

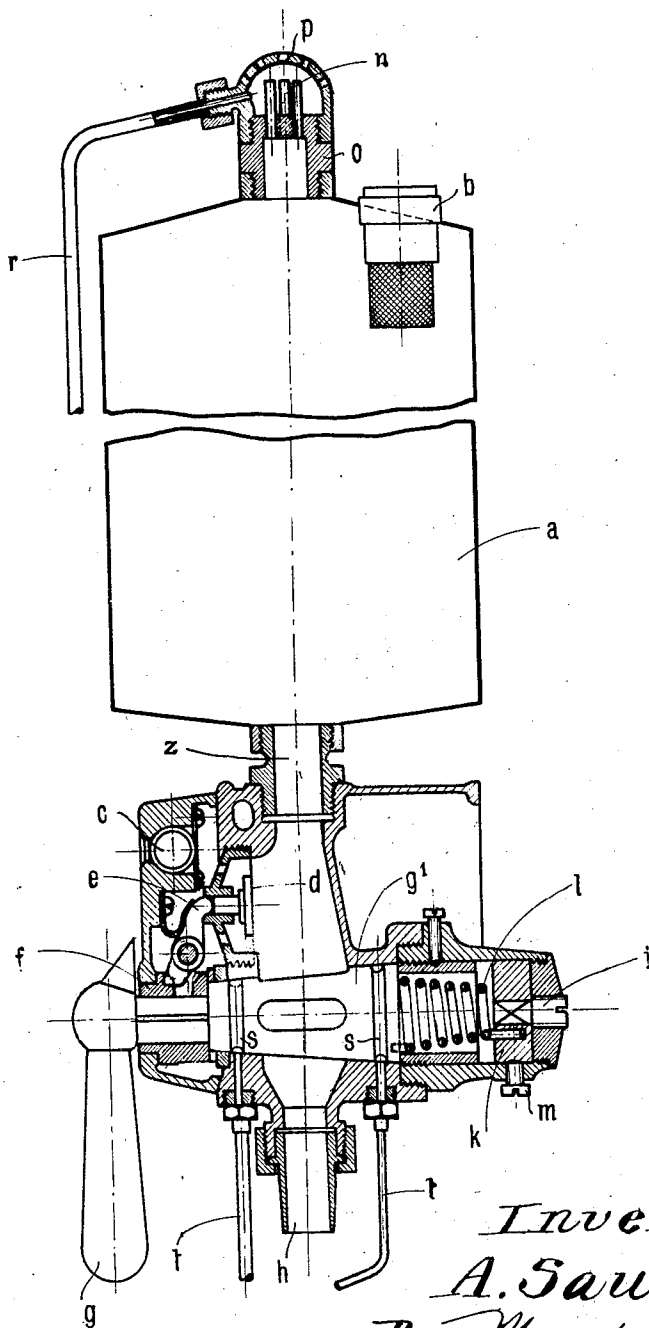
June 12, 1928.

1,673,207

A. SAUSER

APPARATUS FOR MEASURING GIVEN QUANTITIES OF LIQUIDS

Filed May 8, 1923



Inventor
A. Sauser,
By Marks Clerk
Attys.

UNITED STATES PATENT OFFICE.

ARNOLD SAUSER, OF SOLEURE, SWITZERLAND.

APPARATUS FOR MEASURING GIVEN QUANTITIES OF LIQUIDS.

Application filed May 8, 1923, Serial No. 637,601, and in Switzerland February 28, 1923.

The present invention relates to means for automatically operating an apparatus for measuring given quantities of liquid.

The new apparatus comprises at least one 5 gauged vessel provided with an inlet and outlet valve means controlled by a spring which tends to restore the valve means always to the discharge position of said means after the inlet position has been established by 10 hand. During the filling of the vessel these means are maintained in the inlet position by a locking member which is unlocked by the pressure of the liquid when the filling of the vessel is completed.

