

No. 679,388.

Patented July 30, 1901.

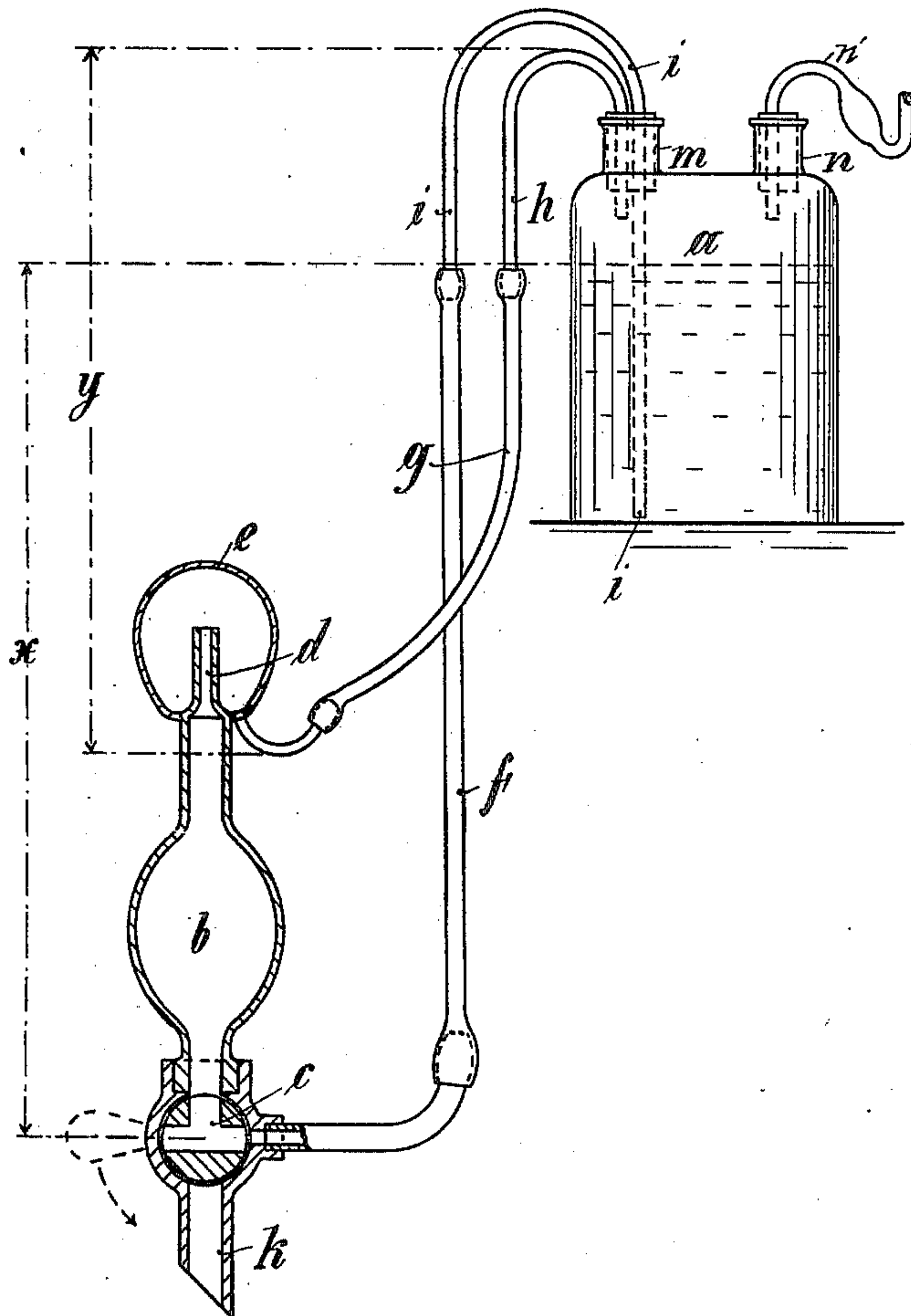
J. F. W. MEYER.
CHEMICAL APPARATUS.

