Sept. 30, 1941. P. L. HEXTER 2,257,238

DISPENSING APPARATUS

Filed Dec. 14, 1939 2 Sheets-Sheet 1

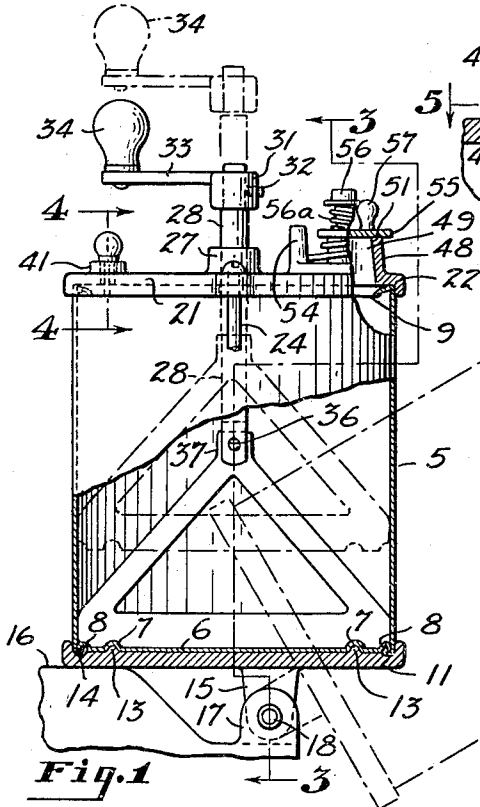


Fig. 1

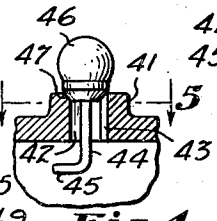


Fig. 4

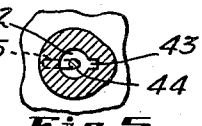


Fig. 5

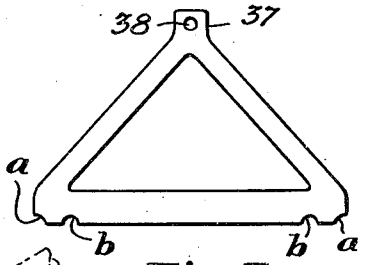


Fig. 6

