March 13, 1956 E. PERSSON ET AL 2,737,885

DUAL BELT MAIL CONVEYING SYSTEMS

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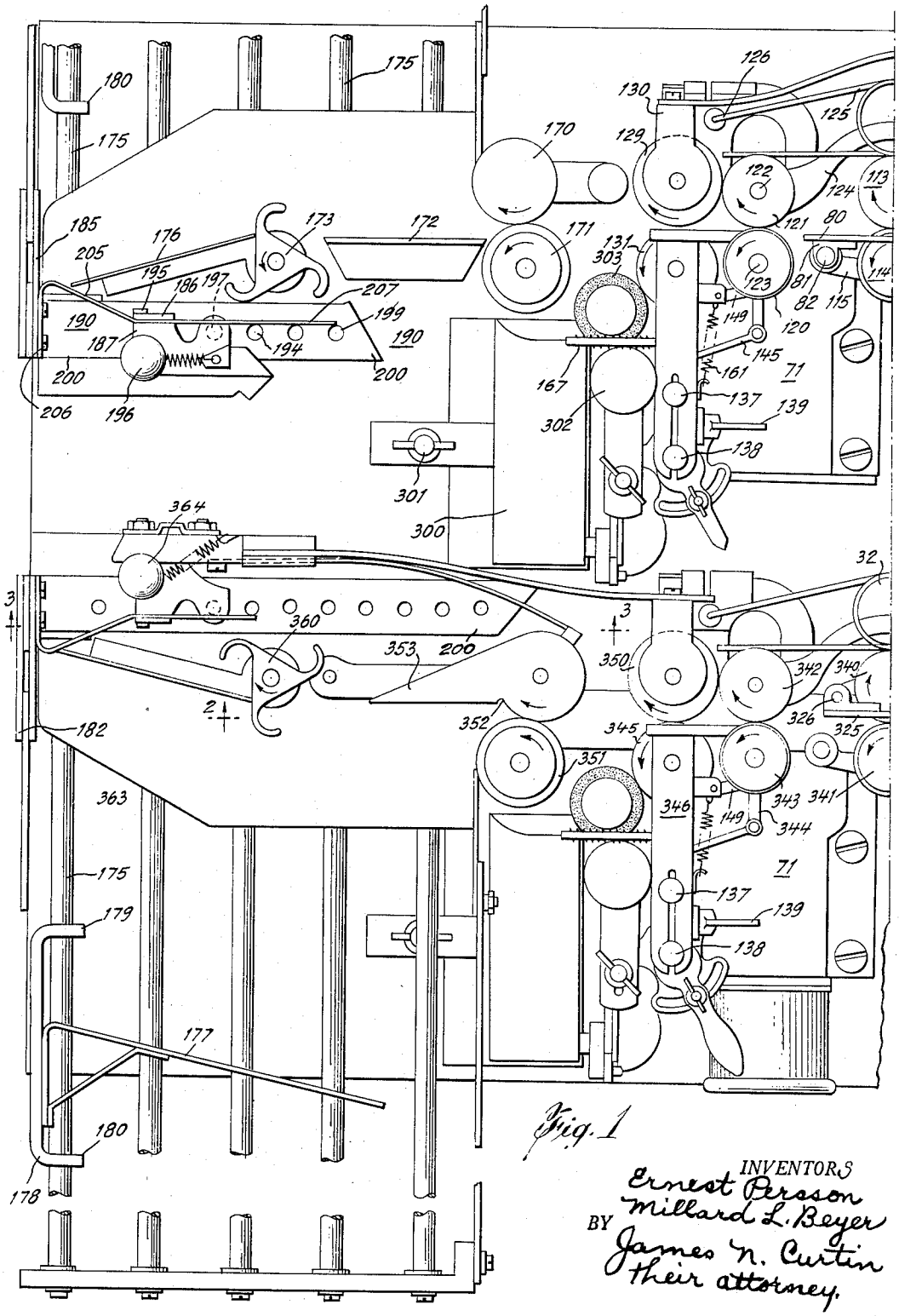


Fig. 1

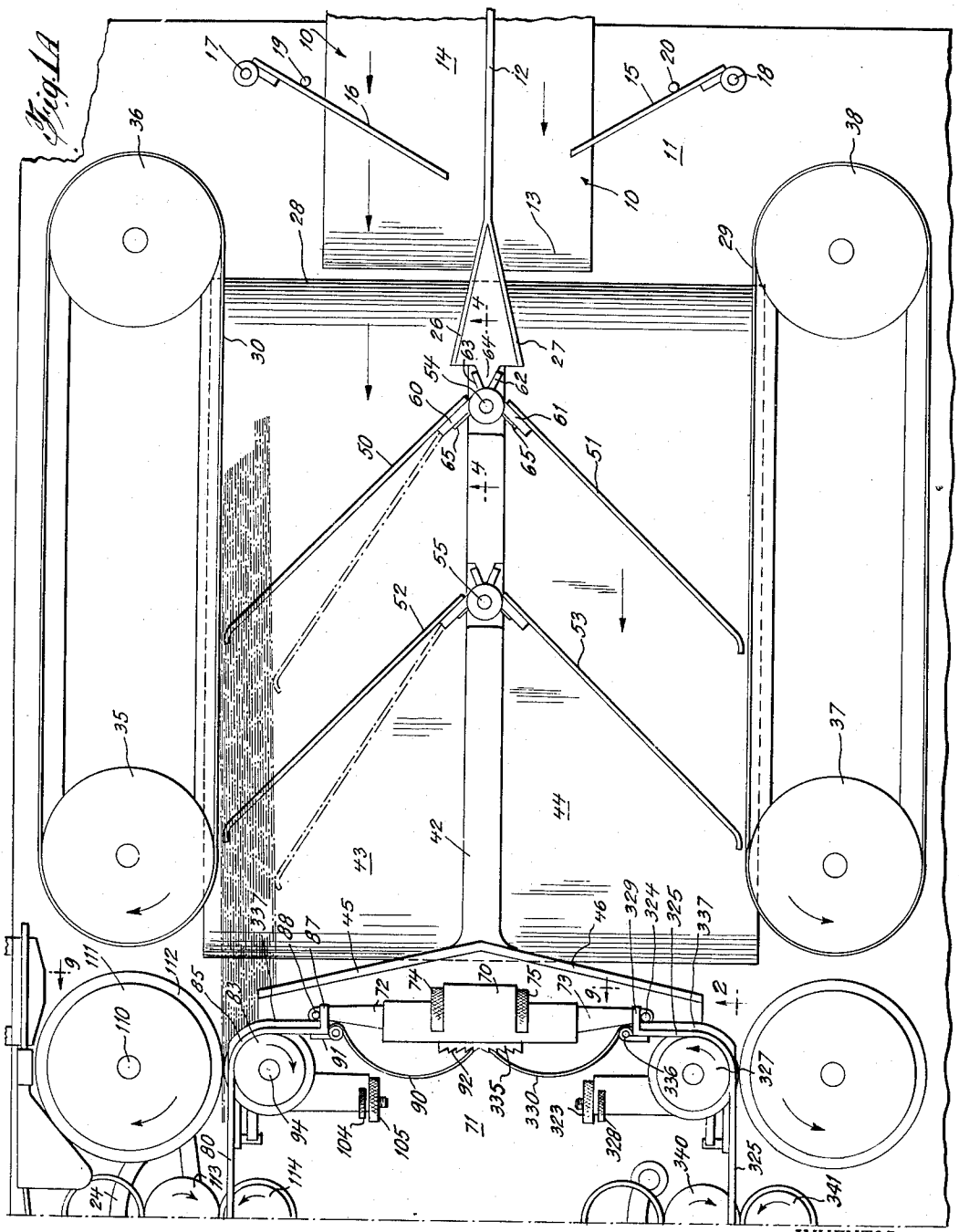
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DUAL BELT MAIL CONVEYING SYSTEMS

