No. 712,070. Patented Oct. 28, 1902.

# C. JOHNSON & D. M. CAMERON.

## INDICATOR FOR TANKS.

(Application filed Sept. 27, 1901.)

(No Model.)

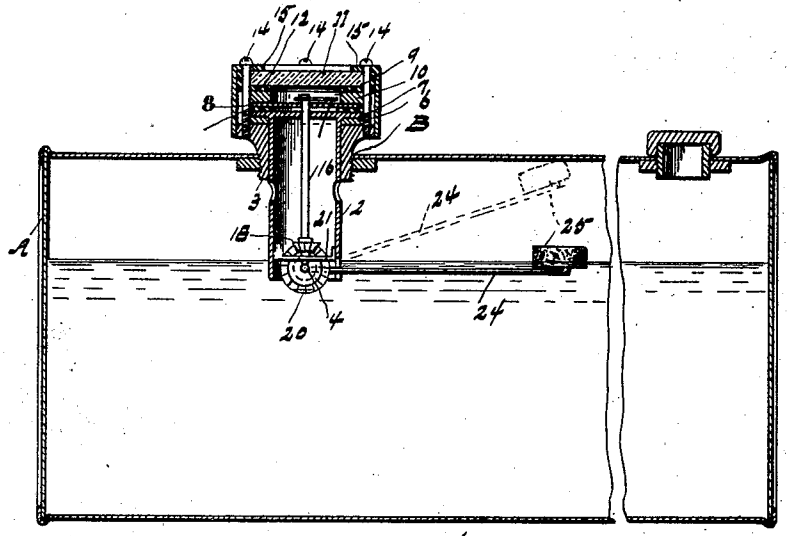


Fig 1.

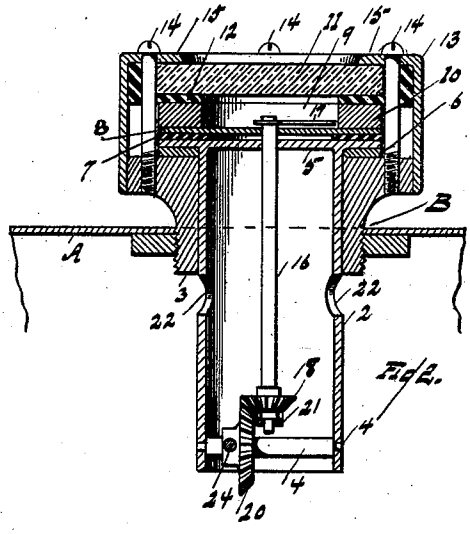


Fig 2.

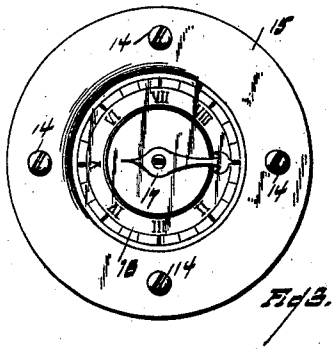


Fig 3.

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# UNITED STATES PATENT OFFICE.

CLARK JOHNSON AND DONALD M. CAMERON, OF DETROIT, MICHIGAN.

## INDICATOR FOR TANKS.

SPECIFICATION forming part of Letters Patent No. 712,070, dated October 28, 1902.

Application filed September 27, 1901. Serial No. 76,753. (No model.)

*To all whom it may concern:*

Be it known that we, CLARK JOHNSON and DONALD M. CAMERON, citizens of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Indicators for Tanks; and we 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 pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to indicators for tanks, and has for its object an improvement in float-actuated indicators intended to show the quantity of liquid contained in the tank with which the indicators are connected.

The indicator, including its actuating mechanism, is made as a unitary device adapted to be attached to the tank whose contents are to be measured and to be sold commercially as an article separate and apart from said tank, to which it may be readily attached, the only requirement being that there shall be in the walls of the tank a screw-threaded opening properly threaded to receive the nipple of the indicator.

