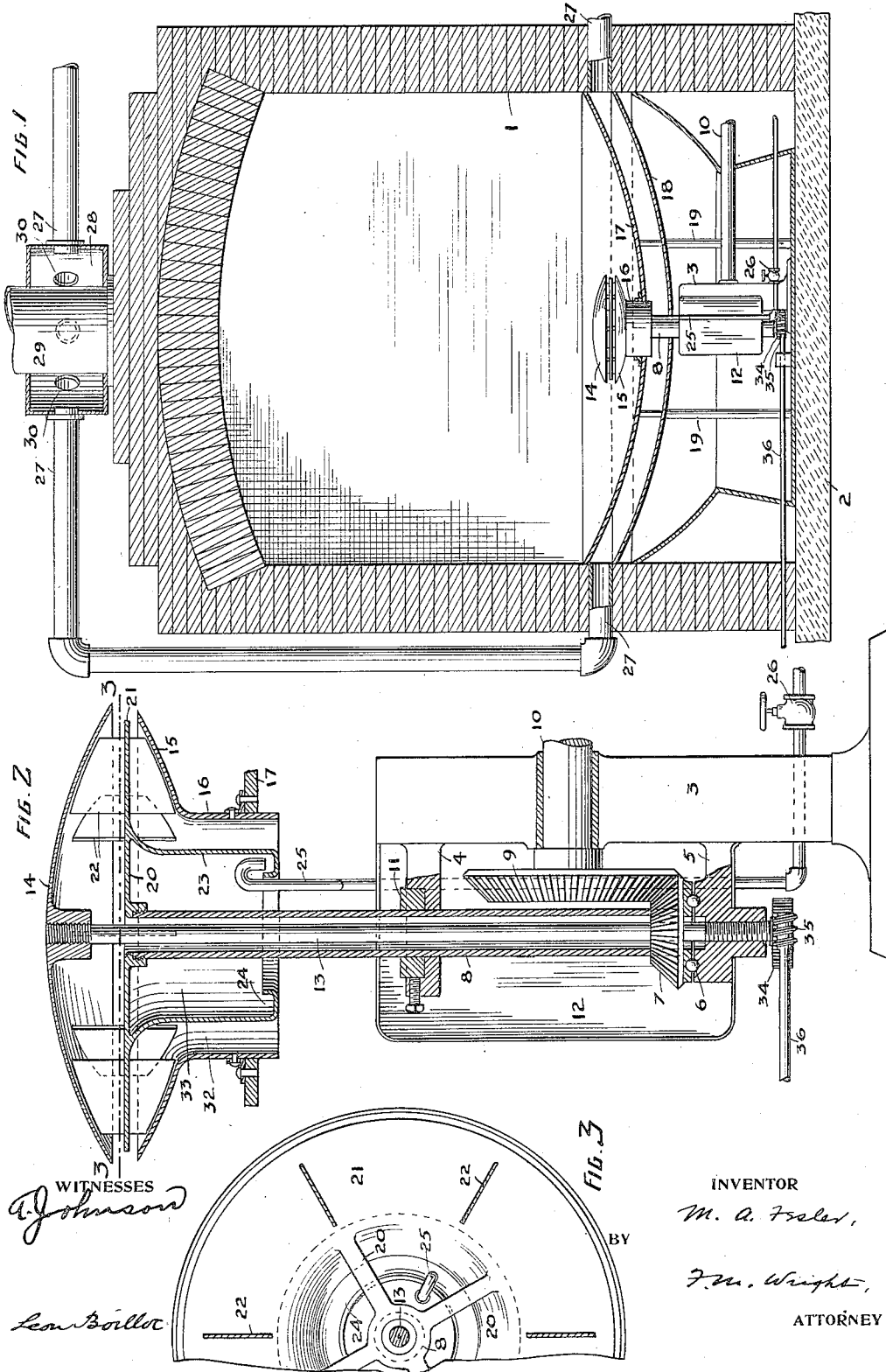


M. A. FESLER.
CENTRIFUGAL OIL BURNER.
APPLICATION FILED OCT. 19, 1911.

1,064,467.

Patented June 10, 1913.



UNITED STATES PATENT OFFICE.

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A CORPORATION.

CENTRIFUGAL OIL-BURNER.

1,064,467.

Specification of Letters Patent. Patented June 10, 1913.

Application filed October 19, 1911. Serial No. 655,457.

To all whom it may concern:

Be it known that I, MILTON A. FESLER, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented new and useful Improvements in Centrifugal Oil-Burners, of which the following is a specification.

The present invention relates to improvements in centrifugal oil burners, the object of the invention being to provide an oil burner of this character which shall be efficient, economical, and of great simplicity of construction.

In the accompanying drawing, Figure 1 is a sectional view of a furnace equipped with my improved oil burner; Fig. 2 is an enlarged vertical section of the burner, certain parts being shown in side elevation; Fig. 3 is a broken horizontal section on the line 3—3 of Fig. 2.

