PACKAGE WITH DESTRUCTIBLE PORTION FOR DISPENSING

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ABSTRACT

A package comprising a pocket of a stiff material and a flexible bag secured within and to the edges of the pocket. The mouth of the pocket is expanded when the bag is supplied with the package material, to form a support and protective covering for the bag. The bottom of the pocket and the bag portion connected thereto can be removed from the remainder by separation along a destructible portion to provide a dispensing opening in the bag for removal of the contents.

4 Claims, 18 Drawing Figures
1

PACKAGE WITH DESTRUCTIBLE PORTION FOR DISPENSING

A packaging bag comprising an outer covering consisting of two stiff sheets with ancillary ripping lines, which cover an inner bag formed by folding a thin sheet of thermosealing material to form the bottom, and heat-sealing the sides simultaneously with the outer covering sheets. The contents to be packaged are introduced from the top opening of the inner bag after which the opening is heat sealed. The package is easily opened by ripping the bag manually along the ancillary ripping line, formed in the stiff outer covering, and the contents can be emptied. When the package is fully loaded, the bottom edge of the outer covering bulges to form a stable base for standing the package in an upright position. The bottom of the inner bag is supported by the stiff outer covering and does not touch the standing surface.

This invention relates to a packaging bag consisting of two stiff outer sheets between which a thin bag is sealed with the outer sheets along both side edges said stiff outer sheets having ancillary ripping lines crossing from one side to the other. Heretofore, self-supporting packaging bags have been formed from thick material making it difficult to manually rip and open the bag. Furthermore, since an inner bag has not been employed, breakage in the seams caused by shocks, especially in the seams on the bottom part, have caused leakage of the contents.

The object of this invention lies in providing a packaging bag comprising an outer covering consisting of two stiff sheets with ancillary ripping lines formed therein, one edge to one edge, and an inner bag formed by folding a thin sheet of thermosealing material between the stiff outer sheets and simultaneously thermosealing both edges of the outer sheets to the inner sheet.

Another object of this invention is to provide a packaging bag which features ancillary ripping lines joining two adjacent edges or nonadjacent edges in the stiff outer covering.

Yet another object of this invention is to provide a packaging bag which features on outer covering with ancillary ripping lines covered on one or both surfaces by a thin film. If desired the surface of said outer covering can be covered on one or both surfaces by a thin film.

Still another object of this invention is to provide a packaging bag which is flat and can be packed by stacking one upon the other.

Another object of this invention is to provide a packaging bag with a thin inner bag which is protected by a stiff outer covering, the bottom edge of which bulges outwards in a bulbous shape, is self-supporting, and is easily manually opened by means of the ancillary ripping line in the outer covering and thereby easily emptied of its contents.

Yet another object of this invention is to provide a flexible packaging bag which features an outer covering and an inner bag, which is sealed after filling with the contents, and heat sealed with the outer covering along two edges and top edge, the bottom portion of the inner bag being unattatched and merely supported by the outer covering.

Still another object of this invention is to provide a packaging bag with an inner bag which is amply protected against bursting by the shock resistant properties and flexibility between the outer covering and the inner bag when the inner bag is filled and the top opening is sealed along with the top edge of the outer covering.

Another object of this invention is to provide a self-supporting packaging bag which, when the inner bag is filled and the top opening is sealed, the bottom of the inner bag is expanded to form a concave curve and is raised from the supporting surface thereby preventing dirtying and damaging of the inner bag.

Still another object of this invention is to provide a packaging bag which when filled with its contents and sealed will pack compactly and firmly into shipping boxes by packing and by wedging-in.

These and other objects of the invention will become manifest upon reading the following description in conjunction with the accompanying drawings wherein:

FIG. 1 is a frontal view, with a part in section, of a basic packaging bag.

FIG. 2 is a side view, in section, taken on line 2—2 of FIG. 1.

FIG. 3 depicts the self-supporting packaging bag from a diagonal view.

FIG. 4 is a side view, in section, taken on line 4—4 of FIG. 3.

FIG. 5 is a front view of a modification of the packaging bag with a part in section.

FIG. 6 is a side view, in section, taken on line 6—6 of FIG. 5.

FIG. 7 is a front view of another modification with a part in section.

FIG. 8 is a side view in section, taken on line 8—8 of FIG. 7.

FIG. 9 is a front view of still another modification with a part in section.

FIG. 10 is a side view, in section, taken on line 10—10 of FIG. 9.

FIG. 11 is a front view of another modification with a part in section.

FIG. 12 is a side view in section, taken on line 12—12 of FIG. 11.

FIG. 13 is an enlarged side view, in section taken on line 13—13 of FIG. 11.

FIG. 14 is a frontal view of another modified form, with a part in section.

FIG. 15 is a side view, in section, taken on line 15—15 of FIG. 14.

FIG. 16 is an enlarged side view, in section, taken on line 16—16 of FIG. 14.

FIG. 17 is a frontal view of still another modified form with a part in section.

