

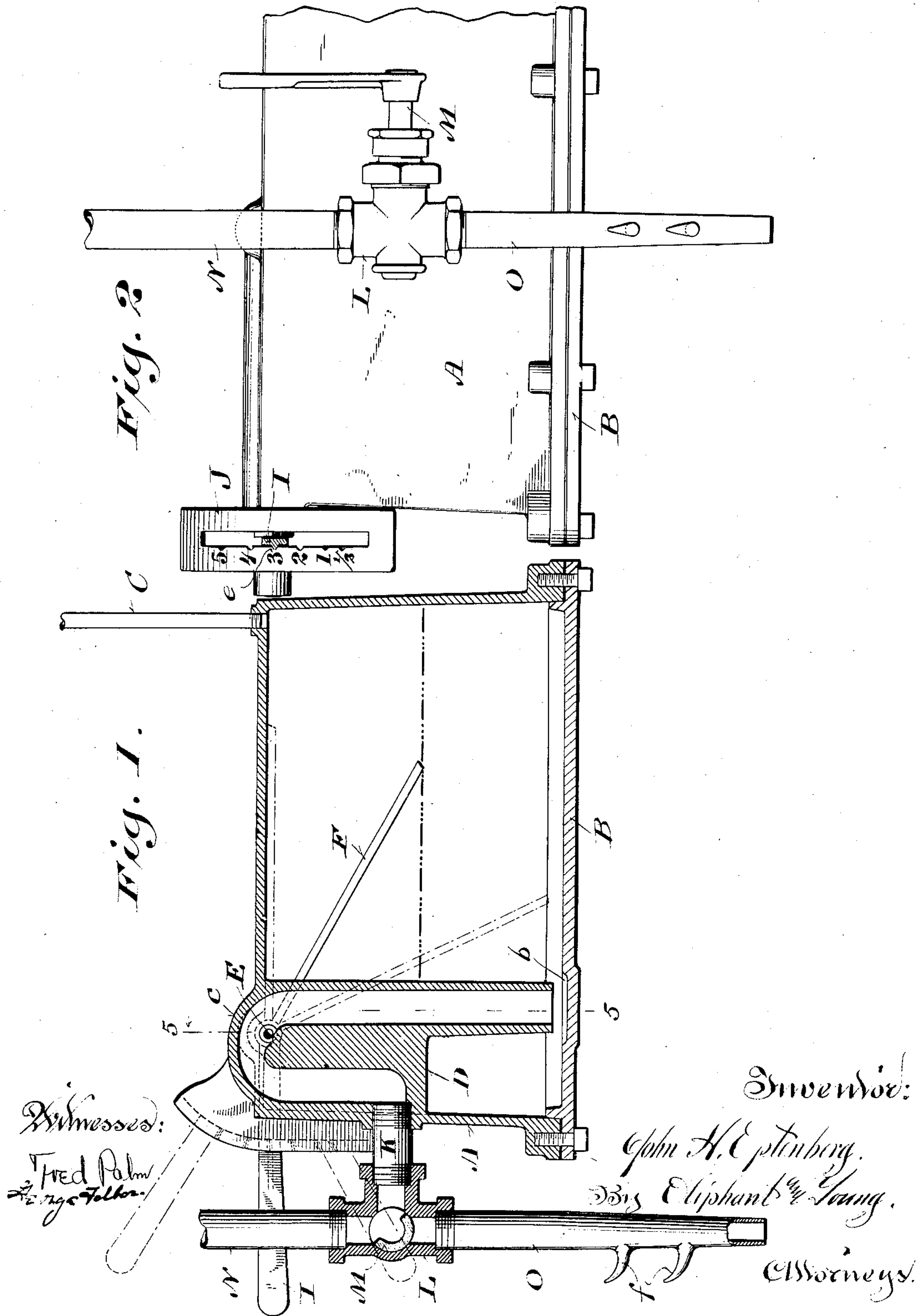
No. 836,941.

PATENTED NOV. 27, 1906.

J. H. OPTENBERG.
LIQUID MEASURING APPLIANCE.

APPLICATION FILED OCT. 30, 1905.

2 SHEETS—SHEET 1.



No. 836,941.

PATENTED NOV. 27, 1906.

J. H. OPTENBERG.
LIQUID MEASURING APPLIANCE.

APPLICATION FILED OCT. 30, 1905.

