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ENVELOPE MOISTENER AND SEALER

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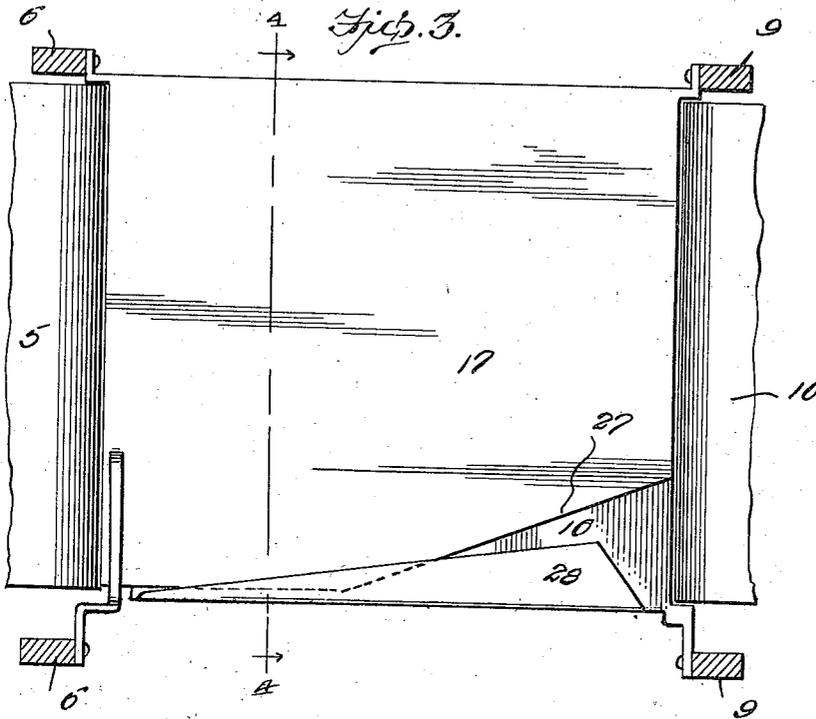
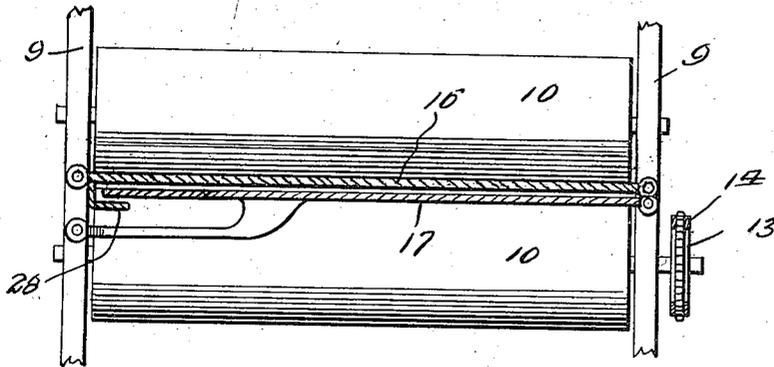


Fig. 4.



Witnesses:

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JOHN M. DORN, OF SEBEKA, MINNESOTA.

ENVELOPE MOISTENER AND SEALER.

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To all whom it may concern:

Be it known that I, JOHN M. DORN, citizen of the United States, residing at Sebeka, in the county of Wadena and State of Minnesota, have invented certain new and useful Improvements in Envelope Moisteners and Sealers, of which the following is a specification.

This invention relates to certain new and useful improvements in envelope moisteners and sealers, and the primary object of the invention is to generally simplify and improve devices of this kind.

Another object of the invention is to provide improved means for guiding the envelope from the feed roller to the sealing roller embodying parallel superimposed plates between which the envelopes move, said plates being conjointly formed to fold the flap of each envelope prior to its passage to the sealing rollers.

Other objects will appear as the nature of the invention is better understood and the same consists in the novel form, combination, and arrangement of parts hereinafter more fully described, shown in the accompanying drawings and claimed.

In the drawings, wherein like reference characters indicate corresponding parts throughout the several views:

Figure 1 is a side elevational view of an envelope moistener and sealer constructed in accordance with the present invention.

Figure 2 is an end elevational view of the device shown in Figure 1, looking toward the right of the latter.

Figure 3 is a fragmentary bottom plan view of the device, partly in section, and

Figure 4 is a transverse vertical sectional view, taken on the line 4—4 of Figure 3.

