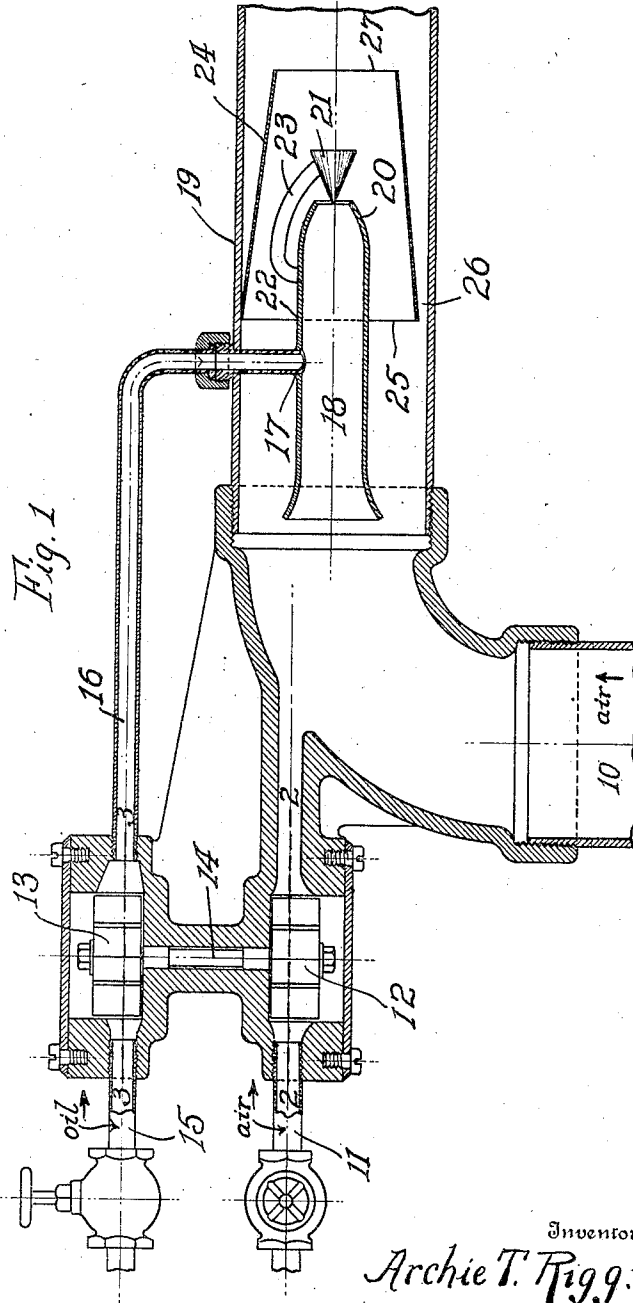
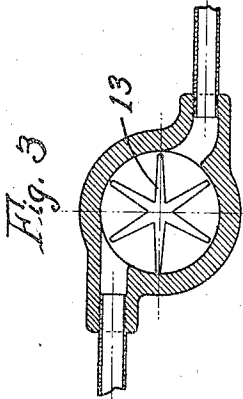
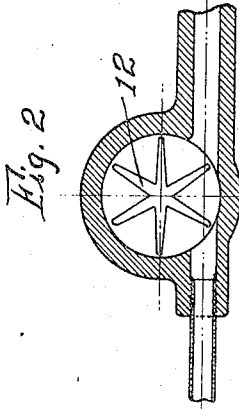


A. T. RIGG.
 SPRAY BURNER.
 APPLICATION FILED OCT. 14, 1909.

966,124.

Patented Aug. 2, 1910



Witnesses

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Fig.

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UNITED STATES PATENT OFFICE.

ARCHIE T. RIGG, OF ALTOONA, PENNSYLVANIA.

SPRAY-BURNER.

966,124.

Specification of Letters Patent.

Patented Aug. 2, 1910.

Application filed October 14, 1909. Serial No. 522,633.

To all whom it may concern:

Be it known that I, ARCHIE T. RIGG, a citizen of the United States, residing at Altoona, in the county of Blair and State of Pennsylvania, have invented certain new and useful Improvements in Spray-Burners, of which the following is a specification.

This invention relates to oil burners used in connection with fuel oil furnaces in which the oil is atomized by an agitator, then forced into the burners, where the hydrocarbons evolve combustible gases which, when heated to incandescence, form the flame to be used.

The principal object of this invention is to provide improved means for uniting the hydrocarbons of the fuel with the oxygen of the air that is forced into the furnace through the burner from the bellows or other suitable pressure supply.

With these and many other objects in view which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts as hereinafter will be more fully pointed out, illustrated and claimed.

In the accompanying drawings—Figure 1 is a longitudinal sectional view of the improved burner showing the combined cylindrical and cone shaped sections of the burner. Fig. 2 is a section taken on the line 2—2 of Fig. 1, and shows the air motor for driving the oil agitator. Fig. 3 is a view taken on the line 3—3 of Fig. 1, and shows the oil agitator inverted, the same being driven by the air motor shown in Fig. 2.

Similar numerals refer to corresponding parts throughout the several figures of the drawings.

Referring to Fig. 1 of the drawings, the air from the bellows enters the burner through the pipe 10 while air under higher pressure is forced through the pipe 11, thus rotating the air motor 12 which is rigidly connected direct to the oil agitator 13 through the shaft 14. The fuel oil, preferably from a gravity oil supply, is forced through the pipe 15 into the agitator chamber where it is rapidly churned and beaten

into a foam or spray, thus breaking the oil globules up into atoms and in this state conducted by the pipe 16, through the opening 17 into the wide mouthed cylindrical focusing chamber 18, which is preferably suspended on the longitudinal center line of the main blast pipe 19.

The forward end 20 of the chamber 18 is contracted so as to insure each atom of the oil striking the diverging cone or spreading element 21, which is attached to the upper side 22 of the focusing chamber 18, by a bracket 23, as shown in Fig. 1 of the drawings. The finely divided oil leaving the outer periphery at the base of the cone 21 is mingled with the air, from the bellows or other pressure supply, which is brought to the burner through the pipe 10. The hydrocarbon of the fuel oil, uniting with the oxygen of the air, forms a combustible mixture, which when ignited is heated to incandescence, thus producing a clean flame of high temperature.

The auxiliary funnel 24 is a frustum of a cone the base 25 being attached at its upper face to the inside of the blast pipe 19 while its lower edge is free from the pipe thus allowing a blast of air to continually pass between the inside of the blast pipe and the outside of the base of the frustum, through the opening 26 as shown in Fig. 1 of the drawings. It is thus seen that any oil adhering to the auxiliary cone will be picked up by this current and carried into the zone of combustion, thus obviating the loss of any fuel oil that is so common with the ordinary types of oil furnaces.

Without further description it is thought that the many advantages of the herein described invention are readily apparent.

I claim:

1. An oil burner comprising a blast pipe, fuel focusing and mixing elements within the blast pipe, an oil agitator, an air motor having an operative connection with said agitator, means for supplying oil to the said agitator, means for conducting atomized oil from said agitator to said elements within the blast pipe, and means for feeding air under pressure to said air motor.

2. An oil burner comprising a blast pipe, fuel focusing and mixing elements within the blast pipe, a bladed rotary oil agitator, a rotary air motor having a direct shaft connection with said agitator, means for supplying oil to said agitator, means for conducting atomized oil from said agitator to said elements within the blast pipe, and means for feeding air under pressure to said air motor. 10

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

ARCHIE T. RIGG.

Witnesses.

N. E. GEE,
ADAM LEAKE.