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TAPE LIFTING DEVICE
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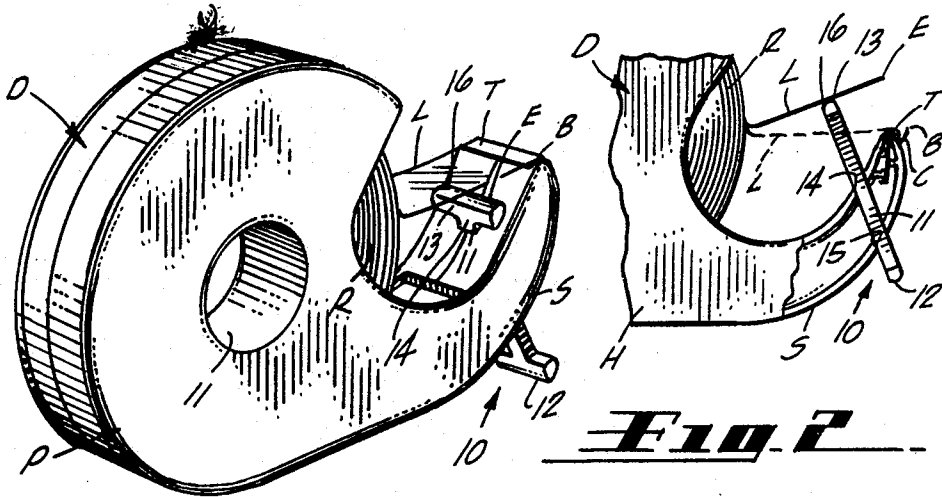


Fig. 1

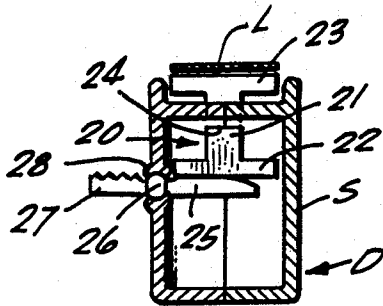


Fig. 3

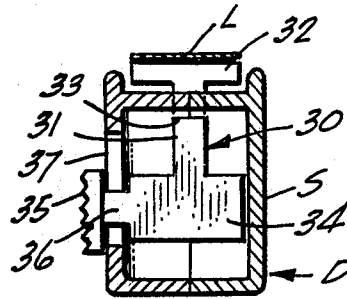


Fig. 4

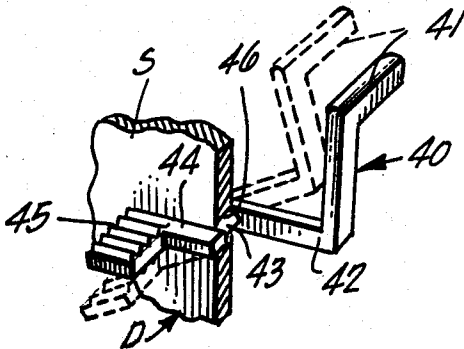


Fig. 5

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TAPE LIFTING DEVICE

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3 Claims

ABSTRACT OF THE DISCLOSURE

A lifting device adapted for incorporation into pressure sensitive tape dispensing apparatus to enable removal of an end of such tape from support structure associated with a cutting member of the apparatus and presentation of the tape end for ready access.

BACKGROUND OF THE INVENTION

Pressure sensitive tapes of various widths, colors, and lengths are widely produced and sold in dispensers. Such tapes are also available in bulk for utilization with dispensers. Dispensers are also available in a wide variety of forms: weighted for use on desks, enclosed for easy carrying, made of plastic or metal, and suitable for use in many applications. Although different in appearance and shape, size, weight and intended use, all of the known dispensers have a common structure, including a central support for the roll of pressure sensitive tape and a cutting mechanism. The cutting mechanism is generally provided with a serrated blade across which the tape may be drawn to sever a desired length from the supply. The cutter mechanism also has associated therewith a tape rest which serves to retain an end of the supply adjacent the serrated blade between times of use of the dispenser and tape. A length of tape is thus suspended between the rest and the point at which it leaves the supply roll, it being intended that, upon use, this length of tape be grasped, pulled or removed from the rest, and the desired length of tape withdrawn from the supply roll. Thereafter, this length of tape is intended to be laterally drawn and cut by being moved into intimate contact with the serrated blade, thus leaving the dispenser supply roll and an extended end portion of the tape in position for a next utilization.

