Sept. 13, 1949. G. J. BUCK 2,481,719

FUEL FILLER CAN

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FIG. 1.

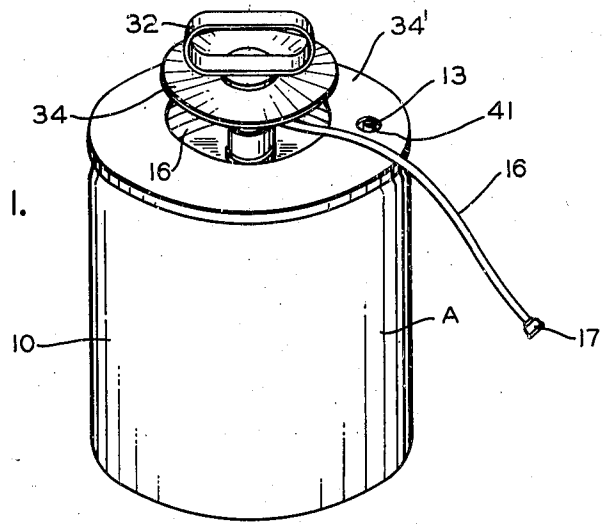

FIG. 2.

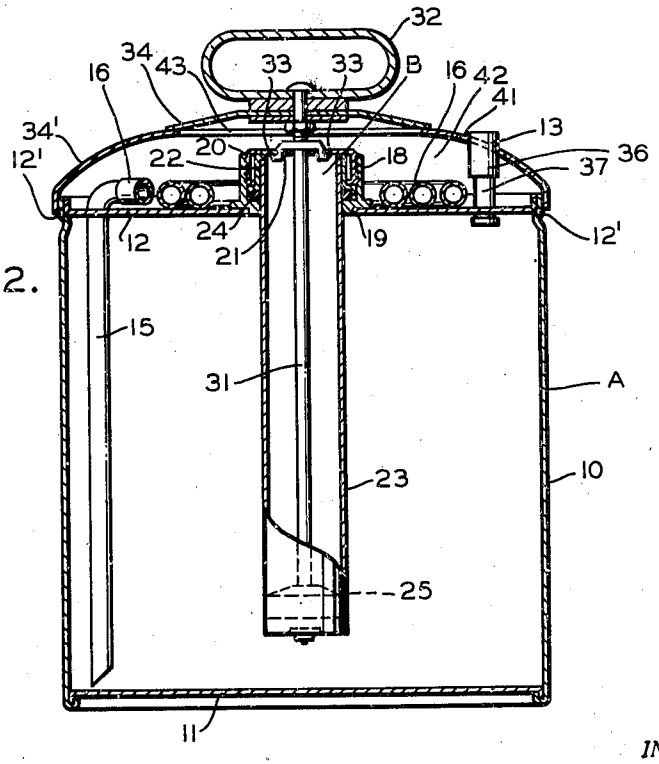

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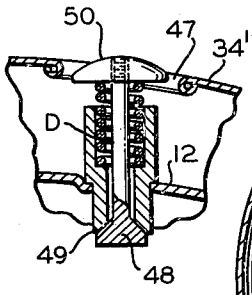
FIG. 8.



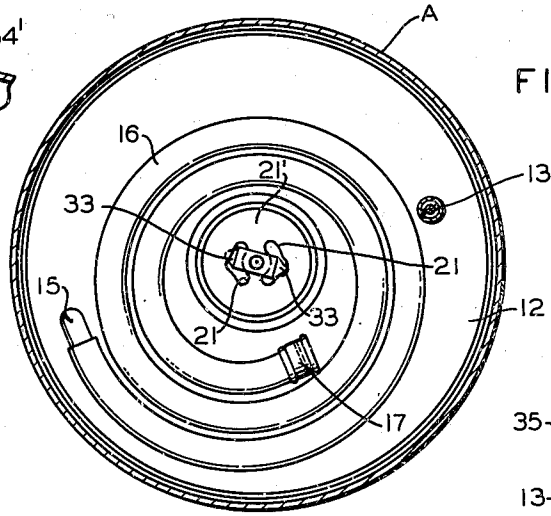
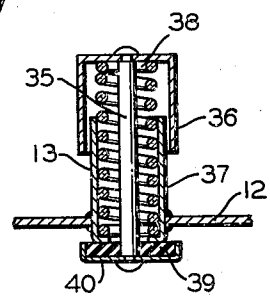


FIG. 3.

