March 10, 1942. C. C. ALLISS 2,275,408

TAPE DISPENSER

Filed July 22, 1940

Fig. 1.

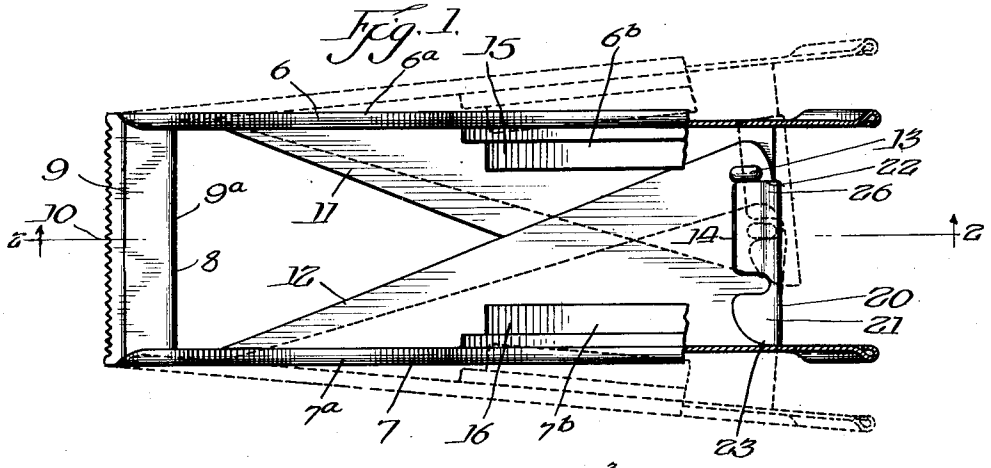


Fig. 2.

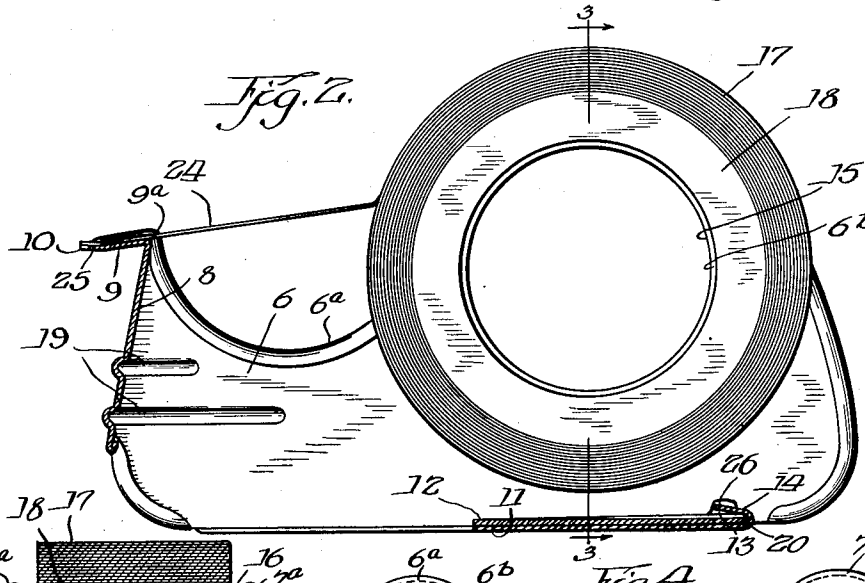


Fig. 3.

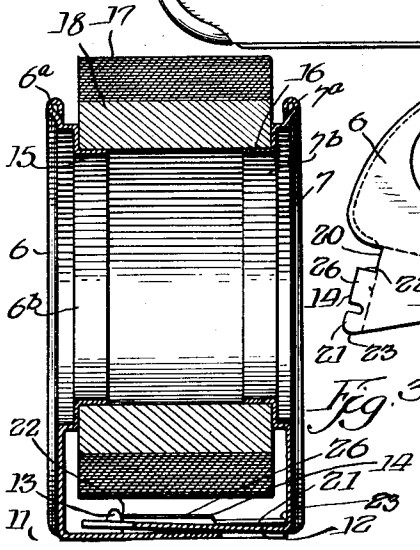
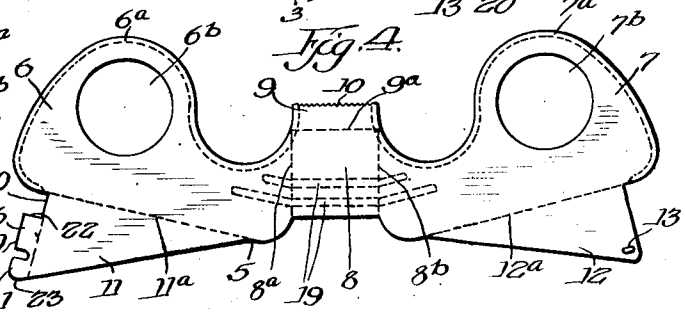


