

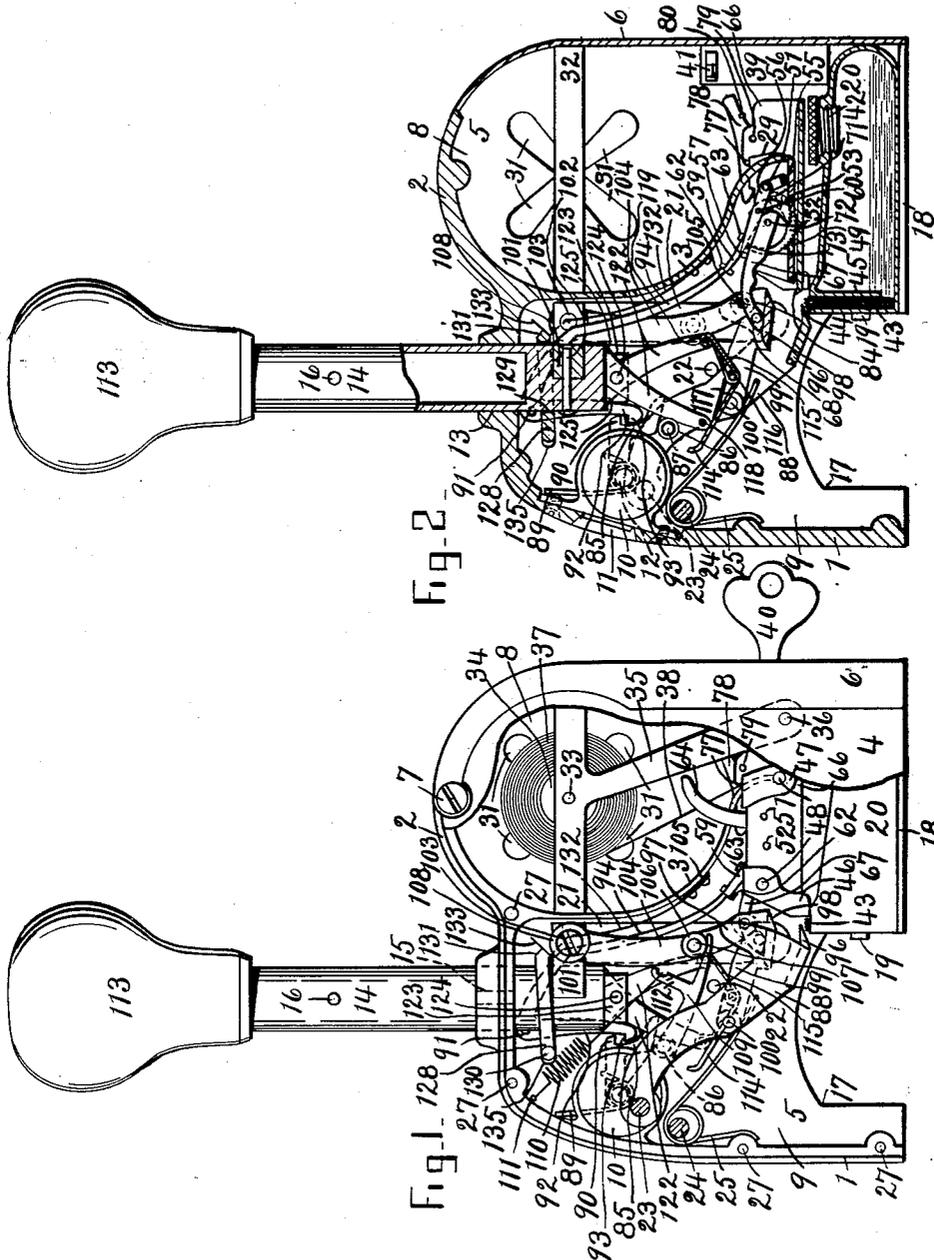
C. J. FANCHER.
STAMP AFFIXER.

APPLICATION FILED MAY 24, 1912.

Patented Nov. 4, 1913.

4 SHEETS—SHEET 1.

1,077,954.



WITNESSES:
A. C. Fairbanks.
J. A. Angier.

INVENTOR.
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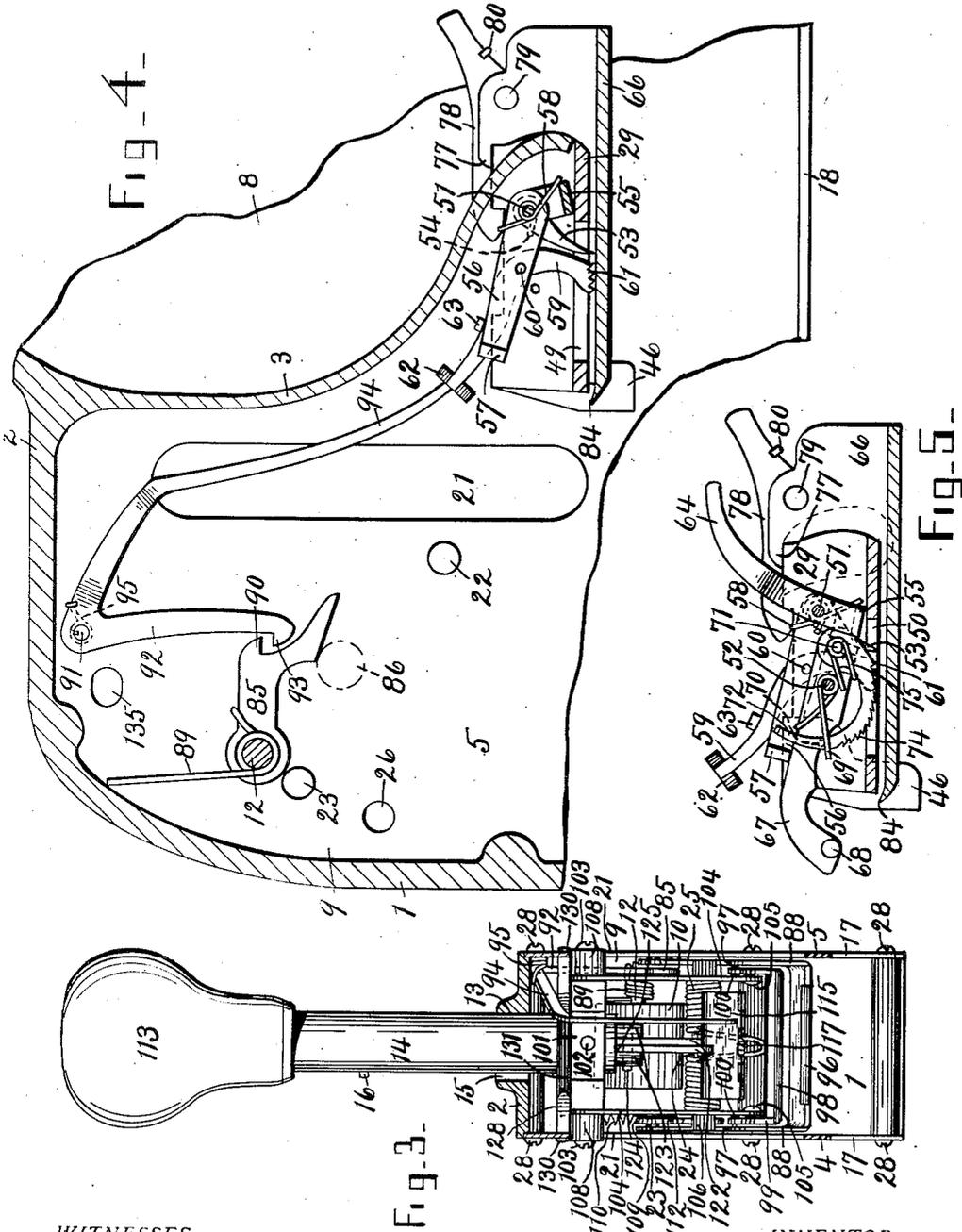
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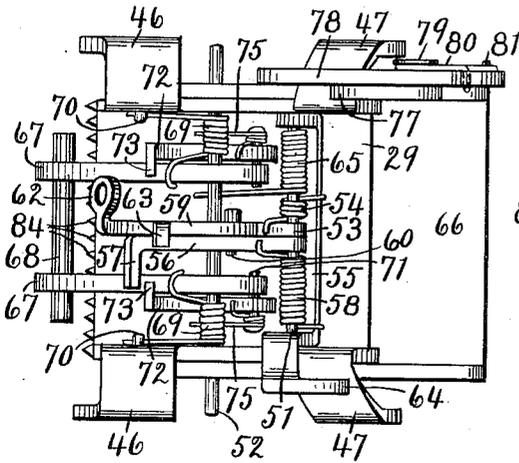


