J. C. HENDERSON.

Carbureter.

No. 164,558. Patented June 15, 1875.

Fig 1.

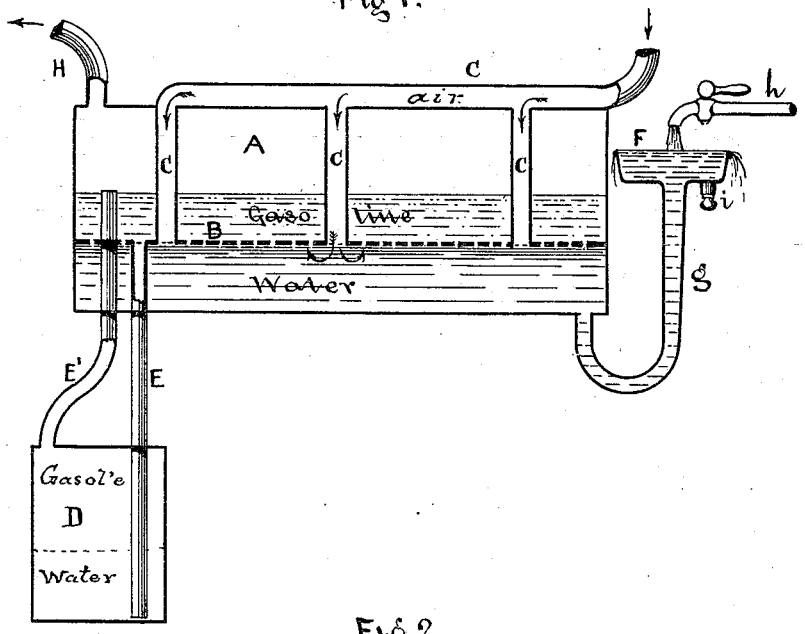
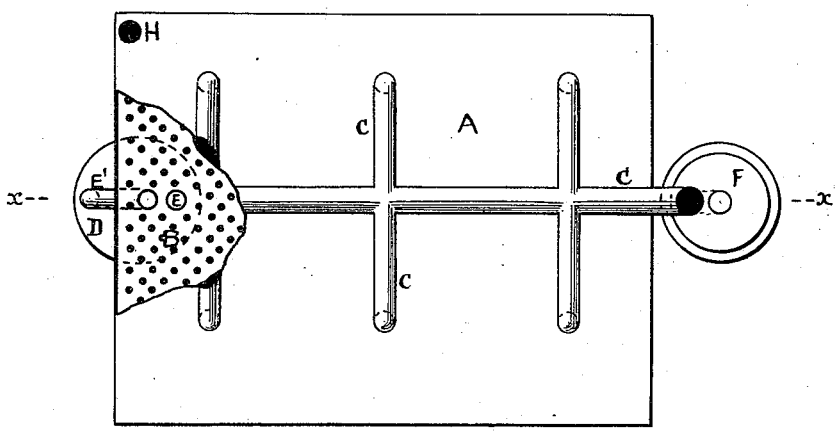


Fig 2.



Witnesses
Geo. Pardy
Jos. K. Firth

Inventor.
John C. Henderson
per his atty
H. Montevercle.

UNITED STATES PATENT OFFICE.

JOHN C. HENDERSON, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO THE CARBURETED GAS MACHINE COMPANY, OF SAME PLACE.

IMPROVEMENT IN CARBURETERS.

Specification forming part of Letters Patent No. **164,558**, dated June 15, 1875; application filed March 13, 1875.

To all whom it may concern:

Be it known that I, JOHN CARLOS HENDERSON, of the city and county of San Francisco, State of California, have invented an Improved Carbureter, of which the following is a specification:

My invention relates to that class of apparatus in which is inclosed a certain amount of gasoline, naphtha, or other volatile oils of petroleum, &c., and through or over which a current of air is passed, charging it with the gases issuing from the above-mentioned oils or fluids, and rendering it inflammable and fit for illuminating purposes.

Referring to accompanying drawing, forming part of this specification, Figure 1 is an elevation of my improved carbureter, shown in section. Fig. 2 is a plan of same.

