United States Patent

Kiely

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[54] ROLL OF DOUBLE-POCKETED BAG STRUCTURES

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[73] Assignee: **Mobil Oil Corporation**

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[52] **U.S. Cl.** ..... **206/58**, 206/56 AB, 229/53

[51] **Int. Cl.** **B65d 83/00**

[58] **Field of Search** ..... 150/1, 3, 7; 206/57 A, 56 AB, 206/56, 58; 229/53, 62, 69

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[57] **ABSTRACT**

A double-pocketed bag structure comprising a carrying pocket, a retaining pocket, and a web of material interconnecting the pockets and being unitary with the backwalls thereof. The total height of the web and the retaining pocket being less than the total height of the carrying pocket. The bag structure being further characterized by being joined together with identical bags into a continuous roll; the structures being defined by heat seals along their height dimensions, and a tear line being located between adjacent structures. The continuous roll of bag structures, for ease of dispensing and detachment of individual bags, being folded in the web area so that the carrying pocket overlies and extends beyond the retaining pocket.

2 Claims, 7 Drawing Figures

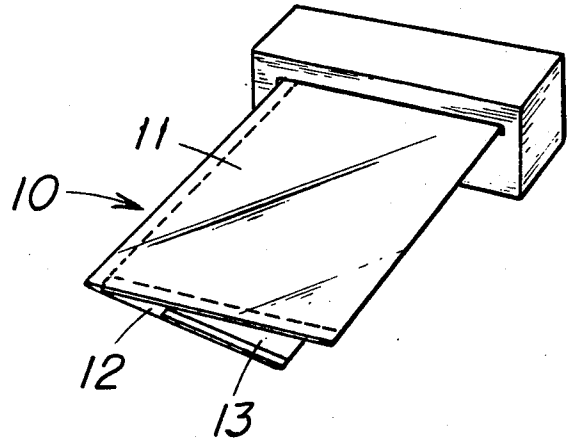


FIG. 1

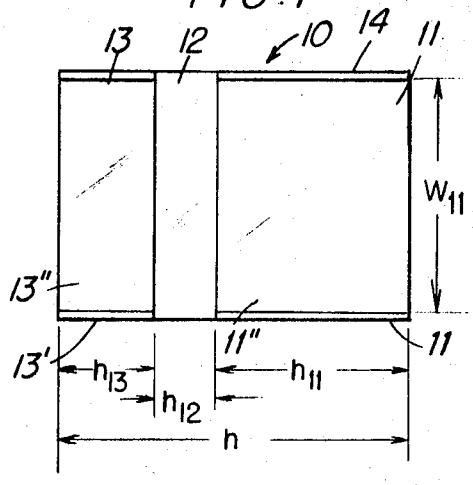


FIG. 2

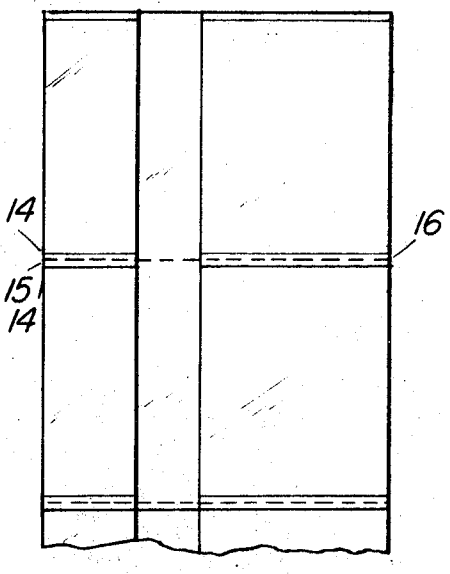


FIG. 3

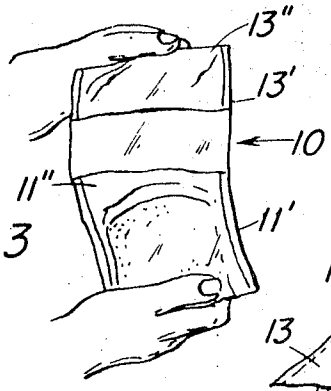


FIG. 4

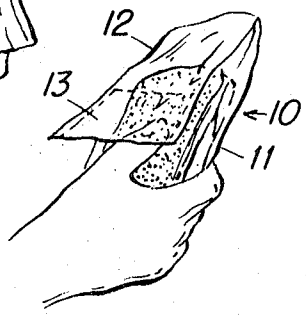


FIG. 5

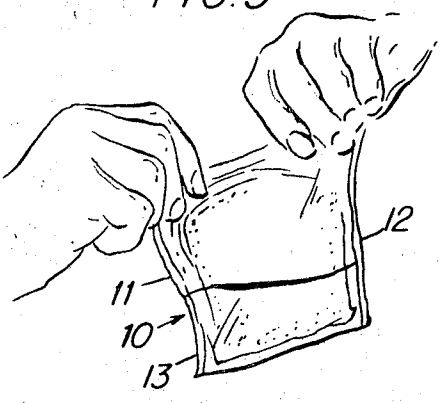
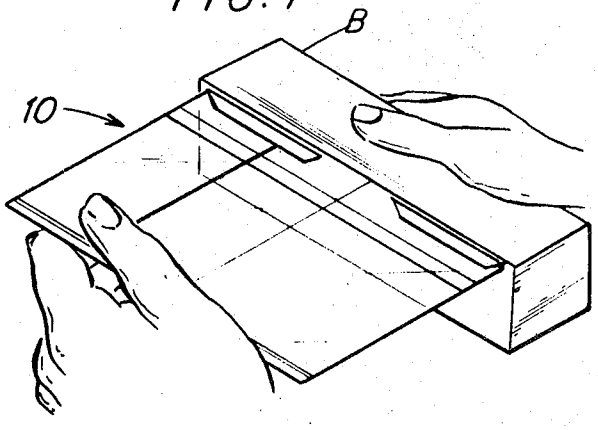
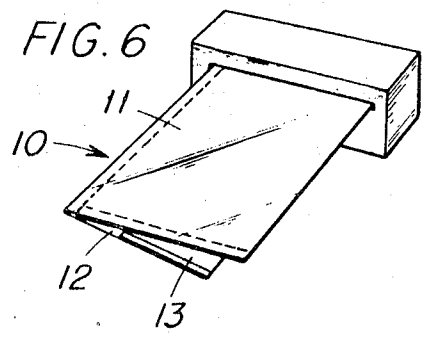


FIG. 7



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FIG. 6



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ROLL DOUBLE-POCKETED BAG STRUCTURES

The present invention relates to double pocketed bag structures and more particularly to bag structures to be formed of limp material, such as very thin gauge polyethylene, to form disposable sandwich bags. In a form of the invention these bags are dispensed as tear-off units from a continuous roll.

Double-bag structures, as used in the specification, are structures in which a carrying bag of suitable size and shape to have articles placed therein, is connected by means of a connecting web with a second bag, hereinafter termed as the retaining bag. In use the retaining bag is grasped and the web and retaining bag are folded over the carrying bag with the carrying bag (and its content) being tucked into the retaining bag, so that a single closed unit is formed, staying closed without requiring additional tying materials. Double-bag structures of this type are known and have