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BAG AND CLOSURE THEREFOR
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Fig. 1.

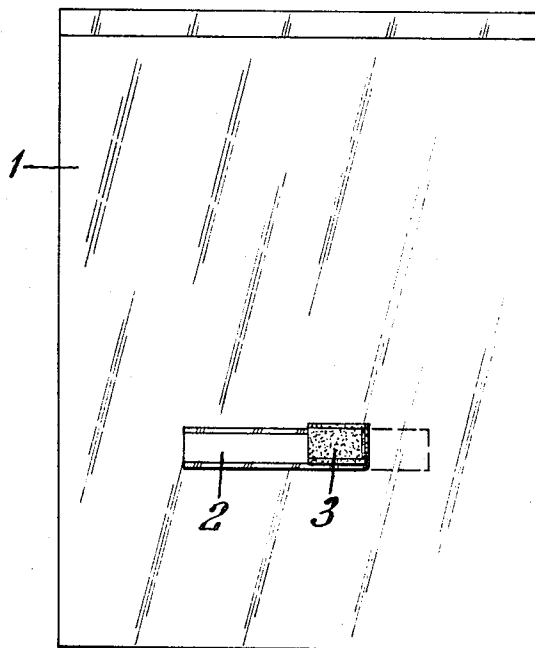
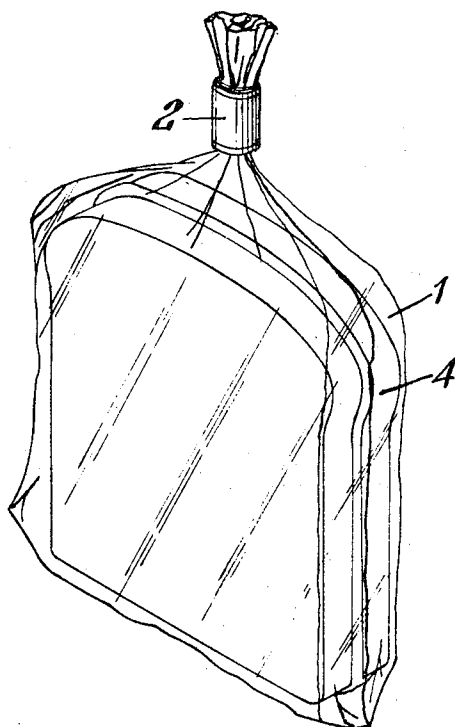


Fig. 2.



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1

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BAG AND CLOSURE THEREFOR

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ABSTRACT OF THE DISCLOSURE

A plastic bag having a closure removably attached to the body of said bag, the closure being a length of adhesive tape which can be readily removed from the bag to be used as a tape tie for said bag.

The present invention relates to a new type of closure for a bag preferably made of a plastic film.

Such bags more and more replace paper bags and are widely used in the packaging industry. They are usually closed by gathering the top end of the bag over the contents, twisting the gathered end and tying, for example, with a piece of string, a rubber band, and the like. Sometimes it is desired to prevent air from entering the closed bag, for example, in packaging foodstuffs which are stored in a freezer, or silverware to retard oxidation. In this case, the closure must be tied particularly tightly over the contents of the bag. A tin tie (a tin wire coated with paper), a tape, a piece of string or a rubber band are commonly employed for this purpose. The tin tie is often supplied by the bag manufacturer, as a separate item in the package of bags. The tape or the piece of string and the rubber band have to be supplied by the user of the bag. These closures have a common characteristic, i.e., they are separate from the bag and too frequently in many households they are not at hand when needed.

It is, therefore, an object of this invention to provide a new and improved closure for a plastic film bag which is readily available whenever needed.

Another object of this invention is to provide a bag made of a plastic film having a new and improved closure attached to said bag and easily removable therefrom.

This invention comprises a bag made of a plastic film having a length of an adhesive tape attached to the body of said bag in such a manner that it does not interfere with the filling of the bag and can be readily and quickly removed from the bag to be used as a tape tie for said bag.

The invention will be more fully described by reference to the accompanying drawings illustrating a preferred embodiment of the bag and its closure, and in which:

FIG. 1 is a plane view of a flattened bag of the invention with the adhesive removable tape closure attached thereto, and

FIG. 2 is a perspective view of a filled bag closed with the closure of the invention.

