J. E. RICHMOND, W. J. BALKWILL & W. F. SCHWEIGER.

STAMP AFFIXER.

APPLICATION FILED MAY 1, 1913.

1,216,363.

Patented Feb. 20, 1917.

2 SHEETS—SHEET 1.

Fig. 1

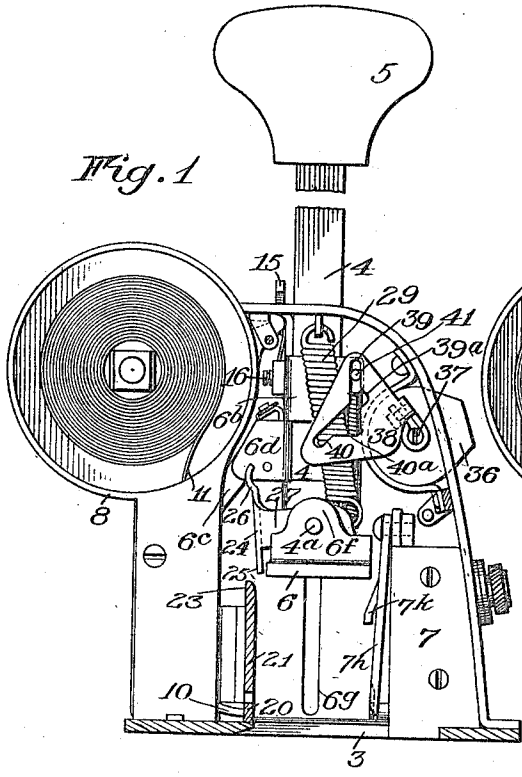

Fig. 2

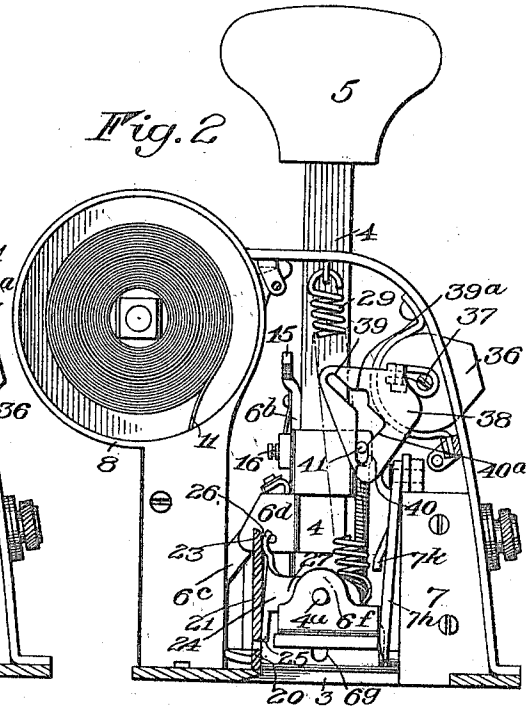

Fig. 5

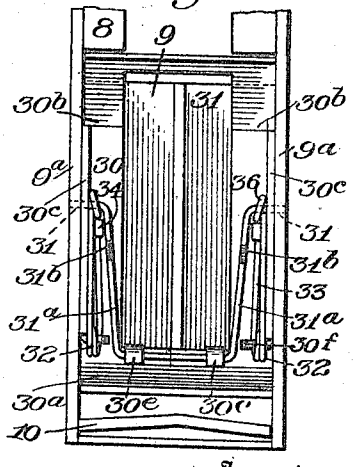

Fig. 6

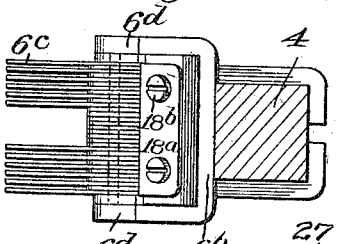

