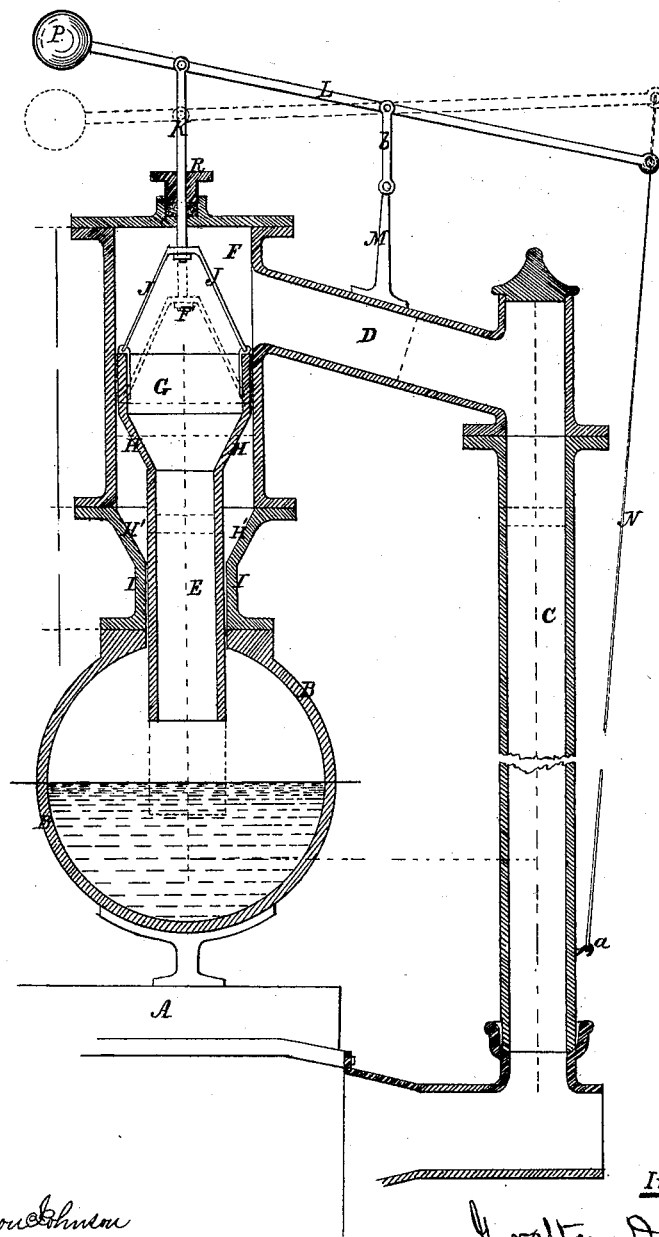


*G. Douly,*  
*Seal for Dip Piles.*  
*No. 111,439.* *Patented Jan. 31. 1871.*



Witnesses:

*W. Hamilton Johnson*  
*Edw. A. Dick*

Inventor

*G. Douly*  
 By his Attorneys  
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# UNITED STATES PATENT OFFICE.

GRAFTON DOUTY, OF COLUMBUS, OHIO.

## IMPROVEMENT IN SEALS FOR DIP-PIPES IN GAS-WORKS.

Specification forming part of Letters Patent No. **111,439**, dated January 31, 1871.

*To all whom it may concern:*

Be it known that I, GRAFTON DOUTY, of Columbus, in the county of Franklin and State of Ohio, have invented a new and useful Improvement in Hydraulic Seals for Apparatus for Manufacturing Illuminating-Gas, of which the following is a specification:

The object of my invention is to provide a means for sealing and unsealing the dip-pipes in hydraulic mains of gas-works, for the purpose of relieving the back-pressure in the retorts in charging and withdrawing the charge therefrom, and thereby prevent the formation of carbon in said retort.

The accompanying drawing represents a vertical cross-section of the hydraulic main, showing one of the dip-pipes unsealed and its connection with the retort and the main, and in which—

A indicates a portion of the retort, which is connected to the hydraulic main B by the usual stand-pipe C and bridge D.

Instead of connecting the bridge D directly to the dip-pipe E, as heretofore, it is joined to and communicates with a chamber, F, secured to the hydraulic main, and which receives and entirely incloses the dip-pipe E, so as to allow it to rise and fall therein, to seal and unseal the main.

Another distinguishing feature of my invention consists in constructing the upper part of the dip-pipe with an enlarged end, G, which, in connection with a corresponding construction of the inclosing-chamber F, serves two useful and important functions: first, to form a ground-seat, H, to limit the descent of the dip-pipe; and, second, a sealing-joint between the dip-pipe and the main, when the communication of the latter with the retort is cut off.

The lower portion, I, of the inclosing-chamber F forms a guide and bearing for the lower portion, E, of the dip-pipe, while the upper portion of said chamber is enlarged in diameter, and constitutes a guide to the upper portion of the dip-pipe, and between these two portions of the inclosing-chamber the supporting and sealing seat H and H' is arranged.

This ground-seat H H' may be of any desired construction, but I prefer to make the

ground-surfaces of the dip-pipe and the chamber which form the seat oblique, as shown in the drawing.

This seat H' has the additional advantage of forming a lodgment for any gum and fatty matter which may rise in the inclosing-chamber F, and thus assist in producing a tight joint when the dip-pipe is sealed, so that it is not necessary that the bearing-surfaces of the dip-pipe and inclosing-chamber should fit accurately, thus obtaining the advantage of being enabled to raise and lower the dip-pipe without binding within its chamber.

For convenience, the chamber is constructed in two sections, F and I, with the supporting and sealing seat H' formed in the lower section, and by the use of this chamber I am enabled to employ a movable dip-pipe, which may be raised and lowered, to seal and unseal the main. Both ends of this dip-pipe are open, and it is connected by a bail, J, and jointed stem K to a weighted lever, L, pivoted to an arm, M, rising from the bridge D, and having a connecting-rod, N, which, when connected with a hook, a, on the stand-pipe C, elevates and unseals the dip-pipe, and when released from said hook the weight P, together with that of the dip-pipe, forces down said pipe and seals the main.

The weighted lever L may be connected to the standard M, or to the stem K of the dip-pipe, by links b, so as to allow the stem to pass through the stuffing-box R, at the upper end of the inclosing-chamber F, without binding.

The level of the tar or water in the hydraulic main must always be sufficient to seal the dip-pipes when down, as represented in the drawing.

I do not claim, broadly, sealing and unsealing gas-retorts, to prevent the formation of carbon therein, as that has already been patented to George A. McIlhenny, June 18, 1867.

Having described my invention, I claim—

1. A chamber, F, for a movable dip-pipe, E G, interposed between the hydraulic main B and retort, and communicating therewith through the dip-pipe, to seal and unseal the main, as described.

2. The supporting and sealing seat H H' of the movable dip-pipe E G, as described.

3. The arrangement of the weighted lever L, connecting-rod N, and movable dip-pipe E G, for the purpose of raising and locking the dip-pipe when unsealed and forcing it down upon its seat when sealed, as described.

4. In combination with a hydraulic seal and gas-retort, the movable dip-pipe E G, the inclosing-chamber F, the communicating-bridge D, and the raising and depressing lever L,

constructed, arranged, and operating as described.

In testimony whereof I have hereunto signed my name.

GRAFTON DOUTY.

Witnesses:

W. H. MILLER,  
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