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Fig. 1A



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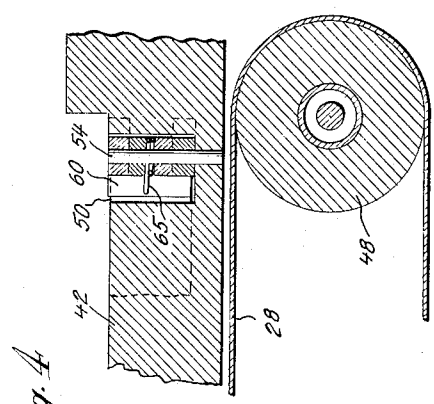


Fig. 4

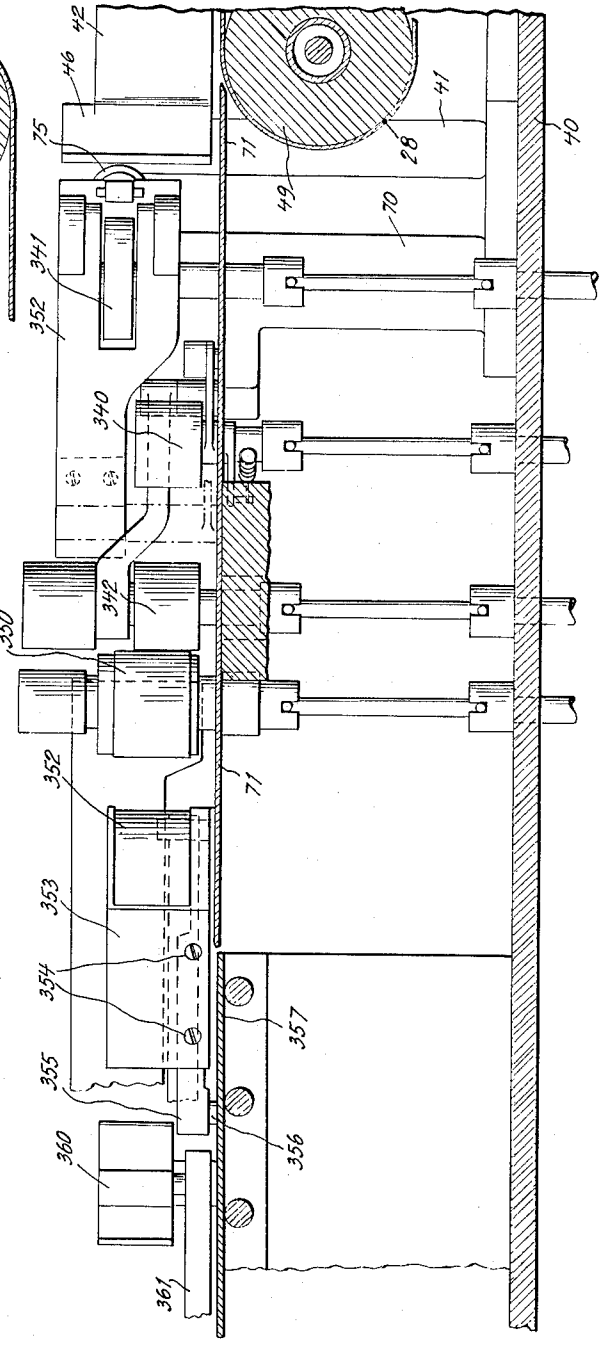


Fig. 2

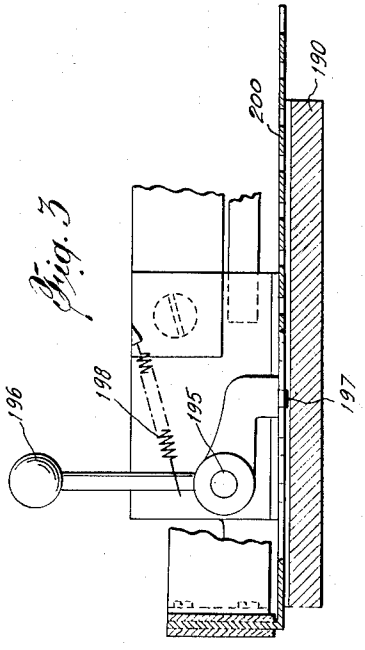


Fig. 3

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Fig. 5

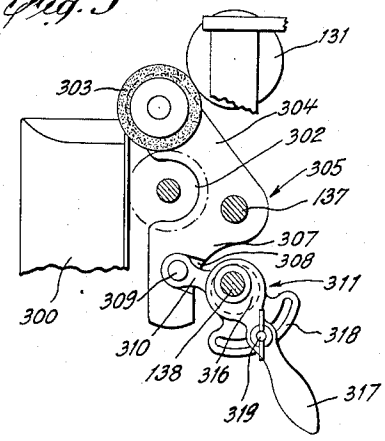
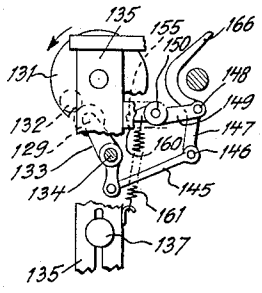


Fig. 6



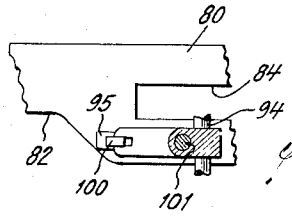
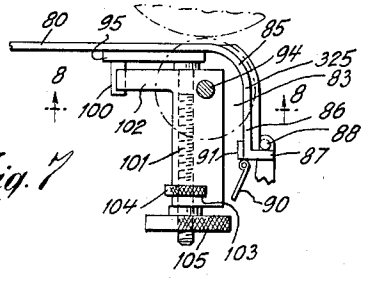


Fig. 8

Fig. 7



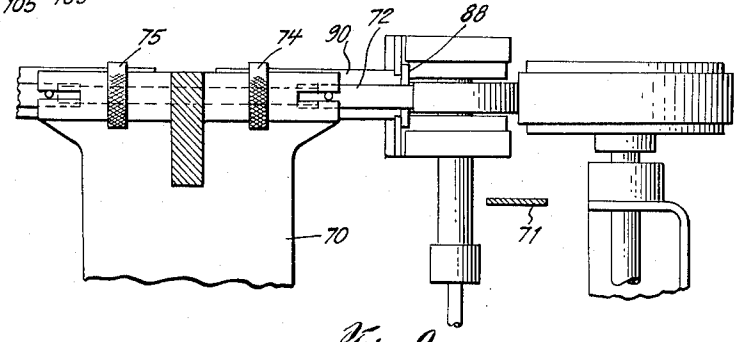


Fig. 9

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2,737,885

DUAL BELT MAIL CONVEYING SYSTEMS

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Application February 27, 1952, Serial No. 273,630

17 Claims. (Cl. 101—236)

This invention relates to a machine for handling mail and the like, and more particularly to an automatic multiple device for cancelling and stacking simultaneously a plurality of different kinds of mail, such as extra long envelopes of varying thickness and envelopes of conventional length.