Referring more in detail to the drawings, the invention embodies a pair of superposed feed rollers 5 journaled in a horizontal position in uprights or standards 6, one above the other, the upper feed roller being vertically adjustable by means of screws 7 for regulating the distance between said feed rollers so as to accommodate envelopes of various thicknesses of paper. Springs 8 are interposed between the journals of the upper rollers 5 and the screws 7 to allow the upper rollers 5 to yield upwardly to avoid mutilation of the envelope.

A pair of standards 9 are mounted in spaced relation to the standards 6 and have sealing rollers 10 journaled therein in su-

perposed relation, the upper sealing roller being aligned with the upper feed roller, and the lower seal roller being horizontally aligned with the lower feed roller as shown in Figure 1. The lower roller 10 is journaled in a fixed position while the upper roller 10 is vertically yieldable and adjustable by the provision of screws 11 and springs 12 that are interposed between said screws 11 and the journals of the upper roller 10. The shafts of the lower rollers 5 and 10 project at one side of the machine and each has a sprocket wheel 13 secured thereon, around which sprocket wheel passes an endless sprocket chain 14. The projecting end of the lower roller 5 is also provided with a crank or handle 15 by means of which this lower roller 5 may be rotated manually, and it is thus apparent that upon rotation of the lower roller 5, the lower roller 10 will be correspondingly rotated through the gearing described.

The feeding and sealing rollers are spaced apart a distance slightly less than the length of the envelope to be sealed, so that the latter will pass between the sealing rollers just prior to the passage of the same from the feeding rollers.

Extending between the feeding and sealing rollers and having their ends connected to the standards 6 and 9 are a pair of superimposed plates 16 and 17 respectively, which are arranged in slightly spaced relation as shown in Figures 1 and 4 with the upper plate 16 disposed on a plane with the bottoms of the upper rollers 5 and 10, and with the lower plate 17 disposed on a plane with the tops of the lower rollers 5 and 10. The plate 17 thus forms a carrier upon which the body of the envelope slides in passing from the feeding rollers to the sealing rollers, and by means of these plates, the envelopes are positively guided between the sealing rollers.

As shown clearly in Figure 2, the lower feeding roller 5 is relatively shorter than the upper feeding roller so as to terminate at one end inwardly of the adjacent end of said upper feeding roller, and a suitable moistening roller 18 is fixed upon the shaft of the lower roller 5 at this point. The roller 18 is preferably constructed of felt or other moisture absorbing material and is partially submerged within a tank 19 that is rigidly fastened upon the adjacent upright 6 and that is adapted to contain water for keeping the

roller 18 moistened. The inner side wall of the tank 19 is extended upwardly alongside the roller 18 inwardly of the latter and then outwardly above the top of said roller 18 to provide a shield for preventing contact of the moistening roller with the envelope except at the outer side of said moistening roller. Thus with the envelopes fed into the machine with their flaps depending at the outer side of the roller 18, the only portion of the envelope that will be moistened is the portion of the flap that is provided with glue for sealing the envelope. In order to replenish the supply of water in the tank 19 conveniently from time to time, a reservoir 20 is mounted upon a bracket 21 upon the adjacent standard 6 above said tank 19 and has an outlet spout 22 disposed to discharge into the tank 19 and provided with a cut off valve 23.

The shield above referred to which prevents contact of the envelope with the moistening roller 18 except at the outside of said roller is generally indicated at 24, and in order to facilitate the feeding of envelopes to and between the feeding rollers 5, a feed table or apron 25 may be suitably mounted on the standard 6 at the intake side of said rollers 5. This feed table or shelf 25 is slotted as at 26 in line with the moistening roller 18 so that the envelopes may be passed between the feeding rollers 5 with the flaps thereof depending in position to engage the outer side of said moistening roller.

As shown clearly in Figures 1, 3, and 4, the side of the plate 17 at that side of the machine where the moistening roller 8 is positioned, is cut away to present an obliquely extending edge portion as at 27 that extends inwardly and toward the sealing rollers 10. As also shown in these figures, the edge of the plate 16 adjacent the oblique edge 27 of the plate 17 is extended downwardly and inwardly under the plate 16 to provide a folding wing 28 onto which the flap of the envelope may readily pass after being moistened, and by means of which said flaps are brought up into contact with the bodies thereof or nearly so, just prior to passage of said envelopes between the sealing rollers 10, the folding of the flaps into contact or adjacent the bodies of the envelope being permitted by the cut away portion of the plate 17. Thus, when the envelopes pass to and between the sealing rollers 10, the flaps of the envelopes are properly positioned for being sealed by said rollers 10.

