

- [54] SQUEEZE GRIP CLOSURE AND HANDLE ASSEMBLY FOR VACUUM BOTTLE
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- [58] Field of Search 222/474, 473, 472, 470, 222/465, 469, 210, 152, 556, 517; 215/13 A, 55; 220/36

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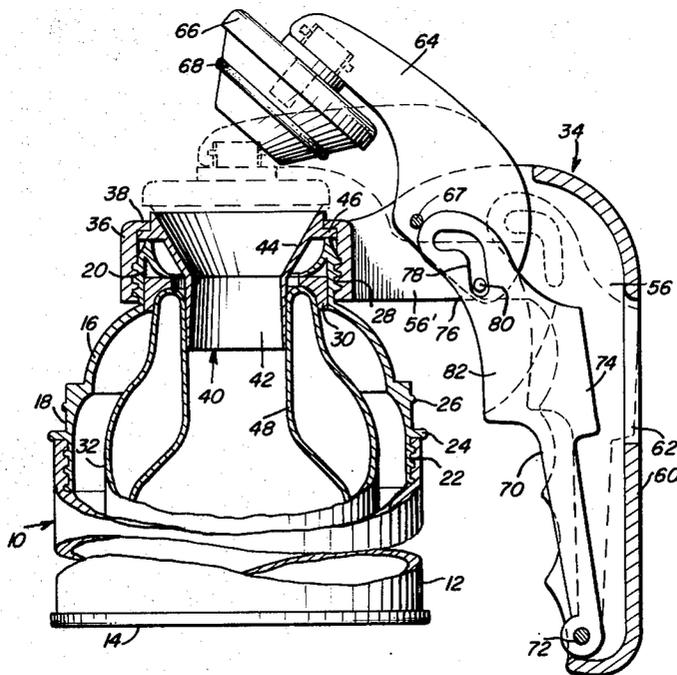
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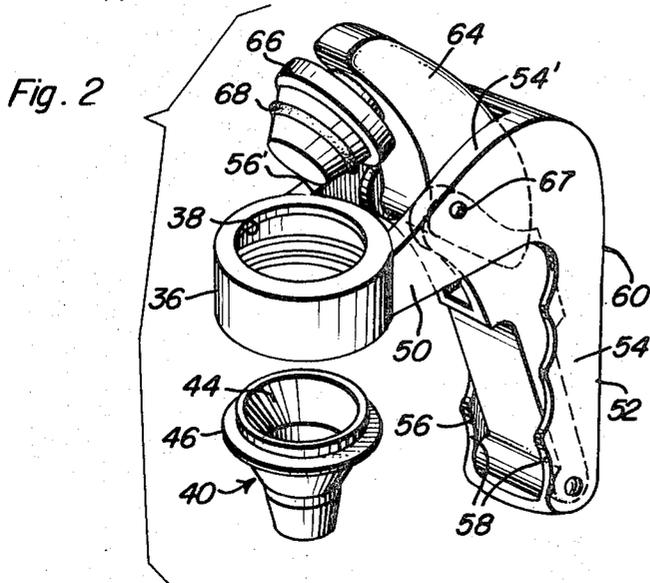
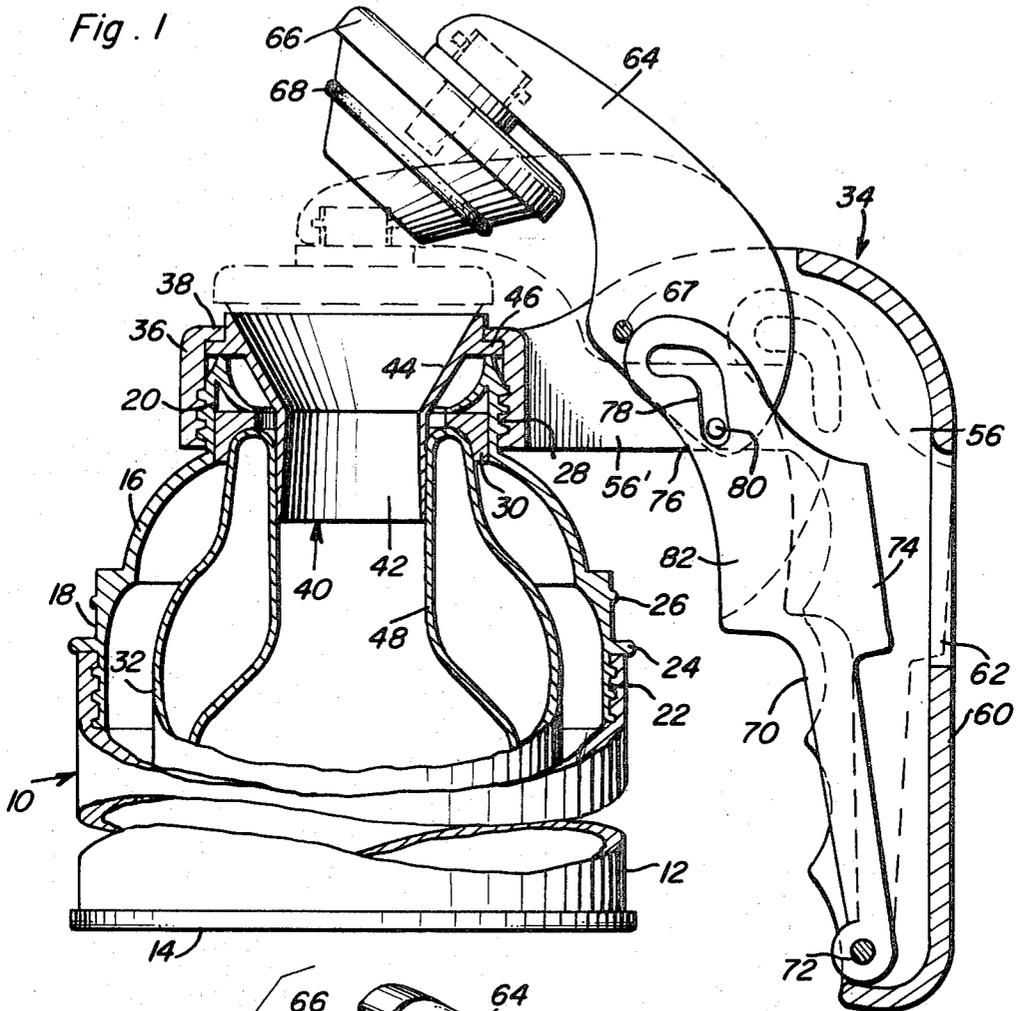
[57] **ABSTRACT**

