APPARATUS FOR PRINTING, DISPENSING AND APPLICATION OF GUMMED LABELS

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Claims:

37. Claims (Cl. 156–384)

This is a continuation-in-part of our copending application Serial No. 103,404, filed Apr. 17, 1961 and now abandoned.

The present invention relates to an apparatus for printing, dispensing and application of gummed labels to merchandise, semi-finished parts, all types of containers, and other objects. More particularly, the invention relates to an apparatus for printing, dispensing and applying labels of the type which are attached to and must be separated from a flexible carrier strip.

It is an important object of the present invention to provide a label printing and dispensing apparatus which is constructed and assembled in such a way that it may place one or more dispensable labels in optimum position for direct application to the exposed surface of an object.

Another object of the invention is to provide an apparatus which may be readily adjusted or converted to dispense different types of labels and/or to actually form labels prior to dispensing.

A further object of the instant invention is to provide a label dispensing apparatus which may be used to apply imprinted labels to hard, soft, brittle, tough, irregular and many other types of objects, which can be adjusted to dispense more than one label at a time, which can be used by semiskilled or unskilled persons, whose printing mechanism can be readily adjusted to provide the labels with different symbols or combinations of symbols, and which is of compact, lightweight and eye-pleasing design.

An additional object of the present invention is to provide apparatus with the above outlined characteristics wherein a fresh supply of labels may be inserted with little loss in time and without resorting to tools, and wherein the stored labels are protected from dust and other foreign matter.

A concomitant object of the invention is to provide a novel feed and actuating mechanism for use in the improved apparatus and to construct the mechanism in such a way that the carrier strip is invariably subjected to requisite tension and is readily separable from the labels.

Still another object of the invention is to provide a novel adapter which may be combined with an apparatus of the above outlined characteristics so as to convert the apparatus for use as a stationary dispenser.

A further object of the invention is to provide a very simple label applicator which may be used in the improved apparatus and which insures that a freshly dispensed label is properly applied to an article of manufacture, to a piece of merchandise or to another object.

An additional object of our invention is to provide an apparatus which comprises a relatively small number of parts, wherein the units which require intermittent inspection, replacement or repairs are readily accessible, and which can provide each of a series of gummed labels with a large number of printed symbols in the form of numerals, letters, words, designs or the like.

Briefly stated, one feature of the present invention resides in the provision of a portable apparatus for dispensing and applying labels from a sequence of labels one side of which is at least partially gummed and adheres to one side of a flexible carrier strip. The apparatus comprises a frame or housing provided with a handle and having a bracket or analogous means for supporting a supply of convoluted carrier strip stock, feed means mounted in the frame and arranged to withdraw the strip from such supply, manual actuating means operatively connected with the feed means and arranged to effect withdrawal of a predetermined length of strip at a time, separating means supported by the frame at the other side of the strip and having a transversely extending edge portion or analogous means for sharply deflecting the strip so as to effect at least partial separation of a label in response to actuation of the feed means, and a roller-shaped applicator supported by the frame in such close proximity to the separating means that a portion of the applicator is adjacent to the other side of a partially separated label.

At least this portion of the applicator extends from the frame so as to be capable of pressing the one side of the partially separated label against an object which is brought in contact with the gum on such label.

In accordance with another feature of the present invention, the apparatus comprises a printing device which automatically applies printed matter to consecutive labels prior to separation of such labels from the carrier strip, and the printing device is readily adjustable so that it may provide the labels with different types of printed matter. Furthermore, the series of labels at one side of the carrier strip may constitute a continuous tape which is severed during intervals between intermittent advances of the carrier strip to yield labels of requisite length. Alternatively, the labels may form a continuous tape which is formed with transversely extending perforations so that the foremost label is readily detachable from the next-following label when its gummed side is brought in contact with an object and the frame is moved in a sense to increase the distance between the foremost label and the next-following label.

In accordance with a further advantageous feature of the present invention, the manual actuating means may be adjusted so as to effect withdrawal of any desired length of carrier strip at a time. This enables the apparatus to dispense and apply labels of different length and/or to apply two or more labels at a time, especially if the labels are connected to each other. The operative connection between the feed means and the manual actuating means preferably comprises a one-way clutch which will cause the feed means to withdraw a predetermined length of strip stock while the actuating means moves from one to the other of its end positions. The arrangement is preferably such that a label is imprinted while the actuating means is caused to move from a position of rest in response to a force supplied by the hand of the operator, and that the carrier strip advances by a step in response to automatic return of the actuating means to such rest position, for example, under the bias of a helical or laminar return spring, a gas-filled cushion or the like.

