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Denzin

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[54] **DEVICE FOR FEEDING ADHESIVE STRIPS TO A FRANKING MACHINE**

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[30] **Foreign Application Priority Data**

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[52] **U.S. Cl.** **83/241;** 83/261; 83/649; 83/902; 226/154

[51] **Int. Cl.²** **G07B 17/00**

[58] **Field of Search** 83/204, 205, 241, 259, 83/261, 649, 902; 226/154, 155

[56] **References Cited**

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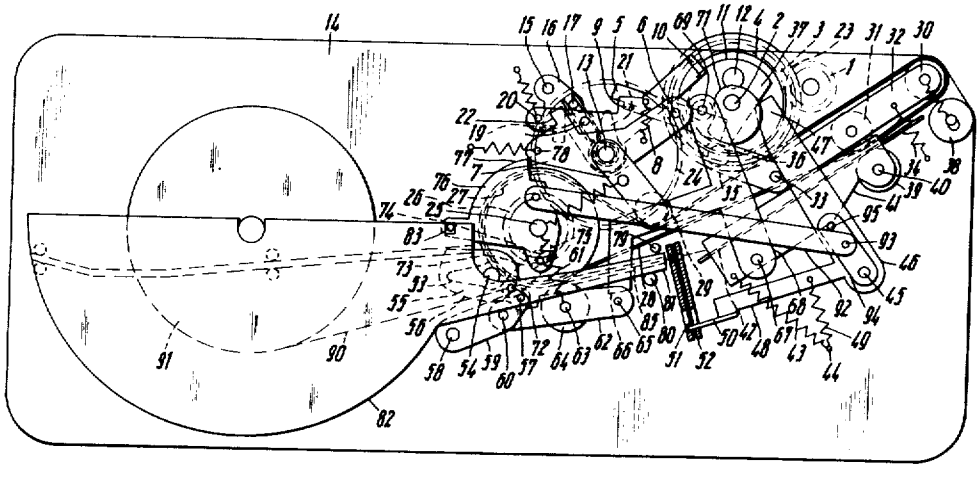
Attorney, Agent, or Firm—Herbert L. Lerner

[57] **ABSTRACT**

A device for feeding adhesive strips to a franking machine is provided with a feed mechanism which draws an adhesive strip to be printed from a storage roll and feeds it to the printing mechanism of a franking machine. A manually adjusting means including a cam disc is operable to actuate the feed mechanism to determine the length of adhesive strip to be fed to the franking machine.