An internally threaded mounting ring including a lat-

erally outwardly displaced and axially extending handle. The mounting ring is engageable with the externally threaded neck of a vacuum bottle and includes an outer end radially inwardly projecting retaining flange for overlying the end edge of the neck of the associated vacuum bottle. A sleeve is also provided and includes a small diameter end for tight telescopic engagement within the neck of the associated vacuum bottle and the opposite larger diameter end of the sleeve is provided with a radially outwardly extending circumferential flange to be held captive against the outer end edge of the neck of the vacuum bottle behind the retaining flange of the mounting ring. The outer large diameter end of the sleeve defines an outwardly facing annular seat and a support arm has one end thereof pivotally supported from the handle of the mounting ring for oscillation about an axis disposed outwardly of the ring and normal to its center axis. The other end of the arm has a tapered stopper-type closure mounted thereon for swinging movement with the arm into and out of seated engagement with the outer end of the sleeve retained in position by the mounting ring. In addition, the handle includes an oscillatable actuator operatively connected with the arm upon which the stopper-type closure is mounted whereby the actuator may be manipulated at the handle to swing the stopper-type closure into and out of position closing the opening of the vacuum bottle.

6 Claims, 2 Drawing Figures





SQUEEZE GRIP CLOSURE AND HANDLE ASSEMBLY FOR VACUUM BOTTLE

The closure and handle assembly of the instant invention has been primarily designed to provide an easy to use handle for a vacuum bottle and a closure for the vacuum bottle remotely actuatable from the handle with ease to open the pouring neck of the associated bottle whenever it is desired to pour some of the contents therefrom or to pour liquids into the vacuum bottle.

