No. 666,538. Patented Jan. 22, 1901.

G. A. LOEBEN.

HYDROCARBON BURNER.

(Application filed Sept. 20, 1899.)

(No Model.)

Fig. 1.

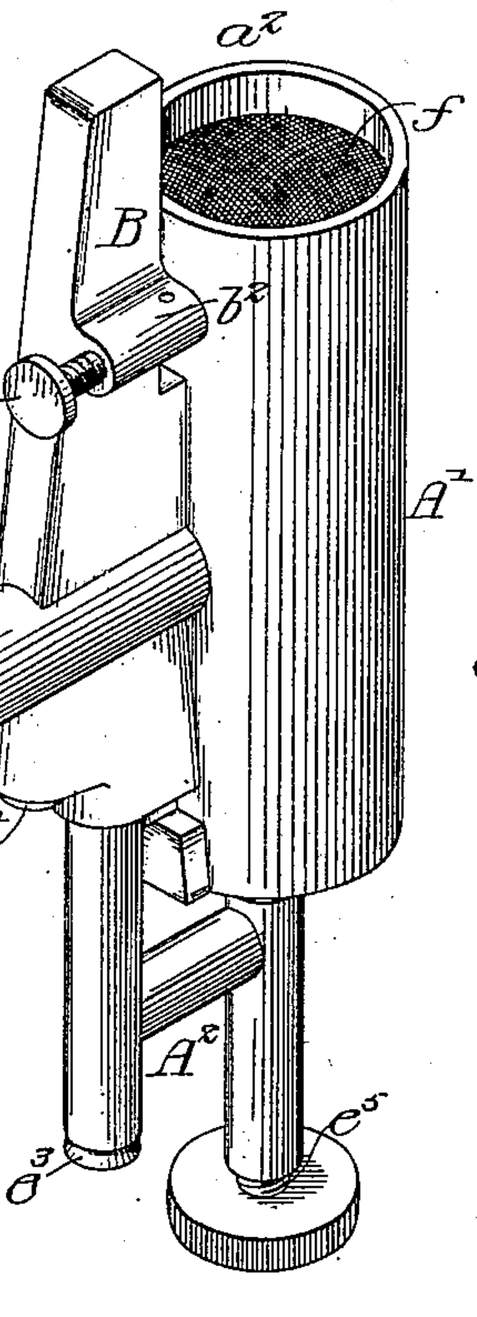


Fig. 2.

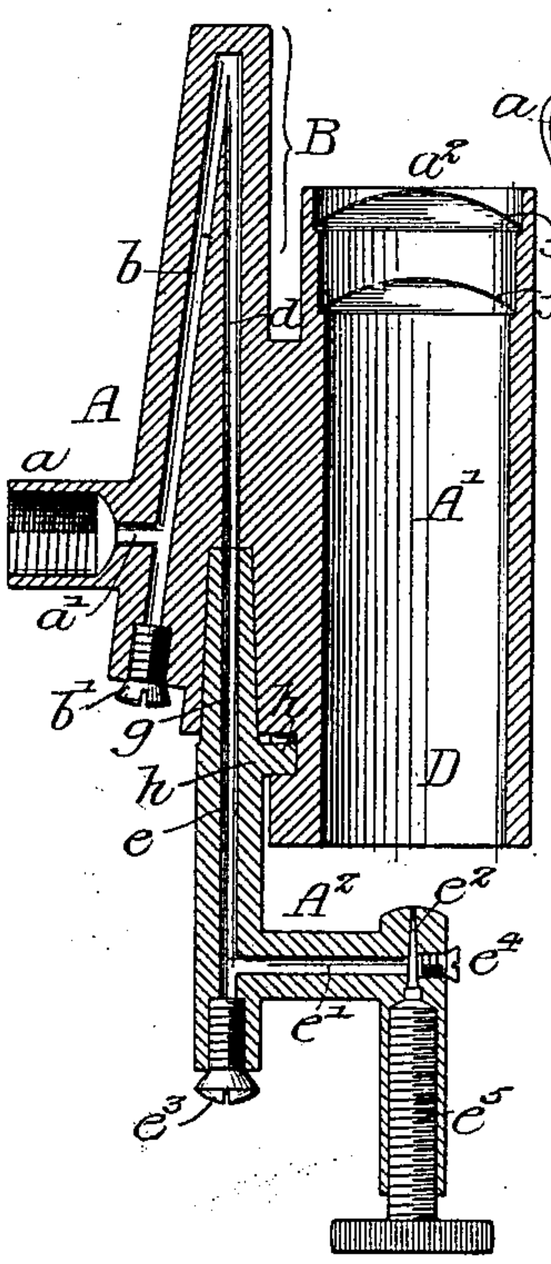


Fig. 3.

