

No. 862,173.

PATENTED AUG. 6, 1907.

T. F. KENT.  
HYDROCARBON BURNER.

APPLICATION FILED MAR. 12, 1903. RENEWED JULY 25, 1906.

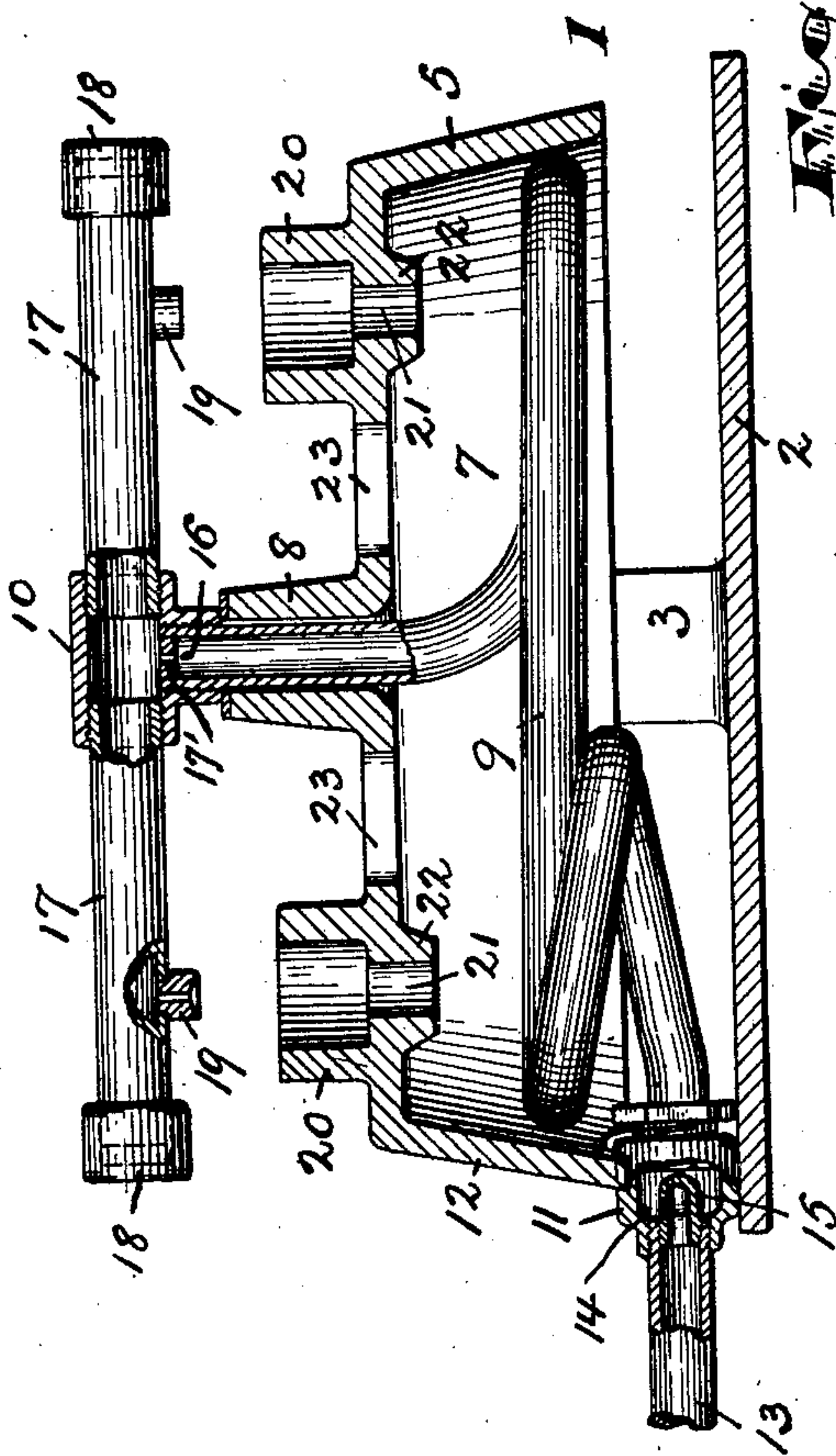


Fig. 1.

