

Dec. 28, 1943.

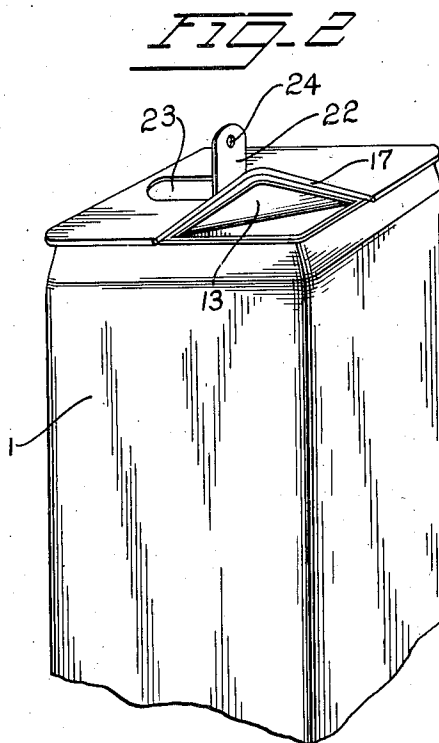
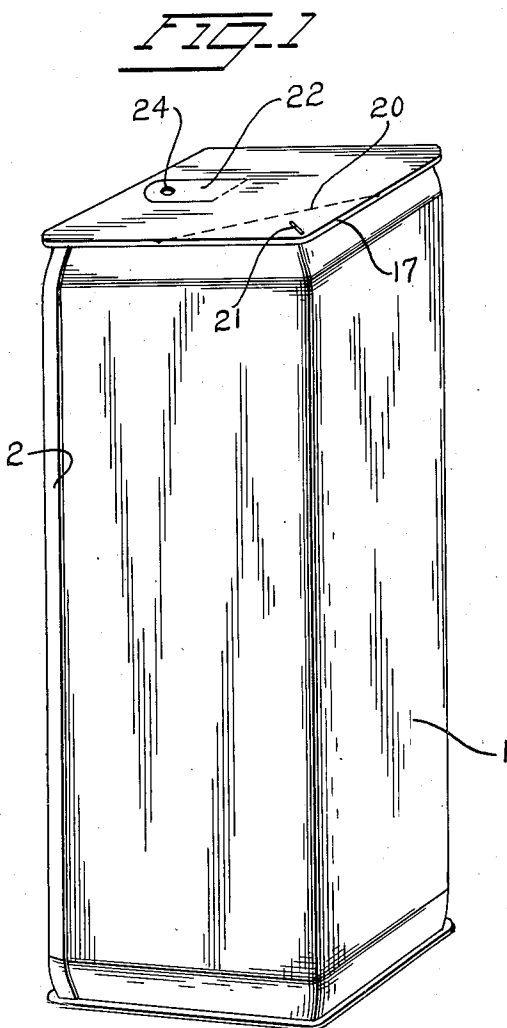
E. E. BAKER ET AL

