

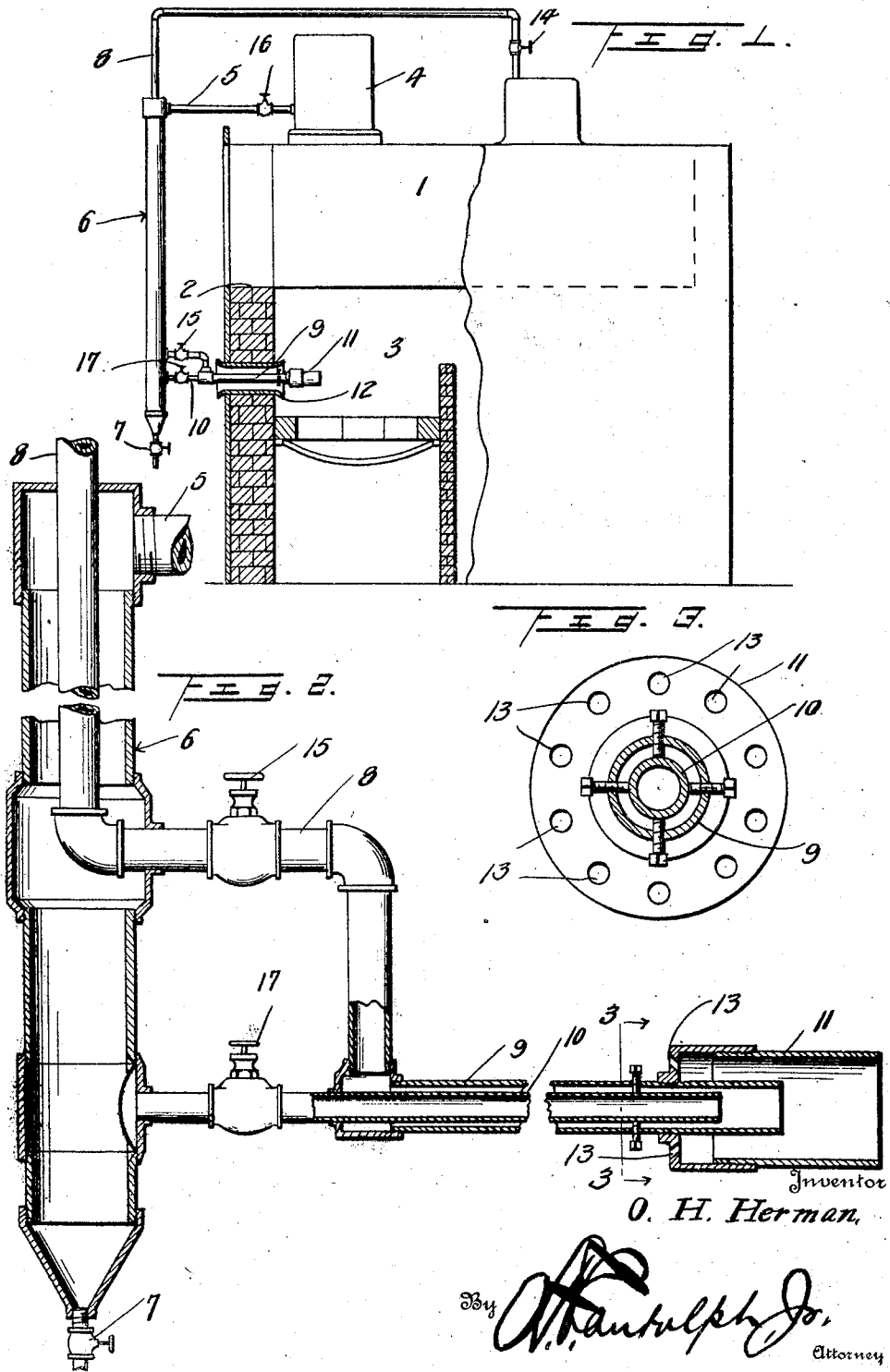
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O. H. HERMAN

OIL BURNER

Filed Oct. 11, 1922



# UNITED STATES PATENT OFFICE.

OSCAR H. HERMAN, OF COUNCIL BLUFFS, IOWA.