9 Claims, 8 Drawing Figures



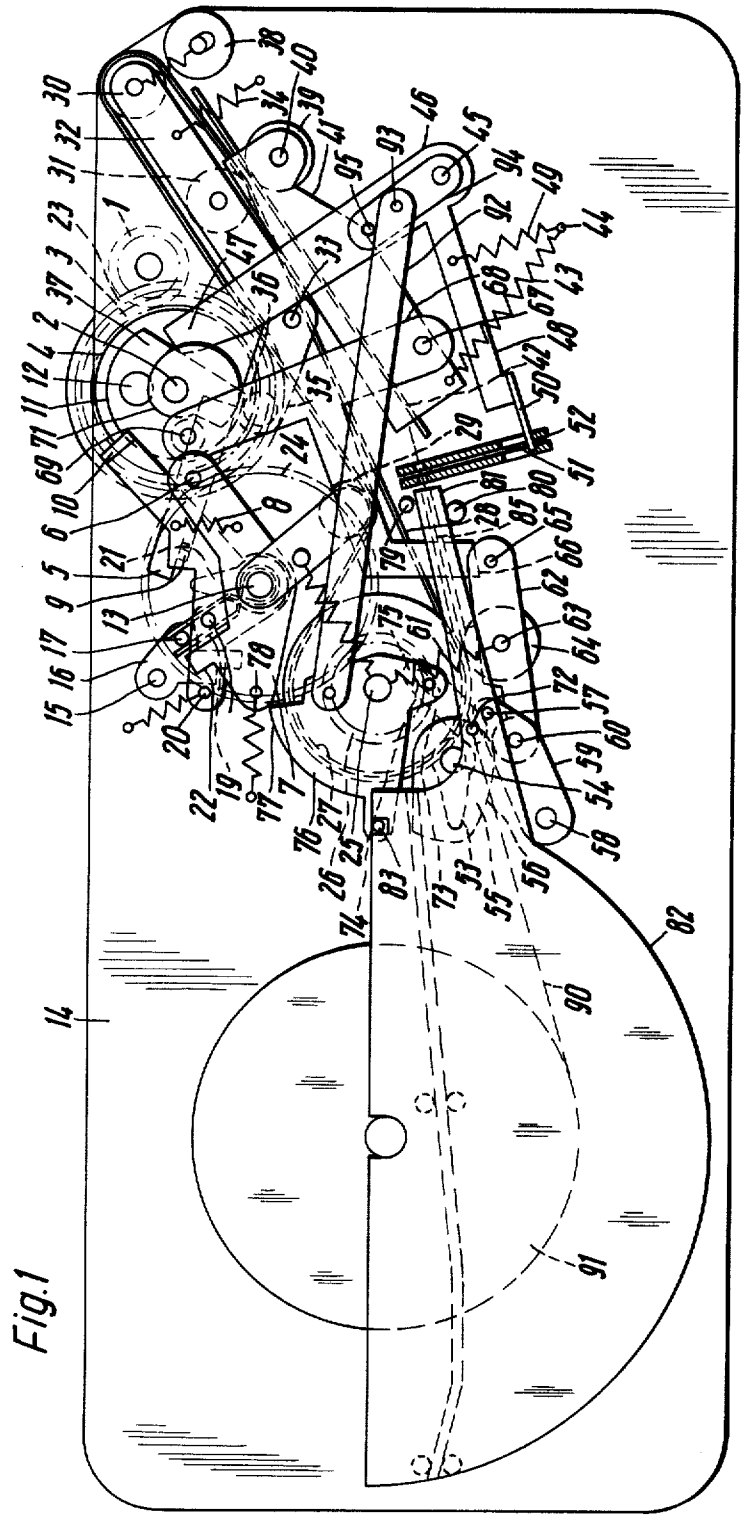
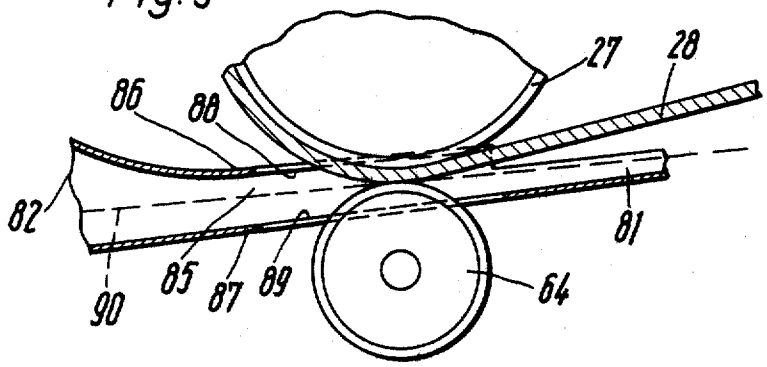


