

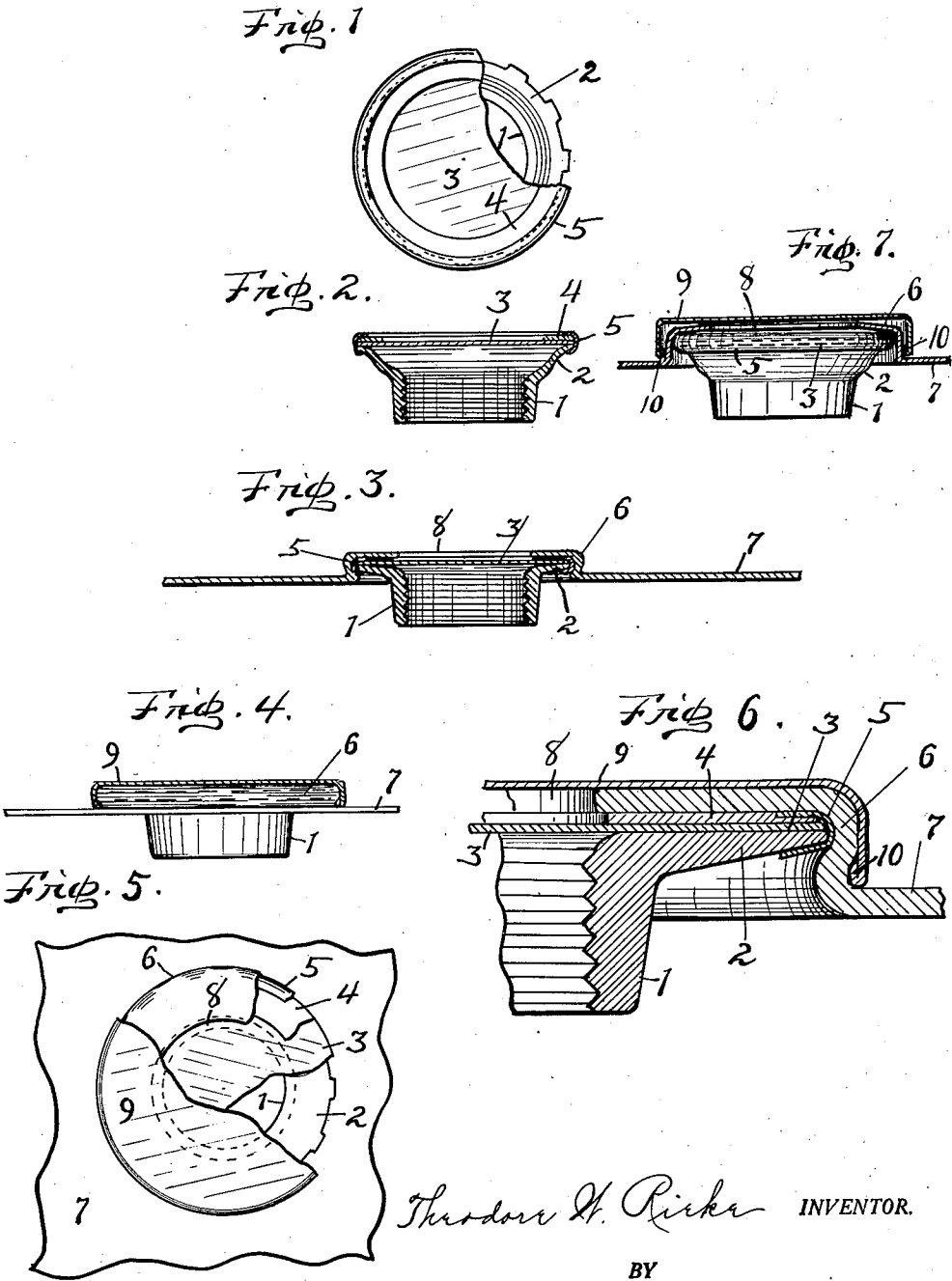
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SPILE FOR A LIQUID CONTAINER

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## SPILE FOR A LIQUID CONTAINER

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6 Claims. (Cl. 220—39)

This invention relates to improvements in spiles for liquid containers, and the object thereof is to provide in a container a bushing having an opening therein that is closed during shipment by a leak-proof disc that may easily be punctured to permit inlet of air to relieve vacuum in the container that is occasioned upon withdrawal of the content of the container through its outlet. A further object of the invention is to provide a seal for the spile fixture to protect said disc from accidental injury or unauthorized interference during shipment.

The invention is applicable to that type of bung fixtures wherein a bushing is installed in the wall of a metal container, and is herein shown in connection with that type of bung fixture for sheet metal containers set forth in Letters Patent No. 1,783,927, issued to me December 2, 1930.

An illustrative embodiment of the invention is shown in the accompanying drawing, in which:—

Fig. 1 is a top plan view showing an assembly of a bushing, frangible disc, packing ring and a binder therefor, a portion being broken away;

Fig. 2 is a vertical section of the assembly projected from Fig. 1, the assembly being shown in the form as prepared for installation in the wall of a container;

Fig. 3 is a vertical section of the assembly installed in a container wall;

Fig. 4 is a side elevation of the structure shown in Fig. 3 with a seal-cap applied thereto, the seal-cap being shown in section;

Fig. 5 is a top plan view of the structure shown in Fig. 4, parts being broken away.

