

July 28, 1970

YO SATO ETAL

3,522,131

DEVICE FOR PRINTING NUMERICAL FIGURES AND OTHER CHARACTERS ON
LABELS AND FOR PASTING THESE LABELS CONSECUTIVELY ONTO
ARTICLES AND MERCHANDISE

Filed Dec. 20, 1966

3 Sheets-Sheet 1

Fig. 1.

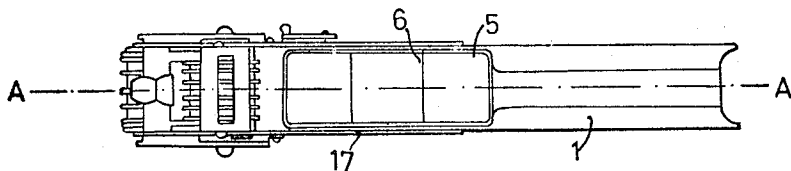


Fig. 2.

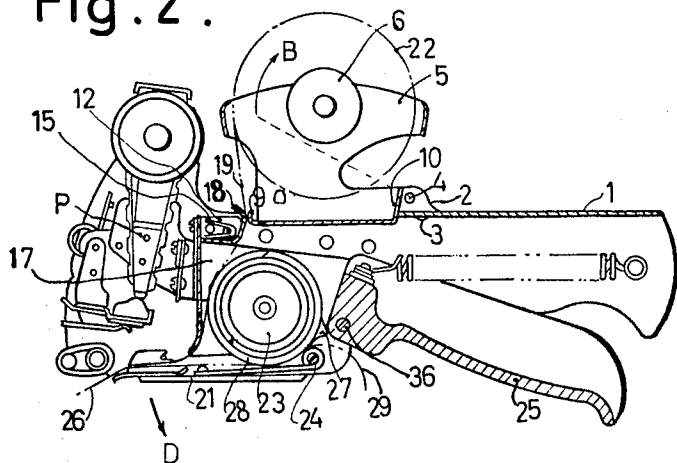
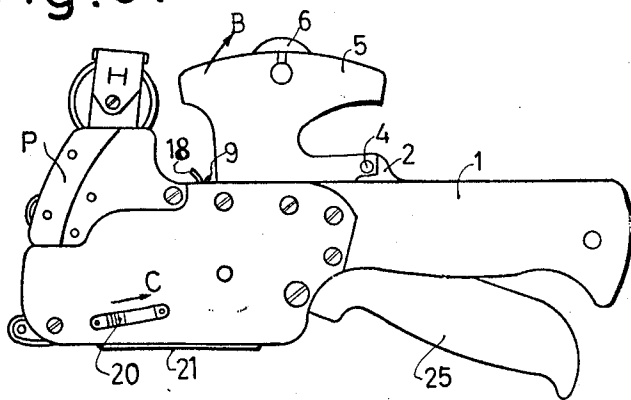


Fig. 3.



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3 Sheets-Sheet 2

Fig. 4.

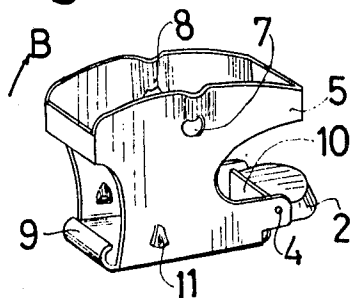


Fig. 5.

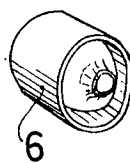


Fig. 6.

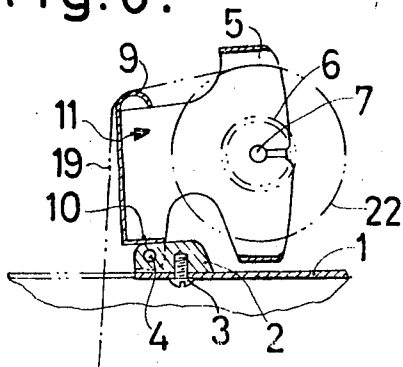


Fig. 7.

