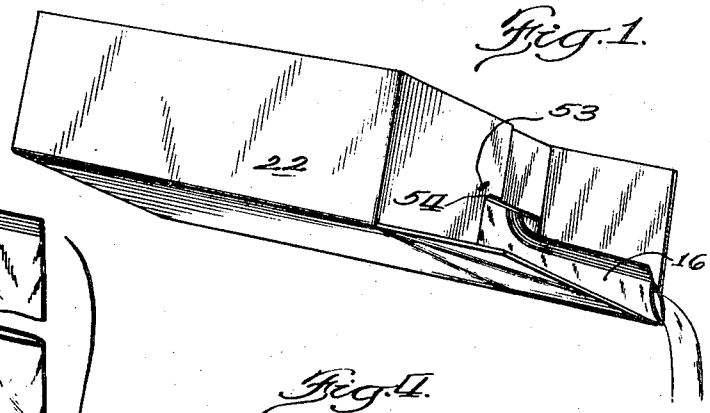
Aug. 3, 1948. L. B. SMITH 2,446,308

PACKAGE

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Fig. 1.



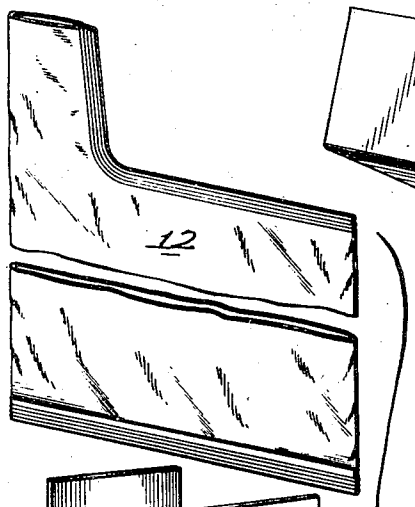


Fig. 4.

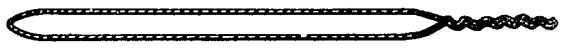
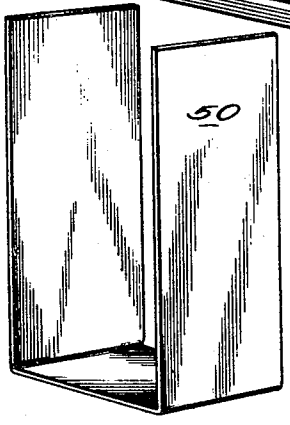


Fig. 2.



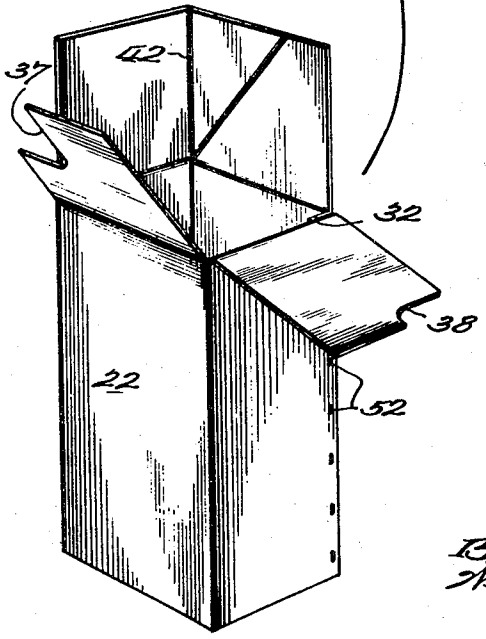
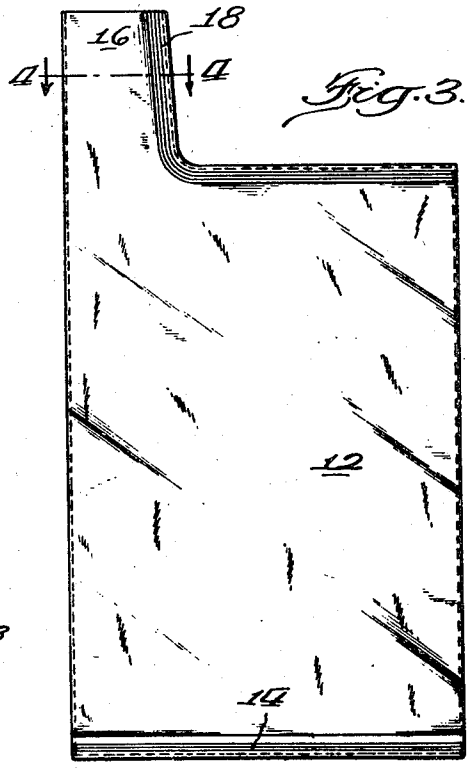


