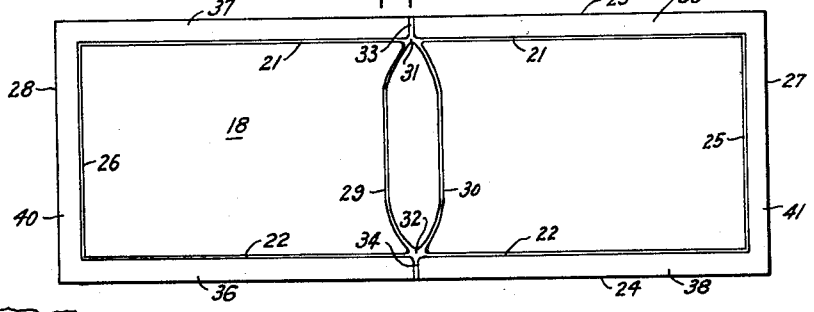
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CONTAINER

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FIG. 1



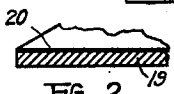


FIG. 2

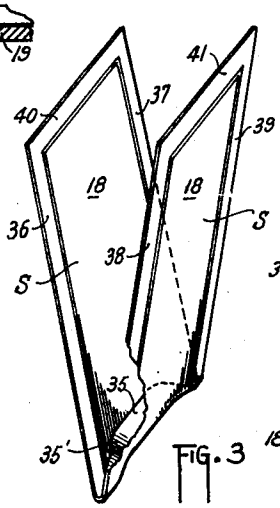


FIG. 3

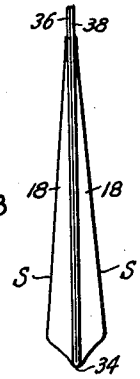


FIG. 4

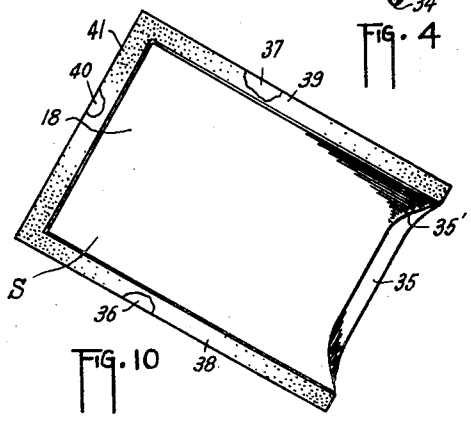


FIG. 10

FIG. 5

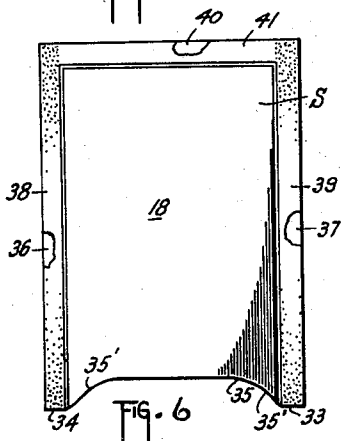


FIG. 6

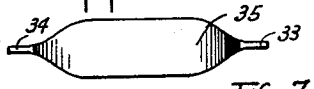


FIG. 7

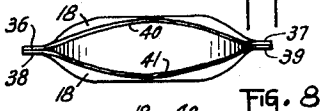
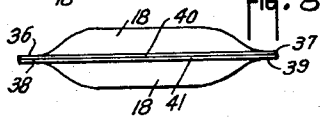


