

No. 712,627.

Patented Nov. 4, 1902.

G. WIBERG.

CONTROLLING AND MEASURING DEVICE FOR LIQUIDS.

(Application filed Oct. 29, 1898.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 2.

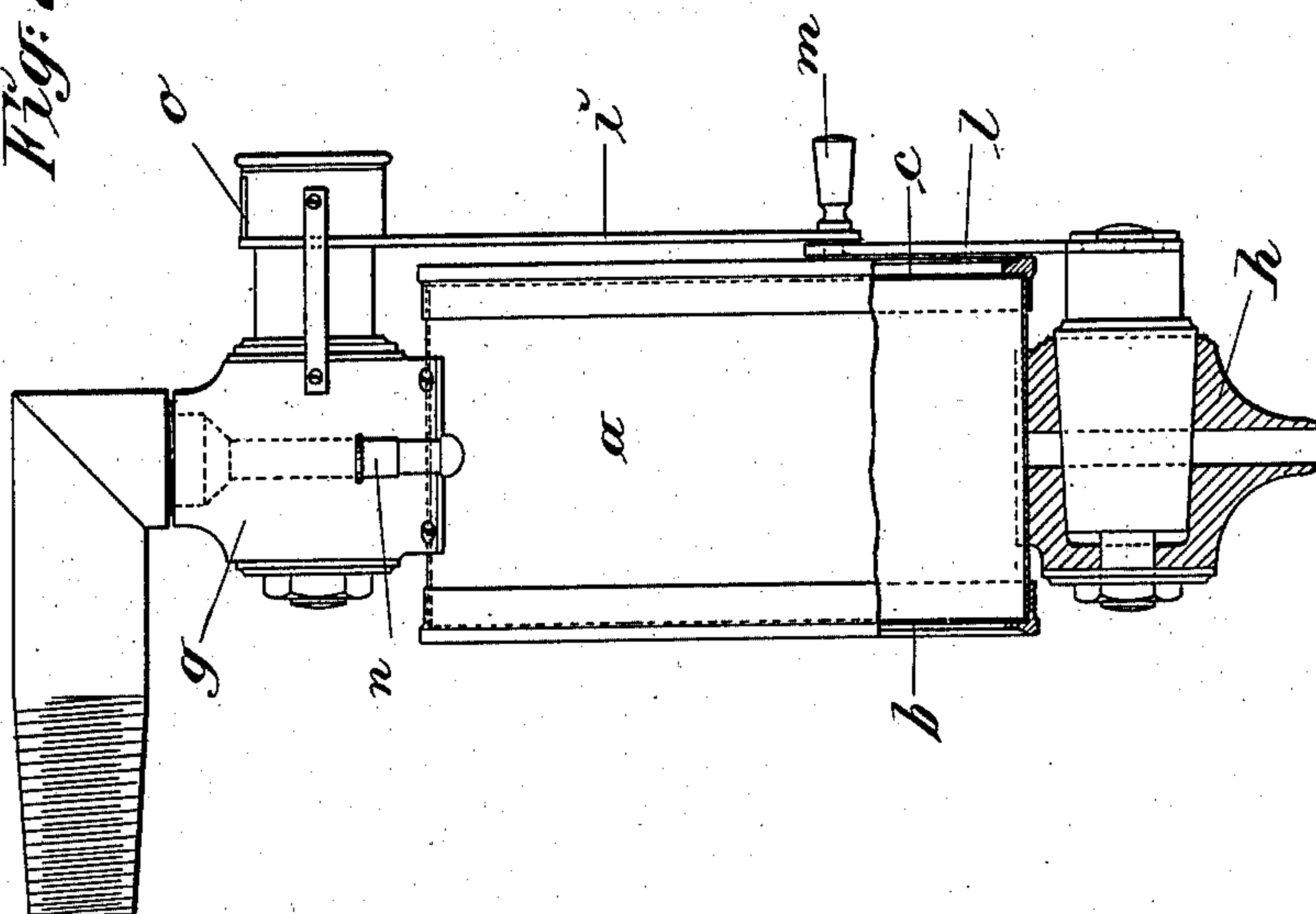
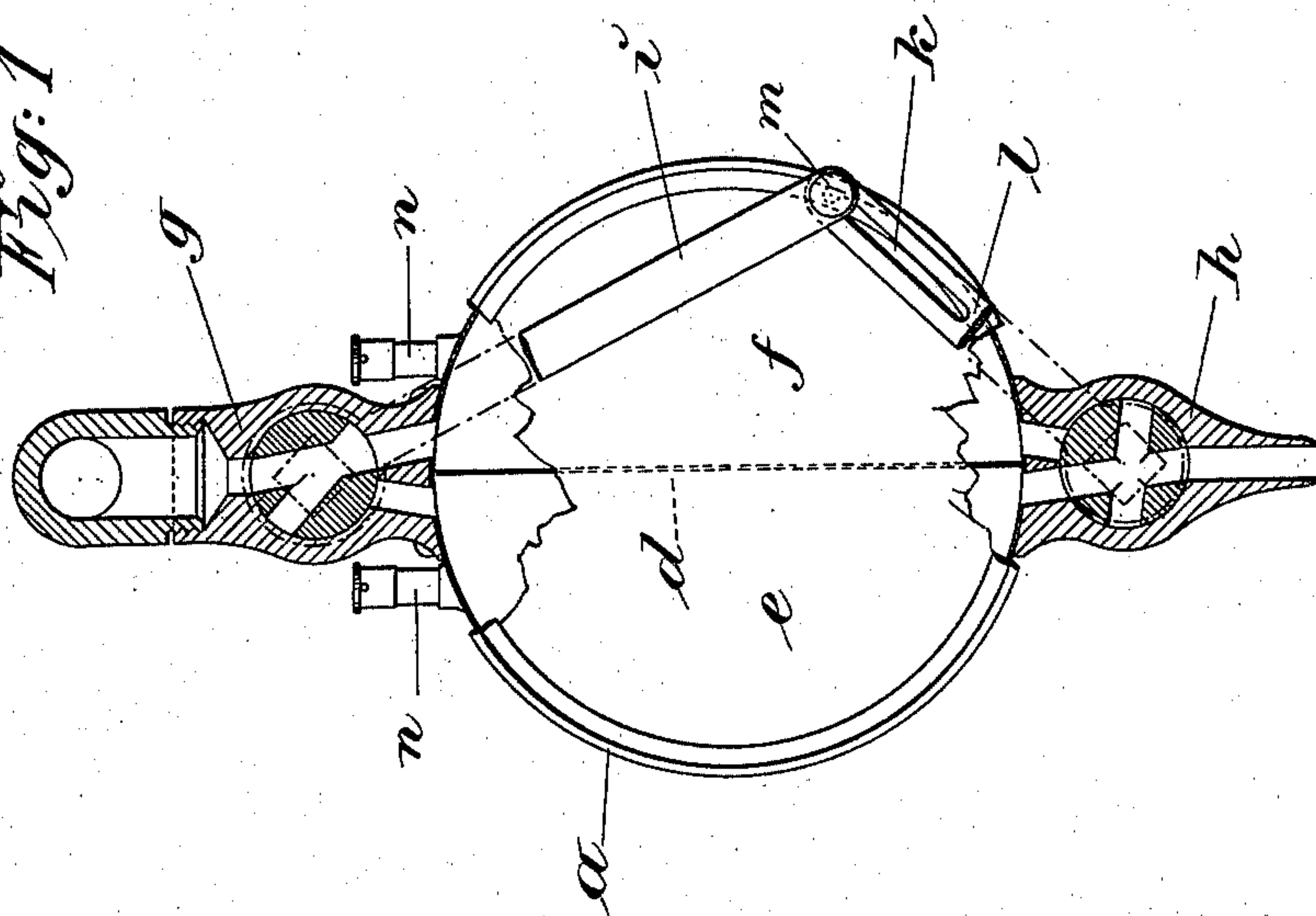


Fig. 1.