FIG. 18 is a side view, in section taken on line 18—18 of FIG. 17 and

FIG. 19 is an enlarged side view in section taken on line 19—19 of FIG. 17.

Various materials are suitable for the stiff outer covering such as Kraft paper, carton board with or without a covering film with heat-sealing properties such as polyethylene, polypropylene, or polyvinylchloride; on one or both surfaces, or more suitably a thick sheet of polyethylene. Polypropylene or polyvinylchloride can be heat sealed to the thin inner bag which is described in more detail later. The thickness of the aforementioned plastic sheets depend on the stiffness of the material and the size of the packaging bag but is in the order of 0.1 mm.

Materials suitable for the inner bag are numerous, and include heat-sealing plastic films such as polyethylene film, polypropylene film, polyvinylchloride film, films comprising a plurality of laminated films, or films comprised of laminates of paper, cellophane, aluminum foil with the above-mentioned plastic films. The thickness of the material depends on the size of the packaging bag. Thickness on the order of 0.01 to 0.1 mm, provides adequate compliance.

The following is a description of a basic packaging bag which embodies this invention as depicted in FIGS. 1, 2, 3 and 4.

Outer covering sheets 1, 2 of stiff material have slits 3, 4 formed into the upper part and across the sheets, which are divided into upper sections 5, 6 and lower sections 7, 8. A narrow strip of thermosealing film 9, 10 comprising polyethylene, polypropylene or polyvinylchloride and of thickness in the order of 0.02 to 0.05 mm is heat sealed to the back surface of slits 3, 4.

Inner bag 12 is formed by folding a thin plastic sheet at the bottom 11 and positioning it between outer sheets 1, 2 after which edges 13, 14 are sealed by heat sealers to form sealed seam joints 15. The inner bag 12 is formed and simultaneously attached to the outer covering to form package bag B1.

Opening 16 of package bag B1 is used to fill the inner bag 12 after which it is sealed by heat sealers by applying heat and pressure to form sealed seam 17 and complete the package P. The package P has an inner bag which expands on being filled and the bottom becomes bulbous and concave in shape and is
thereby raised. Bottom edge 19 of outer covering 1, 2 bulges out laterally and becomes self-supporting as depicted in FIGS. 3 and 4. Outer covers 1, 2 and inner bag 12 are connected only along both side edges and the top, therefore inner bag 12 thereby can readily change shape. Also since sealed seams, 15, are comprised of four layers which are sealed together seams 15 are stiff and strong and thus prevent the bag B of the filled package P from bending.

Package P can be readily manually opened by ripping the outer covering 1, 2 along ripping slit 3, 4, film 9, 10 and inner bag 12 thereby removing top portion 5, 6 of the package to provide a large opening for removal of the contents.

The following is a description of another modification as shown in FIG. 5 and FIG. 6. Outer covers 21, 22 are divided into the top triangular parts 25, 26 and parts 27, 28. A narrow strip of plastic film 29, 30 corresponding to the aforesaid narrow strip 9, 10 is heat sealed to the back side of slits 23, 24.

Inner bag 32 is formed by folding a thin plastic sheet at 31 and positioning it between outer covers 21, 22 and heat sealing it at both edges 33, 34 by applying heat and pressure to form seams 35, while simultaneously sealing the edges of inner bag 32 and thereby forming packaging B2.

Bag B2 is filled through the top opening 26 of inner bag 32 after which opening 26 is sealed by heat sealing to form a complete package. The shape and features of the resultant package B2 is identical to the aforesaid package P. Ripping slits 23, 24 in outer cover 21, 22 permit easy manual ripping, opening and emptying of the package.

Another modification is depicted in FIGS. 7 and 8. Stiff outer cover 41, 42 has sewing machine perforations 43, 44 along its upper part from one edge to the other. Inner bag 52 is formed by folding a thin plastic sheet at 51 and is positioned between stiff outer cover sheets 41, 42 and sealed at both edges to form seams 55. Simultaneously both edges of inner bag 52 are sealed to form packaging bag B3.

Inner bag 52 is filled through the opening 56 of packaging bag B3 after which opening 56 is sealed by heat sealing to form a complete package. The shape and features of the package correspond to the aforesaid packaging B3. The contents can be easily removed by manually ripping the outer cover 41, 42 along perforations 43, 44 to remove the upper parts 45, 46 of outer cover with the upper part of inner bag 52.

Another modification is depicted in FIG. 9 and 10. Stiff outer cover 61, 62 has slits 63, 64 along its upper part, crosswise from one edge to the other, the outer cover surface of the outer covers 61, 62 is covered by thermoplastic films 69, 70 corresponding to previously described films 9, 10.

Inner bag 72 is formed by folding a thin plastic sheet at 71 and positioning it between outer covers 61, 62, sealing at both edges by applying heat and pressure by heat sealers to form seams 75, while simultaneously sealing the edges of inner bag 72 to form packaging bag B4.

