March 15, 1938. O. G. DREHER ET AL 2,111,317

ROTARY GUMMING ATTACHMENT FOR ENVELOPE FOLDING MACHINES OF THE PLUNGER TYPE

Filed Nov. 3, 1934 4 Sheets-Sheet 1

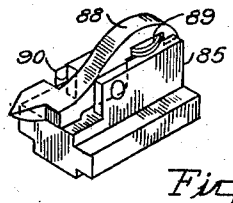


Fig. 10.

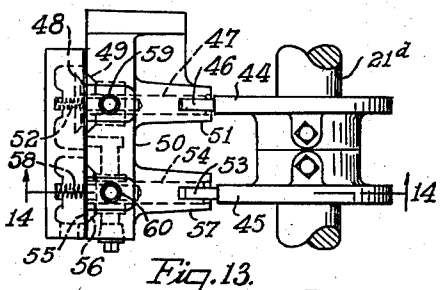


Fig. 13.

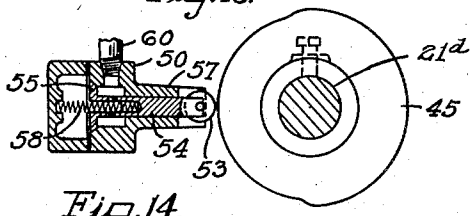


Fig. 14.

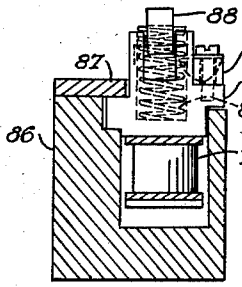


Fig. 12.

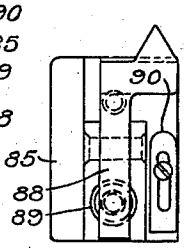


Fig. 11.

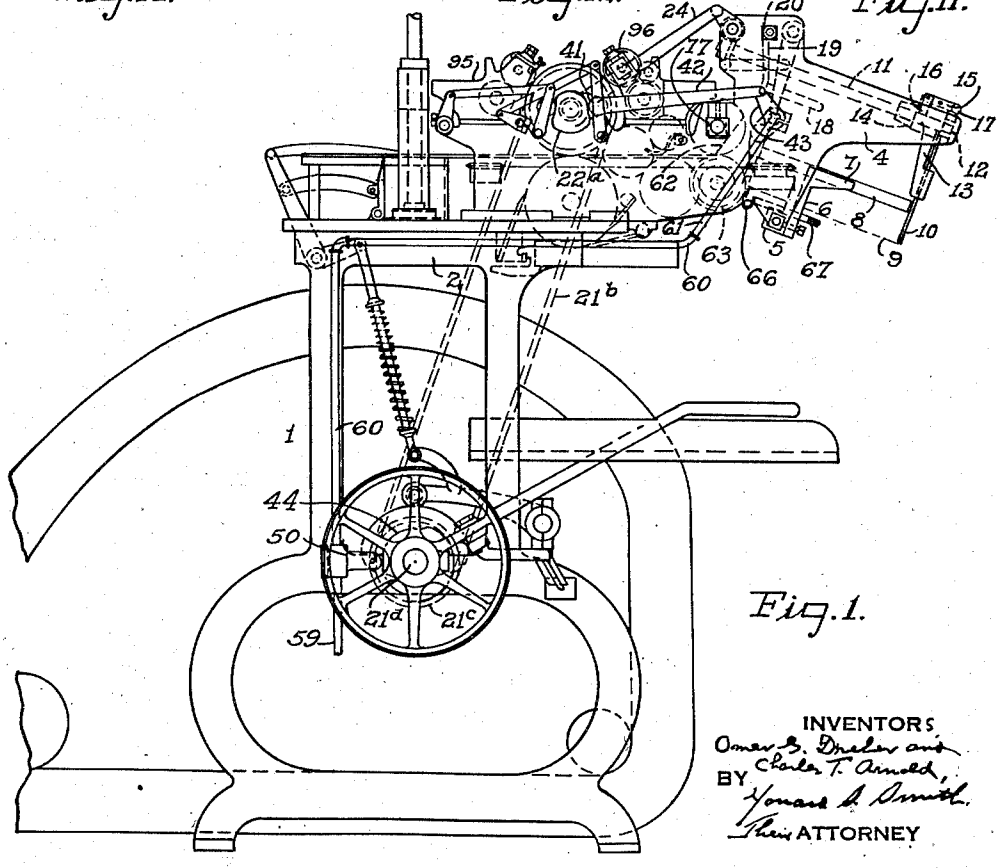


Fig. 1.

