

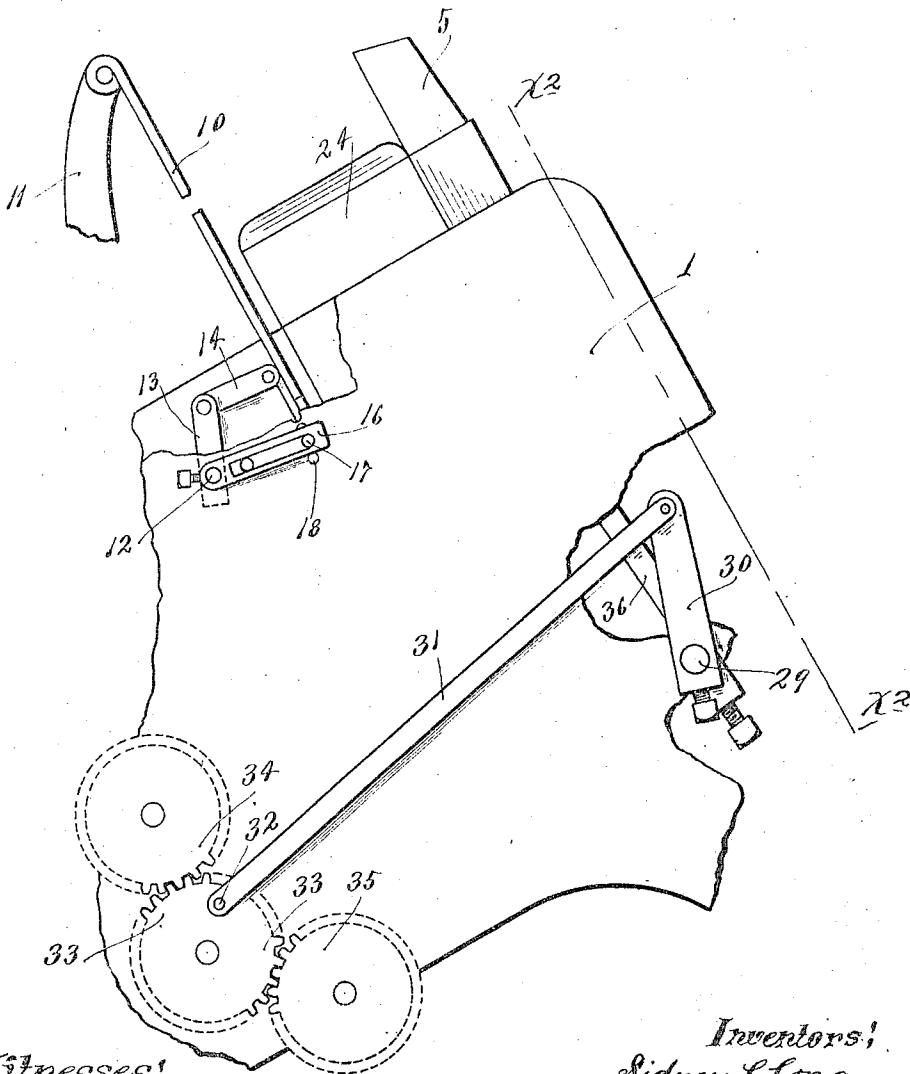
S. L. LONG & G. J. ALBRECHT.
ENVELOP AND CARD FEEDING MECHANISM.
APPLICATION FILED JUNE 12, 1911.

1,032,556.

Patented July 16, 1912.

5 SHEETS—SHEET 1.

Fig. 1



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Inventors:
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Guido J. Albrecht
By their Attorneys:
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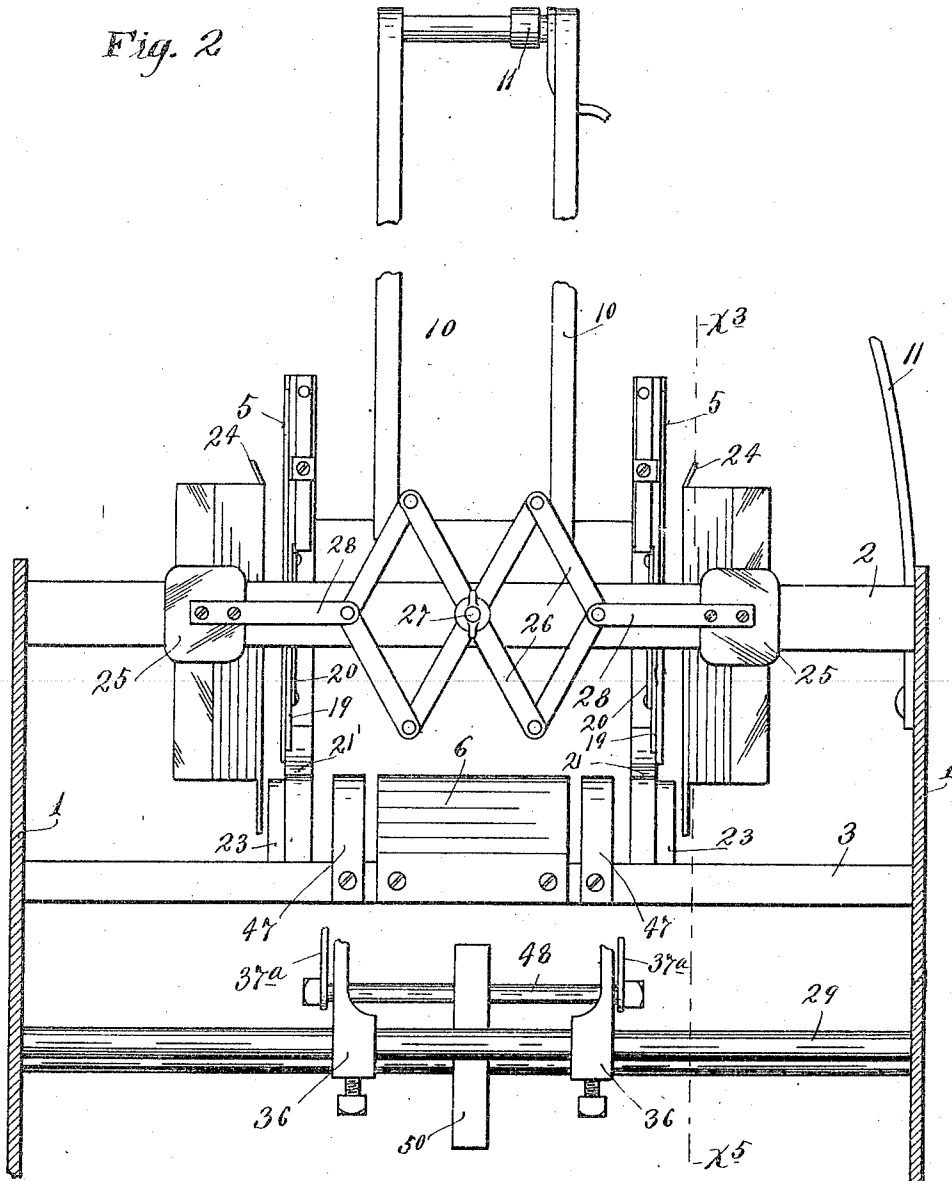
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5 SHEETS—SHEET 2.

