June 9, 1931. S. S. WEIL 1,808,801

VOLATILE LIQUID CONTAINER

Filed April 18, 1928 2 Sheets-Sheet 1

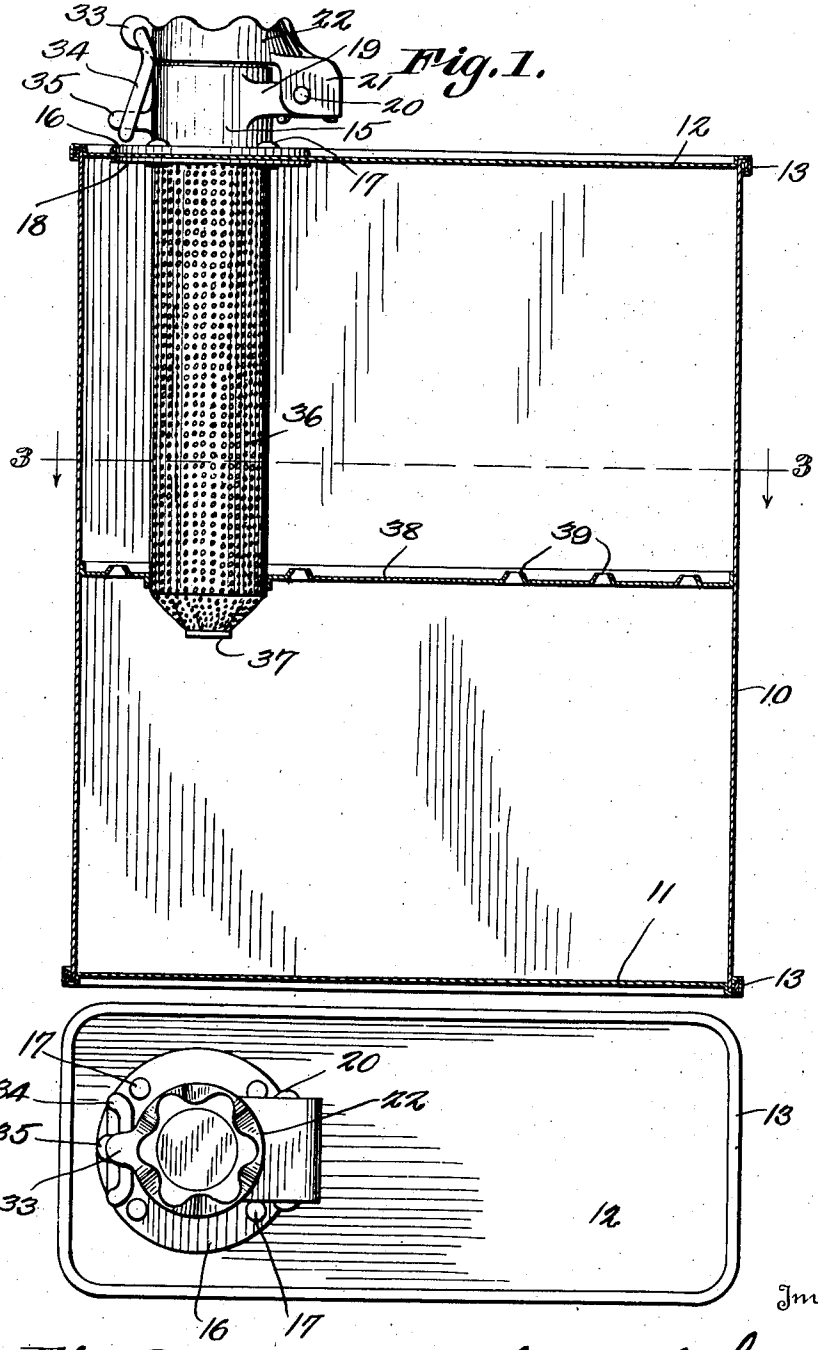


Fig. 1.

Fig. 2.

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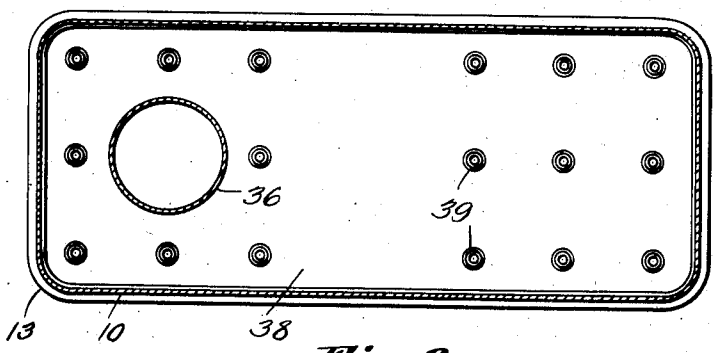


Fig. 3.