An object of the invention is the provision of a combined cancelling and stacking machine of simple and durable construction adapted to operate over long periods of time with little or no attention from skilled mechanical maintenance personnel.

It has been customary in large post offices to separate manually the long envelopes from the short and standard sized envelopes and then feed manually separate batches of each type of envelope to separate cancelling machines because the stacking device, adjusted for long envelopes associated with the cancelling machine, does not readily stack short envelopes. Accordingly, a feature of the invention is the provision of a multiple cancelling stacking machine, having a further feature of a magazine or storage mechanism belt fed automatically from a sorting table which stores momentarily batches of envelopes fed thereto in bunches at a rate in excess of the momentary capacity of the machine, and which is effective to feed the envelopes one at a time at a maximum rate to the cancelling and stacking apparatus without human intervention. A device of the kind disclosed herein is capable of cancelling and stacking two thousand letters per minute.

Other features and objects of the invention will be found in the following description given with the aid of the accompanying drawings, of which:

Figs. 1 and 1A, taken together, show a plan view of a preferred embodiment of the invention;

Fig. 2 is an elevational view, partly in section, the section being taken through 2—2 of Figs. 1 and 1A, showing particularly certain feed rollers with their universal jointed driving connections, one of the stacker star wheels, the adjustable separator guide, and a portion in section of a horizontal feed belt;

Fig. 3 is a section taken through 3—3 of Fig. 1, showing details of the mechanism associated with a lever for adjusting the stacker for envelopes of different lengths;

Fig. 4 is a section taken through 4—4 of Fig. 1A;

Fig. 5 shows a mechanism for adjusting a felt ink roller;

Fig. 6 shows details of a trip lever mechanism which initiates the rotation of the associated printing or cancelling die;

Fig. 7 is a plan view showing details of a mechanism for adjusting the position of a separator roller;

Fig. 8 shows in elevation a portion of an adjustable separator guide in relation to the separator roller adjusting mechanism of Fig. 7; and

Fig. 9 shows a feed and separator roller assembly, together with a bracket, partly in section, provided with a mechanism for supporting and adjusting the separator guide with respect to the associated separator roller.

The device will now be described with reference to the

accompanying drawings. In connection with the description it will be understood that with the exception of the printing dies which are driven by friction or other suitable impositive clutches, the respective shafts are preferably driven by suitable gearing from a common source of power, not shown, in order that the shafts and the parts driven thereby turn in predetermined fixed relation to each other.

In large post offices it is customary to dump bags of mail on large sorting tables where long envelopes and short envelopes are separated manually from the rest of the contents of the mail bags preliminary to cancelling the stamps. In some installations, the sorting tables are provided with a belt running along one edge which carries the envelopes to a cancelling apparatus. For reasons which will be explained further on, the short and long envelopes are cancelled separately through successive operations.

The present invention provides an arrangement for cancelling both long and short envelopes simultaneously by the apparatus now to be described.

Referring to Figs. 1 and 1A, which show a horizontal belt 10 extending along one edge of a mail sorting table: Belt 10 is narrow and inset into a depression or trough providing side walls of sufficient height to support the envelopes so that they are carried along by the belt, singly or in groups, on one of their longer edges. The envelopes are dropped onto the belt with the edge adjacent the stamp resting on the belt, the envelopes being positioned with the stamps toward their leading edges in order that the cancellation mark may be subsequently imprinted upon the stamp.

The present embodiment of the invention contemplates handling both long and short envelopes at the same time, and for this reason a horizontal strip or web 12 is mounted so as to extend along belt 10 to divide the belt into two portions 13 and 14 for short and long envelopes, respectively. Strip 12 is wide enough to hold the envelopes approximately upright so that the edge of the envelope is engaged by belt 10. Long envelopes are manually placed as already described on the part 14 of belt 10, while short envelopes are similarly placed on the portion 13, the belt carrying the envelopes toward the left of the drawing as shown in Fig. 1A.

On opposite sides of belt 10 arms 15 and 16 mounted on pivots 17 and 18 and lightly spring pressed in the direction of their respective stop posts 19 and 20 extend into the paths of envelopes carried by sections 13 and 14 of belt 10, and tend to maintain the envelopes carried by the belt in a general edgewise position.

The vertical web or separator 12 terminates at its left hand end in a pair of deflector plates 26 and 27 partially overlying a second relatively wide horizontal belt 28, plates 26 and 27 being spaced at their outer ends for deflecting envelopes which are fed at rather high velocity by belt 10 toward vertical belts 29 and 30 which overlie opposite edge portions of horizontal belt 28.

Belt 28, together with certain cooperating parts now to be described, forms a pair of storage magazines, one for long envelopes and the other for short or small envelopes, which respectively receive the different type envelopes, either singly or in bunches, from belt 10 and aid in feeding the envelopes one at a time to respective cancelling and stacking mechanisms. Belt 28 is mounted on suitable rollers 48 and 49 as shown in Figs. 2 and 4, respectively.

The stacking, endorsing and feeding mechanisms, together with pulleys 35 and 36 for a relatively narrow V-belt 30, and also pulleys 37 and 38 for a similar V-belt 29, are mounted on suitable vertical shafts positioned respectively in pairs on opposite sides of horizontal belt 28, the narrow V-belts being positioned so that one length of each belt overlies an edge portion of belt 28, and are

driven in the same direction. The narrow belts are spaced above belt **28** so that they engage approximately the mid-section of an ordinary envelope.

A bracket **41** attached to base plate **40** (see Fig. 2) carries a rather wide horizontal arm or vertical plate **42** which extends over, but clear of, the upper surface of belt **28**, dividing the belt effectively into two longitudinal portions **43** and **44**, the former, for the purposes of the present description, being used to handle long envelopes, while the part **44** of the belt is used for feeding short or conventional letter-size envelopes.

A pair of deflector or stop arms **45** and **46**, formed at an angle to the arm **42** of bracket **41**, serves to arrest momentarily groups of envelopes urged by belt **28** toward the left of Fig. 1A of the drawings, the arms being slanted in the direction of feeding mechanism, to be described, to cooperate with other elements in feeding the envelopes thereto.

Referring to Figs. 1A and 4, arm **42** carries a plurality of pairs of hinged deflector plates, two pairs being shown in the drawing indicated by reference characters **50—51** and **52—53**, supported respectively on pivot pins **54** and **55** fastened to arm **42**. The arms are attached to a hinge arrangement; in the case of arms **50** and **51** they are secured respectively to hinge plates **60** and **61** which turn on pivot pin **54**. Hinge plate **60** is formed with a tail piece **62**, while plate **61** is provided with a tail piece **63**. The tail pieces engage opposite sides of a wedge shaped projection formed on arm **42**, which serves to prevent the outer ends of deflector plates **50** and **51** from quite engaging the surface of belts **29** and **30**, respectively. Opposite arms of a light spring **65** disposed about pivot **54**, Fig. 4, engage spring plates **60** and **61**. Spring **65** is tensioned to move deflector plates **50** and **51**, respectively, toward belts **29** and **30**. Deflector plates **52** and **53** are similarly mounted and, therefore, need not be described in detail.