Fig. 7

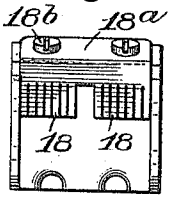

Fig. 8

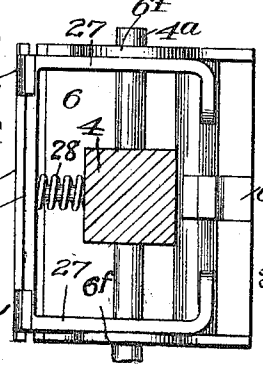

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Fig. 3

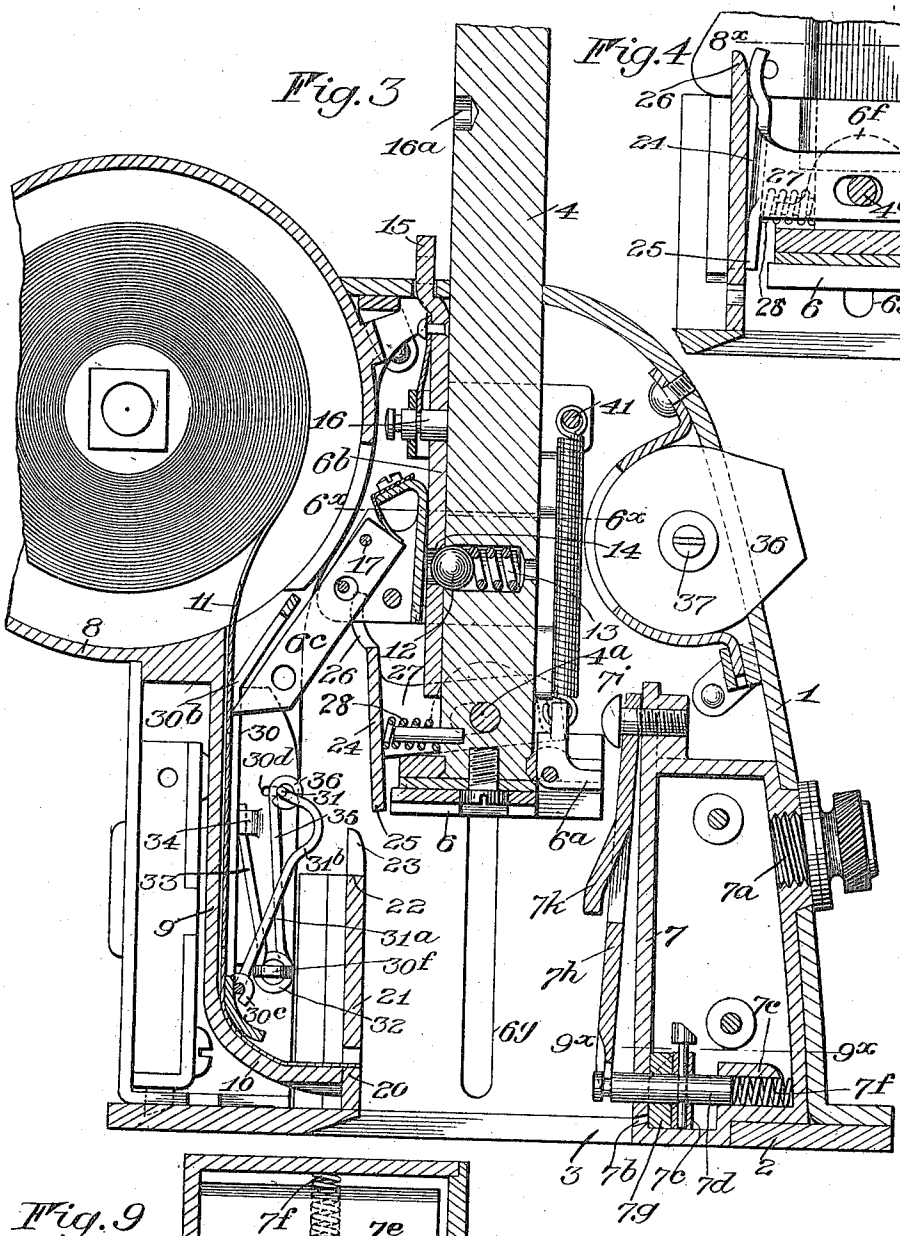
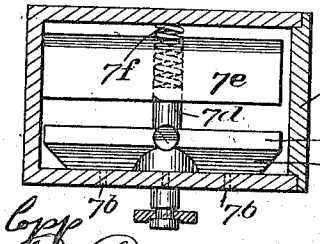


Fig. 4

Fig. 9



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UNITED STATES PATENT OFFICE.

