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BAG WITH WEAKENED CLOSURE

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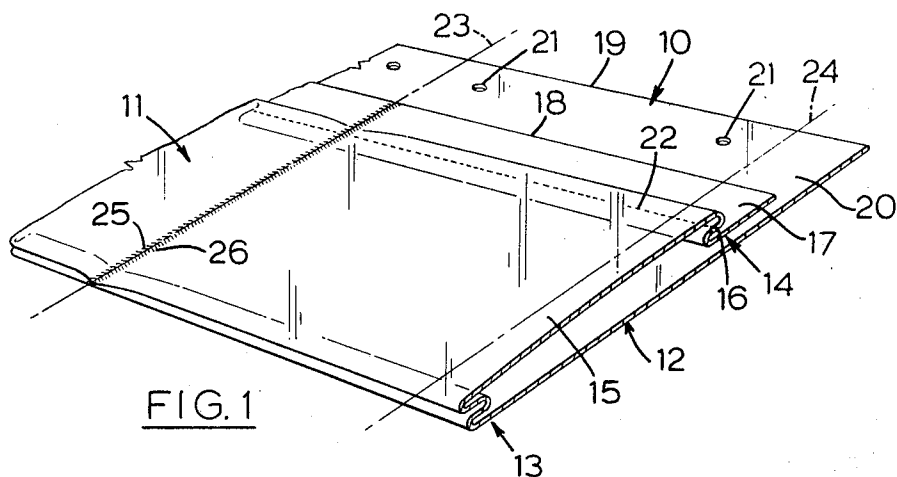


FIG. 1

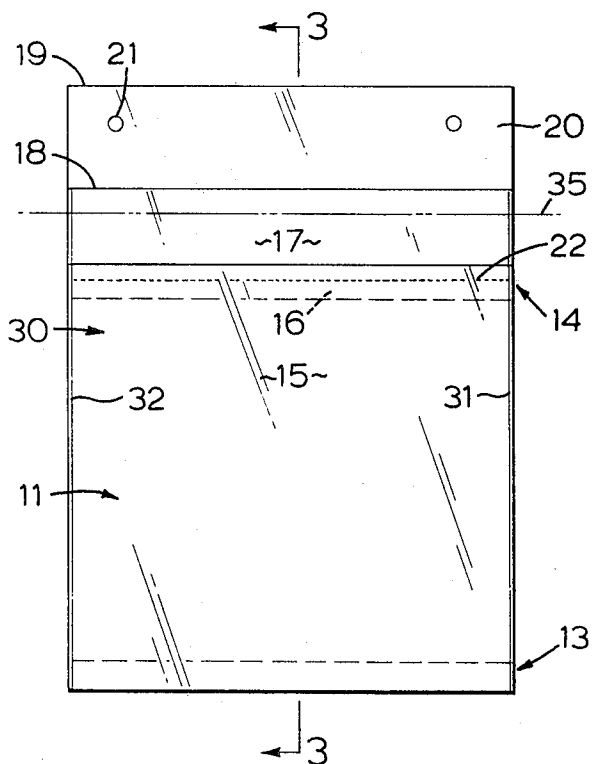


FIG. 2

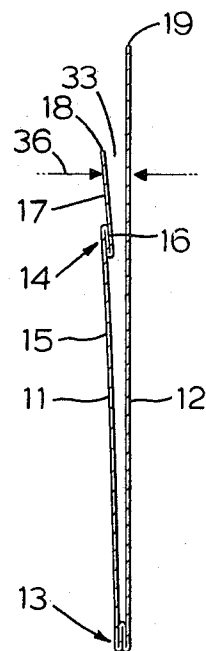


FIG. 3

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11 Claims

ABSTRACT OF THE DISCLOSURE

A bag of thermoplastic material with a front wall and a back wall joined at the bottom and sides and having a perforated line of weakness in one wall between the top and bottom edges. The front and back walls may be heat-sealed along the side of the perforated line remote from the bottom edge. Access to the interior of the sealed bag may be obtained by tearing along the perforated bag. The wall portion between the sealed edge and the perforated edge provides closure for the bag.

This invention relates to bags, and, more particularly, to closures for bags made of a thermoplastic material and to methods for making such bags.

In Canadian Pat. 518,935 there is shown a bag that is made of a flexible, heat-sealable, sheet plastic material, such as polyethylene, that has a closure-flap-forming portion that is initially positioned exteriorly of one wall of the bag at the bag mouth and which is adapted to be folded over the mouth of the bag after the bag has been packed to close the bag. The bag can be re-opened by reversely folding the closure-flap-forming portion to return it to its original position. One disadvantage of such a bag is that it is not completely sealed against dirt or unwanted vapours, such as steam, for example, since dirt and the like can enter the bag even after the closure flap has been closed. This problem can be overcome merely by heat-sealing the open end of the bag after it has been packed, but a bag so closed is relatively difficult to open, the degree of difficulty being dependent upon the thickness of the sheet material employed in the fabrication of the bag.