The entire closure and handle assembly is removably threadedly supported from the externally threaded neck of the associated vacuum bottle. The threads formed on the outer surfaces of the neck of the vacuum bottle are otherwise used to threadedly support a closure cap from the neck of the vacuum bottle. These threads are in addition to those external threads on the adjacent larger diameter body portions of the vacuum bottle from which drinking cups are conventionally threadedly supported in position closing the aforementioned closure cap within the drinking cup.

The main object of this invention is to provide a closure and handle assembly for conventional vacuum bottles which may be readily attached to vacuum bottles and utilized as a convenient means to support the vacuum bottles when pouring and to open and close the outlet neck of the associated vacuum bottle before and after closing, respectively.

Another object of this invention is to provide a closure and handle assembly in accordance with the preceding object and which may be readily constructed so as to be adaptable for securement to substantially all types of vacuum bottles.

A final object of this invention to be specifically enumerated herein is to provide a closure and handle assembly for a vacuum bottle which will conform to conventional forms of manufacture, be of simple construction and easy to use so as to provide a device that will be economically feasible, long lasting and relatively trouble free in operation.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIG. 1 is a fragmentary elevational view of a conventional form of vacuum bottle with the handle and closure assembly of the instant invention mounted thereon, the handle and closure assembly and adjacent portions of the associated vacuum bottle being illustrated in vertical section; and

FIG. 2 is an exploded perspective view of the handle and closure assembly.

Referring now more specifically to the drawings, the numeral 10 generally designates a conventional form of vacuum bottle including an outer cylindrical housing 12 having a bottom wall 14 and a generally cylindrical neck 16, including large and small diameter ends 18 and 20, secured to the upper end of the housing 12.

The large diameter end of the neck 16 is externally threaded as at 22 and includes a circumferentially extending abutment flange 24. The threaded portion 22 of the large diameter end 18 is threadedly engaged in the internally threaded upper end of the housing 12. Also, the large diameter end 18 of the neck 16 is exter-

nally threaded as at 26 above the flange 24 which abuts the upper end of the housing 12. The threads 26 are conventionally utilized to threadedly removably secure an inverted drinking cup over those portions of the neck 16 disposed above the flange 24, the inverted drinking cup not being illustrated.

The small diameter end 20 the neck 16 is externally threaded as at 28 and a sealing and compression ring 30 is disposed within the small diameter end 20 and is utilized to retain the double walled liner 32 in position within the housing 12. The threads 28 are conventionally utilized to secure a threaded closure cap over the small diameter end 20 of the neck 16 within the aforementioned inverted drinking cup, the closure cap also not being illustrated.

The foregoing comprises a description of a conventional form of vacuum bottle.

The handle and closure assembly of the instant invention is referred to in general by the reference numeral 34 and includes an internally threaded mounting ring 36 threadedly engaged with the threads 28 on the small diameter end 20 of the neck 16. The outer end of the ring 36 includes a radially inwardly directed circumferential retaining flange 38 and the assembly 34 additionally includes a sleeve referred to in general by the reference numeral 40. The sleeve 40 includes a substantially cylindrical lower end portion 42 and a conical upper end portion 44 provided with a radially outwardly projecting circumferential abutment flange 46. The small diameter lower end 42 of the sleeve 40 tapers downwardly and is tightly wedgingly received within the slightly downwardly tapering neck 48 of the inner portion of the liner 32. In this position the abutment flange 46 abuts the outer or upper end face of the small diameter end portion 20 of the neck 16 and it may be seen that the retaining flange 38 serves to retain the abutment flange 46 in tight engagement with the upper end face of the neck 16.

The mounting ring 36 includes a generally radially outwardly projecting arm 50 which terminates outwardly in a downwardly directed elongated handle 52. The handle 52 is channel shaped and opens toward the housing 12. The channel shaped handle 52 includes a pair of opposite side flanges 54 and 56 contoured as at 58 to define finger grips and an outer bight portion 60 extending between the outer marginal edge portions of the flanges 54 and 56.

