June 12, 1951 H. G. LANE 2,556,655

DEVICE FOR DELIVERING PREDETERMINED QUANTITIES OF LIQUIDS

Filed July 23, 1946

Fig. 1.

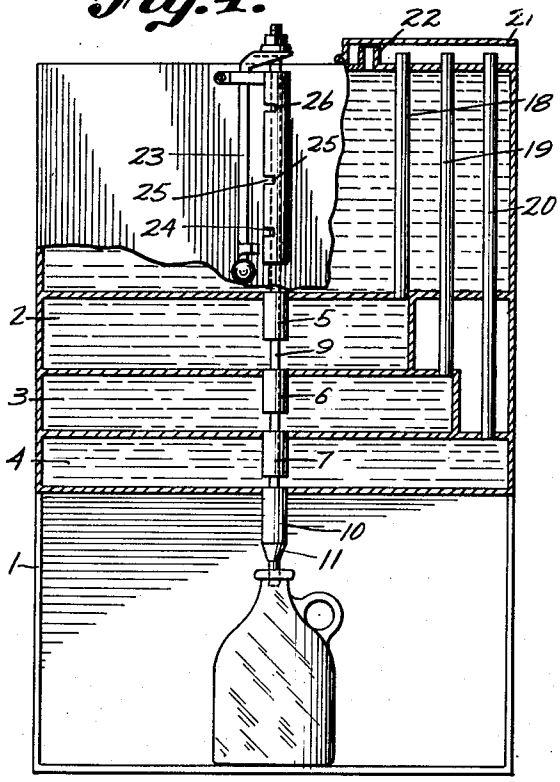


Fig. 2.

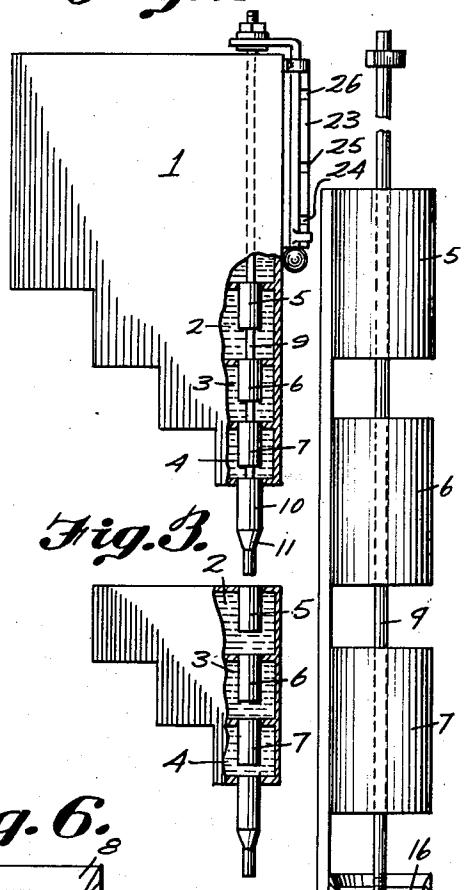


Fig. 3.

Fig. 4.

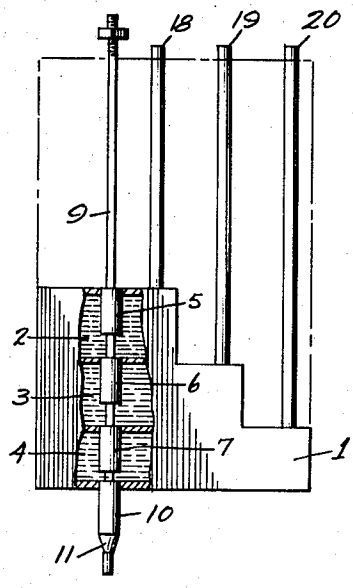


Fig. 6.

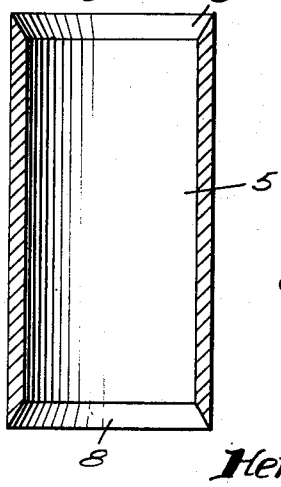
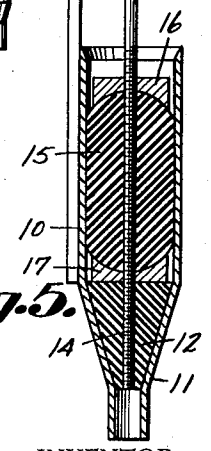


Fig. 5.



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DEVICE FOR DELIVERING PREDETERMINED QUANTITIES OF LIQUIDS

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Application July 23, 1946, Serial No. 685,739

1 Claim. (Cl. 222—436)

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My present invention relates to improvements in valves for dispensing automatically predetermined quantities of oil and other liquids.