In accordance with this invention, there is provided a bag which may be heat-sealed or otherwise permanently closed after it has been packed, and yet which may be opened readily. Thus, in accordance with this invention, there is provided a bag having a front wall and a back wall joined at the bottom and sides of the bag. The front and back walls each have a top edge. A line of weakness may be torn readily to permit access to the interior of the bag after the bag has been sealed on the side of the line of weakness remote from the bottom of the bag. The bag has a top end or mouth at the top of the bag that is open to provide access for packing purposes to the interior of the bag both above and below the line of weakness.

This invention will become more apparent from the following detailed description, taken in conjunction with the appended drawings, in which:

FIG. 1 is a perspective view illustrating one way in which a bag embodying this invention may be constructed;

FIG. 2 is a front elevation of a bag embodying this invention; and

FIG. 3 is a section taken along line 3—3 in FIG. 2.

Referring to the drawings, and, in particular, to FIG. 1, a bag embodying this invention may be fabricated from a continuous web 10 of a thermoplastic, heat-sealable, sheet material such as polyethylene, for example. Of

course, bags embodying this invention also might be made from other types of material such as paper, for example, although, in this case, different constructional techniques with respect to joining the walls, for example, might have to be employed.

Web 10 has a front wall 11 and a back wall 12 and Web 10 is longitudinally folded along its bottom, whereby front wall 11 and a back wall 12 are joined along the bottom edge of the bag by means of an integral gusset 13. Gusset 13 is in no way essential to this invention, and a bag embodying this invention may be simply generally U-shaped at its bottom edge thereof, rather than being shaped generally in the form of a W as occurs when gusset 13 is employed.

Front wall 11 is folded or looped upon itself at 14 and thus may be considered to be in the form of three continuous, integral panels designated 15, 16 and 17, panel 16 being sandwiched between panels 15 and 17 and being overlapped by panel 15.

Front wall 11 has a top edge 18, while back wall 12 has a top edge 19. Although it is not essential to this invention, the height of front wall 11 as measured from gusset 13 or the bottom of the web is less than the height of back wall 12, so that there is a marginal strip 20 of back wall 12 that is not overlapped by front wall 11. Spaced apart openings 21 may be provided in marginal strip 20 to provide a means whereby bags embodying this invention can be hung from nails, hooks or the like.

Web 10 may be folded into the configuration thereof shown in FIG. 1 by known types of folding machinery.

Disposed in front wall 11 at a position below both top edges 18 and 19 of front and back wall 11 and 12 respectively is a line of weakness 22 that runs parallel to the bottom of the web and parallel to top edges 18 and 19. In the illustrated embodiment of this invention, line of weakness 22 is a line of perforations, but this is not essential to the invention, and other types of lines of weakness that can be torn relatively easily can be employed without departing from this invention. In the illustrated embodiment, perforated line 22 is positioned in intermediate panel 16. This is a preferred embodiment of the invention, since the perforated line thereby is protected against accidental opening by the portion of panel 15 that overlaps the perforated line. In another preferred embodiment of this invention, perforated line 22 could be disposed in the position of panel 17 overlapped by panel 16 with the same result. In yet another but less preferred embodiment of this invention, front wall 11 would not be folded upon itself as shown at 14, and perforated line 22 merely would be provided in front wall 11. In this case, however, nothing would overlap the perforated line, and it could be ripped open accidentally. It can be seen that when perforated line 22 is torn, panel 17 provides a partial closure of the bag. In the embodiment wherein the perforation is positioned in intermediate panel 16, panel 17 provides a suitable dust cover for the contents of the bag.

A bag embodying this invention is shown in FIG. 2 at 30. Such a bag is fabricated from the continuous web 10 of FIG. 1 by sealing front and back walls 11 and 12 together on either side of the lines marked 23 and 24 in FIG. 1. Advantageously, the two walls of the bag may be joined together along the sides of the bag by means of a heat-sealing operation. Two heat-sealed lines are schematically shown in FIG. 1 at 25 and 26. Subsequent to heat sealing, web 10 may be segmented at bag width intervals along lines 23 and 24, thereby forming a bag 30 of the type shown in FIGS. 2 and 3 having its front and back walls joined at the bottom by gusset 13 and along the sides by heat-sealing seams 31 and 32. It will be understood that during heat-sealing, panel 15 will be heat-

sealed to panel 16, and panel 16 will be heat-sealed to panel 17.

Referring now to FIGS. 2 and 3, bag 30 has an open top end or mouth 33 that is defined between top edge 18 of front wall 11 and the immediately adjacent part of back wall 12. This opening provides access to the interior 5 34 of the bag to permit the bag to be packed with a shirt or whatever contents the bag is to contain. This may be done conveniently by hanging the bag on hooks or nails, and by pulling front wall 11 away from back wall 12, or by blowing air into the interior of the bag via mouth 33 during the filling thereof.