2 SHEETS—SHEET 2

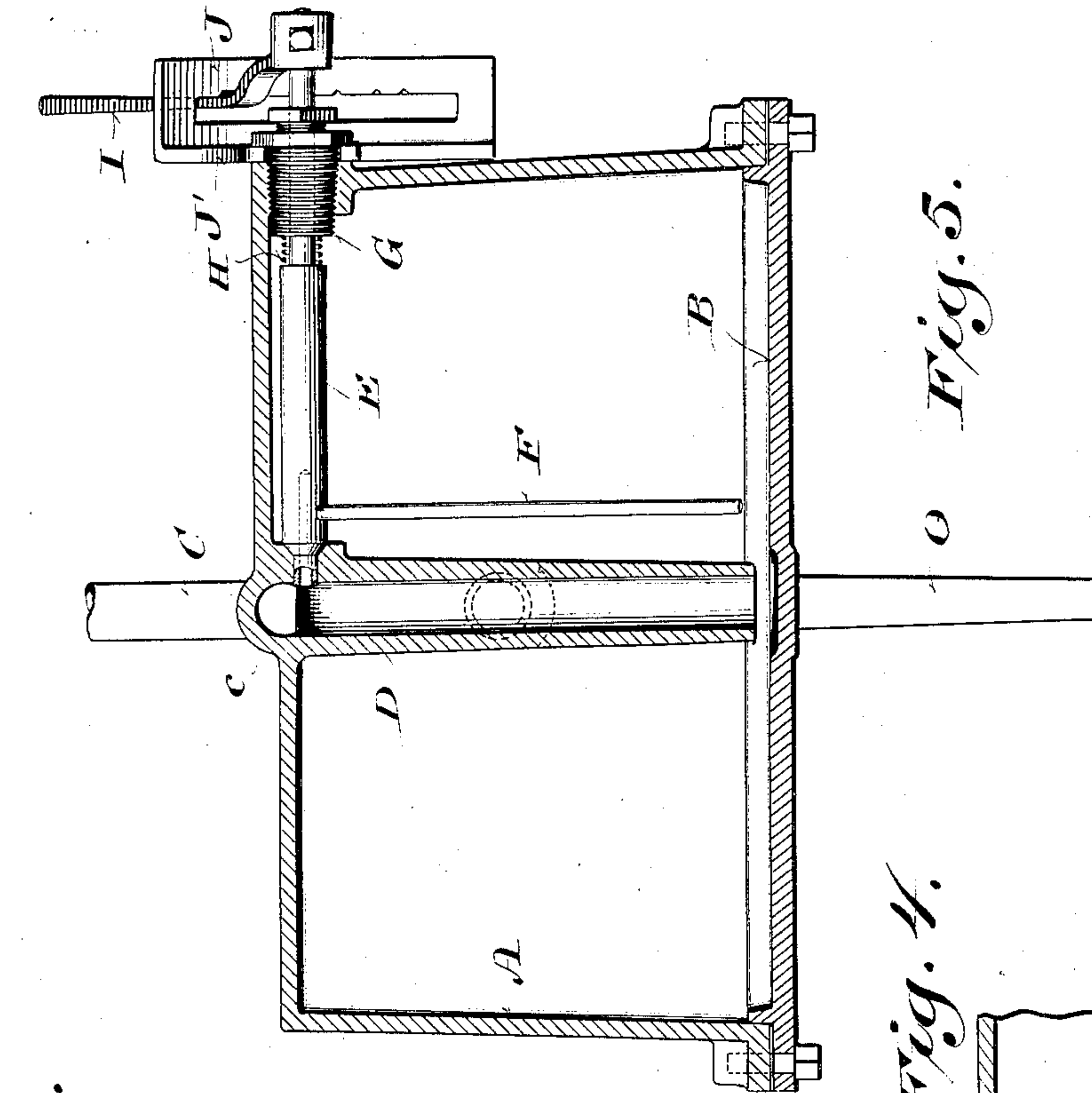


Fig. 5.