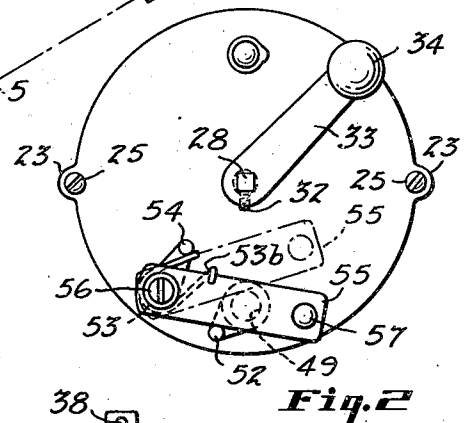


Fig. 2

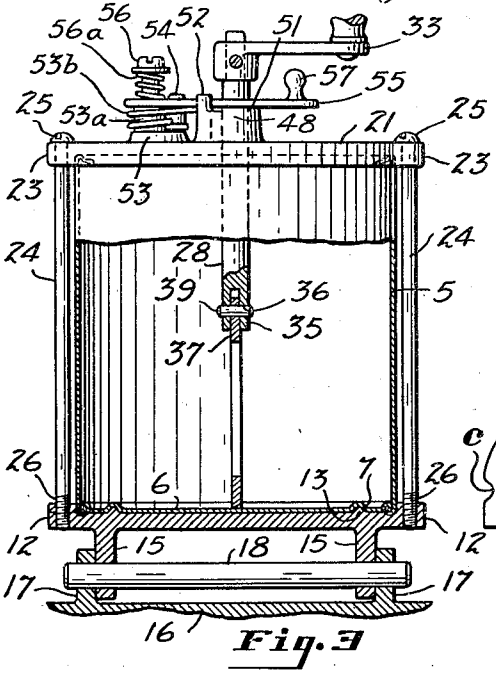


Fig. 3

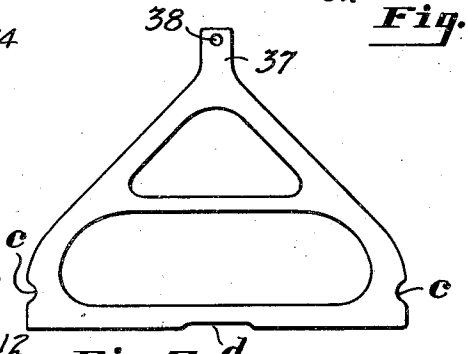


Fig. 7

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DISPENSING APPARATUS

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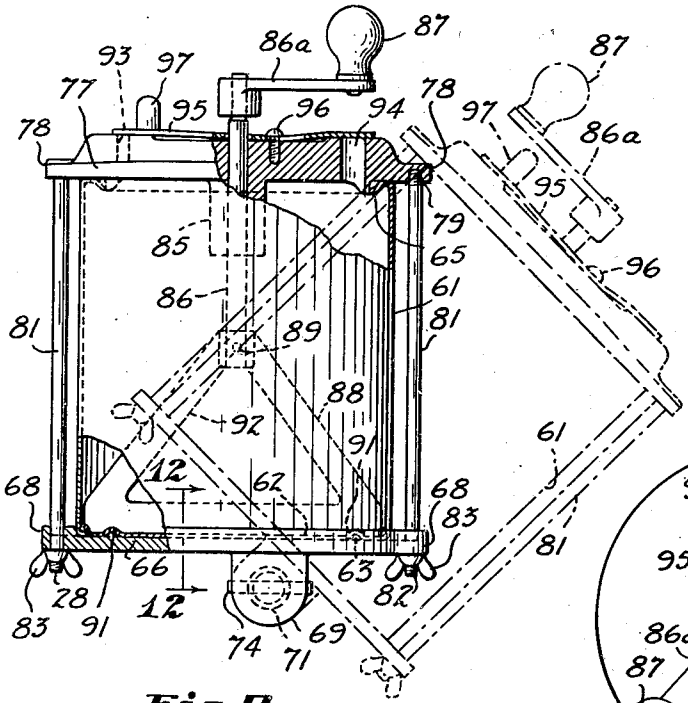


