

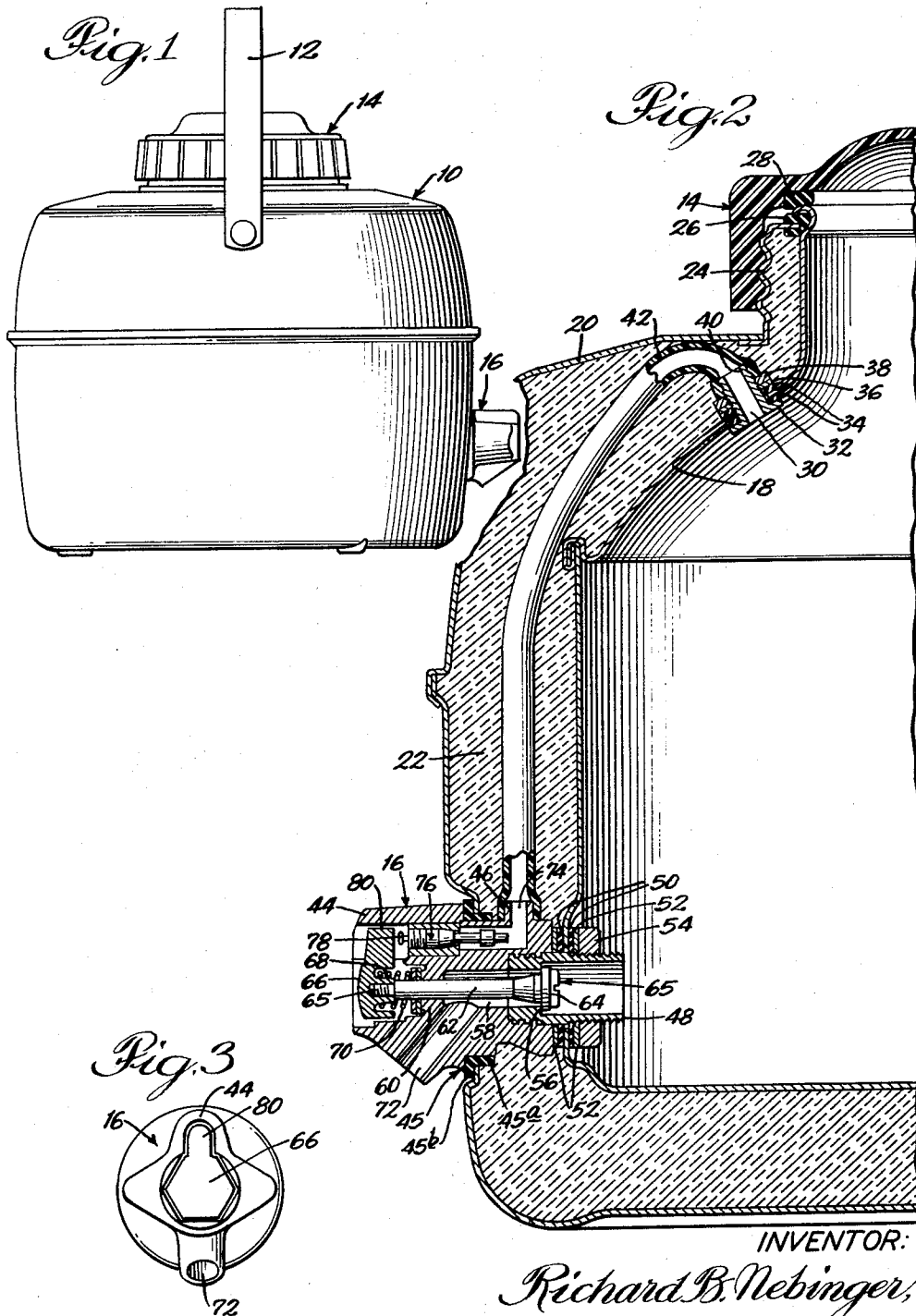
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SELF-VENTING CONTAINER

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1

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SELF-VENTING CONTAINER

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This invention relates to a vented, thermally-insulated jug and more particularly to an improved fluid discharge control for such a jug.

Vented, thermally-insulated jugs are, of course, quite well known. Heretofore, when a jug was provided with a spigot-controlled gravity-discharge system, venting of the jug was accomplished either by unscrewing the jug's top cap, to unseal the jug, or by providing a vent opening in or near the top of the jug, which was either always open to the atmosphere or could be readily uncapped for that purpose.

The first method of venting had drawbacks in that an extra operation is required to permit proper operation of the spigot-controlled discharge. The user's forgetting to unscrew the cap initially, or forgetting to screw it back on after use, all contribute to improper and unsatisfactory jug usage.

The second venting method is frequently unsatisfactory in use, since when a filled jug is tipped over, the liquid will leak out through the open vent path.