Fig. 4.



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UNITED STATES PATENT OFFICE

2,275,408

TAPE DISPENSER

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10 Claims. (Cl. 242—55.5)

This invention relates broadly to apparatus for dispensing adhesive tape from a roll in usable condition and in desired lengths, and more particularly to a device for dispensing rolls of adhesive tape of a nature such that temporary adhesion between the successive layers of the tape in the roll will normally prevent the tape from unrolling except by the act of the user.

The invention is of considerable utility in dispensing adhesive tape having a thin flexible backing of fabric, paper or non-fibrous material and provided with a normally tacky and pressure-sensitive adhesive coating, which does not require moistening with water or other solvents to activate the coating to an adhesive condition, such tapes, for example, as are disclosed in the Richard G. Drew Patents Nos. 1,760,820 and 2,177,627. Tapes of this type are characterized by having a unified adhesive coating possessed of such coherence in relation to its adhesiveness and so firmly united to its backing that the adhesive tape may be stripped from smooth non-fibrous surfaces (not possessing special chemical affinity for the adhesive), to which it may have been temporarily applied, without offsetting of adhesive material to such surfaces. While the present invention relates broadly to dispensing of adhesive tapes of a pressure-sensitive type, the dispenser herein described has been developed with special reference to pressure-sensitive adhesive tapes of the non-offsetting type.

Adhesive tape of the type described is commonly marketed in roll form wound upon a core, and a principal object of the invention resides in the provision of a dispensing device from which the spent tape core can be readily removed and a fresh roll of adhesive tape inserted. In many dispensers known to the art the device is adapted to dispense but one roll of tape and is discarded thereafter, since no provision is made for removing the spent core. A further object of the invention is the provision of an adhesive tape dispenser which is simple and economical of construction and in which the free end of the undispensed portion of the tape is held out away from the roll where it may be readily grasped for removal of the next portion without having to pry it loose from the roll; and the provision of a light weight dispenser for adhesive tape, which is readily portable and remains erect on a flat surface and from which a portion of tape may be removed by holding the dispenser with one hand and grasping the readily available end portion of the tape strip with the other.

The improved tape dispensing device is preferably stamped from a single sheet of metal or stiff cellulosic material, or the device may be in a single casting of any of the modern plastic materials adapted to form thin semi-flexible sheet members. In general, the device comprises suitably spaced parallel side frames, provided with oppositely disposed flange portions adapted to support a roll of adhesive tape, and base members connected to the side frames provided with releasable catch members adapted to releasably retain the side frames in parallel position and to permit the spreading of the side frames to remove spent cores and insert new rolls of adhesive tape on the flange portions. The side frames are connected by a front member equipped along its upper portion with a severing edge and a member adapted to detachably retain a portion of the adhesive tape during and after the severing of the tape.

The invention will be readily understood from the following detailed description in conjunction with the accompanying drawing, in which a preferred embodiment of the invention is shown, and in which:

Fig. 1 is a broken top plan view of the dispenser (with the roll of tape removed) and in which the dotted lines show the side frames in their spread position;

Fig. 2, a vertical sectional view taken along lines 2—2 of Fig. 1, showing the device containing a roll of adhesive tape to be dispensed;

Fig. 3, a vertical sectional view taken along the lines 3—3 of Fig. 2, and

Fig. 4, a view in elevation of a blank from which the dispensing device may be formed.

