Nov. 16, 1937. A. NOVICK 2,098,970

ENVELOPE MACHINE

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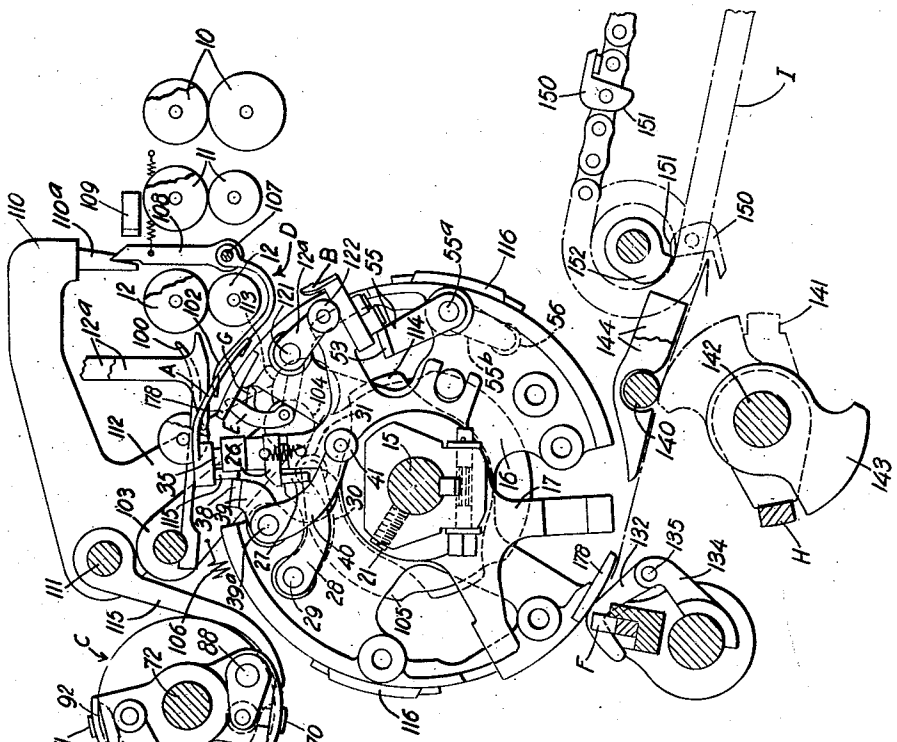


Fig. 1.

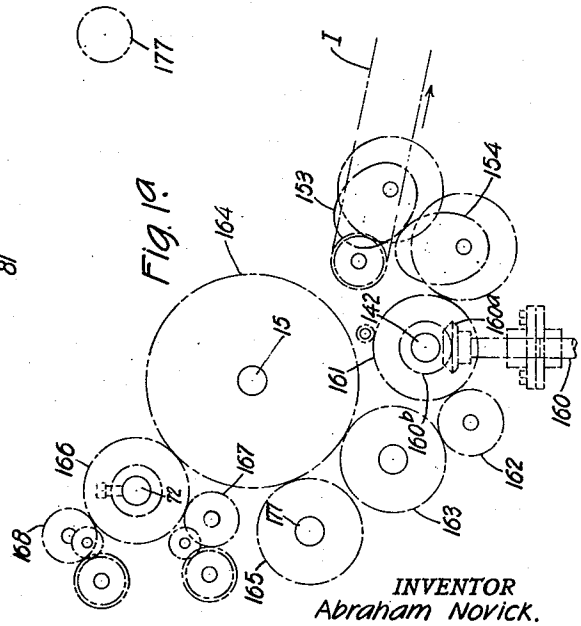


Fig. 1a.

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ENVELOPE MACHINE

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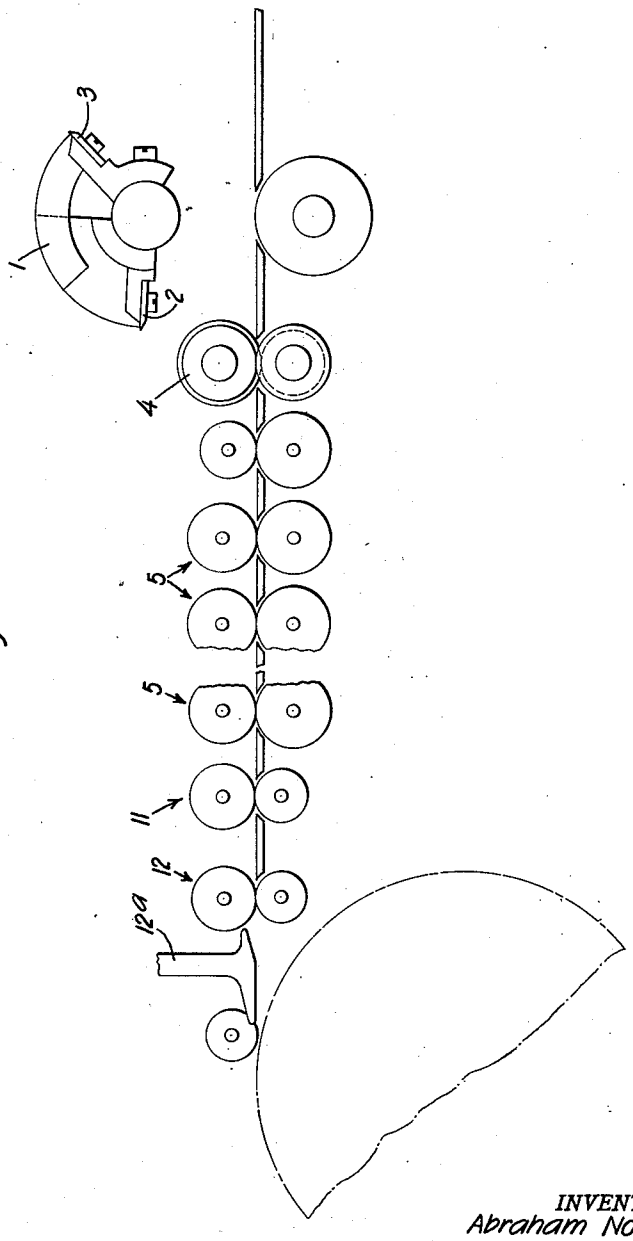


Fig. 2.

