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STAMP AFFIXING MACHINE

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3 Sheets-Sheet 1

FIG. 1

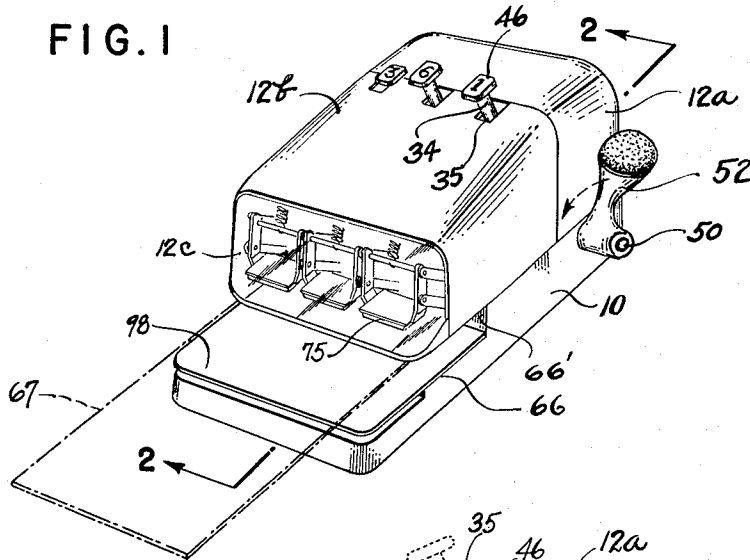


FIG. 2

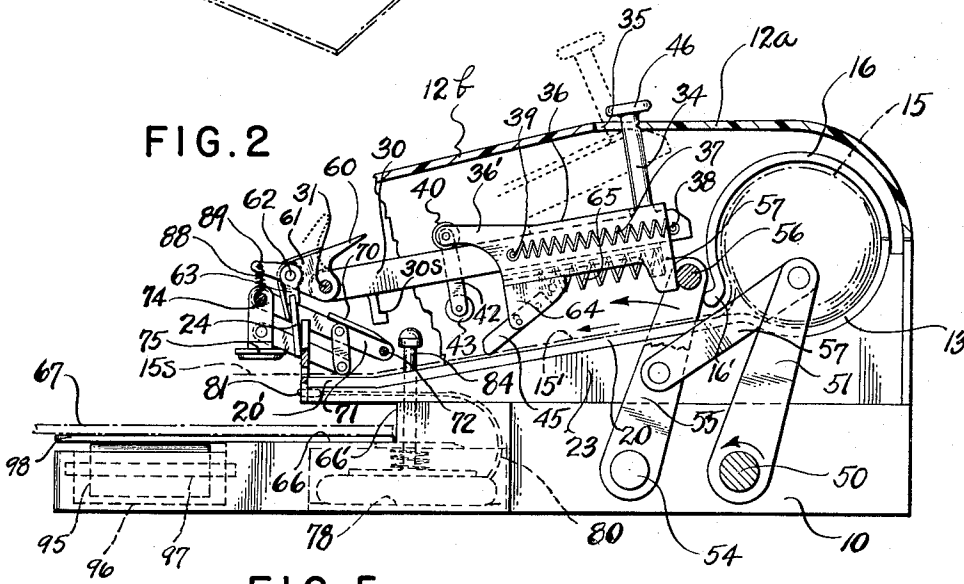
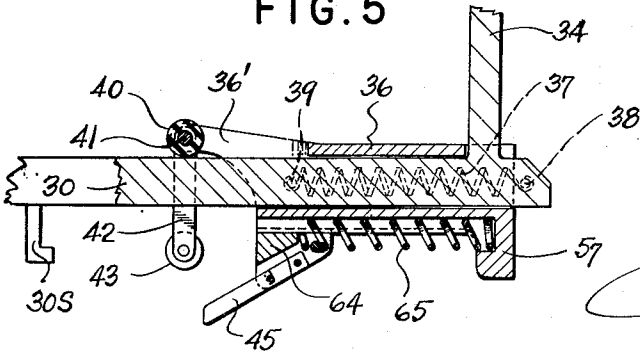