The novel features which are considered as characteristic of the invention are set forth in particular in the appended claims. The improved apparatus itself, however, both as to its construction and the mode of manipulating the same, together with additional features and advantages thereof, will be best understood by reference to the accompanying drawings, in which:

FIG. 1 is a longitudinal vertical section through an apparatus which is constructed and assembled in accordance with a first embodiment of our invention, one of the components of the apparatus being shown in two different positions one of which is indicated by phantom lines;

FIG. 2 is a horizontal section through the frame of the apparatus shown in FIG. 1;
FIG. 3 is a transverse vertical section through the apparatus of FIG. 1.

FIG. 4 is another transverse vertical section through the apparatus of FIG. 1.

FIG. 5 is a fragmentary longitudinal section through a portion of a modified apparatus which is provided with knives to subdivide a continuous tape into labels of requisite length.

FIG. 6 is a fragmentary longitudinal section through a third apparatus which constitutes a slight modification of the apparatus shown in FIG. 5.

FIG. 7 is a fragmentary perspective view of a perforated carrier strip which may be used in the apparatus of FIG. 6;

FIG. 8 is a front elevational view of an attachment which may be assembled with the apparatus of FIG. 1;

FIG. 9 is a transverse vertical section through the attachment of FIG. 8; and

FIG. 10 is a perspective view of the attachment combined with the apparatus of FIG. 1.

Referring first to FIGS. 1 and 2, the improved apparatus comprises a U-shaped frame or housing 1 whose right-hand portion 1a constitutes a handle and whose left-hand portion partly encloses two frame walls 2 and 3 held apart by a distance piece or spacer 28. The space between the walls 2 and 4 accommodates a lever 7 which forms part of the actuating means and is rockable on a pivot shaft 5. The shaft 5 is eccentrically mounted so as to afford a limited adjustment of the lever 7, and this lever is biased to an outward or rest position by a helical spring 6. Two plates 8 and 9 are rigidly secured to or integral with the lever 7 and extend beyond the shaft 5 into the interior of the frame 1. The plates 8 and 9 are respectively adjacent to the inner sides of the frame walls 2 and 4 and each thereof has a forked end which engages the shaft or pin 11 of a stamping or printing mechanism cooperating with an ink roller including an ink pad 14 which is swingable up from below. The ink pad 14 is provided with an elastic clip 16a which is detachably secured to a supporting bracket 16b mounted between the plates 8, 9 and arranged to swing in a clockwise direction in response to movement of the lever 7 from the solid-line position to the phantom-line position of FIG. 1. The shaft 13 is mounted in a wheel box 10 and, in the illustrated embodiment, carries six type wheels 11. The end portions of the shaft 13 are guided in elongated slots provided in the frame walls 2 and 4.

The plate 8 carries a pin 15 which extends into a slot 16 provided in a flange 17 at one end of a driving element 19. The sleeve 19 carries a one-way clutch 18 and is journalled on a shaft 20 which is mounted in the frame walls 2 and 3.

While the inner ring of the one-way clutch 18 is fast on the driving sleeve 19, the outer ring of the clutch carries a knurled feed roller 21 which is adjacent to a pressure roller 23 cooperating with a blocking device 24 which acts not unlike a pawl and prevents reverse rotation of the feed mechanism. The blocking device 24 is mounted on a hinged bottom 22 which is supported by the frame 1. The pressure roller 23 may but need not be mounted on the bottom 22.

An arcuate guide plate 25, disposed between the frame walls 2 and 3, guides an elongated flexible carrier strip 28 one side of which adheres to the gummed sides of a series of labels 29. The strip 28 is intermittently withdrawn from a supply roll 27 mounted on a spool 26 which is detachably secured to the upper end portion of a bracket 3' forming part of or connected to the frame wall 3. The core of the spool 26 supports the convolutions of the carrier strip 28 and is rotatable with reference to its bracket.

One flange of this spool is held on the core by snap action so that it can be removed in order to allow for insertion of a fresh roll 27. The plate 25 guides the carrier strip 28 in a direction to the left, as viewed in FIG. 1. The strip 28 then passes at a level below the printing mechanism 10-13 but above a counterpressure table or rest plate 30 and about a separating device which is formed by the front part of the table 30 and includes a transversely extending deflecting edge 31. Once it has passed through the deflecting edge 31, the strip advances through the space between the table 30 and the base of the hinged bottom 22 and through the gap between the feed roller 21 and pressure roller 23 of the feed mechanism. The table 30 is mounted on the hinged bottom 22, and this bottom is provided with a releasable spring-biased catch 22a serving to normally keep it in the solid-line position of FIG. 1. When the catch 22a is released, the bottom 22 may pivot to and beyond the phantom-line position of FIG. 1 so as to afford access to the table 30 and hence to the deflecting edge 31. Such pivoting of the hinged bottom 22 enables the user to rapidly insert the carrier strip 28 into the gap between the rollers 21, 23, for example, when the strip 28 is accidentally destroyed in a zone between the spool 26 and feed roller 21 or when the operator wishes to insert a fresh supply of carrier strip stock into the frame 1. The spool 26 is disposed symmetrically in relation to the central longitudinal plane of the apparatus.