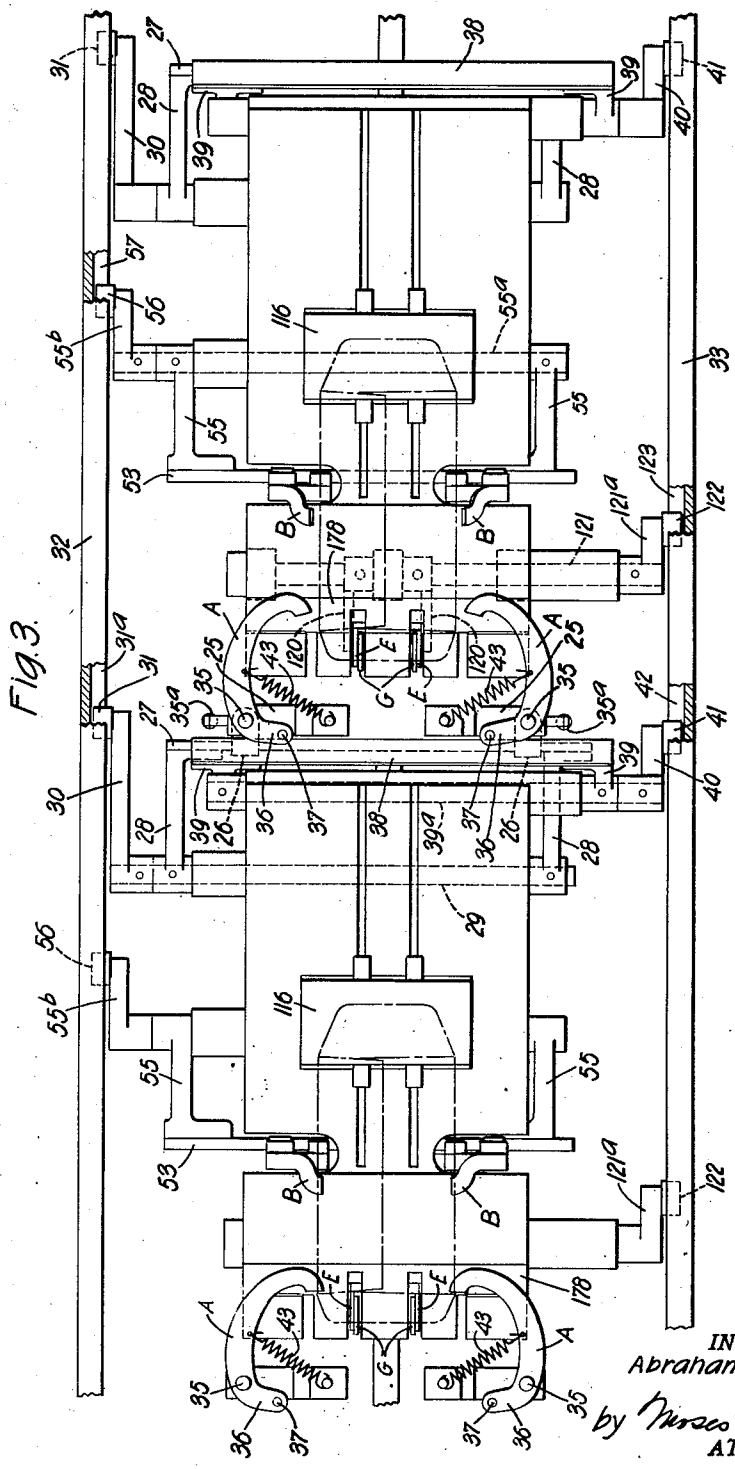
INVENTOR
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Nov. 16, 1937. A. NOVICK 2,098,970

ENVELOPE MACHINE

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Fig 3.



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Nov. 16, 1937. A. NOVICK 2,098,970

ENVELOPE MACHINE

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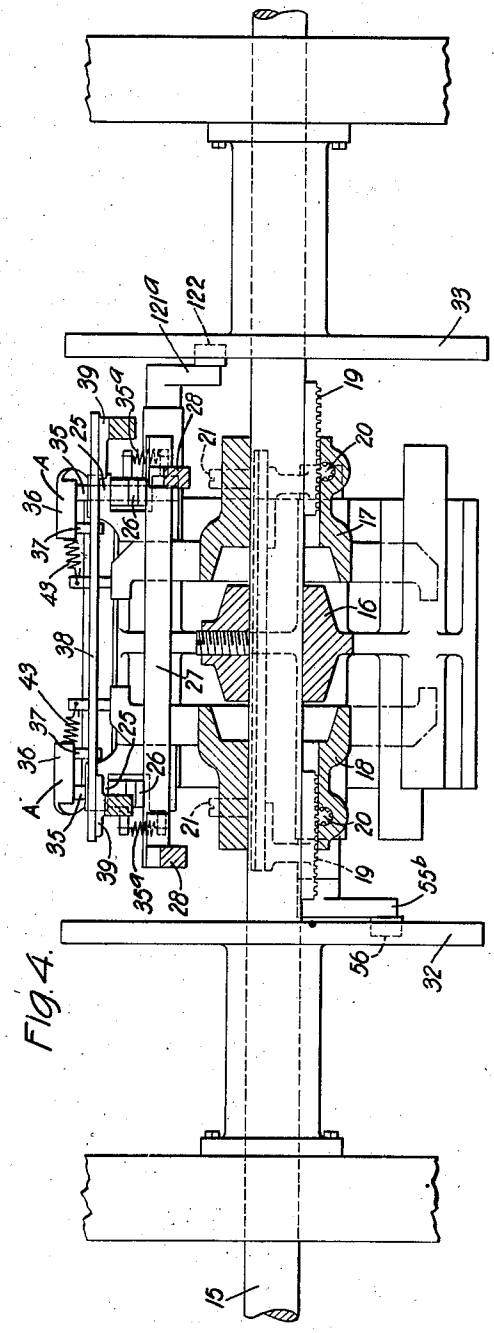


Fig. 4.

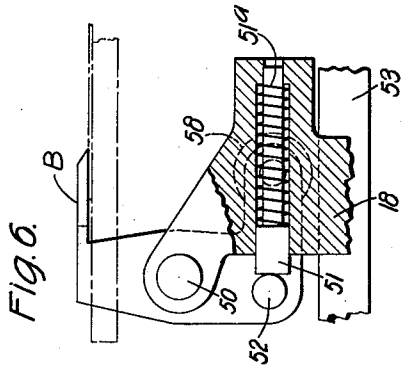


Fig. 6.

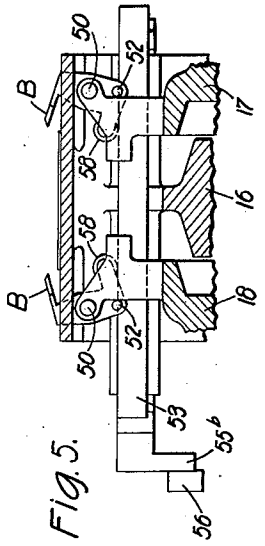


Fig. 5.

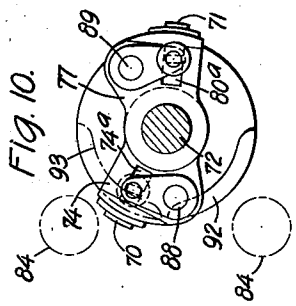
INVENTOR
Abraham Novick.

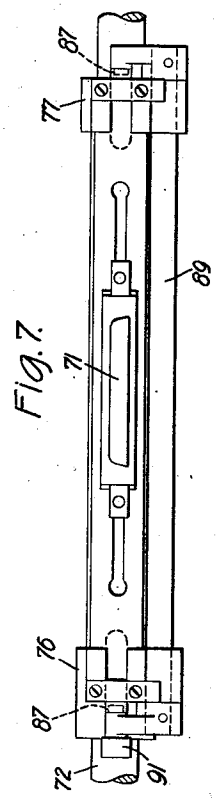
BY Moses & Nolte
ATTORNEYS

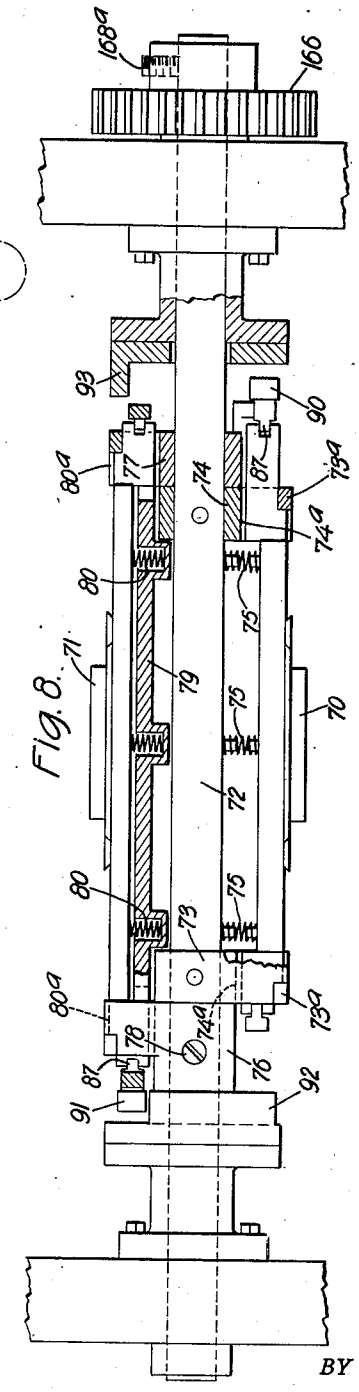
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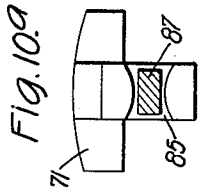
ENVELOPE MACHINE

