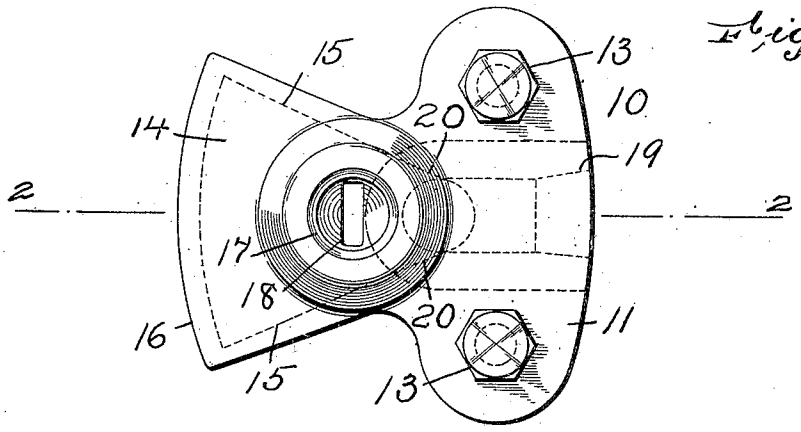
A. L. WILSON.

BURNER FOR FLUID FUEL.

APPLICATION FILED OCT. 29, 1919.

1,375,948. Patented Apr. 26, 1921.

Fig. 1



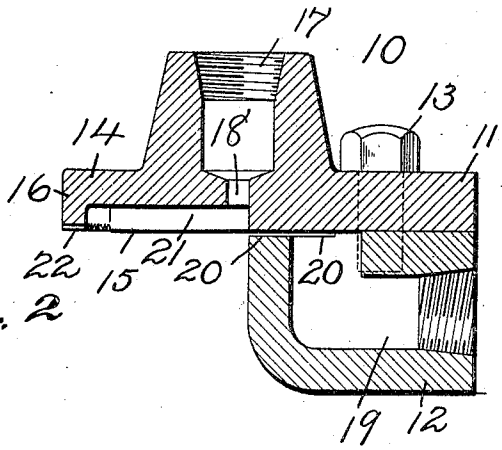


Fig. 2

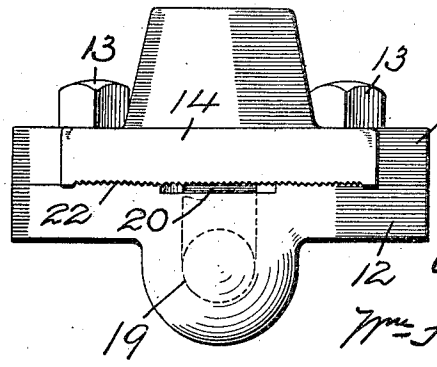


Fig. 3

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BURNER FOR FLUID FUEL.

1,375,948. Specification of Letters Patent. Patented Apr. 26, 1921.

Application filed October 29, 1919. Serial No. 334,173.

To all whom it may concern:

Be it known that I, AMYUIT L. WILSON, a citizen of the United States, and a resident of Elizabeth, county of Union, and State of New Jersey, have invented certain new and useful Improvements in Burners for Fluid Fuel, of which the following is a specification.

This invention relates to an improved burner which is designed to be used with liquid fuel, such as fuel oil, although it will be understood that it is adapted for use with other forms of liquid fuel.

The invention is designed to provide a burner of this kind which is economically made and which provides for better combustion with less smoke.

The invention is also designed to provide a burner in which there is little or no chance for clogging.

The invention is illustrated in the accompanying drawing, in which Figure 1 is a top view of one form of my improved burner. Fig. 2 is a section on line 2—2 in Fig. 1, and Fig. 3 is a front view of the burner.

The burner is preferably made of two members, this being done because it is easier to make. The two members are assembled to form a casing indicated in general by the reference numeral 10. The two members 11 and 12 are held together by suitable means, such as the bolts 13.

The upper part of the casing has a projecting lip or mouth-piece 14, which has an inverted chamber formed on its bottom face by the flanges 15 at the sides and the flange 16 at the front, the lips being of substantial length and the flanges being preferably low so that the chamber is shallow and presents a considerable surface of oil to be subjected to the atomizing agent. The inlet passage 17 has an orifice 18, by means of which liquid fuel is fed to the chamber. This orifice is usually restricted, and means for controlling the flow of liquid is not shown, as it is no part of this invention.

The passage 19 is provided for fluid under pressure, such as air or steam, which acts as an atomizing agent, the passage terminating in a narrow slit 20 which is placed so as to direct a film of fluid on a plane approximately level with the bottom edge of the flange 16. The usual form of flange is fan-shaped and the slit 20 is made so that the film is fan-shaped or divergent. The film forms a bottom for the inverted chamber 21 and supports the liquid fuel in the chamber and at the same time carries away with it a constant supply of fuel in the form of a film from the bottom of the mass of fuel which is stored in the chamber, which film is mixed with the air or steam as it proceeds to the point of combustion.

I may provide small indentures or teeth on the bottom edge of the front flange 16, which indentures finely atomize the oil and also assist in more thoroughly mixing the oil and steam or air on its way to the furnace. These teeth or indentures are usually arranged so that they are radial relative to the slit or outlet for the fluid under pressure.

It will be understood that minor changes in the form and the assembling of the parts can be made without departing from the scope of the invention.

I claim:

1. A burner for fluid fuel comprising a casing having a chamber with an open bottom, said chamber having a restricted supply orifice, and means for projecting a film of fluid under pressure across the bottom of said chamber, whereby said film supports liquid in said chamber and carries a quantity from the bottom thereof.

2. A burner for fluid fuel comprising a casing with a fan-shaped shallow chamber with an open bottom, and means for directing a diverging film of fluid under pressure from the narrow end of the chamber across the bottom thereof to support the liquid in the chamber and carry a quantity from the bottom thereof.

3. A burner comprising a casing having a projecting lip with a front flange and side flanges, said flanges projecting downwardly to form a chamber, and having a passage for fluid under pressure, said passage terminating in a narrow slit to project the fluid in a plane extending across the bottom edge of the front flange so as to form a support and projector for the bottom of the liquid in the chamber.

4. A burner comprising a casing having a projecting lip with a front flange and side flanges, said front flange having a series of relatively fine indentures on its bottom edge, said casing also having a passage for fluid

under pressure terminating in a slit to project the fluid in a plane extending across the indentured edge of the front flange.

5. A burner comprising a casing having a fan-shaped lip with side and front flanges so as to form a shallow inverted chamber, the casing having a restricted orifice to supply the chamber, and means for projecting a fan-shaped film of fluid under pressure in a plane substantially in line with the bottom edge of the front flange to form a support for liquid in the chamber.

6. A burner comprising a casing having a fan-shaped lip with side and front flanges so as to form a shallow inverted chamber, the casing having a restricted orifice to supply the chamber, the casing also having a passage terminating in a narrow slit so as to project a fan-like film of fluid under pressure across the bottom of the chamber to form a support for liquid in the chamber.

7. A burner comprising a casing having a fan-shaped lip with side and front flanges so as to form a shallow inverted fan-shaped chamber with an open bottom, the casing having a restricted orifice to supply the chamber, the casing also having a passage terminating in a narrow slit so as to project a fan-like film of fluid under pressure across the bottom of the reservoir, the bottom edge of the front flange having indentures arranged radially to the slit from which the fluid emerges.

In testimony that I claim the foregoing, I have hereto set my hand, this 27th day of October, 1919.

AMYUIT L. WILSON.