FIG. 5

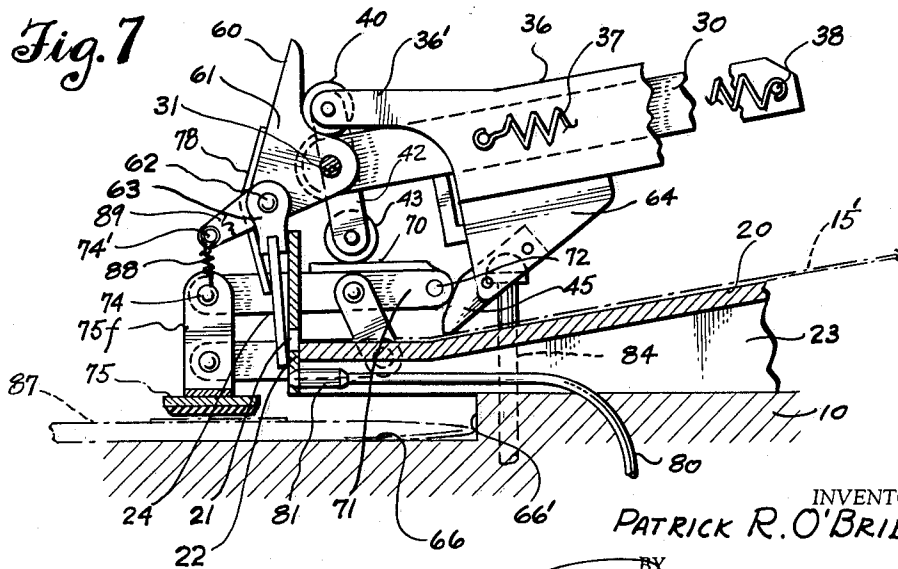


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STAMP AFFIXING MACHINE
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2 Claims. (Cl. 216—28)

This invention relates to stamp affixing machines and it has reference more particularly to machines of the general character of that disclosed by my U.S. patent issued on November 5, 1957, under No. 2,812,094.

It is the principal object of the present invention to provide a simple, light weight, relatively small, and easily operable machine for affixing postage stamps, or the like, to envelopes and cards as required for mailing.

It is also an object of the present invention to provide a stamp affixing mechanism whereby stamps may be individually severed from a rolled strip of stamps, moistened and pressed into contact with the cards or envelopes, and the mechanism thereof automatically reset for action after each stamp affixing operation.

A further object of the invention is to incorporate a plurality of stamp affixing units, to handle stamps of different denominations, in a single machine; to provide means for making a quick selection of the particular unit which is to be used, and to provide an operating mechanism which is common to all units.

It is also an object of this invention to provide means that operates automatically to moisten each stamp as the mechanism moves to sever it from the stamp roll.

Still further objects and advantages of the invention reside in the details of construction of parts; in their combination, relationship and mode of operation, as will hereinafter be fully described.

In accomplishing the above mentioned and other objects of the invention, I have provided the improved details of construction, the preferred forms of which are illustrated in the accompanying drawings, wherein:

FIG. 1 is a perspective view of a stamp affixing machine embodied by the present invention as seen from its forward end and right hand side.

FIG. 2 is a sectional view of the present mechanism; taken substantially in the vertical plane of line 2—2 in FIG. 1; the forward part of the housing being broken away.

FIG. 3 is a horizontal section through the machine above the level of the three stamp affixing units and the operating mechanism as contained within the housing; parts of two of the units being broken away.

FIG. 4 is a front end elevation of the mechanism as seen in FIG. 2 with the medial and front end sections of the housing removed.

FIG. 4a is a detail of the slide bar mounting.

FIG. 5 is an enlarged sectional detail of the stamp strip feeding slide taken on line 5—5 in FIG. 3.

FIG. 6 is a perspective view of the forward end portion of one of the units.

FIG. 7 is an enlarged sectional detail of a stamp severing, moistening and applying means.

Referring more in detail to the drawings:

The present machine has been shown herein to be equipped with three stamp affixing units designed to accommodate stamps of three different denominations. The mechanism of each of these units is like that of the others and the mode of operation of any one is like the others. For these reasons, only one unit has been fully shown in FIGS. 2 and 3 and it will be understood that the following description, as applied to the unit as shown in these views applies equally to all.