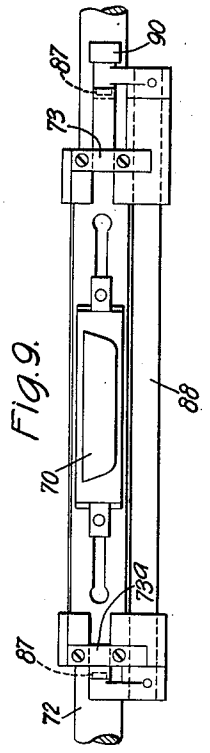
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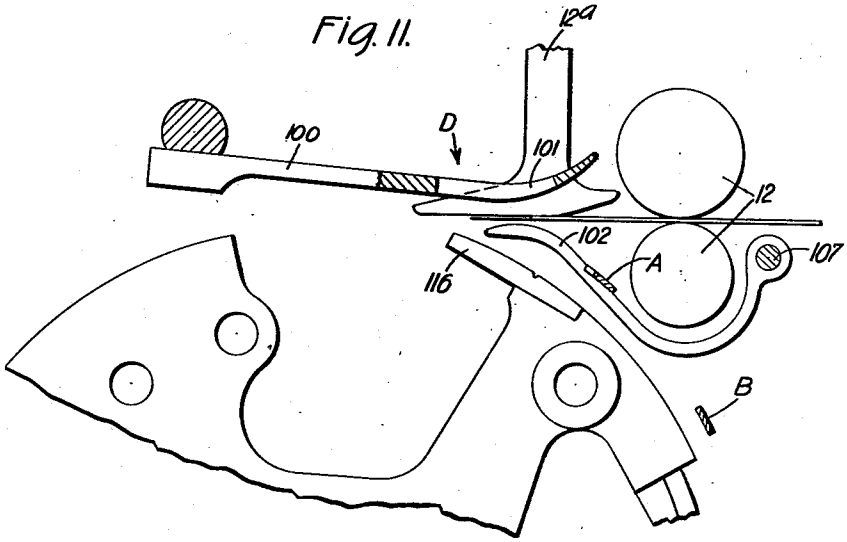
INVENTOR
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Fig. 11.



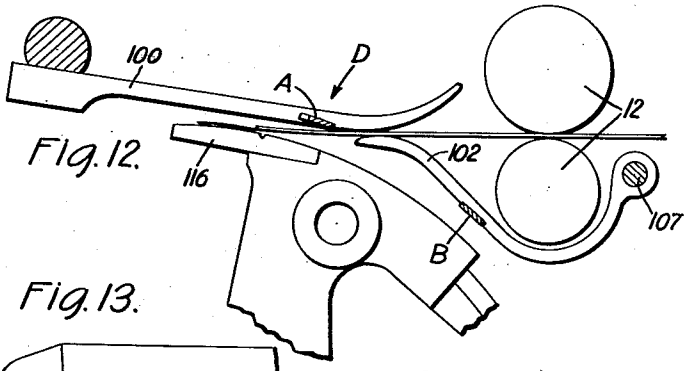


Fig. 12.

Fig. 13.

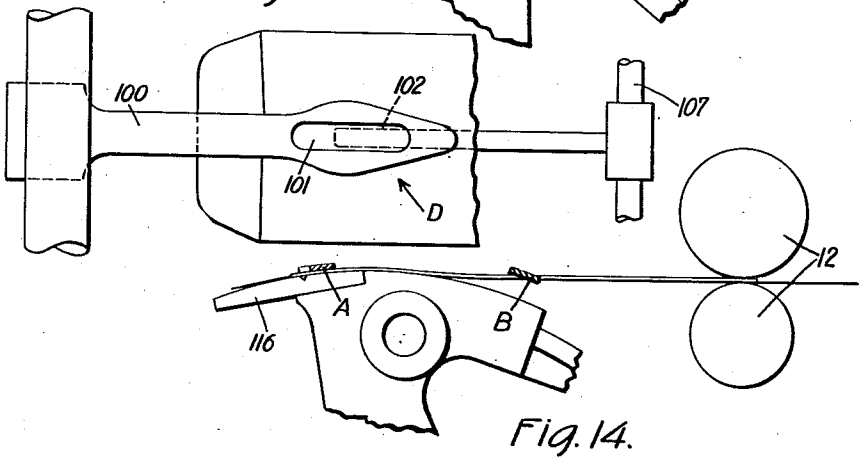


Fig. 14.

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ENVELOPE MACHINE

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Fig. 15.

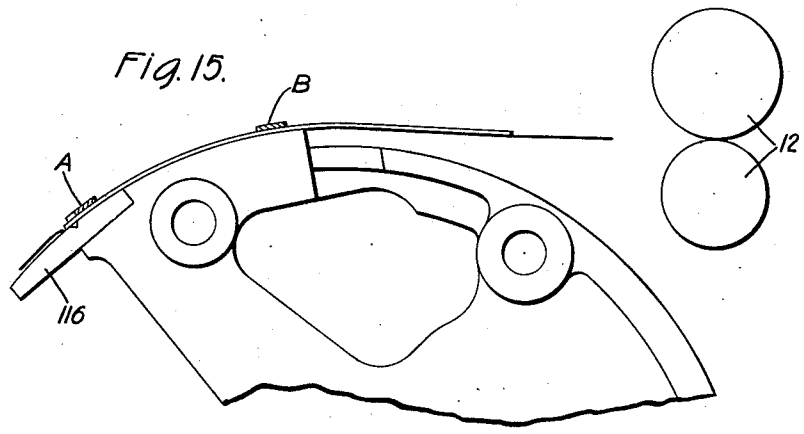
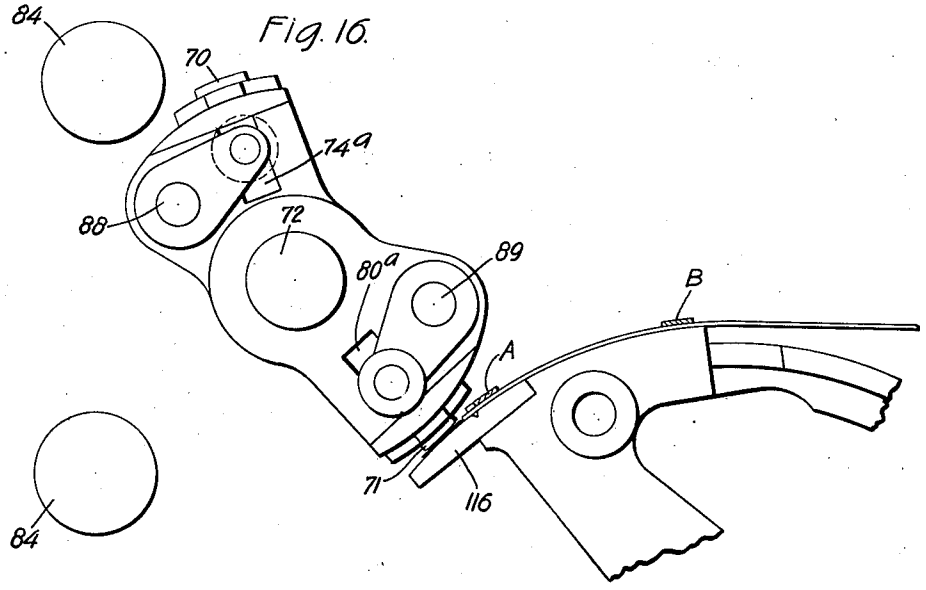


Fig. 16.



