

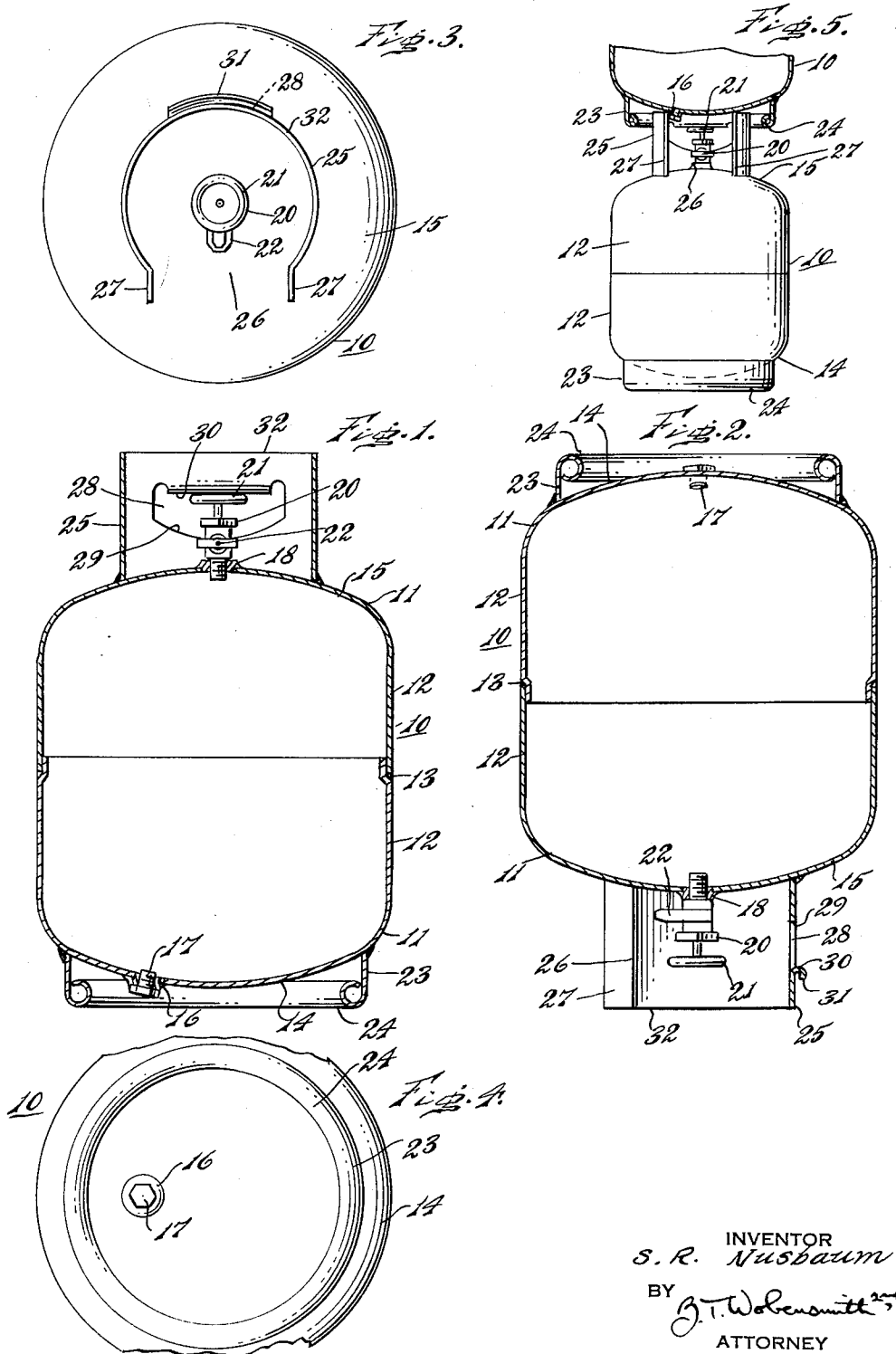
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DISPENSING CONTAINERS FOR REFRIGERANTS

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DISPENSING CONTAINERS FOR REFRIGERANTS 5

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5 Claims. (Cl. 222—4)

This invention relates to dispensing containers for refrigerants.

In the dispensing of pressurized refrigerants, and particularly the fluorinated hydrocarbons such as Freon, in some systems the refrigerant is required to be introduced in gaseous form for charging the system while in other systems the refrigerant is required to be introduced in liquid form.

No wholly satisfactory dispensing container has heretofore been available for this multiple purpose. Certain of the dispensing containers heretofore available did not permit of access to the discharge control valve when the container was positioned for liquid delivery, or were unstable and incapable of self support at the end at which the control valve was located, or had other objectionable characteristics.