In using tape dispensers of the type described hereinbefore, it is necessary that the fingers of the user engage the tape at a position intermediate the dispenser rest and the supply roll and spaced from an end of the tape. In so doing, the pressure sensitive surface of the tape is frequently contaminated through the presence of foreign substances on the fingers of the user, thus creating tape removal problems and impairing the effectiveness of the tape in its intended use. As the tape is grasped remote from an end thereof, in using the severed length of tape it is also necessary that the fingers of the user be removed from their original position thereabout to an end of the tape, thus not only creating a difficult handling situation, but also requiring at least one additional contact of the fingers with the pressure sensitive surface of the tape. Further, as it is common to utilize a number of lengths of tape drawn in succession from and individually separated from the supply roll, the rapidity with which such lengths may be obtained is impaired due to the necessity

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for multiple handling of the tape sections. Still further, as it is usually necessary to hold the dispenser in one hand and to grasp the tape from one side thereof with the thumb and forefinger of the other hand, a twisting motion is applied to the exposed end portion of the tape, thus adding to the possibility of distortion of the dispensed lengths of tape and undesired adhesion of pressure sensitive surfaces one to another.

SUMMARY OF THE INVENTION

Specifically, the device of the present invention serves to provide a simplified structure enabling presentation of the end of a length of pressure sensitive tape disposed from a supply roll in a manner to enable grasping of the extreme end thereof for withdrawal from the supply roll. This action is accomplished by means of the present tape lifting device that is manually operable for engagement with the pressure sensitive surface of the tape adjacent a rest and cutting mechanism of the dispenser, whereby to lift the end of the tape from the dispenser rest for presentation in a manner to permit its being grasped. Multiple and difficult handling of the tape is thus avoided, dispensing operation is improved and made more rapid, and tape distortion does not occur.

It is, therefore, an important object of the present invention to provide a tape lifting device of the type described and to solve problems presented in the use of prior known tape dispensers.

It is another object of the invention to provide a tape lifting device for use with pressure sensitive tape dispensers that is simple in construction, reliable in use, and economical in manufacture, assembly and sale.

Still another object of the invention is to provide a tape lifting device adapted for incorporation into the structure of known tape dispensers without impairing operation or utilization of the dispenser.

Other and further important objects of the invention will become apparent from the disclosures and the following detailed description, appended claims, and accompanying drawing, wherein:

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a perspective view of one type of pressure sensitive tape dispenser, including the tape lifting structure of this invention;

FIG. 2 is a fragmentary, partially broken away, side elevational view of a portion of the tape dispenser, and illustrating the tape lifting device of the present invention, the tape being in a position for ready grasping thereof;

FIG. 3 is a transverse sectional view through a portion of a tape dispenser of a type similar to that of FIG. 1, and showing an alternative form of tape lifting device;

FIG. 4 is a sectional view similar to FIG. 3 showing another form of the tape lifting device of the present invention; and

FIG. 5 is a fragmentary perspective view of still another form of the tape lifting device of this invention.

DESCRIPTION OF THE PRESENT EMBODIMENT

With reference to the drawing, and with reference primarily to FIGS. 1 and 2, the tape lifting device of the present invention is shown as indicated generally at 10

and associated with a tape dispenser D. The dispenser D further includes a hub portion H, upon which a roll R of pressure sensitive tape is mounted. Dispensers of the type illustrated in FIGS. 1 and 2 are frequently made from a plastic material, are split longitudinally, and the halves thereof are adapted to be snapped together to enable initial manufacturing, assembly and replacement of the tape supply roll. In the form of the dispenser illustrated, the dispenser D includes a portion P adapted to surround and protect most of the tape in the supply roll R and an integral cutter support portion S. A cutter member C including a serrated blade portion B is carried by the support S, there being a transverse bar T formed as a portion of the cutter C and acting as a normal rest for a length L of tape suspended between the rest T and the supply roll R.

In one form of the invention, the tape lifting device 10 includes an elongated bar portion 11 having an integral transverse handle portion 12 and a tape engaging and lifting portion 13. The bar portion 11 is freely and slidably disposed in aligned openings 14 and 15 in the walls of the dispenser support S. The lifting portion 13 of the device 10 has a generally rounded tape engaging surface 16 that is adapted to engage the tape length L at a position intermediate the cutter rest T and the supply roll R and adjacent to the rest T. The surface 16 is of a length to span the width of the tape being dispensed from the dispenser D with the material of the lifting device being such as to have a low affinity to the pressure sensitive coating carried by the tape.

In most instances the pressure sensitive coating on tape of the type utilized in dispensers is in the nature of a soluble thermoplastic. In order that the tape lifting device of the present invention may function in the manner desired, it is appropriate that the material of the device 10 be such as to be essentially non-wettable and with a low surface tension. At least that portion of the device 10 comprising the surface 16 should be of such a material. For this purpose, various polymeric materials are available and fall in the class of fluorocarbon types of polymers, Teflon and Nylon the trade names for such material.

