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LABEL OR STAMP AFFIXING MACHINE

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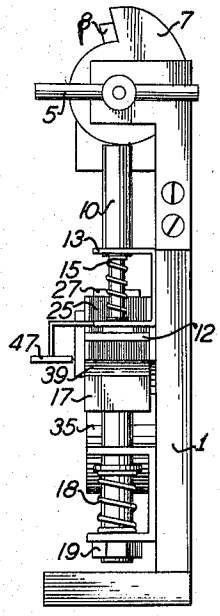


Fig. 2

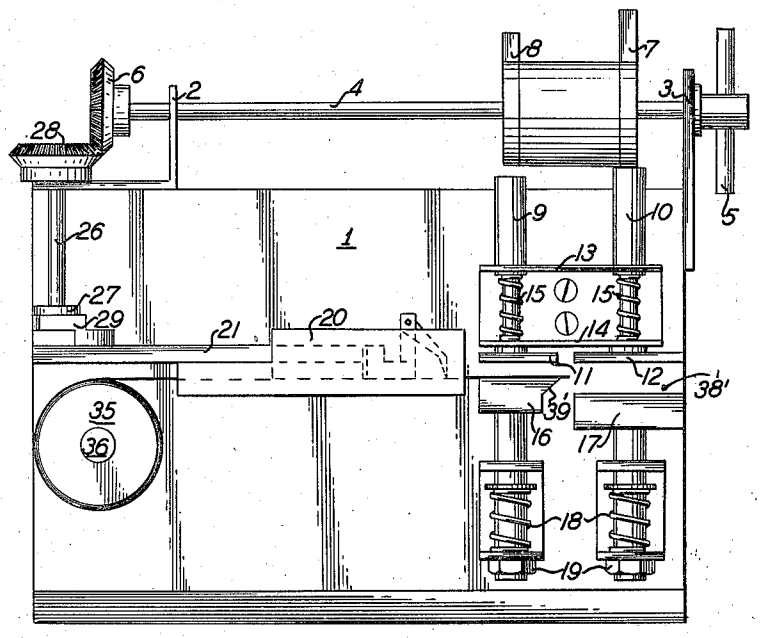


Fig. 1

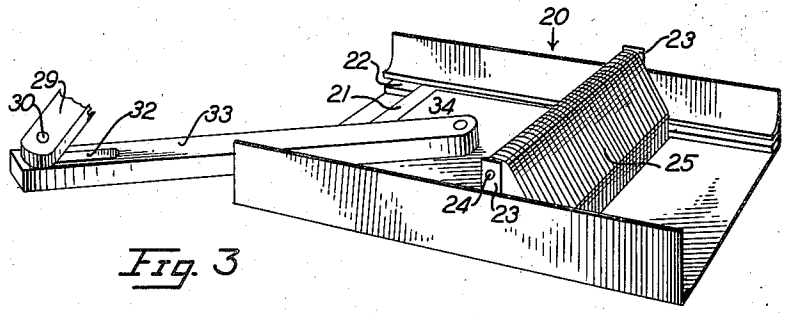


Fig. 3

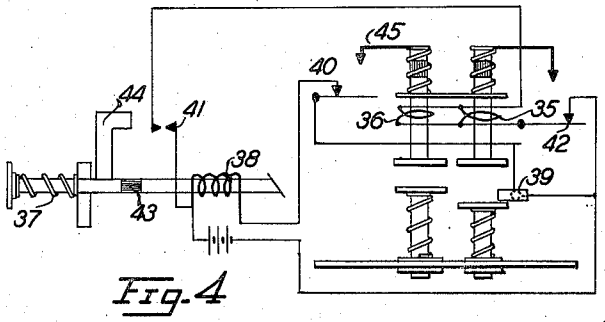


Fig. 4

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LABEL OR STAMP AFFIXING MACHINE

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9 Claims. (Cl. 216—33)

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This invention relates to dispensing machines of the type that successively detach the end portions of a strip and more particularly to such machines which affix the detached portions to articles therefor.

