# United States Patent [19]

**Lynch**

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[54] **PLASTIC BAG WITH INTEGRAL STRAP HANDLES**


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[73] Assignee: **Acme Paper Products Company Limited**, Toronto, Ontario, Canada



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[21] Appl. No.: **204,256**

[52] **U.S. Cl.** ..... **229/54 R**, 150/11, 150/12, 206/DIG. 18, 229/54 C, 229/63

[51] **Int. Cl.** ..... **B65d 33/10**

[58] **Field of Search** ..... 229/54 R, 54 C, 63; 206/DIG. 18; 150/11, 12



[56] **References Cited**

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*Assistant Examiner*—Stephen P. Garbe
*Attorney*—Leon Arthurs



[57] **ABSTRACT**

The instant bag is formed of two panels joined together by their side edges and at the bag bottom. Normally sandwiched between the top ends of the panels are a pair of straps which are integrally attached to the bag at and adjacent to its said side edges being otherwise detached from the panels to render them withdrawable from the bag mouth for use as handles.


**4 Claims, 5 Drawing Figures**

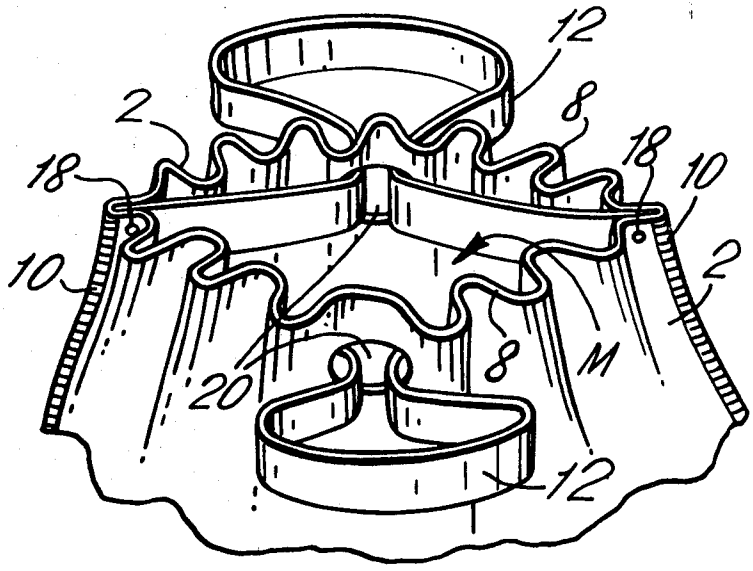


Fig. 1.

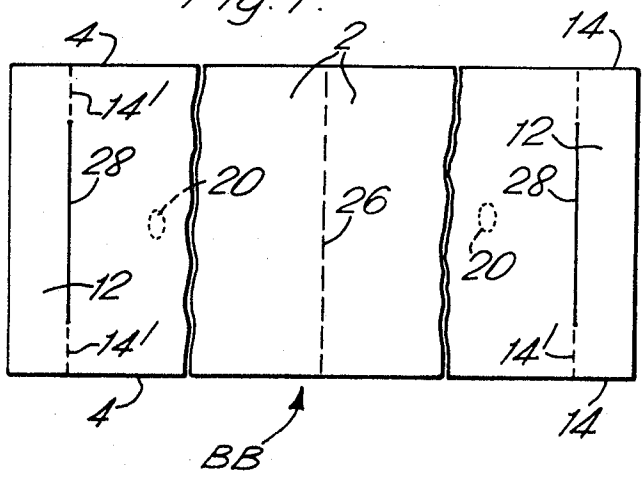

4
2
14
14'
28
20
26
12
28
20
12
14'
14'
4
BB
14

Fig. 2.