(Application filed Jan. 16, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



Witnesses.
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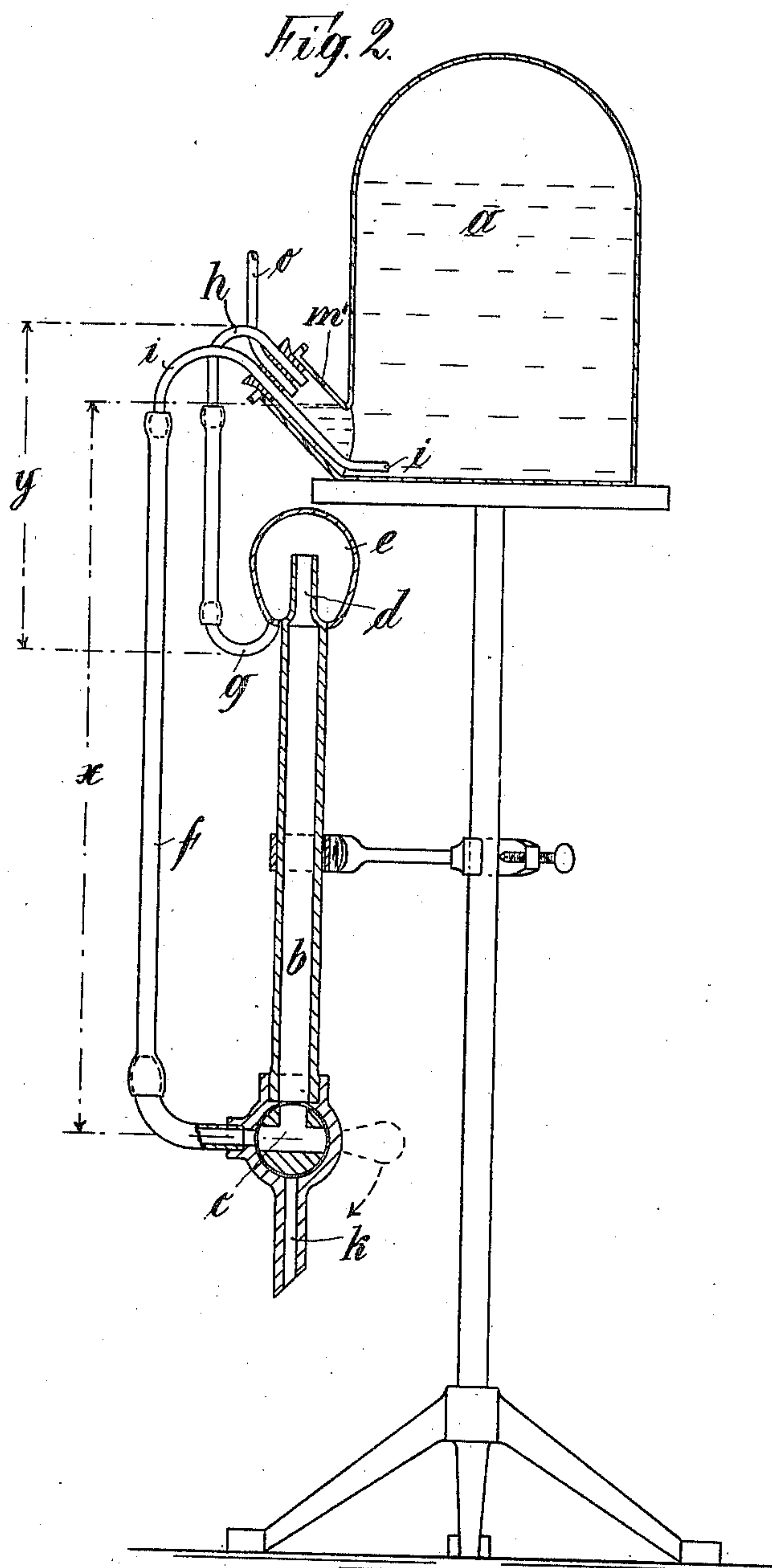
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UNITED STATES PATENT OFFICE.

JOHANN F. W. MEYER, OF SCHEUNE, NEAR STETTIN, GERMANY.

CHEMICAL APPARATUS.

SPECIFICATION forming part of Letters Patent No. 679,388, dated July 30, 1901.

Application filed January 16, 1900. Serial No. 1,596. (No model.)

To all whom it may concern:

Be it known that I, JOHANN F. W. MEYER, a subject of the Emperor of Germany, residing at Scheune, near Stettin, Germany, have invented a new and useful Measuring Apparatus for Fluids, of which the following is a specification.

My invention consists of a new and improved measuring apparatus for fluids, such as are used in chemical experiments, in selling fluids, &c. The most important advantage in this apparatus is the storing vessel from which the fluid to be measured is drawn and which is so constructed that the fluid levels in it and in the measuring-tube attachment are held constant, through which such quantity of fluid that may overflow from the said tube is collected and driven back into the storage by the air-pressure formed by the next entrance of the fluid in the tube aforesaid.

In the accompanying drawings, which form an inseparable part of the specification, similar letters refer throughout to similar parts.

