Oct. 21, 1924. 1,512,043

J. S. REID

CAP CLOSURE

Filed April 17, 1922

Fig. 1

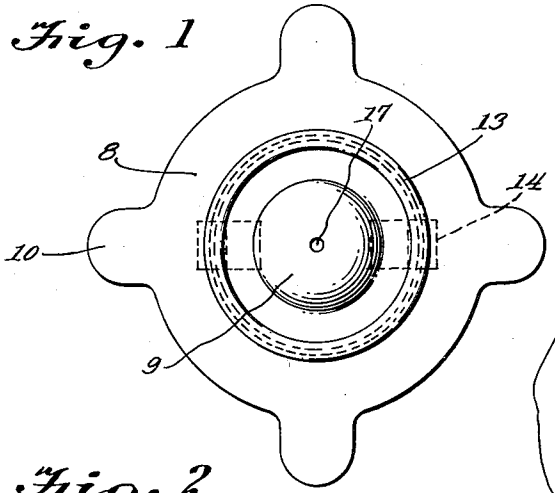


Fig. 4

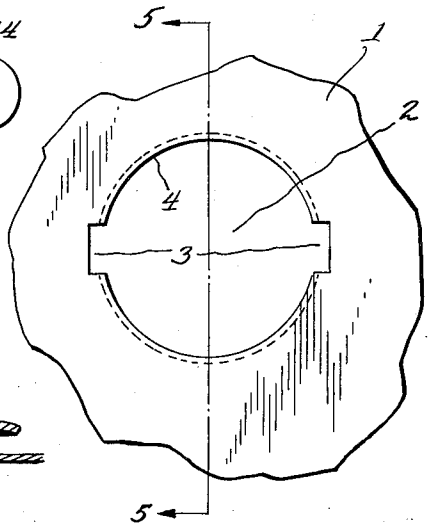
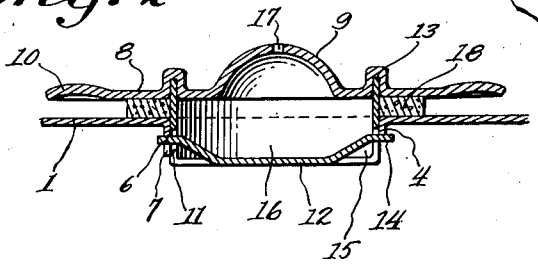


Fig. 2



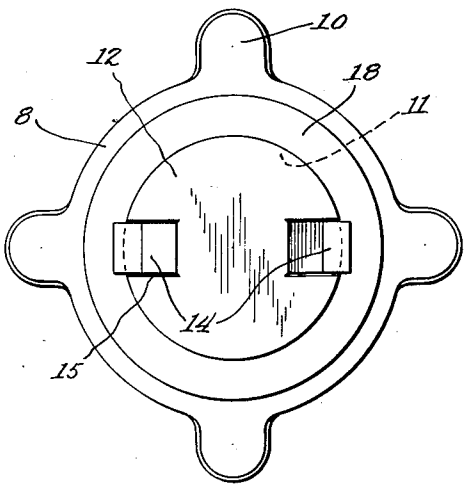
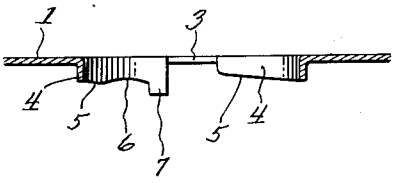


Fig. 3

Fig. 5



Inventor

James S. Reid

By Brockett & Hyde

Atty's

Patented Oct. 21, 1924. 1,512,043

UNITED STATES PATENT OFFICE.

JAMES S. REID, OF CLEVELAND, OHIO, ASSIGNOR TO THE EASY-ON CAP COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

CAP CLOSURE.

Application filed April 17, 1922. Serial No. 553,974.

To all whom it may concern:

Be it known that I, JAMES S. REID, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Cap Closures, of which the following is a specification.

This invention relates to closures such as are used with containers or the like. More particularly, the invention relates to a closure for that class of containers or the like where it is necessary or desirable that the closure parts extend a minimum distance above the top portion of the container, such as in the case of fuel tanks located beneath the seats of motor vehicles, etc.

The object of the invention is to provide an improved closure of the class described, the parts of which extend but slightly above the top portion of the container; which closure is provided with an improved baffled air vent; and which closure is simple in construction, is made of a minimum number of parts, and which can be manufactured and sold at low cost.

Further objects of the invention are in part obvious and in part will appear more in detail hereinafter.

The invention comprises the construction and arrangement of parts hereinafter described and claimed.

In the drawings, which represent one suitable embodiment of the invention, Fig. 1 is a plan view of the cap member; Fig. 2 is a vertical sectional view of the closure applied to a container; Fig. 3 is an inside plan view of the cap member; Fig. 4 is a plan view of a portion of the container with the cap member removed; and Fig. 5 is a vertical sectional view of the container on the line 5—5, Fig. 4.