WITNESSES:

*P. W. Wright*  
*S. C. Connor*

INVENTOR

GEORGE WIBERG

BY

*Howland & Howland*  
HIS ATTORNEYS.

No. 712,627.

Patented Nov. 4, 1902.

G. WIBERG.

CONTROLLING AND MEASURING DEVICE FOR LIQUIDS.

(Application filed Oct. 29, 1898.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 3.

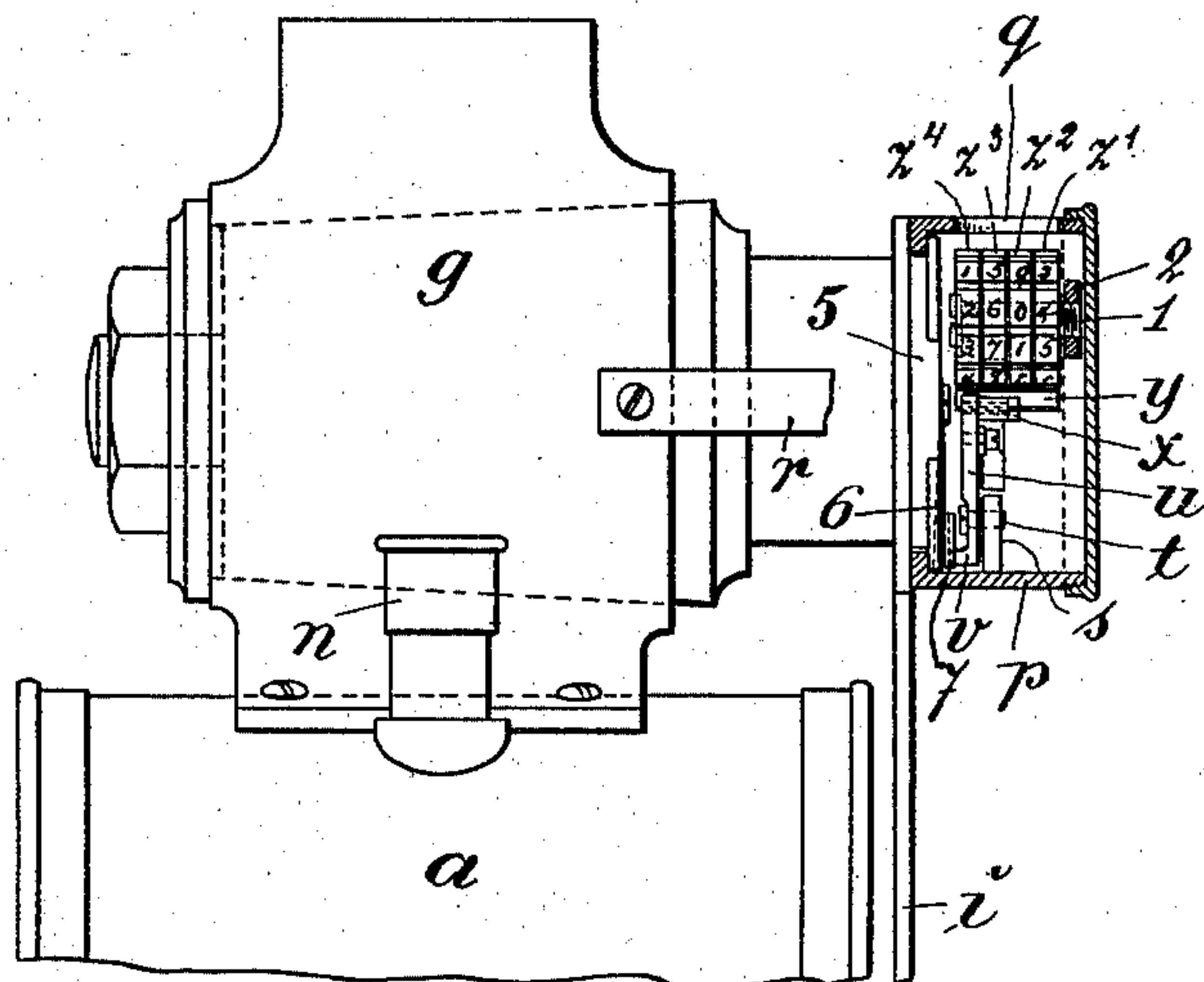


Fig. 4.

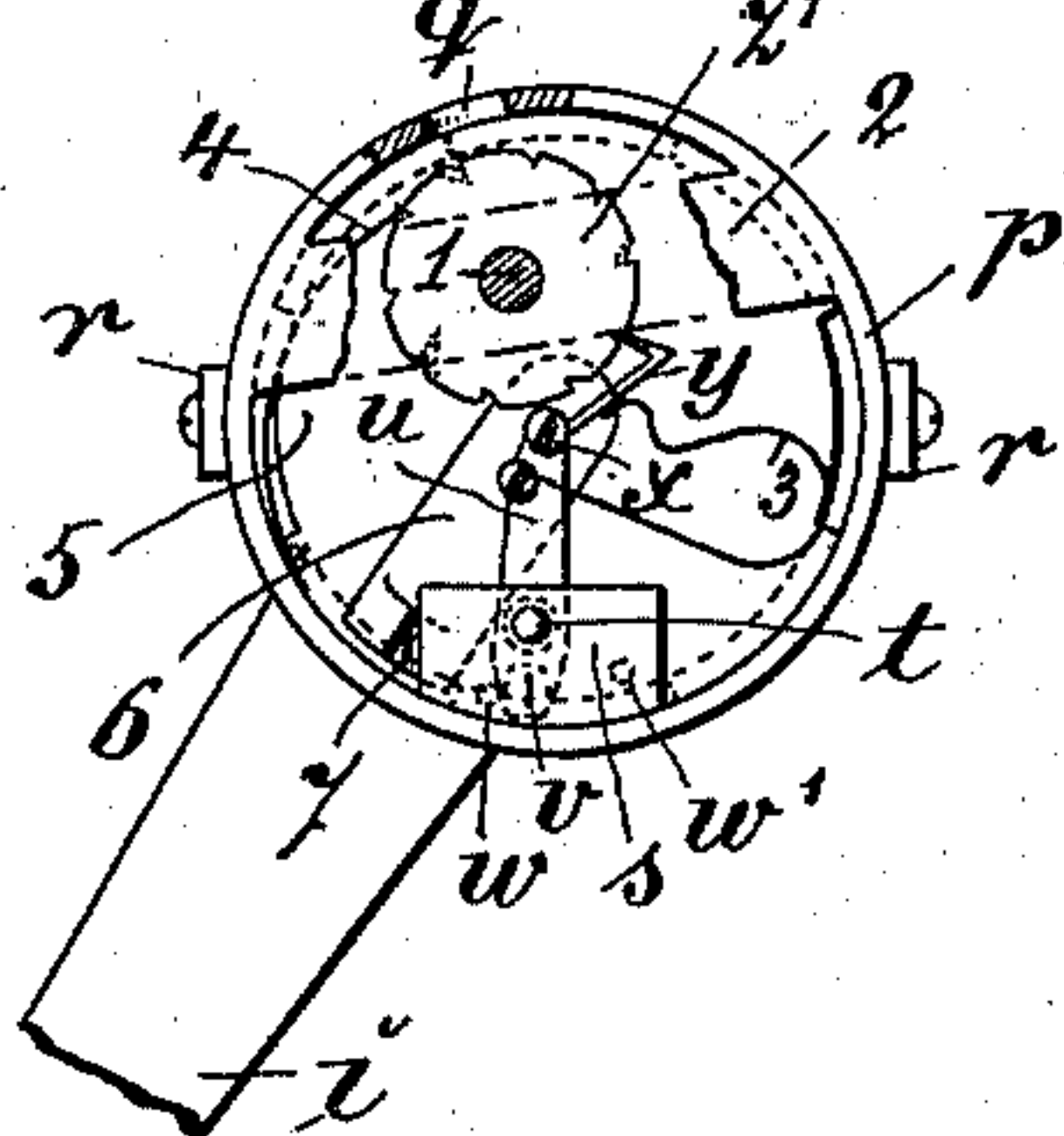
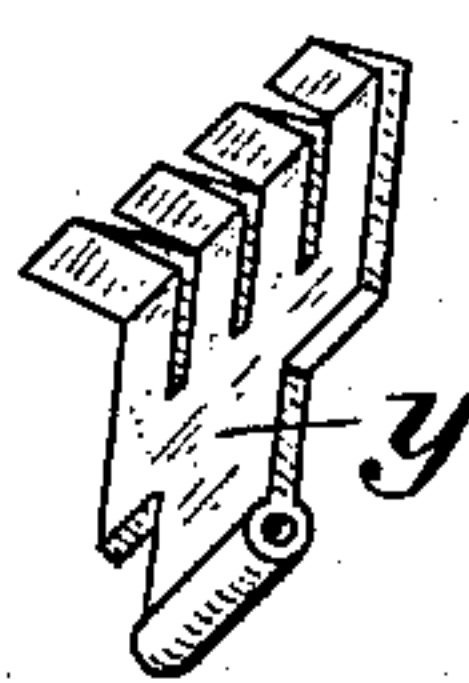