If the lever 7 is rocked by hand to pivot in a counterclockwise direction, as viewed in FIG. 1, the forked ends of the plates 8 and 9 cause the printing mechanism 10-13 to move downwardly and the ink pad 14 is caused to move out of the path of the printing mechanism so that the latter may imprint a label 29 which is located above the table 30. At the same time, the pin 15 rotates the flange 17 of the driving sleeve 19 which in turn rotates the inner ring of the one-way clutch 18 in the non-driving direction and to such an extent that, upon release of the lever 7, the spring 6 causes the one-way clutch 18 to advance a preselected length of the strip 28 in order to bring a fresh label into registry with the printing mechanism. When the spring 6 is free to return the lever 7 from the phantom-line position to the solid-line position of FIG. 1, the printing mechanism 10-13 automatically rises above and away from the table 30 but the ink pad 14 swings upwardly and provides a fresh coat of ink on the numerals, letters or other symbols which were selected by the user to apply printed matter to a label resting on the table 30. In other words, the wheels 11 are inked in a fully automatic way in response to return movement of the lever 7 to its position of rest. In order to rock the lever 7 against the bias of the spring 6, the hand of the operator straddles the right-hand portion 1a of the frame 1 so that all fingers but the thumb grasp the underside of the lever.

When the spring 6 returns the lever 7 to the solid-line position of FIG. 1, the one-way clutch 18 automatically rotates the feed roller 21 in order to withdraw a preselected length of strip 28 from the supply roll 27. The feed roller 21 cooperates with the pressure roller 23 which is engaged by the blocking device 24 so that it cannot rotate in a counterclockwise direction as the parts appear in FIG. 1. When the clutch 18 causes the roller 21 to withdraw a preselected length of strip 28, the same length of this strip travels around the deflecting edge 31 so that its upper side is nearly completely separated from the gummed underside of the freshly printed label 29, and such label then extends into the space directly below a roller-shaped applicator 32 which is mounted on the lower front end of the frame 1 and at least a portion of which extends but a short distance beyond the confines of this frame. In FIG. 1, the lower portion of the applicator 32 is located outside of the frame 1 and is directly above the non-adhesive upper side of a freshly printed label 29. The rear edge portion of the label 29 still adheres to the applicator 32 upstream of the deflecting edge 31. All that the operator has to do in order to apply the label 29 is to press the gummed underside of the label against the exposed surface of a box or another object (not shown) and to move the frame 1 in a sense to rotate the applicator 32 in a counterclockwise direction, as viewed in FIG. 1, whereby the
label 29 is fully separated from the strip 28 and is rolled onto the object. At least a portion of the applicator 32 preferably consists of rubber or other suitable elastomeric material and, if desired, the roller may be provided with circumferential ribs, axially extending teeth, radially extending prongs, or other protruberances which will come in actual contact with the upper side of the label 29 in order to separate the label from its carrier strip and to roll it onto the exposed side of an object.

The normal or rest position of the lever 7 may be selected by a screw 7a shown to the right of the feed roller 21. The tip of this screw engages the shaft 5 and, if the screw is rotated, the inclination of the lever 7 with reference to the frame 1 changes which means that the feed mechanism will withdraw a shorter or greater length of carrier strip 28 when the spring 6 is free to return the lever 7 to its normal position. Other types of adjusting devices for the feed mechanism may be provided if desired. For example, the free end of the lever 7 may be provided with an adjustable stop which engages the handle 1a of the frame 1 when the lever is depressed by hand. By changing the position of the stop with reference to the lever, the latter can be made to perform shorter or longer strokes. The stop may be provided on the handle 1a if desired or the initial position of the lever 7 may be changed if the apparatus is to dispense labels of different length and/or if the apparatus is to dispense two or more labels at a time. If there is clearance between the labels 29 on the carrier strip 28, the stroke of the lever 7 will be adjusted in such a way that the length of the portion of the carrier strip which is withdrawn in response to return movement of the lever 7 to its normal position equals the combined length of a label 29 plus the length of a clearance between two consecutive labels. This will insure that a fresh label is invariably placed in registry with the printing mechanism 10-18 as soon as the lever 7 returns to its normal position.

