

(No Model.)

F. WINTERS & H. A. BINGHAM.

LIQUID MEASURING DEVICE.

No. 397,452.

Patented Feb. 5, 1889.

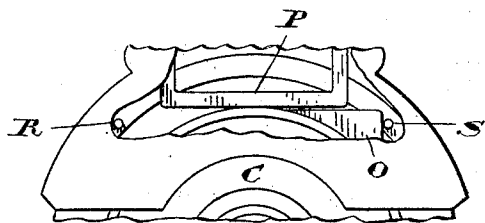


Fig. 2.

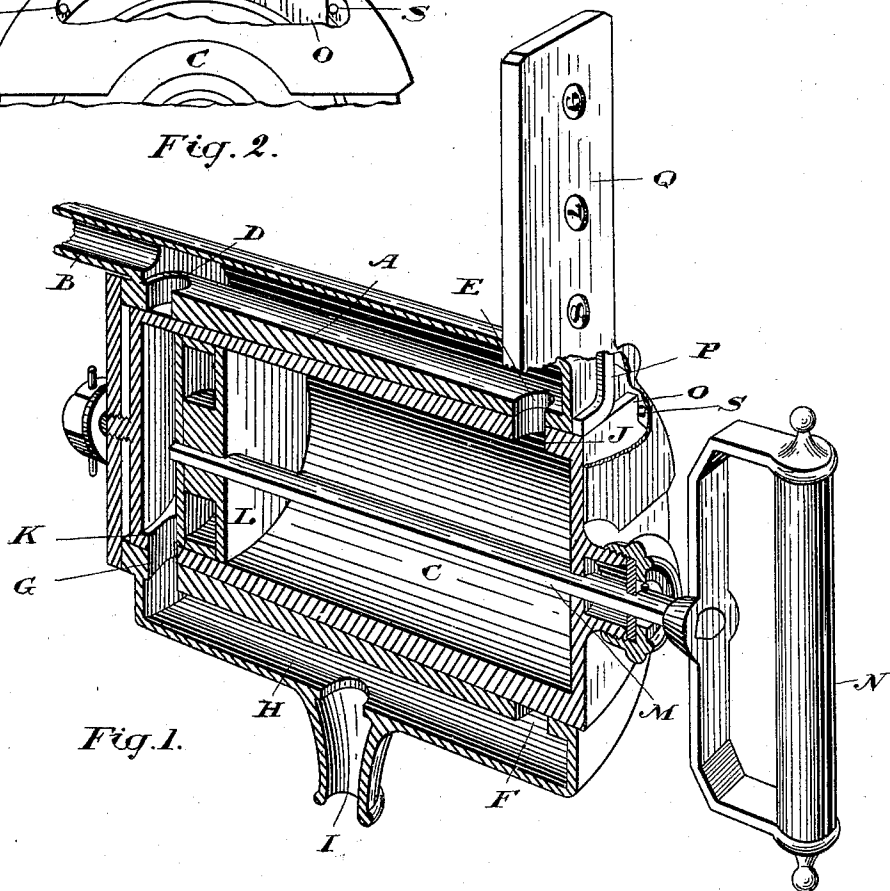


Fig. 1.

Witnesses.

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# UNITED STATES PATENT OFFICE.

FRANK WINTERS AND HORACE A. BINGHAM, OF ORILLIA, ONTARIO, CANADA.

## LIQUID-MEASURING DEVICE.

SPECIFICATION forming part of Letters Patent No. 397,452, dated February 5, 1889.

Application filed June 23, 1888. Serial No. 277,950. (No model.)

*To all whom it may concern:*

Be it known that we, FRANK WINTERS, artist, and HORACE AUSTIN BINGHAM, merchant, both of the town of Orillia, in the county of Simcoe, in the Province of Ontario, Canada, have jointly invented a certain new and Improved Liquid-Measuring Device, of which the following is a specification.

The object of the invention is to design a device simple in its construction and effective in its operation by which spirits and other liquids may be accurately measured and the quantity recorded; and it consists, essentially, of a hollow plug having suitable ports and fitted into a chamber connected to the barrel or other reservoir containing the liquid, and having ports arranged to communicate with the ports in the hollow plug in such a manner that by adjusting the said plug the liquid may be admitted into the hollow plug and discharged therefrom by the longitudinal movement of a piston fitted into the said hollow plug, a suitable counter being arranged in connection with the plug, so that its adjustment for the purpose of admitting liquid into the hollow plug shall cause the counter to register the quantity so admitted, the whole being constructed and arranged substantially in the manner hereinafter more particularly explained.

Figure 1 is a perspective view, partially in section, of our improved measuring and recording device. Fig. 2 is an end view of same, partially in section.