Fig. 5.



WITNESSES:

*P. W. Wright.*  
*S. C. Connor*

INVENTOR

GEORG WIBERG

BY

*Houston and Houston*  
HIS ATTORNEYS.



# UNITED STATES PATENT OFFICE.

GEORG WIBERG, OF STOCKHOLM, SWEDEN.

## CONTROLLING AND MEASURING DEVICE FOR LIQUIDS.

SPECIFICATION forming part of Letters Patent No. 712,627, dated November 4, 1902.

Application filed October 29, 1898. Serial No. 694,896. (No model.)

*To all whom it may concern:*

Be it known that I, GEORG WIBERG, a subject of the King of Sweden and Norway, and a resident of Stockholm, Sweden, have invented certain Improvements in Controlling and Measuring Devices for Liquids, of which the following is a specification.

The invention refers to a controlling and measuring device for casks so constructed that none of the liquid can be drawn from the cask to which the cock is applied without being indicated in liter or parts of a liter by the cock.

In the accompanying drawings, Figure 1 is a front elevation, partly in section, of my improved controlling-cock. Fig. 2 is a side elevation with the lower part in section. Fig. 3 is a view showing the counter in section. Fig. 4 is a front view of the counter with the cover removed, and Fig. 5 is a view of a detail of the counter.

The measuring vessel *a* has two opposite glass walls *b* and *c* and is divided in two by a vertical partition *d*, forming chambers *e* and *f*, each holding a certain quantity—for instance, one-half liter. The cock *g*, which is to be inserted in the cask, and the tapping-cock *h*, with channels in one for drawing liquid into the chambers and in the other to discharge it from the chambers, according to the positions of the plugs, are operated by a handle *m*, fixed to the key *i* and passing through a slot *k* in the key *l*, as shown in Fig. 1. When the handle stands in line with the partition *d* and the keys are in a vertical position, the cocks are closed. On the front end of the plug of the upper cock *g* the counter *o* is arranged.

