Dec. 16, 1924. 1,519,462

C. F. LOKER

OIL BURNER

Filed May 14, 1923

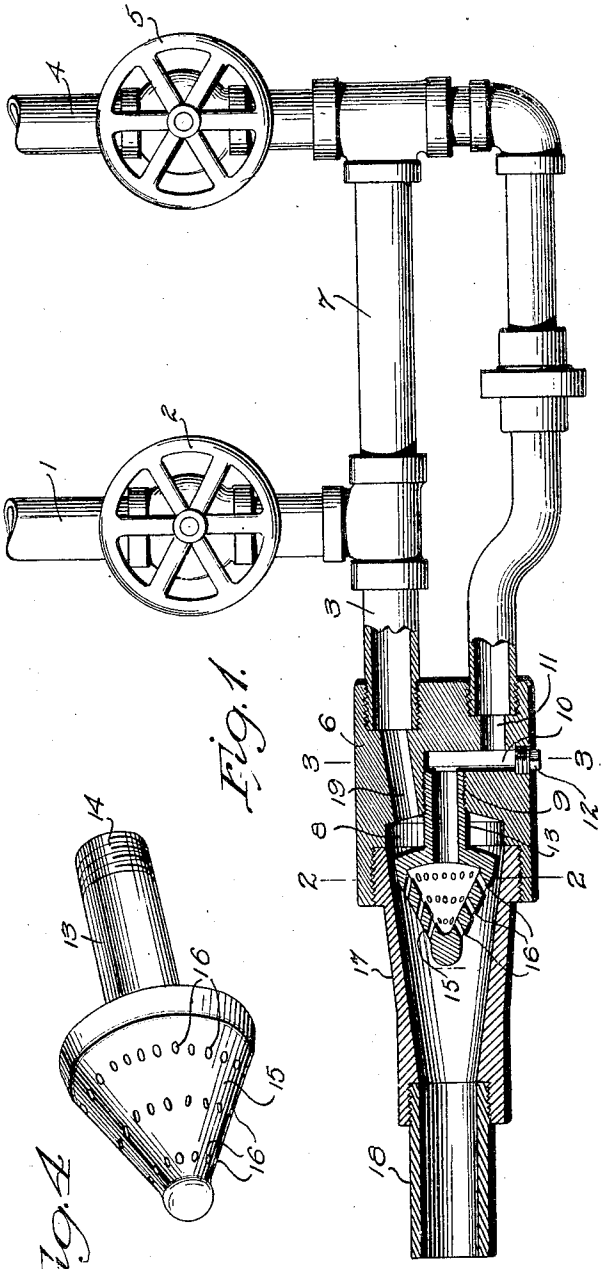


Fig. 1.

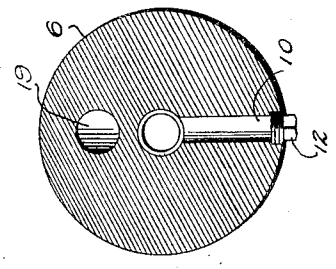


Fig. 3.

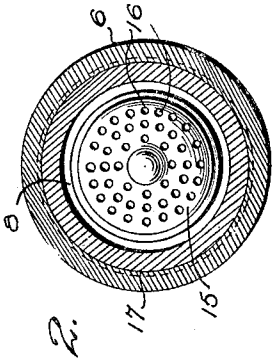


Fig. 2.

Fig. 4.

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UNITED STATES PATENT OFFICE.

CHARLES F. LOKER, OF TONOPAH, NEVADA.

OIL BURNER.

Application filed May 14, 1923. Serial No. 638,961.

To all whom it may concern:

Be it known that I, CHARLES F. LOKER, a citizen of the United States, residing at Tonopah, in the county of Nye and State of Nevada, have invented certain new and useful Improvements in Oil Burners, of which the following is a specification.

This invention relates to oil burners, and more particularly to means for intimately mixing an oil and a fluid, such as air or steam, to increase the combustibility of the oil.

