Feb. 8, 1944. G. A. MOORE 2,341,056

CONTAINER AND METHOD

Filed May 9, 1942

Fig. 1.

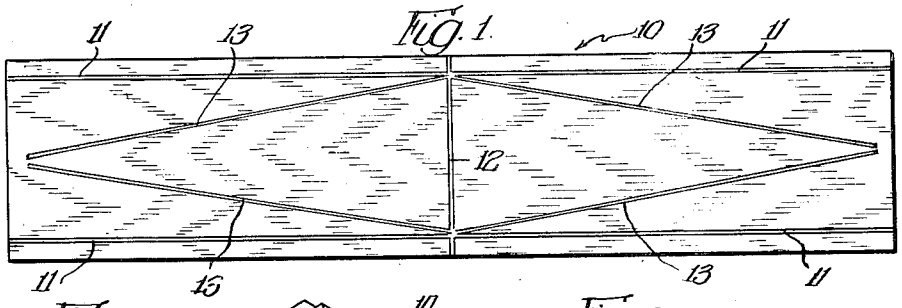


Fig. 2.

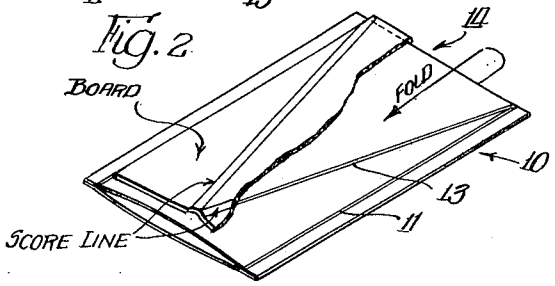


Fig. 3.

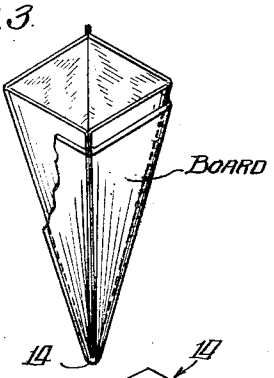
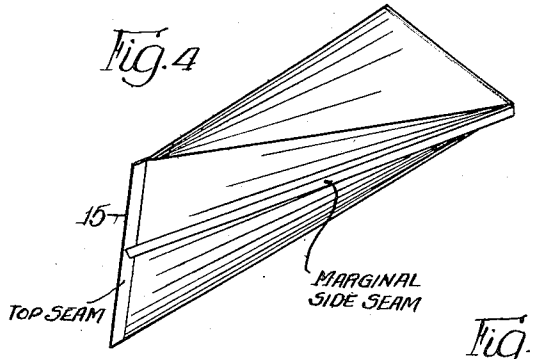


Fig. 4



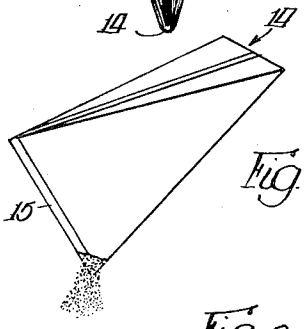


Fig. 5

Fig. 6.

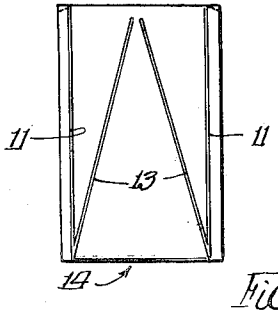


Fig. 7.

