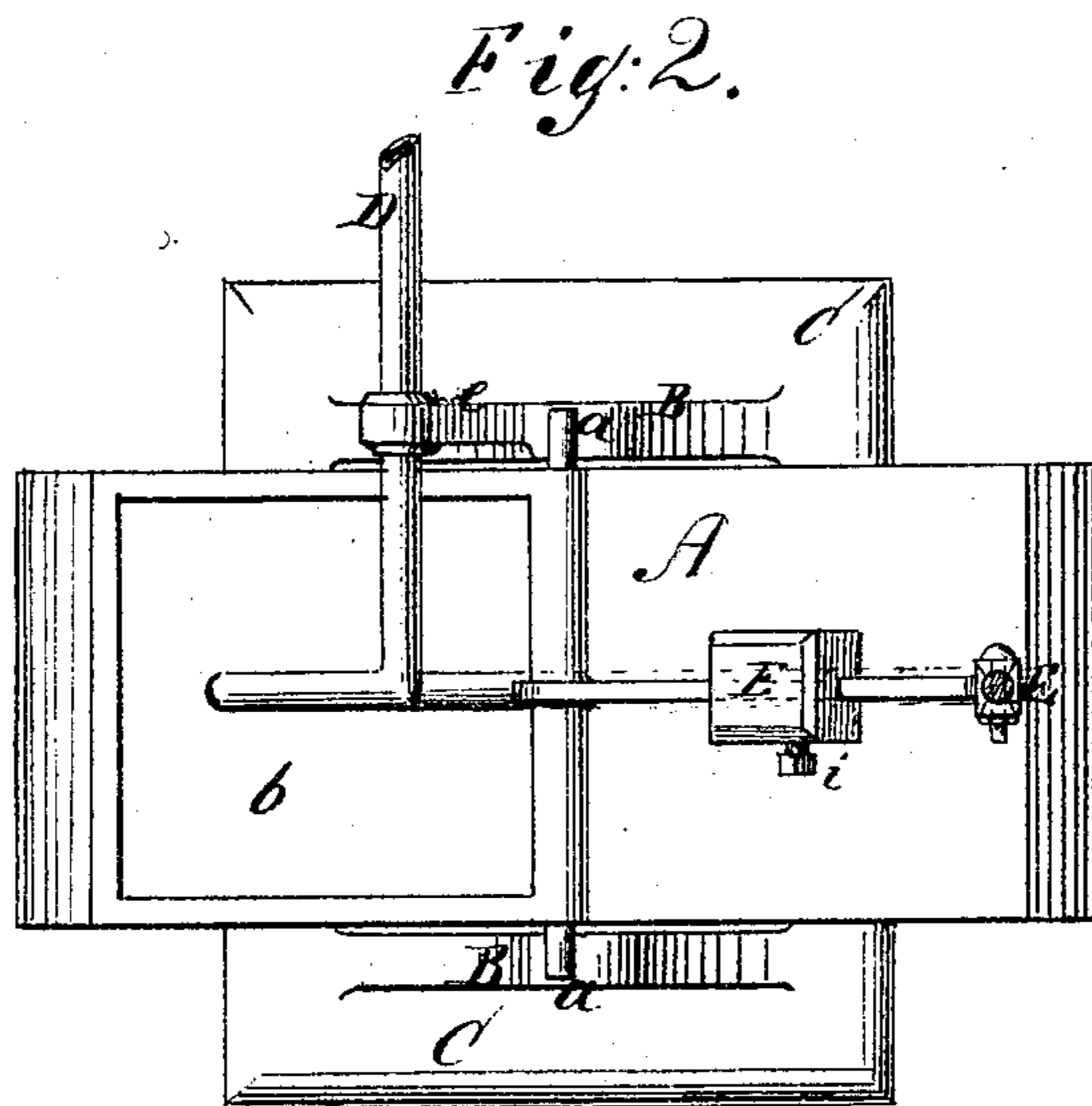
