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F. G. PIRIE & F. SHARMAN.

APPARATUS FOR STORING, MEASURING, AND DELIVERING AERATED LIQUIDS.

(Application filed July 1, 1901.)

(No Model.)

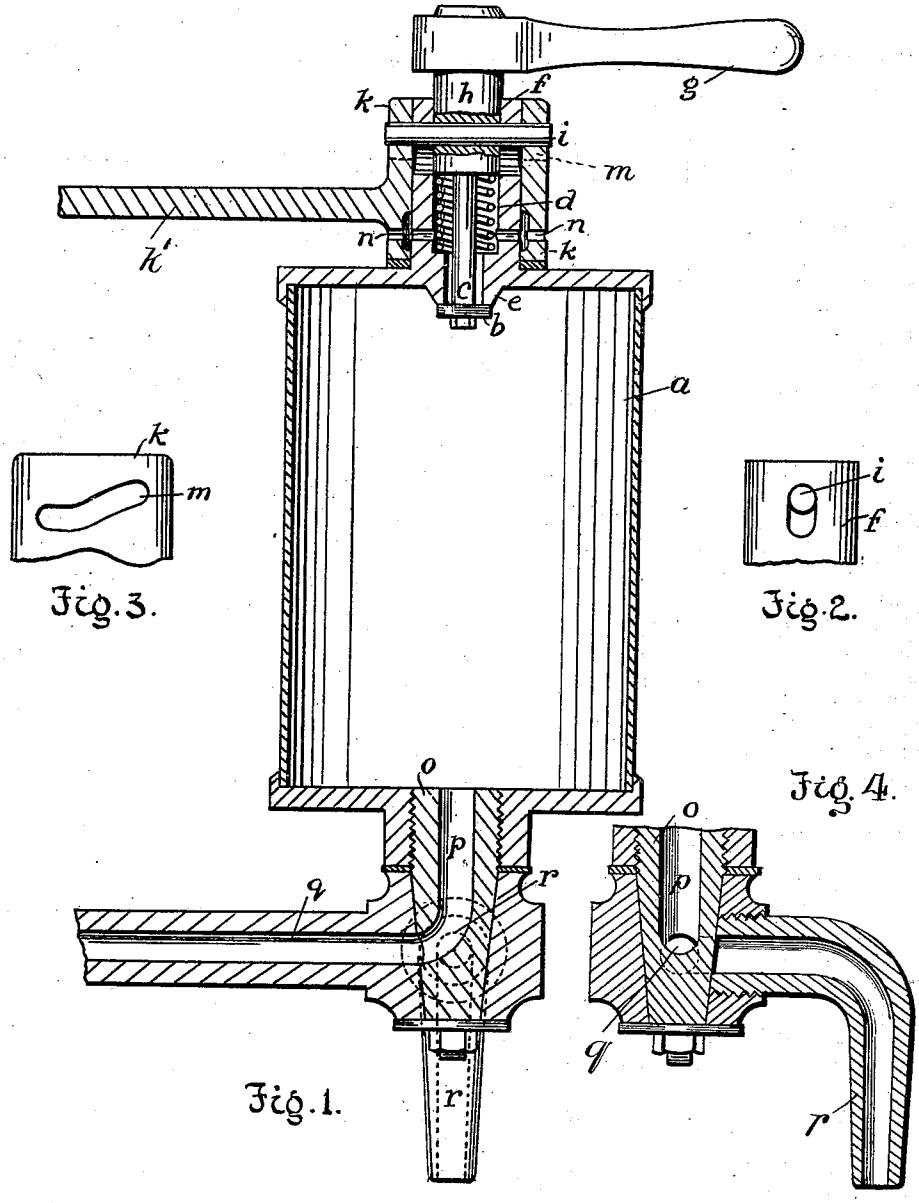


Fig. 1.

Fig. 3.

Fig. 2.

Fig. 4.

Witnesses:
Gustave R. Thompson.
Fred'k W. Englert.

Inventors:
F. G. Pirie and
F. Sharman
by Wilkinson & Fisher
Attorneys.

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UNITED STATES PATENT OFFICE.

FREDERICK GALLOWAY PIRIE AND FREDERICK SHARMAN, OF LONDON, ENGLAND.

APPARATUS FOR STORING, MEASURING, AND DELIVERING AERATED LIQUIDS.

SPECIFICATION forming part of Letters Patent No. 694,187, dated February 25, 1902.

Application filed July 1, 1901. Serial No. 66,702. (No model.)

To all whom it may concern:

Be it known that we, FREDERICK GALLOWAY PIRIE, residing at 112 Pembroke street, and FREDERICK SHARMAN, residing at 171 Lower Clapton road, London, England, subjects of the King of England, have invented Improvements in or Relating to Apparatus for Storing, Measuring, and Delivering Aerated and other Liquids, (for which we have made application in Great Britain, No. 11,996, bearing date June 12, 1901,) of which the following is a specification.