Fig. 2



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5 SHEETS—SHEET 3.

Fig. 3

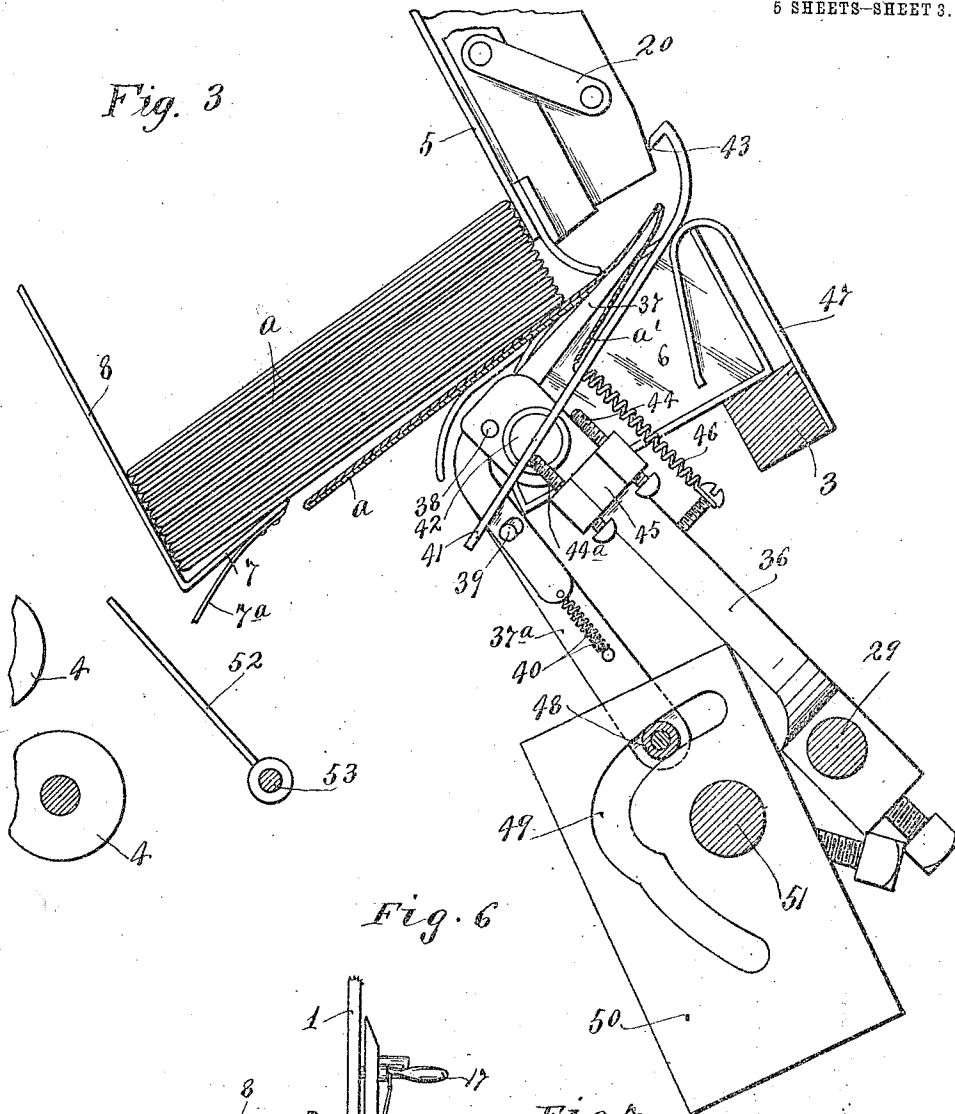


Fig. 6

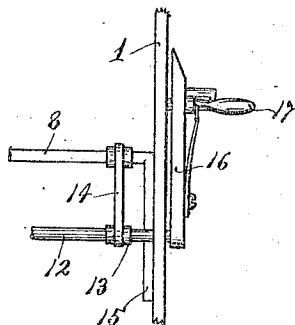
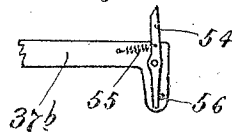