Fig. 9.

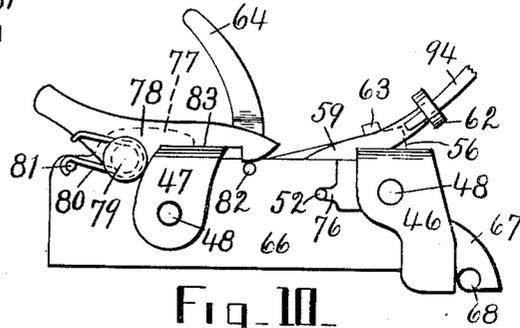


Fig. 10.

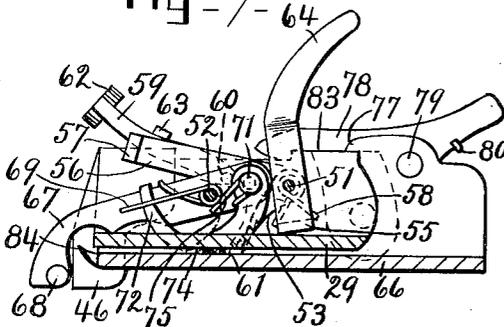


Fig. 11.

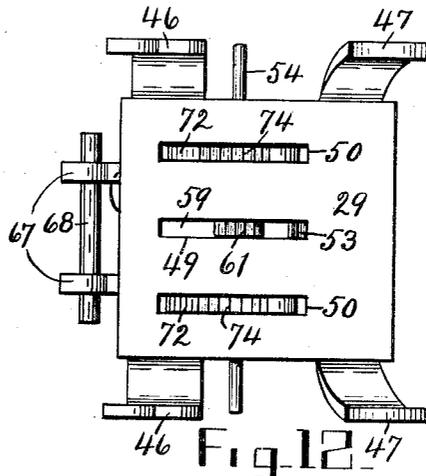


Fig. 12.

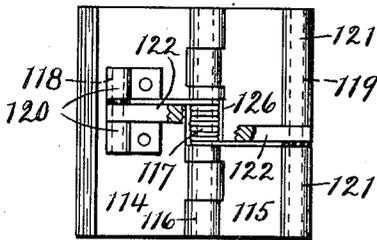


Fig. 13.

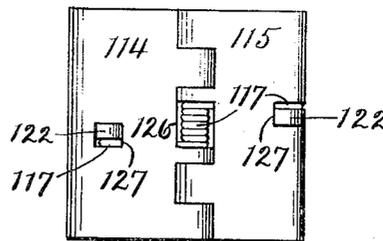


Fig. 14.

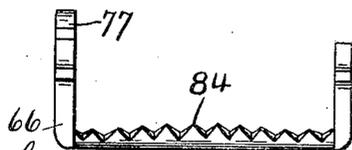


Fig. 15.

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UNITED STATES PATENT OFFICE.

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STAMP-AFFIXER.

1,077,954.

Specification of Letters Patent.

Patented Nov. 4, 1913.

Original application filed June 21, 1911, Serial No. 634,395. Divided and this application filed May 24, 1912, Serial No. 699,385.

To all whom it may concern:

Be it known that I, CHARLES J. FANCHER, a citizen of the United States of America, residing at Thompsonville, in the county of Hartford and State of Connecticut, have invented a new and useful Stamp-Affixer, (the same being a divisional part of my application for United States Letters Patent filed June 21, 1911, and serially numbered 634,395,) of which the following is a specification.

My invention relates to improvements in hand devices or machines for automatically affixing flexible units, coated on one side with adhesive material and connected in the form of strips, to objects or articles, and more particularly for affixing stamps to envelopes and other wrappers for mail matter, and consists of certain peculiar parts and combinations of parts, all as hereinafter set forth.

The objects of my invention, are, first, to produce a compact and convenient machine which is capable of expeditiously handling units such as stamps from a roll mounted in the machine, and of affixing them one at a time securely to objects such as envelopes, without mutilating the units or stamps or failing to affix them properly; second, to provide such a machine with accurate means for counting the objects as they are affixed, and, third, to prevent false movements on the part of the internal mechanism as a whole of the machine, and so to protect the objects handled by such mechanism, by furnishing locking and releasing means for the plunger, whereby the latter is prevented from returning or retrograding in either direction, after being started, until the full stroke is completed.

With this machine an object is moistened, severed from the perforated strip upon being unrolled, and affixed, at each full downward stroke of the plunger, and a record of the object is made and kept at the same time by the same operation.

Other objects and advantages will appear in the course of the following description.

A preferred form of embodiment of the invention, whereby I attain the objects and secure the advantages of the same, is illustrated in the accompanying drawings, and I will proceed to describe the invention with relation to the latter, although it is

to be understood that the form, construction, arrangement, etc., of the parts and members in various aspects are not material and may be modified without departure from the spirit of the invention.

In the drawings, in which like numerals designate like parts throughout the several views, Figure 1 is a side elevation of a stamp affixer in which is embodied the aforesaid form of my invention, the major portion of the front side plate being broken away and the several parts and members being normally or initially disposed; Fig. 2, a longitudinal vertical section through said affixer, with the mechanism displaced as in the first view, the line of cleavage being approximately in the center; Fig. 3, a transverse vertical section through the affixer, taken through the vertical slots in the front and back plates thereof and just behind the mechanism that is directly operated by the plunger and looking toward the front end of the machine and toward such mechanism and the other members in the front-end portion of the case, the normal position of the parts and members shown still obtaining; Fig. 4, an enlarged detail, in partial section, showing the counter-operating arm and the releasing mechanism therefor; Fig. 5, an enlarged front side elevation of the stamp-feed and counter-releasing mechanism, with the hanger, which affords a support for said mechanism, and the stamp guide or tray in section, showing the operation of the lifter which forms part of said mechanism; Fig. 6, an elevation similar to Fig. 1, but showing the stamp-gripping jaws partially depressed and closed; Fig. 7, a fragmentary detail, in section, showing said jaws still further depressed and illustrating the manner in which they draw the stamp from the tray and over the moistener, preparatory to depositing it upon an envelop; Fig. 8, still another elevation similar to the first view, but here showing the parts and members as they appear at the end of the downward stroke of the plunger for final affixing action; Fig. 9, an enlarged top plan of the aforesaid stamp-feed and counter-releasing mechanism; Fig. 10, an enlarged back side elevation of the aforesaid hanger and tray; Fig. 11, an enlarged front side elevation of said stamp-feed and associated mechanism, the front sides of the

hanger and tray being broken away at their base lines; Fig. 12, an enlarged bottom plan of the hanger and parts of the mechanism supported thereby or mounted therein; Fig. 13, an enlarged top plan of the stamp presser; Fig. 14, an enlarged bottom plan of said presser, and, Fig. 15, an enlarged front end elevation of the tray.

