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G. O. SCHROEDER ET AL  
CONTAINER WITH SANITARY POURING SURFACE  
AND PROTECTING BARRIERS  
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2,826,348

FIG. 1

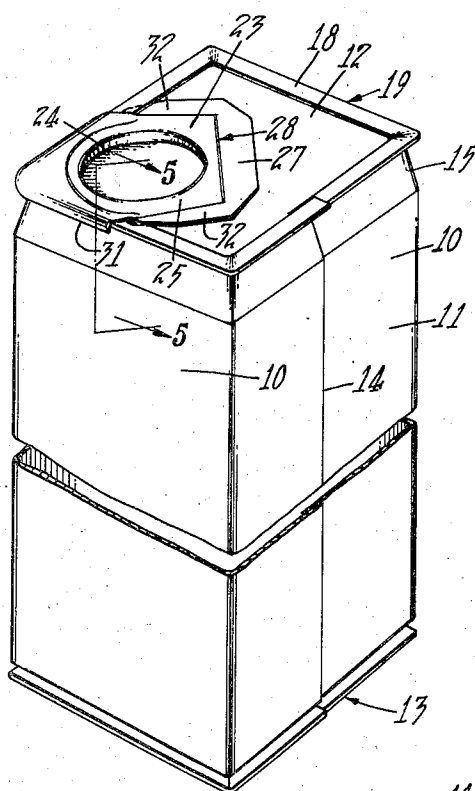


FIG. 2

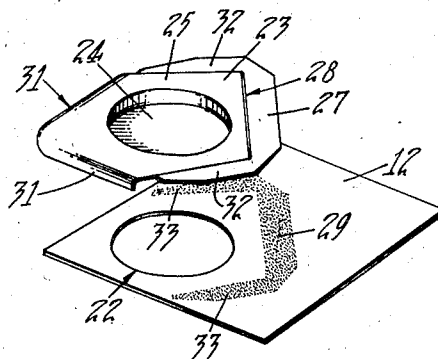


FIG. 3

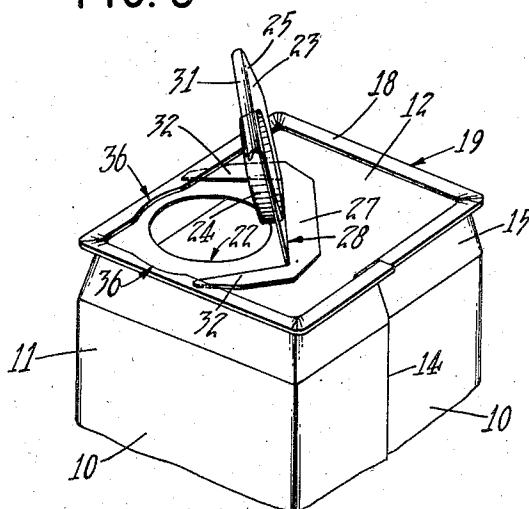


FIG. 4

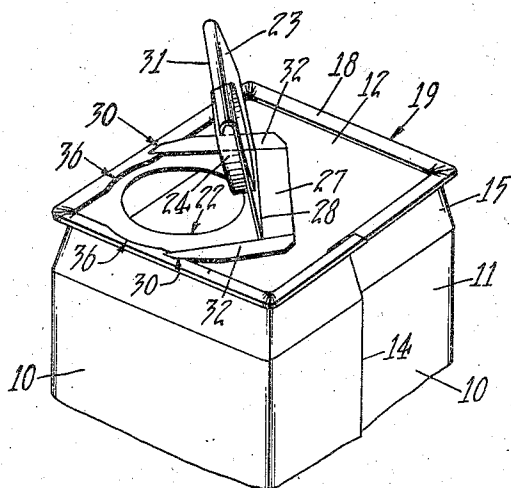
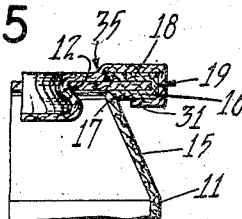


FIG. 5



INVENTORS  
GEORGE O. SCHROEDER  
KENNERD M. FRASE  
BY *Charles H. Erma*  
*Selma R. McCann*  
*George W. Reiber*  
ATTORNEYS

