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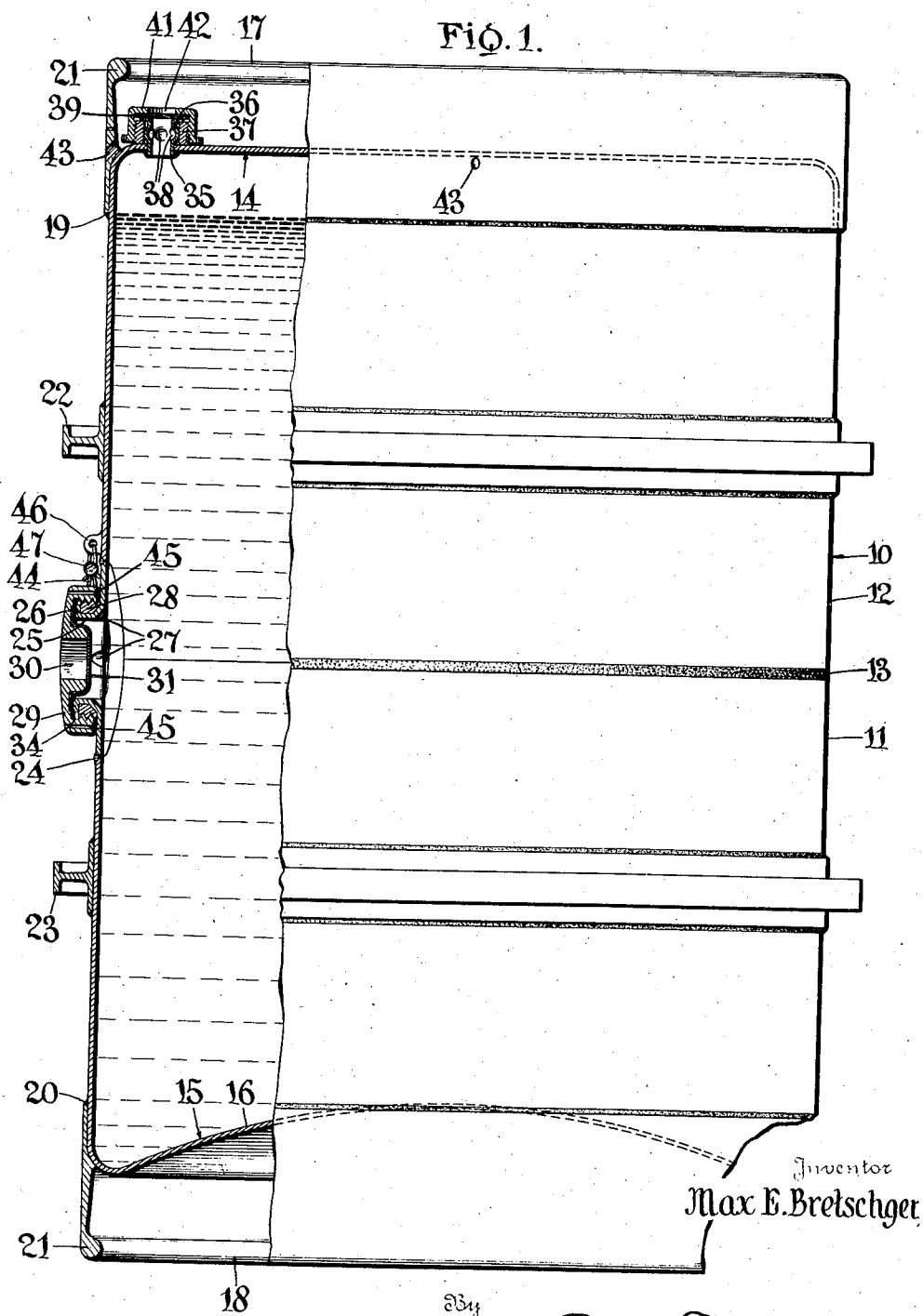
M. E. BRETSCHGER

