

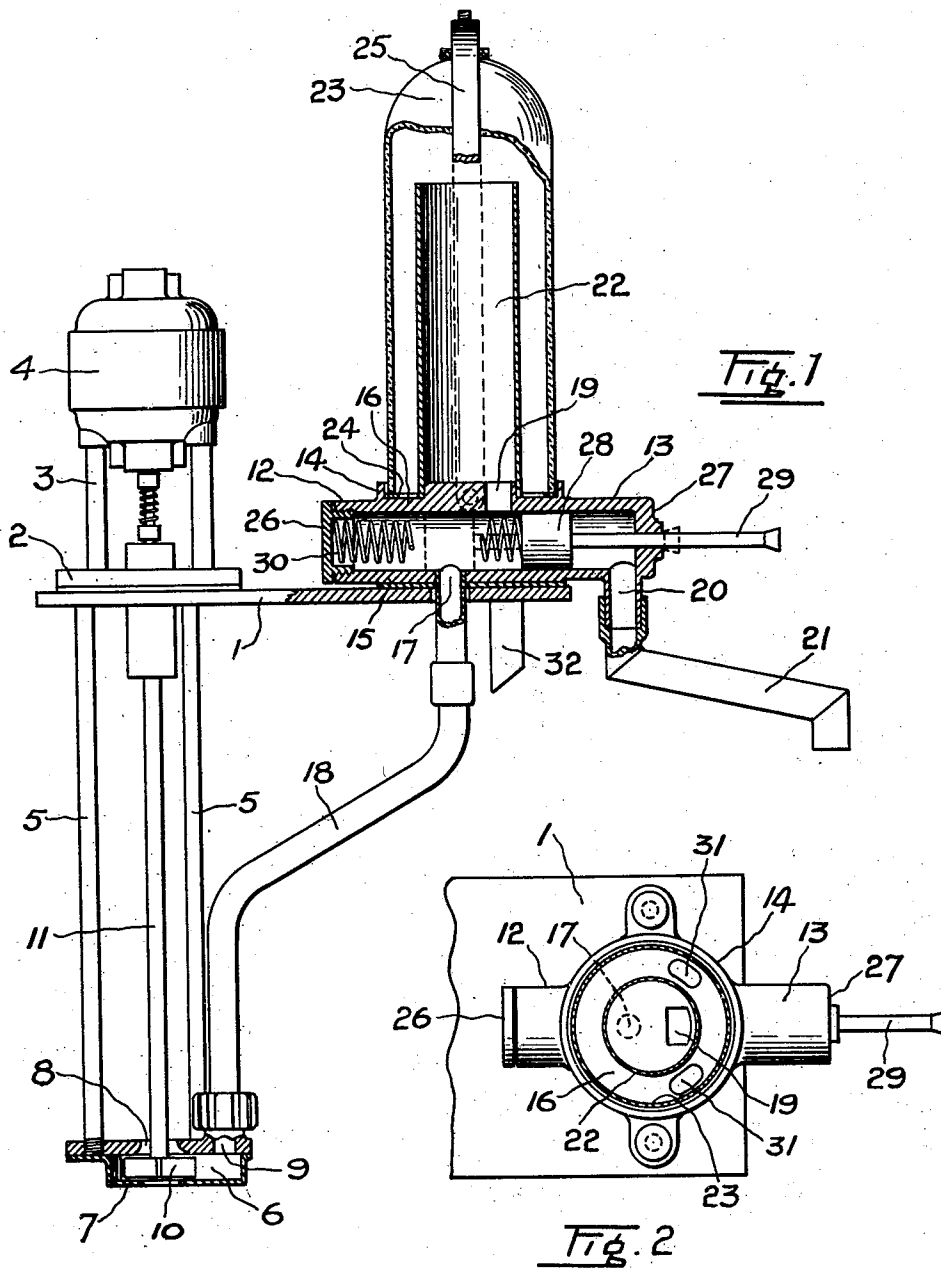
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MEASURING AND CIRCULATING DEVICE

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MEASURING AND CIRCULATING DEVICE

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My invention relates to improvements in measuring and circulating devices which are particularly adapted for use with machines employed in automatically dispensing soft drinks, such as orange crush and the like, where it is desired to keep the liquid in circulation to prevent the deposit of sediment and to maintain the whole of the liquid at an even temperature.

Besides the above object, the invention is designed to display to the purchasers the beverage to be dispensed with a view to stimulating the use of the machine, and to provide means whereby a predetermined quantity of such beverage will be delivered on the actuation of a valve.

