

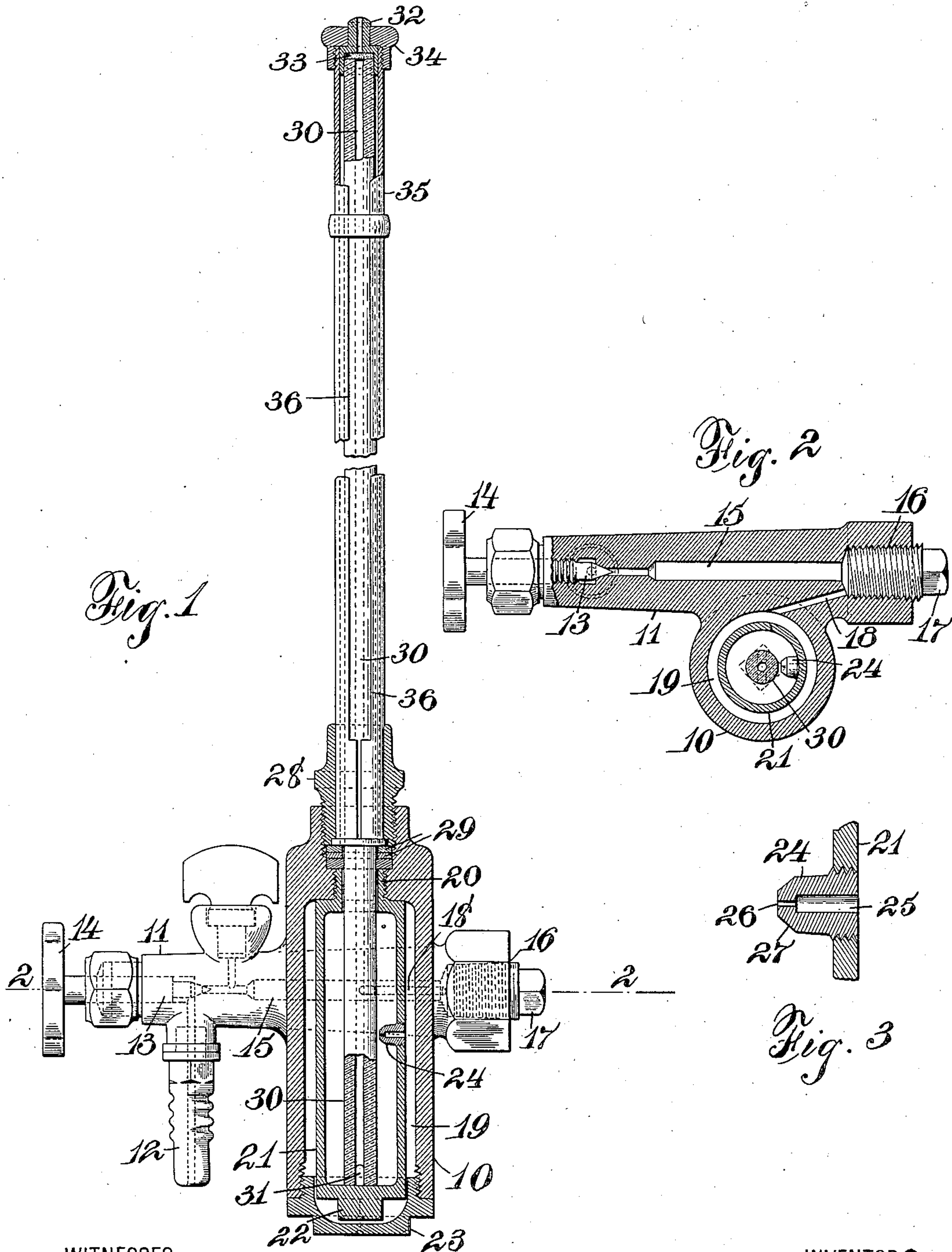
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J. MACMAHON & F. WESLER.

MERCURY COLUMN.

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WITNESSES:

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UNITED STATES PATENT OFFICE.

JAMES MACMAHON, OF IRVINGTON, AND FREDERICK WESLER, OF
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MERCURY-COLUMN.

No. 824,304.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, JAMES MACMAHON, residing at Irvington, and FREDERICK WESLER, residing at Newark, in the county of Essex and State of New Jersey, citizens of the United States, have invented certain new and useful Improvements in Mercury-Columns; and we 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, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

This device relates to that class of goods known as "mercury-columns" that are used for testing pipes, usually gas-pipes in houses, before the gas is admitted to the pipes to detect any leaks. This particular attachment is used to ascertain the pressure on the pipes by means of the mercury in a tube of glass that registers on the gage.

