United States Patent

[11] **3,549,042**

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[54] **BUOYANT BEVERAGE CANS AND THE LIKE**
3 Claims, 8 Drawing Figs.

[52] **U.S. Cl.** **220/54,** 220/68
[51] **Int. Cl.** **B65d 7/22,** B65d 25/02
[50] **Field of Search** 220/20, 68, 66, 54, 60

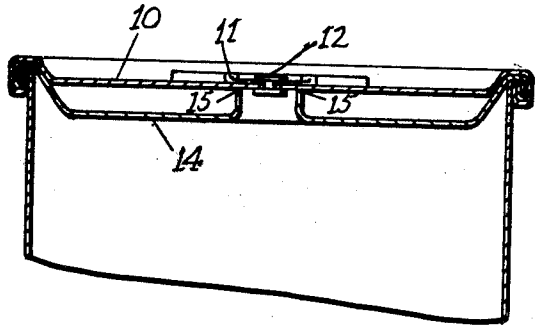
[56] **References Cited**

UNITED STATES PATENTS

2,751,073	6/1956	Sheeran	220/20X
2,864,529	12/1958	Henchert	220/68X
3,170,589	2/1965	Winslow	220/66
3,272,381	9/1966	Bozek	220/54
3,305,368	2/1967	Bourelle	220/20X

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Attorney—Melville, Strasser, Foster & Hoffman

ABSTRACT: A can or container for foods, beverages or the like with a buoyancy chamber or flotation element, such that if the empty can or container is discarded on a body of water it will remain afloat.



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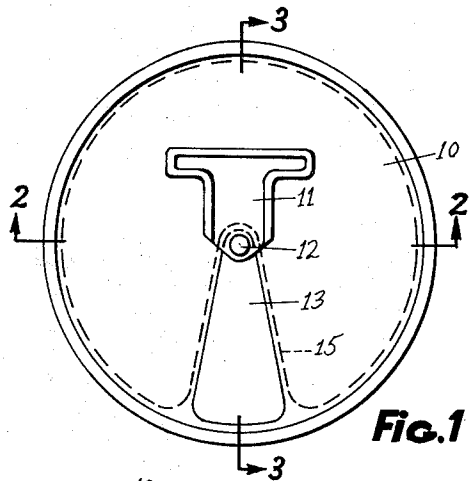