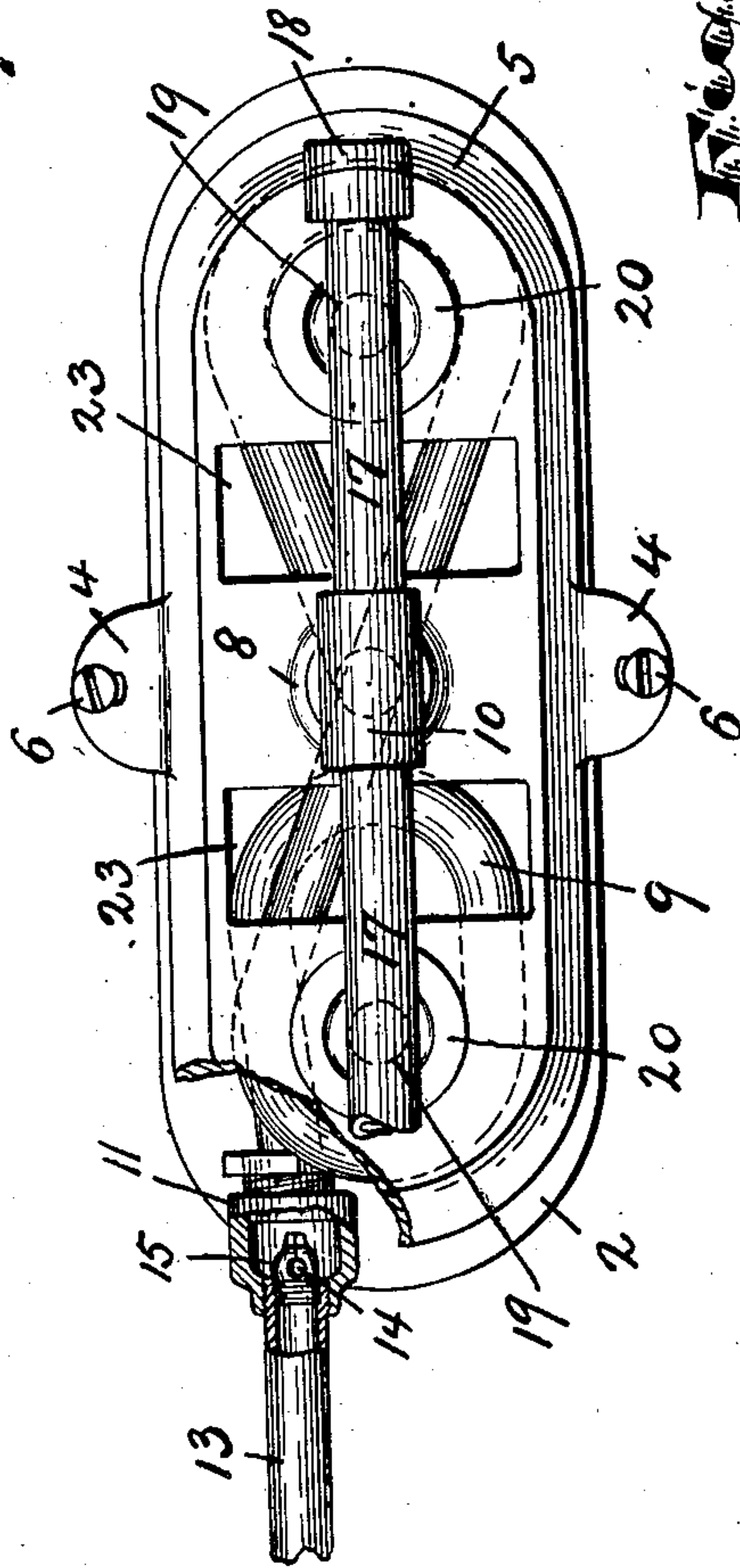


Fig. 2.

WITNESSES:

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# UNITED STATES PATENT OFFICE.

THOMAS F. KENT, OF NEWARK, NEW JERSEY.

## HYDROCARBON-BURNER.

No. 862,173.

Specification of Letters Patent.

Patented Aug. 6, 1907.

Application filed March 12, 1903, Serial No. 147,363. Renewed July 25, 1906. Serial No. 327,634.

*To all whom it may concern:*

Be it known that I, THOMAS F. KENT, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented and  
5 produced a new and original Improvement in Hydrocarbon-Burners; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to  
10 which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to that class of burners which are adapted to vaporize and consume a liquid hydro-  
15 carbon, and more especially the invention relates to a burner for kerosene oil adapted to be used in the fire chambers of kitchen ranges and the like as ordinarily constructed.