Fig. 8

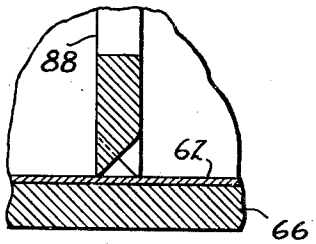


Fig. 12

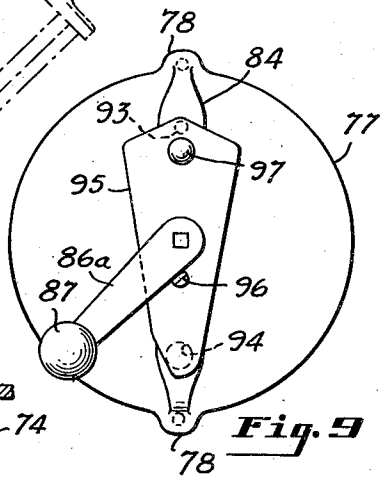


Fig. 9

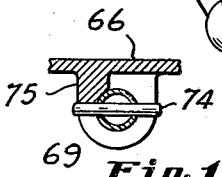


Fig. 13

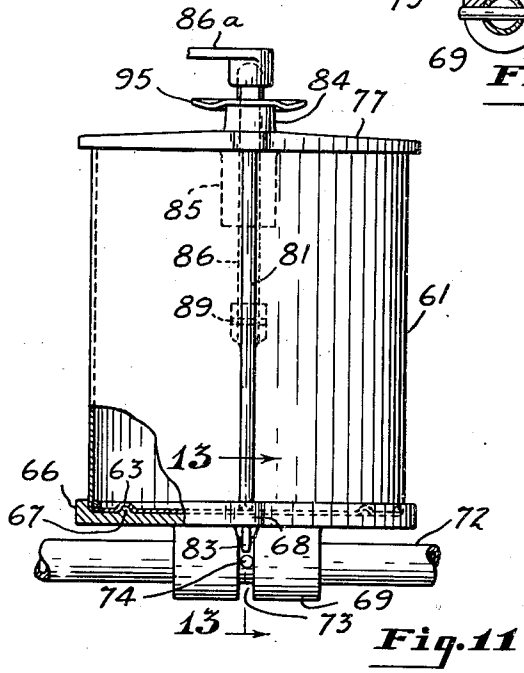


Fig. 11

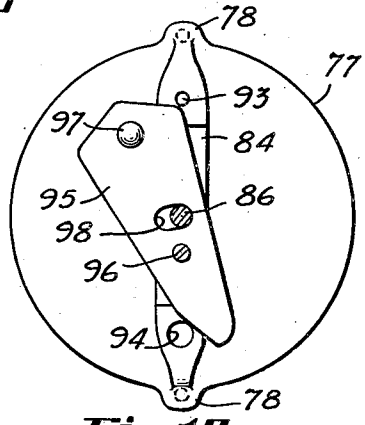


Fig. 10

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UNITED STATES PATENT OFFICE

2,257,238

DISPENSING APPARATUS

Paul L. Hexter, Cleveland Heights, Ohio

Application December 14, 1939, Serial No. 309,253

5 Claims. (Cl. 221—67)

This invention relates to an improvement in a dispensing apparatus and more especially to a dispensing mechanism which may be adapted to hold a container and being provided with means for dispensing the material within the container.

It is customary in the sales of lacquers and paints to place the same in metal containers, the said containers are generally referred to as cans. The cans are formed in cylindrical shape having a base portion, and an annular opening in the top portion, into which a cover is secured by frictional means. The base portion is provided with annular indented section or sections, to prevent bulging of the base when filled with a heavy liquid material such as lacquer or paint. When a can bulges at the base it makes packing difficult and obviously is not desirable.

It is obvious that the dispensing of lacquers and paints from such containers as above described, results in rapid deterioration of the lacquer or paint, due to rapid oxidation caused by having to remove the cover or lid, then pouring the desired amount of lacquer or paint therefrom and later replacing the cover on the can.

The deterioration due to oxidation is more especially apparent and causes endless difficulties, when the lacquers contained in the cans are base colors, and when it is desired to produce various tints by mixing a combination of the base colors thus providing any desired tint.

An object therefore of the present invention is to provide a dispensing mechanism, the said mechanism consisting of a base portion, having annular raised portions and annular grooves, provided to register with the raised and grooved portions in the base of a can.

A further object of the present invention is to provide a dispensing mechanism for cans containing lacquer or paint, the mechanism consisting of a base portion to fit the bottom of a can, including annular indented and extended portions, a dispensing closure means to fit over the top of the can and means for securing the closure means and can rigidly on the base portion.

Another object of the present invention is to provide a dispensing mechanism for cans containing lacquer or paint consisting of a base portion, a dispensing closure member, means for securing the said closure member to the can, and to the base member, and offset pivotal means associated with the under portion of the base member to permit the dispensing mechanism to be rocked from the vertical plane to or nearly a horizontal position, the pivot portion being offset to permit the dispensing mechanism to rest in a vertical position.

Still another object of the present invention is to provide a dispensing mechanism for cans containing paint or lacquer the said mechanism consisting of a base portion, a closure member and means for securing the closure member to the can and to the base portion. The closure member supporting an agitator mechanism, comprising a shaft journaled within a bearing provided in the central portion of the closure member, a handle for the said shaft and an agitator secured to said shaft, the base of the agitator being provided with indented and extended portions thereon to provide wiping clean the base of the can. The said agitator also being provided with openings therein and so designed when in operation to completely mix the contents of the can.

A still further object of the present invention is to provide a dispensing mechanism consisting of a base portion, a container fitting the base portion, closure means to seal the top or open end of the container, the said closure means consisting of plate provided at its central portion with a bearing in which an agitator shaft is journaled. Vent means in said closure, consisting of a cylindrical aperture and being provided with a grooved section therein, a ball fitting and sealing the upper portion of the aperture, and securing means for the said ball consisting of a rod having its end portion bent at right angles to the said rod and of such length that the rod may be removed only when the angled portion is in line with the groove in the aperture, and the ball being so arranged that when the dispensing mechanism is moved away from its normal vertical position the ball will drop out of its seat thereby venting the can. This structure forms a self-cleaning vent member.

