

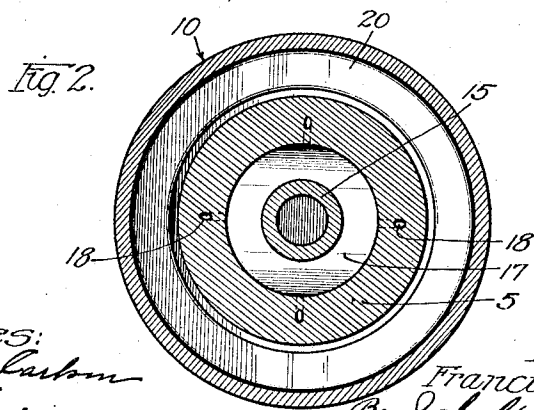
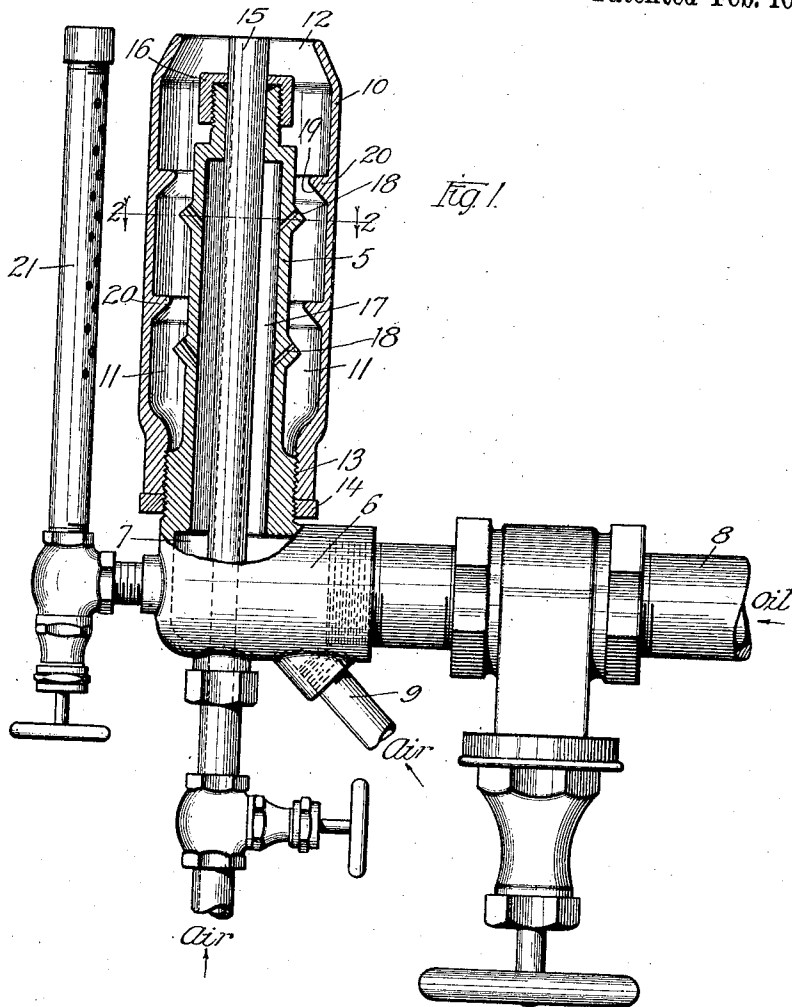
F. B. SCHREIBER.

OIL BURNER.

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1,330,767.

Patented Feb. 10, 1920.



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UNITED STATES PATENT OFFICE.

FRANCIS B. SCHREIBER, OF HARVEY, ILLINOIS.

OIL-BURNER.

1,330,767.

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To all whom it may concern:

Be it known that I, FRANCIS B. SCHREIBER, a citizen of the United States, residing at Harvey, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Oil-Burners, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to oil burners adapted for the burning of hydrocarbon oils, an object being to provide an improved and simplified device of this character in which the oil globules are thoroughly broken up and vaporized by forcing the oil through angularly disposed oil ports and against oppositely positioned flat oil impinging surfaces set at preferably right angles to the oil ports.

For a better understanding of my invention reference is to be had to the accompanying drawing in which:

Figure 1 is a side elevation of the preferred form of my invention partially broken away to show the interior construction; and

Fig. 2 is a cross-section along the line 2-2 of Fig. 1 to show the radial disposition of the ports and the circumferential oil impinging rib.

