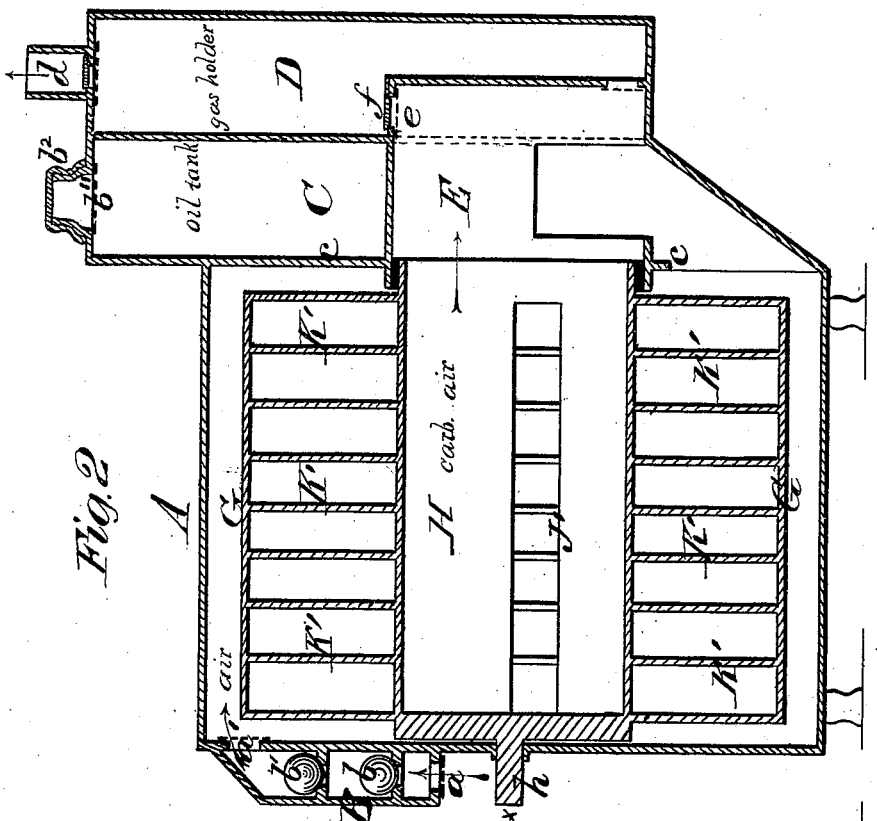
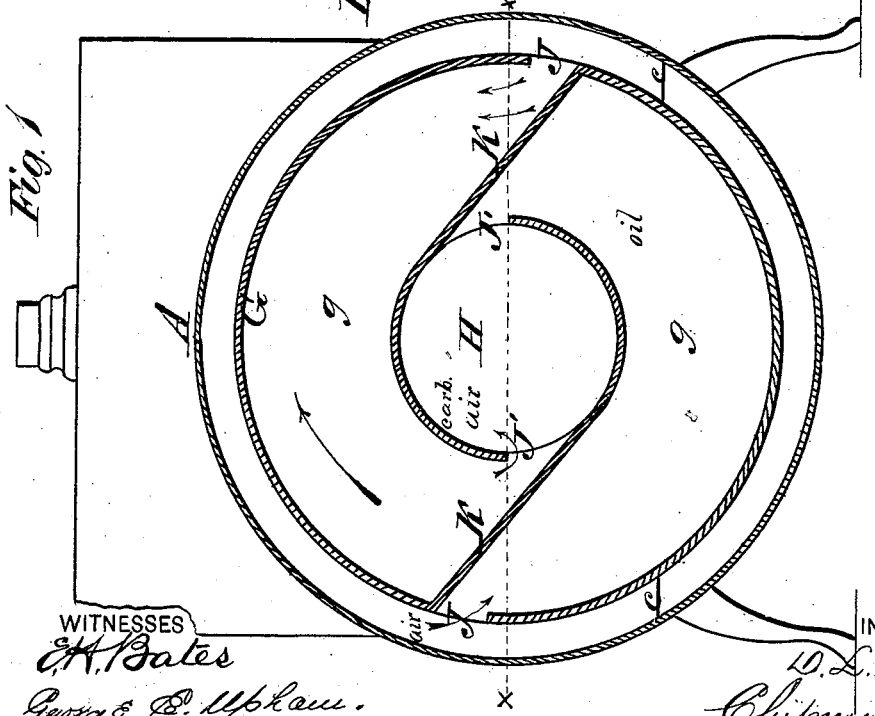
D. L. WESTCOTT.

Carbureter.

No. 167,811. Patented Sept. 14, 1875.





WITNESSES
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UNITED STATES PATENT OFFICE.

DANIEL L. WESTCOTT, OF FORT WAYNE, INDIANA.

IMPROVEMENT IN CARBURETERS.

Specification forming part of Letters Patent No. **167,811**, dated September 14, 1875; application filed August 4, 1875.

To all whom it may concern:

Be it known that I, DANIEL L. WESTCOTT, of Fort Wayne, in the county of Allen and State of Indiana, have invented a new and valuable Improvement in Carbureters; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a transverse vertical section of my carbureter, and Fig. 2 is a longitudinal vertical sectional view of the same.