The machine comprises a suitable supporting frame preferably in the form of a case and a plunger which extends above and has its active or operative end inside of the same, and mechanism for feeding and handling the stamps within such case. The aforesaid mechanism naturally comes under three general heads or subdivisions, namely, the stamp-feed and counter-releasing devices which are so combined that they form practically one group of intimately relating parts, the stamp-transfer devices, and the stamp-presser devices. Included with the stamp-transfer devices is counter-operating mechanism. The combined feeding and counter-releasing mechanism is indirectly operated by the plunger, except when the stamps are initially introduced into such mechanism, an independent and direct manual action on the part of the operator then being required, while the transferring, counting, and pressing mechanisms are directly operated by said plunger. The case is equipped with means for holding the roll of stamps and for conveniently placing such roll in position, and a lock or check is provided for the plunger. There is also a suitable moistening device within the case.

Although the feeding mechanism *per se* is not claimed herein, since it forms the subject matter of the application of which this is a divisional part and is therein claimed, it will be necessary to describe somewhat in detail such mechanism in order to impart a full and clear understanding of the invention which forms the subject matter of the claims in this application.

I will now take up in detail the several organizations of the machine and the several parts and members of which such organizations are comprised, beginning with the case, but before doing so wish to observe that, for the sake of convenience in describing the affixer and its operation, it will be assumed that the terms front and back, or equivalent expressions, as applied to the affixer longitudinally, refer respectively to the left-hand and right-hand ends of the machine as it stands in Figs. 1, 2, 6 and 8, and that the same or equivalent terms or expressions as applied to said affixer transversely, refer respectively to the side of the machine which is nearer the observer in said views and to the opposite side thereof. This assumption in most cases holds in regard to the several parts and members of the machine as well as to the machine as a whole.

The case, herein illustrated, is made up of a front end piece 1, a top piece 2 and a partition piece 3, all integral, front and back plates or side pieces 4 and 5, respectively, which are suitably secured to the lateral edges of said end and top pieces, and a flanged door 6 hinged or pivoted at the top to the rear end of said top piece 2, as shown at 7. The partition 3 extends downward from the top 2 about midway between the ends thereof and curves rearwardly to form with the back portion of said top, which curves upwardly and rearwardly, and the upper part of the door 6, when said door is closed, which upper part curves upwardly and forwardly; and with the side pieces 4 and 5, a compartment or chamber 8 for the stamp roll. The rest of the interior of the case is open and contains practically all of the operating parts and members, such open space being represented at 9. The space or compartment 9 is not only in front of the partition 3, but also extends below it and communicates with the stamp-roll chamber 8 behind the bottom edge of said partition.

A counter 10, of any usual and suitable variety, is fastened against the inside of the front end 1, and there is a slot 11, Fig. 2, in such end of sufficient size to enable the figures of said counter to be seen from outside of the case. The counter 10 has a shaft 12 for operating the counter mechanism, as is customary in devices of this kind, and said shaft protrudes beyond the back end of said counter.

In the top 2, forward of the position of the partition 3, is a hole or opening 13 for a plunger 14 which extends through and operates up and down in said opening. In the front wall of the opening 13 is a vertical slot 15 to admit of the passage of a stud, screw, or other form of projecting member, 16, set in the front of the plunger 14.

Each side piece, 4 and 5, is cut away at 17 to give access laterally to the lower portions of the transfer and presser mechanisms, especially when depressed, and has an inwardly-extending horizontal base piece 18 at the bottom behind said cut-away place or opening 17, and a lug 19 which extends inwardly from the rear edge of said opening. A water tank or reservoir 20 is received on the base pieces 18, and when slid forward thereon encounters the lugs 19, which, with the door 6 when closed, hold said reservoir against endwise movement. The reservoir 20 fits snugly between the side pieces 4 and 5 and so has no lateral movement. The base pieces 18 do not come together, consequently there is a space left between them, which makes it convenient to insert the reservoir 20 after being filled and to withdraw it for refilling. There is a vertical slot 21 in each side piece intermediate of the ends of the same, the two slots being

oppositely disposed relative to each other, and the side pieces are provided on the inside with oppositely-disposed pins or stops 22 located in front of said slots, and with oppositely-disposed studs 23 located near the front edges of said side pieces. A rod 24, for a spring 25, is located below the studs 23, each end of said rod being received in an opening 26 in one of the side pieces. There is a short horizontal slot or elongated opening 135 in each side piece near the upper front corner thereof. Openings 27 are formed in the opposite side edges of the front piece 1 and the top piece 2 to receive screws 28 after passing through suitably located holes in the side pieces. Said side pieces are attached to said front and top pieces by means of said screws. The hanger 29 is attached to and supported between the side pieces by means of two pairs of screws which pass through said side pieces, one of such screws appearing in each of Figs. 6 and 8. The screws for the hanger 29 are in the rear of the slots 21. In the upper rear portions of the side pieces are suitable side openings 31 through which to view the surface of stamps.

The lower part of the partition 3 is narrow to accommodate the sides of the hanger 29.

Offset from the rear side piece 5 is a fixed horizontal bar 32. This bar is located at the rear end of a stud 33 and a roller 34 mounted on said stud, when the two latter are thrown up into normal position. The stud 33 extends rearwardly or inwardly from the head of a T-shaped arm 35 which has its base pivoted at 36 to the front side piece 4. The roller 34 is for a stamp roll 37, Fig. 1, which is slipped onto said roller when the arm 35 is turned down on its pivot 36. After the stamp roll 37 has been mounted on the roller 34 and the strip therefrom introduced into the feed mechanism, the arm 35 is turned upward on the pivot 36 and thrown forward until the front end of its head comes to rest against the partition 3. The stamp roll 37 is now supported loosely on its stud 33, in the chamber 8 between the bar 32 and the head of the arm 35, in readiness for further unwinding. The arm 35 is offset inwardly from the base so as to locate the stamp roll in the center of the space between the plates 4 and 5. The bar 32 and the head of the arm 35 confine the ends of the stamp roll and cause the stamp strip to unwind evenly. A portion of the unwound strip appears at 38 in Figs. 1 and 7.

It may be noted here that the roll 37 consists of a perforated strip of stamps wound with the adhesive surface inside, as supplied by the Post-Office Department.

The door 6 is provided with a suitable lock as 39 and key as 40. The lock bolts, one of which appears at 41 in Fig. 2, are adapted

to engage the front and back plates 4 and 5. Upon unlocking and opening the door, free access is had to the stamp-roll arm 35, and certain other parts yet to be described become accessible, and the reservoir 20 can be removed and replaced, but when said door is closed and locked these parts and members are shut in and tampering with the stamps is prevented.