In operation, the envelopes are placed upon the feed tables 25 with the flaps thereof depending in the slot 26, whereupon the lower rollers are rotated in the proper direction by operation of the crank or handle 15. The envelopes are thus successively fed onto the plates 17 between the rollers 5 with

the flaps of the envelopes disposed with their inner surfaces engaged with the outer side of the moistening roller 18 so as to moisten the glue on said flaps as the envelopes pass said moistening rollers 18. The envelopes move on the plate 17 toward the sealing rollers 10 and the flaps are folded upwardly by riding onto the upper surface of the wing 28 and with the flaps thus folded upwardly into proper position, the envelopes are properly guided between the rollers 10 to be sealed. Any suitable form of receptacle may be provided at the discharge side of the rollers 10 for receiving the sealed envelopes, and if desired, the uprights 6 and 9 may be secured rigidly on a platform 29 that may be provided with suitable supporting legs 30 to support the rollers at a proper elevation.

From the above description, it will be seen that the present machine is extremely simple, the same embodying only two pairs of rollers and the plates 16 and 17 serving to provide a simple and efficient means for supporting and guiding the envelopes in their passage from one set of rollers to the other and at the same time serving to provide a very desirable and cheap construction wherein the flaps of the envelope are properly moistened and then folded upwardly prior to passage of the same between the sealing rollers so that the flaps will be properly disposed for being sealed by said sealing rollers.

Minor changes may be made without departing from the spirit and scope of the invention as claimed.

What I claim as new is:

1. In a moistening and sealing device for envelopes, a pair of feeding rollers, a pair of sealing rollers mounted in spaced relation to the feeding rollers, the rollers of each pair being superimposed for the passage of the envelope therebetween, a pair of plates extending between the moistening and sealing rollers, and arranged in spaced relation for the passage of the bodies of the envelopes therebetween, the lower one of said plates being adapted to receive the envelopes thereon as they pass from the feeding rollers with the flaps of the envelopes depending at one side edge of said roller plates, means for automatically moistening the gummed inner surface of said flap as the envelopes are passing between the feeding rollers, said lower plate being cut away at one side adjacent the sealing rollers, and a wing extending inwardly under the lower plate and rigid with the adjacent side edge of the upper plate for folding said moistened flap upwardly toward the body of the envelope disposed upon said envelope prior to the passage of the same between said sealing rollers.

2. In a moistening and sealing device for

envelopes, a pair of feeding rollers, a pair of sealing rollers mounted in spaced relation to the feeding rollers, the rollers of each pair being superimposed for the passage of the envelope therebetween, a pair of plates extending between the moistening and sealing rollers, and arranged in spaced relation for the passage of the bodies of the envelopes therebetween, the lower one of said plates being adapted to receive the envelopes thereon as they pass from the feeding rollers with the flaps of the envelopes depending at one side edge of said roller plates, means for automatically moistening the gummed inner surface of said flap as the envelopes are passing between the feeding rollers, said lower plate being cut away at one side adjacent the sealing rollers, and a wing extending inwardly under the lower plate and rigid with the adjacent side edge of the upper plate for folding said moistened flap upwardly toward the body of the envelope disposed upon said envelope prior to the passage of the same between said sealing rollers, said moistening means comprising a moistening roller fixed upon the shaft of the lower feeding roller, and a tank within which said moistening roller is partially submerged having an inner side wall extending upwardly along the inner side of the

moistening roller and over the top thereof for preventing the moistening of the envelope except at the gummed inner surface of its flap.

3. An envelope moistener and sealer comprising a pair of feeding rollers of different lengths with the lower shorter roller thereof terminating at one end inwardly of the adjacent end of the upper feeding roller, a moistening roller fixed upon the shaft of said lower feeding roller at said one end of the same, a pair of sealing rollers mounted in spaced relation to the feeding rollers and to receive the envelopes from the latter, a plate mounted on a plane with the tops of the lower feeding and sealing rollers upon which the envelopes are adapted to be moved after being moistened, a second plate disposed above the first named plate and on a plane with the bottoms of the upper feeding and sealing rollers, an inwardly extending wing upon the upper plate for folding the moistened flaps of the envelopes upwardly toward the bodies thereof prior to the passage of the envelopes between the sealing rollers, and manually operative means for rotating the lower feeding and sealing rollers in the same direction.

In testimony whereof I affix my signature.

JOHN M. DORN.