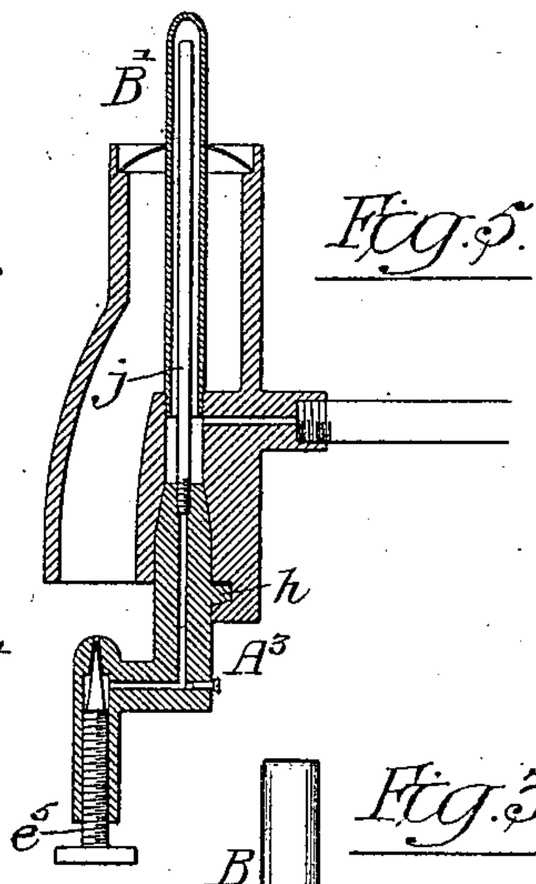


Fig. 5.

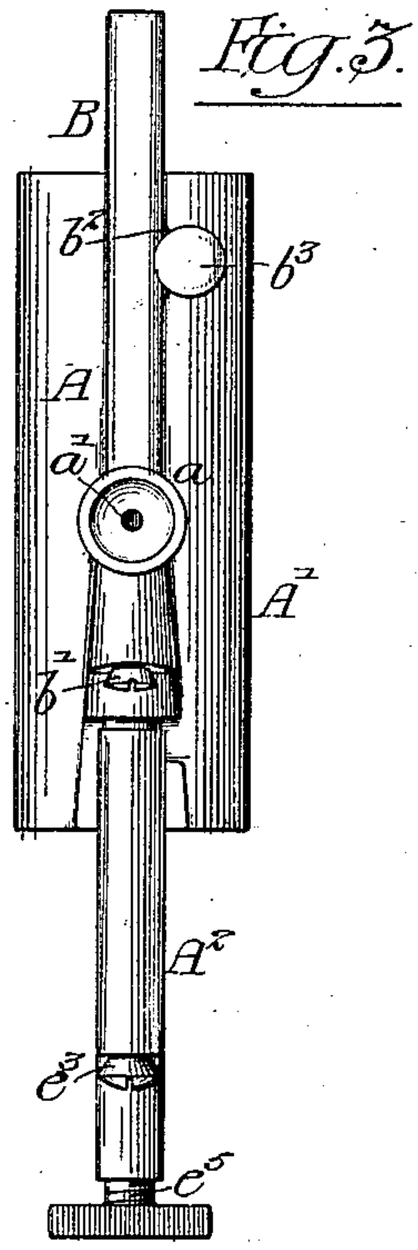
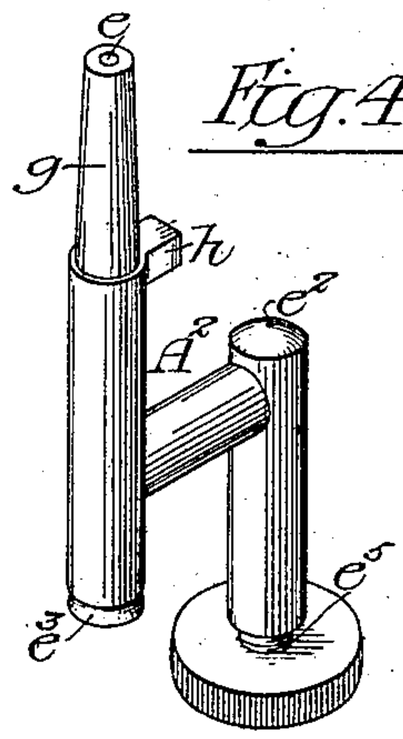


Fig. 4.



Witnesses:-
Charles De Cou.
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by his Attorneys:-
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UNITED STATES PATENT OFFICE.