1

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## CONTAINER WITH SANITARY POURING SURFACE AND PROTECTING BARRIERS

George O. Schroeder, Chicago, and Kennerd M. Frase, Maywood, Ill., assignors to American Can Company, New York, N. Y., a corporation of New Jersey

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6 Claims. (Cl. 229—7)

The present invention relates to containers for the packaging and delivery of liquids, such as milk, fruit juices and other flowable products, and has particular reference to a fibre container having a sanitary pouring surface protected by a closure element and adjacently disposed barriers to shield the pouring surface from foreign matter.

This invention is an improvement upon the containers disclosed in United States Patent 2,321,050 issued June 8, 1943, to R. H. Seymer and in United States Patent 2,085,979 issued July 6, 1937, to J. M. Hothersall.

The invention contemplates a liquid proofed container which comprises a tubular body substantially square through its transverse section, having flat top and bottom end members secured to the body by interfolded marginal edge portions constituting end seams in which the parts are permanently united by an interposed suitable liquid proof adhesive. The container is coated with paraffin or other suitable material to produce a leakproof container, the top end having a filling and dispensing opening which is sealed by a removable closure element covering a pouring surface protected by the element when closed and further protected even when the element is open, by barriers which may or may not be a part of the closure element.

An object of the invention is the provision of a liquid proof fibre container having a pouring opening wherein the surface surrounding the opening is protected by barrier elements permanently secured to the container so that any foreign matter which may collect on the container may be deflected away from the pouring surface.

Another object is the provision of such a container wherein the barrier elements disposed around the dispensing opening serve to reinforce and stiffen the portion of the container adjacent the opening and thereby prevent undue flexing or breathing of the container wall.

Another object is the provision of such a container wherein the barrier elements may be formed integral with the closure element or may be separate pieces, but in either case are spaced relative to movable portions of the closing element by mere slits which are readily sealed by the liquid proof coating on the container or by pressing into intimate contact to bar seepage of liquid foreign matter under the closure element.

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 drawings, discloses a preferred embodiment thereof.

Referring to the drawings:

Figure 1 is a perspective view of a sealed container embodying the instant invention, with parts broken away;

Fig. 2 is an exploded perspective view of the top end member and the closure and barrier elements used in the container shown in Fig. 1;

Fig. 3 is a perspective view of the upper end of the

2

container shown in Fig. 1 with the closure element illustrated in open position:

Fig. 4 is a view similar to Fig. 3 showing a modified form of the invention in which the barrier elements are separate members; and

Fig. 5 is an enlarged sectional view taken substantially along a plane indicated by the lines 5—5 in Fig. 3, with parts broken away.

As a preferred or exemplary embodiment of the instant invention the drawing illustrates a container of the general construction disclosed in the above mentioned Hothersall Patent 2,085,979. Such a container briefly comprises a substantially rectangular or square tubular fibre body 11 closed at its ends with suitable top and bottom end members 12, 13 respectively. These end members are similar and are similarly secured to the body.

The container body 11 preferably is formed from a single sheet or blank of fibrous material folded at right angles to provide four side walls 10. The side marginal edge portions of the blank are overlapped and adhesively secured together to provide a leakproof side seam 14 which extends the full length of the body.

The end members 12, 13 preferably are made of the same fibrous material and are rectangular or square to fit into the ends of the body. These end members preferably are flat and have their marginal edge portions interfolded with marginal end portions of the body. For this purpose the body marginal end portions are bent inwardly at 15 (see Fig. 5) and then outwardly as at 16 thereby providing a shoulder or ledge 17 which extends peripherally around the body and upon which the end members seat.

Beyond the ledges 17, the body marginal end portions are bent around the peripheral edge of the end member and then extend inwardly over the end member to provide a peripheral horizontal flange 18 which is opposed to the ledge 17 and which holds the end member tightly in place. A liquid proof adhesive interposed between the end member and the ledge 17 and the flange 18 provides a leakproof end seam 19.

