March 3, 1964 L. S. SNYDER 3,123,513

STAMP FEEDING AND AFFIXING DEVICE

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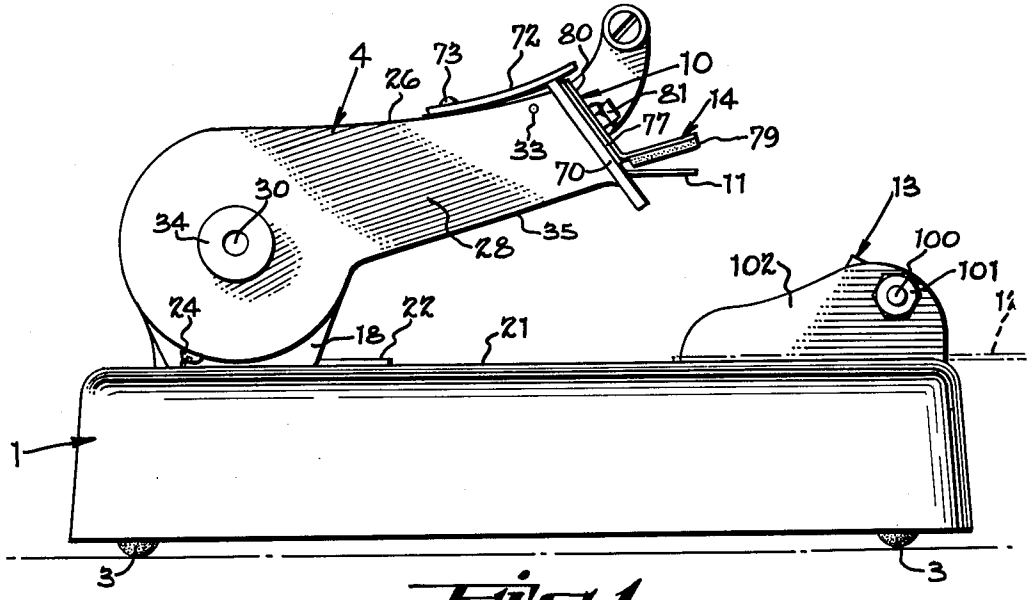


Fig. 1

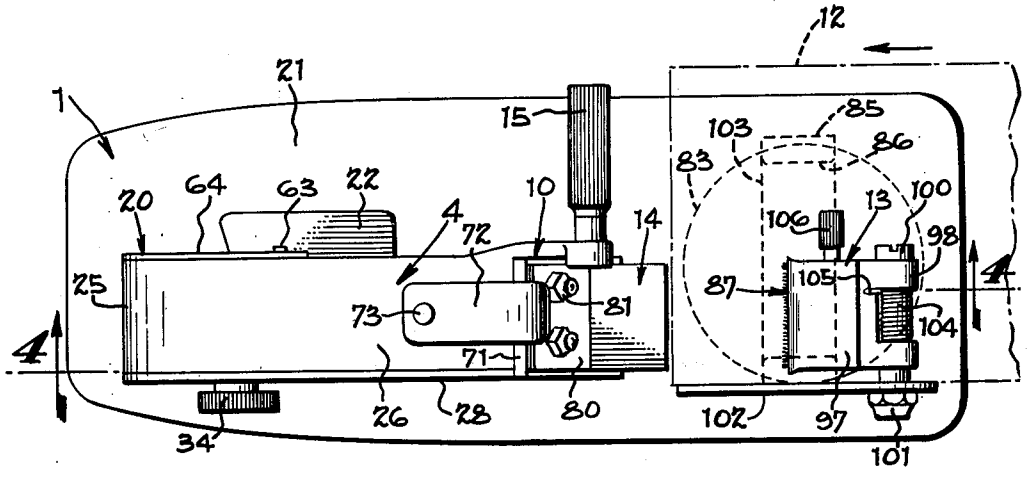


Fig. 2

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STAMP FEEDING AND AFFIXING DEVICE

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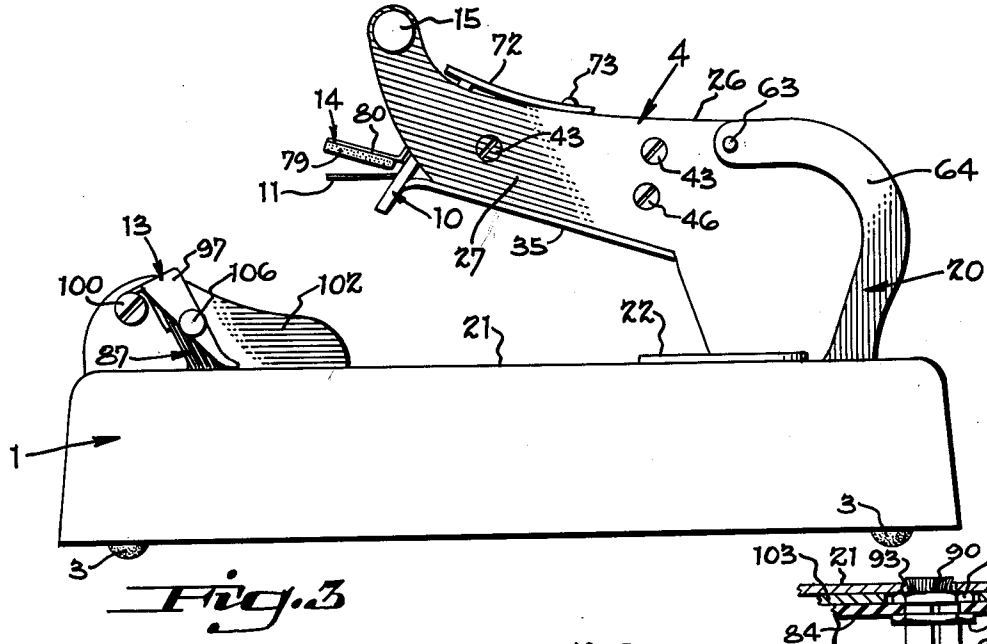


Fig. 3

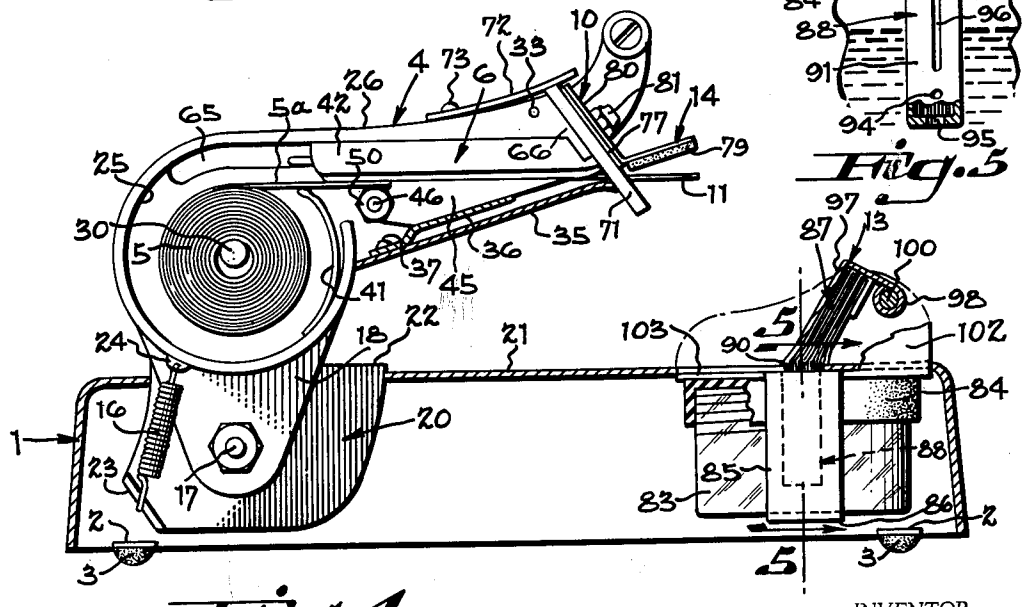


Fig. 4

Fig. 5

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STAMP FEEDING AND AFFIXING DEVICE

