W. T. WOOD.

OIL BURNER.

APPLICATION FILED MAY 3, 1911.

1,020,734.

Patented Mar. 19, 1912.

2 SHEETS—SHEET 1.

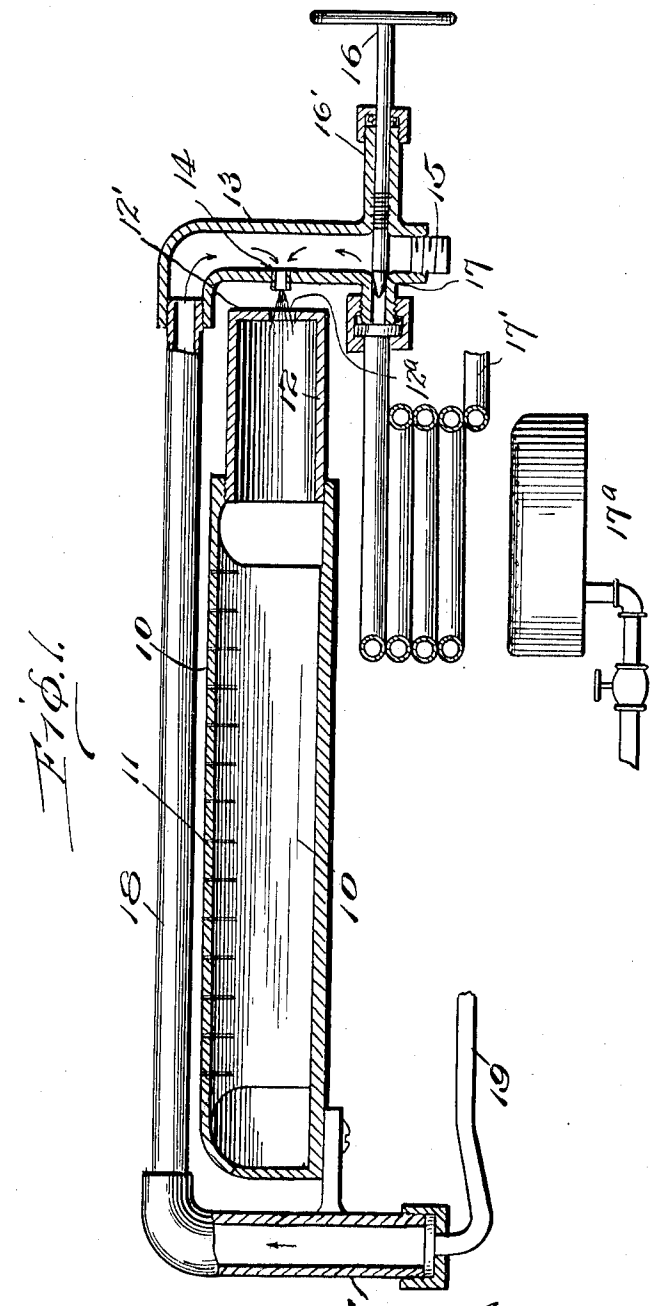

Fig. 1.

