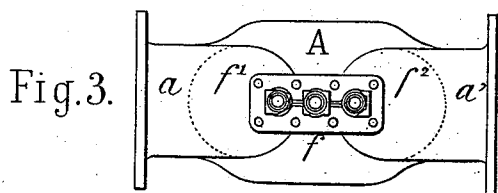
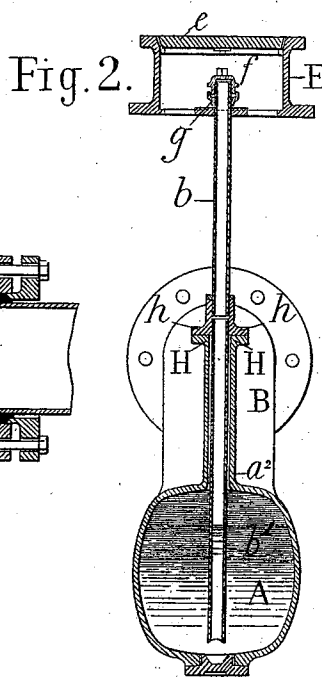
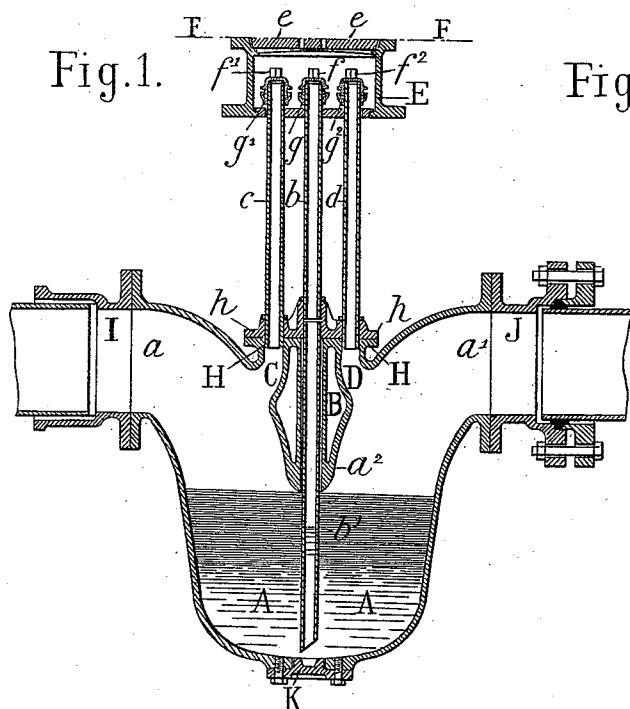


(No Model.)

A. BOUVIER.
SIPHON TEST BOX FOR GAS MAINS.

No. 526,852.

Patented Oct. 2, 1894.



— Adolphe Bouvier —

Inventor:

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UNITED STATES PATENT OFFICE.

ADOLPHE BOUVIER, OF LYONS, FRANCE.

SIPHON TEST-BOX FOR GAS-MAINS.

SPECIFICATION forming part of Letters Patent No. 526,852, dated October 2, 1894.

Application filed April 21, 1894. Serial No. 508,491. (No model.)

To all whom it may concern:

Be it known that I, ADOLPHE BOUVIER, a citizen of Switzerland, residing at Lyons, in the Republic of France, have invented certain
5 new and useful Improvements in Siphon Test-Boxes for Gas-Mains; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable
10 others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is a siphon test
15 box for detecting leaks of gas.

The apparatus is shown in the annexed drawings, in which—

Figure 1 is a vertical section along the axis of the dipping pipe. Fig. 2 is a vertical section
20 along the axis of the dipping pipe and at right angles to the preceding figure. Fig. 3 is a plan.

In the figures:—A is a siphon receptacle or box of metal usually cast iron connected to
25 the gas main by means of two tubes $a\ a'$. The inside chamber or box A of the siphon is U shaped, as shown, being divided into two separate parts by a partition a^2 cast with the box.