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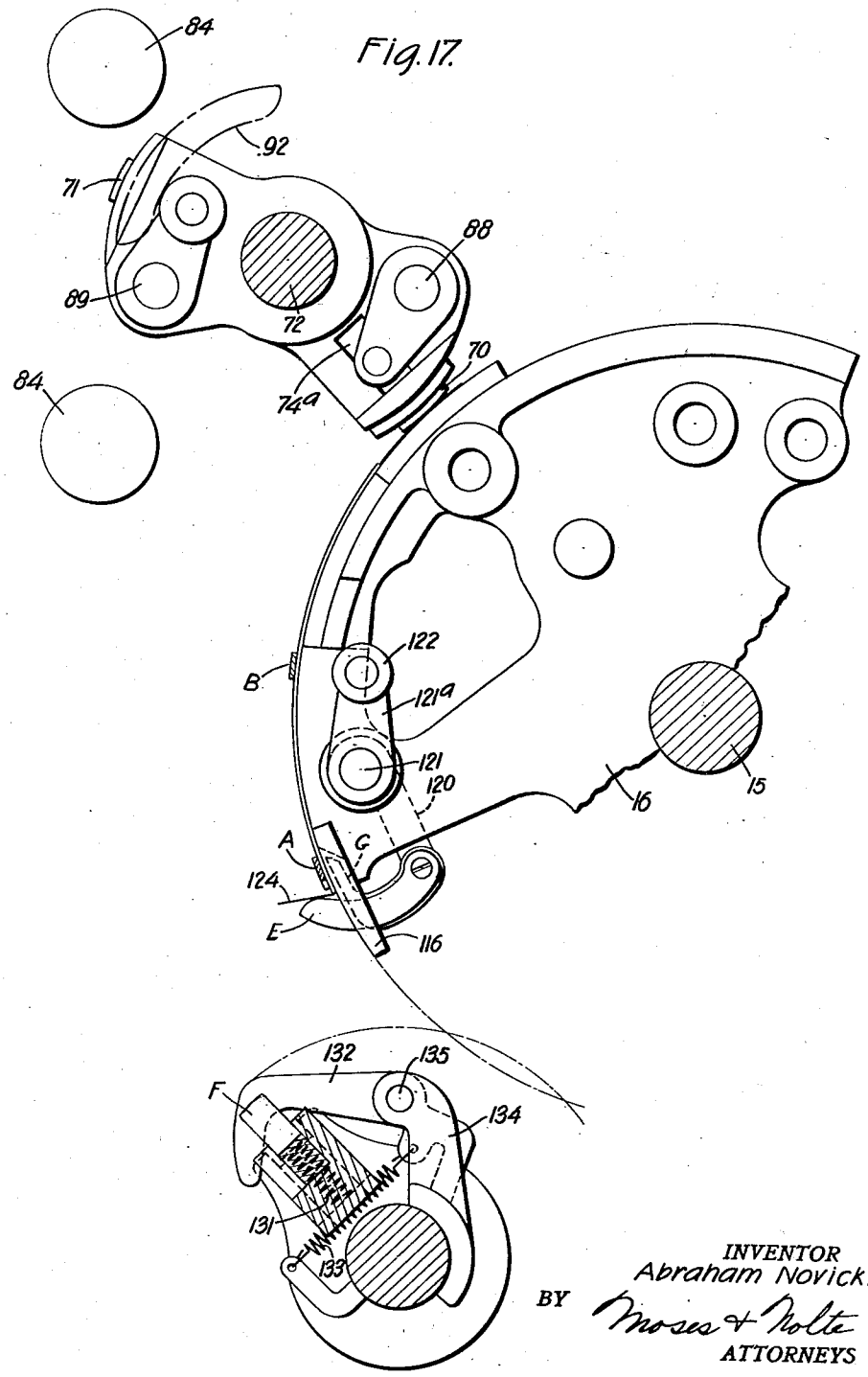
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Nov. 16, 1937. A. NOVICK 2,098,970

ENVELOPE MACHINE

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Fig. 17.



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Fig. 18.

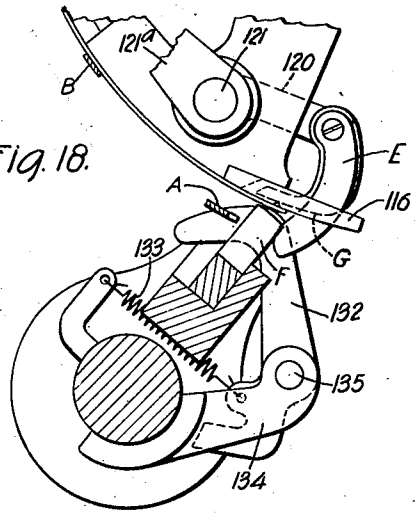


Fig. 19.

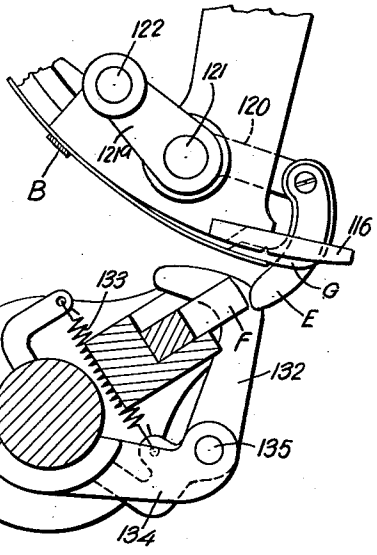
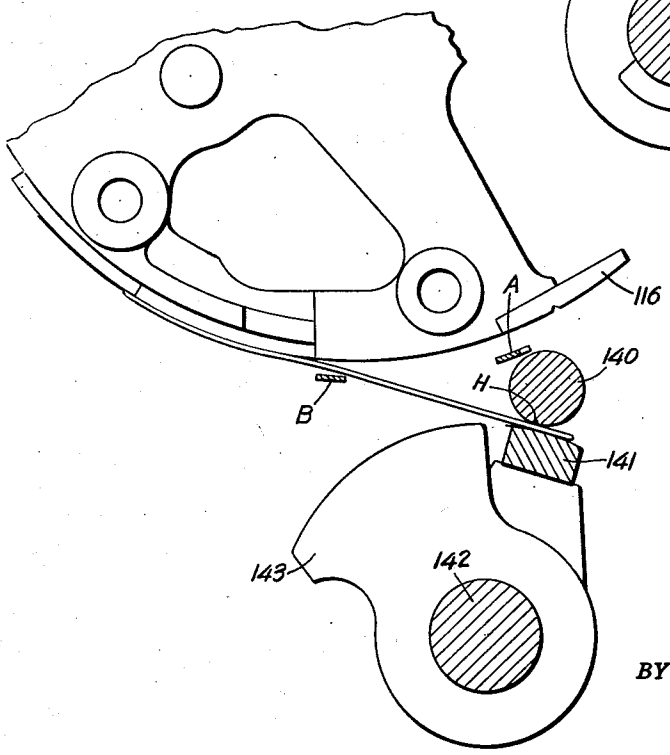


Fig. 20.



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ENVELOPE MACHINE

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Fig. 21.

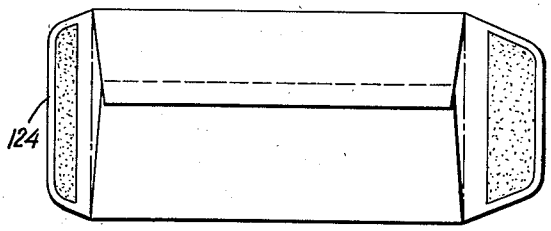


Fig. 22.