Fig. 6 is a fragmentary vertical section of the complete assembly drawn upon an enlarged scale; and

Fig. 7 is an elevation of the assembly, the emplacement and the seal-cap shown in their relative arrangement preparatory to being clinched together, parts being in section.

The illustrative embodiment of the invention consists of a bushing ring 1 having at one end thereof a radially disposed flange 2. Upon the flanged end of the bushing is disposed a frangible disc 3 formed of a thin sheet of ductile metal, and upon the disc is positioned a packing ring 4, the marginal edges of said disc and packing ring being secured to the flange 2 of the bushing by means of a binder 5 consisting of an annulus formed of thin sheet ductile metal shaped so as to extend over the outer margin of the packing ring 4 and beneath the flange 2, thus

holding the packing ring, frangible disc and bushing permanently together.

The assembly constituted of the bushing 1, disc 3, gasket 4 and binder 5 is then conveniently installed in an emplacement 6 formed in the wall 7 of a container (not shown) in a manner similar to that set forth in my said Letters Patent above referred to. The emplacement 6 has an opening 8 that is alined with the bore of the bushing 1, which, if so desired, may be closed by a suitable seal-cap 9. Preferably, the seal-cap is provided with an internal bead 10 that extends around the edge of its rim and which, when the cap is in place, encompasses the neck of the emplacement and underlies the head thereof.

When the assembly is initially formed, the flange 2 of the bushing is conical, as shown in Fig. 2, and during the installment of the assembly in the emplacement the flange 2 is flattened and expanded outwardly which causes the annular wall of the emplacement to become folded outwardly so as to slightly overhang the wall 7 of the container, as shown in Figs. 3, 4 and 6. By placing the seal-cap upon the emplacement before the bushing assembly is installed and confining it in a suitable die (not shown) the cap becomes secured firmly on the emplacement upon subsequent installation of the bushing assembly because of the lateral enlargement of the emplacement above the bead. (Figs. 7 and 6.)

Considerable pressure is applied in the usual manner in securing the bushing assembly and the seal-cap in connection with the emplacement, and due to the applied pressure the packing ring 4 is tightly compressed between the disc 3 and the overlying adjacent face of the emplacement so that leakage through the bushing, past the disc into the opening 8 is thereby obviated.

In use, containers equipped with this invention are generally provided also with a separate bung fixture (not shown) of any suitable type to permit the container to be filled. When it is desired to withdraw the content from the container through said bung fixture air is admitted to the container for the purpose of relieving vacuum therein by first prying the seal-cap 9 off of the emplacement and then puncturing the frangible disc 3 by use of any suitable instrument.

Upon removal of the seal-cap its rim becomes expanded and more or less mutilated which precludes fraudulent re-use thereof. Also, the disc 3, after being punctured, indicates that the con-

tainer has been opened, and the plate being permanently secured, prevents replacement thereof. In this manner unauthorized tampering with the content of the container, through the spile, is circumvented.

I claim:

1. In a spile fixture for sheet metal containers, a container wall having formed therein an emplacement provided with an opening therein, an assembly consisting of a bushing having at one end thereof an external flange, a frangible disc on the flange closing the bushing, a packing ring on said disc, and a binder consisting of an annulus formed of thin sheet metal shaped so as to extend over the outer margin of said ring and beneath said flange to secure the disc, ring and bushing together, said assembly being installed in said emplacement to form a leak-proof closure for the opening in said emplacement, and a seal-cap on said emplacement covering said opening and having a bead underlying the outer edge of said emplacement.

2. In a spile fixture for sheet metal containers, a container wall having formed therein an emplacement provided with an opening therein, and an assembly consisting of a bushing having at one end thereof an external flange, a frangible disc on the flange closing the bushing, a packing ring on said disc, and a binder consisting of an annulus formed of thin sheet metal shaped so as to extend over the outer margin of said ring and beneath said flange to secure the disc, ring and bushing together, said assembly being installed in said emplacement to form a leak-proof closure for the opening in said emplacement.

3. A spile fixture for a sheet metal container, that has formed in its wall an emplacement pro-

vided with an opening therein, consisting of a bushing, a frangible disc secured atop said bushing, and a gasket secured atop said disc, said bushing, disc and gasket constituting an assembly adapted to be bodily installed in the emplacement in such container and close the opening therein immediately at its lower end when so installed.

4. In combination with a container having an emplacement in its wall provided with a spile opening, an assembly adapted to be secured in said emplacement to provide a leak-proof closure for said opening, said assembly consisting of a bushing, a frangible disc closing the top of said bushing, a packing on the top of the disc, and an annulus holding said bushing, disc and packing together.

5. In combination with a container having an emplacement in its wall with an opening therein, a gasket, a frangible disc, and a bushing, said bushing, disc and gasket being so arranged when installed in said emplacement that said disc is rigidly held over the top of the bushing beneath said gasket to form a leak-proof closure for said opening.

6. In combination with a container having an emplacement in its wall provided with a spile opening, a bushing, a frangible disc and a bushing therefor secured atop said bushing, said bushing, disc and gasket constituting an assembly that when installed in said emplacement said disc and gasket are rigidly held between the top of the bushing and the adjacent face of the emplacement to form a leak-proof closure for said opening, and a seal-cap applied to said emplacement exteriorly to close said opening therein.

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