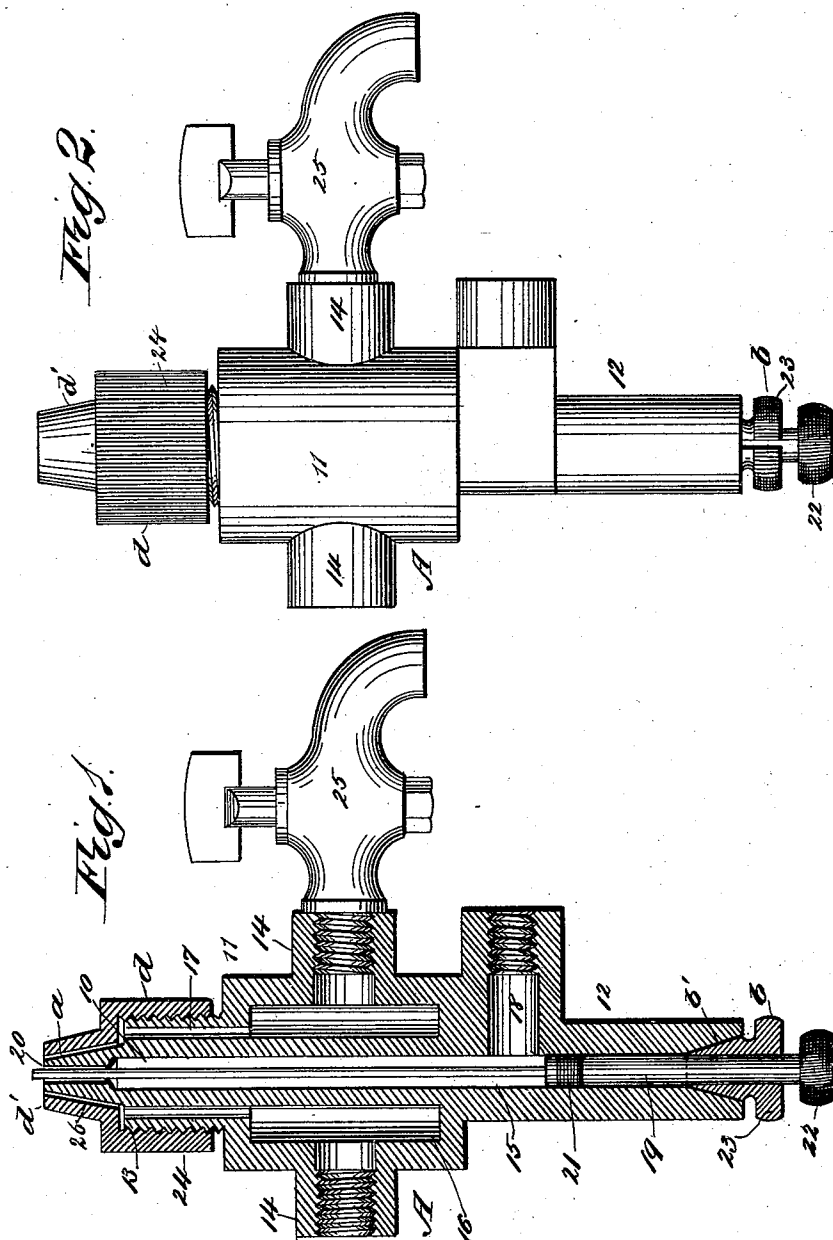


(No Model.)

L. B. WHITE & J. V. REITMAYER.
HYDROCARBON BURNER.

No. 469,108.

Patented Feb. 16, 1892.



WITNESSES:

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UNITED STATES PATENT OFFICE.

LEWIS B. WHITE AND JOHN V. REITMAYER, OF NEW YORK, N. Y., ASSIGNORS
OF ONE-THIRD TO HUGO A. REITZENSTEIN, OF SAME PLACE.

HYDROCARBON-BURNER.

SPECIFICATION forming part of Letters Patent No. 469,108, dated February 16, 1892.

Application filed May 26, 1891. Serial No. 394,134. (No model.)

To all whom it may concern:

Be it known that we, LEWIS B. WHITE and JOHN V. REITMAYER, of New York city, in the county and State of New York, have invented a new and useful Improvement in Hydrocarbon-Burners, of which the following is a full, clear, and exact description.

Our invention relates to an improvement in hydrocarbon-burners, and has for its object to provide a burner of simple, durable, and economic construction and to provide a means whereby the oil-duct may be conveniently and expeditiously cleaned, and also a means whereby the air may be impinged upon the oil at the upper portion of the burner to spray the same, and whereby, also, the amount of air contacting with the oil-jet may be conveniently regulated.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in both the views.