been proposed for carrying coins (see U.S. Pat. No. 3,358,906) in which a relatively long pocket is adapted to hold a plurality of coins in a transparent plastic material of substantial strength, with a reentrant retaining pocket being provided to prevent the coins from falling out of the long carrying pocket. Another known form of double-pocketed bag (see U.S. Pat. No. 3,164,068) utilizes double-material walls to form a tobacco pouch.

The present invention is directed to a bag structure which has the advantage of a double bag, in that it is self-closing, without requiring any additional tie, and adapted to hold sandwiches or the like. The advantages of known plastic sandwich bags—high transparency, extremely low cost, ease of manufacture, packaging, and dispensing—are retained. These known sandwich bags in the past have required the use of a separate tie strip, usually a plastic or paper-covered thin wire, or a separate plastic clip, to provide a good seal so that the contents will retain their freshness, with resistance to outside moisture. The present invention thus enables the use of ordinarily limp non-form-retaining material since the contents for which the bags are to be used, particularly sandwiches or the like, are themselves form-stable; by suitably dimensioning, the bags can be given such a shape that the entire bag structure, when filled, will be stiff enough so that the bag, once properly closed, will not open by itself. This can be achieved even though the material itself is not form-stable.

It is accordingly an object of the present invention to provide an inexpensive, easily detachable roll of bag structures which can be made of transparent material and which is sanitary to use.

SUBJECT MATTER OF THE PRESENT INVENTION

Briefly, a carrying pocket is interconnected by means of a web to a retaining pocket, the web and one wall of the retaining and of the carrying pocket being of unitary single material, such as very thin gauge polyethylene; the carrying pocket has a width dimension which is at least equal to the height, and preferably more, and a height dimension which is more than half the height of the entire structure; the retaining pocket has a height which is just under half the height of the carrying pocket and the web material has a height slightly less than the height of the retaining pocket, the total height of the retaining pocket and the web material being between 42 and 47 percent of the total height of the structure.

Particularly suitable dimensions for bags which will remain self-closed and which can be formed of limp material are height: 25½ cm.; width: 16 cm.; web height: 5 cm.; retaining pocket height: 6¼ cm.; and carrying pocket height: 14¼ cm.

