

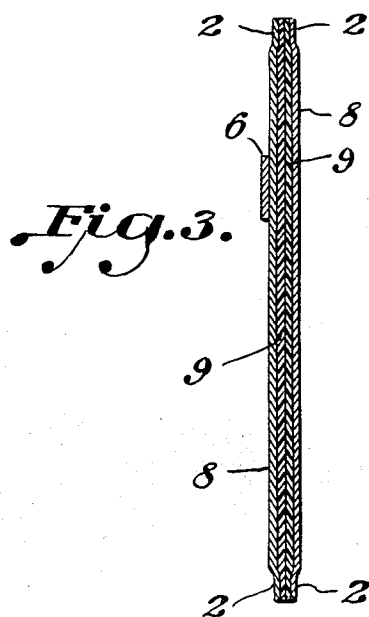
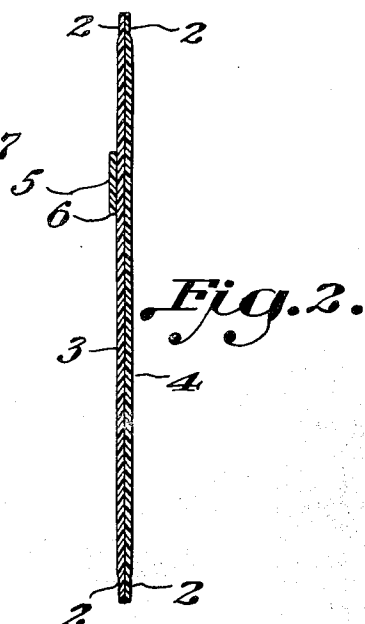
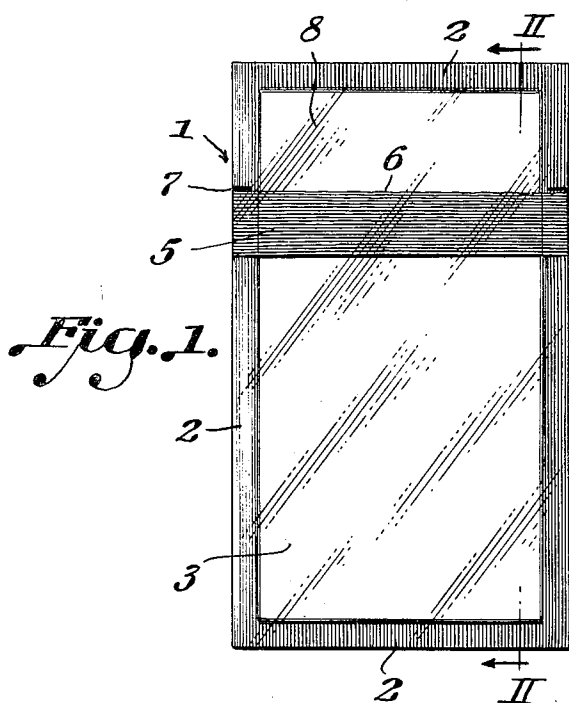
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CONTAINER WITH OPENING MEANS

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CONTAINER WITH OPENING MEANS

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This invention relates to containers such as sealed plastic or plastic-coated bags or envelopes, for the packaging of vendible products, especially liquid products. More particularly, the invention relates to bags or envelopes of this type having special opening means.

The packaging of vendible products in sealed bags made of plastic or plastic-coated film has become of great commercial importance. It presents many advantages over other means of packaging, such as glass bottles and molded plastic containers. The cost of packaging is much lower and there is an appreciable saving in weight and space. Special machinery and apparatus has been developed to form the bag from a roll of film by heat sealing to fill the bag with a product, and to close the open side of the bag, the side from which it is filled, all in a continuous and automatic operation. The most recent trend has been to utilize the sealed plastic or plastic-coated bag to package liquid and semi-liquid products, and this promises to be one of the most important developments in the field of packaging in many years. The present invention is particularly useful in this type of packaging.

Various kinds of film are used for the bag, including those made of polyethylene resin, regenerated cellulose (plain, lacquered or polymer-coated), cellulose acetate, polymer of ethylene glycol and terephthalic acid, polyvinylidene chloride, and vinyl resin. The inherent properties of polyethylene make it an excellent packaging medium. It is tough, durable and chemically inert, and lends itself to bag formation through heat sealing. Polyethylene may be extruded as a film or may be used as a coating material for paper and other substances, including some of those above mentioned. In either form it is well suited for the packaging of vendible products and the invention will be hereinafter described, for the purpose of illustration, as applied to sealed bags of polyethylene film or film of a polyethylene-coated substance such as sulfite paper.

One of the problems inherent in the use of such bags is to provide a practical and effective means of opening the bag to permit easy removal of the contents. Tearing, of course, is the simplest method of opening the bag. However, the films above described do not lend themselves to tearing with any degree of accuracy. The line of tear cannot be controlled and usually will not be straight. The difficulty is increased by the fact that two thicknesses of film, each one separate, must be torn at the same time. Furthermore, the side edges of the bag are heat sealed to form a stiffened area around the sides of the bag which is particularly difficult to tear manually. In many uses, a controlled opening may not be of vital importance since the bag acts only as a protective covering and not as a true container. In bags for such uses, any means for tearing the film would probably serve. However, when the bag is used to package liquid, semi-liquid and powdered substances, for example, it is essential that the bag be opened at the top and that the opening be positively controlled to prevent spillage. It has

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been suggested that perforations be formed in the bag along the opening line to facilitate tearing. Obviously, this means cannot be adopted in the packaging of a product (e.g. liquid) that would leak out through the perforations. Other opening means have been proposed, but these have proved to be either impractical or too costly. It must be kept in mind that the advantages of the plastic bag over other containers would be minimized if a costly opening means were required.

