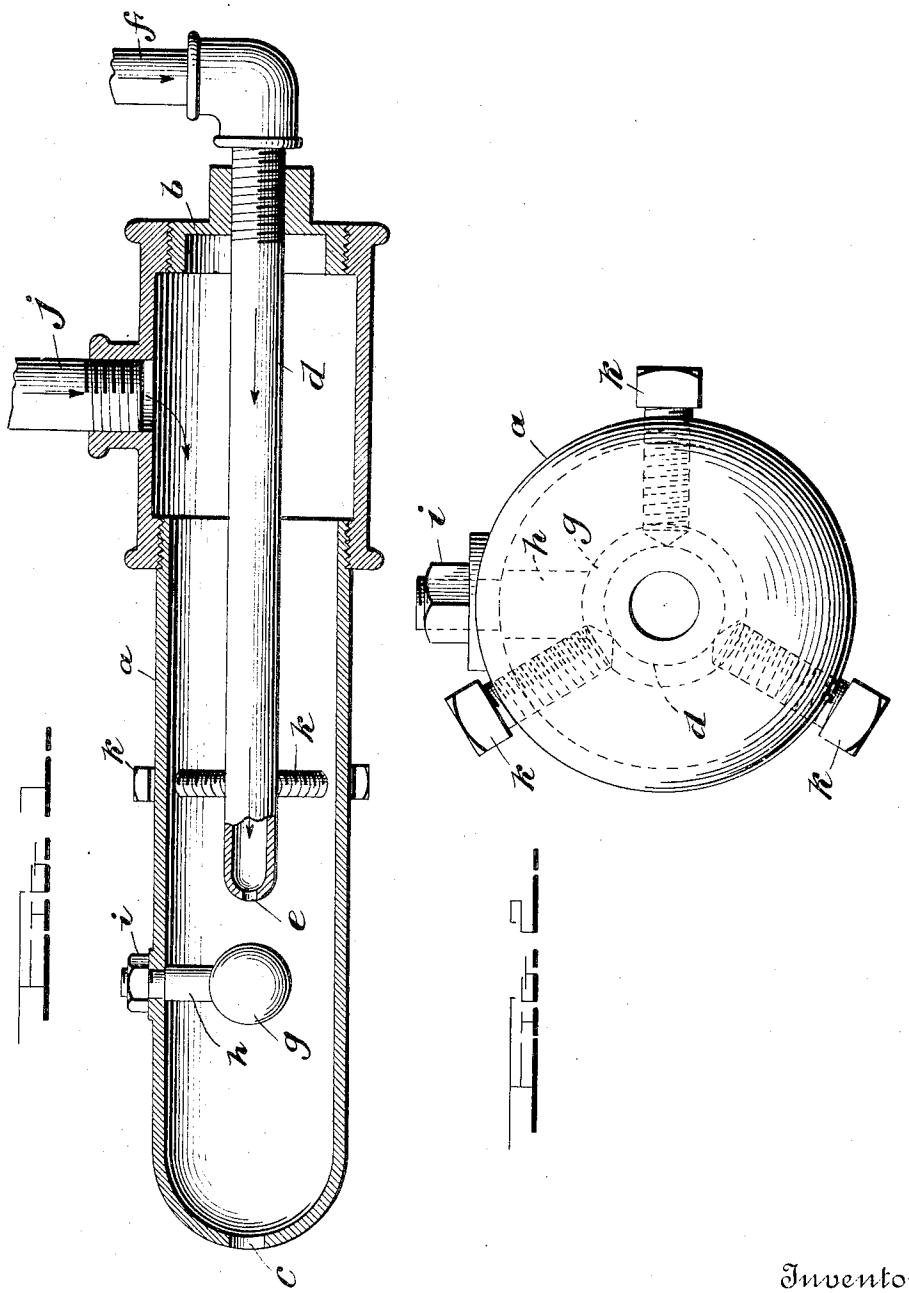
J. R. ARTHUR.

OIL BURNER.

APPLICATION FILED JULY 23, 1913.

1,089,033. Patented Mar. 3, 1914.



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN ROBERT ARTHUR, OF ROANOKE, VIRGINIA.

OIL-BURNER.

1,089,033. Specification of Letters Patent. Patented Mar. 3, 1914.

Application filed July 23, 1913. Serial No. 780,727.

To all whom it may concern:

Be it known that I, JOHN R. ARTHUR, a citizen of the United States of America, residing at Roanoke, county of Roanoke, State of Virginia, have invented certain new and useful Improvements in Oil-Burners, of which the following specification is a clear description.

This invention has relation to that type of oil burner which is in the form of a nozzle and in which the oil is atomized within the nozzle tube and intimately mixed with a suitable quantity of air, this mixture being ejected under pressure and burned at the exit end of the nozzle tube, as more fully hereinafter set forth.

Figure 1 is a longitudinal sectional view of my device, and Fig. 2 is a front end elevation thereof.

In the drawing, *a* designates the burner tube whose rear end is closed by a cap *b* and whose forward end is contracted or brought to a nozzle shape and provided with an exit opening *c*. Threaded through the cap *b* is an oil tube *d* whose forward end is provided with an ejector opening *e* and whose rear end is connected to an oil supply tube *f*. Immediately in front and adjacent to the end of the oil nozzle or ejector is a ball *g* which is supported centrally within the burner tube by means of a radial rod *h*, whose outer end extends through the tube and is provided with a clamp nut *i*.

Air is supplied from the rear end of the burner tube by means of a supply pipe *j*. The oil and air are supplied to the burner under pressure, this pressure being maintained in any suitable manner. It will be seen that the oil will be forcibly ejected against the ball *g* and will be thoroughly atomized, and this atomized oil will be thoroughly commingled with the air and the mixture will be forcibly ejected through the nozzle exit *c*.

It is important that the oil nozzle shall eject the oil directly in the center of the ball in order that thorough atomization shall take place. In order to insure this, I provide a series of radial screws *k* which are tapped through the burner tube so that their inner ends shall engage the oil tube, by means of these screws it will be seen that the end of the nozzle may be adjusted laterally so as to direct the jet of oil directly in the center of the ball. It will be seen also that by threading the oil nozzle through the cap *b* the oil nozzle may be adjusted to the proper distance longitudinally with respect to the ball.

It will be observed, that the exit opening *c* of the burner tube is relatively small compared with the diameter of the air supply pipe *j*, thus forming a combined mixing and compression chamber in front of the atomizing means, so that the air and oil are thoroughly mixed after passing the atomizer and the mixed fuel is forcibly discharged through the opening *c*, due to the compression in the burner tube at its discharge end.

I claim:

A device of the character described, comprising a burner-tube having a contracted nozzle at one end and an air supply pipe at its other end, the diameter of the discharge opening of said nozzle being relatively small compared with the diameter of the air supply pipe, an adjustable oil tube extending longitudinally into said burner-tube, and an atomizing ball in said burner-tube between the outlet of said oil-tube and discharge opening of said burner tube and in close relation to the oil-tube outlet, whereby a combined mixing and compression chamber is formed in the end of the burner-tube between its discharge opening and said atomizer.

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

JOHN ROBERT ARTHUR.

Witnesses:
L. E. ST. CLAIR,
R. L. RUSH.