(No Model.)

A. KITSON.

CARBURETING GAS LAMP.

No. 381,934. Patented May 1, 1888.

FIG 1

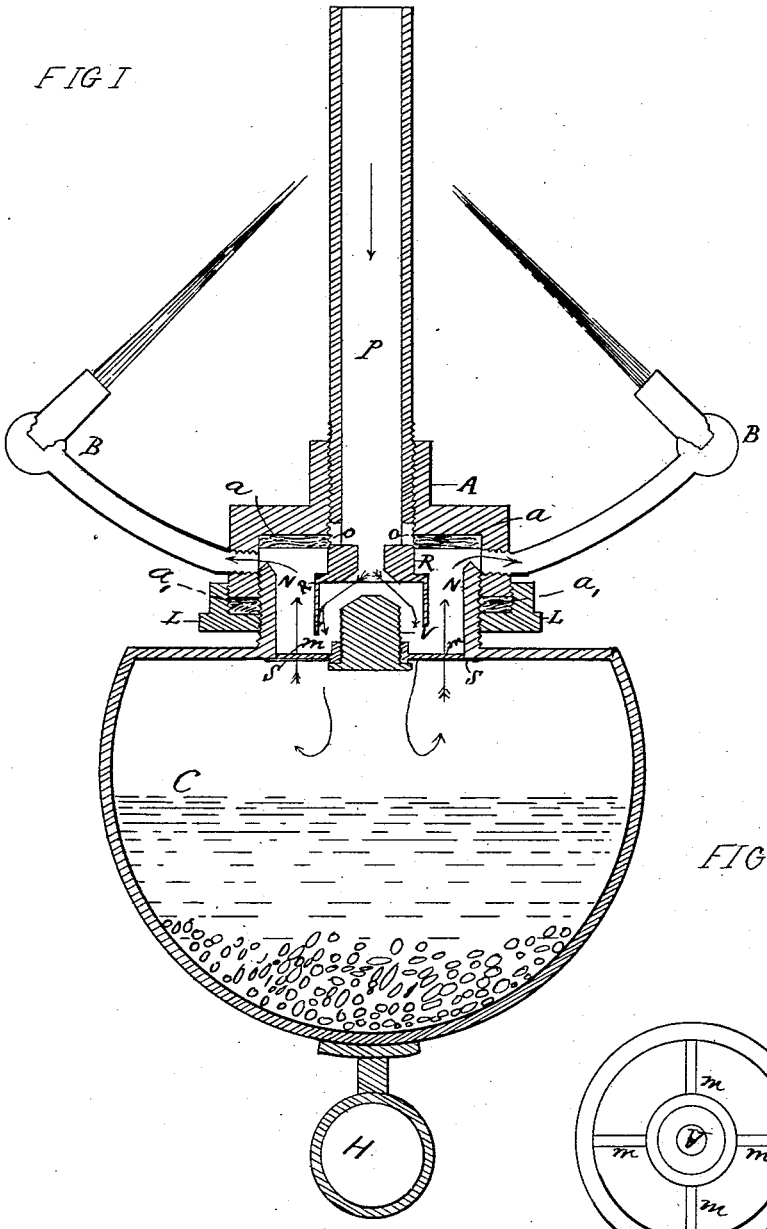
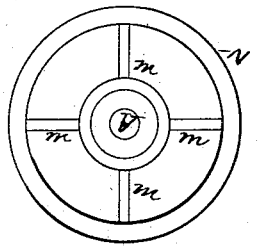


FIG 2.



ATTEST.

R. Aschenbach.

A. Maddox.

INVENTOR.

Arthur Kitson.

UNITED STATES PATENT OFFICE.

ARTHUR KITSON, OF PHILADELPHIA, PENNSYLVANIA.

CARBURETING GAS-LAMP.

SPECIFICATION forming part of Letters Patent No. 381,934, dated May 1, 1888.

Application filed October 15, 1887. Serial No. 252,495. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR KITSON, a subject of the Queen of Great Britain, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Carbureting Gas-Lamps; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

The objects of my improvements are, first, to provide a simple device for regulating the proportion of enriched gas flowing to the burners; second, to provide a simple means for shutting off simultaneously the gas and hydrocarbon vapor from the burners; third, to provide a cheap valve for turning the gas on and off, which shall be unaffected by the heat from the gas-flames; and, lastly, to provide means for turning the gas flames low without their liability to smoke.

Heretofore regulators which have been used for proportioning the amount of unenriched gas flowing to the burners have consisted of three-way stop-cocks, butterfly-valves, and similar contrivances, all of which are expensive, and very liable to clog and become useless.

It has been customary heretofore to turn the gas off from the burners by a lever-cock placed above the burners, which became stiff and difficult to manipulate, owing to the expansion by the heat from the flames.

Heretofore the hydrocarbons in the carburetors have been at all times exposed to the atmosphere through the burner-arms and burners, the result being that after burning the lamp for several hours the hydrocarbons have been reduced to a highly-volatile condition, and an escape of the vapor has ensued, after shutting off the gas from the burners, into rooms and apartments where used, producing an exceedingly disagreeable and offensive odor.

My invention effectually obviates these evils.

Heretofore it has been found impossible to turn the flames of carbureting gas-lamps low without producing smoke, the reason for which is that the supply of enriching vapor has remained constant, while the supply of gas has been reduced, the latter being insufficient to properly consume the enriching vapor, and smoke has resulted. This is overcome by my improvements.