Another object of the present invention is to provide a dispensing mechanism consisting of a base portion, a container fitting the base portion and closure means for the said container, and means to secure the container and closure means therefor to the base portion. The said closure means being provided with a spout for the purpose of dispensing the material contained within the container, the said spout having walls parallel to the walls of the container and knife closure means for said spout whereby the fluid being dispensed from the container is thus prevented from remaining in the spout, thereby providing a self-cleaning delivery spout with clean cut-off exteriorly of the spout by the knife shut-off member.

Other objects of the invention and the features of novelty will be apparent from the following description when taken in connection with the accompanying drawings, in which—

Fig. 1 is a sectional elevational view of the dispensing mechanism, showing a conventional container—a base, closure means for the container, agitator, vent and cutoff spout.

Fig. 2 is a plan view thereof.

Fig. 3 is a sectional elevational view taken on lines 3—3 of Fig. 1.

Fig. 4 is a section of the closure plate showing the venting means.

Fig. 5 is a top sectional view showing the grooved aperture of the vent.

Fig. 6 is an elevational view of a type of agitator that is used.

Fig. 7 is an elevational view of another type of agitator that is used.

Fig. 8 is a partial sectional elevational view of a modified form of dispensing mechanism.

Fig. 9 is a top view of the dispensing mechanism with the knife shut off in closed position.

Fig. 10 is a top view of the dispensing mechanism with the knife shut off in open position.

Fig. 11 is a partial sectional elevational view of the dispensing mechanism.

Fig. 12 is a sectional view taken on lines 12—12 of Fig. 8.

Fig. 13 is a sectional elevational view taken on line 13—13 of Fig. 11.

Referring now to Figs. 1 to 7 of the drawings by numerals and reference wherein like numerals represent like parts, the numeral 5 is a conventional container or can having a base portion 6, an annular indented section 7, and the conventional edge portion 8. The container has an open top 9, the cover for the same having been removed. The said container 5 rests on a base portion 11, the said base portion is preferably circular in shape and is provided with two extending lugs 12, the said lugs being provided with threaded holes therein.

It will be noted that the base 11 is provided with an annular raised portion 13 and an annular grooved portion 14. These portions register with the portions 7 and the edges 8 of the container. The base portion 11 is further provided with two depending lugs 15 which are offset from the central axis of the base. A sub-base member 16 is also provided with two upstanding lugs 17, the said lugs 17 abut the outer portions of the depending lugs 15. It will be noted that all of the above mentioned lugs are provided with holes through which a rod 18 is secured, thus forming a hinge means.

A closure member 21 is provided, the underside thereof being provided with an annular groove 22 which registers with the top edge of the container 5. The closure member is preferably of circular shape, and is provided with two extending lugs 23 having holes therethrough into which rods 24 project. The said rods are provided with heads 25 and slotted to receive a screw driver or similar implement. The bases of the rods are threaded at 26 and project into the threaded holes in the lugs 12. The rods are removable by unscrewing the same from the position as shown in Fig. 3.

The closure member 21 is provided at its central portion with a bearing 27, in which an agitator shaft 28 is journaled. The said shaft is preferably equipped at its upper end with a handle base 31 secured in place by any conventional means such as a set screw 32. An arm 33 extends horizontally from the base and at its outer end is provided with a handle 34. The lower portion of the shaft is provided with a groove or slotted portion 35, and a hole 36 therethrough. An agitator of any desired design, such as is illustrated in Fig. 6 or Fig. 7, is provided with a flat head portion 37 having a hole 38 therethrough. The agitator head fits within the groove or slotted portion 35 of the shaft 28, and is secured in place by means of a pin 39 projecting through the holes in the shaft and in the agitator head. The agitator design will be more fully discussed as the description continues.

The closure member 21 is further provided with a vent member. The said vent member includes a raised boss 41, preferably located at the top of the closure member when said member is in a horizontal position. In the boss and projecting therethrough is an annular hole 42, the said hole being provided with a groove 43. Projecting through the aperture and of less diameter is a rod 44, the lower end of which is bent at right angles to the rod as shown in Fig. 4 and numeral 45. The top portion of the rod is fitted into a ball member 46, the said ball at its lower end being provided with a seat 47. It should be noted that when the mechanism is in dispensing position such as illustrated in Fig. 1 and in dotted lines, the ball automatically drops out of its seat and permits venting of the container. When the container is returned to the normal vertical position the ball immediately seats itself, thereby completely closing the vent hole. When it is desired to remove the ball completely from the vent member, the ball is turned until the horizontal portion 45 of the rod 44 registers with the slot 43, when it may be removed completely.