An object of the invention is the provision of means for delivering a supply of oil into a finely divided stream of air or steam, to thoroughly mix the oil with the air or steam.

A further object is the provision of a nozzle for spraying air arranged interiorly of the burner pipe in the path of the oil supply.

In the accompanying drawings, I have shown one embodiment of the invention. In this showing:

Figure 1 is a side elevation of the burner, parts being shown in section,

Figure 2 is a transverse sectional view on line 2—2 of Figure 1,

Figure 3 is a similar view on line 3—3 of Figure 1, and,

Figure 4 is a detail perspective view of the air nozzle.

Referring to the drawings, the reference numeral 1 designates an oil supply pipe which is provided with a valve 2 and communicates with an oil pipe 3. An air supply pipe 4 is arranged adjacent the oil supply pipe and is provided with a valve 5. The air supply pipe and the oil pipe 3 communicate with a burner 6. A branch pipe 7 connects the air supply pipe to the oil pipe. The burner member is provided with a central opening 8 of material diameter communicating with a central passage 9 at its rear end. This passage communicates with a transverse port 10 which in turn communicates with a passage 11 leading to the air supply pipe. A plug 12 is arranged in the end of the transverse bore of passage 10. The air nozzle is arranged in the central passage 9. As shown, it consists of a short section of pipe 13 having external screw-threads 14 at its outer end, adapted to engage threads in the passage 9. The other end of the pipe is provided with an enlarged cone-shaped outlet 15, having a plurality of openings 16. As shown in Figure 1 of the drawings, these openings are arranged at an angle to the axis of the burner. A burner nozzle 17 is arranged in the end of the burner 6 and surrounds the air nozzle 15. The bore of this nozzle tapers toward the outlet, as shown. The openings 16 are arranged at an angle to deliver streams of air toward the nozzle 17, at an angle so that the air strikes the nozzle a glancing blow and is delivered toward the outlet. A burner tip 18 is arranged on the end of the burner nozzle. The oil pipe 3 communicates with the interior 8 of the burner through a passage 19.

In operation, the valve 5 is opened to deliver air to the burner. Air also passes through the pipe 7 to the oil pipe 3. The valve 2 is then opened to deliver oil from the supply pipe 1 to the oil pipe 3. The mixture of oil and air passes through the passage 19 to the interior 8 of the burner. The flow of air through the nozzle 15 draws the mixture of air and oil around the nozzle, causing it to thoroughly mix with the air supplied through the nozzle and delivering the fuel from the burner in a highly atomized condition.

It is to be understood that the form of my invention herewith shown and described is to be taken as a preferred example of the same, and that various changes in the shape, size, and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. A device of the character described, comprising an integral burner member provided in one end with a relatively large axial opening and a relatively small axial opening communicating therewith, a relatively short air nozzle arranged in said large opening and having a head slightly spaced therefrom throughout its circumference to provide a restricted outlet passage, said head being provided outwardly of said passage with a plurality of outwardly diverging openings and being further provided at its inner end adjacent said head with a reduced stem tightly fitting within said small axial opening, to be supported thereby, means for supplying fuel to said large axial opening, means for supplying a combustion support-

ing fluid to said nozzle through the stem thereof, and a burner nozzle carried by said burner member.

2. A device of the character described comprising an integral burner member provided in one end with a relatively large axial opening and a relatively small axial opening communicating therewith, an air nozzle arranged in said large opening and provided with a hollow enlarged head slightly spaced from said large opening throughout its circumference to provide a restricted outlet passage, said nozzle head having a conical forward portion provided with outwardly diverging openings, said nozzle being further provided at its inner end with a reduced stem tightly fitting within said small axial opening, means for supplying fuel to said large axial opening against and substantially at right angles to the rear wall of said nozzle head, means for supplying a combustion supporting fluid to said nozzle through the stem thereof, and a burner nozzle carried by said burner member.

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

CHARLES F. LOKER.

Witnesses:
L. S. PECK,
R. Q. MACDONALD.