L. McMILLAN.

ENVELOP FILLING MACHINE.

APPLICATION FILED MAR. 28, 1916.

1,211,329.

Patented Jan. 2, 1917.

3 SHEETS—SHEET 1.

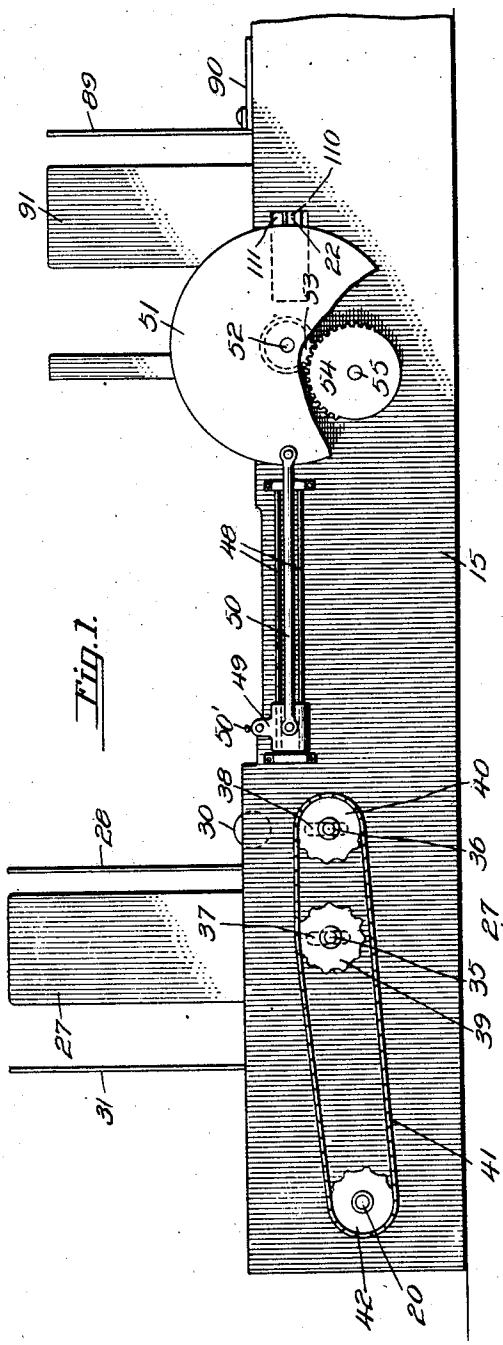


Fig. 1.

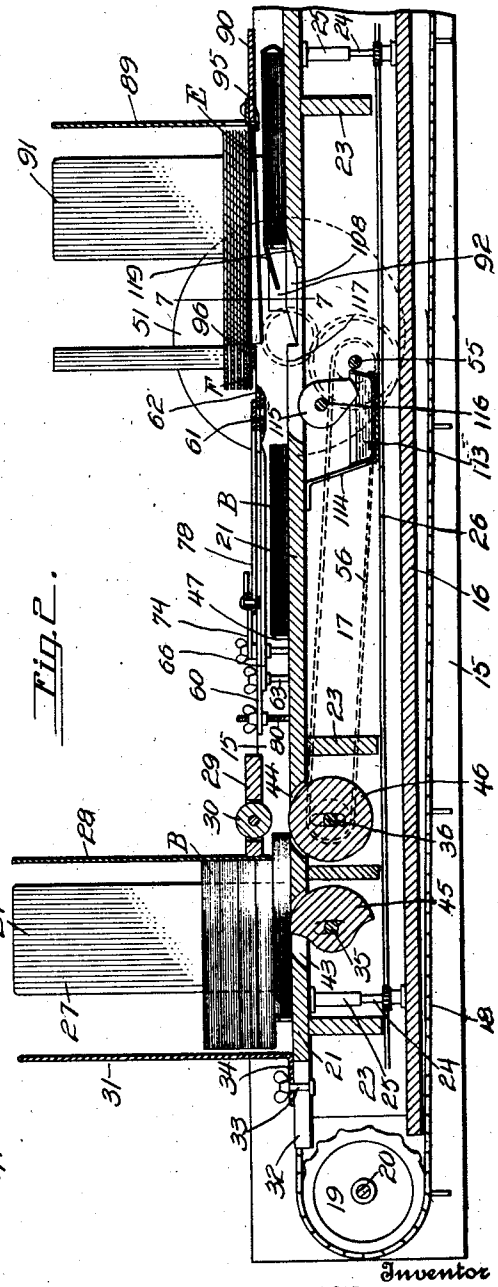


Fig. 2.

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3 SHEETS—SHEET 2.

Fig. 3.

