June 4, 1940. R. S. THORESEN 2,203,553

OIL BURNER

Filed Oct. 22, 1938

Fig. 1.

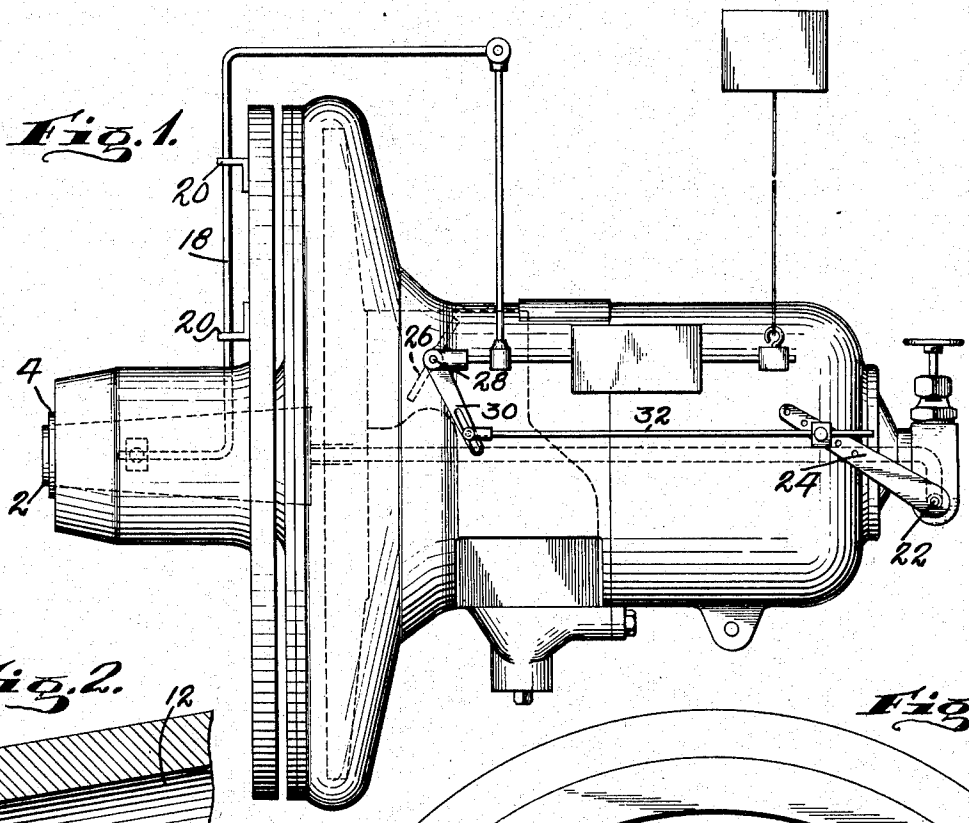


Fig. 2.

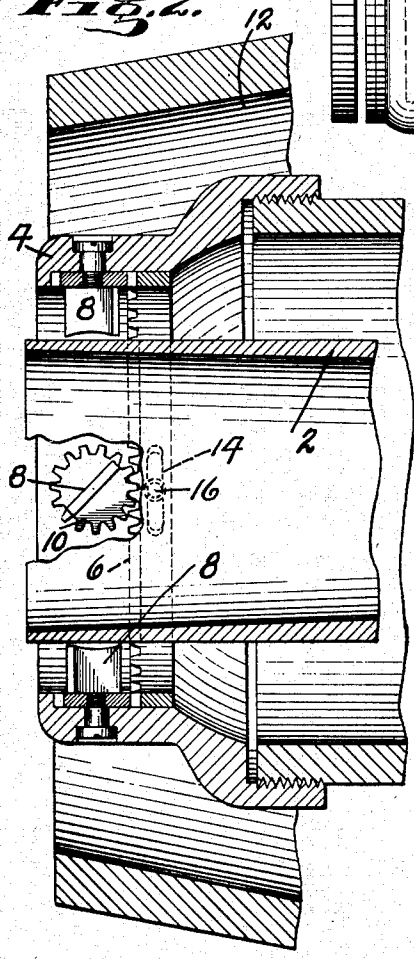
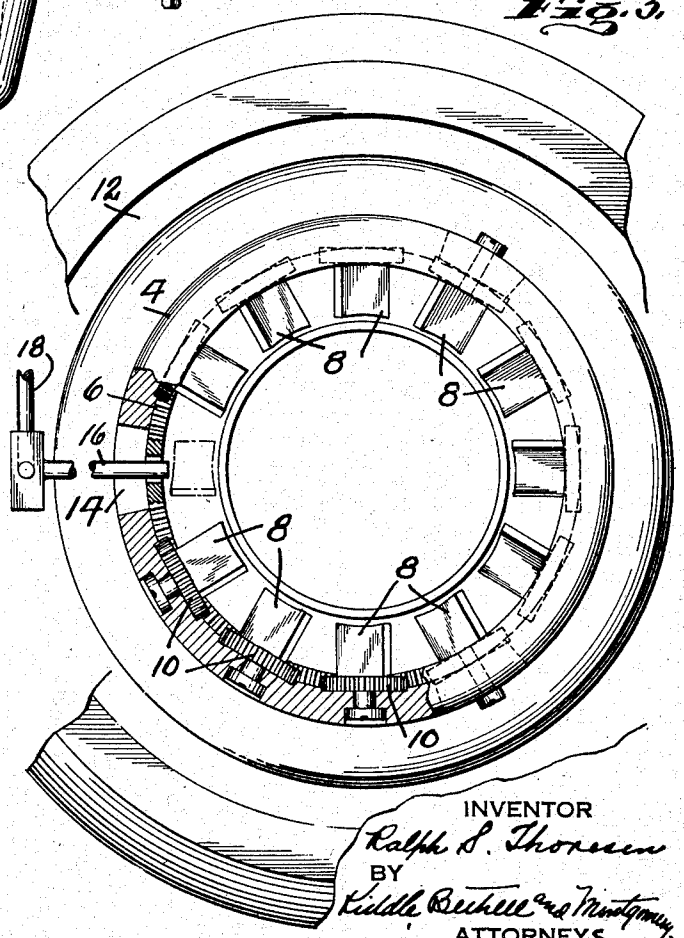