The reservoir 20, which is designed to hold water and has a filling-hole normally closed by a screw-cap 42, is provided at its front end with an interior moistener 43 in the form of a wick or equivalent member, such moistener projecting through a slot 44 in the top of said reservoir adjacent to and parallel with the front end thereof. The moistener 43 extends upwardly between the sides of the reservoir and between the front end thereof and a vertical member 45 within the same through the slot 44, to project a little above the edges of the latter. The member 45 extends from the top to within a short distance of the floor of the reservoir 20.

I will next describe the mechanism for feeding forward the stamp strip 38 and that for releasing the counter for the stamps in the strip so fed which I prefer to employ, the two mechanisms being so closely united or so intimately related and connected as to constitute practically a single mechanism, as previously intimated.

The hanger 29, which forms part of the mechanism now being considered, is an open-ended trough-like structure provided with two pairs of overhanging ears 46 and 47 that contact with the plates 4 and 5 and are secured to said plates by the screws previously mentioned (30), there being openings 48 in said ears to receive said screws, of which latter there are four, two on a side. The ears 46 and 47 spring from the upper edges of the sides of the hanger and extend outwardly and downwardly so as to leave spaces between them and said sides. In the bottom of the hanger 29 are a central slot 49 and two parallel flanking slots 50. Mounted crosswise on the hanger 29 in the side thereof are two rods or spindles 51 and 52, the latter being in advance of the former and having protruding terminals which prevent said spindle 52 from getting out of place, owing to the nearness of the plates 4 and 5, and also serve another purpose as will appear presently. Mounted loosely on the spindle 51 in the center thereof is a back-stop finger 53 which has a sharp lower terminal that projects through and below the hanger slot 49. The finger 53 is pressed downwardly and rearwardly by means of a spring 54 coiled around the spindle 51 and bearing at one end on the front edge of said finger and at the other end on the rear edge of a lifter 55. Loose on the spindle 51 in front of the finger 53 is a counter-releasing foot-operat-

ing arm 56. The arm 56 extends to the left from the spindle 51 and has a forwardly-extending lug 57 at its front end. The arm 56 is borne downward by means of a spring 58 coiled around the spindle 51 and bearing at one end on the upper edge of said arm and at the other end on the aforesaid rear edge of the lifter 55. A counter-releasing foot 59 is pivoted at 60 against the back side of the arm 56 in line with the finger 53. This counter-releasing foot has a serrated part, best shown at 61 in Figs. 4 and 12, that extends below the pivot 60 through and below the slot 49, and a socket 62 at the forward or left-hand terminal, and there is also a forwardly-extended lug 63 on said foot between said pivot and said socket. The lifter 55 is a horizontal member having upwardly-projecting end pieces which are loosely mounted on the spindle 51 and one of which, the front one, is extended above such spindle to form a handle 64. The handle 64 is partly behind the partition 3 and is offset so as not to interfere with the arm 35. Thus it is seen that said handle is easily accessible when the door 6 is open. A spiral-spring 65, stronger than the springs 54 and 58 combined, is wound on the spindle 51 and arranged with one end bearing beneath the spindle 52 and the other end on the front edge of the lifter 55, with the result that said lifter is held normally by said spring 65, in the position shown in Fig. 11, with the front edge of the bottom of said lifter against the floor of the hanger 29. The lifter is so constructed and mounted that its rear edge clears the floor of the hanger when said lifter is swung forward.

Except when otherwise supported, the arm 56 rests, under the influence of the spring 58, on the pivotally-attached counter-releasing foot 59 and the latter rests on a tray 66, as appears in Fig. 4. The arm 56 is beneath the lug 63 and the downward movement of the socket terminal of the foot 59 is limited by said lug and arm.

A stamp-feed-operating member and resetter for the counter-releasing foot 59, comprising two arms 67 which are rigidly connected at their left-hand ends by means of a rod 68, is mounted on the spindle 52, the latter passing through such arms in advance or to the left of their right-hand ends. The construction and arrangement of parts are such that the rod 68 is in operative position relative to the exposed upper end of the moistener 43. The aforesaid stamp-feed-operating member is forced downward by means of springs 69—69 coiled around the spindle 52 and bearing with opposite ends respectively on the upper edges of the arms 67 and beneath pins 70—70 that project inwardly from the sides of the hanger 29. When released to the springs 69, the arms 67 retain the rod 68 on the moistener 43,

Pins 71—71 project laterally from the right-hand ends of the arms 67, and loosely mounted at their rear ends on these pins outside of said arms are two generally arcuate stamp-feed jaws 72. The jaws 72 have inwardly directed lugs 73—73 on their front terminals which lugs extend above the arms 67, and the bottom edges of said jaws are serrated as shown at 74. The serrated portions of the jaws 72 extend into and through the slots 50, and bear on the tray 66 except at such times as they are withdrawn from such position. The jaws 72 are forced downward and rearward by means of springs 75—75 coiled on the pins 71—71 and bearing with opposite ends respectively on the edges of said jaws, which are directly in front and below the horizontal plane of said pins, and beneath the coils of the spring 69 on the spindle 52. The serrations or teeth 74 have their sharp edges directed to the left, while the serrations or teeth 61 have their sharp edges directed to the right, the reason for which will appear presently. The lug 57 extends over the front arm 67 to enable the arm 56 to be raised by said arm 67.

The tray 66, like the hanger 29, is an open-ended trough, and it is adapted with its sides to fit the sides of said hanger inside of the ears 46 and 47, and to be so attached to said hanger that there is a space left between the floors of the two members, as can be seen plainly in Figs. 2, 4, 5 and 11. The tray 66 is supported from the hanger 29 by means of the protruding terminals of the spindle 52, each of which terminals is received into a notch 76 opening through the front edge of one of the sides of said tray, and a forwardly projecting hook 77 formed on the upper edge of the back side of the tray and arranged to fit over the top of the ear 47 that springs from the back side of the hanger. A latch is also provided to engage the aforesaid ear. The latch 78 is pivoted at 79 against the back of the rear side of the tray 66 and extends both ways, the forward part being recessed to fit over the top of the ear 47 just referred to, and the rear part having an upward inclination to form a handle. A spring 80 is coiled on the pivot 79 and bears with one terminal against the inside of the latch handle and with the other terminal on a pin 81 which is set in the tray behind said pivot. The spring 80 normally forces the recessed portion of the latch downward, and a pin 82 is located on the back side of the tray 66 beneath the latch hook to prevent said recessed portion from rocking downward below a point where it could not be readily forced over the ear 47 which it engages when said tray is pushed into place. In attaching the tray to the hanger, said tray is brought into alinement with said hanger at the rear of the latter and pushed forward until the

notched parts at 76 and the hook 77 respectively engage the protruding ends of the spindle 52 and the ear 47 which is in engaging relation to said hook, and the latch 78 snaps over said ear. Said ear is now in the part (83) of the latch which it fits and so prevents the tray from moving longitudinally, and at the same time said ear supports the rear end of said tray through the medium of the hook 77. The spindle 52 supports the front end of the tray as explained.

The tray 66 is removed, when the door 6 is open, by depressing the handle of the latch 78, which handle extends into the chamber 8, and withdrawing said tray from the hanger 29. Such removal of the tray is necessary in case it is desired for any reason to gain access to the stamp-engaging members that project through the slots 49 and 50, or to remove any obstruction that may possibly get into the space between the floors of the hanger and the tray. The tray is returned to position in the same manner as before.

The floor of the tray 66 is turned up slightly and serrated at the front end, and this serrated edge is bowed so that the middle serrations are above the horizontal plane of the serrations at both sides thereof, as represented at 84. The bowed or arcuate arrangement of the serrations is plainly shown in Fig. 15. By thus serrating the front end of the tray floor and raising the serrated edge in the center, I provide unfailing means for catching and holding the stamps at the time they are torn apart. This means is certain because some of the teeth are sure to enter the perforations between the stamps, which might not be the case if the serrated edge were straight.

