

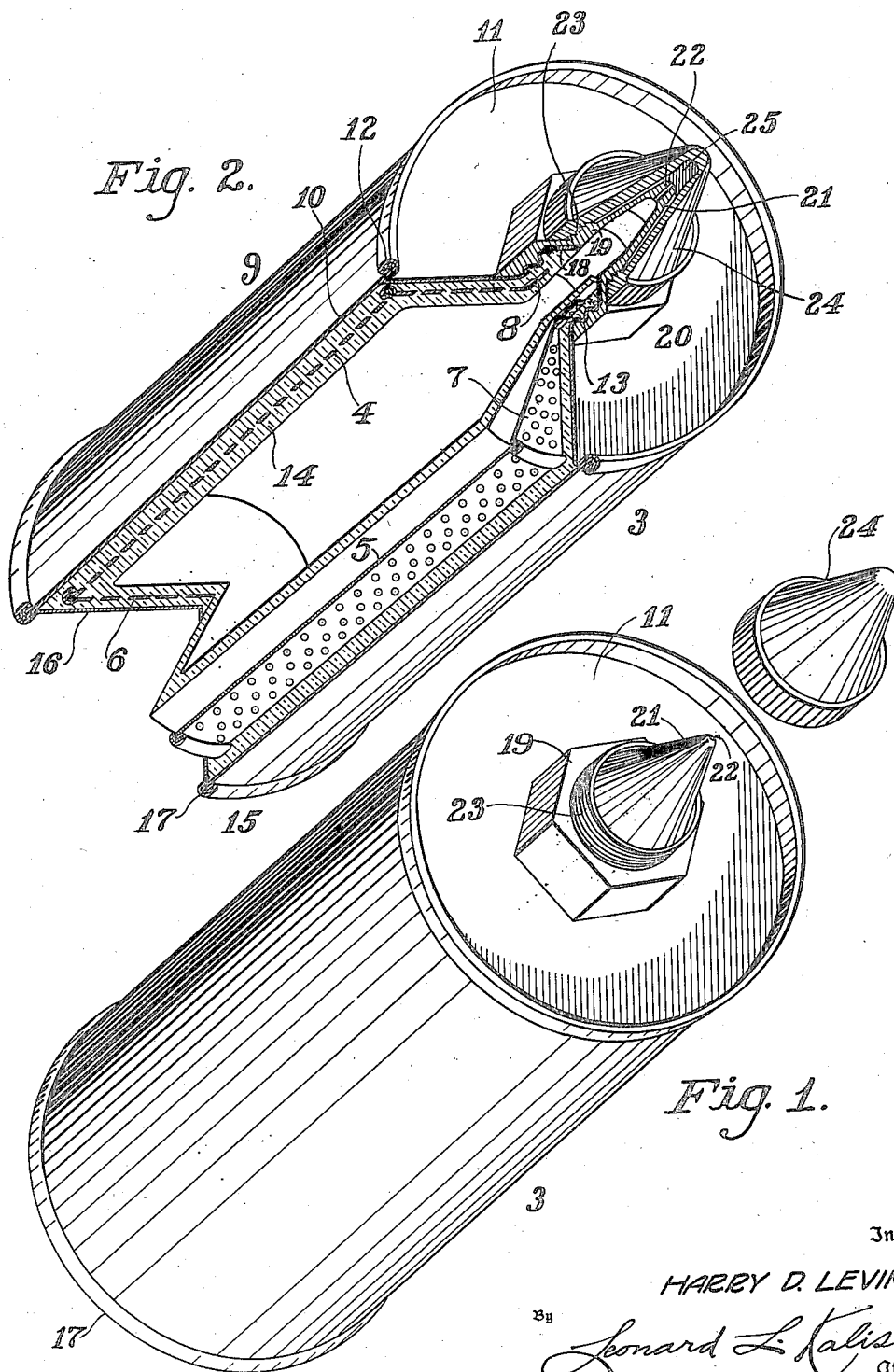
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H. D. LEVINE

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CONTAINER

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Inventor

HARRY D. LEVINE

By *Leonard L. Kalish*
Attorney

UNITED STATES PATENT OFFICE

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CONTAINER

Harry D. Levine, Philadelphia, Pa.

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11 Claims. (Class 206—2)

My invention relates to a new and useful shipping and applicator container for hydrofluoric acid or a solution of hydrofluoric acid, or other corrosive fluids.

My invention relates more particularly to a container of the character stated, which will be durable and resistant to the physical strains and stresses incident to normal use, and which will also resist the chemical action of the hydrofluoric acid solution.

The object of my invention is to provide an inexpensive container which will have all the physical strength and durability of a metallic container and which will at the same time have the chemical resistance of the generally more resistant non-metallic substances, such as hard rubber, paraffin wax or the like.

