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Korn

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[54] COMBINATION BAG AND CLOSURE

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[52] **U.S. Cl.** **229/62,** 150/11

[51] **Int. Cl.** **B65d 33/16**

[58] **Field of Search** 150/11; 229/62, 63

[56] **References Cited**

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[57] **ABSTRACT**

A plastic film bag provided with an accompanying closure member; the closure member being a flexible tie strip detachably secured to the bag; the mouth of the bag being formed with openings for threading the tie strip therethrough to constrict the mouth of the bag.

8 Claims, 6 Drawing Figures

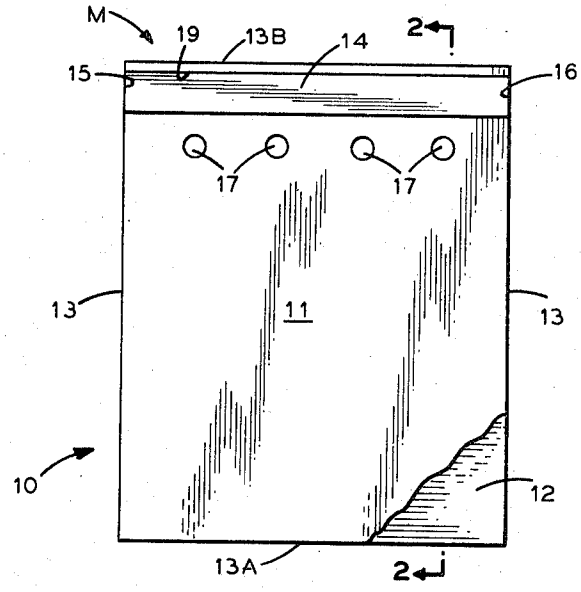


FIG. 1

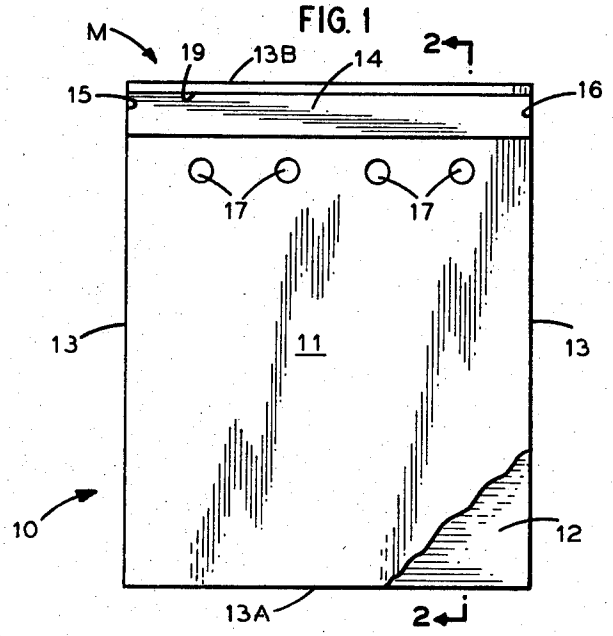


FIG. 2

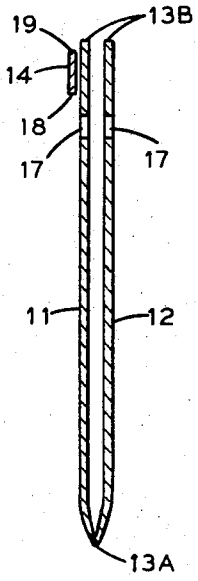


FIG. 3

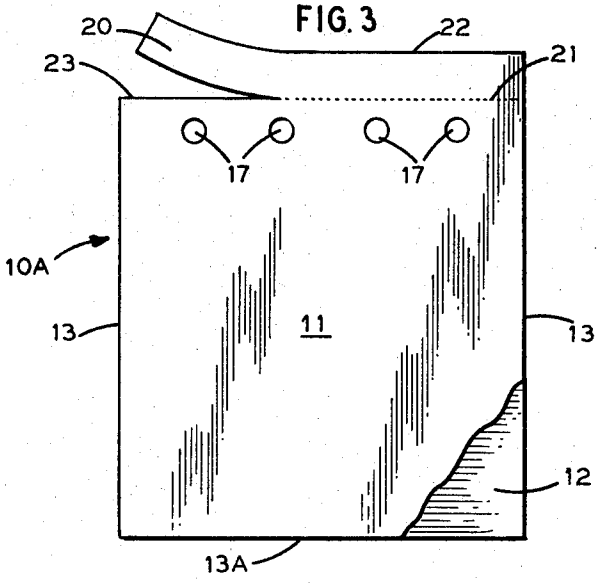


FIG. 4

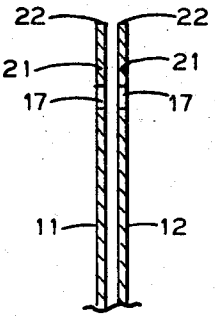


FIG. 5

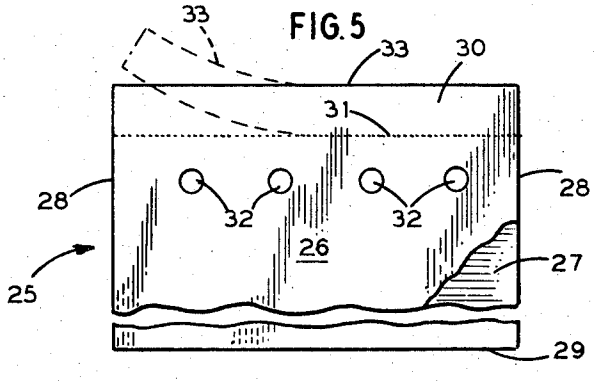
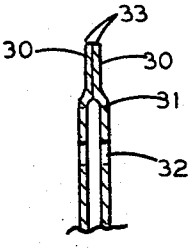


FIG. 6



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COMBINATION BAG AND CLOSURE

BACKGROUND OF THE INVENTION

Plastic film bags are commonly used for receiving refuse; the filled bag being disposed of as a unit. However, since such bags are of the open mouth type, closure means must be provided. Accordingly, tie strings, strips or wires are separately provided and each filled bag is closed by applying a tie string to the constricted mouth portion of the bag and tieing the same.

Such known bag closing procedures present several problems which militate against a wholly satisfactory approach to the closure problem. Since the tieing strings are separate from the bags; an adequate supply of the same must be kept on hand for application to the bags. This necessarily involves storage of the tieing strings and regular check of the inventory thereof to avoid depletion of the item just when the same is needed.

Accordingly, an object of this invention is to provide an improved bag construction which includes a flexible tieing means; such tieing means being unitized with the bag so that the tieing means is available at all times.

Another object of this invention is to provide a bag construction of the character described, wherein the bag is formed of plastic film and the tieing means takes the form of a plastic film strip; the strip being secured in flat condition to the bag so as to avoid any problems in storing the bags.

A further object of this invention is to provide a bag construction of the character described, wherein the tieing means is of a nature as to allow the same to be assembled with the bag proper as the bag is being formed.

