J. F. ANDRES.

MEASURING DEVICE.

APPLICATION FILED FEB. 6, 1911.

1,026,294.

Patented May 14, 1912.

Fig. 1.

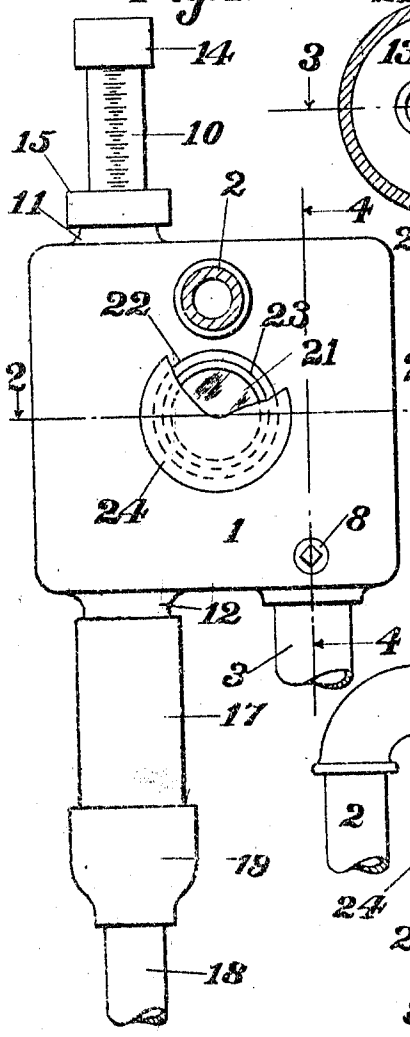


Fig. 2.

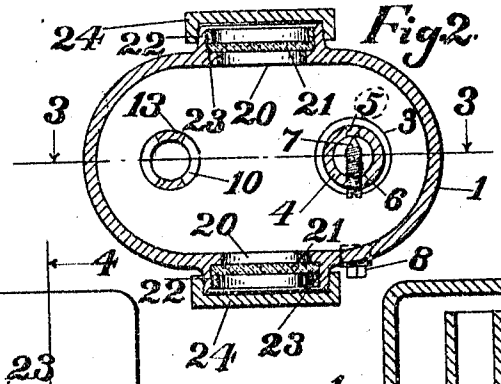


Fig. 3.

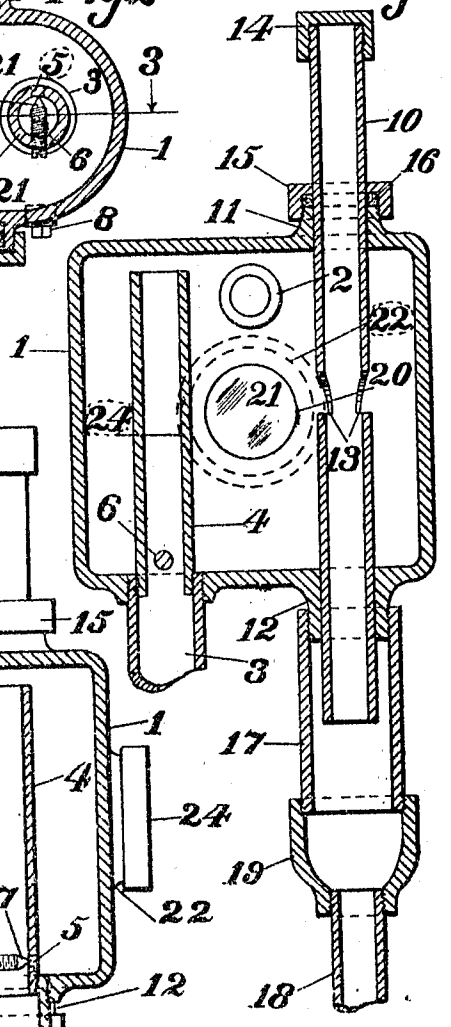
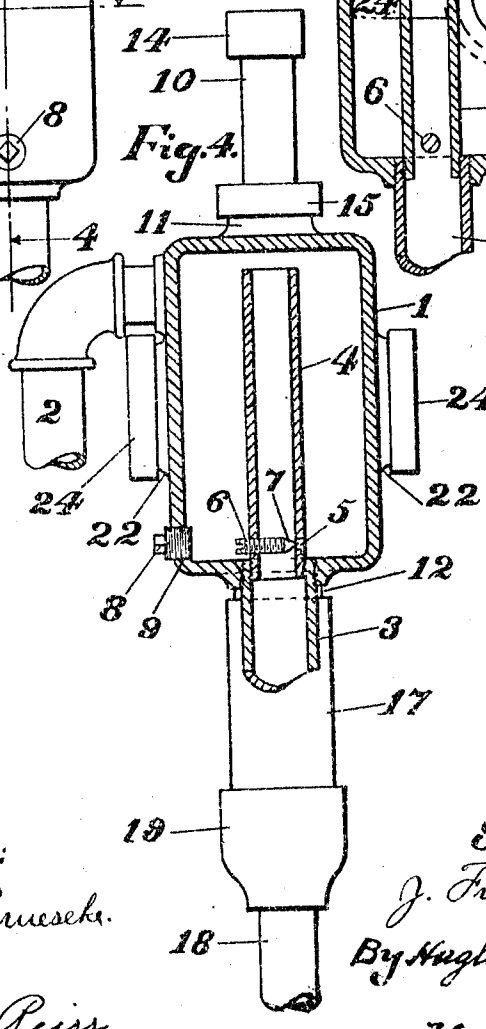