Fig. 3.



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Fig. 6.

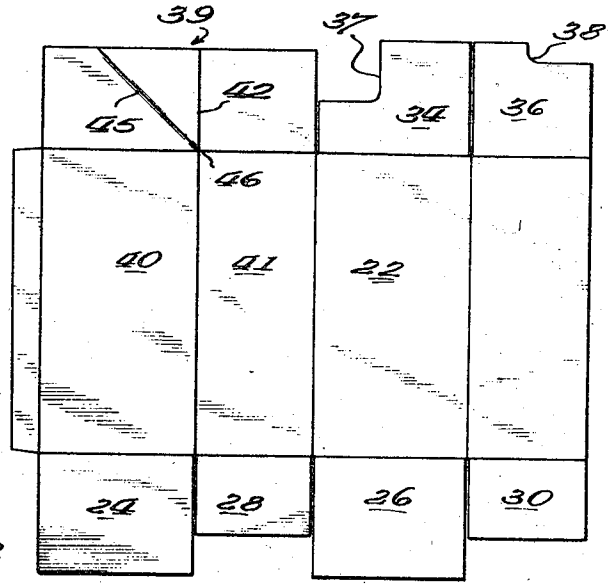
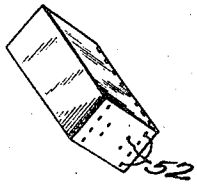


Fig. 5.



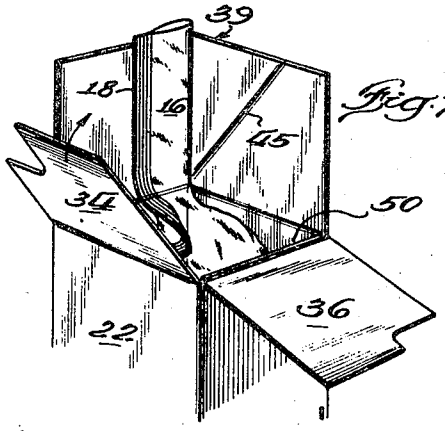


Fig. 7.

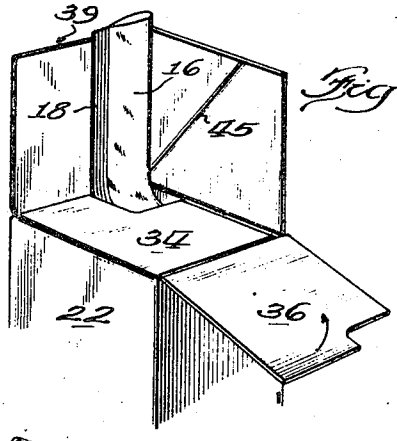


Fig. 8.

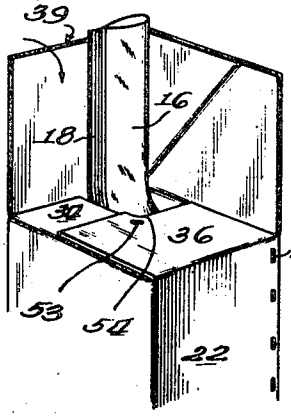


Fig. 9.

