Dec. 10, 1957 R. H. RICHMOND, SR 2,815,892

SAFETY DISPENSING CONTAINER

Filed Aug. 6, 1953

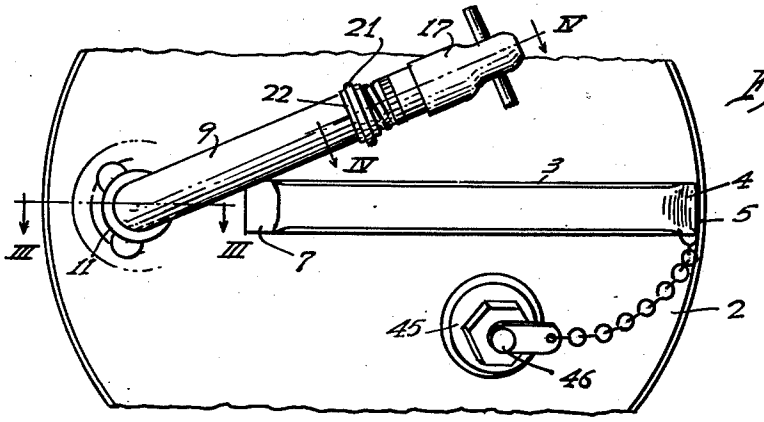


Fig. 1.

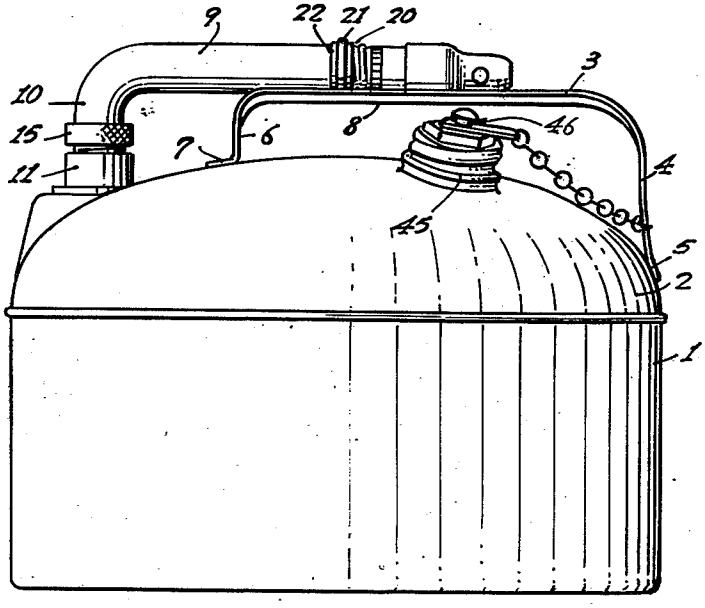


Fig. 2.

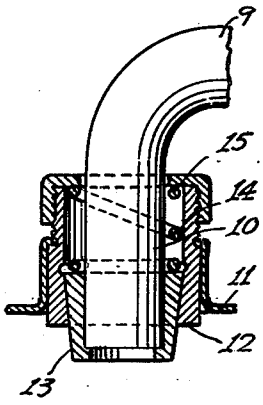


Fig. 3

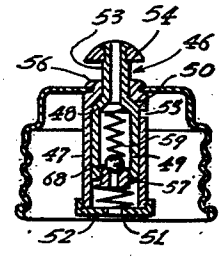


Fig. 6.

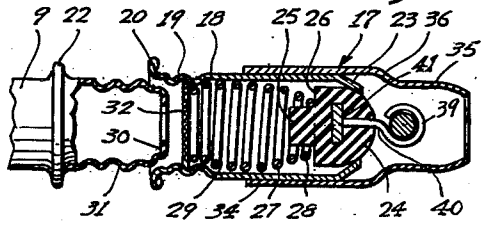


Fig. 4.

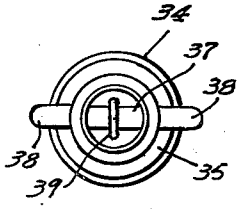


Fig. 5.