The apparatus acts as follows: Let us assume the right chamber *f* to be full and the keys to be in their vertical position. The handle is then moved to the left and a unit is marked in the counter, as hereinafter described, the moment before the discharge begins. If the discharge is allowed to continue without interruption till the right chamber is empty, the left chamber will have been filled and one liter of the liquid drawn off will be indicated by the counter. If it is only desired to draw a smaller quantity of the liquid—for instance, a glass—the handle is moved back to the middle position after

the desired quantity has been drawn, to turn off both cocks *g* and *h*. The drawing off in smaller quantities can be repeated so long as any liquid is left in the chamber in question. A fresh indication of the counter does not take place until the left chamber has also been emptied. When the left has been emptied, the right chamber has been filled, and at the next movement of the handle to the left from the middle position another unit—for instance, "2"—appears in the counter, and so on.

The counter *o* of the controlling-cock is constructed and operated as follows: It is enclosed in a case *p*, provided with a rectangular side aperture *q*, through which the numerals are visible, and is rigidly secured by two arms *r* to the case of the upper cock. A flat piece *s*, rigidly secured to the case *p* and provided with a pivot *t*, has a lever *u* mounted thereon with arms of unequal length. The shorter arm is provided with a lug *v*, whose movements are limited by two pins *w w'*, located on the piece *s*. On the end of the longer upwardly-pointing lever-arm a pin *x* is fixed parallel to the axis of the pivot of the lever. On this pin the operating-pawl *y* of the counter is journaled. The counting mechanism proper consists of a number of numeral disks or wheels *z' z''*, mounted loosely side by side on a shaft 1, fixed to a traverse 2, secured to the case *p*. In the drawings four disks are shown; but the number may be greater or less. The numeral-disks are provided at the circumference with the usual numbers "0," "1," "2," "9" and also with a notch or incision between every two of the numbers, as seen in Fig. 4. These disks are operated by a pawl *y*, Fig. 5, of peculiar shape, which is journaled on the pin *x* of the lever *u* and is acted on by a spring 3. The edge of the pawls which faces the disks extends across all the disks and is stepped in such a manner that the step projecting the farthest is directly opposite the circumference of the units-wheel, while the steps situated opposite the succeeding wheels project for a shorter distance. The notch on each wheel, which in the normal position of the pawl is opposite the edge of the pawl *y*, when the "9" of the wheel is visible through the aperture *q* is deeper than the remainder of the notches of



that wheel, this depth of notch decreasing from one wheel to the next, so that the notch in the units-wheel is deepest, that in the tens less deep, and so on, so that only when all the nines are in view the pawl may engage the notch in each wheel. Four detent-springs 4, each bearing on one of the wheels, prevent them for turning backward. The counter is actuated by the combined cock-levers *il* by means of a handle *m*, the lever *i* being in its upper end in the shape of a flat circular disk 5 and forming a movable rear wall of the counter-case. To this wall is fixed one end of a spring 6, which is provided at its free end with a projection 7, having a ridge which on the motion of the cock-lever *i* past the center strikes the lug *v* of the lever *u*, hereinafter described. On one side of the ridge, the left side in the example shown, the projection 7 has the shape of an inclined plane rising from the left-hand side of the spring 6 up toward the ridge and terminating here in a steep or convex wall. When it is desired to draw liquid from the cock, assuming both chambers of the controlling-cock to be empty, counter-wheels to show all zeros, the cock-levers in their central positions, the cocks closed, the following trip mechanism is employed, consisting of the lug *v*, resting on the inclined plane of the projection 7, near the ridge, and lever *u*, bearing against the left pin *w*. Then if the cock-levers are moved to the left the face of the inclined plane will press on the lug *v*, with but slight pressure, however, and will thus tend to move the lug *v* and the lower arm of lever *u* to the left. Such a movement, however, would be prevented by the pin *w*. Consequently the spring 6 must yield, and the incline will slide past the lug *v*, passing it just before the filling of the left chamber commences. In the drawings the spring 6 is placed in the direction of the cock-lever *i* in a recess formed in the rear wall 5, the sides of which recess serve to guide the spring. If the left chamber is to be drawn from, the cock-levers are moved to the right, whereby the right-hand wall of the incline on the projection 7 strikes the lug *v* shortly before the cock-levers reach their central position and forces it to the right. The upper arm of lever *u* is then forced to the left, and the pawl *y* is made to engage with a notch in the units-wheel of the counter. When the cock-levers have moved slightly beyond the center, the pawl *y* will have been moved so far to the left as to move the counter-wheel from "0" to "1" and a detent-spring 4 will have snapped into a notch of the wheel. The liquid now begins to flow out of the left-hand-cock chamber, while the right one commences to take in liquid. The lower arm of lever *u* has meantime been limited in its movement by striking against the right-hand pin *w'*. The spring 6 is thus forced down into its recess, and the edge of the incline slides under the lug *v* and releases the latter. The spring 3, which has so far been compressed between its points of