Witnesses

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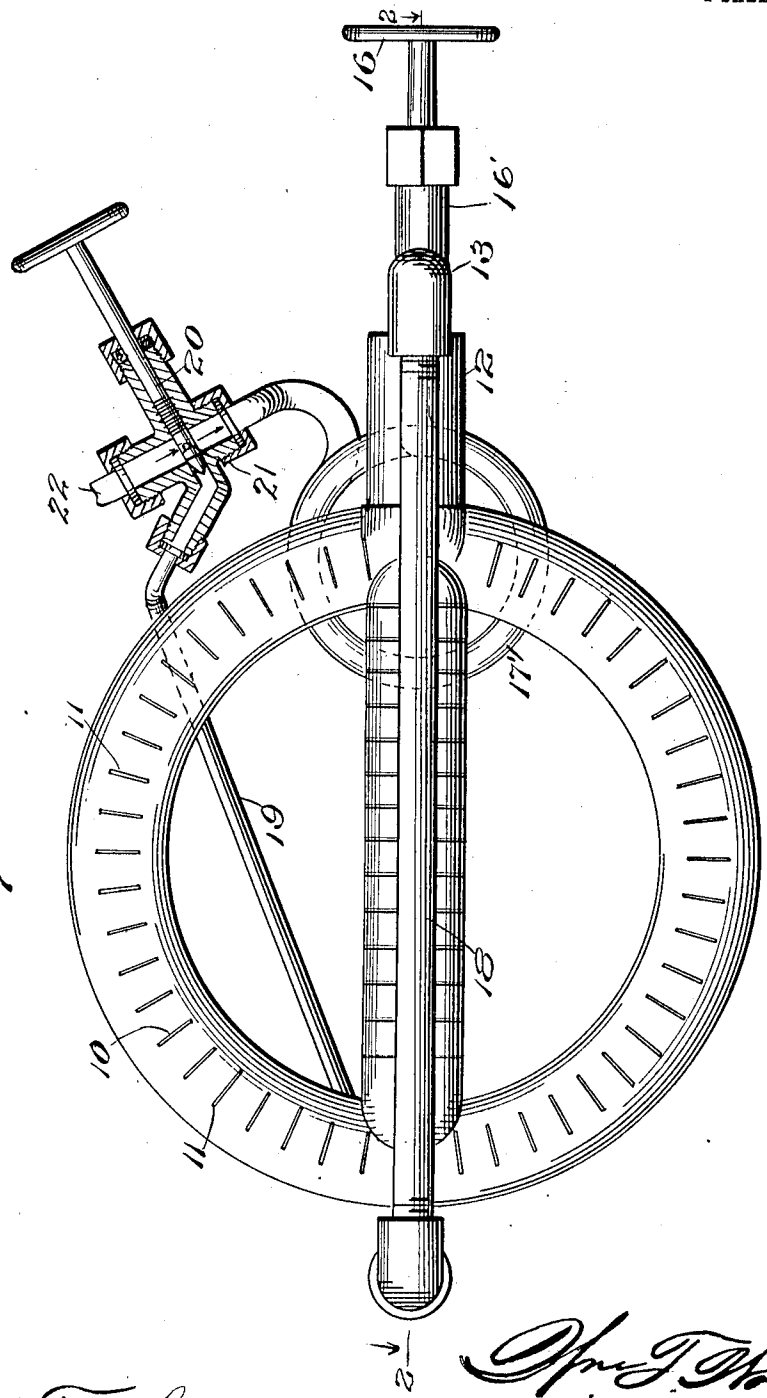

Fig. 2.

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UNITED STATES PATENT OFFICE.

WILLIAM THOMAS WOOD, OF NASHVILLE, TENNESSEE.

OIL-BURNER.

1,020,734. Specification of Letters Patent. **Patented Mar. 19, 1912.**

Application filed May 3, 1911. Serial No. 624,799.

To all whom it may concern:

Be it known that I, WILLIAM T. WOOD, a citizen of the United States, residing at Nashville, in the county of Davidson and State of Tennessee, have invented certain new and useful Improvements in Oil-Burners, of which the following is a specification.

The present invention relates to improvements in oil burners, and is designed especially for use as a blue-flame or vapor burner, using vaporized kerosene as fuel.

The essential object of the invention is the provision of an efficient burner of this character, which is simple in operation, not likely to become deranged, and durable.

A further object of the invention is the provision of means for obviating the objectionable smoke which is common to many burners of this type, when the fire is first started; and by means as will be described, the parts of the burner are preserved free from accumulation of carbon deposits.

The invention consists mainly in certain novel features of construction and combinations and arrangements of vaporizing devices for accomplishing the purposes of the invention, as will be set forth in the following specification and more clearly defined in the claims.

In the accompanying drawings I have illustrated one example of the physical embodiment of my invention constructed according to the best mode I have so far devised for the practical applications of the principles.

Figure 1 is a vertical central sectional view of a burner equipped with my invention. Fig. 2 is a plan view of the burner of Fig. 1, parts being shown in section for convenience of illustration.

The casing designated by the numeral 10 is of usual standard construction and is provided with slots or openings 11 for emission of the blue flame. The mixing chamber 12 communicates with the interior of the burner 10, and its closed end 12′ is perforated at 12^a for the introduction of vapor and air from the atmosphere. A gas feed tube 13 is located adjacent the mixing chamber, and its nozzle 14 is in position to inject gas into the perforation or orifice 12^a of the mixing chamber 12. At its lower end the feed tube 13 is closed by a screw plug 15, and a needle valve 16 is operable in the casing 16′ to admit either vapor or oil through the valve seat 17, which communicates with the coil 17′. The coil 17′ is a primary vaporizing coil and may be heated by the alcohol lamp 17^a located directly under the coil.

The main vaporizer consists of a pipe or tube 18 which extends across the top of the burner from the feed tube 13 to a second tube 18′ to which is attached the oil feed pipe 19.