Having special reference to Figs. 2, 3 and 4, it will be seen that the shaft 12 of the counter 10 is provided on its exposed terminal with an angular operating arm 85. This arm is rigidly secured to the shaft 12, and the major portion of the same is behind the vertical plane of said shaft. The arm 85 at the free terminal normally rides on a roll 86 which is mounted on a stud 87 that projects inwardly from the rear arm of a pair designated by the numeral 88. Said arm 85, when free, is forced onto the roll 86 by means of a spring 89 which encircles the shaft 12 and has one terminal bearing against the front end 1 of the case and the other end on the upper edge of the arm. A hook 90 is formed at the free end of the arm 85 above the part that is designed to ride on the roll 86. Mounted to rock on an inwardly-projecting fixed stud 91, set in the back plate 5, is a detent 92 for the arm 85. The detent 92 depends from the stud or pivot 91 and has a hook 93 at its base arranged to take position in the path of the hook 90 when the arm 85 is occupying an approximately hori-

zontal position, there being, however, enough clearance between the two hooks to enable said detent to swing clear of the arm when occasion requires; and said detent is provided with a long tail-piece 94 that is offset toward the longitudinal center of the machine and sweeps downwardly to the right to have its free terminal inserted in the socket 62, a loose slip connection being thus formed. A spring 95 has one end inserted in or otherwise fastened to the stud 91, is coiled on said stud, and has its opposite end carried over the top of the tail-piece 94 at or adjacent to the junction of said tail-piece with the detent 92 and behind the vertical plane of said stud, and so normally retains said detent with its hook 93 in the path of the hook 90 and the counter-releasing foot 59 with its serrated part 61 in the rearward or operative position, the lug 63 then bearing on the arm 56 and the lug 57 on the front arm 67.

The functions of the combined stamp-feed and counter-releasing mechanisms are thus explained. The lifter 55 is swung forward on the spindle 51, through the medium of the handle 64 and against the resiliency of the spring 65, to raise the sharp end of the finger 53 and the serrated portions of the foot 59 and the jaws 72 upward in the slots 49 and 50 and thus clear the space between the hanger and tray floors for the initial introduction of the stamps. The elevating of the parts just mentioned is effected by reason of the fact that the front edge of the lifter 55, when swung forward, encounters the adjacent edges of the finger 53 and the jaws 72, which swing forward and upward on the spindle 51 and the pivots 71, respectively, and against the resiliency of the springs 54 and 75, respectively, and by reason of the further fact that the front edge of said finger encounters the adjacent edge of the foot 59, which rocks on the pivot 60, against the resiliency of the spring 95, into the desired position. The parts, including those the operation of which has not yet been explained, are now disposed as shown in Fig. 5. Upon the release of the handle 64, the displaced parts are immediately returned to their normal positions by their respective springs, the spring 65 being of sufficient strength to overcome the resistance offered by the springs 54 and 58. When the foot 59 is rocked into the position as represented in Fig. 5, the tail-piece 94 and the detent 92 are actuated with it, rocking on the stud 91, so that the hook 93 is taken out of the path of the hook 90, but at this time such action has no significance, being merely incidental to the operation of the connected parts.

The function of the finger 53 is to prevent backward movement on the part of the stamp strip in the tray 66, which it does

because of the shape of said finger and the situation of the sharp end thereof in advance of the vertical plane of the spindle 51, and this without interfering with the forward movement of such strip. The spring 54 serves to keep the finger 53 in operative position, but is light enough not to cause said finger to bear with too much force on the stamps as they advance.

The jaws 72 engage with their serrated edges 74 the stamps in the tray 66 and advance them when the arms 67 are so rocked on the spindle 52 as to elevate the forward ends and depress the rear ends of said jaws, as when the front ends of said arms are raised, because a rolling or sliding motion forward on said tray or a stamp or stamps thereon is then imparted to such edges. The jaws 72 slide backward, upon the rocking of the arms 67 in the opposite direction or back to normal position, or the serrated edges 74 slide backward at this time and take position in readiness to further advance the stamps at the subsequent upward tilt of the front terminals of said arms, and it is then that the stop finger 53 becomes effective, since said jaws necessarily drag on the stamps when returning to active position. The springs 75 provide the required amount of force to enable the jaws 72 to properly engage the stamps. The principal office of the lugs 73 is to prevent the jaws 72 from dropping down too far when the tray 66 is removed and so interfering with the replacing of said tray.

The parts are so timed in their respective operations that the counter-releasing mechanism is operated but once for each stamp that passes under the foot 59, or, to state it differently and in more general terms, a stamp is affixed at each complete operation of the machine and such stamp is counted or registered. To prevent registration of the operations of the machine when no stamps are actually affixed or delivered the detent 92 is provided, which detent must be moved away from the arm 85 in order for the act of registration to be performed, and this latter can be done only when a stamp passes forward under the foot 59 and at no other time. The forward passage of a stamp in the tray 66 under the serrated part 61 of the foot 59 actuates such part forward and so rocks said foot on the pivot 60 and throws upward the socket 62, the latter carries with it the tail-piece 94 and thus swings the detent 92, on the stud 91 and against the resiliency of the spring 95, rearwardly, and the hook 93 is withdrawn from the path of the hook 90 and no longer acts in the capacity of an obstacle or obstruction to the operation of the counter 10. The foot 59 is now out of operative position and must be reset; in fact the counter-releasing mechanism as a whole, including the detent 92,

must be reset. The resetting of the aforesaid mechanism is effected in this way—after the foot 59 acts to release the counter the arms 67 are elevated at their forward ends, and in changing position the lug 57 is encountered and the arm 56 is rocked upward on the spindle 51 against the resiliency of the spring 58, with the result that the pivot 60 is raised high enough to enable the foot to be returned to operative position by the spring 95 and through the medium of the tail-piece 94. At this time the lug 63 comes to rest on the arm 56 and so limits the movement of the foot 59. The movement in the opposite direction of the arms 67 leaves the lug 57 behind and the foot bears once more in the tray 66, the spring 58, acting through the arm 56 and the pivot 60, holding down said foot. The spring 95 returns the detent 92 to operative position with its hook 93 under the hook 90, and also causes the foot 59 to be swung so that its base is in the backward operative position, as noted, and retains such base in such position until the next stamp is drawn beneath it. The counter-releasing mechanism is most clearly represented in its set condition in Fig. 4.