Fig.1

Fig. 3



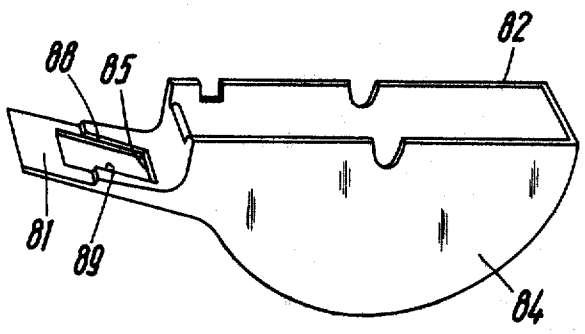


Fig. 2

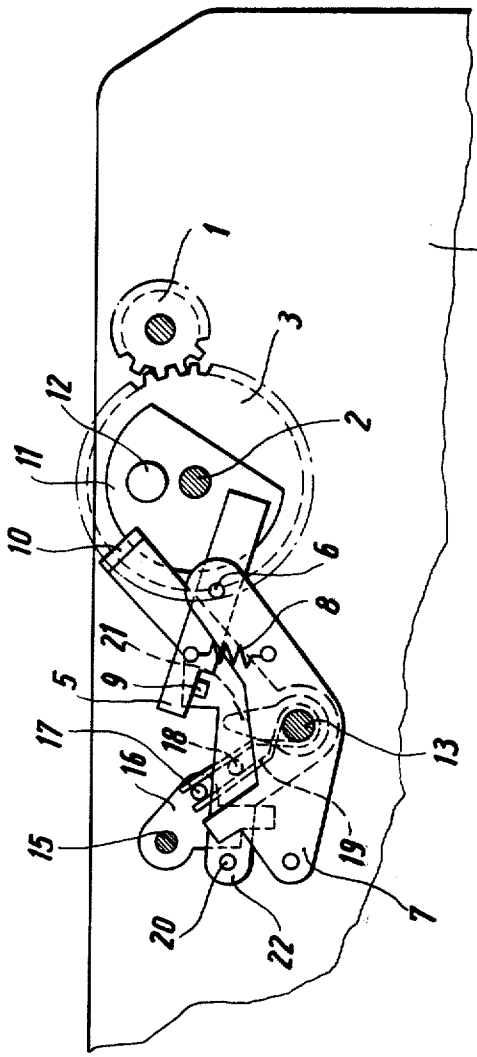


Fig. 4