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STAMP-AFFIXER.

1,216,363. Specification of Letters Patent. **Patented Feb. 20, 1917.**

Application filed May 1, 1913. Serial No. 764,964.

To all whom it may concern:

Be it known that we, JOHN E. RICHMOND, WESLEY J. BALKWILL, and WILLIAM F. SCHWEIGER, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Stamp-Affixers; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference-numerals marked thereon.

The present invention relates to machines adapted to be employed for applying or affixing postage stamps to mail matter or labels or pasters to other articles, and it has for its object to provide in a machine of this character, certain improvements in the construction and operation of the feeding fingers; the means coöperating with the stamp strip for preventing its withdrawal, excepting as it is advanced by said fingers; and certain new and improved arrangements of the movable knife or shear by which the successive stamps are severed. The invention also comprehends certain improvements in the liquid discharge apparatus, for supplying the moisture, by which the stamp or label is caused to adhere to the article to which it is applied, and the actuating device of the register by which accurate account is kept of the number of operations performed by the machines and stamps affixed thereby.

To these and other ends the invention consists in certain improvements and combinations of parts all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings:

Figures 1 and 2 are side elevations, partly in section, illustrating the position of the affixing member or plunger at different points of its movement; Fig. 1 showing the plunger retracted in its normal position and Fig. 2 showing it near the limit of its downward movement at about the point where the shear commences its severing action on the stamp strip;

Fig. 3 is an enlarged detail view similar to Fig. 1;

Fig. 4 is an enlarged detail view showing the knife in the position which it occupies when the plunger has been moved downwardly to the point shown in Fig. 2;

Fig. 5 is a detail view showing the brake shoe in front elevation;

Fig. 6 is a detail sectional view on the line $6^{\times}$—$6^{\times}$ of Fig. 3;

Fig. 7 is a detail view of the comb shaped spring which serves to hold the feeding fingers in engagement with the stamp strip;

Fig. 8 is a horizontal sectional view on the line $8^{\times}$—$8^{\times}$ of Fig. 4, showing a top view of the knife or shear, and

Fig. 9 is a similar view taken on the line $9^{\times}$—$9^{\times}$ of Fig. 3, showing the liquid ejection plunger or piston.

Similar reference numerals in the several figures indicate the same parts.

In illustrating these features of the present invention, we have shown them applied to a stamp affixing machine of a commercial form, the general arrangement and operation of the parts of which is disclosed in United States Letters Patent No. 1,012,021, granted Dec. 19, 1911, to W. F. Schweiger and B. D. Straight. This machine comprises the main frame or housing 1 mounted on the base 2, having a central aperture 3 in alinement with which is mounted a vertical reciprocating shaft 4 provided at its upper end with an operating knob or handle 5 carrying at its lower end the affixing head or plunger 6. At one side of the path of movement of the latter is the liquid receptacle or tank 7, and at the other side of said path is a combined stamp receptacle and guide way, the former being indicated by 8 and the latter shown as embodying the vertically extending backing 9, having the lower end curved laterally, as indicated at 10, guiding and discharging the stamp strip 11 into the path of the affixing head or plunger 6 as it approaches the limit of its downward movement at which time the outermost stamp of the strip is severed, and just before it is cut off the required amount of water or other

liquid is ejected from the tank 7 on to the surface to be covered by the stamp, which is represented by the dimensions of the aperture 3.