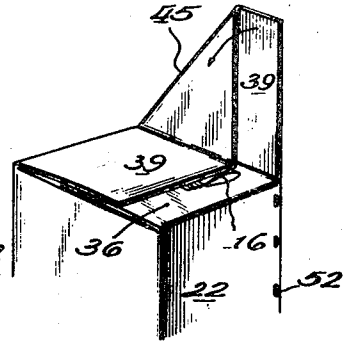
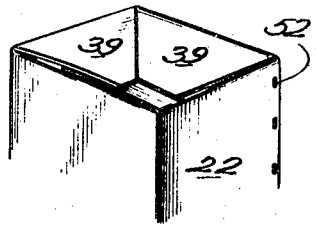


Fig. 10.

Fig. 11.



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2,446,308

PACKAGE

Louis B. Smith, Chicago, Ill.

Application May 25, 1942, Serial No. 444,321

4 Claims. (Cl. 229—14)

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My invention relates generally to packages, and more particularly to packages having an inner container supported by a rigid outer carton.

An object of my invention is the provision of a fluid-tight package having a convenient pouring spout and a support therefor.

Another object is to provide a package having an improved closure.

A further object of my invention is the provision of a package which may be fabricated both easily and inexpensively from materials which are readily accessible.

A further object is to facilitate the handling and storage of fluids, semi-fluids, freely flowing substances, and other materials by providing a package which may be filled and emptied easily, and which occupies a minimum of space in relation to its cubic capacity.

Another object is to provide an improved package for frozen products.

Other objects and advantages will hereinafter appear.

While my invention is described as embodied in a more or less pliable fluid-tight inner container supported by a rigid outer carton, it is of course to be understood that my invention contemplates also the use of the inner container alone. Furthermore, while the package embodied in my invention is described for use with frozen fluids, it may be used equally well with dairy products, petroleum products, grain and cereal—in fact with any substance that is relatively free flowing.

In the drawings:

Fig. 1 is a perspective view of my package showing the pouring operation;

Fig. 2 is an exploded view of the various parts of the package, including the inner container, the protective liner, and the outer carton;

Fig. 3 is a side view of the inner container;

Fig. 4 is a view of the spout of the inner container taken on the line 4—4 of Fig. 3;

Fig. 5 is a bottom perspective view of the outer container showing how it is fastened together by means of staples;

Fig. 6 is a plan view of the blank from which the outer container is formed;

Fig. 7 is a detailed view showing the inner and outer containers assembled prior to closing the package;

Fig. 8 is a detailed view similar to Fig. 7, showing the first step in closing the package;

Fig. 9 is a detailed view further depicting the closing of the package;

Fig. 10 is a detailed view likewise showing a subsequent step in closing the package; and

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Fig. 11 is a detailed view showing the package completely closed.

Referring to the drawings, the package is composed of an inner container or bag 12 preferably made of a relatively thin and pliable fluid-tight material of the type sold under the trade-name "Heat Sealing Cellophane." This inner container, which may be formed from flat sheets or from material in tubular form is heat-sealed or crimped at the lower end 14 thereof to form a fluid-tight bag. The upper end of the bag is likewise sealed with the exception of a pouring spout 16 made integral with the container and having its inner or open side sealed by means of the same continuous heat-sealed welt or seam 18 which closes the top of the bag 12. The spout 16 extends considerably beyond the upper sealed end of the bag.

Although the inner container may be used alone, my invention preferably contemplates its use with an outer supporting carton 22. This carton is made of a relatively heavy cardboard so that the entire package will be better able to withstand the shocks and strains encountered in shipping and handling.

The outer carton is similar in shape to the conventional packing box, with the exception of the upper closure thereof. As will be explained, the upper flaps of the carton 22 are constructed to form a support for the spout 16 of the inner container 12. Referring to Fig. 6, it may be seen that the carton 22 has two pairs of lower flaps 24, 26, 28 and 30 which form the bottom of the carton.

