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2,574,931

CONTAINER FOR CORROSIVE FLUIDS

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FIG. 1

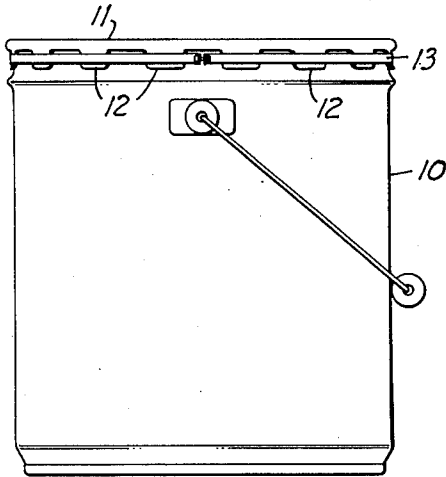


FIG. 2

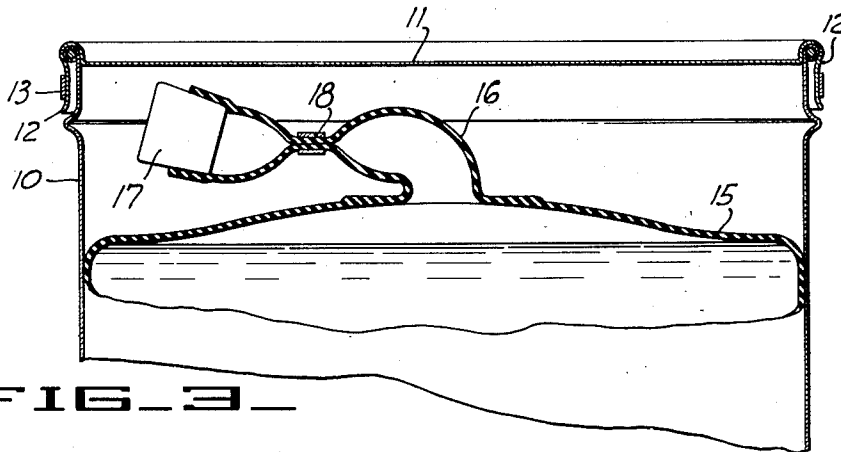
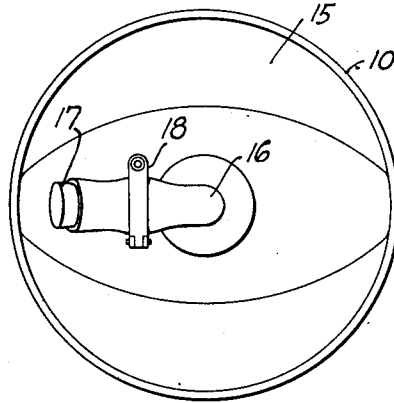
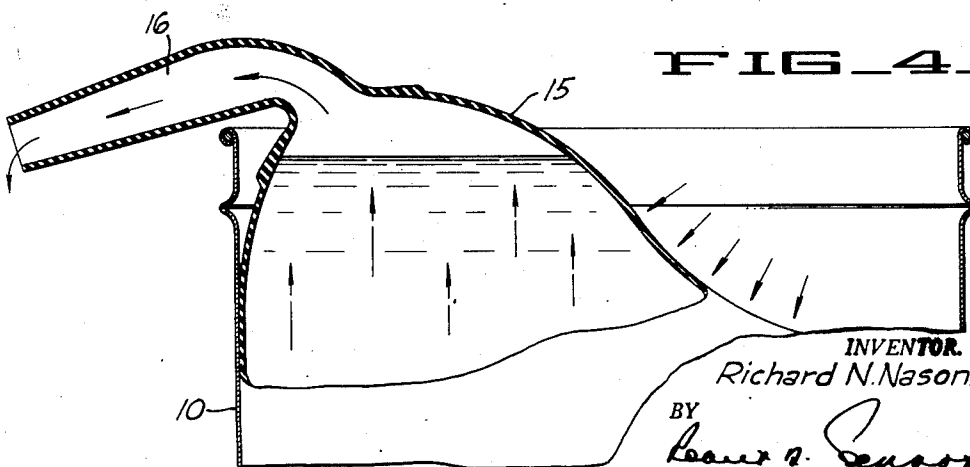


FIG. 3

FIG. 4



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CONTAINER FOR CORROSIVE FLUIDS

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1 Claim. (Cl. 222-95)

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This invention relates to a shipping container for corrosive liquids, and more specifically to an export shipping package for muriatic acid.