This invention relates to apparatus for storing, measuring, and delivering liquids, and is more particularly designed for use with aerated liquids, the object being to deliver such liquids in the best possible condition and uncontaminated from contact with injurious metallic or other surfaces likely to be attacked by the gas or chemicals in solution in the liquids; and in order that our said invention may be clearly understood we will describe the same with reference to the drawing accompanying this specification, in which—

Figure 1 shows a sectional elevation of the apparatus as designed for measuring and delivering aerated liquids. Figs. 2 and 3 show details hereinafter referred to, and Fig. 4 is a vertical section through the plug and socket.

The same letters of reference are employed to denote the same parts in all the views.

a shows a cylinder or other chamber for measuring the liquid.

b is a snifting-valve at the end of the rod *c*, and *d* is a spring in the neck *f* of the chamber *a* for holding the valve *b* against the seating *e*.

g is a handle formed or fixed at the top of the enlargement *h* of the rod *c*.

i is a pin fitting tightly in the hole in *h* and passing through slots in the neck *f*, as shown at Fig. 2.

k is a fixed collar embracing the neck *f* and provided with a brace or support *k'* thereon. This collar is provided with slots *m*, shaped as shown at Fig. 3, in which the ends of the pin *i* engage.

n represents apertures in the neck *f* and collar *k* to allow of the passage of air and gas when the valve *b* is opened.

The cylinder *a* carries a plug *o* at its lower end.

p is a hole through the plug *o*.

q shows the inlet from the supply-cylinder, and *r* shows the outlet from the chamber *a*.

It will be seen that by turning the handle *g* the chamber *a* and plug *o* are rotated, so that the apparatus may be set either to receive the liquid through the inlet-passage *q* or discharge it through the outlet *r*. When the handle *g* is turned in order to discharge the liquid, the pin *i* is forced downward by the slots *m* in the fixed collar *k*. Consequently the valve *b* is opened, allowing the excess of gas in the liquid to escape just before the liquid is delivered. In the case of aerated liquids these are stored in a cylinder under pressure. This cylinder communicates with the measuring apparatus by a pipe *q*. To charge the measure, the handle *g* is turned so that the hole *p* in the plug *o* communicates with the inlet *q*, the snifting-valve *b* being closed. The aerated liquid, being under pressure, rushes into the chamber *a*. The handle *g* is now turned, opening the snifting-valve, thus releasing the excess of gas. The hole *p* then comes opposite the outlet *r*, through which the contents are discharged. In the case of still liquids the slots *m* are so formed that the valve *b* may be opened when liquid is to be admitted to the chamber *a*, as in this case the measure would not fill without the air being allowed to escape.

The storage-cylinder and measuring vessel may be made of or lined with a material which will not be affected by the gas contained in or chemicals in aerated or other liquid. Thus we may make the cylinder and measuring vessel of glass, porcelain, earthenware, or vulcanite, or we may enamel the inside of such cylinder or vessel when made of metal.

In the case of an apparatus for use with aerated waters in order to maintain an approximately constant pressure in the storage vessel we connect thereto a cylinder charged with air or gas at a high pressure, and between this cylinder and the storage vessel we interpose a reducing-valve set at the desired pressure.

When plain aerated water is stored in the

storage-cylinder, but it is desired to deliver beverages containing flavorings or chemical solutions of any description, we connect to the measuring vessel at any suitable part a small pump or injector which delivers a definite quantity of the required flavoring or chemical solution from a reservoir into the measuring vessel before the aerated water is admitted. We are thus enabled to supply lemonade or other aerated beverages or mineral waters.

What we claim, and desire to secure by Letters Patent, is—

1. In apparatus for storing, measuring and delivering aerated liquids, the combination with a cylinder and inlet and outlet ports, of a hollow shoulder formed on said cylinder, a valve mounted in said hollow shoulder, a fixed collar surrounding said hollow shoulder, and means engaging said valve and fixed collar for operating said valve simultaneously with the rotation of said cylinder and hollow shoulder.

2. In apparatus for storing, measuring and delivering aerated liquids, the combination with a cylinder and inlet and outlet ports, of a hollow shoulder formed on said cylinder, a valve and stem mounted in said hollow shoulder, a fixed collar engaging said hollow shoulder, slots cut in said shoulder and collar, and a pin secured to said valve-stem, engaging said slots.

3. In apparatus for storing, measuring and delivering aerated liquids, the combination with a cylinder and inlet and outlet ports, of a hollow shoulder formed on said cylinder, a valve and stem mounted in said hollow shoulder, a fixed collar engaging said hollow shoulder, longitudinal slots cut in said hollow shoulder, curved slots or guideways formed in said collar, and a pin, secured to said valve-stem, engaging said slots.

4. In apparatus for storing, measuring and delivering aerated liquids, the combination with a cylinder and inlet and outlet ports, of a hollow shoulder formed on said cylinder, a valve and stem mounted in said hollow shoulder, a fixed collar engaging said hollow shoulder, ports cut in said hollow shoulder and collar, and means for simultaneously rotating said cylinder and opening said valve.

In testimony whereof we affix our signatures in presence of two witnesses.

FREDERICK GALLOWAY PIRIE.
FREDERICK SHARMAN.

Witnesses:
A. E. VIDAL,
WALTER EVERETT.