FIG. 8



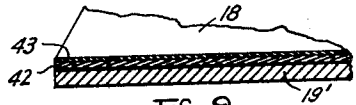


FIG. 9

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FIG. 11

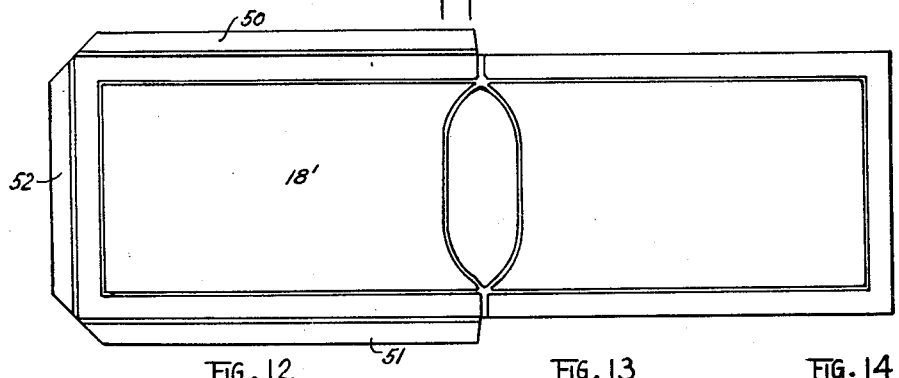


FIG. 12

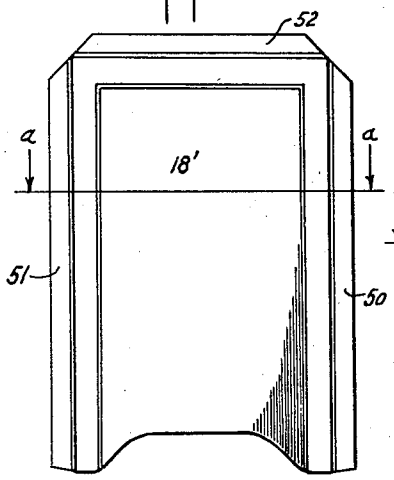


FIG. 13

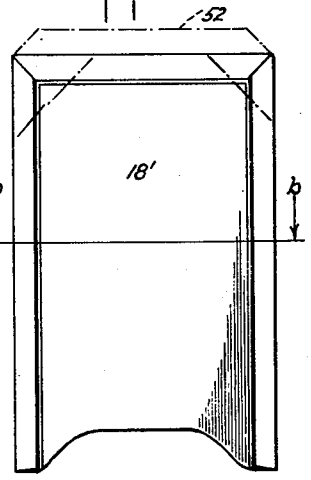


FIG. 14

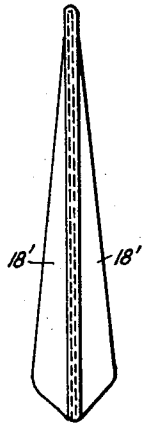


FIG. 17

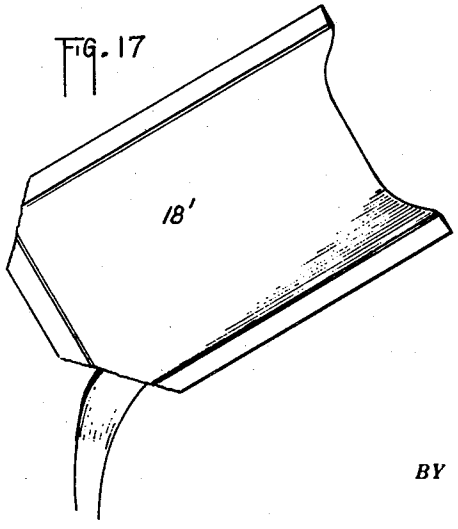


FIG. 15

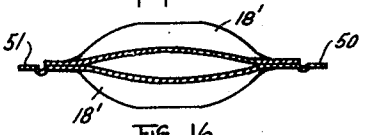
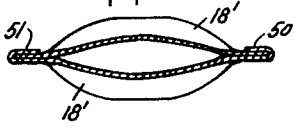


FIG. 16



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Patented May 23, 1950

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UNITED STATES PATENT OFFICE

2,508,962

CONTAINER

George Arlington Moore, New York, N. Y.

Application June 23, 1945, Serial No. 601,108

2 Claims. (Cl. 229—1.5)

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This invention relates to containers for packaging commodities in either dry or liquid forms, and to methods for making such containers. The invention disclosed herein is an improvement on that described and claimed in my copending application Serial No. 532,940, filed April 27, 1944.

