

M. C. STEBBINS.

Carbureter.

No. 83,419.

Patented Oct. 27, 1868.

Fig. 1.

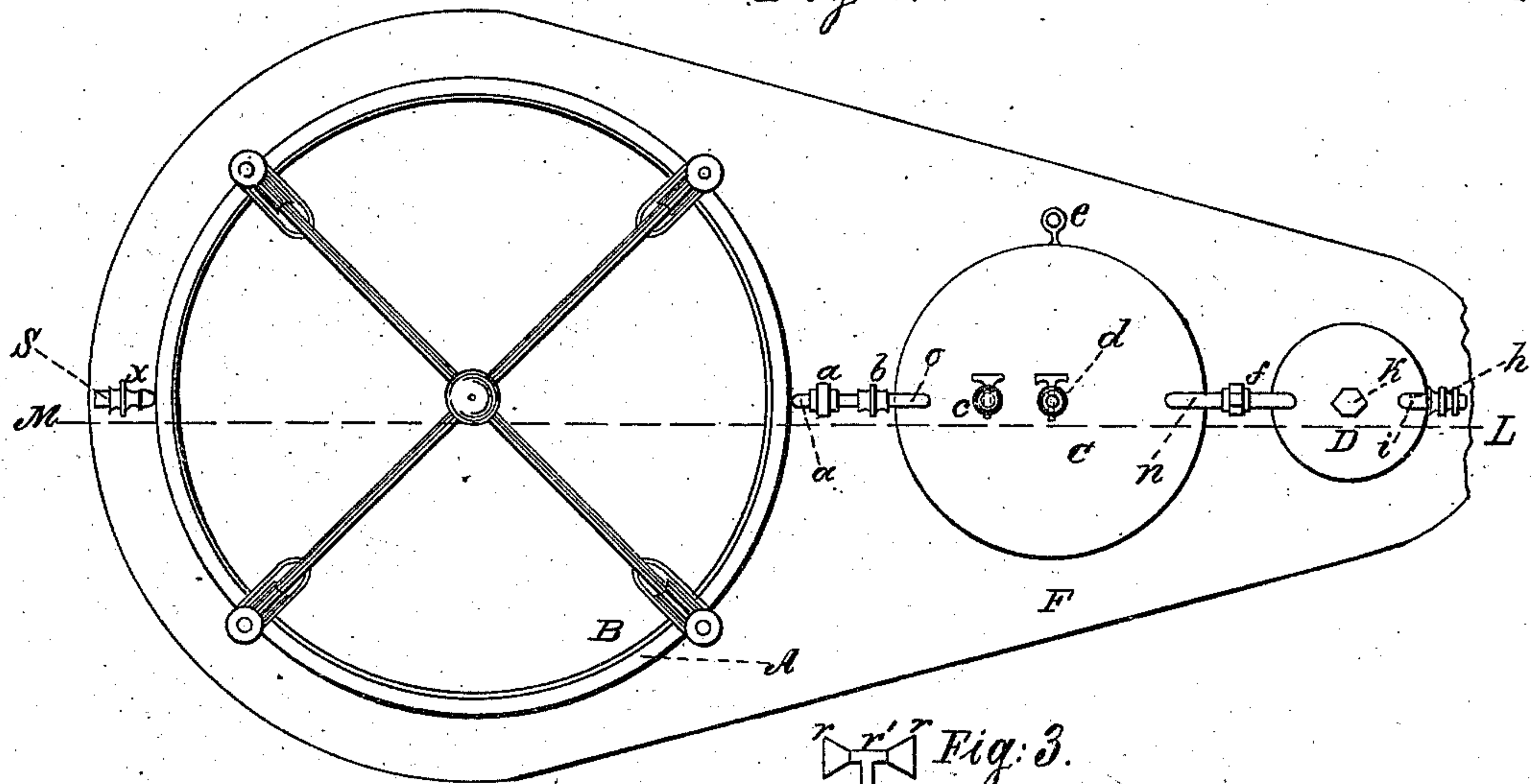
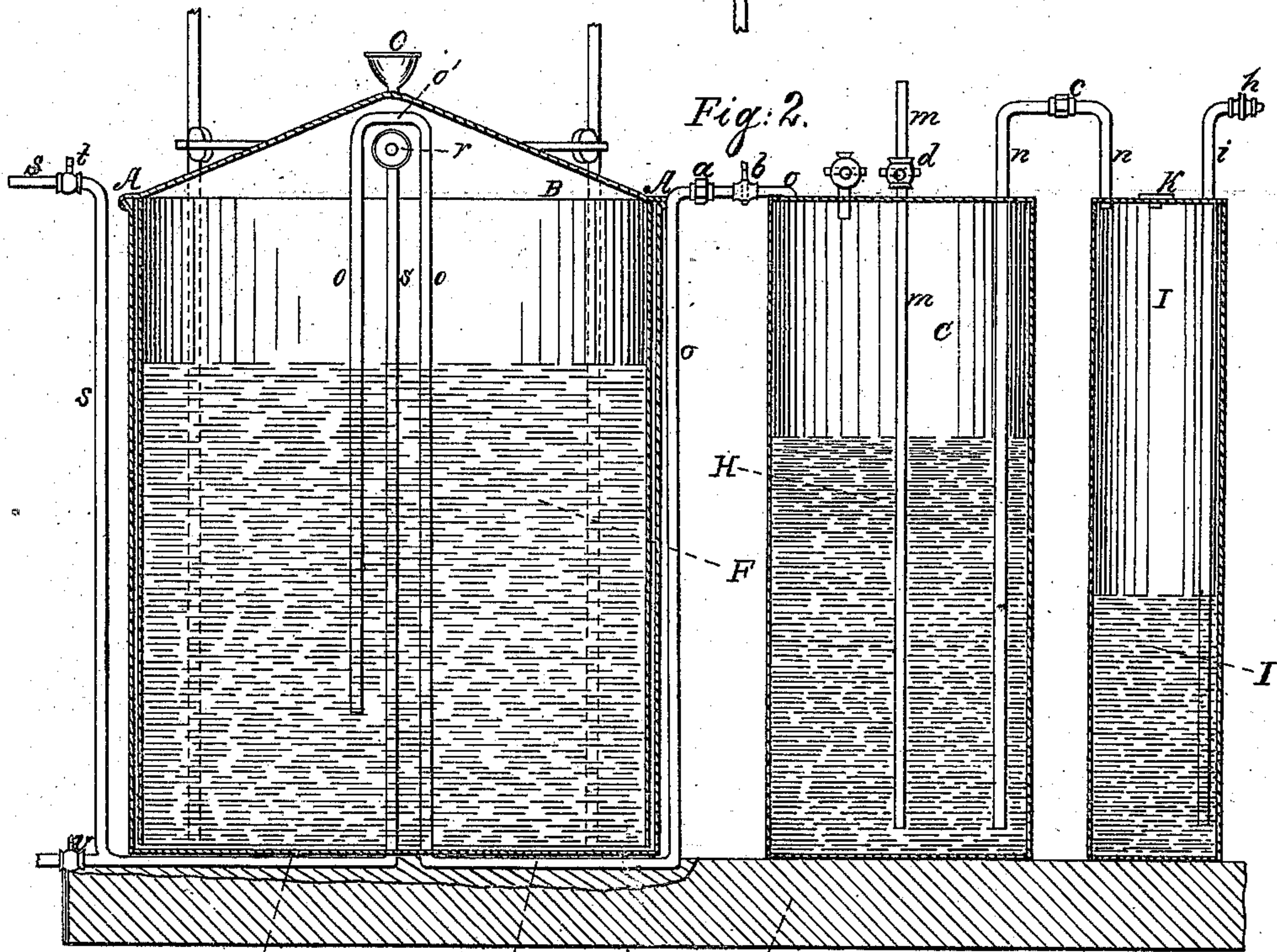


Fig. 3.



