

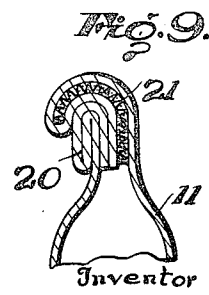
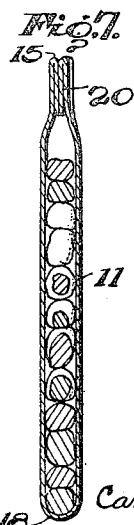
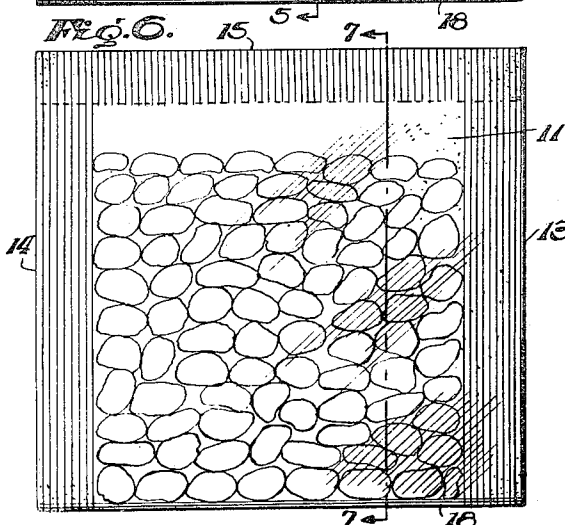
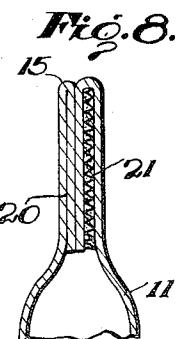
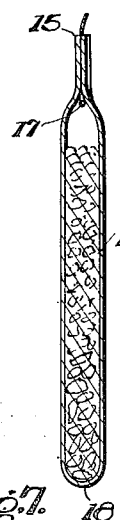
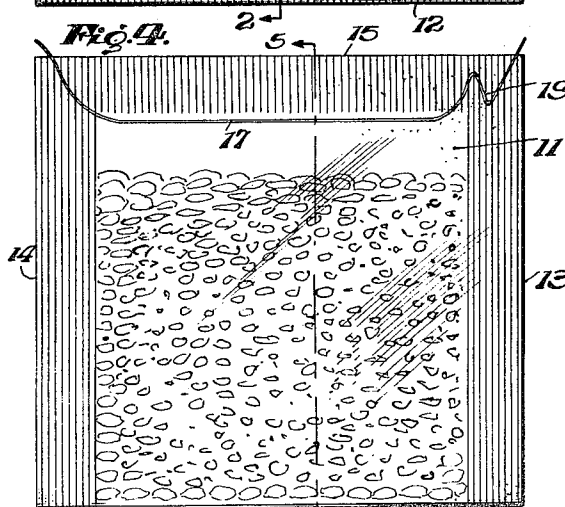
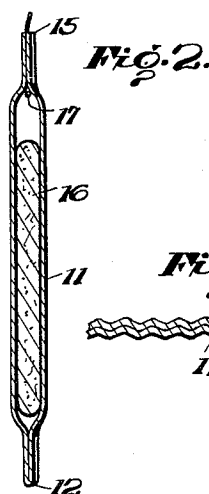
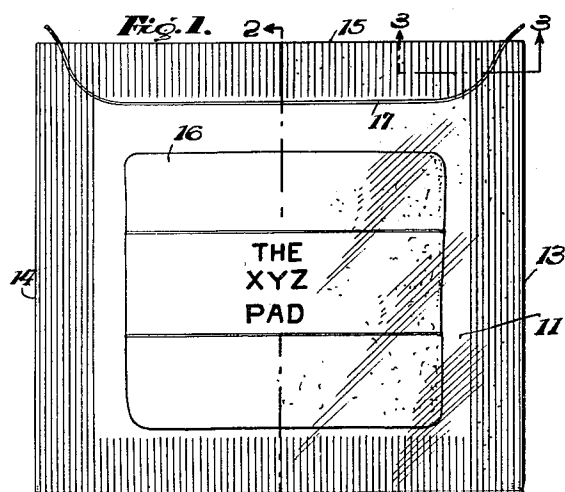
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PACKAGE

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PACKAGE

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This invention relates to packages for commodities, and more particularly to containers of the envelope type suitable for packaging articles of widely varying sizes and characteristics.