It is the principal object of the present invention to provide a dispensing container for pressurized refrigerants which may be used with either end up as required, and which with the valved end at the bottom is disposed and supported to permit of access to the valve for control of the dispensing.

It is a further object of the present invention to provide a dispensing container for pressurized refrigerants and the like which is stable for support by either end and which has accessible provisions at one end for controlling the dispensing of the contents in whichever selected and end supported position the container is placed.

It is a further object of the present invention to provide a dispensing container for pressurized refrigerants which can be readily stacked with a plurality of like containers for reducing the space required for storage.

It is a further object of the present invention to provide a dispensing container for pressurized refrigerants having at one end thereof a collar for positioning the remainder of the container with respect to a supporting floor or the like, which has provisions for aiding in handling the container in the form of a built-in handle on the collar, in which the collar provides easy access to the valve from one side of the container for controlling the dispensing.

Other objects and advantageous features of the invention will be apparent from the description and claims.

The nature and characteristic features of the invention will be more readily understood from the following description, taken in connection with the accompanying drawings forming part thereof, in which:

Figure 1 is a vertical central sectional view of a dispensing container in accordance with the present invention in one position for use;

Fig. 2 is a vertical central sectional view of the dispensing container of Fig. 1, rotated through an angle of ninety degrees and turned to another position for use;

Fig. 3 is an elevational view as seen from the top of Fig. 1;

Fig. 4 is an end view, as seen from the bottom of Fig. 1; and

Fig. 5 is a side view partly in elevation and partly in

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section illustrating one mode of stacking the dispensing containers in accordance with the invention.

It should, of course, be understood that the description and drawings herein are illustrative merely, and that various modifications and changes can be made in the structure disclosed without departing from the spirit of the invention.

Like numerals refer to like parts throughout the several views.

Referring now more particularly to the drawings, the dispensing container in accordance with the invention preferably includes a fluid-tight container 10 of sheet metal of suitable thickness to withstand the pressures encountered in use and, as illustrated, is made of two similar parts 11 having circular cylindrical wall sections 12 in meeting relation and with a suitable welded joint 13 at the meeting locations. End heads 14 and 15 are provided, outwardly dished or convexed, and formed as extensions of and integral with the wall sections 12.

The end head 14, in offset relation to the longitudinal axis of the container 10 is provided with a spud 16 in which a fusible safety plug 17 is mounted for release upon attaining excessive pressures in the interior of the container 10. The other end head 15, in alignment with the central longitudinal axis of the container 10 is provided with a spud 18 within which a dispensing needle valve 20 is mounted in threaded engagement. The valve 20 is provided with a rotatable handle 21 for manual operation and a side discharge connection 22 for the delivery of the material to be discharged transversely with respect to the longitudinal axis of the container 10.

The end head 14 is provided with a circular rim or flange 23 extending therefrom concentric with the side wall sections 12 which may be curled interiorly for added strength and which has an end marginal edge 24 to position the end head 14 at a distance from any surface with which it is in engagement and serves to protect the safety plug 17. The flange 23 provides for supporting the container with the end head 14 downwardly, if desired.

The opposite end head 15 is provided with an elongated collar 25, arcuate in transverse cross section, and of a length, longitudinally considered, beyond the handle 21 of the valve 20 of the order of one and three quarters to two inches, for purposes to be explained.

The curved part of the collar 25 is preferably of lesser diameter than that of the flange 23 at the opposite end, but is of sufficient size to clear the safety plug 17 upon stacking, as hereinafter explained.

The collar 25 is provided with a side opening 26 towards which the discharge connection 22 of the valve 20 is disposed for side access and may be provided with spaced sidewise extending parallel wings 27 integral therewith if desired.

The collar 25 is secured to the end head 15 in any desired manner, preferably by welding. The collar 25 at the side opposite the opening 26 is provided with a slot 28 having a curved margin 29 towards the end head 15 and a straight margin 30 away from the end head 15 and with an outwardly curled handle rim 31 to provide a handle for manual handling of the container. The outer or end margin 32 of the collar 25 positions the end head 15 at a distance from any surface with which it is in engagement so that the collar 25 supports the container 10 with easy access to the valve handle through the side opening 26 for regulating the discharge of the refrigerant.

The mode of use will now be explained.

In the dispensing of pressurized refrigerants, and particularly fluorinated hydrocarbons such as Freon, for some purposes it is desired to introduce the refrigerant in gaseous form into the system to be charged. For this purpose the container 10 can be positioned as illus-

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trated in Fig. 1 with ready access to the handle 21 of the valve 20 either through the opening 26 in the collar 25 or at the open end of the collar 25 surrounded by the end margin 32. The exact amount of refrigerant to be charged can be readily controlled by manipulation of the valve 20 by turning of the valve handle 21.