A represents a chamber of any suitable dimension and connected by the passage-way B to the barrel or other reservoir containing the liquid it is intended to measure.

C is a hollow plug, preferably tapered and accurately fitted into the chamber A. Two ports, D and E, are made in the chamber A to communicate with the passage B, and two similar ports, F and G, are also made in the chamber A to communicate with the passage-way H, which leads to the discharge-port I. There are also four ports made in the plug C to correspond with the ports in the chamber A, but arranged so that only one inlet and one outlet port shall be opened at the same time, as shown in the drawings, where it will be noticed that the port J in the plug C com-

municates with the inlet-port E in the chamber A, while the outlet-port K in the plug C communicates with the outlet-port G in the chamber A, so that the liquid which flows into the hollow plug C through the ports E and J cannot escape, the piston L preventing the liquid escaping through the ports K G. The piston L has a piston-rod, M, which extends through a suitable packing-box in the end of the plug C, and is provided with a handle, N, as shown. The piston-rod M is so shaped and fitted into the end of the plug that it cannot be revolved without carrying with it the plug C; but it may be worked freely longitudinally for the purpose of pushing the piston L from one end of the plug to the other.

O is a cam-plate fitted on the end of the plug C below the adjustable frame P, which rests on the end of the plug C, as indicated in Fig. 2, and is so connected to the mechanism of the counter Q that its vertical movement shall impart motion to the counter and cause it to register.

Having now described the mechanism involved in our invention, we shall proceed to explain its operation.

The hollow plug C is made so that when its piston L is pushed to the edge of its port at one end of the piston the space between its end and the face of the piston shall represent the quantity of liquid it is desired to draw. In the drawings we show the piston L pushed to the edge of the port K. The ports E and J being open, the liquid in the passage-way B will flow through the ports E J and fill the space between the face of the piston L and the end of the plug. As the ports E and J are large, the space mentioned in the hollow plug C will soon be filled, when the handle N is seized and turned so as to cause the plug C to revolve and carry the port J away from the port E and simultaneously bring the port in the bottom of the plug C opposite to the port F, and thereby open communication between the interior of the plug C and the passage-way H. In closing the port E and opening the port F the movement of the plug C opens the port D and closes the port G. The handle N is then drawn out so as to carry the piston L to the opposite end of the plug,

when the liquid from the passage-way B will flow through the port D into the hollow plug C, and the operation will be repeated. Each time that the plug C is turned the cam-plate

5 O pushes up the adjustable frame P as the said cam-plate O is carried from the pin R to the pin S, or vice versa, the pins R and S being placed so as to regulate the distance the plug may be revolved. Each time that the  
10 frame P moves up and down, the counter Q registers the fact that the hollow plug C has been emptied, so that an accurate tally of the number of times that the plug has been emptied will be kept.

15 We do not confine ourselves to any particular dimensions, as the dimensions will be altered to suit the predetermined quantity it is desired to withdraw; nor do we confine ourselves to the use of any particular material;  
20 nor do we limit ourselves to the use of the piston L, as a diaphragm might easily be arranged to act for the same purpose.

It will further be understood that the piston or diaphragm might be dispensed with,  
25 and instead of four ports in the plug and corresponding ports in the chamber two ports in each might be arranged to accomplish in a measure the object of our invention.

What we claim as our invention is—

30 1. A hollow plug, C, fitted into a chamber, A, communicating with a liquid-reservoir through the passage-way B, and the ports D, E, F, and G and passage-way H, arranged in relation to each other, as specified, in combina-

tion with the piston L, connected to the handle N by the piston-rod M, arranged to operate substantially as and for the purpose specified.

2. A hollow plug, C, fitted into a chamber, A, communicating with a liquid-reservoir 40 through the passage-way B, the ports D, E, F, and G and passage-way H, arranged in relation to each other, as specified, and the handle N, designed to revolve the plug C, in combination with the piston L, the cam-plate O, fixed 45 to the plug, and the adjustable frame P, actuated by the cam-plate O, and designed to operate the counter Q, substantially as and for the purpose specified.

3. A hollow plug, C, fitted into a chamber, 50 A, communicating with a liquid-reservoir through the passage-way B, the ports D, E, F, and G and passage-way H, arranged in relation to each other, as specified, and the piston L, provided with a piston-rod, M, which connects 55 it to the handle N, designed to revolve the plug C, in combination with the cam-plate O, operating between the pins R and S, so as to impart a vertical movement to the frame P, which operates the counter Q, substantially as 60 and for the purpose specified.

Orillia, May 18, 1888.

FRANK WINTERS.  
HORACE A. BINGHAM.

In presence of—

WILLIAM HARVIE,  
D. A. MACNAB.