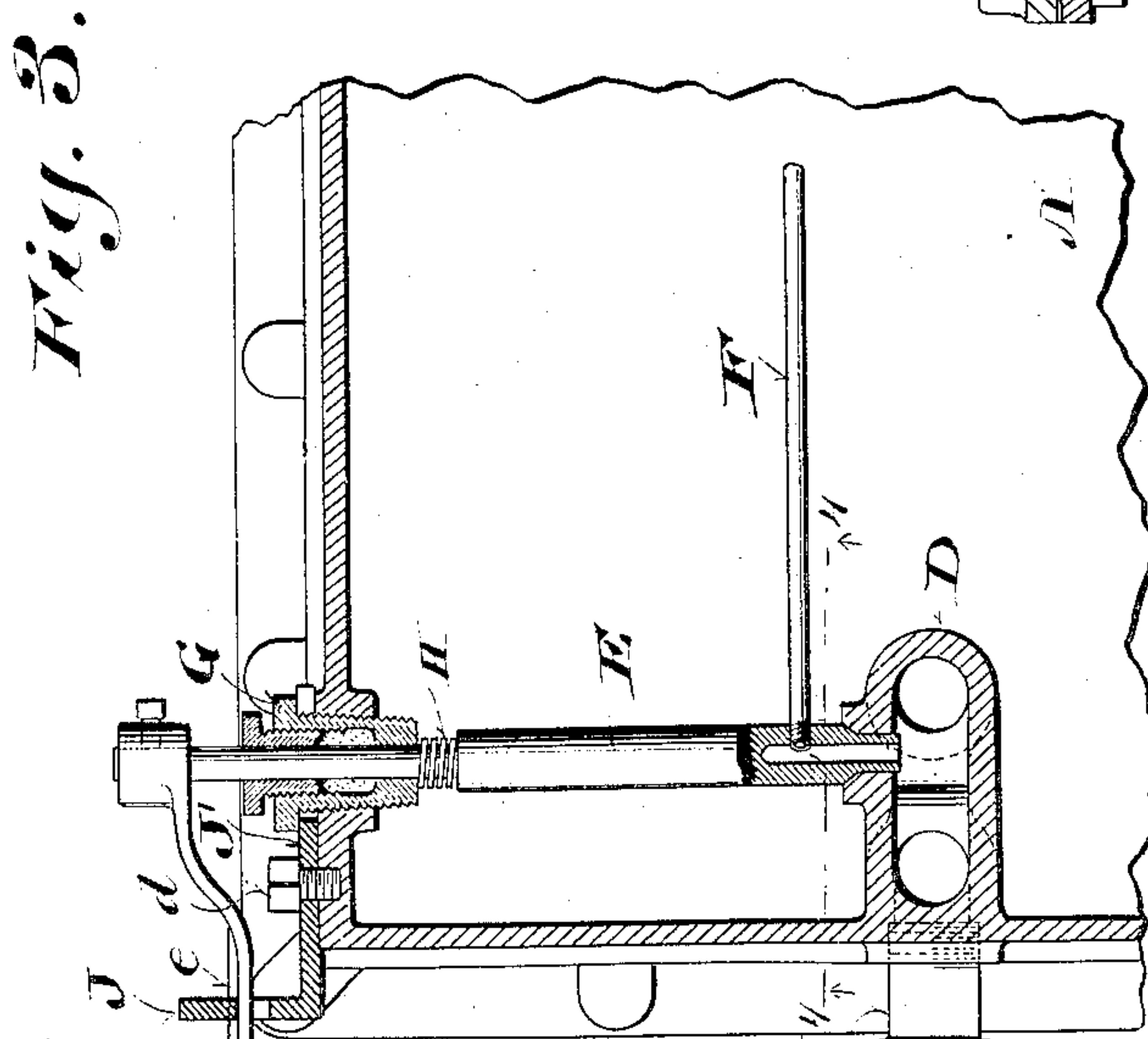


Fig. 3.