The upper ends of the flanges 54 and 56 include laterally inwardly directed terminal ends 54' and 56' which define the arm 50 and bight portion 60 is provided with an opening 62 a spaced distance from the upper end of the handle 52.

A lever defining support arm or lever 64 has its mid-portion pivotally secured between the terminal ends 54' and 56' by means of a transverse pivot pin 67 and one end of the support arm has a tapered stopper 66 supported therefrom, including an O-ring seal 68. The stopper 66, upon oscillation of the arm 64, may be swung into and out of positions seated in the seat defining cone-shaped upper end of the sleeve 40.

An elongated actuator 70 has one end thereof pivotally anchored in the lower end of the channel defining handle 52 by means of a pivot pin 72 and the actuator 70 includes a laterally projecting thumb-engageable abutment 74 which is projectable through the opening 62, the abutment 74 being spaced intermediate the opposite ends of the actuator 70. The upper end of the ac-

tuator 70 remote from the pivot pin 72 is bifurcated and includes a pair of furcations 76 which are slotted as at 78 and have the opposite ends of a transverse pin 80 secured through the end of the arm 64 remote from the stopper 66 slidably disposed therein.

In operation, with the assumption that the assembly 34 is mounted on the neck 16 in the manner illustrated in FIG. 1 of the drawings and that the stopper 66 is in the closed position illustrated in phantom lines in FIG. 1 of the drawings, the abutment 74 is projected into the opening 62 for ready engagement by the thumb of a person whose hand is encircling the handle 52. Upon inward pressure applied to the abutment 74 by the user's thumb, the pin and slot connection between the upper end of the actuator 70 and the outer end of the arm 64 will cause the arm 64 to swing from the phantom line position thereof illustrated in FIG. 1 to the solid line illustrated in FIG. 1 wherein the stopper 66 is in the open position thereby enabling the contents of the liner 32 to be poured from the vacuum bottle 10. Of course, when the arm 64 is in the phantom line position illustrated in FIG. 1 of the drawings, the stopper 66 is disposed in position closing the upper end of the sleeve 40 in a reasonably fluid-tight manner. In order to swing the actuator 70 from the solid line position of FIG. 1 to the dotted line position thereof illustrated in FIG. 1, index pressure is applied to the portion 82 of the actuator 70 so as to retract the upper end of the latter within the channel shaped handle 52. Also, it will be noted from the phantom line positions of the actuator 70 and arm 64 illustrated in FIG. 1 when the stopper 66 is in the closed position, the sharply curved upper ends of the slots 78 serve to prevent movement of the arm 64 toward the solid line position thereof illustrated in FIG. 1 independent of actuation of the actuator 70. Still further, inasmuch as the upper ends of the slots 78 are almost horizontal when the actuator 70 is in the phantom line position illustrated in FIG. 1, the actuator 70 may be utilized to tightly cam the arm 64 into a position with the stopper 66 tightly wedged into the upper end 44 of the sleeve 40 and the inherent friction between the opposite ends of the pin 80 and the slots 78 will maintain the actuator 70 and arm 64 in the phantom line positions thereof illustrated in FIG. 1 until such time as thumb pressure is again applied to the abutment 74 through the opening 62 in order to swing the stopper 66 from the closed position to the open position thereof illustrated in solid lines in FIG. 1.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

What is claimed as new is as follows:

1. In combination with a container of the type including an outlet neck through which a pour opening extends, a support mount stationarily mounted on and encircling the exterior of said neck, a sleeve telescoped into said opening in reasonable fluid tight sealed engagement with the walls of said pour opening, said sleeve including an outer end portion defining an outwardly opening seat and a lever including a first end pivotally supported from said mount for swinging about an axis transverse to said lever and the center axis of