There has long been a demand for a relatively inexpensive, structurally simple commodity package which can be readily and cheaply fabricated, filled and hermetically sealed at high speed at the source of the goods to be packaged without requiring complicated, expensive machinery. There has likewise been a need for a package of this general character which is capable of displaying the goods in an attractive manner prior to sale of the ultimate consumer, and of maintaining the goods in their pristine condition until the package is opened. The purchasing public is also interested in obtaining packages which can be easily and quickly opened without injury to either the packaging material or the goods therewithin, and then reclosed, if desired, for continued protection of the goods. While numerous efforts have been made to satisfy these various requirements, it would appear that no package has heretofore been provided which possesses all of the desired attributes.

It is therefore one of the objects of the present invention to provide a commodity package of relatively simple but novel construction which is capable of fulfilling the requirements for rapid and inexpensive manufacture, complete protection of the packaged goods, and facile opening by the user of the goods.

Another object is to provide a package of improved form which is particularly adapted to high speed, quantity production by relatively inexpensive machinery directly associated with the means for producing the goods to be packaged.

A further object is to provide a novel form of envelope type container which may be used for the packaging of a wide variety of commodities, whether as single units or in quantities, and including liquids as well as solid materials.

Still another object is to provide a package of improved construction which can be formed from a single sheet or blank of packaging material and hermetically sealed as the result of the application of heat and pressure to at least three of the edges thereof.

A still further object is to provide a package of the hermetically sealed envelope type with novel means for readily opening the same without injury to either the packaging material or the contents of the package.

Another object is to provide a commodity package of extremely simple construction which

can be manufactured more cheaply and rapidly, and which will be more satisfactory in use, than the packages hitherto available for similar purposes.

These and other objects of the invention, including the embodiment in a package of the character described of novel means for facilitating reclosure thereof after initial opening, will become more fully apparent upon a consideration of the detailed description of the embodiments of the invention which follows. Although four different forms of package embodying the inventive concept have been described and illustrated in the accompanying drawing, it is to be expressly understood that this drawing is for purposes of illustration only and is not to be construed as defining the limits of the invention, reference being had for the latter purpose to the appended claims.

In the drawing, wherein like reference characters indicate like parts throughout the several views, and wherein the thickness of the packaging material has been exaggerated in order to more clearly illustrate the details of construction:

Fig. 1 is a plan view of one form of commodity package embodying the present invention and adapted to contain a single unit of substantial size;

Figs. 2 and 3 are cross sectional views of the package of Fig. 1 taken substantially on lines 2—2 and 3—3, respectively, of said figure, Fig. 3 being on an enlarged scale;

Fig. 4 is a plan view of a second embodiment of the invention illustrating the application thereof to the packaging of a quantity of a loose fluid material, such as cereal or the like;

Fig. 5 is a cross sectional view taken substantially on line 5—5 of Fig. 4;

Figs. 6 and 7 are plan and sectional views similar to Figs. 4 and 5 of still another form of package embodying the invention and containing a plurality of commodity units, such as pieces of candy; and

Figs. 8 and 9 are enlarged cross sectional views illustrating a modified form of edge for a package such as that shown in Figs. 6 and 7, and indicating the manner in which a metal foil insert may be used to assist in reclosure of the package after initial opening.

Each of the packages embodying the present invention is characterized by the fact that the body thereof is formed out of a single piece of heat sealable packaging material folded over to form a relatively flat envelope or bag substantially rectangular in outline and hermetically

sealed along at least the three otherwise open edges thereof as a result of the application of heat and pressure thereto. Another feature which may be common to all of the packages constructed in accordance with the invention is the provision of a string-like opening device which is so embodied in the package as to make possible an easy and rapid opening of one edge thereof without destroying the package or injuring the contents thereof.