Fig. 1

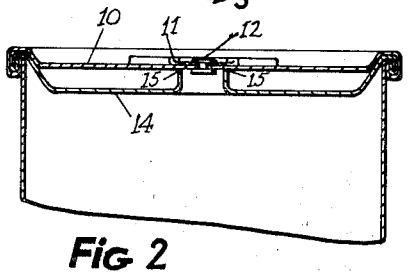


Fig. 2

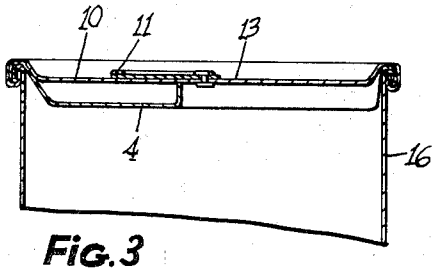


Fig. 3

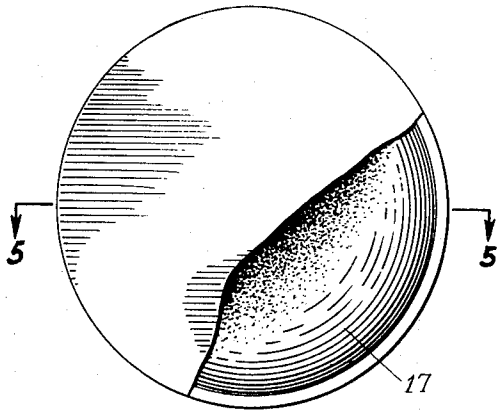


Fig. 4

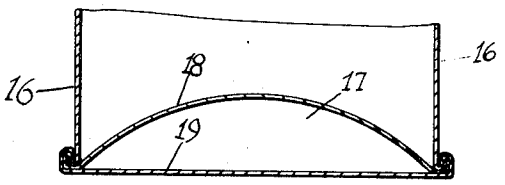


Fig. 5

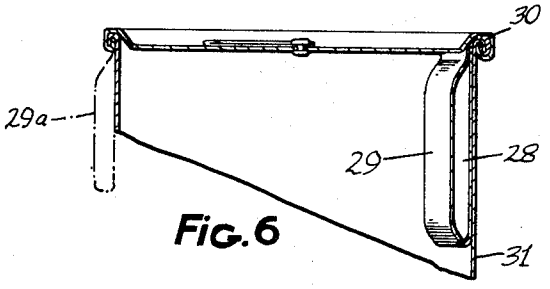


Fig. 6

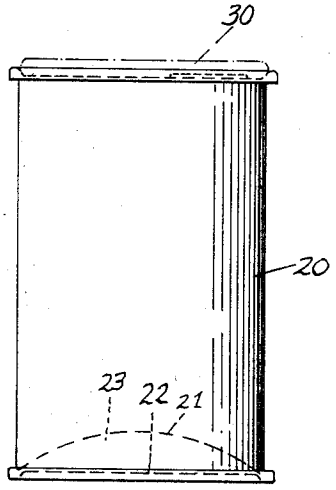


Fig. 7

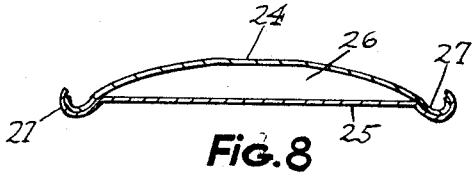


Fig. 8

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BUOYANT BEVERAGE CANS AND THE LIKE

BACKGROUND OF THE INVENTION

The invention relates to tin cans so called, in which foods or beverages may be contained. It has been observed in recent years that picnickers and campers along the shores of ponds, rivers and lakes, and boaters who use bodies of water, habitually toss emptied cans overboard. This is particularly true of beverage cans. In some quarters it is considered a sport to shoot at the temporarily floating cans with pistols or rifles to sink them. Even though a can will eventually sink even if opened only at one end, it is a common practice to punch holes in both ends of the can so that the can will be sure to sink. The theory apparently is that if the discarded cans sink below the surface of the water, no litter has been created and the miscreant does not feel like a litterbug.

In the days when most cans were made of iron, this may have been true because the iron through prolonged contact with water gradually rusted away and no particular problem was created. The situation has changed very greatly with the advent of the aluminum can. When an aluminum can is discarded in a body of water and sinks to the bottom, it does not disintegrate but remains intact substantially forever. It has been found in some small bodies of water where this problem has been investigated that in a small pond there may be a layer of discarded aluminum cans several feet thick.

So far as is known, no one has heretofore attempted to solve the problem of pollution of bodies of water and littering of bodies of water with aluminum cans which do not disintegrate over a period of time, or even steel cans, which in some water conditions may remain intact for many years.

SUMMARY

The present invention contemplates providing cans with a buoyancy chamber or flotation compartment to the end that when cans are emptied and are discarded on a body of water, they will not sink but will float. Thus they will gradually drift to the edges of the pond, lake, stream or other body of water, where they can be picked up and disposed of properly. Furthermore, the fact that the cans will float will tend to call the attention of the miscreants to the fact that the cans should not be discarded on the body of water because they litter up the body and present a bad appearance. This will, therefore, discourage the discarding of empty cans on our lakes, rivers, streams and ponds.

BRIEF DESCRIPTION OF THE DRAWING

1. FIG. 1. is a plan view of a typical tear top can.

FIG. 2 is a fragmentary cross-sectional view of the same taken in the line 2–2 of FIG. 1.

FIG. 3 is a fragmentary cross-sectional view of the same taken on the line 3–3 of FIG. 1.

FIG. 4 is a bottom plan view of a different embodiment of the invention.

FIG. 5 is a fragmentary cross-sectional view of the same taken along the line 5–5 of FIG. 4.

FIG. 6 is a fragmentary cross-sectional view showing yet another embodiment of the invention.

FIG. 7 is a diagrammatic view on a reduced scale showing how the invention is adaptable to a present day, conventional can.