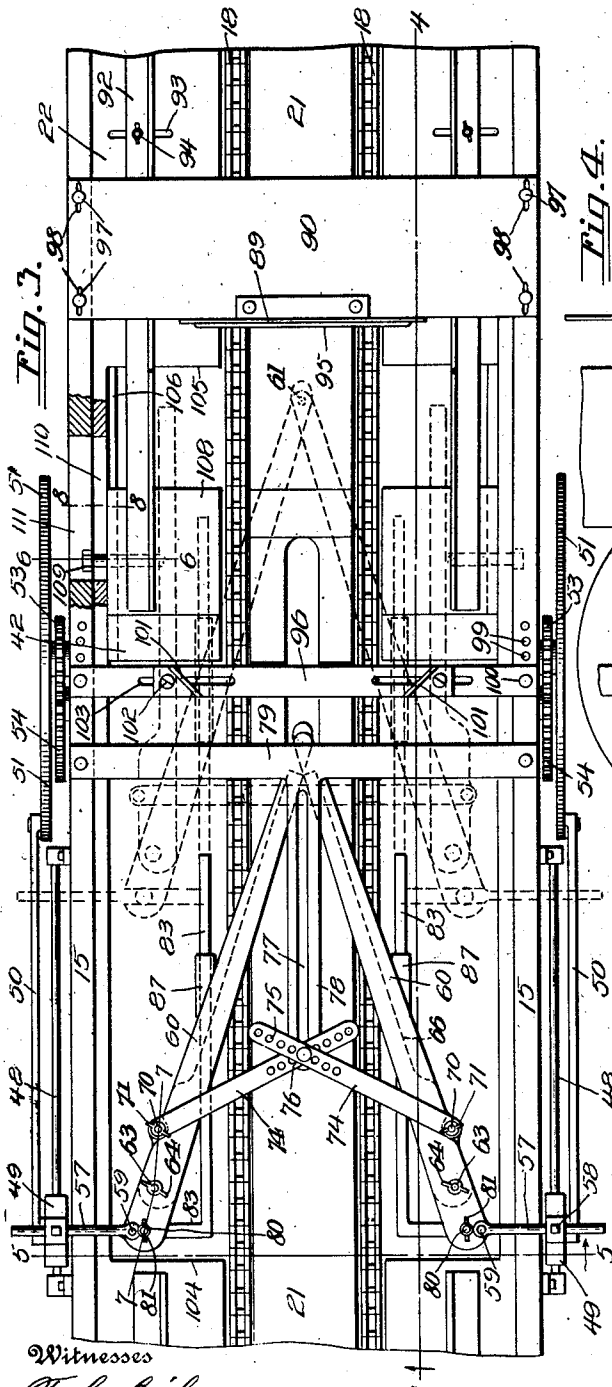
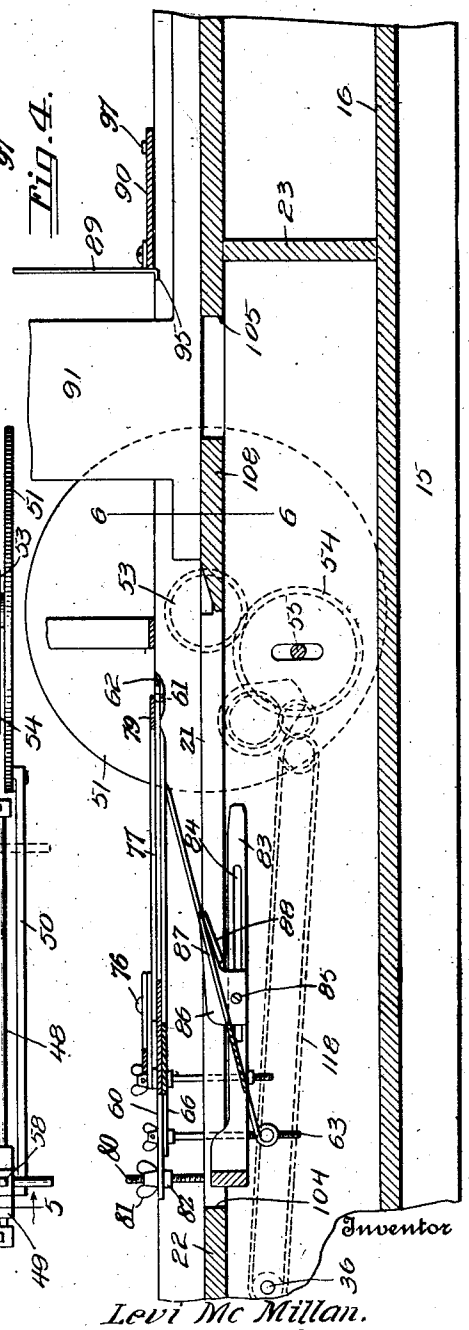


Fig. 4.



Witnesses

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3 SHEETS—SHEET 3.

Fig. 6.

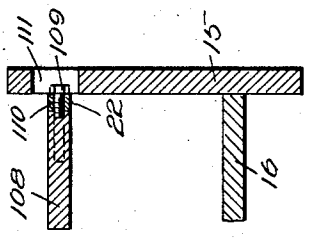


Fig. 8.