Filed Oct. 9, 1961 6 Sheets-Sheet 3

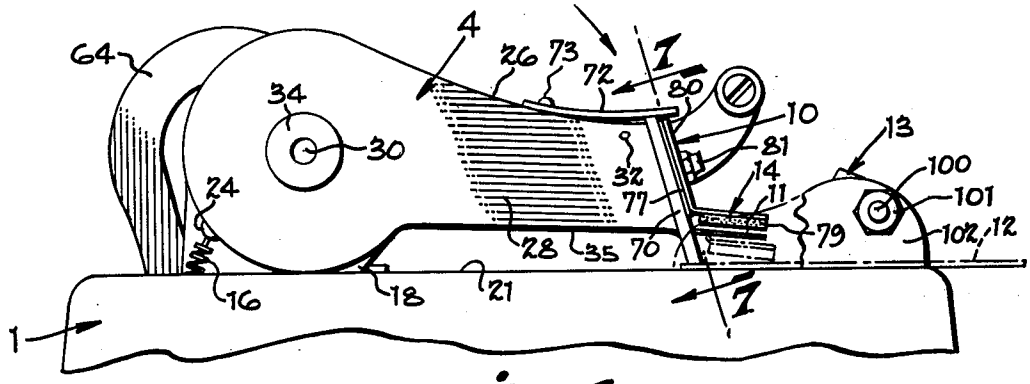


Fig.6

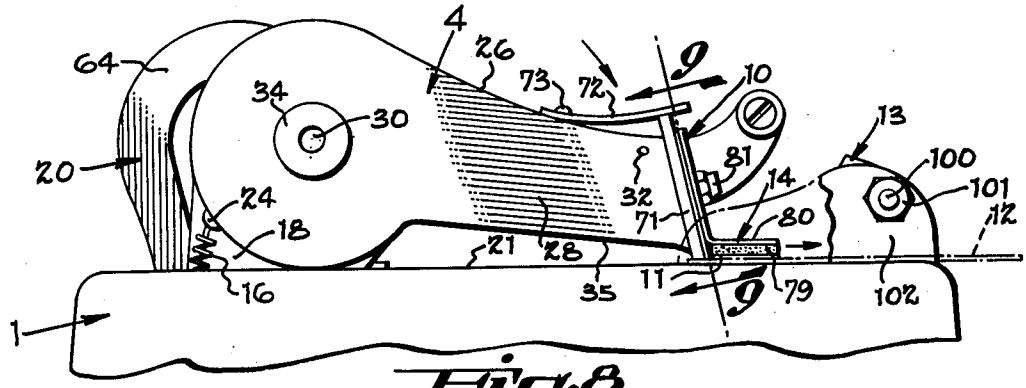


Fig.8

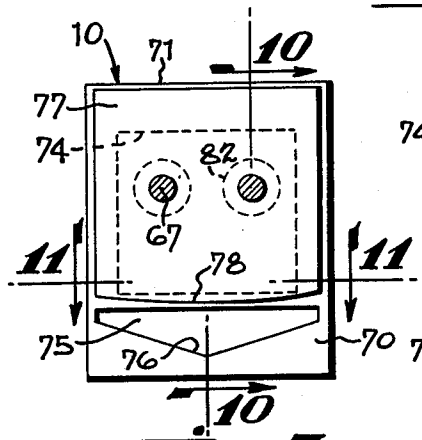


Fig.7

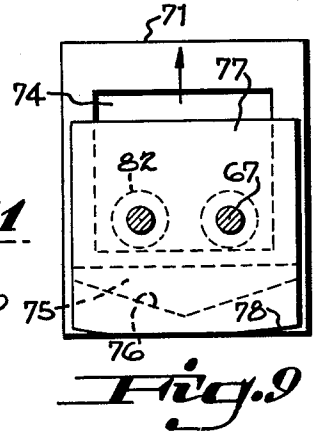


Fig.9

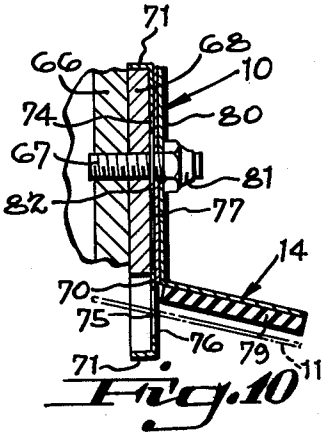


Fig.10



Fig.11

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STAMP FEEDING AND AFFIXING DEVICE

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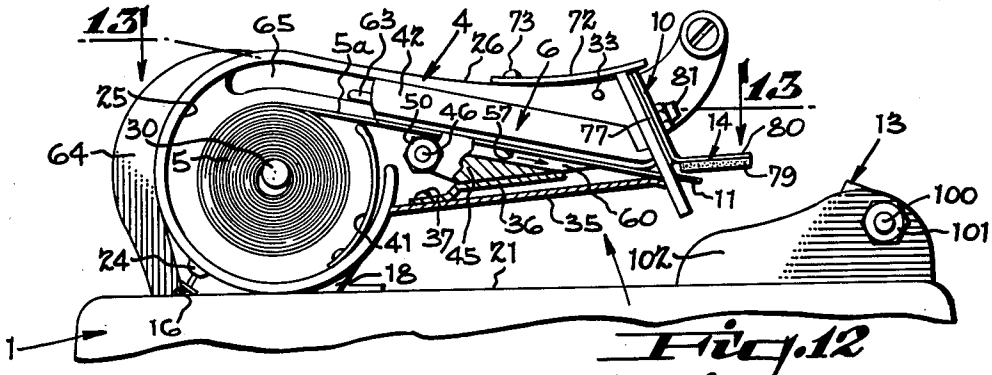


Fig. 12

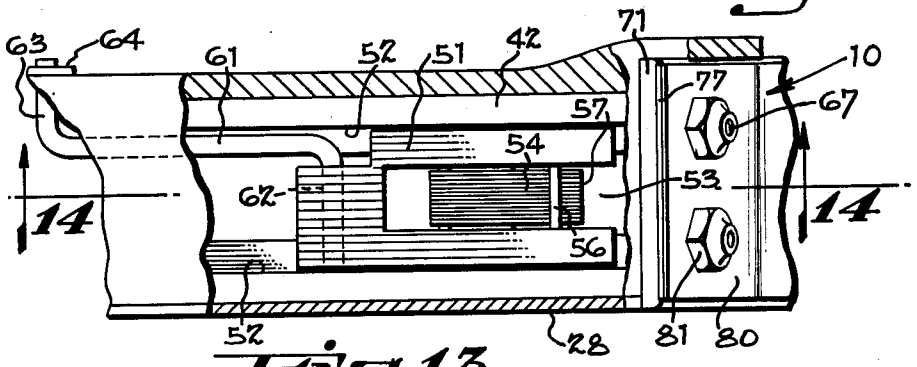


Fig. 13

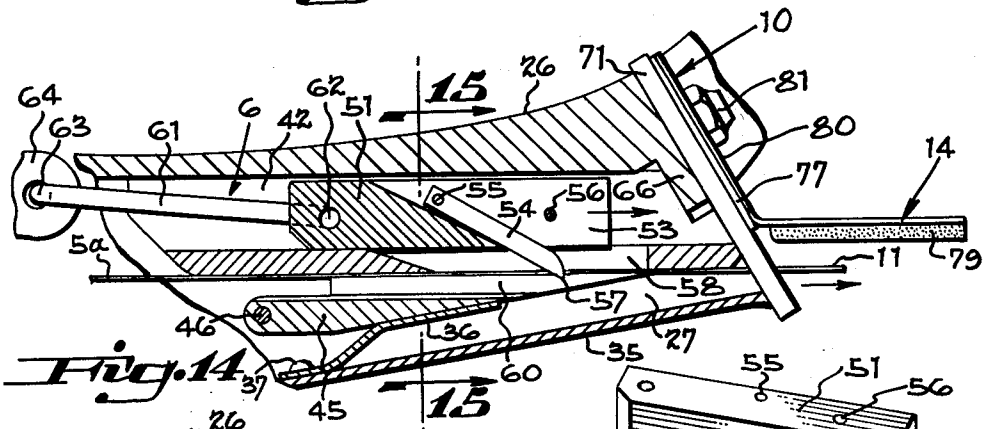


Fig. 14

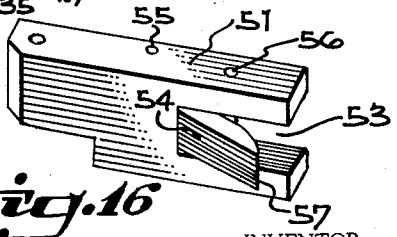


Fig. 16

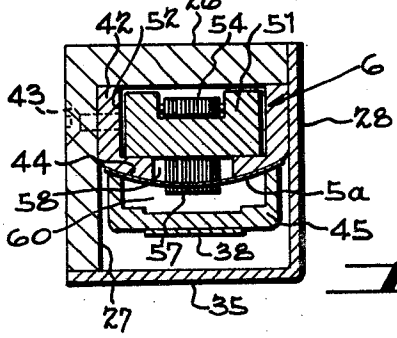


Fig. 15

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STAMP FEEDING AND AFFIXING DEVICE