If it is desired, however, to charge a system with refrigerant in liquid form, the container 10 is positioned as shown in Fig. 2 and is supported by the collar 25 in upright position with the end margin 32 in engagement with the supporting surface. The valve handle 21 is accessible for manual operation through the opening 26 with the container 10 supported in a stable condition by the collar 25.

As illustrated in Fig. 5, a plurality of the containers 10 in accordance with the invention can be readily stacked, one above the other and with the end margin 32 of the collar 25 in direct engagement with an end head 14 interiorly of the flange 23.

The container 10 may be readily moved, as desired, by inserting the fingers either interiorly within the collar 25 or exteriorly of the collar through the handle slot 28 and in engagement with the handle rim 31 to move the container 10 to the desired location and position for use.

I claim:

1. In a dispensing container for pressurized dispensing refrigerant in liquid form, a fluid tight container having opposite ends, at least one of said ends having a longitudinally axially disposed extension therefrom of lesser diameter than the container for supporting said container with said one end downwardly disposed for liquid refrigerant dispensing, said extension having a side access opening therein, and a dispensing valve disposed within said extension and mounted on said one of said ends, said dispensing valve having a discharge connection extending sidewise with respect to the longitudinal axis of the extension and towards said access opening, said valve having an operating handle spaced inwardly from the outer marginal edge of the extension, said extension being of a length with respect to the length of said valve to permit manual access to said valve handle through said access opening with said container supported by said extension and with said valve handle downwardly disposed.

2. In a dispensing container for dispensing pressurized refrigerant in liquid form, a fluid tight container having opposite ends, at least one of said ends having a longitudinally axially disposed collar secured thereto and extending therefrom for supporting said container with said one end downwardly disposed for liquid refrigerant dispensing, said collar having a side access opening therein, and a dispensing valve disposed within said collar and mounted on said one of said ends, said dispensing valve having a discharge connection extending sidewise with respect to the longitudinal axis of said collar and towards said access opening, said valve having an operating portion spaced longitudinally inwardly from the outer marginal edge of said collar, said extension being of a length with respect to the length of said valve to permit manual access to said valve portion through said access opening with said container supported by said extension and with said valve downwardly disposed.

3. In a dispensing container for dispensing pressurized refrigerant in gaseous or in liquid form, a fluid tight container having opposite ends, longitudinally axially disposed hollow container supporting extensions of different diameters than said container extending from said ends, one of said extensions supporting said container for dispensing refrigerant in gaseous form and one of said extensions supporting said container for dispensing re-

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frigerant in liquid form, a dispensing valve connected to said container and disposed within one of said extensions, said one extension having a side access opening extending from said one end to the outer marginal edge thereof, and a dispensing valve mounted on said one end within said extension and having a discharge connection extending sidewise with respect to the longitudinal axis of said one extension and towards said access opening, said valve being disposed downwardly for dispensing refrigerant in liquid form, said valve having an operating handle spaced inwardly from the outer marginal edge of said extension for manual access through said access opening when said container has said extension in supporting relation thereto with its outer marginal edge in engagement with a supporting surface, said extension being of a length with respect to the length of said valve to permit manual access to said valve handle through said access opening with said container supported by one of said extensions with said valve handle disposed downwardly.

4. In a dispensing container for dispensing pressurized refrigerant in liquid form or in gaseous form, a fluid tight container having opposite ends, longitudinally axially disposed hollow container supporting extensions of different diameters and of lesser diameter than said container connected to and extending from said ends, one of said extensions supporting said container for dispensing refrigerant in liquid form and one of said extensions supporting said container for dispensing refrigerant in gaseous form, a dispensing valve connected to one of said container ends and disposed within one of said extensions, said one extension having a side access opening extending from said one end to the outer marginal edge thereof, said dispensing valve having a discharge connection extending sidewise with respect to the longitudinal axis of said one extension and towards said access opening, said valve having an operating handle spaced inwardly from the outer marginal edge of said one extension for manual access through said access opening when said container has said extension in supporting relation thereto with its outer marginal edge in engagement with a supporting surface, and said one extension having a handle opening therethrough opposite said access opening, said extension being of a length with respect to the length of said valve to permit manual access to said valve handle through said access opening with said container supported by one of said extensions with said valve handle disposed downwardly.

5. In a dispensing container for selectively dispensing pressurized refrigerant in liquid or gaseous form, a fluid tight container having an interior liquid containing space and having exteriorly disposed thereon and secured to each of its opposite ends and extending therefrom a longitudinally axially disposed supporting collar, each of said collars having a supporting end face for supporting said container with a selected one of said ends downwardly disposed, a dispensing valve communicating with said space and an operating member therefor mounted on one of said ends, said dispensing valve having a discharge outlet for the connection of delivery piping, one of said collars supporting said container for liquid discharge from said space and the other of said collars supporting said container for gas discharge from said space.

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