FIG. 6.



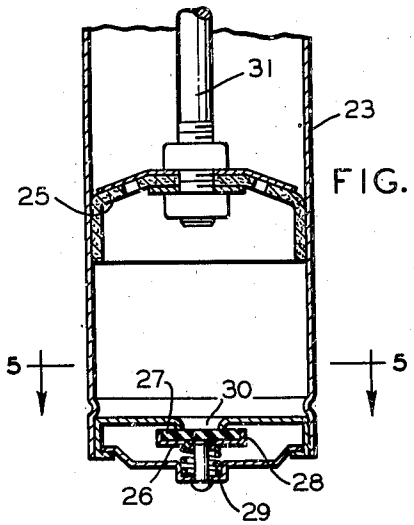


FIG. 4.

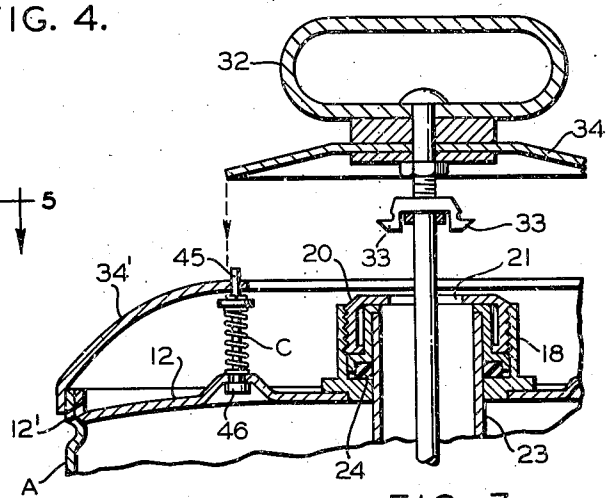


FIG. 7.

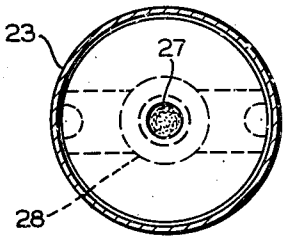


FIG. 5.

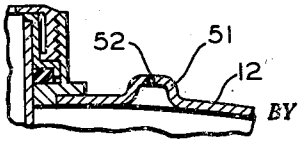


FIG. 9.

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FUEL FILLER CAN

George J. Buck, Minneapolis, Minn.

Application October 24, 1947, Serial No. 781,968

8 Claims. (Cl. 222—401)

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My invention relates to an improvement in a fuel filler can, the use of which allows fuel or any liquid to be easily transferred from the can to another container.

It is a feature of my invention to provide a fuel filler can with a pump operated in conjunction with the lid and handle of the can for drawing fluid from the can. It is a further feature of my invention to provide a metal discharge pipe extending to the bottom of the filler can to which is attached a flexible filler hose which may be coiled around the upper portion of the main body of the pump and at the same time lie on the top surface of the top portion of the can and underneath the lid or cover. I provide a pump for building up pressure within the filler can or tank on the surface of the liquid therein, which liquid is forced upwardly within the discharge pipe and out through the filler hose. The pressure required to force liquid from the filler can is relatively low, and the contents of the can may be removed by a small number of strokes of the pump.

It is an additional feature to provide an air pressure relief valve which will relieve the pressure on the liquid in the filler can when the desired amount of liquid has been withdrawn. As the pressure is relieved by means of the valve, the liquid in the hose will return to the filler can. My invention is particularly useful in refueling outboard motors or other internal combustion engines where gasoline is used thereby reducing the possibility of fire hazard. With my invention I obviate the use of funnels and other transfer means. With the conventional type of flexible spout filler can there is a danger when filling an outboard motor gasoline tank of upsetting the boat or spilling the fuel particularly when the water is rough.