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Filed Nov. 3, 1934 4 Sheets-Sheet 2

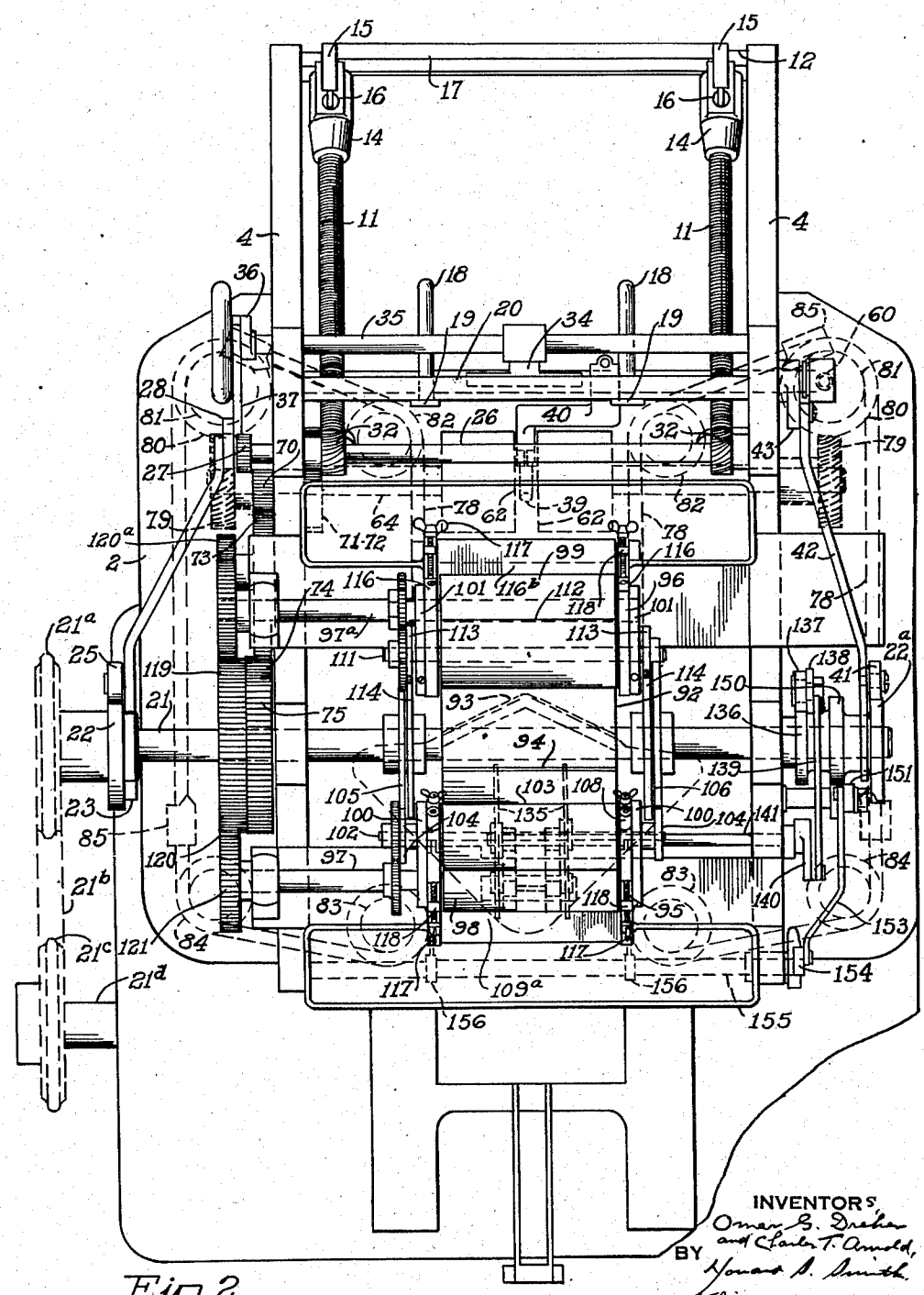


Fig. 2.

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ROTARY GUMMING ATTACHMENT FOR ENVELOPE FOLDING MACHINES OF THE PLUNGER TYPE

Filed Nov. 3, 1934 4 Sheets-Sheet 3

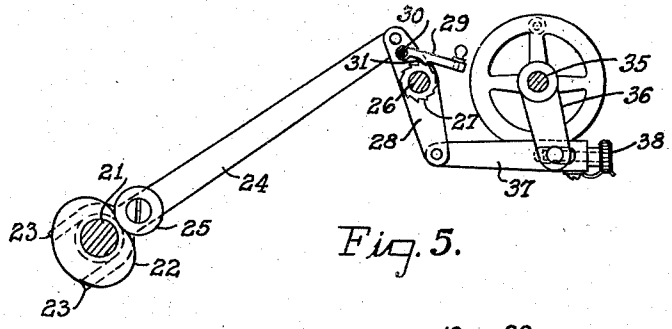


Fig. 5.