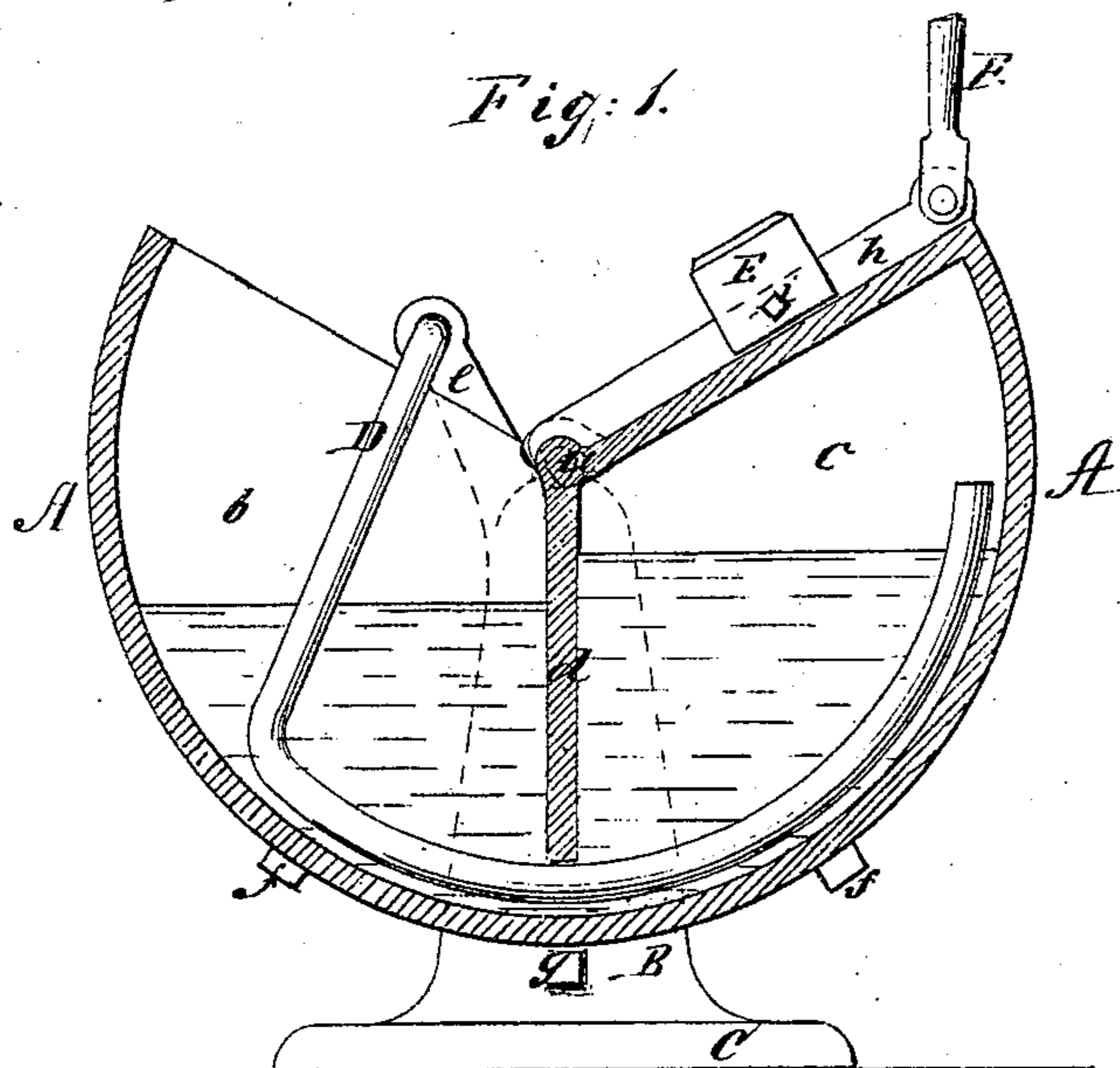


