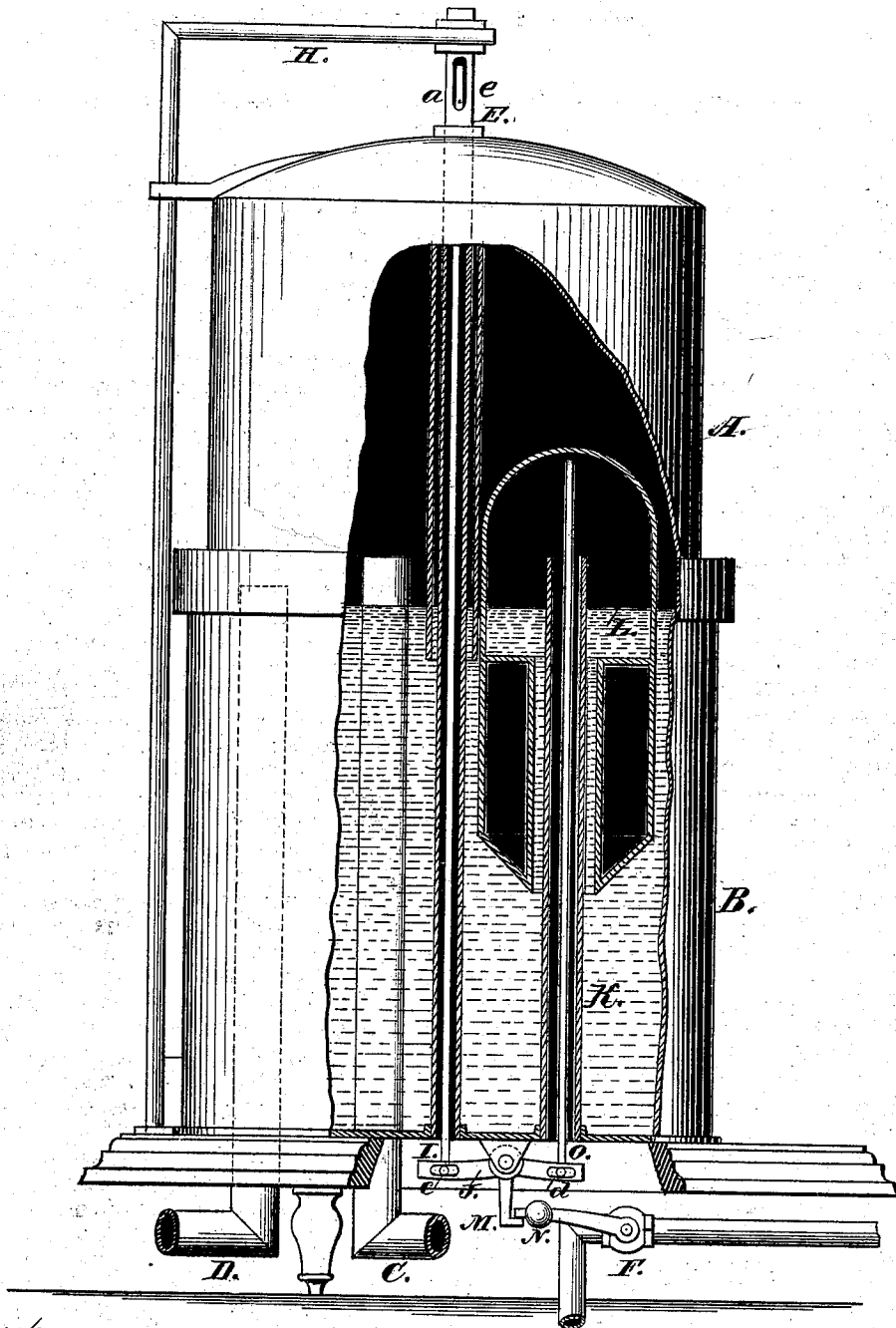


T. B. FOGARTY.
Carburetters.

No. 135,982.

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Witnesses.
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UNITED STATES PATENT OFFICE.

THOMAS B. FOGARTY, OF WARREN, MASSACHUSETTS.

IMPROVEMENT IN CARBURETERS.

Specification forming part of Letters Patent No. 135,982, dated February 13, 1873.

To all whom it may concern:

Be it known that I, THOMAS B. FOGARTY, of Warren, of the county of Worcester and State of Massachusetts, have invented certain Improvements in Attachments for Gas-Machines, of which the following is a specification:

My invention relates to that class of gas-machines in which hydrocarbon liquid is vaporized under pressure in a retort heated by the combustion of part of the gas manufactured by itself, and in which a proper supply and admixture of air are induced and maintained by the inductive force of the escaping gas or vapor; the manufacture and supply of gas being regulated and controlled automatically by the rising and falling of a gas-holder sealed in a tank of water, or other suitable liquid. The object of my improvement is to lessen the danger of accident from fire to machines of the above class, and at the same time to give increased steadiness to the lights.

As the improvements to which my invention relates do not in themselves constitute a gas-machine, but are merely independent attachments applicable to any gas-machine of the class to which my invention relates, I have not attempted to show a gas-machine in my drawing; but have shown only such portions thereof as are immediately connected and combined with my invention, and are necessary to illustrate it. These portions consist of a gas-holder, with its inlet and outlet pipes and a portion of the gasoline-supply pipe, or pipe by which the hydrocarbon liquid is conveyed to the retorts. The base upon which the gas-holder stands is shown broken off at one end, and of the gasoline-supply pipe there is shown nothing more than a broken piece, sufficient to explain the connection of this pipe with the devices which I claim as my invention.

