No. 706,486. Patented Aug. 5, 1902.

A. A. ARNOTT.

HYDROCARBON BURNER.

(Application filed Feb. 20, 1901.)

(No Model.)

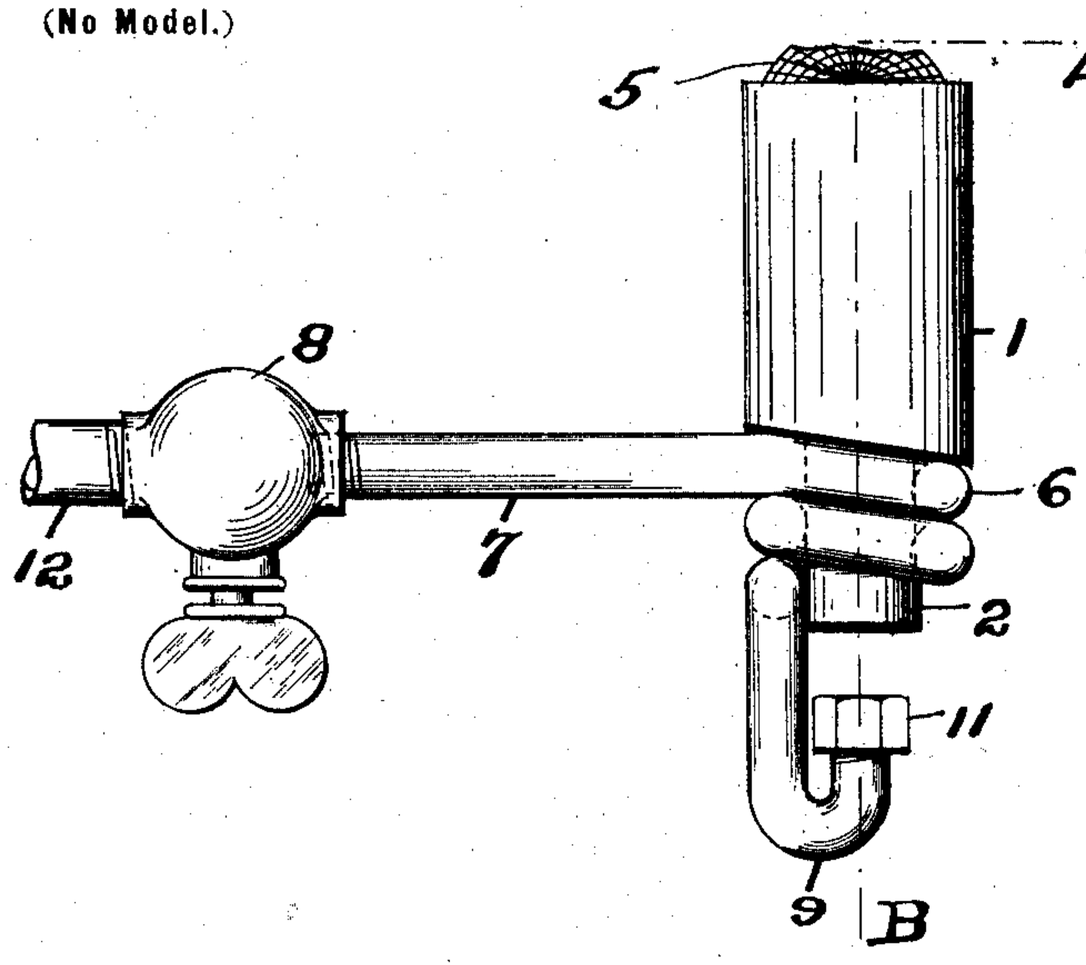

Fig. 1.

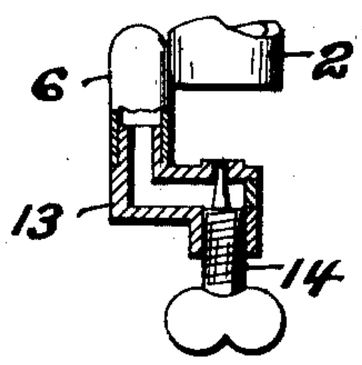

Fig. 3.

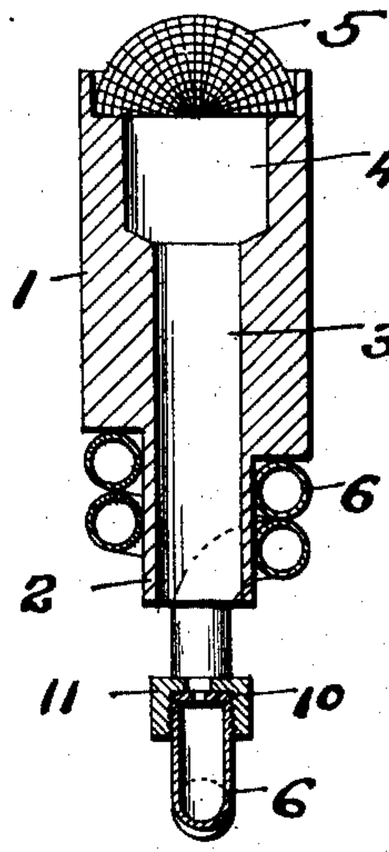

Fig. 2.