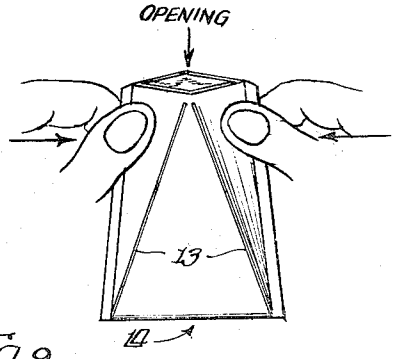


Fig. 8

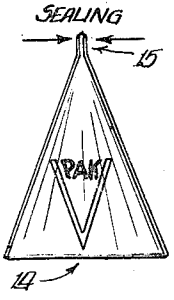
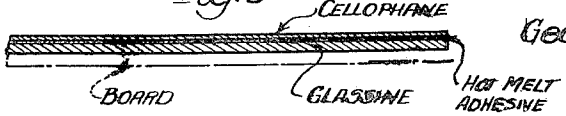


Fig. 9



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UNITED STATES PATENT OFFICE

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CONTAINER AND METHOD

George Arlington Moore, New York, N. Y., assignor to Shellmar Products Company, Mount Vernon, Ohio, a corporation of Delaware

Application May 9, 1942, Serial No. 442,286

2 Claims. (Cl. 229—1.5)

This invention relates to improvements in containers, bags and packages generally and, more particularly, it pertains to a container of novel configuration of a triangular pyramidal shape capable of greatly increased capacities with consequent conservation of materials necessary to its formation and the provision of such a container is a principal object of the invention.

One conventional type of container for packaging granular commodities such as, for example, various dehydrated powders, yeast in powdered or pellet form, dehydrated vegetables, soup-mix powders, desiccated egg products, and various other commodities consisted of a flat pouch or envelope blank folded upon itself, marginally side sealed and with an opening for filling. This type of package is considerably limited in the amount of product which can be packed therein and effectively sealed. Such a pouch when filled will allow the commodity ultimately to settle towards the bottom thereof, resulting in an outward bulge at the lower portions of its side walls with consequent over-tension on the seams in this region causing vulnerability thereto and danger of fracture and rupture.

This outward bulge and distension of the side walls occurs even prior to such settling, often pulling the mouth areas out of alignment before sealing, causing wrinkles therein, particularly if the contents are even slightly greater than what would otherwise normally provide a fairly flat package, and consequently will result in an imperfect closure seal. In sealing any two members of the mouth of a container, and particularly where heat sealing is practiced, the mouth portions of the materials must lie parallel and be free of gathers or wrinkles or shirring to insure effective sealing. Likewise, the side seams of such a pouch are subjected to tension after the mouth has been sealed and there is set up stresses and strains which are unevenly distributed resulting in rupture and breakage or otherwise destroying the effectiveness of the package.

Generally, it is an object of the present invention to provide a container or package of novel configuration which is economical of manufacture, simple yet sturdy and durable of construction and which will eliminate the foregoing as well as other difficulties and disadvantages.

A further object of the invention is the provision of a triangular container which can be filled to substantially maximum capacity without fear of causing significant wrinkles, crimping or shirring of the mouth of the container, thereby materially eliminating the danger of promoting an ineffective seal.

More specifically, it is an object of the present invention to provide a triangularly shaped container wherein the contents are evenly distributed and which will minimize and substantially eliminate settling of said contents to one area of the container so that the thrust of the weight of the material is substantially evenly divided and directed against the walls of the container in a manner which will set up substantially equalized stresses and strains at the seams as well as at the walls.

Yet another object of the invention is to provide a blank of suitable container material having appropriately located score lines which will permit of ready folding and sealing of such a blank to form a triangular pyramidal shaped container having walls and edges, one of which can readily be separably sealed to provide a mouth opening and which is readily adapted to being opened at any one of the vertices of said container.

Other objects of the invention will in part be obvious and will in part appear hereinafter.

The invention accordingly comprises an article of manufacture possessing the features, properties, and the relation of elements which will be exemplified in the article hereinafter described and the scope of the application of which will be indicated in the claims.