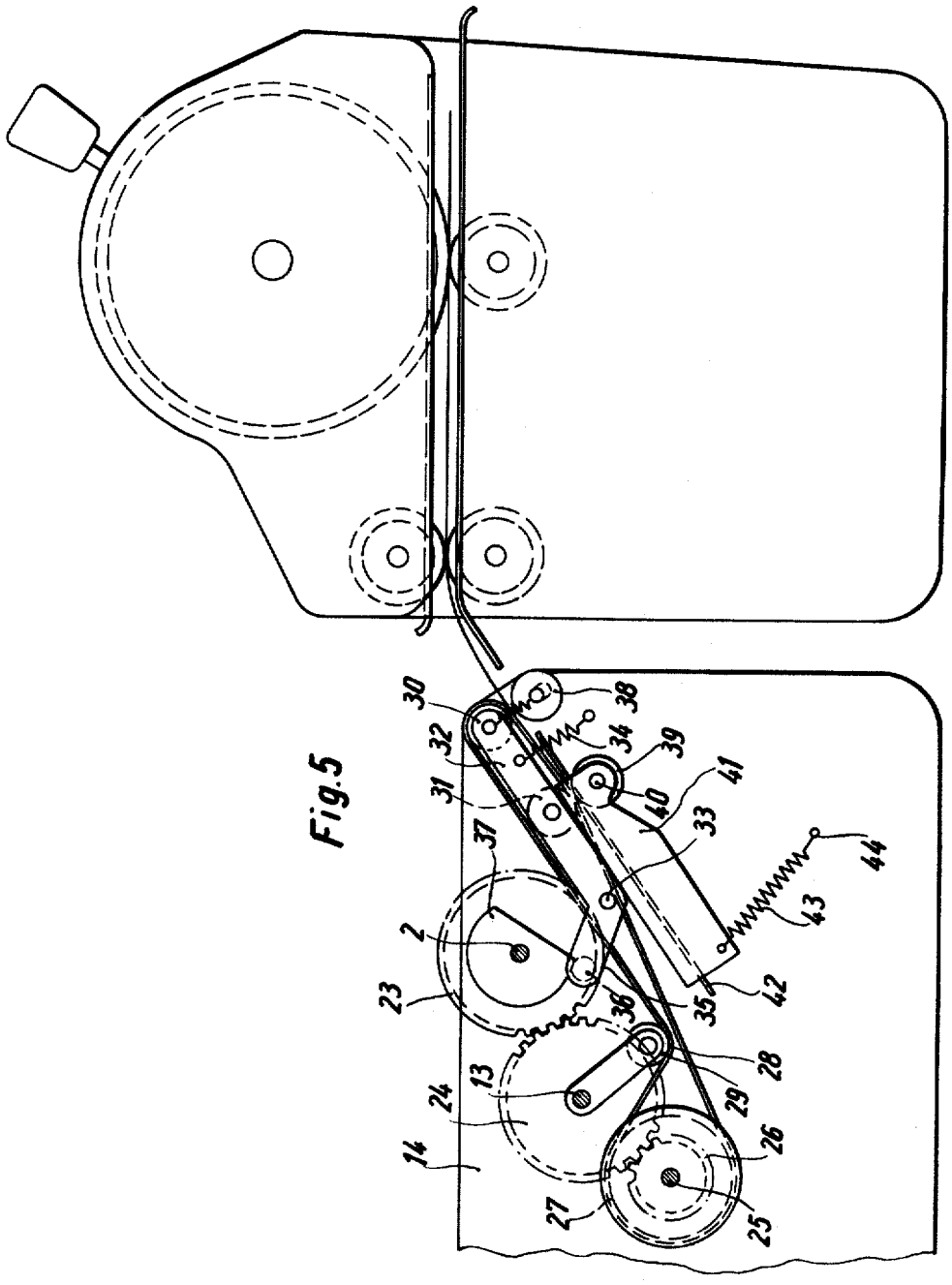


Fig.5

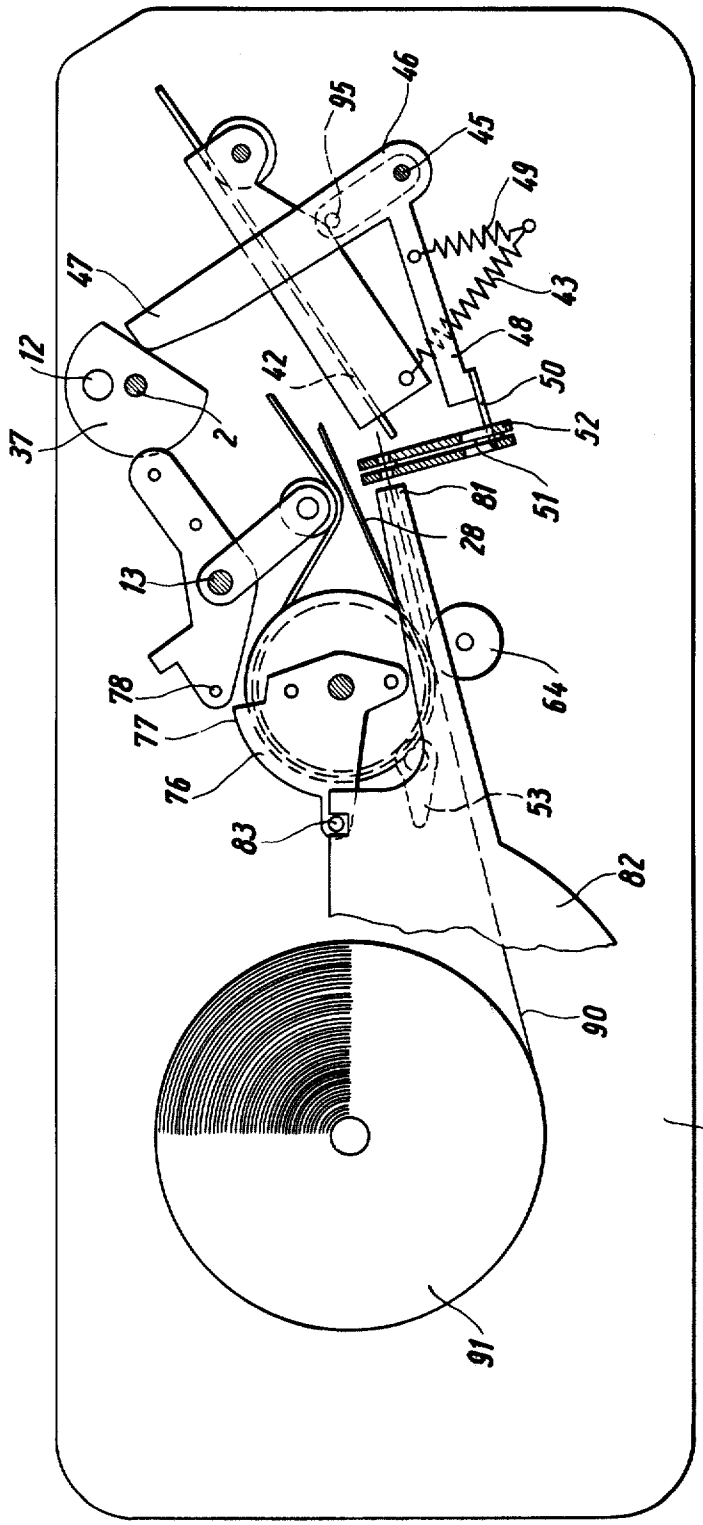

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