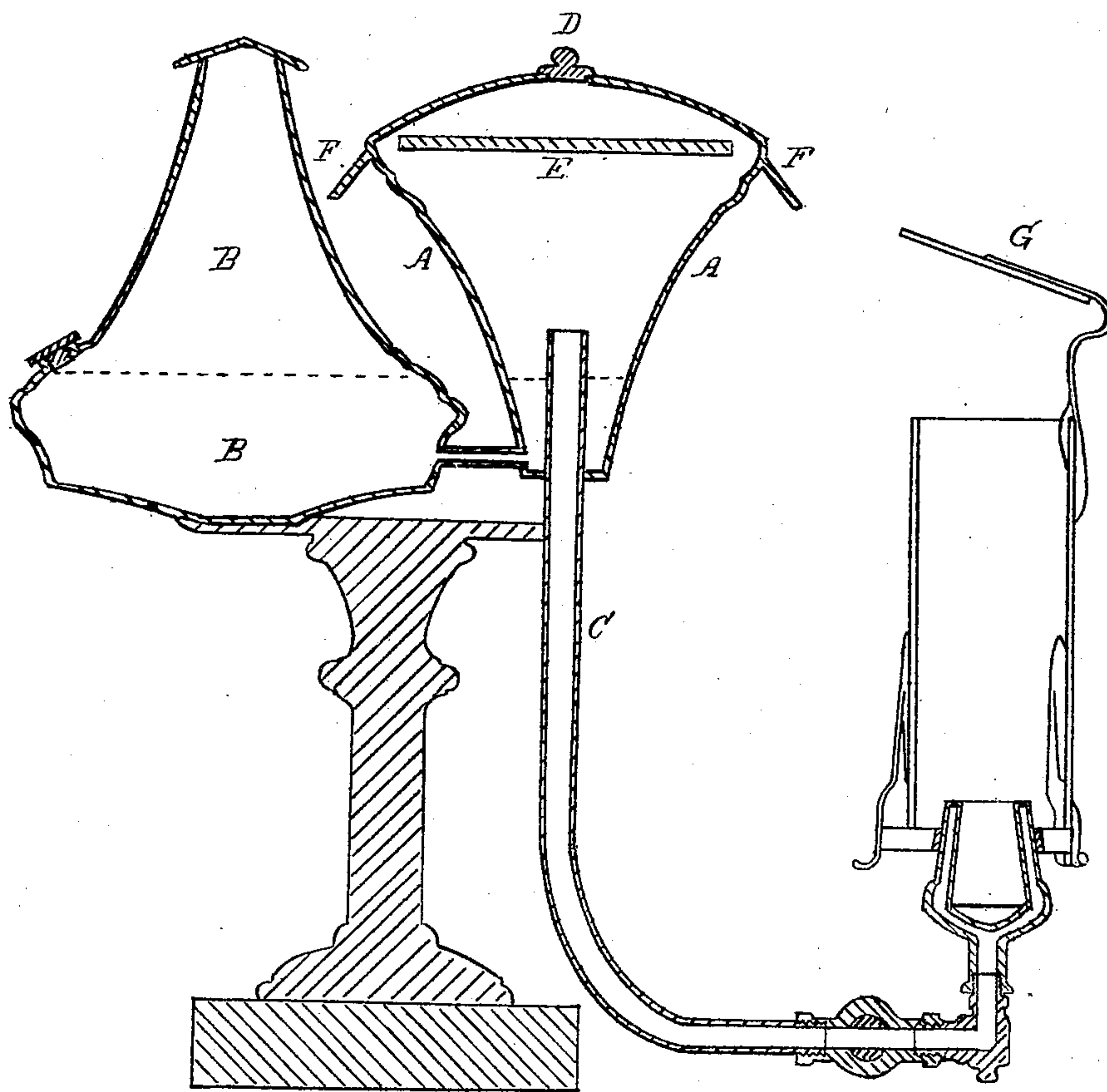


A. W. PORTER.

Improvement in Apparatus for Carbureting Air.

No. 131,025.

Patented Sep. 3, 1872.



WITNESSES
J. A. Blankeman
W. J. Manning

INVENTOR
Alonzo W. Porter
by *Chas. L. Coombs,*
Atty.

UNITED STATES PATENT OFFICE.

ALONZO W. PORTER, OF NEW YORK, N. Y.