Fig. 7



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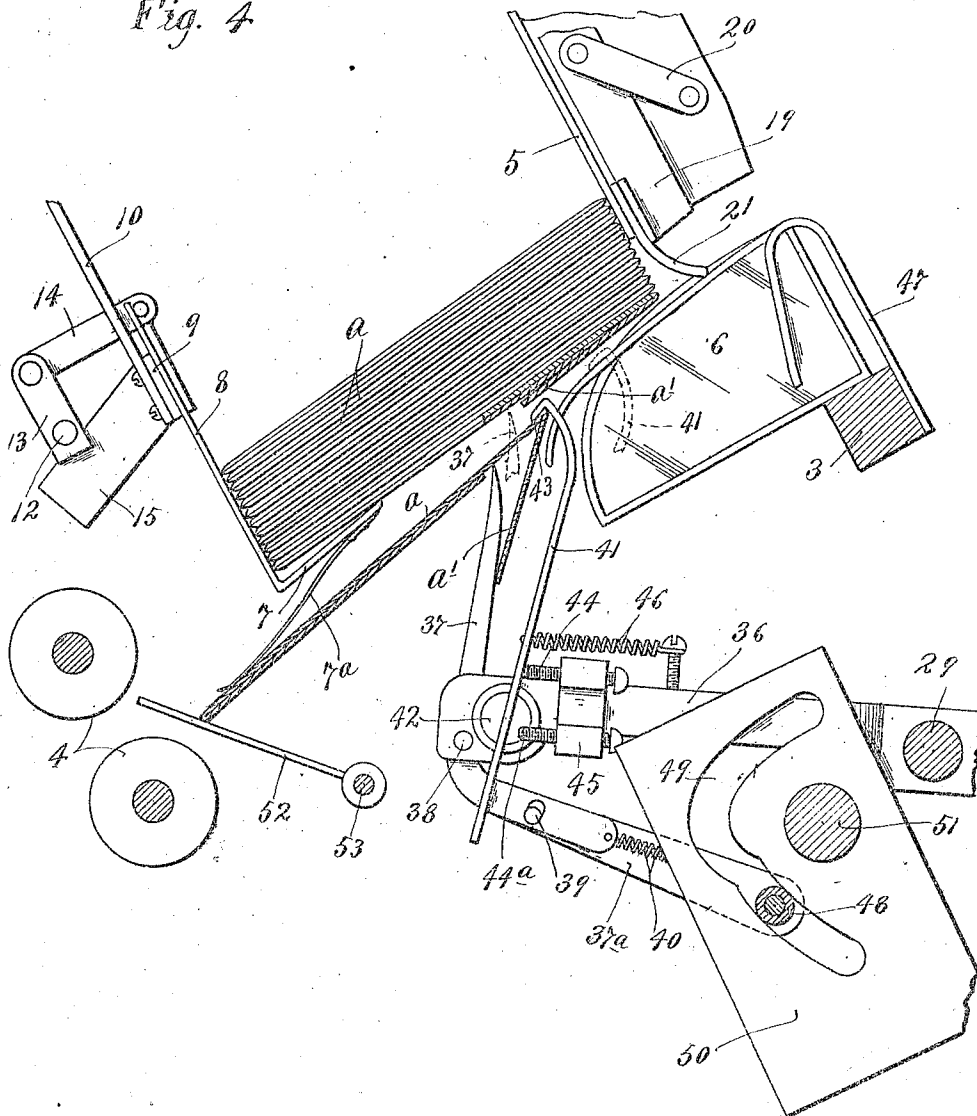
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5 SHEETS—SHEET 4.

Fig. 4



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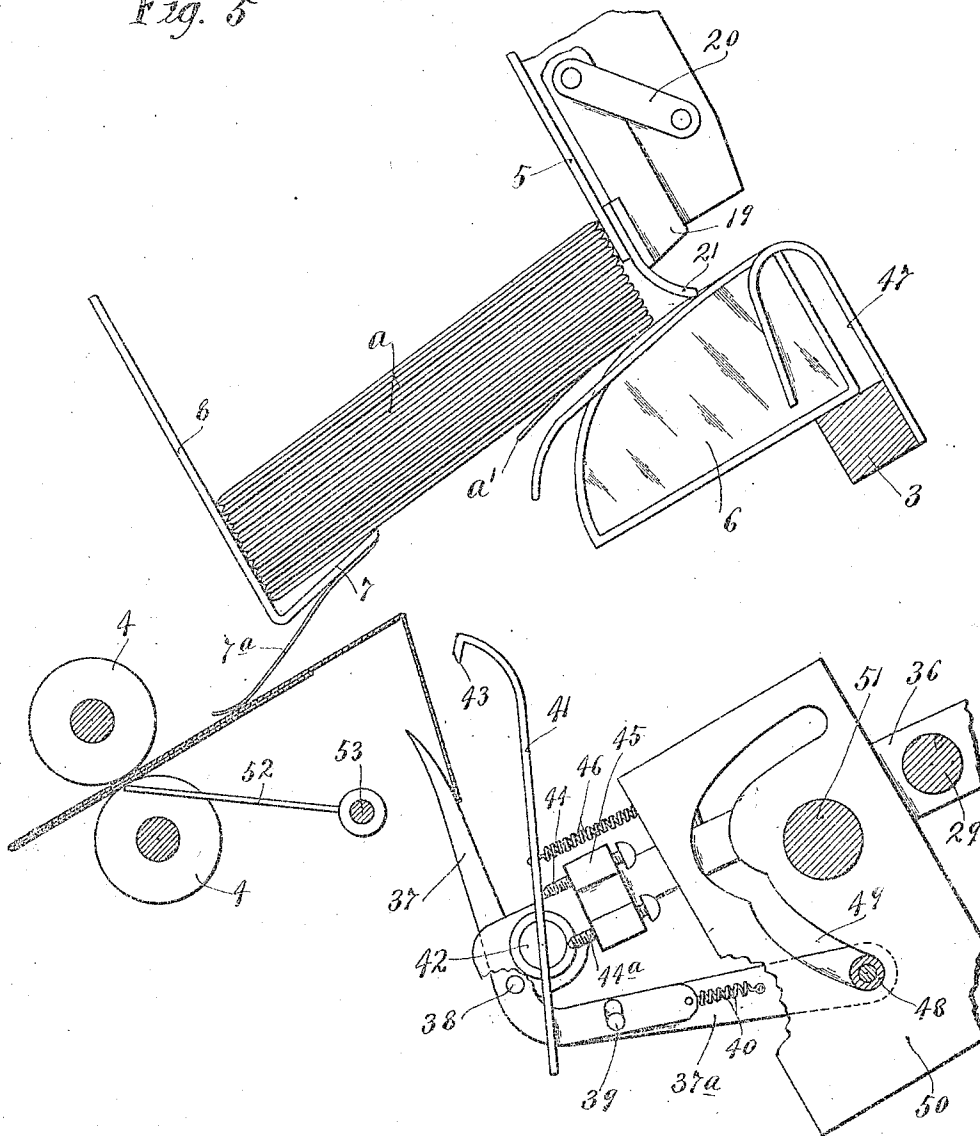
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5 SHEETS—SHEET 5.

Fig. 5



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UNITED STATES PATENT OFFICE.

SIDNEY L. LONG AND GUIDO J. ALBRECHT, OF MINNEAPOLIS, MINNESOTA, ASSIGNORS
TO LONG MAILING MACHINE COMPANY, OF MINNEAPOLIS, MINNESOTA, A CORPORATION.