Fig. 6

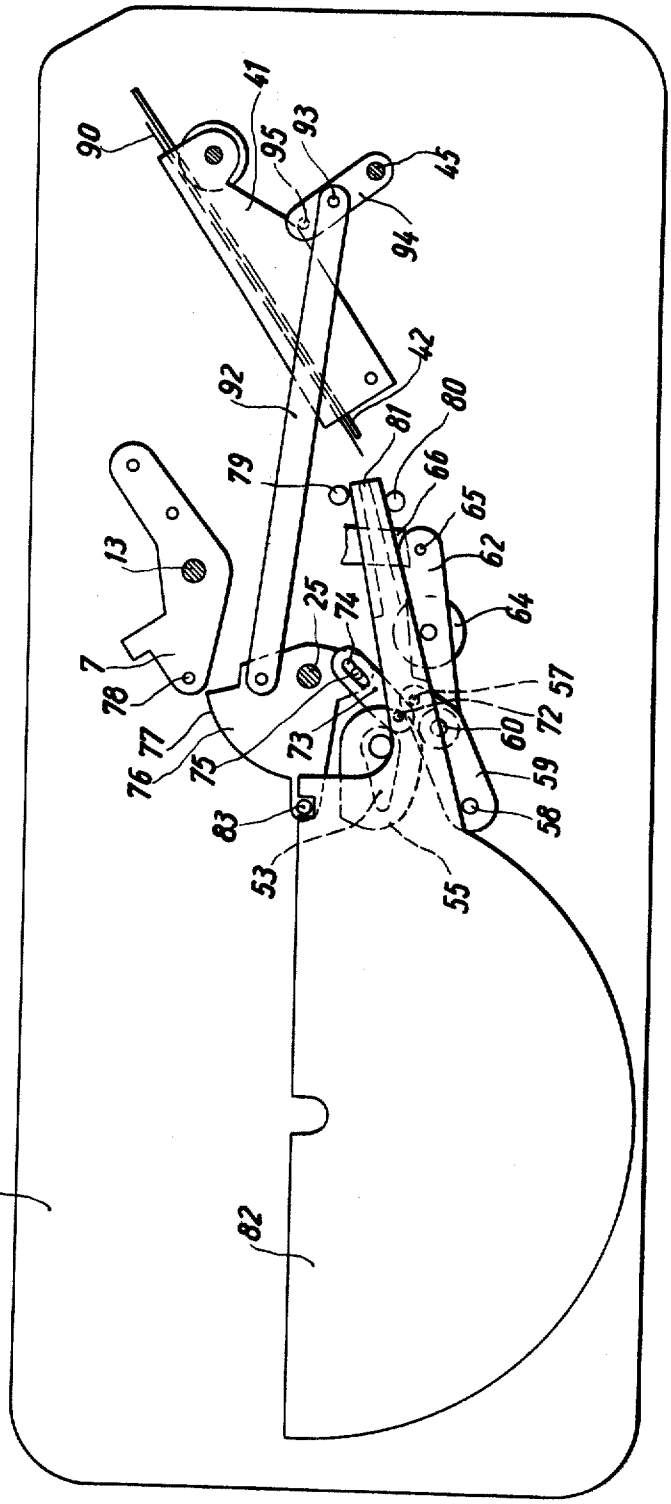
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Fig.8