2,071,679

VENDING CONTAINER

Filed Dec. 18, 1933

2 Sheets-Sheet 1



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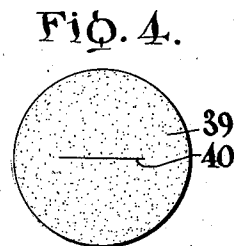
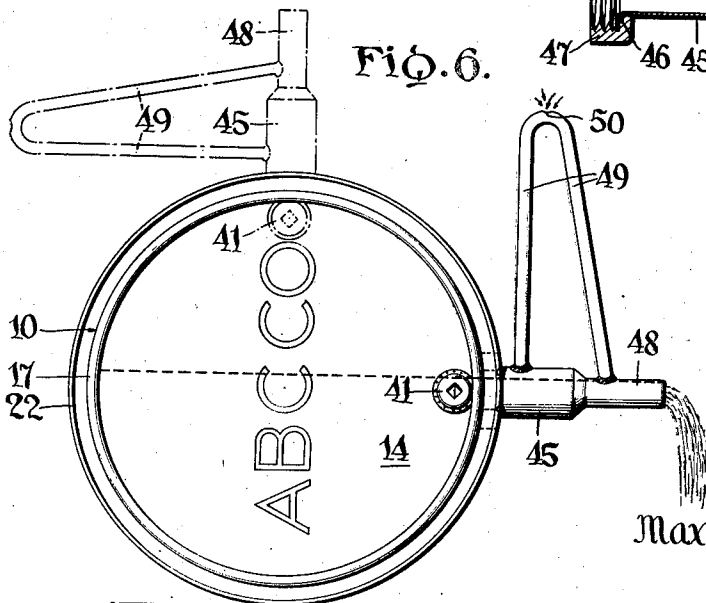
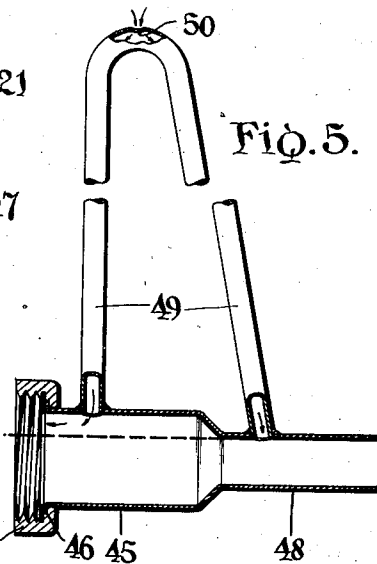
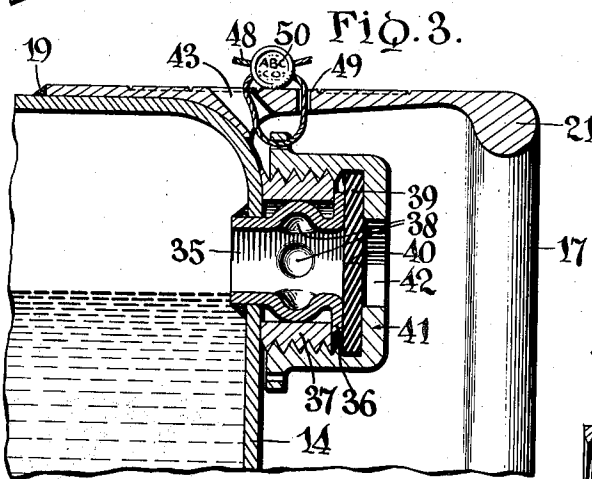
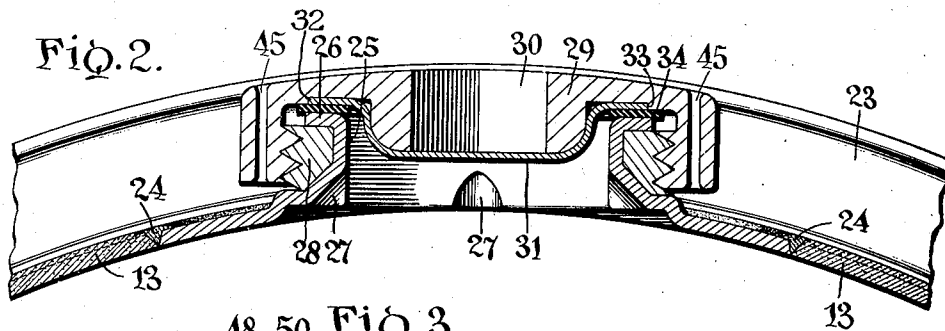
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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VENDING CONTAINER

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3 Claims. (Cl. 221-23)

This invention relates to a shipping and vending container for liquids and more particularly to a container and non-gurgling vending or dispensing container for corrosive liquids like hydrogen peroxide.