If the labels 29 form a continuous series of interconnected labels, the apparatus may be used to dispense two or more labels at a time. All that the operator has to do is squeeze the lever 7 three times in a row so that the apparatus will dispense a chain or train of two or three interconnected labels whereby a portion of the rearmost label in the chain still adheres to the carrier strip 28 or to another surface in the apparatus. In the next step, the operator moves the gummed sides of such labels in contact with the surface of an object and presses the applicator against the uncoated (imprinted) sides of the labels to insure their adherence to the object. For such use, the apparatus may be provided with a differently dimensioned applicator or with two or more applicators. However, even a single roller-shaped applicator will suffice because, once a single label of a chain of labels adheres to the object and the chain of labels is separated from the apparatus, the applicator 32 can be rolled over them to ensure that each thereof adheres to the object. In other words, the apparatus of our invention is sufficiently versatile to be useful for dispensing of different types of labels, of labels which form on the carrier strip a continuous chain of interconnected labels, of labels which are separated from each other by clearances of predetermined width, and/or of two or more labels at a time.

The bracket for the spool 26 may be made as a detachable part of the apparatus so that, when not in use, the apparatus may be stored in a compact box or other receptacle.

The printing mechanism 10-18 may be replaced by a paginating stamp which will imprint each consecutive label with a different numeral or letter. For example, the paginating stamp could provide the labels with serial numbers, with consecutive letters of the alphabet or both.

Also, the printing mechanism 10-18 may constitute a date stamp. The printing mechanism may be mounted in such position that it is normally located outside of the frame 1 in order to be readily accessible to effect changes in the position of rollers 11. This is particularly desirable if the printing mechanism comprises two or more sets of rollers so that it can provide a label with two or more lines of printed matter.

While we selected to illustrate an apparatus wherein the lever 7 must be depressed in order to actuate the printing mechanism and is then released in order to allow the spring 6 to actuate the feed mechanism, the two operations may be reversed without departing from the spirit of our invention. The construction which is shown in the drawings is preferred because the lever need not be depressed at the time the label is applied to an object. All that counts is to provide an actuating device which is capable of effecting a printing operation in response to movement of the lever 7 from the one to the other end position and which is capable of withdrawing a selected length of carrier strip 8 in response to movement of the lever 7 in the opposite direction. The label which is to be printed should remain stationary at the time it comes in engagement with the printing mechanism; otherwise, the printing mechanism must be arranged to move with the label at the time the label advances along the table 30. It is also clear that the table 30 may be rigidly mounted in the frame 1 and that the bottom 22 can be made to move with reference to such table.

FIG. 5 illustrates a portion of a modified apparatus. This apparatus is constructed to actuate both the labels 29 by severing a gummed tape or strip which adheres to one side of the carrier strip. The apparatus comprises a severing device which is located past the deflecting edge 31 and is actuated at regular intervals to sever a label from the continuous tape after the label has been provided with printed matter in the same way as described in connection with FIGS. 1 to 4. The severing device comprises a movable knife 33 which is reciprocable up and down to enter into or to be withdrawn from a vertical slot 34 provided in a fixed counterknife 32 mounted between the deflecting edge 31 and applicator 32. The knife 33 is secured to a rocker arm 35 which is pivoted at 36 and which is rockable by the plates 8, 9 in response to movement of the lever 7 from the solid-line position to the phantom-line position of FIG. 1. The pivot pin 36 is secured to a hinged bottom 22' and is biased by a spring 32a so as to normally keep the knife 33 in its raised position of FIG. 6. The bottom 22' may be inserted into the apparatus of FIG. 1 so that this apparatus may be used to sever labels from a continuous length of tape or to dispense labels which are independent of each other and form a series of individual labels on the carrier strip.

FIG. 6 shows that the rear edge portion of the label 29 which is to be severed by the knife 33 of a slightly modified apparatus adheres to the flat top face of the left-hand portion 33a of a counterknife while the front portion of the label 29 extends beneath the periphery of the applicator 32. As soon as the knife 33 descends, the label 29 is separated from the remainder of the tape 29a and can be readily applied to an object as soon as its underside comes in contact with an exposed surface of such object. The clearance between the rear portion 33b of the counterknife and the deflecting edge 31 is just wide enough to allow for passage of the strongly deflected carrier strip 28. Also, the rear portion 33b of the counterknife is preferably made with a sharp transverse edge to prevent strong adherence of the tape 29a in response to downward movement of the knife 33. This prevents that the tape 29a is readily peeled off the strip 28 when the feed mechanism of the apparatus is caused to withdraw a predetermined length of carrier strip 28 from the supply roll 27. Since it is desirable that a freshly severed label 29 should adhere to the front part 33a of the counterknife with a force which is strong enough to prevent uncontrolled removal or escape of such label from the apparatus, the top face of the front portion 33a...
is flat and will readily adhere to the underside of the label 29 or to such length of tape 29a which is to form a label 29 in response to a working stroke of the knife 33. It will further be noted that, in FIG. 6, the non-adhesive upper side of the label 29 actually abuts against the periphery of the applicator 32 whereas the label 29 shown in FIG. 1 does not come in contact with the applicator 32 and unlike the label is pressed against an object. Of course, the applicator of FIG. 6 could be positioned in such a way that it would remain spaced from the label 29 and, by the same token, the applicator 32 of FIG. 1 could be mounted in such a way that its periphery would abut against that label 29 which is partially separated from the carrier strip 28.

