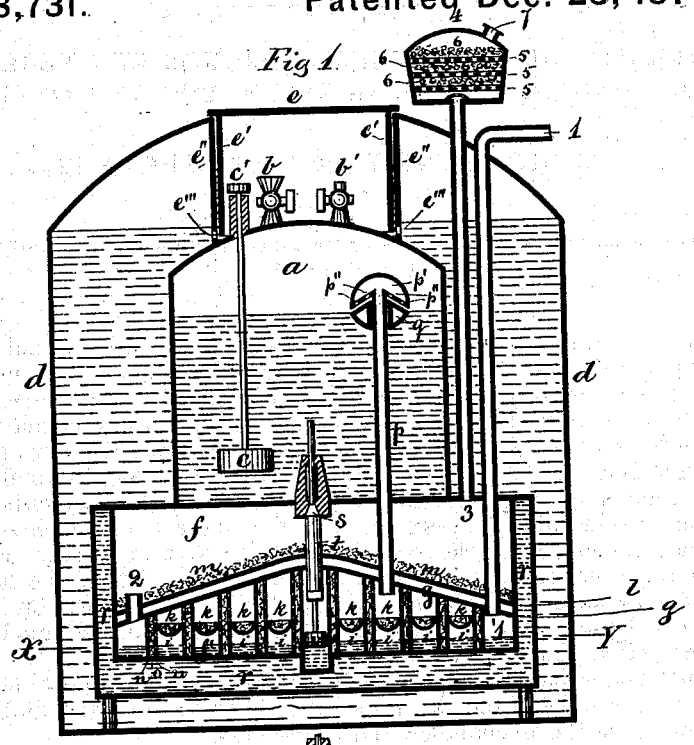
H. W. MERRITT.

Carbureter.

No. 198,731. Patented Dec. 25, 1877.

Fig 1.



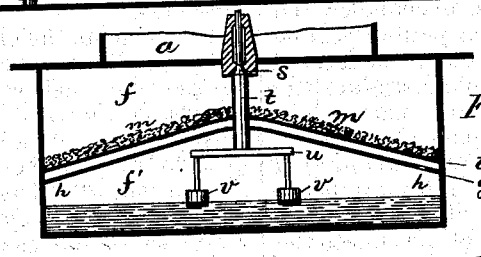


Fig 2.

Fig. 3

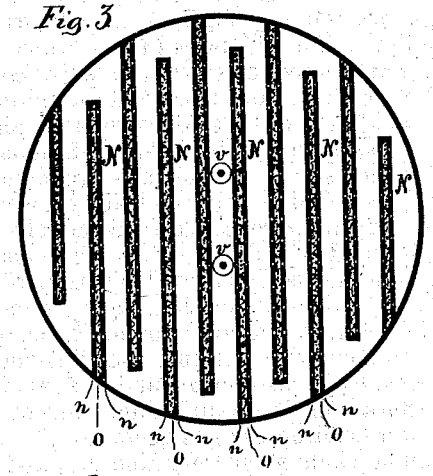
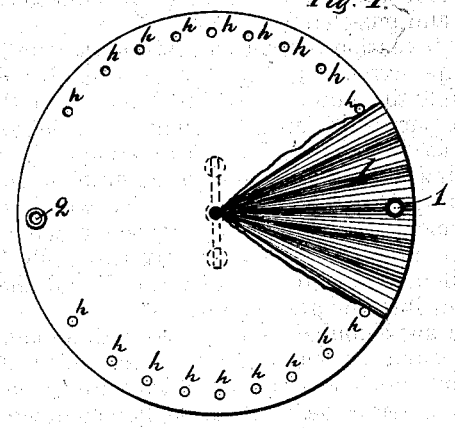


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

HENRY W. MERRITT, OF SOMERVILLE, ASSIGNOR OF ONE-HALF HIS RIGHT TO WILLIAM R. STEARNS AND WILLIAM H. IRELAND, OF BOSTON, MASS.

IMPROVEMENT IN CARBURETERS.

Specification forming part of Letters Patent No. **198,731**, dated December 25, 1877; application filed December 8, 1877.

To all whom it may concern:

Be it known that I, HENRY W. MERRITT, of Somerville, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Carbureters, of which the following is a specification:

My invention relates to improvements on that class of carbureters in which the gas-chamber is located below the oil-receptacles, or otherwise combined together; and my invention consists, first, of a perforated diaphragm located above the gas-chamber, and provided on the top with a corrugated plate, on which wool or other porous material is distributed. Upon this wool the oil is sprinkled from an automatic valve leading from the oil-chamber, and as it drops down through the perforated diaphragm it falls into perforated pans located below in the gas-chamber, which pans are also filled with wool or similar porous material, so as to present in a small compass a large evaporating-surface. The above-named diaphragm is made sloping from the center toward its circumference, where the perforations are made, so as to facilitate the flowing of the oil into the pans and gas-chamber below.

