Sept. 30, 1952 V. E. HEYWOOD 2,612,088

CLOSURE FLAP FOLDING AND ENVELOPE STACKING MECHANISM FOR ENVELOPE MACHINES

Filed July 13, 1948 5 Sheets-Sheet 1

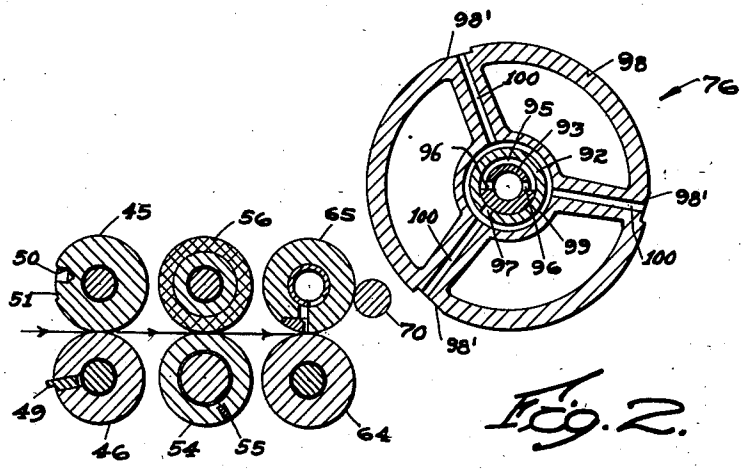


Fig. 2.

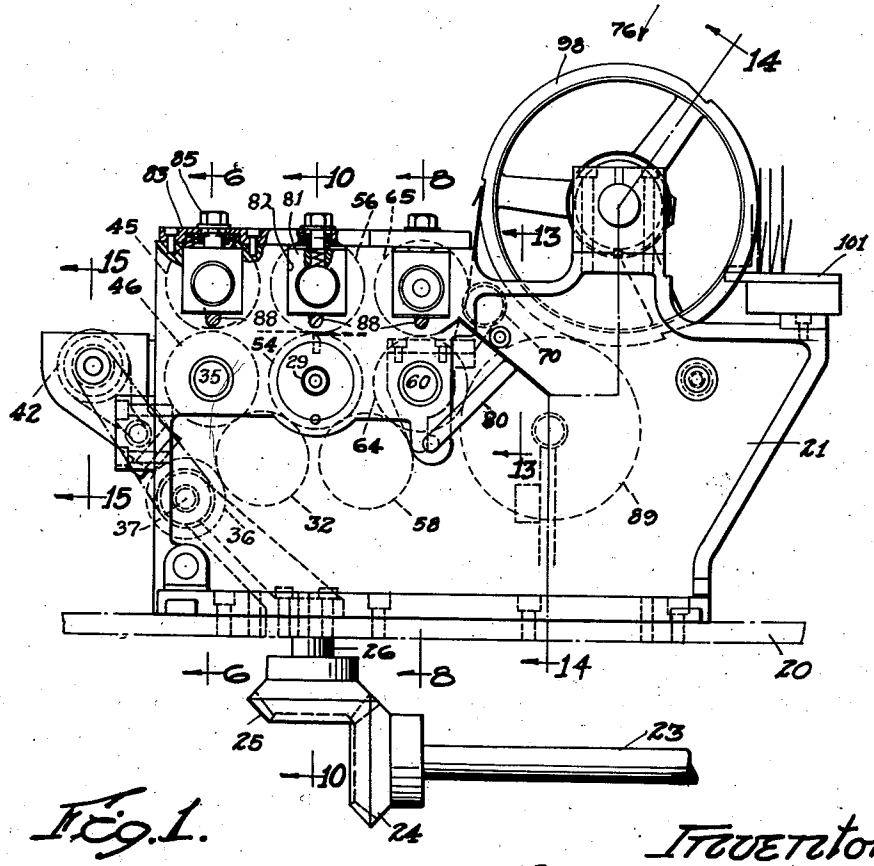


Fig. 1.

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Filed July 13, 1948 5 Sheets-Sheet 2

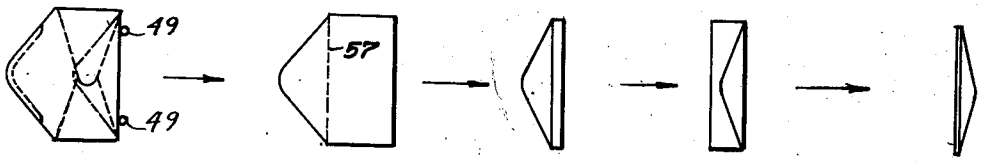


Fig. 5.

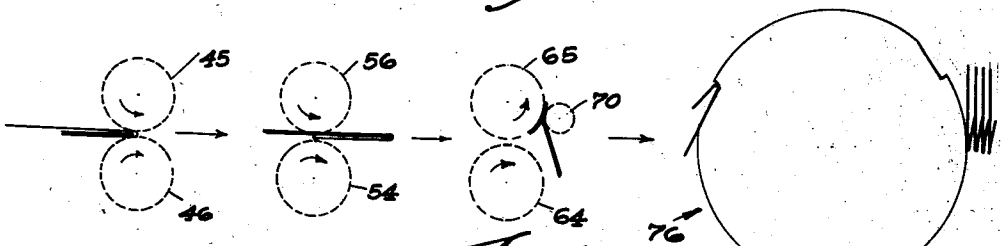


Fig. 4.