Passing now to the stamp-transfer mechanism, or the mechanism that tears the stamps, one at a time, from the strip and conveys them to the envelopes, and incidentally counts or registers them, it will be observed that the two arms 88 are pivotally mounted at their upper front ends on the studs 23 and are rigidly connected at their opposite ends by a transverse plate 96 which projects beyond the free ends of said arms and constitutes the lower stamp-transfer or gripping jaw of the machine. In each of Figs. 1, 6 and 8, although the front plate 4 has been removed, the stud 23 which is set in said plate is left and shown in section for the sake of clearness in illustrating and describing the mechanism of which it forms a part. Each arm 88 has formed thereon at its free end, but somewhat remote from the adjacent end of the plate or jaw 96, a cam-projection 97. Associated with the jaw 96 is an upper stamp-transfer or gripping jaw 98 having two arms 99 rigidly connected with the ends thereof. The front end of each arm 99, assuming that the parts are in their elevated, initial or starting positions, as will be assumed for the purposes of the present description, is pivoted at 100 to one of the arms 88 inside of the same. A horizontal cross-head 101 is let into the back side of the plunger 14 and there secured by means of a rivet 102—see Figs. 2 and 3. Having their upper ends pivotally attached at 103—103 to the sides of the cross-head 101 are two links 104. The lower end of each link 104 is pivoted at 105 to one of the arms 99 on the inside and above the

rear or gripping edge of the jaw 98, and such link is provided on its opposite face with a roll 106 which is mounted on a pin 107 set in said link above the adjacent pivot 105. The cam-projections 97 are at certain times in the paths of travel of the rolls 106. Rolls 108—108 are mounted on the pivots 103, outside of the links 104, and are located by the cross-head 101 and such pivots within the slots 21 in the front and back plates and travel up and down in such slots when the plunger 14 is reciprocated, thus guiding and steadying said plunger and the parts connected therewith and operated thereby and preventing the plunger from turning on its axis. The jaws 96 and 98 are so constructed that their contiguous surfaces can be brought tightly together, as shown plainly in Fig. 7. The spring 25, which is mounted on the rod 24, has a looped middle portion that extends downwardly and bears against the end 1, and has its free ends extended rearwardly and arranged to bear beneath the pivots 100 or beneath anti-friction rolls on such pivots, is designed to swing the arms 88 upward on their pivots 23 until they contact with the stops 22 which are in the paths of travel of said arms, and elevate the plunger 14, together with all attached parts, and to retain such arms, plunger and parts thus elevated in that condition, and said spring has sufficient power to do this. When the arms 88 are in contact with the stops 22, the back edge of the jaw 96 is in approximately the same horizontal plane with the serrated edge 84 of the tray 66.

A lifter arm 109 is loosely mounted at its front end on the front stud 23, inside of the front arm 88, and bears with its opposite terminal against the adjacent roll 106 from below, being held in contact with said roll by means of a spring 110 which has one end attached at 111 to the end 1 of the case near the top thereof and the opposite end attached to an upwardly-extending projection 112 on said arm. The spring 110 is capable of lifting the links 104 and attached parts still higher, through the medium of the arm 109 which bears beneath the roll 106 on one of such links and which swings upwardly on its stud or pivot 23 under the influence of said spring. As the result of the upward movement imparted to the links by the spring 110 the plunger 14 is raised, through the medium of the pivots 103 and the cross-head 101, to its highest position, and the upper gripping jaw is caused to separate from the lower gripping jaw, since said links are pivoted to the arms 99 and swing the latter upward on their pivots 100. The gripping jaws are thus left wide open. Although the spring 110 may assist the spring 25 in the initial raising of the parts, the real work of said first-mentioned spring

does not begin until the work of said second-mentioned spring is finished. Not only are the springs 25 and 89 able to do the work already mentioned, but they have sufficient additional strength to actuate the stamp-feed-operating mechanism and the counter-operating arm, as will appear from the explanation below.

The upper jaw 98 extends under the front end of the stamp-feed-operating member consisting of the arms 67 and the rod 68 and raises such end, said arms rocking on the spindle 52 against the resiliency of the springs 69; when said jaw moves upward under the influence of the springs 25 and 110.

If the detent 92 is out of the way when the arms 88 swing downward, the arm 85 follows down on the roll 86, under the influence of the spring 89, and operates the counter mechanism to register the stamp carried down by the gripping jaws; and when said arms 88 swing upward, under the influence of the spring 25, said arm 85 is rocked upward, against the resiliency of said spring 89, into position to operate said counter mechanism at the next downward sweep of said arms 88.

The plunger 14 is forced downward by hand, and in its descent said plunger first closes the upper jaw 98 onto the lower jaw 96, through the medium of the cross-head 101 and the links 104, then, through the same medium and by reason of the contact of said upper jaw with said lower jaw, forces said jaws downward and forward together, and, finally, through the medium of the rolls 106 which advance onto the cam-projections 97 forces the arms 88 still farther forward and separates said jaw 96 from said jaw 98. The separation of the jaw 96 from the jaw 98 is due to the fact that, at the time the rolls 106 contact with the cam-projections 97, the links 104 have swung forward on their pivots 103 nearly as far as they can go, and can and do exert their force on said cam-projections in a manner, due to the pivotal connections between said links and the arms 99 and the pivotal connection between said arms and the arms 88, which brings about the desired separation of the jaws, the forward movement of the jaw 96 being greater than the little remaining forward movement which may be imparted to the jaw 98. As the jaw 96 is forced forward to the limit of travel in that direction, the arms 99 turn slightly on the pivots 105 as their ends which are pivoted at 100 to the arms 88 move with said last-mentioned arms, and this tilts the jaw 98 backward a little and assists in the separation of the jaws, but the principal factor in such separation is the means which positively acts on said arms 88 to force them forward, while said arms 99 are nearly or quite stationary or at least

have little or no forward movement bodily. Meanwhile the arms 67 have with their front ends and the rod 68 and under the influence of the springs 69 followed down on the jaw 98 until said jaw passes away and leaves said rod resting on the moistener 43, and the counter-operating arm 85 has followed down on the roll 86, unless held up by the detent 92. Upon the release of the plunger 14, the spring 25 immediately acts on the pivots 100 to raise said plunger with the directly and indirectly connected or associated parts, the first result of this being that the rolls 106 pass away from the cam-projections 97 so that the jaws 96 and 98 close. In swinging rearwardly and upwardly the jaw 98 rises beneath the rod 68 and elevates it with the attached parts of the arms 67, the arm 109 completing this part of the operation; and at the same time the roll 86 returns the arm 85 to its former position, provided said last-mentioned arm followed down on said roll.

For a clear understanding of the upward movement of the plunger and parts, it should be noted that the first effect of the spring 25 is to close the gripping jaws, by that act depressing to a still greater extent the lower terminals of the links 104, with the result that a rigid lifting element is produced which transmits the force of said spring to said links through their lower ends, and causes said links to raise the plunger, the oscillatory members swinging backward and upward with it. The spring 25 must, of course, be powerful enough to start and continue the operation of lifting the parts in question or restoring them to initial position, after the plunger has finished its down stroke and been released, even when not aided by the weight of the case and other inert parts at the time, which lend their assistance when, as is usual, the machine is lifted by the protruding terminal of said plunger at the end of the affixing operation.

The plunger 14 is provided at the top with a handle 113 to afford a convenient grip for the hand of the operator.

A presser for the stamps, after they have been deposited on the envelopes, is provided and will now receive attention. This device is carried at the base of the plunger 14, and must be capable of applying pressure throughout the entire area of each stamp as deposited and so causing it to adhere firmly and securely to the envelop upon which it is deposited, and said device must also be so constructed that it can be withdrawn into the comparatively small space provided for it directly under said plunger when the latter ascends. To this end I provide a device which resembles a leaf hinge in that it consists of two interlocking plates 114 and 115 pivotally connected by a pin 116. The plates thus united are cut out in

the center of their interlocking portions to admit the coil of a spring 117 on the pin 116. The straight branches of the spring 117 are arranged above the plates 114 and 115 and have their ends in engagement with pins 118 and 119, the former being held in place parallel with the pin 116 by two brackets 120 secured to the upper side of the plate 114, and the latter being received in two rolls 121 formed on the back longitudinal edge of the plate 115. By this arrangement the spring 117 exerts a tendency to close the presser plates upon each other. Two arms or links 122 have their lower ends pivotally mounted on the pins 118 and 119 and their upper ends pivotally attached to and between twin lugs 123, which depend from the bottom of the plunger 14, by means of a pin 124. The links 122 have oppositely-directed beak-like projections 125—125 at the top which are adapted to strike against the bottom of the plunger 14 and so limit the amount of inward swing of said links and of closing action of the plates 114 and 115, produced by the spring 117. Normally the upper edges of the projections 125 are in contact throughout with the bottom of the plunger, this being while the presser plates stand at an obtuse angle to each other or are in their so-called closed position or condition. When thus contracted the presser is able to pass freely up and down between the gripping-jaw arms and other adjacent members. The opening for the coil of the spring 117 appears at 126, and there are openings 127—127 in the presser plates for the bases of the links 122 (see Figs. 13 and 14), but the bottom ends of said links do not extend below the under or working faces of said plates.