For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description taken in connection with the accompanying drawing, in which:

Fig. 1 is a plan view of a preferred type of container blank illustrating the location of score lines desirable in the formation of a container made in accordance with the principles of the present invention;

Fig. 2 is a perspective view depicting a board reinforced blank desirable in certain types of containers with a portion of the blank broken away, folded upon itself to provide an open-mouthed container having sealed marginal side portions;

Fig. 3 is a view in forwardly elevated perspective of a blank similar in construction to that shown in Fig. 2 and compressed to illustrate the filling area of the mouth of such a container;

Fig. 4 is a perspective view of one form of a sealed container contemplated by the present invention;

Fig. 5 is a perspective view of another form of sealed container;

Fig. 6 is a front elevational view of a container made in accordance with the present invention showing the first progressive step in its formation;

Fig. 7 is a front elevational view of the same container depicting a further progressive step in forming the opening of the mouth of the container for filling;

Fig. 8 is a front elevational view also of the same container illustrating the final step in its formation and showing the direction of mouth sealing; and

Fig. 9 is a cross sectional view of a fragmentary portion of an example of material of the laminated type suitable for use in fabricating a container embodying the present invention.

Referring more particularly to Fig. 1 of the drawing, there is shown generally at 10 a container blank which is preferably rectangular in shape. This container blank may be of laminated material and of the self-sealing variety which utilizes such well known materials as rubber hydrochloride, Koroseal, heat sealing Cellophane, and the like, or it may be striped with any suitable heat sealing lacquer marginally at those portions where it is desirable to effect a seal. In fact, where heat sealing is not desired and clips or staples or other means of effecting a seal is contemplated, any suitable material may constitute the blank for forming a container into the shape contemplated as set forth in accordance with the disclosures involving the present invention. It will be seen that marginally along the longitudinal edges there have been provided score lines 11 as well as an intermediate score line 12 which is preferably about midway between the ends of the blank. Beginning at a point inwardly of the marginal edge and at a point along the intermediate score line 12 are score lines 13 which converge toward the opposite edges of the blank.

In Fig. 2 there is illustrated a blank folded upon itself along the intermediate score line 12 so that opposed marginal side edges are brought together and preferably sealed by heat and pressure or in any other suitable manner. There is here illustrated a blank reinforced with any suitable stiffening board and applied in any suitable manner. This, however, is optional depending upon the type of material to be packed or the kind of package desired. In any event, a reinforcing blank preferably is also scored with an intermediate score line as well as converging lines although it should be understood that in its broader aspect the invention contemplates the formation of a triangularly shaped package as herein disclosed without the use of such score lines.

Referring more particularly to Figs. 6 to 8 inclusive the steps in the filling and sealing of this type of container are progressively set forth. The container after being formed at one station into the shape shown in Fig. 6 (with or without reinforcing board or score lines) is caused to travel along a conveyor if desired until it reaches a next succeeding station, whereupon the sealed edges are urged toward each other as indicated by the arrows, axially of the base line shown generally at 14. The urging together of these oppositely sealed edges to a point where the mouth opens to substantially a square configuration (see Fig. 3) illustrates a further advantage in this type of container for filling purposes. It will be apparent that an opening of maximum area is provided and that such containers can more readily and conveniently be filled than the pouch type of containers wherein the sides were but slightly separated in a direction opposite to that shown herein. Another disadvantage which is overcome is the tendency of the marginal side seams to separate particularly at the mouth opening, a danger which was always prevalent in the conventional type of container heretofore used as represented by the pouch or envelope type.

After the container has been filled it progresses to its next succeeding station as represented in Fig. 8 and the mouth of the container is further brought together until the opposite faces meet marginally and a seal of any suitable type, and preferably a heat seal, is provided to produce the desired closure at the mouth of the container. Whether the edges are substantially equal with the base or elongated in the form of a tube, the designated shape still obtains.