The stamp affixing machine comprises a flat, horizontal base plate 10. Upon this base plate the three stamp affixing units are mounted in the parallel, spaced relationship in which they are shown in FIGS. 3 and 4. The

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several units are enclosed by a housing here shown to comprise a rear end section 12a, a mid-section 12b and a forward section 12c which preferably is transparent. Mounted on the base plate 10, within the rear end section of the enclosing housing, for each unit, is a troughed support or cradle 13 in which a stamp roll 15 of the usual character is supported and held for easy turning to permit withdrawal of the stamp strip therefrom. The stamp strip 15', when drawn from the roll 15, is extended forwardly and passed beneath the lip 16' of a cover member 16 applied over the roll and to the cradle, as shown best in FIGS. 2 and 3.

The stamp affixing unit, as associated with the stamp roll, comprises a flat stamp strip supporting plate 20 that extends in a forwardly and downwardly inclined plane preferably as a continuation of the roll mounting cradle 13, as has been shown in FIG. 2. At its forward end, this plate 20 terminates in a relatively short horizontal portion 20', well shown in FIG. 7 to have the top surface of its forward edge portion disposed flush with the lower edge of a horizontal slot 21 that is formed through a vertical plate 22 that is fixed to the forward end of a longitudinal rail 23 on which the cradle 13 and plate 20 are fixed, and which rail, in turn, is fixed to the base member 10.

When the stamp strip 15' is drawn from the stamp roll 15 along the top surface of the plate 20 and its end portion advanced through the slot 21 of the plate 22, as indicated at 15s in FIG. 2, the stamp at the end can be severed from the strip by a shear plate 24 with a sharpened lower edge that is supported against the forward face of the vertical plate 22 for downward actuation in a manner to cause its sharpened edge to effect shearing coaction with the lower forward edge of the slot 21 thus to sever the stamp strip as disposed between them to release the stamp for affixing it to an envelope.

The means for feeding the stamp strip 15' from the stamp roll 15, downwardly along plate 20 to the shear plate 24 comprises parts which have been shown in FIG. 2, comprising a guide bar 30 of rectangular cross-section that is supported above and is extended along the plate 20 substantially to its full length. At its forward end, the bar 30 is pivotally mounted by a horizontal cross-shaft 31 that extends between and is fixed at its ends in the opposite sidewalls of the housing as observed in FIGS. 3 and 4. At its rearward end, a post 34 extends upwardly from the bar and through an opening 35 in the top wall of housing 12b. Slidably mounted on the bar 30 is a sleeve or slide 36 which is normally held at its rearward limit of travel, against the post 34 by a pair of coiled springs 37—37 that are located at opposite sides of the bar and attached under tension to the opposite ends of a pin 38 that extends horizontally through the rear end of the bar and to studs 39—39 extending laterally from the forward end portion of the slide. Normally the bar 30 is held yieldingly in an upwardly inclined position with its rear end against the housing, as has been shown in dotted lines in FIG. 2, by a spring 44 applied about shaft 31 as shown in FIG. 4a, and fixed thereto with one end bearing upwardly against the bar.

At its forward end the slide 36 mounts a transverse roller 40 for rolling travel on the top surface of the bar 30 as the slide moves forwardly or rearwardly. This roller is carrier by and between a pair of arms 36'—36' that extend upwardly and forwardly from the slide; being rotatable on a transverse axle 41. An arm 42 extends downwardly from one of the arms 36' and supports a transverse roller 43 at its lower end; this roller being laterally offset from the vertical plane of the bar 30 as shown best in FIG. 3.

Also, at the forward end and under side of the slide

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36, is a forwardly and downwardly directed pawl 45 designed to engage at its lower end with the stamp strip 15', as extended forwardly along the plate 20, to effect its forward feeding action incident to forward actuation of the slide 36 on the bar 30. Normally the guide bar 30 is held in the upwardly inclined position in which it is shown in FIG. 2 in dotted lines by light spring tension, but when a stamp is to be applied, it is pressed downwardly to the full line position in which it is shown in FIG. 2; this being effected by downward pressure against the upper end of post 34 as extended upwardly therefrom through the housing opening 35.

