Jan. 15, 1929. 1,698,889

A. J. MARSHALL

AUTO OIL MEASURING DEVICE

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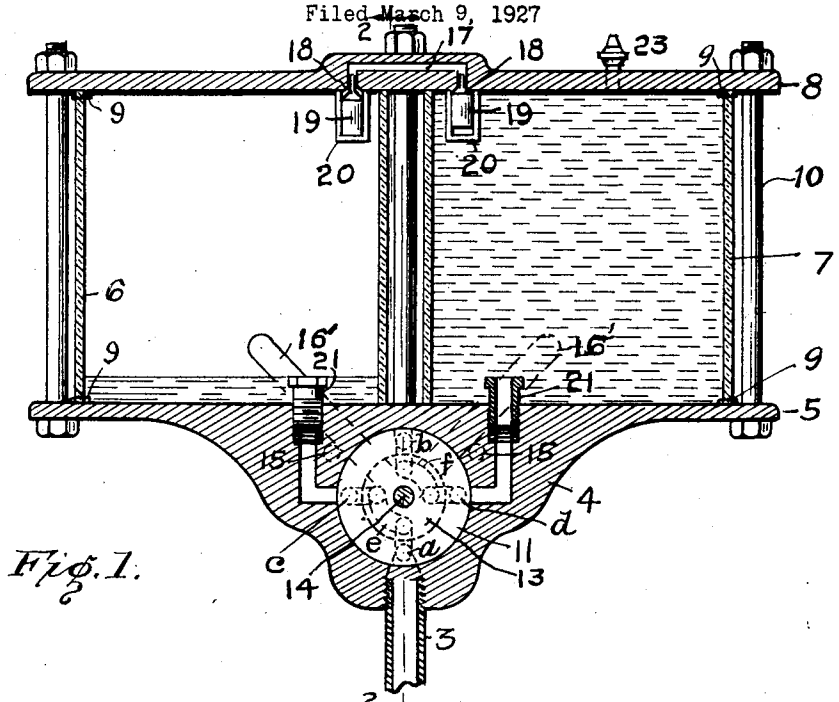


Fig. 1.

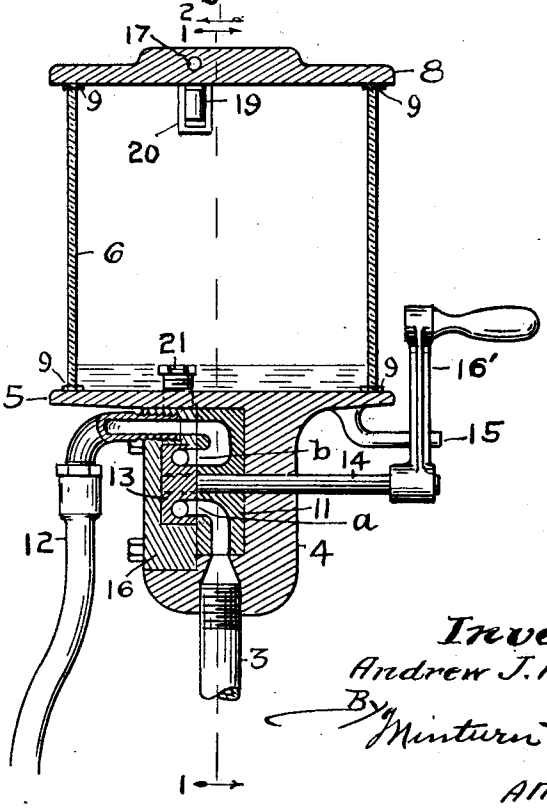


Fig. 2.

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AUTO OIL-MEASURING DEVICE.

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The object of this invention is to provide an oil vending device which can be adjusted to accurately measure the vended oil in any predetermined units, such as quarts, and to display the measured commodity in plain view of the purchaser.

Another object is so to connect two air tight containers that the oil contents of a full container will be positively discharged therefrom by air under pressure from an empty container, due to displacement of the air in the empty container in the process of filling it, under pressure with oil preparatory to the next discharge, that is to say, the object is to cause the filling of an empty container with oil, to discharge the oil in a container previously filled, and so on continuously.

I accomplish the above, and other minor objects which will hereinafter appear, by the mechanism illustrated in the accompanying drawing, in which—

Fig. 1, is a longitudinal vertical section of my invention on the line 1—1, of Fig. 2, and

Fig. 2, is a cross section approximately on the line 2—2 of Fig. 1.

Like characters of reference indicate like parts in the two views.

My invention is preferably elevated several feet above the pavement to make it conspicuous and easily watched by the customer while he is being served. Preferably it will be at the top of a stand pipe 3, which is hollow to also serve as a supply pipe in filling the measuring and vending containers. The stand pipe 3 is supported below in any suitable manner, not shown, and its upper end is screwed into a socket in a large depending boss 4, cast on the under side of a base-plate 5.