attachment to the lever *u* and to the pawl *y*, now straightens out and returns the lever *u* to its normal position, where it again bears against the left-hand pin *w*. If it is desired to draw off only a part of the contents of the left-cock chamber, the cock-levers are returned to their middle position again as soon as the desired quantity has been obtained and the cocks closed. The lug *v* will again bear on the incline of the projection 7, near its edge. If the cock-levers are again moved to the right, the contents of the left-cock chamber can again be drawn off without moving the counter-wheels, since the incline only slides away from the lug *v* without communicating any motion to it. If the left-hand-cock chamber is empty and liquid is to be drawn from the right-hand one, the cock-levers are moved to the left. The inclined plane of the projection 7 slides under the lug *v*, as previously described. If only a portion of the contents of the right-hand-cock chamber is to be drawn off, the cock-levers are returned to the center and the cocks being closed the outflow will cease. No indication of the counter-wheels is thereby produced, for when the cock-levers have arrived near the center and the right-hand wall of the incline strikes the lug *v* the latter will be forced to the right only a short distance, so that the pawl *y*, which is moved to the left in the motion of the lug to the right, will advance the counter-wheel through only a portion of the distance between two notches. When a partial drawing of liquid from the right-hand-cock chamber again takes place, by moving the cock-levers to the left the lever *u*, actuated by the spring 3, will resume its normal position and the pawl *y*, which is then moved back to the right, will pull the counter-wheel back to its former position. Not until the right-hand-cock chamber is emptied and the left-hand chamber, which has meantime become filled, is to be drawn from will the counter-wheels indicate a new number "2" in the manner and under the circumstances above described. The channels in the cock *g* are made somewhat wider than the channels in the cock *h* in order that the inflow from the cask into the chambers of the cock shall take place a little faster than the outflow from said chambers, thereby insuring as continuous an outflow without interruption as can be obtained with a common cock, and at the same time without diminishing the safety of the control, however great quantities may be drawn from the cask. For the entrance and escape of the air into and from the chambers of the cock there are provided two automatic air-escape valves *n n* of any suitable construction, one on each of the chambers *e* and *f*.

I claim as my invention—

A controlling and measuring device for liquids comprising a measuring vessel having two chambers, an air-valve to each chamber, a two-way inlet-cock and a two-way outlet-cock, levers connecting both cocks adapted



to slide one on the other, in combination with  
a counter, having numbering-wheels and a  
ratchet mechanism to operate them, a trip  
mechanism and means whereby said trip  
5 mechanism operates the counter mechanisms  
upon the movement of the cock-levers in one  
direction only, whereby the counting appa-  
ratus is adapted to remain at rest after com-  
munication has once been established be-  
10 tween the vessel and the outlet-cock, and  
means whereby said counting apparatus can

also remain at rest and allow said cock to  
draw liquid from the vessel at intervals until  
said vessel has once been emptied, substan-  
tially as described.

In testimony whereof I have signed my  
name to this specification in the presence of  
two subscribing witnesses.

GEORG WIBERG.

Witnesses:

CARL G. GERELL,

FREDRIC L. ENQUIST.

15