

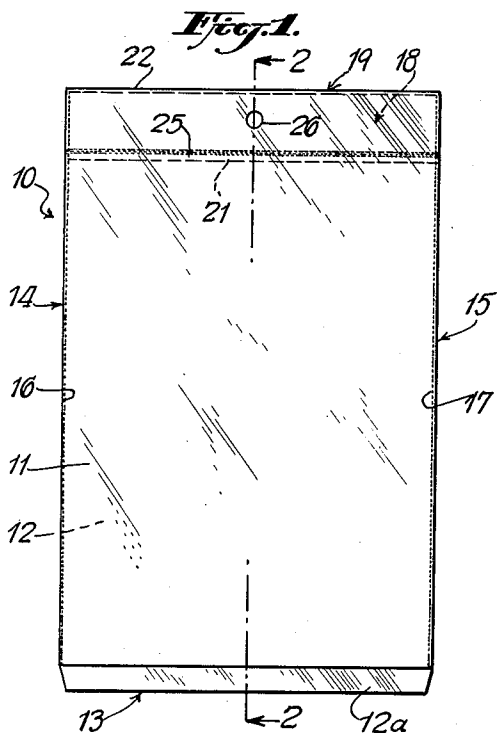
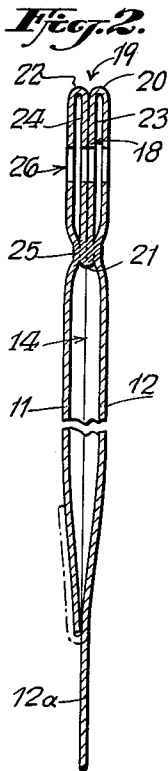
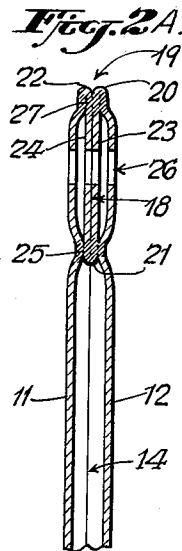
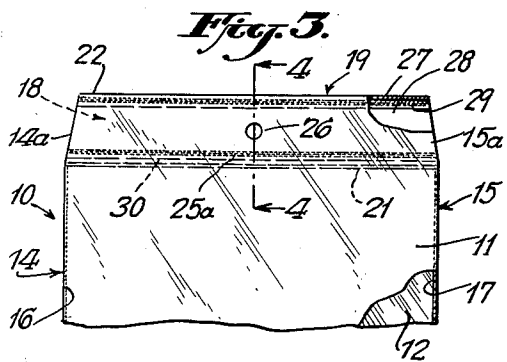
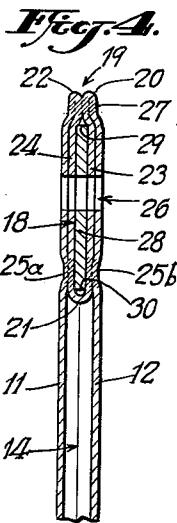
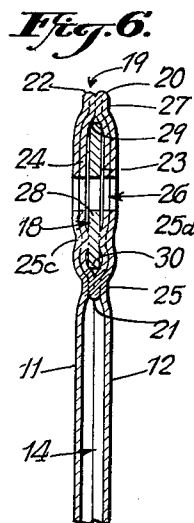
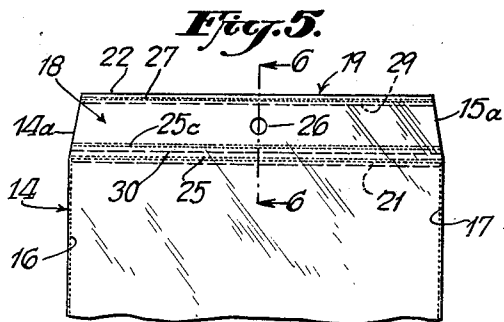
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This invention relates to bags which are more often made of flexible plastic material, such as polyethylene. More particularly, the invention relates to such bags of the like which are intended to be suspended by their top ends, as from a rod or hook or the like, for the purpose of displaying the merchandise therein contained, or for more convenient viewing of printed indicia on the bags.

The particular construction of the bag will affect the process by which it is manufactured, either facilitating the same or making manufacture more difficult of control, more expensive, etc. Moreover the bag construction will either simplify or render more difficult the application and subsequent registration of printed indicia thereon. Accordingly, it is an object of the invention to provide a bag construction which will promote facility in the manufacture of the bag, including the application thereto of properly registered printed indicia. In addition, it is intended that the completed bag will be attractive in appearance, thereby enhancing the sales appeal of the filled package.

In accordance with a preferred form of the invention, a tubular bag is made of a single sheet of the filmy polyethylene material, the sheet providing oppositely disposed front and back face panels which are heat sealed together at the opposed side edges of the bag. The bag, in one of its forms, has an open bottom end for insertion of the merchandise to be contained therein. At the top end of the bag, the sheet of plastic material is folded to form an interiorly extending pleat, or so-called "gusset" thereat, the sheet being folded downwardly of the height of the bag, then upwardly, and then downwardly again during the manufacturing process for the purpose. A line of heat seal is provided transversely of the bag, in the direction of its width and generally coincident with the interiorly disposed fold of the gusset, to secure the front and back face panels to the interiorly disposed gusset. One or more hanger apertures are provided through the top end gusseted construction for the purpose of mounting the bag in the aforesaid manner for display purposes.