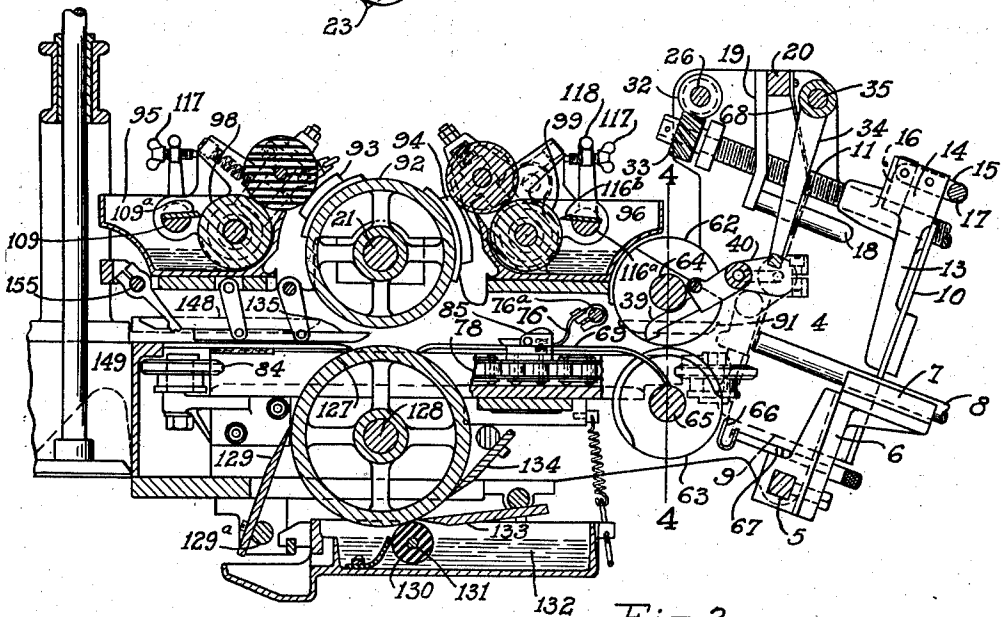


Fig. 3.

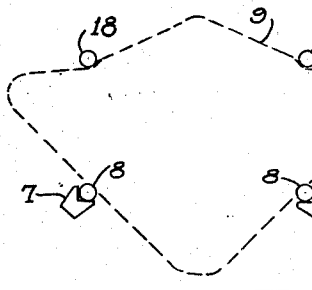


Fig. 6.

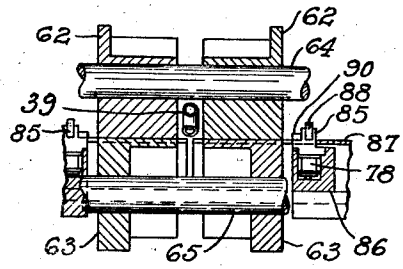


Fig. 4.

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ROTARY GUMMING ATTACHMENT FOR ENVELOPE FOLDING MACHINES OF THE PLUNGER TYPE

Filed Nov. 3, 1934 4 Sheets-Sheet 4

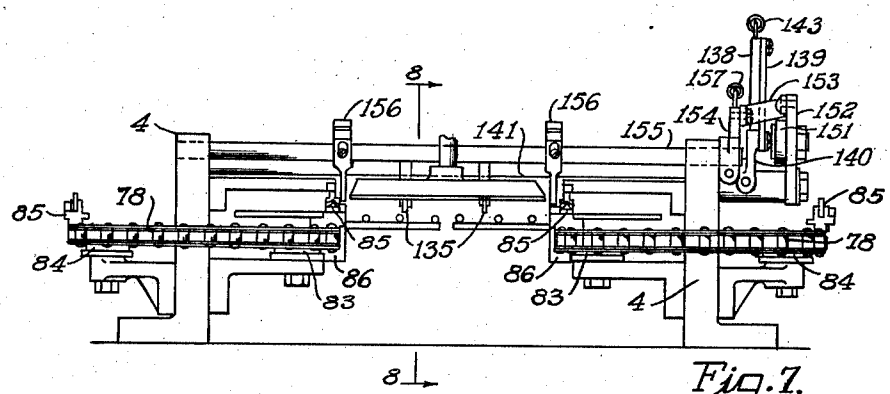


Fig. 7.

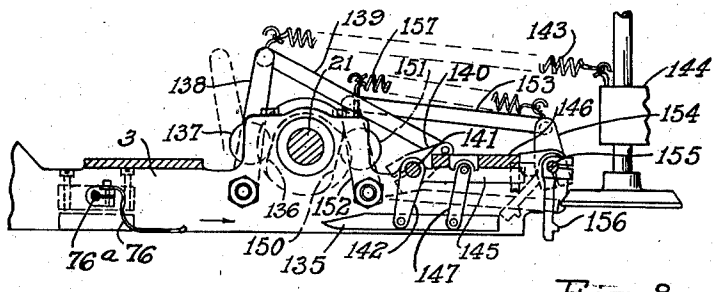


Fig. 8.

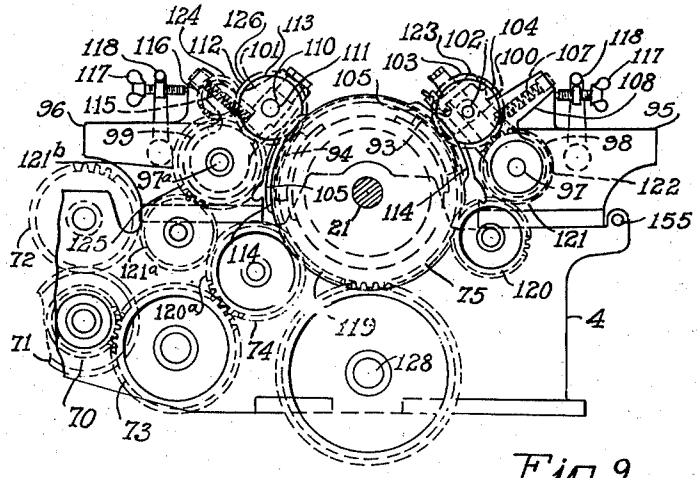


Fig. 9.