In the vending or discharging of certain types of liquids from containers it is of the utmost importance that a minimum of splashing occur due to the corrosive or inflammable nature of the liquid discharged. Numerous devices have been suggested to serve to this end but all suffer from some particular disadvantage.

An object of my invention is to provide a shipping and vending container for liquids, particularly hydrogen peroxide from which the liquid can be vended and discharged without gurgling, regurgitation or aspiration and therefore in a steady stream and with substantially no splashing.

In the drawings:

Fig. 1 shows a vertical section of the improved container;

Fig. 2 shows a fragmentary horizontal section through the container and the charging and discharging orifice;

Fig. 3 shows a fragmentary section through the improved safety valve;

Fig. 4 shows the resilient membrane of the safety valve;

Fig. 5 shows the non-gurgling spout and handle for the container; and

Fig. 6 shows the non-gurgling spout and handle connected to the container showing the non-gurgling discharge.

Referring more particularly to the drawings, a substantially cylindrical container or vessel is shown at 10 formed, when designed for storage of hydrogen peroxide, from a lower portion 11 of rolled aluminum, and an upper portion 12 welded to the lower portion at 13. This method of formation insures the production of a container having a minimum of irregularities and seams upon the interior thereof and decreases the possibility of degradation of the contained peroxide due to the physical effect of contact of the peroxide with excessive surface, sharp edges or a rugose surface. Seams and irregularities in the container are further reduced by forming the ends 14 and 15 of the upper and lower halves of the container by pressing or spinning to produce a rounded interior edge. This may also prevent strain and crystal distortion in the metal which might tend to induce decomposition of sensitive peroxide contained in the vessel.

Additional strength is imparted to the lower

end portion of the container by forming the end with an inwardly curved bottom portion 16.

The cylindrical container is provided with upper and lower chimes 17 and 18 welded to the exterior surface of the container as at 19 and 20. To facilitate the positioning of the container upon its chimes and to add additional strength thereto the free and extending portion of the chime is formed with the enlarged portion 21. Convenient drain holes 43 are formed in the chimes at suitable places to drain away collected liquid.

As containers for liquids are often moved from place to place within a plant, the container is provided with exteriorly positioned runners 22 and 23 which circumscribe the container and are of sufficient depth to extend outward from the container a greater extent than the charging and discharging orifice and cap as explained more fully hereafter.

As shown in Fig. 2 the sides of the charging and discharging orifice are formed from rolled aluminum sheet welded to the wall portions of the container at 24, and having an upwardly extending portion 25 defining the orifice, with an outwardly extending peripheral flange 26. The upwardly extending portion 25 is impressed with beads or teats 27 to hold the exteriorly threaded ring 28 surrounding portion 25 and retained against inadvertent displacement by engagement with the underside of the peripheral flange 26.

The charging and discharging orifice is closed with an interiorly threaded cap 29 adapted to engage the exteriorly threaded ring 28 and provided with a centrally located socket 30 in which a tool may be inserted to close and open the cap. In order to present a substantially unbroken surface of rolled aluminum sheet to the action of the hydrogen peroxide, the substantially circular piece of sheet aluminum 31 is pressed into the underside of cap 29 to form the cap liner, the edges 32 of the sheet 31 bearing against the shoulder 33 formed in the underside of cap 29. A fluid tight joint is produced by inserting the rubber or fabric washer 34 between flange 26 and the peripheral portions of cap liner 31. Cap 29 is closed tightly against washer 34 and maintained in position against inadvertent displacement by wire 44 passing through holes 45 drilled in the cap adjacent the periphery thereof and the drilled lug 46, wire 44 being sealed with a sealing device 47.