Referring now to Figs. 1, 2 and 3 for a showing of one specific form of package embodying the invention, it will be seen that the body of the package consists of an integral piece or sheet of substantially transparent, flexible, heat sealable material 11 folded along its lower edge 12 into substantially U shape in cross section to form a relatively thin, flat package rectangular in plan view. In order to hermetically seal the package, the two side edges 13 and 14 and the top edge 15 (which would otherwise be open) are tightly sealed as a result of the application of heat and pressure to the marginal portions of the doubled over sheet 11. In this particular embodiment of the invention, the two superposed thicknesses of the packaging material are also bonded together along the bottom edge 12 so as to strengthen this edge of the package to the same extent as the other three edges, thus providing the package with a completely sealed periphery of uniform character. While the bond between the two thicknesses of the packaging material might be made by simply pressing them together in flattened condition and applying heat thereto, it has been found preferable to also crimp the material in the sealed areas simultaneously with the application of the heat and pressure, as is indicated in the drawing.

It will be noted that the crimped and sealed marginal portions of the package are relatively narrow in extent so as to leave a relatively large space within the package for containing the goods which, in the case of Figs. 1-3, may be a single unit 16 of substantial size, such as a waxing pad for polishing woodwork or metallic surfaces, for example. In the event that the packaging material 11 is transparent in its natural state, it will be recognized that the form of package disclosed will not only provide an hermetically sealed container for the goods, but will also enable the goods to be attractively displayed, the crimped and sealed periphery of the package forming a sort of frame for the picture presented by the goods as viewed through the transparent central portion. Should the packaged commodity be of a character such as would be injured by exposure to light, it is apparent that the packaging material may be opaque, or that the hermetically sealed envelope forming the subject matter of the present invention may comprise the inner portion of a duplex package, the outer covering being opaque but not of such a character as to thoroughly protect the goods against volatilization, oxidation and the like. If the nature of the goods to be packaged is such as to require it, it will also be understood that the packaging material may be so treated as to resist the action of solvents or other chemicals that may be contained in the goods.

When a package of this character has been sealed in the manner described, it is extremely difficult to open the same by separating the bonded together thicknesses of the packaging material at any of the edges thereof without tearing or otherwise destroying the package, and possibly 75

injuring the goods contained therein. To obviate this difficulty, there is provided by the present invention an extremely simple but effective means for opening the package along one edge thereof in such a way as to permit removal of all or any part of the goods contained therein and yet leave the packaging material intact so that the package may be continued in use and even reclosed if desired.

As shown, the opening means consists of a string or thread-like member 17 the central and major portion of which lies within the goods receiving space of the package, entirely inside of the sealed area of the associated edge, but which has its two ends embedded in the sealed portion of the edge and extending outwardly of the package at either one or both ends sufficiently to enable the string to be grasped by the person desiring to open the package. If desired, the member 17 may be made out of a narrow, twisted length of material of the same character as the packaging material 11. As will be seen from Fig. 1, if one end of the opener 17 is pulled to the right in the plane of the figure, substantially parallel to the edge 15, it will open the package by simply unsealing the bond between the two thicknesses of packaging material which are sealed together to form the closed upper edge 15, without tearing the material or otherwise injuring either the package or its contents. Inasmuch as the major, central portion of the opener 17 lies inside of the sealed marginal area of the edge 15 with its ends inclining outwardly toward the extreme corners of the package, it will be recognized that, by the use of such an opener, direct access is provided to the interior of the package without acquiring any further opening operation such as would be necessary were the portion of the member 17 intermediate its ends entirely embedded in the sealed area.

The form of package shown in Figs. 4 and 5 differs from that of Figs. 1-3 in two respects in addition to the character of the goods packaged therewithin which, in the present instance, may be a loose, fluid material such as a quantity of cereal, flour, sugar, or like substance which is capable of being poured for the purpose of filling. The first distinction between this second embodiment of the invention and that previously described resides in the fact that the bottom edge 18 of the package is left in its natural folded condition and is not stiffened and reinforced by having the two overlying thicknesses of the packaging material 11 sealed together and crimped in the manner shown in Figs. 1 and 2. With this construction, the package is more easily filled with loose material inasmuch as the unsealed edge 18 tends to become rounded and thereby permits the opposed unsealed portions of the packaging material to spread further from one another and provide a greater volume of space within the package to receive the goods. This feature is of substantial importance when the package of the present invention is formed in an automatic machine of the continuous motion type wherein the packaged material is loaded through what ultimately becomes one of the side edges 13, 14 of the finished package.