This invention has relation to apparatuses which are designed for carbureting air, and also for enriching illuminating-gas; and the nature of my invention and improvement consists mainly in a revolving cylinder arranged in a suitable case containing fluid hydrocarbon, inside of which cylinder are vertical and longitudinal partitions, so arranged that the air or gas is carried down into the hydrocarbon fluid, and discharged uniformly into a suitable receptacle from the hollow center of said cylinder, as will be hereinafter explained.

The invention further consists in the combination, with a revolving center-discharge cylinder, of a feed-chamber, and a gas-receiver, which latter is provided with valves, to prevent a return of the gas after it enters this receiver, as will be hereinafter explained.

In the annexed drawings, A designates the cylindrical casing of my improved carbureter, which casing may be of any required diameter and length. To one head of this casing an air-inlet conduit, B, is applied, which is provided with wire-cloth at the points *a a'*, and also with valves *b b'*. The wire-cloth prevents fire communicating with the interior of the casing, and the two valves prevent the regurgitation of the air which enters the casing. At the opposite end of the casing A are two chambers, C D, which are rectangular in form, and which communicate with the interior of the casing. The chamber C is provided with a feed-hole, *b''*, tightly closed by means of a cap, b^2, and from this chamber C the gasoline or other fluid hydrocarbon flows into the casing on opposite sides of a cylindrical chamber, E, and beneath a division-plate, *c*. The chamber D communicates with the cylindrical chamber E by means of an opening, *e*, which is closed by wire-cloth, and from the chamber D the gas is carried off to be burned through a pipe, *d*, provided with wire-gauze and a valve. A valve, opening upward, is applied at *f* for the escape of the gas into chamber D, which valve prevents the return of the gas into the chamber E. The chamber or reservoir D should be of such capacity that a uniform supply of gas from it will be obtained while the gas is being manufactured. G designates a cylinder, which is of less diameter and length than the casing A. One end of this cylinder G has a shaft, *h*, fixed to it, which passes through the casing-head, and has applied to it suitable mechanism, which will give regular rotation to cylinder G in the direction indicated by the arrow in Fig. 1. Inside of and concentric with the axis of cylinder G is a tube, H, one end of which is closed. The other end has its bearing in the division-plate *c*, and opens into the chamber E. J J are openings through the external wall of the cylinder G, which are diametrically opposite each other, and extend from one end to the other of the cylinder. J' J' are openings, which are made through the inner wall of the cylinder G, and which are equal in length to the openings J J. K K are partitions, which are in planes tangent to the circumference of the inner wall of cylinder G, and which extend to the openings through its outer wall, and divide it into two compartments, *g g*, of equal capacity, each one of which has its inlet-opening J and its outlet-opening J'. The chambers *g g* are subdivided by partitions K', which are in vertical planes, and which are not perforated, they being made of solid sheets of thin metal, so as to present the largest possible amount of evaporating-surface in a given space.

The operation of the apparatus is as follows: When the casing A has been charged with the proper carbonizing-liquid the height of this liquid will be automatically and uniformly preserved at the proper point, indicated by dotted line *x x*; for as the liquid in the machine is expended, and falls below a

given point, the air will pass in, and take the place of a corresponding amount of liquid, which will flow out. As the interior cylinder revolves one of the openings J will be brought down to the level of the liquid, and thus closed, entrapping in one-half of cylinder G a quantity of air, which will be carried beneath the surface of the liquid, and discharged from an opening, J′, into the central chamber H, and from thence into the chamber D. In like manner the opposite chamber in cylinder G will submerge its quantum of air, and discharge it properly carbureted into the chamber D.

If I divide the cylinder G into two equal parts, as shown, and charge with liquid to the line *x x*, an interior passage, J′, to the center will be opened at the moment the exterior passage J of the same chamber is closed at the surface of the liquid, and the air contained within said chamber will be forced into the upper portion of the hollow axis, and thence out into the receiving-chamber. The liquid is at the same time poured out into the lower portion of the hollow axis, and thence into the casing-chamber outside of cylinder G, to be again acted on as before. While one side of cylinder G is acting the other portion is brought over, and operates in the same manner as stated, thus keeping up a continued and uniform pressure of air or gas. The effect produced is that the air, being carried over, around, and through the carbureting-liquid, and subjected to the liquid evaporating from the constantly-wet surfaces of the partitions K′, and agitated, becomes so mingled with the light vapor of hydrocarbon that an illuminating-gas of excellent quality is produced.

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

1. In a carbureter, the revolving cylinder G, having the tube H, the vertical and longitudinal partitions K K′, and openings J J′, whereby the air or gas is carried down into the hydrocarbon fluid and discharged uniformly into a suitable receptacle from the tube of said cylinder, as described.

2. In a carbureter, the combination, with the revolving cylinder G, as described, and the feed-chamber C, of the gas-chamber D, provided with valves, to prevent a return of the gas after it enters, substantially as described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

DANL. L. WESTCOTT.

Witnesses:

WALTER C. MASI,

B. H. MORSE.