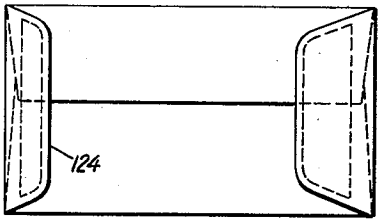


Fig. 23.

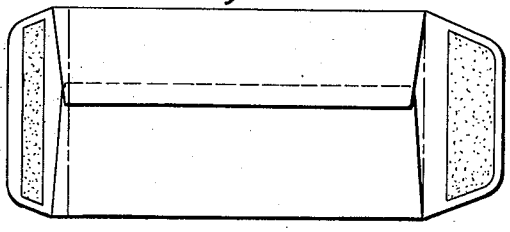


Fig. 24.

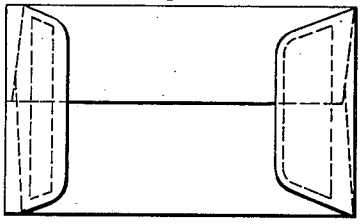
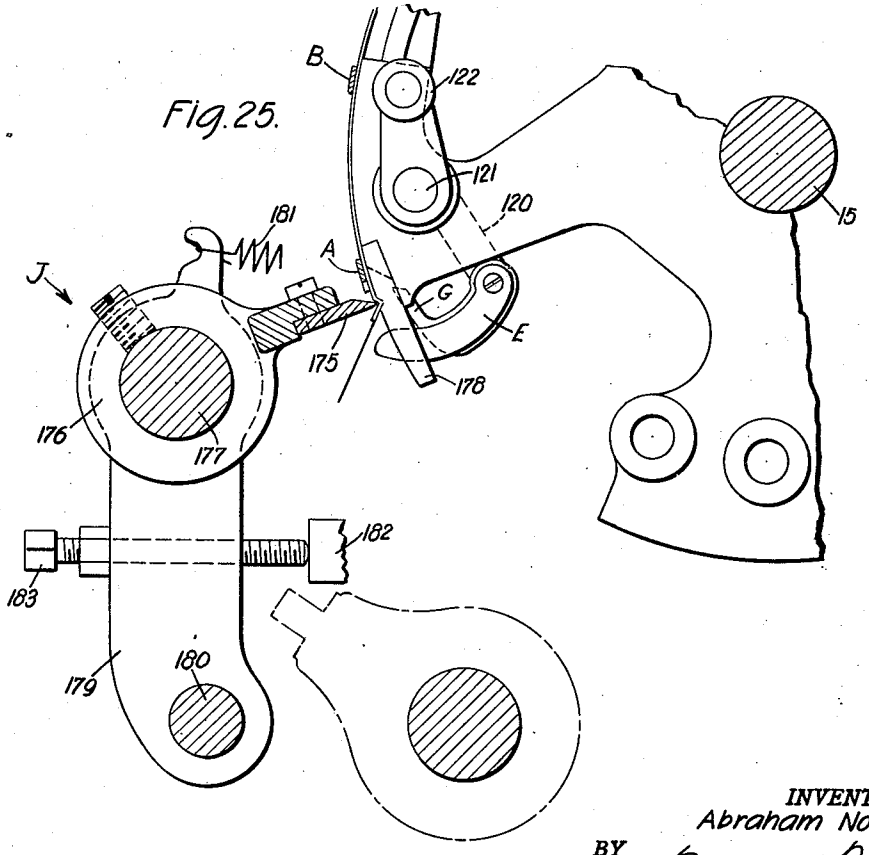


Fig. 25.



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ENVELOPE MACHINE

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Fig. 26.

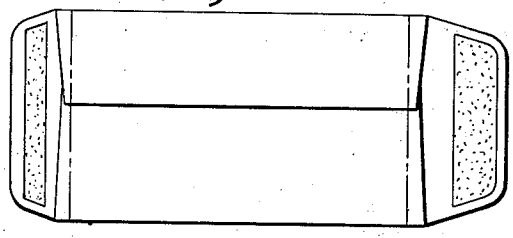


Fig. 27.

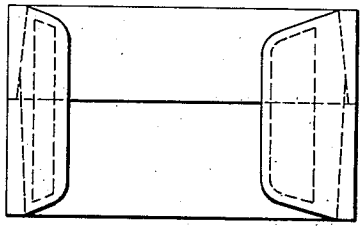
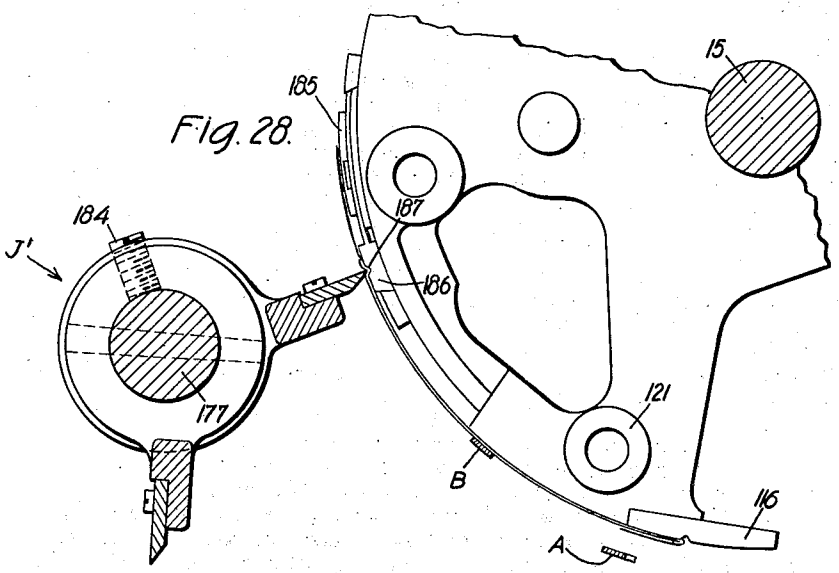


Fig. 28.



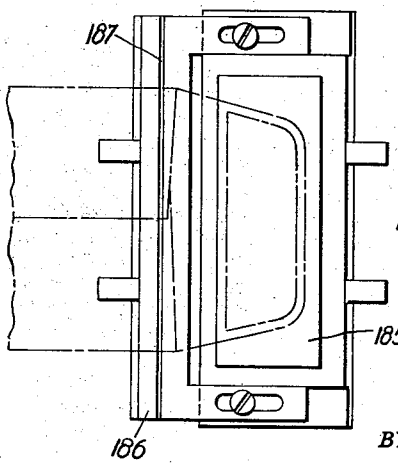


Fig. 29.

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Patented Nov. 16, 1937

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UNITED STATES PATENT OFFICE

2,098,970

ENVELOPE MACHINE

Abraham Novick, Flushing, N. Y., assignor to F. L. Smithe Machine Co., Inc., New York, N. Y., a corporation of New York

Application May 18, 1933, Serial No. 671,630

11 Claims. (Cl. 93—62)

The present invention relates to improvements in rotary machines for folding and gumming envelopes, and the principles of my invention have been illustrated as applied to the manufacture of so-called open end envelopes having a central longitudinal seam. In general, it is the object of my invention to improve existing machines of this type by way of greatly increasing their output per unit time. In prior machines with which I am familiar, the speed of operation has been limited by the fact that the blanks had to be fed to the machine with great accuracy whereby high speed frictional conveying elements which admit of slight errors in registry of the blanks could not be used.