30 B, C, D are three vertical tubes. Each of these tubes B, C, D receives a pipe marked with the corresponding small letter b, c, d . b' is a pipe fixed in the central tube B. This pipe is a prolongation of the pipe b . It is
35 beveled at its lower end which dips to the bottom of the box, A. I call it the dipping pipe. It serves to introduce water into the siphon. The tubes C and D with their respective pipes $c\ d$ serve for the passage of gas
40 when testing the tightness of the mains.

E is an inspection box with a cover e beneath which I place my siphon.

F F' is the ground line.

45 $f\ f'$ are screw caps for the pipes $b\ c\ d$ having generally a triangular or other shaped head.

$g\ g'$ are grease cups which like the caps are preferably of inoxidizable metal.

50 H is a horizontal plate connecting the three tubes B, C, D.

h is a similar plate receiving the pipes b, c, d , and which is fixed to the plate H.

I, J, are lateral tubes or junction pieces which serve to connect the siphon to the main.

K is a plug in the bottom of the box.

Leaks are searched for in the following manner: A given section of the main comprising part of a street or even several neighboring streets in the same quarter being isolated from the rest of the system by means of one
60 or more siphon boxes previously filled with water, as shown in Fig. 1, I bring up a portable gasometer of ordinary construction mounted on wheels which is not shown in the drawings.

65 It is assumed that the siphon has been filled with water as indicated in Figs. 1 and 2, and that the pipe a and consequently also the tube C and pipe c communicate with the side where the gas is supplied freely from the gas works
70 under the usual daytime pressure of gas, for example twenty millimeters of water, and that the pipe a' and consequently the tube D and pipe d communicate with the isolated section. I close all the supply branches from this section
75 ceasing therefore to supply gas to the consumers of this section. This interruption does not last more than half an hour and only takes place once or twice a year. I connect the supply pipe of the gasometer by an india
80 rubber pipe with the pipe c . The bell of the gasometer rises owing to its flotation and is filled with gas at a pressure of twenty millimeters. When it is full I close the supply
85 pipe c and connect the exit pipe of the small gasometer with the pipe d of the siphon and thus with the section to be tested. Sufficient weights are placed on the bell to give the gas
90 it contains a considerable pressure for the test, say one hundred millimeters. I introduce this gas under pressure into the isolated section and the bell first descends a certain distance by reason of this. Afterward if there are leaks in this section the bell descends at a rate proportional to the size of the leaks.
95 I note how many liters of gas escape per minute from each section under the testing pressure of one hundred millimeters. I am thus enabled to know in figures the relative tightness of each section under conditions which
100 augment the sensibility of the test and the precision of the measure. I know where the leaks are and their importance. It is thus easy to repair them.

This siphon test box also serves as an ordinary siphon for receiving the condensations from the gas, as a connecting piece for the mains, and as a hydraulic stop valve for closing the passage for the gas under any circumstances, for example in case of accident, fire or explosion, repairs, &c.

I claim—

1. The siphon test box for gas mains herein shown and described, comprising the chamber A having the vertical partition, the inspection box E above said chamber, the dip tube extending nearly to the bottom of the chamber and extended within the inspection box, and the tubes on opposite sides of the dip tube and communicating with the chamber and with the inspection box, substantially as and for the purposes described.

2. A siphon test box for gas mains, comprising the chamber A provided with the pendent partition a^2 and the vertical tubes B, C, D, the inspection box E, the dip tube passing through a central passage in the partition a^2

and continued by the pipe b into the inspection box, and the pipes c, d connected with the tubes C, D and with the inspection box, substantially as and for the purposes described.

3. The combination with a divided test box or chamber, and an inspection box above the same, of the tubes C, D, within said test box or chamber, the dip tube b' , the pipes b, c, d communicating with the tubes C, D and dip tube b' within the test box or chamber, and terminating at their upper ends in the inspection box, the caps on the upper ends of said pipes, and the grease cups fastened to the pipes within the inspection box, substantially as and for the purposes described.

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

ADOLPHE BOUVIER.

Witnesses:

CHARLES H. DAY,
THOS. N. BROWNE.