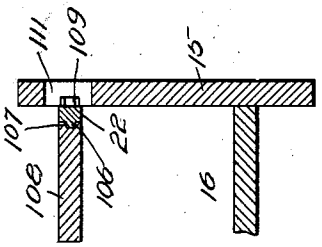


Fig. 5.

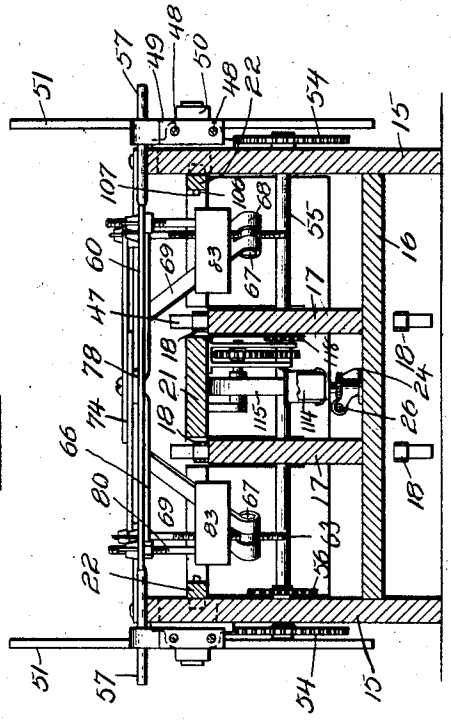
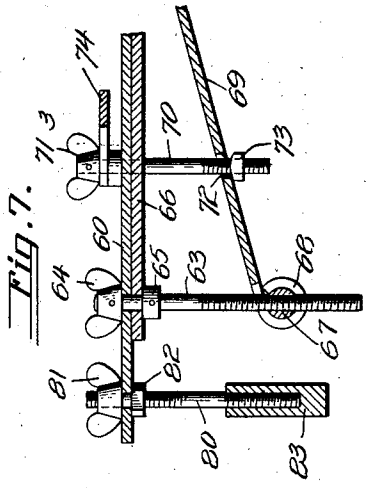


Fig. 7.



Witnesses

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UNITED STATES PATENT OFFICE.

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ENVELOP-FILLING MACHINE.

1,211,329. Specification of Letters Patent. Patented Jan. 2, 1917.

Application filed March 28, 1916. Serial No. 87,361.

To all whom it may concern:

Be it known that I, LEVI McMILLAN, a citizen of the United States, residing at Wilmington, in the county of New Hanover and State of North Carolina, have invented new and useful Improvements in Envelop-Filling Machines, of which the following is a specification.

This invention relates to envelop filling machines, and it has reference to a device of this class adapted to be used in connection with an envelop addressing machine such as shown, for instance, in my application for Letters Patent, Serial No. 47,724, filed on the 28th day of August, 1915, the purpose being to produce a complete organized machine by means of which the contents may be placed in envelops which are subsequently labeled or addressed at a single operation of the organized machine.

The present invention has for its object to produce simple and improved means for holding a stack of envelops while the contents is being inserted into the lowermost envelop of the stack, the filled envelop being carried off in the direction of the addressing device.

A further object of the invention is to provide simple and improved means for opening the envelop to receive the contents, said opening means being adjustable according to the bulk of the contents.

A further object of the invention is to produce simple and improved means for intermittently actuating the envelop opening means.

With these and other ends in view which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts which will be hereinafter fully described and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that changes, alterations and modifications within the scope of the claims may be resorted to when desired.

In the drawings,—Figure 1 is a side elevation illustrating the invention. Fig. 2 is a longitudinal vertical sectional view of the same. Fig. 3 is a top plan view, on a larger scale, of that part of the device which includes the envelop receptacle and the envelop opening mechanism. Fig. 4 is a longitudinal sectional view taken on the line 4—4 in Fig. 3. Fig. 5 is a transverse sectional view taken on the line 5—5 in Fig. 3. Fig. 6 is a sectional detail view taken on the line 6—6 in Fig. 3. Fig. 7 is a sectional detail view taken on the line 7—7 in Fig. 3. Fig. 8 is a sectional detail view taken on the line 8—8 in Fig. 3.

Corresponding parts in the several figures are denoted by like characters of reference.

The frame of the improved machine includes vertically disposed side members 15 which are connected together in part by a bottom member 16 on which longitudinal track members 17 are mounted, said track members serving to support the top leads of chains 18 which are guided over sprocket wheels 19 on a shaft 20. Parts only of the chains 18 have been shown, it being understood that said chains are guided over sprocket wheels carried by a shaft located at the distant or delivery end of the organized machine of which the present invention forms a part, and that the chains may be driven by power derived in any convenient manner from any suitable source.