More specifically, an object of my invention is therefore to so devise the rotary folding machine as to enable it to handle blanks fed to it at high speed as by a frictional conveying element, which blanks arrive at the rotary drum of the machine slightly out of registry, say one-sixteenth of an inch either way. In the prior machines the bottom flap of the envelope, because of this slight error in registry, would not receive an accurate fold. In my present machine I have undertaken to solve this difficulty by scoring the bottom flap previous to its arrival at the drum and at a point so early in the travel of the blank as to obviate errors in registry. By means of my improved folding mechanism on the drum, it is then possible to gum and fold this bottom flap along previously made score lines within the limits of error of the frictional feeding means to the drum. In my preferred embodiment I accomplish this by the coaction of an improved forward gripping device for the partially completed blank and fingers which initiate folding of the flap along the previously made score line after which the fold is completed by a presser element pressing the blank against the drum, the forward gripping device having in the meantime been withdrawn so as to avoid the presser element.

A further object of the invention is to provide a unitary flap gumming device so that gum from different sources may be applied to the bottom and sealing flaps, respectively. Because of the practice of licking the gum on the sealing flap of envelopes, certain types of gum cannot be used on this flap. This consideration, however, does not apply to the bottom flap and hence the desirability of being able to use two types of gum on the two flaps. In connection with the gumming mechanism it is also an object of the invention to provide an improved feeler mechanism for rendering the gummers inoperative when no blank is passing through the machine.

Further objects of the invention are to perfect the means for folding the bottom flaps and for delivering the envelopes containing the freshly gummed sealing flap surface to a suitable conveyor for conveying the envelopes through a drier.

Various other and more specific objects of the invention and advantages thereof will be apparent as the description proceeds.

The invention will be best understood by reference to the detailed description which follows, taken with the accompanying drawings, in which

Figure 1 is a view elevation (with portions of the various shafts broken away) of a preferred embodiment and showing the rotary folding drum and associated mechanism;

Figure 1*a* is a diagrammatic view showing the drive connections to the various parts;

Figure 2 is a diagrammatic view showing the feeding and scoring operations taking place prior to the arrival of the blanks at the drum;

Figure 3 is a developed plan view of the drum and parts associated therewith;

Figure 4 is a view taken in a substantially radial section through the drum and illustrating the mounting of the same and of the parts associated therewith;

Figure 5 is a detail in radial section showing the construction of the trailing grippers;

Figure 6 is an enlarged view of one of the trailing grippers showing further constructional details thereof;

Figure 7 is a top plan view of the gummer bar for the bottom flap of the envelope;

Figure 8 is a view partly in section of the gummer bar unit;

Figure 9 is a bottom plan view of the gummer bar for the seal flap;

Figure 10 is a side view of the gummer bar mechanism showing an arrangement of the parts at the time the seal flap gummer bar is about to receive its gum;

Figure 10*a* is a detail view showing the connection between the end of a gummer bar and the end of the actuating arm;

Figure 11 is an enlarged view showing the feeler mechanism which acts to render inoperative the gumming mechanism in case there is no blank to be gummed, and the grippers in their released position;

Figure 12 is a view of the same parts in a different position;

Figure 13 is a view of the feelers looking from the top;

Figure 14 is a view showing the leading grippers in holding position and the trailing grippers before actuation;

Figure 15 shows the same parts as Figure 14 but in a more advanced position with the trailing grippers in holding position;

Figure 16 shows the parts when the bottom flap is being gummed;

Figure 17 shows the cylinder in a position further advanced from that of Figure 16 and in which the seal flap is being gummed. It also shows the bottom flap folding fingers partly operated. It also shows the presser bar which is soon to be operated to further complete the action of the turning fingers to fold the bottom flap;

Figure 18 shows the position of the cylinder and the presser bar immediately after the presser bar has performed its function of pressing down the bottom flap and that of stripping the envelope from the presser bar;

Figure 19 shows the next step in which the end of the envelope is separated from the cylinder by means of fingers to be described;

Figure 20 shows the further step of compressing the bottom flap after it has been folded;

Figure 21 shows a type of envelope in which the bottom flap is gummed and which is scored beyond the edges of the side flaps, the seal flap also being gummed;

Figure 22 shows the same envelope with the bottom flap and the seal flap folded;

Figure 23 shows an envelope which may be made on this machine in which the bottom score line extends over the ends of the side flaps for the purpose of making a leak-proof hold as seen in Figure 24;

Figure 24 shows the envelope of Figure 23 with flaps folded;

Figure 25 shows the means employed for scoring the envelope shown in Figures 23 and 24;

Figure 26 shows an envelope scored to provide both ends with a leak-proof or safety seal;

Figure 27 shows the same envelope with the ends sealed;

Figure 28 shows the scoring of both flaps; and

Figure 29 shows an adjustable scoring element associated with the gum pad for the sealing flap.

When the blanks reach the mechanism herein shown in Figure 1, the side flaps have been folded and gummed, and in the case of the ordinary envelope the top and bottom flaps have been scored. Thus partially folded and gummed, the blank is advanced bottom flap foremost and middle seam upward into the folding cylinder by means of the feed roll sets **10**, **11** and **12** aided by stationary guide shoes **12***a*. These prior operations are shown diagrammatically in Figure 2 wherein the seal flaps of the blank are first scored by the scorer **1** and having scoring blades **2** and **3**, whereupon the side flaps are longitudinally scored by scorer **4** after which the blanks are conveyed by frictional conveying rolls **5**, **5** etc. through the customary side flap folding and gumming mechanism which may be of known type not shown in Figure 2, after which the partially folded blank is conveyed by further friction rolls **11** and **12** into the drum for the further gumming and folding operations to be described. The first operation performed by the drum is to grip the forward end of the envelope by means of forward grippers A, Figure 3, after which trailing grippers B come into play further to secure the blank to the drum. Then the bottom flap is gummed by means of the gum applying device C following which the seal flap is gummed by means of another part of the same device, Figure 1. In case no blank is present to receive the gum, the gumming devices are rendered inoperative by means of feeler mechanism D. The next operation consists in folding the bottom flaps, which action is initiated by means of fingers E, as best seen in Figure 17, whereupon this folding is further accomplished by means of a presser bar F, Figure 1 and Figure 17, after which the blank leaves the drum, being positively released therefrom by the action of an ejector finger G, Figure 17, the forward grippers in the meantime having been released. The folded bottom flap is then further subjected to a rolling or ironing action at H, Figure 20, after which the advancing end of the envelope is fed into the grip of grippers of the conveying chain I, the trailing grippers having been in the meantime released.

My improved machine also is adapted to form the so-called safety fold envelopes, illustrated in Figures 23 and 24, in which the fold includes a slight portion of the side flaps. To accomplish this, a score line is first made in the body of the envelope by means of the scorer J, Figure 25 which is only operated when this type of envelope is made.

Having described in general the operations which are to be gone through with, the various individual mechanisms involved will now be separately described.

Construction of rotary drum

While the construction of various parts of the drum will be apparent from the description of the various mechanisms associated with it, it is desired at this time to point out the certain general features of the drum by means of which great ease and latitude of adjustment of the machine for different size envelopes may be had. Referring to Figures 1 and 4, the drum is mounted upon a main shaft **15**, the drum consisting of a middle portion **16**, constituting the drum proper, and side sections or brackets **17**, **18** upon which gripping mechanisms A and B are mounted (as will be apparent from a consideration, which follows, of these gripping mechanisms).

It will be apparent from Figure 4 that two sets of envelope handling devices are provided in the drum. To facilitate adjustment of the gripping mechanisms laterally of the drum, sections **17** and **18** are slidable on the shaft **16** by means of racks **19**, **19** and pinions **20**, **20**, respectively, and are held in any given position by means of set screws **21**, **21**.