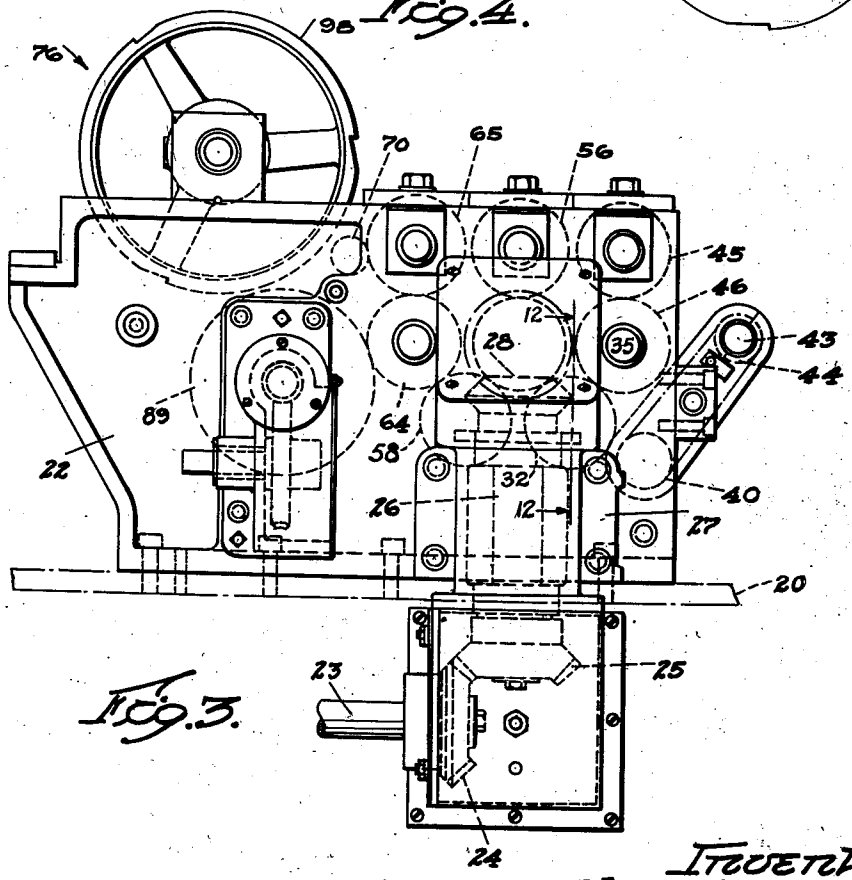


Fig. 3.

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CLOSURE FLAP FOLDING AND ENVELOPE STACKING MECHANISM FOR ENVELOPE MACHINES

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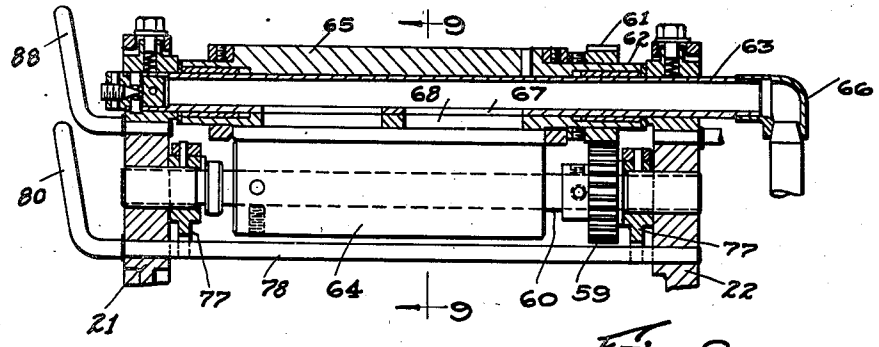


Fig. 8.

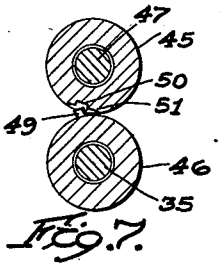


Fig. 7.

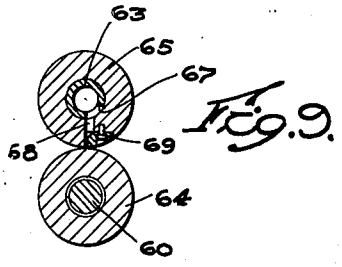


Fig. 9.

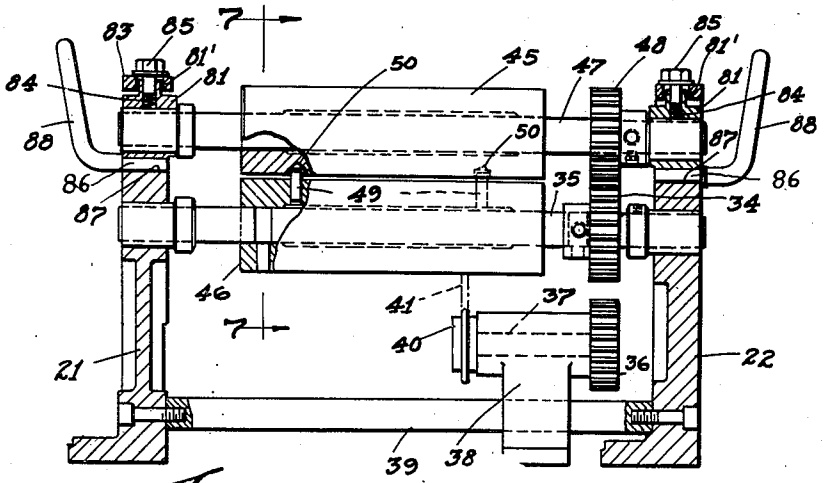


Fig. 6.