The object of this invention is to provide a vented jug construction which avoids the aforementioned problems by providing a single control for substantially simultaneously opening both the fluid discharge means and the vent means for the jug.

Another object of this invention is to provide a vented jug construction wherein the fluid discharge passageway and venting passageway are normally closed by valve means which may be selectively opened substantially simultaneously by a single control member, to effect proper and desired fluid discharge from the jug.

Further objects and advantages of this invention will become apparent as the following description proceeds and the features of novelty which characterize this invention will be pointed out with particularity in the claims annexed to and forming part of this specification.

A preferred embodiment of this invention is shown in the accompanying drawings, in which:

Figure 1 is a side elevation view showing a thermally-insulated jug equipped with the new fluid discharge control.

Figure 2 is an enlarged, fragmentary, vertical cross-section view through the insulated jug, and illustrates the important details of said control.

Figure 3 is an elevation view of the exterior of the control, and is taken looking substantially from the left of Figure 2.

Referring now to the drawings, there is shown a thermally-insulated jug generally indicated at 10, which is provided with a pivotable handle, or bail, 12 and with a closure cap, or lid, 14 for the top of the jug. Projecting laterally from the side of the jug, adjacent the lower end thereof, is a control generally indicated at 16.

More specifically, the jug 10, as can best be seen in Figure 2, comprises a fluid-tight inner shell 18, adapted to receive and hold the jug's contents, and an outer shell 20, which are assembled in spaced relationship to define

2

a space 22 therebetween which substantially insulates the inner shell 18 from the outer shell 20. The space 22 may, if desired, be filled with suitable insulating material, as is well known in the art. The outer shell 20 is appropriately threaded at its upper end at 24 to receive a screw-threaded closure cap 14. A suitably formed sealing gasket 26 is provided between the inner shell 18 and outer shell 20 to effect the necessary sealing off of insulating space 22 between the shells. The cap 14 carries an annular washer-like sealing gasket 28 which is adapted to clamp against the upper lip of the jug mouth to effect proper sealing of the interior of the jug. What has been described thus far is well known in the art, and merely forms the basic environment in which the invention of this application is disposed.

The inner shell 18 is provided with a vent opening 30 which communicates with the interior of the jug near the top thereof. The vent opening 30 is defined by means of a ferrule 32 which is positioned in an aperture formed in shell 18, and which ferrule is appropriately mounted on the wall of shell 18 by means of a pair of sealing washers 34, a bearing washer 36, and a nut 38 which, together with the flanged head of the ferrule 32, operates to secure the ferrule 32 in position on shell 18. The tubular stem of ferrule 32 is appropriately threaded to receive the nut 38. A portion of the stem of ferrule 32 extends beyond the nut 38 to define a tubular stud 40 onto which one end of a resilient air-tight vent tube 42 may be press fit, to be secured in position. The vent tube 42 is wholly disposed in the space 22 between the shells.

The lower end of the jug is provided with the fluid-dispensing control 16, and more particularly includes a fitting member 44 which extends through an aperture in the outer shell 20. An annular sealing and mounting gasket 45 surrounding fitting 44 is positioned in said aperture in the outer shell 20 and cooperates therewith to maintain the insulating space 22 air tight. The gasket 45 provides a tubular portion 45a, disposed between the fitting 44 and the edges of the aperture in shell 20, and a washer-like portion 45b which is clamped between fitting 44 and an annular wall portion of shell 20 which surrounds said aperture.

The fitting 44 defines, in part, an upstanding tubular stud 46, over which the lower end of resilient, air-tight, vent tube 42 may be press fit, to establish communications between the bore in stud 46 and the vent opening 30. The fitting 44 also has a threaded recess into which is screwed a tubular stud 48, which is of a length and is so positioned as to extend through the wall of inner shell 18, to establish communication with the interior of the jug. The stud 48, and the fitting 44 to which it is connected, is rigidly secured to the wall of inner shell 18 by means of sealing washers 50 disposed on opposite sides of shell 18, bearing washers 52 for cooperation with the sealing washers 50, and a nut 54 which is threaded onto the exterior of the tubular stud 48. The outermost washer 52 abuts against the fitting 44 to establish a very rigid connection for the mounting of stud 48 and fitting 44 on the jug.

The interior of stud 48 is shaped to define an annular valve seat 56, and the bore of annular stud 48 communicates outwardly past valve seat 56 with a fluid-receiving passageway 58 formed in the fitting 44. The fitting 44 also defines an upright, internal, wall portion 60 which is apertured, or bored, to slidably receive a tubular valve stem 62 extending therethrough and carrying at the extended end thereof an annular, resilient, sealing valve member 64 adapted for seating against valve seat 56. An elongated threaded bolt 65 extending through tubular valve stem 62 operates to clamp sealing valve member 64 against the enlarged end of stem 62 and also protrudes be-

3

yond the opposite end of stem 62 to receive thereon a control button 66. The underside of control button 66 is annularly recessed at 68, and a coil spring 70, positioned in annular recess 68 for reacting against upright wall 60, is operative to normally bias sealing valve member 64 to its normal closed position, as seen in Figure 2.