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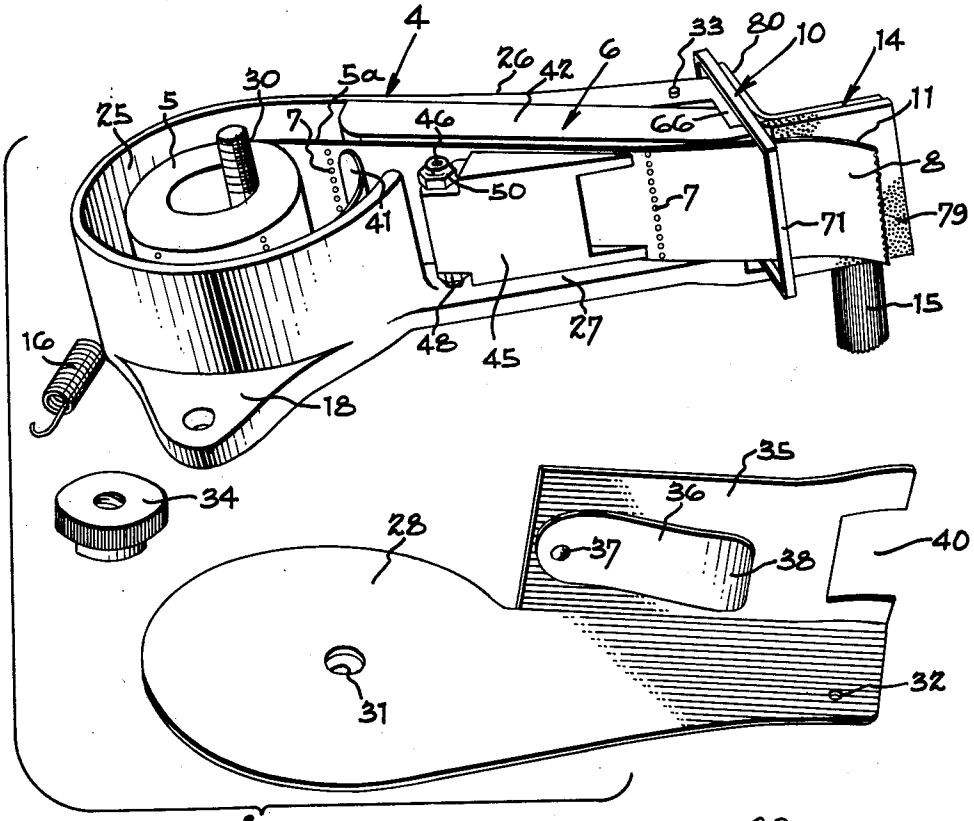


Fig. 17

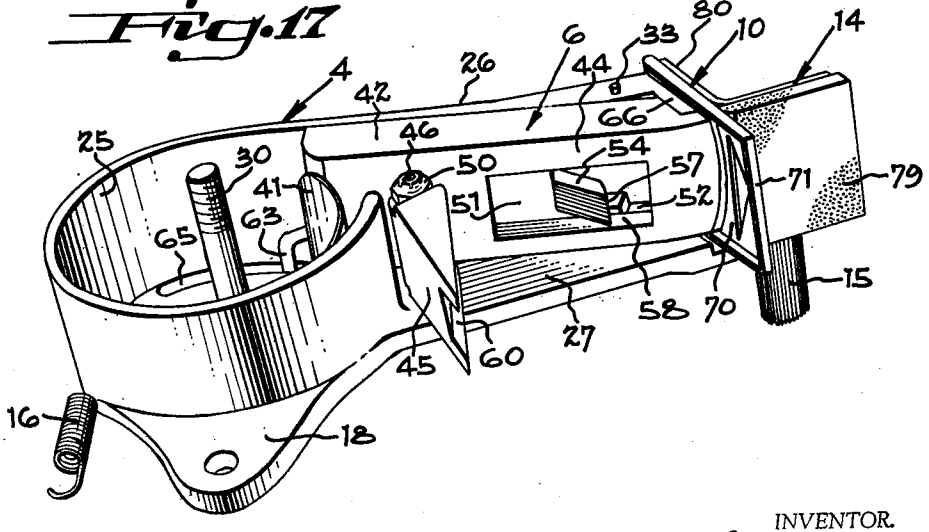


Fig. 18

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STAMP FEEDING AND AFFIXING DEVICE

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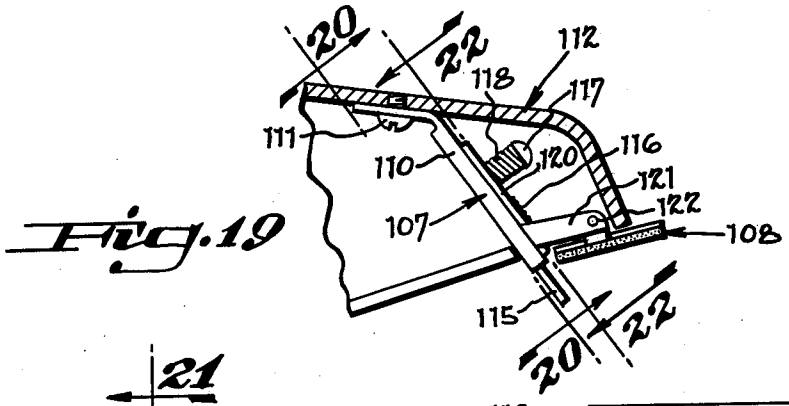


Fig. 19

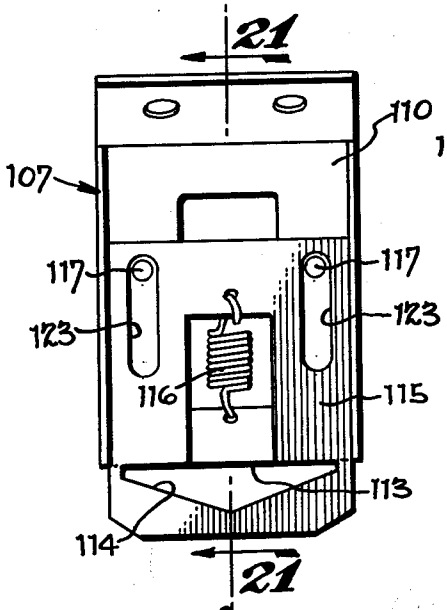


Fig. 20

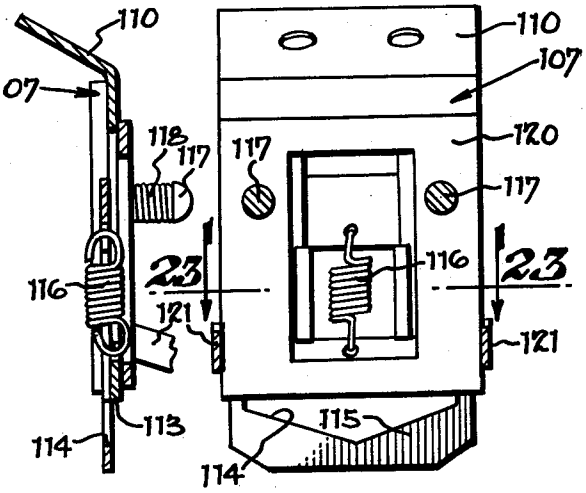


Fig. 21 Fig. 22

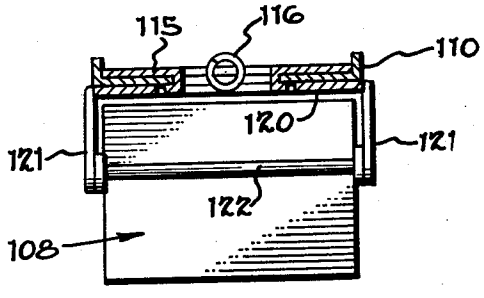


Fig. 23

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United States Patent Office 3,123,513 Patented Mar. 3, 1964

3,123,513

STAMP FEEDING AND AFFIXING DEVICE

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Filed Oct. 9, 1961, Ser. No. 143,970
12 Claims. (Cl. 156—522)

This invention relates generally to devices for affixing gummed postage stamps and the like to flat pieces of mail, such as postcards and envelopes. More specifically, the invention contemplates a hand-operated portable device adapted to feed the gummed stamps from a roll, to sever the stamps individually, and to apply the severed stamp under pressure to a piece of mail in a rapid, convenient manner.

The invention is disclosed in relation to the handling of gummed postage stamps of a standard type which are furnished in rolls, one face of the stamp having a water-soluble adhesive coating which is activated by moisture. The individual stamps are delineated by transverse rows of perforations, adapting the stamps normally to be torn from the strip to be moistened and applied to the mail by hand. The present device is also intended to be used in applying gummed labels of similar design to pieces of mail or other flat surfaces. For simplicity, the various articles to which the stamps or labels are applied, are designated herein as a letter.