15 The annexed drawing is a sectional elevation of an example of the object of the invention.

In the drawing a gauged vessel *a* is provided at its top with an air escape device 20 formed by a plurality of capillary tubes *n* and protected by a cap *p* provided with vent holes *n*¹ and with a drain pipe *r* which is connected to said pipe for draining off any liquid which might have passed through the 25 capillary tubes. Vessel *a* is besides provided with a chamber *b* filled with hail shot to any desired extent and shut off from the inside of the vessel by screens and intended as a bulb-compensating device as is well known. 30 To the neck *z* which serves alternately as a discharge and inlet neck of the vessel is attached a three-way cock *g*¹ having a handle *g* and carrying on a square portion of the plug of said cock a collar *f* having a slot *f*¹ and a 35 shoulder provided with a lateral notch *f*². In the fill position one arm of the two-armed lever *e*, is kept engaged in said notch while the other arm leans against a pusher rigidly connected to diaphragm *d* which is exposed 40 to the pressure of the liquid within the inlet neck at the bottom of the vessel *a*. Cock *g*¹ is also connected to a torsional spring *l* attached to a rotably mounted bushing *k* which serving as adjusting means of said 45 spring, may be controlled by an outside screw *i* and a set screw *m*. Spring *l* always tends to reestablish the discharge position of the cock and acts also as a pressure spring in so far as it keeps always the plug of 50 cock *g*¹ within its seat. In order to avoid any loss of liquid by casual leakage through the cock, the jointing surfaces of the same are interrupted by grooves *s* which commu-

nicate through pipes *t* with the supply tank not shown.

The liquid is discharged through a nipple 55 *h* and the feeding of the vessel is effected through an admission neck which communicates with the box of said cock. A counter *C* is in operating connection with lever *e*. 60 The working of this apparatus is as follows:

In the normal position of the apparatus that is in the position of rest, the three-way 65 cock is in the discharge position with the admission neck shut and the vessel empty. If some liquid is to be measured the handle *g* is turned so as to point downwards. Then 70 lever *e* under the effect of a spring *e*¹ snaps into the notched collar *f* thereby locking the cock. While the vessel is filling the air escapes 75 through the capillary tubes *p*. The liquid reaches these tubes and gets suddenly stopped thereby. The return swing imparted thereby to the liquid will cause the diaphragm *d* to bulge and push lever *e* out 80 of the notch of the collar so as to unlock it, whereupon spring *l* will rapidly turn cock *g* into its discharge position, and the contents of the vessel will be discharged.

Having now fully described my invention 85 what I claim as new and want to secure by Letters Patent is:—

1. Liquid measuring apparatus which 85 comprises in combination, a gauged vessel having at its bottom a neck for the admission and the discharge of the liquid, and at its top means permitting the escape of 90 air but substantially preventing the escape of liquid, a three-way cock communicating with said neck and provided with a notched collar fast to it, an admission and a delivery 95 neck communicating with said cock, a pressure responsive device depending on the inside pressure of said vessel, a locking member, bearing on said pressure responsive device 100 so as to depend on its movements and capable to engage the notch of said collar and a torsional spring attached to the plug of said cock and to a stationary part of the same and adapted to restore the discharge position of said cock after the unlocking of the 105 cock by the movement of the pressure responsive device.

2. Liquid measuring apparatus of the kind described comprising in combination a 105 gauged vessel having at its bottom a neck

for the admission and the discharge of the liquid and at its top an air escape device formed of a plurality of capillary tubes, a protecting cap for the same on the outside of said vessel, vent holes in said cap and a drain pipe attached thereto.

3. In combination, a gauging vessel, a three-way cock a liquid delivery neck controlled by said cock, a delivery nipple and an admission neck integral with the box of said cock, a notched collar rigidly fast to the plug of said cock and a torsional spring mounted so as to tend to normally retain the cock in the discharge position, a diaphragm exposed to the liquid pressure within said delivery neck and carrying a pushing member and a pivoted locking lever adapted to rest with one arm on said pushing member and to be engaged with its other arm

within the notch of said collar while locking the cock in position to admit fluid to the gauging vessel.

4. In a liquid measuring apparatus of the kind described and in combination a three-way cock having a box arranged to control the admission and the discharge of the liquid, a torsional spring attached to said cock and tending to normally retain the cock in the discharge position, and means for adjusting said torsional spring comprising a bushing lodged rotatably in the box of said cock, a cap closing said box, an adjusting screw fast to said bushing and held within said cap and a set-screw adapted to secure the bushing in an adjusted position.

In testimony whereof I hereunto affix my signature.

ARNOLD SAUSER.