said opening and spaced radially outwardly from said neck, the other second end of said lever including a stopper-type closure member swingable into reasonable fluid tight engagement with said seat, said mount including an arm extending generally radially outwardly of said neck, said first end of said lever being pivotally supported from an outer portion of said arm, said arm being defined by a pair of generally parallel flanges between which said first end of said lever is pivotally supported, the outer end of said arm terminating in an elongated handle extending lengthwise of said pour opening in the direction opposite to the direction in which said pour opening opens outwardly of said container, said handle being channel shaped and opening inwardly toward said container, the opposite side flanges of said channel shaped handle merging into the parallel flanges of said arm, an elongated actuator disposed within and extending along said elongated channel shaped handle and having one end thereof pivotally secured to the end of said handle remote from said arm for oscillation about an axis extending between the opposite side flanges of said handle, the end of the bight portion of said handle adjacent said arm having a thumb receiving opening formed therethrough, the portion of said actuator registered with said opening having a thumb engageable surface thereon, said lever including a pin projecting laterally outwardly therefrom on the side of said transverse axis remote from said other end of said lever, said other end of said actuator being received between said flanges of said arm and having a generally L-shaped transverse slot formed therein in which said pin is slidably received, said slot including a first leg extending generally longitudinally of said arm and curving smoothly at its end remote from said mount into a second leg extending generally longitudinally of said actuator toward said one end thereof, said pin being received in the end of the first leg of said slot remote from the second leg when said stopper-type closure member is swung into position in reasonable fluid tight engagement with said seat.

2. The combination of claim 1 wherein said mount comprises an internally threaded mounting ring and the outer end of said neck includes external threads with which said ring is threadedly engaged.

3. The combination of claim 1 wherein said outer end of said sleeve includes a radially outwardly extending circumferential abutment flange abutted against the outer end of said neck, said mount comprising an internally threaded mounting ring and the outer end of said neck includes external threads with which said ring is threadedly engaged, said ring including an outer end radially inwardly directed circumferential retaining flange overlying said abutment flange.

4. The combination of claim 1 wherein the inner end portion of said sleeve is defined by endwise tapering wall portions of said sleeve rendering the walls of said sleeve inner end portion somewhat flexible for wedging fit within said pour opening, said pour opening tapering slightly inwardly.

5. In combination with a container of the type including an outlet neck through which a pour opening extends, a support mount stationarily mounted on and encircling the exterior of said neck, the outer end of said pour opening including means defining an outwardly opening seat, and a lever including a first end pivotally supported from said mount for swinging about an axis transverse to said arm and the center axis of said open-

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ing and spaced radially outwardly from said neck, the other second end of said lever including a stopper-type closure member swingable into reasonable fluid tight engagement with said seat, said mount including an arm extending generally radially outwardly of said neck, said first end of said lever being pivotally supported from an outer portion of said arm, said arm being defined by a pair of generally parallel flanges between which said first end of said lever is pivotally supported, the outer end of said arm terminating in an elongated handle extending lengthwise of said pour opening in the direction opposite to the direction in which said pour opening opens outwardly of said container, said handle being channel shaped and opening inwardly toward said container, the opposite side flanges of said channel shaped handle merging into the parallel flanges of said arm, an elongated actuator disposed within and extending along said elongated channel shaped handle and having one end thereof pivotally secured to the end of said handle remote from said arm for oscillation about an axis extending between the opposite side flanges of said handle, the end of the bight portion of said handle adjacent said arm having a thumb receiving opening formed therethrough, the

portion of said actuator registered with said opening having a thumb engageable surface thereon, said lever including a pin projecting laterally outwardly therefrom on the side of said transverse axis remote from said other end of said lever, said other end of said actuator being received between said flanges of said arm and having a generally L-shaped transverse slot formed therein in which said pin is slidably received, said slot including a first leg extending generally longitudinally of said arm and curving smoothly at its end remote from said mount into a second leg extending generally longitudinally of said actuator toward said one end thereof, said pin being received in the end of the first leg of said slot remote from the second leg when said stopper-type closure member is swung into position in reasonable fluid tight engagement with said seat.

6. The combination of claim 5 wherein said mount comprises an internally threaded mounting ring and the outer end of said neck includes external threads with which said ring is threadedly engaged, said ring including a generally radially outwardly extending arm, said first end of said arm being pivotally supported from an outer portion of said arm.

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