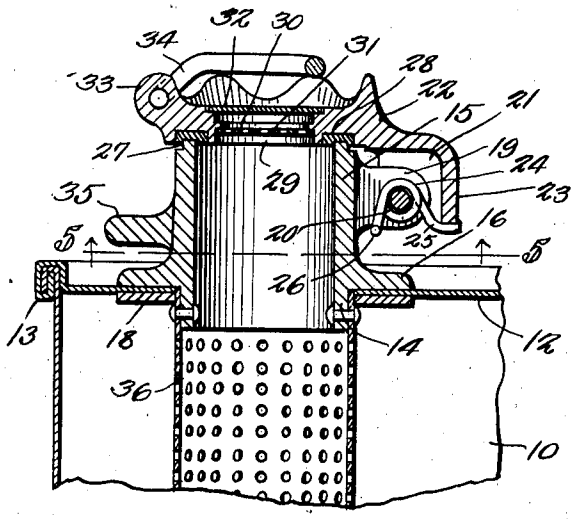


Fig. 4.

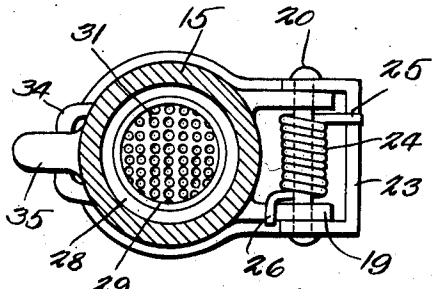


Fig. 5.

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UNITED STATES PATENT OFFICE

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VOLATILE LIQUID CONTAINER

Application filed April 18, 1928. Serial No. 271,087.

This invention relates to dispensing apparatus and has special reference to a dispensing can for the dispensing of volatile and inflammable liquids.

One important object of the invention is to provide an improved can of this character wherein the contents will be normally sealed from evaporation.

A second important object of the invention is to provide an improved can of this character wherein provision is made for releasing vapor pressure generated when the can becomes overheated and that without result of the contents of the can exploding.

A third important object of the invention is to provide an improved dispensing can so arranged that normally no air can reach the gas or liquid confined therein.

A fourth important object of the invention is to provide an improved can of this character having novel means for readily refilling and emptying the can of its contents.

A fifth important object of the invention is to provide a can of this character with means to prevent the contents from being carelessly or accidentally spilled when the receptacle is overturned or is by inadvertence left lying on its side or in an inverted position.

With the above and other objects in view as will be hereinafter apparent, the invention consists in general of certain novel details of construction and combinations of parts hereinafter fully described, illustrated in the accompanying drawings and specifically claimed.

In the accompanying drawings like characters of reference indicate like parts in the several views, and:

Figure 1 is a vertical transverse section through the can with certain of the parts shown in elevation.

Figure 2 is a plan view of the improved can.

Figure 3 is a section on the line 3—3 of Figure 1.

Figure 4 is an enlarged detail section through the delivery spout.

Figure 5 is a section on the line 5—5 of Figure 4.

In the present embodiment of the invention there is shown a can of conventional oblong form having a side wall 10, bottom 11 and top 12. The parts are all secured hermetically together by seaming and beading as indicated at 13. In the top 12 adjacent one side of the can is a suitable opening wherethrough extends the lower neck or stem 14 of a filling spout 15 which has a flange 16 circumferentially surrounding the upper part at the bottom thereof and resting on the top 12. This flange is secured to the top by any desired hermetic means as by brazing or the like and is additionally secured by rivets 17 which pass through the flange, the top 12 and through a reinforcing ring 18 resting against the underside of the top 12 beneath the flange 16. Thus this spout is fixed firmly in position. Projecting toward the center of the can from the spout is a pair of ears 19 through which passes a headed pin 20. This pin likewise passes through downwardly projecting lugs or ears 21 formed on the closure cap 22. This closure cap has a downwardly extending vertical flange 23 connecting the lugs or ears 21 and surrounding the pin 20 is a spring 24, one end 25 of which bears beneath the flange 23 while the other end 26 engages beneath one of the lugs 19 so that the cap 22 is always urged to closed position. The upper end of the spout is provided with a lip 27 which engages against a suitable packing washer 28 held in a groove on the underside of the cap 22. This cap 22 has an opening 29 therethrough and about midway the height of this opening is an inwardly projecting flange 30 against the underside of which is fixed a foraminous disk 31. The upper end of the opening 29 is also shouldered and on this shouldered portion rests an imperforate disk 32 which is secured in position by a fusible brazing alloy or may even itself be made of fusible metal. At the front side of the cap 22 there is provided a lug 33 in which is pivoted a latching loop 34 which, when the cap is closed, swings downwardly as shown in Figure 1 to engage a latching lug 35 secured to the spout by a suitable fusible brazing alloy.