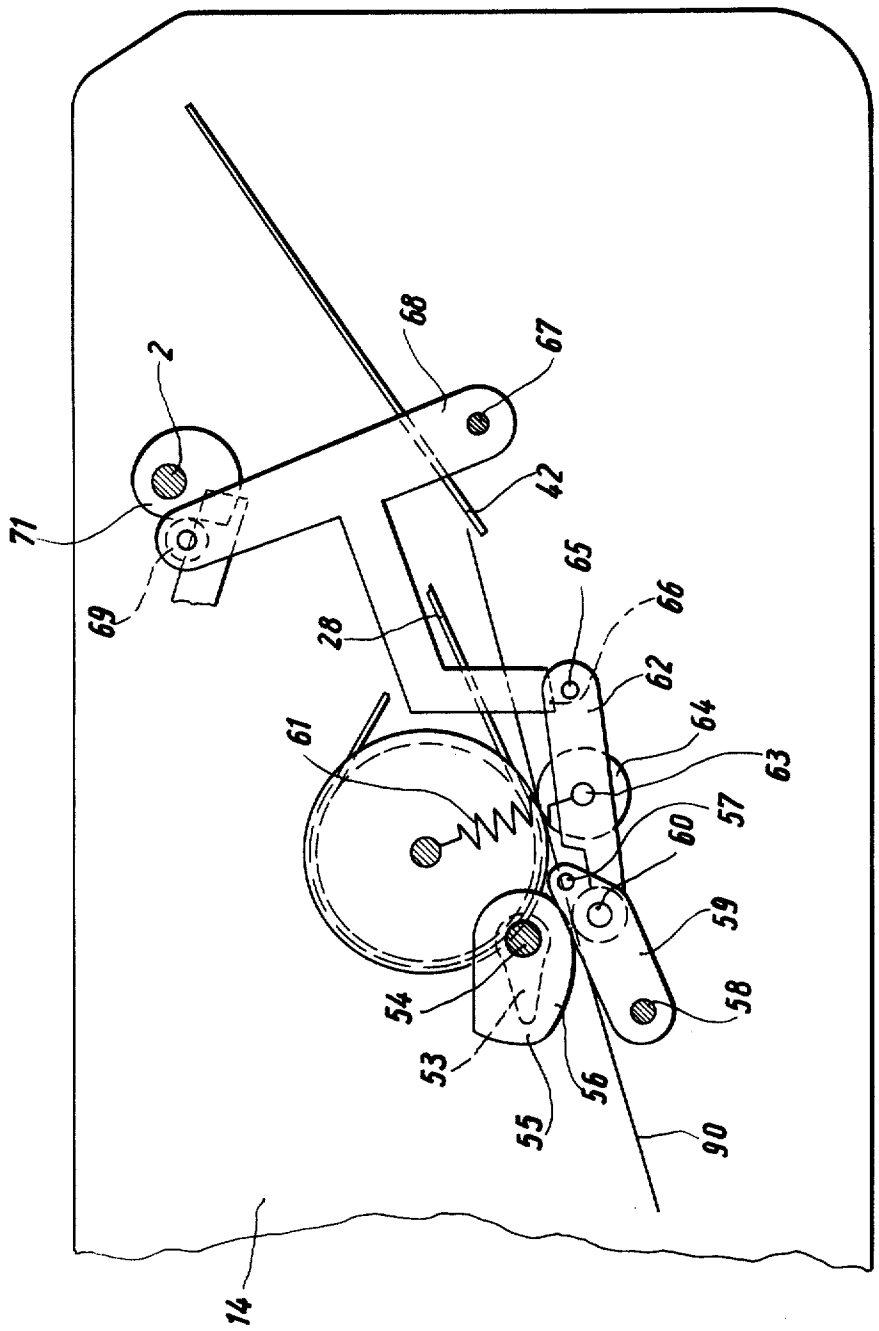

Fig. 7

DEVICE FOR FEEDING ADHESIVE STRIPS TO A FRANKING MACHINE

The present invention concerns a device for feeding adhesive strips to a franking machine comprising a feeding mechanism which draws the adhesive strip to be printed from a supply roll and feeds it to the printing mechanism of the franking machine.

In German Published, Prosecuted Application, DAS 1,201,591, a franking machine is described which is associated with an adhesive strip holder comprising a cylindrical cassette incorporating a tangential outlet which leaves the strip to be printed uncovered on one side so that this part, instead of a letter, can be moved past the printing drum of the franking machine by the conveyor rollers.

However, only adhesive strips of the same dimensions can be introduced in the franking machine with conventional feeding devices. If the block or stereotype roller is changed, it would, however, be desirable to be able to adapt the length of the paper strip to be printed to the particular block or stereotype roller, without having to take any special steps.

The object of the present invention is therefore, in a device for feeding adhesive strips to a franking machine, to determine the length of the fed adhesive strips by a manual adjusting means which is preferably infinitely adjustable within a predetermined range.

The present invention is based on a device for feeding adhesive strips to a franking machine which is provided with a conveyor mechanism which draws the strip from a supply roll and feeds it to the printing mechanism of the franking machine and is characterised in that a manual adjusting means influencing the feed mechanism by means of a cam disc or the like is provided, said adjusting means determining the feed length of the adhesive strip to be fed to the franking machine within a predetermined range of adjustment.

Due to the infinitely variable pre-selectable length of the issuing adhesive strip, the device may be attached to any desired franking machine, since the length of the adhesive strip to be printed can be readily adapted to the particular block or electro-type roller employed. Another advantage also resides in the feature that, if the block is changed or if there are various impressions, the particular length of paper required is made available by the device through simple conversion. In addition, there are other advantages in production. Due to the parts which are always constant, large numbers of items for the individual parts can be ordered, which is an advantage from the point of view of stock.

Other features of the invention also reside in the fact that other functions are associated with the manual adjusting means for infinitely varying the setting of the feed length, these functions consisting in the locking of the trigger lever for releasing the machine, in holding the cassette for the paper roll in the adjusted position, in the effect on the pivotable strip feed guiding device and in the outward swinging of the pressure roller for the adhesive paper strip, determining the feed operation, when a new paper roll is inserted.

For simplifying operation, the present invention is provided with an interchangeable cassette for receiving the paper roll, the orifice of the cassette being engaged by the conveyor belt and the pressure roller cooperating therewith.

Other features which are considered as characteristic for the invention are set forth in the appended claims.

Although the invention is illustrated and described in relationship to specific embodiments, it is nevertheless not intended to be limited to the details shown, since various modifications and structural changes may be made therein without departing from the spirit of the invention and within the scope and range of equivalents of the claims.

The construction and method of operation of the invention, however, together with additional objects and advantages thereof will be best understood from the following description of specific embodiments when read in connection with the accompanying drawings, in which:

FIG. 1 is an elevational view of a device for feeding adhesive strips according to one embodiment of the invention.

FIG. 2 is a perspective view of the cassette for the paper roll.

FIG. 3 is a detailed elevational view, on a large scale, of a portion of the cassette and associated apparatus.

FIGS. 4 to 8 are enlarged fragmentary views of FIG. 1 showing detailed features of the invention.

Referring to the drawings, there is shown in FIGS. 1 and 4 a device for feeding adhesive strips to a franking machine of conventional type. The feeding device is driven by a gear motor (not shown) by way of a pinion 1 meshing with a gearwheel 3 freely rotatable on a shaft 2. Connected to the gearwheel 3 is a co-axially mounted toothed clutch wheel (not shown) of a pawl clutch 4 (FIG. 1) of known type which is secured to the shaft 2 and released by a clutch pawl 5.

