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DRINK DISPENSING DEVICE

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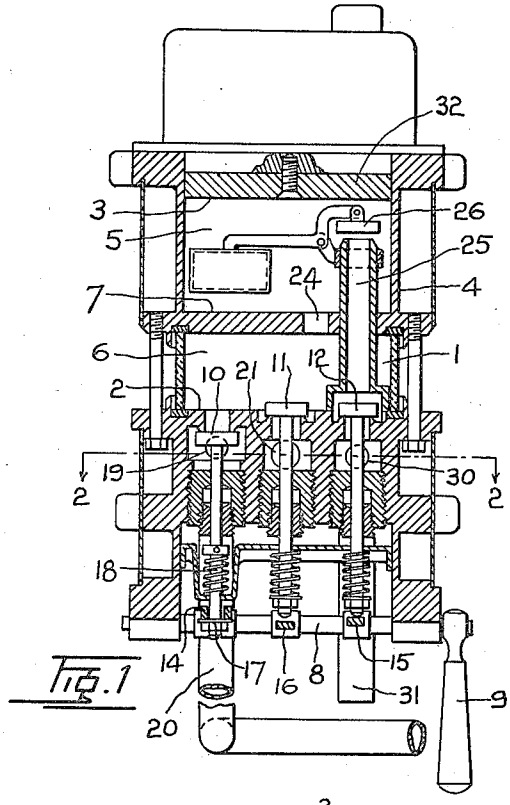


FIG. 1

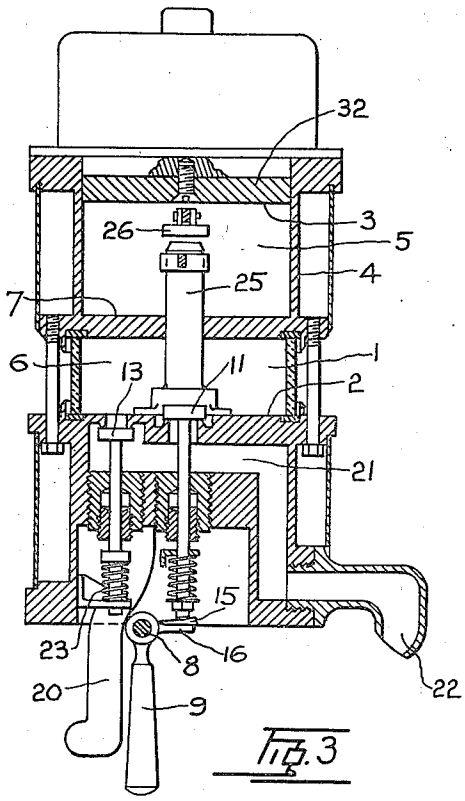


FIG. 3

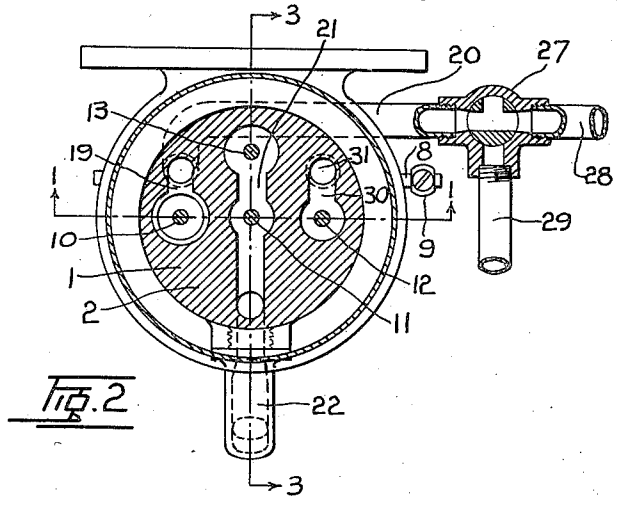


FIG. 2

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DRINK DISPENSING DEVICE

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4 Claims. (Cl. 225—9)

My invention relates to improvements in drink dispensing devices the objects of which are to provide means capable of dispensing measured quantities of liquid under vapour pressure, such as beer, directly from the barrel without passing it through an intermediate chamber wherein the gas content of the liquid is in part evolved; to provide a device capable of rapid operation, and to provide means whereby the device may be washed out whenever desired without wasting any of the liquid to be dispensed. A further object is to provide means whereby refrigeration is not required around or adjacent the dispenser, thereby effecting great economy in manufacture and continual saving when in use.

The invention consists essentially of a normally sealed vessel, a valve for admitting liquid to the vessel, a valve for discharging the liquid, and means for operating said valves in timed relation, as will be more fully described in the following specification and shown in the accompanying drawing, in which:—

Fig. 1 is a vertical sectional view of the dispenser taken on the line 1—1 of Figure 2.

Fig. 2 is a transverse sectional view of the dispenser taken on the line 2—2 of Figure 1.

Figure 3 is a vertical sectional view of the dispenser taken on the line 3—3 of Figure 2.

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

The numeral 1 indicates a vessel having a bottom wall 2, a top wall 3 and side walls 4. The vessel 1 is divided into gas and liquid compartments, respectively indicated by the numerals 5 and 6, by a horizontal partition 7.

Journalled below the vessel 1 is a shaft 8 fitted with a hand lever 9 by which the shaft may be rocked to charge and discharge the dispenser.