The bed of the machine is composed in part of a longitudinal center strip 21 and longitudinal side strips 22, as best seen in Figs. 3 and 5, said center and side strips being mounted on cross pieces 23 whereby they are assembled together, and said cross pieces and the track members 17 having interengaging slots that will permit the bed of the machine to be raised or lowered by means of jack screws 24 operating in sockets 25 on the underside of the center piece 21 and adapted to be simultaneously operated by a longitudinally disposed shaft 26 which may be rotated in any convenient manner and which may be connected with the jack screws by means of worm gearing or in any convenient and well known manner, the result being that the machine bed may be raised or lowered between the side members 15 of the frame, the said bed being positioned below the top edges of said side members.

The material that is to be placed in the envelops, and which in the drawings has been illustrated as consisting of booklets B, is confined between upright side members 27 and an upright rear wall member 28, the latter being mounted upon a cross bar 29

which is supported on the side members 15 of the frame, said cross bar serving to support an anti-friction member, such as a roller 30. A front wall member 31 is also provided, the same being mounted adjustably on the center piece 21 of the bed of the machine, said center piece being provided with a slot 32 for the passage of an adjusting screw 33 that extends through a flange 34 at the lower end of the wall member. The side wall members 27 may be similarly adjustable laterally of the frame, thus enabling the area of the container formed by the front, rear and side wall members to be varied according to the dimensions of the material to be placed in the envelops.

The center piece 21 of the bed is provided with bearings for shafts 35, 36 that extend through slots 37, 38 in one of the side members of the casing, said shaft carrying sprockets 39, 40 that are driven by a chain 41 passing over a sprocket wheel 42 on the shaft 20. The shafts 35, 36 are positioned adjacent to slots 43, 44 in the center piece 21, said shafts carrying, respectively, a cam member 45 and a roller 46. The slot 43 through which the cam member 45 projects is located between the front and rear walls 31, 38 so that the said cam will engage the lowermost of the booklets B and serve to feed the same rearwardly beneath the lower edge of the wall member 28, and between the rollers 46 and 30, it being obvious that by the action of the driven roller 46 the booklet will be fed along the bed of the machine until it is clear of the container in which the booklets are stacked. As soon as the lowermost booklet has been projected from the container the superposed booklets will gravitate until the lowermost one rests on the bed of the machine above the slot 43. The chains 18 are provided at suitable intervals with fingers or projections 47 which engage the booklets and carry them along the bed of the machine in the direction of the mechanism for placing the booklets in envelops, as will be presently described.

It may here be stated that although the contents to be placed in envelops are here referred to as booklets, this term is in no sense intended as a limitation, but is intended to include circulars, folded or otherwise, magazines, books, bound or otherwise, and, in fact, any kind of material or object that it may be desired to place in envelops.

It will also be particularly noticed that by the vertical adjustment of the bed of the machine, the distance between the rollers 46 and 30 will be varied, while at the same time the distance between the surface of the bed of the machine and the lower edge of the rear wall member 28 is correspondingly varied, according to the thickness or bulk of material that is to be placed in envelops.

Mounted exteriorly on the frame members 15 are guide rods 48 on which cross heads 49 are supported for reciprocation. The cross heads 49 receive motion by means of pitmen 50 from crank disks 51 mounted on stub shafts 52, said stub shafts having spur wheels 53 meshing with mutilated gears 54 on a shaft 55 which may receive motion by means of a chain 56 from the shaft 36. Owing to the presence of the mutilated gear 54 the motion of the cross heads 49 will be intermittent, and the motion will be so timed that the rest period will occur when the cross heads are at the rearward limit of their movement, that is to say, at the limit of their movement in the direction of the tail end or delivery end of the machine.

Each cross head 49 carries a laterally adjustable arm or rod 57 which extends through a transverse aperture in said cross head and which may be secured at various adjustments by means of a set screw 58. Pivotally connected with each rod 57 by means of a pivot member 59 is a rearwardly extending arm 60, said arms being converged rearwardly and overlapped at their rear ends where they are pivotally connected together by means of a rivet 61, one of said arms being formed with a rearwardly extending prong 62. Extending vertically through each of the arms 60 near the forward end thereof where it is pivotally connected with the rod 57 is a screw threaded rod 63 having a handle 64 whereby it may be rotated and a collar 65 between which and the bottom face of the arm 60 is supported a horizontally disposed spreader arm 66. Each of the screw threaded rods 63 constitutes an adjusting screw on which is mounted a trunnion 67 which is in threaded engagement therewith, said trunnion being capable of vertical adjustment with respect to the adjusting screw 63 by turning the latter about its axis. Hingedly connected with each trunnion 67 by means of an eye 68 engaging the same is an inclined spreader arm 69. Each of the arms 66 supports a screw threaded rod 70 having a handle 71 whereby it may be rotated, said screw extending also through a slot 72 in the inclined spreader arm 69, which latter is supported on a nut 73 engaging the screw 70. It will be observed that the angle of inclination of the spreader arm 69 may be varied by adjustment of the trunnion 67 on the screw 63, or by adjustment of the nut 73 on the screw 70, or by adjustment of both the trunnion and the nut; the object being to enable the inclined spreader arms 69 to be adjusted to various inclined positions in various planes according to the work that is to be performed.