Referring now to Fig. 4 of the drawing, wherein is shown a blank 5 preferably stamped from a single sheet metal strip and from which the dispensing device shown in Figs. 1–3 may readily be formed, the blank comprises two side portions 6 and 7 connected by a bridge portion 8, adapted to serve as the front of the device, and which is provided with a portion 9 having a severing edge 10 which is conveniently serrated or formed of a plurality of sharp points or teeth as shown in Figs. 1 and 4. The side members 6 and 7 are provided, respectively, with flap members 11 and 12 adapted to serve as base members. The member 12 is provided along the rear edge thereof with a stud 13 preferably punched therein during the stamping operation. The member 11 is equipped with a bifurcated portion 14 for a purpose hereinafter more fully described.

The blank 5 is formed over a suitable die so that the side members 6 and 7 may be bent, re-

spectively, into a position where they are normally disposed in a parallel spaced relation as shown in Fig. 1. Members 11 and 12 are likewise adapted to be bent along the dotted lines 11a, 12a, to form base members, substantially perpendicular to the side members 6 and 7, and in overlying relationship in which base member 12 is uppermost, as most clearly shown in Fig. 1. The edge portions of the sides 6 and 7 are preferably rolled, as shown by the dotted lines 6a and 7a, to reinforce the edges and eliminate sharp edges along the sides.

The annular edge portions surrounding the openings 6b and 7b in the side members 6 and 7 are stamped to form inwardly projecting annular flanges 15 and 16, respectively, oppositely disposed to each other, which act as spindles for a roll of tape 17, shown in Figs. 2 and 3, wound on a hollow core 18. The upper portion 9 of the bridge member 8 is bent along the line 9a shown in Fig. 4 to form a substantially horizontal tape supporting surface between the serrated edge 10 and the roll of tape 17. The ribs 19 extending from the side members 6 and 7 across the bridge member 8 act as reinforcing means to impart rigidity to the device and to hold the portions of the device in the desired relative positions.

As previously mentioned herein, the device is provided with suitable catch members adapted to maintain the side members 6 and 7 in spaced relationship such that the tape roll 17 is retained on the flanges 15 and 16 when the device is in its operable position and to permit lateral spreading of the side members 6 and 7 by pivotal movement from their junctures with said bridge member indicated by the dotted lines 8a and 8b in Fig. 4, to permit removal and replacement of tape rolls within the device. Suitable releasable catch members are shown in the drawing, and modifications of the specific construction shown within the scope of the invention will be apparent to those skilled in the art. As shown in Figs. 1, 3 and 4, one of the base members 12, which preferably overlies the other base member 11, is provided with an upwardly extending stud 13, which may be formed therein during the stamping operation. The underlying base member 11 is provided along its rearward edge 20 with a bent over bifurcated flange portion 14. The portion 21 of the flange 14 is bent over until it is in close proximity to the upper surface of the base member 12 and serves as a stop for the stud 13 when the device is in its expanded position as shown in dotted lines in Fig. 1, and thereby prevents unlimited expansion of the side members 6 and 7. The portion 26 of the flange 14 is not bent over as far as the portion 21 and is spaced slightly from the upper surface of the base member 12 and the resilient nature of the material permits passage of the stud 13 between the flange portion 26 and the base 12. The length of the flange portion 26 is predetermined so that its inner edge 22 engages the stud 13 in the closed operative position of the device and, due to the resilient base member 12 being sprung slightly upwardly at its outer edge, the stud 13 carried thereon engages the edge 22 of the flange portion 26. Likewise, it will be noted that the outer edge 23 of the flange portion 21 bears against the inner surface of the side wall 7 and thus tends to releasably retain the side members 6 and 7 in their operative parallel position.

The flanges 15 and 16, adapted to serve as spindles for the tape core 18, may conveniently be approximately one-eighth inch in width and, accordingly, it will be seen that it is only necessary that the spread position of the side members 6 and 7 be one-half inch greater than the distance between the side members in the closed position to permit ready removal and replacement of the tape roll 17.