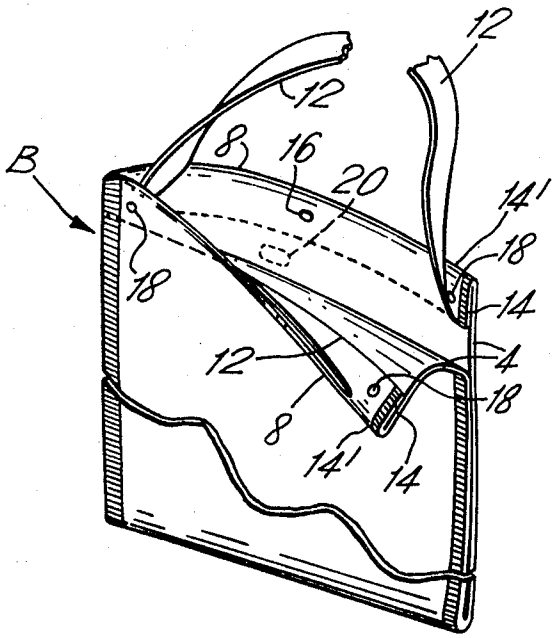
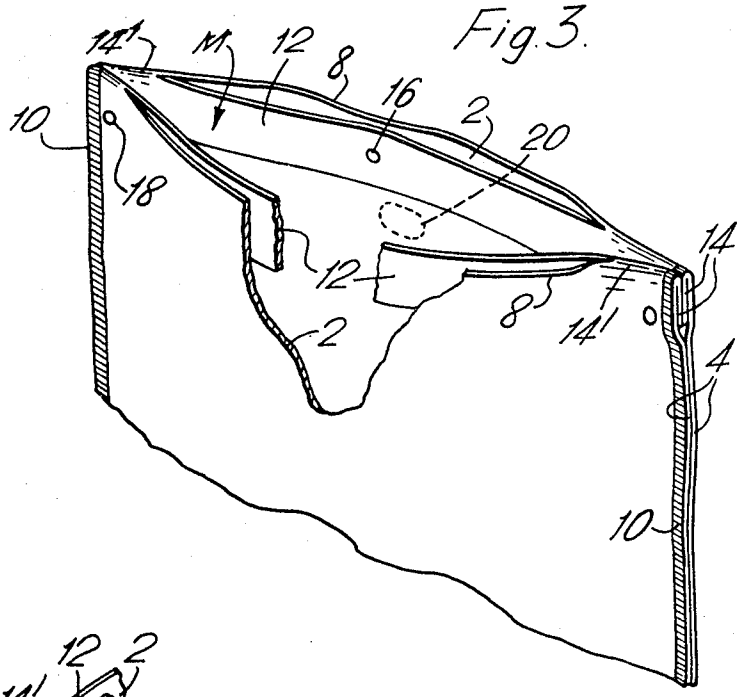

12
12
8
16
20
B
14'
18
18
14
12
4
18
8
14'
14

Fig. 3.



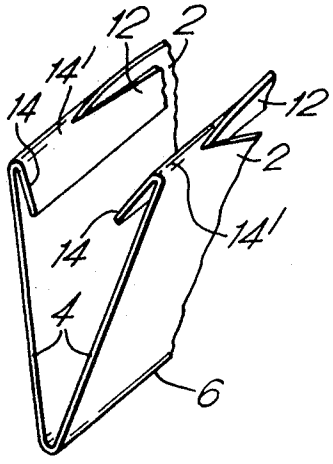
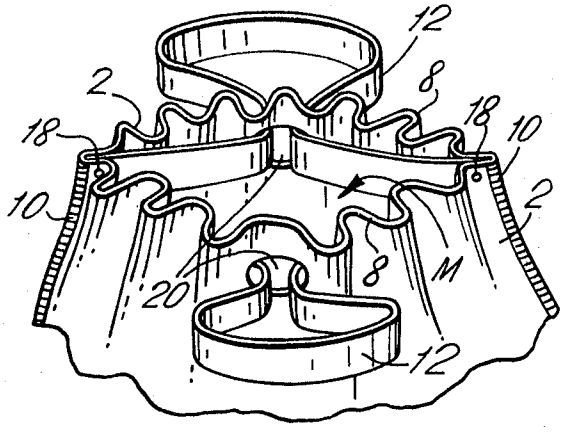




Fig. 5.

Fig. 4.



# PLASTIC BAG WITH INTEGRAL STRAP HANDLES

The invention relates to sacks or bags such as are used for transporting relatively light burdens. In particular, the invention is concerned with a bag of this type which is provided with handles.

Modern bags as herein visualized are commonly made of plastic film which substance is also the choice of the present invention.

In the past, bags of the character descirbed have been provided with handles of various sorts. In the main, however, past handles serving the purposes of the invention were supplementary to and not integral with the bags and the attachment thereof to the bags necessitated additional manufacturing procedures of more or less complexity.