Witnesses.

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UNITED STATES PATENT OFFICE.

ALFRED A. ARNOTT, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO THE ARNOTT LIGHT AND BURNER COMPANY, OF NEW HAVEN, CONNECTICUT, A CORPORATION OF SOUTH DAKOTA.

HYDROCARBON-BURNER.

SPECIFICATION forming part of Letters Patent No. 706,486, dated August 5, 1902.

Application filed February 20, 1901. Serial No. 48,126. (No model.)

To all whom it may concern:

Be it known that I, ALFRED A. ARNOTT, a citizen of the United States, residing at New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Hydrocarbon-Burners, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in hydrocarbon-burners, and has for its object, among other things, the construction of a burner wherein the vaporizing-tube is so arranged that the time necessary for the preliminary heating thereof can be reduced to a minimum and the burner-body heated from the flame, to provide an oil and vapor passage of uniform area from the inlet-valve, and, further, to construct the burner of parts that can be economically constructed and readily assembled.

To these and other ends my invention consists in the hydrocarbon-burner having certain details of construction and combination of parts, as will be hereinafter described, and more particularly pointed out in the claims.

Referring to the drawings, in which like numerals designate like parts in the several figures, Figure 1 is a side elevation of my improved hydrocarbon-burner. Fig. 2 is a longitudinal section thereof upon line A B of Fig. 1; and Fig. 3 is a fragmentary view of the lower end of the burner, showing a modified construction thereof.

In the drawings the numeral 1 designates the burner-body, which operates upon the principle of the Bunsen tube and is made cylindrical in form, having a shank portion 2 at its lower end, with the usual bore 3 throughout, having the counterbore 4 at its upper end, within which is the gauze cap 5. Surrounding the shank 2 is the vaporizing-tube 6, the end of the upper horizontal portion 7 thereof being threaded into the valve 8 and the lower end extending downwardly parallel with the axis of the burner-body and then turned upwardly at 9, terminating just below the shank 2, the end thereof being covered by a check-plate 10 and nut 11, having a perforation therethrough in line with the perforation in the check-plate. The volatile oil passes through the supply-pipe 12, valve 8, and into vaporizing-tube 6, and while in said tube is vaporized, passing thence as a vapor through the check-plate 10 and nut 11, uniting with the air in the bore 3, and is ignited through the gauze 5.

By my invention herein described the disadvantages before mentioned are overcome, because the vaporizing-tube is exposed where it can be heated quickly without heating the whole burner-body, which is heated afterward by the burner-flame. By having the convolutions of the vaporizing-tube turn downward an increased pressure is given the oil or vapor in the vaporizing-tube over that given by the constructions of the present time, wherein the vaporizing-tube projects above the plane of the valve, this being accomplished by reason of the fact that I am enabled to acquire a greater head or oil-pressure when the oil is fed by force of gravity, as is usual.

I prefer to use the means described for an escape for the vapor from the vaporizing-tube, which comprises the check-plate 11 and nut 10; but if it is desired to use a needle-valve I simply attach to the vaporizing-tube 6 a valve-body 13, having threaded therein the stem of a needle 14, which operates in a well-known manner. Any other form of valve mechanism can be used, if preferred, aside from either of the forms herein shown.

The length of the burner-body above the vaporizing-tube can be varied within certain limits without impairing the efficiency of the device, and therefore increases the number of purposes for which the burner can be used.

I am aware that vaporizing-tubes have heretofore been wound about a burner-body, and therefore do not claim such construction broadly.

There are minor changes and alterations that can be made within my invention aside from those herein shown, and I would therefore have it understood that I do not limit myself to the exact construction herein shown and described, but claim all that falls fairly within the spirit and scope of my invention.

The spiral shoulder and the spiral winding

of the tube serve a further function in that this arrangement and construction prevents a turning or rotary movement of the body member 1 with relation to the tube, as will be readily understood.

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

1. A hydrocarbon-burner, comprising a tubular body member having a shank of reduced diameter at its lower end with a spiral shoulder formed by said reduction, and a vaporizing-tube wound spirally about said shank with the said spiral shoulder resting upon and engaging the whole of the upper coil of said vaporizing-tube, which tube projects laterally at its upper end from the said body member, and all of the coils thereof being below said projecting portion, all constructed and operating substantially as described.

2. In a burner, the combination with the tubular body member 1 having a shank 2 at its lower end of reduced diameter with a spiral shoulder formed by said reduction and a bore therethrough with a gauze cap 5 covering the upper end thereof; of a vaporizing-tube 6 formed into a spiral coil midway of its length which surrounds said shank 2 and supports said body member, the said spiral shoulder resting upon the top inclined coil of said vaporizing-tube, and the outside diameter of said coil and said body member being substantially the same, with the end 7 of said tube projecting laterally from said body member with all of the said coils below said projecting portion and the other end of said tube projecting downwardly substantially parallel with the axis of said body member and thence upwardly substantially parallel with the said downwardly-projecting portion and terminating below the bottom of the body member; and a perforated check-plate 10 covering the end of said tube; and a nut threaded thereon inclosing the said check-plate, all constructed and operating substantially as described.

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

ALFRED A. ARNOTT.

Witnesses:

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EDWIN M. CLARK.