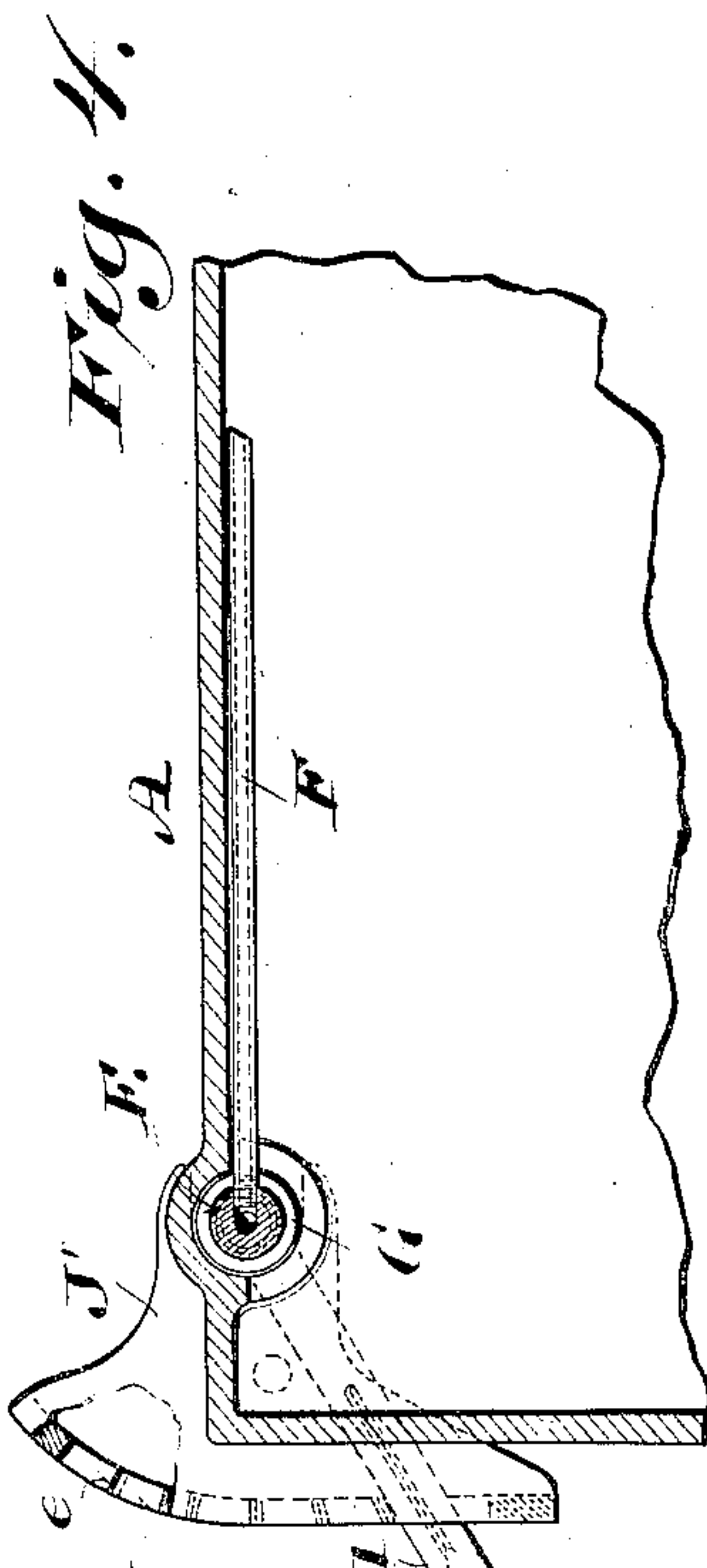


Fig. 4.

Witnesses:
Fred Palm
George Feltz

Inventor:
John H. Optenberg
By Elephant & Young,
Attorneys.

UNITED STATES PATENT OFFICE.

JOHN H. OPTENBERG, OF SHEBOYGAN, WISCONSIN, ASSIGNOR TO
SYPHONIC MEASURE TANK COMPANY, OF SHEBOYGAN, WIS-
CONSIN.

LIQUID-MEASURING APPLIANCE.

No. 836,941.

Specification of Letters Patent.

Patented Nov. 27, 1906.

Application filed October 30, 1905. Serial No. 284,988.

To all whom it may concern:

Be it known that I, JOHN H. OPTENBERG, a citizen of the United States, and a resident of Sheboygan, in the county of Sheboygan and State of Wisconsin, have invented certain new and useful Improvements in Liquid-Measuring Appliances; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention consists in certain peculiarities of construction and combination of parts hereinafter particularly set forth with reference to the accompanying drawings and subsequently claimed, its object being to provide simple, economical, durable, and accurate liquid-measuring appliances of the kind designed to be employed in connection with a more or less distant supply-tank, each appliance comprising a preferably covered receptacle having a cock-controlled inlet and outlet passage and provided with means for automatic stop of flow of liquid contents therefrom when a predetermined quantity of such contents has been drawn, the receptacle being automatically refilled from the supply-tank whenever the cock of the appliance is adjusted to place the passage aforesaid in communication with the corresponding tank and to simultaneously close the outlet continuation of said passage.

Figure 1 of the drawings represents a vertical longitudinal section of a liquid-measuring appliance of the kind aforesaid improved in the matter of details in accordance with my invention; Fig. 2, a front elevation of the same, partly broken away; Fig. 3, a plan view of a fragment of the appliance, partly in horizontal section; Fig. 4, a sectional view on the plane indicated by line 4 4 in Fig. 3; and Fig. 5 a vertical transverse section view of said appliance, this view being indicated by lines 5 5 in Fig. 1.