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CLOSURE FLAP FOLDING AND ENVELOPE STACKING MECHANISM FOR ENVELOPE MACHINES

Filed July 13, 1948 5 Sheets-Sheet 4

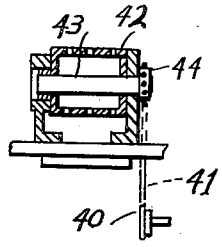


Fig. 15.

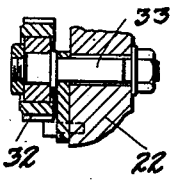


Fig. 12.

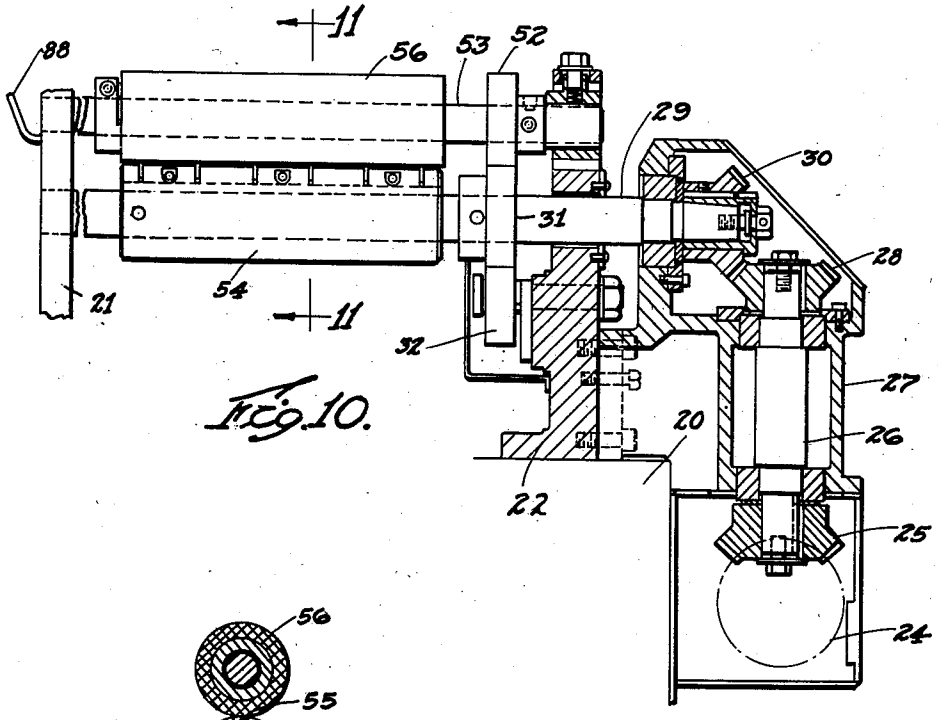


Fig. 10.

Fig. 11.

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CLOSURE FLAP FOLDING AND ENVELOPE STACKING MECHANISM FOR ENVELOPE MACHINES

Filed July 13, 1948 5 Sheets-Sheet 5

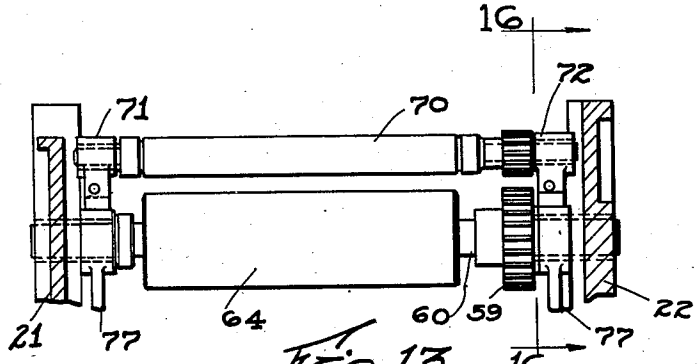


Fig. 13.

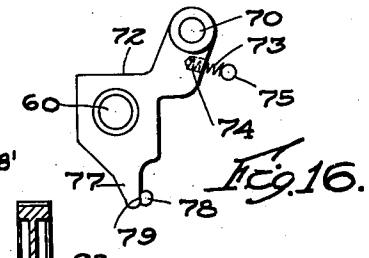


Fig. 16.