Many difficulties are encountered in the transportation of corrosive liquids. It is usually economically infeasible to utilize a container of material having all the qualities necessary such as rigidity, strength, corrosion-resistance, etc. Solutions of the problem involve internal coating of metallic containers with varnishes or like coatings designed to resist the action of the corrosive liquid. Glass jars or carboys protected by bulky and heavy frameworks are employed for acids.

It is an object of my invention to provide a shipping container of a composite nature, having sufficient strength and rigidity to withstand abuse, to provide adequate safety in use and enabling the contents to be withdrawn with ease and safety as desired.

The invention includes other objects and features of advantage some of which, together with the foregoing, will appear hereinafter wherein is disclosed a container embodying the present preferred embodiment of the invention.

In the drawing constituting a part of this specification, Figure 1 is an elevation of a complete container embodying a present preferred embodiment of the invention.

Figure 2 is a top view with removable drum head removed.

Figure 3 is a fragmentary section of the outer container with a portion of the inner container shown in section.

Figure 4 is a like section showing the operation of forcing the liquid from the inner container.

The outer container specifically shown comprises an outer cylindrical container 10 having a removable end closure 11 having a plurality of downwardly depending ears 12. The ears 12 are encompassed by a surrounding band 13 which can be drawn taut by suitable means to retain the closure in sealing position. A bail is usually provided for handling the container.

This container is adapted for the shipment of corrosive liquids by employment of a separate internal container 15 made by flexible and non-corroding materials such as rubber, artificial rubber, a flexible plastic material such as rubber hydro-halide and like materials. The inner container is made in approximately the inner shape of the container 10, except for its vertical height. The container 15 is provided with a tube 16 of suitable length secured at the top. The tube is closed by any suitable means as a stopper 17 and by a clamp 18 which serves to deform the tube

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and pinch the sidewalls together as is shown in Figures 2 and 3.

In use, the inner container 15 is placed in the outer container 10 and is then filled to about 80%-95% of capacity; the tube 16 is then closed as by means of the stopper and the clamp. The size of the inner container is such that when the inner container is filled the outer container has a free space (as appears in Figure 3) of about 5-10% when the cover is secured thereon. This free space permits expansion of the contents in the flexible container without exerting an expansive pressure on the container 10 or cover 11.

The corrosive liquid thus does not at any time come in contact with the metal or other material in the container 10, which thus need not be of a corrosion resistant material. Thus container 10 can be of metal as shown, or of fibre, or may be of wood so long as it is capable of supplying the necessary strength to withstand rough handling, piling one on top of the other, etc.

A particular advantage of the construction disclosed is provided in removal of the contained fluid; with the tube 16 extending over the upper edge of the outer container 10, as indicated in Figure 4, the stopper 17 and the clamp 18 being absent, pushing down on one side of the container 15 is effective to force the desired quantity of fluid from container 15 at the feed rate desired without the lifting or tipping of the outer container and without the fluid coming in contact with the outer container. The package is thus satisfactory for the shipment of corrosive materials, and for the easy dispensing thereof in a laboratory or like place of use. The combination permits the employment of relatively cheap material so that it may be used as a one-trip container, if desired. The total weight is small and the volume waste is at a minimum.

I claim:

A shipping package for corrosive liquids comprising a rigid tubular outer container, an inner container of flexible, liquid-imperious sheet material shaped to conform generally to the shape of the outer container, said outer container having an open upper end of sufficient diameter to admit the hand, a closure removable from said upper end to expose the interior of said container and said inner container through said tubular upper end, and a flexible filling tube secured to an upper portion of the inner container and deformable for closing and of a length sufficient to extend beyond and over an upper edge of the outer container to discharge liquid from said inner container upon manual manipulation thereof as by forcing the walls of the inner con-

tainer against the walls of the outer container by pressure with the hand extended through said open upper end.

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