It will be found that the aforementioned transverse line of heat seal does not unduly wrinkle the panel elements of the bag, as might otherwise occur without the gusset, and therefore the bag will have an attractive finished appearance.

In the preferred construction, a reinforcing member, such as a strip of cardboard or the like, is disposed within the top end pleat or "gusset," and is heat sealed in place by one or more additional lines of heat seal disposed toward its upper and lower edges.

In the preferred embodiment, a line of heat seal is provided above the reinforcing member, the line of heat seal joining together the two aforementioned downwardly directed lines of fold of the gusset.

Printed indicia may be conveniently disposed on one or both of the interior panels which are provided by the pleated or gusseted construction, thereby rendering such indicia pleasing in appearance in the completed construction.

These and other objects, advantages, and features of the invention will become more fully apparent by reference to the following detailed description thereof, when taken together with the accompanying drawings, in which:

FIGURE 1 is a plan view of a bag made in accordance with the invention;

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FIGURE 2 is an enlarged sectional view of the bag of FIGURE 1, the section taken at line 2-2 of that figure;

FIGURE 2A is a similarly enlarged, but fragmentary sectional view showing the top end of a bag in accordance with a slightly modified form of the invention;

FIGURE 3 is a fragmentary plan view of a bag embodying another modified form of the invention;

FIGURE 4 is an enlarged sectional view of the bag shown in FIGURE 3, the section taken at line 4-4 of that figure;

FIGURE 5 is a fragmentary plan view of a bag in accordance with still another modified form of the invention; and

FIGURE 6 is an enlarged section view of the bag shown in FIGURE 5, the section taken at line 6-6 of that figure.

Referring first to FIGURES 1 and 2, the bag 10 is made from a single sheet of flexible plastic material, such as polyethylene, and has a front face panel 11 and an oppositely disposed back face panel 12. The back face panel 12 is preferably longer than the front face panel 11 to provide a closure flap portion 12a at the bottom end of the bag, generally indicated by reference numeral 13. Thus, the bag 10 is open at its bottom end 13 for insertion of merchandise (not shown) to be therein contained, whereupon the bottom closure flap 12a may be folded into overlapping relation with the front face panel 11, as indicated by dotted lines in FIGURE 2, to be sealed in such position as by adhesive, adhesive tape, or a line of heat seal.

The bag 10 has opposed side edges 14 and 15 whereat the front face panel 11 is heat sealed to the back face panel 12 along respective lines of heat seal 16, 17. The lines of heat seal 16 and 17 extend from substantially the bottom end 13 of the bag at least to adjacent the pleated construction or gusset, generally indicated by numeral 18, at the top end 19 of the bag.

The gusset 18 at the top end 19 of the bag is formed integrally with the folding of the sheet of polyethylene during the manufacturing process. Referring to FIGURE 2, it is seen that the gusset 18 is formed by folding the back face panel 12 downwardly along a line of fold 20 adjacent thereto; thence folding the sheet upwardly along a line of fold 21 which is spaced downwardly, with respect to the bag height, from line of fold 20; and thence again folding the sheet downwardly along line of fold 22 which is spaced upwardly from line of fold 21 a distance equal to the distance of the latter from line of fold 19. Thus are provided a back interior panel 23 and a front interior panel 24 on which printed indicia may be disposed.

A transverse line of heat seal 25, in the direction of the bag width and generally coincident, or slightly above the location (with respect to the height of the bag) of interior line of fold 21, conjointly attaches the back face panel 12 to the back interior panel 23; back interior panel 23 to the front interior panel 24; and the front interior panel 24 to the front face panel 12. The lines of heat seal 16 and 17, at the respective side edges 14, 15 of the bag extend at least to the location of transverse line of heat seal 25, and therefore the bag 10 is effectively sealed at its top end 19.

One or more hanger apertures 26, passing through all of the panels 11, 24, 23 and 12 as shown, provides means whereby the bag 10 may be suspended by its top end 19, as aforesaid, when the bag is mounted with the aperture 26 passed over a rod or hook or the like (not shown).

Referring now to FIGURE 2A, which is similar to FIGURE 2, it is seen that an additional transverse line of heat seal 27, along or closely adjacent to lines of fold 20, 22, is preferably provided so as to attach together

all of the panels 11, 24, 23 and 12 at the top of gusset 18. This effects a more unitary top end panel construction, and prevents accumulation of dirt within the gusset 18 where the filled package is likely to be on display for some considerable period of time.

