

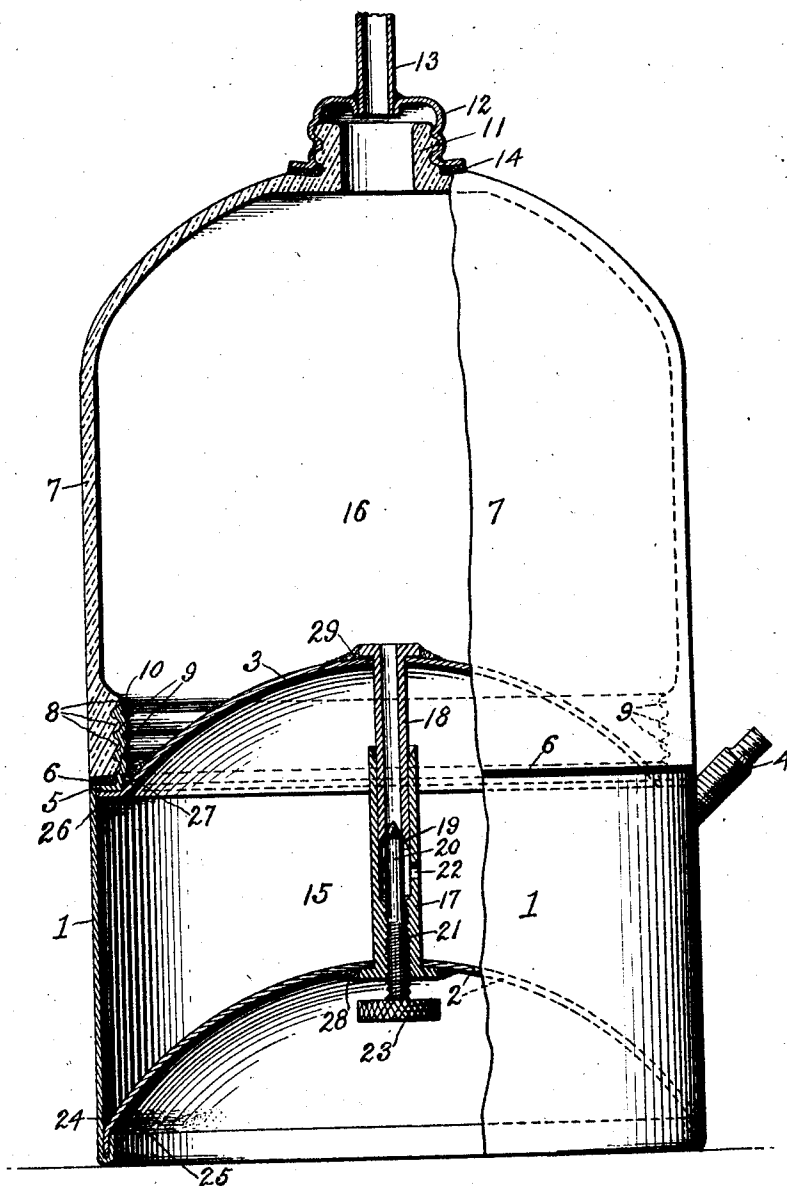
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OIL DISPENSER

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UNITED STATES PATENT OFFICE.

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OIL DISPENSER.

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This invention relates to liquid dispensers, and especially to an improved oil dispenser.

At automobile supply stations, a considerable amount of time is consumed in putting oil in the crank cases of automobiles, especially in cold weather, when the oil is comparatively thick and sluggish. Besides, there is a considerable loss to the consumer because of the quantity of oil which remains on the internal surface of the measuring vessel, where the force of gravity alone is depended on for forcing the oil from the measuring vessel. Therefore, one object of this invention is to provide a measuring and dispensing vessel in combination with and in communication with a compressed air receptacle or container, and to provide the latter with an air inlet valve which is quickly and easily connectible with a pump such as is ordinarily used for inflating pneumatic tires, so that this device may be operated by the equipment at hand at most every automobile supplying station.

Another object is to provide a dispensing device of this character, the oil container of which is transparent, so the consumer or purchaser can be sure that he is receiving the proper measure of oil.

Another object is to provide a device of this character which, while being comparatively light, is of the proper shape to sustain the heavy air pressure without danger of bursting or distorting the device.

