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R. P. PARK.

MEANS FOR DELIVERING MEASURED QUANTITIES OF LIQUID.

APPLICATION FILED DEC. 29, 1906.

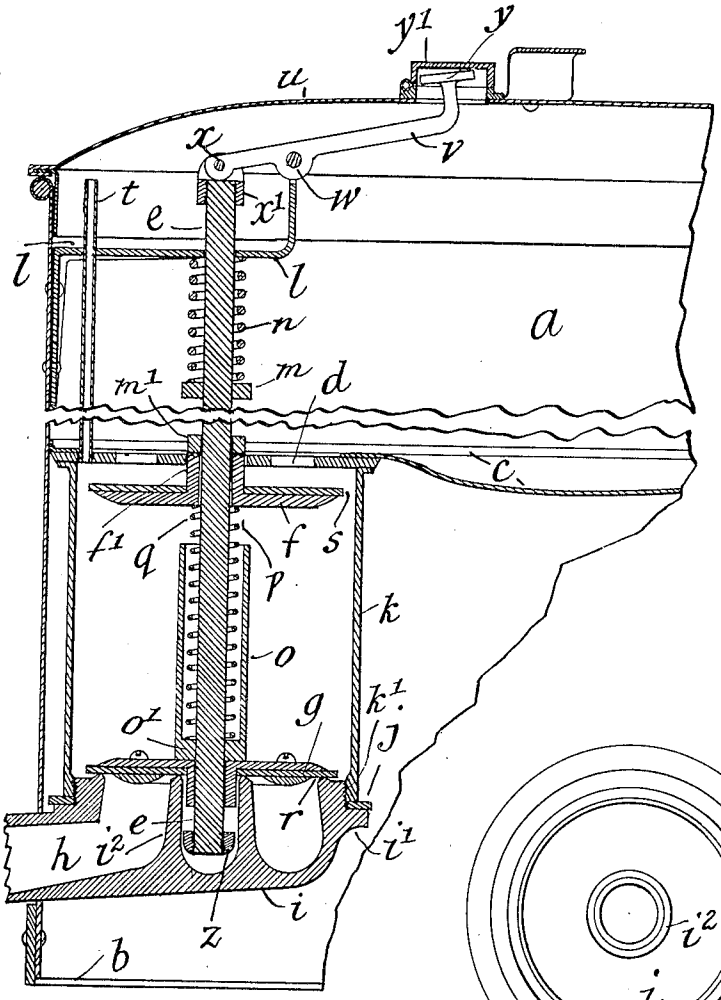


Fig 1

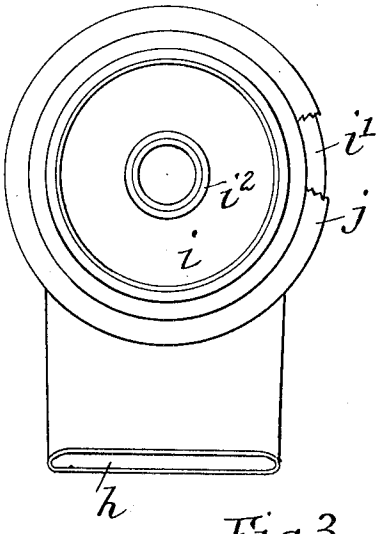


Fig 3.

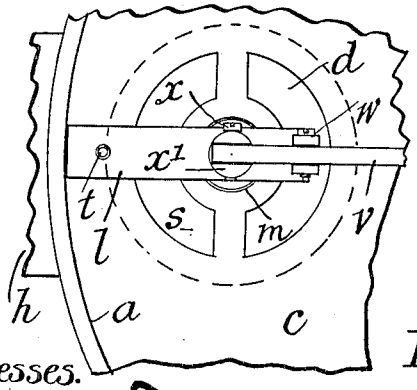


Fig 2

Witnesses.

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UNITED STATES PATENT OFFICE.