One of the primary objectives of the present invention has been to provide a simple, reliable, hand-operated stamp affixing device, for business offices and the like, which is conveniently loaded, used and serviced by the office personnel, the device being adapted to apply moisture to each letter, and thereafter to sever and apply a stamp under pressure to the moistened surface portion of the letter.

Described generally, the present device comprises a base and an actuating arm having one end pivotally connected to the base, the arm providing a self-contained stamp magazine for confining a roll of stamps. The arm includes a feed mechanism for advancing the stamps from the roll toward the swinging end of the arm, and a stamp cut-off device mounted on the swinging end of the arm. A presser foot or pad resides above the cut-off device at the end of the arm and is adapted to press the stamp against the moistened surface of the letter as the stamp is severed from the strip by the cut-off device. The arm is normally spring-biased to an elevated position above the base, with the endwise stamp of the strip projecting in a cantilever fashion from the end of the arm below the pad, with its gummed side facing downwardly ready to be applied to the letter.

A moistening device is mounted upon the base and is arranged to moisten the upper surface of the letter as it is slipped by hand to a position on the base beneath the swinging end of the actuating arm. In operating the device, the arm is depressed or pivoted downwardly by hand, causing the cut-off mechanism to sever the stamp, while the presser pad forces the stamp downwardly with its gummed side firmly into contact with the moistened surface of the letter to adhesively affix the severed stamp to the letter. The feeding mechanism is so arranged that the next stamp is advanced forwardly as the arm returns to its elevated position, in such manner that the next stamp projects from the end of the arm, ready to be applied when the arm is again swung downwardly through its stamp affixing stroke.

Another objective of the invention has been to provide a simplified and improved feeding mechanism which advances the stamp strip in a positive manner from the roll within the arm during upward pivotal motion of the arm by positive engagement with the perforations of the stamp strip.

According to this aspect of the invention, the arm includes a reciprocating feed block connected to a stationary element on the base so as to be shifted forwardly relative to the arm as the arm is shifted or released to its elevated position after applying a stamp. The forward end of the reciprocating block is provided with a series of feed fingers having pointed ends which are adapted to engage the transverse perforations of the stamp strip so as to advance the strip in a positive manner.

Further objectives have been to provide a stamp guide mechanism cooperating with the feed mechanism and adapted to bow the strip of stamps transversely, thereby to impart stiffness to the strip to facilitate stamp feeding and affixing; to provide a cut-off mechanism which is curved transversely in a manner to shear the curved stamp along a straight line; to provide a guide mechanism which prevents sticking of the stamps within the feed mechanism due to moisture absorption by the gummed face of the stamp; and to provide an arm structure whereby the roll of stamps may be loaded into the arm in a convenient manner.

According to these aspects of the invention, a stationary guide bar, having a lower surface which is convex in cross section, is mounted below the reciprocating feed block and includes a longitudinal opening through which the pointed end portions of the feed fingers project downwardly into engagement with the perforations of the stamp strip. A pivoted pressure bar is mounted below the curved guide bar and is arranged to engage the marginal portions of the stamp strip and to force the strip upwardly against the curved guide surface, thereby bowing the strip transversely. This imparts longitudinal stiffness to the stamp strip, adapting the stamp strip to sustain the feed fingers without a backing surface, whereby the fingers drop through the perforations without interference during the feeding motion to provide positive stamp feeding or indexing. The bowing also adapts the endwise stamp to project outwardly in a straight line adapting the stamp to be applied to the letter without buckling.

In loading the device, a cover is removed from one side of the arm, the stamp roll is placed in a housing formed in the rearward portion of the arm, and the pivoted pressure bar is swung downwardly, adapting the stamp strip from the roll conveniently to be pulled forwardly along the convex lower surface of the stationary guide bar. The forward end of the strip is then passed through a shearing opening formed in the cut-off device, with the endwise stamp of the strip projecting outwardly. The pivoted pressure bar is then swung into engagement with the stamp strip beneath the convex guide bar. The cover includes a leaf spring which engages the pivoted pressure bar and forces it lightly into engagement with the stamp strip when the cover is replaced. The device is then ready for use.

Another feature of the invention arises in the arrangement of the presser pad, whereby the pad imparts a wiping action to the stamp with respect to the moistened surface of the letter as the stamp is forced against the moistened surface, thereby to improve the adhesive bond of the stamp.

According to this arrangement, the presser pad is resiliently mounted on the arm and is so related to the cut-off mechanism that the cut-off mechanism contacts the surface of the base before the presser pad engages the stamp which projects through the opening of the cut-off mechanism. During continued downward arm motion, a shearing element of the cut-off mechanism, which contacts the base, is shifted upwardly relative to a shearing edge and severs the stamp across its perforated line; at about the same time, the forward edge of the presser pad engages the severed stamp. Continued downward motion of the arm to its

downward limit springs the presser pad downwardly and forwardly and thus produces the wiping action which causes the stamp to be firmly affixed to the moistened surface of the letter, thus completing the operation.

A further objective has been to provide an improved moistening device which applies moisture to the surface of the mail in a reliable manner; which prevents spilling of water; and which may be refilled quickly and conveniently.

In general, the moistening device comprises a water reservoir which is demountably confined within the base for refilling, and which includes a wick holder, confining a wick adapted to carry the moisture by capillarity from the reservoir to an applicator brush which is mounted above the base. The reservoir and wick holder prevent the spilling of water when the device is handled in reloading, and feed a controlled amount of moisture to the applicator brush. The letter to be stamped is thus slipped along the base and under the brush so that the moisture is applied in the upwardly facing area which receives the stamp. The brush is also adapted to be used in moistening the gummed flap of the envelope for sealing the envelope before the stamp is applied.

The various features and advantages of the invention will be more fully apparent to those skilled in the art from the following description made with reference to the drawings.

In the drawings:

FIGURE 1 is a general side elevation of the stamp affixing device, the parts being shown in the normal position with the actuating arm elevated above the base.

FIGURE 2 is a top plan view of the machine, as projected from FIGURE 1.

FIGURE 3 is a general side elevation similar to FIGURE 1, but showing the opposite side of the machine.

FIGURE 4 is a sectional view taken along the line 4—4 of FIGURE 2, illustrating the internal components of the actuating arm and letter moistening apparatus.

FIGURE 5 is a sectional view taken along line 5—5 of FIGURE 4, detailing the wick portion of the moistening apparatus.

FIGURE 6 is a view similar to FIGURE 1, showing the displacement of the actuating arm downwardly toward the stamp affixing position.

FIGURE 7 is a sectional view taken along line 7—7 of FIGURE 6, showing the position of the stamp cut-off or shearing mechanism when the actuating arm is in the position of FIGURE 6.

FIGURE 8 is a view generally similar to FIGURE 6, showing the actuating arm in its final stamp affixing position.

FIGURE 9 is a sectional view taken along line 9—9 of FIGURE 8, showing the cut-off mechanism in its stamp shearing position corresponding to the arm position of FIGURE 8.

FIGURE 10 is an enlarged, fragmentary sectional view taken along line 10—10 of FIGURE 7, detailing the stamp shearing apparatus and pressure pad.

FIGURE 11 is a sectional view taken along line 11—11 of FIGURE 7, further detailing the stamp cut-off mechanism.

FIGURE 12 is a side view, partially in section, generally similar to FIGURE 6 but showing the motion of the stamp feed mechanism during the upward motion of the actuating arm after a stamp has been affixed to a piece of mail.

FIGURE 13 is an enlarged fragmentary sectional view taken along line 13—13 of FIGURE 12, illustrating the reciprocating block of the stamp feeding mechanism.

FIGURE 14 is a sectional view taken along line 14—14 of FIGURE 13, further illustrating the feed mechanism of FIGURE 13.

FIGURE 15 is a cross sectional view taken along the line 15—15 of FIGURE 14, further illustrating the feed mechanism.

FIGURE 16 is a perspective view, illustrating the reciprocating feed block which forms a part of the stamp feeding mechanism shown in FIGURES 14 and 15.

FIGURE 17 is a perspective view of the actuating arm and its removable cover plate, with the stamps in place, further illustrating the general arrangement of the parts.

FIGURE 18 is a perspective view, generally similar to FIGURE 17, but showing certain parts of the feed mechanism in the stamp loading position.

FIGURE 19 is a fragmentary sectional view of the forward portion of the actuating arm with a slightly modified cut-off mechanism and pressure pad mounted thereon.

FIGURE 20 is a face view of the cut-off mechanism removed from the arm as viewed along the line 20—20 of FIGURE 19.

FIGURE 21 is a sectional view of the modified structure, taken along line 21—21 of FIGURE 20.

FIGURE 22 is a face view of the cut-off mechanism as viewed along the line 22—22 of FIGURE 19.

FIGURE 23 is a cross sectional view of the cut-off mechanism taken along line 23—23 of FIGURE 22.