It is a primary feature of my invention to provide the above mentioned flexible filler hose which is relatively long and is oil resistant. As a result my filler can can be positioned on the seat or bottom of a boat where a few strokes of the pump will enable an operator to fill a fuel tank with speed and safety while in a seated position. It is a further feature to provide a compartment underneath the lid of my filler can in which the filler hose may be easily coiled and secured when not in use. With my device I also provide means whereby a fuel tank may be emptied of fuel by simply placing my filler hose into the bottom of the fuel tank to be emptied, pump enough liquid to completely fill the filler hose, and then depress the air valve and as a result the liquid or fuel in the fuel tank will be siphoned into my filler can.

In the use of outboard motors where gasoline is mixed with oil in a filler can, the oil and gasoline gradually separate by reason of gravity after

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the mixture has stood for a short period of time. With my device the action of the pump in my filler can forces air through the mixture as the pump is operated, which action agitates the gas and oil thus mixing them, doing away with the necessity of shaking the can or in some manner again mixing the oil and gasoline for proper engine operation.

With my invention I provide a convenient manner in which to store and protect the filler hose, and combined with its other features my device lends itself to other uses such as filling gasoline and kerosene stoves, distillate burning home heaters, lamps, and in fact any use to which an ordinary filler can may be put.

A further object of my invention consists in providing a spring actuated valve that is opened by the cover when the cover is in a closed position to relieve the air pressure in the container.

I also provide an alternative form of my container where an extremely small hole allows the air pressure which is built up in the container to gradually escape.

In a further form of my receptacle I provide a valve having an opening in the seat which permits air to gradually escape from the container. With these features the air pressure in the tank is gradually automatically released when the air pump is out of operation for any length of time.

I also provide a series of drain holes under the cover of the container which communicates with the top portion thereof, so that if any water or fluid is deposited on top of the container and enters the hose compartment these small holes will drain the liquid away so as to keep the hose compartment dry.

The features of primary importance have been defined heretofore, and other features and objects will be set forth in the specification and claims.

In the drawings forming a part of this specification:

Figure 1 is a perspective view of my filler can showing the lid and pump handle in a raised position for operation.

Figure 2 is a cross sectional view of my device with the lid in a closed, locked position.

Figure 3 is a partially sectional plan view with the lid and cover removed.

Figure 4 is a detailed sectional view of the pump valve.

Figure 5 is a view on the line 5—5 of Figure 4.

Figure 6 is a detailed cross sectional view of the air pressure relief valve.

Figure 7 is a detailed section showing a portion of the top of my container with an alternative form of air relief valve.

Figure 8 is an enlarged sectional detail of another form of spring operated air relief valve where an air channel is cut in the seat of the

valve to permit air to automatically escape out of the same.

Figure 9 is an enlraged section of a portion of an alternative form of my container where an extremely small air hole is provided in the top of the container which permits air to escape and thus relieve the air pressure within the container.

With my fuel filler can A I provide a cylindrical tank body portion 10 closed at its lower end by the cylindrical bottom portion 11. A cylindrical top portion 12 is secured to the upper edge of the body portion 10. A pressure relief valve 13 is secured to the cylindrical top portion 12 for releasing pressure built up within the body portion 10. A metal discharge pipe 15 extends from the upper surface of the top portion 12 downwardly into the tank portion 10 to a point just above the bottom 11 thereof. Attached to the upper end of the discharge pipe 15 is a length of flexible hose or tubing 16 which may be coiled on the top surface of the top portion 12 as illustrated in Figures 2 and 3. The filler hose 16 is provided with a shutoff valve 17 secured to the end thereof.