The tape 29a is preferably stiff enough to automatically advance into the space above the parts 33a, 33b in response to travel of the strip 28 around the deflecting edge 31 and toward the feed roller. Such stiffness of the tape 29a also insures that the tape adheres only lightly to the rear part 33b of the counterknife and will automatically advance over and beyond the front portion 33a as soon as the feed mechanism withdraws a fresh length of carrier strip 25 from the supply roll. Of course, the stiffness of the front edge of the tape 29a will be greater if only the small part of such tape extends beyond the deflecting edge 31 after the knife 33 has severed a freshly printed label 29. Therefore, the rear part 33b of the counterknife should be as close to the edge 31 as possible without interfering with the travel of the carrier strip 28. The just described structure including the knife 33 and counterknife 33a, 33b may be used in all or nearly all labelling apparatus including electric labelling machines and others.

FIGS. 6 and 7 show that the carrier strip 28 is formed with a row of perforations or apertures 55 which are engaged by the needles or teeth 57 of a feed roller 56. The roller 57 is located past the deflecting edge 31, as seen in the direction of travel of the carrier strip 28, so that the teeth 57 cannot come in contact with the labels 29 because the tape 29a is peeled off the carrier strip in a zone which is located ahead of the roller 56. FIG. 7 also shows that the tape 29a is formed with trimmed corners and prepared lines for transverse separating cuts. The carrier strip 28 is of similar shape.

The underside of the tape 29a is coated with a layer of dry paste and adheres to the upper side of the carrier strip 28 with a force which can be overcome by sharply deflecting the edge strip around the edge 31. The perforations 55 may be omitted if the feed roller 56 is provided with teeth which can extend into triangular notches 28a in the marginal portions of the strip 28.

The apparatus of FIG. 5 or 6 will be utilized for dispensing of labels which are bounded by sharp and clearly defined edges. As mentioned hereinabove, the apparatus of FIGS. 1 to 4 may be used for dispensing of individual labels or of labels which form a chain and are readily separable from each other along transversely extending lines of perforations. If the labels are large and reasonably thick, their separation along such perforations may involve the expenditure of considerable force which could be tiresome to an operator who must apply labels to a large number of objects. Also, the tear lines along the perforations might reduce the attractiveness of labels. By utilizing an apparatus which is provided with a set of knives 33 which labels are formed with clean edges even though they are obtained by subdivision of a continuous tape, it is clear that the edge of the cutter 33 need not be straight but may assume an undulate or other attractive shape.

Instead of resorting to the apparatus of FIG. 5 or 6, the apparatus of FIG. 1 may be used for dispensing of labels which form a continuous chain of labels and are connected solely by thin webs of adhesive even though their material is separated by transverse cuts. In other words, the adjoining labels are actually separated from each other and are connected solely by the layer of adhesive which causes them to adhere to one side of the carrier strip. Such labels are formed by connecting the carrier strip with a continuous tape 29a and by severing the label 29 prior to insertion into the apparatus or by severing the tape 29a with the knife 33 to such an extent that the material of the carrier strip remains intact. The edge of the knife 33 penetrates only through the material of the tape 29a but not through the layer of binding agent so that the binding agent continues to form a continuous film which acts not unlike a second carrier and allows for simultaneous dispensing of two or more labels even though such labels are independent of each other.

Undesirably strong adhesion of the labels can be prevented by cutting their edges in a manner of a shredder FIG. 7. The lateral excisions thus produced can be dimensioned in such a way that only the desired adhesion is obtained. Of course, it is also possible to increase the adhesion between comparatively heavy and rather narrow labels. This can be achieved by adding to the binding agent substances which increase the viscosity or by admixing to the binding agent suitable fibrous materials which remain unaffected by the incision and continue to form connections between the adjoining labels.