Pivoted on each of the screws 70 is a toggle arm 74 having apertures 75 for the passage of a pivot member 76, whereby said toggle arms are adjustably connected together, the pivot member 76 being guided in a longitudinal slot 77 in an arm 78 that extends forwardly from a cross bar 79 supported on the side members of the frame of the machine. It will be seen that when the cross heads carrying the rods which support the arms 60 with which the spreader arms 66 and 69, as well as the toggles, are connected approach the rearward limit of their movement, the pivot member 76 will engage the rearward end wall of the slot 77, thereby causing the toggles to spread the arms 66 and 69 laterally to the position indicated in dotted lines in Fig. 3; at the forward limit of the movement of the cross heads, the pivot member 76 will engage the forward end wall of the slot 77, and the toggles will operate to retract the spreader arms 66 and 69 until they occupy positions substantially in the vertical planes of the arms 60, when the latter are in the position indicated by full lines in Fig. 3.

Each of the arms 60 carries at its forward end a vertically disposed adjusting screw 80 which is vertically adjustable by means of a thumb nut 81 and a jam nut 82, said adjusting screw serving to support an arm 83, the rearwardly extending portion of which has a longitudinal slot 84 for the passage of a screw 85, whereby a presser block 86 is mounted on said arm in such a manner as to be longitudinally adjustable thereon, said presser block being formed with a rearwardly extending inclined beak 87 which may be faced on its underside with material such as rubber 88, or which may be roughened, corrugated or otherwise treated so as to enable it to take a sufficiently firm hold on the back portion of an envelop to cause the latter to be securely held while material is being inserted therein, as will be presently more fully shown and described.

The envelop receptacle is composed of a rear wall member 89 which is fixed on a cross bar 90 mounted on the side members of the frame of the machine. The envelop receptacle also includes side walls 91 that extend upwardly from flange members or guide members 92 that are laterally adjustable on the strips or side members 22 of the bed of the machine which bed, as hereinbefore stated, is mounted for vertical adjustment between the side members 15 of the frame. To provide for the lateral adjustment of the guide strips 92, the side members 22 have been shown as being provided with transverse slots 93 for the passage of the connecting members or fastening members 94. The back wall 89 is provided at its lower extremity with a narrow flange 95 to support the lowermost or bottom one of the stack of envelops, said bottom envelop E being additionally supported by a cross bar 96 secured on the side members 15 of the frame, said cross bar lying in the path of the flap F of the envelop, it being understood that the flaps of the envelops must be opened or unfolded, as seen in Fig. 2, before said envelops are placed in the container. To provide for envelops of various sizes the flange members or guides carrying the side walls 91 are laterally adjustable, as hereinbefore stated, and the cross piece 90 supporting the back wall 89 may be mounted for longitudinal adjustment by means of screws or fastening members 97 engaging slots 98 in said cross piece. The cross piece 96 may also be mounted in such a manner as to be longitudinally adjustable with respect to the frame of the machine, as seen in Fig. 3, where a series of recesses 99 for the reception of the fastening members 100 have been provided in each of the side members 15. The cross bar 96 also carries obliquely disposed uprights 101 adjustably secured thereon by fastening members 102 engaging longitudinal slots 103 in said cross piece, said obliquely disposed uprights serving to confine the flap of the envelop between them.

The strips or side members 22 of the bed of the machine are provided with recesses, the front and rear walls of which are designated by 104 and 105, respectively, see Figs. 3 and 4, and the side walls of which are provided with tongues 106 engaging grooves 107 in longitudinally slidable supporting members 108 which are securely connected with the side strips 22 of the bed by means of screws 109 that extend through longitudinal slots 110 in the side strips 22, and the heads of which are accessible through slots or openings 111 in the side members 15 of the frame, said slots being sufficiently large to accommodate the heads of the screws when the bed of the machine is vertically adjusted, and also to permit the requisite longitudinal adjustment of the supporting members 108. Said supporting members 108 serve in part to support the rearward ends of the flange members or guide members 92 which are loosely supported thereon, and the forward extremities of said supporting members which lie in the path of the beaks 87 are provided with beveled or inclined faces 112 to be engaged by said beaks, it being obvious that when adjustment of the parts of the machine is made for the accommodation of envelops of various sizes, the supporting members 108 and the blocks 86 having the beaks 87 are to be relatively so adjusted that the back portions of the envelops will be engaged by and held frictionally between the opposed inclined faces of the beaks and the supporting members, thus holding the

envelop with sufficient security to resist the pressure brought to bear by the material which is inserted into the envelop, but not with sufficient tenacity to cause the envelop to be torn or injured by the insertion of material therein.