It is an object of the invention to provide a valve for accurately dispensing definite quantities of liquids, such as 1 qt., 1 gallon or 5 gallons.

A further object is the provision of a liquid dispensing valve for accurately dispensing predetermined quantities of liquid the valve including a plurality of compartments of different capacities, and having a novel compartment measuring valve that will not leak.

These and other objects are attained by the novel construction and arrangement of parts, hereinafter described and illustrated by the accompanying drawings, forming a part hereof, and in which—

Figure 1 is a vertical sectional view of the dispenser of my invention.

Figure 2 is an end elevational view partially broken away to show the interior.

Figure 3 is a view showing the aligned cylinders.

Figure 4 is an elevational view showing the relation of the air vents.

Figure 5 is an elevational view of the cylinders showing the piston rod.

Figure 6 is a vertical sectional view of one cylinder.

Referring now to the drawings—

My compartment liquid measuring valve consists in a main casing 1, which is divided into three or more superimposed containers 2, 3, 4, of different capacities. For example, the upper container 2 has a capacity of 4 gallons, the intermediate container 3 has a capacity of 3 quarts, and the lower container 4 has a capacity of 1 quart. These capacities of the containers or compartments 2, 3, 4 are by example and not limiting, it being obvious that the containers or compartments can be made of any desired capacity without departing from the spirit of my invention.

Formed in the upper walls of the compartments 2, 3, 4 of my valve are cylinders 5, 6, 7, having tapered ends 8, through which a piston 9 passes, and these cylinders stay wide open unless piston is being drawn through except for the valve rod space. Depending from the lower wall of compartment 4 is a bottle spout 9, having a conical valve seat 11, adapted to receive the conical plug 12 of the valve piston 9. The plug is threaded on a piston rod 14.

The upper portion of the packing 15 is positioned in a recessed nut 16, threaded on the rod 14, and the lower portion of the packing is also

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positioned in a recessed nut 17. The packing may be a small rope, spiral or some soft spongy material and requires hollow faces in the nuts 16 and 17 to keep it in place. The piston does not fit tightly as it passes through the cylinders so that it will not be hard to pull through. The lower section of plug 12 is made of tough material and screwed on to bottom end of rod 14. It is of the bottle stopper type and is designed to wedge into the conical valve seat 11, and is leak-proof.

Extending into the compartments 2, 3, 4, and above the liquid level in container 1 are air vent pipes 18, 19, 20, and the several compartments are provided with suitable drain plugs.

The cover 21 may be raised to permit access to the filling port 22, when the supply of liquid in the main casing 2 is exhausted. In operation when it is desired to dispense, for example, one quart of liquid, the operating handle 23 is set in lower notch 24, on front of storage tank, which pulls piston 9 up into cylinder 7. To draw off one gallon the operating handle is set in slot or notch 25, which pulls piston 9 up into cylinder 6, so all liquid in compartments 3 and 4 can run out through the bottom of the valve, and for 5 gallons operating handle is set in notch 26, which pulls piston 9 on up into cylinder 5, which cuts off all liquid in the storage tank and all liquid in compartments 2, 3 and 4 is below the piston 9, and can all run out, which is 5 gallons, then when all is out, the operating handle is released from the notch in which it is set and the piston 9 drops down into the conical valve seat 11, closing the bottom of the valve leak-proof, and opening all cylinders 5, 6, 7 so that all compartments 2, 3, 4 will refill from the storage tank.

The cylinders and vent pipes are welded into the casing and thus eliminates all pipe fittings, providing a leak-proof structure and making the compartment dispensing valve cheaper to manufacture, and of considerable strength and durability.

The piston 9 and cylinders 5, 6, 7 are not leak-proof while piston 9 is in a cylinder or passing through. This part of the valve does not have to be leak-proof, the flow of liquid is cut down to a few drops per second and does not change the measurements enough to count. The piston is stopped in the different cylinders when desired, for dividing the different amounts, while the amount wanted runs out at bottom.

The cylinders 5, 6, 7 stay wide open all the time when not in operation except for rod space so that liquid can run out of storage or main con-

tainer into the valve through cylinders to the different compartments 2, 3, 4.

From the above description it will be seen that there has been provided a simple and effective liquid dispenser of great durability, leak-proof and capable of being manufactured at small cost.

The above description is to be considered as illustrative, and not limitative of the invention of which modifications can be made without departing from the scope and spirit of the appended claim.

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

A liquid dispenser having superimposed compartments of varying capacity and an upper storage compartment, cylinders having tapered ends forming communicating ports between the adjoining compartments, a discharge spout having a conical mouth secured to the lowermost compartment, a piston having a conical valve head for co-action with the spout, and a resilient body

engageable with the cylinders, said resilient body being positioned between a pair of recessed nuts, means for reciprocating the piston to successively permit the discharge of liquid from the compartments and including a handle, a lug on the handle, a notched bar on the dispenser into which the lug may be selectively engaged to discharge a selected compartment, and a vent pipe connected to and extending upwardly of each compartment.

HENRY G. LANE.

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