General Arrangement and Operation

Described with reference to FIGURES 1–4, the stamp affixing machine illustrating the principles of this invention comprises, in general, a base 1 preferably of sheet metal which may be fabricated by a stamping operation. The lower edge of the base includes inturned ears 2, each ear including a button 3 formed of rubber or the like, adapted to support the machine upon the surface of the work table. An actuating arm, indicated generally at 4, is pivotally mounted within the base for swinging motion from the elevated position of FIGURE 1 to the stamp affixing a depressed position of FIGURE 8.

As shown in FIGURE 4, a roll of gummed stamps, indicated at 5, is mounted within the rearward portion of the arm 4, with the stamps extending forwardly from the roll as at 5*a*, through the stamp feeding and guiding mechanism, which is indicated generally at 6. The roll of stamps 5 represents postage stamps of any denomination presently available, each individual stamp being delineated by a transverse row of perforations, as indicated at 7 in FIGURE 17. The roll 5 may also represent other types of stamps, such as identifying labels and the like, which are delineated by transverse rows of perforations. In any event, the stamps are of standard type having the underside coated with water-soluble adhesive, as indicated at 8 (FIGURE 17), which faces downwardly as the stamps issue from the machine. Ordinarily, in applying the stamp to the piece of mail, such as an envelope or post card, the adhesive coating is moistened to activate the adhesive before the stamp is applied. However, in the operation of the present machine, the surface of the piece of mail is moistened, the adhesive being activated as the stamp is applied under pressure to the moistened surface, as explained in detail later.

The forward or swinging end of the arm 4 includes a stamp shearing or cut-off mechanism, which is indicated generally at 10 (FIGURES 1–4). In the normal elevated position of the arm, as shown in these views, the endwise stamp 11 of the strip 5*a* extends through the cut-off mechanism, with its row of cross perforations aligned with the shearing element of the cut-off mechanism. The arrangement is such that the stamp 11 is sheared along the perforations as it is applied to the letter.

In general, moisture is applied to the upper surface of the letter 12 (FIGURE 2) by a moistening device, indicated generally at 13, which is mounted upon the end portion of the base 1. A presser foot or pad, indicated generally at 14, is mounted upon the swinging end of the actuating arm 4 and resides immediately above the stamp 11 which projects in cantilever fashion from

the end of the arm, as viewed in FIGURE 1. In order to impart stiffness to the stamp, adapting it to project in a straight line, as indicated, the feed and guide mechanism 6 is adapted to bow the stamp slightly in the transverse direction, as indicated in FIGURE 15. The longitudinal stiffness adapts the stamp to be applied directly to the moistened surface of the letter without buckling as the presser pad 14 is forced downwardly upon the stamp.

Operation

In utilizing the machine, the letter 12 to be stamped (FIGURE 2) is slipped longitudinally in place relative the base of the machine, as indicated by the upper horizontal arrow, such that moisture is applied to its upper surface by the moistening device 13. With the letter in place, the operator grasps the handle 15 and swings the arm downwardly as shown in FIGURES 6 and 8. As the arm reaches the position of FIGURE 6, the lower end of the cut-off mechanism 10 contacts the top surface of the base 1 adjacent the forward edge of the letter 12, at which point the stamp 11 is poised immediately above the moistened upper surface of the letter. Continued downward motion of the arm 4 causes the shearing element of the spring-loaded cut-off mechanism 10 to be shifted upwardly with respect to the arm, as indicated by a comparison of FIGURES 6 and 8. This motion causes the cut-off mechanism to shear the stamp along its line of perforations and, at the same time, brings the pressure pad 14 into engagement with the severed stamp in order to force its adhesive coating into pressure engagement with the moistened surface of the letter.

In order to improve the adhesive bond between the stamp and letter surface, the stamp is shifted forwardly a limited distance by the pad or foot 14, while under pressure, thereby to provide a wiping action with respect to the moistened letter surface. For this purpose, the pad 14 is yieldably mounted with respect to the arm 4 and its normal angle of tilt is such that the forward end of the pad first contacts the stamp during downward motion, as indicated in broken lines in FIGURE 6. This contact is established at about the same time that the cut-off mechanism 10 severs the stamp along its line of perforations. Continued downward motion of the arm thus springs the pad 14 upwardly with respect to the arm, thus forcing the adhesively coated stamp downwardly, at the same time shifting the stamp along the moistened envelope surface, as indicated by the horizontal arrow in FIGURE 8, to produce the wiping action, thus securely bonding the stamp to the moistened surface.

After the stamp is thus affixed, the arm 4 is released and is returned to its normal elevated position, as indicated by the counterclockwise pointing arrow in FIGURE 12. The arm is biased in the upward direction by a spring 16 for this purpose. During the upward pivotal motion of the arm, the feed mechanism 6 engages the straight stamp strip 5*a* (FIGURE 14) and indexes the strip forwardly so as to advance the next stamp 11 forwardly through the cut-off mechanism to be applied to the letter during the next cycle of operation.

Base and Actuating Arm

As noted above, the stamp feeding and guiding mechanism 6 is mounted within the actuating arm 4 and is arranged to advance one stamp 11 from the stamp roll 5 each time the arm returns to its elevated position. Described in detail with reference to FIGURE 4, the arm 4 is mounted for swinging motion upon a pivot screw 17 disposed within the base 1, the screw passing through a downwardly depending limb 18 which forms a part of the arm 4. The screw 17 projects from a bracket 20, preferably formed of sheet metal. The bracket passes downwardly through a slot formed in the top wall 21 of the base 1 and includes a horizontal flange 22 secured preferably by welding to the top wall 21 of the base. The tension spring, previously indicated at 16, has its lower end anchored to an ear 23 bent outwardly from the bracket 20, the upper end of the spring being anchored to a screw 24 forming a part of the arm 4, so as to bias the arm upwardly.

The arm 4 (FIGURES 17 and 18) comprises a partially cylindrical housing 25 residing immediately above the limb 18 and blending into a wall 26 which forms the top of the arm 4. A side wall 27, in the same plane as the limb 18, encloses one end of the cylindrical housing 25 and is coextensive with the top wall 26. As viewed in FIGURE 15, the top wall 26 and side wall 27 form a right angular section partially enclosing the feed and guide mechanism 6. The closure is completed by a detachable cover plate 28, as explained below. Referring again to FIGURES 17 and 18, the circular housing 25 includes a stud 30 located at the central axis of the housing and projecting rigidly from the side wall 27. The cover plate 28 corresponds to the outline configuration of the housing 25 and arm 4 and includes an aperture 31 which interfits the stud 30.

It will be understood at this point, that the cover plate is removed, as shown in FIGURE 17, in order to permit the stamp roll 5 to be loaded into the circular housing and to be loosely journalled upon the stud 30. After inserting the roll, its forward portion 5*a* may be conveniently threaded through the feed and guide mechanism 6 and through the opening of the cutoff mechanism 10, with the leading stamp 11 projecting outwardly beneath the presser pad 14. After loading, the cover plate 28 is placed in position over the open side of the arm 4, with the stud 30 passing through the aperture 31 of the cover plate. The forward portion of the cover plate includes a small aperture 32 which interfits a dowel pin 33 projecting outwardly from the side of the top wall 26 of the arm. The pin 33 thus keys the forward end of the cover plate to the arm. A knurled nut 34 is then threaded upon the stud 30 to clamp the cover plate in place.

As viewed in FIGURE 17, the lower edge of the cover plate 28 includes a right angular flange 35. This flange encloses the lower portion of the actuating arm, as shown in FIGURES 3 and 4. The flange 35 includes a leaf spring 36 which is riveted in place as at 37 (FIGURE 17). The leaf spring is configured to provide a forward portion 38 (FIGURE 14) spaced upwardly from the flange 35 to provide a yieldable section which coacts with the feed and guide mechanism 6, as explained later. The forward portion of flange 35 is notched out as at 40 (FIGURE 17) so as to expose the forward portion of the strip of stamps 5*a* for the convenience of the user.

Stamp Feeding and Guiding Mechanism

As the strip of stamps 5*a* (FIGURE 4) passes from the roll 5, it advances across the upper end of a curved guide piece 41, which is secured within the cylindrical housing 25. From this point, the strip enters the feed and guide mechanism 6, which extends to the forward end of the arm 4. The feed and guide mechanism includes a guide block 42, which is preferably formed of metal, and which is stationary relative to the feed block 51 (FIGURES 13, 14 and 15). The guide block 42 is secured by screws 43 (FIGURE 15) passing through the side wall 27 of the arm (see also FIG. 3). The stationary guide block 42 is generally U-shaped in cross section and its lower surface is curved transversely as at 44 to bow the stamp strip 5*a*, as best shown in FIGURE 15.

