A. ODIORNE.

Improvement in Seals for Hydraulic-Mains of Gas-Works.

No. 115,634.

Patented June 6, 1871.

Fig: 1.

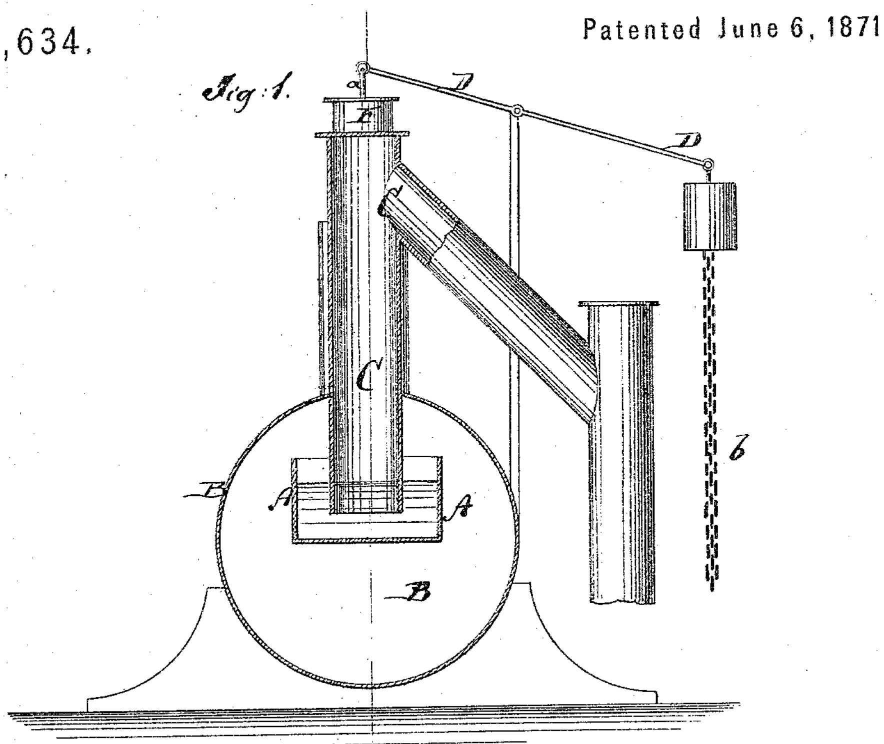
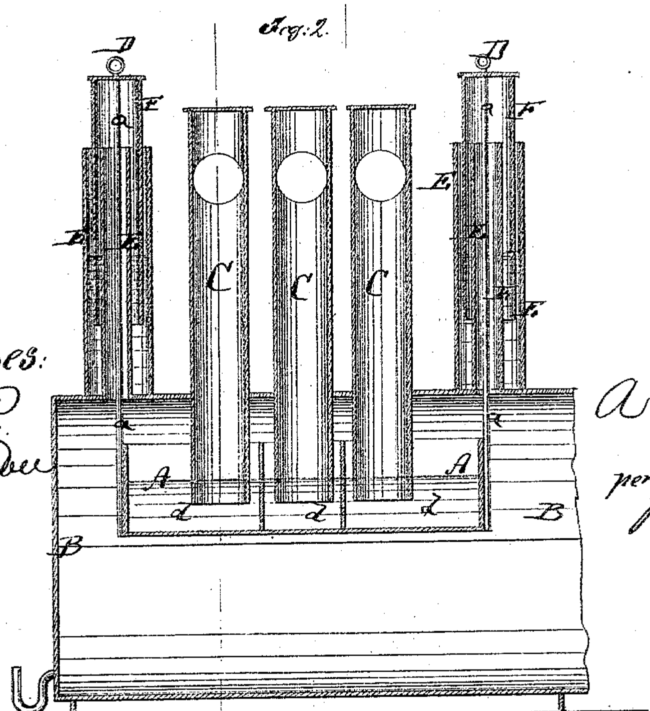


Fig: 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

ALFRED ODIORNE, OF SPRINGFIELD, ILLINOIS.

IMPROVEMENT IN SEALS FOR HYDRAULIC MAINS OF GAS-WORKS.

Specification forming part of Letters Patent No. 115,634, dated June 6, 1871.

To all whom it may concern:

Be it known that I, ALFRED ODIORNE, of Springfield, in the county of Sangamon and State of Illinois, have invented a new and Improved Seal for Gas-Works; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 represents a vertical transverse section of my improved seal for gas-works. Fig. 2 is a longitudinal vertical section of the same.

Similar letters of reference indicate corresponding parts.

In the ordinary gas-works the gas, in passing from the retorts to the hydraulic main, is intercepted by the hydraulic seal, and has to be forced through by accumulated and otherwise unnecessary pressure in the retort. The object of my new seal is to prevent the gas from flowing back to and out of the retorts while the same are opened for drawing and charging. The new seal is, therefore, only necessary during this brief time, while, by the process in common use, its use is continual. It has always been a desideratum to limit this obstruction to the flow of the gas to the short time needed for drawing and charging; but no contrivance to accomplish this has yet come into use, although much ingenuity has been expended in attempts to that end. My movable seal is intended to produce this desired result.

It consists of a box, A, for each bench placed in the hydraulic main B, with a compartment, *d*, for each dip-pipe C. When the box rests on the bottom of the main the top of the box is one inch below the ends of the dip-pipes, and when filled with water or the products of condensation it will, consequently, not obstruct the gas, but let it flow freely from the retorts into the main. When the box is raised up the ends of the pipes C are immersed, and a seal is thus made, preventing the flow of the gas back to the retorts.

The box A is suspended by means of rods *a a*, of which one projects from each end of the box, from a lever, D. The rods pass through the top of the main B, and are connected with the lever above said main, the lever being pivoted outside of the same. The holes through which these rods pass are larger than the rods, allowing them to rise and fall with ease, and are sealed from leakage by annular sealing-cups E, through which the rods pass. These cups are screwed or otherwise secured to the main, and are of sufficient depth to resist the outward pressure from the main, and are filled or partly filled with water, glycerine, or any other suitable liquid. A cup, E, is suspended from each end of the lever D, and, embracing the rod *a*, enters with its open lower end the annular cup E and the liquid therein, producing an air-tight seal. The outer end of the lever D is weighted, and is provided with a small chain, *b*, by which the stoker can easily raise and lower the box.

By this improvement the back pressure on the retorts is lessened from two to four inches, as the case may be, or about one-half of the ordinary pressure. In a great measure the collection of carbon in the retorts will be prevented, as well as the clogging in the stand-pipes, and leakage, while the yield of gas is increased, labor and fuel saved, and wear and tear lessened. It also obviates the necessity of keeping any liquid in the hydraulic main, giving increased main capacity.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The suspended and movable sealing-box A, having separate compartments *d d d*, combined and operating with the series of dip-pipes C C C, as and for the purpose described.

2. The annular cups E and sealing-cups F, applied to form an air-tight packing for the connecting-rods *a*, substantially as herein shown and described.

ALFRED ODIORNE.

Witnesses:

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