D. E. BANGS.

GAS CARBURETER.

No. 183,884. Patented Oct. 31, 1876.

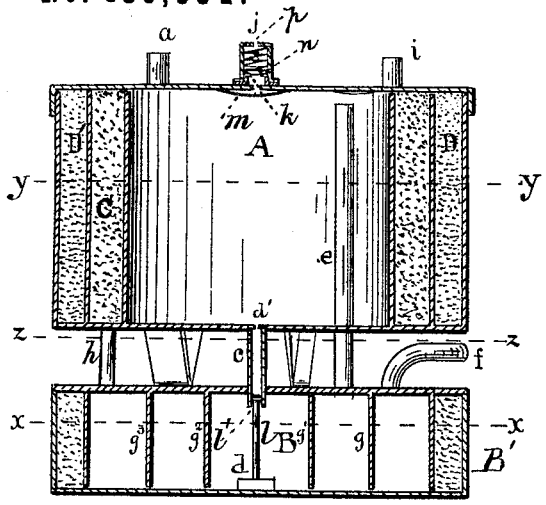

Fig. 1.

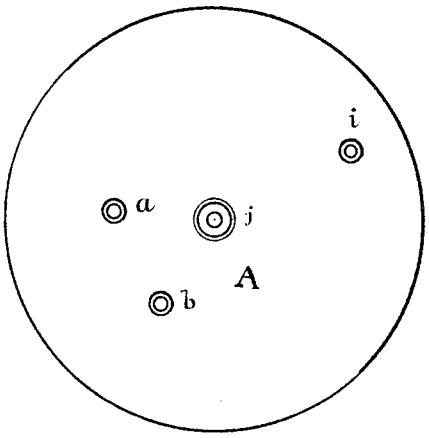

Fig. 2.

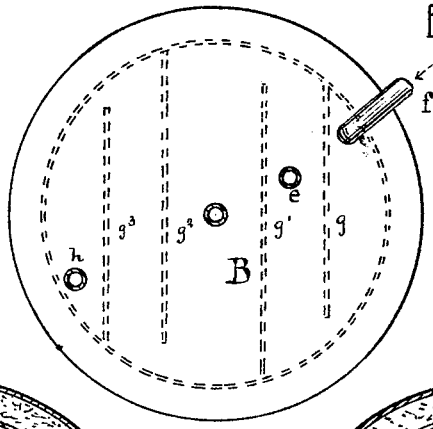

Fig. 5.

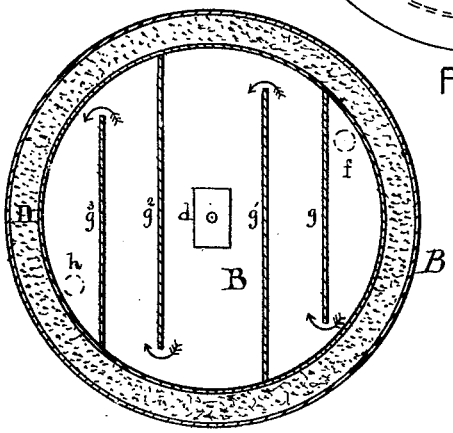

Fig. 3.

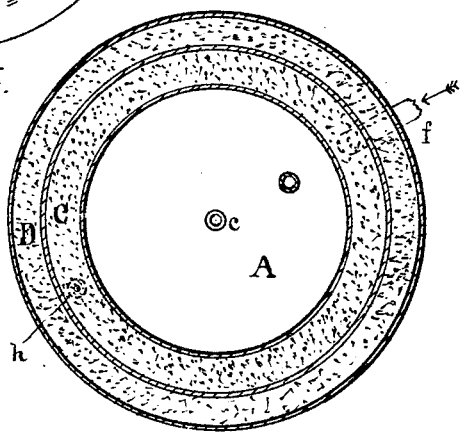

Fig. 4.

WITNESSES

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DAVID E. BANGS, OF MEDFORD, MASSACHUSETTS.

IMPROVEMENT IN GAS-CARBURETERS.

Specification forming part of Letters Patent No. **183,884**, dated October 31, 1876; application filed April 28, 1876.

