C. G. SPENGLER.

Carbureting Attachment for Gas Burners.

No. 197,424. Patented Nov. 20, 1877.

Fig. 1.

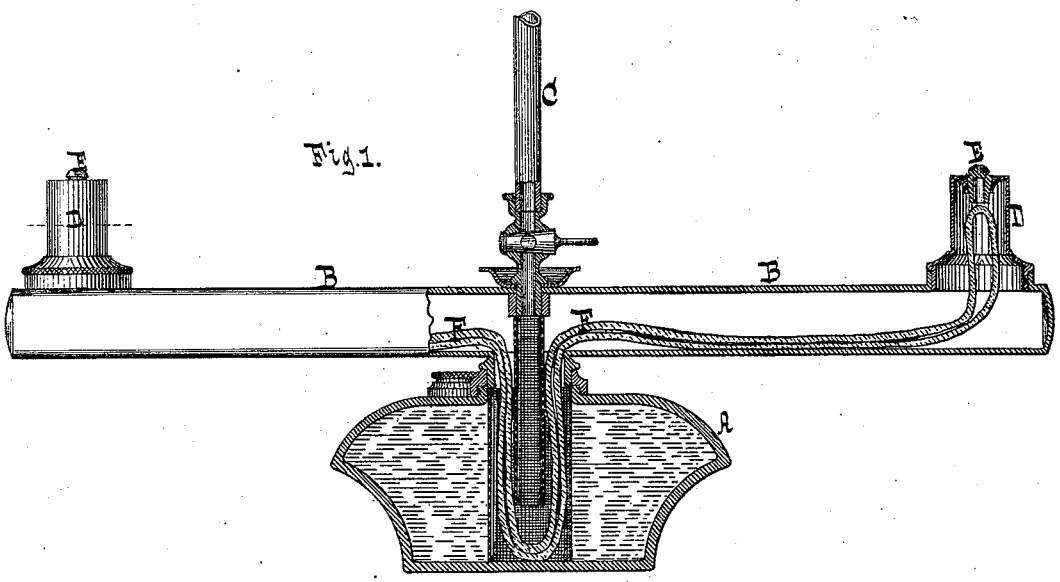
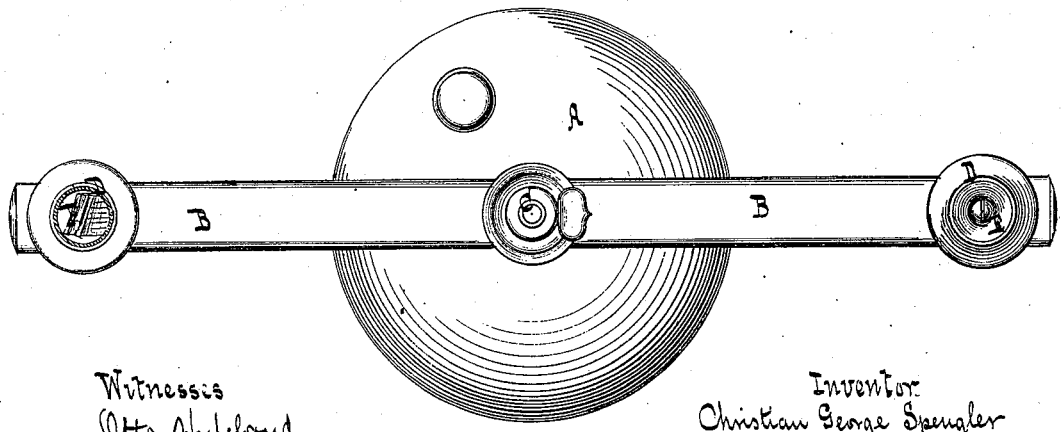


Fig. 2.



Witnesses
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by
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UNITED STATES PATENT OFFICE.

CHRISTIAN G. SPENGLER, OF HOBOKEN, NEW JERSEY.

IMPROVEMENT IN CARBURETING ATTACHMENTS FOR GAS-BURNERS.

Specification forming part of Letters Patent No. **197,424**, dated November 20, 1877; application filed May 23, 1877.