With the above and other objects in view, my invention consists of a container including a layer of inert organic material in which is embedded a sheet of perforated metal generally co-extensive with the organic layer, and an outer imperforate metallic shell, and a quick-detachable closure member formed of an acid resisting material.

My invention further consists of other novel features of construction, all of which will appear more fully from the following detailed description.

For the purpose of illustrating my invention, I have shown in the accompanying drawing a form thereof which is at present preferred by me, although it is to be understood that the various instrumentalities of which my invention consists can be variously arranged and organized, and that my invention is not limited to the precise arrangement and organization of the instrumentalities as herein shown and described.

Referring to the drawing in which like reference characters indicate like parts,

Figure 1 represents a perspective view of a container embodying my invention,

Figure 2 represents a similar perspective view, partly broken away to expose to view the interior construction of the wall of the container.

In making the container 3 of the present invention, I first form a can-like shell 4 of perforated sheet metal, having a cylindrical body 5, a bottom 6, a top 7, both seamed to the cylindrical body 5 in any suitable manner, as for instance by the lock seam shown, and also preferably having a slight neck portion 8.

The perforated sheet metal shell 4, is then dipped in molten paraffin wax or other suitable acid-resisting organic material, until a sufficient

amount of the material is coated on to both sides of the perforated sheet metal and fills the openings in said sheet metal.

An outer can-like body 9, of imperforate sheet metal is then formed, having a cylindrical body portion 10, a top 11 seamed thereto, as at 12, by any suitable conventional seaming method, and having a screw-threaded, flanged opening 13.

The perforated sheet metal shell 4, having a coating 14 of paraffin wax or other suitable acid-resistant material, is then inserted into the outer housing 9, through the bottom end 15 thereof, before the bottom member 16 is applied to the cylindrical shell 10. Any clearance which may then exist between the outer surface of the paraffin 14 and the inner surface of the cylindrical shell 10 and the top 11, is then preferably also filled with additional paraffin wax or similar material by pouring such molten material into the clearance or gap;—thereby completely filling the space between the perforated sheet metal shell 4 and the imperforate sheet metal shell 9, as indicated particularly in Figure 2. Thereupon the bottom 16 is applied and seamed to the shell 10 in any suitable manner, as for instance upon a conventional capping machine, which forms the seam 17.

The paraffin wax is then applied to the interior of the free end of the screw-threaded flange 13, so as completely to conceal the inner metallic neck portion 8. A rubber gasket or washer 18 is then applied and the hard rubber nozzle member 19 is then firmly secured onto the screw-threaded flange 13, thereby completely concealing all metallic portions and providing a passageway 20 for the flow of acid or acid solution without contact with any metallic portions.

The hard rubber nozzle member 19 preferably terminates in a generally conical tip 21 having a suitable small opening 22 in its end and is also provided with an external thread 23 adapted to receive the correspondingly and internally threaded closure cap 24. The closure cap 24 preferably contains a small piece of soft rubber in its small end, which is adapted to bear against the apertured tip of the nozzle 19, thereby to prevent the drippage of acid through the aperture 22 when the container is closed.

The container of the present invention is thus not only ideally suited for shipping and handling of hydrofluoric acid or similar materials, but is also ideally suited for the application of such acid where needed.

Thus, the container of the present invention is also particularly adapted for use in laundries

and similar industries, where small amounts of hydrofluoric acid solution must be applied by operators. Thus, by removing the screw cap 24, the container may be handled in such a way as to discharge small amounts, even drops, of the hydrofluoric solution through the aperture 22, without danger to the operator or without harm to the container.

It will be appreciated that the container of the present invention is particularly suitable because it resists physical strains as well as chemical reaction, and is not subject to breakage as ordinary wax or hard rubber containers are.

I am aware that my invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof, and I therefore desire the present embodiment to be considered in all respects as illustrative and not restrictive, reference being had to the appended claims rather than to the foregoing description to indicate the scope of the invention.

I claim:—

1. A container of the character stated, comprising an outer metallic shell, an inner body of a relatively soft acid-resistant, thermoplastic material of relatively low melting point, a relatively form-retaining porous shell embedded in said thermo-plastic material, and a generally tubular discharge nozzle of a relatively hard and of a relatively higher melting point acid-resistant material, affixed to the outer metallic shell;—said inner body of relatively soft acid-resistant thermo-plastic material extending into said outer metallic shell into operative juxtaposition to said discharge nozzle, so as to form a continuation of the internal discharge passageway of said nozzle.