The second modification embodied in the package of Figs. 4 and 5 relates to the string opener 17. As shown in Fig. 4, one end of the opener (the end opposite to that pulled during the opening operation) may be given a reversely curved form within the sealed portion of edge 15 as indicated at 19 so as to more firmly anchor this

end of the opener and thereby avoid the possibility of merely pulling the opener out of the package along the path in which it is initially placed and without separating the bonded-together layers of packaging material forming the sealed edge 15. If desired, a pull tag or the like may be attached to the end of the opener 17 opposite to the more firmly anchored end.

The third embodiment of the invention illustrated in Figs. 6 and 7 is similar to that of Figs. 4 and 5 but differs therefrom in the construction of the upper sealed edge portion 15. As indicated best in Fig. 7, the two edges of the blank of packaging material which are sealed together to form the upper edge of the finished package are doubled over inwardly as indicated at 20 so as to provide four, instead of two, thicknesses of material which are sealed together and crimped at this point, thus producing a reenforced upper edge for the package. With this construction, the opener member 17 may be omitted, if desired, and the package opened by manually separating the sealed, doubled-over portions in any suitable manner, as by the use of a knife.

Where it is anticipated that all of the contents of the package will not be consumed when the package is first opened, and it is desired to facilitate reclosure thereof after opening, the upper edge portion may be modified in the manner indicated in Figs. 8 and 9 by the inclusion, in one or both of the doubled-over edges of the blank, of a strip 21 of metal foil or a like material which is relatively more rigid and has a greater tendency to remain in a folded position than the packaging material 11. While two rigidifying strips of this character may be employed, if desired, it is preferable from the standpoint of efficiency in heat sealing to use only one such strip, as shown in the drawing. When only one strip is used, a perfect seal is insured between at least three of the four thicknesses of packaging material forming this edge of the package, whereas, if two such strips are employed, the transfer of heat to the two innermost thicknesses, between which the seal is most important, might be somewhat less than in the embodiment illustrated. As indicated in Fig. 9, a package embodying this form of upper edge may be reclosed by bringing the originally sealed portions back into contact again and then doubling the same over with the foil-including side outermost so that the shape-retaining tendency of the foil will assist in preventing unfolding and reopening of this edge of the package.

The term "heat sealable packaging material" as used throughout this specification and the appended claims is intended to apply to any packaging material of such character that, when two layers thereof are brought into contact with one another, or when one layer thereof is brought into contact with a layer of some other material such as metal foil, and heat and pressure are applied thereto, the two layers become tightly sealed or bonded together. There are a number of different materials possessing this characteristic now on the market any of which may be successfully used in practicing the present invention. It is therefore to be understood that the invention is not limited to any specific one of this general class of packaging materials, but is capable of embodiment in all.

There is thus provided by the present invention a new and improved type of package which is extremely simple in its structure, and yet entirely capable of packaging in hermetically sealed

condition a wide variety of commodities. The package of the present invention is also characterized by the provision of means for quickly and easily opening one edge thereof without injuring either the packaging material or the contents thereof, and of other means for facilitating reclosure of the package after initial opening. By forming the present package out of a single piece of packaging material and sealing the edges in the manner described, a container is provided which lends itself especially well to rapid and inexpensive manufacture by means of automatic machinery. These and other characteristics of the invention, including the provision of a package of the envelope type embodying a relatively large goods-containing space in proportion to the overall size of the package, result in a container which is especially well adapted for the packaging of many commodities now requiring containers of more involved structure and substantially more expensive to manufacture. For example, the present package is adaptable to the packaging of liquids such as milk, oil and the like, as well as solid materials, thus making it possible to save the cost of the relatively expensive bottles and cans hitherto used for such materials.

While several specifically different forms of package embodying the invention have been described and illustrated in the accompanying drawing, it will be obvious that the invention is not limited to the exact structures shown but is capable of a variety of mechanical embodiments. It will also be understood that certain features, such as the opener member and the metal foil reinforcement of the upper edge, which are shown in one or more of the different figures of the drawing, may be combined with one another or embodied in packages of specifically different construction than those illustrated. Various other changes, which will now suggest themselves to those skilled in the art, may be made in the form and details of construction of the package without departing from the spirit of the invention. Reference is therefore to be had to the appended claims for a definition of the limits of the invention.