It has heretofore been proposed to fold a flat sheet of material such as lacquered paper along a line which divides the sheet in half and then seal the side edges of the folded sheet to form an envelope type of container for receiving a commodity. After the introduction of the commodity through the mouth of the envelope, the top edges thereof are sealed together whereby a container for the commodity is formed. In order to provide volume inside such a container the sheet of material in the side walls and the bottom fold line are flexed into an irregular shape conforming to the material contained therein. This flexing of the material stretches and distorts the seams of the container, and its volume is quite small compared to the amount of material used.

In my prior application I disclosed a novel five-sided container formed from a rectangular sheet of material folded in half, the material preferably being relatively heavy fibrous board and being so scored and constructed as to overcome the difficulties referred to in containers of the envelope type heretofore provided.

One of the objects of the present invention is to provide a novel container formed from a rectangular blank of relatively thick and semi-rigid material which will have a substantially fixed volume for the commodity to be packaged and which is so constructed that the raw edges of the material from which it is formed are not exposed in the interior thereof.

Another object is to provide a novel three-sided wedge-shaped container from a flat blank of semi-rigid material which is adapted for packaging liquid and dry commodities.

Another object is to provide a packet having stiff sides capable of protecting the contents thereof, that is adapted to be made by simple manufacturing techniques and from ordinary and inexpensive materials.

A further object is to provide a novel simplified and self-sustaining container which may be fabricated from a single blank of foldable material.

Another object is to provide a novel container having a pleasing and ornamental appearance

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and which lends itself to compact packing for storage or shipment.

The above and further objects and novel features of the invention will appear more fully hereafter in the detailed description which is to be read in connection with the accompanying drawings. It is to be expressly understood, however, that the drawings are for the purposes of illustration only and are not designed as a definition of the invention, reference being primarily had for this purpose to the appended claims.

In the drawings, wherein like reference characters refer to like parts throughout the several views,

Fig. 1 is a plan view of a packet blank scored in accordance with the principles of the present invention;

Fig. 2 is an enlarged detail section of a portion of one type of blank material;

Fig. 3 is a perspective of the blank as it has been partially folded;

Fig. 4 is a side view of the container formed from the blank of Fig. 1;

Fig. 5 is a front elevation of the container shown in Fig. 4;

Fig. 6 is a bottom view of the container shown in Fig. 5;

Fig. 7 is a top view showing the mouth of the container sprung open to receive a commodity;

Fig. 8 is a top view showing the top edges of the container sealed;

Fig. 9 is an enlarged fragmentary section of a piece of laminated blank material;

Fig. 10 is a perspective view of the finished and filled container;

Fig. 11 is a plan of another blank which may be employed in forming a second embodiment of the invention;

Fig. 12 is a side elevation showing the preliminary step in forming the completed container from the blank of Fig. 11;

Fig. 13 is a front elevation of the completed container;

Fig. 14 is a side elevation of the container shown in Fig. 13;

Fig. 15 is a section on the line *a*—*a* of Fig. 12;

Fig. 16 is a section on line *b*—*b* of Fig. 13; and

Fig. 17 is a view of the finished container in dispensing position.

Referring to the embodiment of the invention shown in Figs. 1 to 10, inclusive, the container is formed from a scored blank 18. The material of this blank is preferably fibre board 19 (Fig. 2), coated on one side with a thermo-

plastic 20 adapted to render the fibre board impervious to oily substances and to serve as a sealing medium for the seams. Ethyl cellulose, nitro-cellulose, phenol resin compounds and other well-known thermo-plastic compounds may be used for the coating 20.