At the upper end or closure of the carton are two flaps 34, 36, having reentrant portions 37, 38 respectively cut therein. The closure includes in addition an angular flap 39 which is a continuation of the sides 40, 41 of the carton. It is this angular flap which serves as a support for the pouring spout 16 (see Fig. 1). It is to be noted that the corner or apex 42 of the flap 39 is not severed, as is the case with the other flaps 34, 36. If desired, the corner 42 may be reinforced to prevent its splitting or tearing as the result of frequent folding of the flap 39. A diagonal crease 45 is made in the flap in order to permit it to be folded to a closed position. This crease extends across the flap to a point 46 at the upper junction of the sides 40, 41 of the carton. Fig. 2 shows the carton completely assembled.

As has heretofore been mentioned, my package may be used with fluids which are to be frozen therein. In such instances, because of the likelihood of condensation of moisture on the out-

side of the bag 12, it is advisable to use a lining 50 (see Fig. 2) within the outer carton. This lining may be made of corrugated paper or other absorbent material. It is further advisable where condensation of moisture within the carton is likely to occur, to employ staples 52 rather than glue in assembling or fastening the carton.

Inasmuch as the inner container or bag 12 must of necessity belly outwardly when it is filled, it is desirable to make the bag 12 almost twice the length and width of the outer carton 22 with which it is to be used. An ideal relationship in the size of the bag and carton is shown in a comparison of Fig. 3 with the carton in Fig. 2.

Referring now to Fig. 2, the complete package when ready for use is composed of the outer carton 22, the lining 50 and the bag 12. When the bag is placed within the carton, as shown in Fig. 7, it is contemplated that the spout 16 will be placed adjacent the corner 42 of the flap 39. It is advisable to make the spout of such a length that it will extend slightly beyond the edge of the flap 39 when the bag 12 is entirely filled.

The operation and use of my package is as follows: After the bag 12 is placed within the carton 22, the bag is filled with whatever substance it is intended to hold. The filling of the bag may be easily and quickly accomplished simply by inserting a filling nozzle or hose (not shown) into the spout 16. After the bag 12 has been filled, the flap 34 of the outer carton is folded to the position shown in Fig. 8 where it will bear against the upper end of the lining 50. Next the flap 36 is folded over the flap 34 and the two are stapled together, by means of a staple 53 as illustrated in Fig. 9. It is to be noted that the corner 54 formed by the reentrant portions of the overlapping flaps 34, 36, is rounded. The package thus formed, and shown in Fig. 1, provides a novel and useful container from which material can be easily poured. Inasmuch as the flaps 34, 36 are stapled together, the bag 12 is thereby held securely within the carton 22 without danger of becoming displaced during the pouring operation. It will be seen that the corner 42 of the flaps 39 serves as a support upon which the flexible spout 16 rests while the contents of the package are being poured. In the same manner, the corner 42 likewise serves as a support for the spout during a filling operation. It is possible, although not necessary, to attach the spout 16 to the flap 39 more permanently by means of glue.

A further feature of my invention is found in the closure wherein the outer carton 22 acts upon and cooperates with the spout 16 to seal the contents of the bag 12 when the carton is closed and sealed. It may be seen in Fig. 10 that when the flap 39 is folded downward and inward along the diagonal crease 45, the inner side of the flap 39 is brought to bear against the spout 16 whereby the spout is folded over and compressed tightly against the flap 36, and is thereby sealed. When the bag 12 is used with fluids, it may be advisable to heat-seal the end of the spout 16 before compressing it against the flap 36. On the other hand, when the package is used with freely flowing solids, such as grain and the like, it will not be necessary to heat-seal the spout. The closure is completed by bending the remaining part of the flap 39 to the position shown in Fig. 11, whereupon the entire package may be finally sealed with

gummed tape or by any other conventional means.