Another object is to provide a device of this character which is composed of sections having air-tight connections, such sections being separable from one another for the purpose of gaining access to the valves and their adjuncts, also to permit replacement of any glass member which may become broken.

Another object is to provide a device of this character having a valve-controlling handle protected within the arched or concavo-convex bottom, but is in readily accessible and convenient position for manipulation when the device is being used for dispensing the oil into the crank case of a motor vehicle.

Other objects and important features are pointed out or implied in the following details of description, in connection with the figure of the drawings which is a view partly in side elevation and partly in central vertical section and illustrates the preferred construction embodying the inventive ideas.

In these drawings, a sheet metal air-tank includes a cylindrical wall 1, a concavo-convex bottom 2 and a concavo-convex top part 3, these three elements being secured together in air-tight relation, and because of the curvature of each of these elements, they form an especially rigid or unyielding resistance against any distortion by the force of compressed air therein. Any ordinary form of air valve 4 may be provided at any convenient place through the wall 1, and be used in connection with any ordinary tire-pump for compressing air in this air-tank.

A marginal gasket seat 5 is formed on the upper face of the air-tank and forms part of the top of the latter, a gasket 6 is seated thereon, and a hollow glass member 7 has its lower annular edge seated on this gasket. This member 7 is molded with screw-threads 8 which mesh with screw-threads 9 formed in an annular upstanding flange 10 which is preferably an extension of the gasket seat 5 and of the wall 1. By screwing the member 7 down tight on the gasket 6, a liquid-tight joint is provided between the air-tank and the glass member 7. This glass member combines with the flange or annulus 10 and with the top part 3 of the air-tank, thus forming the oil container which may receive the oil through its externally threaded tubular mouth 11. A metal cap 12 is screw-threaded on the externally threaded mouth 11, and a spout or tube 13 extends through this cap and provides an outlet through which the oil is dispensed into the crank cases of the motor vehicles. This outlet tube 13 is shown broken off, it being understood that such tube may be of any appropriate length, also of any appropriate cross section, and it may be provided with a cap or other appropriate stopper for preventing dust and other foreign matter from getting into the oil. A gasket 14 is provided between the glass member 7 and cap 12.

A simple and very effective form of valve mechanism is here shown for controlling the flow of air from the air chamber (indicated at 15) into the oil chamber (indicated at 16), such valve mechanism including an outer tubular member 17 and an inner tubular member 18, the latter having its lower end closely fitted in the upper end of the member 17. This member 18 is provided with a valve seat 19 into which extends a conical end of a valve needle 20, the latter being threaded at 21 into the lower end of the member 17.

This latter member is provided with an inlet 22, so that compressed air can pass from the chamber 15, through the member 17, thence through the member 18, and thence
 5 into the oil chamber 15, that is, when the valve is open; but when the valve is closed, air cannot pass from the chamber 15 to the chamber 16. The needle 20 may be provided with any appropriate form of handle 23, and
 10 this handle is located within the hollow of the arched bottom 2, out of the way, and out of danger of being accidentally turned.

In constructing a device of this character, the tank-wall 1 is preferably formed of
 15 seamless tubing, and is spun, pressed or otherwise formed to include the gasket seat 5 and the threaded annulus 10. The parts 2 and 3 may be spun or pressed from sheet metal, centrally apertured, and formed with appropriate margins for securing them to the lower
 20 end of the wall 1 and to the gasket seat 6 respectively. For securing the arched bottom 2 in place, the wall 1 may be turned inward and upward around the margin of this
 25 part 2, and these parts 1 and 2 may be soldered at 24 and 25, thereby not only rendering this part air-tight, but also providing maximum strength against the pressure of air therein. The top part 3 has integrally
 30 formed therewith a plane marginal part which is soldered at 26 and 27 and thereby united with the gasket seat to form the top or cover of the air chamber. After the air chamber is thus formed, the member 17 is inserted through the central opening of the
 35 member 2, the member 18 is inserted through the central opening of the top part 3, and forced into the member 17, and then the latter is soldered at 28, and the member 18 is
 40 soldered at 29. The solder not only adheres to the peripheries of the flanges on these members 17 and 18, but also flows into the joints under these flanges, or between them and the parts 2 and 3, thereby making
 45 these connections air-tight and very strong.