In accordance with a feature of the invention, the bags are joined together in a continuous roll, with separating strips of approximately 1 cm. width therebetween, and a perforation line in the separating strips. Preferably, the retaining pocket and a major portion of the web are folded over against the carrying pocket, so that as the pocket structures are unrolled, the edge will be presented to the user in which the separating region is only of single-strength material (the double-folded over portions of the web) rather than having both edges of double strength (where the pockets appear) so that tearing off of a bag structure from the entire roll is facilitated.

The invention will now be described by way of example with reference to the accompanying drawings, wherein:

FIG. 1 is a plan view of a single bag structure, drawn to scale;

FIG. 2 is a partial plan view of a group of bag structures in a continuous roll;

FIG. 3 is a perspective view of a single bag structure, with contents just inserted;

FIG. 4 is a similar view of FIG. 3 while in the process of being folded;

FIG. 5 is a view similar to FIGS. 3 and 4 but reversed front to rear with the bag structure completely closed;

FIG. 6 is a detailed view of the folded bag structures as they come from a roll dispenser; and

FIG. 7 is a perspective view of roll-dispensed bag structures.

Referring now to FIG. 1: The bag structure **10** has a carrying pocket **11**, a connecting web **12** and a retaining pocket **13**. The rear wall **11'** (FIG. 3), the web **12** and rear wall **13'** are formed by a unitary piece of material of polyethylene, which is thin and transparent, for example of 0.015–0.025 mm. thickness. Preferably the entire web of material from which the bag is made also includes a width of the front walls **11''**, **13''** of the carrying and retaining pockets, and during manufacture the web is folded to assume the shape of the pocket structure **10** and heat sealed along seam lines **14** at the edges. When the bags are made in a continuous strip form to be then wound in rolls, a transverse seal **15** is formed between adjacent pockets, through which a severing or tear line **16**, in the form of perforations, or a weakened section is made, as well known in the art.

Polyethylene of 0.025 mm. or less thickness is limp and flexible and will not retain a given shape, like a paper bag, when handled. It must be closed since, otherwise, it will revert to a position in which the material itself is at least stress. Therefore, in order to close polyethylene bags, ties, made of metal, string, plastic or paper covered wire have been used. The bag of the present invention overcomes the need for an additional tie and is particularly suitable for use with form-stable contents which give the bag the required stability to stay closed. As a sandwich bag, it will be designed to hold contents of square, or rectangular configuration with average minimum and maximum dimensions of about 8½ to 11½ cm. For ease of description, the longest dimension of the bag structure will be termed height, and the shorter dimension of the bag structure the width. As indicated in FIG. 1, the height dimension h_{11} of the carrying bag is somewhat less than the width dimension w_{11} thereof, although the width could be made slightly smaller to even approach height dimension; if, however, the contents are to be relatively thick, it has been found that they will fit better, with less waste of material, and better seal if the width dimension is made larger than the height dimension. The height of the retaining pocket h_{13} is just under half the height of the carrying pocket h_{11}; and the height of the web h_{12} is again slightly less than the height of the retaining pocket h_{13}. The overall height of both the retaining pocket and the web ($h_{13}+h_{12}$) should be about 42 to 47 percent of the overall height of the bag h, so that the height of the carrying pocket will be somewhat more than half, that is 53 to 58 percent of the overall height. Suitable dimensions have been found to be: h: 25½ cm.; h_{11}: 14¼ cm.; h_{12}: 5 cm.; h_{13}: 6¼ cm.; w_{11}: 16 cm. The width of the separating strip **15**, between the heat-sealed edges of individual bag structures may be about 1 cm., with the severing line **16** located therein; a width of 1 cm. provides sufficient width to still enable economical manufacture without requiring extreme accuracy in locating a tear line at a precise location with respect to the heat seal during high-speed manufacture, since a slight offcenter position of the tear line will not interfere with edge sealing at the heat lines **14** of the bag structures.

FIGS. 3, 4, and 5 show the closing of bags in sequential steps, with FIG. 4 illustrating the closing operation, FIG. 5 a completely self-closed bag with the contents therein.

As best seen in FIG. 5 when the bag is completely closed, the contents will be sealed therein since a small portion of the

carrying bag will be folded over unto itself, and stretched around the entire package. Since the material used, thin polyethylene or similar plastic film, is highly self-adhering, slight pressure by the user can completely seal the contents, particularly if the completed bag is slightly flattened, so as to squeeze out air bubbles from the inside. For short-term use, that is for only a few days, this is ordinarily not necessary, the structure providing sufficient protection against outside contamination, and penetration of moisture, by merely folding over the web and retaining pocket and packing in the carrying pocket, together with its contents, into the retaining pocket. Ordinary polyethylene of 0.025 mm. and less thickness is highly transparent; the contents will be visible and can be immediately inspected for freshness.