Fig. 4.



Witnesses:

William H. Brueseke.

Harry H. Peiss

Inventor:

J. Frank Andres,

By Hugh K. Wagner,

His Attorney.

UNITED STATES PATENT OFFICE.

J. FRANK ANDRES, OF ST. LOUIS, MISSOURI, ASSIGNOR TO UNITED STATES SAFETY GAS MACHINE COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

MEASURING DEVICE.

1,026,294. Specification of Letters Patent. Patented May 14, 1912.

Application filed February 6, 1911. Serial No. 606,759.

To all whom it may concern:

Be it known that I, J. FRANK ANDRES, a citizen of the United States, residing at the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Measuring Devices, of which the following is a specification.

This invention relates to measuring devices for gas machines and embodies novel improvements of the measuring device forming the subject-matter of my copending application Serial No. 560,269, filed May 9, 1910.

In the accompanying drawings forming part of this specification, in which like numbers of reference denote like parts wherever they occur, Figure 1 is a side elevation of a measuring device embodying this invention; Fig. 2 is a sectional view on the line 2—2, Fig. 1; Fig. 3 is a sectional view on the line 3—3, Fig. 2; and Fig. 4 is a sectional view on the line 4—4, Fig. 1.

The casing 1 is formed of metal or other suitable material, and may be of any desired configuration or size. An inlet pipe 2 is preferably attached to the upper part of casing 1 and is connected to a pump (not shown in the drawings) that forces the hydrocarbon oil to said device, said pump being preferably similar to and operated in the same manner as the pump disclosed in my copending application, Serial No. 560,268, filed May 9, 1910. An outlet pipe 3 is preferably attached to the bottom of casing 1 and is connected to a carbureter (not shown). A tube 4 is fastened by any suitable means to the end of pipe 3 that is attached to casing 1 and is arranged to extend upwardly into the interior of said casing. The tube 4 is open at both ends and contains an orifice 5 which is located adjacent the bottom of casing 1 in order to allow the liquid to discharge from said casing into the outlet pipe 3. A screw or screw-threaded valve-stem 6 extends through a screw-threaded opening in one side of tube 4 and bears a conical point or needle valve 7 which registers with the orifice 5 in the opposite side of said tube. A plug 8 is detachably secured in an opening 9 in the lower part of casing 1, said opening being preferably located in alinement with the head of screw 6 so that, when said plug is removed, a screw-driver or other tool can be inserted into said opening in order to turn the screw 6 in either direction, thereby causing the point 7 of said screw to move toward or away from orifice 5. By this arrangement the passage through which the liquid flows from casing 1 into outlet pipe 4 can be decreased or increased and, if desired, the passage can be closed entirely by turning the screw 6 so as to cause its point 7 to seat in orifice 5.