2,338,019

FIBER CONTAINER

Filed April 1, 1941

2 Sheets-Sheet 1



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FIG. 3

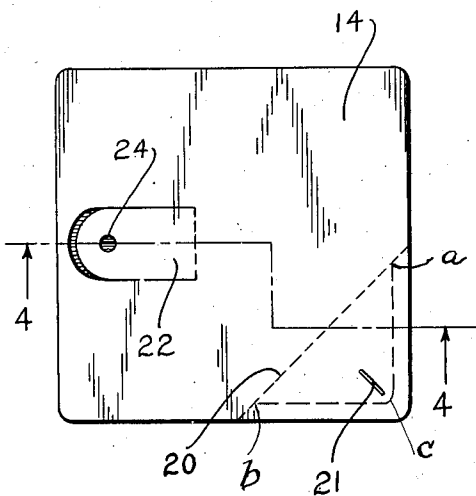


FIG. 4

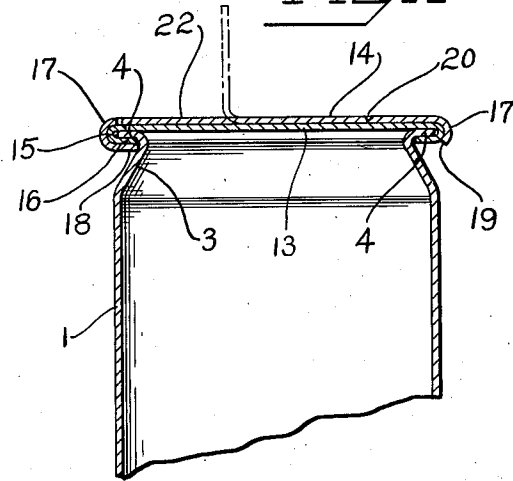
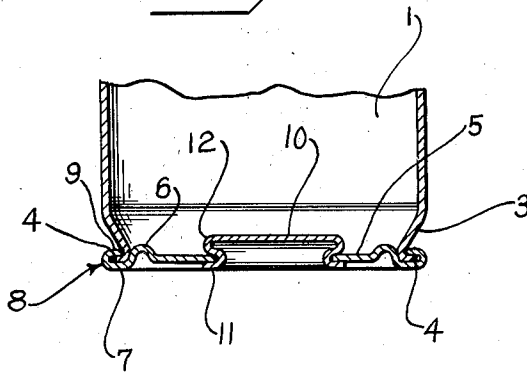


FIG. 5



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2,338,019

FIBER CONTAINER

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Application April 1, 1941, Serial No. 386,362

6 Claims. (Cl. 229-5.5)

The invention relates to new and useful improvements in fiber containers for liquid products.

An object of the invention is to provide a container for liquid products which is made of fibrous material and which shall be strong so as to withstand rough handling without collapsing, and wherein the seams joining the end members to the body are confined within the limits of the maximum transverse section of the body, and wherein the outer lapping portions of the end members terminate so that they are covered and protected by projecting portions of the body wall.

A further object of the invention is to provide a container of the above type wherein the top end member is substantially free from depressions and ledges in and around which dust and dirt may lodge.

A still further object of the invention is to provide a container of the above type wherein the top end member is composed of inner and outer plies scored and secured together, and to the container body, so that a corner portion of the top end member may be lifted and a pouring opening formed, said score lines being disposed so as to provide a pouring lip for the pouring opening, which lip is covered by the outer ply of the end member.

These and other objects will in part be obvious and will in part be hereinafter more fully disclosed.

In the drawings which show by way of illustration one embodiment of the invention—

Figure 1 is a perspective view of a fiber container embodying the improvements, said container being sealed and ready for handling with the product therein;

Fig. 2 is a perspective view of the top portion of the container shown in Figure 1, with the corner portion lifted so as to provide a pouring opening;

Fig. 3 is a plan view of the top of the container showing in broken lines the scoring of the outer and inner plies of the top closure end so that the corner portion can be lifted to provide a pouring opening;

Fig. 4 is a sectional view on the line 4-4 of Figure 3, and

Fig. 5 is a sectional view through the bottom end portion of the container.

The invention is directed to a container of fibrous material which is especially adapted for liquid products. As shown in the drawings, the container includes a tubular body portion which

is rectangular in cross section. This body portion is made from a blank which is folded so as to form a tubular body with the side walls substantially parallel with each other and dimensioned so that the body is rectangular in cross section. The body portion is indicated at 1. The side edges of the blank are lapped as indicated at 2 and are secured together by a suitable liquid-proof cement. The side walls of the body portion are formed after the side edges have been joined so that they taper inwardly as indicated at 3, and are then bent outwardly as indicated at 4, which provides a horizontal seating flange for the end members. The tapering in of the body wall and the bending out of the seating flange is done by die-shaping the fibrous material constituting the body wall. This provides seating flanges which are continuous all the way around the top and bottom ends of the body wall. The lower end of the body portion is closed by a bottom end closure member 5 made of fibrous material. Said member is provided with a recess 6 which extends into the open end of the body member. This bottom end closure member extends outwardly at 7 across the lower face of the seating flange 4, and it is then bent upwardly at 8 and inwardly at 9 until it is brought into contact with the opposite face of the seating flange 4. The body wall is tapered inwardly at 3, as has been noted, and this permits of the folding of this edge portion 9 flat against the upper face of the seating flange and with the raw edge of said turned-back edge portion well concealed and protected by the projecting portions of the body wall and end member. The bottom end closure member 5 is secured to the seating flange by a suitable liquid-proof cement, so that a very firm and strong seam is provided all the way around the container, which seam is liquid-proof. The bottom end is preferably provided with a filling opening which is circular in cross section. Said opening after the container is filled, is closed by a fiber plug 10. Said fiber plug is provided with a flange 11 which seats against the outer face of the bottom end closure member, and the plug is so dimensioned that it projects into the container so that it may be expanded as indicated at 12, for firmly seating and holding the plug in the container end for closing the opening. After the container is filled and this plug inserted and expanded, hot wax may be used for sealing the joint between the plug and the wall of the closure end.

