

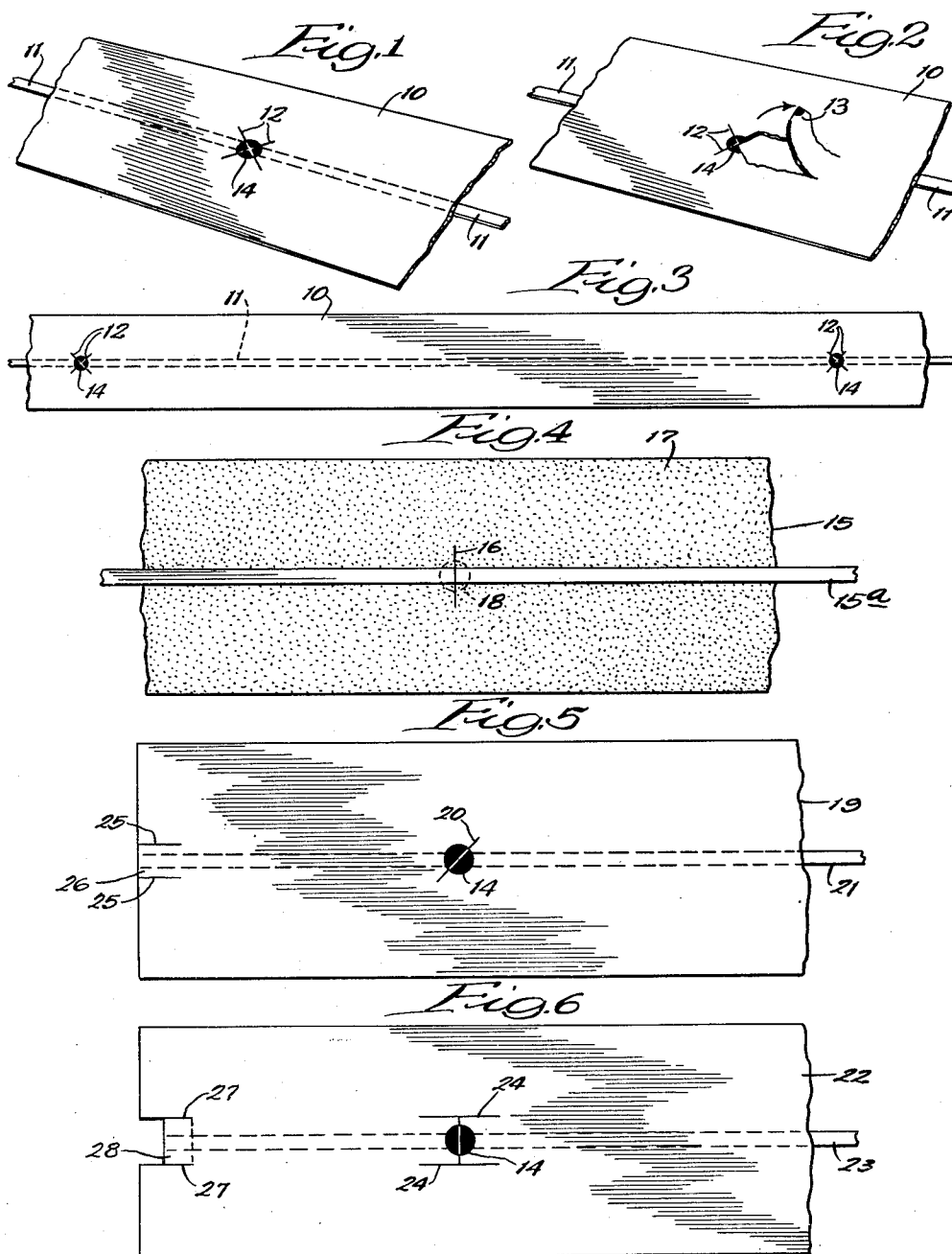
Nov. 20, 1956

F. W. HUMPHNER

2,771,385

PRESSURE-SENSITIVE AND REMOISTENING DRAW TAPE

Filed Aug. 26, 1954



INVENTOR:

Ferdinand W. Humphner,

BY

Dawson, Tilton & Graham,

ATTORNEYS.