ENVELOP AND CARD FEEDING MECHANISM.

1,032,556.

Specification of Letters Patent.

Patented July 16, 1912.

Application filed June 12, 1911. Serial No. 632,571.

To all whom it may concern:

Be it known that we, SIDNEY L. LONG and GUIDO J. ALBRECHT, citizens of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Envelop and Card Feeding Mechanism; and we do hereby declare the following to be a full, clear, and exact description 10 of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention has for its primary object to provide a highly efficient and perfectly reliable mechanism for selecting and for feeding envelopes, one at a time, from a pack, and for opening the flaps thereof, so that they are in proper condition for delivery to cooperating moistening and sealing devices. 20 To the above ends, generally stated, the invention consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

The selection of various kinds of envelopes containing various different loads or contents, from a pack or stack, and feeding therefrom, one at a time, with their gummed flaps opened up in proper condition for moistening, has been found extremely difficult. In the first place, the envelopes themselves vary greatly in character. Some are of flimsy, light material, and some of very stiff material. Some, thereof, are provided with address openings covered with transparent material, and some are simply provided with open slots in their faces through which an address on the inclosed letter or card may be seen. Sometimes the envelopes will contain only a simple letter or card and at other times they will contain bulky matter, such as a large number of advertising folders, cards, and even small articles of merchandise. 40

Our invention provides a separating and feeding mechanism which will, with certainty and accuracy, handle the various kinds of envelopes, regardless of their contents. In accordance with the invention, the envelopes are placed in a stack or pack in a holder or magazine, which at the central portion of its bottom or delivery end, is open. Otherwise stated, the said bottom of the 50

magazine or holder is provided with abutments or envelop supports that are spaced apart longitudinally of the line of feed, and transversely of the envelopes that are placed within the magazine. A suitably equipped device is applied to the magazine, adjacent to the envelop support which is at the flap equipped edges of the envelopes. The envelop flaps are primarily folded. 60

The envelopes are separated and fed from the magazine, one at a time, by an oscillating or reciprocating member provided with reversely acting fingers, one of which is forced between the flap and body of the bottom envelop and into engagement with the base of the flap, and is caused to impart primary movement to the said envelop in one direction, sufficient to carry the same beyond the escapement device and out of engagement with the envelop supporting abutment or ledge which is at the opposite side of the magazine. The so-called primary separating finger, above noted, performs the operation just described under movement of the feeding device in one direction, and under movement of the feeding device in the other direction, the so-called secondary separating finger engages the envelop and imparts a secondary movement thereto which entirely removes the selected envelop from the magazine and starts the same on its way to the moistening and sealing devices and under which movement, the flap of the said envelop is opened up and turned backward, and is thus put in condition for proper delivery to the moistening device. 85

The invention is illustrated in the accompanying drawings wherein like characters indicate like parts throughout the several views. 90

Referring to the drawings, Figure 1 is a side elevation with some parts broken away, showing a portion of the framework of an envelop sealing machine and illustrating our improved envelop feeding mechanism; Fig. 2 is an oblique section taken approximately on the line $x^2 x^2$ of Fig. 1; Figs. 3, 4 and 5, are similar views but showing different positions of the parts, taken in section approximately on the line $x^3 x^3$ of Fig. 2, some parts being broken away and with some parts removed; and Fig. 6 is a detail in front elevation. 100

tion, some parts being broken away, showing a device for regulating the adjustment of the envelop magazine. Fig. 7 is a detail view of a modification of the primary feed

5 finger.

As hereinafter used in this specification and in the claims, the term "envelop feeding device" is used to designate a mechanism which selects and separates the envelopes, one at a time, from a pack, and feeds the same from the magazine. Such feeding device is capable of many uses, but is especially designed and intended for use in an envelop sealing machine, and in the drawings, it may be assumed to be thus applied.

15 The framework of the envelop sealing machine is shown as made up of laterally spaced bearing plates 1, rigidly tied together by transverse bars 2 and 3, and other devices, not shown.

20 The numeral 4 indicates cooperating feeding rollers to which the envelopes are delivered from the magazine by our improved feeding device. These rollers 4 may be assumed to be continuously driven, and to be separated and moved together with a properly timed action as, for instance, in the manner disclosed in the co-pending application of Albrecht and Long, S. N. 622,254, 30 filed April 20, 1911, and entitled Envelop sealing machines. So far as this invention is concerned, they are cooperating envelop feeding rollers adapted to pass the envelopes delivered thereto, onward to cooperating devices, such, for instance, as moistening 35 and sealing mechanism.

Envelop magazine.—The envelopes *a* with their gummed flaps *a'* folded, are arranged in a pack or stack within a magazine which 40 is preferably made adjustable to envelopes of different lengths and widths. The envelop magazine is preferably inclined. The flap-equipped edges of the envelopes are placed forward against confining bars 5 which may be rigidly secured to the frame cross bar 2. 45 The front edges of the pack of envelopes are supported by an abutment 6 which is conveniently secured to the frame cross bar 3. The upper surface of the supporting abutment 6 is preferably rounded, as clearly shown in Figs. 3, 4 and 5. The lower edge portions of the envelopes *a* are supported on an abutment or ledge 7 shown as formed integral with a hanger plate 8, rigidly attached at its upper portion, at 9, to the 50 lower end of a pair of hanger rods 10. The ledge 7 may be formed obliquely with respect to hanger 8, and the envelop supporting point on the curved surface of abutment 6 is preferably positioned with respect to the supporting edge of ledge 7 so that the envelop will be held in a position slightly oblique to bars 5 and hanger plate 8, which latter members will of course be relatively 60 parallel. This structure, as shown, is such

that the lowermost envelop of the stack will engage only the edge of ledge 7 and practically a single element of abutment 6, the curvature of which falls away from said engaging point, the whole arrangement being 70 adapted to permit ready separation of said lowermost envelop from the remainder in the stack, as will hereinafter appear. The hanger rods 10, at their extreme upper ends are pivotally attached to a relatively fixed 75 support 11 (see Figs. 1 and 2). At the rear, mounted in suitably journaled bearing plates 1, at the rear of the hanger plate 8, is a transverse rock shaft 12 provided at its intermediate portion with an arm 13 that is 80 connected by a link 14 to the upper portion of the hanger plate 8.