The apparatus just described provides a single automatic arrangement for feeding envelopes simultaneously to a pair of endorsing machines which is adequate to take care of a large sorting table directly, doubling effectively the capacity of former devices, thereby expediting the handling of mail and resulting in a considerable saving of labor.

The overall belt arrangement feeds the envelopes singly or in bunches in accordance with the way they are deposited on belt **10** toward two endorsing and cancelling machines having at their respective inputs separator mechanisms effective to feed envelopes thereinto one at a time.

The description of the respective endorsing and stacking machines where they differ appreciably will be given separately, but first portions of a separator apparatus which is common in some aspects to both endorsing machines will be described. Part of this separator apparatus includes an adjustable guard arrangement mounted upon a bracket **70** supported by base **40**, Figs. 1A, 2 and 9. The bracket projects upward through an opening in a horizontal plate **71**, serving to enclose some of the driving mechanism as well as supporting some of the parts of the endorsing machine.

Bracket **70** carries symmetrically arranged, oppositely disposed arms **72** and **73** which are horizontally adjustable by knurled rings **74** and **75**, Figs. 1A and 9.

From this point onward until further notice the description will be directed to the upper endorsing apparatus to avoid unnecessary duplication of description.

A vertical guide strip **80**, Figs. 1 and 1A, is attached near one end to a bracket formed with a horizontal lug **81** which is pivoted on stud **82** to plate **71**.

Referring to Figs. 1, 1A, 7 and 8, guide strip **80** is cut away at **82** to clear the top of a roller **114**, and some distance further on is slotted at **84**, and curved at **85** in accordance with the contour of roller **83** and thereafter formed with a straight section **86** terminating in a step **87** which is engaged by a pin **88** secured at one end of the

adjustable arm **72**. Roller **83** is driven in a clockwise direction and cooperates with a roller **111** also driven in a clockwise direction for feeding envelopes one at a time from a bunch of envelopes, as will be explained.

Pin **88** is held in engagement with step **87** by a flat spring **90** having a fixture **91** at one end engaging the outer corner of step **87**. Spring **90** is adjustably tensioned by variably bowing the same by placing the opposite end of the spring between desired teeth of a saw-tooth rack **92** attached to bracket **70**.

The mechanism just described provides an easily adjustable arrangement for guide strip **80** which permits one end to be easily detached from its support to permit replacement of the usual rubber tire or band on the periphery of roller **83**.

In order to take care of batches of envelopes of varying thickness and to compensate for wear of roller **83**, the roller spindle **94** is provided with an adjustably positionable support shown in Figs. 1A, 7, and 8, by which the roller **83** may be adjusted relative to guide strip **80**.

A bar **95** is secured to guide strip **80** immediately below slot **84**, Figs. 7 and 8. Near one end, a lug or pin **100** projects outward, horizontally at right angles to bar **95**. The bar also holds a threaded stud **101**. Shaft **94** for roller **83** turns in a suitable bearing carried by a bracket **102** adjustably supported by bar **95** in the following manner:

Bracket **102**, Fig. 7, has a slotted arm which rides on pin **100**. The bracket is formed with a central opening through which the threaded stud **101** extends. The opening has a slot **103** communicating therewith for a disc **104** fixed on stud **101** which retains the bracket in position on the spindle. A thumb nut **105**, fixed to the outer end of stud **101**, is used to adjust bracket **102** and shaft **94** carried thereby. Shaft **94** is driven from the source of power for the machine.

Referring to Figs. 1A and 9, belt **30** is in alignment with the center line or bite of roller **83** and cooperating feed roller **111**, both of these rollers being provided with suitable soft rubber bands about their periphery.

Envelopes fed from the belt system already described are guided by belt **30** and arms **50** and **52** toward the left of the drawing as shown in Fig. 1A. When the envelopes are in bunches, momentarily in excess of the present capacity of the endorsing machine, they deflect arms **50** and **52** in a counter-clockwise position, the arms serving to hold the envelopes upright on their edges with light spring-pressure until the envelopes are extracted one by one and the accumulation exhausted.

The belt system urges the bunch of envelopes toward the left of the drawing where the movement of the lowermost portion of the group will be temporarily arrested by fixed stop arm **45** while some of the uppermost will engage the curved part **85** of guide strip **80**, while a few of the others of the upper part of the group contact the rubber periphery of roller **83**. The latter roller turns in a clockwise direction as indicated by the arrow thereon and tends to move envelopes engaged thereby toward the right of the drawing. Roller **83**, therefore, is effective to yieldingly restrain all but the uppermost envelope momentarily from further movement toward the left. The upper cooperating feed roller **111**, however, also turns in a clockwise direction and engages the upper side of the topmost envelope and propels it toward the left of the drawing in the direction of the endorsing machine. When this latter envelope has cleared rollers **83** and **111**, the rubber tire **112** of roller **111** then engages the topmost surface of the next succeeding envelope and propels it toward the left of Fig. 1A and so on as long as envelopes are fed into the device. By this arrangement, envelopes are rapidly and automatically fed one at a time to the endorsing machine. The rollers **111** and **83** are driven by suitable gearing, not shown, in fixed relation with the endorsing and stacking apparatus.

The envelopes are directed by guide strip **80** to a pair of feed rollers **113** and **114**, which advance the successive envelopes toward the left of the drawing of Fig. 1 as indicated by the arrows thereon.

The spindles of rollers **113** and **114** are yieldingly mounted on movable spring pressed arms to take care of envelopes of different thicknesses, roller **114** being mounted on a spindle in arm **115** which is mounted on stud **82**.

Another pair of pressure rollers **120** and **121** are mounted on spindles **122** and **123**, respectively. Spindle **122** is mounted on a rather long arm **124**, pivoted at one end to plate **71** by a stud, not shown. A spring **125** having one arm detachably secured in a bracket at **126** and the opposite end pressing against arm **124** holds roller **121** in yielding engagement with roller **120**. Spindle **122** is driven from a source of power which operates the machine.

The envelopes are fed from the pressure rollers just referred to so as to pass between a platen roller **129** mounted in a bracket **130** and a cooperating printing and cancelling die **131** indicated in plan view in Fig. 1 as a circle **131**.

Cancelling die **131**, and the supporting bracket and tripping mechanism therefor, are known structures fully described in U. S. Patent No. 2,516,721, issued July 25, 1950, and in U. S. Patent No. 2,693,754, issued November 9, 1954; therefore, only a brief description thereof will be given here.

Die **131** is a cylindrical structure carrying raised type or other data. In the present instance, an arrangement for printing a cancelling mark over the postage stamps of the respective envelopes, together with any other data desired by the post office, is formed on a suitable printing surface carried by the die.

Die **131** is provided with a depending spindle detachably attached to the driven member of a friction clutch, these members being well known and not shown. Driving power is furnished by the driving motor of the machine, also not shown.

Referring to Fig. 6, on the top of the die **131** a roller **132** of substantial size is supported for rotation. This roller cooperates with another roller **129** mounted in one end of a stop lever **133** pivoted at **134** to the under side of a bracket **135**, Figs. 1 and 6, detachably clamped to round upright pins **137** and **138** by a thumb screw **139** which extends through the bracket. With this arrangement the bracket and printing die **131** may be readily removed from the machine for cleaning.