Riveted or otherwise secured to the neck 14 is a foraminous strainer tube 36, the side walls of which are pressed together at the bottom and in which the bottom opening is closed by a suitable closure 37. This tube has its lower end extending through an opening formed in a baffle plate 38 which divides the interior of the can into lower and upper chambers and which has a series of openings formed therein each surrounded by a frusto-conical tubular projection 39.

In the operation of the device we may suppose that the can has been at least partially filled with a volatile liquid such as gasoline or the like. Naturally, there will be above the liquid itself a volume of vapor which will commonly consist of air mixed with vaporized volatile liquid and is thus consequently of a more or less explosive nature. Obviously, if it is desired to pour from the can the latching loop 34 is swung clear of the lug 35 and is used for a finger loop to raise the cap 22 against the action of the spring 24 whereupon the can may be poured from. Similarly, in filling the cap is thus raised. Now, if in the process of filling or emptying any of the liquid flowing out or the exterior vapor becomes ignited the can will not explode because of the fact that no flame can reach any portion of the interior of the can except that within the minutely foraminous tube 36. Moreover, should the can at any time be exposed to abnormal heat conditions so that the pressure within the can becomes excessive or the heat surrounding the can becomes excessive then the closure 32 will be released and the volatile liquid will escape through the minute openings in the foraminous plate 31 and in this manner flame will be prevented from reaching the interior of the can so that there can be no explosion of the can itself since to make such an explosion flame must reach the interior. This provides a can which is perfectly safe from accidental explosions. For instance, it would be possible to place a can of this construction in the middle of a fire and the only result would be that the escaping vapor would burn on top of the foraminous disk or closure 31 and this would continue until all of the contents of the can had evaporated without the can itself exploding.

There has thus been provided a simple and efficient device of the kind described and for the purpose specified.

It is obvious that minor changes may be made in the form and construction of the invention without departing from the material spirit thereof. It is not, therefore, desired to confine the invention to the exact form herein shown and described, but it is desired to include all such as properly come within the scope claimed.

Having thus described the invention, what is claimed as new, is:

1. In a volatile liquid container, a receptacle having a delivery opening, a closure for said opening having an opening communicating with the delivery opening, said closure having hinge connection with the receptacle at one side of the delivery opening, a fusible member cooperating with the closure to hold the latter closed over the opening, a disk normally closing the closure opening and adapted automatically to free the closure opening under abnormal heat conditions, and a foraminous tube extending downwardly from around said delivery opening and having a closed bottom, the sum of the cross sectional areas of the foramina in the tube being greater than the cross sectional area of the delivery opening.

2. In a volatile liquid container, a receptacle having a delivery opening, a closure for said opening having an opening communicating with the delivery opening, said closure having hinge connection with the receptacle at one side of the delivery opening, a fusible member cooperating with the closure to hold the latter closed over the opening, a disk normally closing the closure opening and adapted automatically to free the closure opening under abnormal heat conditions, a foraminous diaphragm in the closure opening between said disk and the delivery opening, and a foraminous tube extending downwardly from around said delivery opening and having a closed bottom, the sum of the cross sectional areas of the foramina in the tube being greater than the cross sectional area of the delivery opening.

3. In a volatile liquid container, a receptacle having a delivery opening, a closure for said opening having an opening communicating with the delivery opening, a disk normally closing the closure opening and adapted automatically to free the closure opening under abnormal heat conditions, a foraminous diaphragm in the closure opening between said disk and the delivery opening, a foraminous tube extending downwardly from around said delivery opening and having a closed bottom, the sum of the cross sectional areas of the foramina in the tube being greater than the cross sectional area of the delivery opening, and spring means between the first mentioned closure and the receptacle normally tending to retain the former in closed position.

In testimony whereof I affix my signature.

SYDNEY S. WEIL.