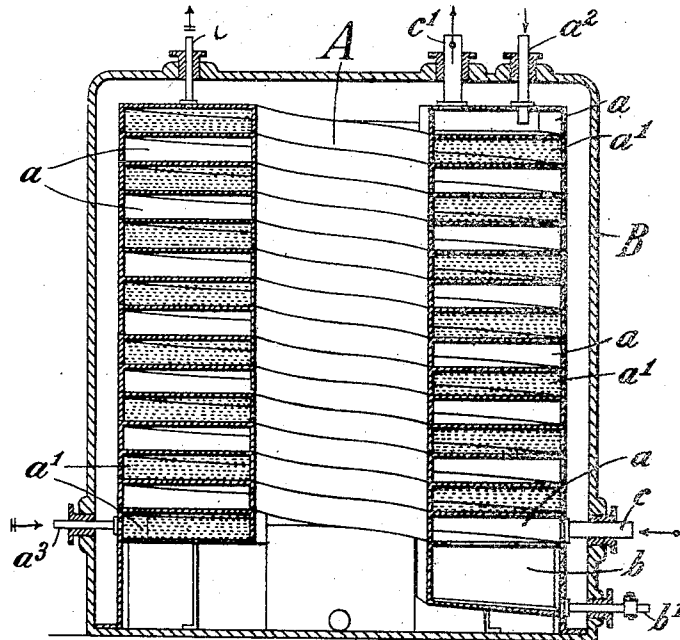


F. W. O. BOECKEM.
AIR CARBURETING APPARATUS.
APPLICATION FILED DEC. 2, 1914.

1,246,704.

Patented Nov. 13, 1917.



Attest:

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by *John Middleton Donaldson*
Atty.

UNITED STATES PATENT OFFICE.

FRITZ W. O. BOECKEM, OF LONDON, ENGLAND.

AIR-CARBURETING APPARATUS.

1,246,704.

Specification of Letters Patent.

Patented Nov. 13, 1917.

Application filed December 2, 1914. Serial No. 875,164.

To all whom it may concern:

Be it known that I, FRITZ WILHELM OTTO BOECKEM, a subject of the King of Great Britain and Ireland, residing at 30 to 33 Bolsover street, Great Portland street, London, England, have invented certain new and useful Improvements in Air-Carbureting Apparatus, of which the following is a specification.

10 This invention relates to improvements in air-carbureting, and is particularly applicable in connection with self-contained automatic plants for producing carbureted air for incandescent gas lighting purposes.

15 The principal object of the invention is to produce a device wherein a thorough mixing of air and hydrocarbon vapor is insured, and to prevent freezing due to the low temperature produced, when the hydrocarbon, for example, petrol, vaporizes, and to provide such a device with means for regulating the production and consumption of the mixture so made.

I will now describe my invention with reference to the accompanying drawings in which—

The figure is a transverse vertical section through a carbureting apparatus embodying my invention.

30 Referring to the figure, the carbureter A consists of a tubular structure formed by two tubular helices a , a' arranged side by side, that is to say, the spires of the helix a are interspaced with the spires of the helix a' , so that each spire of the helix a is covered at the top and bottom by a spire of the helix a' .

40 At the top, the helix a is provided with an inlet pipe a^2 for the petrol or other hydrocarbon to be vaporized. At the bottom this helix a communicates with a chamber b , in which any residues or excess of hydrocarbon collect, to be drawn off through the tap b' . At the bottom of the helix a an inlet c is provided for air, which consequently travels upward through the helix and thus in the opposite direction and in intimate contact with the downwardly flowing petrol or other fuel. The air thus becomes charged with petrol vapor, and issues through the exit pipe at the top in a highly carbureted

form. The helix a' is provided at the bottom with an inlet pipe a^3 for steam, hot water or heated air, the steam or other heating or protecting medium passing upward 55 through the helix and finally issuing from the pipe a^4 at the top.

The heating of the helix a not only prevents freezing, due to the evaporation of the petrol, but also assists in vaporizing the hydrocarbon, and consequently a cheaper fuel or one of lower specific gravity can be employed than would be possible if no such heating were provided.

I prefer to mount the double helix in an 65 inclosed casing B, which casing may be filled or charged with steam, hot water or hot air, in which case the spires of the helix a will be entirely surrounded by the heating agent throughout the length of the helix. 70

Among the advantages of this form of carbureter is that a very extended surface for the hydrocarbon is provided in a very compact form, and owing to the large diameter compared to the pitch of the helix, the 75 floor or the surface upon which the hydrocarbon flows, is substantially horizontal at any point, while its downward inclination is very slight, which conduces to an even distribution of the fuel over the entire width 80 of the helix.

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

A carbureter comprising a pair of vertically disposed concentric cylinders having 85 two helically arranged partitions forming two superposed helically arranged chambers of rectangular cross section, a supply pipe for a heating fluid communicating with the bottom of one of said chambers and an education pipe leading from the top thereof, a 90 pipe for supplying hydrocarbon to the top of the other chamber, a pipe for supplying air to the bottom of said other chamber, and a pipe for conducting the carbureted air 95 from the top of said last named chamber.

In testimony whereof I have affixed my signature in presence of two witnesses.

FRITZ W. O. BOECKEM.

Witnesses:

ALBERT JONES,

WILLIAM S. COLLINS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."