GUSTAVE A. LOEBEN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO ALBERT L. A. TOBOLDT, OF SAME PLACE.

HYDROCARBON-BURNER.

SPECIFICATION forming part of Letters Patent No. 666,538, dated January 22, 1901.

Application filed September 20, 1899. Serial No. 731,091. (No model.)

To all whom it may concern:

Be it known that I, GUSTAVE A. LOEBEN, a subject of the Emperor of Germany, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Hydrocarbon-Burners, of which the following is a specification.

My invention relates to certain improvements in hydrocarbon-gas burners in which the liquid hydrocarbon is vaporized by passing within the heat zone of the burner.

The object of my invention is to so construct the burner that it can be cheaply made and readily cleansed and in which the hydrocarbon liquid will be thoroughly vaporized.

In the accompanying drawings, Figure 1 is a perspective view of my improved burner. Fig. 2 is a sectional view. Fig. 3 is a rear view. Fig. 4 is a perspective view of the detachable tubular section. Fig. 5 is a view of a modified form of the burner.

A is the burner, in the present instance made of a fixed section A′ and a removable section A^2.

a is a nipple to which the supply-pipe is secured, and extending from this nipple is a short passage *a′*, leading into a long inclined passage *b*, formed in the body of the section A′ and in the extension B. This extension projects beyond the upper surface a^2 of the burner proper, so as to be within the heat zone of the flame or mantle when a mantle is used. The burner in the present instance is constructed for use with a mantle of the ordinary type.

Communicating with the upper end of the passage *b* is a passage *d*, which forms a continuation of a passage *e* in the removable section A^2 of the burner. The passage *e* communicates with a cross-passage *e′*, which in turn communicates with a tapered discharge-passage e^2. The gas produced by the oil becoming vaporized in the passages *b* and *d* discharges from the tapered passage or nozzle e^2 into the chamber D, at which point it takes up a given quantity of air and passes through the two screens *f f* and is ignited at the upper surface a^2 of the burner.

The upper portion *g* of the section A^2 is tapered, as shown in Figs. 2 and 4, and this tapered portion is adapted to a tapered opening in the fixed section of the burner, and on the removable section is a lug *h*, adapted to a recess *i* in the fixed section of the burner, and the base of this recess is slightly tapered, so that when the removable section A^2 is placed in position and turned the lug will ride upon the inclined portion and lock the removable section securely to the fixed section. By simply turning the removable section the two parts can be readily detached.

In order to keep the passages clear of sediment, I make provision for the ready cleansing of the passages.

The lower end of the passage *b* is closed by a screw-plug *b′*, and the lower end of the passage *e* is closed by a plug e^3. One end of the passage *e′* is closed by a screw-plug e^4, and one end of the tapered passage e^2 is closed by a screw-plug e^5. This screw-plug e^5 may in some instances have a tapered end and can be used as a needle-valve when necessary.

I have shown a perforated lug b^2 on one side of the projection B, to which is secured the supporting-stem for the mantle. The stem is held in position by a binding-screw b^3.

When it is wished to cleanse the burner, all that is necessary is to detach the removable section A^2, remove the plugs *b′* e^3 e^4 e^5, and pass a wire or other implement through the passages, which can be thoroughly cleansed in this manner. By reinserting the plugs and coupling the removable section to the fixed section the burner is ready for use.

In Fig. 5 I have shown a modification in which the removable section is formed as shown at A^3, having a tubular extension *j* entering a tube B′, which is closed at the upper end and screwed into the fixed section of the burner at the lower end. In this construction the projection is within the mantle instead of at one side, as shown in Fig. 1. A needle-valve is shown in this instance instead of the screw-plug e^5.

I claim as my invention—

1. The combination in a burner, of a fixed section, a mixing-chamber forming part of the fixed section, a passage-way in the fixed section at one side of the burner, a projection of the fixed section extending within the heat zone of the burner, said passage-way continuing in said extension, the lower portion of

the passage-way being enlarged and on a taper, a movable section having a tapered portion adapted to the tapered portion of the fixed section and extending under the combustion-chamber, a lug on the movable section adapted to a recess in the fixed section, substantially as described.

2. A burner consisting of a casting having a cylindrical mixing-chamber, screens therein, a projection on one side of and extending above said chamber, passages therein, in combination with a removable L-shaped tube, one end of said tube fitting into a corresponding recess in said projection at one side of the mixing-chamber, thus forming a continuous line of passages, the other end projecting below said chamber and having an outlet, with means for controlling the flow of fluid through the burner and means for holding said tube in place, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GUSTAVE A. LOEBEN.

Witnesses:

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