The bags are preferably packaged by being dispensed from a roll, a suitable container for dispensing being disclosed, for example, in U.S. Pat. Nos. 3,098,594 and 3,173,601. In accordance with a feature of the invention, the bags are not rolled up from a strip as seen in FIG. 2, but are folded against themselves before rolling; referring to FIG. 6 it is seen that the retaining bag 13, together with a major portion of the web 12 is folded over against a small remaining piece of web 12 and the carrying pocket 11. The tear line 16 at the region of web 12 will be only single strength material, whereas in the region of the pockets 11 and 13, it will have a double-strength material, that is will cover both back and front walls 11', 11'' of the carrying pocket as well as front and back walls 13', 13'' of the retaining pocket. As the bags in a continuous roll are dispensed, folded as shown in FIG. 6, one edge, that is the left side edge in FIG. 6, will present only a single-strength material at the tear line, whereas at the right side two separate structures, of double-strength each, are presented.

Polyethylene, and similar transparent plastic packaging material is highly self-adhering; if a slight misalignment occurs during rolling-up of the roll from which the bags are to be dispensed, there may be resistance to tearing at the right-hand side, or wherever a double-strength severance line occurs; no such resistance will occur at the left-hand edge of the roll (with respect to FIG. 6) so that rolling in this manner facilitates dispensing to the user. The rolled-up material itself is dispensed from a box B.

As can be seen in FIG. 6, the ends of the bags 11, 13, will not overlie each other but rather will be staggered since, by definition, the height of the web and the height of the retaining pocket are less than half the height of the entire bag structure, and part only of the height of the web is folded over. This stagger of the bags, when rolled in accordance with FIG. 6, further facilitates separation of the bags, both for tearing, and after having been torn off the roll.

The material from which the double-pocketed bag structures can be made can be plain and completely transparent or can be embossed, to have a slight crinkle effect. Embossing the material facilitates separation and, in some materials increases their strength; additionally, the friction between the folded-over retaining pocket and the material of the carrying pocket may be increased to improve the holding capability of the bag when closed. For some uses, indicia of contents or advertising material, may be printed on the bags, at any location; if printed, just inwardly of web 12 on the front wall 11'' of the carrying pocket, or on the rear wall 11' and adjacent the edge, the printed material will be protected by a single layer of bag structure material when the bag is closed for use.

The bag blanks may be made by holding a flat web; alternately, a tube may be extruded, from which a strip is removed, the tubular material being flattened and provided with the transverse seals 15 to thus obtain a continuous strip of double-pocket bags. The present invention thus provides a bag structure, the dimensions of which may be tailored, for example, for bread which, when in slice form, has an approximate dimension of 8 to 12 cm., rectangular, square, or oblong. In this connection "human dimensions" determine the size of the normal sandwich bread, namely the size which is convenient. The bag structure of the present invention can be made of a material which is not form sustaining, that is, which is limp, to hold form-stable contents, such as a sandwich, maintain it in sanitary, substantially moistureproof condition by providing a fold-over region; the structure is self-closing, by providing a carrying pocket which is wider than deep to leave extra space for thickness of the content and for stretching.

I claim:

1. In a double-pocket bag structure comprising a carrying pocket having a front wall and a backwall,

a retaining pocket having a front wall and a backwall,

and a web of material interconnecting said pockets and unitary with the backwall of said pockets,

the improvement wherein

said structure being made of form-unstable material, the carrying pocket having a width dimension which is at least equal to the height dimension, and a height dimension which is more than half of the height of the entire bag structure;

the retaining pocket having a height less than half the height of said carrying pocket,

and said web of material having a height less than the height of said retaining pocket, the total height of said retaining pocket and said web of material being between 42 and 47 percent of the total height of said structure;

said bag structure being further characterized as being joined together with a plurality of identical bag structures into a continuous roll, said structures being defined by heat seals interconnecting the front walls and backwalls of said pockets along their height dimensions;

and a severing strip being located between adjacent structures, said severing strip being formed by a tear line;

said continuous roll of double pocketed bag structures being further characterized by having said retaining pocket and part of said web folded over to overlie said carrying pocket, the fold line being in the region of said web and adjacent said carrying pocket, the bag structure at the fold line presenting a thickness defined by overlapped portions of said web of material thereby facilitating tearing from one lateral edge of the folded bag structures towards the other.

2. The continuous roll of double-pocketed bag structures according to claim 1, the structures being formed of tubular material having a strip removed in the region overlying said web, and the tubular material being flattened and the pockets being defined by transverse heat seals along their height dimensions.

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