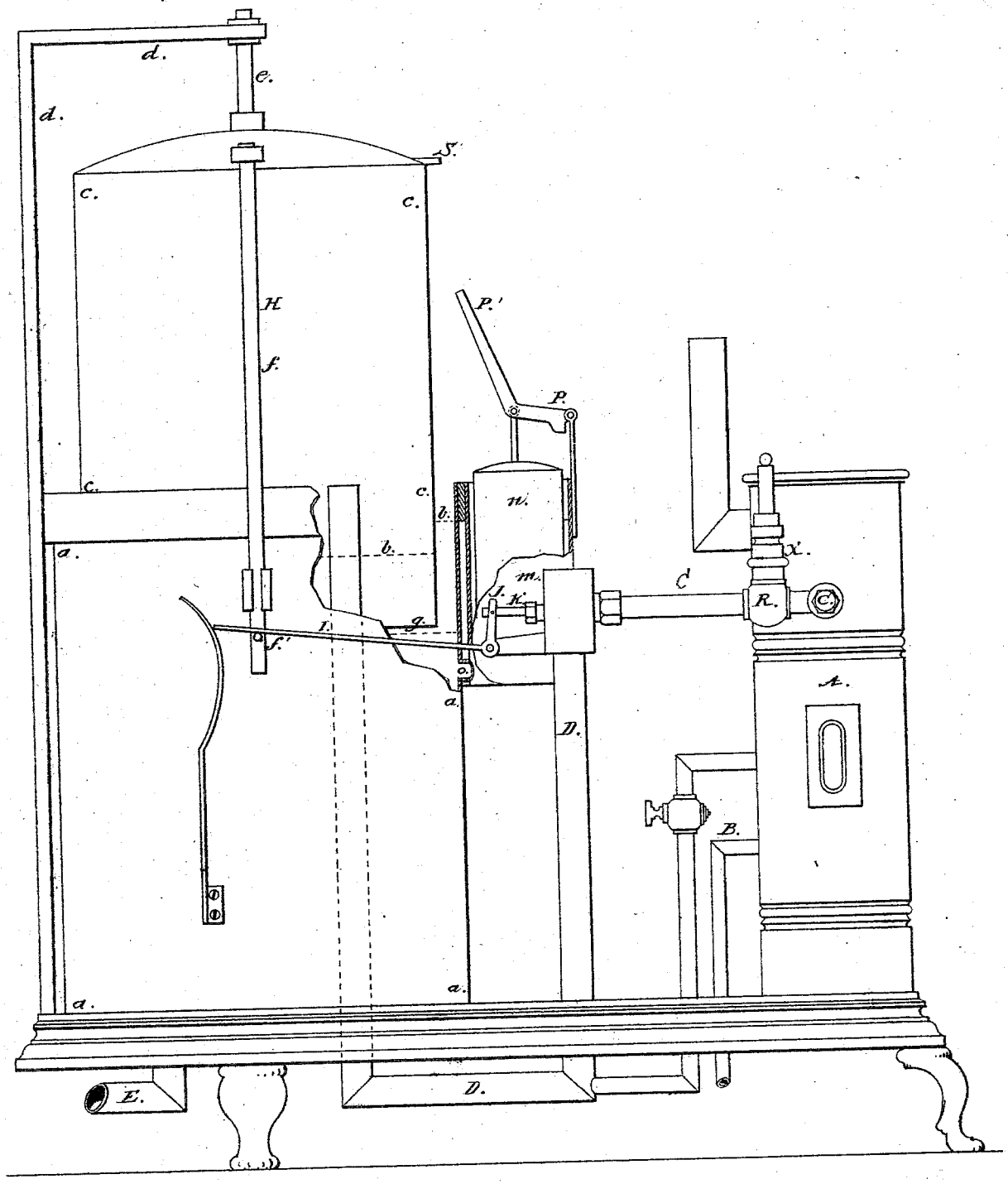
THOMAS B. FOGARTY.

Improvement in Gas-Machines.

No. 115,591. Patented June 6, 1871.



Witnesses:

Jno. D. Patten.

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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS.)

UNITED STATES PATENT OFFICE.

THOMAS B. FOGARTY, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN GAS-MACHINES.

Specification forming part of Letters Patent No. 115,591, dated June 6, 1871.

I, THOMAS B. FOGARTY, of Brooklyn, in the county of Kings and State of New York, have invented a certain Improvement in Gas-Machines, of which the following is a specification:

Nature and Objects of the Invention.

My invention has for its object the obviating of the dangers incident to gas-holders of automatic regulating gas-machines, of leakage of gas resulting from the lowering of the water in the holder-tank; and consists in the combination, with the gas-holder tank, of a secondary tank containing a float having attached to it a lever and other mechanism for preventing the inlet of gas into the holder whenever the water in the tank falls below a certain line, as will be more clearly set forth in the following specification.