To all whom it may concern:

Be it known that I, DAVID E. BANGS, of Medford, county of Middlesex, and State of Massachusetts, have invented certain new and useful Improvements in Gas-Carbureters, of which the following is a specification:

This invention has relation to improvements in apparatus for carbureting gas or air by encircling it with the vapors of naphtha or other hydrocarbon oils, and it has for its object to prevent explosion of the apparatus should the building in which it is located take fire, and to prevent atmospheric influences from unduly retarding or accelerating the generation of hydrocarbon vapors. It consists in an oil-reservoir arranged above and separate from the carbureting-tank, which reservoir is provided with an exterior jacket of soap-stone, pebbles, or other similar non-combustible materials, surrounded by a jacket of asbestus, whereby the condensed hydrocarbon vapors in the inner jacket and the fluid in the reservoir will be protected from exploding in case of fire, and from atmospheric influences. It also consists in certain minor details of construction, as will be hereinafter more fully set forth.

In the annexed drawings, the letter A designates a preferably cylindrical metallic oil-reservoir, arranged above and separate from a similar carbureting-tank, B. Tank B is surrounded by a metallic casing, B′, forming a space which is designed to be filled with asbestus or other non-conducting material, D, and to protect the oil therein from explosion should the building containing the apparatus take fire. It is also provided with a number of spaced partitions, forming a labyrinth, through which the air or gas to be enriched will pass when let into the said tank into an induct-pipe, *f*, on its way to the educt-pipe *h*, leading into the chamber C, surrounding the reservoir. The excess of vapor will be here condensed, and the remainder pass out through pipe *i* into the mains along with the gas or air, by which means the clogging of the pipes by the deposit of this excess therein will be effectually prevented.

The hydrocarbon oil will be poured into the reservoir A through a pipe, *a*, and will escape therefrom through a pipe, *c*, into the carbureting-tank B. Pipe *c* has in its upper end a valve-seat, *d′*, and when a sufficient quantity of oil has reached the said tank it will raise a float, *d*, therein, thereby actuating rod *l*, thrusting valve *l′* against its seat *d′*, and cutting off the flow of oil into the tank B. When this float falls, which it will do as soon as a sufficient quantity of the hydrocarbon has become vaporized, the valve *d′ l′* will be reopened and the flow re-established, thus replenishing the carbureting-tank automatically.

j represents a valve-case, situated at the upper part of the reservoir, and having at its lower end a seat, *k*, for a valve, *n*, which is held thereon by means of a coiled spring, *s*. Case *j* has at its upper end a small opening, *p*. In case of fire the expansion of oil and gas in the reservoir will overcome spring *s*, raise valve *n*, and allow the excess of vapor to pass out of the reservoir through the valve-case to opening *p*, where it will be consumed, as by an ordinary burner.

I prevent the flame from getting into the reservoir and causing explosion by means of a metallic screen, *m*, of any suitable material, covering the opening of the valve-case leading into the oil-tank A. As the oil flows into tank B from reservoir A air will escape from the former through a pipe, *e*, extending upward into the upper part of reservoir A.

As the vapor or enriched gas passes upward through the chamber C, any excess of vapor will be condensed by the soap-stone or gravel therein, and will form a considerable accumulation of oil in time; and in order to prevent this deposit from explosion I have caused the non-conducting jacket to surround it also. The condensing-jacket C will, of itself, form a considerable protection to the contents of the oil-reservoir; but when surrounded by the non-conducting jacket D, all possibility of explosion, either in the reservoir or condensing-jacket C, is effectually obviated.

I am aware that it is not new to provide gas-carbureters with exterior protecting-cases packed with gypsum or plaster-of-paris, pumice-stone, or asbestus saturated with alum, as described in the Letters Patent granted to S.

Whitney, June 6, 1871, and M. P. Coons, July 4, 1871, and I do not, therefore, claim such inventions, broadly.

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

1. In combination with the jacketed carbureting-tank B, the surmounting oil-reservoir A, having an exterior condensing-space, C, and the non-conducting jacket D, surrounding the said space, the said condensing-space being connected with the carbureting-tank, as and for the purpose set forth.

2. The oil-reservoir A, having an exterior space, C, filled with soap-stone, pebbles, or other like substance, and surrounded by a casing filled with a non-conducting compound, substantially as specified.

DAVID E. BANGS.

Witnesses:
WM. H. GRUBB,
W. S. HILL.