The blank 18 as shown in Fig. 1 may be made of material such as is shown in Fig. 2, material which is comparatively stiff and which has heretofore been considered unsuited to the construction of small containers because of its stiffness. The blank is provided with lines 21, 22 which are parallel to each other and parallel to the sides edges or outlines 23, 24 of the blank. The lines 21, 22 are joined at their ends by parallel lines 25, 26 which are parallel to each other and to the end edges or outlines 27, 28 of the blank. There is thus formed within the outlines of the blank a rectangular figure. The blank is also provided with lines 29 and 30 which are curved in the sense of not being right lines, and which are conjoined at points 31, 32 located at the mid lengths of lines 21 and 22. The central portions of lines 29 and 30 are spaced apart in the longitudinal direction of blank 18 and may be parallel straight lines having the corresponding ends thereof connected to points 31 and 32 by curved lines. If desired, however, lines 29 and 30 may be curved throughout or formed by a series of connected straight or curved lines. Hereinafter and in the claims, the term curved line is intended to include all such modifications. Additional lines 33, 34 may be provided across the side margins of the blank perpendicular to the lines 21, 22 at points 31, 32. It contributes to the ease of forming the container to score the said lines in the material.

The container is made by folding the blank about the lines 29, 30, 33, 34 as shown in Fig. 3, a step which produces a bottom 35 which is longitudinally, upwardly curved as shown at 35' in Fig. 5, but has transverse geometric elements substantially perpendicular to the side walls S which make it transversely flat at its mid portion. The container is made by bringing the folded walls together and joining the flanges 36, 37 to the corresponding flanges 38, 39. When the material 20 is thermo-plastic, the joining may be made by pressing the flanges together under heat sufficient to plasticize and join the thermo-plastic material. The folding of the blank and sealing of the side seams 36, 38 and 37, 39 may be accomplished in any suitable manner such as by means of the apparatus and method disclosed in my above mentioned prior filed application. When thus folded, the blank forms a container having volume without distorting the material or placing stresses upon the seams. The side flanges engage each other flatly so that any appreciable separating stresses on the seams after sealing are avoided.

The container thus formed will have the pleasing appearance shown in Figs. 4, 6 and 7. The end flanges 40, 41 are not yet joined and may be sprung apart as indicated in Fig. 7 by pressing the side edges of seams of the container. Since the container has volume when the side seams are sealed, this springing open of the mouth of the container and the subsequent insertion of the product to be packaged does not exert a damaging stress upon the seams or material of the blank. The container can be filled in this position with sufficient material to fill it up to the lines 25, 26 when the end flanges 40 and 41 are again brought together. Those

flanges fall naturally and flatly together and may also be joined by the use of a hot iron, or other heat and pressure means, without having to exert any appreciable tension or stress on the adjacent material of the blank, thereby completing a sealed container of considerable strength capable of offering substantial protection to the contents.

This novel container is substantially 3-sided and is capable of being packed for storage or shipment with similar containers in a minimum of space. In packing, the tops and bottoms of adjacent containers are alternated so that they fit snugly together, two containers making a rectangle in side elevation not substantially greater in thickness than the major thickness of one container.

The material of which the container is made may be cardboard, heavy paper, foldable sheets of plastic material, or laminated structures. If it is desired that the container be moistureproof, it may be lined with material such as moisture-proof cellophane, Pliofilm, wax, or with synthetic resinous materials of cellulosic, vinyl or other types. If it is desired to provide ventilation for the contents of the container, the thermo-plastic material may be omitted from the area within the scored figure, or from portions of the area, being applied to the flanges only. If desired, single strips of thermo-plastic material may be laid between the flanges and joined thereto by heat; or adhesive may be employed to join flanges not provided with resinous coatings.

Fig. 9 shows a laminated blank structure having a base member 19' of relatively heavy paper or board, an intermediate layer 42 of adhesive character, and an over layer 43 of selected materials such as paper, cloth or metal foil, such as aluminum foil. If the pellicle 43 is non-thermoplastic, a suitable coating, or strips of thermoplastic or adhesive, is applied thereto for forming the seams of the container.

Although scoring is preferred, particularly when relatively heavy materials are to be formed into a container, it may be omitted and the formation of the wall 35 accomplished by seating the blank upon a form having, for instance, an upper surface conforming to the bottom line of Figure 5, or conforming to some similar shape which will compel the material of the blank to form a wall on folding.