The stamp strip 5*a* is confined against the curved surface 44 by a pressure bar 45 (FIGURES 17 and 18). One end of the pressure bar 45, in the upstream direction of stamp advancement, is pivotally connected as at 46 to the side wall 27 of the arm 4. As viewed in FIGURE 15, the pressure bar 45 is generally U-shaped in

cross section, providing a pair of vertical limbs which embrace the opposite edge portions of the stamp strip *5a*, so as to confine the stamp strip against the curved guide surface 44, thus bowing the strip transversely while providing clearance for the stamp indexing fingers, as explained later. Best results are obtained by utilizing a pressure block 45 formed of plastic, wood or a similar non-metallic material.

The general configuration of the pressure bar 45 is shown in FIGURES 17 and 18. It will be noted in these views, that the pivot screw 46 is clamped to the side wall 27 of the arm by a nut 48, the head of the screw being seated against the opposite face of the side wall 27 (FIGURE 3). A self-locking nut 50 (FIGURE 17) is threaded upon the end portion of the pivot screw 46 to loosely hold the pressure bar 45 in place.

As shown in FIGURE 18, the pressure bar 45 is swung outwardly for convenience in threading the stamp strip through the feed mechanism when the device is loaded. Thereafter, the bar is swung to its operating position (FIGURE 17), then the cover plate 28 is applied, as noted earlier. With the cover plate in position, the free forward portion 38 of the leaf spring 36 is brought into engagement with the pressure bar 45, thereby to force the bar lightly into engagement with the marginal portions of the edges of stamp strip *5a*.

Feeding motion is imparted to the stamp strip by a reciprocating feed block 51 (FIGURES 13–16), which is slidably confined within the guide way 52 of the stationary block 42. The reciprocating block 51 is preferably formed of plastic, wood or a similar material and its forward portion is slotted as at 53 to accommodate a parallel group of feed fingers 54 which are pivotally mounted upon a pin 55 passing across the recess 53. A second cross pin 56 limits the upward motion of the fingers 54. These fingers are preferably formed of thin sheet metal and their outer swinging ends are tapered to a point as at 57 for gravity engagement with the perforations 7 of the stamp strip. It will be noted in FIGURE 14, that the stationary guide block 42 is provided with a rectangular clearance opening 58 to permit the pointed ends 57 of the fingers 54 to rest by gravity upon the upper surface of the bowed stamp strip *5a* and to move in translation to feed stamps.

The transverse spacing of the fingers 54 corresponds to the spacing of the perforations 7; thus, a plurality of the fingers drop into the perforations during the feeding stroke, as indicated in FIGURE 14, to provide a positive feed or index motion. As viewed in FIGURE 15, the U-shaped pressure bar 45 provides clearance as indicated at 60 for the pointed end portions 57 of the feed fingers 54. As noted earlier, the stamp strip, by virtue of its transverse arch, is, sufficiently stiff to support the fingers without springing downwardly. This arrangement permits the fingers to drop freely through the perforations, thereby to provide a positive engagement which brings about a highly efficient feeding action.

The reciprocating feed block 51 (FIGURE 14) is actuated relative to the arm 4 by a crank-shaped link or connecting rod 61 having one end pivotally connected as at 62 to the block and having its opposite end pivotally connected as at 63 to a fixed post 64. As viewed in FIGURE 3, the fixed post 64 forms a part of the bracket 20 and is generally arcuate in configuration. The end 63 of the link passes through an arcuate clearance slot 65 (FIGURE 4) formed in the side wall 27 of the actuating arm. Slot 65 permits the arm 4 to pivot with respect to the end 63 of the link. That is to say, as arm 4 is depressed clockwise (FIGURE 6) the slot 65 slides over the crank portion 63.

By virtue of this arrangement, the reciprocating feed block 51 is effectively shifted rearwardly relative to the arm 4 during the downward movement of the arm from the position of FIGURE 1 to the position of FIGURE 8. This motion shifts the block 51 rearwardly a distance somewhat greater than the length of a stamp, as delineated by the rows of perforations 7. While the block 51 is in fact secured against translatory motion, the element 42 is moved forwardly in translation relative to block 51. Thus, when the arm reaches its lower limit of travel shown in FIGURE 8, the pointed ends 57 of the feed fingers will have retracted to a position slightly behind the next row of perforations. As the arm returns toward its elevated position, the link 61 advances the feed block effectively forwardly, as indicated by the arrow (FIGURE 14), in such manner that the pointed ends of the fingers drop into the perforations and feed the forward stamp 11 to its position beneath the presser pad 14 for the next cycle of operation. That is, the arm 4 turns counter clockwise (FIGURE 12) and the translatory motion of the element 42 is rearwardly relative to the feed block 51.

Cut-Off Mechanism

The cut-off mechanism 10 (FIGURES 7–11) is mounted upon the end wall 66 of the actuating arm by means of a pair of studs 67 threaded into the wall and passing through a spacer block 68. A shiftable shearing blade 70, having peripheral flanges 71, slidably interfits the spacer block 68. The blade 70 normally is urged downwardly to the position shown in FIGURE 1 by a leaf spring 72 which is riveted as at 73 to the top wall 26 of arm 4. The central portion of blade 70 is recessed as at 74 to provide clearance, adapting the blade to slide vertically with respect to the studs 67 along the spacer block 68.

The lower portion of blade 70 includes a generally triangular opening 75 through which the stamp strip *5a* passes as it is advanced by the feeding mechanism (FIGURE 7). The lower portion of opening 75 is delineated by the angularly related shearing edges 76. A shear plate 77 is mounted in a fixed position upon the studs 67 and cooperates with the shiftable blade 70. The lower edge of the plate 77 includes a shearing edge 78 which resides above the opening 75 in the normal position of the shiftable blade 70, as shown in FIGURE 7.

As the arm 4 shifts downwardly from the position of FIGURE 6 to the position of FIGURE 8, the lower edge of the shiftable blade 70 engages the surface of the base 1 and is shifted upwardly relative to the fixed shear plate 77 from the position of FIGURE 7 to the position of FIGURE 9. During this motion, the inclined shearing edges 76—76 of the shiftable blade 70 progressively shear the stamp strip against the stationary shearing edge 78. The shearing action starts at the outer edges of the stamp and progresses inwardly toward its center. The knife is shown in its upward limit at completion of the shearing stroke in FIGURE 9. In order to compensate for the bowed cross section of the stamp strip, the shiftable blade 70 and fixed shear plate 77 are curved slightly in cross section, as indicated in FIGURE 11.

As viewed in FIGURE 10, the presser pad subassembly, generally inidcated at 14, is also mounted upon the studs 67. The pad 79 is formed of a yieldable material such as rubber or the like. In order to provide the wiping action, the pad 79 is mounted upon a generally right angular bracket 80 formed of a suitable grade of spring metal. The bracket includes apertures interfitting the studs 67 of the cut-off mechanism. The bracket 80 seats against the shear plate 77, the bracket and cut-off mechanism being secured in place by self-locking nuts 81 which are threaded upon the studs 67. In order to permit the shiftable blade 70 to reciprocate, each stud is provided with a spacer washer 82 (FIGURE 10) disposed between the spacer block 68 and fixed shear plate 77. The washers 82 are disposed within the recess 74 of the shiftable blade 70, the arrangement being such that the nuts 81 may be tightened to clamp the fixed shear plate 77 and bracket 80 firmly in place, while permitting the blade 70

to be shifted during the shearing stroke without undue frictional resistance.

Moistening Device

As noted earlier, the letters to be stamped are inserted by hand across the forward portion of the base 1 and through the moistening device 13 in a position to receive one or more of the stamps 11. The moistening device applies a film of moisture to the upper surface of the letter so as to activate the coating of gum or adhesive as the stamp is severed and pressed in place.

Referring now to FIGURES 2, 4 and 5, the stamp moistening device 13 comprises a water reservoir 83 mounted within the forward portion of the base 1 and having a removable cover 84. The reservoir is supported within the base by hangers 85—85 projecting downwardly from a mounting plate 103, as explained later. The lower end of each hanger 85 includes an inwardly turned foot portion 86 which engages the bottom surface of the reservoir 83. The hangers 85—85 are located within the base at opposite sides and are formed of yieldable material, such that the reservoir may be filled with water and slipped in place in a convenient manner from the bottom portion of the base.

The water from the reservoir is transferred to the upper surface of the letter by a brush, which is indicated generally at 87 in FIGURE 4. The brush is yieldably mounted above the base, as explained later. The water is carried upwardly to the brush 87 by a wick, indicated generally at 88, which extends from the reservoir to the lower surface of the brush 87.

