

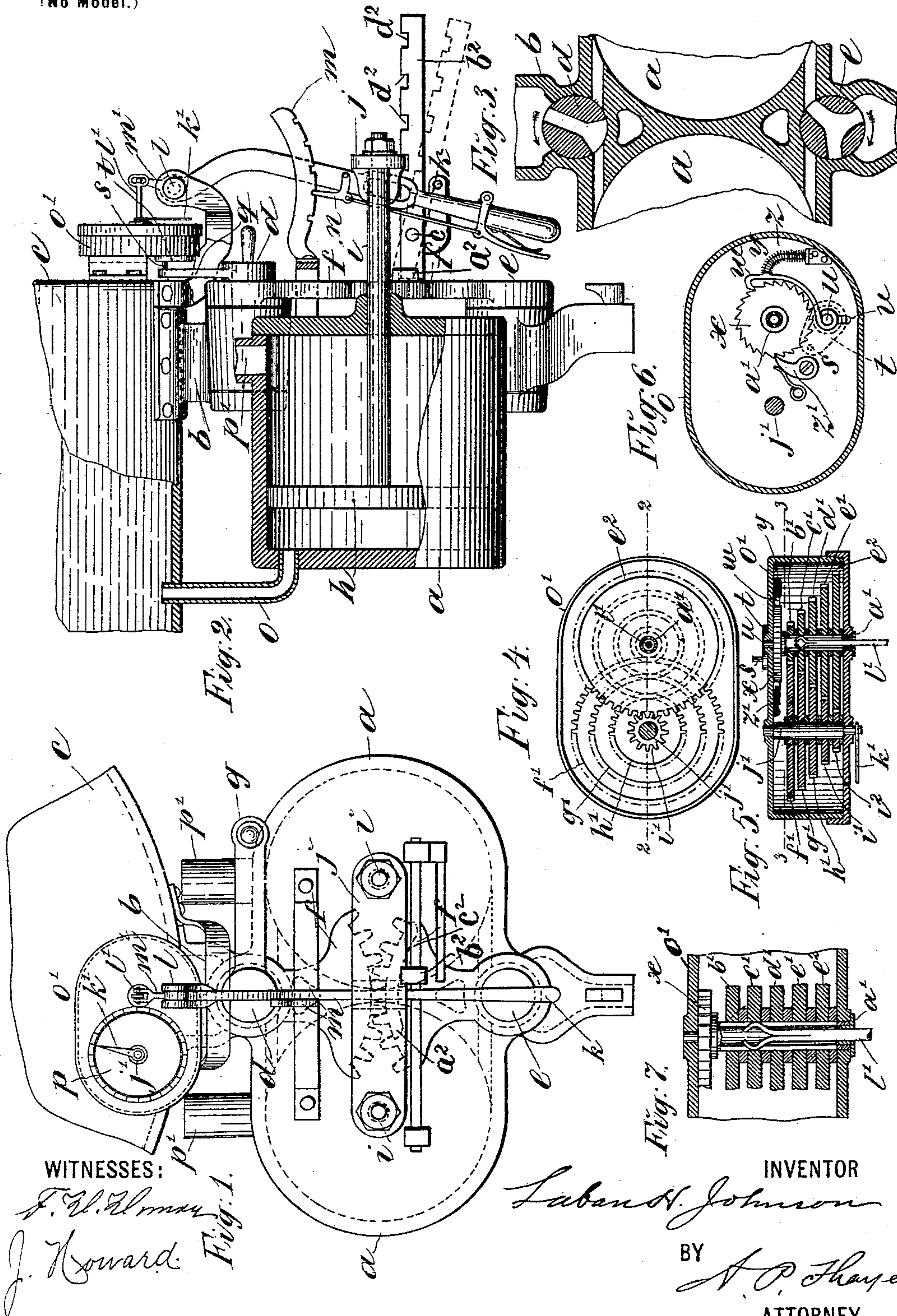
No. 616,671.

Patented Dec. 27, 1898.

L. H. JOHNSON.
MEASURING FAUCET.

(Application filed May 15, 1897.)