Witnesses:  
J. C. Bailey  
L. A. Curtis

No. 83,419.

Inventor:  
M. C. Stebbins.



# United States Patent Office.

M. C. STEBBINS, OF SPRINGFIELD, MASSACHUSETTS.

Letters Patent No. 83,419, dated October 27, 1868.

## IMPROVED PORTABLE GAS-APPARATUS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, M. C. STEBBINS, of Springfield, in the county of Hampden, and State of Massachusetts, have invented a new and improved Portable Gas-Apparatus; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a plan view of my invention;

Figure 2 is a vertical section of the same, through line L M of fig. 1; and

Figure 3 is a side view of the hood used to protect the opening to the gas-pipe within the gasometer.

My invention relates to that class of gas-apparatus used to carburet common air or gas, and consists in the arrangement and construction of a set of vessels with their pipes and connections, and their combination, in such manner as to greatly simplify the manufacture of carburetted gas.

That others skilled in the art may be able to make and use my invention, I will proceed to describe its construction and arrangement, and the mode of its operation.

In the drawings—

A and B represent the shell and self-sealing cover of a common water gasometer; C represents the vessel for containing the gasoline, or other carburetting-oil, and D represents a vessel to contain water, and which I denominate a water-valve, into which passes a pipe, *i*, extending nearly to the bottom of the vessel upon the inside; said pipe *i* also extending above the top of the vessel and having a check-valve attached thereto, at *h*, and at *k* is an orifice, through which to put in water, when desirable, which orifice is closed either by a stop-cock, or by any convenient stopper.

The pipe *n* just enters the top of the vessel D, extends some little distance above the top of said vessel D, and down again into and nearly to the bottom of the vessel C; the said pipe being cut, and a coupling-connection, *f*, uniting the two ends, for the purpose of disconnecting the two vessels, when desirable.

The pipe *m*, having a stop-cock at *d*, enters the top of the vessel C, and extends nearly to the bottom thereof, through which pipe *m*, the carburetting-oil is either put in or taken out of the vessel C, when necessary; and at *c* is a pet-cock, for the escape of gas while filling in the carburetting-oil, although, in practice, it is not believed to be necessary to have the pet-cock attached, as the operation of forcing in the carburetting-oil will force the gas into the gasometer, through the pipe *o*, which just enters the top of the vessel C; a stop-cock, *b*, being attached to said pipe *o*, and also a coupling-connection, for the purpose of more conveniently disconnecting said pipe, when desirable. Said pipe *o* passes down, and enters the gasometer at the bottom, and extends upwards, within said gasometer, to a height somewhat above the upper edge of the

outer case A of said gasometer, and from thence, extends downwards to a point below the surface of the water.

The pipe *s* has its opening at a point above the top of the outer case A of the gasometer, and the entrance to said pipe *s* is protected by two tunnel-shaped hoods *r*, which enter the pipe at the side, and there may be one or more of said hoods.

The object of said hoods is to prevent the water, which may spatter during the operation of forcing the air into the gasometer, from entering the pipe, and also to furnish a surface for condensation, as in case of the use of this device, the condensation occurs mainly upon the hoods *r*, and their form is such, that the condensed fluid is conducted away from the entrance to the pipe *s*, and it drops into the water in the gasometer.

The construction and form of these hoods are shown more fully in fig. 3.

The pipe *s* extends down through the bottom of the gasometer, and has a drip-pipe at its lowest point, which may be opened and closed by a stop-cock, *v*, for the purpose of drawing off any condensed matter which may collect in said pipe *s*.

This pipe *s* conducts the gas to the burners, and a stop-cock, *t*, is placed at any point between said burners and the gasometer.

The gasometer is precisely similar in its construction, so far as its case A and cover B, with the braces, pulleys, &c., are concerned, though different, in its arrangement of pipes, to gasometers now in use.

