

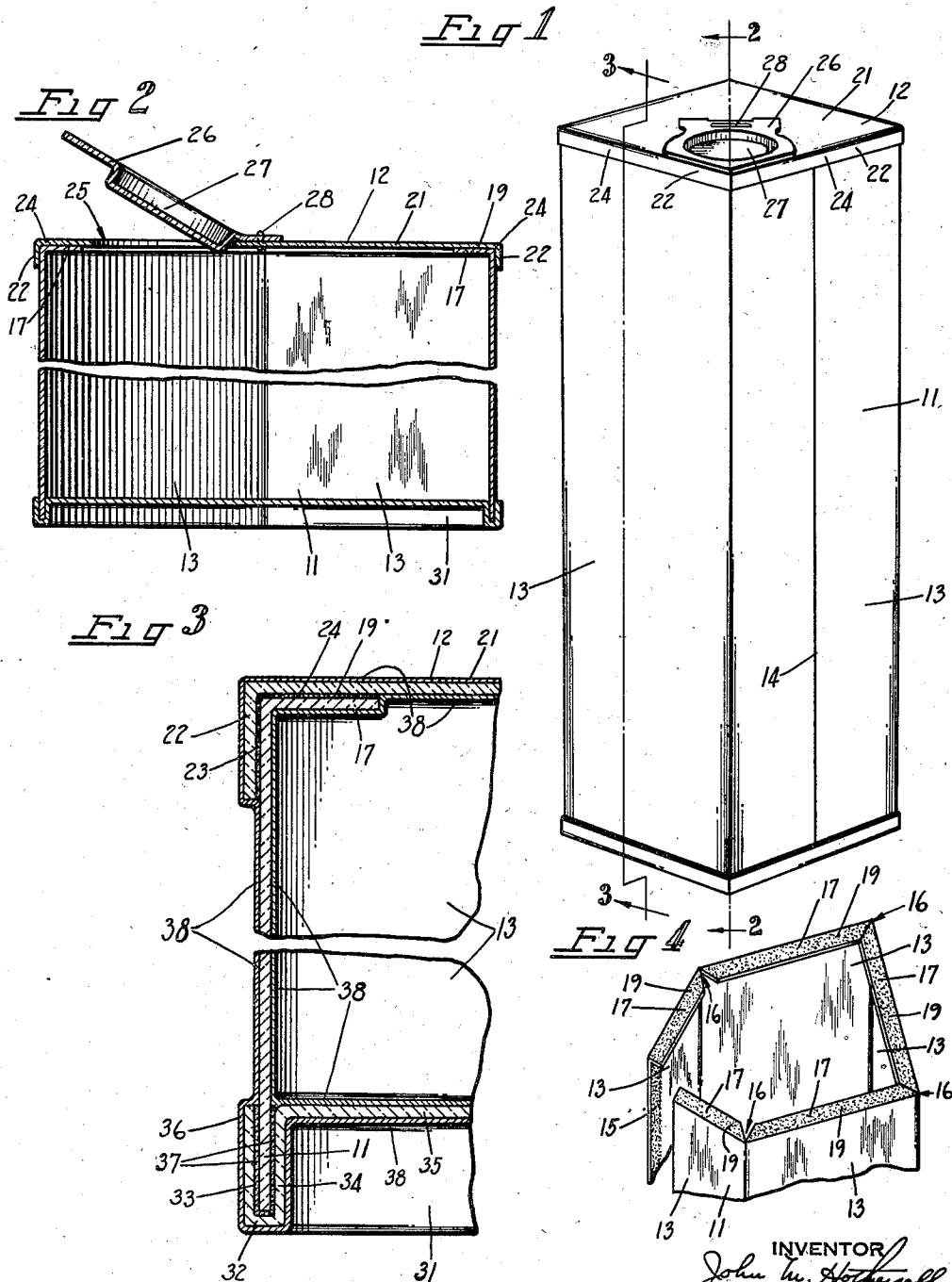
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CONTAINER

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CONTAINER

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1 Claim. (Cl. 229—5.5)

The present invention relates to fibre containers for the packaging and delivery of liquids, such as milk, fruit juices or the like and has particular reference to an improved end joint construction for the container.

The invention contemplates a liquid-proof fibre container, comprising a tubular body substantially square through its transverse section, having an end member secured to the top end of the body by overlapped flanges which are adhesively united with marginal portions of the body in a leak-proof end joint.

An object of the present invention is the provision of a sanitary fibre container for liquids such as milk and other beverages wherein the top end member, having a dispensing opening, is provided with a hinged plug closure having a dished plug section, the marginal portions of the top end being connected with the side walls of the body in a substantially right angle end joint which provides for shedding liquid or other foreign matter from the top and preventing fouling of the dispensing opening of the container.

Another object of the invention is the provision of such a flat top container which is closed at the bottom by a substantially flat depressed panel end having an annular marginal receiving channel for the reception of the tubular body which is secured in place by a suitable adhesive interposed between the parts and producing a liquid-proof end joint.

Numerous other objects and advantages of the invention will be apparent as it is better understood from the following description, which taken in connection with the accompanying drawing, discloses a preferred embodiment thereof.