The receptacle 7 is provided in its rear wall and near its upper end with a screw plug 7^a which may be removable to permit the insertion of water or other liquid. The bottom of the receptacle is provided with a downwardly extending chamber fitting into the end of the aperture 3, so that its lower edge is flush with the lower face of the base 2, thus permitting the location of the ejection orifices 7^b in proximity to the article on which the machine is placed at the time of performing the stamp affixing operation. The expelling of the liquid from the receptacle is accomplished by means of a piston 7^c, carried on the piston rod 7^d, guided in the perforations formed in the inner wall of the receptacle and in the internal lug 7^e which latter also contains the coil spring 7^f which is of sufficient strength to cause the piston head to normally occupy the position shown in Fig. 3. The face of the piston is formed of rubber or other resilient covering 7^g, the end and top corners of which are cut away on the beveled lines shown in Fig. 9, an arrangement which permits the liquid in the receptacle to more easily flow downwardly into the space between the contiguous faces of the piston and receptacle when the piston is retracted. The beveling of the edges of the packing reduces the area of the face of the piston so that the flow of water into the orifices is facilitated when the machine is operated rapidly and at the same time it permits that portion of water remaining in the tank which is not expelled, to be dislodged from its position in front of the plunger so that there is no excess moisture to ooze or leak out of the orifices when the piston is at rest.

The piston 7^d is reciprocated by a cam plate 7^h loosely pivoted on a screw or rivet 7^i at the upper end of the receptacle and connected to the piston at its lower end by interlocking slots on said parts. At about the center of the plate a portion is struck up, forming an inclined guide surface 7^k by means of which the plate is forced rearwardly upon the downward movement of the plunger or affixing member, the latter being provided with a pawl 6^a which engages the said cam surface on its downward movement, and is pivoted to permit it to pass said projection upon the upward movement of the plunger.

The shaft 4 is preferably made rectangular in cross section, and surrounding it is a carriage 6^b carrying the stamp feeding fingers 6^c, said carriage being movable independently of the shaft, so that it may be arrested after the stamp strip has been projected the proper distance to discontinue the feeding action, permitting the stamp at the free end of the strip to be severed and the stamp to be affixed to the article by the further downward movement of the plunger. The latch connection between the shaft 4 and the carriage 6^b is obtained by inserting a steel ball 12 in an aperture in the shaft which is forced outwardly by a coiled spring 13 so that the projecting portion of its circumference coöperates with the peripheral edge of a recess or aperture 14 provided in the carriage 6^b. The upper end of the latter is off-set slightly and forms a projection 15, which extends through an aperture in the top of the frame of the machine where it may be engaged by a suitable instrument, as for instance, a key or coin, for the purpose of retaining the carriage and permitting the downward movement of the shaft and permitting the latter to be locked in an inoperative position, at which time a small locking bolt 16 on the carriage will engage a recess 16^a in the face of the shaft and hold the affixing head or plunger within the aperture 3 of the base, until such time as the bolt 16 is retracted by the person authorized to open the machine.

The feeding fingers 6^c comprise a plurality of thin steel blades or fingers pivoted on a cross rod or pin 17 held at its ends in the ears 6^d projecting from the forward edge of said carriage, said fingers being separated slightly and so shaped at their forward ends as to engage in the perforations between the successive stamps on the strip 11, during their downward movement. A limited pivotal action is permitted these fingers and they are held yieldingly in engagement with the stamp strip by a plurality of springs 18 which are preferably made in the form of a comb by slotting the edge of a plate 18^a which is secured by screws 18^b to a cross piece on the wings of the carriage. An advantage accrues in the use of metallic springs for operating the feeding fingers and of arranging a plurality of these on the edge of a single plate, since they are durable, can be adjusted to vary the tension with which one or another of the feeding fingers engages the stamp strip, and as a whole may be easily assembled with the other parts of the machine.

An important feature of the present invention relates to the means employed for cutting or severing the stamp strip. The arrangement of the parts here disclosed is adapted particularly to provide an inexpensive combination of elements which may be easily assembled and which will obviate the necessity of guiding the movable part on which one of the knives is mounted for very close accurate movement relatively to other parts of the machine; the careful adjustment of the knives themselves in the first instance,

and of subsequently resharpening them. This feature of the invention broadly considered, comprises a stationary cutter bar or blade and a floating shear or knife carried on the plunger, the cutting edge of which is brought into operative position and caused to coöperate with the stationary blade at the time the severing operation is to take place, said shear being capable of adapting itself to any irregularities of the stationary blade which may occur as the result of use.