1

2,771,385

PRESSURE-SENSITIVE AND REMOISTENING DRAW TAPE

Ferdinand W. Humphner, River Forest, Ill., assignor to
Mid-States Gummed Paper Co., Chicago, Ill., a cor-
poration of Delaware

Application August 26, 1954, Serial No. 452,251

15 Claims. (Cl. 154—53.5)

This invention relates to pressure-sensitive and remoistening draw tape, and more particularly to a type of tape in which a filament may be drawn to tear the tape for the opening of cartons, containers, etc.

An object of the present invention is to provide a draw tape or tear tape structure in which the tape is provided with a tear filament along its underside and in which the tape may be slitted partially across the face of the tape and through the tear filament. A further object is to provide in such a tape structure slits of angular arrangement which permit the quick grasping and tearing of the tape. Yet another object is to provide means for facilitating the grasping of the filament for the drawing thereof in either direction. A still further object is to provide a pressure-sensitive tape equipped with a tear filament which is effective in tearing the pressure-sensitive adhesive-equipped tape. Another object is to provide in a tear tape structure means for locating the severed end of the tear filament while also preventing adherence of the tape to the carton or other object in the area where the slit or aperture is made. Other specific objects and advantages will appear as the specification proceeds.

The invention is shown, in illustrative embodiments, by the accompanying drawing, in which—

Figure 1 is a perspective view of adhesive tape equipped with a tear filament having slits therein in accordance with my invention; Fig. 2, a view similar to Fig. 1 but showing one end of the tear filament being drawn to sever the tape; Fig. 3, a top plan view of tape of the type shown in Figs. 1 and 2 and in which spaced slits are formed therein; Fig. 4, a bottom plan view of a strip of tape having a tear filament bonded thereto; Fig. 5, a broken top plan view of tape embodying a further modified form of the invention; and Fig. 6, a broken top plan view of a modified form of tape illustrating another aspect of the invention.

In the illustration given in Figs. 1 to 3, inclusive, I provide a tape 10 which may be formed of paper, plastic, or any other suitable material which is adapted to tear upon the drawing of the longitudinal filament 11 secured to the bottom side of the tape 10. The filament 11 may be formed of plastic, textile material, or any other suitable material, and is bonded to the longitudinal underside of the tape 10 so that it may be employed for severing the tape 10 along a center line. The tape 10 is slitted in the manner shown in Figs. 1, 2 and 3, to sever the filament therebelow. In the form illustrated in Figs. 1 to 3, inclusive, the slits 12 are in the form of a cross, and they provide two V-shaped ends 13 which may be grasped to draw the filament for severing the tape, as illustrated best in Fig. 2. To indicate the point where the slit is formed, I prefer to use a spot 14 or other indicator. The slits and spots may be spaced apart, as shown in Fig. 3, and for any desired distance.

In Fig. 4, the tape 15 is shown provided with a straight transverse slit 16 which extends through the tape 15 and filament 15a, the adhesive 17 on the underside there-

2

of, and the spot 18. The adhesive 17 may be pressure-sensitive adhesive, so that when the tape is applied to an object, it is secured readily thereto by the sensitive character of the adhesive. Since such adhesive is well known in the art, it is believed unnecessary here to set forth the ingredients thereof. Instead of the straight transverse slit 16, as shown in Fig. 4, it will be understood that slits of the different angles and configurations shown in the other figures of the drawing may be employed.

The adhesive which is employed upon the tape may be of the remoistening type, and may consist of adhesive applied to the tape 15 or 10, and then allowed to dry, the adhesive being remoistened just before application to the carton or other containers, etc. It will be understood that the invention herein may be utilized with any type of adhesive tape.