Having thus described the construction and arrangement of my invention, I will now proceed to describe its mode of operation.

The cocks *c* and *d* being open, gasoline or other carbon-oil is placed in the vessel C, through the pipe *m*, filling the vessel C to any proper or desirable height, say two-thirds full, and the cocks *c* and *d* are then closed. The desired quantity of water is then placed in the gasometer, say to within a few inches of the top, and a sufficient quantity of water is also placed in the vessel D, through the orifice *k*, to submerge the lower end of the pipe *i*. The stop-cocks *v*, *c*, and *d* being closed, and the cock *b* being open, connection is made, at *x*, with a condenser, pump, or blower, and air is forced into the pipe *i*, up through the water I and vessel D, and through the pipe *n* into the vessel C. As the air in its passage passes out the lower end of the pipe *n*, it rises through the gasoline or carbon-oil H, and during its said passage, and stay in the vessel C, the air absorbs a certain quantity of the carbon, and is converted into carburetted air or illuminating-gas, and it thence passes out through the pipe *o*, and, as the lower end of said pipe *o* is submerged in the water F, within the gasometer, the carburetted air, as it emerges from said pipe *o*, rises through the water F, which clears it of any impurities which may exist, and it is ready for consumption. As the carburetted air is forced into the gasometer, the cover B being properly balanced,



as usual, said cover rises until the gasometer is full, when the flow of air is stopped. Should the flow of air be continued, however, and be condensed to any degree in the gasometer, the water could not be forced back into the pipe *o* over the point *o'*, for that point being higher than the outer case A of the gasometer, the water would first be forced between the cover B and case A, and over the top of said case A; and in order to guard against any back pressure, and prevent any possibility of the escape of the gasoline through the pipe *n* into the vessel D, said pipe *n* is carried to a height somewhat above the top of said vessel C; and to prevent any escape of water from the vessel D through the pipe *i*, said pipe *i* is carried or extended somewhat above the top of said vessel D.

The upper end of the pipe *s* being above the top of the case A, there is no possibility of the water being forced into said pipe *s*, on account of any condensation of gas within the gasometer, and any condensation of vapor in the pipe *s* is removed by opening, for an instant, the stop-cock *v*.

I do not claim the construction of the vessels B C D, or either of them, when considered irrespective of their arrangement of pipes and connections, as I have endeavored to make such an arrangement of said pipes and connections as to obviate the use of complicated valves, or valves in any form, which, when immersed in the liquid, as they often are in other devices used for the same purpose, sometimes become stopped or clogged by sediment, and are difficult to remove for repair. In practice, it may not be actually necessary to use the check-valve *h*, though I prefer to use it, as it is perfectly easy and convenient of removal for repair, if necessary.

This apparatus is particularly applicable for use for the manufacture of gas for dwelling-houses, for by connecting the pipe *i* with a small hand-blower or pump, a sufficient quantity of gas may be manufactured in a very few minutes to supply the demand for one or more evenings, according to the size of the gasometer.

It will be perceived that the position of the several vessels C D and gasometer B A may be modified or changed, as convenience or circumstances may require. For instance, the vessel D may be placed in the cellar of a building, and the gasometer and vessel C may be placed in a vault, apart from the cellar, or the vessel D and gasometer may be placed in the cellar, and the vessel C placed in a separate vault, the distance between the vessels being of no moment, as long as the same arrangement of pipes and their relative height is maintained.

The vessel D having the pipe *i* therein, the lower end of which is immersed in water, forms a most perfect and effective guard against any escape of gas from the gasoline-holder C, while it is cheap, and simple, and easy to regulate.

Having thus described my invention,

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

The combination of the vessels C and D, and the gasometer B, with their pipes and connections, all arranged and operating substantially in the manner and for the purposes herein specified.

M. C. STEBBINS.

Witnesses:

T. A. CURTIS,  
T. C. BAILEY.