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Patented Mar. 15, 1938 2,111,317

UNITED STATES PATENT OFFICE

2,111,317

ROTARY GUMMING ATTACHMENT FOR ENVELOPE FOLDING MACHINES OF THE PLUNGER TYPE

Omer G. Dreher, Miamisburg, and Charles T. Arnold, West Carrollton, Ohio, assignors to The American Envelope Company, West Carrollton, Ohio, a corporation of Ohio

Application November 3, 1934, Serial No. 751,390

6 Claims. (Cl. 93—62)

This invention relates to new and useful improvements in rotary gumming attachments for envelope folding machines of the plunger type.

One of the principal objects of our invention is to provide a roll seal for applying gum to envelope blanks for the purpose of preventing an accumulation of gum at the ends of the seal flap. Under the present method of applying gum to envelope blanks, it accumulates in harmful wads at the end of the seal flaps; but under our method of rolling the gum in, such a result will not ensue. Furthermore, our roll seals extend over the edge of the paper to apply the gum all the way over the edge of the seal flap.

Another main object of our invention is to provide vacuum nozzle means that co-act with cupped feed cylinders from which sections have been removed to permit the nozzle to pull the lower end of the topmost blank well into the pinch between the cylinders.

It is still another object of our invention to provide means for automatically maintaining the leading ends of the blanks in a predetermined position to cause the stack to be moved toward the feed cylinders by the elevator mechanism.

Another object of our invention is the provision of transfer chains for moving the blanks through the gumming station to the creasing box in an accurately alined manner.

A further object of our invention is the provision of means for automatically applying gum of the proper kind to a respective pad on the pad cylinder without depositing any of that gum on the wrong pad. For instance, non-acid gum is applied only to the seal-flap pad by the gum roll bearing that kind of gum; said pad being moved back out of the path of the back pad by a cam when that pad passes that roll. And when the seal-flap pad passes the back gum roll, the latter is moved rearwardly out of its path by a similar cam. However, the proper roll is spring-pressed into engagement with its respective pad to apply gum thereto when it crosses the path of that pad.

It is a further object of our invention to provide means for continuously maintaining in a clean condition, the cylinder over which the envelope blanks travel while being gummed. Gum must be removed from this cylinder lest the blanks adhere to it.

Another object of our invention is the provision of a stripper blade to strip the envelope blanks from the gum pads to which they tend to adhere. Suitable mechanism is provided to move this blade backward and upward while the stripped blanks are moved forward by the transfer chains whose gripper blocks still continue in gripping engagement with the rear ends of the blanks after their leading ends are stripped from the gum pads.

It is another object of our invention to provide locating fingers which are adapted to move through an arc to accurately locate each advanced blank over the creasing box after it has been approximately placed thereon by the transfer chains.

Other important and incidental objects will be brought forth in the following specification and particularly set forth in the subjoined claims.

In the accompanying drawings illustrating our invention, Figure 1 is a side view of our envelope feeding machine, showing our vacuum feed and rotary gumming attachment secured thereto. Figure 2 is a top plan view of said attachment. Figure 3 is an enlarged, vertical sectional view taken through the same. Figure 4 is a cross-sectional view taken through the attachment on the line 4—4 of Figure 3, showing the feed rolls. Figure 5 is a detail view of the mechanism for keeping the leading ends of the blanks at a predetermined position. Figure 6 is a skeleton view of an envelope blank supported by the guide rods. Figure 7 is a view looking into the discharge end of the gummer attachment, showing the gripper chains and locators for the blanks. Figure 8 is a longitudinal, sectional view taken on the line 8—8 of Figure 7, showing the stripper blades, locators and associated mechanism. Figure 9 is a partial view of the left side of the machine, showing the driving mechanism. Figure 10 is a perspective view of one of the gripper blocks. Figure 11 is a plan view of the same. Figure 12 is a cross-sectional view taken through one of the chain channel-guides. Figure 13 is a plan view of the vacuum control means for the vacuum nozzles, and Figure 14 is a longitudinal sectional view taken on the line 14—14 of Figure 13.

Referring to the accompanying drawings for a detailed description of our invention, the numeral 1 designates an envelope folding machine of a conventional type having a table 2. Adapted to be secured to this table is a vacuum feed and rotary gumming attachment comprising a main frame 3 from which side rails 4, 4 project rearwardly. Extending between these rails is a lower cross member 5 which carries two brackets 6, 6 terminating in grooved, right-angle extensions 7 which support two rearwardly projecting guide rods 8, 8 for a stack of envelope blanks 9. These blanks are supported by the rods 8 and an ele-

vator plate 10, which is advanced by two screws 11, 11 sustained by a cross bar 12 secured to its side rails 4, 4.

The elevator plate 10 carries two bracket members 13, 13, one for each screw 11. Each bracket member 13 is formed at its upper end with a sleeve portion 14 through which a respective screw 11 freely projects. To the upper end of each bracket member 13 there is pivotally secured a lever arm 15. Pivotally secured to the inner end of each lever arm is a depending member 16 having a semi-circular lower end formed with threads which engage the threads on its respective screw 11, after it passes downwardly through a hole in the bracket member. Since the threaded member 16 is stationary, the screws 11, 11, when rotated, will move the elevator plate 10 either forwardly to advance the blanks 9, or rearwardly away from them. Attached to the lever arms 15 is a handle 17 which may be depressed to raise the toothed members 16 above their respective screws 11 to permit the elevator plate to be freely moved backward or forward without turning the screws.