The top end of the container consists of an

inner ply 13 of fibrous material and an outer ply 14 of fibrous material. The inner ply extends across the seating flange 4 at the top end of the body wall and is bent downwardly at 15, and thence inwardly at 16 beneath the seating flange 4. Said inwardly bent portion 16 extends well under the flange and substantially to the wall of the body. The tapering of the body wall as indicated at 3 permits this folding of the edge portion of the end member underneath the seating flange so that the edge will be well concealed and protected by the projecting portions of the body wall. This inner ply is scored along the line *a, a* and also along the line *b, b*. These lines intersect at the point *c*. This score line is parallel with the adjacent sides of the body wall and is located along the inner side of the seating flange 4 so that when the inner ply is ruptured along the score line and lifted, a pouring opening will be provided at the corner of the container, and the pouring lip over which the liquid flows will be the outer face of this inner ply 13 which is left joined to the seating flange.

The outer ply 14 extends all the way across the inner ply in both directions and is curved downwardly as indicated at 17. All the way around the container end, this outer ply is also curved inwardly as indicated at 18, except in the region where the pouring takes place, that is, opposite the score line indicated by the lines *a, a* and *b, b*. The portion 18 of the outer ply extends well in toward the wall of the body portion and will be secured to the outer ply by a suitable adhesive. The folded down portion 17 in the region where the score line referred to is located, terminates at 19 and throughout this region of the score line the upper ply is not cemented to the under ply. The upper ply is also scored along the line *a, b* to form a hinge line 20. The upper and lower plies are preferably stapled together by a staple 21.

When it is desired to open the container, the corner portion adjacent the point *c* is pressed upwardly and this will lift the upper ply, said ply turning on the hinge 20. As this upper ply is lifted, the scored line in the lower ply will start rupturing at the point *c* and will continue to rupture along lines parallel with the adjacent sides of the body wall as clearly indicated in Figure 2 of the drawings. This forms a pouring opening. The pouring lip associated with the opening is the outer face of the inner ply, and this is well covered by the outer ply until the outer ply is lifted and the inner ply ruptured along the score line. This prevents any dust or dirt from collecting on the pouring lip.

It is sometimes desired to hang the container on a supporting member, and the outer ply is shown as provided with a flap 22 which is normally housed in the recess 23. Said flap may be raised to the position shown in Figure 2. The flap has an opening 24 therethrough which serves as a means whereby the container may be attached to a supporting member and suspended therefrom.

It will be noted from the above description that the upper face of the top closure member is free from depressions and ledges, except of course, in the region of the flap. Being smooth and substantially horizontal, dust and dirt is not likely to collect and become fixed thereto so as to produce an unsanitary condition. The edges of the end members are well concealed and protected by the projecting portions of the body wall and the end members themselves. This makes a very

strong and durable seam which is not likely to be torn open during the handling of the container. The forming of a horizontal seating flange and the folding of the end members about the same, also produces a very strong and durable seam structure which reinforces the body wall and prevents the same from collapsing during handling.

While the particular manner of forming the pouring opening described in detail has advantages in connection with the seam structure described, it will be understood that from certain aspects of the invention, other ways of providing a pouring opening may be utilized without departing from the spirit of the invention as set forth in the appended claims. While it is desirable to form the filling opening in the bottom end member and close it by a friction plug, it will be understood that the filling opening may be provided at other portions of the container and closed by other means than a friction plug, without departing from the spirit of the invention as set forth in the appended claims.

Having thus described the invention, what we claim as new and desire to secure by Letters Patent is:

1. A container for liquid products comprising a body of fibrous material, the body wall adjacent each end thereof being tapered inwardly and thence bent outwardly to provide substantially horizontal end seating flanges extending all the way around the body and terminating in an outer edge disposed substantially in alignment with the body wall, and an end member for closing the top end of said body, said end member consisting of an upper and a lower ply of fibrous material, said lower ply resting on said seating flange and having its edge portion extended and folded back underneath the flange and secured thereto all the way around the seating flange, said upper ply being extended and folded back underneath the seating flange and secured to the folded back portion of the under ply all the way around, except in the region of one corner and the portions adjacent thereto, in said region the edge portion of said upper ply terminates at the fold in the under ply and is free from attachment thereto in the region directly above the seating flange, said under ply being scored along lines extending from the corner along the adjacent sides, said score lines being disposed at the inner portion of the seating flange so that the corner portion may be lifted and the inner ply ruptured along the scored lines for forming a pouring opening.

