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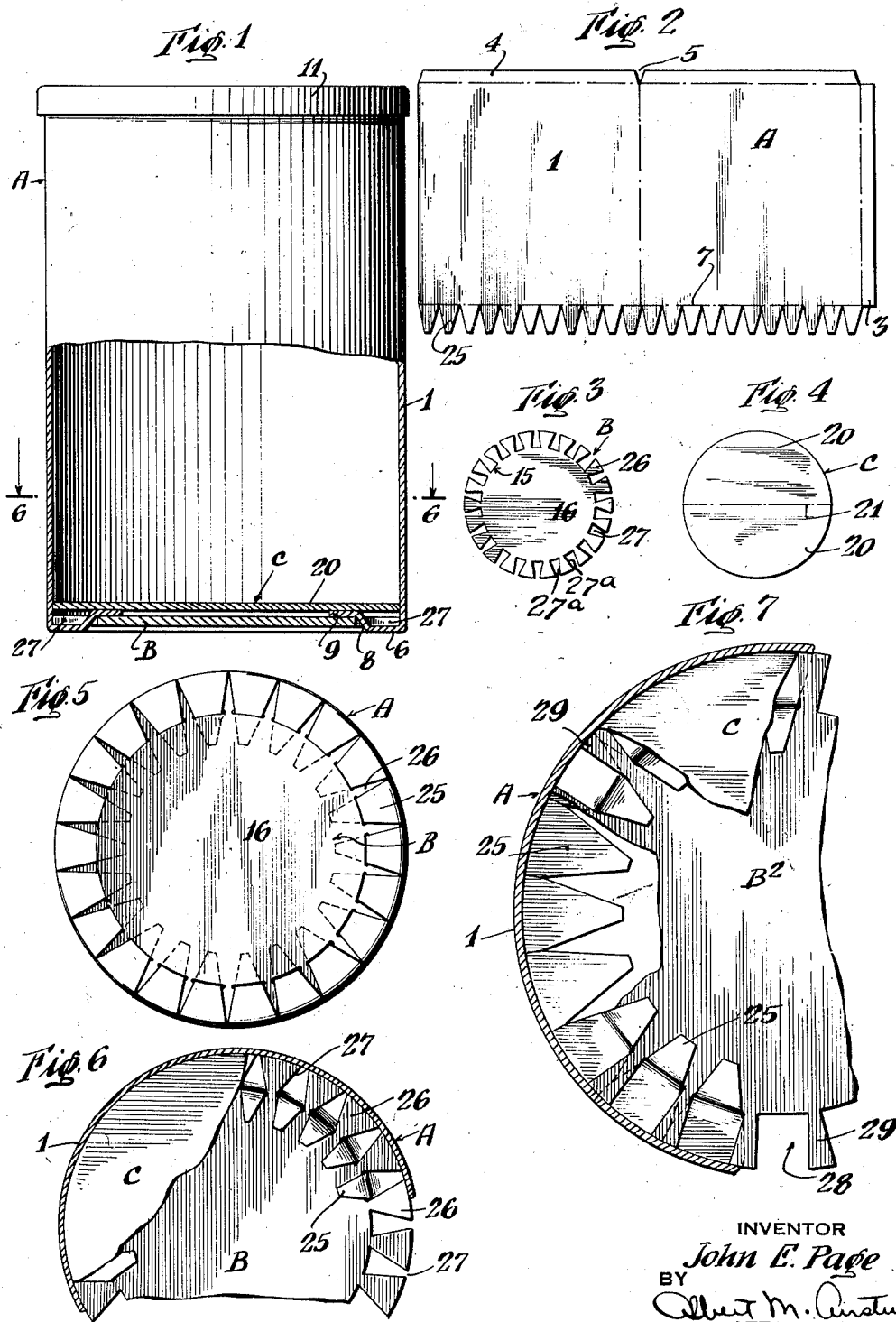
J. E. PAGE