The top end member 12 is provided with a filling and dispensing opening 22 (Figs. 2 and 3) which is formed adjacent one corner of the member. This opening 22 preferably is closed with a hinged closure element 23 which preferably is made from a single thickness of the same fibrous material as the body and the end members. The closure element seals the filling and dispensing opening 22 and extends over adjacent surfaces of the top end member 12 and portions of the top end seam 19 to protect all pouring surfaces against contamination. For this purpose, the closure element 23 is slightly wider than the dispensing opening 22 and intermediate its ends is formed with a depending friction plug 24 having a surrounding flange 25.

The friction plug 24 seats within the opening 22 and is expanded under the top end member 12 in the usual manner, after the container is filled, to seal the opening and hold the closure element in place. The surrounding flange 25 covers the top surface around the opening 22 of the top end member 12 and thus protects this surface from contamination. The outer edges of this flange 25 preferably are straight and may be parallel or may be divergent as shown in Fig. 1.

At its inner end, the closure element 23 is formed with a tab 27 which is set off from the element by a hinge line 28. The tab 27 is adhesively secured to the upper face of the top end member 12 by adhesive 29 (Fig. 2). The opposite or outer end of the closure element 23 projects over the portion of the end seam 19 adjacent the dispensing opening 22. This end of the

3

closure element is provided with a lip 31 which extends down over the outer corner edges of the end seam 19 and is bent inwardly under the corner portion of the seam to secure the outer end of the closure element in place.

In order to protect the pouring surfaces under the closure element 23 at all times, even when the element is open as in Fig. 3, against contamination by undesirable foreign matter which may collect on the top end member 12 and to prevent this foreign matter from entering the opening 22, provision is made to divert any such foreign matter away from these parts of the container. For this purpose a pair of barrier members 32 are disposed closely adjacent and abutting the straight side edges of the flange 25 of the closure element 23. These barrier members 32 are permanently secured to the top end member 12 by adhesive 33 (Fig. 2). At their inner ends, the barrier members 32 extend up to or past the hinge tab 27 of the closure element 23. At their outer ends, they are tapered toward the end seam 19 and extend under the flange 18 as clearly shown in Figs. 1 and 3 where they terminate in the end seam to insure that no foreign matter passes beyond them.

In the modified form of the invention as shown in Fig. 4, the body flange 18 adjacent the outer ends of the barrier member 32, is cut away to form close fitting recesses 30 in which the outer ends of the barrier members 32 are seated. In this form of the invention the barrier members are in the same plane as the flange 18 of the end seam so that the upper surfaces of the members and the flange are substantially flush.

The barrier members 32 preferably are made from a single thickness of the same fibrous material as the closure element 23 and may be made integral with the closure element as shown in Fig. 3 where they are forward and sidewise extensions of the hinge tab 27, or they may be made as separate pieces as shown in Fig. 4. A preferred manner of forming these barrier members 32 is to include them in the material from which the closure element 23 is made and to first draw the friction plug 24 and to then slit the closure element inwardly between the outer edges of the barrier members and the drawn friction plug to produce the closure unit shown in Fig. 2. With this manner of forming the barrier elements no space is created between the inner edges of the barrier members and the outer edges of the closure flanges 25.

Where the barrier members 32 are formed as separate pieces (as in Fig. 4), the closure element 23 is first attached to the top member 12 and the barrier members are then attached with their inner edges in contact with the outer edges of the closure flanges 25. In either case the portion of the closure element situated between the barrier members 32 constitutes a movable flap which may be readily hinged upwardly to dispense the contents of the container while the barrier members remain permanently stationary.

In either case, no space is provided between the barrier members 32 and the closure flanges 25 so that the liquid proofing substance applied to the entire container after the container is made, also seals any interstices between the inner edges of the barrier members and the outer edges of the closure flanges and thereby prevents any liquid foreign matter from seeping past these edges onto the protected pouring surfaces. If desired, external pressure, with an application of heat may be applied to the closure element and barrier members to seal their contacting edges.