OIL BURNER.

Application filed October 11, 1922. Serial No. 593,751.

*To all whom it may concern:*

Be it known that I, OSCAR H. HERMAN, a citizen of the United States, residing at Council Bluffs, in the county of Pottawattamie and State of Iowa, 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.

The primary object of this invention is the provision of means for utilizing oil as fuel in the generation of steam or for heating generally where a hot flame is required.

In accordance with the present invention, a casing or conduit is provided for the passage of the oil therethrough from a suitable source of supply. A steam pipe extends through said casing or conduit to initially heat the oil. A steam casing or conduit is in communication with said steam pipe, and an oil pipe passes therethrough and receives the heated oil from the oil casing or conduit. A mixing chamber receives the heated oil and steam, and air is supplied thereto for mixing with the oil and steam preliminary to the discharge of the mixture into the combustion chamber, the steam and oil pipes having regulating valves.

Other objects and advantages will be apparent and suggest themselves as the nature of the invention is understood.

While the drawings illustrate an embodiment of the invention it is to be understood that in adapting the same to meet different conditions and requirements, various changes in the form, proportion and minor details of construction may be resorted to without departing from the nature of the invention.

Referring to the accompanying drawings forming a part of the application,

Figure 1 is a view showing the invention primarily in elevation and as applied to a steam boiler and its setting, the latter being partly shown in section.

Figure 2 is an enlarged sectional detail of the mixing chamber, the steam casing or conduit, the oil pipe therein and a portion of the oil casing or conduit and the steam pipe therein, and

Figure 3 is a sectional detail on the line 3—3 of Figure 2.

Corresponding and like parts are referred to in the following description and designated in the several views of the drawings by like reference characters.

The numeral 1 designates a steam boiler and 2 the setting therefor including the fire-box or combustion chamber 3. An oil tank 4 is shown mounted upon the setting 2 and is illustrative of a source of oil supply and the same may be disposed in any preferred or convenient position. An oil pipe 5 leads from the tank 4 and connects with the upper end of a casing or conduit 6 which is provided at its lower end with a drain cock 7. A steam pipe 8 connects with the dome of the boiler 1 and extends through the oil casing or conduit 6 and passes laterally therefrom near the lower end thereof and connects with the outer end of a steam casing or conduit 9. An oil pipe 10, extending from the lower portion of the oil casing or conduit 6, passes through the steam casing or conduit 9 whereby the oil passing there-through is further heated preliminary to its discharge into a mixing chamber 11 in which the oil and steam are mixed with air preliminary to the discharge of the mixture into the combustion chamber 3. An air tube 12 is set into the front wall of the combustion chamber and receives the steam casing or conduit 9. The tube 12 is sufficiently large to admit of free passage of air therethrough and its ends preferably flare. The mixing chamber 11 is mounted upon the inner end of the steam casing or conduit 9 and is provided in its outer end with a plurality of openings 13 for the admission of air, said openings being disposed about the steam casing or conduit 9 and having an inward inclination so as to direct the incoming jets of air towards the center of the chamber so as to mix with the oil and steam preliminary to the discharge of the mixture into the combustion chamber.

The steam pipe 8 is provided with a valve 14 adjacent its connection with the boiler 1 and a valve 15 intermediate the oil casing 6 and the steam casing 9, whereby to admit of proper control or the shutting off of the steam. The oil pipe 5 is provided with a valve 16 and the oil pipe 10 with a valve 17 for proper control or the shutting off of the oil, as required.

What is claimed is:

A burner of the class described comprising a vertically disposed casing of relatively large girth, a steam pipe depending into said casing and extending outwardly through the side of the casing intermediate the ends of the latter, the lower portion of the steam pipe outwardly of the casing being offset, a fuel supply pipe extending laterally from

the casing below that portion of the steam pipe located within the casing, said fuel supply pipe entering said steam pipe at a point spaced from the casing, a control valve for the steam pipe located outwardly of the casing and steam pipe, and a control valve for the fuel pipe on said offset portion.

In testimony whereof I affix my signature.

OSCAR H. HERMAN.