-rollers and links connecting the journals of the moistening and feed rollers to cause them to move together.

9. In an envelop-sealing machine, the combination with a frame, a moistening-roller and a water-trough into which said moistening-roller depends, of a holder disposed to one side of the moistening-roller, means for adjusting said holder toward and from the moistening-roller and a soft absorbent wiper held by said holder and bearing against the moistening-roller.

10. In an envelop-sealing machine, the combination with a frame, a moistening-roller and a trough into which said roller depends, of a holder disposed to one side of the moistening-roller, a wiper carried by the holder and bearing against the roller and a lip on said holder to direct surplus moisture back into the trough.

11. In an envelop-sealing machine, the combination with a moistener, of a receptacle for envelops having a base, a side, an inclined end and a curved portion between the base and inclined end, a feed-roller in the base, and a finger terminating slightly above the base in proximity to said feed-roller.

12. In an envelop-sealing machine, the combination with a moistener, of a platform in front of the moistener, a feed-roller projecting through the platform and two spring-fingers, one longer than the other and terminating over the platform in proximity to the feed-roller.

13. In an envelop-sealing machine, the combination with a moistener, and rollers for feeding envelops through the moistener, of a platform in front of the moistener and feeding-rollers, a feed-roller projecting through said platform for automatically feeding envelops to the moistener and its feed-rollers, means for driving said first-mentioned feed-rollers and means for driving the feed-roller in the platform at a speed slower than that of the first-mentioned feed-rollers.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOSEPH T. WILKINSON.

Witnesses:

H. ARISTIDE PRESTON,
WILLARD F. WARNER.