It is sometimes desirable to furnish the edges of the container with more strength than they obtain from the face to face sealing indicated in Figs. 1 to 8. Under such circumstances, the blank 18' of Fig. 11 is prepared, having in addition to the structures shown in Fig. 1, flanges or margins 50, 51, and 52 projecting beyond the outlines of the blank shown in Fig. 1. The adhesive material, thermoplastic or otherwise, is applied to the faces of the flanges 50, 51 and 52 or the surfaces to be engaged thereby as well as to the flanges hereinbefore described. Figs. 15 and 16 show the method of forming the container. In these figures the side walls of the container are brought toward each other until the side flanges abut, then the outer flanges 50, 51 are folded over as shown in Fig. 16, and heat and pressure are applied for sealing purposes, or if non-thermoplastic material is employed, sealing is carried out by manipulation appropriate to the adhesive used.

The container can be emptied by clipping off a top corner thereof, as shown in Fig. 17, to form a pouring opening, or in any other satisfactory

way. The other top corner may be cut off to provide an air opening to facilitate pouring of the contents.

It will be understood that the figure scored upon the blank need not be rectangular but can be of any shape that will on folding, provide conforming surfaces adapted to be joined to form the container. These containers are adapted for use in the packaging of loose materials, such as powders, seeds, solids of irregular shape, solids having sharp edges which would tear less sturdy materials and even to the packaging of liquids such as oil and semi-liquids such as viscous materials. Where the materials in the container are heavy, it is advantageous to use the reenforced seams. The blanks can be made singly and scored after making, or large sheets of material can be scored in a plurality of places and subsequently cut to size.

It will be understood that means for joining the flanges, other than adhesive or thermoplastic materials, can be employed where the contents of the container do not make the use of an adhesive necessary or advantageous. For example, sewing or stapling can be resorted to alone, when the material of which the container is made and the purpose for which it is to be used make such closure means acceptable, or additional.

The body of the container is sufficiently flexible for its purpose, but the conjoined flanges are quite stiff and strong, forming strong supports that prevent the collapse of the container. The pre-formed bottom wall insures volume in the empty container and prevents damaging distortion when filling takes place. The bottom wall is also an element of strength in the container and renders it self-sustaining by tending to prevent the container from being collapsed by pressure applied at the sides. The packages can be made in many sizes, from those so small that they hold only a small amount of fine seed, to containers large enough to contain large quantities of lubricating oil.

The process by which the container is made is very simple, the materials are easily obtainable and of low cost, and the container is adapted to manufacture by mass production methods that do not require heavy investments in machinery.

This invention has been described and illustrated in connection with two embodiments of the same, but it is to be expressly understood that the invention is not limited thereto. Various changes may be made in the design and arrangement of the parts and in the materials suggested as being suitable for use without departing from the spirit and scope of the invention, as will now be clear to those skilled in the art. For a definition of the limits of the invention, reference is had primarily to the appended claims.

What is claimed is:

1. A container consisting of an elongated rectangular piece of sheet material having a margin adapted to receive adhesive and divided into two like sections by marginal limited transverse medial lines of fold, each of said lines of fold meeting one end of an unbroken and unscored generally oval configuration formed by transversely-extending separated preformed scored areas of fold disposed inwardly of said margin.

2. A container consisting of an elongated rectangular piece of sheet material having a margin divided into two like sections by marginal limited medial transverse lines of fold, each of said lines of fold meeting one end of an unbroken and unscored generally oval configuration formed by transversely-extending separated pre-formed scored areas of fold disposed inwardly of said margin, said sheet being folded on said transversely-extending lines of fold in marginal face contacting relation, effecting a substantially flat base wall area inwardly of said margins, said margin being in sealed engagement at the opposite ends of said base wall and thence to the top of the structure formed by said folding, the structure being formed as a wedge shape.

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