It is known to provide rolled strips of labels, specifically postage stamps, from which strip the end stamp can be pulled off manually when needed for use. The usual perforation lines utilized in pulling off the stamps can be utilized also in an efficient machine for this purpose, to aid and demarcate the severance line. Such lines can also be of assistance in feeding the strip in such a machine.

It is an object of my invention to provide a machine which will dispense individual stamps or labels by detaching the same from a strip.

It is a further object to effect the detachment of the end portion or stamp by separately clamping the said end portion and the adjacent portion of the strip and pulling the two portions apart while clamped by moving the clamps relatively.

It is a further object to utilize the clamping action on said end portion to affix the same to an article, such as an envelope.

The foregoing and other objects and the invention itself will be better understood from the following description of one embodiment thereof, taken in connection with the accompanying drawings in which:

Figure 1 is a front view of one form of the invention;

Figure 2 is a right end view of Figure 1, looking to the left;

Figure 3 is an enlarged perspective view in detail of the feed carriage; and

Figure 4 is a diagrammatic view of a modification.

Referring to Figures 1–3, 1 is the panel upon which the working parts are mounted having a suitable supporting base. Mounted in suitable bearings 2, 3 is the horizontal shaft 4 with the operating crank 5 on one end and bevel gear 6 on the other. Near the crank end on shaft 4 are fastened two cams 7 and 8 which, during rotation, pass into an opening cut into the panel. These cams act to depress the upwardly extending clamping plunger rods 9 and 10 carrying the presser feet 11 and 12. These plunger rods are mounted in guides 13 and 14 and are urged upwardly by springs 15 engaging collars fastened to the rods and acting against lower plungers on the guides.

In vertical alignment with plungers 9 and 10 and their presser feet, but normally spaced therefrom are plunger rods and their receiving supports 16 and 17 respectively similar to the elements above them but having stronger springs 18 and stop nuts 19 to adjust the spring tension and limit the upward projection of the plungers.

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A guide trough 20 for the tape and feed carriage 21 is fastened to the panel as shown in Figures 1 and 3 and is provided with guide grooves 22 for the carriage. This carriage may be of any suitable design for guided movement but is shown as a plate with side edges in the trough grooves 22 and having upwardly extending ears 23 in which a rod 24 is mounted having loosely mounted thereon a series of narrow spaced jowls or dogs 25. These dogs are one-way acting and act only to advance the tape from left to right, and preferably are so numbered and designed that a number of them will engage perforations in the tape and advance the tape a definite amount for each advance movement of the feed carriage. Of course, springy fingers could be substituted for these dogs.

For operating the carriage I have provided vertical shaft 26 mounted in bearings 27 on panel 1 having a bevel gear 28 engaging the companion gear 6 on shaft 4. On the lower end of shaft 26 is secured crank arm 29 having pin 30 with head 31 secured thereto and engaging and sliding freely in a slot 32 in the left hand end of pitman 33, the other end of the pitman loosely engaging a pin 34 fastened to the carriage. The stamp roll 35 is mounted on arm 36 fastened at 37 to the panel.

The operation is as follows:

The end of the tape is fed into the trough with the adhesive surface down and the feed dogs resting on top until a line of perforations is in front of the dogs. An envelope with the upper corner moistened is inserted into the position indicated at 38' in Figure 1. Attention is called to the notch 39' in receiver support 16 whereby the stamp can be affixed so as to be spaced from outlines of the envelope if so desired.

With the envelope held in this position, the operating crank is turned in the proper direction. The cams and crank 5 are so arranged that during the initial operation the strip advances the end stamp between the plunger foot 12 and the receiver support 17. In this position, because of slot 32 in pitman 33, there will be a dwell in the movement of the carriage until the two end stamps are clamped by the respective clamping plungers, whereupon the carriage is returned to the left without any possibility of dragging the tape backward. Continued movement of the

crank will move the clamping presser feet 12 and receiver support 17 as a unit further downwardly against the action of the lower, stronger plunger springs thereby simultaneously severing the end stamp and applying it to the envelope.