Our improvement consists in a mercury-containing bottle or casing that receives the lower end of the glass tube and is adapted to contain the mercury and prevent it from escaping if the device is tipped over or is laid down on its side, at the same time allowing the air-pressure from the exterior of the bottle to act on the mercury.

Another new feature is the prevention of dirt and grit getting into the mercury on account of it being inclosed, and a still further feature is the vent that allows the air to enter the chamber with the mercury, but is designed to shed the mercury and prevent its escape.

We also show in our construction a peculiar situation of the vent from the air-pipe to the chamber containing the mercury-containing bottle, so that it can be easily cleaned.

In the drawings, Figure 1 is a part elevation and part section of our improved mercury-column. Fig. 2 is a section on line 2 2 in Fig. 1, and Fig. 3 is a detail section of the vent in the mercury-containing bottle.

The body of the device is as usual and comprises the cylindrical portion 10 and the transverse casing 11, on this latter being attached the nozzle 12, to which is secured in practice a tube leading from a compressed-

air supply, such as a pump, to give the pressure required.

The valve 13 is arranged as shown, being actuated by the handle 14, this valve shutting off or opening communication with the duct or bore and the end widening out at the outlet portion 16 that in use it screws onto the gas-pipe system to be tested and when not in use can be stopped up to the plug 17. This arrangement of pipes permits the filling of the gas-pipe system of a house, and the pressure passes back through an inclined duct 18 to within the chamber 19 of the casing 10. In the upper part of this casing is fitted the reduced screw-threaded neck 20 of the bottle or receptacle 21, that is preferably made of metal, and has on its lower end the rectangular piece 22 for the reception of a wrench.

The whole device is inclosed by screwing in place the cap 23 to the casing 10. Approximately midway up the side of the bottle 21 is placed the tip 24, that is provided with an opening or vent 25, which is made smaller at its inner end, as at 26, and emerges from the end 27 of the tip 24. This end 27 is preferably made conical, as shown, so as to shed the mercury, which on account of its consistency will easily roll off, and enough is not required in the cup to exceed in depth the height of the tip 24 when the device is laid on its side.

The stuffing-box 28 along with the washers 29 and the tube 30 make an air-tight joint at the top of the bottle 21, and the usual groove 31 in the bottom of the tube 30 allows the mercury to have access to the bore of the tube.

A cap 32 holds the washer 33 on the top of the tube 30, and a cap-piece 34, screwed down on the sleeve 35, holds the washer 33 tightly down on the top, so that while the joint is tight the sleeve 35 can still be turned around on the tube 30, so that if the device is in an unhandy position the sleeve can be turned to afford a sight of the tube-bore. The sleeve 35 is provided with the slot 36, and this slot 36 can have the usual scale-marks on its edge to indicate the pressure.

It will thus be seen that the inclosing of the mercury in the bottle 21 prevents its being spilled when the device is tipped over, and it also prevents dirt being forced back

through the vent 18 into the mercury, which is the case where the mercury is placed right inside the casing 10 in a cup set into the cap 23. The position of the vent 18 also allows
5 a ready insertion of wire to clean it when the device is removed from the pipe system.

Having thus described our invention, what we claim is—

1. In a device of the kind described, comprising a casing having an air-tight closure embracing a tube, said tube projecting into the casing, a sleeve surrounding the tube, a cap on the outer end of the tube, and a
10 screw-threaded cap turning on the first-mentioned cap and secured to the end of the sleeve.

2. In a device of the kind described, a casing having means of attachment to an air-supply, means for attachment to a pipe system, ducts connecting the air-supply to the means for attachment for a pipe system, a chamber in the casing, a bottle secured to the casing inside the chamber, a tube projecting into the bottle and emerging from
15 the casing, means for closing the outer end of the tube, an inclined duct connecting the chamber with means of communication between the air-supply and the pipe-connect-

ing means, and a tip arranged in the bottle intermediate of its ends, said tip projecting
30 inside the bottle and having a perforation therein, said tip also having its end pointed.

3. In a device of the kind described, a bottle having means on one end for attachment to a casing, and a tip arranged in the bottle,
35 said tip having a perforation, said perforation being smaller at its inner end, said tip also having its inner end conical.

4. A device of the kind described, comprising a casing having a cap on one end, a
40 bottle within the casing and secured to the top of the casing, a tube having one end in the bottle, and emerging from the casing, an inwardly-projecting perforated tip in the wall of the bottle intermediate of its ends,
45 and means on the bottom of the bottle for turning it.

In testimony that we claim the foregoing we have hereunto set our hands this 2d day of April, 1906.

JAMES MACMAHON.
FREDERICK WESLER.

Witnesses:

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E. A. PELL.