In operation of the tape lifting device illustrated in FIGS. 1 and 2, the dispenser D is normally held by one hand of the user and portion 11 of the device 10 is moved within the aligned openings 14 and 15 by manual application of pressure upon the bar 12, thus moving the portion 13 and the surface 16 thereof in a direction to engage the pressure sensitive surface of the tape and remove an extreme end E of the tape portion L from the supporting rest T. Tape movement is from the position illustrated in FIG. 1 to the position illustrated in FIG. 2, thus presenting an end of the tape portion L that may readily be grasped by the user for withdrawal of tape from the supply roll R. As the material of the device 10 is such as to have a low affinity to the pressure sensitive coating on the tape, the device 10 does not readily adhere thereto and the desired length of tape may be withdrawn from the roll, moved into engagement with the rest T, and severed by being drawn across the blade B. At this time or upon movement of the tape from the supply roll, the device 10 gravitationally returns to its original position as shown in FIG. 1.

It may thus be seen that the disadvantages of the prior known tape dispensers as described hereinbefore are overcome by the lifting device of the present invention. Inasmuch as the device 10 is extremely simple in construction, operation and manufacture, it is within a desired economical range to enable use in association with known dispensers to provide the advantages set forth without substantial increase in cost over dispensers which may not be fitted with the present device.

With reference to the form of the invention shown in FIG. 3, a modified form of tape lifting device is shown as indicated generally at 20 and includes a lifting struc-

ture having a central portion 21, a bar portion 22 disposed within the confines of the dispenser support S, and a tape engaging portion 23 similar in nature to the previously described engaging portion 13. The portion 21 of the device 20 is slidably disposed through an opening 24 in a wall of the support S. In order to cause movement of the device 20, a lever is provided and includes an inner end portion 25, a bulbous portion 26 and a finger engaging portion 27. The bulbous portion 26 is journaled in a bearing opening 28 in a wall of the support S, the inner end 25 of the lever being engageable with a surface of the bar 22. In the position shown in FIG. 3, movement of the portion 27 in a downwardly direction will move the lifting device 20 in a direction to lift the tape L from the rest T of the dispenser.

Another modified form of the invention is illustrated in FIG. 4, wherein an integral structure 30 is disposed within the confines of the support S and includes a shaft portion 31 with a tape engaging bar portion 32. The shaft portion 31 is slidably disposed in an opening 33 in a wall of the support S and is integrally connected to a transverse portion 34, a lateral outer end of which is provided with a finger engaging portion 35. An inter-connecting structure 36 between the portions 34 and 35 is slidably movable within a slot 37 in one side wall of the support S. As in the prior described forms of the invention, movement of the portion 35 in an upwardly direction as viewed in FIG. 4 and in the same direction as that of the bar portion 32 will move the bar portion in a manner to engage the tape L.

In FIG. 5 a further modified form of the invention is illustrated at 40 and includes an integral lifting member having a tape engaging portion 41 and an L-shaped arm 42 depended from one lateral end thereof. Another end of the arm 42 is connected to a shaft portion 43, an outer end of the shaft being fitted with a lever 44 having a finger engaging portion 45. The shaft portion 43 is pivotally journaled in a suitable opening 46 in a wall of the support S. The apparatus 40 is adapted to be moved in the manner illustrated in FIG. 5 from the solid line to the dotted line positions, the L-shaped portion 42 being disposed through a suitable opening (not shown) in another wall of the support S. Operation of the modified forms of the invention shown in FIGS. 3, 4, and 5, and the material from which the elements may be constructed are similar to those described in connection with the form of the invention shown in FIGS. 1 and 2.

Having thus described the invention and the present several embodiments thereof, it is desired to emphasize the fact that many further modifications may be resorted to in a manner limited only by a just interpretation of the following claims.

I claim:

1. In a pressure sensitive tape dispensing apparatus having a roll tape supply mount, a support and a cutter blade and tape end rest carried by said support, a tape lifting apparatus comprising:

a tape engaging element positioned for engagement with the pressure sensitive surface of said tape intermediate a location at which said tape is separated from a roll supply and said tape and rest, said tape engaging element having at least one surface constructed from a material having a low affinity to said tape surface;

an intermediate element connected to said tape engaging element and movably carried by said support of said dispensing apparatus; and

operating means accessibly positioned exteriorly of said support and coupled to said intermediate element remote from said tape engaging element, movement of said operating means serving to move said tape engaging element into contact with said surface of said tape thereby removing an end of said tape from said tape end rest and presenting a free end portion of said tape to enable grasping thereof.

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2. A tape lifting apparatus according to claim 1 wherein said tape engaging elements and said operating means each comprise integral T shaped bars coupled to opposite ends of said intermediate element.

3. A tape lifting apparatus according to claim 1 wherein said operating means is carried by and movable with respect to a lateral side wall of said support of said dispensing apparatus; and

a slot in said support, said operating means being guided by said slot and movable therein in the same direction as said tape engaging element.

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