The spot 18 which here occurs on the underside of the tape 15 represents a non-adhesive area. I have found that a non-adhesive area at the point where the slit occurs facilitates the grasping of the tape and the ready tearing of the filament. The non-adhesive area 18 may be formed by simply imprinting an ink spot, which is water-repellent upon the area where the slit occurs, as illustrated in Fig. 4. Thus when the water-soluble or remoistening adhesive is moistened with water, the spot 18 remains unactivated and the tape does not adhere at this point. Similarly, when pressure-sensitive adhesive is employed, the adhesive may be covered with a non-adhesive powder or material which renders the spot 18 non-tacky. Further, the spot 18 may be made non-adhesive by simply omitting either the pressure-sensitive adhesive or the remoistening adhesive at this point.

In the modification illustrated in Fig. 5, the tape 19 is provided with a slanting slit 20 which extends partly across the tape 19 while severing the filament 21. An advantage of this structure is that the slanting type of slit provides a relatively wide surface for grasping the end of the filament and the aperture is even enlarged when the tape is drawn slightly, because of the laterally-extending tear of the tape.

In Fig. 6, the tape 22 is provided with a filament 23 and the slitting 24 is in the form of the letter H. This form of slitting is very effective because it produces, at each separate end of the filament 23 adjacent the spot 14, a pull-tab portion which may be readily drawn to tear the tape from either direction.

It will be understood that in each of the structures illustrated, the tape itself may be formed of plastic, paper, or any frangible or rupturable material, while at the same time a filament formed of plastic, cord or other material may be bonded to the underside of the tape. Further, it will be understood that the tape may bear on its underside remoistening adhesive or pressure-sensitive adhesive, etc., and adhesive may be omitted or rendered non-tacky adjacent the area of the slit. Thus the spot 14 may be employed on the outside of the tape to designate the slit, or it may be provided on the inner side of the tape to provide an area about the slit which will not be tightly adhering to the carton and thus may be readily grasped.

In the forming of the pregummed tape with a filament, the string or cord 11 may be adhesively attached by moistening the filament and then bringing it directly into contact with the dry glue surface of the gummed tape. When pressure-sensitive adhesive is carried by the tape, the string may be secured thereto by pressure or by any other suitable means.

In the structures shown, the severance of the filament enables quick tearing of the tape to be brought about, since the tab may be easily lifted with the fingers and a

3

right and left operation may be completed to open the carton.

The slitting may be accomplished from either side. For example, the cutting operation may be from the paper or face side, or it may be made from the reverse side. When the cut is made from the reverse side, the aperture or end portion extends slightly upward, providing a tab and access point for getting hold of the tape more easily.

Also shown in Fig. 5 is an arrangement whereby the tear filament 21 may be drawn from the end of the tape 19 to sever that pressure-sensitive adhesive-equipped tape. In the arrangement illustrated, the tape 19 is provided with weakened lines 25 extending longitudinally along the tear filament 21 and spaced slightly therefrom. The lines 25 may be slits in the tape or may be perforations or other weakening arrangements whereby the initial tearing of the tape is facilitated. If desired, a non-adhering spot as heretofore described may be used under the flap 26.

In Fig. 6 an end portion of the tape 22 is slit along the lines 27 that extend along the filament 23 in spaced relation therewith. The flap formed by these slits is folded under to provide the tab 28. The slit lines 27 adjacent the tab facilitate initiation of the tearing operation of the tape when the tab, and the filament 23 secured thereto, are drawn.

In the case of pressure-sensitive tape, and particularly plastic tape equipped with pressure-sensitive adhesive, a problem has long existed since it is extremely difficult to slit or separate the tape and when the tape is drawn, there is a tendency for it to gather and bunch together, giving a bulky, unruly result. However, by forming a slit in the plastic or other form of adhesive tape and completely severing the filament thereunder, I have no difficulty in slitting the backing material, and here again a right and left operation is effective in completely severing the tape about a container. If desired, the V-shaped ends of the tape, as shown in Figs. 1 and 2, may preliminarily be folded inwardly at their tips to form separated tabs, thus facilitating the drawing of the tabs. The use of the H-shaped slits, as illustrated in Fig. 6, with plastic tapes is particularly effective in the tearing of the tape because of the longitudinally-extending slits on either side of the transverse slit.