Figure 1 shows in side view, part in section, a fluid-measure embodying my invention. Fig. 2 shows in modified form a measuring device for fluids embodying my invention.

In the construction of my invention I employ a measuring tube or pipe *b*, which may be short and thick, as shown in Fig. 1, or may be longer, as seen in Fig. 2. To the lower end of this pipe or tube I secure a valve *c*, having connected thereto a nozzle *k*. Connected to the said valve is a pipe *f*, which in turn is connected with a pipe *i*, which latter is entered into a store vessel *a*. The connected pipes *f* and *i* form in connection with tube *b* a siphon-like contrivance and serve to draw the fluid out from the said vessel and carry the same down into the said tube when valve *c* is in the proper position.

Formed on the upper end of tube *b* is a projection *d*, while around about the same and also integral with said tube is a bulb *e*. In connection with bulb *e* is a pipe *g*, which is connected to pipe *h*, which latter enters vessel *a* aforesaid. It will be thus seen that any fluid overflowing from tube *b* passes through *d* and is caught in bulb *e*, from which latter it is led

through pipes *g h* back to the vessel *a*, thus preventing any overflow with resulting loss or danger.

The vessel *a* may be provided with two openings *m* and *n*, as shown in Fig. 1, in which the pipes *h* and *i* enter (pipe *i* extending to the lower portion of vessel *a*) through *m*, while the vessel can be filled through *n*, or it may have a single neck-opening *m'*, (shown in Fig. 2,) located near the base of said vessel and having the different pipes *i*, *h*, and *o* all entering therethrough. It will be also seen that in the latter arrangement the weight of the fluid adds to the last in forming a high air-pressure for driving back the overflow, as will now be seen.

The operation of the apparatus will be clearly understood from the accompanying drawings, foregoing description, and the following statement: siphonic action is first started through air admitted through the small pipe *n'* at the upper right-hand top of the reservoir. Opening outlet-pipe *k*, a certain quantity of air is forced through tube *b* and pipes *g* and *h*, which are connected thereto, into vessel *a*. The fluid flows through pipes *i* and *f*. The valve *c* is now so adjusted as to allow the said fluid to enter tube *b*. Here most likely an overflow will occur which is collected in bulb *e*. When next using the device, the fluid on entering tube *b* forces the air therein upward, which in turn drives the collected overflowed fluid through pipes *g* and *h* back into the vessel. However, when I employ a vessel as shown in Fig. 2 the weight of any suitable fluid is added to increase the air-pressure, thus even more facilitating the return flow. It will be seen, however, that the levels of the two fluids are kept constant, inasmuch as in each instance the pressure developed between is sufficient to drive the fluid back. However, the form of vessel shown in Fig. 2 is preferable, as here, since pipe *i* drains from the bottom the pressure developed, which for clearness I designate *x*, is unvarying in regard to the amount of fluid in vessel *a*, while the resistance from bulb *e* back to the vessel *y* is also unvariable, whereas in that form as shown in 1 *x* varies; but in each instance *x* exceeds *y*.

Having now described my invention, that which I claim as new, and desire to protect by Letters Patent, is—

1. In a fluid-measuring apparatus the combination of a store vessel, a neck opening therein, a pipe *i* entering therethrough, a pipe *h* also passing therethrough and both in connection respectively with pipes *f* and *g*, the bulb *e*, and a measuring-bulb *b* in connection therewith, all said parts being so arranged that the fluid-levels in the different pipes aforesaid are kept constant, substantially as described.

2. In a fluid-measuring apparatus, the combination of a vessel, a neck opening therein, a measuring-tube, a projection on said tube, a bulb also on said tube and about said projection, pipes connecting said bulb and said vessel, a valve on the lower end of said tube and pipes connecting said valve and said vessel substantially as described.

3. In a fluid-measuring apparatus, the combination of a closed vessel, a measuring-tube,

a bulb surrounding the upper end thereof, pipes connecting said tube and said vessel and other pipes connecting said bulb and said vessel and adapted to lead the overflow from said tube back to said vessel, substantially as described.

4. In a new and improved fluid-measuring device, the combination of a measuring-tube, a vessel; a neck opening in the lower part thereof, a valve on the lower end of said tube, pipes connecting said valve and vessel, a projection on the upper end of said tube, a bulb about said projection, pipes also connecting said bulb and said vessel, all so arranged that through flow of fluid from said vessel to said tube such overflow in said bulb is forced back into said vessel substantially as described.

In testimony whereof I have hereunto set my hand this 16th day of August, 1899.

J. F. W. MEYER.

Witnesses:

GEORG ROSENBERG,
CARL FREESE.