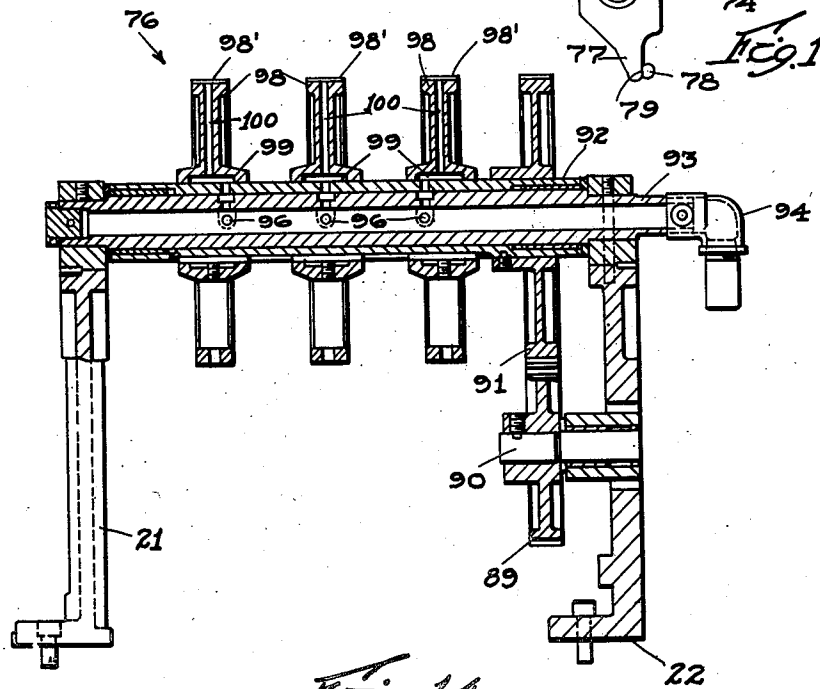


Fig. 14.

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Patented Sept. 30, 1952

2,612,088

UNITED STATES PATENT OFFICE

2,612,088

CLOSURE FLAP FOLDING AND ENVELOPE STACKING MECHANISM FOR ENVELOPE MACHINES

Vincent E. Heywood, Worcester, Mass., assignor to United States Envelope Company, Springfield, Mass., a corporation of Maine

Application July 13, 1948, Serial No. 38,495

4 Claims. (Cl. 93—62)

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The present invention relates to envelope machines and more particularly to such machines of the rotary type wherein the several operations involved in the forming of envelopes are performed in a continuous manner by the passage of the material from end-to-end in the machine in rolling contact with the various instrumentalities thereof.

More specifically, the mechanism of the present invention is located at the delivery end of the envelope machine and is concerned with the folding down, and where need be with the preliminary scoring of the gummed and dried closure or seal flaps of already-formed envelopes emerging successively from the drying apparatus of such a machine, as well as with the stacking of the so-completed envelopes in face-to-back relation. After passing through the mechanism comprising the present invention, the envelopes are completely formed and ready for boxing or packing.

A primary object of the present invention is to provide for envelope-making machinery a simplified closure flap folding means which is capable of efficient high-speed operation.

A further object of the present invention is to provide in combination with such closure or seal flap folding means, an effective mechanism for stacking the completely formed envelopes in face-to-back relation.

With the above and other objects in view, as will hereinafter appear, the invention comprises the devices, combinations and arrangements of parts hereinafter set forth and illustrated in the accompanying drawings of a preferred embodiment of the invention, from which the several features of the invention and the advantages attained thereby will be readily understood by those skilled in the art.

In the accompanying drawings,

Fig. 1 represents a side view of the delivery portion of a rotary envelope machine in which the present invention is incorporated.

Fig. 2 represents a longitudinal vertical sectional view of parts of the mechanism disclosed in Fig. 1.

Fig. 3 represents a backside view of the mechanism disclosed in Fig. 1.

Fig. 4 is a schematic view, showing in sequence from left to right, the operations performed on successive envelopes by the devices of Fig. 2, said devices in Fig. 4 being shown in an abnormal spaced or separated relation.

Fig. 5 is a view similar to Fig. 4, but showing the envelopes in plan.

Fig. 6 represents a vertical sectional view taken substantially along the line 6—6 of Fig. 1.

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Fig. 7 represents a vertical sectional view taken substantially along the line 7—7 of Fig. 6.

Fig. 8 represents a vertical sectional view taken substantially along the line 8—8 of Fig. 1.

Fig. 9 represents a vertical sectional view taken substantially along the line 9—9 of Fig. 8.

Fig. 10 represents a vertical sectional view taken substantially along the line 10—10 of Fig. 1.

Fig. 11 represents a vertical sectional view taken substantially along the line 11—11 of Fig. 10.

Fig. 12 represents a fragmentary vertical sectional view taken substantially along the line 12—12 of Fig. 3.

Fig. 13 represents a vertical sectional view taken substantially along the line 13—13 of Fig. 1.

Fig. 14 represents a vertical sectional view taken substantially along the line 14—14 of Fig. 1.

Fig. 15 represents a sectional view taken substantially along line 15—15 of Fig. 1.

Fig. 16 represents a sectional view taken substantially along line 16—16 of Fig. 13.

The present invention is concerned with the folding, and where need be with the preliminary scoring of the seal flap portions of envelopes, as well as the positioning of the envelopes with their seal flaps thus folded down upon a stacking table in face-to-back relation. Accordingly, the devices for fabricating the envelopes, up to the point where they enter the present mechanism, are not herein illustrated or described. It will be understood, however, that the illustrated mechanism desirably forms a part of a complete envelope-making machine. More specifically, the present mechanism is adapted to receive successive envelopes from an envelope drying device with the side and bottom flap portions of each envelope folded over and adhered to each other, and with the seal flap portion gummed and extending from each envelope body in an unfolded condition, as is illustrated in Figs. 4 and 5.