It is an object of the present invention to overcome the above-mentioned difficulties in opening the bag.

It is a further object of the present invention to provide a bag of the type described having simple and inexpensive means to permit positive, controlled cutting of the bag to open it.

In accordance with the invention I provide a sealed bag having a cutting edge in the form of a strip of material which is stiffer and more resistant to tear than the film of the bag which strip is attached to and extends completely across the outside face of one of the walls of the bag from one side to another side, the said strip including a straight cutting edge along its entire length against which the walls of the bag may be cut.

Other details, objects and advantages of the invention will become apparent from the following description of a preferred embodiment, as illustrated in the accompanying drawings in which:

Figure 1 is a rear elevational view of a bag of polyethylene film embodying the invention;

Figure 2 is a magnified sectional view on the line II—II of Figure 1; and

Figure 3 is a view like Figure 2, showing a modified form of a bag embodying the invention in which the wall of the bag has two layers, the inside layer being a coating of polyethylene.

Referring to Figures 1 and 2 of the drawings, the bag is indicated generally at 1. The bag has a front wall 4 and a rear wall 3 of a single thickness of tough film material. The bottom, top and side edges of the walls 2 and 3 are heat sealed, and these heat sealed portions are designated by the reference numeral 2. Extending across the outside face of rear wall 3 is a strip 5, which strip is of a material which is stiffer and more resistant to tear than the film of material forming the two walls, said strip having a top straight cutting edge 6. The strip may be cellophane tape or a tape of other suitable material that will adhere to the outside face of the bag. Immediately above the top straight edge 6 of the strip 5, each of the side edges of the bag is slit or notched as at 7, the slit or notch extending only part of the way across the sealed portion 2 so that the seal remains fully effective.

The bag is shown empty for purposes of illustration, but it will be understood that in actual use, the bag would contain the vendible product to be packaged.

To open the bag, the user would remove the top portion 8 by grasping one end of top portion 8 and cutting it against the top straight edge 6 of strip 5. The cut is already started by the slit or notch 7, which facilitates the operation. The cut may be made from either side edge so long as it is made against the cutting-edge of strip 5.

The strip 5 is shown as having the top straight edge 6 parallel to the top and bottom edges of the bag. However, it will be understood that the strip may be made so that the top straight edge 6 extends across the face of the bag in an inclined direction. Alternatively, the strip may extend diagonally across the face of the bag from either side edge to the top edge of the bag, so that the bag could be opened by cutting off a top corner of the bag.

Figure 3 illustrates the same kind of bag as heretofore described, except that the tough film material forming

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the front and rear walls is made up of two layers, the outside layer 8 being, for example, regenerated cellulose or sulfite paper, and the inside layer 9 being a coating or lamination of polyethylene. In this embodiment, .0015" sulfite paper may be used with a coating of .003" polyethylene. The tear strip may then be .006" gummed tape.

While I have illustrated and described certain present preferred embodiments of the invention it is to be distinctly understood that the invention is not limited thereto but may be otherwise variously embodied within the scope of the following claims.

I claim:

1. A filled bag consisting essentially of a front wall and a back wall each comprised of a thickness of tough plastic film with the edges of said front and back walls sealed, and means to facilitate cutting of the bag comprising a strip of material stiffer and more resistant to tear than the said film, said strip attached to and extending completely across the outside face of only one of said walls from one edge to another edge, the said strip having a straight cutting edge along its entire length against which the walls of the bag may be cut.

2. A bag as claimed in claim 1 in which the tough plastic film is a film of polyethylene resin.

3. A bag as claimed in claim 1 in which the tough film is a film of sulfite paper integrally coated with a film of polyethylene resin.

4. A bag having therein a liquid or semi-liquid product and comprising a front wall and a back wall, said walls consisting of a thickness of tough plastic film, the edges of said front wall being sealed to the edges of the back wall to form the bag and a strip of material stiffer and more resistant to cutting than the said film and having a straight cutting edge along its entire length, the said strip being attached to and extending completely across the outside face of only one of said walls between two of the sealed edges, said edges between which said

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strip extends each having a notch therein immediately adjacent the straight edge of the said strip, whereby the bag may be opened by moving the said walls against the said straight cutting edge beginning at one of said notches to cut the plastic film of the front and back walls.

5. A bag as claimed in claim 4 in which said strip is an adhesive tape of regenerated cellulose.

6. An envelope comprising a front wall and a back wall each consisting of a thickness of polyethylene resin film, said walls being secured to each other by heat sealing along at least three of the edges of each of said sides, and a strip of material stiffer and more resistant to cutting than the said film attached to and extending completely across the outside face of only one of said walls between two of the said heat-sealed side edges, the said strip having a straight cutting edge along its entire length against which the walls of the bag may be moved to cut the plastic film of said walls.

7. An envelope as claimed in claim 6 in which said film comprises .0015" sulfite paper integrally coated with a film of .003" polyethylene resin, and the strip is .006" gummed tape.

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