(No Model.)



WITNESSES:

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Fig. 1.

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MEASURING-FAUCET.

SPECIFICATION forming part of Letters Patent No. 616,671, dated December 27, 1898.

Application filed May 15, 1897. Serial No. 636,631. (No model.)

To all whom it may concern:

Be it known that I, LABAN H. JOHNSON, a citizen of the United States, and a resident of New York, (Brooklyn,) in the county of Kings and State of New York, have invented certain new and useful Improvements in Measuring-Faucets, of which the following is a specification.

My invention relates to measuring-faucets; and it consists of means for adjusting them for measuring predetermined different quantities and the combination therewith of a variable automatic register to register the different quantities measured, as hereinafter described, reference being made to the accompanying drawings, in which—

Figure 1 is a front elevation of my improved differential measuring-faucet and register. Fig. 2 is partly a side and partly a sectional elevation. Fig. 3 is a detail in transverse section, illustrating the valves of the faucet. Fig. 4 is a front elevation of the register with the cover removed. Fig. 5 is a section of the register on line 2 2, Fig. 4. Fig. 6 is a section of the register on line 3 3, Fig. 5. Fig. 7 is a detail of the register enlarged for greater clearness.

In the present example of my invention a duplex faucet is represented, comprising two measuring-chambers *a*, one of which may be filled while the other is discharging for economizing time, said chambers being cylindrical in form and placed together side by side, with a filling connection at *b* the top, with the tank *c* containing the liquid to be drawn, in which connection is a plug-valve *d*, which directs the liquid into one or the other of the chambers as it is set, cutting off the other chamber at the same time, and beneath the filled cylinder for discharge and closing the other for filling, said valves being geared together by segments *f*, to be operated in unison with a crank-arm *g*, attached to one valve for operating them by hand.

In each cylinder *a* is a piston *h* intermediate of the rear ends of the cylinders and the inlet and outlet passages varying the measuring capacities of said cylinders. The pistons are connected by rods *i* with a cross-head *j* at the front, to which a lever *k* is connected for shifting them forward and back-

ward, said lever being pivoted at *l* in suitable relation with a notched quadrant *m* and having a setting-latch *n* for gaging the pistons according to the quantities to be drawn. Behind the pistons there are open communications *o* with the tank for free flow of the liquid in and out to avoid obstruction of the pistons when they are to be shifted.

It will be seen that the pistons may be positively set in any predetermined position preparatory to using the faucet and be positively retained in position for repeated use of the respective different capacities without change.

In this case the apparatus is gaged for measuring one to five gallons, the scale of notches on the quadrant being gaged to determine the positions of the pistons therefor.

The registering apparatus is contained in a case *o'*, located on the front of the tank, with a dial *p* on the front of the case for registering a limited amount. For registering larger quantities the usual counting device for larger numbers will be added.

For actuating the register automatically an upwardly-extending arm *q* is attached to the upper valve, so as to vibrate as the valve turns, with a stud-pin *s* in its upper end, which engages the free end of a link *t*, that swings on a stud *u*, that projects through a slot *v* in the back plate of the register-case and carries the hook-pawl *w* inside of said case, so that the pawl is made to slide up and down through the difference in the radii of the arm *q* and link *t* suitably to shift a ratchet-wheel *x*, properly arranged with relation to the pawl. A coiled spring *y* and a staff *z* are provided to keep the pawl in engagement with the ratchet-wheel and to retract the pawl, and a suitable retaining-pawl *z'* is also provided.

The ratchet-wheel *x* is attached to the tubular shaft *a'*, on which there are five loose spur-pinions *b'*, *c'*, *d'*, *e'*, and *e''* of different sizes, gearing with five other pinions *f'*, *g'*, *h'*, *i'*, and *i''*, fixed on the shaft *j'*, which carries the pointer *k'*.