For the purpose of preventing the envelope blanks 9 from being displaced upwardly, we have provided two rods 18, 18. These rods are carried by arms 19, 19 which depend from a cross bar 20 secured to the side rails 4, 4. (See Figures 2 and 3.)

When blanks are removed from the leading end of the blanks 9, it is necessary to maintain this leading end at a predetermined position. This is accomplished by the mechanism shown in Figure 5. Mounted on a cross shaft 21 journaled in bearings supported by the side rails 4, 4 is a cam 22. Fast on the outer end of the shaft 21 for the purpose of driving the same, is a sprocket 21^a which receives a sprocket chain 21^b that passes around a sprocket 21^c secured to the drive shaft 21^d of the envelope folding machine. A yoke 23 on the outer end of a connecting rod 24 straddles the shaft 21, said rod carrying a roller 25 which is in engagement with the cam.

Journaled in bearings supported by the side rails 4, 4, in a position above and at the rear of the shaft 21, is a cross shaft 26 on which a ratchet wheel 27 is fast. Loosely mounted on this shaft 21 is an arm 28 to which one end of a pawl 29 is pivotally secured by a screw 30. Formed on the lower surface of this pawl, at its middle portion, is a projection 31 for engagement with the teeth of the ratchet.

When the rod 24 is reciprocated by the cam 22, it will oscillate the arm 28 about the shaft 26; and since the pawl 29 is carried by the arm, it will rotate the shaft through its engagement with the ratchet wheel 27. Pinned to the shaft 26 are two spiral gears 32, 32 which mesh with two spiral gears 33, 33 pinned to the screws 11, 11 respectively. Therefore, the rotation of the shaft 26 will cause the elevator plate 10 to be moved forwardly by the screws to advance the blanks 9.

The leading ends of the blanks 9 are maintained at a predetermined position by an arm 34 pinned to a shaft 35 journaled in bearings carried by the side rails 4, 4. Also pinned to the shaft 35 is an arm 36 connected by a link 37 to the arm 28. Therefore an oscillating movement of the arm 28 will cause an oscillation of the arm 34. It is now apparent that if the blanks 9 were in advance of their predetermined position, the arm 34 would strike their leading ends and prevent the cam roller 25 from reaching the short diameter of the cam 22. This shortened stroke of the arm 28 would prevent the pawl 29 from engaging the next tooth of the ratchet 27, whereupon the blanks 9 willl not feed forward. However, if the leading ends of the blanks were behind their predetermined position, the arm 34 would not contact them. Consequently, the cam roller 25 would reach the short diameter of the cam 22. This additional movement imparted to the arm 28 would allow the pawl 29 to fall into the next preceding tooth of the ratchet 27. The shaft 26 would then be partially rotated to cause the elevator plate 10 to move the blanks 9 forward along the rods 8. By means of a knob 38, the spread of the fulcrum points in the link 37 may be adjusted to change the relative position of the leading end of the blanks.

The separation of a blank from the stack of blanks 9 is accomplished by a vacuum nozzle or sucker 39. The latter is attached to a frame 40 secured to a tubular cross support that is rotatable in bearings carried by the side rails 4, 4. This vacuum nozzle is caused to move through the arc indicated in dotted lines in Figure 3, by the following means. Mounted on the shaft 21 is a second cam 22^a. Contacting this cam is a roller 41 that is mounted on a yoked connecting rod 42 which is pivoted to an arm 43. This arm in turn is secured to the vacuum frame 40 which carries the nozzle. (See Figures 1 and 3.)

For the purpose of alternately making and breaking the vacuum in the nozzle 39 to cause it to raise a blank from the stack 9 and then release it at the proper time, we have provided the following means. Mounted on the shaft 21^d are two cams 44 and 45. The cam 44 is in engagement with a roller 46 carried by the stem 47 that depends from a poppet valve 48 resting on a conical seat 49 in a valve body 50 supported by the frame of the folding machine 1. The valve stem projects downwardly through a boss 51 on said body to expose the roller 46 to the cam 44. A helical spring 52 bears against the upper portion of the valve to hold the roller in normal engagement with the cam at all times. (See Fig. 13.)

The cam 45 is in engagement with a roller 53 carried by the stem 54 of a poppet valve 55 that engages a conical seat 56 in the valve body 50. This valve stem projects downwardly through a boss 57 on said body to expose the roller 53 to the cam 45. The pressure of a helical spring 58 upon the valve 55 maintains the roller 53 in continuous engagement with the cam.

The valve body 50 is in communication with a vacuum pump (not shown) through a pipe 59. A tube 60 leads from the valve body to a hose 61 which is attached to the nozzle frame 40.