The pump unit B is located centrally of the top portion 12 and is composed of a cylindrical base portion 18 which is secured to the top portion 12 at 19. The cylindrical cup-like member 20 is adapted to be screwed into the cylindrical base portion 18 and the top portion of which is provided with the irregularly outlined lug receiving holes 21. Secured within the cup-like member 20 is a collar 22 which is adapted to position the elongated cylinder casing 23 together with the washer 24. The pump unit B is further composed of the plunger 25 which is adapted to operate within the cylinder casing 23 and will force air downwardly and outwardly through the valve 26 which is composed of the washer 27, the retainer 28 and the spring 29. As pressure is directed against the washer 27 it moves downwardly allowing air to be forced downward through the opening 30 as a result of the action of the plunger 25 moving downwardly in the cylindrical casing 23. As air is forced past the valve 26 and into the cylindrical tank body 10, the pressure then exerted on the fuel within the body portion 10 will force fuel upwardly through the discharge pipe 15 and out of the hose 16 when the shutoff valve 17 is open. The plunger 25 is operated by the rod 31 which is secured to the handle 32. Secured to the rod 31 are the lugs 33 which are adapted to engage within and under the top portion 21' of the cup-like member 20 by means of the irregular lug receiving holes 21 to secure the lid 34 to the cover portion 34'. The circular cover portion 34' is secured to the upper edge of the body portion 10. The handle 32 is further secured to the lid 34. The handle 32 is turned slightly to disengage the lugs 33 from the irregular receiving holes 21 so that the handle 32 together with the lid 34 may be drawn upwardly, thereby allowing the plunger 25 to move upwardly within the casing 23.

The pressure relief valve 13 is composed of the vertical rod 35 at the top of which is secured the cap 36 which operates to move upwardly and downwardly over the cylinder 37 against the action of the spring 38. As the cap 36 is moved downwardly the washer valve 39 and retainer 40 also move downwardly, allowing air pressure which may have been built up within the body portion 10 to escape through the valve. A hole or aperture 41 is formed in the cover 34' in such a position that the pressure relief valve 13 will extend therethrough for easy operation. When the lid 34 is closed upon the aperture 43 of the cover 34', the closed compartment 42 is formed wherein the filler hose 16 is easily and readily stored.

My device is operated in the following manner. When the lid 34 is in a closed locked position the handle 32 is grasped by the user and turned slightly in one direction or the other to disengage the lugs 33. As a result the lid may be moved upwardly and downwardly which allows the plunger 25 to build up pressure within the body portion 10 by moving the handle 32 in an up-and-down movement. As pressure is built up within the body portion 10, any liquid therein will tend to be driven upwardly into the discharge pipe 15 and outwardly through the filler hose 16 to the valve 17. The filler hose 16 is conveniently coiled in the compartment 42 formed by the top portion 12, the cover 34', and the lid 34. The filler hose 16 is uncoiled and placed in a container which is desired to be filled. When the container is filled, the liquid or fuel remaining in the filler hose 16 may be drawn back into the body portion 10 of my fuel filler can by releasing the pressure therein by means of the valve 13.

My fuel filler can A is filled with liquid by engaging the lugs 33 under the portion 21' and turning counter-clockwise thereby removing the cup-like member 20 together with the pump unit B.

My device may also be used for siphoning fuel or liquid from a container into the body portion 10 of my fuel filler can by forcing fuel into the filler hose 16 in the manner above described and inserting the end of the filler hose 16 into the fuel to be siphoned with the valve 17 open. The pressure relief valve 13 is then depressed and opened, allowing the fuel or liquid in the filler hose 16 to return to the filler can A, drawing with it the liquid or fuel in the container which is desired to be emptied into my fuel filler can.

In Figure 7 I have illustrated a form of a pressure relief valve C. The valve C is operated when the lid 34 is moved downwardly and locked in position, the outer portion of the lid contacting the rod 45 which is in turn pushed downwardly opening the valve proper 46. The valve C is secured to the top portion 12 with the rod 45 extending through a small hole formed in the cover portion 34'. Thus when sufficient air pressure is built up within the filler can A, the lid 34 is closed and locked in position thereby opening the valve C allowing the fuel in the filler hose 16 to return to the filler can as a result of the pressure on the top surface of the fuel being relieved by means of the operation of the valve C.

In Figure 8 I have illustrated a form of a pressure relief valve D which is positioned on the top portion 12 of the filler can A and which extends upward through an aperture 47 formed in the lid portion 34. The valve head 48 is prohibited from making a complete seal by a small channel portion 49 which allows a small amount of air to escape although the valve head is on its seat. The valve head 48 is opened completely by pushing downward on the button 50 when it is desired to relieve the air pressure on the fuel in the filler can A.