The stationary cutting member in the present instance comprises the edge or lip 20 formed by the lower edge of the slot provided in the plate 21 secured to the frame of the machine and through which the free end of the stamp strip is discharged as it leaves the curved end of the guideway 10. The plate 21 is situated at the edge of the aperture 3 in the base 2 and extends upwardly the desired distance to provide a stop shoulder 22 which limits the downward movement of the wings 6^d and arrests the carriage 6^b, thus limiting the feeding movement of the stamp strip. The lateral edges of the plate 21 project upwardly a short distance and are rounded, as indicated at 23, providing cam surfaces which coöperate with similar surfaces on the other cutting member or shear, as will be further described.

The floating shear or knife member, which is movably carried on the affixing head or plunger 6, comprises a plate 24 having the lower cutting edge 25 which coöperates with the lip 20 and is thrown into position for this coöperative action by the cam members or fingers 26 on its upper edge when they bear against the surfaces 23, as shown in detail in Fig. 4. The plate 24 is supported by the two arms 27 extending laterally at opposite sides of the lower end of the shaft 4 and to which they are connected by the transversely extending pin 4^a, said arms being provided with elongated apertures permitting their longitudinal movement under the influence of the spring 28 which bears against the contiguous faces of the shaft and plate for the purpose of yieldingly holding the latter in operative position relatively to the lip 21. In order to hold plate 24 in position so that its cutting edge 25 is not subject to excessive wear by reason of its contact with the cutter bar, 21, throughout the major portion of the stroke of the plunger, means is provided for holding it in an inoperative inclined position, as shown in Fig. 3. The preferred method of accomplishing this is by connecting the spring or springs 29, which are employed for retracting the affixing head or plunger, with the free ends of the arms 27, the upper extremities of said springs being connected to the top of the case 1. In the operation of the machine, it will be observed that upon the downward movement of the plunger the shear or knife 24 is held by springs 29 in the position shown in Figs. 1 and 3 until the cam surfaces 23 and 26 engage, whereupon the further downward movement of the plunger causes the cutting edge 25 to be thrown sidewise against the plate 21 and in this position to pass over the edge 20 in intimate contact therewith. The parts continue to retain this position until the limit of the downward movement of the plunger is reached, when upon releasing the pressure on the operating knob 5, the springs 29 are allowed to retract the affixing member applying their force first on the arms 27, causing the latter to shift about the point of engagement of the cams 26 as a fulcrum. The springs 29 at this time are distended and their force is sufficient to overcome the force of the spring 28 so that upon the upward movement of the plunger the cutting edge 25 is held clear of the face of plate 21. The pin 4^a also serves as means for connecting the head 6, which is formed at opposite sides with upward extending ears 6^f, and its ends traveling in the vertical slots 6^g in the sides of the frame of the machine serve to guide the lower end of the shaft 4.

The clamping member or detention device for preventing the withdrawal of the stamp strip by a force applied to its free end comprises in the present instance, means for mounting said member whereby it may be conveniently removed to facilitate the insertion of the stamp strip, or for any other reason, and also for holding the member in frictional engagement with the stamp strip. The clamping member is disposed in front of the guide way 9 between the side walls 9^a and comprises the plate 30, having the central aperture 31, through which the feeding fingers 6^c project, said plate having at its lower end a curved portion 30^a coöperating with the curved part 10 of the guide to deflect the stamp strip as it is pushed forwardly. At its upper end the top of the plate is bent, forming the somewhat angular portions 30^b shown in Fig. 3, providing a fulcrum point around which said plate rotates in the event its lower end is displaced relatively to the guide, as occurs when the free end of the strip is drawn forwardly. The clamping member also comprises the lateral ears 30^c, lying within the walls 9^a to which they are pivoted and on which they have a relative sliding movement. This form of connection is afforded by reason of elongated slots 30^d accommodating the securing devices which enter apertures in the walls 9^a. The securing devices in the present instance consists of the laterally projecting horizontal ends 31 of a U-shaped wire 31^a attached to the member 30 by means of the ears 30^e. In forming the parts just de-

scribed, it is also desirable to make the arms of the loop with outwardly curving portions 31^b, which extend beyond the edges of the side walls 9^a and the flanges 30^c to afford projections which may be conveniently engaged by the operator's fingers, so that he may simultaneously retract the pins 31 and thus release the clamping member and remove it from the stamp guideway.

