

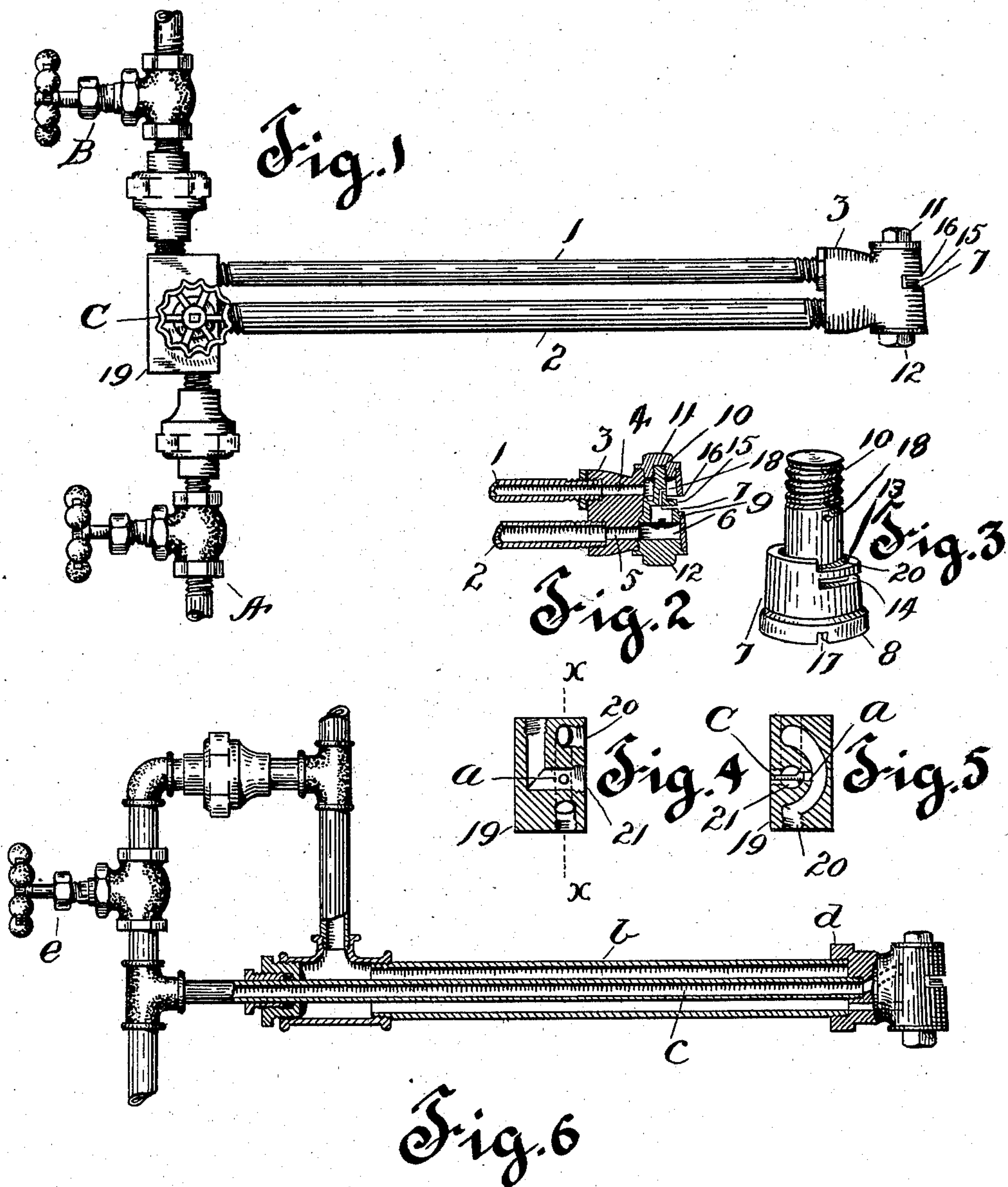
No. 741,867.

PATENTED OCT. 20, 1903.

G. E. WITT.  
OIL BURNER.

APPLICATION FILED JAN. 26, 1903.

NO MODEL.



WITNESSES:  
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## UNITED STATES PATENT OFFICE.

GEORGE E. WITT, OF SAN FRANCISCO, CALIFORNIA.

## OIL-BURNER.

SPECIFICATION forming part of Letters Patent No. 741,867, dated October 20, 1903.

Application filed January 26, 1903. Serial No. 140,650. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE E. WITT, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Oil-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 which it appertains to make and use the same.

My present invention relates to improvements in oil-burners, and has for its objects to produce a burner which will possess all the requisites of strength and durability and which will be especially simple in construction and efficient in operation.