The objects of the invention are to secure a more gentle and uniform feed of oil; to obtain a more complete and perfect vaporization; to prevent a roaring or hissing sound as the vapor burns from the ignition nozzles; to secure a proper mixture of air with the vapor as it is  
20 consumed, and to obtain a blue flame; to secure complete combustion, whereby the apparatus is free from objectionable deposits of soot and from the smell or odor of unconsumed oil; to obtain cheapness and simplicity of construction, and to secure other advantages and results, some of which may be referred to hereinafter in  
25 connection with the description of the working parts.

The invention consists in the improved hydrocarbon burner, and in the arrangements and combinations of parts of the same, all substantially as will be hereinafter set forth and finally embraced in the clauses of the  
35 claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several figures, Figure 1 is a plan of my improved burner showing the oil feed means partly in  
40 section, and Fig. 2 is a side elevation with the burner frame or casing, and some parts of the burner itself, in central vertical section.

In said drawings, 1 indicates the frame or casing of my improved burner, which is preferably cast as is  
45 common, and comprises a base plate 2, having at its opposite sides upwardly projecting lugs 3, bent outward at their tops to form seats for other lugs 4, projecting from the upper portion 5, of the casing. Clamping screws 6, hold said lugs 4, and 3, together, and thus the upper  
50 portion of the casing is conveniently supported upon the base plate 2, at a distance above the same. Said upper portion 5, is hollow to form within itself a chamber 7, the bottom being open and the walls 12, preferably

converging upward, slightly. Within said chamber is horizontally coiled, preferably in the shape of a figure 55 8, a tube 9, which serves as a vaporizer, said tube leading at one end upwardly through a perforated boss 8, upon the top of the casing 5, and being screwed into a T-connection 10, which sits upon the top of said box. The other end of the vaporizing coil 9, is screwed into 60 the end of an enlarged coupling 11, preferably stationed between the base plate 2, and depending edge 12, of the casing 5, at one end thereof. Into the other end of said enlarged coupling 11, is screwed an oil-supply or feed tube 13, the construction of said tube 13, at its 65 point of connection with the coupling 11, being peculiar and constituting a feature of my invention. Said oil-supply or feed tube 13, does not open directly and longitudinally into the coupling 11, but by means of a lateral opening 14. This lateral opening is pref- 70 erably secured by inserting in the end of the supply tube 13, a smaller nipple 15, presenting a closed end to the coupling 11, in the side of which the lateral opening 14, is formed. Any other equivalent construction, however, might be employed. 75

By the feed means thus described, the force of the oil-supply is not exerted to drive the oil through the vaporizing tube, but its progress is retarded so that greater opportunity is given for vaporizing. Moreover at the upper end of the tube 9, where it opens into 80 the T-piece 10, said tube is provided with an arresting-plug 16, which partially closes the end of the tube and by the size of its central aperture 17', regulates the admission of vapor to the ignition nozzles above. Into the opposite ends of the said T-piece 10, are screwed 85 pieces of tubing 17, 17, each closed at its outer end 18, and having at its under side somewhat back from said end, a tubular nozzle 19, of any suitable and well-known form, and from which the vapor escapes. Beneath each nozzle 19, there is formed upon the top of 90 the casing 5, a raised annular flange 20, concentric with said nozzle and adapted to receive therefrom the vapor, and air carried with said vapor by the force of its flow. At the center of said annular flange 20, the top plate of the casing 5, is perforated as at 21, the 95 walls of said perforation being preferably extended into the chamber 7, as at 22, to secure a greater length of passage. Thus, as the vapor issues from the nozzle 19, it passes together with a proper proportion of air into the passage 21, and out into the chamber 7, of the 100 casing 5, where it is consumed. By reason of the peculiar shape of the said passages 21, there is not that whistling or roaring sound which is so objectionable in many burners, and yet an adequate supply of air is provided and thoroughly mixed with the vapor. Per- 105 fect combustion and an absence of soot or smell is there-

fore obtained. Apertures 23, 23, in the top of the casing 5, permit circulation of the heat, as is common.

Having thus described the invention, what I claim as new is:—

- 5 In a hydrocarbon burner, the combination with a casing providing a combustion chamber with a perforation in its top, and having an annular flange concentric with said perforation at a distance therefrom, of a vaporizing

tube in said chamber, a vapor nozzle above said perforation and in alinement therewith, and means connecting 10 said nozzle with said vaporizing tube.

In testimony, that I claim the foregoing, I have hereunto set my hand this third day of March, 1903.

THOMAS F. KENT.

Witnesses:

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C. B. PITNEY.