Yet another object of this invention is to provide a bag construction of the character described, wherein the tie strip is detachably secured at its terminal ends to a wall portion of the bag; the bag being provided with openings adjacent the mouth thereof, the tie strip being detached from the bag for threading through the openings, in a manner to facilitate the threading operation.

Still another object of this invention is to provide a bag of the character described, wherein the tie strip is integral with at least one of the bag panels; the tie strip being removable from the bag panel along a line of perforations when the strip is to be used.

Yet a further object of this invention is to provide a bag of the character described, wherein the bag is originally sealed at the mouth portion thereof; the sealed mouth portions providing the tie strip upon removal thereof to provide the bag with an open mouth.

DESCRIPTION OF THE DRAWING

FIG. 1 is a plan view of a bag construction embodying the invention;

FIG. 2 is a sectional view taken on the line 2—2 of FIG. 1;

FIG. 3 is a plan view of another embodiment of the invention;

FIG. 4 is a sectional view thereof;

FIG. 5 is a plan view of another embodiment; and

FIG. 6 is a sectional view thereof.

DESCRIPTION OF THE PREFERRED EMBODIMENT

As shown in FIG. 1–3, 10 designates a bag construction embodying the invention. The same comprises similar, overlying panels 11, 12 which are of rectangular shape and formed of a thermoplastic resin film such as polyethylene or the like. Panels 11, 12 may be seamed together along their side edges 13 and the bottom edges 13A thereof, as by fusion in a manner known in the art. Alternatively, the bag 10 may be derived from tubular film which is transversely cut and seamed to form bottom edges 13A.

The bag 10 further comprises unseamed top edges 13B which provides the mouth M of the bag. Means is provided for constricting and tieing the mouth M of bag 10 after the same has been filled.

To this end, there is provided a tieband 14 of plastic film, which may also be of polyethylene or the like. Tieband 14 has a gauge somewhat greater then the gauge of panels 11, 12. The tieband 14 is secured to the bag 10 so as to lie flat against one of the panels 11, 12; say panel 11. The bank 14 is secured at its opposite ends 15, 16 to the side edges 13 of the bag by fusion or the like. Such operation may take place when the bag 10 is formed from seamed panels 11, 12, at which time band 14 is also seamed to the side edges of said panels.