Described in detail, the wick 88 consists of a mass of closely packed bristles 90 confined in a tube 91 attached to the cover 84 and extending downwardly into the reservoir. The upper end of the tube 91 is secured to the cover 84 by a pair of retainer elements 92—92 secured to the tube and in clamping engagement with the opposite sides of the cover 84. As viewed in FIGURE 5, the top wall 21 of the base includes an opening 93 to accommodate the upper portion of the wick 88, which projects above the surface of the top wall 21. It will be observed in FIGURE 4 that the upper portion of the wick 88 contacts with the lower end of brush 87, so as to transfer the moisture by capillarity from the reservoir to the brush.

As viewed in FIGURE 5, the tube 91 is provided with apertures 94 and 95, and also a longitudinal breather slot 96 for the passage of water from the reservoir to the wick. The slot and apertures are located along the side of the tube which faces upwardly when the stamp affixing device is placed on its side (FIGURE 17) for loading the roll of stamps into the arm. When the device is so positioned, the water level within the reservoir is below the apertures and slot, and such water cannot flow through the wick and leak from the reservoir.

The brush 87 also comprises closely packed bristles which are confined in a generally U-shaped clip 97 formed of sheet metal. The arrangement is such that the lower end of the brush engages the upper end of the packed bristles 90, with the brush in its inclined position shown in FIGURE 4. The upper end of the bristle pack 90 is substantially flush with the upper surface of wall 21, so that there is no interference when the letter is slipped in place under the brush, as indicated by the upper horizontal arrow in FIGURE 2.

In order to bias the brush 87 against the top surface of the letter, the brush clip 97 is pivotally mounted as at 98 (FIGURES 2 and 4) upon a pivot screw 100. The pivot screw is clamped by a nut 101 to a bracket 102 which projects upwardly from the top surface 21 of the base. The bracket 102 forms a part of the mounting plate 103, which is welded to the under surface of the top wall 21 of the base and which includes hangers 85, as noted earlier. The bracket 102 also serves as a letter guide. A coil spring 104 encircles the pivot screw 100

and has an end 105, bearing against the brush clip 97 to urge the brush downwardly. The opposite end of the coil spring 104 is suitably anchored to the pivot screw 100. The brush clip 97 includes a knurled post 106 (FIGURE 2) adapting the clip to be lifted conveniently.

The moistening device may also be utilized to moisten the adhesive coating of the envelope flap prior to affixing the stamp. For this purpose, the flap is opened and passed between the wick and brush, with its adhesive side facing upwardly. After being moistened, the flap is closed; then the envelope is inserted with its opposite side facing upwardly for application of the stamp.

Modified Cut-Off Mechanism and Presser Pad

The modified cut-off mechanism shown in FIGURES 19–23 is similar in principle to the cut-off mechanism described above; however, the structure has been simplified to provide a one-piece unit which may be replaced in a convenient manner should the parts become worn. As shown in FIGURE 19, both the cut-off mechanism, indicated generally, at 107, and the presser pad 108, are attached to a mounting plate 110. The mounting plate is attached by a pair of screws 111 to a slightly modified actuating arm, which is indicated generally at 112.

In the modified arrangement, the lower end of the mounting plate 110 provides a shearing edge 113 (FIGURE 20) coacting with the shearing edge 114 of a shiftable blade 115. The shear blade 115 is normally urged to its outwardly extended position by a tension spring 116. During the cutting stroke, the lower edge of the shiftable shear blade engages the top surface of the base and is shifted upwardly, counter to spring 116, to sever the stamp in the same manner as described earlier.

In order to yieldably mount the presser pad 108, the mounting plate 110 includes a pair of rivets 117 projecting outwardly, each rivet having a compression spring 118. A pad mounting plate 120 is seated against the outer surface of the knife mounting plate 110, under pressure imposed by the compression spring 118. The lower edge of the pad mounting plate 120 includes a pair of arms 121—121, the pad 108 being pivotally connected to the arms as at 122. In order to provide clearance for the ends of the rivets 117, the shiftable blade 115 is provided with longitudinal slots 123 in registry with the heads of the rivets (FIGURE 20).

At the time the stamp is sheared, the forward edge of the pressure pad 108 engages the stamp, as described earlier with reference to FIGURE 6. During continued downward motion, the compression springs 118 allow the pad mounting plate 120 to be sprung outwardly with respect to the plate 110, thus allowing the pad 108 to shift forwardly to impart the wiping action to the stamp with respect to the moistened letter surface.

The subject matter disclosed but not claimed herein and relating generally to the stamp cut-off and affixing means is disclosed and claimed in my co-pending United States patent application, Serial No. 319,212 filed October 28, 1963, entitled "Stamp Cut-off and Affixing Device for Stamping Machine," assigned to the same assignee as the present application and invention, said co-pending patent application being a division of the present patent application.

Having described my invention, I claim:

1. In a device adapted to feed and sever stamps from a continous stamp strip and to affix the severed stamps to pieces of mail, said stamps delineated by lines of perforations extending transversely of said strip, the combination of: a base, a single actuating arm having a rearward portion pivotally connected relative to the base, means for normally biasing said arm into an elevated position, said arm adapted to slidably guide the stamp strip along a substantially unidirectional path therethrough, a stamp feeding device reciprocally mounted on said arm and adapted to engage the transverse rows

of perforations of said stamp strip said stamp feeding device being mounted in its entirety for longitudinal displacement along said arm, rearwardly extending actuating means connected between the feeding device and a point fixed relative to the base and adapting the feeding device to shift the stamp strip forwardly relative to the arm during pivotal motion of the arm relative to the base toward the said elevated position, a cut-off device mounted on the arm, said cut-off device adapted to sever the leading stamp of said strip along the line of perforations during pivotal motion of the arm downwardly toward the base, and means adapted to press the severed stamp against the surface of a piece of mail resting on the base, thereby to affix the stamp thereto.

2. In a device adapted to feed and sever stamps or the like from a continuous stamp strip and to affix the severed stamps to pieces of mail, said stamps delineated by lines of perforations extending transversely of said strip, the combination of: a base, a single actuating arm having a rearward portion pivotally connected relative to the base, guide means mounted on the arm and adapted to slidably engage a stamp strip extending along the arm, a stamp feed block slidably mounted within said arm and adapted to engage the transverse rows of perforations of said stamp strip, a single rearwardly extending link between the feed block and a point fixed relative to said base, said link being adapted to shift the feed block and stamp strip forwardly relative to the arm during pivotal motion of the arm upwardly relative to the base, a cut-off device mounted on the swinging end of the arm, said feed block adapted to locate the line of perforations of the stamp strip in alignment with the cut-off mechanism upon pivotal movement of the arm to its upward limit of motion, said cut-off device adapted to sever the stamp along the line of perforations during pivotal motion of the arm downwardly toward the base, and means on the swinging end of the arm adapted to press the severed stamp under pressure against the surface of a piece of mail resting on the base, thereby to affix the stamp thereto.

3. A device adapted to feed and sever stamps from a continuous stamp strip and to affix the severed stamps to pieces of mail, said stamps delineated by lines of perforations extending transversely of said strip, said device comprising: a base, an actuating arm having a rearward portion pivotally connected to the base, guide means mounted on the arm, said guide means having a curved surface adapted to bow said stamp strip transversely, thereby to impart longitudinal stiffness to the stamp strip, a stamp feed block slidably mounted relative to the guide means, said guide means being formed with an opening, a plurality of feed fingers connected to said feed block, said fingers having forward end portions projecting downwardly through said opening and adapted to engage the lines of perforations of the bowed stamp strip which is slidably engaged against the guide means, actuating means connected to the feed block and adapted to shift the feed block and stamp strip forwardly relative to the arm in response to pivotal motion of the arm upwardly relative to the base, and means mounted on the swinging end of the arm adapted to sever the endwise stamp of the strip along the line of perforations during pivotal arm motion downwardly toward the base and to press the severed stamp against the surface of a piece of mail resting on the base, thereby to affix the severed stamp thereto.

4. A device adapted to feed and sever stamps from a continuous stamp strip and to affix the severed stamps to pieces of mail, said stamps delineated by lines of perforations extending transversely of said strip, said device comprising a base, an actuating arm having a rearward portion pivotally connected to the base, a guide member mounted on the arm, said guide member having a downwardly facing curved surface, a pressure member mounted below said curved surface and adapted to engage the stamp strip and to urge the same against the curved surface, thereby to bow said stamp strip transversely and impart longitudinal stiffness to the stamp strip, a stamp feed member slidably mounted relative to the guide member above said curved surface, said guide member being formed with an opening, a plurality of feed fingers pivotally connected to said feed member, said fingers having forward end portions projecting downwardly through said opening and adapted to engage the lines of perforations of the bowed stamp strip which is slidably engaged against the guide member, actuating means connected to the feed member and adapted to shift the feed member, feed fingers and stamp strip forwardly relative to the arm during pivotal motion of the arm upwardly relative to the base, and means mounted on the swinging end of the arm adapted to sever the endwise stamp of the strip along the line of perforations during pivotal arm motion downwardly toward the base and to press the severed stamp against the surface of a piece of mail resting on the base, thereby to affix the stamp thereto.