The upper pair of plunger rods now ride off the high point of their cams and are spring returned to their upper or open position, ready for another operation.

In the modification (Figure 4) the upper clamping plungers are pulled down against the action of their springs by solenoids 35 and 36 and the carriage is moved to the right against its spring 37 by solenoid 38. Two switches 39 and 40 respectively are arranged in series in the circuit of solenoid 38, the former being normally spring-biassed open, the latter normally spring-biassed closed. Arranged in circuit of solenoids 35 and 36 are two switches 41 and 42 in series respectively, switch 41 spring-biassed open and switch 41 spring-biassed closed. The arrangement is such that an envelope moistened as above is inserted between plungers as in the first modification and in this position it closes switch 39 thereby energizing solenoid 38 which attracts iron core 43 and advances the strip to the right. Upon the end of this movement, the projection 44 moving with the core closes switch 41, whereupon solenoids 35, 36 are energized and attract the respective plunger iron core sections downwardly against the action of their springs. At the end of the downward movement of the left hand plunger, arm 45 mounted to move with this plunger opens switch 40 de-energizing solenoid 38 and spring 37 returns the feed carriage while the tape is still clamped. The solenoids 35, 36 and plungers are so designed and arranged that the right hand plunger pair continue their downward movement, detaching the end stamp and applying the same to the envelope. At the end of the down movement of this right hand pair, the arm 46 opens switch 42 whereby solenoids 35, 36 are de-energized and all four plungers are spring returned to normal position.

If the machine is to be used as affixer, any conventional moistener as shown at 47 (Figure 2) may be used so placed as to moisten the envelope as the latter is inserted. Obviously, also in place of crank 5 to operate shaft 4, other suitable means may be used—for example, a rack-bar and pinion. Also, it is obvious that the machine can be used as a mere dispenser and if desired any conventional coin-control arrangement for controlling the operation of shaft 4 can be added. Various other minor changes may be made in the described embodiment without departing from the scope of the invention.

What is claimed is:

1. In a machine for detaching successively the end portions of a material strip, a first device for receiving and clamping an end portion, a second device for receiving and clamping said strip adjacent said end portion, means positioning the strip for said clamping, and means for moving said devices in their entirety relatively during clamping to sever said end portion.

2. A mechanism according to claim 1, including driving means synchronized to actuate the positioning means, and the clamping devices and their relative movement in entirety in succession, and to restore them for another operation.

3. A machine according to claim 2, wherein said driving means are mechanical and include respective cam mechanisms for actuating and timing said devices and a cyclically stroking element for actuating and restoring said positioning means.

4. A machine according to claim 2, wherein said driving means include electromagnets for actuating said devices and said positioning means, energizing circuit means for said electromagnets and circuit switches for initiating and timing the actuation, said switches after the initiating of the actuation being each controlled by the previous actuation.

5. A machine according to claim 4, wherein the device clamping the end portion of said strip operates to affix said end portion to a carrier, and wherein the circuit switch for initiating electromagnet actuation is controlled by the inserting of the carrier into a clamping device.

6. A machine according to claim 4, wherein the circuit switch for controlling the electromagnets for actuating the clamping devices is actuated by the positioning means near the end of its forward stroke, and wherein means actuated by said clamping devices upon their operation opens the circuit of the positioning means electromagnet.

7. In a machine for affixing to a article a label while attached to another label, comprising a device for receiving and clamping together the first-mentioned label and the article, a second device for receiving and clamping the other label, and means to move said clamps in their entirety relatively to sever the labels.

8. In a machine according to claim 7, wherein the two labels are attached along a perforated line, and the said clamps are so constructed and positioned that their adjacent clamping edges sever the label along said line.

9. In a machine for detaching successively the end portions of a material strip, a first device for receiving and clamping an end portion, a second device for receiving and clamping said strip adjacent said end portion, means positioning the strip for said clamping, and means for moving said devices relatively during clamping to sever said end portion, said clamping devices each comprising two members, one being a yieldable support and the other a driven member, and said moving means comprising means for driving said driven members to effect their clamping and moving operations.

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