It is contemplated that the envelopes will have their gummed seal flaps dried before entry into the present mechanism, by apparatus of the type disclosed in my copending application, Serial No. 21,673, filed April 17, 1948, Drier Mechanism for Envelope Machines. However, other drying mechanism may be employed to supply the envelopes which are acted upon by the present mechanism.

Referring particularly to Figs. 1, 3, 6, and 10, the present mechanism includes a table top 20 upon which is mounted a pair of spaced apart vertically disposed brackets 21 and 22 between which the present mechanism is mounted. The present mechanism is adapted to be powered by

any appropriate means, such as an electric motor (not herein shown), which motor may be connected with a horizontally disposed shaft 23 which is located beneath the level of the table top 20 and at one side portion thereof. Mounted upon one end of the shaft 23 is a bevel gear 24 meshing directly with a bevel gear 25 carried upon the lower end of a vertically disposed shaft 26 which is suitably journaled within a housing 27 carried directly upon one side portion of the bracket 22. The upper end portion of the shaft 26 has secured thereto a bevel gear 28 which is adapted to drive a horizontally disposed shaft 29 through the medium of a bevel gear 30. As shown in Figs. 3 and 10, the shaft 29 extends out of the housing 27 and has its left-hand end portion, as viewed in Fig. 10, journaled directly in the bracket 21. From the above, it is manifest that the main power shaft 23 functions positively to drive the shaft 29 in a clockwise direction, as viewed in Fig. 1.

Referring now to Figs. 1, 3, 10, and 12, there is provided on the shaft 29 a gear 31 which meshes directly with a similar gear 32 carried upon a stub shaft 33 which is carried directly upon the bracket 22 in a manner as best disclosed in Fig. 12. This gear 32 is an idler gear which meshes directly with a gear 34 carried upon a shaft 35, as is best disclosed in Figs. 1 and 6. Shaft 35 has its opposite end portions journaled directly within the brackets 21 and 22. This idler gear 32 also meshes with a gear 36 carried upon the right-hand end portion of a jackshaft 37 which is mounted directly within a bracket 38 carried upon a cross rod 39 secured between the oppositely disposed brackets 21 and 22 in a manner as particularly disclosed in Fig. 6. Thus, this shaft 37 is driven positively at all times by means of the main shaft 23.

Referring now particularly to Figs. 1, 3, 6, and 15, it is to be understood that the left-hand end portion of the shaft 37, as viewed in Figs. 6 and 15, has secured thereon a sprocket wheel 40 about which is trained a sprocket chain 41 which functions to rotate a suction roll 42. This suction roll 42 corresponds to the suction roll 46 of the above-mentioned drier application, and it is carried by a shaft 43 having a sprocket wheel 44 mounted thereon and driven by means of a sprocket chain 41. The periphery of the suction roll is provided with a plurality of apertures which are connected with a vacuum pump so that as the roll is rotated in the clockwise direction, as viewed in Fig. 1, it will function to draw successive envelopes from between cooperating pairs of drier fingers (not shown), to the end that such envelopes will be delivered toward the mechanism shown in Fig. 2.

That is to say, the successive envelopes are removed from the drier mechanism by the suction roll 42, so that the envelopes are delivered toward the present mechanism in a manner as particularly disclosed in Figs. 4 and 5. More specifically, each envelope is delivered toward the present mechanism bottom edge foremost and with the extended seal flap trailing with its gummed portion facing downward. The first operation of the present mechanism is to square up the envelopes so that they will pass through the present mechanism in proper alignment. Any conventional means for this purpose may be employed; for example, as herein shown, I may use a pair of so-called squaring up rolls which take the form of upper and lower rolls 45 and 46, which are particularly disclosed in Figs. 6 and 7.

Roll 46 is mounted directly upon shaft 35, and thus rotates in unison therewith in a clockwise direction, as viewed in Fig. 1. Roll 45 is mounted upon a shaft 47, the opposite end portions of which are carried by the brackets 21 and 22. Mounted directly upon the shaft 47 is a gear 48 which meshes with gear 34 carried upon the lower squaring up shaft 35. Thus, it is manifest that the main drive shaft 23 functions to rotate the squaring up rolls 45 and 46 in unison. Still referring to Figs. 1, 6 and 7, it is to be understood that the lower roll 46 is provided with a pair of radially disposed fingers 49, 49, against which the bottom edge portion of each envelope is adapted to be delivered by means of the above noted suction roller 42. Since these fingers 49, 49 are aligned with one another, they function to square up each envelope which is delivered there against. It is to be noted that the upper roll 45 is provided with a pair of apertures 50, 50 which correspond to the fingers 49, 49, so that as the rolls 45 and 46 rotate, the fingers will be received within the apertures 50, 50. As may be particularly seen in Fig. 7, the upper roll 45 is provided across its periphery with a recessed portion 51 which permits the envelopes to be freely delivered against the fingers 49, 49, and thereafter to be properly aligned before the rolls 45 and 46 actually engage the same to continue their feed in a right-hand direction, as viewed in Fig. 1.