Forward grippers A

It is desirable that the grippers A have a movement both lateral of the drum and radial of it, the radial movement being necessary to grip the blank. The lateral movement is desirable in order that the grippers may clear the presser bars F. To accomplish this, the grippers A are secured to shafts **35** each pivotally supported in a bracket **25** secured to the brackets **17** and **18**, Figures 1 and 4. To accomplish the upward movement of the grippers is provided a bar **27** engaging lugs **26** secured to the shafts **35**, said bar **27** being thus effective to move the shafts **35** against the action of return springs **35***a*. The bar **27** is attached to arms **28**, **28**, Figure 3, pivoted on a shaft **29**, Figures 3 and 4. Also attached to shaft **29** is a crank **30** terminating in a cam follower **31**, Figure 3, which rides within

a cam groove 31*a* within the cam disc 32, such groove causing the upward tilting of bar 27 and hence the grippers A through lugs 26. A cam disc 33 is provided on the opposite side as will be referred to hereinafter. To move the grippers or fingers A laterally of the drum, such fingers are provided each with an inwardly extending portion 36 beyond the pivot, to which portion is attached a pin 37. These depending pins 37 (see also Figure 4) are adapted to be contacted with a bar 38 having arms 39 secured to shaft 39*a* to which is secured crank 40, terminating in a cam follower 41 within the cam track 42 of the disc 33. It will be noted that when this follower moves in accordance with the cam track, the bar 38 will be tilted to move pins 37 to move the grippers outward against the action of springs 43.

Trailing grippers B

These are shown best in Figures 3, 5, and 6 which show the grippers B pivoted at 50 to an extension of the brackets 17, 18, Figure 5. The fingers B are each urged against the face of the drum by means of a spring 51*a* acting on plunger 51, Figure 6, the latter acting against pin 52 in the body of the gripper. These fingers are actuated away from the drum by means of a bar 53, Figures 1, 3, 5, and 6, suitably journaled in the central portion 16 of the drum, such bar having arms 55 secured to a shaft 55*a* to which is connected crank 55*b* provided with a follower 56 in a cam groove 57 in the cam disc 32. In operation, the bar will be actuated (by the action of the cam groove 57 on the follower 56) to move the bellcrank finger elements B upwardly against spring 51*a* by contacting with the ends 58 of said elements.

Flap gumming devices C

The gumming devices, seen best in Figures 1, 7, 8, 9, 10, and 10*a*, consist of a seal flap gummer or stamping element 70 and a bottom flap gummer or stamping element 71 which are mounted on a common cylinder having an axial shaft 72, Figures 1 and 8. In this construction one of the gummers, as for example the seal flap gummer 70, is fixed to the shaft 72 by means of collars 73, 74 in which it is loosely mounted so as to permit slight radial movement which is limited by slots 74*a*, Figure 10, such collars being pinned to shaft 72 as shown. As shown, the stamping element 70 is confined within the slots by bars 73*a* and is urged outwardly by means of springs 75 which are in contact with the shaft 72. Stamper element 71, on the other hand, is mounted for angular adjustment relative to the shaft by means of collars 76 and 77 which are secured to the shaft 72 by means of set screws of which one, 78, is seen in Figure 8. Stamper 71 is accordingly provided with a tie bar 79 which holds springs 80, corresponding to spring 75, away from shaft 72. As in the case of the stamper 70, radial movement of the stamper 71 is permitted within slots 80*a* of the collars 76, 77 as seen best in Figure 10. It is desirable for each stamper to have a separate source of gum for which are provided gum boxes 81, 82, Figure 1, for the bottom and seal flap stampers, respectively. Each gum box has a driven feed roller 83 and a driven applicator roller 84 which applies gum to the stampers. In order that the stampers 70 and 71 may be gummed by the proper applicators and none other, it is necessary to withdraw a given stamper when it passes the applicator serving the other stamper. To accomplish this, the ends of the stampers are slotted at 85, as in Figure 10*a* (see also Figure 1) to accommodate the ends 87 of a bifurcated rocking shaft 88 for stamper 70, and a similar shaft 89 for stamper 71, such shafts being journaled in the respective collars (73, 74 and 76, 77) for the stampers as seen best in Figure 10. Rock shaft 88 is further provided, opposite one of its ends 87 in contact with the slot in the stamping element, with a cam follower 90, rock shaft 89 being similarly provided with a cam follower 91. A stationary cam 92 is now provided for the follower 91, whereas a cam 93 is provided for follower 90. Because of the location of these cams, as will be seen from Figures 10 and 1, the stamper 70 will be retracted as it passes the applicator 84 of the gummer 81 but will be in an extended position to be gummed by the applicator 84 of the seal flap gummer 82, and the bottom flap gummer 71 will have a corresponding movement to enable it to receive gum from the gummer 81 only.

It will therefore be seen that by continued rotation of the shaft 72 gum from different sources, namely, gum boxes 81, 82, will be applied to the bottom and seal flaps, respectively.

Feeler mechanism D for rendering gummers ineffective when no blank is passing through the machine

This feeler mechanism comprises first a reciprocating upper tamper 100, Figures 11 and 13, terminating in an apertured portion 101, within which aperture is adapted to register a reciprocating bottom tamper 102. Tamper 100 is moved up and down by means of a crank 103, Figure 1, terminating in a cam follower 104 which is constrained to follow cam 105 by means of a spring 106. The lower tamper 102 is pivoted at 107 and is attached to a vertically extending arm 108 which is spring pressed so as to throw the tamper 102 upward when the arm 108 is released, such motion being limited by means of a stop 109. However, movement of the arm 108 is influenced by a rock arm 110 having a fork 110*a* receiving the pointed end of arm 108, arm 110 being pivoted at 111 and reciprocated by means of crank 112, follower 113, cam track 114 and spring, not shown. Cam tracks 105 and 114 are so arranged that the upper and lower tampers 100 and 102, respectively, will be brought together at the same time, i. e., by the raising of the rock arm 110 so as to permit the upward movement of the lower tamper 102. When a blank is being fed through the machine the upward movement of tamper 102 will be limited by the interposition of the blank as seen in Figures 12 and 13. Consequently, the arm 108 will constantly be in a position to intercept the downward movement of the rock arm 110. When, however, a blank is no longer passing, the lower tamper 102 will be allowed to move above the plane of the blank into the aperture of the upper tamper 100 so that arm 108 will no longer arrest the downward movement of rock arm 110, whereby a pair of arms 115 attached thereto (of which only one is seen in Figure 1) are brought upwardly so as to engage respectively the cam followers 90 and 91 of the gummer bars 70 and 71, thereby preventing them from coming into contact with and smearing gum upon the backing pad 116 upon which the blank would ordinarily be gummed.

It will be noted that because of the momentary contact of the upper and lower tampers 100 and 102, there is substantially no drag exerted on the feed of the envelopes.

Bottom flap folding operations, elements E to H

The gum having been applied to both the end flaps of the envelope, the next operation is to fold the freshly gummed bottom flap. The first fold is initiated by means of fingers E, Figure 17 (and Figure 3) which are adjustably attached to arms 120 secured to a shaft 121 supported on the drum section 16. Secured to the shaft 121 is an arm 121*a* having a cam follower 122, the latter operating in a cam groove 123, Figure 3. Fingers E are movable through slots (not shown) in the drum, additional slots being provided to accommodate additional fingers (not shown) if required. When the position shown in Figure 17 is reached, the cam follower 122 is forced inwardly to move the fingers E outwardly and thereby initiate the folding of the bottom flap (designated 124, Figure 17) aided by the action of grippers A which hold the blank a short distance (say within ⅛" thereof depending upon the nature of the paper and the size of the blank) behind the score line. Continued rotation of the drum brings the bottom flap in position to be further folded by means of a presser bar F, as best seen in Figures 17 and 18. This presser bar is urged outwardly by means of springs 131. However, before the presser F is brought into operation, the leading grippers A are released and retracted to the position shown in Figure 18. (In some instances, however, it may be desirable to arrange the presser so that it will contact with the fold, but not the gripper just before the grippers A are released.) In order, however, to provide against the blank following the presser F, a releasing finger 132 is provided. This finger is of knuckle shape and spring pressed outwardly by means of spring 133 urging the bellcrank portion 134 of the finger 132 clockwise around the pivot 135, Figure 17, and is arranged to function further, after the presser bar F leaves the drum, to strip the blank from the presser bar as in Figure 18.