Inner bag 72 is filled through the opening 76 of packaging bag B4 after which opening 76 is heat sealed to form a complete package. The shape and features of the package correspond to the aforesaid packaging B4. In the event that condensation of water forms on the outer surface of inner bag 72 the films 69, 70, covering the inner surface of outer covering 61, 62 prevent moisture from affecting the outer covers 61, 62 thereby prevent deterioration of stiffness and strength of the outer covers 61, 62. Slits 63, 64 of the outer covers 61, 62 permit easy manual ripping of the outer covering and the inner bag whereby to remove upper sections 65, 66 to permit the opening of the package and removal of its contents.

Another modification is depicted in FIGS. 11, 12 and 13. Stiff outer covers 81, 82 have slits 83, 84 along the upper parts from one edge to the other. Outer covers 81, 82 have their total surface covered with plastic film 89, 90 corresponding to previously described film 9, 10.

Inner bag 92 is formed by folding a thin plastic sheet at 91 and positioning it between outer covers 81, 82 and subsequently heat-sealing at both edges by applying heat and pressure to form seams 95 while simultaneously sealing the edges of inner bag 92 to form packaging bag B5.

Inner bag 92 is filled through the opening 96 of packaging bag B5 after which opening 96 is sealed by heat sealers to form a complete package. The shape and features of the package correspond to the aforesaid package P. The entire surfaces of the outer coverings 81, 82, 84 are covered by films 89, 90 and due to the moisture-preventing characteristic of the covering films the outer coverings 81, 82 do not lose stiffness or strength through the effects of moisture from outside of the package. Slits 83, 84 of outer cover 81, 82 permit easy manual ripping of the outer covering and inner bag simultaneously for ease removal of the upper sections 85, 86 whereby to open the package and remove the contents.

Another modification is depicted in FIGS. 14, 15 and 16. Stiff outer covers 101, 102 are completely covered by thermoplastic films 109, 110 corresponding to the aforesaid films 9, 10. The upper part of outer covers 101, 102 have sewing machine perforations 103, 104 across the upper edge.

Inner bag 112 is folded along 111 and positioned between outer covers 101, 102 after which seams 115 are formed by applying heat and pressure to both edges by means of heat sealers to simultaneously seal the edges of inner bag 112 to form packaging bag B6.

Inner bag 112 is filled through the opening 116 after which the opening 116 is sealed by heat sealers to form a complete package. The shape and features of this package correspond to the aforesaid packaging P, the moisture-resistant qualities of outer coverings 101, 102 correspond to that of packaging bag B5. Outer coverings 101, 102 can be opened by ripping upper section 105, 106, together with inner bag 112, manually along sewing machine perforations 103, 104 and the contents of the package can then be removed.

Another modification is depicted in FIGS. 17, 18 and 19. Stiff outer covers 121, 122 have along its upper part from one edge to the other, slits 123, 124. Outer covers 121, 122 have their outer and inner surfaces completely covered by thin plastic films 129, 130 with thermosealing characteristics similar to the aforesaid films 9, 10.

Inner bag 132 is formed by folding a plastic sheet at its bottom 131 and positioning it between outer covers 121, 122 after which it is heat sealed at both edges by applying heat and pressure to form seams 135 while simultaneously sealing the edges of the inner bag 132 to form packaging bag B7.

Inner bag 132 is filled through the opening 136 of packaging bag B7 after which the opening 136 is heat sealed by heat sealers to form a complete package. The shape and features of this package correspond to the aforesaid packaging P. Outer covers 121, 122 are completely covered on their outside and inside surfaces by plastic film 129, 130 therefore the outer cover is not affected by moisture on the outside or moisture on the inside caused by dew forming on the outside surface of the inner bag. As a result, loss of stiffness or strength by moisture affecting the outer covers 121, 122 can be prevented.

The outer cover and inner bag can be simultaneously manually ripped along slits 133, 134 and the upper sections 125, 126 can be removed from the package to form an opening for removing the contents.

In the aforesaid various forms of packaging bags sewing machine perforations can be substituted for the slits in the outer cover or where sewing machine perforations have been used these can be replaced by slits. Where thin plastic film is used to cover one or both surfaces of the outer covering, the outer covering material is water-absorbent paper, when fairly thick plastic film is used for the outer covering this becomes unnecessary.

What we claim is:

1. A package comprising a pair of relatively stiff outer covering sheets secured together at three edges thereof to form a pocket, each said sheet having a top and bottom portion separated by an elongated slit extending from one of said edges to another of said edges and said slits being in registra-
A flexible bag secured within and to said three edges of said packet, a thin tearable film connecting one of said top and bottom portions across said slit and secured to a portion of said flexible bag, whereby said packet can be torn along said slits to provide an opening for dispensing the contents of the bag.

2. A package as defined in claim 1 wherein said slits extend transversely of two of said edges and parallel to another of said edges.

3. A package as defined in claim 1 wherein said slits extend between two adjacent said edges across a corner of the package.

4. A package as defined in claim 1 wherein the film is between the bag and the walls of the pocket.

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