The closure member 21 is further provided with a spout 48, and is provided with an annular opening 49 therein. It should be noted that the spout 48 is located near the lower edge of the container 5, when the said container is in the position of dispensing as illustrated in Fig. 1, and shown in dotted lines.

The spout 48 has an outer face 51 which is machined to provide a flat, smooth surface. The spout 48 is provided with a stop member 52, the purpose of which will be explained as the description continues.

A base support or boss 53, having a stop portion 54 is provided adjacent the spout. A knife closure member 55, preferably of spring steel, is secured and pivoted to the base support 53 by means of a screw 56. The opposite end of the knife closure member is provided with a handle 57. It should be noted that the knife closure member 55 is of greater width than the opening in the spout, thus providing the complete closure therefor. It should further be noted that the stops 52 and 54 limit movement of the knife closure member from the point of completely open to completely closed.

To further assist in providing a close fit between the knife member 55 and the outer face 51 of the spout 48, a compression spring 56a is interposed between the head of the screw 56 and the knife member 55. The top surface of the boss 53 may be slightly inclined downwardly toward the spout 48, if desired, to provide a slight amount of relief on one side of the boss, so that the spring 56a may effectively thrust the knife member 55 against the surface 51.

To insure complete closure of the opening 49 and prevent inadvertently leaving the member 55

in the open position, a torque spring 53*a* is provided. The spring 53*a* is coiled around the cylindrical portion 53*b* of the boss 53 between the knife member 55 and the closure 21, and has one end seated against the side of the stop 54 and the other end turned over the edge of the knife member 55 as shown in Fig. 2, so as to urge the knife member 55 toward the stop 52.

It will be noted that two types of agitators are illustrated in Fig. 6 and Fig. 7. However, any number of agitators may be used providing they are equipped with heads to fit the agitator shaft. The agitators are designed to fit and be used in different types of containers or cans, as will be noted from the grooved portions as shown at (*a*) and (*b*) in Fig. 6, and (*c*) and (*d*) in Fig. 7.

With this design it will be noted that the bottom portion of the container is wiped by the movement of the agitator. This action is of great importance, especially when mixing or stirring paints and/or lacquers, thus giving positive assurance that the entire pigment has been completely and thoroughly mixed with the contents of the container.

Referring now to the modification as illustrated in Fig. 8 to and including Fig. 13. This modification relates particularly to the base member and mountings therefore, and also to the closure member.

The numeral 61 refers to a conventional container. The said container having a base portion 62 and an annular indented portion 63. The top of the container is open as illustrated, the cover for the same having been removed. The edges 65 which form the opening are bent downwardly and provide a spring tight fit for the cover.

The base 62 of the container rests on a preferably circular support 66 which is provided with annular raised portions 67, and of such dimensions as to fit the indented portion of the container base. Extending in opposite directions and on either side of the support are ears 68 having holes therethrough. On the underside of the support and slightly off center is a boss 69 having a hole 71 therethru. Thru this hole a pipe 72 is placed and forms a portion of a stand on which is carried one or more support members.

The boss is provided with a centrally located slot 73 thru which a pin 74 is projected, the said pin acting as a stop when the support is tilted forwardly, preferably resisting downward movement slightly beyond 90°. However, the slot may be made to permit greater downward movement if desired. The portion 75 in Fig. 13 is a boss and acts as a rest and/or stop to maintain and support the unit in a normal vertical position.

The closure member 77 is preferably circular, and is provided with extending ears 78, or projections located on either side of the said member and extending in opposite directions. On the underside of the said ears are threaded holes 79 into which rods 81 are secured. The opposite ends of said rods are also provided with threaded portions 82. The said rods project thru the holes in the ears of the support 66 and are secured in place by wing nuts 83. The closure is thereby held rigidly over the top of the containers, and the whole secured to the support.

The closure 77 has a raised portion 84, the surface of which is machined to give a true flat surface. Centrally located on the underside of the closure is a downwardly projecting portion 84, being provided with a hole therethru into which is placed a shaft 86. The top end of the shaft is formed into a square for the reception of a crank 86*a* having a handle 87. The lower end of the shaft has a hole therethru.

