

JOHN R. FARNUM.

Improvement in Sealing Dip-Pipes of Gas Apparatus.

No. 127,035.

Patented May 21, 1872.

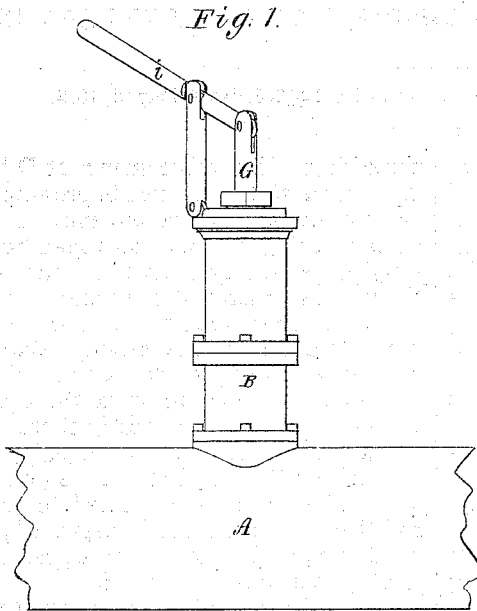


Fig. 3.

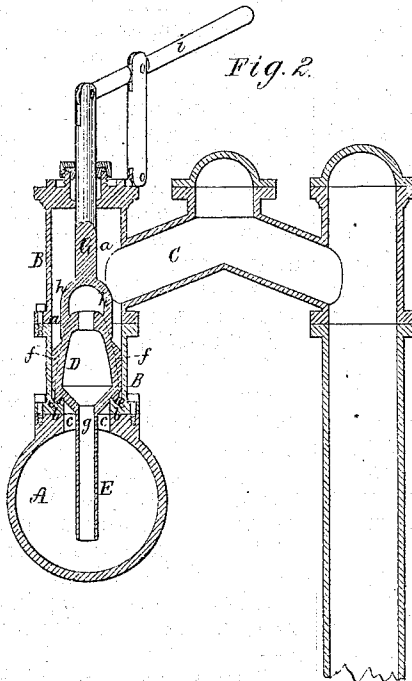
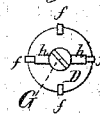
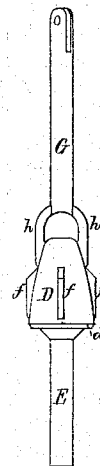


Fig. 4.



Witnesses.

S. H. Piper.
L. N. Möller.

John R. Farnum.

by his attorney.

R. W. Hady

UNITED STATES PATENT OFFICE.

JOHN R. FARNUM, OF WALTHAM, MASSACHUSETTS.

IMPROVEMENT IN SEALING DIP-PIPES OF GAS APPARATUS.

Specification forming part of Letters Patent No. 127,035, dated May 21, 1872.

To all persons to whom these presents may come:

Be it known that I, JOHN R. FARNUM, of Waltham, of the county of Middlesex and State of Massachusetts, have invented an Improved Valve Apparatus for the Hydraulic Main of a Gas-Retort; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawing making part thereof.

Of such drawing, Figure 1 denotes a front elevation, and Fig. 2 a vertical section, of a hydraulic main with my valve apparatus applied to it. Fig. 3 is a top view and Fig. 4 a side elevation of the valve, its guides, dip-pipe, and furcated stem.

The main feature of difference between my apparatus and various others in use having what is termed a "dip-pipe" so combined with the valve that the two are movable together relatively to the valve-seat, and have one continuous passage extending through them, is, that I have a free passage around the valve and dip-pipe and through the valve-seat, such passage being to enable the gas, when the valve and dip-pipe are raised so as to draw the dip-pipe out of the liquid of the main, to freely flow through the valve-seat, as well as through the valve and dip-pipe, thereby having two passages for the gas instead of one, and thus obviating the danger that would result were the dip-pipe passage to be estopped by tar or gummy matter from the retort. The dip-pipe is liable to be thus choked, in which case the dip-pipe and valve have to be removed, and the matter by which they may be choked has to be extracted by burning it out or otherwise.

With my improvement, the dip-pipe is raised with the valve, and on its being drawn out of the liquid in the hydraulic main the gas from the retort has a chance to enter the main through the dip-pipe, as well as through the valve-seat, the latter having but one passage through it instead of two or more, as is required when the dip-pipe is stationary and fastened to or projects down from the valve-seat.

In the drawing, A denotes the hydraulic main and B the valve-box erected thereon and provided with the induction-pipe C to lead from a retort. In the lower part of the valve-box, whose chamber or internal space *a* is cylindrical, there is a valve-seat, B, having a single circular passage, *e*, leading down

through it. The valve shown at D has a conoidal form, and at bottom is provided with an annular lip, *d*, to enter an annular groove, *e*, encompassing the valve-seat opening *c*. Wings *f f f f*, projecting from the outer surface of the valve and against the inner surface of the valve-chamber, serve to guide the valve in its vertical motions. The dip-pipe shown at E is connected directly to the bottom of the valve and extends down through the opening *c* of the valve-seat, concentrically therewith, there being one continuous passage, *g*, extended through the pipe and the valve axially of the two. The valve is connected to its stem or rod G by two branches or arms, *h h*, arranged as shown, such stem at its upper end being jointed to a lifter or lever, *i*.

The object of the dip-pipe, when used with the valve and its seat, is to prevent bursting or blowing up of the retort in case of the valve being closed, as would be likely to take place were there no means for the escape of the gas from the retort into the main.

Without the dip-pipe, should a careless attendant forget to open the valve after having charged the retort, the gas generated and confined in such retort would be likely to take fire and explode, and burst the retort, all of which is well understood by makers of illuminating gas.

I make no claim to any thing, arrangement, or combination, as shown in either of the United States Patents No. 111,439 and 111,440, 117,602 and 119,135. In the two patents last named the dip-pipe and the valve are not connected and do not move simultaneously together, as in my valve apparatus, nor is there any passage arranged around the valve and through its seat, as in my apparatus, my invention or improvement relating to my special construction and arrangement of parts, as shown and described.

What I claim as my invention or improvement in the hydraulic main-valve apparatus is—

The passage *a c* around the valve and through or within its seat, in combination and arranged with the dip-pipe and valve connected together and having a passage extending through them, as described and represented.

Witnesses:

JOHN R. FARNUM.

R. H. EDDY,
J. R. SNOW.