There is shown in FIG. 1 a flattened bag 1 having adhesively attached to the outside wall thereof a length of a tape 2 coated with a pressure-sensitive adhesive 3.

FIG. 2 shows the bag 1, containing an article 4 packaged therein such as a sandwich, for example, with the top tightly closed by the tape 2 wrapped therearound. An extremity of the tape may, if desired be left free of adhesive to provide a small end tab which facilitates removal of the tape from the bag.

Alternatively, the whole length of tape 2 may be coated with the adhesive, and one extremity of the coated tape, ½ in. for example, folded over the adjacent portion of tape, in adhesive to adhesive surface contact, and adhered thereto thus forming a double thickness end tab.

2

This other end tab embodiment might be preferred from a production standpoint.

The film material from which the bag is made is not critical. It can be any plastic film used in the manufacture of such bags. For example, plastic bag 1 may be made of a polyolefin film such as polyethylene, or polypropylene, or copolymers thereof, or from ethylene or propylene copolymerized with other monomers such as butene, acrylic acids, esters of acrylic acids, vinyl acetate. It can also be made of non-olefinic films such as vinyl film, i.e., polyvinyl chloride film and the like.

The tape 2 may be made of the same material as the bag, or of any other material used in the production of known tapes, i.e., plastic films, cloth, paper and the like. The only essential requirement is that the tape be strong enough to be wrapped around the top of the bag. It follows that the thickness of the tape and the thickness of the bag wall are completely independent from each other. Thus, when the tape is made of a plastic film, it may have the same thickness as the bag wall, or be thicker or thinner, as long as it meets the strength requirement. For example, if the bag is made of very thin 1 mil thick polyethylene film, and if the tape is also made of polyethylene film, then the tape should preferably be made of about 2 mil thick film.

The pressure-sensitive adhesive must meet two essential requirements, i.e., its adhesive quality should be mild enough to permit easy removal of the tape from the bag wall without tearing said wall, yet it must be strong enough to provide a satisfactory seal closure for the bag. Tests effected with commercially available adhesive tapes such as masking tapes, first-aid tapes and the like have shown that, while these tapes can be peeled off the bag soon after their application without damage to the bag wall, they will usually tear said wall when peeled off several hours after their application.

The preferred adhesive is a solution of an acrylic resin in xylene, containing 55% solids resin, with a viscosity of 4300 centipoises, a weight of 8.5 lbs. per gallon and a flash point of 39° F.

Some other resins may also be used in the pressure-sensitive system of the present invention. They include latex-type adhesives made from natural or synthetic rubber containing about 50% solids, with a viscosity of from about 2500 centipoises to about 3800 centipoises and a weight per gallon of about 8 lbs. Poly(vinyl ether) resins and the like are also suitable for use in this invention. An emulsion of a poly(vinyl ether) containing 45% solids resin has been found satisfactory.

The other essential requirement as to the adhesive is that it should adhere more to the tape material than to the bag wall.

When both the bag and the tape are made of a polyolefin film, the preferred manner of meeting this requirement is to subject the tape to an electric treatment, such as a corona discharge treatment, for example, before applying the adhesive to the tape. The tape could also be subjected to a chlorine treatment, or any other known treatment for increasing the adhesiveness of the treated surface.

The materials from which the bag and the tape are made, respectively, are not critical, as long as the adhesive adheres more to the tape than to the bag.

The greatest advantage of the invention resides in its simplicity and low cost of manufacture. The tape can be easily positioned and adhered to the bag during mass production thereof. It is an integral part of the bag until needed by the user for whom it is always at hand.

While a particular embodiment of the invention has been shown, it will be understood that the invention is not limited thereto since many modifications apparent to those skilled in the art may be made.

What is claimed is:

1. An open plastic bag having a closure device removably attached thereto, said closure device being a length of tape having an adhesive material on one surface thereof and adhered to the body of said bag, said adhesive material adhering more to said tape than to said bag, wherein the adhesive comprises a material selected from the group consisting of acrylic resins, poly(vinyl ether) resins, natural and synthetic rubbers, said bag and tape are made of a polyolefin film, and the film tape has been subjected to an electric treatment prior to being coated with the adhesive material whereby said

adhesive material adheres more to said tape than to said bag.

2. A bag as claimed in claim 1 wherein the adhesive material is a solution of an acrylic resin in xylene.

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