FIGS. 8 to 10 illustrate an attachment in the form of a carrying frame including a bracket 37 having a lower part provided with two jaws 38 and a counterknife 39. The jaw 39 is traversed by a spindle 40 the upper end of which carries a clamping plate 41 and the lower end of which carries a wing head 42. Thus, the bracket 37 may be readily clamped to a table top or another support by causing the jaws 38 to abut against the upper side of the support and by rotating the spindle 49 until the plate 41 comes in clamping engagement with the underside of the support. The bracket 37 resembles a risk and comprises a side wall 42 provided with a vertical groove for an elongated slider 43 (see also FIG. 4) which may be reciprocated by a lever 44 through the right hand or by a knurled put 53. A median portion of the slider 43 is provided with a shoulder or face 50 which may engage a pin 51 (see FIGS. 1 and 2) provided on the plate 8 and projecting laterally from the frame wall 3. The apparatus of FIGS. 1 and 2 may be secured to the bracket 37 by a threaded protruberance 52 (see FIGS. 2 and 3) and a knurled nut 53. To prevent angular displacements of the apparatus about the axis of the protruberance 52, the axle 54 of the spool 26 extends into a recess 59 provided in the side wall 42. When the apparatus of FIGS. 1 and 2 is mounted in the bracket 37, the applicator 32 is located at the upper side of the frame 1. The lever 7 extends to one side and the handle 45 extends to the other side of the bracket 37, see FIG. 10. In order to dispense a label 29, the handle 45 is moved downwardly and thereupon returns to its normal rest position in response to bias of the spring 6. The operator may grasp the handle 45 with the right hand and the object to be labelled is manipulated by the left hand to travel over the applicator 32 whereby a freshly dispensed label 29 is automatically applied to the object.

The attachment of FIGS. 8 to 10 is of particular advantage when the apparatus of our invention is used for labelling of large objects. It could happen that, in order to be preferably labelled, such objects are in a position in which the operator cannot reach the lever 7 but is free to reach the handle 45. Therefore, the handle 45 is preferably mounted opposite the lever 7 to make sure that one of the objects is accessible even if the nature of objects to be labelled is such that the lever 7 or the handle 45 cannot be reached by hand.

The apparatus of our invention may be put to use in
factories, department stores, other types of stores, packing and shipping plants, food stores, gift shops, libraries, tailoring establishments, bottling plants, warehouses, and many others. The position of its lever 7 with reference to the housing may be changed in a number of ways without departing from the spirit of our invention. For example, Fig. 7 may resemble the trigger of a pistol-like apparatus whose housing is formed by the frame 1, and the applicator 32 is then located at the front end of the frame from which the labels shoot out in response to depression and subsequent release of the trigger. Such construction is of particular advantage when the labels must be applied in the interior of a hollow body, especially if the spool 26 is located at the rear end of the frame so that the front end of the frame resembles a slender barrel which can be introduced into a narrow space.

Without further analysis, the foregoing will so fully reveal the gist of the present invention that others can, by applying current knowledge, readily adapt it for various applications without omitting features which fairly constitute essential characteristics of the generic and specific aspects of our contribution to the art and, therefore, such adaptations should and are intended to be comprehended within the meaning and range of equivalence of the claims hereinafter.

What is claimed as new and desired to be secured by Letters Patent is:

1. A device for applying to goods printed stick-on labels from a carrier strip, comprising an elongated channel-like housing having an opening on one side thereof, a rotary label press-on roll in said housing at one end thereof and having at least a portion of its periphery projecting beyond the housing, mechanism in said housing for printing successive labels on a strip, including a fixed strip rest plate with an edge in close proximity to said press-on roll, mechanism in said housing for feeding the strip step by step, means for guiding the strip past said press-on roll to said feed mechanism, including said plate edge around which the strip passes for abrupt reversal of its travel direction for separation of successive labels from the strip and their delivery to said press-on roll to be pressed on the goods thereby, a lever pivoted in said housing and extending toward the other end thereof and being spring biased outwardly from and depressible into the housing through said opening therein, and operative connections between said lever and said mechanism for operating the lever on movement of the former.

2. A label-applying device as set forth in claim 1, in which said operative connections are arranged to operate said printing mechanism on depression of said lever into said housing and to operate said feed mechanism on the return of said lever.

3. A label-applying device as set forth in claim 1, in which said printing mechanism comprises a stamp unit guided in said housing for movement to and from said rest plate and having a transverse pin, and the operating connection between said lever and printing mechanism comprises spaced arms on said lever having forked ends straddling said stamp unit and receiving the ends of said transverse pin.

4. A label-applying device as set forth in claim 1, in which said feed mechanism comprises rotary companion rollers and a one-way clutch having driving and driven members of which the driven member turns with one of said companion rollers, the operative connection between said lever and said feed mechanism comprising an arm on said lever having a floating pivotal connection with said driving clutch member whereby on angular adjustment of said lever on said eccentric shaft the feed step of the strip is varied.