A link **145** is pivoted to the opposite end of lever **133** and the other end of this link is pivoted at **146** to the lower end of a trip lever **147**. The trip lever is pivoted at **148** to one end of a lever **149** which initially serves as a fulcrum for the trip lever. Lever **149**, however, is pivoted at **150** to a projection from bracket **135**. The opposite end **155** of lever **149** is normally retained against a stop **160** by a spring **161**.

The pivots of rollers **132**, **129** and lever **133** are normally disposed in substantially the same straight line when in a position of rest. Therefore, only a slight pressure from an envelope against the upper end portion **166** of the trip lever is sufficient to cause a slight turning movement of the latter on its pivot **148** in a counterclockwise direction which will rock lever **133** on its pivot **134** in a counterclockwise direction sufficiently to upset the aligned arrangement of the centers of rollers **132** and **129** with that of fulcrum pin **134** of lever **133**. The pressure exerted by the friction clutch, not shown, on die **131** will cause roller **132** to cam roller **129** out of its path and the die **131** will turn for one revolution, irrespective of the length of the envelope. The latter will deflect the end **166** of the trip lever downward and toward the left, and roller **129** immediately is restored into the path of roller **132** by means of spring **167**, Fig. 1, attached to lever **133**. This operation is possible because once arm **166** is

tripped by an envelope, say a long envelope, the envelope overrides the end of the trip lever, causing it to depress one end of its supporting lever **149** by turning it momentarily in a clockwise direction on its fulcrum **150** against the tension of its spring **161**. On passing of the respective envelopes between the die **131** and platen **129** it will be understood that since the various rollers turn by interconnected gearing, not shown, necessarily rotating in fixed relation, a cancellation mark will be printed at a fixed predetermined position from the leading edge of each of the respective envelopes passing therethrough.

The trip and endorsing mechanism has the further effect of advancing the envelopes through the machine in predetermined spaced relation.

After passing through the endorsing apparatus the envelopes, now travelling rapidly in spaced relation, are fed along toward the left of the machine by cooperating feed rollers **170** and **171**, the latter being a driven roller, along a guide strip **172** to a stacking apparatus which includes a star wheel **173** suitably driven by gears, not shown, to turn with the feed rollers already described.

The recesses in the star wheel **173** are arranged to receive the leading edges of one envelope at a time when the projection of the next following tooth kicks the envelope outward away from the star wheel, and thereafter the next succeeding depression in like manner receives the leading edge of the next following envelope which is kicked outward by the projection forming the following tooth. With this arrangement a stack of envelopes is formed rapidly and a basket-like arrangement formed of a series of spaced horizontal rods **175** is provided to receive the stack.

The envelopes are kept supported resting on their edges by a fixed support plate **176** and a cooperating movable support plate **177**, not shown in connection with supporting plate **176**, but illustrated in connection with the stacking arrangement in the lower part of Fig. 1.

Supporting plate **177** is formed from a strip of metal fastened to a generally U-shaped bracket **178** having widely spaced, relatively short arms **179** and **180** perforated to slide on the outermost bar **175** of the basket. Initially when a basket of the type described is manually emptied of a stack of cancelled envelopes, bracket **178** is moved the maximum distance in the direction of the associated star wheel, and the spacing with respect to its cooperating stationary bracket is such that even single envelopes will be kept standing on one edge. As successive envelopes are fed through the device the successive kicks of the star wheel teeth impart pressure to supporting plate **177**, forcing the latter away from the star wheel associated therewith as the thickness of the stack of envelopes increases.

Referring back to the embodiment of the stacking device shown at the top of Fig. 1, and also to the stacking arrangement drawn below, the baskets composed of rods **175** in each instance have stop brackets independently displaceable manually with respect to the rest of the machine when it is desired to make adjustments for stacking envelopes in specific size groups. The mechanism for displacing and retaining in position the stop bracket shown at the top of Fig. 1 will now be described.

The upper basket apparatus comprising rods **175** is provided with a relatively movable bracket **185** overlying its outer left hand edge adapted to be engaged by the left hand ends of the respective envelopes for the purpose of holding the same in alignment. Bracket **185** is mounted on an adjustable sliding plate **200**.

A second upright bracket **186** is formed with a horizontal section **187** projecting upright from a stationary plate of the upper surface of the machine generally indicated as **190**.

Bracket **186** supports on a pivot pin **195**, Fig. 3, a tiltable locking handle **196** provided with a lower horizontal portion terminating in a depending pin **197**. This arrangement is shown substantially in Fig. 3 which, how-

ever, is drawn as a sectional showing of the lower stacking mechanism, not yet described. A spring **198** tends to turn the handle **196** in a clockwise direction and thereby hold the pin **197** in its lowermost position. Pin **197** is shaped to fit freely into any of a series of holes formed in a movable strip **200** which supports the envelope stop bracket assembly **185**. Strip **200** overlies one of the top plates **190** of the machine as shown in Fig. 3. The arrangement just described permits the stop bracket assembly to be positioned as desired within limited distances with respect to star wheel 173 in accordance with the holes **199** provided in strip **200**. A bent flat plate **205** fastened to the movable bracket **185** by screws **206** cooperates with guide **176** to fill in the gap at the left hand end thereof when the bracket **185** is moved to the left of the position shown in the drawings.

The mechanism for inking die **131** is probably conventional, but to give a better understanding of the drawings a brief description will be given of the same.

An ink tank **300** is detachably secured to the structure by thumb screw **301**. Through a suitable channel, not shown, an inker wheel **302** is coated with ink from the ink tank (kindly refer to Figs. 1 and 5). In operation, the inker wheel **302** rides against a felt surfaced wheel **303** which engages and supplies a suitable amount of ink to the surface of the printing die roller **131**.

In order to adjust the relative position of the ink roller **303** with respect to the ink tank **300** and die **131**, the following mechanism is provided:

Ink roller **303** is mounted on one arm **304** of a lever **305** pivoted at the lower part of upright pin **137**. The opposite arm **307** of the lever has a notch **308** formed on it. A pin **309** disposed in one arm **310** of a lever **311** is eccentrically pivoted to the lower part of upright pin **138**. An eccentric **316** is operated by a hand lever **317** disposed underneath, but clear of bracket **135**, which detachably supports the trip and endorsing apparatus. Hand lever **317** is movably secured in any position in arcuate track **318** by thumbscrew **319** in accordance with the degree of inking desired. It will be seen from Fig. 5 that by adjusting arm **317** the felt wheel **303** can be moved into or out of contact with the die **131**, or the adjustment in connection with both the die **131** or the felt wheel **303** can be varied at will without disturbing the rest of the machine.

The cancelling machine shown at the lower side of Figs. 1 and 1A is substantially about the same as that already described. It comprises a stop arm **46**, a vertical guide strip **325**, which is pivoted at **326**. The guide strip is slotted in the same manner as that shown in Fig. 4, but it will be understood that some of the parts of the lower cancelling apparatus are of the reverse construction as those for the upper, being a mirror image thereof as it were.

The guide strip **325** is curved about the periphery of separator wheel **327**, and this wheel is mounted for adjustment through the slot in guide strip **325** by the nut **323**. Adjustable arm **73** of the bracket **70** regulates the position of pin **324** which engages the bent portion or step **329** formed at the end of guide strip **325**. This pin, together with a bowed flat spring **330**, held at one end adjustably by a saw-toothed rack **335** and secured to the step **329** at the opposite end of the rail or guide step **329** by an assembly **336**, presses step **329** against pin **324** and holds the same detachably in place. It will be noted that a short curved piece **337** is found in both separator assemblies disposed alongside strips **80** and **325**. This is merely a strip riveted to the strips just mentioned for the purpose of reinforcing the same.