The amount of hydrocarbon oil that is allowed to discharge through outlet pipe 3 each time casing 1 receives a charge of same from the pump is regulated by means of an adjustable tube or gage 10. Said tube passes through an opening in lug 11, which projects from the top of casing 1, and extends through an opening in lug 12 borne by the bottom of said casing. Tube 10 is arranged to fit snugly in said lugs in order to be held in any desired position and is provided with apertures 13 which communicate with the interior of casing 1. When the liquid flows into the interior of casing 1, it fills said casing to the level of apertures 13 in tube 10, said apertures being held at any desired elevation within said casing in order to allow a predetermined amount of the liquid to discharge through pipe 3. Any excess of liquid that enters the interior of casing 1 flows through apertures 13 into tube 10 from which it discharges to the source of liquid supply. The upper end of tube 10 projects above casing 1 so that said tube can be moved upwardly or downwardly in order to raise or lower apertures 13 within said casing. A cap 14 is attached to the upper end of said tube and prevents the vapors of the hydrocarbon oil from escaping from said tube. A cap 15 encircles tube 10, and is screw-threaded to fit on the screw-threaded portion of lug 11. Said cap 15 presses packing 16 against lug 11 and thereby prevents the vapors of the hydrocarbon oil from escaping from the interior of casing 1. The lower end of tube 10 protrudes into the interior of pipe 17 that is connected to lug 12. Said pipe 17 is connected to pipe 18 by means of a coupling 19, or the like, said pipe 18 being connected with source of liquid supply (not shown) in order to conduct the superfluous liquid to same.

In order to afford a convenient means by which the elevation of apertures 13 can be

observed from the outside of casing 1, said casing is provided with an opening 20 or a plurality of such openings, each opening 20 being covered with a piece of glass 21. Said glass 21 fits into an annular flange or ring 22 that projects from casing 1, said flange or ring being screw-threaded internally to receive a screw-threaded ring 23, which holds said glass firmly in place and prevents the liquid from leaking through opening 20. A cap 24 fits over flange or ring 22 and thereby protects the glass 21. If desired, the tube 10 can be graduated to indicate the amount of liquid that is measured by the device.

The operation of the device is as follows: Each discharge stroke of the pump forces a quantity of hydrocarbon oil through pipe 2 into casing 1. The amount of liquid to be discharged to the carbureter fills the casing 1 to the level of apertures 13, and any superfluous amount of liquid flows through apertures 13 back to the source of supply as hereinabove described. The predetermined amount of liquid left in casing 1 flows through orifice 5 into pipe 3 and then to the carbureter, the screw 6 having been adjusted, as hereinabove described, to allow all of the liquid in casing 1 to flow to the carbureter before the next discharge stroke of the pump forces another quantity of liquid into said casing. Obviously a very small amount of liquid discharges through orifice 5 before the liquid in said casing reaches the level of apertures 13, but this premature discharge is substantially equal for all amounts of liquid measured by the device.

I claim:

1. A measuring device including a casing having an inlet and an outlet, a tube extending upwardly on the interior of the casing, said tube having a pair of openings located at diametrically opposite points adjacent to the casing bottom, one of said openings being threaded and the other acting as an inlet to conduct the liquid from the casing to the interior of said tube, a screw-threaded cone-pointed valve in said threaded opening, the cone-point of the valve being for engagement with the wall surrounding the other opening, said casing being formed with an opening in one side thereof which is in alinement with said valve, and a plug closing said last named opening.

2. A measuring device including a casing having integral closed ends, said casing having an inlet and an outlet in its bottom end, a vertical tube inserted in the outlet and projecting upwardly on the interior of the casing, said tube having an inlet to conduct the liquid from the casing interior to the tube interior, a transverse valve to control said tube inlet, said casing having one side thereof formed with an opening which alines with the outer end of said valve to allow access to the latter for the purpose of manipulating said valve, and removable means to close said opening.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

J. FRANK ANDRES.

Witnesses:
GLADYS WALTON,
GEORGE G. ANDERSON.