

C. L. NEWLAND.
 DEVICE FOR DRAWING OFF MEASURED QUANTITIES OF LIQUIDS.
 APPLICATION FILED MAY 16, 1911.

1,001,977.

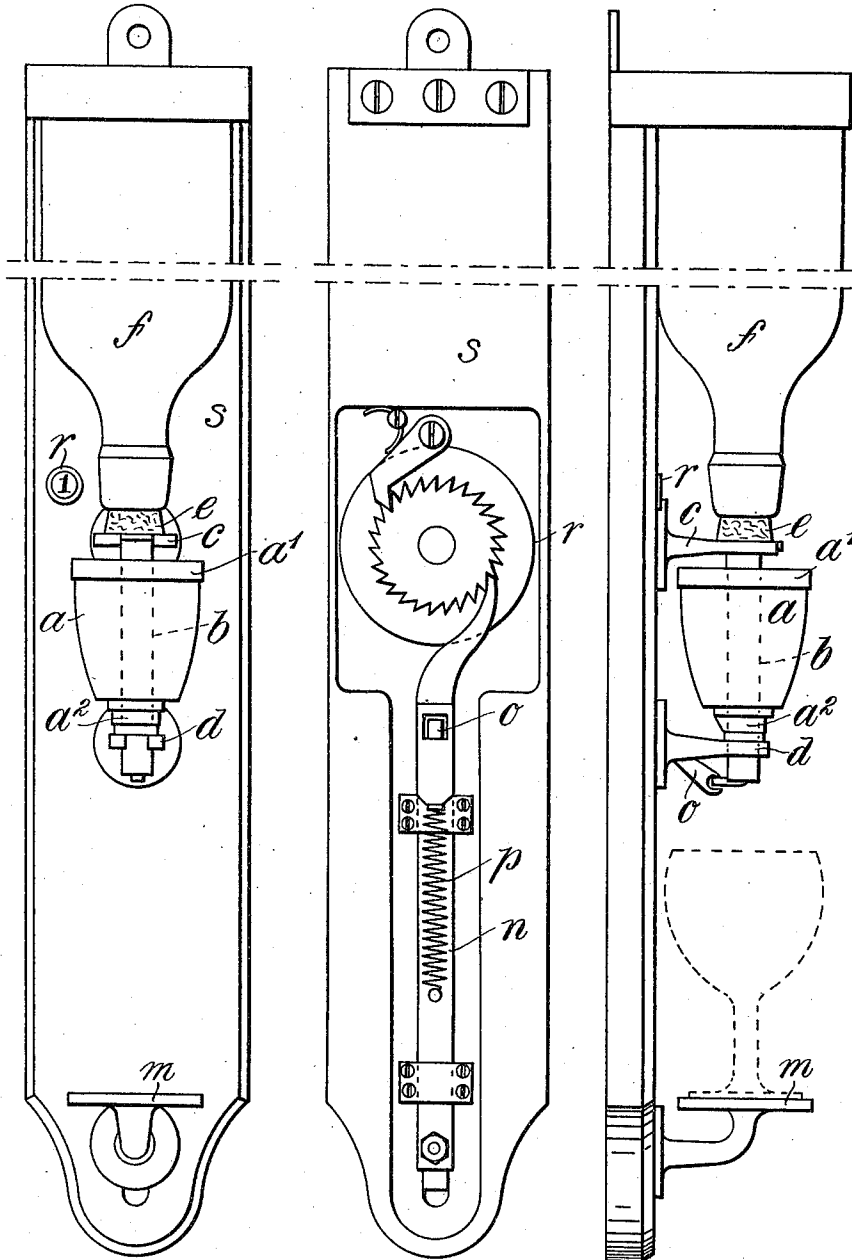
Patented Aug. 29, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

Fig. 2.

Fig. 3.



Witnesses
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 By *E. J. Siggers*
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2 SHEETS—SHEET 2.

Fig. 4.