Fig. 3.



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Patented June 4, 1940 2,203,553

UNITED STATES PATENT OFFICE

2,203,553

OIL BURNER

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Application October 22, 1938, Serial No. 236,446

2 Claims. (Cl. 158—1.5)

This invention is directed to an improvement in oil burners.

One of the objects of the invention is the provision of an oil burner wherein means are provided for adjusting the angularity of the primary air vanes.

Another object of the invention is the provision of an oil burner construction wherein adjustment of the air vanes will at the same time effect variation or regulation of the oil valve controlling the oil supplied to the burner and another valve controlling the amount of air passing to the vanes.

Further objects of the invention will appear hereinafter.

In the accompanying drawing:

Fig. 1 is a side elevational view of an embodiment of my invention;

Fig. 2 is a sectional view of the nozzle end of the burner of Fig. 1; and

Fig. 3 is an end view in part section of Fig. 2.

Referring to the drawing in detail: My improved oil burner construction comprises an atomizing cup at the nozzle end of the burner. Surrounding the atomizing cup 2 is an air nozzle 4. This air nozzle is spaced from the atomizing cup to permit of the passage of primary air therebetween.

Inasmuch as fire boxes vary in size and oil varies in viscosity, it is desirable to provide, as I have done in the present invention, for regulation of the primary air supply to ensure correct proportioning of the air to the oil being supplied to the burner.

Intermediate the atomizing cup 2 and the air nozzle 4 I provide an adjustable rack 6. This rack is in the form of a rotatable ring, that is, rotatable for adjustment purposes, and while the teeth thereof have been shown continuous they may be discontinuous if desired.

Disposed at regular intervals about the atomizing cup 2 in the primary air space between the cup and the air nozzle 4 are air controlling vanes 8.

Each of these vanes is mounted on or carries a pinion 10, these pinions meshing with the rack 6.

Secondary air is supplied to the burner in the usual way about the air nozzle 4 through secondary air passage 12.

Extending through a slot 14 in the wall of the air nozzle 4 and into the rack ring 6 is a pin 16. This pin is connected to an adjusting rod 18 which extends vertically of the end of the burner where it is guided by suitable brackets 20.

At the rear end of the burner I provide oil control valve 22, provided with adjusting lever 24.

The shutter for controlling the secondary air is shown at 26. The pivot 28 of this shutter carries a lever 30, which is connected by rod 32 to the oil valve lever 24.

The rod 18 is connected, as indicated in the drawing, to the pivot 28 of the secondary air shutter.

It will be apparent that the rod 18 may be raised or lowered to vary the angle of the primary air vanes 8, movement of the rod effecting rotation of the ring or rack 6 and rotation of the vanes.

It will be apparent also that this movement of the rod 18 will also effect a variation in the angle of the secondary air shutter 26, and at the same time vary the setting of the oil valve 22.

The present invention, therefore, not only provides for varying the setting of the primary air vanes 8 but at the same time provides for simultaneous adjustment of the secondary air shutter and the valve which controls the amount of oil which is fed to the burner.

It is to be understood that changes may be made in the details of construction and arrangement of parts herein illustrated and described without departing from the spirit and scope of my invention.

What I claim is:

1. An oil burner comprising in combination an atomizing cup, an air nozzle immediately surrounding said cup and spaced therefrom, air vanes in the space between the cup and air nozzle and rotatably adjustable about axes extending radially of the cup, a pinion carried by each vane, a rack rotatably mounted in said air nozzle and meshing with said pinions, and means attached to the rack and extending through the wall of said nozzle for moving the rack circumferentially of the cup thereby to rotate said vanes about said axes to vary the angle of their setting within said air nozzle.

2. An oil burner comprising in combination an atomizing cup, an air nozzle immediately surrounding said cup and spaced therefrom, air vanes in the space thus provided between the cup and air nozzle and rotatably adjustable about axes extending radially of the cup, a pinion carried by each vane, a rack supported by the air nozzle and meshing with said pinions, and a pin extending through the wall of the air nozzle and operatively connected to said rack to effect rotation of the rack from the exterior of the air nozzle, thereby to effect movement of said vanes about said axes to vary the setting of the vanes.

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