Hydrogen peroxide being a volatile liquid and one which will, under certain conditions, decompose, the container must be provided with a safety

valve which can be readily formed in the aluminum or attached thereto and which is formed of parts having substantially no adverse effect upon the stability of the peroxide. I provide, in one end of the container and preferably adjacent the edge thereof and substantially in the same sectional plane as the orifice 25, a thimble 35, the lower end of which projects through and is welded smoothly to the walls of the container, the upper end terminating in the outwardly projecting flange 36 which retains the exteriorly threaded ring 37 in proper position as do the teats 38 formed in the thimble. The valve proper is a resilient member such as the rubber disc 39, seen in plan in Fig. 4, which is carefully slitted, as at 40, that rests upon the upper edge of flange 36 and is maintained in proper position by means of the interiorly threaded cap 41 which bears the disc against the flange 36. Cap 41 being formed with the socket portion 42, the central portion of the disc 39 and slit 40 are exposed and excessive pressure within the interior of the container presses the disc outwardly and opens the slit whereby the excess pressure is relieved. I have found this type of valve very efficient in operation both with pressures built up by gases as well as liquids, and have found no leakage of liquid when subjecting the valve to a head of about ten feet or with air pressure of about twenty five pounds per square inch. These requirements are far in excess of the usual operating requirements, since in shipping the container is normally placed upright with the valve at the top with the liquid level as shown in Fig. 1, while in use the liquid level is as shown in Figs. 3 and 6. Valve cap 41 is secured in place by passing wire 48 through drain 43 and a hole 49 in chime 17 and secured by sealing means 50.

In order to provide the trade with a safe means of discharging or vending the peroxide from the container, I provide a discharge spout of special shape which also acts as a handle or lever in turning the container when placed in a rack or upon a gantry. The non-gurgling spout prevents regurgitation or aspiration so common in the usual discharge spouts. The spout, shown in Fig. 5, comprises an inner conduit portion 45 terminating at one end in the outwardly extending flange 46 engaging the interiorly threaded collar nut 47 adapted to be fastened to the exteriorly threaded ring 28 upon removal of cap 29 and cap liner 31, and an outer nozzle portion 48, the internal diameter of which is less than that of inner conduit 45.

A curved conduit 49 has fluid communication with spout portion 45 as well as with the reduced end or nozzle portion 48 and to prevent gurgling, aspiration or regurgitation upon pouring or vending liquid from the container, fluid communication is had between the atmosphere and the interior of conduit 49 through the port or breather hole 50 positioned in conduit 49 between the point of communication of conduit 49 with spout 45 and nozzle 48 and preferably in that portion of conduit 49 which is normally the upper or outer side, as for instance at the outer portion of the elbow as shown in Fig. 5.

It will be seen that a non-gurgling discharge is obtained from my container and spout due to entrance of air through port 50 which enters spout 45 and due to the relatively restricted opening in nozzle 48 travels into the container against the current of discharging liquid and so maintains sufficient pressure in the container to prevent aspiration or regurgitation and hence permits a non-gurgling discharge.

What I claim is:

1. A discharge spout for a liquid container comprising an inner conduit portion and an outer nozzle portion, the internal diameter of the nozzle portion being less than that of the conduit, connecting means upon the conduit for attachment to a container, and another conduit having fluid communication with said first conduit and with said nozzle, said second conduit being curved and having communication with the atmosphere.
2. A dispensing container comprising a vessel having an opening in the periphery thereof, a spout comprising an inner conduit and an outer nozzle portion attached to said vessel at said opening, and a conduit having fluid communication with said first named conduit and said nozzle curved to form a handle for turning said vessel, and means in said second named conduit communicating with the atmosphere whereby air enters said conduits and vessel when liquid is discharged therefrom.
3. A discharge spout for a container comprising an inner conduit portion for connection to a container and an outer nozzle portion communicating with said conduit and having an internal diameter less than that of the conduit, and another conduit connected to said first conduit and said nozzle and having fluid communication therewith and with the atmosphere intermediate the points of connection.

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