What is claimed is:

1. A commodity package comprising a single sheet of flexible, heat sealable packaging material doubled upon itself along one edge of the package to form a substantially rectangular envelope, the opposed portions of the thus folded sheet along at least the three otherwise open edges of the package being sealed to one another to form an hermetic closure for the package, and means for opening said package consisting of a thread-like member associated with and substantially paralleling the sealed edge of said package opposite that along which the sheet is doubled and having a portion thereof projecting outside of the package, another portion embedded in the sealed portion of said edge and still another portion lying entirely within the goods-containing space of the package, said member being so constructed and arranged that, when its projecting portion is pulled in a direction substantially parallel to the edge of the package with which it is associated, it will pass between and separate the sealed-together thicknesses of packaging material along said edge and provide direct access to the interior of the package.

2. A commodity package comprising a single sheet of flexible, heat sealable packaging material doubled upon itself along one edge of the package to form a substantially rectangular

envelope, the opposed marginal portions of the sheet along at least the three otherwise open edges of the package being sealed to one another to form an hermetic closure for the package, and means for opening said package consisting of a thread-like member associated with the sealed edge of the package opposite that along which the sheet is doubled and having one of its extremities projecting outside of the package, the opposite end thereof having a portion embedded in the sealed portion of said edge, and a portion intermediate its ends lying within the package between the unsealed portions of said sheet.

3. A commodity package comprising a single sheet of flexible packaging material doubled upon itself along the bottom edge of the package to form a substantially rectangular envelope, the opposed marginal portions of the sheet along the top and side edges of the package being sealed to one another to form a closure for the package, and means for opening the package consisting of a thread-like member associated with the top edge of the package having its end portions embedded in the sealed area of said top edge adjacent the side edges of the package and an intermediate portion located within the package between the unsealed portions of said sheet, at least one of the extremities of said member projecting outside of the package sufficiently to enable grasping thereof for the opening operation.

4. A commodity package comprising a single sheet of flexible packaging material doubled upon itself along the bottom edge of the package to form a substantially rectangular envelope, the opposed marginal portions of the sheet along the top and side edges of the package being sealed to one another to form a closure for the package, and means for opening the package consisting of a thread-like member associated with the top edge of the package having its end portions embedded in the sealed area of said top edge adjacent the side edges of the package and an intermediate portion located within the package between the unsealed portions of said sheet, one of the end portions of said member being more firmly anchored in said sealed area than the other, the opposite end portion having its extremity projecting outside of the package sufficiently to enable grasping thereof for the opening operation.

5. A commodity package comprising a single sheet of flexible, heat sealable packaging material doubled upon itself along the bottom edge of the package to form a substantially rectangular envelope, the opposed marginal portions of the sheet along the top and side edges of the package being hermetically sealed to one another to form a closure for the package, means for opening the package consisting of a thread-like member associated with the top edge of the package having its end portions embedded in the sealed area of said top edge adjacent the side edges of the package and an intermediate portion located within the package between the unsealed portions of said sheet, and means for anchoring one of the end portions of said member more firmly than the other with respect to said sealed area, the opposite end portion having its extremity projecting outside of the package sufficiently to enable grasping thereof for the opening operation.

6. In a commodity package of the envelope type having at least one edge formed by opposed thicknesses of packaging material hermetically sealed to one another, a device for opening said package without injury to the packaging material consisting of a thread-like member having its end portions embedded in the sealed area of said edge and a portion intermediate said embedded end portions located within the body of the package inwardly of sealed edge, both of the extremities of said member projecting outside of the package at points within the length of said sealed edge.

7. In a commodity package of the envelope type having at least one edge formed by opposed thicknesses of packaging material hermetically sealed to one another, a device for opening said package without injury to the packaging material consisting of a thread-like member having its end portions embedded in the sealed area of said edge and an intermediate portion located within the body of the package inwardly of said sealed edge, one of the end portions of said member being more firmly anchored in said sealed area than the other, the opposite end portion having its extremity projecting outside of the package sufficiently to enable grasping thereof for the opening operation.

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