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MEANS FOR DELIVERING MEASURED QUANTITIES OF LIQUID.

No. 852,343. Specification of Letters Patent. Patented April 30, 1907.

Application filed December 29, 1906. Serial No. 349,988.

To all whom it may concern:

Be it known that I, RICHARD PICKUP PARK, a subject of the King of Great Britain and Ireland, &c., residing at South Melbourne, in the State of Victoria, Commonwealth of Australia, have invented certain new and useful Improvements in Means for Delivering Measured Quantities of Liquid; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of this invention is to provide in or for combination with a can or vessel, means for delivering measured quantities of liquid from it at will. When desired the number of quantities for example, pints, delivered will be indicated by having a counter attached. The invention is intended for, among other fluids, milk, and it has been so arranged that the parts can easily be dissembled, inspected and cleansed. The operation of the measuring device is rapid, and the working parts are so positioned as to be protected from injury. All that it is necessary for the milkman or user to do when he desires to deliver a charge—say one pint—is press a button or lever so as to raise a spindle which operates two valves in turn—as is described below. Then when the button is released the measuring vessel refills and is ready for the next delivery.

The invention is illustrated in the drawings herewith which show a can which may be carried by a milkman, instead of an ordinary one, and by which he can deliver without introducing a measure into the fluid or even removing the can lid.

Figure 1 is a side elevation in central middle section; Fig. 2 is a plan view from above the can when the lid is removed. Fig. 3 shows in plan view a detached detail.

In these drawings *a* indicates the can, *b* its base or lower rim, *c* its bottom, which is higher than *b*, and *d* is an aperture in *c*, the whole constructed to form a storage chamber and a valve controlled communicating measuring chamber. A stem or spindle *e* suitably supported passes through the said aperture and carries two slidable valves *f* and *g*, both being loose on the spindle but limited as to the distance of their movability along the same. The former is shown open, the latter closed, spring pressure being utilized for this purpose. Valve *f* controls aperture *d* which is at the top of a measuring chamber *k*, and valve *g* controls the outlet from that chamber at the latter's base.

l is an upper bracket or support of the stem or rod *e*, and of a lever for lifting the said rod; *m*, *m*^{1} are projections or collars suitably secured to that rod removably or adjustably in some cases; and *n* a spring abutting against parts *l* and *m* and normally pressing down rod *e*, keeping valve *f* open, so that chamber *k* is normally always full.

o is a stop fixed to stem *e*. This stop may be a rod or be tubular; it is located between valves *f* and *g*, leaving a gap *p* between its upper end and valve *f*. The lower end *o*^{1} of part *o* is the part of it which is shown fixed to spindle *e*, but instead of said end a collar or other abutment could be used. A spring *q* abuts against part *o*^{1}, and against valve *f*, being so placed as to require further compression to bring the two valves closer than their normal position.

h shows the outlet or nozzle of measuring chamber *k* which has a bottom *i* removably secured in position as by being screwed on as at *k*^{1}, and having if desired a flange *i*^{1} to press against a washer *j* to prevent leakage.

r represents any suitable washer to prevent leakage of valve *g*, and *s* a similar washer to prevent leakage of valve *f*.

t is an air pipe extending any suitable height from chamber *k*. The air pipe top is protected from dust as by the can lid *u*.

v is a lever suitably pivoted, as at *w* to bracket *l*, and connected or pivoted to rod *e*, as at *x*, the lever head or button *y* being adapted to be pressed down by the milkman or other user, causing the raising of rod *e* and the striking of a shoulder or projection *z* at the base thereof against the valve *g* or a flange thereon. A cup *i*^{2} in the bottom *i* by being pressed against by the washer *r* or valve under side, prevents leakage by way of the stem foot *z*.

A hinged or other cap *y*^{1} is when desired used on lid *u* to cover button *y* and thus exclude dust from vessel *a*.