In operation, to place a roll of tape on the spindle members 15 and 16, it is only necessary to grasp the rear edge portions of the side members 6 and 7 and lightly draw them apart, since the stud member may be readily forced from engagement with the edge 22 of the flange 26 shown in Figs. 1 and 3 and through the channel afforded beneath the flange portion to permit radial spreading of the side members 6 and 7 to the position shown in dotted lines in Fig. 1. In this position, a roll of tape having a core of slightly greater diameter than the diameter of the annular spindles 15 and 16, may be placed on one of the spindles and the side members returned to their parallel closed position, by pressing the rear edge portions of the sides 6 and 7 inwardly until the edge 23 of the bent over flange 21 abuts against the inner surface of the side 7 where it is retained by the engagement of the stud 13 against the edge 22 of the flange 14. The core 18 is then supported by annular spindles 15 and 16.

To withdraw a portion of the tape 24 from the roll 17, the free end of the tape is drawn away from the roll 17 with the adhesive coated surface facing downwardly and, as shown in Fig. 2, pulls away from the roll at substantially a uniform angle due to the temporary adhesion between the pressure-sensitive adhesive coated side of the tape and the back of the underlying layer in the roll. The free end of the tape 24 then passes from the roll over the surface 9 and the cutting edge 10. When a portion of tape of the desired length has been removed from the roll, by merely bringing the tape downward it will first contact the surface 9 and be held in position by the adhesive action of the pressure-sensitive coating of the tape upon the surface 9; a further downward movement of the free end of the tape causes the tape to come into contact with the severing edge 10, and the dispensed portion is thus severed. Subsequent portions of the tape may be successively removed by grasping the portion 24 between the supporting surface 9 and the tape roll, lifting the tape slightly and again removing the desired portion by pulling upon the free end of the tape. Furthermore, when a portion of tape has been removed, the free end is retained in position by the adhesive action of the coating of the tape on the surface 9. As shown in Fig. 2, a groove or trough 25 may be formed in the supporting member 9. As the tape is dispensed and severed by the edge 10, any excess of adhesive removed during the severing operation is deposited in the groove 25 and thus prevents fouling of the severing edge 10. Any accumulation of adhesive in the groove 25 may be removed from time to time, thus the teeth of the cutting edge 10 are kept clean.

While the above description has been made particularly with reference to the use of the dispenser structure in connection with pressure-sensitive adhesive tape, yet the dispensing device is obviously capable of being used with strip material formed into rolls regardless of whether the material is provided with an adhesive coating and regardless of the nature of the adhesive coating where used.

I claim:

1. A device for dispensing adhesive tape of the pressure-sensitive type comprising a front and two side members formed from a single piece of sheet material, said side members being provided with means for revolubly supporting a roll of said tape, a severing element mounted on said front member and spaced from said roll supporting means, said severing element including a cutting edge and an exposed surface, positioned adjacent the path of said tape between said roll supporting means and said cutting edge, to which said tape will lightly and detachably adhere by reason of its pressure-sensitive coating, said side members being normally positioned in spaced relationship and adapted to be spread radially from their junctures with the front member, to permit removal and replacement of said tape roll, and releasable catch members adapted to retain said side members in normal spaced relationship and permit limited spreading thereof.

2. A device for dispensing adhesive tape comprising two side members normally positioned in spaced relationship, a bridge member connecting said side members at one end thereof, said members being formed of flexible sheet material, means within said side members adapted to revolubly support a roll of adhesive tape, a tape severing edge mounted on said bridge member and spaced from said roll supporting means, said side members being adapted to be spread laterally to permit the removal and replacement of tape rolls on said roll supporting means, base members secured to said side members, and releasable catch members on said base members adapted to retain said side members in operative position and to limit the lateral spreading of said side members.

3. A device for dispensing a roll of adhesive tape, comprising two side members normally positioned in spaced relationship slightly more than the width of said tape roll, a bridge member connecting said side members, annular flanges on the inside surface of said side members adapted to support revolubly said roll of tape, the distance between the inner edges of said flanges being less than the width of said tape roll, a severing edge mounted on said bridge member and spaced from said annular flanges, said side members being adapted to be manually spread laterally from their juncture with said bridge member to permit removal and replacement of said tape roll, a pair of base members disposed one above the other and connected to said side members, and releasable catch members carried at the rear of said base members adapted to retain said side members in normal relationship and permit limited lateral spreading of said side members.

