

J. F. KRAUS.
OIL BURNER.
APPLICATION FILED JAN. 2, 1917.

1,230,725.

Patented June 19, 1917.

Fig. 1.

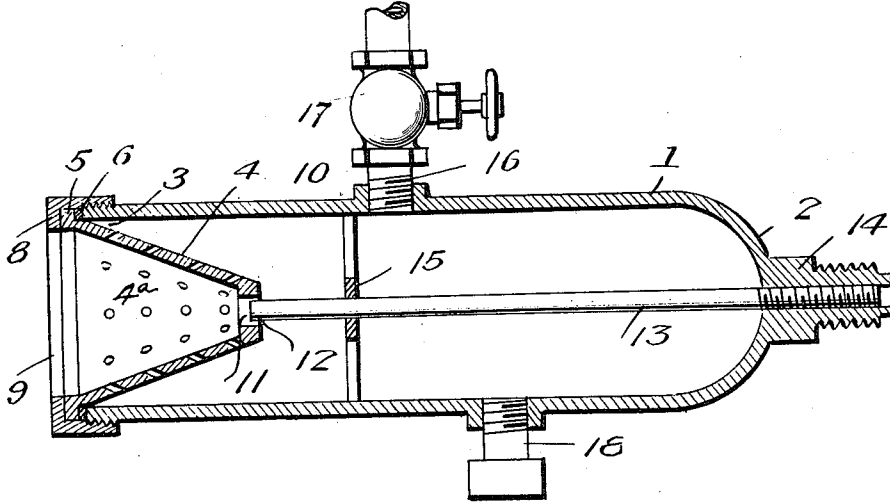


Fig. 2.

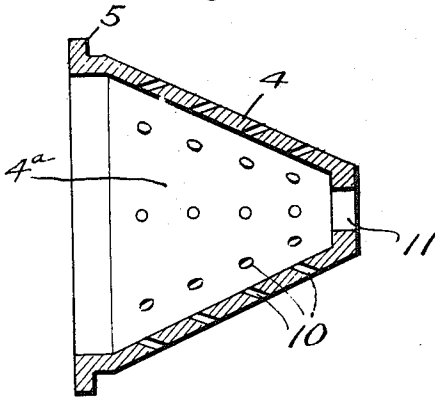
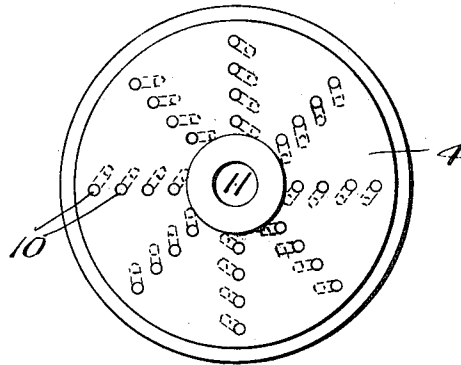


Fig. 3.



Witness

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UNITED STATES PATENT OFFICE.

JACOB F. KRAUS, OF PITTSBURGH, PENNSYLVANIA.

OIL-BURNER.

1,230,725.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JACOB F. KRAUS, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented new and useful Improvements in Oil-Burners, of which the following is a specification.

This invention relates to a liquid fuel burner and has for its primary object to provide an apparatus of this character in which the parts are so constructed and arranged that a larger volume of flame will be produced and the complete combustion of the oil assured.

An object of the invention is to so construct the atomizing device that a fluid will be capable of thoroughly atomizing the oil so that the latter will be completely consumed.

Besides the above my invention is distinguished in the use of a cone shaped nozzle having tangentially arranged apertures in combination with an oil pipe arranged in alinement with the center of the nozzle at the end of the casing.

With these and other objects in view the invention will be better understood from the following detail description taken in connection with the accompanying drawing wherein:—

Figure 1 is a longitudinal sectional view of the burner.

Fig. 2 is a sectional view through the nozzle.

Fig. 3 is a front elevation of the nozzle.

Again referring to the drawing the numeral 1 designates a casing having a closed end 2 and an open end 3. Arranged in the open end 3 is a cone shaped nozzle 4 forming a mixing chamber 4^a and having a peripheral flange 5 between which and the end of the nozzle is a gasket ring 6. Coöperating with the flange 5 and having a screw threaded engagement with the casing as illustrated at 7 is a ring 8 having an opening 9 arranged in alinement with the interior of the nozzle.

The nozzle is provided with a plurality of tangentially arranged apertures 10 converging toward the center line through the nozzle. Arranged in the small end of the aperture 10 of the nozzle and concentrically of the center of the nozzle is an opening 11.

Arranged in the opening 11 but spaced from the wall thereof and also a slight distance from the interior of the nozzle is the

exit end 12 of an oil pipe 13. This oil pipe is supported in a boss 14 formed integral with the closed end 2. In this particular instance the pipe 13 has a screw threaded engagement with the boss so that the same may be readily removed and the exit end portion is held rigid in alinement with the center of the cone by a spider 15.

To complete my invention I provide the fluid pipe 16 communicating with the interior of the casing and controlled by the valve 17 and also a drip valve 18 to take care of the condensation within the casing as the fluid may be used in the form of steam.

In operation the valve 17 is opened which allows a fluid under pressure such as steam to pass into the casing to make its exit through the apertures 10. Owing to the arrangement of the apertures the steam is given a whirling motion within the nozzle. Within the nozzle the whirling steam meets oil passing from the pipe 13 and as a result the oil is broken into minute particles and thoroughly commingled with the proper amount of oxygen to assure a complete combustion.

It is to be understood that the structural embodiment of the invention as a whole and its various features as shown is merely illustrative and not restrictive as I am well aware that many of the details of construction can be widely varied without departing from the spirit of the invention. I therefore do not desire to be limited in these particulars or in any others, except as set forth in the appended claims.

Having described my invention what I claim is:—

1. An oil burner comprising an elongated casing having communication with a fluid under pressure, a frusto conical spray nozzle forming a conical mixing chamber communicating with the interior of the casing by tangentially arranged openings in the nozzle, said chamber having its large end in direct communication with the atmosphere and its small end in communication with the interior of the casing and an oil pipe supported by the casing and having its outlet in communication with the small end of said chamber.

2. An oil burner comprising an elongated casing having communication with a fluid under pressure, a frusto conical spray nozzle forming a conical mixing chamber communicating with the interior of the casing by

8 tangentially arranged openings in the nozzle, said chamber having its large end in direct communication with the atmosphere and its small end in communication with the interior of the casing and an oil pipe supported by the casing and having its outlet in communication with the small end of said

chamber, and a ring having a slidable connection with the large end of the nozzle and having screw threaded engagement with the casing for holding the axis of the nozzle in alinement with the axis of the oil pipe. 19

In testimony whereof I affix my signature.

JACOB F. KRAUS.