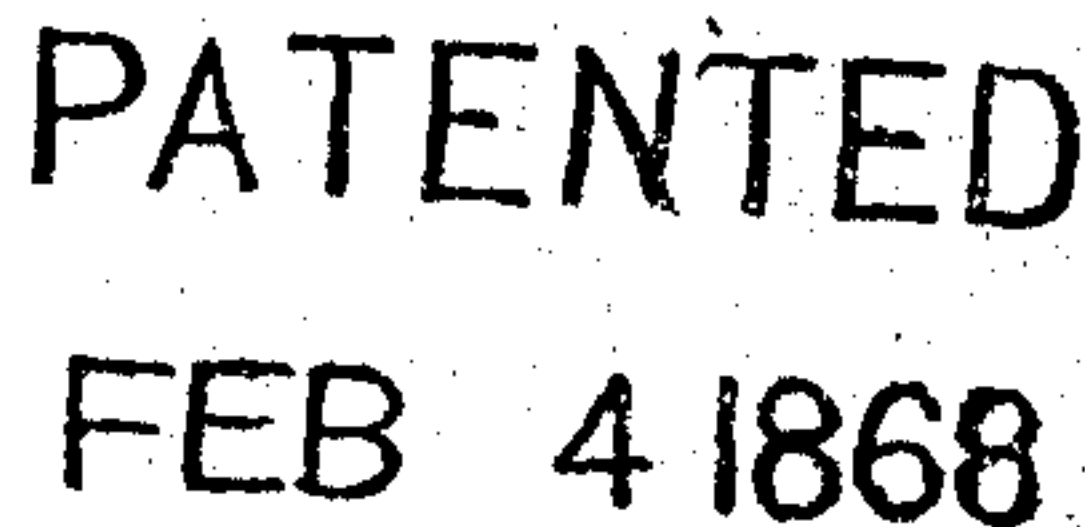


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IVA PRICHARD, OF TERRE HAUTE, INDIANA, ASSIGNOR TO HIMSELF AND JOSEPH RAIBER, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN GAS-MACHINES.

Specification forming part of Letters Patent No. 74,132, dated February 4, 1868.

To all whom it may concern :

Be it known that I, IVA PRICHARD, of Terre Haute, in the county of Vigo and State of Indiana, have invented a new and Improved Carbureting-Machine; and I do hereby declare the following to be a full, clear, and exact description of the same, sufficient to enable those skilled in the art to which my invention appertains to make use of it, reference being had to the accompanying drawings, forming part of this specification, in which the drawing is a longitudinal vertical section through the various parts of my apparatus.

This invention is a simple and economical machine for the manufacture of illuminating-gas from the volatile hydrocarbons.

In this invention three vessels are employed—the first, A, for condensing air by the force of water from a hydrant or bellows, or by other suitable means; the second, B, for subjecting such condensed air to contact with a volatile hydrocarbon till the air becomes heavily laden with inflammable hydrocarbon vapor; and the third, C, for receiving such inflammable mixture of air and vapor, and distributing it to the burners.

The first vessel is divided into two airtight compartments, a a' , one above the other, communicating with each other through an outside pipe, a'' . a^3 is a stop-cock by which the communication may be cut off, and a^4 is a faucet by which the lower or water chamber may be emptied.

The water is let into the lower chamber through a pipe, a^5 , and drives the air out of it into the upper chamber a' , condensing two atmospheres in that chamber, or more, if the upper chamber be smaller than the lower.

A' is a gage, which indicates the pressure of air in the upper chamber, and a^6 a^6 are try-cocks, to enable the operator to ascertain when the lower chamber has been properly filled with water.

A pipe, D, provided with a stop-cock, d , extends from the upper end of the vessel A to the lower end of the vessel B, discharging the air from the former into the latter vessel, the elasticity of the condensed air being sufficient to force it through the pipe into the hydro-

carbon contained within the vessel B. The vessel is kept about half-full of the liquid, the height of the liquid being shown at all times by a gage, E. F is a funnel, through which the liquid is introduced. G is a partition across the upper part of the chamber B, and v v' are valves opening upward, which prevent the fluid from flowing backward into pipe D, and the air in the upper part of chamber B from passing back to the hydrocarbon again.

The air forced into the hydrocarbon, in the manner described, rises through it, becoming heavily laden with inflammable gas from the liquid, and itself assuming the condition of a highly inflammable vapor of great illuminating power. In this form it reaches the upper portion of chamber B, and passes over to the third vessel C, where it is collected under a floating receiver, R, of the common form. The pipe H, extending from vessel B to vessel C, is similar to that connecting vessels A and B, being provided with a stop-cock, h , and extending from the upper end of the former to the lower part of the latter chamber, where it discharges its contents upward from its end, bent up as shown. A valve, v^2 , may be attached also, as in the other case, and for a similar purpose, and it may have a bonnet, h' , to diffuse the gas from the mouth of the tube. From the top of the receiver another pipe, K, runs to the burner L. A cock, k k' , is attached at each end of the pipe.

In general, for the purpose of properly balancing the receiver, I would discharge the vapor from the tube H into three or more upright tubes, m m m , connected with each other in any suitable manner, and extending to the upper portion of the receiver, above the level of the water in which it is floated. In simplicity, economy, and safety, this machine excels all others hitherto used for the purpose.

There is no friction or wear about it, and no opportunity for the hydrocarbon liquid or vapor to escape in any direction except as desired for burning. The flow of air is regulated by the burner. When that is closed the further production of gas must stop for want of room to receive it. There is no evaporation of the hydrocarbon except that produced

by the passage of the air through it, and this is immediately utilized.

The receiver may be properly weighted, and may be provided with a stop to arrest its upward motion at any point, so as to control the production of the vapor.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the air-chamber *a'* and water-chamber *a* with the carbureting-vessel B and the receiving-vessel C, in the manner and for the purpose set forth.

2. The application of a column of water to a carbureting-machine, for the purpose of condensing air and forcing it through the carbureting fluid, substantially as shown and described.

To the above specification of my improvement I have signed my hand this 13th day of November, 1867.

IVA PRICHARD.

Witnesses:

CHAS. A. PETTIT,
SOLON C. KEMON.