2. A container of the character stated, comprising an outer form-retaining shell, an inner body of a relatively soft acid-resistant, thermoplastic material of relatively low melting point, a relatively form-retaining porous shell embedded in said thermo-plastic material, and a generally tubular discharge nozzle screw-threadedly attached to said outer form-retaining shell;—said inner thermo-plastic material extending into the screw-threaded portion of said discharge nozzle.

3. A container of the character stated, comprising an outer form-retaining shell and an inner form-retaining shell, the former impermeable and the latter permeable, an acid-resistant material within said outer shell and extending to within said inner shell and permeating and concealing the latter, and a generally tubular discharge nozzle of relatively hard acid-resistant material screw-threadedly secured to said outer shell with the internal passageway thereof generally contiguous to said acid-resistant material and with the juncture between the two sealed against the passage of fluid through said juncture.

4. A container of the character stated, comprising an outer form-retaining shell having a generally cylindrical nozzle-receiving portion, an inner form-retaining shell in spaced relation thereto, an acid-resistant material intermediate said two form-retaining shells and extending to within the inner form-retaining shell and concealing the latter, and a discharge nozzle carried by said nozzle-receiving portion of the container in operative relation thereto, formed of a form-retaining acid-resistant material having a melting point substantially above said first-mentioned acid-resistant material.

5. A container for corrosive liquids comprising an outer form-retaining shell including a metallic end-disc, a screw-threaded flange extending from

said metallic end-disc, a relatively soft corrosion-resistant material lining the entire inside of said outer form-retaining shell, and extending into said screw-threaded flange, a relatively hard corrosion-resistant nozzle screw-threadedly secured to said flange, and means to form a seal between the nozzle and said corrosion-resistant lining material within said screw-threaded flange, thereby to shield said screw-threaded flange from the liquid contents of the container.

6. A container for corrosive liquids comprising an outer form-retaining shell including a metallic end-disc, a screw-threaded flange extending from said metallic end-disc, an inner form-retaining shell of permeable character within said outer shell and in spaced relation thereto and generally co-extensive therewith, a relatively soft corrosion-resistant material lining the inside of said outer form-retaining shell as well as the entire inside of said inner permeable shell and permeating the latter, and extending into said screw-threaded flange, a relatively hard corrosion-resistant nozzle screw-threadedly secured to said flange, and means to form a seal between the nozzle and said corrosion-resistant lining material within said screw-threaded flange, thereby to shield said screw-threaded flange from the liquid contents of the container.

7. A container for corrosive liquids comprising an outer form-retaining shell including a metallic end-disc, a screw-threaded flange extending from said metallic end-disc, a corrosion-resistant material lining the entire inside of said outer form-retaining shell, and extending into said screw-threaded flange, a corrosion-resistant nozzle having an internal screw-thread and being screw-threadedly secured thereby to said screw-threaded flange and having also an external screw-thread, and a corrosion-resistant cap adapted to be detachably secured to said nozzle by means of said external screw-thread on said nozzle.

8. A container for corrosive liquids comprising an outer form-retaining shell including a metallic end-disc, an inner corrosion-resistant lining completely lining said outer form-retaining shell and extending through said metallic end-disc in generally tubular formation, and a corrosion-resistant nozzle secured to said end-disc and surrounding the portion of said inner lining which extends through the end-disc in tubular formation.

9. A container for corrosive liquids comprising an outer form-retaining shell having a metallic end-disc, an inner perforated metallic shell disposed within said outer shell in generally spaced relation thereto, and being generally co-extensive therewith, a corrosion-resistant material completely lining said outer shell and also completely lining said inner shell and permeating the latter, and a corrosion resistant nozzle secured to said metallic terminal disc in sealed relation to said corrosion-resistant material within said shells.

10. A container for corrosive liquids comprising an outer form-retaining shell including a metallic end-disc, a screw-threaded flange carried by said metallic end-disc, a corrosion-resistant material lining the entire inside of said outer form-retaining shell, and a relatively form-retaining corrosion-resistant nozzle screw-threadedly secured to said flange and covering one side of said flange;—said corrosion-resistant lining material covering the other side of said screw-threaded flange and extending into close proximity of said nozzle so as to shield said screw-

threaded flange from the liquid contents of the container.

external screw-thread;—said corrosion resistant lining covering one side of said metallic flange and extending into close proximity of said nozzle so as to shield said metallic flange from the liquid contents of the container, and a corrosion-resistant cap adapted to be detachably secured to said nozzle by means of said external screw-thread on said nozzle.

11. A container for corrosive liquids comprising an outer form-retaining shell including a metallic end-disc, a metallic flange carried by said metallic end-disc, a corrosion-resistant material lining the entire inside of said outer form-retaining shell, a corrosion-resistant nozzle having a basal flange in telescoping relation to said metallic flange and secured thereto and having also an

HARRY D. LEVINE. 10