Both the coil 17′ and the vaporizer 18 are fed from a suitable source of supply, and kerosene under pressure is admitted from the valve 20. As clearly seen in Fig. 2 this valve is provided with transverse perforations or ports 21 for the passage of kerosene to the coil 17′, and the valve may be rotated to control the admission of oil or kerosene to the feed pipe 19, from the inlet pipe 22.

In operation, assuming the coil 17′ to be filled with oil, and the needle valve 20 closed against admission of oil to the main vaporizer 18, the alcohol lamp under the coil is ignited. The heat from the lamp vaporizes the kerosene in the coil and the vapor passes upwardly through the feed tube 13 and into the casing 10, thus heating the tube and vaporizer 18. The valve 20 is now opened to admit kerosene to feed pipe 19 and thence to the vaporizer 18. The heated condition of the vaporizer 18 vaporizes the inflowing kerosene from valve 20 and the increased volume of gas from vaporizer 18 causes the gas therefrom to pass into the feed tube 13 thence through the nozzle 14 into the chamber 12 where the gas and air are mixed for fuel. The burner is now lighted as usual. With the burner in operation and receiving vaporized kerosene from the vaporizer 18, the valve 16 may be adjusted to nearly closed position. In this position, a fine spray of kerosene is forced into the feed tube 13, and the raw oil is injected through the nozzle 14 with the vapor. The passage of this spray through the nozzle tends to keep the nozzle washed, and prevents the deposit of carbon or soot from the vaporized kerosene. The location of the coil 17′ under the mixing chamber of the burner insures a heating of the chamber at the start, and the location of the vaporizer 18 above the burner keeps the vaporizer in a heated condition for vaporizing the kerosene feed thereto.

From the above description taken in connection with the drawings it is evident that I have provided a burner which fulfils the

conditions set forth as the object of my invention.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. The combination in a burner, of a casing, a mixing chamber communicating therewith, a vaporizing coil beneath said chamber, a vaporizing tube extended over the burner casing, a feed tube connecting the vaporizing coil and vaporizing tube, an inlet pipe communicating with the vaporizing coil and the feed tube, an oil feed pipe communicating with the vaporizing tube and the inlet pipe, and a controlling means provided with transverse ports for regulating the passage of fluid to said oil feed pipe.

2. The combination in a burner, of a casing, a mixing chamber communicating therewith, a vaporizing coil beneath said mixing chamber, a vaporizing tube extending diametrically across the burner casing, a feed tube disposed vertically with reference to the mixing chamber and connecting said coil and vaporizing tube, a second tube located in parallel opposite relation to the vertical feed tube and connected therewith by the vaporizing tube, an oil feed pipe connected to said second tube, an inlet pipe communicating with the oil feed pipe, and means for controlling the passage of fluid to said oil feed pipe.

3. The combination in a burner, of a casing, a mixing chamber communicating therewith, a vaporizing coil beneath said mixing chamber, a vaporizing tube extending diametrically across the burner casing, a feed tube disposed vertically with reference to the mixing chamber and connecting said coil and vaporizing tube, means for controlling the admission of the vaporized fluid from the vaporizing coil to the feed tube, a second tube located in parallel opposite relation to the vertical feed tube and connected therewith by the vaporizer tube, an oil feed pipe connected to said second tube, an inlet pipe communicating with the oil feed pipe and the vaporizing coil, and means for controlling the passage of fluid to said oil feed pipe.

4. The combination in a burner, of a casing, a mixing chamber communicating therewith, a vaporizing coil beneath said mixing chamber, means for supplying fuel to said coil, a vaporizing tube extending across the burner casing, a feed tube disposed vertically with reference to the mixing chamber and connecting said coil and vaporizing tube, a second tube located in parallel opposite relation to the vertical feed tube and connected therewith by the vaporizing tube, an oil feed pipe connected to said second tube, an inlet pipe communicating with the oil feed pipe and the vaporizing coil, and means for controlling the passage of fluid to said oil feed pipe.

5. The combination of a casing, a mixing chamber communicating therewith, a vaporizing coil beneath said mixing chamber, a vaporizing tube extending across the burner casing, a feed tube disposed vertically with reference to the mixing chamber, a second tube located in parallel opposite relation to the vertical feed tube and connected therewith by the vaporizing tube, an oil feed pipe connected to said second tube, an inlet pipe communicating with the oil feed pipe and the vaporizing coil, and a rotatable valve mounted at the juncture of the oil feed pipe and the inlet pipe and provided with a plurality of transverse ports for regulating the passage of fluid through said oil feed pipe.

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

WILLIAM THOMAS WOOD.

Witnesses:
F. A. CLARKSON,
J. L. LESUEN.