Once an envelope has been properly alined by the fingers 49, 49, the continually rotating rolls 45 and 46 will function to advance the same toward the right-hand end portion of the mechanism and, more particularly, toward the seal flap folding means which will be presently described. With certain materials it may be advantageous, before such folding, to preliminarily score along the fold line and for that purpose any suitable scoring means may be employed; for example, referring to Figs. 1, 10 and 11, it will be recalled that the shaft 29 is driven directly by the main drive shaft 23 and has secured thereupon a gear 31. This gear 31 meshes directly with a gear 52 carried upon a shaft 53, the opposite end portions of which are carried by the brackets 21 and 22. Thus, the shafts 29 and 53 are driven in unison. Mounted upon the shaft 29 is a scoring roll 54 which is best illustrated in Fig. 11. Disposed longitudinally across the surface of the scoring roll 54 is a scoring knife 55, the sharpened edge portion of which projects slightly beyond the periphery of the roll 54. Cooperating with this scoring roll 54 and knife 55 is an upper scoring roll 56 which, preferably, is prefabricated from rubber, or other similar soft material.

From the above, it is to be understood that as the squaring up rolls 45 and 46 deliver an envelope in a right-hand direction, as viewed in Fig. 1, the bottom edge portion of each envelope will be delivered between the bite of the scoring rolls 54 and 56 which will, in turn, continue to advance the envelope at the same speed as the squaring up rolls. The knife 55 is so positioned and the scoring rolls 54 and 56 are so timed that the knife will function to partially crush the material between itself and the rubber roll 56 in a manner so as to provide a score along the line 57, as particularly disclosed in Figs. 4 and 5. Thereafter, the scoring rolls 54 and 56 will continue to advance each envelope in a right-hand direction until the same is delivered to the folding mechanism which is hereinafter described in detail.

Referring now to Figs. 1, 3 and 8, it is to be understood that the lower scoring roll gear 31

meshes directly with a second idler gear 58 which is carried upon the bracket 22 in a manner similar to the mounting of the gear 32, as disclosed in Fig. 12. Also meshing with the idler 58 is a gear 59 carried upon a shaft 60 whose opposite end portions are carried within the brackets 21 and 22. Thus, the drive shaft 23 functions positively to drive this shaft 60 at all times. Meshing with this gear 59 is a similar gear 61 carried upon a hollow cylinder 62 which is journaled upon a stationary hollow conduit 53. Thus, the shaft 60 and the sleeve 62 rotate in unison.

The lower shaft 60 carries thereupon a lower folding roll 64 which cooperates with an upper suction roll 65 which is integrally formed with the sleeve 62. The left-hand end portion of the conduit 63 is closed over, while the right-hand end portion is provided with an elbow 66 which connects the conduit with a vacuum-creating mechanism, not herein disclosed. It is sufficient to state that this vacuum-creating mechanism tends to maintain the inner portion of the conduit 63 at a negative pressure at all times during the operation of the present mechanism.

Referring now to Figs. 8 and 9, it is to be understood that the conduit 63 is provided intermediate the end portions of the suction roll 65 with an elongated slot 67 which periodically communicates with a radially disposed slot 68 formed within the peripheral portion of the roll 65. An adjusting strip 69 is embedded within the roll 65 for the purpose of governing the opening of the slot 68. From the above, it is to be understood that as the rolls 64 and 65 rotate, the slot 68 will be periodically placed in communication with the central portion of the conduit 63. More specifically, the slots 67 and 68 are so arranged that the open end portion of the slot 68 will engage the seal flap portion of each envelope, immediately adjacent its juncture with the envelope body or along one side of the score line 57, if such has been formed, in a manner as particularly illustrated in Figs. 4 and 5. Thus, since the inner portion of the conduit 63 is maintained at a negative pressure, the suction created within the slot 68 will cause the ungummed surface of each envelope's seal or closure flap to be seized and held by suction against the periphery of the roll 65, immediately adjacent the line of juncture 57 of said flap with the envelope's body portion. By this time, in the case of each envelope, said body or pocket portion, of double thickness substantially throughout, has passed completely through the rolls 64, 65, and being without support beyond said rolls has tended to sag downwardly or to bend away from the horizontal plane of the envelope's movement through the several pairs of rollers 45, 46, 54, 56 and 64, 65. This tendency increases as the suction-gripped closure flap, by further rotation of roll 65, starts to move in an upward direction, beyond the point or line of tangency between the two rolls 64 and 65, with the result that the two-thickness envelope body is in effect suspended from the suctionally-gripped closure flap and tends to bend over more and more into substantial parallelism with such closure flap, as the latter is carried upwardly by the rotation of roll 65. Finally, as this movement continues, the bend in the material between body portion and closure flap is converted to a fold; this occurs as the suction slots 68 come opposite to a roll 70, which, as shown in Fig. 2, is tangent to the roll 65 at a point well above the horizontal plane of the envelopes' travel through the pairs of rolls 45, 46, 54, 56 and 64, 65.