2,157,302

CONTAINER

Original Filed Aug. 11, 1934

2 Sheets-Sheet 1



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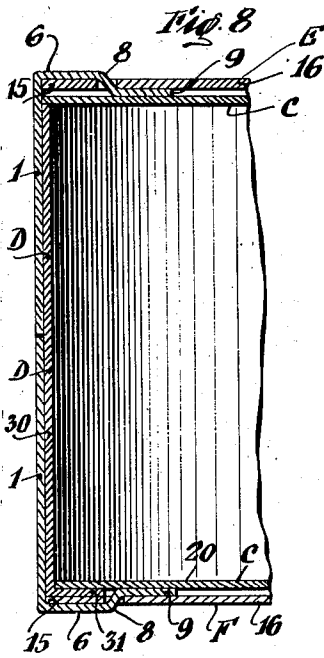
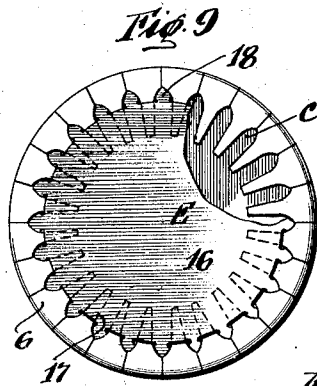
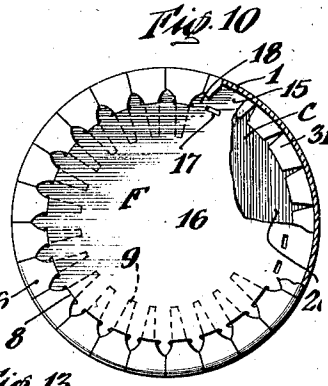
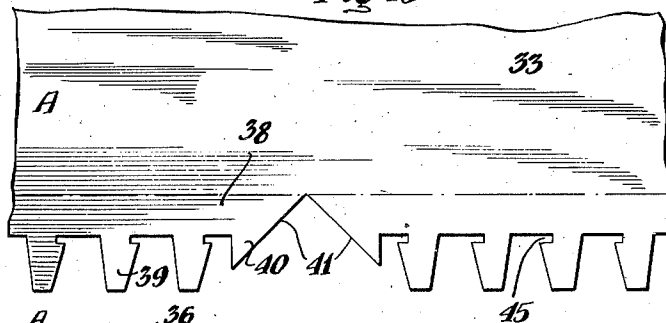
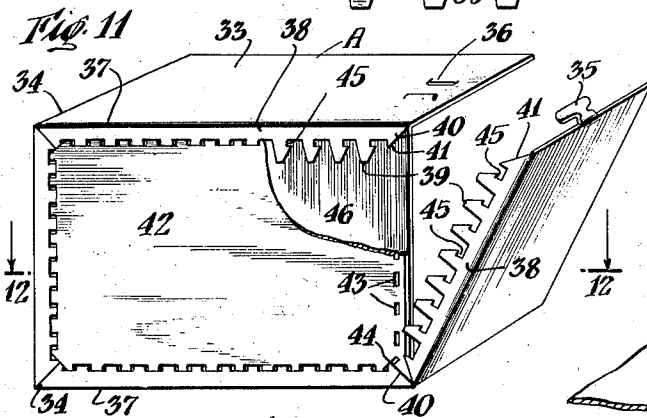
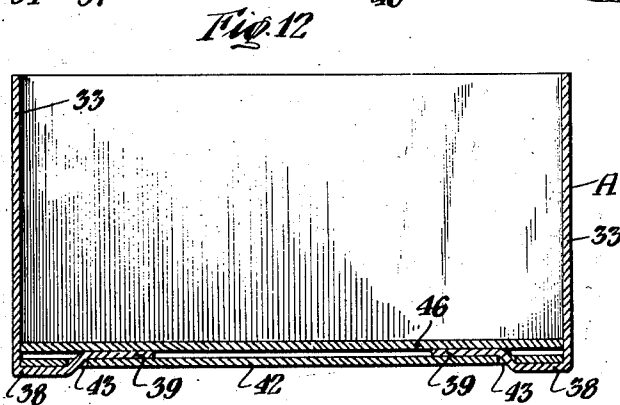
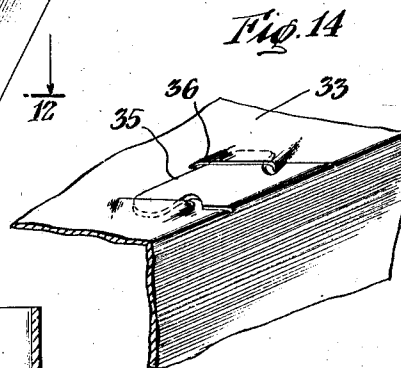
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CONTAINER

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,157,302

CONTAINER

John Ernest Page, Sydney, New South Wales, Australia, assignor to President and Directors of the Manhattan Company, a corporation of New York, as trustee for the Gibson Patent Containers, Ltd., a corporation of New South Wales, Australia

Original application August 11, 1934, Serial No. 739,408. Divided and this application February 4, 1937, Serial No. 123,965. In Great Britain October 30, 1933

4 Claims. (Cl. 229—23)

This invention relates to containers and more particularly to an improved box or container of paperboard material adapted to be shipped and stored in knockdown form.