When rod *e* with valve *f* kept up by spring *q* rises that valve closes aperture *d* after which flange *z* contacts with and raises valve *g*, which prior to the said contact is kept down on its seat by the weight of liquid on it.

When valve *g* opens, the liquid in vessel *k* escapes, and is at will delivered to any suitable receiver, no other liquid being able meanwhile to enter vessel *k*. When valve *g* is opened fully the top of stop *o* meets valve *f*. When raised rod *e* is allowed to descend to its normal position, the pressure for a time of the compressed spring *q* on valve *f* keeps that valve closed (collar m^1 being meanwhile raised out of contact with the said valve); valve *g* however descends since the lowering of part *z* allows the latter valve to fall to its seat by its own weight. Then collar m^1 contacts with the flange f^1 of valve *f* (and as rod *e* descends to its normal position by the pressure of spring *n*) forces valve *f* open, against the power of spring *q*. In this it is assisted by the weight of any liquid in can *a*.

What I do claim as my invention and desire to secure by Letters Patent of the United States is:—

1. The combination with a can, comprising a storage chamber and a communicating measuring chamber, provided with an outlet, of a reciprocating spindle passing through said chambers, a valve loosely mounted on said spindle adjacent said outlet and normally closing said outlet, a valve loosely mounted on said spindle at the upper end of said measuring chamber and normally maintaining open communication between said storage chamber and said measuring chamber, and means coöperating with said spindle and valves to initially close said upper valve against its seat upon the upward movement of said spindle and upon continued upward movement to raise said lower valve from its seat, and upon the return movement of said spindle to initially close said lower valve on its seat before opening communication between said storage and measuring chambers, substantially as described.

2. The combination with a can comprising a storage and measuring chamber, an outlet being provided for said measuring chamber, and a communicating passage being formed between said measuring chamber and said storage chamber, of a spindle passing through said chambers, a valve loosely mounted on said spindle and coöperating with said outlet, a second valve loosely mounted on said spindle at the upper end of said measuring chamber, a spring interposed between said valves for normally supporting said upper valve in its open position, means carried by said spindle engaging said lower valve during the upward movement of said spindle, and means for reciprocating said spindle, substantially as described.

3. The combination with a can comprising a storage chamber and a communicating measuring chamber provided with an outlet, of a spindle passing through said chambers, an outlet valve loosely mounted on the lower end of said spindle, an upper valve loosely mounted on said spindle at the upper end of said measuring chamber, a stop secured to said spindle between said valves, and springs interposed between said stop and upper valve, means for reciprocating said spindle, and means carried by the lower end of said spindle for engaging said outlet valve at a predetermined point in the upper movement of said spindle, substantially as described.

4. The combination with a can comprising a storage chamber and a communicating measuring chamber provided with an outlet, of a reciprocating spindle passing through said chambers, an outlet valve loosely mounted on said spindle at its lower end, an upper valve loosely mounted on said spindle and provided with a boss, abutments carried by said spindle above said upper valve, the lower one of said abutments coöperating with said boss, substantially as described, a spring engaging said upper abutment and a rigid part of said can, a stop secured to said spindle comprising a cylindrical hollow member disposed between said valves, a spring contained within said hollow stop and normally supporting said upper valve in its open position, and a stop carried at the lower end of said spindle for engaging said outlet valve at a predetermined position in the upward stroke of said spindle, and a lever pivotally connected to said spindle, substantially as described.

5. The combination with a can comprising a storage chamber and a measuring chamber, said measuring chamber being provided with an outlet consisting of a base member having an upwardly extending cup formed thereon and forming with the upper edge of said base member a valve seat, of a reciprocating spindle extending through said chambers and disposed at its lower end in said cup member, a valve loosely mounted on said spindle, adapted to be normally seated on said cup and base member, means for opening and closing communication between said chambers, and means for reciprocating said spindle, substantially as described.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

RICHARD PICKUP PARK.

Witnesses:

GEORGE G. TURRI,

BEATRICE M. LOWE.