For the purpose of retaining the material, such as the booklet B, that is inserted into the envelop securely therein a small quantity of adhesive material is applied exteriorly to such material or booklet. For this purpose a paste receptacle 113 is supported beneath the center strip of the bed of the machine by means of a bracket 114, and a cam-shaped brush member 115 is revolubly supported by a shaft 116 in such a manner as to dip into the paste receptacle once during each rotation, after which a small quantity of paste is applied to the outside face of the booklet or other material B, the latter passing over a slot 117 in the center strip 21, and the cam-shaped brush member 115 being so arranged as to engage the booklet or other material through said slot. The shaft carrying the cam-shaped brush member may be driven in any convenient manner by means which may include a chain 118, see Fig. 4, deriving motion from the shaft 36 or from any convenient moving part of the device. The rear end wall portion of the slot 117 is beveled or inclined, as seen at 119 in Fig. 2.

In the operation of this machine the fillers for the envelops, described as booklets B, are placed within the container formed by the front and rear walls 31, 28 and the side wall members 27 in such a manner as to rest on the bed of the machine which has been previously adjusted vertically to correspond with the thickness of the filler; that is to say, to such a position that the filler will readily pass beneath the lower edge of the wall member 28. The chains 18 are being driven at a predetermined constant speed, motion being transmitted from the shaft 20 over which said chains are trained to the shafts 35, 36 carrying the cam member 45 and the roller 46. The cam member 45 by frictional engagement with the lowermost filler serves to project the same beneath the bottom edge of the wall member 28 until it is engaged between the rollers 46 and 30, whereby it is still further projected on the bed of the machine until it is presently taken up by some of the fingers 47 of the chains 18, whereby it is moved rearwardly along the bed of the machine. While this operation takes place the mutilated portion of the gear 54 engages the gear 53 associated with the disk 51 at each side of the machine, said disks and the parts actuated thereby being consequently at rest with the spreading elements 60, 66 and 69 at the rearward limits of their movements, and with the members 66, 69 spread laterally to the positions indicated in dotted lines in Fig. 3. As the spreading device passes from the position shown in Fig. 2 to the rearward limit of its movement, indicated in dotted lines in Fig. 3, the prong 62 enters the envelop beneath the flap F which is supported on the cross piece 96, thus opening the envelop sufficiently for the entrance of the spreading members 66 and 69, which latter, being inclinedly disposed, will exert downward pressure on the back portion of an envelop, pulling the latter down against the inclined face 119 at the rear end wall of the slot 117, the mouth of the envelop being thus spread and opened wide for the reception of the filler which is now being carried by the conveyer chains 18 into the envelop. It is obvious that the spreading action of the toggles 74 will serve to swing the spreader bars 66, 69 about their pivotal supporting members 63. After the back portion of the envelop has been spread by the spreading members 66, 69, the said back portion is seized and held by the beaks 87 which abut on the inclined faces 112 of the supporting members 108. After the filler has been inserted into the envelop the said envelop is carried in a rearward direction beneath the cross piece 90 and disposed of in any desired way, while the cross heads governing the movement of the spreader elements are started forwardly to commence the next cycle of movement of the said spreader elements which, as is obvious, are operated intermittently by the means provided for the purpose.

It has been clearly described how, in the construction of the filler container and the envelop container, some parts of said containers, and more particularly the rear wall members, are mounted or supported on the frame of the machine, while other parts of said containers, more particularly the front side wall members thereof and the front wall member of the filler container, are mounted or supported on the bed of the machine which is vertically adjustable with respect to the frame. By this arrangement it will be seen that provision is made for operating on fillers of various thicknesses and for properly inserting the same in the envelops, adjustment in a downward direction of the bed serving to space the top face of the bed whereon the fillers as well as the envelops are stacked in a downward direction, thereby widening the space between the top face of the bed and the bottom edges of the rear wall members of the respective containers, enabling a relatively thick booklet, magazine or other filler to be inserted in an envelop and enabling such envelop to be opened sufficiently wide to receive the thick filler and also enabling the filled envelop to be discharged in a rearward direction beneath the bottom edge of the rear

wall member of the envelop container. Conversely, when a thin filler is to be operated upon, the raising of the bed will reduce the distance between the top face of the bed and the bottom edges of the rear wall members of the containers so that when proper adjustment has been made, not more than one filler or one filled envelop may be discharged rearwardly with respect to the respective containers.

As hereinbefore stated, the improved machine may be operated in connection with an addressing machine shown and described in a previous application filed by me, and in such event the filled envelop will be carried onward to the addressing mechanism. It is obvious, however, that the improved filling mechanism herein described may be used and operated independently of any other machine or device in which event it only becomes necessary to provide suitable supporting and driving means for the chains 18.

Having thus described the invention, what is claimed as new, is:—

1. In a machine of the class described, a substantially horizontal bed, a filler container and an envelop container spaced apart and supported with respect to the bed to permit their respective contents to gravitate in the direction thereof, constantly movable means parallel to the bed for conveying the filler from the filler container in the direction of the envelop container, and intermittently movable means for opening the mouth of an envelop to receive the filler, said opening means being arranged for operation in a plane substantially parallel to the plane of movement of the conveying means.