5. A device adapted to feed and sever stamps from a continuous stamp strip and to affix the severed stamps to pieces of mail, said stamps delineated by lines of perforations extending transversely of said strip, said device comprising a base, an actuating arm formed as a housing opened to receive a roll of stamps and closed to house said stamps, said arm having a rearward portion pivotally connected to the base, a guide member mounted on the arm, said guide member being generally U-shaped in cross section, said guide member having a downwardly facing curved surface, a pressure number mounted below said curved surface and adapted to engage the stamp strip and to urge the same against said curved surface, thereby to bow said stamp strip transversely to stiffen the same, a stamp feed member slidably mounted within said U-shaped guide member, said guide member being formed with an opening, a plurality of feed fingers pivotally connected to said feed member, said fingers having forward end portions projecting downwardly through said opening and adapted to engage the lines of perforations of the bowed stamp strip which is slidably engaged against the curved surface of the guide member by the pressure member, actuating means effectively interconnecting the base and feed member and adapted to shift the feed member and stamp strip forwardly relative to the arm during pivotal motion of the arm upwardly relative to the base, and means adapted to sever the endwise stamp of the strip along the line of perforations during pivotal arm motion downwardly toward the base and to press the severed stamp against the surface of a piece of mail resting on the base, thereby to affix the stamp thereto.

6. A device adapted to feed and sever stamps from a continuous stamp strip and to affix the severed stamps to pieces of mail, said stamps delineated by lines of perforations extending transversely of said strip, said device comprising a base, an actuating arm having a rearward portion pivotally connected to the base, a guide member mounted on the arm, said guide member having a downwardly facing curved surface, a pressure member mounted below said curved surface and adapted to engage the stamp strip and to urge the same against the curved surface, thereby to bow said stamp strip transversely and impart longitudinal stiffness to the stamp strip, a stamp feed member slidably mounted relative to the guide member above said curved surface, said guide member being formed with an opening, a plurality of feed fingers pivotally connected to said feed member said fingers having forward end portions projecting downwardly through said opening and adapted to engage the lines of perforations of the bowed stamp strip which is slidably engaged against the guide member by the pressure member, actuating means connected to the feed member and adapted to shift the feed member and stamp strip forwardly relative to the arm during pivotal motion of the arm upwardly relative to the base, a cut-off device mounted on the swinging end of the arm, said cut-off device having a

shiftable shear blade, said shear blade being curved in cross section, said curvature adapted to compensate for curvature of the stamp strip, said shear blade adapted to sever the stamp along the line of perforations in response to pivotal motion of the arm downwardly toward the base, and means on the swinging end of the arm adapted to press the severed stamp against the surface of a piece of mail resting on the base, thereby to affix the stamp thereto.

7. In a device adapted to feed and sever gummed stamps from a continuous stamp strip and to affix the severed stamps to pieces of mail, said device being of the type comprising a base adapted to support a piece of mail, and a moistening device mounted on the base and adapted to apply a film of moisture to the upper surface of a piece of mail to be stamped, the combination of: a single actuating arm having a rearward portion pivotally connected relative to the base, guide means mounted on said arm and adapted to slidably guide the stamp strip therethrough along a substantially unidirectional path, a stamp feeding device reciprocally mounted on said arm said stamp feeding device being mounted in its entirety for longitudinal displacement along said arm, rearwardly extending actuating means connected between the feeding device and a point fixed relative to the base and adapting the feeding device to shift the stamp strip forwardly relative to the arm in response to pivotal motion of the arm upwardly relative to the base, a cut-off device mounted on the arm, said cut-off device adapted to sever the leading stamp of said strip in response to pivotal motion of the arm downwardly toward said base, and means mounted on said arm and adapted to press the gummed surface of the severed stamp against the moistened upper surface of the piece of mail resting on the base, thereby to affix the stamp thereto.

8. A feed mechanism for a device adapted to feed stamps from a continuous strip, said stamps delineated by lines of perforations extending transversely of said strip, said device having a base and an actuating arm having a rearward portion pivotally connected to the base, said feed mechanism comprising: guide means mounted within the arm, a reciprocating feed means slidably mounted relative to said guide means, said guide means having a lower guide surface, a pressure member pivotally mounted on said arm and disposed below said guide surface and adapted to confine the strip of stamps against said guide surface, said guide means being formed with an opening, feed fingers mounted upon said reciprocating feed means and having pointed end portions projecting downwardly through said opening, said fingers adapted to pass through said rows of perforations of said strip with the fingers supported by the stamp strip, whereby the pointed end portions of the fingers are supported by the stamp strip above the surface of the pressure member, said fingers adapted to advance the strip toward the forward end of the arm, actuating means connected to the reciprocating feed means and adapted to shift the same forwardly relative to said guide means in response to pivotal motion of the arm upwardly relative to the base, a cut-off device mounted on said arm, said cut-off device being adapted to sever the leading stamp of said strip along the line of perforations during depression of the arm, and means adapted to press the severed stamp against the surface of a piece of mail resting on the base, thereby to affix the stamp thereto.

9. In a stamp affixing machine of the arm-actuated type adapted to feed and sever stamps from a continuous perforated stamp strip and having a pivotally mounted arm, the combination of: a pressure member having a free end and being swingably mounted on said arm, a guide member mounted on said arm and disposed in relation to the pressure member to provide a feedway for a perforated stamp strip, feeding means reciprocally mounted in relation to the guide member to register with the perforations of a stamp strip on retract stroke and to move the stamp in translation relative to the arm on advance stroke, said pressure member and guide member being formed to hold the stamp strip stationary relative to the arm as the arm is depressed and the feeding means is retracted, and means for pressing the free end of said pressure member toward said guide member.

10. In a stamp affixing machine adapted to feed and sever stamps from a continuous strip and to affix said stamps individually to a moistened surface on a mailable item, said stamps being bounded by transverse perforations, the combination of:

a base;

lever means having inner and outer ends;

a first pivot for mounting the lever means at its inner end for elevation or depression relative to the base;

means included in said lever means for guiding a continuous strip of stamps, said strip being formed with spaced rows of perforations;

feeding means formed with surfaces complementary to any row of said perforations;

a second pivot for mounting the feeding means for rotation relative to said base,

said second pivot being elevated in relation to said first pivot,

whereby depression of the lever means increases the distance between said outer end and said surfaces and moves a row of perforations outwardly ahead of said surfaces,

and whereby elevation of the lever means decreases said distance, first engaging said row of perforations and said surfaces with each other and then causing said surfaces to exert thrust against said row to feed outwardly the stamp trailed by said row;

cut-off means mounted on said outer end for severing said stamp during the depression of said lever means next following the last-mentioned elevation;

and means mounted on said outer end for affixing said stamp to said mailable item.

11. In a machine for feeding and severing stamps from a continuous strip and affixing the severed stamps individually to a moistened surface on a mailable item, said stamps being bounded by transverse perforations, said device being of the type comprising a base and means for surface moistening, the combination of:

lever means rotatably mounted in relation to the base so that it is depressed to affix a stamp and elevated to advance a succeeding stamp into position to be affixed;

means carried by the lever means for guiding said stamp strip;

feeding means movably mounted on said lever means and adapted to engage a row of said perforations;

rearwardly restrained actuating means connected between the feeding means and a point fixed relative to the base,

said actuating means adapted to shift the feeding means rearwardly during depression of said lever means;

stamp cut-off means and stamp affixing means mounted on the swinging end of said lever means; and

said actuating means advancing the feeding means in a direction to register a row of perforations of the stamp strip with the cut-off means during elevation of said lever means.

12. A device adapted to feed and sever stamps from a continuous stamp strip and to affix the severed stamps to pieces of mail, said device comprising:

a base;

an actuating arm having a rearward portion pivotally connected to the base;

a housing residing at the rearward portion of said arm, said housing adapted to confine a rolled strip of stamps for feeding a stamp strip from said rolled strip, said arm adapted slidably to guide a stamp strip therethrough;

a stamp feeding device reciprocally mounted on said

arm said stamp feeding device being mounted in its entirety for longitudinal displacement along said arm;

actuating means connected to the feeding device to shift the feeding device forwardly relative to the arm in response to pivotal motion of the arm upwardly relative to the base;

a cut-off device mounted on the arm, said cut-off device adapted to sever the leading stamp of said strip in response to pivotal motion of the arm downwardly toward the base;

and means mounted on the arm and adapted to engage and press the severed stamp against the surface of

a piece of mail resing on the base, thereby to affix the stamp thereto.

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