Figure 1 is a central vertical section through a burner, and Fig. 2 is a side elevation thereof. The body A of the burner may be said to comprise three integral sections—an upper section 10, an intermediate section 11, and a lower section 12. The intermediate section is preferably made cylindrical in general contour and the upper section 10 is likewise thus formed, but is of less diameter than the intermediate section. The upper end of the upper section is conical, as illustrated at *a* in Fig. 1, whereby an annular shoulder 13 is formed, and the exterior portion of the upper section 10, from the shoulder downward to its connection with the intermediate section, is exteriorly threaded.

The intermediate section is provided at opposite sides with tubular branches 14, the interior of said branches being, preferably, threaded. The lower section 12 is inverted-L shape in cross-section, the members being cylindrical in exterior contour. The entire body is provided with a central longitudinal channel 15, which channel is very much re-

duced in diameter where it passes through the conical portion *a* of the upper section of the body.

In the intermediate section of the body the channel 15 is surrounded by an annular chamber 16, the chamber being entirely independent of the channel. The chamber 16, however, has direct communication with the tubular extensions 14 of the body, and a series of vertical channels or bores 17, preferably four in number, is arranged around the main channel 15 of the body, the said channels or bores 17 connecting with the upper portion of the chamber 16, and they extend upward through the upper section of the body out through the shouldered portion 13 thereof.

In the upper member of the lower section 12 of the body a horizontal chamber 18 is formed, having connection with the main vertical channel 15, the outer end of the said chamber being interiorly threaded. The main channel 15 of the body is adapted to receive a piston 19, the said piston being made in two diameters, the greater diameter being at the bottom thereof, and the upper end of the piston is of sufficient diameter to snugly pass through a vertical opening 20, produced in the conical portion *a* of the upper section of the body. The vertical opening 20 and the vertical channels 17 comprise exits, one for oil and the other for air. The piston is provided with a suitable packing 21, preferably located in its enlarged portion, and the piston extends some distance below the lower extremity of the body and is provided with a head 22, the outer side surface of which head is milled or otherwise roughened.

The lower end of the main channel 15 is conically shaped and is adapted to receive a locking or binding sleeve 23, which sleeve comprises a head *b* and a shank *b'*, which shank tapers and enters the tapering portion of the main channel. The sleeve is split vertically and snugly hugs the plunger or piston 19 just above the head thereof. The head-section of the locking-sleeve is preferably milled or otherwise roughened to assist in the manipulation thereof.

In conjunction with the body a cap 24 is employed, which cap is shaped to the contour of the upper section of the body, comprising

a cylindrical body d and a conical upper section d' , which section is open at the top. The interior chamber of the conical portion of the cap, while conforming to the tapering shape of the upper portion of the body-section 10, is of greater diameter than said portion, and the body of the cap is interiorly threaded to engage with the exterior threads upon the said upper body-section.

One of the tubular extensions 14 of the body has attached thereto a petcock 25, the opposite tubular extension being connected with any suitable apparatus or device capable of supplying air to the chamber 16, with which it is connected. A connection between an oil tank or receptacle and the horizontal chamber 18, connecting with the body-channel 15, is made in any suitable or approved manner. The exterior surface of the cap 24 may be given a polygonal contour; but preferably the body portion of the cap is made circular and its outer face is milled or roughened.

When the burner is in use, the plunger 19 is drawn downward, so that its upper end will be entirely removed from the outlet 20 in the upper conical portion of the body, and the cap is screwed upon the upper section of the body in a manner to leave a space 26 between its upper conical portion and the conical face of the body, and likewise between the body of the cap and the shoulder 13 of the body, as shown in Fig. 1. The oil passes upward through the body-channel 15 and out at the outlet-aperture 20. The air passes into the annular chamber 16 up through the channels 17 into the space 26 and, impinging upon the oil-jet above the burner, sprays said jet and produces a gas proper for ignition.

The plunger 19 is especially adapted for cleaning the oil-outlet opening 20 in the event it should become foul or clogged, and the petcock is attached in order that the chamber 16

may be blown through and cleaned, likewise the connections with the chamber.

The amount of air supplied to the burner may be regulated at will by screwing the cap downward upon the body, or may be entirely cut off by causing the body of the cap to engage with the body-shoulder 13 and the conical section of the cap to closely engage with the conical upper end of the body. The sleeve 23 is adapted by frictional contact with the body and with the plunger to maintain the plunger in whatever position it may be placed.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. A hydrocarbon-burner comprising the body having a longitudinal channel 10, a conical end a , having a contracted bore, an external shoulder at the base of said cone, a chamber 16, concentric with the channel 10, passages 17, leading from the said chamber through the shoulder, inlets for the channel and chamber, and the adjustable cap 24, having a cylindrical body d screwed on the body below its shoulder, having an internal shoulder over the ends of the passages 17, and the conical portion d' , between which and the cone a a space 26 is formed, substantially as set forth.

2. In a hydrocarbon-burner, a body portion, said body portion being provided with an air-chamber, and openings oppositely arranged and leading into said chamber, one opening having a petcock secured therein and the other opening being adapted for coupling with an air-supply apparatus, as and for the purpose set forth.

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