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A. S. CAMERON.

Improvement in Regulator for Exhausters in Gas Works.
No. 119,505. Patented Oct. 3, 1871.



Witnesses:
Ernst Bilhuter.
C. W. Hahner.

Inventor:
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By Van Santoni Haupt
his atty

UNITED STATES PATENT OFFICE.

ADAM S. CAMERON, OF NEW YORK, N. Y.

IMPROVEMENT IN REGULATORS FOR EXHAUSTERS IN GAS-WORKS.

Specification forming part of Letters Patent No. 119,505, dated October 3, 1871.

To all whom it may concern:

Be it known that I, ADAM S. CAMERON, of the city, county, and State of New York, have invented a new and Improved Regulator for Exhausters in Gas-Works; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which drawing—

Figure 1 represents a longitudinal vertical section of this invention. Fig. 2 is a plan or top view of the same.

Similar letters indicate corresponding parts.

This invention consists in a vessel hung on gudgeons so that it can freely oscillate, and provided with a partition which extends nearly down to the bottom of said vessel and divides the same in two compartments, one of which is closed on top while the other is open, in combination with a pipe which communicates with the exhaust-pipe of the gas-works, and which opens into the closed compartment of the oscillating vessel, said oscillating vessel being connected with the throttle-valve of the steam-engine, which imparts motion to the exhauster in such a manner that when the oscillating vessel is partially filled with water and the force of the exhauster exceeds the desired limit the water will rise in the closed chamber, thereby causing this chamber to sink down, and closing the throttle-valve of the engine; and as soon as the force of the exhaust is reduced the water returns from the closed to the open chamber, the throttle-valve is again opened, and the engine reassumes its original force. An adjustable weight secured to one side of the vessel serves to regulate the oscillating motion of the vessel and to adapt it to the desired force of the exhauster.

In the drawing, A designates a vessel, which is hung on gudgeons *a*, (by preference knife-edge bearings,) so that it can oscillate with the least possible friction. Said vessel is divided in two compartments or chambers, *b c*, by a vertical partition, *d*, which is open at its bottom edge, so that water or other liquid poured into the vessel can freely pass from one chamber to the other. The gudgeons of the vessel A have their bearings on standards B, which rise from a suitable bed-plate, C; and from one of these standards extends a bracket, *e*, which forms the support for a pipe, D. This pipe connects with the hydraulic main or

with the exhaust-pipe of the gas-works, and it extends down through the open top of the chamber *b*, through under the partition *d*, and up into the chamber *c*, which is firmly closed at its top, as shown in Fig. 1 of the drawing. From one edge of the vessel A extends a rod, F, which connects with the throttle-valve of the exhausting-engine. The oscillating motion of the vessel A is confined within certain limits by stops *f f*, which are cast or otherwise secured to the bottom or side of the vessel, and which, when the oscillating motion reaches the desired limit, strike against one of the standards B, or against a projection, *g*, extending from one of said standards. On the top of the vessel A is placed a weight, E, which slides on a rib, *h*, and which is held in position by a set-screw, *i*. By moving this weight in or out the motion of the vessel A can be regulated.

When the vessel A is filled with water or other liquid and the exhausting-engine is started the air or gas on the top of the liquid in the closed chamber *c* is rarefied and the liquid in this chamber rises. While it descends in the open chamber *b* the equilibrium of the vessel A is disturbed and the throttle-valve of the engine is closed. By adjusting the weight E the time when the throttle-valve closes can be adapted to a greater or less rarefaction of the air in the closed chamber *c*. When the speed of the engine is reduced the water sinks down in the closed chamber, the vessel A returns to its original position, and the throttle-valve is again opened.

By these means the action of the exhauster in gas-works is rendered self-regulating, and an apparatus is obtained which is very simple in its construction, and which in its operation requires but little attention.

What I claim as new, and desire to secure by Letters Patent, is—

1. The oscillating vessel A, with its partition *d*, in combination with a pipe, D, connecting with the hydraulic main or exhaust-pipe of gas-works, substantially as described.

2. The adjustable weight E, in combination with the oscillating vessel A and pipe D, substantially as set forth.

This specification signed by me this 20th day of July, 1871.

ADAM S. CAMERON.

Witnesses:

E. BILHUBER,

E. F. KASTENHUBER.

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