The bottom wall 2 is apertured to provide a plurality of seats, for an inlet valve 10, a discharge valve 11, a relief valve 12 and a water outlet valve 13. The valves 10, 11 and 12 are respectively disposed to be controlled by fingers 14, 16 and 15 which are mounted upon the shaft 8. It will be noted that the inlet valve 10 is arranged to open against the pressure of the supply liquid and that the finger 14 is therefore divided at its outer end to engage both sides of a washer 17 adjustably fitted upon the stem 18 of the valve. A port 19 communicates between the inlet valve 10 and a liquid supply pipe 20. A passage 21 communicates between the discharge valve 11, the water outlet valve 13 and a discharge spout 22, so that the liquid to be dispensed and water used for washing purposes is discharged from the same spout. The water outlet valve is spring loaded as at 23, see Figure 3, and is not operated except by excess pressure within the vessel 1.

The partition 7 is provided with an opening 24 through which gas, foam or liquid may pass between the compartments 5 and 6. A pipe 25 extends upwards from the relief valve 12 through the partition 7 well up towards the top wall 3. The upper end of this pipe is equipped with a float valve 26 which is adapted to close it when a predetermined quantity of liquid has entered the upper compartment 5 through the opening 24.

The inlet pipe 20 is fitted with a three way valve 27 to which is connected a pipe 28 leading from a source of supply and a pipe 29 leading from a source of supply of water under suitable pressure.

The relief valve 12 communicates through a passage 30 with a vertically disposed pipe 31 which is led to a convenient point to discharge any drops of liquid passing the float valve 26.

In order to permit of a capacity charge of the dispenser a block 32 of desired size or volume is secured to the underside of the top wall 3, a large block being used to provide a small liquid capacity and a small one to provide a greater capacity.

The operation of the device is as follows:—

Beer or other liquid is conducted under suitable pressure from a barrel or other source of supply to the dispenser through the pipe 28, and the valve 27 is set to permit it to flow through the pipe 20. As the lever 9 is pushed backwards, is viewed in Figure 1, or the left as in Figure 3, the shaft 8 is rocked, causing the finger 14 to open the inlet valve 10, and allow the beer to flow therethrough into the lower compartment 6. The vessel 1 being sealed against discharge and relief during the filling operation, obviously causes an air pressure to be built up in the upper chamber 5 as the beer enters the compartment 6, so that when the pressure within the vessel 1 is in equilibrium with that in the pipe 20 the flow will cease and the hand lever 9 may be released if desired. On the initial flow of beer into the lower compartment 6 foaming will take place, due to pressure reduction, the foam will obviously rise into the upper compartment as the liquid fills the lower one, and in the interval between filling and emptying, the foam may condense and flow back to the lower compartment. When the hand lever 9 is moved in the opposite direction to that described, the relief valve 12 will be opened and immediately afterwards, by virtue of the relative set of the fingers 15 and

16 on the shaft 8, the discharge valve 11 will open, so that the liquid within the vessel 1 may be run off through the spout 22 and the vessel become filled with air at atmospheric pressure.

The discharging of the dispenser takes place at atmospheric pressure only, so that undue foaming of the beer is prevented.

The float valve 26 serves to prevent dishonest manipulation by an operator, whereby the pressure may be relieved in the upper compartment that more than the predetermined amount of liquid may be allowed to enter and pass out through the relief valve 12. In case of such manipulation, liquid would flow into the upper compartment and close the valve before the liquid reached the overflow level.

To wash out the dispenser, the valve 27 is turned to admit water under suitable pressure to the pipe 20, when on manipulating the valve to fill the dispenser, water will flow through the inlet valve into both compartments 6 and 5 until the pressure becomes equal to or greater than that of the spring on the water outlet valve 13, when the valve will open and allow the water to escape through the discharge spout. An alternate means for flushing the dispenser is to connect a water supply to the pipe 31 leading from the relief valve 12 and to move the hand lever 9 to open said relief valve.

What I claim as my invention is:

1. A drink dispenser comprising a normally sealed vessel having a bottom wall and a top wall, said bottom wall having three valves, means for operating said valves, one valve serving as liquid inlet, one as air relief outlet and one as liquid discharge, said air relief having a pipe having an open end adjacent the upper wall, and means for progressively opening the liquid inlet, the air relief outlet and the liquid discharge valve, said vessel having an automatic valve adapted to discharge liquid from the vessel in response to a predetermined pressure within the vessel.

2. A drink dispenser comprising a normally sealed vessel having a bottom wall and a top wall, said bottom wall having three valves, means for operating said valves, one valve serving as liquid inlet, one as air relief outlet and one as liquid discharge, said air relief having a pipe having an open end adjacent the upper wall, and means for progressively opening the liquid inlet, the air relief outlet and the liquid discharge valve, said vessel having an automatic valve adapted to discharge liquid from the vessel in response to a predetermined pressure within the vessel, said automatic valve being arranged to communicate with the outlet to the liquid discharge valve.

3. A drink dispenser comprising a normally sealed vessel having in its base a liquid inlet, a liquid outlet and a relief outlet, a valve for the liquid inlet and liquid outlet and the relief outlet, each of said valves having a depending stem projecting below the vessel and a rocking shaft mounted horizontally below the vessel and having laterally projecting fingers adapted to engage the stems of the valves to operate them whereby the rocking of the shaft in one direction opens the liquid inlet valve and the rocking of the valve in the other direction opens the relief outlet and the liquid outlet valves.

4. A drink dispenser comprising a normally sealed vessel having in its base a liquid inlet, a liquid outlet and a relief outlet, a valve for the liquid inlet and liquid outlet and the relief outlet, each of said valves having a depending stem projecting below the vessel and a rocking shaft mounted horizontally below the vessel and having laterally projecting fingers adapted to engage the stems of the valves to operate them whereby as the shaft is rocked in one direction the liquid inlet valve is opened and as the shaft is rocked in the other direction the relief valve is opened and subsequent to the opening of said relief valve the liquid outlet valve is opened.

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