It will be observed by reference to FIGS. 3 and 4 that the upper ends of the posts 34 of the three stamp units are each equipped with a pad 46 on which the denomination of the stamps handled by the corresponding unit is marked. In the present showing, it is indicated that the units serve stamps in 1 cent, 6 cent and 3 cent denominations which can be selectively applied to an envelope. When the guide bar 30 is in a depressed position as in FIG. 2, the sleeve 36 thereon may be mechanically actuated forwardly by use of a hand operated lever mechanism, common to all units, which comprises a horizontal cross-shaft 50 that is extended rotatably through the rear end portion of base plate 10 and on which shaft, at one side of the base but within the housing as shown in FIG. 3 an upwardly extended lever arm 51 is fixed. Fixed to the right hand end of the shaft 50 at the outside of the housing, as in FIGS. 1 and 4, is a hand lever 52 whereby the shaft can be rotatably actuated to swing the lever arm 51 forwardly from position of FIG. 2. Extended horizontally through base 10, at a location immediately forward of the cross-shaft 50, is a second cross-shaft 54 and fixed to its opposite ends, within the housing and closely adjacent the base 10, are paired, upwardly extending lever arms 55—55 which are joined across their upper ends by a cross-shaft 56 that normally is positioned just in front of the stamp roll cover 16 as seen in FIG. 2. Pivotaly joined to the upper end of lever arm 51 is a link 51x which at its other end is pivotaly fixed to the lever arm 55 at that side. After the operator has depressed the post 34 to place the slide 36 and pawl 45 in stamp strip feeding position, he then pushes down on the hand lever 52 and rotates shaft 50 in the direction indicated by the arrow adjacent thereto in FIG. 1, which causes the cross shaft 56 to be swung forwardly by the lever arms 55—55 against a leg 57 extended downwardly from the rear end of the slide 36 and the slide to be moved forwardly along the bar 30, causing the lower, forward end of the pawl 45, which holdingly engages with the stamp strip, to feed the forward end of the stamp strip through the slot 21 of plate 22 a distance that is equal to the width of one stamp. As the slide 36 moves forwardly on bar 30, the roller 40 which it carries, moves below and against the underside of a lever 60 extending rearwardly and upwardly from its mounting portion 61 that is pivoted for oscillation on the cross-shaft 31 which supports the forward end of bar 30. This mounting is in the form of a rocker head of bell crank form that extends forwardly from the shaft 31, and at its forward end, as at 62 in FIG. 7, has a pivotal connection with a bearing 63 which is fixed to the top edge of the shear plate 24. Thus, with the final forward feeding of the stamp strip, and the forward rocking action of the head 61 on shaft 31, as effected by the engagement of roller 40 with the underside of lever arm 60, the shear plate 24 will be actuated downwardly against the stamp strip to sever the end stamp therefrom. When cut free, the stamp drops into position for application to the envelope that has been placed in position to receive it as presently explained.

In order that the stamp will be advanced to the exact position that will insure that it will be severed from the strip at the line of perforations that sets it off from the next adjacent stamp, the pawl 45 is made up of a plurality of flat fingers of rubber or the like, placed side to

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side and pivoted in a block 64 that has limited forward sliding movement in a guideway formed longitudinally in the underside of the slide 36 as shown in FIG. 5. When the slide 36 moves forwardly, the block 64 will finally engage a stop 30s extended downwardly from the forward end portion of bar 30. This stop is so located as to cause the pawl to be stopped when it has advanced the stamp strip to the exact position for the shearing action. A coiled spring 65 acting against the block 64 and leg 57, as shown in FIG. 5, urges the block to its forward limit in its guide, and allows the slide to be advanced a slight distance after the pawl has been stopped in the advancement of the stamp strip.

In order to insure the proper positioning of the envelope to receive the stamp, the forward end portion of the horizontal base plate 10 is downwardly recessed to form a shelf 66 below the level of the forward end of the rail 23, and a vertical stop 66'. When an envelope is to be stamped, it is disposed as indicated in dash lines at 67 in FIGS. 1 and 2, on the shelf 66 with its forward edge against the stop 66'; the stamp denomination selector post 34 is then pushed down, as to the full line position in FIG. 2, and the operating lever 52 is actuated. As the slide 36 is thus moved forwardly to advance the stamp strip 15' and cut off a stamp, the roller 43 engages the top surface of an upwardly and forwardly inclined plate 70 that is mounted at its opposite sides by a pair of upwardly and forwardly inclined parallel links 71—71, pivoted at their rear ends on a stationary cross-shaft 72. As the roller 43 moves upwardly along this plate 70, the links 71—71 are swung downwardly. At their downwardly swinging ends, the links mount a cross-shaft 74 that supports a frame 75f equipped with a horizontal pad 75 which is directly above the severed stamp and will be moved downwardly by links 71 against the top surface of the stamp to press it against and secure it to the envelope.