Referring to the drawing:

Figure 1 is a perspective view of a container embodying the present invention and illustrating a hinged closure in sealed position;

Fig. 2 is an enlarged fragmentary longitudinal sectional view of the container in Fig. 1, said view being taken substantially along the diagonal section line 2—2 of that figure and illustrating a hinged plug closure in opened position;

Fig. 3 is a still greater enlarged fragmentary section of the container shown in Fig. 1, as viewed along the line 3—3 of Fig. 1 and illustrating the container end joints in detail; and

Fig. 4 is a fragmentary perspective view of the top end of a partially folded container body illustrating coated marginal portions that form the top and body end joints.

The container illustrated in the drawing as a preferred embodiment of the invention comprises

a substantially rectangular body 11 (Fig. 1) closed at its ends with suitable top and bottom closure members. A substantially flush top end member 12 provides the upper end closure of such a container.

The container body 11 (Figs. 1 and 4) is preferably formed from a single sheet of fibrous material and is folded at right angles to provide four side walls 13. The edges of the sheet are joined by a lap side seam 14 extending longitudinally of the fibre body in one of the side walls 13.

Figure 4 of the drawing illustrates the folding of the side walls of the container body and shows a suitable liquid-proof adhesive 15 which has been applied to the outerlap and which secures the parts together to seal the side seam joint 14.

Prior to being formed into the container body 11, the body blank has been cut away or notched as at 16 (Fig. 4) adjacent its top edge and at the line of fold of the side walls of the body to provide for flush marginal end portions at the end of the container body. These marginal portions or inwardly turned flanges are designated by the numeral 17 and are bent laterally inwardly from the side walls of the body producing a flat annular end closure support with adjacent opposite ends of the flanges 17 disposed in substantial abutting relation. The upper surface of the closure support is coated with a suitable adhesive 19 by means of which the top end closure 12 may be attached.

The top end closure 12 is formed as a substantially flat panel 21 having marginal edge portions bent at right angles to form downturned flanges 22 (Figs. 1, 2 and 3). These flanges are preferably coated with a suitable adhesive on the inner surface as at 23 by means of which such marginal flanges are secured to the side walls 13 of the container body 11 (Fig. 3) while the closure support of the body which carries the adhesive 19 is secured thereby to the under surface of the top panel 21 of the end 12. The adhesives 19 and 23 (Figs. 3 and 4) are of the liquid-proof variety and permanently secure the parts together in a liquid-proof end joint 24 (Figs. 1, 2 and 3).

The top end closure 12 is provided with a filling and dispensing opening 25 (Fig. 2) which is formed adjacent one corner of the container. This opening is preferably closed with a hinged plug closure 26 having a slightly tapered plug section 27. Hinged closure 26 is connected with the top end 12 by a wire staple 28 which is arranged to permit its plug section 27 to be swung to either an opened or a closed position. The

subsequent operations of filling and dispensing of the container contents are thus facilitated as when the closure is open, or either the empty or the filled container is closed when the plug is in inserted position.

The opposite end of the container body 11 is closed by a sunken panel or bottom end closure 31. This end is provided with an annular bent marginal wall portion 32 which forms an annular receiving channel 33 for the reception of the peripheral lower edge of the tubular body 11. The marginal wall section 32 consists of an inner wall 34 extending from a flat sunken panel wall 35 at right angles thereto. An outer spaced parallel wall 36 extending from the inner wall completes the assembly and defines the receiving channel 33. The engaged parts of the body and the inner and outer walls of the receiving channel 33 are adhesively secured together with a liquid-proof adhesive 37 in a leak-proof bottom end joint.

When the container parts are all assembled a liquid-proofing material such as paraffin or other sanitary wax that will provide a sterile condition in the container, is coated on all interior parts thereof and preferably also on the exterior. Such a coating is designated by the numeral 38 and is preferably applied by immersing an opened container into a bath of liquid-proofing material. After the coating operation and before the wax has set, the plug section 28 of the hinged plug closure 26 is temporarily inserted into the opening 25 in the top end 12 thus sealing the container in empty condition. This operation is performed in the container manufacturer's plant and the containers are thereafter retained in a sterile condition before and during shipment to the dairy or packer's plant.

Containers are prepared for filling by raising the plug section 28 from the dispensing opening 25 and swinging it to open position on its hinged connection or staple 28. Then the container may be filled through the opening 25. The filled con-

tainer is then finally closed by reinserting the plug of the hinged plug closure 26 into the dispensing opening 25. In addition the shape of the tapered plug section 28 may be slightly altered if desired by a suitable expanding tool. Such a tool would enlarge the plug section directly beneath the under side of the end closure 12 and thus more effectively retain the plug closure in a sealed position.

It is thought that the invention and many of its attendant advantages will be understood from the foregoing description, and it will be apparent that various changes may be made in the form, construction and arrangement of the parts without departing from the spirit and scope of the invention or sacrificing all of its material advantages, the form hereinbefore described being merely a preferred embodiment thereof.

I claim:

A leak and moistureproof fibre container for liquids, comprising a tubular body member having straight substantially flat side walls adhesively secured together in a side seam, and top and bottom closure members adhesively secured to opposite ends of said body to close the same, the side walls of said body at its top end terminating in integrally formed marginal flanges cut away at their opposite ends and extending inwardly in abutting relation at substantially right angles to the body side walls so as to together constitute a flat peripheral top closure support to permit said top closure member to be adhesively secured to all portions of the outer surfaces of said flanges, said top closure member having integrally formed marginal flange portions extending inwardly over and secured to the upper outer surface of said body side walls and to said body marginal flanges with a continuous film of leak-proof adhesive of substantially uniform thickness, thereby reenforcing the container end and providing an angular liquidproof joint of double thickness throughout.

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