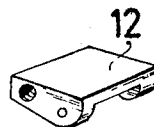


Fig. 8.

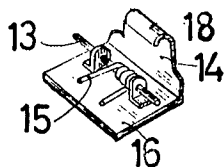
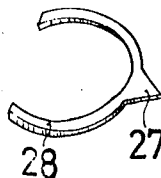


Fig. 9.



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3 Sheets-Sheet 3

Fig. 10.

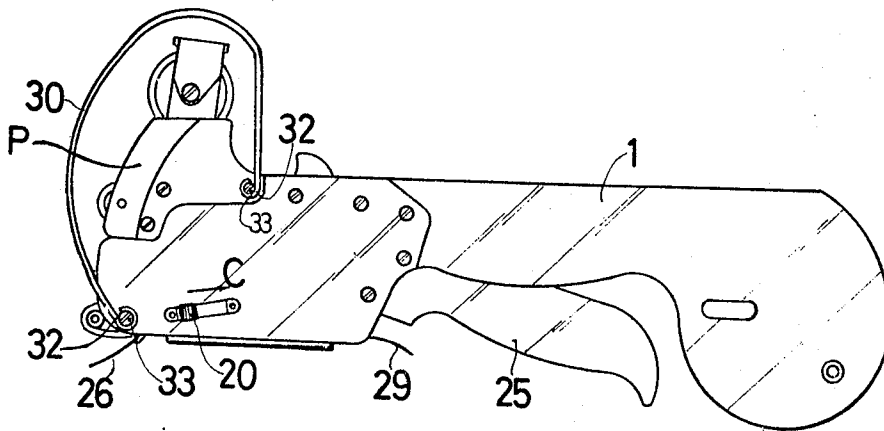
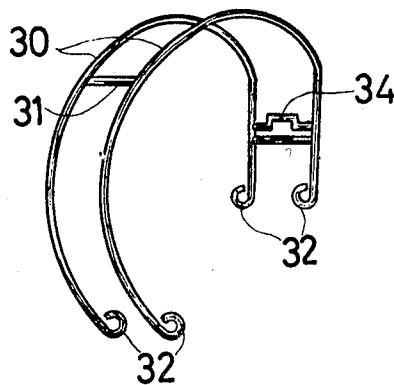


Fig. 11.



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3,522,131

DEVICE FOR PRINTING NUMERICAL FIGURES AND OTHER CHARACTERS ON LABELS AND FOR PASTING THESE LABELS CONSECUTIVELY ONTO ARTICLES AND MERCHANDISE

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U.S. Cl. 156—384

5 Claims

ABSTRACT OF THE DISCLOSURE

A device for printing numerical figures and other characters on labels and for pasting these labels consecutively onto articles and merchandise, characterized by the provision of a label holding apparatus which is capable of being opened and closed at will, an abnormal-label-delivery preventing apparatus which is installed adjacent a receiving piece located below a label holding frame for blocking movement of the labels instantly when necessary to prevent the labels from being pulled out, a rolling-up preventing piece equipped with a guide projection and a guard installed about printing apparatus at the front part of the device to cover and protect the same.

The present invention relates to the improvement of a device whose chief objective is to consecutively carry on the operation of printing prices, marks, numerical figures and letters on labels and pasting these labels onto the surface of merchandise and other articles.

Labels to be used for this device to be cut to a certain measurement and are applied to a belt-shaped paper by means of adhesive agent applied to the rear side of the labels. This body of paper is wound into a spiral and placed in a label holding frame.

The first objective of the present invention is to provide for separating the labels from the belt-shaped paper and to carry said paper smoothly outside the device by means of a guide projection for preventing labels from being improperly dispensed.

The second objective of the present invention is to provide for pasting said labels accurately onto various articles by means of a rotating regulating adhesive device.

The third objective of the present invention is to prevent said projected parts from being damaged.