Finished packages are illustrated more clearly in Figs. 4 and 5. It appears that this type of package is unique in its shape and configuration and may be described as tending to take the form of a triangular pyramid or it may also be defined as a triangularly shaped wedge. It will be observed that any seal effected across the mouth of the container will be disposed transversely of the base line 14 and that the container has only four triangular sides but no top and bottom of significant area as shown in certain of the views if the base line 14 is considered the bottom. When lying on one of its triangular faces such a container or package may be said to have a supporting base but no summit at least of any significant area. The edges of this container are formed by the intermediate score line 12, the oppositely disposed score lines 13 and at the opposite edges of the blank where they are brought together to be sealed to form a separable seam or a top or mouth opening seam. This seam may be regarded as a separable seal or seam which provides the mouth opening of the container. It will also be observed that the edge 14 forms the base line for two triangular sides of the container while the seam at the mouth portion or edge seam 15 forms the base line for the opposite and remaining triangular faces of the container.

The marginal side seams are preferably flatly folded against the walls of the container. Such packages may also have printed thereon diagonal lines across one or more corners of the seams with instructions to cut or tear off. At the mouth opening such a package may be provided with an extended lip if desired to afford refolding to close the opening after removing part of the contents. Plastic creams and similar products ordinarily extruded from a tube are well suited to packaging in such a container. A closure can readily be effected by squeezing the opening between the thumb and forefinger, the plastic substance being often well suited to aid in closing the same and may be followed by folding.

Such a container is well suited for evenly distributing stresses and strains at the seams and throughout the wall areas. With the same amount of material heretofore used for unit packing with the flat pouch envelope it is now practical to pack in the present type of container more than double the quantity of product and to draw the margins to be sealed together without gathers or wrinkles, thus insuring an efficient seam structure. Heretofore it was not possible to load the pouch type of container to capacity

whereas with the present geometrical solid type of construction substantially the entire area of the container can be loaded to capacity.

About twenty to twenty-five per cent less material is used with my new type of container to pack the same amount of commodity as was heretofore used with the flat pouch or envelope type of package. As an example, certain well known products that have heretofore been packed in flat pouches or envelopes containing about two and one-half ounces were emptied of their contents. The same amount of material in the shape of the triangular pyramid embodying my invention accommodated in excess of twice that amount. This necessarily results in desirable conservation of raw materials entering into a container so formed.

It also will be observed that in fabricating this type of package there is little or no waste material other than nominal trim waste. The blank formation as well as the ultimate formation of the container is directly contrary to conventional practice and forms a V type of container.

It will be appreciated that when such a container is filled to capacity and sealed the various forces and tensions exerted on the four walls of the container by the commodity are substantially evenly divided and in substantially even distribution of thrust outwardly over the entire area of the interior of the container.

It will thus be seen that the objects hereinbefore set forth may be readily and efficiently attained and since certain changes may be made in the above described article and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. An article of the type described, which comprises a rectangular blank of suitable heat sealing container material having a score line intermediate the ends of said blank, marginal score lines disposed longitudinally of said blank, and oppositely disposed converging score lines beginning at points inwardly of an intermediate marginal portion of said blank and extending toward the ends thereof, said first and said last named score lines defining edges of said container when said blank is folded into container formation, the marginal portions outwardly of said marginal score lines being heat sealed in face-to-face relationship and the ends of said blank forming the remaining edge of said container to provide a mouth opening for filling said container with a commodity when separated and for retaining the same therein when closed, and said ends being separably sealed.

2. A method of forming triangular pyramidal shaped containers, which comprises providing a rectangular blank of suitable heat sealing container material, marginally scoring the longitudinal edges of said blank, scoring said blank intermediate its ends, and effecting score lines at points inwardly of said marginal edges along said intermediate score lines and oppositely disposed and converging inwardly of the longitudinal axis and outwardly toward the edges of said blank, folding said blank along said score lines and heat sealing opposed marginal edges outwardly of said marginal score lines to provide an open-mouthed container, and after filling said container through the remaining mouth opening, heat sealing said remaining opening to form a mouth seal transversely of said intermediate score line.

GEORGE ARLINGTON MOORE.