Referring now to Figs. 1, 8, 13 and 16 it is to be noted that the folding roll 70 has its opposite end portions loosely journaled in a pair of bell crank lever elements 71 and 72, the mid-portions of which are respectively pivoted upon the opposite end portions of the lower shaft 60. A coil spring 73 functions to bias each of the levers 71 and 72 in a counterclockwise direction, as viewed in Fig. 16. More specifically, one end portion of each of the springs 73 is disposed within an aperture 74 provided by each of the levers 71 and 72. The other end portion of each of the springs engages a boss 75 which extends from the adjacent bracket 21 or 22. Thus, the roll 70 is biased toward the suction roll 65 so that as the roll 65 continues to rotate, it will deliver an envelope between itself and the roll 70, the pressure of the latter completing the crease or fold between the single thickness closure flap and the double thickness body portion of each envelope.

After this so-folded upper edge of each envelope passes from between the bite of the rolls 65 and 70, the suction slot 68 is no longer in communication with the conduit 63 and, therefore, the envelope no longer has any tendency to cling against the periphery of the roll 65 and thus, each envelope will be delivered toward the peripheral portion of an envelope transferring mechanism which is generally designated by the numeral 76.

Referring to Figs. 1, 8 and 13, it is to be noted that each of the levers 71 and 72 has depending therefrom a finger portion 77, 77 which engages a cam shaft 78. This cam shaft 78 has its opposite end portions mounted directly within the brackets 21 and 22, and is provided intermediate its ends with a pair of flat faces 79, 79, against which the bell crank fingers 77, 77 abut. Also, the cam shaft 78 is provided with a handle element 80 which permits an operator to rotate the cam shaft so as to force each of the bell crank levers 71 and 72 in a clockwise direction, as viewed in Fig. 1, to the end that the folding roll 70 may be spaced to the desired amount away from the peripheral portion of the suction roll 65.

Referring now to Figs. 1, 3 and 6, it is to be noted that the opposite end portions of the upper squaring up shaft 47 are each journaled directly within a block 81 which is slidably mounted within a vertically disposed slot 82 formed in each of the bracket walls 21 and 22. The upper portion of each of the blocks 81, 81 is provided with a circular boss 81' which is received within a suitable opening formed in a strip 83 secured along the top portion of each of the brackets 21 and 22. Coil springs 84, 84 disposed between the strip 83 and the blocks 81 function normally to maintain the blocks in their lowermost positions. An adjusting screw 85 is threaded directly within the boss portion 81' of each of the blocks so as to provide a means for adjusting the lowermost position of the blocks, to the end that the desired spacing between the upper and lower rolls 45 and 46 may be readily obtained. In order to raise the upper roll 45 above the roll 46 for the purpose of facilitating the adjustment and maintenance of the present mechanism, there are provided a pair of cam elements 86, 86, each of which is rotatably mounted within an arcuate saddle 87 formed in each of the brackets 21 and 22, as may be particularly seen in Fig. 6. Each of these cams engages the lower portion of a respective one of the blocks 81, so that as the cams are rotated, they

will function to raise the blocks 81, 81 against the force of their coil springs. A pair of handle members 86, 88 are provided for permitting the operator to rotate each of the cams 86, 86 so as to raise the upper roll 45 away from the surface of the lower roll 46. It is to be particularly understood that the scoring roll 56 and the suction roll 65 are also provided with similar roll elevating means so that an operator may elevate each of these upper rolls above their associated lower rolls whenever the occasion arises.

Referring now to Figs. 1, 2 and 14, it is to be understood that the gear 59 of the lower folding roll shaft 60 meshes directly with an idler gear 89 carried upon a stub shaft 90 which is journaled within the bracket 22. This idler gear 89 also meshes with a gear 91 which is secured rigidly upon a sleeve 92 journaled upon a stationary hollow conduit 93. The opposite end portions of the conduit 93 are secured between the brackets 21 and 22. Thus, rotation of the main shaft 23 will function to rotate the gear 91 and the sleeve 92 in a positive fashion.

Referring particularly to Figs. 2 and 14, the left-hand end portion of the conduit 93 is closed over, while the right-hand end portion has secured thereto an elbow connection 94 which communicates directly with a vacuum-creating means for the purpose of maintaining the inner portion of the conduit 93 at a negative pressure at all times during the operation of the present mechanism. Intermediate the end portions of the sleeve 92, the conduit 93 is provided with a relieved portion 95 which forms an arcuate chamber between the peripheral portions of the conduit 93 and the sleeve 92. Communicating with this chamber are a plurality of radial ports 96, 96. Also, a plurality of radial ports 97, 97 are formed within the sleeve 92 so that as the sleeve rotates about the stationary conduit 93, the ports 97 will communicate intermittently with the conduit ports 96, 96. Secured upon the sleeve 92 are three envelope delivery wheels 98, 98. Each of these wheels 98 is secured rigidly upon the sleeve 92 and is provided with an inner annular chamber 99 which communicates directly with a respective one of the sleeve ports 97, 97. As may be seen particularly in Fig. 2, each of the wheels 98, 98 is provided upon its periphery with three flat surfaces 98', and communicating with each of these flat surfaces is a radial conduit 100, the inner end portion of which communicates with the annular chamber 99. From this, it will be appreciated that as each of the wheels 98, 98 rotates about the conduit 93, each of the conduits 100 will be periodically connected with the vacuum-creating means.