The accompanying drawings illustrate a preferred embodiment of the present invention, in which:

FIG. 1 is a plan view of one embodiment of the invention;

FIG. 2 is a cross-sectional view along line A—A in FIG. 1;

FIG. 3 is a side view of the apparatus of FIGS. 1 and 2;

FIG. 4 is a perspective view of a label holding frame;

FIG. 5 is a perspective view of a core cylinder matched with the consecutive body of the labels;

FIG. 6 is a cross-sectional view illustrating the state of loading the consecutive body of the labels onto the label holding frame;

FIG. 7 is a perspective view of a holding piece;

FIG. 8 is a perspective view of a label stopper;

FIG. 9 is a perspective view of a label rolling-up preventing piece;

FIG. 10 is a side view of a guard fixed in the front end of the device for protecting a printing apparatus with rubber stamps; and

FIG. 11 is a perspective view of a guard.

A detailed explanation of the present invention follows with reference to the accompanying drawings.

A fitting stand 2 is mounted on the central part of a case 1 of the device by a screw 3. As illustrated in FIG. 4, the label holding frame 5 is connected at the one side of the fitting stand 2 by a shaft 4. A hole 7 is provided on both sides of the upper central part of the label holding frame 5 for fixing the core cylinder 6 which is inserted into the body of consecutive labels. An arc-shaped groove 8 is formed by bending one side of the lower end of the frame into the shape of an arc. A damping piece 10 prepared by bending the other end into the form of a leaf spring which is put into close contact with the upper and side faces of one side of the fitting stand 2. A projection 11 is provided in an appropriate position in the lower side to prevent the label holding frame 5 from descending more than necessary.

A label stopper 14, as shown in FIG. 8, is fixed to a shaft 13 pressed into a holding piece 12 and a coil spring 15 is fixed in such a manner as to press the label stopper 14 in a counterclockwise direction.

A metallic frame 17 is installed for pushing the part 16 of the label stopper towards lower side of the holding piece 12. Therefore, the label 19 is pressed and fixed between the receiving piece 9 of the label holding frame 5 and the curved part 18 which is one side of the label stopper 14 bent approximately at a right angle. The label stopper 16 is also in contact with the label 19. This is for the purpose of enlarging the contact area of the part 16 of the label stopper and the metallic frame 17 to minimize friction and further to make the stopping position of the metallic frame 17 precise.

The procedure of setting the body of labels onto this device is as follows: The label holding frame 5 is pushed down in the direction of an arrow B as shown in FIG. 6. Then, a knob 20 is pulled in the direction of an arrow C, the lower frame 21 is opened in the direction of an arrow D and then a core cylinder 6 is inserted into the body of labels 22 which is then set in the label holding frame 5. The body of labels is pulled out at its edge, as shown in FIG. 2, and then this edge is put through a gap between the lower frame 21, a delivery roller 23 and a small roller 24 and then the lower frame 21 and the label holding frame 5 are set up.

When a grip 25 fixed in parallel with the lower side of the rear half of the device is engaged, the metallic frame 17 which is connected with the grip 25 turns in a counterclockwise direction on the fulcrum shaft 36 in the center. Then the force applied to the part 16 of the label stopper is removed and the part 16 of the label stopper turns in a counterclockwise direction due to the action of the coil spring 15 with the shaft 13 in the center and the label stopper 14 comes into contact with one side of the holding piece 12 coming to halt. Then the part 18 of the label stopper is separated from the receiving piece 9, and the label 19 is set free.

When the grip 25 is engaged and held until it comes to a halt, the printing process is effected. When the printing is over and the grip 25 is released, the label 19 is forwarded by the action of a unidirectional clutch fitted inside the delivery roller 23. At this time, the part 18 of the label stopper and the receiving piece 9 are set apart from each other, and thus the label 19 is transported with no difficulty.

When label 19 is moved forward, the metallic frame 17 comes into contact with the part 16 of the label stopper, and just as soon as these two parts come into contact with each other, the part 18 of the label stopper holds the label 19 between itself and the receiving piece 9. Therefore, when a label 26 dispensed outside the device is pasted onto an article, the said label stopper 14 prevents subsequent labels from being pulled out due to

insufficient cutting or the connection of an adhesive agent and at the same time it eliminates shear in printing which might otherwise be brought about by the slackening of the label 19.