The clamping member is caused to normally exert a slight frictional contact with the stamp strip and to this end there is applied to each side of the plate a coil spring 32 held in position on the lug 30^f, struck up from the bottom edge of the flange 30^c, having one end 33 secured beneath the lug 34 and an end 35 provided with an eye 36 wrapped around the adjacent pin 31. The pins 31 being received in apertures in the walls 9^a afford projections against which the ends of the springs 35 bear, so that their opposite extremities cause the clamping member 30 to be yieldingly held in engagement with the backing 9 of the guideway. The clamping member being thus yieldingly held when displaced at its lower end rotates about the point 30^b by reason of the movement afforded by the slot 30^d, and additional tension under such circumstances is imparted to the spring 32 so that the greater the strain applied to the lower end of the stamp strip, the greater becomes the clamping action between the upper end of the member 30 and the backing 9 of the stamp guideway.

In machines of this character, it is desirable to keep a record of the stamps or labels supplied or affixed, and to this end, there is mounted on the frame a counter 36, of the usual or any preferred construction, provided with the customary numeral wheels actuated by the oscillation of the central shaft 37. In order to obtain an accurate record of the number of stamps deposited, it is essential that the operating member of the register be constructed in such a manner that it can only be actuated upon a full stroke of the plunger or affixing member and prevented from manipulation in any other manner. In carrying out this feature of the invention, the operating shaft 37 of the register is shown as provided with the cam plate 38 having two angularly disposed slots 39 and 40 in which travels an operating pin 41 on the carriage 6^b, said slots being so arranged as to provide the shoulders 39^a and 40^a which will effect an oscillation of the plate 38 alternately in opposite directions at the proper point in the stroke of the plunger, the slots proper permitting the travel of the plunger in one direction or the other after said plate has been oscillated. The engagement of the pin in the slots prevents the actuation of the register and locks it against movement otherwise than by the reciprocation of the plunger.

We claim as our invention:

1. In a stamp affixer, the combination with a reciprocatory movable affixing member, a stationary cutter and means for feeding a stamp strip thereover, of a knife carried bodily on the affixing member and movable thereon, and means for adjusting it on said member into coöperative engagement with the cutter at a predetermined point in the movement of said member.

2. In a stamp affixer, the combination with a movable affixer, a stationary cutter and movable feeding devices for projecting a stamp strip over said cutter, of a knife loosely carried by the affixer and means cooperating therewith and positioned to adjust the knife on the affixer into operative engagement with the cutter relatively to the feeding movement of the stamp strip.

3. In a stamp affixer, the combination with a movable affixer, a stationary cutter and a shearing blade carried on the affixer and normally occupying an inoperative position, of means for feeding a stamp strip over said cutter and coöperating portions arranged respectively on the shear and a stationary part of the machine for moving said shear independently of the affixer into engagement with the cutter upon the downward movement of said affixer.

4. A stamp affixer comprising means for feeding a strip of stamps successively and an affixer, a shear movable transversely on the affixer and means for automatically positioning it in cutting position upon the downward movement of the affixer.

5. In a stamp affixer the combination with a reciprocatory affixing member, means for successively projecting a stamp strip and a stamp cutter, of a coöperating shear mounted on the affixing member and capable of limited transverse and rotary movement and means automatically operated upon movement of the member into affixing position to adjust said shear into cutting position relatively to said cutter.

6. The combination with an affixing machine comprising a movable affixing member, of a shearing couple embodying a stationary cutter and a shear mounted on the affixing member and movable transversely thereof into position to operatively engage the cutter upon movement of said affixing member toward the cutter.

7. The combination with an affixing machine comprising a movable affixing member and a cutter, of a shear movable with the affixing member past the cutter, said shear being mounted to rock into coöperating cutting engagement with the cutter

upon movement of the affixing member toward the cutter.