Referring by letter to the drawings, A indicates the body, and B the bottom, of the liquid-receptacle of my improved liquid-measuring appliance. The body and bottom of the receptacle are separate castings bolted together, provision being had for a liquid-tight joint. The general shape of the receptacle is immaterial, although preference is had for a rectangular form of same, and the capacity of said receptacle is a matter of arbitrary selection. A vent-opening is pro-

vided in the top of the receptacle, and a vent-pipe C is herein shown as having its lower end in said opening.

Integral with the body A of the receptacle at the forward end of same is a flow-chamber D, comprising two parallel vertical channels and an upper bend connecting said channels. The innermost channel of the chamber extends from above the top of said body to near the bottom B of said receptacle, it being preferable, as herein shown, to provide said bottom with an indenture *b* immediately under said channel in order to obtain a corresponding amount of clearance for the liquid contents of the aforesaid receptacle. The wall between the vertical channels of the flow-chamber extends to approximately the same height as the inner side of the top of the aforesaid receptacle, the upper end of said chamber being a bulge *c* of said top, and said flow-chamber is part of the inlet and outlet passage of the receptacle.

A lateral aperture provided in the upper bend of the flow-chamber D is outwardly expanded, and in ground-joint engagement with said aperture is the correspondingly-shaped longitudinally-bored end of a rod E, to which one end of an air-tube F is fitted.

The rod E is shouldered, and the reduced portion thereof extends out through a preferably tapered stuffing-box G, that has screw-thread engagement with a corresponding aperture in a side wall of the liquid-receptacle to insure an economical liquid-tight joint. Arranged on the rod E, under tension between the shoulder of same and the stuffing-box G, is a spiral spring H, that operates by its expansive force to compensate for wear and always bind the aforesaid rod in its ground-joint engagement with the lateral aperture in the upper bend of the flow-chamber above specified. The self-binding ground-joint connection of the hollow end of the rod E with the flow-chamber D is an important feature of the apparatus.

Fast on the outer end of the rod E is a lever I, guided in a slot of a scale-plate J, having a shank *J'* made fast by a set-screw *d* to the adjacent side of the liquid-receptacle astraddle of the outer end of the stuffing-box G, said lever being bent at its inner end and having spring contact with the outer face of the scale-plate slot, whereby it aids the

spring H in holding the rod E in its ground-joint engagement with the aperture in the bend of the aforesaid flow-chamber.

The lever is provided with an outer longitudinal rib *e* for latch engagement with any one of the several notches of the scale-plate, which notches correspond with graduations of said plate denoting arbitrary quantities of liquid measurement. The resiliency of the lever is such that the rib *e* thereof will automatically engage any one of the scale-plate notches with which it is brought into register, and some effort on the part of the operator is necessary to the disengagement of the lever-rib from a scale-plate notch.

In screw-thread union with the outermost vertical channel portion of the flow-chamber D is a horizontal pipe K, and the casing L of a cock M is coupled to said pipe, another pipe N, and a nozzle O to complete the aforesaid inlet and outlet passage. The pipe N is for connection with a more or less distant supply-tank, (not shown,) from which liquid has hydrostatic flow to the aforesaid receptacle, and the nozzle O extends below the bottom of said receptacle, this nozzle, the casing L for the cock M, the pipe K, and the outermost vertical channel portion of the flow-chamber D combining to constitute the long leg of a siphon whose short leg is the innermost vertical channel portion of said chamber.

The cock M is adjusted to cut off the supply-pipe N or the nozzle O from communication with the pipe K, as may be desirable from time to time in the operation of the measuring appliance, and said nozzle is shown as preferably provided with outer hooks *f*, upon which to hang the bails of vessels into which liquid from the receptacle of said appliance is to be drawn.

The appliance herein shown is proportioned for measuring one-half of a gallon, one, two, three, four, or five gallons of the liquid contents at any one time, according to the adjustment of the lever I and cock M aforesaid. The cock being adjusted to cut off the nozzle O of the siphon aforesaid and open the supply-pipe N to the pipe K, the liquid-receptacle of the measuring appliance will be automatically filled. Now if the lever I be set at the one-half-gallon notch of the scale-plate J the adjustment of the cock M to cut off the supply-pipe and open the nozzle will result in a gravity flow of one-half of a gallon of the liquid contents from said receptacle, the proportions being such that there is always that amount of liquid in the siphon between the cock and the air-inlet of said siphon when the aforesaid receptacle is full of liquid. The receptacle being full of liquid (as is always the case when the cock M is in the position shown in Fig. 1) and the lever I set at any one of the gallon-notches of the scale-plate, then as a result of a turn of said cock to close the aforesaid supply-pipe