In order that the released stamp will be made to adhere to the envelope, its adhesive under surface is moistened immediately after it has been advanced through the shear plate slot 21 but before it has been cut free from the stamp strip. This moistening is effected by spraying a small quantity of water onto the adhesive coated under surface by means shown in FIG. 2 to comprise a compressible water container 78 contained in a recessed portion 79 of base plate 10. From the container, a small tube 80 leads to and along the rail 23 to a plurality of spray jets 81 located in its forward end portion below the forward end of the plate 20.

When the slide 36 is moved forwardly on bar 30 to feed a stamp to the shear blade, the roller 43, before engaging the plate 70 to actuate the stamp affixing pad downwardly, engages the rounded upper end of a plunger 84 extended upwardly from the chamber 79 and depresses the plunger against the water container 78 to cause discharge of water from the jets 81 against the stamp. Immediately thereafter the stamp is cut free from the strip and is pressed by the pad 75 against the envelope thus to affix it.

The rocker head 61 and lever 60 are urged back to normal position after a stamp shearing operation and the slide 36 returned to its normal position, by pressure of a spring 78 that is coiled about the cross-shaft 62, which mounts the rocker head 63, and which spring has opposite end portions pressing against plate 24 and top of lever 60 as shown in FIG. 6.

Upon release of the operating lever 52, the slide 36 is returned to initial position by the pull of the pair of springs 37—37. The slide, through leg 57, returns lever 52 to normal position. The stamp pressing pad and linkage 71 for its support and activation are returned to lifted position after actuation by a small coiled spring 88 that is attached to the cross shaft 74 and to a cross shaft 74' that extends between the forward ends of a pair of arms 89 extended forwardly from the bearing 63. This spring also, through pull on the arms 89—89 which

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extend from bearing 63, causes the shear plate 24 to be pressed against plate 22 to insure clean shearing of the stamp strip.

Provision has been made also in the present device for moistening the flaps of envelopes. This comprises a roller 95 shown in FIG. 2 to be contained in a water reservoir 96 in the forward end portion of the base 10 and supported for easy turning on a shaft 97. A plate 98 is fixed on shelf 66 to extend across the roller. By passing the flap of the envelope between the plate and against the top of the roller to cause it to rotate, moisture can be transferred to the adhesive of the flap.

The machine so designed, is easy to use; and is efficient and effective in carrying out its intended operation.

What I claim as new is:

1. A stamp affixing mechanism comprising a plurality of like stamp feeding and applying units, each unit comprising means for mounting a roll of stamps, a stamp strip feeding mechanism, means for severing a stamp from the end of the stamp strip, means for moistening the severed stamp and for pressing it into place on an envelope; each stamp feeding means including a reciprocally movable slide with a pawl mounted to engage the corresponding stamp strip, a movably mounted guide bar supporting the slide for its reciprocal action, a manually operable actuator common to the slides of all units, springs normally retaining the bars and slides out of operating contact with the actuator, and a push button selector for selectively moving the slides into operating position relative to the actuator.

2. In a stamp affixing machine, a frame including a supporting surface on which an envelope may be positioned to receive a stamp, means for mounting a rolled stamp strip, a guide plate formed with a shearing edge

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across one end, upon and along which guide plate said stamp strip may be progressively advanced from the roll, a slide mounting bar extending along said guide plate, a slide reciprocally movable along said slide mounting bar, a pawl mounted on the slide engageable with the stamp strip with each forward reciprocal action of the slide to effect the advancement of the stamp strip across and a predetermined distance beyond the shearing edge of the guide plate, a rocker lever pivoted in the frame, a shear plate mounted for actuation by said rocker lever to cause its coaction with said shearing edge of the guide plate, means extending forwardly from said slide in position to operatively engage said rocker lever to effect the functional actuation of the shear plate and the severance of the advanced end portion from the stamp strip and a manual means operable for forward actuation of the slide; said slide mounting bar being pivotally mounted at one end for swinging adjustment from and into parallel relationship with the guide plate, spring means acting against said slide mounting bar to normally retain it and said slide in a position that lifts said pawl out of feeding contact with said stamp strip, and a push member extending from the swinging end of the slide mounting bar for manually moving it to and retaining it in position for the functional actuation of the rocker lever by means of said slide.

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