FIG. 8 is a diametral cross-sectional view of a can end embodying the invention prior to being assembled to a can body.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

In its broadest aspects, the invention contemplates the provision of a buoyancy or flotation chamber or element inside or outside of the can or container body, or on one or both of the ends. The flotation chamber may be provided in a conventional three piece can, a conventional two piece can, or a two or three piece can having a tear top. If the buoyancy chamber is to be located in the end of the can, this may be accomplished by an additional sheet of aluminum or any suitable material to form a chamber. This additional material can be crimped, welded, or fastened with sealants during the seaming or crimping operation, or secured to the end or body before or after assembly. If the buoyancy chamber is incorporated in the can body, it may be formed of a suitable material so as to form a portion of the lining of the can. Sealants may be used where necessary, particularly if a nonresilient material is captured in a seam crimping operation. The particular dimensions of the buoyancy chamber will, of course, be determined by the size and weight of the can to insure sufficient buoyancy that the can will float with a portion thereof at least exposed to view above the level of the water.

Referring more particularly to FIG. 1, the end of the can is indicated at 10. The particular can illustrated has a pull tab 11 secured by means of a rivet 12 to a tear strip 13 so that when the pull tab 11 is raised, the tear strip 13 is broken out and may be torn out of the can for purposes of dispensing the contents thereof. If it is desired to incorporate the buoyancy chamber in such an end of a can, it is accomplished as shown in FIGS. 1—3. A second sheet of material, as for example, aluminum, may be provided as at 14. The member 14 is spaced from the member 10 and suitably welded to the portion 10 along the broken lines 15 shown in FIG. 1. The peripheral edges of the member 14 may simply be crimped in with the periphery in the seaming operation when the can is assembled. It will be understood that an end, as shown in FIGS. 1—3 inclusive, may be prepared and assembled and then be assembled to the can body 16 in the conventional manner.

In FIGS. 4, and 5 and 7, a flotation chamber or buoyancy chamber is shown at 17. In this embodiment, the can body 16 has assembled to it a conventionally dished or domed end 18. It is only necessary to provide an additional circular element 19 which may be assembled to the body 16 in the same seaming operation during which the domed end 18 is assembled. Thereby, an air space or buoyancy chamber 17 is formed in the can end. This particular embodiment requires a minimum modification of existing machinery.

In FIG. 7, a can 20 having an integral dished or domed end 21 is shown and here a member 22 may be welded or otherwise suitably secured across the domed end to provide the buoyancy chamber 23.

In FIG. 8, a partially assembled can end is shown comprising the conventional domed element 24 and the flat element 25 creating the buoyancy chamber 26 therebetween. The ends at 27 are shown as being partially crimped so as to retain the members 24 and 25 in assembly. The composite of FIG. 8 may be shipped in that form for assembly at the filling point. This is useful where the can to be filled has an integral end with the pull tab and tear strip in the integral end.

The embodiment of FIG. 6 contemplates the provision of the flotation or buoyancy chamber 28 in the body wall of the can. The chamber 28 may be constituted of a flexible impervious baglike member 29 which is assembled to the can during the crimping operation at 30. It will be understood that this bag may be annular, extending all the way around the body of the can, or not, depending upon the volume of flotation chamber necessary to float the can. Further, it will be clear that the flotation element may consist in a similar member 29*a* secured outside the body of the container, as shown in broken lines in FIG. 6. It will also be understood that instead of a bag 29 of impervious flexible material, the body wall 31 of the can could simply be made of two spaced thicknesses of aluminum or any material as in the case of FIGS. 1, 2 and 3 inclusive, and FIGS. 4 and 5. Flotation may also be provided by a block of low density material like polystyrene, secured inside or outside the container, as shown in broken lines at 30 in FIG. 7.

Many variations will occur to those skilled in the art with regard to the location and manner of providing the flotation chamber. In some cases, cold welding may be used, and in others adhesives or heat seaming may be necessary. It will also be understood that the flotation or buoyancy chamber may be filled with solids if thought desirable.

In any event, no limitations are intended other than those which are specifically set forth in the following claims.

We claim:

1. A beverage can and the like having an end provide with a tear strip and pull tab therefore, and having a buoyancy element in said end over the area thereof not occupied by said tear strip, and providing sufficient buoyancy, having regard for the weight of said can, to cause the can, after opening, to float with at least a portion thereof visible above the water level.

2. A beverage can and the like having a buoyancy element constituted by a sealed bag element within the body wall of the can and secured to the can by crimping together with the can ends in a position to be undisturbed by the opening of said can, said buoyancy element providing sufficient buoyancy, having regard for the weight of said can, to cause the can, after opening, to float with at least a portion thereof visible above the water level.

3. A can according to claim 1 wherein a second layer is bonded to said end outside the limits of said tear strip, and said end and second layer are crimped to the body of said can in assembly.