In the drawings, Figure 1 shows the indicator in place in a tank. Fig. 2 is an enlarged cross-sectional view. Fig. 3 is a plan of the dial.

The tank A must be provided with a screw-threaded opening B, and if the walls of the tank are thin they should be strengthened and thickened sufficiently to hold the indicator.

The indicator consists of a guard-tube 2, projecting from a screw-threaded nipple 3 and containing at the open end bearings for a pinion-journal 4. This end will be called hereinafter the "lower" end of the device, inasmuch as in operation it assumes a position lower than the other parts hereinafter described. At the upper end the guard-tube 2 is closed by a cap-piece 5, the edge of which extends beyond the walls of the guard-tube and constitutes a flange around the top end of the tube, which rests on the upper surface of the nipple 3 on an interposed gasket 6. Above the flange is a second gasket 7, on which rests the dial-plate 8. Above the dial-plate is a chamber 9, inclosed by a ring 10 at its sides and by a transparent wall 11, preferably a piece of glass, at its upper side. Between the glass and the ring 10 is preferably a gasket 12, and the parts are held together by a cap 13, that is secured to the nipple 3 by screws 14, which pass through an inturned flange 15 on the cap and into the body of the nipple 3. There is thus formed a chamber at the upper end of the fixture which is completely closed in, so that neither liquid nor vapor can escape to the outside of the tank beyond the chamber. The cap 8 of the guard-tube and the dial-plate are perforated, and through the perforation engages the upper end of a shaft 16, the upper terminal of which has secured to it an index-finger 17. On the lower end of the shaft is a pinion 18, that meshes with a pinion 20 on the shaft 4. Below the pinion 18 the shaft 16 is carried in a bracket-bearing 21, that projects from the inner surface of the guard-tube 2. The pinion 18 is of less diameter than the pinion 20, in such a proportion that the turning of the latter pinion about one-third of a revolution will completely revolve the gear-wheel 18. The guard-tube 2 is provided with ventilation-holes 22 intermediate its ends and near the point where the tube emerges from the nipple 3. A float-arm 24 is secured to the shaft 4 and terminates with a float 25.

The position of the float in the tank determines the position of the index-finger 17 over the dial 8. This dial is in the first instance located with the float in the position shown in dotted lines in Fig. 1 to indicate the maximum fullness of the tank, and in this condition the indicator is properly secured to the tank. It forms a perfect closure to the opening B, preventing the escape of either liquid or vapor through the opening or through the indicator, but furnishes an indicator in which there is a minimum of frictional resistance to the action of the float. The float may be very small, so small indeed that it may be readily inserted into the tank through the opening D. It will be observed that the float-arm 24 is so pivoted that it may be turned into line with the guard-tube 2. The position of the finger 17 will show the relative position of the float, and consequently will show the level of the liquid in the tank until the float falls to a position nearly vertical under the tube.

This indicator is intended to be used especially with those gasolene-tanks which are used on self-propelled vehicles, and in those tanks it is common to place the liquid in the tank under pressure, and the vent-holes 22 are placed in the side walls of the guard-tube in order that the pressure inside the tube and outside the tube may be balanced, so that there will be no tendency to drive the liquid up into the tube and into the chamber 9, to which it would have ready access through the opening through which the shaft 16 engages.

What we claim is—

An indicator for liquid-tanks, having in combination a nipple adapted to be inserted in the wall of said tank, a shaft pivoted on said nipple and provided with an index-finger visible from the outside of the tank, a second shaft pivoted to said nipple so as to turn in a plane parallel to the axis of said nipple and a float-arm secured to the last-mentioned shaft, and means for gearing said shafts together.

In testimony whereof we sign this specification in the presence of two witnesses.

CLARK JOHNSON.
DONALD M. CAMERON.

Witnesses:
MAY E. KOTT,
CHARLES F. BURTON.