The fitting 44 is shaped to define a downwardly depending discharge portion having a discharge spout bore 72 therethrough which communicates at its upper end with the fluid-receiving passageway 58.

The fitting 44 is further bored, or formed, with an air passageway 74 therethrough which extends through the upwardly extended tubular stud 46 and then turns to pass laterally in substantially parallel spaced relation to passageway 58. Mounted in the outer end of passageway 74 is a normally closed, spring-biased, air-valve 76 of well-known construction, which may be screw-threaded into position, and which has an outwardly extending stem 78, by means of which passage through the air-valve may be controlled.

The control button 66 is shaped to define an upwardly extending button extension 80, which is positioned oppositely of and in slightly spaced relation to the outermost end of air-valve stem 78, so that when the control button 66 is depressed slightly inwardly against the bias of spring 70, the button extension 80 operates to engage air-valve stem 78, and, thereafter, further depression of button 66 operates to simultaneously open fluid-control valve 64 and air-valve 76.

It will thus be seen that the air-valve 76 is normally closed and constitutes vent valve means for preventing passage of air through passageway 74, the vent tube 42, and vent opening 30 to the interior of the jug. At the same time, the drain-valve means for the jug is normally closed by valve member 64, and this prevents discharge of liquid through the drain opening. The control button 66 constitutes a single manual control which is positioned for operative association with both the drain-valve means and the vent-valve means so that both said valve means are substantially simultaneously opened when the button 66 is depressed, thereby permitting controlled gravity discharge of liquid from the jug. While the control button 66 is shown mounted for reciprocal movement so as to operate both the drain-valve means and the vent-valve means, it will be understood that other types of control button movement, such as pivotal or rotary, may be utilized to effect said substantially simultaneous opening of the drain-valve and vent-valve means.

While there has been shown and described a particular embodiment of this invention, it will be obvious to those skilled in the art that various changes and modifications may be made therein without departing from the invention and, therefore, it is intended in the appended claims to cover all such changes and modifications as fall within the true spirit and scope of the invention.

What is claimed is:

1. A combination drain and venting means for an insulated jug of the type having a double-walled construction defining an insulating space between inner and outer wall shells of the jug, an openable top for the jug through which liquid may be introduced into the inner shell of said jug, and drain means adjacent the bottom of the inner shell of said jug for selectively dispensing liquid from the jug; said combination drain and venting means comprising, in combination: means defining a vent opening in

4

the inner shell of the jug adjacent the top of the jug; valve body means carried by said jug and defining therein an elongated drain passageway means, one end of which opens through the inner shell of the jug adjacent the bottom thereof and the other end of which is below said one end and terminates outwardly of the outer shell of said jug, and an elongated air-bleed passageway means, one end of which is positioned in said insulating space of the jug and the other end of which terminates outwardly of the outer shell of said jug; air-bleed means located wholly within said insulating space of the jug and communicating said one end of the bleed passageway means to said vent opening; first valve means for selectively opening and closing said drain passageway; second valve means for selectively opening and closing said air-bleed passageway; and a single manual control for substantially simultaneously opening or closing both said drain passageway and said air-bleed passageway, to permit selective draining of liquid from the inner shell of said jug while the top of the jug is maintained closed.

2. A combination drain and venting means for an insulated jug of the type having a double-walled construction defining an insulating space between inner and outer wall shells of the jug, an openable top for the jug through which liquid may be introduced into the inner shell of said jug, and drain means adjacent the bottom of the inner shell of said jug for selectively dispensing liquid from the jug; said combination drain and venting means comprising, in combination: means defining a vent opening in the inner shell of the jug adjacent the top of the jug; valve body means carried by said jug and defining therein an elongated drain passageway means, one end of which opens through the inner shell of the jug adjacent the bottom thereof and the other end of which is below said one end and terminates outwardly of the outer shell of said jug, and an elongated air-bleed passageway means, one end of which is positioned in said insulating space of the jug and the other end of which terminates outwardly of the outer shell of said jug; air-bleed means located wholly within said insulating space of the jug and communicating said one end of the bleed passageway means to said vent opening; first valve means including a normally closed, spring-biased, first valve member for selectively opening and closing said drain passageway; second valve means including a normally closed, spring-biased, second valve member for selectively opening and closing said air-bleed passageway; and a single manual control for substantially simultaneously moving said spring-biased valve members of said first and second valve means in the same direction away from their normally closed positions to permit selective draining of liquid from the inner shell of said jug while the top of the jug is maintained closed.

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