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J. M. HOTHERSALL

2,303,359

CONTAINER

Filed May 5, 1939

Fig 1

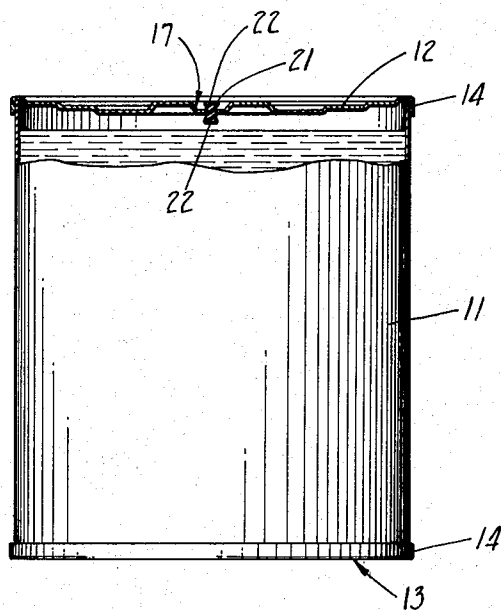


Fig 2

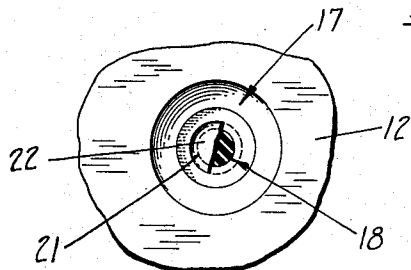


Fig 3

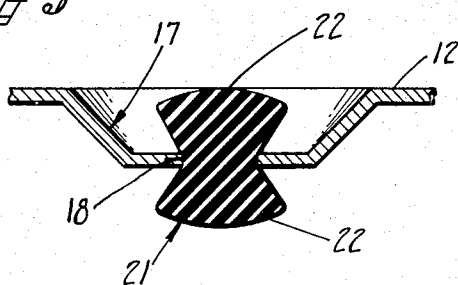


Fig 4

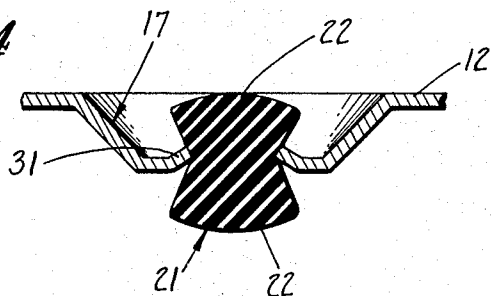


Fig 6

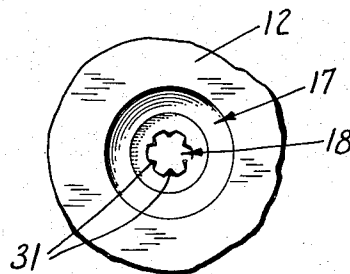
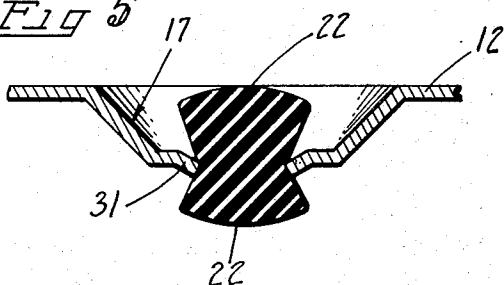


Fig 5



INVENTOR.
John M. Hothersall
BY *Donald D. Thompson*
Charles H. Fine
ATTORNEYS

UNITED STATES PATENT OFFICE

2,303,359

CONTAINER

John M. Hothersall, Brooklyn, N. Y., assignor to
American Can Company, New York, N. Y., a corporation of New Jersey

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3 Claims. (Cl. 220—44)

The present invention relates to containers or cans having a small vent hole provided therein through which they may be vacuumized or gassed and has particular reference to sealing the vent hole in order to seal the can.

An object of the instant invention is the provision of a sheet metal can having a vent hole wherein the hole is sealed with a rubber plug which is readily insertable into the hole and provides a hermetic seal therefor.

Another object is the provision of a can of this character wherein the plug is located in a sunken panel so that it will be protected against displacement during shipment and storage of the can.

Another object is the provision of such a can wherein the plug is held in place in such a manner that it will serve as a safety device for the can, the plug being easily displaced from the hole when a pressure develops in the can.