The presser is arranged transversely in the machine, that is to say, the axial center of said presser is parallel with the gripping jaws. When the presser is depressed by the plunger 14, its apex strikes first, and then, as said plunger continues to descend, the links 122 swing away from each other at their bases, turning on the pin 124 and drawing the projections 125 away from the bottom of said plunger, and force the plates 114 and 115, against the resiliency of the spring 117, down flat onto the same horizontal plane upon which said apex first comes to rest. The result of this operation, when there is a stamp under the presser, is to press said stamp firmly against the envelop through the longitudinal center of the stamp, and then to press the remaining portions of the stamp into place, at the same time squeezing the moisture on the stamp out under the left-hand edge which was in the grasp of the gripping jaws and so prevented from being moistened before. This unmoistened portion of the stamp is but a small fraction of an inch, not enough to

escape wetting under the action of the presser. The presser is contracted by the spring 117 upon the ascent of the plunger.

Taking up, finally, the stop or check device for the plunger 14, by means of which said plunger, after being started in either direction, is prevented from being impelled in a contrary direction until the full stroke is made, attention is directed to an oscillatory lock-plate, gripper or clutch 128. This clutch has an opening 129 therethrough for the passage of the plunger, is arranged transversely in the case, and has trunnions 130—130 at the front ends of its lateral edges, which trunnions are journaled in the elongated openings 135 in the plates 4 and 5 of said case. The straight part of the back edge of the clutch 128 is beveled horizontally in both directions to form a double bearing 131. A flat spring 132 is secured at the base to the front side of the partition 3, and has a forwardly-extending angular head 133 at the top to engage the bearing 131. The pin 16 is above and the cross-head 101 below the clutch 128; and the arrangement of parts is such that said pin encounters said clutch from above, just before the plunger arrives at the end of its down stroke, turns said clutch downward, and forces the bearing 131 below the head 133 of the spring 132, or below the apex of said head, by the time said plunger completes said stroke, which is when the presser plates 114 and 115 are laid flat on the same plane with the bottom of the case; and said cross-head encounters said clutch from below, just before said plunger arrives at the end of the up stroke, turns said clutch upward, and forces said bearing above said apex of the spring, by the time the plunger completes said last-mentioned stroke. The pin 16 travels up and down through the vertical slot 15 in the top of the case. The trunnions 130 turn freely in the openings 135 when the clutch is shifted in either direction, and the head 133 of the spring 132 retains said clutch, by reason of the engagement of said head with one beveled face or the other of the bearing 131, at either an upward or a downward inclination, excepting when overcome by the force transmitted through the pin 16 or cross-head 101. The action of the spring 110 is responsible for the shifting of the clutch from the downward to the upward inclination, or vice versa, or rather is responsible for retaining said clutch in place after being shifted. The diameter of the opening 129 is slightly larger than that of the plunger 14, and the edge of such opening is preferably rounded, as best shown in Fig. 2. The elongated openings 135 afford what little forward and backward play is required when the clutch is shifted from one position to the other.

From the foregoing it is plainly to be seen that, when the clutch 128 is arranged at an upward incline, there is sufficient looseness of the parts, afforded by the openings 135 and the spring 132, to allow the plunger to travel downward freely, but that the instant said plunger starts to rise it is gripped firmly by said clutch and checked before any upward movement takes place, the frictional engagement between the clutch and the plunger being great enough to accomplish this end; and that, on the other hand, when said clutch is arranged at a downward incline, said plunger can travel upward freely, but cannot be moved down, the same causes operating in this as in the first instance. The upward movement of the plunger is fixed by the clutch when cramped into gripping relation with the plunger by the ascending cross-head, and the descending pin 16 would cause said clutch to grip and stop said plunger at the end of the downward travel of the latter, if the presser did not do so.

It is very apparent that some arrangement, such as the lock or clutch just described, is needed to prevent retrograde movement of the plunger and attached or connected parts, after starting from either end of their travel and before arriving at the opposite end of their travel, because without such provision the stamps would be torn and the mechanism very likely would be injured. With this locking device no false movement of the mechanism is possible.

A brief explanation of the operation of the machine as a whole is all that appears to be necessary, in view of the preceding description of the parts and explanation of their operations, and this is as follows: In the first place the door 6 is unlocked and opened, the arm 35 is turned down, the stamp roll 37 is slipped onto the roller 34, and the loose end of the stamp strip 38 is led from the top of said roll to the floor of the tray 66 and pushed along said floor and into and through the space between said floor and the floor of the hanger 29 until a narrow portion of such end projects onto the working edge of the lower jaw 96, the handle 64 having meanwhile been pressed down to remove with the lifter 55 the sharp end of the finger 53 and the serrated parts of the foot 59 and the jaws 72 from said space. As soon as the stamp strip is thus placed, the handle 64 is released and the aforesaid finger, foot and jaws permitted to swing down on to said strip, the engagement being with the ungummed surface of the strip which is uppermost. In order that the ungummed surface of the stamp strip shall be uppermost in the tray 66, care must be taken to place the stamp roll on the roller 34 in such a way that the strip passes

off from the top of said roll, instead of from the bottom, at this time. Next the arm 35 is turned back into the case. The door 6 is now closed and locked, and the machine is ready to commence operation, it being assumed that the reservoir 20 has been filled and placed in position, and understood that the stamp strip 42 extends downward from the stamp roll 37 and behind the base of the partition 3 to the feed mechanism. The several mechanisms are at this time initially disposed, as represented in Figs. 1, 2, 3 and 4, and when the machine is placed in position with the axis of the plunger 14 over the point on an envelop where it is desired to deposit a stamp said plunger is forced down to its full extent. The following operations occur during the descent of the plunger: The upper jaw 98 is closed onto the lower jaw 96 and the advance edge of the first stamp in the strip is tightly gripped between said jaws, and the rod 68 is lowered onto the moistener 43 and onto said stamp which is between said moistener and said rod (see Figs. 6 and 11); said stamp is drawn by said jaws, as they continue to descend, forward over said moistener and downward, as indicated in Fig. 7 wherein said stamp is represented at 134, and said strip moves with said stamp until the perforated portion between the first and second stamps reaches the serrated edge 84 of the tray 66 when said first stamp is torn from the remainder of the strip; and the stamp thus severed from its companions is carried by said jaws beneath the descending presser, is pinned down, as it were, by said presser and at the same instant is released from the gripping jaws, and finally is compressed throughout its entire area by the spread presser plates (see Fig. 8). As the stamp 134 moves forward it actuates the foot 59, which is resting on said stamp, to withdraw the detent 92 from the path of the arm 85, and the counter is operated to register the stamp. Another action that occurs as one of the results of the descent of the plunger is the backward setting of the stamp-feed jaws 72 to bring them into position to further advance the strip 38, the finger 53 preventing said strip from being carried backward with said jaws at this time. After thus affixing the stamp pressure from above on the plunger 14 is removed and said plunger permitted to ascend or to return to initial position, the clutch 128 having shifted to release said plunger for its upward travel. While the plunger is rising the operations which previously occurred are practically reversed, that is to say, the bottom gripping jaw closes on the upper gripping jaw and remains so disposed until said bottom jaw arrives at stamp-receiving position adjacent to the moistener, when said upper jaw moves away