A further object of my invention is to improve a device of this character generally, and thereby facilitate the proper manipulation of "crude oil" in furnace-heating.

Other objects and advantages of the invention will appear in the following specification, and the novel features thereof will be particularly pointed out in the appended claims.

I am enabled to accomplish the objects of my invention by the means illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the complete apparatus. Fig. 2 is a central vertical section of the outer extremity or nozzle of the device. Fig. 3 is a perspective view of the adjuster-plug of the burner. Fig. 4 is a side elevation of the member through which the steam and oil channels pass. Fig. 5 is a section on the line  $x x$  of Fig. 4. Fig. 6 is a side elevation and partial section of a modified form of construction.

Referring now to the above views by numerals, 1 and 2 represent two parallel pipes, the smaller or former being adapted to conduct oil, while the larger or latter is for the conduct of steam. Engaging with threads on the outer extremities of the pipes 1 and 2 is the nozzle 3, which is provided with the two conduits 4 and 5, leading to the vertical conical bore 6. Adapted to fit into the bore 6 is the plug 7, which is provided with the flange 8, the latter being adapted to rest on the shoulder 9, formed in bore 6. The upper contracted stem 10 of the plug is screw-

threaded and engages with the nut 11, which closes the upper mouth of the bore, while the screw-plug 12 closes the lower extremity of the bore. This plug 7 is hollow and is formed with two notches 13 and 14, interposed by the lip 15. The notches and lip are arranged to engage with a cut-out portion 16, formed through the wall of the nozzle.

Now it is manifest that as oil and steam are passed through the pipes 1 and 2, respectively, the oil will issue from the notch 13 above the lip 15, while the steam will issue from below the lip, thereby affording a proper and efficient flame. Now should it be desired to direct the flame in any other direction the plug 12 can be readily removed and the plug 7 turned by means of the notch 17 until the proper direction is assumed.

In order to obviate any liability of the upper portion of the plug 7 being carbonized, I have provided the minute perforation 18, which allows a small quantity of steam to reach the upper portion of the plug.

The rear ends of the pipes 1 and 2 are threaded into the member 19, which is formed with the oil and steam conduits 20 and 21, the former passing back of the latter. The valves A and B regulate the flow of the oil and steam, respectively, to the burner.

In order to cleanse the burner, I have provided the valve C, which engages with a perforation  $a$ , leading from the steam to the oil conduit in member 19. By this means the steam may be permitted to enter the oil-conduit and effectually cleanse it.

To insure an even flow of oil from the upper surface of the lip 15, I have formed a slightly-depressed channel 23 about the base of the stem 10.

As a modified form of construction I have resorted to the mechanism shown in Fig. 6, in which the steam-pipe  $b$  encircles the oil-pipe  $c$ , both of which are threaded into the nozzle  $d$ , the latter being similar to that described above. In this modification the valve  $e$  permits the turning of the steam into the oil-pipe for purposes of cleansing, thereby affording the function of the valve C shown in Fig. 1.

The construction and management of the several parts of my oil-burner being thus made known, the operation and the advan-



tages of the same will, it is thought, be readily understood.

I am aware that changes in the form and proportion of parts of the devices herein shown and described as an embodiment of my invention can be made without departing from the spirit or sacrificing the advantages thereof, and I therefore reserve the right to make such changes, substitutions, and alterations as fairly fall within the scope of my invention.

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

1. A device of the class described consisting of a steam and oil conduit, a nozzle engaged by said conduits, a plug revolubly secured in said nozzle, a slot in the wall of said nozzle, a slot in said plug which communicates with one of said conduits, and a lip on said plug separating said conduits and forming two mouths with said first-named slot, for the purpose set forth.

2. A device of the class described consisting of a steam and oil conduit, a nozzle engaging said conduits, an exit-mouth formed in said nozzle, a plug adjustable over said mouth, a lip formed on said plug and forming a wall separating said conduits, and a small perforation leading through said plug

and connecting said conduits substantially as and for the purpose set forth.

3. A device of the class described consisting of a steam and an oil conduit, a member engaging said conduits, a bore in said member, a plug in said bore, a lip on said plug dividing said bore into an upper and a lower cavity, a small perforation through said plug and forming a communication between said cavities, a mouth cut into said nozzle, said plug being adjustable over said mouth, and means for directing steam from said steam-conduit to said oil-conduit, substantially as and for the purpose set forth.

4. A device of the class described consisting of a steam and oil conduit, a nozzle engaged by said conduits, a slot in the wall of said nozzle, a plug formed with a lip separating said conduits, said plug being revolubly adjustable within said nozzle to operate said lip relative to said slot substantially as and for the purpose set forth.

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

GEORGE E. WITT.

Witnesses:

GEORGE PATTISON,  
ORPHA C. POOR.