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SAFETY DISPENSING CONTAINER

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Application August 6, 1953, Serial No. 372,739

8 Claims. (Cl. 222—470)

This invention relates, as indicated, to a safety dispensing container for inflammable materials such as gasoline and the like and is directed to a dispensing container having improvements which from a safety standpoint are effective to prevent spillage of the container contents both during a dispensing operation and when the container is being used as a storage receptacle.

The container of this invention is of the manually portable type and is primarily intended as a receptacle in which gasoline may be stored and which may be operated as a dispenser in transferring its contents to the gasoline tanks of outboard motor boats, motor vehicles, tractors, lawn mowers, and more generally any device powered by an internal combustion engine. The inflammable nature of gasoline to be stored and dispensed constitutes a fire hazard upon spillage of the contents of the receptacle or leakage of gasoline vapor therefrom, the elimination of which is one of the principal objects of this invention.

More particularly, the improvements of this invention are directed to a novel arrangement of carrying handle, pour spout, and vent which are so constructed and positioned relative to each other that the necessary operations required in dispensing the contents of the container may be accomplished by a one-handed operation. In this manner, the dispenser of this invention frees the other hand of the operator and provides a desirable advantage in that the operator's other hand may be used to steady his position, for example, when standing in a small boat and using the dispenser to fill the gas tank of a power motor.

As will be explained further below, the receptacle constituting the part of the dispensing container of this invention has a shallow depth and has a flat dome-shaped top or covering to which is attached a metal strap-like handle. The handle is flat and extends diametrically of the container and directly in line therewith at one edge of its top there is provided a pour spout in the form of a tube having a pivotal connection to the receptacle cover. By locating the pour spout connection in line with the diametrically extending strap handle, the operator can readily tilt the receptacle to supply its contents to the pour spout. The pour spout is provided with a closure at its end which is automatically moved to open position when engaged with the filling spout of the tank into which the contents of the receptacle is to be poured. The pour spout closure may be rested against the filling opening of the gas tank and its weight will be sufficient to move the closure to its open position, and when this pressure is released by removing the container from a pouring position the spout closure automatically moves to its closed position to discontinue the dispensing operation. To one side of the handle, there is located a vent which is in a position to be operated by the thumb of the operator's hand engaged with the handle. By reason of this specific location of the pour spout and vent with respect to the handle, all of the operations essential to a dispensing operation

may be accomplished by the single hand of the operator engaged with the handle.

A further object of the invention is to provide an improved closure for the pour spout of a gasoline container which is actuated to open position by engagement with the fill-opening of a receptacle into which gasoline is to be dispensed.

Other objects and advantages of the invention will become apparent from the following description.

In the drawings, there is shown a preferred embodiment of the invention. In this showing:

Fig. 1 is a fragmentary plan view of a dispensing container constructed in accordance with the principles of this invention, a portion thereof at the upper and lower edges as viewed in Fig. 1 being broken away;

Fig. 2 is an elevational view of the container shown in Fig. 1;

Fig. 3 is a sectional view taken along a plane in the line III—III of Fig. 1;

Fig. 4 is an enlarged sectional view of the spout closure taken substantially along the line IV—IV of Fig. 1;

Fig. 5 is an end view of the spout closure looking from the left of Fig. 4; and

Fig. 6 is a sectional view through the cap closure and vent for the receptacle.

Referring to the drawings, the numeral 1 designates a receptacle of cylindrical shape having a top or cover 2. The receptacle 1, as illustrated, preferably has a shallow depth as compared to its diameter and may be of a size sufficient to contain a relatively small quantity of gasoline such as one to three gallons.

The cover 2 has a flat dome shape and is provided with a handle 3. The handle 3 is fabricated from a flat metal strap shaped to the form of a U having one arm 4 projecting downwardly and secured at 5 by welding to the cover 2 at one side thereof and the other arm 6 secured to the cover 2 at the point 7 which is located inwardly of the other edge of the cover but outwardly from the center thereof. The intermediate portion 8 extending horizontally between the arms 4 and 6 has its edges curved upwardly to provide a hand grip and is spaced from the cover to provide room for the insertion of the operator's fingers. The strap 3 extends diametrically of the top 2 and by reason of specific location of the arm 6 and its connection 7, the receptacle may be readily tilted with little effort by the operator, to effect a pouring operation.