2. In a machine of the class described, a substantially horizontal bed, a container for a stack of fillers and a container for a stack of envelops, said containers being spaced apart and so arranged as to permit their contents to gravitate in the direction of the bed on which the lowermost contents unit in each container is supported, constantly moving means for conveying the lowermost filler in the direction of the envelop container, the latter being arranged directly in the path of movement of the conveying means, and intermittently movable means for opening the mouth of the lowermost envelop from the stack to receive a filler, said opening means being arranged for operation in a plane substantially parallel to the plane of movement of the conveying means.

3. In a machine of the class described, a substantially horizontal bed, a container for a stack of fillers and a container for a stack of envelops, said containers being spaced apart and so arranged as to permit their contents to gravitate in the direction of the bed on which the lowermost contents unit in each container is supported, constantly moving means for conveying the lowermost filler in the direction of the envelop container, the latter being arranged directly in the path of movement of the conveying means, and intermittently movable means for opening the mouth of the lowermost envelop from the stack to receive a filler, said opening means being arranged for operation in a plane substantially parallel to the plane of movement of the conveying means, and said containers having rear wall members that are spaced from the bed to permit the passage of material therebetween.

4. In a machine of the class described, a frame, a vertically adjustable bed, a container for a stack of fillers including a front wall member supported for longitudinal adjustment on the bed and a rear wall member supported on the frame of the machine, an envelop container, friction means carried by the bed for initially projecting the lowermost filler from the container, and constantly moving means for carrying the filler thus advanced in the direction of the envelop container, the latter being supported in spaced relation to the filler container.

5. In a machine of the class described, a frame, a vertically adjustable bed, a filler container including a rear wall member supported on the frame and side wall members supported on the bed for lateral adjustment with respect thereto, longitudinal guide flanges supported on the bed and transversely adjustable thereon, and an envelop container including a rear wall member supported on the frame and side wall members connected with the longitudinal guide flanges and adjustable therewith.

6. In a machine of the class described, a frame, a vertically adjustable bed, a filler container supported partly on the frame and partly on the bed, constantly moving means for conveying a filler from the container over the bed, an envelop container supported partly on the frame and partly on the bed in spaced relation to the filler container, and intermittently movable means operable in a plane substantially parallel to the plane of movement of the conveying means for entering the mouth of an envelop to open and spread the same for the reception of the filler.

7. In a machine of the class described, a frame, a vertically adjustable bed, a filler container supported partly by the frame and partly by the bed, an envelop container supported partly by the frame and partly by the bed, said envelop container including a rear wall member having a narrow supporting flange, a cross piece on the frame to support the envelop flaps, and means for feeding the fillers to the envelops.

8. In a machine of the class described, a frame, a bed, a filler container supported partly by the frame and partly by the bed, an envelop container supported partly by

the frame and partly by the bed, said envelop container including a rear wall member having a narrow supporting flange, a cross piece on the frame to support the envelop flaps, and intermittently operable means for entering the mouth of an envelop and spreading the same to receive the filler, and constantly moving means for carrying the filler in the direction of and inserting it into an envelop.

9. In a machine of the class described, a frame, a bed, a filler container supported partly by the frame and partly by the bed, an envelop container supported partly by the frame and partly by the bed, said envelop container including a rear wall member having a narrow supporting flange, a cross piece on the frame to support the envelop flaps, and intermittently operable means for entering the mouth of an envelop and spreading the same to receive the filler, and constantly moving means for carrying the filler in the direction of and inserting it into an envelop, the flap supporting cross piece being provided with upwardly extending obliquely disposed guides or standards.

10. In a machine of the class described, a frame, a vertically adjustable bed, a filler container, an envelop container, means for carrying a filler in the direction of and beneath the envelop container, and means for opening the mouth of an envelop to prepare it for the reception of the filler, said opening means including a V-shaped member composed of two pivotally connected arms and having a prong at the apex thereof, and means for imparting to said V-shaped member an intermittent reciprocatory motion.

11. In a machine of the class described, a frame, a bed, a filler container, the contents of which is supported on and gravitates in the direction of the bed, an envelop container, constantly moving means for conveying a filler from the filler container over the bed in the direction of and beneath the envelop container, means associated with the envelop container for supporting the flap and the back edge of the lowermost one of a stack of envelops above and in spaced relation to the top face of the bed, and intermittently movable means operating in a plane below the flap supporting means for entering the mouth of an envelop and opening and spreading the same to receive a filler.

12. In a machine of the class described, a frame, a bed, an envelop container, constantly moving means for conveying a filler from a source of supply over the bed beneath the envelop container, intermittently movable means for entering the mouth of an envelop and spreading the same to receive a filler, a member associated with the bed of the machine having an inclined face to support the back portion of an envelop when the mouth is spread open, and a clamp member associated with and movable with the spreading means to hold such back portion of the envelop securely on such inclined face while a filler is being inserted into the envelop.