To make sure that the leading end of the blank does not adhere to the surface of the drum, I also provide ejector fingers G, Figure 17, which are also attached to the arms 120. By means of the cam track 123 the arms 120 carrying both fingers E and ejector G are further moved outward so as to bring the ejectors G in the operative position of Figure 19.

The end of the blank now having been released from the drum passes between the ironing elements H, Figure 20, comprising a cylindrical element 140 and the sector 141 rotatable by shaft 142. These ironing elements further complete the folding action and insure a thorough contact of the surfaces to be gummed together. The feed of the blank is further facilitated by means of a feed sector 143 cooperating with a portion, not shown, of the cylindrical element 140, sector 143 reaching short of the gummed surface of the sealing flap.

It will be seen from the foregoing that flap turning means have been provided which do not depend for their operation upon exact registry of the score line of the flap to be folded with the folding mechanism. Thus, in practice I have found that normal operation of the machine will permit a variation in the position of the score line of a sixteenth of an inch in either direction, such a tolerance absorbing any error resulting from the normal high speed operation of the friction feeding devices shown in Figure 20.

Blank removal conveyor I

The folding operations so far as the drum mechanisms are concerned having been completed, it is necessary now to remove the envelopes from the drum (without smearing the gummed sealing flap) and dry the gum on the sealing flap. The feed section 143 aided by guides 144, Figure 1, operates to present the blank to the gripper 150 of the chain I, such gripper being spring pressed against the chain by a spring, not shown, except when the gripper is released from the chain by contact of the cam surface 151 against the cam 152, such contact occurring at the moment when the envelope is presented to the chain conveyor, after which the grippers snap shut and the blank is conveyed through a drier, not shown. Shortly prior to the presentation of the blank to the conveyor the trailing grippers B have been released as shown in Figure 20. A feature of the chain I is that the speed thereof is slowed up at the time the envelope is presented to the grippers, this being accomplished by means of the elliptical gear set 153, 154 (or equivalent device), Figure 1*a*. This feature is described at length, and is made the subject of claims in a co-pending application, Serial No. 58,335.

In Figure 1*a* I have shown diagrammatically the driving connections for the machine consisting of main drive shaft 160 and gears 160*a*, 160*b*, 161, 162, 163, 164, 165, 166, 167, 168. Gear 162 driven by gear 161 is mounted on the shaft of sector 143, gear 163 on the shaft of the presser element F, gear 164 on the shaft 15 of the drum, gear 165 on the optional scoring elements J or J', gear 166 on the shaft 72 of the gummers, gear 167 on the shaft of the gum applicator 84 of gum box 81, and gear 168 on the shaft 84 of the gum box 82.

These gears are adjustable angularly of their respective shafts as seen for example in Figure 8 at 168*a*.

Optional scoring devices J and J'

As heretofore stated, it may be desired to score either end of the partially completed envelope as indicated in Figures 23, 24, 26 and 27. When one end of the envelope is to be scored, as for example the bottom flap end, as seen in Figure 23, the mechanism of Figure 25 is provided consisting of a blade 175 secured in a collar 176 which is mounted on a shaft 177, driven in timed relation with the drum on which the envelope blank is contained. Behind the envelope is a suitable backing plate 178. Shaft 177 is mounted in a bracket 179 capable of angular movement on shaft 180 and limited in such movement by means of a spring 181 in conjunction with a stop 182 and a set screw 183.

When both ends of the envelope are to be scored as shown in Figures 26 and 27, the mechanism J', Figure 28, is provided which is similar to mechanism J except that two collars containing two score blades are provided, one of which is angularly adjustable on the shaft 177 by means of a set screw 184, and by means of this adjustment, the space between the score lines may be adjusted for different sizes of envelopes. In the use of the scorer J', it is desirable to provide an adjustable backing pad as shown in Figures 28 and 29 in which a portion 185 constituting a backing for the sealing flap (receiving the force of the sealing flap gummer 70) is made adjustable in respect of a portion 186 having a groove 187

which comes opposite the scorer for this portion of the envelope.

I have described what I believe to be the best embodiments of my invention. I do not wish, however, to be confined to the embodiments shown, but what I desire to cover by Letters Patent is set forth in the appended claims.

I claim:

1. In a machine for making envelopes, said machine being of the type characterized by means for scoring the blank longitudinally and transversely, and by means for folding the side flaps of the blank; the combination of a rotatable member; a flap-folding means revoluble bodily therewith in an arcuate path conforming in part with the path of travel of the blank, said last-named flap-folding means being swingable in an arcuate path intersecting said first-named arcuate path, for folding an end-flap of the blank; and frictional conveying means for transporting said blank, after it has been acted on by said side flap folding means, to its arcuate path of travel to be acted on by said end-flap folding means, the latter being adapted to accomplish the end flap fold irrespective of the normal error in registry imparted by the frictional feeding means.

2. A machine having the features claimed in claim 1, and in which said rotatable member is constituted by a rotary drum, and is provided with means for securing the blank thereto.

3. In a machine for making envelopes, a rotary drum, means for feeding thereto bottom flap foremost an envelope blank having the side flaps already folded and bottom flap previously scored, and means for folding the forward flap including forward gripping elements pressing the envelope to the drum behind the score line of the bottom flap, a folding finger operative to initiate the folding of the blank while held by the said forward grippers, and means for completing the folding of the bottom flap.

4. The machine according to the preceding claim in which the means last mentioned includes a presser element bringing the flap against the body of the envelope and means for retracting the gripper elements from beneath the bottom flap being folded.

5. In an envelope making machine, a rotary drum, means for feeding blanks with side flaps folded to the drum in a direction parallel to the side flaps, means for securing the blanks to the drum, means for gumming the end flaps of the blank, means for initiating the folding of the bottom flap which has been previously scored, means for completing the folding of said flap in the form of a presser element, and means for retracting the forward gripping means which has aided in the initial folding movement, upon the operation of the presser element.

6. The machine according to the preceding claim including means for stripping the folded end of the blank from the drum.

7. The machine according to claim 3, including means for feeding the blank having the bottom flap folded by a feeding sector which does not extend to the freshly gummed surface of the sealing flap.

8. The machine according to claim 3, including a presser element for bringing the gummed surface of the bottom flap against the body of the envelope, together with means preventing the envelope from following the presser.

9. The machine according to claim 3, including elements between which the folded bottom flap is squeezed or ironed without squeezing the rest of the envelope.

10. In a machine for making envelopes of the so-called "safety fold type", including a drum upon which the blanks with the side flaps folded are fed bottom flap foremost, means for securing the blank to the drum, means for gumming an end flap, and scoring means so disposed with relation to the drum as to serve for scoring an end flap of the envelope, including a portion of the side flaps, said scoring means comprising a rotary scorer driven in timed relation with the drum, and means, co-ordinated with said drum and scoring means, for folding the bottom flap.

11. In a machine of the rotary type for gumming and folding an end flap of an envelope, a rotary drum comprising three parallel sections, each mounted on a common shaft, blank gripping elements carried by the outer sections, means for adjusting the outer sections along the shaft to accommodate different sizes of envelope blanks, and a common actuating member carried by the central section, for the grippers carried by the outer sections, and arranged to maintain cooperative relation with them regardless of adjustment.

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