Referring to the drawings, 1 represents a portion of a fuel tank in which is an opening, such as a filling opening, 2. At diametrically opposite points at the edge of said opening, radially extending recesses 3 are provided, and the metal of the container around said opening and between said recesses is bent inwardly, forming two substantially semi-circular depending flanges 4. These flanges may be integral with the container, or formed separately and secured to the container around the opening 2. The lower or inner edges of said flanges are inclined, as shown in Fig. 5, so as to form cam faces 5 for engagement by the locking spring fingers of the cap member, as will later appear. Each of said cam faces is provided with a dwell portion 6 and a lug or projection 7, the latter limiting the rotary movement of the cap member.

The cap member comprises a substantially circular top portion 8 having a central dome 9 and a plurality, four being shown, of radially extending projections or finger portions 10, the latter facilitating the turning of the cap member. The upper edge portion of a cylindrical or cap-shaped member which comprises a cylindrical wall portion 11 and a bottom portion 12, is secured to the top portion 8 around the central dome 9 by crimping, as indicated at 13, Fig. 2.

At the base of said cap-shaped member and at diametrically opposite points, portions of the metal of the bottom portion 12 and the cylindrical wall portion 11 are sheared and bent upwardly, so as to form two spring fingers 14 which are adapted for engagement with the cam faces 5, as before referred to. Said fingers extend upwardly and outwardly, as viewed in Fig. 2, the outer ends of said fingers extending beyond the cylindrical wall portion 11 of the cap-shaped member.

The openings 15, formed by the upwardly extending sheared fingers 14, provide air passages between the fuel tank or other container and the chamber 16 in the cap-shaped member and the central dome 9, the latter being provided with an aperture 17 leading to the atmosphere. While the openings 15 are sufficiently large for the passage of air therethrough, the sheared fingers 14 serve as a baffle to largely prevent the splashing of gasolene or other contents of the container into the chamber 16.

The cap member is applied by inserting the depending cap-shaped portion thereof through the opening 2 of the container, the spring fingers 14 passing through the radially extending recesses 3. The cap member may then be turned, the spring fingers 14 riding up the cam faces 5 with gradually increasing binding action. The cap member may be turned until said fingers strike the projections 7, at which point the outer ends of said fingers will lie in the dwell portions 6 in the cam faces, so that the cap member will be securely locked in closed position.

An annular gasket 18, of cork or the like,

is preferably provided, being suitably secured to the inner face of the top portion 8 of the cap member and snugly surrounds the upper portion of the depending cap-shaped member. When the cap member is in closed position, the gasket 18 lies between the top portion 8 of the cap member and that portion of the container surrounding the opening 2, so that said opening is effectively sealed. Due to the great resiliency of the spring fingers 14, the gasket is relieved of undue pressure and grinding action, so that its life is materially lengthened. The gasket is also protected from the contents of the container.

To remove the cap member, it is only necessary to turn it in the reverse direction, whereupon the spring fingers 14 will ride down the cam faces and the cap member may be lifted bodily from the container.

What I claim is:

1. A closure device for containers having spaced recesses and cam portions, comprising a cap member having a top portion and a hollow cup-shaped locking portion providing an air chamber within said cup-shaped portion, said top portion being provided with a vent affording communication between the outside atmosphere and said air chamber, and said cup-shaped portion being provided with outwardly extending sheared fingers adapted to enter the recesses of the container and engage the cam portions thereof upon relative rotation of said cap member and said container, the formation of said sheared fingers providing an air vent which affords communication between the inside of the container and the air chamber within said cup-shaped portion.

2. A closure device for containers having spaced recesses and cam portions, comprising a cap member having a top portion and a hollow cup-shaped locking portion providing an air chamber within said cup-shaped portion, said top portion being provided with a vent affording communication between the outside atmosphere and said air chamber, and said cup-shaped portion being provided with outwardly extending sheared fingers adapted to enter the recesses of said container and engage the cam portions thereof upon relative rotation of said cap member and said container, the formation of said sheared fingers providing a baffled air vent which affords communication between the inside of said container and the air chamber within said cup-shaped portion.

3. A closure device for containers having spaced recesses and cam portions, comprising a cap member having a top portion provided with a centrally disposed dome and a hollow cup-shaped locking portion having its upper edge secured to said top portion around the dome thereof by a crimping operation, said top portion being provided in the dome thereof with a vent affording communication between the outside atmosphere and the air chamber within said cup-shaped locking portion, said locking portion being provided with outwardly extending sheared fingers adapted to enter the recesses of the container and engage the cam portions thereof upon relative rotation of said cap member and said container, the formation of said sheared fingers providing a vent which affords communication between said air chamber and the inside of said container.

4. A closure device for containers having spaced recesses in cam portions, comprising a cap member having a top portion and a cup-shaped locking portion secured thereto, opposed corner portions of said locking portion being sheared to provide locking fingers, the free outer end portions of said sheared fingers being adapted to enter the recesses of the container and engage the cam portions thereof upon relative rotation of said cap member and said container, said sheared fingers extending upwardly and outwardly from the bottom of said cup-shaped locking portion.

In testimony whereof I hereby affix my signature.

JAMES S. REID.