The invention consists essentially of a receiver adapted to be filled by a non-positive drive pump, a display chamber having return communication with the source of supply to the pump and a valve mechanism for shutting off the supply to the receiver and opening it to an exterior discharge, as will be more fully described in the following specification and shown in the accompanying drawings, in which:—

Fig. 1 is a general view of the invention part in section.

Fig. 2 is a plan view of the valve body.

In the drawings like characters of reference indicate corresponding parts in each figure.

The numeral 1 indicates generally a bed plate which is adapted to be supported about a beverage container, not shown. Mounted upon the bed plate is a base 2 fitted with standards 3 upon which a vertically disposed motor 4 is supported.

Extending downwards from the bed plate 1 are rods 5 which support a horizontally disposed centrifugal pump generally indicated by the numeral 6, which consists of a housing 7 having an inlet opening 8 and a delivery opening 9. The pump is fitted with an impeller 10 which is direct driven from the motor 4 through a vertical shaft 11.

Mounted upon the bed plate 1 is a valve body generally indicated by the numeral 12, which is provided with a horizontally dis-

posed cylinder 13 intersecting a vertically disposed cylindrical chamber 14 having a bottom wall 15 and an upper wall 16, both of which are common to the side walls of the cylinder 13. The cylinder 13 is provided with an inlet port 17 which communicates with the pump delivery opening 9 through a pipe 18, a top discharge port 19 and a bottom discharge port 20, which latter communicates with a spout 21 for delivering the liquid to any suitable drinking cup. Fitted above the top discharge port 19 is a measuring cup 22 and covering the cup is a glass dome 23 which is seated upon a gasket 24 carried upon the outer periphery of the upper wall 16 of the chamber 14. The dome is held in position by a bale 25 extending thereover and down to the side walls of the chamber 14.

The cylinder 13 is provided with a rear end closure 26 and a front end closure 27 and is fitted with a piston 28 and a piston rod 29 thereto which extends through the closure 27 and is adapted to be inwardly pressed by any suitable means. The outward thrust of the piston is accomplished by a compression spring 30 which bears against the end closure 26. Extending through the lower and upper walls 15 and 16 of chamber 14 are ports 31 which preferably are fitted with short pipes 32 which serve to return to the container the liquid which has overflowed from the measuring cup.

Having thus described the several parts of my invention I will now briefly explain its operation.

The container is supplied with liquid to be dispensed and is so filled as to fully immerse the pump 6. The motor is started causing the liquid to be pumped upwards through the pipe 18, the inlet port 17, the cylinder 13, to the rear of the piston, thence through the top discharge port 19 into the measuring cup 22. When the receiving cup is full, the continued pumping causes the liquid to overflow into the annular space between the cup and the glass dome 23 in full view of any prospective purchaser from

the machine, so that the person can be duly attracted to the commodity offered for sale. The liquid so delivered from the cup passes downwards through the ports 31 in the chamber 14 and the pipes 32 back to the container, thus causing a constant circulation of the liquid, which ensures an even temperature of the whole body of liquid which will, in the case of soft drinks, be preferably kept under the influence of some refrigerating medium. When the piston rod 29 is thrust inwardly, the piston will pass along the cylinder 13 to a point between the inlet port 17 and the top discharge port 19 as shown in dotted line in Figure 1, thus stopping the flow of liquid to the measuring cup and opening communication between the measuring cup through the top discharge port 19, the forward end of the cylinder 13 and the bottom discharge port 20, so as to discharge the contents of the cup through the spout 21 to a suitable drinking cup or other vessel.

When the pressure against the forward end of the piston rod is removed, the piston will be returned to the position shown and the cycle as above described will be repeated. The pump 6 being of the non-positive drive type enables the piston to be moved with ease to shut off the flow from the pump when it becomes necessary to discharge a measured quantity of liquid from the machine.

What I claim as my invention is:

35 1. A measuring and circulating device comprising a pump, a measuring cup, a valve communicating therebetween, and means of return communication between the cup and the pump, said valve having alternate setting in which one setting enables liquid to flow from the pump to the cup and the other enables the liquid pumped into the cup to flow to discharge through the valve, said means of return communication 45 comprising a transparent vessel enclosing the measuring cup whereby the liquid overflowed from the measuring cup is displayed prior to its return to the pump.

50 2. A measuring and circulating device comprising a pump, a measuring cup, a valve communicating therebetween, and a means of return communication between the cup and the pump, said valve having alternate setting in which one setting enables 55 liquid to flow from the pump to the cup and the other enables the liquid pumped into the cup to flow to discharge through the valve, and means associated with said valve to retain same in first mentioned setting and to return same automatically to first mentioned setting upon being removed therefrom. 60

Dated at Vancouver, B. C., this 14th day of May, 1929.

65 JAMES HOWARD McLELLAN.