5. A label-applying device as set forth in claim 1, further comprising a removable cover for said housing terminating short of said lever, knife means on said cover between said plate edge and said press-on roll for cutting individual labels from a continuous tape on the strip and an operative connection between said knife means and lever.

6. A label-applying device as set forth in claim 1, in which said knife means includes a knife provided on a lever pivoted on said cover.

7. In a device for dispensing stick-on labels on a carrier strip with longitudinally spaced holes, the combination of a mechanism for feeding the strip and means for guiding the fed strip around an edge at which the strip travel direction is abruptly reversed for separation of successive labels from the strip, said feed mechanism having teeth for registering with holes in the strip, and the guiding means and feed mechanism being arranged to pass the strip from said edge to said feed mechanism in a manner such that the teeth of the latter do not contact the labels.

8. Apparatus for the individual dispensing and application of adhesive labels from a sequence held on a carrier strip from which they are separated by passing the carrier strip over a deflecting edge by the aid of intermittently acting carrier strip feed means, comprising a narrow housing including spaced frame walls, an external handle rigid with said housing, said deflecting edge and feed means being located between said frame walls, a label application roller journaled between said frame walls in such position that at least a portion thereof projects beyond the outline of the housing and that each label, after it has been separated from the carrier strip by the action of said deflecting edge, by its own stiffness maintains its non-adhesive surface adjacent to the periphery of the application roller at a short distance from the deflecting edge, the label then partly leaving the housing but remaining lightly adhering at its rear edge to a surface within the apparatus.

9. Apparatus as set forth in claim 9, further including a counterpressure plate between said frame walls, said deflecting edge being constituted by one edge of said counterpressure plate and the carrier strip with the labels still held thereon being led over said counterpressure plate with the labels outermost, the apparatus further including a stamp block movable towards and away from said counterpressure plate to effect printing on the labels, and means for inking the stamp block, said stamp block being coupled to said feed means to be operated to effect printing in the intervals between the forward movements of the carrier strip.

10. Apparatus as set forth in claim 9, further including a hand lever rockable in relation to said handle, spring means urging said lever away from said handle, means for coupling said lever to said feed means and said stamp block whereby printing is effected when said lever is rocked in one direction, and feed of the carrier strip through one label length and the return of the stamp block to its starting position are effected when said lever is rocked in the other direction.

11. Apparatus as set forth in claim 11, wherein as seen in longitudinal section the part of the housing accommodating the stamp block, the feed means, the deflecting edge and the application roller is of substantially rectangular form with the application roller located at one corner and the handle extending longitudinally from the corner which is diametrically opposite the corner at which the application roller is located.

12. Apparatus as set forth in claim 11, also including
a spool for receiving the labels and carrier strip wound into a roll, mounted above the part of the housing accommodating the counterpressure plate, the stamp block and the feed means.

14. Apparatus as set forth in claim 10, wherein said stamp block comprises a plurality of coaxial type wheels and a shaft about which said type wheels can be individually rotated to select the pattern to be printed.

15. Apparatus as set forth in claim 11, in which said lever has ends by which it is coupled to said stamp block to move it towards said counterpressure plate when the lever is retracted towards the handle, the apparatus also including a driving member on one of said lever ends and a one-way clutch coupling said driving member to said feed means, said one-way clutch coupling said driving member to said feed means when the lever is retracted towards the handle.

16. Apparatus as set forth in claim 11, in which said feed means includes a feed roller over which the strip holding the labels passes and a one-way clutch incorporated within the roller by which the lever is coupled to the roller to drive it.

17. Apparatus as set forth in claim 16, also including a pressure roller which presses the carrier strip holding the labels against the feed roller, and a blocking device for preventing reverse rotation of said pressure roller.

18. Apparatus as set forth in claim 11, in which said feed means includes a feed roller, a one-way clutch by which said feed roller is coupled to said lever whereby the roller is rotated in the feed direction, a pressure roller which presses the carrier strip against the feed roller, and a bottom hinged to said housing, said bottom carrying said counterpressure plate and said pressure roller, and the hinge axis being located on the opposite side of the pressure roller to the deflecting edge.

19. Apparatus as set forth in claim 15, in which said feed means includes a feed roller within which said one-way clutch is incorporated, and further including a shaft for said roller and a one-way clutch supported in both said frame walls, a second shaft coupling said stamp block to said lever through slots in said lever ends and working in slots in said frame walls, a third shaft supported in both said frame walls on which said lever rocks, and a U-shaped housing member enclosing said frame walls, said handle being of hollow form integral with said outer housing member, and extending beyond said frame walls, with the hollow facing said lever.