A label rolling-up preventing piece 28 which provides a guide projection 27 at the rear of the delivery roller 23 is placed so that the curved surface of the bottom of the grooves provided in the perimeter of the delivery roller 23 is inserted inside of this preventing piece 28, and thus the paper 29 is guided by the guide projection 27 and ushered outside the device without any difficulty.

Further, as shown in FIG. 10, the printing apparatus P fixed in the front end of the case 1, sticking out from the front end at all times, is readily damaged by friction or impact with other articles or by being pushed against other substances. Another characteristic of the present invention is to protect the projected part of the printing apparatus P with a simple guard piece manufactured with a piece of rigid wire such as metallic wire.

For the manufacture of said guard, a piece of metallic wire of relatively large diameter is bent, as illustrated in FIG. 11, to make the guard 30. One set comprising two pieces of said guards 30 are welded together with shorter pieces of the same material at the connecting part 31 to form the main body of the guard, and both ends of the guard are bent into the shape of small rings to form the installation part 32 to be fixed to the device.

When this guard body is installed on the device, the screws 33 which are provided in both side wall of the printing apparatus P are used to fasten the installation part 32 to the device.

The illustrated connection part 31 can also be utilized at a hook 34 for hanging by changing its shape.

The present invention possesses the following characteristics and effects:

(1) Since the body of consecutive labels can be easily loaded and the device is light in weight and the operation can be performed with ease, the fatigue of an operator of the device can be considerably mitigated.

(2) Since the device makes it possible to press down a label instantly and only when necessary, it causes no resistance and gives no ill-effect to the label-delivery apparatus labeling at a certain fixed pace. The device also maintains a stabilized operation for a prolonged period and, even if the cutting of a label is imperfect, the label cannot be wasted as it can be used widely. In printing the labels, there is no fear of the shear in printing due to slackening of the labels.

(3) The paper which is delivered forward by the delivery roller 23 and the small roller 24 after being pulled out from the body of labels 22 and passing the separating part of the printing apparatus is precisely guided outside the device by the guide projection 27 of the rolling-up preventing piece 28 inserted into the delivery roller, and thus there is no fear that the device can go out of order. Furthermore, the rolling-up preventing piece 28 is simple in shape and can be easily attached or taken away, and

thus it leaves little chance of disorder but instead raises efficiency of the work.

(4) The invention makes it possible to form a simple guard body with a rigid metallic wire, the device also possesses a frame which is mechanically strong. The projected part of the printing apparatus with rubber stamps is thus protected and the printing apparatus can be easily cleaned.

What we claim is:

1. Apparatus for printing on and dispensing labels comprising means for printing on and guiding labels arranged consecutively on a strip of paper, said means including a casing and an operating member to control the movement of said strip; and a source of said strip, said source including a frame, a fitting stand on said casing, a shaft pivotally connecting the frame to said stand, an arc shaped receiving piece on said frame and cooperating with said means for the guiding of said strip, a core on said frame for supporting a coil of said strip, and a leaf spring on said frame and cooperating with said stand such that the frame can be selectively pivoted between open and closed positions on the said casing.

2. Apparatus as claimed in claim 1, wherein said means comprising a label stopper includes a curved part adapted to cooperate with said receiving piece, and means to pivotally support said stopper whereby the curved part and receiving piece can block movement of the strip.

3. Apparatus as claimed in claim 2, wherein the first said means includes a guide roller to receive the strip from between the curved part and receiving piece, said roller being provided with a peripheral groove, and a ring-like member in said groove and including a projection extending radially outwards of said groove to guide the strip outwardly from the roller, the strip passing from said core between the curved part and receiving piece and partially around said roller and being separated from the latter by said projection, said apparatus further comprising means to guide the strip from said casing.

4. Apparatus as claimed in claim 3 comprising a displaceable guard frame on said casing to protect said means for printing.

5. Apparatus as claimed in claim 3 comprising means connected to said operating member and positioned to displace said label stopper on the means pivotally supporting the same.

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U.S. Cl. X.R.

101—292; 156—584