The shaft *a'* is slotted on opposite sides, and an expanding key *l'*, connected with a short arm *m'* of lever *k*, is made to slide along said shaft when the pistons are shifted into the bore of the pinion corresponding to the quantity to be measured to grip and so connect the pinion with the shaft that the movement

of the ratchet-wheel will be communicated to the pointer of the indicator in due measure for indicating the quantity drawn, the said pinions being duly proportioned therefor, pinions b' and f' being adapted to move the pointer one degree on the dial, pinions c' and g' to move it two degrees, pinions d' and h' to move it three degrees, and pinions e' and i' to move it four degrees, and so on. Any other approved form of indicator may be used and also any other approved form of variable gear for causing the indicator to vary in accordance with the changes of the faucet, and I do not limit myself to particular contrivances. Suitable vents for the chambers are to be provided, as partly indicated at p' .

To prevent shifting the pistons after a small quantity has been registered and drawing a larger quantity than indicated by the record, a locking device is provided to prevent change of the pistons until the valves have been turned too far for such fraudulent operation. Various contrivances may be employed for such purpose. That which is here represented consists of a cam-flange a^2 on the front of the lower sector f and a locking-bar b^2 , mounted on a pivot c^2 in such relation to the cam and to the cross-head j that when the valves are in either position for filling one chamber and emptying another the said bar will fall to the position indicated in dotted lines, Fig. 2, and the cross-head will be free for shifting the pistons; but when movement of the valves begins the cam a^2 will engage the short arm of the locking-bar and throw up the long arm, which will engage the cross-head by the notch d^2 , corresponding to the position of the pistons, and prevent the pistons from being shifted until the other extremity of the movements of the valves has been reached and inflow to the chamber being discharged is cut off, so that changing the pistons can only be effected, while there is no possibility of increasing the capacity of the chamber being discharged.

I do not limit myself to the particular contrivance of this locking apparatus, for it is manifest that various arrangements of devices may be employed.

I am aware that in certain dry measures adapted for only one special volume side plates have been made slightly adjustable by a set-screw to secure accuracy of the said volume with nothing whatever to prevent changing the adjustment at any time for fraudulent purposes, while in my invention the locking devices are adapted to a variable measuring-faucet capable of changing for various different standard measures of volume and being such that no fraudulent change can be effected, being incapable of securing and locking the movable side except in the exact predetermined position.

I claim—

1. In a liquid-measuring-faucet chamber

having a variable side adapted to be shifted and set in different positions for varying the size of the chamber for measuring various predetermined different standard measures of volume, the combination with said chamber having said variable side, of means adapted to automatically and positively lock and retain said movable side in its set position while filling and emptying the chamber, said locking and retaining means being such that the said movable side can only be secured in the exact predetermined position, and cannot be moved while the inflow-passage to the chamber is open, and means for filling and emptying said chamber independently of and without shifting said variable side substantially as described.

2. In a duplex liquid-measuring faucet the chambers of which have each a variable side and both adapted to be together shifted and set in different positions for varying the size of the chambers for measuring various predetermined different standard measures of volume, said faucet adapted for filling one chamber while emptying the other alternately, the combination with said chambers having said variable sides, of means adapted for together shifting, locking and retaining said movable sides automatically and positively in their set positions while alternately filling and emptying the chambers, said locking and retaining means being such that the said movable side can only be secured in the exact predetermined position, and cannot be moved while the inflow-passage to a chamber is open, and means for filling and emptying said chambers independently of and without shifting said variable sides substantially as described.

3. In a measuring-faucet, the combination of a cylindrical measuring-chamber, a piston and means for shifting and setting it in different positions for measuring different quantities, a register automatically variable in accordance with the variations of the piston, and means for changing the register connected with the means for changing the piston so as to be actuated thereby substantially as described.

4. In a measuring-faucet, a measuring-chamber that is variable in size adapting it to various quantities, means combined therewith for effecting the variations, an automatically-variable register coacting therewith, and means to lock and secure both the side-adjusting apparatus and the register in their due relations to each other, substantially as described.

Signed at New York, in the county of New York and State of New York, this 4th day of May, A. D. 1897.

LABAN H. JOHNSON.

Witnesses:

C. SEDGWICK,
A. P. THAYER.