Referring particularly to Figs. 2 and 4, it is to be understood that the wheels 98, 98 are so timed that as the completed envelopes, with their seal flaps folded are successively delivered upwardly from between the bite of the rolls 65 and 70, the upper portion of each envelope will be positioned within one of the wheel flats 98', 98' of each of the three wheels. As soon as an envelope is so positioned within the wheel flats, the conduits 100 will each be in a position such that it will be placed in communication with the inner portion of the conduit 93, to the end that a suction will be formed within the conduit 100. Thus, this suction will cause the envelope to adhere to the peripheral portions of the wheels so that the envelope will be carried thereabout as the wheels rotate in a clockwise direction, as viewed in Fig. 1. Furthermore, it is to be understood that when the envelope reaches the right-hand position disclosed in Fig. 1, the vacuum within the conduits 100, 100 will be broken, to the end that the envelope will be deposited upon a horizontally disposed table 101. Thus, as the wheels continue to rotate, envelopes will be successively stacked upon the table 101 and thereafter, appropriate means, not herein shown, may be provided for removing these envelopes from the table in a conventional manner.

I claim:

1. In mechanism of the class described, for folding down the extended seal or closure flaps of envelopes, the combination with means for advancing successive envelopes flatwise in a substantially horizontal path, with their bottom folds or edges foremost and their extended seal flaps in trailing relation, glued margins facing downward, of a pair of cooperating rolls between which each envelope is received at the end of said path, and beyond which said envelope's pocket portion is wholly unobstructed and unsupported, whereby gravity is effective thereon to initiate between said pocket portion and its associated seal flap a bending in the direction of the desired ultimate fold or crease between said parts, means carried by the upper roll of said pair for gripping each seal flap's upper surface adjacent the zone of said desired fold or crease, whereby in the ensuing upward movement of said gripping means by said upper roll's rotation, said pocket portion becomes pendent from its associated seal flap, to increase said gravitational bending action, and a third roll cooperating with the upper roll at a point in said upward movement to receive said bend and to press same into a fold or crease, substantially at the line of juncture between seal flap and pocket portion.

2. In mechanism of the class described, for folding down the extended seal or closure flaps of envelopes, the combination with means for advancing successive envelopes flatwise in a substantially horizontal path, with their bottom folds or edges foremost and their extended seal flaps in trailing relation, glued margins facing downward, of means operable during such advancement for scoring the underside of each envelope at the juncture of its seal flap and its pocket portion, a pair of cooperating rolls between which each envelope is received at the end of said path, and beyond which said envelope's pocket portion is wholly unobstructed and unsupported, whereby gravity is effective thereon to produce bending on said score line in the direction of the desired ultimate fold or crease between seal flap and pocket portion, means carried by the upper roll of said pair for gripping each seal flap's upper surface adjacent the zone of said scoring, whereby in the ensuing movement of said gripping means by said upper roll's rotation, said pocket portion becomes pendent from its associated seal flap to increase said gravitational bending action, and a third roll cooperating with said upper roll at a point in said upward movement, to receive said score and to press same into a fold or crease.

3. In mechanism of the class described, for folding down the extended seal or closure flaps of envelopes, the combination with means for advancing successive envelopes flatwise in a substantially horizontal path, with their bottom folds or edges foremost and their seal flaps in trailing relation, glued margins facing downward, of a pair of cooperating rolls between which each envelope is received at the end of said path, and

beyond which said envelope's pocket portion is wholly unsupported and unobstructed, whereby gravity is effective to initiate between said pocket portion and its associated seal flap, a bending in the direction of the desired ultimate fold or crease between said parts, suction gripping means carried by the upper roll of said pair for seizing each seal flap's upper surface adjacent the zone of said desired fold or crease, whereby in the ensuing movement of said suction gripping means by said upper roll's rotation, said pocket portion becomes pendent from its associated seal flap to increase said gravitational bending action, and a third roll cooperating with said upper roll at a point in said upward movement to receive and press said bend into a fold or crease, and to project each so-completed envelope upwardly, upon release of same by said suction-gripping means.

4. In mechanism of the class described, for folding down the extended seal or closure flaps of envelopes, the combination with means for advancing successive envelopes flatwise in a substantially horizontal path, with their bottom folds or edges foremost and their seal flaps in trailing relation, glued margins facing downward, of a pair of cooperating rolls between which each envelope is received at the end of said path, and beyond which said envelope's pocket portion is wholly unsupported and unobstructed, whereby gravity is effective to initiate between said pocket

portion and its associated seal flap, a bending in the direction of the desired ultimate fold or crease between said parts, suction gripping means carried by the upper roll of said pair for seizing each seal flap's upper surface adjacent the zone of said desired fold or crease, whereby in the ensuing movement of said suction gripping means by said upper roll's rotation, said pocket portion becomes pendent from its associated seal flap to increase said gravitational bending action, and a third roll cooperating with said upper roll at a point in said upward movement to receive and press said bend into a fold or crease, and to project each so-completed envelope upwardly, upon release of same by said suction-gripping means, a stacking table, and a rotating transfer means to receive each upwardly projected envelope and to convey it through an arc, for deposit, creased edge downward, upon said stacking table.

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REFERENCES CITED

The following references are of record in the file of this patent:

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Number	Name	Date
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