Any suitable form of handle (not shown) may be secured to either the wall 1, the concaved or arched bottom 2 or both, or may be molded integrally with the glass member 7.
 50 In preparing this device for dispensing oil into the crank case of an engine, the cap 12 is removed, the chamber 16 is filled with oil through the mouth 11, the cap is replaced, and the air is now forced into the chamber 15
 55 through the valve 4, the valve-member 20 being seated in the valve-seat 19, so no air can now pass to the chamber 16. The desired air-pressure is thus obtained and maintained in the air-chamber.

In dispensing the oil into the crank-case, the device is inverted, and its spout is placed in the inlet of the crank case, then the valve
 60 19—20 is opened, and air passes from the chamber 15 to the chamber 16 and exerts a pressure on the oil, thus hastening the flow

of oil from the oil chamber into the crank-case. It is to be understood that the oil-chamber is of a standard measuring capacity, or may be made of different capacities, as
 70 one-quart, one-half-gallon, etc. and, being transparent, the purchaser can readily see that he is receiving the desired quantity of oil.

It is within the scope of this invention to place any ordinary form of check-valve (not
 75 shown) in the air-passage between the chambers 16 and 15, or to make the valve 19—20 spring-pressed, so oil cannot flow into the air-chamber in the event the user fails to close such valve.

I do not intend to limit my patent protection to the exact construction, arrangement, dimensions or materials here shown
 80 and described, but the inventive ideas include numerous changes and additions which may be made without departing from the spirit
 85 and scope of the invention.

What I claim as my invention is:

1. In an oil measuring and dispensing device, the combination of an air-chamber having
 90 an air-inlet and having a valve-mechanism extending through its bottom and top, said valve-mechanism including an air-passage extending from the interior of the air-chamber through said top and terminating
 95 adjacent to the latter, said bottom being upwardly arched and providing a cavity thereunder, said valve mechanism including a manipulative valve-controlling member in said cavity, and a hollow member provided
 100 with means to removably secure it to said top in the relation for combining with the latter to form an oil-chamber, this oil-chamber having an oil-outlet at its upper part, for the purpose specified.

2. In an oil measuring and dispensing device, the combination of an air-chamber having
 105 an air-inlet and having a valve-mechanism extending through its bottom and top and terminating adjacent to the latter, said valve mechanism including manipulative means to permit and prevent a flow of air
 110 through said top, a screw-threaded annulus united with said top around said valve-mechanism, and a hollow member having a primarily open lower end having screw-
 115 threads for screwing onto and off of said screw-threaded annulus, this hollow member combining with said annulus and top to form an oil-chamber, this oil-chamber having
 120 an oil-outlet at its upper part, for the purpose specified.

3. In an oil measuring and dispensing device, the combination of an air-chamber having
 125 an air-inlet and having a valve-mechanism extending through its bottom and top and terminating adjacent to the latter, said valve mechanism including manipulative means to permit and prevent a flow of air
 130 through said top, a screw-threaded annu-

lus united with said top around said valve-mechanism, said top including a gasket-seat at the base of said annulus, a gasket for said gasket-seat, and a hollow glass member having a primarily open lower end and an outlet at its upper end, said open lower end of this glass member being screw-threaded and adapted to fit on said gasket while meshing with said screw-threads of said annulus, said glass member being of a size to combine with said annulus and top for constituting a transparent measuring chamber for oil, substantially as shown, for the purposes specified.

4. In an oil measuring and dispensing device, the combination of a cylindrical air-chamber having an air-inlet and having an upwardly arched bottom providing a cavity under said bottom, said air-chamber having a top provided with a gasket-seat around its margin, an annular threaded member

united with said top at the inner edge of the gasket-seat, a gasket on said gasket-seat, a hollow member having threads to mesh with the threads of said annularly threaded member while said hollow member is seated on said gasket and combines with said annular threaded member and top to form an oil-chamber, said oil-chamber having a mouth at the opposite end from said threads, and a valved air-passage between said air-chamber and oil-chamber and terminating at the bottom of the latter, the valve of said air-passage being provided with a manipulative element for permitting and preventing a flow of air from the air-chamber to the oil-chamber, said manipulative element being in said cavity, for the purposes specified.

In testimony whereof I affix my signature.

EVERETT E. THOMPSON, JR.