Referring now more particularly to the detailed construction of my invention it comprises a plurality of concentric tubes consisting of an intermediate tube 5 extending from a base portion 6 having an oil receptacle 7 therein and a valve controlled oil connection 8 and air connection 9. The intermediate tube 5 and outer tube 10 due to their concentric disposition form an outer or vaporizing chamber 11 closed at its lower end and open at its flame or burner end 12, the tubes 5 and 10 being adjustably threaded together at 13 and held by means of a lock nut 14. A central tube 15 is threaded through the base 6 and extends through the intermediate tube 5, tube 15 providing air at the burner end 12. A suitable packing nut 16 encircles the open end of the central tube 15 so as to provide an airtight joint between the tubes 5 and 15. The concentric intermediate and central tubes 5 and 15 respectively thus provide an inclosed intermediate oil chamber 17 and this chamber is connected with the vaporizing chamber 11 by means of a plurality of rows of radially

disposed ports 18 angularly extending toward oil impinging surfaces 19 preferably in the form of circumferential ribs 20, the impinging surfaces 19 being preferably positioned at right angles to the direction of flow through the ports 18, so as to effectively break up the oil globules and thoroughly mix it with the air in the vaporizing chamber 11.

The burner may be used either in a furnace or inclosed in a heating chamber so that the heat from the flame will maintain the vaporizing chamber hot. But, in order that it may be used in the open for heating rivets and the like, I provide a heater in the form of a perforated tube 21 which is connected to the oil chamber 7 and positioned parallel to the vaporizing chamber so that the flame from the tube 21 is directed toward the vaporizing chamber to keep it hot.

In the operation of the device a suitable proportion of oil and air are directed through the oil and air tubes 8 and 9 respectively and into the chamber 7 where they pass up through the ports 18 to impinge upon the oppositely positioned surfaces 19 where the oil globules are thoroughly broken up and vaporized. Air under pressure is also admitted through the central tube 15 so as to produce a suitable combustion at the burner or flame end 12.

For the purpose of illustrating my invention I have shown a preferred form but it will be apparent that changes and modifications will readily occur to those skilled in the art and therefore I do not desire to be limited to the exact construction shown and described but aim to cover all that which comes within the spirit and scope of the appended claims.

I claim—

1. An oil burner comprising three concentric tubes, a vaporizing chamber formed by the outer and intermediate tubes and opening out at one end, an intermediate inclosed chamber formed by the intermediate and inner tubes and opening out at the other end, means for feeding oil to the intermediate chamber through its end opening, and oil feed ports connecting the chambers.

2. An oil burner comprising three concentric tubes, a vaporizing chamber formed by the outer and intermediate tubes and opening out at the flame end, an intermediate inclosed chamber formed by the intermediate

and inner tubes and opening out at the other end, means for feeding oil to the intermediate chamber through its end opening, oil feed ports connecting the chambers, and an
5 air passage through the central tube opening out at the flame end of the vaporizing chamber.

3. An oil burner comprising concentric tubes forming an interposed vaporizing
10 chamber, radially disposed angularly extending oil ports connecting the interior of the inner tube and said chamber, and flat oil impinging surfaces on the inner wall of the
15 outer tube opposite the oil ports and at a right angle thereto.

4. An oil burner comprising concentric tubes forming an interposed vaporizing chamber, radially disposed angularly extending oil ports connecting the interior of
20 the inner tube and said chamber, and an inner circumferential rib having a flat oil impinging surface opposite the oil ports and at a right angle thereto.

5. An oil burner comprising three concentric tubes, a vaporizing chamber formed by the outer and intermediate tubes and opening out at the flame end, an intermediate inclosed chamber formed by the intermediate and inner tubes and opening out at
30 the other end, means for feeding oil to the intermediate chamber through said other end, rows of radially disposed angularly extending oil ports connecting the intermediate and vaporizing chambers, inner circumferential ribs having a flat oil impinging
35 surface opposite each row of oil ports and at a right angle thereto, means for supplying air through said inner tube, said inner tube opening out at the flame end of
40 the vaporizing chamber, and means for feed-

ing oil to the intermediate chamber at its open end.

6. An oil burner comprising an externally threaded tube having rows of radially disposed angularly extending oil ports in the
45 wall thereof, and an outer tube having inner circumferential flat oil impinging surfaces, said outer tube being threaded onto the first said tube and adjustable so as to position the impinging surfaces opposite the rows of
50 oil ports.

7. An oil burner comprising a pair of concentric tubes, an oil port extending through the wall of the inner tube, a flat oil
55 impinging surface on the inner wall of the outer tube and at a right angle to the port, and means for adjusting the tubes to place the oil impinging surface in proper position opposite the oil port.

8. An oil burner comprising three concentric tubes provided with a burner at one end,
60 the innermost tube supplying air directly to said burner and a heater adjacent and parallel to the tubes.

9. An oil burner comprising concentric
65 tubes having a burner at one end, means within said tubes for supplying air directly to said burner, a heater and means for supplying oil to the heater.

10. An oil burner comprising a vaporizing
70 chamber, a heater external to said chamber, means to supply oil and air to said chamber, and means within the chamber for supplying additional air for combustion
75 purposes.

In witness whereof, I hereunto subscribe my name this 12th day of March, A. D. 1918.

FRANCIS B. SCHREIBER.