No. 704,374. Patented July 8, 1902.

E. B. RAYMOND.

OIL BURNER.

(Application filed Aug. 19, 1901.)

(No Model.)

Fig. 1.

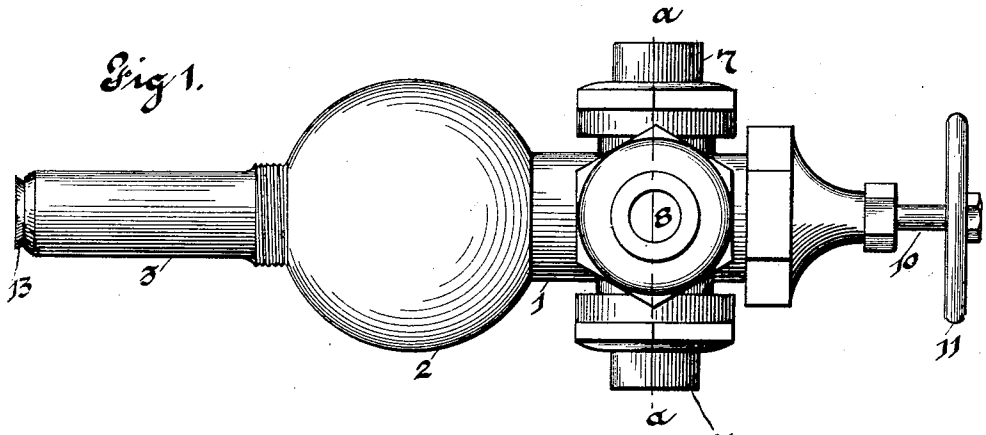


Fig. 2.

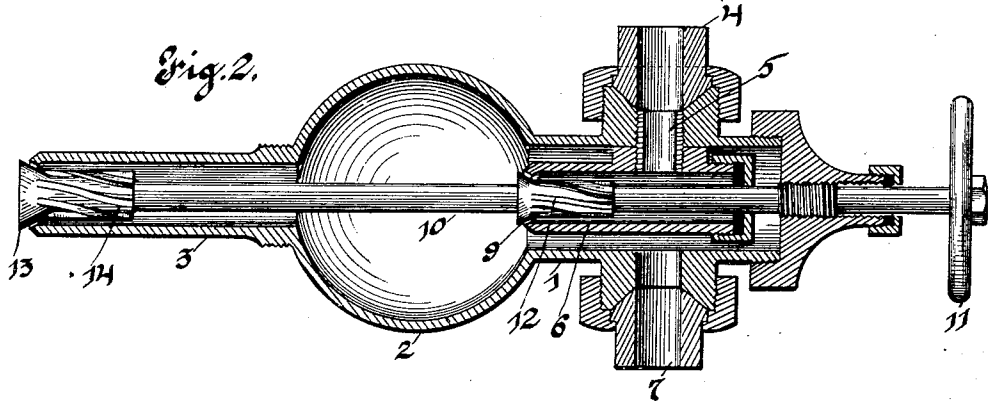


Fig. 3.

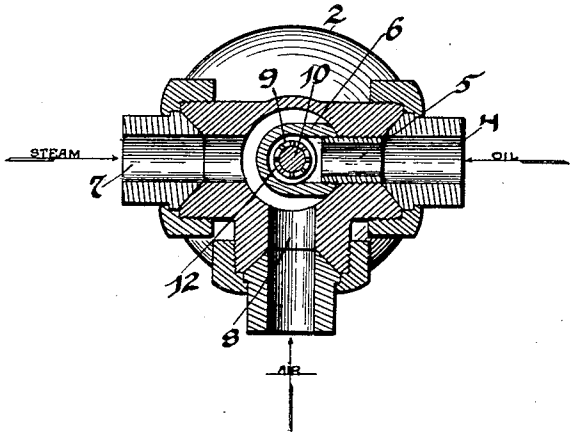
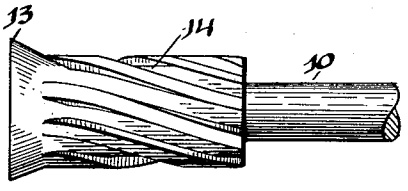


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

EMMET B. RAYMOND, OF ST. LOUIS, MISSOURI.