The clutch pawl 5 is rotatably journalled on a pin 6 of a trigger lever 7 and is engaged under the bias of a spring 8 on a square pin 9 of a clutch lever 10. Upon the release of the pawl clutch 4, a roller 12, secured to a control disc 11 comes into contact with the clutch pawl 5 and disengages it from the square pin 9 so that the clutch lever 10 can drop in again, despite the pressurised trigger lever 7. The trigger lever 7 is secured to a switch shaft 13, on which the clutch lever 10 is loosely mounted.

A pawl 16, to which a pin 17 is riveted, is journalled on a cylindrical bolt 15 screwed in the wall 14 of the stand. A pin 18 is also inserted in the clutch lever 10. A spring clasp 19 enclosing the switch shaft 13 engages over the pins 17 and 18 and swivels the pawl 16 in clockwise direction as soon as the coupling lever 10 is swivelled anti-clockwise about the switch shaft 13. In this operation, the spring clasp 19 is not tensioned at first. However, as soon as the pawl 16 strikes against the pin 20 of the coupling lever 10, it is tensioned and thus produces a pressure point on the trigger lever 21 which is rigidly secured to the switch shaft 13. This condition occurs shortly after the clutch lever has released the pawl clutch 4 (FIG. 1) for a rotation. During further rotation of the clutch lever 10, the pawl 16 becomes disposed across the pin 20 and thus engages the clutch lever 10 with the result that the drive is switched to continuous operation. To interrupt this operation the trigger lever 31 is swivelled in clockwise direction, the arm 22 of the trigger lever 7 strikes the pin 17 of the pawl 16 and thus disengages the clutch lever 10 which switches off the drive.

As shown in FIGS. 1 and 5, secured to the shaft 2 is a gearwheel 23 which meshes with a gearwheel 24 freely rotatable on the switch shaft 13. The gearwheel

24 is in driving engagement with another gearwheel 26, freely rotatable on the spindle 25, said gearwheel 26 being rigidly connected to a belt pulley 27, the endless belt 28 of which extends over a tension pulley 29, a guide pulley 30 and another pulley 31. The guide pulleys 30 and 31 are secured to an angled fork-lever 32 which is journalled on a bolt 33 secured to the stand and is biased by a draw spring 34. A roller 36 is provided to rotate on the angled arm 35 of the fork lever 32 and cooperates with a cam 37 rigidly secured to the shaft 2. A pressure roller 38 resiliently journalled under the pressure of a spring, co-operates with the already mentioned guide pulley 30. A pressure roller 39 cooperating with the guide roller 31, is mounted on a spindle 40 which extends from the frame and on which the frame 41 of a guide plate 42 is also journalled to rotate. The frame 41 is engaged by a draw spring 43 attached to the pin 44, extending from the stand. As shown in FIGS. 1 and 6, a bell-crank lever 46, the arm 47 of which is biased by the roller 12 and the lower arm 48 of which, engaged by a draw spring 49, is provided to rotate on a spindle 45 secured to the wall 14 of the stand. By means of a switch finger 50, the draw spring 49 actuates a knife 51 of a cutting device 52 secured to the wall 14, of the stand.

As can be seen in FIGS. 1 and 7, secured to a switch shaft 54 rigidly connected to a switch knob 53 is a cam 55, the control profile 56 of which acts on a switch pin 57 of a lever 59 provided to rotate on the pin 58 mounted in the stand. A bolt 60 is riveted to the lever 59. A roller lever 62, loaded by a draw spring 61, is mounted on the pin 60, whilst the pin 63 of the lever 62 supports a pressure roller 64. An angled stop 66 of the control lever 68, pivotable about the pin 67, is in contact with the pin 65. A roller 69 is mounted to rotate on the upper part of the control lever 68 and cooperates with a cam 71 mounted on the shaft 2.

According to FIGS. 1 and 8, the cam disc 55 carries a pin 72 to which a link 73 is secured. A pin 75 of a segment 76 engages in the slot 74 of the link, said segment being also provided to rotate on the spindle 25. The control profile 77 of the segment 76 becomes disposed, as it rotates in anti-clockwise direction, under the pin 78 of the trigger lever 7 secured to the switch shaft 13 and prevents pivoting thereof if the switch knob 53, moved in clockwise direction, is displaced beyond the position for the shortest paper strip. Two guide pins 79, 80 are riveted in the wall 14 of the base frame. An intake 81 of a container 82 shown in FIGS. 2 and 3 is inserted in the pins 79, 80, said container being arrested in the inserted position by a pin 83 secured to the segment 76. The container 82, as shown in FIGS. 1 and 8, is preferably made of synthetic material and comprises a semi-circular trough 84 (FIG. 2). As shown in FIG. 3, on the orifice 81, a passage 85 for the paper strip is provided, the upper and lower edges 86 and 87 of said passage being interrupted by rectangular openings 88, 89 through which the belt 28 and the pressure roller 64 act on the inserted paper strip 90 drawn from the roll 91. As FIGS. 1 and 7 further show, a drawbar 92 is also linked to the aforementioned segment 76 and is engaged on the pin 93 of a lever 94 which is journalled to rotate on the spindle 45 and the pin 95 of which engages on the lower edge of the frame 21 and pivots the latter in and out of the feed path for the paper strip 90. Residues of the paper strip can therefore slip out of the guide plate 42 when a new paper roll 91 is inserted.

