

Carbureter.

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Fig. 1.

J. P. Hall
Wm F Mc Namara

Ellis S. Archer

UNITED STATES PATENT OFFICE.

ELLIS S. ARCHER, OF NEW YORK, N. Y.

IMPROVEMENT IN APPARATUS FOR CARBURETING AIR.

Specification forming part of Letters Patent No. 44,060, dated September 6, 1864.

To all whom it may concern:

Be it known that I, ELLIS S. ARCHER, of the city, county, and State of New York, have invented a new and Improved Gas Apparatus; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a sectional side elevation of this invention. Fig. 2 is a transverse vertical section of the same. Fig. 3 is a modification of the same.

Similar letters of reference indicate like parts.

The object of this invention is to produce illuminating-gas by passing atmospheric air through the vapors of a hydrocarbon liquid.

The carbonizer which forms the subject-matter of said invention consists of a hollow drum, which is partially filled with a suitable hydrocarbon liquid, and which is occupied by a cylinder provided with an air-induction pipe, and made of cloth, flannel, or other suitable textile or absorbent material, stretched over a skeleton wire frame, which is arranged to rotate in such a manner that the air forced into said drum has to pass through the cloth or other absorbent material, which, being saturated with oil, offers a very extensive evaporating-surface, and said air is thereby impregnated with a sufficient quantity of hydrocarbon vapors to produce a good illuminating-gas.

A represents a hollow drum, made of sheet metal or other suitable material capable to hold benzine, naphtha, or other hydrocarbon liquids. The interior of this drum is occupied by one or more cylinders, B, made of cloth or other suitable fibrous or absorbent material, which is stretched over a skeleton frame of wire or wire-gauze. If only one cylinder is used, as shown in Figs. 1 and 2, it is provided at the center of one head with a tubular gudgeon, *a*, which has its bearings on a tube, *b**, secured to one of the heads, *b*, of the drum A, and from the opposite head of the cylinder B projects the gudgeon *a'*, which has its bearing in a suitable box in the center of the head *b'*

of the drum A, as clearly shown in Fig. 1 of the drawings. A pulley, *c*, secured to the end of the gudgeon *a'*, serves to impart rotary motion to the cylinder B, within the drum A, and if said drum is partially filled with hydrocarbon liquid the cloth stretched on the skeleton frame is thoroughly saturated with said liquid, and spreads the same over an extensive evaporating-surface. The tube *b** in the head *b* of the drum connects with the air-supply pipe, and the air is forced in by means of a fan-blower, which may be situated under the drum A, and to which motion is imparted in any convenient manner; or, instead of the fan-blower, any other mechanical device may be used to create an impelled current of air. The air passes through the tube *b** into the cylinder B, and in order to find its way out it has to pass through the cloth saturated with hydrocarbon liquid. It is thus brought in intimate contact with the hydrocarbon vapor, and it takes up a sufficient quantity to produce a good illuminating-gas. In some cases it may be desirable to use more than one cloth cylinder within the drum, and in that case said cylinders are stationary. The drum is made with a double bottom, as shown in Fig. 3, to which the air is admitted through suitable pipes, and other tubes or pipes conduct the air up into the cylinders, which are covered with cloth. The lower part of this cloth dips into hydrocarbon liquid, and the air, in passing through the cloth, is saturated with the liquid and forms an illuminating compound.

This device may be placed with advantage in the bottom of chandeliers, to bring the carbonizer as close as possible to the burners and to prevent condensation.

The rotating cylinder shown in Figs. 1 and 2 is used in cases where the gas-pipes can be placed in an inclined position to carry the condensed vapors back to the drum. If desired, the gas, on emanating from the drum A, may be conducted through a gas-meter, and a suitable regulator, C, may be applied to govern the flow of gas to the burner.

I do not claim a revolving drum, with threads to raise the hydrocarbon liquid, as

described in Letters Patent granted to O. P. Drake, August 30, 1853, and May 6, 1862; but

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

A carbonizer consisting of a hollow drum or chamber, to be partially filled with hydrocarbon liquid, and provided with one or more

cylinders or diaphragms of textile fabric, through the texture of which the air or gas to be carbonized is passed, substantially as and for the purposes set forth.

ELLIS S. ARCHER.

Witnesses:

J. P. HALL,

M. M. LIVINGSTON.