The numeral 15 indicates a guide or retaining arm which is rigidly secured to the upper portion of the hanger plate 8 and the 85 inclined upper portion of which maintains engagement with the lower portion of the shaft 12 under different adjustments of the hanger plate 8, and thereby holds the said hanger plate against upward jumping movements. The rock shaft 12 is adapted to be 90 set in different adjustments by means of an arm rigidly secured to one outer end thereof, and provided with a latch 17 that is engageable with any of several perforations 18 95 in the adjacent bearing plate 1. By adjustments of the arm 16, the hanger plate 8 may be moved laterally toward or from the front bars 5, so as to thereby vary the width of the magazine and set the same to properly 100 hold envelopes of different widths.

The escapement device employed for preventing more than one envelop from being moved at one time from the magazine, may take different forms, but is preferably of the 105 character disclosed in the co-pending application of Albrecht and Long, above identified. As indicated most clearly in Figs. 2, 3 and 4, the retaining bars 5 are provided with rearwardly extending flanges 5^a, forming L-shaped channels. Within these channels and normally contacting with bars 5 are escapement members 19, connected with 110 flanges 5^a by means of links 20 pivotally connected at one end to the said flanges and at the other end to the escapement bars 19, the links preferably extending in an upwardly oblique direction from the point of connection with the flanges to the point of connection with the escapement bars. The 115 lower ends of the escapement bars 19 are provided with depending stop fingers 21, which may be rearwardly curved and normally rest upon downwardly curved rest bars 23, said rest bars having the portion of their surfaces thus engaged below the envelop supporting portion of abutment 6, the rest bars 23 being secured in position to the frame cross bar 3.

The end plates 24 of the envelop maga- 130

zine are made adjustable to envelopes of different lengths and, as shown, are provided with hub portions 25 mounted to slide on the frame cross bar 2 and connected for simultaneous reverse movements by a lazy tong 26. The lazy tong is intermediately pivoted to the bar 2 at 27 and is directly connected to sliding hubs 25 by metal straps 28. Under all adjustments of the end plates 24, the envelopes, regardless of length, are kept centered in respect to the machine. The supporting ledge or abutment 7 of the magazine is shown as provided with one or more rearwardly projecting spring fingers 7^a, under which the envelopes are fed to the rollers 4.

Feeding mechanism.—In the illustrated, and what is at present thought to be the preferred form of envelop feeding mechanism, a rock shaft 29 is mounted in the frame bearing plates 1 and at one outer end is provided with an arm 30 connected by a link 31 to a crank pin 32 of a gear 33. This gear 33 is shown as journaled to the adjacent bearing plate 1, and is in mesh with gears 34 and 35, also journaled to the said bearing plate. These gears are all complete gears, although their teeth are indicated in part by dotted lines in Fig. 1. In one way, or another, not necessary for the purposes of this case to consider, the gear 33 is driven from one or the other of the said gears 34 and 35, so that the rock shaft 29 will continuously oscillate. At its central portion, the rock shaft 29 is provided with a feed arm 36, to the free end of which, the reversely acting primary and secondary feed fingers are applied. Preferably, the rock shaft 29 is provided with two of the said arms 36 and primary and secondary selecting or feeding fingers applied to each. The so-called primary selecting fingers are preferably made up of two parts 37 and 37^a, both of which are pivoted to the cooperating arms 36 at 38. A slot and pin connection 39 permits slight pivotal movement of the said parts 37 and 37^a, in respect to each other, and they are yieldingly held in the relative position, in respect to each other, shown, for instance, in Fig. 5, by a light coiled spring 40. The so-called secondary selecting fingers 41 are pivotally connected to the cooperating arms 36 and 42 and they are provided with forwardly and upwardly projecting hooked ends 43. Extreme oscillatory movements of the fingers 41, in respect to the arms 36 which carry them, may be adjustably limited by set screws 44 and 44^a, shown as applied to lugs 45 carried by the said arms 36. Light coiled springs 46 (see particularly Fig. 4) anchored to the said fingers 41 and to the corresponding arms 36, yieldingly hold the said fingers against the stop screws 44. The upper ends of the secondary fingers 41 are curved and are ar-

ranged to be thrust against cam acting abutments 47 secured on the frame bar 3, for a purpose which will appear in the description of the operation. The extended ends of the supplemental sections 37^a of the primary fingers 37 are connected to a cross rod or sleeve 48 that is extended through an irregular cam groove 49 of a fixed cam block 50, through which, as shown, one of the frame tie rods 51 is passed.

The numeral 52 indicates fingers pivotally supported at 53 and which may be assumed to be yieldingly pressed upward so that they cooperate with the spring fingers 7^a to guide the envelopes between the rollers 4. The above noted function is all that need to be mentioned here in respect to the said fingers 2, although, in the complete machine, they perform another and more important function. It may be here further noted that the feed rollers 4 are preferably grooved so as to permit the fingers 52 to be pressed downward, as shown in Fig. 5.

Operation.—What may be assumed to be the normal positions of the primary and secondary selecting fingers 37 and 41, is indicated by dotted lines in Fig. 4. From these positions, the said fingers are first moved upward and toward the right, in respect to Fig. 4, and the first result of this is that the points of the primary fingers 37 are forced between the flap and body of the envelop which is at the bottom of the stack, the sharp points of the said fingers 37 lightly scrape along the lower surface of the bottom envelop, and hence, are certain to pass above the gummed flap thereof, and to thereby positively force the flap into a partly opened position; and under continued upward movement, the said primary fingers, engaged as stated, force the bottom envelop from the bottom of the stack toward the right, and under the gravity-held yielding escapement device 19—20. This first movement of the envelop, which may be designated as its primary movement, carries the lower edge thereof beyond and off from the supporting abutment or ledge 7, as clearly shown in Fig. 3, the position shown in Fig. 3 being the extreme position of the said fingers 37 and 41, in a forward and upward position toward the right, in respect to Figs. 3, 4 and 5. The free part of the envelop under the influence of gravity and from the pressure of the stack above, will drop down upon the rest bars 23 into the position shown in Fig. 3, where the lower edge will stand out separated from the body of the stack in position to be guided by spring fingers 7^a when moved by the feeding means in reverse direction. Under the primary movements, just stated, the tie bar or rod 48 moves in the cam groove 49 on such an irregular line that it causes the points of the primary fingers 37 to move in approximately straight lines be-

tween the position indicated by dotted lines in Fig. 4, and the position indicated in Fig. 3. The spring 40 and slot and pin connection 39 permit such slight variation from its straight line movement as may be required to insure the close contact between the points of the said primary fingers and the body of the bottom envelop of the stack. When the feed arm 36 is given a movement required to impart the above described primary movement to the said fingers 37 and 41, the curved ends of the latter are thrown against the cam acting abutments 47 and are forced upward, against the tension of the springs, 46 so that in the position of the parts shown in Fig. 3, the hooked ends 43 of the said secondary fingers stand above the upper edge of the partly ejected envelop and so that when moved backward, or toward the left, and downward in respect to Fig. 3, the said hooks are certain to engage the upper edge of the said partly ejected envelop.