The nozzle 39, when it contacts a blank in the stack 9 is under a sufficient vacuum to raise the blanks from the pack, because at that time the valve 48 is raised above its seat by the cam 44 to place the vacuum frame in communication with the vacuum pump through the pipe 59. The nozzle 39 is then caused to move through an arc from its dotted line position illustrated in Figure 1, to present the blank to the feed cylinders soon to be described. At this point the drive shaft 21^d, rotating further, will bring the cam 44 to a position to cause the spring 52 to close the valve 48, and the cam 45 to a position to raise the valve 55 above its seat. Air at atmospheric pressure will then be admitted past the valve 55 to the nozzle or sucker 39, while the valve 48 is closed, to break the vacuum in the nozzle to release the blank at a time when it has presented the lower end of the blank to the

feed cylinders which will be designated by the numerals 62 and 63. These cylinders are mounted on cross shafts 64 and 65 respectively, journaled in bearings carried by the side rails 4, 4. A U-shaped spring 66 secured to an adjustable rod 67 carried by a bracket 6, rests against the lower edges of the blanks to prevent more than one being separated at one time from the stack 9. (See Figures 1 and 3.)

There are two flat springs 68, 68 secured to the cross bar 20 for the purpose of bearing against the stack of blanks 9 to stabilize them while the transfer is being made from the nozzle 39 to the feed cylinders 62 and 63. (See Figure 3.)

The feed cylinders 63, 63 are cup-shaped with a section removed to provide an opening for the nozzle 39 to pull the lower end of a blank well into the pinch between said cylinders and the cylinders 62, 62. (See Figures 3 and 4.) A section is also removed from each one of the cylinders 62, 62, the circumference of their remaining peripheries being sufficient to push the blank to a predetermined position on a horizontal plate 69 mounted in front of the cylinders in the frame 1.

Fast on the shaft 65 is a gear 70 by which the shaft is rotated to drive the feed cylinders 63. Also secured to the shaft 65 is a gear 71 that meshes with a gear 72 fast on the shaft 64 whereby, when the feed cylinders 63 are rotated, the feed cylinders 62 will be rotated in timed relation with them.

The gear 70 meshes with an intermediate gear 73 that in turn meshes with a small intermediate gear 74. The latter engages a large gear 75 mounted on the shaft 21. Thus, when the shaft 21 is rotated, it will drive the feed cylinders 62 and 63 in timed relation, through this gear train. Two retard springs 76, 76 secured to a cross bar 76a, engage the blank on the plate 69 to stabilize said blank after the feed cylinders have completed their cycle.

The shaft 64 is mounted in spring-tensioned journal boxes 77 so that the tension between the feed cylinders 62 and 63 may be easily adjusted whereby crooked and warped blanks may be fed between these cylinders to lie accurately upon the plate 69. Furthermore, because of the peculiar design of the before described separating and feeding mechanism, any grade, weight or kind of paper may be easily handled.

The nature and function of the transfer chains 78, 78 will now be described. The purpose of these chains is to move the blanks from the plate 69 through the gumming station to the creasing box. On each end of the shaft 65 is a spiral gear 79 that meshes with a spiral gear 80 to the hub of which a sprocket 81 is attached. Each sprocket 81 is arranged in the frame 1 with sprockets 82, 83 and 84 to define with them the corners of a parallelogram. There are two sets of these sprockets, one on each side of the device; and over the sprockets of each set there passes in a horizontal plane, an endless roller-transfer chain 78 heretofore referred to. Mounted on the top of each chain is a series of gripper blocks 85.

Each transfer chain 78 slides in a chain track 86, and is held in position by a gib 87 (see Figure 4). Each block 85 carries a hinged jaw part 88 which is held in a normally closed position by a coiled spring 89. Also mounted on each block 85 is a block 90. These blocks 90 on the two chains enter the corners of an envelope blank to align the same. When the hinged part 88 of each block 85 passes under a plate cam 91 fixedly secured in the frame 3 above the tracks 86, the coil spring 89 is depressed to provide an opening in which the blank may be gripped. (See Figures 3, 10, 11 and 12.)

Further movement of the chains 78, 78 causes the gripper blocks 85, 85 to enter the corners of the blank which rests upon the plate 69 under the springs 76, 76, for the purpose of locating the same. When the hinged jaw parts 88 of the gripping blocks 85 have passed from under the plate cam 91, this blank will be accurately located by the blocks and securely gripped by them through the agency of the hinged parts 88. Being gripped in this manner, the blank is maintained in alignment at all times (see Figures 10, 11 and 12).

By these gripping blocks the blank is carried to a gumming cylinder 92 mounted on the shaft 21. Carried by this gumming cylinder is a seal pad 93 and a back pad 94.

Since a different kind of gum is used on each one of the two pads 93 and 94, it is necessary to provide two gum boxes 95 and 96, one on each side of the shaft 21. The object of these two gum boxes is to distribute a thin film of gum to the respective pads, through means now to be described. The gum box 95 contains the seal-flap gum and the pad 93 is the seal-flap pad, the gum box 96 containing the back-flap gum to supply the back-flap pad 94. Mounted on cross shafts 97 and 97a journaled in the gum boxes 95 and 96, are two lower rolls 98 and 99 respectively which revolve in these gum boxes. Pivotally secured to the roll shafts 97 and 97a are arms 100, 100, and 101, 101 respectively. (See Figures 2, 3 and 9.)