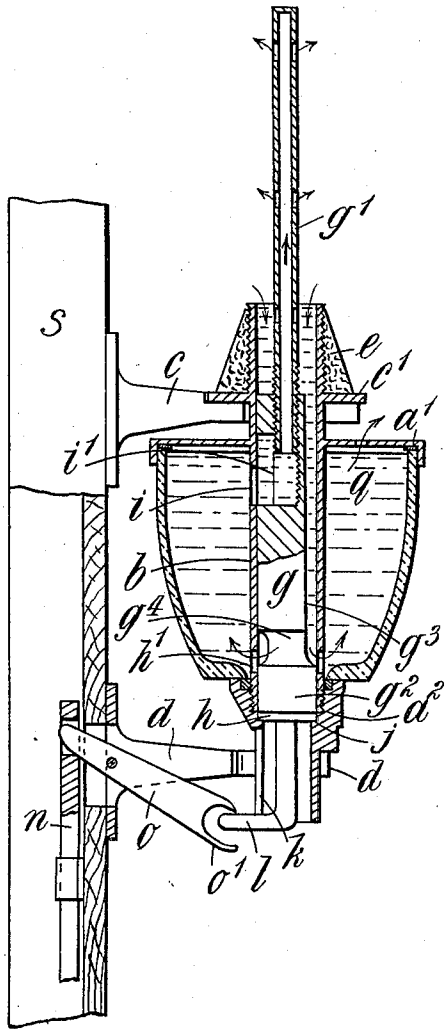
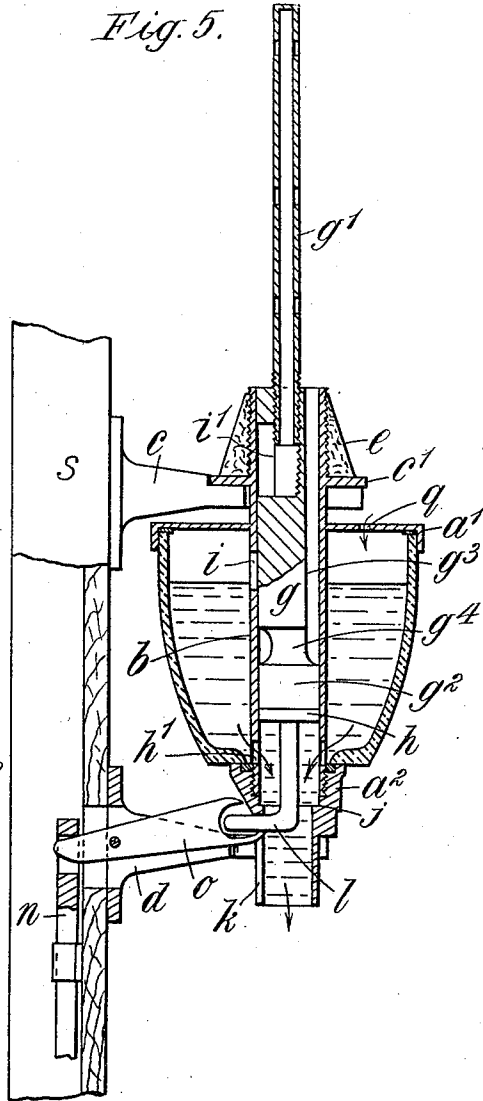


Fig. 5.



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UNITED STATES PATENT OFFICE.

CHARLES LESLIE NEWLAND, OF MERTON, ENGLAND.

DEVICE FOR DRAWING OFF MEASURED QUANTITIES OF LIQUIDS.

1,001,977.

Specification of Letters Patent. Patented Aug. 29, 1911.

Application filed May 16, 1911. Serial No. 627,388.

To all whom it may concern:

Be it known that I, CHARLES LESLIE NEWLAND, a subject of His Majesty the King of England, residing at Victoria Villa, Cavendish Road, Merton, in the county of Surrey, Kingdom of England, have invented certain new and useful Improvements in and Relating to Devices for Drawing Off Measured Quantities of Liquids, of which the following is a specification.

This invention relates to improvements in devices for drawing off measured quantities of liquids from bottles or other vessels of the kind wherein the liquid is conducted therefrom into a measuring chamber which is mounted about a ported tube within which latter is movably mounted a sliding valve member controlled by a movable platform on which the receiving receptacle is placed.

The primary object of my present invention is to provide an improved and more simple device and controlling valve that can be cheaply manufactured.

In the accompanying drawings:—Figure 1 is a front elevation of my improved device; Fig. 2 is a rear elevation; Fig. 3 is a side elevation; Fig. 4 is a detail sectional elevation showing the valve in its normal position when filling the measuring bulb; and Fig. 5 is a similar view showing the valve open and the contents of the bulb partly discharged.

In carrying my invention into practice I employ a liquid measuring device or bulb a of glass or other material and mount it between flanges or rings a' a^2 on a metal or other tube or ported sleeve b that is supported on fixed upper and lower brackets c , d . A suitable attachment for a bottle or other container is provided at the upper end of the measuring bulb. In the particular showing of the drawings this attachment is in the form of a cork ring e for receiving the bottle f .

For controlling the supply of liquid to and from the measuring bulb I employ a solid valve rod g having a valve h at its lower end and an extended air tube g' of reduced diameter at its upper end. The valve rod g is provided with an intermediate portion g^2 of solid section that closely

fits the internal bore of the external ported tube or sleeve b to cooperate with the liquid inlet and outlet ports h' . For the passage into the bulb of the liquid externally of the valve rod g a cut away portion g^3 is formed on the rod g , it communicating with an annular recess g^4 which latter cooperates with the liquid ports h' . An air port z' is also formed on its opposite side forming a continuation of the upper air tube g' . The valve h controlling the exit of the liquid from the bulb seats at j in a cup formed in the screwed extension a^2 of the outer sleeve b and when the valve is in its normal position (Fig. 4) on this seat the liquid inlet leading from the main container to the measuring bulb and also the air exit port from the bulb to the container are both open. A longitudinal or axial slot k is cut or formed in the side of the extension piece, below the valve seat, for the passage of a pin or stud l on a reduced end of the valve rod g which serves for its control.