The secondary or second step of ejecting movement is imparted to the envelop by movement of the arm 36 and ejecting fingers 37 and 41 toward the left and downward, in respect to Figs. 3, 4 and 5. Under this movement, the primary fingers 37 recede from their engagement with the face of the envelop flap and the hooks 43 of the fingers 41 are moved into close engagement with the upper edge of the partly ejected envelop and draw the engaged edge portion thereof, slightly below the upper face of the abutment 6, which at that time, supports the upper edge portion of the said envelop. The lower edge of the envelop at this time, as already stated, is dropped below the lower supporting abutment 7 so that under continued movement downward and toward the left, the envelop engaged thereby, will be positively carried from the bottom of the stack and delivered between the rollers 4, and under this delivering movement, the primary fingers 37 maintain engagement with the gummed flap of the envelop and turn the same into an opened position. Fig. 4 shows the envelop moved about half way from the position shown in Fig. 3, toward the position shown in Fig. 5, and the said latter view shows the envelop, with its flap opened, delivered between the said rollers 4 and the said rollers operating to continue the feed movement of the said envelop. The light spring fingers 7^a simply prevent the lower end of the envelop from being tilted upward into position too high for proper delivery between the rollers 4. Attention is here further called to the fact that under the above described so-called secondary feed movements, the hooked ends 43 of the fingers 41 are engaged with the upper edge of the partly ejected envelop, before the curved ends of the said fingers leave contact with

the cam abutments 47, so that the proper initial engagement is insured; that the disengagement of the said fingers from the said abutments 47 takes place before the hooked ends 43 thereof, are moved forward far enough for possible engagement with the envelop lying immediately on top of the partly ejected envelop; and that immediately after the disengagement of said fingers 41 from the abutments 47, the springs 46 draw the hooked ends thereof downward, moving the engaged edge portions of the envelop therewith so that they have good clearance from the upper edge of the envelop next above the partially ejected envelop. Thus, there is no possibility of the secondary fingers 41 taking up two envelops at one time.

The important features of this improved envelop feeding mechanism summed up are substantially as follows: The envelops are ejected from the magazine by movement first in one direction, to disengage the same from the supporting abutment or ledge of the magazine, and are then moved in a reverse direction to disengage the envelop from the other or second supporting abutment or ledge of the magazine. Stated in another way, the envelops are ejected, one at a time, through an intermediate delivery passage in the bottom of the magazine. An escapement device and cooperating escape passage permits the initial movements of the envelops, one at a time, so that they may be ejected through the said intermediate discharge passage of the magazine. The envelops are ejected by devices that engage the flaps thereof, so that neither the contents, nor the construction of the body of the envelop interferes with the ejecting action of the so-called primary and secondary ejecting fingers. The primary fingers that engage the envelop flap to effect the primary discharge movement thereof, serve to open the envelop flaps, while the envelop is given its secondary or reverse movement, by the so-called secondary fingers.

Any kind of mechanism arranged to accomplish the discharge or ejecting movements of the envelops from a magazine in the manner above described, will be within the scope of our invention. From a broad point of view, the combined operating primary and secondary fingers afford a sort of a grapple or pincers that embrace or catch the flap of the envelop and effect the delivery of the envelop by the two-step reverse movement, above described.

The selecting and feeding mechanism, above described, in detail, was especially designed and is especially adapted for feeding envelops, but it may be used to feed postal cards, and like articles which are without flaps. For this purpose, however, it will be advisable to modify the construction of the

so-called primary feed finger substantially as illustrated in Fig. 7. In Fig. 7, 37^b indicates one of the primary selecting fingers, to which a sharp pointed feed dog 54 is intermediately pivoted and is normally pressed by a spring 55 against a stop 56 on the said finger 37^b. The point of this dog 54 being sharp, it would serve to impart the initial feed movement to the card, but under return movement, the spring 55 will permit the same to move pivotally and slip readily backward on the card without causing the card to return therewith. The secondary selecting fingers will operate on a card in substantially the same way as they will operate on an envelop.

The mechanism above described, has been put into actual use and has been found highly efficient for feeding all kinds of envelops with numerous and various different kinds of load or contents.

The term "envelop magazine" is herein used in a very broad sense to include any means for holding a stack or pack of envelops or analogous articles. The so-called primary and secondary selecting fingers are preferably carried by an oscillating arm, but various other means might be provided for imparting vibratory or reciprocatory movements thereto. The elements 6 and 7 are herein referred to as envelop supporting ledges or abutments but the gist of the thing is that they normally serve or hold the stack of envelops so that they may be ejected, one at a time, by a two-step reverse movement above indicated.

What we claim is:

1. In a feeding device, means for holding articles in a stack and means for delivering said articles singly and successively from the stack comprising a device movable forward and back and operating to engage one portion of an article and move it partly from the stack at each forward movement and to engage another portion of said article and move it entirely free from the stack at each backward movement.

2. In a feeding device, a magazine for holding articles in a stack having a discharge opening in the bottom thereof, and means for removing said articles singly and successively through said opening comprising a device movable forward and back across said opening and operating to engage one portion of an article and move it partly from the stack and into position to pass through said opening at each forward movement and to engage another portion of said article and move it through said opening and entirely out of the magazine at each backward movement.