13. In a machine of the class described, a frame, a bed, an envelop container, constantly moving filler conveying means, spreading means to open and spread the mouth of an envelop, and clamping means including a relatively stationary and a relatively movable member for frictionally engaging a portion of an envelop therebetween and holding such envelop while a filler is being inserted.

14. In a machine of the class described, an envelop container, a flap support, constantly moving means for carrying a filler beneath the envelop container, and intermittently movable means for opening and spreading the mouth of an envelop, said opening and spreading means comprising a V-shaped member having a prong at the apex thereof, pivotally supported spreader arms movable in an approximately horizontal plane, inclined spreader arms supported beneath and in the vertical planes of the horizontal spreader arms and connected with said horizontal spreader arms for movement simultaneously therewith, and means for imparting a swinging movement to said horizontal and inclined spreader arms.

15. In a machine of the class described, an envelop container, a flap support, constantly moving means for carrying a filler beneath the envelop container, and intermittently movable means for opening and spreading the mouth of an envelop, said opening and spreading means comprising a V-shaped member having a prong at the apex thereof, pivotally supported spreader arms movable in an approximately horizontal plane, inclined spreader arms supported beneath and in the vertical planes of the horizontal spreader arms and connected with said horizontal spreader arms for movement simultaneously therewith, and means for imparting a swinging movement to said horizontal and inclined spreader arms, said inclined spreader arms being supported for adjustment to various angles with respect to the horizontal spreader arms.

16. In a machine of the class described, an envelop container, a flap support, constantly moving means for carrying a filler beneath the envelop container, and intermittently movable means for opening and spreading the mouth of an envelop, said opening and spreading means comprising a V-shaped member having a prong at the apex thereof, pivotally supported spreader arms movable in an approximately horizontal plane, inclined spreader arms supported beneath and in the vertical planes of the

horizontal spreader arms and connected with said horizontal spreader arms for movement simultaneously therewith, and means for imparting a swinging movement to said horizontal and inclined spreader arms, said inclined spreader arms being supported for adjustment to various angles with respect to the horizontal spreader arms and also for adjustment in various planes with respect to said horizontal spreader arms.

17. In a machine of the class described, a frame, a bed having longitudinally adjustable supporting members with inclined front faces, an envelop container, constantly moving means for conveying a filler beneath the envelop container, intermittently operating reciprocatory means for opening and spreading the mouth of an envelop to receive a filler, and clamp means movable conjointly with the opening and spreading means and coöperating with the inclined faces of the supporting member to clamp the back portion of an envelop therebetween.

18. In a machine of the class described, the combination with an envelop container, of an intermittently operating reciprocatory and spreading device comprising a prong carrying element to enter the mouth of an envelop, wedge elements movably supported with respect to the prong carrying element, and means for actuating the wedge elements to spread the mouth of the envelop and open it wide for the reception of a filler.

19. In a machine of the class described, the combination with an envelop container, of an intermittently operating reciprocatory and spreading device comprising a prong carrying element to enter the mouth of an envelop, and wedge elements to spread the mouth of the envelop and open it wide for the reception of a filler, said wedge elements being supported for lateral swinging movement.

20. In a machine of the class described, the combination with an envelop container, of an intermittently operable reciprocatory opening and spreading device, the same comprising arms pivotally connected to form a V-shaped element having a prong at the apex thereof, reciprocatory cross heads, rods carried by said cross heads and connected therewith for lateral adjustment, and pivotal connections between the said rods and the arms of the V-shaped element, whereby the angle between said arms may be varied.

21. In a machine of the class described, an envelop container and constantly moving means for conveying a filler beneath said container, in combination with envelop opening and spreading means comprising reciprocatory cross heads, rods connected with said cross heads for lateral adjustment, arms pivotally connected with said rods, a pivot member connecting said arms together to form a V-shaped element, spreader arms pivotally supported by the arms of the V-shaped element, said spreader arms combining to form wedge members, and means including toggle arms whereby said wedge elements may be actuated to swing laterally.

22. In a machine of the class described, an envelop container and constantly moving means for conveying a filler beneath said container, in combination with envelop opening and spreading means comprising reciprocatory cross heads, rods connected with said cross heads for lateral adjustment, arms pivotally connected with said rods, a pivot member connecting said arms together to form a V-shaped element, spreader arms pivotally supported by the arms of the V-shaped element, said spreader arms combining to form wedge members, toggle arms connected pivotally with the spreader arms adjacent to the two arms of the V-shaped member, a pivot member whereby the toggle arms are adjustably connected together, and an arm having a longitudinal slot wherein the pivot member is guided to actuate the toggles and the spreader arms by engagement with the end walls of the slot.

In testimony whereof I affix my signature in presence of two witnesses.

LEVI McMILLAN.

Witnesses:
W. H. Oates,
Bainbridge Richardson.