The closure flanges 25 preferably are pressed down into the plane of the barrier members 32 to locate the top surfaces of the flanges in substantially flush relation with the top surfaces of the members. This preferably is done after the container is filled and simultaneously with the expansion of the friction plug in the usual manner to seal the container. This produces an

4

offset or shoulder 35 (see Fig. 5) in the flap adjacent the inner edge of the horizontal flange 18 of the container body and thus permits the inner surface of the flap to tightly and intimately engage and to protect the top surface of the end member 12 entirely around the dispensing opening 22. In order to provide for greater area contact between these surfaces, when the dispensing opening 22 is closely adjacent the body flange 18, the flange preferably is relieved or recessed as at 36. The offset 35 merges into the outer portion of the flap which surrounds the end seam 19 and terminates in the lip 31. The offset or shoulder 35, however, may be initially formed in the closure member 23 prior to its attachment to the end member 12 to facilitate manufacturing procedure if desired.

Hence with the barrier members 32 in permanent place on the top member 12 and with their outer ends securely tucked under the flange 18 of the end seam 19, or seated in the recesses 30 of the flange 18, the outer edges of the single thickness of fibrous material of the barrier members provide a shoulder or raised barrier, extending above the upper surface of the top member 12, to dam or divert away from the pouring surfaces and the dispensing opening 22, any foreign matter which may become dislodged from or flow across the top member 12 when the closure element 23 is in open position as shown in Fig. 3.

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.

We claim:

1. A container for holding and dispensing liquid products, comprising a tubular body having a flat end wall member secured thereto in a peripheral end seam, said end wall being provided with a pouring opening, a single thickness one-piece closure for closing said opening, said closure having a substantially flat extension overlying and covering said wall around said opening, marginal lateral and inner portions of said flat extension being secured to and sealed against said end wall, and said lateral portions extending from said inner portion of the extension toward and into said end seam and being slit from the central portion of said closure to provide a central closure flap freely hingeable on said secured inner end of the closure so that said sealed lateral and inner end portions rise above the surface of said flat end wall to form a barrier against movement of foreign matter from the unprotected onto the protected portion of the end member around said opening when the latter is uncovered and while liquid is dispensed through said opening.

2. A container of the character defined in claim 1 wherein the pouring opening containing wall is a flat top end member secured to said tubular body by the top marginal end portion of said body being lapped over said end member in a peripheral end seam.

3. A container of the character defined in claim 2 wherein said peripheral end seam is cut away to receive the terminal ends of said barrier members.

4. A container for holding and dispensing liquid products, comprising a tubular body, an end member secured to the top of said tubular body in an end seam wherein the top marginal portion of the body forms an intumed flange overlapping the top peripheral margin of said end member, a single thickness one-piece closure having a central friction plug for closing said opening and a marginal closure extension surrounding said plug, said extension overlying and covering said wall around said opening and having its inner end hingedly secured to said top end member, said extension on both sides of said plug

5

being slit to provide a freely hingeable flap containing said friction plug and to also provide marginal barrier members terminating between said flat top end member and said lapped over marginal end portion of said body to secure said barrier member ends in said end seam, said barrier members being adhesively secured to said top end member and projecting above the surface of said top end member to prevent movement of foreign matter from the uncovered portion of said top end member onto the normally covered portion of said end member when it is uncovered.

5. A container for holding and dispensing liquid products, comprising a tubular body having an end wall secured thereto in a peripheral end seam, said end wall being provided with a pouring opening therein, a friction plug closure hingedly attached at its inner end to a tab sealed and secured against said wall, said closure having a central friction plug for closing said opening and a flange around said plug to cover and protect said wall around said opening, and barrier members sealed and

6

secured against said wall on opposite sides of said closure and laterally abutting along and against the lateral edges thereof, said barrier members extending from said tab to and into said peripheral end seam and thereby cooperating with said tab to prevent movement of foreign matter from the unprotected onto the protected portion of the wall around said opening when the latter is uncovered and while liquid is dispensed through said opening.

6. A container of the character defined in claim 5 wherein said closure is provided with a lip at the free end thereof offset from said closure flange and extending over said peripheral end seam.

#### References Cited in the file of this patent

#### UNITED STATES PATENTS

2,085,979	Hothersall	July 6, 1937
2,321,050	Seymer	June 8, 1943
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