3. In a machine for operating upon envelops, means for holding the envelops in a stack with their flaps folded, and means for delivering said envelops singly and succes-

sively from the stack comprising a device movable forward and back and operating to engage beneath a flap and push an envelop partly from the stack at each forward movement and to engage said envelop outside of said flap and push the same entirely free from the stack at each backward movement.

4. In a machine for operating upon envelops, a magazine for holding the envelops in a stack with their folded flaps downward having a pair of supporting members and an intermediate discharge opening at the bottom thereof, and means for delivering the envelops singly and successively through said opening comprising a device movable forward and back across said opening and having a portion thereof operative at each forward movement to engage beneath the lowermost flap and push an envelop partly from the stack and into position so that its free edge will extend out of said opening, and to engage said envelop outside of said flap and push the same through said opening and out of said magazine at each backward movement.

5. In a machine for operating upon loaded envelops, a magazine for holding the envelops in a stack with their folded flaps downward having a discharge opening in the bottom thereof, means engageable inside of the flap of the lower envelop to push said envelop into position to be delivered through said opening, and means thereafter engageable with the envelop outside of said flap to push the envelop in reverse direction through said opening.

6. The combination with an envelop magazine having abutments and provided with a yielding escapement at one side, of primary and secondary selecting fingers and means for vibrating the same, the said primary fingers being engageable between the flap and body of an envelop to move the same under the said escapement device and out of engagement with one of said abutments, and the said secondary finger thereafter being engageable with the flap equipped edge of the partly ejected envelop, and operating under reverse movement to disengage the envelop from the other abutment and to complete the discharge thereof, from the magazine.

7. The combination with a magazine adapted to contain envelops, cards, and the like, of a vibratory carrying member provided with primary and secondary selecting fingers, which said primary fingers are operative under movement in one direction to partly disengage the articles, one at a time, from said magazine, and which secondary fingers are operative under reverse movements to complete the disengagement of the articles, one at a time, from said magazine.

8. The combination with a magazine adapted to contain envelops, cards, and the

like, of a vibratory carrying member provided with primary and secondary selecting fingers, the latter of which have hooked ends, and which primary fingers are operative when moved in one direction to partly disengage the articles, one at a time, from said magazine, and which secondary fingers are operative under reverse movements to complete the disengagement of the articles, one at a time, from said magazine.

9. The combination with a magazine adapted to contain envelopes, cards, and the like, of a vibratory carrying member provided with primary and secondary selecting fingers, which said primary fingers are operative under movement in one direction to partly disengage the articles, one at a time, from said magazine, and which secondary fingers are operative under reverse movements to complete the disengagement of the articles, one at a time, from said magazine, and a cam device operative to direct the movement of said primary finger.

10. The combination with an envelope magazine, of a vibratory carrying member provided with primary and secondary selecting fingers, which primary fingers, under movement in one direction are engageable with the envelop flaps to partly disengage the envelopes from said magazine, and which secondary fingers are operative under movement in reverse direction to complete the disengagement of the envelopes, one at a time, from said magazine, and which selecting fingers serve to turn the envelop flaps into opened positions while the envelopes are given their secondary movement.

11. In a feeding device, a magazine and means for feeding articles singly and successively therefrom, comprising a sectional, yieldingly-connected member for initially engaging and pushing said articles partly from the magazine, oscillating means for actuating said member and upon which the same is directly mounted, and means for differentially moving the member on the oscillating means to cause the engaging portion thereof to travel in an approximately straight line while the same is in engaging position.

12. The combination with a magazine adapted to contain envelopes, cards, and the like, of an oscillatory carrying arm provided with a pivoted selecting finger operative on the articles on the bottom for pushing the same partly from the magazine, one at a time, and a device operative on said selecting finger to cause the article engaging portion thereof, to travel on an approximately straight line while engaged with the article.

13. The combination with a magazine adapted to contain envelopes, cards, and the like, of an oscillatory carrying arm provided with a pivoted selecting finger oper-

ative on the articles on the bottom for pushing the same partly from the magazine, one at a time, and a fixed cam operative on said selecting finger to cause the article engaging portion thereof, to travel on an approximately straight line while engaged with the article.

14. The combination with a magazine adapted to contain envelopes, cards, and the like, of an oscillatory carrying arm provided with pivoted primary and secondary selecting fingers operative on the articles to be delivered from the magazine, under reverse movements, said primary finger having yieldingly connected supplemental sections, and a cam operative on the latter to cause the operative end of the said primary finger to travel on an approximately straight line while engaged with the article which is being ejected from the magazine.

15. In a machine for operating upon envelopes, a magazine for holding the envelopes in a stack provided with a discharge opening, means for discharging the envelopes transversely through said opening singly and successively, and means movable therewith for first moving said envelopes partly out of the stack into position so that one edge may be engaged by the discharging means and the other edge will extend out of said opening.

16. The combination with a magazine adapted to contain envelopes, cards, and the like, of a vibratory carrying member provided with primary and secondary selecting fingers operative under movements in reverse direction to eject the articles, one at a time, from the magazine, and relatively fixed abutments operative on the secondary selecting finger to move the same and insure initial engagement thereof with the article partly ejected from the magazine by the said primary finger.

17. The combination with a magazine adapted to contain envelopes, cards, and the like, of an oscillatory carrying arm provided with pivoted primary and secondary selecting fingers, the latter having hooked ends, the said fingers being arranged to eject the articles, one at a time, from said magazine by movement first in one direction and then in the other, the relatively fixed abutment operative on the free end of said secondary finger to move the same pivotally and to insure initial engagement of the hooked end thereof with the adjacent edge of the envelop that has been partly ejected from said magazine by said primary finger.

18. In a machine for operating upon loaded envelopes, a magazine for holding the envelopes comprising envelop-supporting abutments and retaining bars having the ends thereof spaced from the plane of said abutments, means for selecting and moving said envelopes singly and successively partly out

of the magazine beneath said bars, and escapement members linked to said bars so as to be movable bodily out of the plane of movement of the envelopes for permitting single envelopes of different thicknesses to be so moved while holding back all other envelopes in the stack.

19. In a machine for operating upon loaded envelopes, a magazine for holding the envelopes comprising envelop-supporting abutments and retaining bars having the ends thereof spaced from the plane of said abutments, means for selecting and moving said envelopes singly and successively beneath said bars into position to be discharged from the magazine, outwardly extending flanges on said retaining bars, links pivoted to said flanges, escapement bars pivoted to said links and positioned normally to engage said retaining bars, and stop fingers on said escapement bars extending across the path of movement of said envelopes.