OIL-BURNER.

SPECIFICATION forming part of Letters Patent No. 704,374, dated July 8, 1902.

Application filed August 19, 1901. Serial No. 72,584. (No model.)

To all whom it may concern:

Be it known that I, EMMET B. RAYMOND, of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Oil-Burners, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

This invention relates to oil-burners; and it consists of the novel construction, combination, and arrangement of parts hereinafter shown, described, and claimed.

The object of this invention is to provide an oil-burner through which the oil may be forced and heated during its passage therethrough and which is provided with means for scattering or distributing the oil within a furnace.

Figure 1 is a view showing the under side of my improved oil-burner. Fig. 2 is a longitudinal section. Fig. 3 is a cross-section taken on the line *a a* of Fig. 1 looking to the left. Fig. 4 is an enlarged view of one of the distributing attachments forming a part of my invention.

In the construction of my improved burner I provide a casting comprising the tube 1, the globe 2, and the extension or tube 3, leading from the said globe 2 on the side opposite from the tube 1. The oil is first admitted into the tube 1 through the pipe 4, which communicates with an opening formed in the said tube 1, and within the said opening is threaded a nipple 5, which extends into the tube 1 and carries on its inner end a tubular chamber 6, closed at its outer end and its inner end terminating adjacent to the globe 2 and opening thereinto. It is desirable that the oil be heated during its passage, and to accomplish this result I admit steam into the tube 1 around the chamber 6 through an opening 7, to which a steam-pipe may be connected, as clearly shown in the different views. As shown in Fig. 2, there is a space within the tube 1 around the chamber 6, and into this space steam is forced or admitted through the opening 7, and the oil is thereby heated and rendered thin, so that it passes easily and quickly into the globe 2, from which it passes through the tube or extension 3 into the furnace. The air is admitted through an opening 8, to which a pipe may be connected, as shown in Fig. 3, and the said opening 8 is under the chamber 6, so that the air thoroughly becomes mixed with the steam and passes from the tube 1 into the globe 2 and there becomes mixed with the oil.

9 indicates a conical valve, which is located within the end of the chamber 6, and the said valve is mounted on a rod 10, extending throughout the length of the burner, as shown in Fig. 2, and being provided with an ordinary valve-handle 11, whereby it may be operated to move the said valve 9 into the required position. The valve 9 is provided with a hub, which extends into the chamber 6, and a series of spiral troughs 12 are formed in the said hub, through which the oil is forced as it passes out of the chamber 6 into the globe 2. A similar valve 13 is mounted on the inner end of the rod 10 and closes the end of the tubular extension 3. The said valve 13 is also provided with spiral coils 14, serving a like purpose as the coils 12.

In operative position the burner is mounted within the pipe or extension 3, extending through an opening in the furnace-wall, and the oil is admitted through the oil-passage 4 into the chamber 6, where it is thoroughly heated by the steam which is forced into the tube 1 through the opening 7. The oil being rendered thin passes through the open end of the chamber 6 into the globe 2, where it becomes mixed with the air, and from there is forced through the open end of the pipe 3 and into the furnace by means of the spiral coils 14. The flow of the oil may be regulated by operating the valve-rod 10 to move the valves 12 and 13 into the required position.

I claim—

1. An oil-burner, comprising a tube and a globe connected thereto, a chamber carried within the tube and opening into the globe and adapted to receive oil, means for heating the oil within the chamber, means for distributing the oil within the globe, and means for delivering the oil from the globe into a furnace, substantially as specified.

2. The improved oil-burner, comprising a tube adapted to be connected to a furnace, a chamber located within the tube adapted to receive the oil before it is admitted into the furnace, means for heating the oil within the chamber, a valve for controlling the flow of the oil from the chamber, a second valve for controlling the flow of oil into the furnace, and means for simultaneously operating said valves, substantially as specified.

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

EMMET B. RAYMOND.

Witnesses:
ALFRED A. EICKS,
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