Referring to the embodiments shown in FIGURES 3-6 inclusive, reinforcing member 28, such as a strip of cardboard or stiff paper or the like, is disposed within the gusset 18, adjacent the interior panels 23, 24, so that a more rigid construction is effected at the top end 19 of the bag. The reinforcing member 28 is preferably inserted within the line of fold 21 during a continuous manufacturing process in sequentially forming a multiplicity of bags and prior to the providing of line of heat seal 27 at the extreme top end of the bag. However, reinforcing member 28 may be later inserted between front and back interior panels 24, 23, through either of the open side portions 14a, 15a thereat, subsequent to the application of line of heat seal 27, if found desirable.

In the embodiment shown in FIGURES 3 and 4, the reinforcing member 28 is adhesively secured in position, with its upper edge 29 adjacent but below the top end line of heat seal 27, as by lines of heat seal 25a and 25b which respectively seal together the front face panel 11, front interior panel 24 and lower edge 30 of reinforcing member 28, and the lower edge 30 of reinforcing member 28, back interior panel 23 and back face panel 12. In such construction, a line of heat seal below the lower edge 30 of the reinforcing member, such as line of heat seal 25 in the other figures, is omitted.

As illustrated in FIGURES 5 and 6, however, the lower edge 30 of the reinforcing member 28 may be disposed adjacent the line of heat seal 25 (at the line of fold 21), with the upper edge 29 of the reinforcing member 28 situated adjacent line of heat seal 27, and the reinforcing member is secured in its position by additional transverse lines of heat seal 25c, 25d. The lines of heat seal 25c, 25d respectively seal together the front face panel 11, front interior panel 24 and the lower edge 30 of reinforcing member 28, and the reinforcing member lower edge 30, back interior panel 23 and back face panel 12. Of course, additional transverse lines of heat seal (not shown) may be employed to additionally secure the reinforcing member, adjacent its top edge 29, within the gusset 18.

Thus has been described a bag in several of its embodiments which achieves all of the objects of the invention.

What is claimed is:

1. A tubular bag of flexible and filmy material having a top end, a bottom end and opposed side edges, and including oppositely disposed front and back face panels merging together in three lines of fold at said top end, said lines of fold being spaced from and alternating in direction of fold with respect to each other to provide a gusseted construction at said top end including two oppositely disposed interior panels, the first and third of said lines of fold being contiguous at said top end and defining an upper edge of said gusseted construction, and the second of said lines of fold defining a lower edge of said gusseted construction, said front face panel and said interior panels and said back face panel being heat sealed together by a singular line of heat seal substantially coincident with said first and third lines of fold, said front and back face panels being heat sealed together at and thereby defining each of said side edges along their respective lengths extending from substantially said bottom end at least to said lower edge of the gusseted construction, a reinforcing member disposed within said gusseted construction, and means retaining said reinforcing member in its said position.

2. A tubular bag according to claim 1, said front face panel and said interior panels and said back face panel

further being heat sealed together by an additional line of heat seal substantially coincident with said second line of fold.

3. A tubular bag according to claim 1 wherein said retaining means comprises a line of heat seal attaching together said front face panel, one of said interior panels and said reinforcing member, and another line of heat seal attaching together said reinforcing member, the other of said interior panels and said back face panel.

4. A tubular bag according to claim 3, said front face panel and said interior panels and said back face panel further being heat sealed together by an additional line of heat seal below said reinforcing member and substantially coincident with said second line of fold.

5. A tubular bag of flexible and filmy material having a top end, a bottom end and opposed side edges, and including oppositely disposed front and back face panels merging together in a plurality of lines of fold at said top end, said lines of fold being spaced from and alternating in direction of fold with respect to each other to provide a gusseted construction at said top end including a plurality of oppositely disposed and consecutively merging interior panels whose upper and lower edges are each formed by one of said lines of fold to define respective upper and lower edges of said gusseted construction, said front face panel and said interior panels and said back face panel being sealed together substantially coincident with one of said lines of fold at said lower edge of the gusseted construction, said front and back face panels being sealed together at and thereby defining each of said side edges along their respective lengths extending from substantially said bottom end at least to said lower edge of the gusseted construction.

6. A tubular bag of flexible and filmy material having a top end, a bottom end and opposed side edges, and including oppositely disposed front and back face panels merging together in a plurality of lines of fold at said top end, said lines of fold being spaced from and alternating in direction of fold with respect to each other to provide a gusseted construction at said top end including a plurality of oppositely disposed and consecutively merging interior panels whose upper and lower edges are each formed by one of said lines of fold to define respective upper and lower edges of said gusseted construction, said front face panel and said interior panels and said back face panel being sealed together by two lines of heat seal, one of said lines of heat seal being substantially coincident with one of said lines of fold at said lower edge of the gusseted construction, and the other of said lines of heat seal being substantially coincident with said lines of fold at said upper edge of the gusseted construction, said front and back face panels being sealed together at and thereby defining each of said side edges along their respective lengths extending from substantially said bottom end at least to said lower edge of the gusseted construction.

7. A bag made of heat-sealable sheet plastic material having opposed walls joined together at the side edges of the bag by heat seals and joined at the top of the bag by a gusset, said bag being open at the bottom, a heat seal securing the walls of the bag and said gusset together on a line extending transversely from one side edge of the bag to the other adjacent the top, and said bag having a hole extending through both walls and said gusset located between said line and the top.

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