The pour spout comprises a metal tube of L shape having a horizontally extending portion 9 and a vertically extending portion 10. The vertically extending portion 10 provides access to the interior of the container and is pivotally connected to the cover 2 by a sput 11 secured to the cover 2 about an opening therein through which the tube portion 10 extends. The sput 11 mounts a bushing 12 having a tapered inner surface which provides a bearing support for a bushing 13 secured to the lower end of the tube portion 12. The bushing 13 has a taper opposed to the taper on the bushing 12 so that its engagement with the bushing 12 provides a seal against leakage of fluid from the container. A spring 14 bears against the upper edge of the bushing 12 and is held in position by a cap 15 secured to the upper end of the bushing 12. The spring maintains the oppositely tapered surfaces of the bushings 12 and 13 tightly engaged with each other to provide a seal preventing leakage of fluid from the container while allowing rotational movement of the tube 10 and bushing 13 with respect to the container. As indicated in Fig. 1, the sput 11 and pivotal tube 10 are aligned with the handle 3 and have their axes positioned along the diameter over which the handle 3 extends. When the container is being used to carry fluids from one point to another or for the storage of gasoline, the horizontal portion is swung to an inopera-

tive position overlying the cover 2 as illustrated in Figs. 1 and 2. When the spout is to be used to dispense gasoline from the container, it will be rotated to a position in which the horizontal tube portion 9 projects outwardly from the container and in a position axially in line with the handle 3.

The point of connection of the handle 7 to the top is located a sufficient distance from the center of the container to allow the operator's hand to be positioned centrally of the container for carrying purposes. With one edge of the operator's hand against the strap 6 above its connection 7, the container will be balanced and may be carried about in an untilted position. However, when the operator moves his hand along the horizontal strap 8 toward the arm 4, the upward supporting force exerted by his hand will be eccentric with respect to the container and cause it to tilt about a line transverse of the handle to a position with the sput 11 at the lowest point along the diameter over which the handle extends. This tilting movement facilitates dispensing of the gasoline through the spout 9.

The outer end of the horizontal tube portion 9 is provided with a valve closure designated as a whole by the numeral 17. As best shown in Fig. 4, the closure 17 comprises a tubular section 18 having rolled threads 19 at its inner end for threaded engagement with similar threads on the outer end of the horizontal spout portion 9 to secure the spout closure thereto. The inner end of the section 18 terminates in a flange 20 which engages and compresses a seal 21 against a flange 22 on the tube portion 9. The outer end of the section 18 has an inwardly tapering flange 23 which provides a seat for a valve closure 24. The valve 24 is preferably formed of hard rubber, either natural or synthetic, and has a semi-spherical shape enabling it to seat readily against the flange 23. The inner end of the valve 24 has a projecting part 25 of cylindrical shape about which an annular shoulder 26 is provided on the valve 24 against which one end of a spring 27 has bearing engagement.

The valve 24, in assembly, is inserted in the tubular section 18 to the position illustrated in Fig. 4 prior to insertion of the spring 27. The spring 27 is constructed so that it can be moved to the position illustrated in Fig. 4 only by a threading action with respect to the threads 19 on the section 18. The coils 28 at the outer end of the spring 27 have a reduced diameter such that they clear the threads 19 when the spring is initially inserted in the section 18. However, the coils 29 at the inner end of the spring are enlarged and have an outer diameter such that they will have threaded engagement with the threads 19 so that the coil can be moved to its operative position only by rotating it to thread the coils 29 with respect to the threads 19. As the coils 29 are threaded over the threads 19, they are compressed slightly and the threads 19 are thereby effective to hold the coil 27 against movement out of the position to which it may be moved. While the threads 19 are effective in this manner to hold the coil in position, a flange 30 at the outer end of the threads 31 on the tube 9 is effective as a stop to prevent unthreading movement of the spring 29. The flange 30 normally holds a screen 32 against the inner end of the spring 29, the screen 32 acting as a filter for gasoline being dispensed from the container.