A is the casing, having a diaphragm, B, of perforated sheet metal. C is the inlet-pipe for the air-current, and opens out underneath perforated diaphragm. D is a supply-tank filled with gasoline or any other oil used. E is pipe leading from immediately above the perforated diaphragm to the bottom of the supply-tank D. E′ is pipe leading from supply-tank D to carbureter, and opens out as far above the level of perforated diaphragm as the required thickness or depth of the oil-film, as hereinafter described. F is a water-supply tank, having a siphon-pipe, *g*, communicating to under side of main casing A. This tank F is supplied with water from any source, such as at *h*. This water-supply is kept up when the carbureter is working. The tank F should be placed a little above the level of perforated diaphragm. H is pipe on top of casing A, which carries off the carbureted air to its destination.

In working my carbureter, it is first filled with water from tank F through siphon-pipe *g*, to a level with top of perforated diaphragm B, and the supply of water being kept up it will run into pipe E, thence into oil-supply tank D, where, being of greater specific gravity than the gasoline or other oils of petroleum used, it will displace its bulk of oil, which will pass upward through pipe E′ into carbureter, and there float upon the water already there, when the required depth of oil-film is attained, this depth of film being the distance between top of pipe E to a line level with contents of tank F, and this depth will be more or less great as the said tank F is more or less elevated above mouth of pipe E. This will be the case as the water from tank F, flowing into the carbureter, will, in rising to seek its level, reach the mouth of pipe E, when it will flow through it and into gasoline-supply tank D, there displacing and forcing upward into carbureter, through pipe E′, sufficient of the gasoline to equalize the pressure from tank F. This equilibrium being established, the water in tank F, or which is supplied to it, will overflow its sides, until the carbureter be set in operation by allowing the current of air from inlet-pipe C into it. This air-current passes out of pipe C underneath the diaphragm and through the water there, spreading itself and bubbling upward through it and the oil-film floating on top, thus becoming charged with the volatile and inflammable gases issuing from the oils used, and passing out of outlet-pipe H to its destination.

The purpose of the above-mentioned diaphragm B in my carbureter is to serve or act as a "break-wall" or partition, (its position, as before said, being between the water and gasoline-film in tank A,) for checking the too great ebullition or shaking up of the liquids in the carbureter when the air-current is passed through them, which will be seen is the case; for the air-bubbles coming out of pipe C in rising through the water strike the diaphragm, breaking their volume and force, and only quietly filter through the perforations in diaphragm and through the oil-film, thereby preventing, as before said, the two liquids from being too heavily agitated, and the water from rising above the mouth of pipe E, which, by the operation before described, would allow an extra quantity of gasoline from the supply-tank D to enter the carbureter almost continuously while the machine would be in operation, which not only would not be necessary, but would be wasteful, as by this continuous supply of gasoline the film in the carbureter would be increased in depth, thereby giving more, as well as an unnecessary, carbureting-surface for the air to pass through, making it

extravagantly rich in carbon, which would give a smoky flame at the burner—a thing to be avoided as much as possible. All the above-mentioned results will take place in the carbureter when not supplied with the diaphragm; and it is to conquer these objections that I apply it in my machine.

When, through the constant evaporation and carrying off of the vapors from the oils used, the depth of film floating on the water in the casing A is depleted, diminishing also the head of pressure in the mouth of siphon-pipe *g*, the water in it will naturally rise to keep the same level as before, in doing which it will force itself upward through perforated diaphragm, and into the supply-tank D through pipe E, there displacing, as before said, its equivalent in bulk of oil or gasoline, which rises to the top, and regains again the level formerly had in casing A. This is a continuous and automatic operation, which keeps the carbureter always supplied with fresh material. Be it understood that the cock *h* which supplies the tank F and siphon *g* with water is kept running when the carbureter is in operation. The water not required to sustain the balance or level of the film of oil in the carbureter flows over the sides of the tank, or through an opening for the purpose, as at *i*.

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

1. The supply-tank D, having water-induction pipe E and ejection-pipe E′, in combination with a carbureter, wherein layers of water and of volatile hydrocarbon oil or fluid are used, as before specified.

2. The water-tank F, with its siphon-pipe *g*, in combination with a carbureter-tank or casing, A, constructed and operating substantially as hereinbefore described.

3. In a casing or tank, A, the perforated diaphragm or partition B, in combination with pipes E and E′ and supply-tank D, for the purpose as hereinbefore fully described.

JOHN C. HENDERSON.

Witnesses:

F. E. MONTEVERDE,

GEO. PARDY.