20. In a machine for operating upon loaded envelopes, a magazine for holding the envelopes comprising an envelop-supporting abutment and retaining bars having the ends thereof spaced from said abutment, means for selecting and moving said envelopes singly and successively beneath said bars into position to be discharged from the magazine, outwardly extending flanges on said retaining bars, links pivoted to said flanges, escapement bars pivoted to said links and positioned normally to engage said retaining bars, curved rest bars having the surface thereof positioned below the envelop supporting surface of said abutment, and curved stop fingers on said escapement bars extending across the path of movement of said envelopes.

21. In a machine for operating upon loaded envelopes, a magazine for holding the envelopes comprising spaced parallel walls and a curved supporting member adjacent the lower portion of one of said walls, said last named wall being provided with an opening at one side thereof, means for engaging and moving the envelopes singly and successively partly through said opening, rests below the supporting plane of said curved member, and a movable gate having stops normally engaging said rests, movement of the envelop against said stops operating to lift the gate to permit the engaged envelop only to pass.

22. In an envelop sealing machine, means for holding the envelopes in a stack with their flaps folded, a two-part member, and means to move the member to cause said parts to embrace loosely the exposed flap of the outermost envelop and each part successively to engage and thereby impart movements to said envelop in opposite directions to effect discharge thereof from the stack.

23. In an envelop sealing machine, means

for holding the envelopes in a stack with their flaps folded, a selecting device comprising a pointed finger and a hooked arm extending in overlapping spaced relation to the end of said finger, and means to move said device to cause said parts to embrace the exposed flap of the outermost envelop and to cause the finger to engage beneath the flap and move the envelop in one direction and the hook then to engage over the edge of the moved envelop and move it in the opposite direction to effect discharge thereof from the stack.

24. In an envelop sealing machine, means for holding the envelopes in a stack with their flaps folded, a two-part member, means to move the member to cause said parts to embrace loosely the exposed flap of the outermost envelop and each part successively to engage and thereby impart movements to said envelop in opposite directions to effect discharge thereof from the stack, and means to pull the discharged envelop away from said member and the flap from between said parts, whereby said flap is extended.

25. In an envelop sealing machine, means for holding the envelopes in a stack with their flaps folded, means, including a finger operative beneath the folded flap, for discharging the envelopes singly and successively from the stack, and means thereafter operating to move the envelop away from the discharging means, whereby the flap is pulled over said finger and thereby extended.

26. In an envelop sealing machine, means for holding the envelopes in a stack with their flaps folded, a pair of intermittently separating feed rollers, means, including a finger operative beneath the folded flap, for discharging the envelopes singly and successively from the stack and delivering the closed edges thereof between said rollers, and means to operate the rollers to move the envelop away from the discharging means and pull the flap over said finger thereby extending the flap.

27. A feeding device comprising means for holding articles in a stack, means for moving the articles singly and successively so that an edge thereof extends free of the stack, a hook normally out of the plane of movement of said article, and means to move the hook to cause the same to engage loosely over said free edge and then push the moved article from the stack.

28. A feeding device comprising means for holding articles in a stack, means for moving the articles singly and successively so that an edge thereof extends free of the stack, a moving member, a hooked arm carried thereby, and means to move the hooked arm differentially on said member while the same is being moved so that the hook will be caused to engage over said free edge,

whereby movement of said member will thereafter discharge the moved article from the stack.

29. A feeding device comprising means 5 for holding articles in a stack, means for moving the articles singly and successively so that an edge thereof extends free of the stack, a moving member, an arm pivoted thereon provided with a curved hooked end, 10 means to hold the arm normally in a predetermined position, and a fixed abutment against which said curved end is moved to position the hook for engagement over said free edge whereby movement of said member 15 will thereafter discharge the moved article from the stack.

30. A feeding device comprising means for holding articles in a stack, means for moving the articles singly and successively 20 so that an edge thereof extends free of the stack, a moving member, an arm pivoted thereon provided with a curved hooked end, means to hold the arm normally in a predetermined position, a fixed abutment against 25 which said curved end is moved to position the hook for engagement over said free edge whereby movement of said member will thereafter discharge the moved article from the stack, adjustable stops limiting pivotal 30 movement of said arm on said member, a spring to hold the arm normally against one of said stops, and a fixed abutment against which said curved end is moved to position the hook in opposition to the spring for engagement 35 over said free edge, whereby movement of said member will thereafter discharge the moved article from the stack.

31. In a machine for operating upon 40 loaded envelopes, a magazine comprising spaced parallel walls, a supporting lip secured to one wall and a support adjacent and spaced from the other wall for holding the envelopes in a stack with their folded 45 flaps above the support, means engageable with the flap when so held for moving the

lowermost envelop so that the opposite edge will come free of said lip, and means thereafter to discharge the envelop in reverse direction from the magazine.

32. In a machine for operating upon 50 loaded envelopes, a magazine comprising spaced parallel walls, an oblique supporting lip secured to one wall and a curved support adjacent the other wall for holding the envelopes in a stack with their folded flaps 55 above the curved support, means engageable with the flap for moving the lowermost envelop so that the opposite edge will come free of said lip, and means thereafter to discharge the envelop in reverse direction from 60 the magazine, said curved support and oblique lip operating to direct the envelop while it is being discharged.

33. In a machine for operating upon loaded envelopes, a magazine for holding 65 the envelopes in a stack with their flaps folded provided with side walls and a discharge opening intermediate thereof and parallel with the longer edges of the envelopes as held, and means operative to deliver 70 the envelopes singly and successively, flap-edge last, transversely through said opening.

34. In a machine for operating upon loaded envelopes, a magazine for holding the 75 envelopes in a stack with their flaps folded provided with a discharge opening longitudinal of and intermediate the longer edges of the envelopes as held, and means operative 80 upon the flap-edge of the envelopes to deliver the same singly and successively, flap-edge last, transversely through said opening.

In testimony whereof we affix our signatures in presence of two witnesses.

SIDNEY L. LONG.
GUIDO J. ALBRECHT.

Witnesses:

HARRY D. KILGORE,
F. D. MERCHANT.