Cooperating pressure rollers **340** and **341** turn in such direction as to feed the envelopes to cooperating pressure rollers **342** and **343**. Underneath the latter a trip lever **344** adapted to actuate the endorsing die by the leading edges of the envelope is disposed.

Trip lever **344** and its associated parts actuate die **345** driven by a friction clutch, the assembly being detachably secured to the structure by bracket **346**. Some of these parts are not shown.

A suitable platen **350** cooperates with die **345**. The envelopes cancelled by die **345**, are propelled toward the left to pressure rollers **351** and **352**, referring to Fig. 2 for the latter. Pressure roller **352**, an idler roller, is provided with an elongated combined dust cover and finger guard **353**, and in this way differs from the embodiment already described at the upper part of the sheet. Finger guard **353** is fastened by screws **354** to a horizontal arm **355** secured by pivot **356** to an upper plate **357** of the machine, as shown in Fig. 2.

Star wheel **360** is supported on a shaft having fixed bearings and is driven in fixed relation with other rotary elements just described by a known horizontal gear train, not shown.

The lower cancelling apparatus just briefly referred to is designed to be adjusted to cancel short or conventional length envelopes or those of considerable length. The mechanism for positioning the lower envelope stop bracket **182** with respect to the lower rack generally designated by the reference character **363** and star wheel **360** is similar to that already described, and the apparatus therefor is shown in Fig. 3 which comprises a lever **364** for locking the stop bracket **182** in desired positions with respect to star wheel **360** in accordance with the length of the envelopes being processed.

A simple mechanism is described above for feeding envelopes from a common conveyor or conveyor system to a pair of cancelling machines, which provides an output of cancelled envelopes from a single sorting table of at least double that of former machines. An arrangement is provided for feeding out envelopes uniformly from a magazine or storing device which takes care of envelopes arriving in bunches momentarily in excess of the capacity of the cancelling apparatus. The device generally speeds up handling of mail and eliminates entirely many of the manual operations required in connection with the operation of former equipment of the kind.

What is claimed is:

1. In a conveyor apparatus for a mail cancelling machine or the like having belt means mounted to run longitudinally at the edge of a mail sorting table for conveying alongside the table long and short envelopes resting on their edges manually deposited according to length on separated portions of the belt, means disposed at the end of the belt means for receiving and momentarily storing while maintaining separated bunches of long and short envelopes comprising a horizontal belt disposed in substantially coplanar relation with the belt means, an upright plate supported to overlie the mid-portion of the belt to divide it into two longitudinal sections, one for long envelopes and the other for short envelopes, a pair of fixed stop arms symmetrically mounted at the end of the plate near the exit end of the belt extending horizontally respectively part way toward the side edges of the belt adapted to be engaged by the leading edges of bunched envelopes momentarily, a pair of pulleys disposed adjacent each of the opposite edges of the belt mounted on vertical shafts, relatively narrow belts mounted on each of the respective pairs of pulleys having their inner runs overlying respective edge portions of the horizontal belt and travelling in the same direction, a plurality of pressure arms pivoted about vertical axes to the upright plate symmetrically arranged on opposite sides thereof, spring means for the arms tending to pass lightly the free ends of the arms in the direction of the adjacent narrow belt, and separate envelope feeding means each comprising feed roller means mounted to turn about vertical axes beyond the ends of the stop arms and beyond the end of the horizontal belt in substantial alignment with said runs of the respective narrow belts which cooperate with the pressure arms for feeding respective envelopes to the feed roller means from those that may have

been momentarily restrained from advancing by the stop arms.

2. A mail conveying apparatus according to claim 1 in which the feed roller means comprise a pair of slightly spaced cooperating rollers driven in the same direction, the bite of the rollers being in substantial alignment with the run of the associated narrow belt overlying the edge portion of the horizontal belt.

3. A mail conveying apparatus for a dual letter cancelling machine fed by belt means running along a mail sorting table arranged with a pair of separated longitudinal sections for conveying to a cancelling device manually separated long and short envelopes manually deposited on their edges either singly or in bunches on the appropriate section of the belt means, the improvement which comprises an arrangement for storing momentarily envelopes received from the belt means when the number received is momentarily in excess of the immediate capacity of the cancelling machine to process the same, said improvement including a substantially coplanar, flat, horizontal belt common to both sections of the belt means arranged at the end thereof for receiving envelopes travelling on one of their longer edges from the belt means, means for maintaining the long and short envelopes separated and upright including a common vertical plate extending along the mid-section of the horizontal belt for substantially the length thereof, a pair of relatively narrow belts turning about vertical axes and having runs running in the same direction as the horizontal belt and so spaced respectively over the opposite edges of the horizontal belt so as to be aligned with approximately the mid-section of an envelope carried by the horizontal belt, a plurality of hinged pressure plates pivoted about vertical axes to the vertical plate lightly spring loaded and extending in a slanting direction toward one or the other of the narrow belts into the path of the respective groups of long and short envelopes received by the horizontal belt for the purpose of maintaining the edgewise travel of single envelopes or groups of envelopes and urging the same in the direction of the adjacent narrow belt as the envelopes are advanced, and separate means disposed beyond each section of the horizontal belt aligned with the above mentioned run of each narrow belt for feeding the envelopes one at a time to respective devices for printing cancellation marks on long and short envelopes.

4. A mail conveying apparatus according to claim 3 in which the envelopes are arranged on the belt means manually with the stamps in the same relative position near the leading edge of the envelopes, an intermittently operated device for printing cancellation marks on the stamps, means for feeding the envelopes one at a time to the cancelling device, and a trip lever positioned in the path of the envelopes in advance of the printing device for initiating the operation of the printing device at a predetermined time whereby all cancellation marks are printed a uniform distance from the leading edge of the envelopes.

5. A mail conveying apparatus according to claim 4 in which the vertical plate extending along the mid-section of the horizontal belt is provided near the exit end of the horizontal belt with symmetrically arranged fixed stop arms which arrest momentarily the forward movement of the envelopes which come into engagement therewith when the number of envelopes being fed is momentarily in excess of the capacity of the cancelling device.

6. A mail conveying apparatus according to claim 5 in which the separate means disposed beyond each section of the narrow belt comprise two independent pairs of separator rollers so disposed that their respective bites are alined with respective runs of adjacent narrow belts for feeding envelopes one at a time in the direction of the associated cancelling die, and in which the stop arms slant symmetrically in the direction of the separator rollers associated therewith.

7. A mail conveying apparatus according to claim 6 provided with a stacking mechanism driven in fixed relation to the envelope feed mechanism which arranges the long and short envelopes in separate stacks after being cancelled.