This application is a division of my copending application Serial No. 739,408, filed August 11, 1934.

The improved container of the present invention comprises a tubular body portion which may be formed from a blank of paperboard material. The body portion is provided with a series of fingers at one end thereof which are inserted into corresponding spaced apertures or slots provided in the end closure member. An insert disc of strong paperboard material is inserted into the body of the container and seats against the end portions of the fingers which project through the apertures, thus firmly securing the body member and end closure in fully assembled, set-up condition. The body member may be stacked in collapsed, flat condition during shipment and storage, requiring a minimum of space. The end closure and the insert piece are simple flat pieces of paperboard material and are adapted to be stacked in a minimum space until ready for assembling. The body member and insert piece may be quickly assembled together by means of a simple jig tool as the containers are needed. The body member, end closure and insert piece may be cut and scored to the desired shape and form by automatic machinery in common use.

The container presents a strong and durable construction and can be made without hand operation from a minimum of material. The body member and end closure are joined together by the interlocking of the parts and held in this position by the insert disc. The container is most economical to manufacture and produce. It presents a substantially leakproof container.

Another object of this invention is to provide an improved container comprising a body member and an end closure member maintained and set up in an assembled condition by interlocking of the parts.

Another object of this invention is to provide a container comprising parts which can be economically made by means of automatic machinery in common use, which can be shipped and stored in a minimum of space and which may be quickly and effectively set up at the place of use as needed or desired.

Still another object of this invention is to provide an improved knockdown container which may be made entirely of paperboard material with a minimum of waste, which is strong and

durable in construction, and which affords an economical and efficient packaging medium for a large variety of different products.

Other objects of this invention will become apparent as the disclosure proceeds.

In order that a clearer understanding of my invention may be had, attention is hereby directed to the accompanying drawings, forming a part of this application and illustrating certain possible embodiments of my invention.

Referring to the drawings,

Fig. 1 is an elevational view of my improved container, certain parts being broken away to illustrate certain features thereof;

Fig. 2 is a plan view of the paperboard blank used to form the container body shown in Fig. 1;

Fig. 3 is a plan view of the end piece used to form the bottom of the container shown in Fig. 1;

Fig. 4 is a plan view of an insert piece which may be used in the container shown in Fig. 1;

Fig. 5 is a bottom end view of the container shown in Fig. 1;

Fig. 6 is a horizontal cross sectional view of the container shown in Fig. 1, this view being taken on line 6—6 of Fig. 1 looking into the container, certain parts being broken away to more clearly illustrate the bottom construction;

Fig. 7 is an enlarged fragmentary cross sectional view of a container having an end piece provided with tongue receiving openings of rectangular shape, parts in this view being shown broken to more clearly illustrate the construction;

Fig. 8 is a vertical cross sectional view through a closed container, the bottom and cover portions of which may be formed from parts herein described;

Fig. 9 is a top plan view of the container shown in Fig. 8;

Fig. 10 is a bottom plan view of the container shown in Fig. 8;

Fig. 11 is a perspective view of a rectangular box made in accordance with this invention, the box being shown partially assembled;

Fig. 12 is a vertical cross sectional view through the bottom and sides of the box shown in Fig. 11, this view being taken on the line 12—12 of Fig. 11; and

Figs. 13 and 14 are views of various details of the box shown in Fig. 11.

Similar reference characters denote similar parts throughout the drawings and specification.

The structural members comprising the container include a body member A, an end closure B, and an insert disc C which may be formed of

paperboard or fibreboard material. The body member A is formed from a blank of relatively tough yet flexible paperboard material cut and scored in the manner shown in Fig. 2. The body member comprises more particularly a body portion 1 having a plurality of vertically extending score lines therein causing the body portion when assembled to assume a substantially cylindrical or arcuate cross sectional configuration. The body blank is provided with a tab portion 3 along a vertical side thereof which may be suitably secured by stitching, staples or by a crimping operation, to the other vertical side edge of the blank so as to form a tubular member. The body member A may be provided with a flange portion 4 which may be turned downwardly to provide a reinforcing and stiffening rim for one end of the container. A notch 5 is preferably cut in the rim portion 4 to permit the body member when assembled in tubular form to be collapsed into flat condition. The body member may comprise any form of collapsible tubular member within the purview of this invention.

The other end of the body portion is provided with a plurality of laterally extending fingers which are hinged to the body portion 1 along the score line 7. The fingers may comprise the tapered tongues 25, as shown in Fig. 2, which engage the end closure, or, if desired, the fingers may each comprise a rim portion 6, a neck portion 8, and an end portion 9. When the fingers, as shown in Figs. 9 and 10, are turned inwardly, the rim portions 6 closely abut one another so as to provide a substantially continuous rim around the end of the container. The body member 1 may, if desired, be provided with tapered tongues 25, as shown in Fig. 2.