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 side view of a can embodying the instant invention, the upper end of the can being broken away and shown in section;

Fig. 2 is an enlarged plan view of a fragment of the can top, showing the vent hole therein;

Fig. 3 is a greatly enlarged sectional detail taken through that portion of the can cover adjacent the vent hole and showing the hole sealed with a plug;

Figs. 4 and 5 are views similar to Fig. 3 showing modified forms of the instant invention; and

Fig. 6 is a view similar to Fig. 2 and on the same scale and showing a top plan of the vent hole embodied in the modified forms illustrated in Figs. 4 and 5.

As a preferred embodiment of the invention the drawing illustrates a sheet metal can which includes a tubular body 11 having top and bottom paneled closures 12, 13, respectively, secured thereto in suitable seams 14. The top closure 12 is preferably provided with a centrally located sunken or countersunk panel 17 in which is disposed a small round vent hole 18. Such a vent hole is preferably provided for vacuumizing or vacuumizing and gassing the interior head space of the can after the latter has been filled and the cover or top closure 12 has been secured in place.

This vent hole 18 is finally sealed with a short resilient rubber plug 21 which is preferably of cylindrical shape. The plug is forced into the hole under pressure so that its middle section will completely fill the hole and thereby hermetically seal it while the opposite ends of the plug spread out and overhang the edge of the surrounding panel wall around the hole thereby providing enlarged heads 22 which maintain the plug in place. The head 22 on the outside of the can is disposed entirely within the countersunk panel 17 and is thus protected against displacement during shipment and storage of the can.

Figs. 4, 5 and 6 illustrate modified forms of the invention in which the inner edge of the can closure wall around the hole 18 is serrated or otherwise shaped with projecting tongues or teeth 31. These teeth grip the rubber plug 21 when the latter is inserted in the vent hole and hold it tightly in place but in one direction only. For example, Fig. 4 illustrates the teeth bent upwardly or outwardly and in this modification they prevent accidental pushing of the plug entirely through the hole and into the can. They also facilitate displacement of the plug in an outward direction so that if an internal pressure is developed in the can the plug will readily yield and thereby act as a safety valve thus preventing the can seams from bursting.

Figure 5 is a further modification in which the teeth 31 are bent downwardly or inwardly toward the inside of the can. Such a modified construction prevents withdrawal of the plug by force applied from outside the can and this will prevent undetected tampering with the can contents.

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:

1. A sealed container comprising a body member, top and bottom end members secured thereto, one of said members having a round vent hole having serrated edges formed therein through which the head space in said container may be vacuumized, said member having that portion of the wall immediately surrounding the hole and including the serrated edges, projecting outwardly relative to the body member, and a resilient rubber

ber plug of substantially cylindrical shape in said vent hole, said plug having a middle section held under compression by said serrations, said plug filling and hermetically sealing the hole and having its uncompressed ends extending beyond the hole on both sides in substantially identical enlarged cylindrical heads which assist in holding the plug in inserted position, said serrations resiliently gripping the middle section of the plug, whereby to prevent inadvertent projection of the plug into the container and permitting expulsion of the plug from the container by the development of unduly high internal pressures.

2. A sealed vacuumized container of the safety valve type comprising a body member, top and bottom end members secured thereto, one of said members having a vent hole through which the head space in said container may be vacuumized, and a resilient rubber plug normally of substantially uniform cylindrical shape throughout and having a diameter greater than that of the vent hole, positioned in the vent hole with the medial portion of the plug contacting the edges of the hole and compressed thereby to reduced diameter to hold the plug within the hole, said plug filling and hermetically sealing the hole and having its uncompressed ends extending on opposite sides of the hole as enlarged cylindrical heads, the outer head preventing projection of the plug into the

vacuumized container by external pressure and the inner head normally preventing outward displacement of the plug, whereby said plug serves as a safety valve which may be expelled from the container only by the development of unduly high internal pressure.

3. A container comprising a body member, top and bottom end members secured thereto, one of said members having a vent hole formed therein through which the head space in said container may be vacuumized, said member having serrations formed therein surrounding the said vent hole, said member having that portion of the wall immediately surrounding the hole and including the serrations, projecting inwardly relative to the body member, and a resilient rubber plug normally of substantially uniform cylindrical shape throughout and having a diameter greater than that of the vent hole, positioned in the vent hole with the medial portion of the plug contacting the edges of the hole and compressed thereby to reduced diameter to hold the plug within the hole, said plug member having its uncompressed ends extending beyond the hole on both sides in enlarged heads which assist in holding the plug in inserted position, said serrations tightly gripping the plug and thereby preventing accidental displacement thereof.

JOHN M. HOTHERSALL.