4. A device for dispensing adhesive tape of the pressure-sensitive type comprising a front and two side members, said side members being provided with means for revolubly supporting a roll of said tape, a severing element mounted on said front member and spaced from said roll supporting means, said severing element including a tape cutting edge and an exposed surface positioned adjacent the path of said tape between said roll supporting means and said cutting edge, to which said tape will lightly and detachably adhere by reason of its pressure-sensitive coating, said side members being normally positioned in spaced relationship and adapted to be spread laterally to permit replacement of said tape roll, base members secured to said side members, and means attached to said base members for releasably retaining said side members in spaced parallel relationship and for permitting limited lateral spreading thereof.

5. A device for dispensing adhesive tape comprising a pair of side members interconnected by a bridge member and adapted to be spread radially from their junctures with said bridge member, a pair of base members each connected to one of said side members, said side members, bridge member and base members being formed from a single blank of flexible sheet metal, means within said side members for supporting revolubly a roll of said tape, a severing edge mounted on said bridge member, and means adapted to releasably retain said side members in normal parallel relationship and to limit the radial expansion of said members, said means comprising a stud on one of said base members, a flange on the other of said base members forming a channel for said stud and an abutment on said second mentioned base member adapted to limit the movement of said stud in said channel.

6. A device for dispensing adhesive tape comprising a pair of spaced side member interconnected by a bridge member and adapted to be spread laterally from their junctures with said bridge member, a pair of base members each connected to one of said side members, said side members, bridge member and base members being formed from a single blank of flexible sheet metal, means within said side members for supporting revolubly a roll of said tape, a severing edge mounted on said bridge member, and means adapted to releasably retain said side members in normal parallel relationship and to limit the radial lateral spreading of said members, said means comprising a stud formed on the upper surface of the upper base member near the rear edge thereof, a flange member on the rear edge of said bottom base member and overlying said upper base member and forming a channel for said stud member, and a second flange member carried on the rear edge of said lower base member and overlying said upper base member and adapted to serve as a stop for said stud member and adapted to limit the movements of said side members toward each other.

7. A device for dispensing adhesive tape comprising a pair of spaced side members connected by a bridge member and adapted to be spread laterally from their junctures with said bridge member, a pair of base members each connected to one of said side members, means within said side members for supporting revolubly a roll of said tape, a severing edge mounted on said bridge member, and means adapted to releasably retain said side members in normal parallel relationship and to limit the radial spread of said members, said means comprising a stud member on the upper surface of said upper base member, and a bifurcated flange member carried on the rear edge of said lower base member and overlying the rear portion of said upper base member, one portion of said flange forming a channel for said stud, the other portion of said flange serving as a stop for said stud and being adapted to limit the movement of said side members toward each other.

8. A device for dispensing adhesive tape comprising a pair of side members interconnected by a bridge member and adapted to be spread laterally from their junctures with said bridge member, a pair of base members each connected

to one of said side members, means within said side members for supporting revolubly a roll of said tape, a severing edge mounted on said bridge member, and means adapted to releasably retain said side members in normal parallel relationship and to limit the radial spread of said members, said means comprising a stud carried on the rear edge of the upper surface of said upper base member, a bifurcated flange member carried on the rear edge of said lower base member and overlying the rear portion of said upper base member, one edge of said flange serving as an abutment for said stud in the closed position of said side members, one portion of said flange forming a channel for said stud, the other portion of said flange serving as a stop for said stud in the expanded position of said side members.

9. A device for dispensing adhesive tape comprising two side members normally positioned in spaced relationship and provided with means for supporting a roll of said tape, a bridge member connecting said side members, said side members being adapted to be spread radially from their junctures with their bridge member to permit removal and replacement of said tape roll, and releasable catch members carried on said side members to retain said side members in normal spaced relationship and permit limited spreading thereof.

10. A device for dispensing adhesive tape comprising two side members normally positioned in spaced relationship, a bridge member connecting said side members, means within said side members adapted to support a roll of said adhesive tape, said side members adapted to be spread laterally to permit the removal and replacement of tape rolls on said roll supporting means, flange members secured to said side members, and releasable catch members on said flange members adapted to retain said side members in operative position and to limit the lateral spreading of said side members.

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