The end piece B, as shown in Fig. 3, is provided with a series of spaced slots 27 dividing the same into an outer section 15 and an inner section 16, as shown in Fig. 3. The slots 27 extend outwardly to the edge of the end piece providing therebetween tongues or fingers 26 having outwardly flared shoulder portions 27a. The tongue-receiving slots 27 are easy to cut out and do not clog the cutting die.

An insert piece, as shown more particularly in Figs. 1 and 4, is provided which is adapted to be inserted into the body of the container. The insert piece preferably comprises the half portions 20 hinged together along the score line 21 to facilitate insertion thereof, but the score line may be omitted in many cases.

In setting up the container, the fingers at one end of the tubular member are turned angularly upwardly and inwardly. The end closure B is then telescoped into the tubular body member and the end closure and the fingers relatively adjusted so that the end portions 9 of the fingers are inserted into the respective apertures 27 provided in the end closure. The end closure is then forced downwardly until the end portions 9 project upwardly through the apertures 27 and the end closure comes to rest on the neck portion 8 of the fingers. When so arranged, it will be noted that rim portions 6 of the fingers, as illustrated more particularly in Fig. 9, may be made to closely abut one another and form a substantially continuous rim at the end of the container. The fingers or tongues, whether in the form as shown in Figs. 9 and 10 or in the form 25, as shown in Fig. 1, may be easily inserted into the slotted openings 27 providing a bottom construction of great strength and rigidity.

The insert piece C is then telescoped into the

body member, as shown in Fig. 1. The insert piece is preferably slightly oversize with respect to the tubular body member. One of the half portions 20 is advanced downwardly into seating position against the inwardly projecting end portions 9 of the fingers. The other half portion 20 is then forced down into seating position against the end portions 9 of the fingers. When fully assembled the piece C clamps the end portions against the end closure B and offers great resistance to the withdrawal of the fingers from the apertures 27. Resistance to the withdrawal of the fingers is further increased when the container is filled with contents, since the weight of the contents further increases the clamping force exerted by the end closure B and the insert piece C upon the fingers. The insert piece C may be scored along the line 21 across the mid-section thereof or may be left unscored, as desired.

The body member A and the associated fingers are preferably formed of strong, tough, fibreboard material so as to withstand bending without rupture. The end closure B and the insert piece C are preferably formed of relatively stiff paperboard material which will remain substantially rigid under considerable pressure. The container thus formed is strong and durable and will carry considerable weight without weakening. The rim portions 6 of the fingers form a substantially continuous rim upon which the container may rest, thus holding the end closure B out of contact with the floor. The end closure B is thus maintained out of contact with wet surfaces upon which the container may rest.

If moist material such as ice cream and other liquid or semi-liquid products are packed in the container, it may be found desirable to coat the end portion of the container with a layer of wax, paraffin or other waterproofing material. The waterproof material above described may be applied either on the outside or one the inside of the container or both, as found desirable.

There is shown in dotted lines in Fig. 1, for purposes of illustration only, a cover member which may comprise a top piece 10 and a rim portion 11 telescoped over the downturned flange 4. It is understood, however, that the end closure above particularly described may be used to form either the bottom end of the container or the top end of the container, or both.

A further modified end piece construction B—2 is shown in Fig. 7. The end piece B—2 here shown is provided with rectangular shaped slots 28 for receiving the locking tongues 25 of the body member. The slots 28 are separated by projecting parts 29 which form the outer section of the end piece. The container parts comprising the body member A, end piece B—2, and the insert piece C, when assembled, appear as shown in Fig. 7.

The container parts above described may be assembled in combination with a tubular body member so as to produce the modified type of container as shown in Fig. 8. In this type of construction the end closure F at the bottom of the container, and if desired also the end closure E at the top of the container, may be provided with spaced apertures or openings 17 completely surrounded by paperboard material. At the bottom of the container the tongues extending from the body member I have neck portions 8 which extend through the aperture 17 of the closure member F. Likewise the tongues extending from the opposite end of the body member I also have neck portions 8 which extend from the closed

apertures 17 in the top closure member E. An inner liner member D of tubular form may be provided over which the bottom member F, shown in Fig. 10, and the lid member E, shown in Fig. 9, are telescoped. The liner member D comprises a tubular side wall 30 provided at its lower end with a series of taper tongues 31 preferably scored at its juncture with the side wall 30.