N and open the nozzle O the predetermined quantity of the liquid contents of said receptacle will siphon therefrom, the siphon being vented at the proper time to break the column of liquid therein, as a result of the adjustment of the air-tube F in connection with the lever-controlled rod E, this air-tube being normally against the top of the aforesaid receptacle, parallel to the same and adjustable in the arc of a circle. Because of the ground-joint engagement of the partly-hollow rod E with the aperture in the bend of the flow-chamber and the spring-pressure on said rod it is impossible for air to enter said chamber during a discharge of liquid contents of the aforesaid receptacle until such time as the free end of the air-tube F is uncovered, this being a matter of the utmost importance to the successful operation of the measuring appliance.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a liquid-measuring appliance, a receptacle having a flow-chamber comprising two parallel vertical channels communicating at their upper ends, a rotary adjustable vent in spring-controlled binding ground-joint connection with the upper portion of the flow-chamber, and a cock having its casing in communication with the outermost vertical channel of said flow-chamber and a nozzle depending below the bottom of said receptacle, said casing being also adapted for union with a supply-pipe.

2. In a liquid-measuring appliance, a receptacle having a flow-chamber comprising two parallel vertical channels communicating at their upper ends, a lever-controlled shouldered rod extending through a stuffing-box in a wall of the receptacle and having a hollow end in ground-joint engagement with a lateral aperture in the upper portion of the flow-chamber, a spring on the rod under tension between the shoulder of same and the stuffing-box, an air-tube fitted at one end to the hollow portion of said rod, and a cock having its casing in communication with the outermost vertical channel of said flow-chamber and a nozzle depending below the bottom of said receptacle, said casing being also adapted for union with a supply-pipe.

3. In a liquid-measuring apparatus, a receptacle having a flow-chamber comprising two parallel vertical channels communicating at their upper ends, a rotary adjustable vent in ground-joint connection with the upper portion of the flow-chamber, a slotted scale-plate in connection with the receptacle, a bent spring-lever in connection with the vent and engaging the scale-plate slot under compression against the outer face of same to at all times exert pressure tending to bind said vent tight in its ground-joint seat, and a cock having its casing in communication with

the outermost vertical channel of the flow-chamber and a nozzle depending below the bottom of said receptacle, said casing being also adapted for union with a supply-pipe.

5 4. In a liquid-measuring appliance, a receptacle having a flow-chamber comprising two parallel vertical channels communicating at their upper ends, a shouldered rod extending through a stuffing-box in a wall of
10 the receptacle, and having a hollow end in ground-joint engagement with a lateral aperture in the upper portion of the flow-chamber, a spring on the rod between its shoulder and the stuffing-box, an air-tube fitted at one
15 end to the hollow portion of said rod, a spring-lever fast on the outer portion of the aforesaid rod in tension contact with a guide, and a cock having its casing in communication with the outermost vertical channel of
20 said flow-chamber and a nozzle depending below the bottom of said receptacle, said casing being also adapted for union with a supply-pipe.

25 5. In a liquid-measuring appliance, a receptacle having a flow-chamber comprising two parallel vertical channels communicating at their upper ends, a rotary adjustable lever-controlled vent in spring-controlled binding ground-joint connection with the up-

per portion of the flow-chamber, a graduated
30 guide for the vent-lever, and a cock having its casing in communication with the outermost vertical channel of said flow-chamber and a nozzle depending below the bottom of said receptacle, said casing being also adapted for union with a supply-pipe. 35

6. In a liquid-measuring appliance, a receptacle having a flow-chamber comprising two parallel channels communicating at their upper ends, the wall between the channels
40 being approximately the same height as the top of the receptacle, a rotary adjustable vent in spring-controlled binding ground-joint connection with the upper portion of the flow-chamber, and a cock having its casing in communication with the outermost
45 vertical channel of said flow-chamber and a nozzle depending below the bottom of said receptacle, said casing being also adapted for union with a supply-pipe. 50

In testimony that I claim the foregoing I have hereunto set my hand, at Sheboygan, in the county of Sheboygan and State of Wisconsin, in the presence of two witnesses.

JOHN H. OPTENBERG.

Witnesses:

FELIX BENFEY,
GUSSIE BICKEL.