8. An envelope feeding apparatus having an arrangement for momentarily storing envelopes when they are being fed at intermittent times at a rate in excess of that of a processing device which comprises a flat conveyor belt for envelopes an upright plate overlying the belt dividing it into two longitudinal channels, one for short envelopes and the other for long envelopes, two pairs of spaced pulleys mounted to turn on vertical axes, the pairs being disposed respectively alongside opposite edges of the belt, a V-belt mounted on each pair of pulleys, the V-belts being disposed with their inner runs overlying in spaced relation respective opposite edge portions of the flat belt and running in the same direction thus forming moving outer sides for both channels of the flat belt, a pair of sets of separator rollers respectively mounted beyond the eject end of the flat conveyor belt near opposite edges thereof with the bites of the roller sets substantially aligned with the inner run of the adjacent V-belt, a plurality of spring loaded pressure arms slanting in the direction of the movement of the belts hinged about vertical axes to the upright plate and extending toward one or the other of the V-belts adapted to yield when engaged by bunches of envelopes so that the envelopes are pressed by the arms in the direction of the V-belts, and a pair of fixed stop arms for arresting the forward movement of envelopes coming into engagement therewith mounted symmetrically near the eject end of the flat belt formed to slant in opposite directions in the same horizontal plane each toward one set of separator rollers, the ends of the arms being spaced from the adjacent V-belt to permit envelopes in engagement with the V-belts to pass by the ends of the arms to the associated set of separator rollers.

9. An envelope feeding apparatus for a dual cancelling and stacking apparatus for storing envelopes arriving in bunches momentarily in excess of the capacity of the cancelling machine which comprises a flat belt for conveying envelopes riding thereon on one of their longitudinal edges, a bracket mounted beyond the eject end of the belt, a flat vertical plate supported by the bracket extending along the belt dividing it into two longitudinal channels respectively for long and short envelopes, two pairs of spaced pulleys mounted to turn about vertical axes, the pairs being disposed respectively alongside opposite edges of the belt, a V-belt mounted on each pair of pulleys, the V-belts being disposed with their inner runs overlying in spaced relation respective opposite edge portions of the flat belt and running in the same direction thereby providing moving outer sides for both channels of the flat belt, a pair of sets of separator rollers respectively mounted beyond the eject end of the flat belt near opposite edges thereof with the bites of the separator rollers substantially aligned with the inner run of the adjacent V-belt, a plurality of spring loaded arms slanting in the direction of movement of the belts hinged to the upright plate on opposite sides thereof extending toward the adjacent V-belt adapted to yield according to the size of the bunches of envelopes being fed to hold the envelopes upright and press them in the direction of the associated V-belt and a pair of stop arms shorter than the pressure arms fixed to said bracket beyond the pressure arms respectively extending in the direction of the separator rollers for arresting momentarily the forward movement of the innermost of the larger bunches.

10. An envelope feeding apparatus for a dual cancelling and stacking apparatus for storing envelopes arriving in bunches momentarily in excess of the capacity of the cancelling machine which comprises a flat belt for conveying envelopes riding thereon on one of their longitudinal edges, a bracket disposed beyond the eject end of the belt, a flat vertical plate supported by the

bracket extending along the belt dividing it into two longitudinal channels respectively for long and short envelopes, two pairs of spaced pulleys mounted to turn about vertical axes, the pairs being disposed respectively alongside opposite edges of the belt, a V-belt mounted on each pair of pulleys, the V-belts being disposed with their inner runs overlying in spaced relation respective opposite edge portions of the flat belt and running in the same direction thereby providing moving outer sides for both channels of the flat belt, a pair of sets of separator rollers respectively mounted beyond the eject end of the flat belt near opposite edges thereof with the bites of the separator rollers substantially aligned with the inner run of the adjacent V-belt, a plurality of spring loaded pressure arms slanting in the direction of movement of the belts hinged to the upright plate on opposite sides thereof extending toward the adjacent V-belt adapted to yield according to the size of the bunches of envelopes being fed to hold the envelopes upright and press them in the direction of the associated V-belt, a pair of stop arms shorter than the pressure arms fixed to said bracket beyond the pressure arms respectively extending in the direction of the separator rollers for arresting momentarily the forward movement of the innermost envelopes of the larger bunches, an intermittently operated printing device for cancelling stamps associated with each set of separator rollers and an envelope operated trip lever positioned in the path of the envelopes between the separator rollers and the printing device for initiating the operation of the printing device at a predetermined time after the operation of the trip lever.

11. An envelope feeding apparatus for a dual cancelling and stacking apparatus for storing envelopes arriving in bunches momentarily in excess of the capacity of the cancelling machine which comprises a flat belt for conveying envelopes riding thereon on one of their longitudinal edges, a bracket disposed beyond the eject end of the belt, a flat vertical plate supported by the bracket extending along the belt dividing it into two longitudinal channels respectively for long and short envelopes, two pairs of spaced pulleys mounted to turn about vertical axes, the pairs being disposed respectively alongside opposite edges of the belt, a V-belt mounted on each pair of pulleys, the V-belts being disposed with their inner runs overlying in spaced relation respective opposite edge portions of the flat belt and running in the same direction thereby providing moving outer sides for both channels of the flat belt, a pair of sets of separator rollers respectively mounted beyond the eject end of the flat belt near opposite edges thereof for feeding the envelopes one at a time toward a cancelling device, the bites of the separator rollers being substantially aligned with the inner run of the adjacent V-belt, a plurality of spring loaded pressure arms slanting in the direction of movement of the belts hinged to the upright plate on opposite sides thereof extending toward the adjacent V-belt adapted to yield according to the side of the bunches of envelopes being fed to hold the envelopes upright and press them in the direction of the associated V-belt, a pair of stop arms shorter than the pressure arms respectively extending in the direction of the separator rollers for arresting momentarily the forward movement of the innermost envelopes of the larger bunches, an intermittently operated printing device for cancelling stamps associated with each set of separator rollers, an envelope operated trip lever positioned in the path of the envelopes between the separator rollers and the printing device for initiating the operation of the printing device at a predetermined time after the operation of the trip lever and an envelope stacking device fed by each printing device operating in fixed relation therewith.

12. In a conveyor apparatus for a mail cancelling machine or the like having belt means mounted to run longitudinally at the edge of a mail sorting table for conveying alongside the table long and short envelopes resting on their edges manually deposited according to length on separated portions of the belt means, means disposed at the end of the belt means for receiving and momentarily storing while maintaining separated bunches of long and short envelopes comprising a horizontal belt disposed in substantially coplanar relation with the belt means, an upright plate supported to overlie the mid-portion of the horizontal belt to divide it into two longitudinal sections, one for long envelopes and the other for short envelopes, a pair of fixed stop arms symmetrically mounted at the end of the plate near the exit end of the belt extending horizontally respectively part way toward the side edges of the belt adapted to be engaged by the leading edges of bunched envelopes momentarily, a pair of pulleys disposed adjacent each of the opposite edges of the belt mounted on vertical shafts, relatively narrow belts mounted on each of the pairs of pulleys having their runs overlying respective edge portions of the horizontal belt and travelling in the same direction, a plurality of pressure arms pivoted about vertical axes to the upright plate symmetrically arranged on opposite sides thereof, spring means for the arms tending to press lightly the free ends of the arms in the direction of the adjacent narrow belt, separate envelope feeding means each comprising feed roller means mounted to turn about vertical axes beyond the ends of the stop arms and beyond the end of the horizontal belt in substantial alignment with the pressure arms for feeding respective envelopes to the feed roller means from those that may have been momentarily restrained from advancing by the stop arms, and a guard member partially enclosing one of the feed rollers formed with a slot through which a small arc of the latter feed roller extends for the purpose of cooperating therewith in driving back in a direction opposite that of the horizontal belt all envelopes engaged thereby except the envelope actually in engagement with the other roller of the pair.