When my package is used with frozen fluids, it may be assembled and filled at the point of origin with the fluid contents, then frozen, and shipped in a refrigerated condition. Upon reaching the consumer, the contents are permitted to thaw, after which they may be easily poured. Should the consumer not wish to use the entire contents at one time, the package may be quickly sealed merely by closing the flaps over the spout, as described.

Because my package is rectangular in shape, it consumes a minimum of space in proportion to its cubic capacity. It has the additional advantage of being easily disposable, or it may be re-used, if desired. An additional advantage lies in the fact that the package can be shipped in great quantities in a "knocked down" condition and assembled at the point of use.

While I have described my invention in connection with a preferred embodiment thereof, it will be apparent to those skilled in the art that numerous variations and modifications may be made from the structure disclosed without departing from the underlying principles of my invention. I therefore wish to include within the scope of the following claims all constructions by which substantially the results of my invention may be obtained by substantially the same or equivalent means.

Having illustrated and explained typical embodiments of my invention, what I claim and desire to secure by United States Letters Patent is as follows:

1. A package comprising a flexible inner container having a spout thereon, an outer reinforcing carton having a plurality of sides, a closure for said package comprising a plurality of flaps hinged to the top edge of adjacent sides of said carton, at least one of said flaps having a reentrant portion therein through which said spout is adapted to protrude, another of said flaps comprising an extension of at least two of the side walls of said carton and forming an angular flap for supporting said spout, said angular flap having a diagonal crease therein extending from an edge thereof to an upper junction of two of said side walls, said diagonal crease being adapted to permit inward folding of said angular flap, said angular flap being adapted to compress said spout against one of said first mentioned flaps, thereby sealing said inner container.

2. A package comprising a flexible inner container having a spout thereon, an outer reinforcing carton having a plurality of sides, a closure for said package comprising a plurality of flaps hinged to the top edges of adjacent sides of the carton, one of said flaps comprising an extension of two adjacent side walls of the carton and forming a unitary angular flap when in open position for supporting said spout in the trough formed at the junction of the two walls of the flap, another flap of the closure having a notch which is disposed adjacent said junction of the angular flap walls when said other flap is in closed position, said notch being dimensioned to accommodate the spout and serving to retain it adjacent the trough of the angular flap, and said angular flap being creased for collapse into closed position over said other flap in a plane substantially perpendicular to the side walls of the carton.

3. A package comprising a flexible inner container having a spout thereon, an outer reinforc-

ing carton having a plurality of sides, a closure for said package comprising a plurality of flaps hinged to the top edges of adjacent sides of the carton, one of said flaps comprising an extension of two adjacent side walls of the carton and forming a unitary angular flap when in open position for supporting said spout in the trough formed at the junction of the two walls of the flap, the closure including at least two other flaps extending respectively from different sides of the carton, folded one over the other in closed position and secured together, the outlines of said flaps forming an opening adjacent said junction of the angular flap walls, said opening being dimensioned to accommodate the spout while said other flaps retain the main body of the inner container in the carton, and said angular flap being creased for collapse into closed position over said other flaps in a plane substantially perpendicular to the side walls of the carton.

4. A package comprising a flexible inner container having a spout thereon, an outer reinforcing carton having a plurality of sides, a closure for said package comprising a plurality of flaps hinged to the top edges of adjacent sides of the carton, one of said flaps comprising an extension of two adjacent side walls of the carton and forming a unitary angular flap when in open position for supporting said spout in the trough formed at the junction of the two walls of the flap, the closure including at least two other flaps extending respectively from different sides of the carton, folded one over the other in closed position and secured together, the outlines of said flaps forming an opening adjacent said junction of the angular flap walls, said opening being

dimensioned to accommodate the spout while said second flaps retain the main body of the inner container in the carton, said angular flap having a diagonal crease therein extending from an edge thereof to an upper junction of two of said side walls, said diagonal crease being adapted to permit inward folding of said angular flap over said other flaps with the spout compressed between said other flaps and the angular flap, thus sealing the inner container.

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