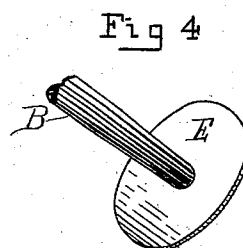
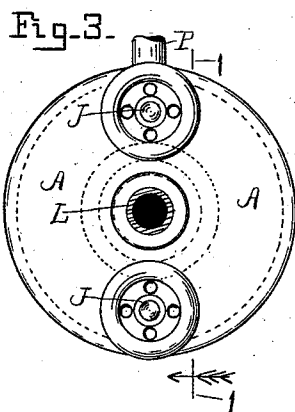
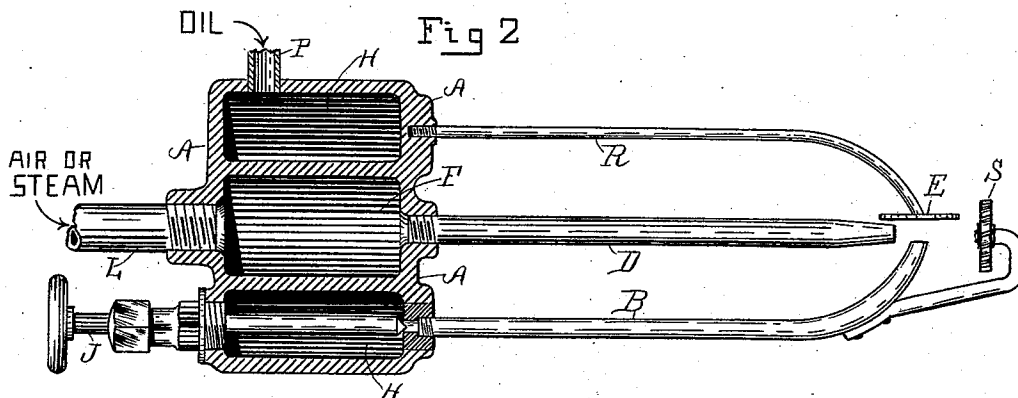
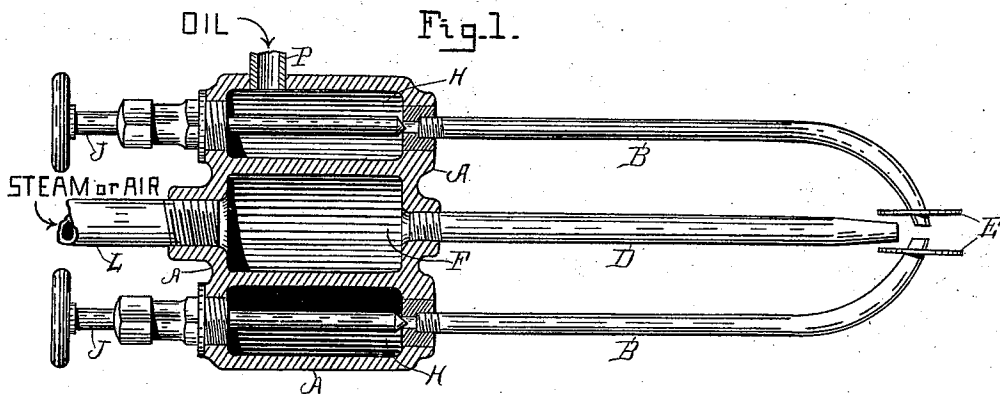


(No Model.)

W. S. LUTHER & C. T. COWART.
ATOMIZING OIL BURNER.

No. 536,216.

Patented Mar. 26, 1895.



Witnesses:

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UNITED STATES PATENT OFFICE.

WALTER S. LUTHER AND CHARLES T. COWART, OF JOLIET, ILLINOIS.

ATOMIZING OIL-BURNER.

SPECIFICATION forming part of Letters Patent No. 536,216, dated March 26, 1895.

Application filed September 5, 1894. Serial No. 522,170. (No model.)

To all whom it may concern:

Be it known that we, WALTER S. LUTHER and CHARLES T. COWART, citizens of the United States of America, residing at Joliet, in the county of Will and State of Illinois, have invented certain new and useful Improvements in Atomizing Oil-Burners, of which the following is a specification, reference being had therein to the accompanying drawings, and the letters of reference thereon; forming a part of this specification, in which—

Figure 1, is a longitudinal vertical section of the steam cylinder and its annular oil chamber, and a side view of the oil and spray pipes and needle valves taken on line 1 of Fig. 3 looking in the direction of the arrow. Fig. 2 is a similar view to Fig. 1, omitting one of the oil pipes and its valve, and showing an arm for supporting a deflecting plate. Fig. 3, is an end view of the steam cylinder and its annular chamber, and showing the hand wheels of the two needle valves, and Fig. 4 is a perspective view of the tapered outer end of one of the oil pipes having a deflecting plate attached thereto.

This invention relates to certain improvements in atomizing oil burners for use in the fire box of steam boilers for burning an atomized spray of oil, which improvements are fully set forth and explained in the following specification and claims.

Referring to the drawings A represents a closed cylinder having a central steam chamber F, and an annular oil chamber H surrounding said steam chamber for holding the oil in close proximity with said steam chamber so that the oil may be heated before its use.

P is an oil supply pipe leading from an adjacent oil supply to the annular chamber H.

L is a steam pipe leading from a steam supply to the chamber F, and D is a steam atomizing spray pipe leading from chamber F into the fire box of a boiler, not necessary to be shown, and B, B are oil pipes leading from said annular chamber H, and arranged so the steam spray pipe D will discharge a steam blast across their discharge orifices in the ordinary manner.

The supply of oil to pipes B is controlled by means of needle valves J. The outer ends of the oil pipes B are provided with deflecting plates E arranged so as to deflect the spray in a horizontal, or any other desired direction according to the angle in which they may be placed on said pipes.

In the drawings two oil supply pipes are shown in Fig. 1, arranged opposite to each other, and each provided with a deflecting plate E, but only one such pipe may be used if desired as shown in Fig. 2, and a rod R provided with a deflecting plate E may be used. These deflecting plates may be plane disks, or they may be curved or corrugated, or of any form desired. A distributing or deflecting wheel S formed with blades similar to a propeller wheel may be located in the path of the blast, as shown in Fig. 2 if desired, to more thoroughly distribute the steam and oil throughout the fire box, and may be used both with or without the deflecting plates; also instead of using steam for a blast, air may be used, with the same results.

In operation it is designed to place the discharge ends of the pipes in the fire box of any ordinary steam boiler, or in any fire box or furnace where such device would be useful, leaving the cylinder A outside of the fire box. Oil being let into the annular chamber H at P becomes heated by means of its proximity to the steam chamber F, and oil is let into the pipes B from said chamber H, and its supply is controlled by means of the needle valves J, and is atomized and sprayed by the steam or air blast as it is sprayed.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is as follows:

1. In an atomizing oil burner, the combination of the cylinder A having the central steam chamber F, and annular oil chamber H, the oil pipes B, B, leading from said oil chamber, the deflecting plates E on said oil pipes and arranged contiguous to the discharge outlet of pipe D, the steam spray pipe D, the needle valves J and the inlet pipes P and L all arranged to operate substantially as and for the purpose set forth.

2. In an atomizing oil burner the combination of the spray pipe D, the oil pipes B having their discharge outlets arranged to discharge across the path of the blast from pipe D, and the deflecting plates on pipes B arranged contiguous to the discharge outlet of pipe D, all arranged to operate substantially as and for the purpose set forth.

WALTER S. LUTHER.
CHARLES T. COWART.

Witnesses:

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RAY HUTCHINS.