13. In a conveyor apparatus for a mail cancelling machine or the like having a belt means mounted to run longitudinally at the edge of a mail sorting table for conveying long and short envelopes resting on their edges manually deposited according to length on separated portions of the belt means, means disposed at the end of the belt means for receiving and momentarily storing while mantaining separated bunches of long and short envelopes comprising a horizontal belt disposed in substantially coplanar relation with the belt means, an upright plate supported to overlie the mid-portion of the horizontal belt to divide it into two longitudinal sections, one for long envelopes and the other for short envelopes, a pair of fixed stop arms symmetrically mounted at the end of the plate near the exit end of the belt extending horizontally respectively part way toward the adjacent edges of the belt adapted to be engaged by the leading edges of bunched envelopes momentarily, a pair of pulleys disposed adjacent each of the opposite edges of the belt mounted on vertical shafts, relatively narrow belts mounted on each of the respective pairs of pulleys having their runs overlying respective edge portions of the horizontal belt and travelling in the same direction, a plurality of pressure arms pivoted about vertical axes to the upright plate symmetrically arranged on opposite sides thereof, spring means for the arms tending to press lightly the free ends of the arms in the direction of the adjacent narrow belt, separate envelope feeding means each comprising feed roller means mounted to turn about vertical axes beyond the ends of the stop arms and beyond the end of the horizontal belt in substantial alignment with the pressure arms for feeding respective envelopes to the feed roller means from those that may have been momentarily restrained from advancing by the stop arms, a guard member partially enclosing one of the feed rollers formed with a slot through which a small arc of the latter feed roller extends for the purpose

of cooperating therewith in driving back in a direction opposite that of the horizontal belt all envelopes engaged thereby except the envelope actually in engagement with the other roller of the pair, and portions of the guard members of the respective feed roller means extending beyond the stop arms for arresting smaller envelope groups which are not bulky enough to engage the stop arms.

14. In a conveyor apparatus for a mail cancelling machine or the like having belt means mounted to run longitudinally at the edge of a mail sorting table for conveying long and short envelopes resting on their edges manually deposited according to length on separated portions of the belt means, means disposed at the end of the belt means for receiving and momentarily storing while maintaining separated bunches of long and short envelopes comprising a horizontal belt disposed in substantially coplanar relation with the belt means, an upright plate supported to overlie the mid-portion of the horizontal belt to divide it into two longitudinal sections, one for long envelopes and the other for short envelopes, a pair of fixed stop arms symmetrically mounted at the end of the plate near the exit end of the belt extending horizontally respectively part way toward the side edges of the belt adapted to be engaged by the leading edges of bunched envelopes momentarily, a pair of pulleys disposed adjacent each of the opposite edges of the belt mounted on vertical shafts, relatively narrow belts mounted on each of the respective pairs of pulleys having their runs overlying respective edge portions of the horizontal belt and travelling in the same direction, a plurality of pressure arms pivoted about vertical axes to the upright plate symmetrically arranged on opposite sides thereof, spring means for the arms tending to press lightly the free ends of the arms in the direction of the adjacent narrow belt, separate envelope feeding means each comprising feed roller means mounted to turn about vertical axes beyond the ends of the stop arms and beyond the end of the horizontal belt in substantial alignment with the pressure arms for feeding respective envelopes to the feed roller means from those that may have been momentarily restrained from advancing by the stop arms, a guard member partially enclosing one of the feed rollers formed with a slot through which a small arc of the latter feed roller extends for the purpose of cooperating therewith in driving back in a direction opposite that of the horizontal belt all envelopes engaged thereby except the envelope actually in engagement with the other roller of the pair, portions of the guard members of the respective feed roller means extending beyond the stop arms for arresting smaller envelope groups which are not bulky enough to engage the stop arms, a bracket mounted beyond the adjoining part of the stop arms, members symmetrically arranged and extending from opposite sides of the bracket alongside the stop arms, means formed near the outer ends of the members each for retaining one end of the guard members for the respective feed roller means and independent threaded members for adjusting the spacing of the ends of the members with respect to the bracket and thereby adjusting the relative position of the guard with respect to its cooperating roller.

15. In a conveyor apparatus for a mail cancelling machine or the like having belt means mounted to run longitudinally at the edge of a mail sorting table for conveying long and short envelopes resting on their edges manually deposited according to length on separated portions of the belt means, means disposed at the end of the belt means for receiving and momentarily storing while maintaining separated bunches of long and short envelopes comprising a horizontal belt disposed in substantially coplanar relation with the belt means, an upright plate supported to overlie the mid-portion of the horizontal belt to divide it into two longitudinal sections, one for long envelopes and the other for short envelopes, a pair of fixed stop arms symmetrically mounted at the end of the plate near the exit end of the belt extending horizontally respectively part way toward the side edges of the belt adapted to be engaged by the leading edges of bunched envelopes momentarily, a pair of pulleys disposed adjacent each of the opposite edges of the belt mounted on vertical shafts, relatively narrow belts mounted on each of the respective pairs of pulleys having runs overlying respective edge portions of the horizontal belt and travelling in the same direction, a plurality of pressure arms pivoted about vertical axes to the upright plate symmetrically arranged on opposite sides thereof, spring means for the arms tending to press lightly the free ends of the arms in the direction of the adjacent narrow belt, separate envelope feeding means each comprising feed roller means mounted to turn about vertical axes beyond the ends of the stop arms and beyond the end of the horizontal belt in substantial alignment with the pressure arms for feeding respective envelopes to the feed roller means from those that may have been momentarily restrained from advancing by the stop arms, a guard member partially enclosing one of the feed rollers formed with a slot through which a small arc of the latter feed roller extends for the purpose of cooperating therewith in driving back in a direction opposite that of the horizontal belt all envelopes engaged thereby except the envelope actually in engagement with the other roller of the pair, portions of the guard members of the respective feed roller means extending beyond the stop arms for arresting smaller envelope groups which are not bulky enough to engage the stop arms, a bracket mounted beyond the adjoining part of the stop arms, members symmetrically arranged and extending from opposite sides of the bracket alongside the stop arms, means formed near the outer ends of the members each for retaining one end of the guard members for the respective feed roller means, independent threaded members for adjusting the spacing of the ends of the members with respect to the bracket and thereby adjusting the relative position of the guard with respect to its cooperating roller, a flat spring member attached to each guard member, and a member on the bracket for detachably retaining the free ends of the flat spring members to exert pressure on the respective guard members and thus hold the guard members in contact with the bracket supported thereby.

16. A device according to claim 17 which includes a single bracket mounted beyond the end of the belt and fixed to the vertical plate, said bracket providing a single support for the vertical plate and the parts carried thereby.

17. In a system for conveying envelopes of the character described, the combination of a horizontal conveyor belt, a longitudinal vertical plate dividing the belt into two longitudinal channels, a plurality of pairs of deflector plates, each plate of a pair disposed on opposite sides of the vertical plate and slanting in the direction of travel of the envelopes toward the adjacent edge of the horizontal conveyor belt, a common vertical pivot for each pair of deflector plates, said pivots being mounted on the vertical plate, a single spring for each pair of deflector plates mounted upon each pivot, each deflector plate being formed with a tail piece, and a common stop member disposed on the vertical plate in the path of the tail pieces to provide a common stop for the deflector plates.

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