from the lower one, and the presser closes or contracts and is drawn up out of the way of the other stamp-handling members in the compartment 9. As the gripping jaw 98 approaches the end of its upward movement said jaw encounters the arms 67 and tilts them, with the result that the foot 59 is reset and the detent 92 swung into operative relation again to the arm 85 which is by this time in its elevated position, and with the further result that the jaws 72 are rolled or pushed forward and in turn push the second stamp which is now the leading stamp out over the jaw 96 waiting to receive it. The clutch 128 is shifted once more, this time to release the plunger for downward movement, and all is at last in readiness for a repetition of the stamp-affixing operation and incidentally for the feeding, counting, and other operations which combine with the affixing operation proper to produce the complete operation of the machine and which may be included under the general descriptive term stamp-affixing.

Not only does the rod 68 hold the stamp down on the moistener, but it also takes out the "curl" which is frequently present, especially in the stamps that come from the inner convolutions of the roll 37. Said rod straightens the stamp by causing it to describe a reverse curve as it is drawn from the front edge of the tray under the rod by the gripping jaws.

Although the feeding jaws 72 are not held down by the springs 75 with sufficient force to injure the stamps as the latter are intermittently drawn through the tray by the gripping jaws, they do hold said stamps down so as to insure the catching on the points at 84 of the perforated parts of the stamps or of the strip and the severing of the strip or separating of the stamps at such points.

It may be well to note that the gripping jaws in descending sweep forward and pass under and out of the way of the presser, which they can then do because of the contracted condition of said presser, before the latter descends low enough to encounter said jaws, and conversely said presser rises and contracts in time to avoid said jaws when they return to initial position.

Although this machine is especially designed and adapted for handling postage stamps, it is conceivable that a machine embodying practically the same invention might be employed for other purposes, I do not, therefore, intend to restrict my invention to stamp affixers.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. An affixer for flexible units from a perforated strip, comprising feeding mechanism to engage such strip and actuate it for-

ward, transfer mechanism for such units, a presser for such units, and a plunger arranged and adapted to operate both of said mechanisms and said presser.

5 2. An affixer for flexible units from a perforated strip, comprising feeding mechanism to engage such strip and actuate it forward, transfer mechanism for such units, a presser for such units, a plunger arranged and adapted to operate both of said mechanisms and said presser, and a lock or check arranged to prevent retrograde movement on the part of said plunger between the ends of its stroke.

15 3. The combination, in an affixer for flexible units from a perforated strip of adhesive-coated material, with a reciprocable plunger, of means to grip and detach a unit from the strip at each downward stroke of said plunger, means to affix such detached unit at the end of such downward stroke, and means to engage such strip and actuate it forward to advance another unit to gripping position at each return stroke of said plunger.

25 4. The combination, in an affixer for flexible units from a perforated strip of adhesive-coated material, with a reciprocable plunger, of means to grip and detach a unit from the strip and to count the same at each downward stroke of said plunger, means to affix such detached unit at the end of such downward stroke, counter-controlling means, and means to advance another unit to gripping position and to reset said counter-controlling means at each return stroke of said plunger.

35 5. An affixer, for flexible units from a strip, comprising a suitable frame, a plunger mounted to reciprocate therein, a unit presser attached to the bottom of said plunger, cooperating spring-pressed gripping jaws mounted to oscillate in said frame and operatively connected with said plunger, and strip- or unit-feeding mechanism within said frame and operated by the gripping-jaw mechanism.

45 6. An affixer, for flexible units from a strip coated with adhesive material, comprising a suitable supporting frame, a plunger mounted to reciprocate therein, cooperating spring-pressed gripping jaws mounted to oscillate in said frame and operatively connected with said plunger, strip- or unit-feeding mechanism within said frame and operated by the gripping-jaw mechanism, a moistener arranged in the path of said units, and means operated by said plunger to press the moistened units into place.

60 7. An affixer, for flexible units from a strip coated with adhesive material, comprising a suitable supporting frame, a plunger mounted to reciprocate therein, a unit presser attached to the bottom of said plunger, cooperating spring-pressed gripping

jaws mounted to oscillate in said frame and operatively connected with said plunger, strip- or unit-feeding mechanism within said frame and operated by the gripping-jaw mechanism, and a moistener arranged in the path of said units. 70

8. In an affixer, of the class described, a case having a partition to divide such case into a supply chamber and a compartment for the mechanism, stamp handling mechanism in said compartment, a moistener also in said compartment, and members arranged between the base of said partition and said moistener to form a passageway from such chamber to said moistener for a strip of units which said mechanism is designed to handle, the lower end of said partition being adjacent to the rear end of said passageway, and said partition serving as a guide for such strip. 75

9. The combination, in an affixer of the class described, of passageway-forming members provided at the outlet end of the passageway formed thereby with means to hold back an advancing perforated strip as the perforated portions of the same arrive at such end, a moistener adjacent to such holding means, spring-pressed means for forcing the leading portions of such strip onto said moistener, and gripping jaws capable of grasping and drawing forward such strip, between said moistener and such pressure-applying means, and severing such leading portions, one after another, as said perforated portions become engaged by such holding means. 80

10. The combination, in an affixer of the class described, with spring-pressed rocking arms and a rod connecting the front terminals of said arms, and feeding jaws pivotally attached to the rear terminals of said arms, of a counter-releasing foot, means to reset said foot when said arms rise in front, and a moistener beneath said rod. 85

11. The combination, in an affixer of the class described, with a supporting member for a strip, such member being provided at the front end with a severing edge for said strip, and a moistener adjacent to such severing edge, of spring-pressed rocking arms and a rod connecting the front terminals of said arms, and gripping means for the forward end of said strip, said front terminals of such arms being in the path of such gripping means and adapted with said rod to descend, when said gripping means passes away from them, and to cause said strip to be drawn at an angle over said severing edge and to be pressed onto said moistener. 90

12. The combination, in an affixer of the class described, with a suitably-mounted reciprocable plunger, of arms pivotally attached to the base of said plunger, and hinged plates pivotally attached to the lower 95

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ends of said arms and yieldingly retained normally in angular relationship to each other.

13. The combination, in an affixer of the class described, with a suitably-mounted reciprocable plunger, of arms pivotally attached to the base of said plunger and provided with means to limit the amount of their inward movement, and hinged plates 5 pivotally attached to the lower ends of said arms and yieldingly retained normally in angular relationship to each other.

14. The combination, in an affixer of the class described, with a suitable supporting

frame, of a reciprocable plunger mounted 15 to operate in said frame, oscillatory gripping mechanism within said frame and operatively connected with said plunger, and a contractible and expansible presser carried by said plunger at the bottom, the construction and arrangement of parts being such that such presser is not expanded until after 20 said gripping mechanism has cleared the same.

CHARLES J. FANCHER.

Witnesses:

F. A. CUTTER,
G. A. ANGER.