The valve closure 17 is completed by a tubular section 34 having telescopic engagement over the tubular section 18. The outer end of the section 34 has a portion of reduced diameter providing a nozzle 35 and a shoulder 36 which engages with the tapered flange 23 to limit inward movement of the tubular section 35 with respect to the section 18. An operating pin 37 extends through the tubular section 36 at a point adjacent the inner end of its nozzle portion 35 and has end portions 38 which project laterally outwardly from opposite sides of the section 36. The pin 37 as shown in Fig. 5 extends transversely and diametrically of the opening through the nozzle 35 and in addition to serving as an operating member for moving the tubular section inwardly in a manner to be described, furnishes a connection for the section 34 with the section 18. This connection is provided by an eyelet 39 at the outer end of an anchoring member 40 which has its inner end 41 embedded in the valve 24.

The spring 27 is normally effective to hold the valve 24 in its closed position against the flange or valve seat 23 to prevent flow of fluid outwardly through the nozzle portion 35. Fluid can be dispensed through the nozzle 35 only by moving the section 34 inwardly to unseat the valve 24 with respect to the flange 23. This unseating movement of the valve 24 with respect to the flange 23 can be readily effected by placing the projecting ends 38 of the pin 37 in engagement with opposite edges of a fill opening (not shown) in a tank into which gasoline is to be dispensed from the receptacle 1. With the ends 38 so engaged, the application of a small amount of pressure to move the section 34 telescopically inwardly with respect to the section 18 will be effective to unseat the valve 24 and permit the dispensing of gasoline through the nozzle 35. As soon as the pressure against the ends 38 is released by disengaging such ends intentionally or accidentally with respect to the edges of the opening through which gasoline is being poured, the spring 27 will automatically move the valve 24 to its closed position thereby interrupting the flow of gasoline through the nozzle 35.

A threaded sheet metal cap closure 45 is provided for a fill opening into the container which is located at one side of the panel 3 at a point substantially centrally of its ends. The cap closure 45 provides a support for a vent 46 which is mounted centrally thereof. The vent 46 comprises a stationary tube 47 extending centrally and inwardly with respect to the cap 45. The tube 47 has a tapered shoulder 48 at its upper end and provides a sliding support for a hollow tube 49 having a tapered shoulder 50 at its upper end for sealing engagement with the shoulder 48. The tube 49 is held in its upper position by a spring 51 which has its upper end engaged with the lower end of the tube 49 and its lower end engaged with a cap 52 threaded on the lower end of the tube 47. The upper end 53 of the tube 49 projects outwardly through an opening in the cap 45 and has an operating member 54 secured to its outer end by which it may be depressed against the action of the spring 51. Depression of the tube 49 against the biasing action of the spring 51 interrupts the sealing engagement of the shoulders 48 and 50 and uncovers a vent opening 55 through which air may be admitted to the container during a dispensing operation. The upwardly extending portion 53 has a loose fit in the upper end 56 of the stationary tube 47 which allows for the flow of air to and through the vent opening 53. The lower end of the tube 49 has a seat 57 for a ball check valve 58 which is held in position by a spring 59, the upper end of which bears against the inner surface of the tapered shoulder 50. The check valve 58 closes an opening through the seat 57 and is normally held in a closed position by the spring 59. However, when the pressure of the gasoline vapor within the container exceeds a predetermined pressure determined by the tension of the spring 59, the ball check valve 58 will be unseated and the gasoline vapor may be exhausted through an opening in the cap 52.

The specific structure of the check valve mechanism shown in Fig. 6 is covered by my copending application Serial No. 372,738, filed August 6, 1953, to which reference is made for a more detailed description thereof.

The fill opening closed by the cap 45 is positioned substantially centrally of the ends 4 and 6 of the handle. This location of the fill opening closed by the cap 45 with respect to the handle 3 is important in that it enables the vent 46 to be actuated by the thumb of the operator's hand engaged with and supporting the handle 3.