To all whom it may concern:

Be it known that I, CHRISTIAN GEORGE SPENGLER, of Hoboken, in the county of Hudson and State of New Jersey, have invented a new and Improved Apparatus for Carbureting Illuminating-Gas, which invention is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 represents a longitudinal vertical section. Fig. 2 is a sectional plan.

Similar letters indicate corresponding parts.

This invention consists in the combination, in an apparatus for carbureting illuminating-gas, of a gas-supply pipe, a cistern for hydrocarbon liquid, a hollow arm, (one or more,) which communicates with a cistern, a vaporizing-chamber, which communicates with the hollow arm and supports the burner-tip, and a wick, which extends from the cistern through the hollow arm into the vaporizing-chamber, so that by the wick the hydrocarbon liquid is conducted to the vaporizing-chamber, where it is rapidly evaporated by the heat of the gas-flame, and that the gas in passing through the hollow arm and through the vaporizing-chamber is enriched by the hydrocarbon vapors, and its illuminating power is materially increased.

The vaporizing-chamber may be placed directly upon the cistern, omitting the hollow arm, and the effect of enriching the gas is fully attained; but great care must be taken to prevent the liquid in the cistern from getting heated.

In the drawing, the letter A designates a cistern, which is intended to contain a hydrocarbon liquid, such as petroleum of 130° fire-test. In the top of this cistern is secured a hollow arm, B, which communicates with the gas-supply pipe C, and in the outer end of this hollow arm is fastened the vaporizing-chamber D, which supports the burner-tip E.

In the example represented by the drawing I have shown two hollow arms, B, extending from the cistern A in opposite directions; but the number of these arms may be increased to three or more, or only one such arm may be used, or the vaporizing-chamber may be secured directly in the neck of the cistern. This cistern is filled with a hydrocarbon liquid, such, for instance, as petroleum of 130° fire-test; and I must here remark that I prefer to use a heavy hydrocarbon liquid, so as to avoid all danger of an explosion; but any suitable hydrocarbon liquid may be used. This hydrocarbon liquid is conducted to the vaporizing-chamber by means of a wick, F, which extends from the cistern through the hollow arm or arms B, or if no such arms are used, directly into said chamber; and as the gas which is admitted through the pipe C passes through the arms B into the vaporizing-chamber, it takes up a quantity of the hydrocarbon vapors, so that a bright flame is produced. When the gas is ignited the vaporizing-chamber D becomes heated, and the hydrocarbon liquid contained therein is rapidly evaporated, so that the illuminating power of the gas is materially increased, and a very bright flame can be produced by comparatively poor gas.

In carrying out my invention, care must be taken to prevent the liquid in the cistern from becoming heated, and this purpose is effected by placing the burner-tips and vaporizing-chamber on hollow arms at a distance from the cistern. If the vaporizing-chamber is secured directly in the neck of the cistern a ring of hard rubber, asbestus, or any other bad conductor of heat may be interposed.

The wick, on its passage from the cistern to the hollow arm or arms, is inclosed in a jacket of perforated sheet metal, and the gas is conducted down between the wicks through a perforated pipe, so that the same comes in contact with the hydrocarbon liquid in fine jets, and that it takes up some of the hydrocarbon vapors even before it reaches the hollow arm or arms.

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

1. The combination, in an apparatus for carbureting illuminating-gas, of a gas-supply pipe, a cistern for hydrocarbon liquid, a vaporizing-chamber which communicates with the cistern and supports the burner-tip, and a wick which extends from the cistern into the vaporizing-chamber, substantially as and for the purpose set forth.

2. The combination, in an apparatus for car-

bureting illuminating-gas, of a gas-supply pipe, a cistern for hydrocarbon liquid, a hollow arm, (one or more,) which communicates with the cistern, a vaporizing-chamber, which communicates with the hollow arm and supports the burner-tip, and a wick, which extends from the cistern through the hollow arm into the vaporizing chamber, all constructed and operating substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 21st day of May, 1877.

C. G. SPENGLER. [L. S.]

Witnesses:
WM. MEHAN,
JOHN A. ALLEN.