My invention further consists of an equalizing-pipe extending from the gas-chamber up through the liquid in the oil-chamber, in the upper part of which it terminates as a hollow hood having perforations on its under side, in combination with a hollow annular float surrounding the equalizing-pipe, by which arrangement the gas from the gas-chamber can rise up into the air-space above the liquid in the oil-chamber, so as to displace the oil that escapes into the gas-chamber.

The gas-chamber is provided with a chamber around its circumference and below its bottom, which chamber is filled with glycerine, that serves as an effectual non-conductor for heat and cold, by which arrangement the oil in the gas-chamber is prevented from thickening in cold weather, or from evaporating too quickly in a warm place, and a uniform temperature is thus at all times insured to the gas-chamber. Both the oil and gas chambers are surrounded with annular water-spaces, in the usual manner.

This carbureter can be used for carbureting with air or coal-gas, as may be desired.

On the annexed drawings, Figure 1 represents a central longitudinal section of my invention. Fig. 2 represents a vertical section of the diaphragm, which section is at a right angle to that of Fig. 1. Fig. 3 represents a horizontal section of the labyrinth passages on the line X Y, shown on Fig. 1. Fig. 4 is a plan view of the diaphragm below the oil-chamber.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

A represents the oil-chamber, with its cocks *b b'* and indicators *c c'*, in the ordinary manner. *d* is the outer shell, containing water, that surrounds both oil and gas chambers. *e* is the movable cover, with its annular ring *e'* fitting inside of the chamber *e''*, that is provided with perforations *e''' e'''*, as shown, by which a complete water-seal is obtained at the cocks *b b'*. *f* represents the gas-chamber, with its diaphragm *g*, having perforations *h h h h* directly above the perforated pans *i i i*, in which the wool *k k* is located, as shown. *l* is the corrugated plate, Figs. 1 and 4, above the diaphragm *g*, and *m* is the woolon said corrugated plate. *n n n* represent the division-walls of the labyrinth passages N N, which walls are made as hollow perforated chambers, filled with wool, *o o o*, as shown. *p* represents the equalizing-tube, provided in its upper end, in the oil-chamber A, with the hood *p'*, provided with perforations *p'' p''* on its under side. *q* is the annular hollow float or valve surrounding the pipe *p*. If too much oil is put into the oil-chamber A, the float *q* will rise upward, and close against the perforations *p'' p''*, and thus prevent all liability of flooding the gas-generator *f'*. *r* is the annular chamber surrounding the gas-generator and gas-chamber, which annular chamber contains glycerine, for the purpose stated. S is the automatic conical supply-valve, located in the bottom of the reservoir A, and is pro-

vided with a downwardly-projecting stem, *t*, that is connected, by means of the bar *u*, to the double floats *v v*, that rest upon the liquid in the gas-generator, and by which arrangement a constant and uniform depth of oil is maintained in the bottom of said gas-generator. 1 is the inlet-pipe for the gas or air into the generator *f'*, and 2 is the opening through the diaphragm *g* at the other end of the labyrinth passage N, through which the enriched gas or air enters the gas-chamber *f*, from which it ascends through the pipe 3 to the purifier, that consists of the receptacle 4, containing perforated shelves 5 5 5, having oyster-shells, pebbles, &c., 6 6 6, resting thereon, as shown on Fig. 1. 7 is the opening in the upper part of the purifier, from which the enriched gas or air is drawn, for consumption, to the burners or otherwise.

Having thus fully described the nature, construction, and operation of my invention, I wish to secure by Letters Patent, and claim—

1. In a carbureter, the herein-described diaphragm *g*, with its perforations *h h h*, corrugated plate *l*, wool covering *m*, and perforated pans *i i i*, containing wool *k k*, or its equivalent, as and for the purpose set forth.

2. In a carbureter, the equalizing-tube *p*, with its perforated hollow hood *p' p'' p''* and hollow float-valve, as and for the purpose set forth.

3. In a carbureter, the glycerine-chamber *r*, surrounding the gas-generator *f'* and gas-chamber *f*, as and for the purpose set forth.

HENRY W. MERRITT.

Witnesses:
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