2. A container for liquid products comprising a body of fibrous material, the body wall adjacent each end thereof being tapered inwardly and thence bent outwardly to provide substantially horizontal end seating flanges extending all the way around the body and terminating in an outer edge disposed substantially in alignment with the body wall, and an end member for closing the top end of said body, said end member consisting of an upper and a lower ply of fibrous material, said lower ply resting on said seating flange and having its edge portion extended and folded back underneath the flange and secured thereto all the way around the seating flange, said upper ply being extended and folded back underneath the seating flange and secured to the folded back portion of the under ply all the way around, except in the region of one corner and the portions adjacent thereto, in said region the edge portion of said upper ply terminates at the

fold in the under ply and is free from attachment thereto in the region directly above the seating flange, said under ply being scored along lines extending from the corner along the adjacent sides, said score lines being disposed at the inner portion of the seating flange so that the corner portion may be lifted and the inner ply ruptured along the scored lines for forming a pouring opening, said upper ply being scored along a line at right angles to a diagonal line through the pouring corner for providing a hinge line on which the corner portion swings when lifted.

3. A container for liquid products comprising a body of fibrous material, the body wall adjacent each end thereof being tapered inwardly and thence bent outwardly to provide substantially horizontal end seating flanges extending all the way around the body and terminating in an outer edge disposed substantially in alignment with the body wall, an end member for closing the top end of said body, said end member consisting of an upper and a lower ply of fibrous material, said lower ply resting on said seating flange and having its edge portion extended and folded back underneath the flange and secured thereto all the way around the seating flange, said upper ply being extended and folded back underneath the seating flange and secured to the folded back portion of the under ply all the way around, except in the region of one corner and the portions adjacent thereto, in said region the edge portion of said upper ply terminates at the fold in the under ply and is free from attachment thereto in the region directly above the seating flange, said under ply being scored along lines extending from the corner along the adjacent sides, said score lines being disposed at the inner portion of the seating flange so that the corner portion may be lifted and the inner ply ruptured along the scored lines for forming a pouring opening, said upper ply being scored along a line at right angles to a diagonal line through the pouring corner for providing a hinge line on which the corner portion swings when lifted, and a staple joining the upper and the lower ply at the corner immediately inside of the score lines.

4. A container for liquid products comprising a body of fibrous material, the body wall adjacent each end thereof being tapered inwardly and thence bent outwardly to provide substantially horizontal end seating flanges extending all the way around the body and terminating in an outer edge disposed substantially in alignment with the body wall, end members of fibrous material for closing the ends of said body, said end members being extended across the seating flanges

with which they are associated and folded back onto and secured to the opposite face of the flange thus forming a substantially horizontal projecting reinforcing member for preventing collapsing of the body wall, said end member for closing the top of the body consisting of upper and lower plies, the lower ply being scored along lines adjacent one of the corners for rupturing to form a pouring opening and said upper ply being scored to form a hinge line permitting the upper ply to be lifted for rupturing the lower ply to form a pouring opening, and a staple securing the plies together adjacent the corner which is to be lifted.

5. A container for liquid products comprising a body of fibrous material, the body wall adjacent each end thereof being tapered inwardly and thence bent outwardly to provide substantially horizontal end seating flanges extending all the way around the body and terminating in an outer edge disposed substantially in alignment with the body wall, and end members of fibrous material for closing the ends of said body, said end members being extended across the outer face of the seating flanges with which they are associated and folded back onto and secured to the opposite face of the flange where they are concealed from view and protected, one of said end members having score lines paralleling one corner and adjacent side portions and disposed inside of and adjacent the flange on the body wall, the other end member having a filling opening and a closure plug therefor.

6. A container for liquid products comprising a body of fibrous material, the body wall adjacent each end thereof being tapered inwardly and thence bent outwardly to provide substantially horizontal end seating flanges extending all the way around the body and terminating in an outer edge disposed substantially in alignment with the body wall, and an end member for closing the top end of the body consisting of an upper and a lower ply of fibrous material, the lower ply resting on said seating flange and having its edge extended and folded back underneath the flange and secured thereto all the way around the seating flange, said upper ply being extended so as to cover the region above the seating flange and secured to the under ply all the way around except in the region of one corner and the portions adjacent thereto, said under ply being scored at said corner and in the portions adjacent thereto along a line within the seating flange and paralleling said corner and edge portions.

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