Carried by the outer ends of the arms 100, 100 are spring-tensioned bearings for a shaft 102 on which an upper roll 103 that contacts the roll 98, is mounted. Also mounted on the shaft 102, near the ends thereof, are cam followers 104, 104 that are adapted to engage cams 105 and 106 secured to the shaft 21. Compression springs 107, 107 contained within inclined bosses 108, 108 on the glue box 95, bear against the outer ends of the arms 100, 100, and thus tend to press the roll 103 in engagement with the pads 93 and 94. However, when the lobes of the cams 105 and 106 engage the followers 104, 104, the roll 103 will be moved out of the path of the pad 94.

Pivoted to a shaft 109 journaled in bearings in the glue box 95, is a scraper blade 109a that bears against the roll 98 to regulate the thickness of the film of glue deposited thereon. This glue is transferred to the upper roll 103 and by it to the pad 93. Therefore, when the pad 93 is opposite the roll 103, the springs 107, 107 will press that roll against the pad 93 to deposit thereon the seal-flap glue contained in the glue box 95. But before the pad 94 reaches the roll 103, the lobes of the cams 105 and 106 will have engaged the followers 104, 104 to push that roll out of the path of the pad 94 so that it will not pick up any back-flap glue from the box 96. (See Figures 2, 3 and 9.)

On the other side of the shaft 21, the arms 101, 101 carry spring-tensioned bearings 110, 110 for a shaft 111 on which an upper roll 112 is mounted. Also mounted on the shaft 111, near the ends thereof, are cam followers 113, 113 that are adapted to engage cams 114, 114 respectively secured to the shaft 21. Compression springs 115, 115 contained within inclined bosses 116, 116

on the glue box 96, bear against the outer ends of the arms 101, 101 and thus tend to press the upper roll 112 into engagement with the gum pads 93 and 94. However, when the lobes of the cams 114, 114 engage the followers 113, 113, the roll 112 will be moved out of the path of the pad 93.

Pivoted to a shaft 116a journaled in bearings in the glue box 96, is a scraper blade 116b that bears against the roll 99 to control the thickness of the film of glue deposited thereon. This glue is transferred to the upper roll 112 and by it to the pad 94. (See Figure 3.)

The depth of the engagement of the scraper blades 109a and 116b with the glue on the respective rolls 98 and 99 is controlled by set screws 117, 117 carried by arms 118, 118 secured at their lower ends to the shafts 109 and 115 respectively, the inner ends of said set screws engaging the fixed abutments provided by the spring-containing bosses 108 and 113.

For the purpose of rotating the lower rolls 98 and 99, the following means are provided. Fast on one end of the shaft 21 is a large gear 119 which is in engagement with an idler gear 120, which in turn engages a gear 121 on the shaft 97. Mounted on the stud with the gear 74 is another idler gear 120a that engages a second gear 121a which in turn meshes with a gear 121b on the shaft 97a. Therefore, when the shaft 21 is rotated to receive the gum pad cylinder 92, the lower rolls 98 and 99 will also be rotated to pick up gum from their respective glue boxes and deposit it on the upper rolls 103 and 112 respectively. (See Figure 9.)

The upper roll 103 is driven from the shaft 97 by a gear 122 on the latter which meshes with a gear 123 on the shaft 102 that carries the roll 103.

The upper roll 112 is driven from the shaft 97a through an idler gear 124 which is in mesh with a gear 125 on the shaft 97a and a gear 126 on the shaft 111 to which the roll 112 is secured. This idler permits the roll 112 to be driven at a lower peripheral speed than the peripheral speed of the pad 94 so that the glue may be deposited thereon through a wiping action because of its peculiar consistency.

It will now be seen that the means provided for placing the kind of gum from one gum box upon the pad provided to receive it, without depositing that type of gum upon the other pad, is unique. In brief, this result is accomplished by camming an upper roll which receives gum from one gum box, out of the path of the pad which receives gum from the other gum box, and spring pressing the proper roll into engagement with its respective pads to deposit gum upon it when the lobes of its respective cams have cleared their respective cam followers.

Under our method of rolling the gum into the paper, it will not accumulate in harmful wads at the ends of the seal flaps. Furthermore, the roll seal pads 93 and 94 extend over the edge of the paper sufficiently to apply the gum all the way over the edge of the seal flap.

Should no blank be fed through the mechanism, the pads 93 and 94 would place gum on a cylinder 127 mounted on a cross shaft 128 and over which the blank travels while being gummed. This gum must be removed because the blanks would otherwise adhere to the cylinder. For the purpose of removing most of this gum from the cylinder 127 we have provided a blade 129 which projects upwardly against the cylinder from a cross bar 129a.

The remainder of the gum is removed from the cylinder 127 by an engaging roll 130 mounted on a shaft 131. This roll, running in water in a box 132, moistens the remainder of the gum on the cylinder 127, while blades 133 and 134, similar to blade 128, complete the removal of the gum, thereby presenting a clean cylinder to the oncoming blanks. (See Figure 3.)