In Figure 9 I have illustrated a form of an air pressure release which embodies a raised portion 51 having formed on the top thereof a small hole or aperture 52 which allows a very slow re-

lease of air pressure at all times, but small enough in diameter to allow pressure to be built up on the fuel in the filler can. The raised portion 51 is formed on the top portion 12.

The air relief valves in the container do not interfere with the securing of sufficient air pressure to force the gasoline or liquid fuel out of the container when the pump B is operated.

A series of drain holes 12' are provided where the top portion 12 joins the outer wall portion 10 to allow any liquid which is collected on the top portion 12 to drain from the compartment 42. This leaves the compartment 42 which contains the hose, dry at all times.

The shutoff valve 17 may be equipped with a removable strainer screen (not illustrated in the drawings). However, this screen is of ordinary construction which will prevent any foreign matter entering the gas tank of the outboard motor or the vehicle where my filler can and hose are used.

I claim:

1. A fuel filler can including in combination a main body portion, a top portion enclosing said body portion, an air pressure relief valve positioned in said top portion, and air pressure pump positioned centrally of said top portion and extending within said main body portion, a cover portion secured to said top portion, an aperture formed in said cover portion, a lid secured to said pump and adapted to cover said aperture, a handle secured to said lid, means for securing said lid to said cover, a discharge pipe secured to said top portion and extending adjacent the bottom of said main body portion, a filler hose connected to said discharge pipe and adapted to be coiled under said cover portion when not in use.

2. A portable fuel filler can including a tank, an annular compartment formed in the top of said tank, an air pressure pump for building up air pressure in said tank, valve means for relieving said pressure, a lid for said compartment, a handle formed on said lid and secured to said pump, means for securing said lid to said pump, a discharge pipe extending into said tank, a filler hose secured to said discharge pipe adapted to be coiled in said annular compartment when not in use.

3. A fuel filler can including a tank, a compartment formed in the top of said tank, pump means for creating pressure in said tank upon fuel therein, lid means for said compartment attached to said pump means, a handle secured to said lid means, a filler hose leading from said tank and adapted to be coiled within said compartment when not in use.

4. A liquid dispensing can including in combination a tank, a filler hose leading from said tank, compartment means formed on the top of said tank for storing said hose when not in use, pump means for building up pressure within said tank, valve means for reducing air pressure in said tank, a lid for said compartment means, and a handle on said lid secured to said pump means for operating said pump means.

5. A liquid dispensing container comprising a tank for holding a supply of liquid, a hood portion formed on the top of said container, a cover for closing a central hole formed in said hood, a flexible filler hose adapted to be stored in said hood under said cover when not in use, and a pump for forcing air into said container, the operating handle of which is secured to said cover of said hood whereby said hood can be closed to conceal said filler hose within said hood.

6. A fuel container for outboard motors and the like, including a tank for supplying a quantity of fuel, a hood formed on said tank adapted to provide a closure in which a flexible fuel discharge hose may be coiled and stored when not in use, a cover for opening and closing said hood, an air pump attached to said cover and adapted to be operated by a handle secured thereto which opens and closes said cover, a lock for holding said cover closed, and an air relief valve adapted to be operated by said cover when the same is moved into closed position to relieve the excess air pressure in said fuel tank when not in use and said cover is closed.

7. A container for fuel including a receptacle for liquid fuel like gasoline, an air pump for forcing air into said container, a hood formed on said container adapted to enclose a flexible discharge hose leading from the bottom of said container, a series of drain holes formed around the lower edge of said hood to drain any liquid entering said hood, and a cover for closing said hood adapted to be secured to said air pump and to be closed when said pump is in lowermost position, said hood being adapted to conceal said fuel discharge hose when the same is contained therein and said cover is closed.

8. A fuel container comprising an air pump adapted to inject air into the fuel compartment, a discharge tube leading from the top to the bottom of said fuel compartment, a flexible discharge hose connected to said discharge tube, a dome-like hood formed on said fuel container and adapted to provide a storage compartment for said flexible fuel discharge hose when the same is not in use, an air relief valve for relieving excess air pressure from said fuel container, drain passageways formed in the bottom of said hood to drain liquid out of the same, and a cover for closing said hood adapted to be operated by the handle which operates said air pump.

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