As stated above, the apparatus can be adjusted by means of the trigger lever 21 to the feed of a single paper strip 90 of pre-selectable length or for continuous feeding. By associating a suitable pre-adjustable metering mechanism which switches off the electrical drive when the set number of items is reached, the apparatus can also be equipped for issuing pre-selectable numbers of items. The particular length of the paper strips 90 to be issued is infinitely adjustable. By setting the switch knob 53 with which a suitable scale of known design is preferably associated, its control profile 56 swivels the lever 59 through a certain angle about the pin 58 in clockwise direction. The control lever 68, rotatable about its pin 69 at a constant angle by the cam disc 71 with each rotation of the shaft 2, swivels the roller-mounted lever 62, the bearing arrangement of which is adjusted is height on the bolt 60 by the profile 56 of the cam disc 55, by means of its stop 66. The resultant swivel movements of the roller-mounted lever 62 are thereby infinitely adjustable within a pre-determined range. The length of the particular paper strip 90 to be fed is determined by the length of operation of the pressure roller 64 cooperating with the belt 28 driven always at a constant speed. The duration of the engagement of the pressure roller 64 and, consequently, the length of the feed path can be easily varied or adapted to all possible requirements by the adjustment of the roller-mounted lever 62. The conveyed paper strip 90 is separated by the cutting device 52 and fed to the franking machine by the belt 28 by way of the guide plate 42, when the guide rollers 30 and 31 as well as the belt 28, through the fork lever 32, which is provided with a roller 36, have been pivoted together with the cam 37 into the effective range of the pressure rollers 38 and 39.

In addition to the function of setting the length of the particular paper strip 90 to be issued, the switch knob 53 also stops the container 82 by means of the segment 76 and its pin 83, locks the trigger lever 21 if the adjustable minimum length for the paper strip 90 is not reached, by means of the control profile 77 and the pin 78, tilts the guide plate 42 downwardly when a new paper roll 91 is inserted by means of the pin 95 so that the residues of paper can be removed therefrom and swivels the pressure roller 64 out of range of the intake 81 when the container 82 is used.

I claim:

1. A device for infinitely adjusting within a given adjusting range the length of adhesive strips in a franking machine having a printing mechanism, the adhesive strips being drawn from a storage roll and, after having been severed therefrom, being fed to the printing mechanism, along a given guiding path, comprising manual adjusting means adjustable for varying the travel length within a given adjustment range of adhesive strips that are to be issued by the franking machine, a trigger lever means for releasing travel of the adhesive strips, means for blocking said trigger lever means, means for arresting a cassette wherein the storage roll is received, and means for pivoting into and out of operating position a means defining the given guiding path.

2. A device as claimed in claim 1, wherein said adjusting means is operable in one setting range for releasing and in another range for locking said trigger lever means.

3. Device according to claim 2 including stop means cooperable with said trigger lever means for arresting in adjusted position the cassette wherein a storage roll is received.

4. A device as claimed in claim 3, wherein the cassette is formed with a mouthpiece through which the adhesive strips are fed, and said manual adjusting means include means for outwardly pivoting said pressure roller out of the range of the mouthpiece of the cassette, said last mentioned means cooperating with a conveyor belt for advancing the adhesive strips.

5. A device according to claim 4, wherein said means for pivoting said strip guiding path means into and out of operating position comprises a lever transmission cooperating with said trigger level means.

6. A device as claimed in claim 4, wherein said cassette is engageable at said mouthpiece thereof by said conveyor belt and by a pressure roller.

7. A device as claimed in claim 6, including a cutting device having a drive means and a clutch having a switch roller, said cassette mouthpiece being guidable to said cutting device, said cutting device drive means being actuable by said switch roller of said clutch for operating said cutting device.

8. A device as claimed in claim 7, wherein said cassette mouthpiece is provided with a rectangular guide passage for the adhesive strip, said guide passage being partly interrupted by an opening provided transversely thereto.

9. A device as claimed in claim 8, wherein said conveyor belt and said pressure roller engage in said opening.

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