While in the foregoing specification I have set forth certain structures in considerable detail for the purpose of illustrating embodiments of the invention, it will be understood that such details of structure may be varied widely by those skilled in the art without departing from the spirit of my invention.

I. claim:

1. Tear tape, comprising a tape body formed of rupturable material, adhesive on the underside of said tape, and a tear-filament extending longitudinally of the underside of said tape and united thereto, said filament being slit from side to side along a line of severance extending through said tape and part way thereacross at a point intermediate the ends thereof, said tape and filament being non-adhesive in the area thereof at said slit.

2. The structure of claim 1, in which the slit is slanted.

3. The structure of claim 1, in which the slit is X-shaped.

4. The structure of claim 1, in which the slit is H-shaped.

5. The structure of claim 1, in which adhesive on the underside of said tape adjacent said slit is imprinted to render the same non-adhesive.

6. Tear tape, comprising a tape body formed of tearable material, remoistening adhesive on the underside of

4

said tape, a tear filament extending longitudinally on the underside of said tape and bonded thereto, said tape intermediate the ends thereof being slitted part way across and through said filament, and a water-repellent imprint over said adhesive and filament at said slit.

7. A pressure-sensitive tear tape, comprising a tape body provided on its underside with pressure-sensitive adhesive, a filament secured to said tape on the underside thereof, and slitting in said tape at restricted areas to produce longitudinal tearing of said tape as the filament is drawn.

8. The structure of claim 7, in which said tape is formed of plastic.

9. The structure of claim 7, in which the tape is provided with a slit extending through the filament and at an acute angle thereto.

10. The structure of claim 7, in which the slit extends through said filament and in which there are longitudinally-extending slits along the tape.

11. Tear tape, comprising a tape strip of tearable material provided on the underside thereof with a pressure sensitive adhesive, and a tear filament extending longitudinally along the underside of said tape strip and being secured thereto, said tape strip being provided at an end thereof with longitudinally extending slits, one on each side of said tear filament, to form a flap for initiating the tearing of said tape upon the drawing of said tear filament.

12. The tear tape of claim 11 in which said flap is folded under and upon itself intermediate its ends to provide a recessed tab.

13. A pressure-sensitive tear tape, comprising a tape strip equipped on its underside with pressure-sensitive adhesive, a tear filament extending longitudinally along the underside of said tape strip and being secured thereto, said tape strip and filament being severed intermediate the ends thereof along a relatively short line of severance extending generally transversely of the tape strip for limited distances but completely across said filament, and relatively short lines of weakening extending longitudinally of said tape strip from said line of severance to facilitate initial tearing of said tape strip.

14. In a strip of tear tape, an elongated tape strip formed of tearable plastic material coated on the underside thereof with a pressure-sensitive adhesive, and a tear filament extending longitudinally along the underside of said tape strip and being united thereto, said tape strip having an H-shaped slit therein intermediate its ends, the H-shaped slit being oriented so that the cross bar of the H extends through said filament and from side to side thereof, said tape strip and filament having a non-adhesive area at the H-shaped slit.

15. In a tear tape structure of the character described, a tape strip of tearable material having an adhesive coating on the underside thereof for securing the same to a surface, and a tear filament extending longitudinally of said tape strip along the adhesive coated surface thereof, said tape strip intermediate the ends thereof being provided with an interrupted portion in alignment with said tear filament for affording access thereto through the tape strip whereby said tear filament may be drawn for severing said tape strip longitudinally thereof.

References Cited in the file of this patent

UNITED STATES PATENTS

1,032,026	Roden	July 9, 1912
1,827,636	Ames	Oct. 13, 1931
2,049,030	Strauss	July 28, 1936
2,120,629	Schunemann	June 14, 1938