The broad object of the invention is to provide an improved bag construction with integral handles.

A further object is to provide a bag construction whereby a bag and its handles may be formed of a single sheet of bag material and in a single more or less continuous operation.

A further object is to provide a bag of the type described wherein the handles have reinforced connection to the main body of the bag.

A still further object is to provide a bag of the character indicated with integral strap handles which, in addition to their function as handles, can also be used as drawstrings for the bag mouth.

The foregoing and other more or less broad objects of the invention, both stated and unstated, are achieved by the provision of a bag comprised, substantially, of congurent front and rear panels of bag material arranged in superposed relation; each said panel having side edges and a bottom end coinciding with an continuously attached to the coinciding edges and bottom end of the other panel. Each said panel also has a top end which is detached from the top end of the other panel and co-operates therewith to form a mouth for the bag. A strap integral with each said panel is constituted by an extension of its top end; the two straps being sandwiched between the superposed panels with the strap ends respectively sandwiched between the proximal side edges of the panels and attached thereto by the same seam which attaches the coincident side edges. Each said strap is detached from its associated panel intermediately of its ends; remaining, preferably, attached thereto at an end zone extending inwardly from each side edge of the bag.

In the preferred form of the invention, each of the aforementioned straps is intermediately tacked to its associated panel by a breakable connection and may be further tacked to the panel in the end zones aforesaid.

Optionally, a small central aperture may be provided in each panel adjacent the bag mouth whereby to extend the utility of the present bag.

The invention will now be exemplified by the construction hereinafter described and illustrated in the annexed drawings wherein like reference devices refer to like parts of the invention throughout the several views and wherein:

FIG. 1 is a plan view of a blank of bag material with fold and cut lines demarcated thereon;

FIG. 2 is an isometric view of the bag constructed pursuant to the invention; parts thereof being cut away and other parts turned back to reveal otherwise hidden structural details;



FIG. 3 is a further isometric and somewhat enlarged view of the top portion only of the bag with parts cut away;

FIG. 4 is an isometric view of the top of the present bag with the handles positioned for use as drawstrings, and

FIG. 5 is an isometric view of one edge of the bag at an intermediate point in its construction.

As illustrated in the drawing, bag B is made of plastic film which is much thinner than that suggested in the drawing; the thickness of the film in the drawing having been very much exaggerated for the sake of clarity and to facilitate comprehension. However, the thickness of the film actually used in the bag construction may vary within relatively wide limits having regard to economical and load considerations. Moreover, it will be obvious that the invention is not restricted to plastic film nor to any particular plastic film; the essential properties of the bag substance being readily obvious from its character as hereinafter described.

The bag B of the invention is comprised of the usual front and rear panels 2—2 which are arranged in superposed relation. Said panels 2—2 are congruent with their respective side edges 4—4 and bottom ends 6 coincident. The panels 2—2 are attached together, in this instance, by continuous thermal seams 10—10 welding together their coincident side edges 4—4. In addition, the respective bottom ends of the panels 2—2 merge with each other in this embodiment of the invention and so form a common bottom end 6. The top ends 8—8 of the panels are not attached except by the side seams 10—10 described and the bag B is thus left with an open top constituting its mouth M through which articles may be deposited therein and removed therefrom.

An extension of each top panel end 8 is folded inwardly into the bag B as best shown in FIG. 5; said extension being the narrow strap 12 shown in the drawings. The two straps 12—12 are both sandwiched between the panels 2—2 at the bag mouth M with each of their specific ends 14 caught between the proximal side edges 4—4 of panels 2—2 where they are captured and integrally anchored by thermal seams 10—10 aforesaid in the manner best shown in FIG. 3.

Between its end zones 14'—14', each said strap 12 is detached from its associated panel 2. This detachement does not extend all the way to the side seams 10—10 but terminates a short distance therefrom. Each said strap 12, accordingly, remains integrally attached to its associated panel 2 in said end zones 14'—14' as best indicated in FIGS. 3 and 5.

Each strap 12 is attached to its panel 2 by a readily breakable central tack weld 16 more or less as shown in FIG. 3 to hold it out of the way while the bag B is being loaded through the bag mouth M. Said tack 16 is capable of being easily torn or broken in order to permit the straps 12—12 to be widthdrawn from bag B for service as handles in the manner exemplified by FIG. 2.