After the bag has been packed, it may be closed by heat-sealing front and back walls 11 and 12 together along a line designated 35 in FIG. 2 and indicated by arrows 36 in FIG. 3. Bag 30 then is permanently sealed, and the only openings into the bag are those which are provided by perforated line 22. If desired, at the same time, or subsequent to heat-sealing along line 35, the portions of back wall 12 and panel 17 above line 35 can 20 be removed.

When it is desired to open the bag, it only is necessary to rip the bag along perforated line 22, thereby providing access to the interior of the bag and permitting the contents thereof to be removed through the opening thus created. The contents may be returned to the bag and panel 17 which is now secured at the ends as well as along line 35 provides a useful dust cover.

In the wrapping of clothing which have been laundered or dry cleaned for example, the clothing can be sealed in the bag at the cleaning plant and delivered to a customer. The customer can remove the clothing by tearing the perforated line in order to inspect the cleaned material and then return the material to the bag. The panel 17 which is now sealed along the top and side edges provides a suitable dust covering until the clothing is ready to be used.

It will be understood that it is not essential to this invention that back wall 12 be longer than front wall 11. The two walls could be of equal length, or back wall 12 could be shorter than front wall 11, but, in any event, the line of weakness that is formed in front wall 11 must be disposed below the top edges of the front and back walls, so that these walls can be sealed together on the side of the line of weakness remote from the bottom of the bag. There is some advantage to having back wall 12 longer than front wall 11, since this permits the bag to be opened more readily for filling via mouth 33 than would be the case if the two walls were of equal length.

It also would not depart from this invention to provide a line of weakness 22 in the back rather than in the front wall of the bag.

Those skilled in the art will appreciate that heat-sealing is not an essential part of this invention, and that other means for sealing the side seams and top end of the bag could be employed, if desired, without departing from this invention.

While preferred embodiments of this invention have been disclosed herein, those skilled in the art will appreciate that changes and modifications may be made therein without departing from the spirit and scope of this invention as defined in the appended claims.

I claim:

1. A bag consisting of a front wall and a back wall each of said walls having a bottom, sides and top edge, said walls joined at the bottom sides and at an upper end to define the interior of said bag, the top edge of the front wall disposed closer to the bottom of said bag than is the top edge of the back wall, said front wall having a first part thereof overlapped by a second part thereof, said first part being disposed closer to the back wall than is said second part, a line of weakness in said overlap which may be torn readily to permit access to

the interior of said bag, said upper end being at a junction of the top edges of the front wall and the back wall on the side of said line of weakness remote from the bottom of said bag, said front and back walls consisting of a sheet of thermoplastic integral at the bottom of said bag.

2. A bag as claimed in claim 1 wherein said thermoplastic material is polyethylene.

3. A substantially flat bag of heat sealable thermoplastic material having overlying first and second walls, a closed bottom, an open mouth opposite said bottom and side edges,

one said wall containing a tuck, spaced from the open mouth, extending from one said side edge to the other and being directed inwardly and away from said open mouth,

the overlying side edges of the walls including edge portions of the tuck being integrally heat sealed, a line of weakness being present in said one wall parallel to and located at or closely adjacent the interior extremity of said tuck.

4. A bag having a front wall and a back wall joined at the bottom and sides to form an open mouth bag, said front and back walls each having a top edge, the top edge of the front wall disposed closer to the bottom of said bag than is the top edge of the back wall, said front wall having a first part thereof overlapped by a second part thereof, said first part being disposed closer to the back wall than is said second part, a line of weakness in said overlap which may be torn readily to permit access to the interior of said bag after said bag has been sealed between said line of weakness and the top edge of the front wall.

5. A bag as claimed in claim 4 wherein said line of weakness is a perforated line.

6. A bag as claimed in claim 5 wherein said bag is fabricated of a thermoplastic sheet material.

7. A bag as claimed in claim 6 wherein said thermoplastic sheet material is polyethylene.

8. A bag as claimed in claim 7 wherein said line of weakness is in said first part of said front wall.

9. A bag as claimed in claim 7 wherein said line of weakness is in said second part of said front wall.

10. A bag as claimed in claim 9 wherein said front and back walls consist of a sheet of polyethylene integral at the bottom of said walls.

11. A closed bag of heat sealable thermoplastic material enclosing an article of commerce and having overlying first and second walls, a bottom edge constituted by a fold connecting said walls, a top edge opposite said bottom edge constituted by a heat seal, and side edges, one said wall containing a tuck, spaced from the top edge, extending from one said side edge to the other and being directed inwardly and away from said top edge,

the overlying side edges of the walls including edge portions of the tuck being integrally heat sealed, a line of weakness being present in said one wall parallel to and located at or closely adjacent the interior extremity of said tuck.

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