Since the blank tends to adhere to the pads 93 and 94, stripper blades 135, 135 are provided to strip the leading edge of the blank from the pads. Mounted on the shaft 21 is a cam 136 which contacts a roller 137 carried by an arm 138 pivoted at its lower end to the frame 3. A link 139 connects the arm 138 to an arm 140 secured to a shaft 141. Pinned to the shaft 141 are arms 142, 142 which are caused to move in one direction by the cam 136; and in a reverse direction by a tension spring 143 connected between the outer end of the arm 138 and the plunger bracket 144. Pivoted to blocks 145, 145 secured to the cross plate 146, are arms 147, 147. Pivotally secured to each pair of arms 142, 147 is a stripper blade 135. In their downward positions the blades 135, 135 strip the freshly gummed blank from the pads 93 and 94, after which they move upwardly and backwardly to clear the freshly gummed surface of the blank. (See Figures 2, 3 and 8.)

The gripper blocks 85 on the chains 78 now pass under a plate cam 148 to release the blank, leaving the latter approximately located on the creasing box 149. At this time the gripper blocks 85 on the chains 78 will have passed over the sprocket, completely out of range of the blank and have no further action upon it.

In order that the blank may be accurately located over the creasing box 149, the following mechanism is provided, as shown in Figures 7 and 8. Fast on the shaft 21 is a cam 150 in contact with a roller 151 carried by an arm 152. This arm 152, which is pivoted at its lower end to the frame, is connected at its other end by a link 153 to an arm 154 on the shaft 155. Fixedly secured to this shaft 155 are two fingers 156, 156. A tension spring 157 connected between the bearing for the shaft 21 and an arm 154, acts on said arm to move the notched ends of the fingers through an arc against the recessed portions of the blank to accurately locate it over the creasing box. After it is so located, the cam 150 will contact the roller 151 to cause these locating fingers, through the linkage mechanism heretofore described, to be raised a sufficient distance to clear the approaching blank, as shown by the dotted lines in Figure 8.

It is thus seen that our attachment for envelope folding machines easily and correctly, separates the envelope blanks from the stack for an aligned delivery to the roll seal pads, which apply the proper gum to their back and seal flaps, after which they are cleanly stripped from the pads for correct location over the creasing box for folding in a conventional manner.

Having described our invention, we claim:

1. In a device of the type described, the combination with a frame, a gumming cylinder, means for rotating said cylinder, means for feeding envelope blanks to the latter, a seal pad and a back pad secured to the periphery of said cylinder, a seal-flap, gum roller and a back-flap, gum roller, spring means for pressing said rollers into engagement with said gumming cylinders to ap-

ply gum to the pads, and cams adapted to be rotated in timed relation with the gumming cylinder for holding the seal-flap gum roller out of the path of the back-flap pad and the back gum roller clear of the seal-flap pad during the rotation of the pad cylinder.

2. In a device of the type described, the combination with a frame, a gumming cylinder, means for rotating said cylinder, means for feeding envelope blanks to the latter, a seal-flap pad and a back-flap pad secured to the periphery of said cylinder, a gum box on each side of said cylinder, one of said boxes containing a seal-flap gum and the other a back-flap gum, a roll rotatable in each gum box, an arm pivotally secured at its lower end in said box, for movement at its upper end toward and away from the pad cylinder, a gumming roll carried by the upper end of each arm, and being in contact with its respective gum box roll, a spring urging each arm forwardly to contact its upper roll with a respective seal pad to apply gum thereto from its respective gum box, a cam follower carried by each arm, and a cam adapted to be rotated in timed relation with the gumming cylinder for engagement with each follower to hold its respective upper roll out of engagement with the pad to which gum is applied from the opposite box during the rotation of the pad cylinder.

3. In a device of the type described, the combination with a frame, a gumming cylinder, means for rotating said cylinder, means for feeding envelope blanks to the latter, a seal pad secured to the periphery of said cylinder to apply gum to the seal flaps of said blanks, said pad overlapping the seal-flap edges of the blanks when applying gum thereto, a cylinder mounted in said frame below the pad cylinder to receive the excess gum therefrom, a blade in contact with the last named cylinder to scrape the greater part of the gum therefrom, a water box, a roll in said box in contact with said cylinder to moisten the remainder of the gum thereon, and blade means in contact with said cylinder to remove the remainder of the gum therefrom.

4. In a device of the type described, the combination with a frame, a gumming cylinder, means for rotating said cylinder, means for feeding envelope blanks to said cylinder, a seal-flap pad and a back-flap pad carried by said cylinder for applying gum to said blanks, a stripper blade adapted to strip the leading edges of the blanks from the back pad, and means for moving said stripper blade forwardly and upwardly out of contact with newly gummed surfaces of the blanks.

5. In a device of the type described, the combination with a frame, a gumming cylinder, means for rotating said cylinder, means for feeding blanks to said cylinder and moving them beyond it, a stripper blade adapted to strip the leading edges of the blanks from the gumming cylinder, a creasing box, a shaft journaled in said frame near said box, and locating fingers secured to said shaft to contact the corners of each blank after it is placed approximately on the creasing box, to properly locate said blank on the box.

6. In a device of the type described, the combination with a frame, a gumming cylinder, means for rotating said cylinder, means for feeding envelopes to the latter, a seal pad and a back pad secured to the periphery of said cylinder, a seal flap gum roller and a back flap gum roller, means for pressing said rollers into engagement with said gumming cylinders to apply gum to the pads, and means adapted to be rotated in timed relation with the gumming cylinder for holding the seal flap gum roller out of the path of the back-flap pad and the back gum roller clear of the seal-flap pad during the rotation of the pad cylinder.

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