The tubular body member D and the bottom closure are assembled together by first bending the tongues 31 inwardly, and then inserting the liner member D within the cylindrical side wall portion 1 of the body member until the tongues 31 overlie the outer section 15 of the end piece C. An insert disc C is then telescoped into the liner member and thrust downwardly therein until its peripheral portion overlies and contacts with the upper surface of the tongues 31, it being appreciated the contact will simultaneously be made with the upper surface of the tapered tongues 6, the parts being thus held together. The lid E used on this container is constructed similarly to the bottom closure member F and telescopes over the tubular portion 30 of the liner member D. The bottom portion F and the lid portion E may be made of such size as to abut and snugly fit against the inside face of the body portion 1 to provide a substantially leak-proof and sift-proof construction when the bottom and lid portions are applied.

There is shown in Figs. 11 to 14 inclusive a rectangular shaped box made in accordance with this invention. The box side walls 33 are formed from a single blank of cardboard, paperboard or fibreboard having vertical score lines 34 and horizontal score lines 37, the end of the blank being connected together by stapling or adhesive or by a tongue 35 and slot 36, as shown in Fig. 14. Depending below each horizontal score line is a flap 38, each of which is provided with a series of tapered depending tongues 39. The end tongues 40 are somewhat shorter in length than the fingers 39, the outer edges of fingers 40 being cut off at an angle approximately 45°, as indicated at 41. The side edges of the flaps 38 are also cut off at an angle of approximately 45° to align with respective end tongues. A rectangular end piece 42 is provided with a series of slots or apertures 43 along each marginal edge thereof to receive the tongues 35. At each corner of the end piece 42 there is provided an elongated slot 44 adapted to receive adjacent pairs of end tongues 40.

The root portions of the tongues 39 are provided with notches 45 whereby the end piece 42, after being assembled with the body member, can be shifted slightly longitudinally and transversely to thereby interlock the end piece 42 and the body member together. A rectangular shaped insert 46 may be provided to overlie the ends of the tongues 39 and hold the same firmly against the end piece 42.

The containers may be formed entirely of paperboard material which may be cut and scored entirely by automatic machinery. The container may be assembled either by hand or by a simple jig tool. The body member may be assembled into tubular form and then shipped and stored in flat collapsed condition. The end closure and the insert piece may be stacked one upon the other during shipment and storage, occupying a minimum of space. The setting up of the container may be performed by the packer as needed. Containers of cylindrical and rectangular form are herein shown for purposes of illustration only,

it being understood that containers of numerous cross-sectional shapes may be made by following the teachings of this invention, including containers having body sections of generally polygonal, elliptical, arcuate and half-cylindrical form. While certain novel features of the invention have been disclosed and are pointed out in the annexed claims, it will be understood that various omissions, substitutions and changes may be made by those skilled in the art without departing from the spirit of the invention.

What is claimed is:

1. A knockdown container of the character described including, a collapsible tubular body member, an end closure for said body member, said end closure having a series of spaced openings therein defining outer and inner sections, said body member having an inturned flange section upon which said end closure is adapted to seat, and a plurality of fingers extending from said inturned section through said spaced openings in said end closure, said fingers being integrally connected to one another through said flange section, and means engaging said fingers to retain the body member and end closure in assembled set-up position.

2. A knockdown container of the character described including, a tubular body member, an end closure for said body member, said end closure having a series of spaced openings, a flange section extending from said body member, a plurality of locking fingers integrally connected together through said flange section and extending from said flange section through said openings to secure the body member and end closure in assembled set-up position, said fingers having a reduced neck portion substantially conforming to the width of the opening through which it projects, and a laterally projecting shoulder portion greater in width than said neck portion to prevent withdrawal of said finger from said opening.

3. A knockdown container of the character described including, a tubular body member, an end closure for said body member, said end closure having a series of spaced openings therein, said body member having a continuous inturned flange section upon which said end closure is adapted to seat, said flange extending unbroken a substantial distance along and in overlapping relation to a peripheral edge portion of said closure, a plurality of fingers integrally connected to one another through said flange section and extending from said inturned flange section through said spaced openings in said closure, and a shoulder portion extending from said finger and seating against the inside face of said end closure operative to lock said end closure to said body member.

4. A container including, a body member of polygonal cross-section comprising connected side wall sections, an end closure for said body member, said end closure having a series of spaced openings therein defining outer and inner sections, the side wall sections of said body member each having an inturned broken flange extending substantially the full width of its side wall section providing a seat for said end closure, and a plurality of fingers extending inwardly from each of said inturned flanges through said spaced openings in said end closure, said fingers being integrally connected to one another through the flange to which they are connected.