Referring to the accompanying drawings, Figure 1 represents a carbureting gas-lamp of the ordinary type, P being the gas supply pipe, C the carburetor, and B B the gas burners.

A is a metal collar containing the burner-arms, and attached to the supply-pipe P. The upper central hole of the collar A is screw-threaded, and engages similar screw-threads on the lower end of the supply-pipe.

O O are holes in the sides of the supply-pipe, near its lower extremity, which may be made of any size, and are shown in drawings as closed by the metal collar A and asbestus washer *a*. These holes may be opened by turning the collar around the pipe P, and the gas in pipe P conveyed directly to the burners. The amount of unenriched gas conveyed by these means direct to the burners can be properly adjusted by opening or closing the holes O O more or less. The asbestus washer *a* serves to keep the collar A and supply-pipe gas-tight and prevent leakage.

N is the neck of the sectional view of a carbureting-vessel, screw-threaded, and supported by the collar A, as shown.

L is a metal bushing, which serves to hold the asbestus washer *a* in position and pressed close against the screw of neck N to prevent escape of gas.

R is a metal piece drilled through its center and countersunk at its under side, as shown. It is firmly secured to the bottom of supply-pipe. Directly under this piece is the corresponding metal plug, V, supported by the pieces *m m*, and springs S S to the bottom of the neck of carburetor.

V is screw-threaded, and can be raised and lowered in its supports *m m* by screwing it up and down. The top of the plug is shaped to fit exactly the countersink in the piece R.

S S are metal springs, which secure the pieces *m m* to the bottom of N.

The object of the pieces V and R and their supports is to open and close the supply-pipe P, thus forming an equivalent for the ordinary stop-cock. This valve, as will be seen, is op-

erated by turning the carbureting-vessel. By screwing it up the plug V closes the pipe P, and by unscrewing it the pipe is opened.

It will be noticed that the burner-arms are placed on sides of collar A, just below the asbestus washer *a*. The object of this is to enable the neck N to close off the gas and carbon vapor from the burners instantly by screwing the neck N against the asbestus washer *a*, which is done by means of the handle H. The top of N is made sharp, as represented, to make a perfect joint with the washer *a*.

Fig. 2 is a plan of the piece V, with its supports *m m* and the neck N of carburetor.

The lamp is operated as follows: To light the burners, the handle H is turned once or twice in the direction of unscrewing. This opens the supply-pipe and passage-ways to the burners and admits gas to the burners, as shown by the arrows, which first descends into the carburetor, becoming enriched and rising to the burners. Should it be found necessary to reduce the degree of enrichment, the collar A, together with carburetor C, is screwed up on the supply-pipe by the burner-arms B B. This opens the holes O O, and a portion of gas unenriched escapes direct to the burners. The same movement brings the plug V nearer to R and partially closes the supply of gas to the carburetor.

It will be seen that the same movement which closes the supply-pipe P by turning H brings the neck N against the washer *a*. To enable N and plug V to operate exactly and simultaneously, the springs S S are employed. The plug V closes its valve slightly in advance of N, and the springs S S allow for the extra movement necessary to bring N in close contact with its seat *a*.

The closing of the supply-pipe and carbureting-vessel at one and the same time in the manner shown permits the flames to be burned at any height without smoking, as the proportion of enriching vapor is altered to correspond to the amount of gas consumed. It will therefore be seen that the regulation of unenriched gas supplied to burners is effected by the holes O O and collar A; that the hydrocarbon vapors are shut off from the atmosphere at the same time the gas is turned off by means of handle H and parts P R and N *a*. The latter are unaffected by the heat and are simpler and cheaper to construct than ordinary stop-cocks, which they replace.

I wish it to be understood that I do not confine myself to the exact details herein specified; but

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

1. In a carbureting gas-lamp, the combination, with the carbureting-vessel, of a supply-pipe having passage-ways in its sides, and a burner-support attached to said pipe and adapted to open and close said passage-ways.

2. In a carbureting gas-lamp, the combination, with a carbureting-vessel, gas-burners, and burner-support, of a valve situated at or near the burner-support and adapted to open and close simultaneously all of the burner passage-ways leading to the carbureting-vessel and to the gas supply, substantially as described.

3. In a carbureting gas-lamp, the combination, with a carbureting-vessel, a gas-burner, and a burner-support, of a gas-supply pipe terminating in the neck or mouth of the carbureting-vessel, and a valve placed at the termination of said pipe adapted to admit and shut off the gas from said pipe to the gas-burners and carbureting-vessel, substantially as described.

4. In a carbureting gas lamp, the combination of a gas-supply pipe, a gas-burner, a burner-support internally grooved and screw-threaded, and an asbestus washer placed at end of said groove, with a carbureting-vessel detachably connected to said burner-support by an elongated screw-threaded neck, which engages the similar screw-threads in said groove, and arranged to make a gas-tight joint with the said washer, and a packed joint or stuffing-box attached to the lower end of burner-support, substantially as and for the purpose herein described.

5. In a carbureting gas lamp, the combination, with a gas-burner and burner-support, of a carbureting-vessel detachably connected to said burner-support by a neck, said neck forming, with its connection to the burner-support, a valve adapted to open and close the passage-ways leading from the burners to the carbureting-vessel, substantially as described.

ARTHUR KITSON.

Witnesses:
R. ASCHENBACK,
E. CLINTON RHOADS.