A represents an ordinary gas-holder; B, the tank, containing the water-seal; C and D, the gas inlet and outlet pipes; E, the holder-guide or king-post; H, an iron standard or support for E; F, a cock or valve upon the gasoline-supply pipe.

In gas-machines of the class to which my invention relates, the manufacture and supply of gas are regulated and controlled by the rising and falling of a gas-holder which is connected with suitable mechanism in such a manner that, whenever the holder becomes inflated

with gas so as to rise to certain height, it automatically stops the further manufacture of gas until, in consequence of the gas it contains being consumed, it automatically restarts the manufacture, thus regulating it according to the requirements of the consumption.

It is evident that if, through any accident to or disarrangement of the mechanism through which the holder stops the manufacture of gas, it should fail to act at the normal height for stopping the manufacture, and, instead, should continue to rise until it reaches the stay H, its inability to rise further will cause an increase of pressure sufficient to blow off the water-seal, and permit an escape of gas into the gas-house with the certainty of its taking fire from the burners under the retort. It is also evident that, when in falling the holder reaches its normal point for restarting the manufacture of gas, and, owing to the machine being overtasked, or to there being a want of heat or pressure, the holder does not become inflated, as it should do, but, on the contrary, continues to fall, there should be some means by which the machine may be stopped automatically, and the supply of gas may be cut off until the defect is remedied. It is principally to provide an automatic means of preventing accident from either of the causes above described, and which I may designate excess or deficiency of pressure, that I have devised the improvements set forth in this specification.

I make the king or guide post E hollow, and, preferably, out of a piece of gas-pipe, and near its top I make through it a slot, *e*. Within E I place a rod, I, and through the upper end of I, at a point opposite the lower part of the slot *e*, I pass a wire, *a*, extending through the slot, and to some distance outside of E on one or both sides, and by a suitable pin or other fastening I connect the lower end of I with an arm, *c*, of a rock-shaft, J, working in suitable bearings under the bottom of the tank. I also place within the tank B, and at any convenient point, the pipe K, passing through the bottom of B, and up to a point above the water-line. I place over K the covered float L, the lower part of which is sealed in the water of the tank, so as to prevent any escape of gas through K, through which I pass the rod O, connected at its lower end with the end *d* of the rock-shaft J, and having its upper end extended upward

nearly as far as the top of the float L, which I make of such a weight that the holder in falling may rest upon it and bear it down with it whenever it falls too low. I now attach to the rock-shaft J the hooked arm M, upon the hook at the end of which the weighted lever N upon the valve F on the gasoline-supply pipe rests.

It is now evident that, if from any cause the holder rises above its normal point for stopping the manufacture of gas, it will strike against the pin *a*, passing through the upper end of the rod I, and, carrying up with it the rod I and the end of the rock-shaft to which it is attached, will withdraw the hook of the hooked arm M from under the weighted lever N, so as to allow N to fall and cut off the supply of gasoline. It is also evident that, should the holder fall below its normal point sufficiently to rest upon the float L, and should continue to fall, it will press down the float, and consequently the rod O, so as to cause O to depress the end *d* of the rock-shaft J, to which it is attached, and thereby cut off the supply of gasoline. By means of one or more arms similar to M, and placed upon the same rock-shaft J, I am enabled to release a weighted lever or levers placed upon the pipe which supplies gas to the burners under the retort, or any other pipe connected with the machine, so as to shut off the supply, whether of gas or liquid, from these pipes at the same instant that the supply of gasoline is cut off by the closing of the cock F, and by the same movement of the rock-shaft J, thus extinguishing any fire or light which may be burning in the gas-house at the same instant that the supply of gasoline is cut off.

It is evident that it is not necessary that the rods I and O should be placed within the holder, for they will act equally well, and with precisely the same results, if placed upon the outside of the gas-holder in such a manner that, in the event of the holder rising or falling above or below the normal points of reversing its motion, suitable projections upon its sur-

face will act upon the rods so as to cause them to operate the rock-shaft, as already described. It is also evident that the rods I and O may be made to operate upon suitable cams or levers so as to release a weight and cut off the supply of liquid or gas, in the manner and under the circumstances already described.

The float L serves another purpose—that of preventing a certain oscillation or jumping incidental to the lights produced by gas-machines of the class to which my invention relates. I make the pipe K of a large size, so as to permit of a very free and rapid circulation of air through it to and from the interior of the float L. Now, when an automatic gas-holder is inflated very rapidly, and the manufacture of gas is stopped suddenly, as it usually is, the momentum of the holder causes its upward movement to continue sufficiently long to partially lessen the pressure upon the gas, and cause a very sensible and painful jumping or oscillation of the lights. When this occurs, the float L, having free communication with the air by means of the pipe K, rises out of the water or other liquid in which it floats correspondingly to the diminution of pressure, and thus considerably reduces the amount of oscillation or jumping caused by the sudden stopping of the manufacture.

I claim—

1. The float L and rock-shaft J, suitably connected, in combination with the weighted lever N, as and for the purpose specified.

2. The gas-holder A and the rock-shaft J, suitably connected, in combination with the weighted lever N, as and for the purposes specified.

3. In combination with the gas-holder A, the rods I and O, the pipes E and K, the float L, and the weighted lever N, constructed and operated substantially as described.

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Witnesses:

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