An agitator blade 88 is preferably formed in the shape of a section of a cone, the apex of which is provided with a hole into which the shaft projects. The blade is secured to the shaft by means of a pin 89. The lower edge of the blade may have notches 91 formed therein to conform to the annular raised portion 63 of the bottom of the container. An opening 92 is formed in the agitator to provide means for thorough mixing of the material in the container.

The surfaced member 84 of the closure has a vent hole 93 located at one end, the said hole projecting through the member 84 and the closure, thus providing a vent for the container. In the opposite end of the said member is a hole 94 somewhat larger than the vent hole, the said hole 94 is the means through which the contents of the container is poured. A flat metal valve member 95, preferably of spring steel, is pivotally secured to the surfaced member 84 by a screw 96 or similar securing means. It should be noted the surfaced portion of the said member is slightly angled toward the screw 96, which permits the valve member to be pulled downwardly in its central portion by the said screw 96, thus providing a complete shutoff of the two holes. The member 95 is further provided with a handle 97 to permit ease of manual operation of the valve. It will be seen from the above description that the valve mechanism in conjunction with the closure member provide a valve which simultaneously open or close both the pouring and vent openings and prevent clogging of either of the said openings due to the provision that the openings are parallel to the walls of the container or in vertical position when the apparatus is in its normal position, which is in the vertical plane. By referring to Fig. 9 it will be noted that the valve is in the closed position and Fig. 10 illustrates the valve in open or pouring position and shows the two openings completely uncovered. When the valve is being moved to the closed position a knife cut off effect is produced and avoids any of the liquid from the container dripping after the shutoff, which is a highly essential feature of the present invention. It should be noted that the member 95 has an enlarged opening 98 in its central portion through which the shaft 86 operates and permits movement of the valve member without interference from the shaft and also limits the travel of the member acting as a stop for the member 95.

Although the invention has been described in connection with a specific embodiment, the principles involved are susceptible of numerous other applications which will readily occur to persons skilled in the art. The invention is, therefore to be limited only as indicated by the scope of the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. In a dispensing mechanism including a hinged base portion, an open top container mounted on the base portion and a closure means mounted on the container, and means for rigidly securing the closure means and container to the base portion, the base of the container having annular extended and indented surface portions, the base portion of the dispensing mechanism being provided with annular extended and indented portions on its surface, the said por-

tions registering with the annular indented and extended surfaces of the container when the container is secured to said base portion.

2. In a mechanism for the dispensing of liquids from a container, the said container having an open top, the dispensing mechanism comprising a hinged base portion, a closure member and means for securing the container and closure member to the base portion, the said closure member being provided with a knife blade spout shutoff and an automatic vent mechanism, comprising an annular hole in the closure member, the said hole being provided with a groove throughout the length thereof, a ball having a seat provided at its base and a rod projecting from the said base and the end thereof, bent at right angles and of such length as to permit passage through the hole and groove, and when turned to restrain the same from completely falling away therefrom.

3. In a mechanism for the dispensing of liquids from a container, the said container having an open top, the dispensing mechanism comprising a hinged base portion, a closure member and means for securing the container and closure member to the base portion, the closure member being provided with a bearing section centrally located therein, an agitator shaft journaled in the said bearing, a handle for the said shaft and an agitator blade, the said blade being removably associated with the lower portion of the shaft and extending across the entire bottom of the container and contacting a portion of the side wall thereof and means for securing the blade to the shaft, the lower portion of the blade being provided with grooved sections whereby the container bottom is completely wiped by the blade.

4. In a mechanism for the mixing and dispensing of a liquid from a container including a hinged base support, a closure for the said container and means for securing the container and closure to the base support, the said closure being provided with a vent opening, a discharge opening and a swivelable resilient valve member for said openings whereby the openings are simultaneously uncovered or covered by the said valve and an agitator having a shaft journaled in said closure, said shaft passing through an elongated opening in said valve member.

5. In a removable closure for a liquid container including a base member therefor and means for securing the closure and container to the base member, the said closure being provided with a vent opening and a discharge opening—the base member being secured to a stand by a horizontal hinge whereby the mechanism can be tilted from a vertical to a horizontal position, a valve member for the said vent opening the said valve being provided with a seat and holding means therefor whereby the valve is unseated when the mechanism is tilted and reseats when the mechanism is returned to its normal vertical position.

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