To use the container for dispensing gasoline into a

tank, the container is supported by an operator with four fingers of one hand engaged under the handle strap 8 and against the strap 4 as explained above and with the thumb of the hand supporting the container projecting outwardly toward the vent 46. The horizontal spout 9 is then pivoted to a position in which it projects outwardly from the container and is aligned with the handle 3. By reason of the eccentric location of the handle 3 on the cover 2 due to the location of the handle connection 5 at one edge of the cover and the connection 7 at a point intermediate the center of the cover and the pivotal spout connection at 11, the container will tend to tilt forwardly to deliver fluid to the spout without any effort on the part of the operator when the operator's hand is in supporting engagement with the handle adjacent the strap 4. The nozzle closure is then operated by inserting the nozzle 35 in the fill spout of the tank into which gasoline is to be dispensed with the oppositely projecting ends 38 of the pin 37 engaged with opposite edges of the fill spout. A slight forward pressure against such fill spout will move the pin 37 inwardly to unseat the valve 24 and permit the flow of gasoline into the tank, and this is accomplished by resting a portion of the weight of the tilted container against the tank fill spout. At the time the valve 24 is moved to its open position in this manner, a downward pressure is applied to the vent 46 by the operator to open the vent 46, and this operation of the vent 46 is effected by the thumb of the operator's hand engaged with the handle 3. In this manner, it will be apparent that the particular arrangement of the handle 3 with respect to the pour spout and the location of the vent 46 with respect to the handle 3 enable the operator to perform all of the operations required including the opening of the nozzle 17 with one hand, and that his other hand is freed for other purposes such as steadying his position when the dispensing operation is being performed on an unstable base such as in a boat. In addition, attention is directed to the fact that the nozzle 17 is automatically operative to close the valve 24 and interrupt the dispensing of gasoline should the operator accidentally drop the receptacle or otherwise remove the pin arms 38 from engagement with the fill spout into which gasoline is being dispensed.

While I have illustrated and described a preferred embodiment of my invention, it will be understood that this is merely by way of illustration, and that various changes and modifications may be made therein within the contemplation of the invention and under the scope of the following claims.

I claim:

1. A safety dispensing container for gasoline and the like comprising a receptacle having a top wall, a handle comprising a horizontal strap extending in a direction diametrically of said top wall and having a first connection therewith adjacent one edge thereof and a second connection therewith at a point between the center of the wall and an adjacent edge thereof, a pour spout in the form of an L-shaped tube having a spring biased vertically movable vertical portion communicating with the interior of said receptacle through said top wall and having a pivoted connection with said top wall, and a horizontal portion extending outwardly from the top of said vertical portion for swinging movement from a position overlying and engaged by said receptacle handle to an operative dispensing position in which it projects outwardly from said adjacent edge of the wall and is aligned diametrically with said handle, the outer end of said spout having a spring biased closure normally preventing flow of the container contents, and a manually operable normally closed air vent for said receptacle positioned to one side of said handle for selective operation to open position by the thumb of the operator's hand engaged with said handle.

2. A dispensing container for gasoline and the like comprising a receptacle having a top wall, a handle comprising a horizontal strap extending in a direction diametrically of said top wall and having a first connection therewith adjacent one edge thereof and a second connection therewith at a point between the center of the wall and an adjacent edge thereof, a pour spout in the form of an L-shaped tube having a vertical portion communicating with the interior of said receptacle through said top wall and having a pivoted connection with said top wall, and a horizontal portion extending outwardly from the top of said vertical portion for swinging movement from an out-of-the-way position in which it projects outwardly from said adjacent edge of the wall and is aligned diametrically with said handle, and a nozzle comprising inner and outer tubular sections telescopically engaged with each other, said inner section being detachably secured at one end to the outer end of said horizontal tube portion and having a radially inwardly tapering flange at its outer end providing a valve seat, a valve within said inner section having a spring biasing it to a closed position against said seat, said outer section having a portion of reduced diameter at its outer end providing a flange engageable with said inner section inwardly tapered flange for limiting the inward telescopic movement of said outer section relative to said inner section, and means extending transversely of said outer section connecting said outer section with said valve whereby pressure exerted on said means causing inward telescopic movement of said outer section is effective to unseat said valve and said biasing spring is effective through said valve to move said outer section telescopically outwardly relative to said inner section when said pressure is released.