It will be observed that, as best shown in FIG. 3, each strap 12 is anchored between the side edges of the connected panels 2—2 by seam 10 and is attached, as well, to a panel 2 at each of its end zones 14'. There is thus provided a two-point attachment of the strap to the bag B. When and if desired, a third point of attachment or suspension is also available in the form of a further tack weld 18 sturdier than the central tack 16 joining the

strap 12 to panel 2 between and in alignment with the other two above-enumerated interattachements of the same parts.

In the result, when the bag B is carried by its strap handles 12—12, the stress will be shared at each end zone 14' of each strap 12 by the integral attachment of said end zone 14' to its panel 2, by side seam 10 engaging the specific end 14 of the strap 12 and by the tack weld 18 interposed therebetween and aligned therewith.

In addition to being used as handles for the bag B, the straps 12—12 may also be threaded through panel apertures 20—20 for use in the manner of drawstrings for constricting the bag mouth M, as shown in FIG. 4.

To this end, a said aperture 20 may be provided centrally in each panel 2 adjacent the bag mouth M. The respective straps 12 may then each be drawn through an aforesaid aperture 20 to pucker or constrict the bag mouth. Such apertures 20 are indicated by dotted lines in FIGS. 2 and 3.

The versatility of the invention is exemplified by the fact, which will be very obvious to those in the art, that the present bag B is capable of being produced by simple and economical industrial procedures.

While the invention speaks of two superposed panels 2—2, it is obvious that both such panels may be formed of and provided by a single blank BB of the component substance.

Such blank BB is shown by way of example in FIG. 1 of the appended drawings wherein it will be seen to have been divided by the dotted fold line 26 into two panels 2—2 which are further subdivided by fold lines 28—28 to provide the straps 12—12.

While still in the preliminary form of FIG. 1, each of the fold lines 28—28 of said blank BB may also be split between its end zones 14'—14' to detach strap 12 from its parent panel 2.

Thereafter, following techniques presently very well known in the art, the blank BB may be folded along fold lines 26 and 28—28 as suggested in FIG. 5 and seamed and welded as required to produce the said bag B ready for use.

In use the bag B may be packed, shipped, stored and loaded in the conventional manner after which tack welds 16—16 may be torn to liberate the straps 12—12 and enable them to be withdrawn through the bag mouth M to serve as handles for bag B.

When and if apertures 20—20 are provided, the straps 12—12 may be threaded and drawn therethrough to act as draws for bag B in the manner exemplified by FIG. 4.

What I claim is:

1. In a bag:

a pair of panels of bag material disposed in superposed relation, each said panel having side edges and top and bottom ends coinciding with the corresponding edges and ends of the other panel in the superposed relation aforesaid, the coinciding side edges and bottom edges being joined to each other and the top ends disconnected from each other providing a mouth for the bag; said coinciding side edges being connected to each other by a seal,

a strap constituted by an integral extension of each said top panel and folded to lie withdrawably within the bag mouth with its ends sandwiched between and joined to the proximal panel edges;

each said strap being detached from its assocaited panel intermediate said panel edges;

said straps being undetached from the top ends of their assocaited panels in end zones of the bag mouth adjacent said panel edges, and

tacks affixing each said strap intermediate said end zones to its associated panel to retain it in the bag mouth; said tacks providing connections between said straps and said top ends, each of said connections being weaker than the connection provided by said seal some, at least, of said tacks being readily breakable to permit withdrawal of said straps from the bag mouth to serve as bag handles, each of said tacks being spaced from said end zones, each of said straps being affixed to its associated panel by a tack which is disposed substantially half way between said end zones.

2. In a bag as set forth in claim 1 wherein:

the panels are formed of plastic film and are joined to each other by thermal seams; said panels being integrally attached to each other at their bottom ends and said tacks being formed by thermal welds.

3. In a bag as set forth in claim 2 including:

tacks effecting a sturdy supplementary attachment of each said strap to its associated panel adjacent said end zones to bear a portion of the weight of the bag when it is carried by said straps.

4. A bag as set forth in claim 2 wherein:

each said panel has an aperture adjacent its top end through which its assocaited strap is withdrawable.

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