Seated on the base-plate 5 are the two cylinders 6 and 7, preferably glass, which form the walls of a pair of oil measuring and vending containers, of which the plate 5 is the bottom. A cap plate 8 rests upon the cylinders. Suitable gaskets 9 are interposed between the glass and metal and an air tight seal is secured by tightening the cylinders between the metal plates by means of the bolts 10.

A cylindrical socket is formed in one side of the boss 4, in which a correspondingly cylindrical valve seat block 11 is seated. Ports *a*, *b*, *c*, and *d*, start from four equi-distant concentric points in the outer side of the block 11. The bottom port *a* registers with a port extension in boss 4, through which it communicates with the interior of stand pipe. The top port *b* is extended and has constant communication with a discharge pipe 12. The side port *c* registers with an extension in the boss 4, which communicates with the interior of cylinder 6, and the side port *d* registers with an extension in the boss 4 which communicates with the interior of cylinder 7.

A cylindrical valve block 13 is mounted on a valve stem 14, which passes through the middle of the block 11; also through the boss 4 and terminates with an outside crank 15, by which the valve block 13 is manually rocked. The assembly is preferably made tight by a cover plate 16 which conforms in shape and is bolted to the boss 4. Through this cover plate the continuation of port *b* is here shown as extending to discharge pipe 12, but this cover plate may be dispensed with in which case the goose neck for pipe 12 will screw into the enlarged port *b* in block 11.

The valve block 13 has four port-holes on its inner face or that face which is in contact with the block 11 equi-distant from each other and on a concentric circle of the same radius as are holes for ports *a*, *b*, *c* and *d*, on block 11, whereby the ports of the two blocks are adapted to be brought into register with each other. The four port-holes in the valve block 13 are connected in pairs by extensions *e* and *f*, shown by dotted lines in Fig. 1.

It will now be apparent that when the port holes of block 13 are in register with those of block 11, as for example, in the manner shown in Fig. 1, the inlet pipe will be in communication with the interior of receptacle 6 and the receptacle 7 will be in communication with the discharge pipe 12. It is also apparent that when the valve block 13 is rocked a quarter of a revolution the inlet pipe 3 will be in communication with receptacle 7 and the receptacle 6 will be in communication with discharge pipe 12.

The rocking of the valve-block 13 is accomplished by operating crank 16′, and to stop the crank at positions of register of the ports I provide stop arms 15 suitably placed.

It is obvious that neither of the receptacles 6 and 7, can be filled while full of air, but in-

stead of providing a vent to the atmosphere I provide a communicating port 17 through the cap plate 8.

In each end of the port 17 is a valve 18, which closes by pressure against it of a float 19. The float is retained in operative position by a basket 20, but when oil supplied to the receptacle reaches the float the latter rises and closes the valve. Before that occurs the air contents of the receptacle begins to condense as the empty receptacle is filled under pressure with oil, and it passes through the port 17 to the oil-filled receptacle at its other end, and acts to forcibly eject the oil. Consequently, when the receptacle being filled with oil is full of oil, the other tank previously full of oil now contains air. This operation is reversed as often as the valve block 13 is appropriately rocked by the aid of crank 16'.

The receptacles 6 and 7 hold somewhat more than a quart or whatever the unit of measurement may be, but the amount discharged each time is accurately regulated by a stand pipe 21, which is screwed in or out, as the circumstance requires, until the quantity of oil contained above the top of the standpipe is just equal to the desired unit.

A vent controlled by a cock 23 may be opened to let the air out of container 7 at the first filling and is then closed.

The details of construction here shown may be varied without departing from the spirit of my invention and I therefore do not desire to be bound to the exact mechanism illustrated and described nor any more than is required by the appended claims.

I claim:

1. In a liquid vending machine, two measuring cylinders, a cap plate covering both cylinders having a conduit therein forming a communication between the cylinders, and having a float valve at each end of the conduit, a base plate supporting both cylinders having a depending boss with a recess on one side and a port from each cylinder to the recess, a hollow standard fixed to the boss and forming a supply conduit discharging into said recess, a valve seat block fixed in the recess having two ports respectively connecting with the ports to the two cylinders, and a rockable valve block having ports cooperating with those of the valve seat block to establish alternate communication between the supply pipe and a corresponding one of the cylinders by the rocking of the valve.

2. In a liquid vending machine, two measuring cylinders, a cap plate covering both cylinders having a conduit therein forming a communication between the cylinders, and having a float valve at each end of the conduit, a base plate supporting both cylinders having a depending boss with a recess on one side and a port from each cylinder to the recess, a hollow standard fixed to the boss and forming a supply conduit discharging into said recess, a valve seat block fixed in the recess having two ports respectively connecting with the ports to the two cylinders, and a rockable valve block having ports cooperating with those of the valve seat block to establish alternate communication between the supply pipe and a corresponding one of the cylinders by the rocking of the valve and a plate covering the valve seat block and valve block and having a recess in which the valve block is seated.

In testimony whereof I affix my signature.

ANDREW J. MARSHALL.