The panels 11, 12 are formed with a series of openings 17 located transversely of the panels and immediately below the bottom edge 18 of the tieband 14, whose top edge 19 is located immediately below the top edges 13B of the panels 11, 12.

It will be apparent that after bag 10 is filled, the tieing means in the form of tieband 14 is immediately available. Accordingly, band 14 may be then completely separated from panel 11 by pulling the same away at edges 15, 16. The separated band is then threaded through openings 17 and the mouth M is constricted and the ends of band 14 are tied together.

Alternatively, only one end of band 14 is separated from one side edge 13 of the bag, leaving the other end still attached. The free end of the band 14 is then threaded through openings 17, followed by constriction of the mouth M of the bag, and finally, detachment of the secured end of band 14 to allow both free ends to be tied together.

The diameter of openings 17 and the appropriate width of band 14 are selected in accordance with the gauge of the panels 11, 12. If the band 14 has a gauge equal to or less than that of panels 11, 12, the same may be folded longitudinally to double the thickness thereof. In all cases, by folding the band 14 along a longitudinal line, the same may be accomodated on openings 17.

Alternatively, bag 10A, as shown in FIGS. 3, 4, is similar to bag 10, except that in lieu of attached tieband 14; such tieing means is derived from the bag panels 11, 12. To this end, the upper marginal edge portion 20 provides the tie band, the same being separable from panels 11, 12 by a line of perforations 21 spaced below top edges 22. The band 20 thus separated from the bag 10A, may be threaded through openings 17, as previously described to provide tie means for the mouth 23 of said bag. The band 20 may be of doubled thickness if perforations 21 extend through both panels 11, 12; or

of single thickness if the perforations **21** extend through only one of said panels **11, 12**.

In some instances, bags **25**, as shown in FIGS. **5, 6**, are formed in a manner to seal upper marginal portions **30** of opposed panels **26, 27**. Bag **25** may thus be formed from flattened tubular film stock, being transversely cut sealed to form bottom sealed edge **29**.

As the bags **25** come off the machine, the bag is closed due to the marginal seal at portions **30**. The portions **30** provide the tie band, being separable along a line of perforations **31**, spaced below top edges **33**. The perforations **31** being located immediately below the sealed portions **30**; upon tearing off tie band **30**, the bag **25** is provided with an open mouth simultaneously with the provision of tieing means for the bag **25**; the doubled thickness of film portions **30** being threaded through openings **32** located immediately below the perforation line **31**.

It will be apparent that in each of the embodiments, tieing means accompanies each bag; such tieing means being of a character as to lie flat, thereby facilitating packaging of the bags. Further, the tiebands may be readily and quickly manipulated to provide closure means for the bags.

I claim:

1. A bag comprising opposed panel portions of plastic film, said panels being interconnected at their side and bottom edges and providing a mouth portion at the top edges thereof, and tieing means for the constricted mouth portion of said bag, said tieing means comprising a flexible tie strip extending between the side edges of said panels, the terminal ends of said tie strip being removably secured to portions of one of said panels, said panels being formed with a plurality of pairs of laterally spaced openings located below the mouth of said bag; said tie strip being removable from said panel for threading through said openings in said panels, whereby to constrict the mouth portion of the bag and to tie the ends of said tie strip to retain the mouth of the bag in its constricted condition.

2. A bag as in claim **1** wherein the terminal ends of said tie strip extend to the side edges of said panels.

3. A bag as in claim **1** wherein said tie strip is formed of plastic film of a gauge greater then that of said panels.

4. A bag as in claim **1** wherein said tie strip is located between the mouth of said bag and said openings.

5. A disposable bag comprising opposed panel portions of plastic film, said panels being interconnected at their side and bottom edges, and tieing means for the mouth of the bag comprising a flat flexible tie strip, and means for removably connecting said tie strip in a flat condition to at least one of said panels, said panels being formed with a plurality of laterally spaced openings adjacent the mouth of the bag, said tie strip being removable from said panel for threading through said panel openings whereby to constrict the mouth of said bag, the ends of the tie strip then being adapted to be tied together.

6. A bag as in claim **5** wherein said tie strip extends between the side edges of said panels, the top edge of the tie strip being located immediately adjacent the mouth of the bag.

7. A bag as in claim **5**, wherein said tie strip is integral with at least one of said panels and is defined by a transversely disposed line of perforations extending to the opposite side edges of said panels.

8. A bag as in claim **5**, wherein said tie strip comprises narrow strip portions in opposed relation and respectively integral with said panels, said strip portions being sealed together and defined by a transversely disposed line of perforations extending to the opposite side edges of said panels.

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