Referring to the drawing, 1 indicates a furnace, supported on a suitable base 2, upon which base rests a standard 3, from which project upper and lower lateral extensions 4 and 5. In the lower extension 5 is a runway for balls 6, upon which rotates a bevel gear 7 secured to a tubular shaft 8, said bevel gear meshing with a bevel gear 9 on a horizontal shaft 10, having its bearings in the standard 3. Said shaft 8 passes through, and rotates in, a bushing 11 secured in the upper extension 4. Said lateral extensions 4 and 5 are inclosed by a casing 12. Screwed at its lower end in said extension 5 and passing centrally upward through the tubular shaft 8 is a rod 13, upon the upper end of which is secured an upper curved guide plate 14, convex at the top. A lower curved guide plate 15, convex at the bottom, is formed with a cylindrical downward extension 16 which passes through, and is secured to, the upper of two partitions 17, 18. Said partitions are arranged in a general horizontal direction in the furnace and at equal distances from each other. They are concave on the upper side, and the outer edge of the uppermost partition 17 is at a higher level than the upper guide plate 14, although its center is below both guide plates 14 and 16. Said partitions are supported from the base 2 by posts 19. To the upper end of said shaft is secured by arms 20 a horizontal disk or plate 21, the outer edge of which occupies a position inter-

mediate between the upper and lower guide plates. To said disk 21 are secured webs 22 which extend radially from said shaft 8, and said disk at the middle portion has a cylindrical downward sleeve or extension 23, the lower edge of which is bent inwardly and then upwardly to form a channel 24. Into said channel discharges the end of a vertical pipe 25, bent over at its upper end. Said pipe leads from a suitable oil supply (not shown) and is controlled by a valve 26. There are thus formed between said tubular downward extensions 16 and 23 and shaft 8 and also between the upper and lower spreaders and the webs air conduits 32, 33.

Into the space between the upper and lower partitions 17, 18, pipes 27 lead from the interior of a sleeve 28 surrounding the flue 29 from the furnace, and supplied with air through suitable openings 30.

On the lower end of the rod 13 below the extension 5 is a worm wheel 34 which is adapted to be engaged by a worm 35 on a shaft 36 extending outside the furnace. By turning said shaft, said worm wheel may be turned and the upper guide plate 14 raised or lowered to vary the amount of air supplied above the plate 21.

The following is the mode of operation of the apparatus. A fire is started by any suitable means, and the shaft 8 is set in motion. Said shaft being maintained in rotation at high speed, the oil supplied by the pipe 25 to the channel 24 flows, by the centrifugal force due to the high speed of the depending sleeve 23, upward over said sleeve and plate 21, its motion being directed outward by means of the webs 22. The air supplied to the interior of the sleeve 28 and around the flue 29 becomes highly heated, and flows by the pipes 27 to the space between the upper and lower partitions, and is thus supplied to the air conduits 32, 33. It then flows out past the edge of said disk 21 and mixes with the oil which, moreover, is atomized by the centrifugal force resulting from the high speed of the rotating parts. Very perfect combustion of the oil then ensues.

I claim:—

1. The combination of a vertical shaft, upper and lower plates, the peripheries of which approach in close proximity to each other, an intermediate plate carried by said shaft, means independent of said shaft for

supporting said upper and lower plates, concentrically disposed conduits leading respectively into the spaces between the upper and intermediate plates, and the intermediate and lower plates, an oil pipe discharging within one of said conduits, and means for rotating the shaft, substantially as described.

2. The combination of a vertical shaft, upper and lower plates, the peripheries of which approach in close proximity to each other, an intermediate plate carried by said shaft, means independent of said shaft for supporting said upper and lower plates, vertical webs formed on each side of said intermediate plate and rotating with said shaft, concentrically disposed conduits leading respectively into the spaces between the upper and intermediate plates, and the intermediate and lower plates, an oil pipe discharging within one of said conduits, and means for rotating the shaft, substantially as described.

3. The combination of a vertical shaft, upper and lower plates, the peripheries of which approach in close proximity to each other, an intermediate plate carried by said shaft, means independent of said shaft for supporting said upper and lower plates, concentrically disposed conduits leading respectively into the spaces between the upper and intermediate plates, and the intermediate and lower plates, an annular channel formed at the lower end of the inner conduit, an oil pipe discharging within said channel, and means for rotating the shaft, substantially as described.

4. In a furnace, a burner having a vertical shaft, upper and lower plates, the peripheries of which approach in close proximity to each other, an intermediate plate carried by said shaft, means independent of said shaft for supporting said upper and lower plates, concentrically disposed conduits leading respectively into the spaces between the upper and intermediate plates, and the intermediate and lower plates, an oil pipe discharging within one of said conduits, partitions beneath said burner, the space between the partitions opening into said conduits, a pipe for conducting the air to said space, and means whereby the heat of the products of combustion at the burner heats said air, substantially as described.

5. In combination with a casing of a furnace, a vertical shaft, means for rotating the same, means, secured to and rotating with said shaft, for atomizing oil by centrifugal force, a guide plate forming an air conduit with said means, means for supplying oil to said atomizing means, and means, extending inwardly from the outside of said casing, for varying the distance between said atomizing means and plate to vary the supply of air.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

MILTON A. FESLER.

Witnesses:

FRANCIS M. WRIGHT,
D. B. RICHARDS.