IMPROVEMENT IN APPARATUS FOR CARBURETING AIR.

Specification forming part of Letters Patent No. 131,025, dated September 3, 1872.

SPECIFICATION.

Specification describing certain Improvements in Apparatus for Carbureting Air, or Gravity Vapor-Lamp, invented by ALONZO W. PORTER, of the city of New York, county of New York and State of New York.

My invention relates to an improved portable carbureting-lamp, and belongs to the class of carbureting apparatus known as "gravity machines."

It consists, first, in a peculiar construction and arrangement of the carbureting-vessel so as to receive and contain but a small quantity of hydrocarbon liquid in the lower part, which is distributed over an extended surface in the upper part by means of fibrous or capillary material; second, in a reservoir and carbureter arranged in relation to each other in such a manner that the hydrocarbon will flow freely from one to the other and attain a common level, the carbureter being so constructed as to contain but a small portion of the hydrocarbon liquid at any time; third, in the combination of a deflector with said carbureter on the inside near the top, which causes the air entering said carbureter to pass to the sides of the same before coming in contact with the carbureting material; fourth, in combination with said carbureter of a flange extending around the top of the same and so arranged as to catch the heated air arising from the burner and throw it around the carbureting-vessel; fifth, in combination with the chimney of the apparatus of an adjustable deflector, by means of which the heated air may be turned toward the carbureter; all of which will be more fully hereinafter explained.

By the peculiar construction of my carbureting-vessel the packing or fibrous material contained therein is kept saturated with hydrocarbon liquid without having a large amount of liquid in said vessel, which facilitates the warming of said vessel and prevents the boiling of the liquid in the same or the flooding of the service-pipe, and also prevents the formation of an excess of gas and consequent smoking of the light.

The drawing represents a sectional view of my apparatus.

A represents the carbureting-vessel, which is made in the form of an inverted cone or approaching thereto, or in such a manner that the lower portion will be much less in diam-

eter than the upper part, for the purpose hereinafter described. B is the reservoir, consisting of a large shallow vessel, larger at the bottom than the top, placed at one side or to the rear of the carbureter, and communicating therewith by means of the tube *b*. Said reservoir is so constructed and arranged in relation to the carbureter in such a manner that, when full, the level of the hydrocarbon liquid will be below the upper end of the service-pipe C, which extends upward a short distance into the carbureter. D is an air-inlet, and E a deflector secured directly under it in the upper part of the carbureter, which causes the air to pass to the sides of the carbureter before coming in contact with the carbureting material. The carbureter is filled with fibrous or capillary material, such as hair, wicking, sponge, &c. The service-pipe C extends downward from said carbureter and outward by a bend, and terminates with an Argand gas-burner and chimney. F is a flange around the upper portion of the carbureter for catching and retaining the heated air. G is an adjustable deflector attached to the chimney, and so constructed and arranged as to be set at any angle or height to deflect the heat toward the carbureter.

The operation of my apparatus will be readily understood. The reservoir, upon being filled, supplies a small amount of hydrocarbon liquid to the carbureter, which can never rise beyond the level of the dotted line which is the level of the liquid in the reservoir when full. A portion of the liquid is absorbed and distributed throughout the fibrous or capillary packing in the upper part of the carbureter where it is exposed to the air to be carbureted. The vapor and air form a mixture heavier than the atmosphere, which descends through the pipe C to the burner. The vaporization of the hydrocarbon is assisted by the heated air arising from the light, which is thrown by the deflector under the flange on the carbureter.

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

1. A carbureting-vessel constructed and arranged so as to contain but a small quantity of hydrocarbon liquid at one time, which is distributed over an extended surface and exposed to the air to be carbureted by means of fibrous material, substantially as described.

2. The reservoir and carbureter arranged in

relation to each other in such a manner that the hydrocarbon will flow freely from one to the other and attain a common level, the carbureter being so constructed as to receive and contain but a small portion of the hydrocarbon liquid at any time, substantially as described.

3. The combination of the deflector E with the carbureter, as and for the purposes described.

4. The flange around the top of the carbureter, as and for the purposes described.

5. The combination of the adjustable deflector with the chimney and outer flange of the carbureter, substantially as described.

A. W. PORTER.

Witnesses:

J. H. CARRINGTON,
EDWARD L. OWEN.