The accompanying drawing represents a gas-machine of this class, or at least as much of it as is necessary to explain the nature of my improvement.

a a a a is a tank containing water or other suitable liquid, and is represented as having a portion of its outer wall or side removed so as to show the water-line *b*. *c c c c* is the float or holder; and *d d* a standard supporting the center or guide-post *e*. A is a stove containing a retort, of any known form, suitable for generating gas or vapor from hydrocarbon liquids. B is the inlet or supply-pipe, by which the hydrocarbon liquid is conveyed to the retort. C is the outlet or delivery-pipe, by which the gas or vapor escapes from the retort, and, passing through the pipe D, enters the holder *c c c c*. E is the outlet or delivery-pipe of the holder. The holder represented in the drawing is an automatic one—that is, it is constructed so as to automatically regulate the manufacture and supply of gas. It will be seen that it has attached to it, and, as it rises and falls, carries with it, the rod H, furnished with the projecting pins *f* and *f'*. In the drawing the holder is represented as being filled, and as it rises the pin *f'* engages in the lever I, and, carrying it up with it, causes it to close the valve and cut off the supply of gas or vapor by means of its short arm J, attached to and actuating the valve-stem K, when the valve remains closed until the falling of the holder causes the pin *f* to engage in the lever L so as to open it again and turn on a fresh supply of gas, thus automatically regulating the manufacture and supply according to the consumption. It is evident that the holder in rising must reach a certain position before the pin *f'* can operate on the lever L so as to close the valve. Let it be supposed that this position is that which it now occupies, and that from leakage or evaporation, or both together, the water in the tank *a a a a* has fallen to the point indicated by the dotted line *g*. The consequence of this insufficiency of water would be that the holder would be blown completely out of the water before it would reach the proper position for closing the valve, which would consequently remain open all the time, and, as a natural result, all the gas manufactured in excess of the consumption would escape into the house or building containing the machine, and in all likelihood would produce an explosion, entailing the destruction of the machine and the building containing it.

The object of my improvement is to obviate and remove this danger, and this I effect as follows:

In any convenient position I attach to the tank *a a a a* a vessel, *m*, containing a float, *n*, and at some distance below the proper level of the water in the tank, as at *o*, I establish a communication between them, so that the water in the tank *a a a a* and that in the vessel *m*, will stand at the same level. Now, if from any cause whatever the level of the water in the tank *a a a a* should be lowered, that in the vessel *m* would be correspondingly so, and the float falling would depress the lever *p*, attached to it, and would cause its long arm *p'* to engage in any suitable projection attached to the holder, as at S, the worst consequence of which would be that the holder could not fall far enough to open the valve, and no light could be had until the supply of water was renewed, so that that chance of accident would be effectually removed by attention being thus directed to the want of water.

I do not, however, confine myself to this particular arrangement of the float, or to this particular mode of operating it, for it is evident that it might be made to act just as effectually by causing it to operate upon the lever I or the valve-stem K.

The machine represented in the drawing is

one of that class in which gasoline is converted into vapor by the application of external heat, and in which a proper and uniform supply of heat is induced by the escaping force of the gas itself as it is blown through a small jet under a high pressure.

In the drawing, R designates the position of the jet, and *x* the air-valve; but there has been no attempt made to show these in detail, because their particular construction and arrangement do not form any part of my invention.

Although I use an induced current of air in my machine, I lay no claim to its invention or exclusive use, for it has been described heretofore in Newton's (1841) and Mansfield's (1847) English specifications, and later in the French patent of Rouen and Marronnies in 1854, and that of Delahane in England and France in 1855, and later still in the United States patents of Maxin, Seeley, and others.

I do not claim the method of generating vapor under pressure from the surfaces of the liquid, or the method of supplying the hydrocarbon liquid to the retort by pneumatic or hydrostatic pressure; and of causing the pressure and volume of vapor in the retort to regulate the supply of liquid; nor do I claim the use of an automatic gas-holder, for all these devices are old, having been known for many years, and having been described in printed publications in England and France, as well as in the United States.

Claims.

I claim—

1. A secondary tank, placed either within or without the gas-holder tank, and communicating therewith below the water-line, and containing a float having a lever or other equivalent devices for arresting the gas-holder and stopping the inlet of gas thereto from the retort, substantially as set forth.

2. The subject-matter of the above claim, in combination with an automatic gas-machine, consisting of gas-holder, tank, retort, and their connections and devices, substantially as shown.

THOS. B. FOGARTY.

Witnesses:
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