8. The combination with an affixing machine comprising a movable affixing member and a cutter, of a shear movable with the affixing member past the cutter, said shear being mounted to rock into coöperating cutting engagement with the cutter upon movement of the affixing member toward the cutter, and to rock into a position out of contact with the cutter upon the movement of said member in the opposite direction.

9. The combination with an affixing machine comprising a movable affixing member, a cutter and means for feeding a stamp strip thereover, of a shear movably carried on the affixing member and normally held in an inoperative position, and cam surfaces on the shear and a stationary portion of the machine which coöperate upon movement of affixing member in one direction to adjust the shear into cutting engagement with the cutter.

10. In a stamp affixing machine the combination with an affixing member means for feeding a stamp strip and a cutter bar underlying the stamp strip of a shear movably mounted on the affixing member, a spring for retracting the latter attached to shear and yieldingly holding it in an inoperative position and means acting to move the shear into engagement with the cutter upon the movement of the member into affixing position.

11. In a stamp affixing machine the combination with an affixing member, means for feeding a stamp strip and a cutter bar underlying the stamp strip, of a shear movably mounted on the affixing member, means for normally holding the shear yieldingly in an inclined inoperative position and means acting upon the movement of the affixing member in a direction toward the cutter to adjust said shear into cutting engagement therewith.

12. In a stamp affixing machine the combination with a reciprocatory affixing member, a cutter at one side of the path of movement thereof and means for feeding a stamp strip across said cutter, of a shear movably mounted on said affixing member having a cutting edge and means for holding it with its cutting edge out of alinement with the cutter bar and means for moving said shear to position its edge in cutting position as it passes the cutter bar.

13. In a stamp affixing machine, the combination with a reciprocatory affixing member, a cutter at one side of the path of movement thereof and means for feeding a stamp strip across said cutter, of a shear movably mounted on said affixing member, having a cutting edge and means for holding it with its cutting edge out of alinement with the cutter bar and means for moving said shear to position its edge in cutting position as it passes the cutter bar upon movement of the affixing member into affixing position and restoring it to the inoperative position upon the return movement of said affixing member.

14. In an affixing machine the combination with a reciprocatory affixing member, a cutter bar located at one side of the path of movement thereof and means for feeding a stamp strip thereover, of a shear, an arm supporting it having a limited rocking and longitudinal movement on the affixing member and yieldingly held to retract the cutting edge of the shear out of alinement with the cutter bar and coöperating cam members, one on the shear, the other located stationary relatively to the cutter, serving to tilt the shear and hold its cutting edge in engagement with the cutter bar as said shear edge is carried past the cutter bar by the affixing member.

15. In a stamp affixing machine, the combination with a stamp strip guide way, a reciprocatory affixing member and a carriage guided thereon embodying feeding devices for advancing the stamp strip, of a stop for limiting the movement of the carriage and a yielding latch connection between the carriage and affixing member comprising a spring operated ball located in a recess in one of the parts and coöperating with a recess disposed in the other part.

16. The combination with a stamp affixing machine combining a movable affixing member and means for feeding stamps, of a liquid receptacle provided with discharge orifices, a piston in the receptacle, the operative face of which on the side adjacent the orifices is of reduced area to facilitate the inrush of liquid between it and said orifices when the piston is retracted, and means for operating the piston.

17. In a stamp affixer, the combination with a stamp guideway comprising a backing and having laterally extending portions at each side thereof, of an affixing member and feeding devices for advancing a stamp strip, of a front piece for the guideway having edge pieces fitting within the lateral extension and pins projecting through said lateral extensions and side pieces and removably securing said front piece in position.

18. In a stamp affixer, the combination with a stamp guideway comprising a backing having walls at its opposite sides, of a front piece for the guideway having side portions fitting within the side walls, said side portions and walls being provided with

registering apertures and yieldingly supported pins fitting said apertures and retractable to disconnect the front piece, an affixing member and means for feeding stamps through said guideway.

19. In a stamp affixer, the combination with a casing, a movable affixing member and means for feeding stamps, of a countermechanism on the casing, an actuating member therefor, having cam slots and a projection on the affixing member, coöperating with said slots and serving to actuate it during the movement of the affixing member and at other times serving to hold said actuating member against movement.

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