20. Apparatus as set forth in claim 19, wherein one of said frame walls projects through the outer housing member of the apparatus also including a spool mounting on said projecting wall to receive a spool carrying a roll of carrier strip with labels held therein, disposed symmetrically in relation to the longitudinal midplane of the apparatus.

21. Apparatus as set forth in claim 9, also including means operated in timed relationship to said feed means for cutting off the individual labels from a continuous tape after this has been separated from the carrier strip.

22. Apparatus as set forth in claim 21, wherein said means for cutting off the individual labels comprises a two-part fixed counterknife at substantially the same level as said deflecting edge and a moving knife engaging between the two parts of said counterknife, a gap adequate for the passage of the carrier strip being left between the deflecting edge and the part of the counterknife nearer that edge.

23. Apparatus as set forth in claim 22, wherein the part of the counterknife nearer the deflecting edge has its upper surface inclined to reduce the area of contact and hinder adhesion of the labels thereto.

24. Apparatus as set forth in claim 22, further including a rocking pivoted to the housing of the apparatus and carrying said knife.

25. Apparatus as set forth in claim 21, further including a detachable bottom hinged to said housing and carrying said cutting means, said bottom also carrying a counterpressure plate one edge of which constitutes the deflecting edge, and carrying a pressure roller forming part of said feed means.

26. Apparatus as set forth in claim 9, wherein said feed means includes a roller with projections on its periphery adapted to engage perforations in the carrier strip.

27. An apparatus for the individual dispensing and application of adhesive labels from a sequence held on a carrier strip from which the labels are at least partially separated by passing the carrier strip over a deflecting edge with the aid of intermittently acting carrier strip feed means, comprising a housing including spaced frame walls, an external handle rigid with said housing, said deflecting edge and feed means being located between said frame walls, a label applicator journaled between said frame walls in such position that at least a portion thereof projects beyond the outline of the housing and that the nonadhesive surface of each label, after it has been separated from the carrier strip by the action of said deflecting edge, remains adjacent to said applicator at a short distance from the deflecting edge, the label then partly leaving the housing but its rear edge adhering lightly to a surface within the apparatus.

28. A portable apparatus for dispensing and applying labels from a sequence of labels one side of which is at least partially gummed and adheres to one side of a carrier strip, comprising a frame provided with a handle and having means for supporting a supply of convertible carrier strip stock; feed means mounted in said frame and arranged to withdraw the strip from said supply; manual actuating means for said feed means; actuating means for applying printed matter to consecutive labels prior to separation of such labels from said carrier strip; and means for applying printed matter to consecutive labels prior to separation of such labels from said carrier strip.
32. An apparatus as set forth in claim 29, wherein said actuating means comprises a spring biased lever rockably mounted on said frame for movement between two end positions, and means for adjusting said lever with reference to said frame.

33. An apparatus as set forth in claim 29, wherein the labels on said carrier strip form a continuous tape and further comprising knife means coupled with said actuating means for severing labels from the leading end of said tape subsequent to separation of such leading end from said carrier strip.

34. An apparatus as set forth in claim 29, wherein said applicator includes a roller at least a portion of which consists of elastomeric material.

35. An apparatus as set forth in claim 29, wherein said carrier strip is provided with at least one row of perforations and wherein said feed means comprises a roller having teeth which enter such perforations to advance the carrier strip in a zone located past said deflecting means.

36. A portable apparatus for dispensing and applying labels from a sequence of labels one side of which is at least partially gummed and adheres to one side of a carrier strip, comprising a frame; means carried by said frame and arranged to support a supply of carrier strip stock; feed means mounted on said frame and arranged to withdraw the strip from said supply; actuating means for said feed means, said actuating means being arranged to effect withdrawal of a predetermined length of strip at a time and including a handle fixed to said frame and a lever rockable with reference to said handle between two spaced end positions, said lever being sufficiently close to said handle to be operable by the hand grasping said handle; separating means supported by said frame at the other side of the strip and comprising means for sharply deflecting the strip so as to effect at least partial separation of a label in response to actuation of said feed means; and an applicator supported by said frame at a point distant from said lever and in such close proximity to said separating means that a portion thereof is adjacent to the other side of a label which is at least partially separated from the strip, at least said portion of the applicator being located externally of said frame so as to be capable of pressing said one side of the at least partially separated label against an object which is brought in contact with the label.

37. An apparatus as set forth in claim 36, wherein said feed means comprises one-way clutch means and a feed roller engaging said carrier strip, said clutch means being operative to rotate said feed roller in response to rocking of said lever from the one to the other of said end positions.

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