When the movable platform m is depressed its movement is transmitted to the valve rod g and valve h by means of a spring controlled sliding rod n and lever o which is fulcrumed between the arms of the lower one of the fixed brackets c , d and provided with a fork shaped end o' or finger for engaging with the sliding pin or stud l on the valve rod g . The downward movement of the platform m is thereby converted into an upward movement of the valve rod g and valve h ; an arrangement which enables all internal springs to be dispensed with and a weak spring p to be employed for returning the platform as the valve h falls on to its seat by gravity and is assisted by the spring p controlling the platform m which through the finger lever will tend to hold the valve firmly on its seat, thus preventing all possibility of leakage.

The orifices or perforations q for the admission of air to the measuring bulb are formed in the top cover or flange a' on the outer sleeve b and do not need to be positively closed as the liquid does not reach such orifices. The air shaft g' is adjustably formed relatively to the valve rod g by a screw thread as shown or other means, and

is provided with a suitable number of openings through its walls, a plurality of openings at various heights being shown.

By varying the position of the air shaft g' the amount of liquid entering the bulb can in the known manner as in other measuring devices where an adjustable air tube is provided be controlled as the supply of the liquid will be checked as soon as the air outlet is covered by the incoming liquid. Thus by making the air tube in the outer sleeve g in this manner any desired quantities of liquid can be drawn off at one operation within the desired limits.

In order to insure the proper positioning of the measuring bulb a in the two supporting brackets e, d I may as shown in connection with the bracket e form circular recesses in both of these members and provide projections or filling pieces e' on the engaging flanges or parts of the bulb fittings that drop into the entry slots in the brackets to securely hold it in position at both the top and bottom.

The device may be arranged in various connections and the structure may be variously modified to suit the conditions of installation, and under some circumstances some of the parts may be omitted.

Any convenient recording or integrating mechanism may be provided in conjunction with the device as shown generally by the reference letter r and the whole device can be mounted on a suitable wall plate s .

What I claim as my invention and desire to secure by Letters Patent of the United States is:—

1. A device for drawing measured quantities of liquids comprising, in combination, a container, a normally sealed measuring chamber, a tube secured within the chamber and provided with common inlet and outlet ports, a solid ported valve member slidably fitted within the said tube and communicating with the container and provided with cut away portions arranged to register with the ports in the tube, a movable support adapted to hold a receptacle and connections between the movable support and the valve member whereby the ports in the tube may be opened to discharge the contents of the measuring chamber, or the slidable member may be moved to cause the ports in the tube to register with the said cut away portions to fill the chamber, the chamber being provided with a port to admit air to the chamber and permit the same to escape to the atmosphere.

2. A device for drawing measured quantities of liquids comprising, in combination, a normally sealed measuring chamber, a tube extending through said chamber and provided with common inlet and outlet ports

within the same, a solid ported valve member slidably fitted within the first mentioned tube and provided with cut away portions, said tube being arranged to communicate with a source of supply, a movable support for a receptacle connected with said valve member and operating upon the same to lift it from its seat within the tube and also to free the outlet ports in said tube for the purpose of discharging the contents of the measuring chamber, means for automatically causing the inlet cut away portion in said valve member to register with the ports in the outer tube to put the measuring chamber into communication with the source of supply, the said chamber having an additional port to permit the entry of air to the measuring chamber and the escape of air from the said chamber to the atmosphere.

3. A device for drawing measured quantities of liquids comprising, in combination, a sealed measuring chamber, a fixed tube extending through the measuring chamber and provided with common inlet and outlet ports within the same, an inner solid ported valve member slidably fitted within the first mentioned tube and provided with cut-away portions, a movable support connected with said slidable valve member and operating upon the same to cause the valve to lift from its seat in the inner tube and also to free the ports in the tube to discharge the contents of the measuring chamber, means for automatically putting the measuring chamber into communication with a source of supply, the chamber being provided with a port to permit the entry of air to the measuring chamber and the escape of air therefrom to the atmosphere and an air tube adjustably arranged at the upper end of the valve member for permitting the entry of air to the source of supply and thereby determining the quantity of liquid entering the measuring chamber.

4. The combination of a fixed support, a normally sealed measuring chamber thereon adapted to engage a container and having a ported tube therein provided with common inlet and outlet ports and also provided with an air port within the said chamber and near its upper end, a slidable valve member fitted within the said tube and provided with cut-away portions and closure members adapted to register respectively with the ports of the fixed tube, the said slidable member being further provided with an adjustable air tube adapted to register with the port in the fixed tube at the upper end of the measuring chamber, a support for a receptacle below the measuring chamber, a connection between said support and the slidable valve member whereby the said member may be raised when the support is depressed to

permit of the contents of the measuring chamber to escape, and a spring acting on said connection in opposition to said support to put the ports of the said tube into registry
5 with a cut-away portion of the sliding member whereby the measuring chamber may be filled.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses this fifth day of May 1911.

CHARLES LESLIE NEWLAND.

Witnesses:

J. CULLIER,

C. GARNET.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
