



# United States Patent Office.

WILLIAM MONT STORM, OF NEW YORK, N. Y.

Letters Patent No. 64,457, dated May 7, 1867.

## IMPROVEMENT IN LIQUID METERS.

The Schedule referred to in these Letters Patent and making part of the same.

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, WILLIAM MONT STORM, of the city, county, and State of New York, have invented a new and useful Instrument for Measuring Liquids, of which the following specification embraces a full and fair description.

Figure 1, on the accompanying drawing, represents a cross-section of my meter.

Figure 2 is a central longitudinal section, one end being broken off, as it is the exact counterpart of the end shown.

My meter was more particularly designed for the measurement of spirituous liquors, such as whiskey, it being intended to be attached to the "worm" of a still, and the liquor pass through the meter as it runs off. In a general sense its construction is similar to that of a steam pump, being constituted of a cylinder of metal, *a a*, with its head *b*, valve-chest *c*, induction passages *d d*, exhaust passage *e*, &c. To avoid rust and the action of certain acids liable to be present in whiskey as it comes from the still, the cylinder *a* is lined with a glass cylinder, *a' a'*, and the metal cylinder has openings cut through it on each side, as *x x x x*, so that the action of the pistons *f f*, &c., may be observed. The pistons *f f* slide to and fro on a central rod, *g*, the extremities of which pass through the heads *b*, and are supported and fixed in brackets, *h*, which are in turn fixed to the heads.

As it would be scarcely practicable to build a meter to hold exactly a given number of gallons, I make the pistons *f* adjustable by a right-and-left screw, as shown, so that by setting them closer together or further apart I can regulate the capacity of the meter to the desired point, as will be understood. By suspending my pistons, so to express it, on the rod *g*, the resistance to their motion from friction is far less than it would be if contact between their peripheries and the cylinder *a' a'* were their only guide. *i* is a common D-slide valve, the action, &c., of which is well known. The valve-rod *j* passes the end of the valve-chest into what I call the lever-chest *k*, and there connects with the long end of a simple lever, *l*, as shown, and the fulcrum of which is at *l'*. The shorter end of this lever spans the fixed rod *g*. Fitting this rod and passing through the head *b* is a sleeve, *z*, on which again is an adjustable collar, *z'*.

Now, the action of the meter is as follows: Suppose the pistons to be moving by the pressure of the "head" of liquor in the worm of the still toward the left on the drawing, when the corresponding piston strikes the sleeve *z* it will of course be pushed outward, and its collar *z'* pushing against the lever *l*, this, in turn, moves the rod *j* and reverses the valve *i*, and so on continuously, as will be readily understood. The collar *z'* is made adjustable with a set-screw, or other suitable device, so as to cause the valve *i* to be reversed a little sooner or later, as may be desired, and as will be at once understood. *m* is a little cock by which (when the meter is to remain idle for a length of time) the liquor, that would have gradually leaked in between the pistons, may be drawn off. *n* is another cock communicating with the lever, chest, and cylinder for a similar purpose. Motion may be obtained from the meter to operate a register by extending the fulcrum-rod of lever *l* out through the side of the lever-chest *k*, and attaching to such outer end a short slotted crank, &c., in manner common and readily understood.

Having now fully described my meter, what I claim therein, and desire to secure by Letters Patent, is as follows:

1. I claim the arrangement of the valve *i*, rod *j*, and lever *l*, operating in conjunction with the sleeve *z* and piston *f*, as and for the purpose described.
2. I claim regulating a liquid meter, constructed substantially as described, by means of the adjustable pistons *f f*, as and for the purpose explained.
3. I claim the glass cylinder *a*, embracing a piston or pistons moving on a central rod and supported by a perforated exterior case, as and for the purpose specified.

WM. MONT STORM.

Witnesses:

JAMES GORTON, Jr.,

JAS. S. WIGHTMAN.