3. The invention defined in claim 2 characterized by the outer end of said horizontal portion and the inner end of said inner section having rolled threads for threaded engagement with each other, and said spring comprising coils having an outer diameter for threaded engagement with the threads on the inner surface of said inner sections.

4. A pour spout nozzle comprising inner and outer tubular sections having sliding telescopic engagement with each other, said inner section having a radially inwardly tapered flange at its outer end providing a valve seat and a valve mounted within said inner section therein for movement to and from a position engaged with said seat, a spring biasing the movement of said valve to a closed position engaged with said seat, said outer section having a portion of reduced diameter adjacent its outer end providing an inwardly tapered flange for engagement with said inner section flange to limit inward telescopic movement of the outer section relative to said inner section, and means connecting said outer section with said valve whereby inward telescopic movement of said outer section is effective to unseat said valve and said spring is effective through said valve to move said outer section telescopically outwardly relative to said inner section.

5. A pour spout nozzle for attachment to a thin-walled tube having rolled threads on its outer end comprising thin-walled inner and outer tubular sections having telescopic sliding engagement with each other, the inner end of said inner tubular section having rolled threads for engagement with the threads on said tube and said inner tubular section having a flange tapering radially inwardly thereof at its outer end to provide a valve seat, a valve mounted in said inner section for axial movement to and from a position in seating engagement with said flange, a coil spring movable to an operative position in said inner section by a threading action of its coils with respect to the threads on said inner section, and means connecting said outer section with said valve whereby inward telescopic movement of said outer section is effective to unseat said valve and said spring is effective

through said valve to move said outer section telescopically outwardly relative to said inner section.

6. A pour spout nozzle for attachment to a thin-walled tube having rolled threads on its outer end comprising thin-walled inner and outer tubular sections having telescopic sliding engagement with each other, the inner end of said inner tubular section having rolled threads for engagement with the threads on said tube and said inner tubular section having a flange tapering radially inwardly thereof at its outer end to provide a valve seat, a valve mounted in said inner section for axial movement to and from a position in seating engagement with said flange, a coil spring movable to an operative position in said inner section by a threading section of its coils with respect to the threads on said inner section, said outer section having a portion of reduced diameter at its outer end providing an inwardly tapered flange for engagement with said inner section flange to limit its inward telescopic movement relative to said inner section, and means connecting said outer section with said valve whereby inward telescopic movement of said outer section is effective to unseat said valve and said spring is effective through said valve to move said outer section telescopically outwardly relative to said inner section.

7. A pour spout nozzle for attachment to a thin-walled tube having rolled threads on its outer end comprising thin-walled inner and outer tubular sections having telescopic sliding engagement with each other, the inner end of said inner tubular section having rolled threads for engagement with the threads on said tube and said inner tubular section having a flange tapering radially inwardly thereof at its outer end to provide a valve seat, a valve mounted in said inner section for axial movement to and from a position in seating engagement with said flange, a coil spring movable to an operative position in said inner section by a threading section of its coils with respect to the threads on said inner section, said outer section having a portion of reduced diameter at its outer end providing an inwardly tapered flange for engagement with said inner section flange to limit its inward telescopic movement relative to said inner section, a pin extending transversely of said outer section and having end portions projecting beyond its outer surface, and means connecting the center portion of said pin with said valve for moving said valve out of seating engagement with said flange in response to inward telescopic movement of said outer section relative to said inner section.

8. The invention defined in claim 7 characterized by said valve being a rubber body having a semi-spherical shape at its axially outward end for engagement with said flange seat, and a cylindrical projection at its axially inward end providing an annular shoulder thereabout against which the outer end of said opening has bearing engagement, and said connecting means comprising a pin having an eyelet at its outer end through which said transversely extending pin projects and a part at its inner end embedded in said rubber body.

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