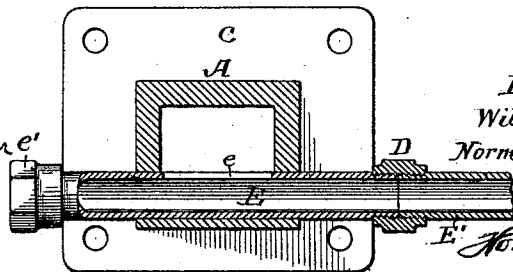
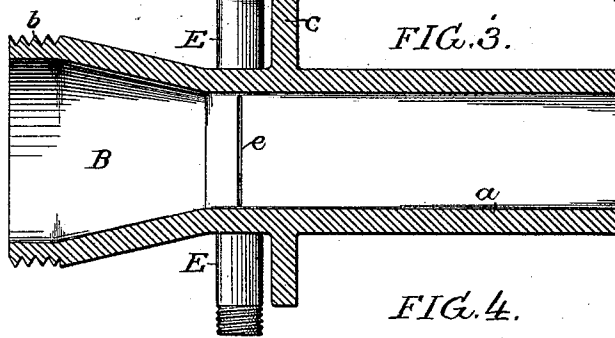
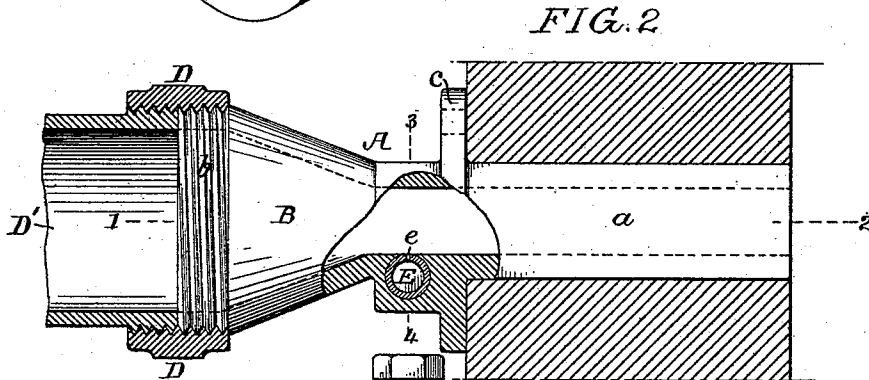
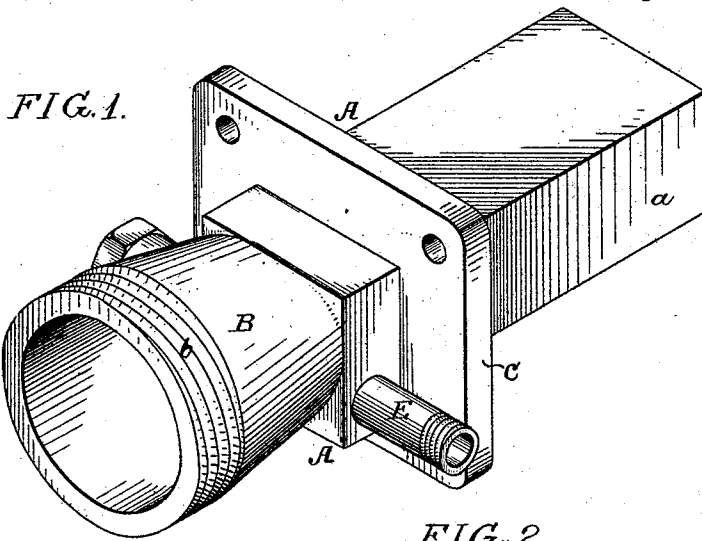


(No Model.)

W. VOLLMER & N. ST. G. CAMPBELL.
OIL BURNER.

No. 498,591.

Patented May 30, 1893



Witnesses:

Hamilton D. Turner
A. V. Grouse

Inventors

William Vollmer &
Norman St. G. Campbell
by their Attorneys
E. Johnson & Johnson

UNITED STATES PATENT OFFICE.

WILLIAM VOLLMER AND NORMAN ST. G. CAMPBELL, OF PHILADELPHIA,
PENNSYLVANIA.

OIL-BURNER.

SPECIFICATION forming part of Letters Patent No. 498,591, dated May 30, 1893.

Application filed November 28, 1892. Serial No. 453,441. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM VOLLMER and NORMAN ST. GEORGE CAMPBELL, both citizens of the United States, and residents of Philadelphia, Pennsylvania, have invented certain Improvements in Oil-Burners, of which the following is a specification.

The object of our invention is to construct an oil burner especially adapted for heating furnaces and like structures, where an intense heat is required; and which is simple in construction, satisfactory in operation, and which will not require careful adjustment. This object we attain in the following manner, reference being had to the accompanying drawings, in which—

Figure 1, is a perspective view of our improved burner. Fig. 2, is a side view, partly in section, showing the burner mounted in the walls of a furnace. Fig. 3, is a sectional plan view on the line 1—2, Fig. 2; and Fig. 4, is a transverse sectional view on the line 3—4, Fig. 2.

A is the body of the burner preferably made of cast metal, and has a contracted quadrangular tubular section *a*, through which air and oil pass into the furnace, and ignite at the mouth of the burner.

B is a head having a screw thread *b*, to which is adapted a coupling sleeve D, whereby the air tube D' is coupled to the burner, as shown in Fig. 2.

E is the oil inlet pipe, situated transversely in respect to the burner. This tube E has a slot *e* in its upper surface, and extends through the entire width of the passage of the burner, opening directly into the air passage or tube as clearly shown in Figs. 2, 3 and 4. This tube is preferably cast into the burner during the process of manufacture, so that it is absolutely tight, and is in fact, part of the burner itself, as it cannot be moved therein, and cannot be thrown out of line by carelessness of an operator, or the attendant at the furnace. Each end of this tube is screw threaded so that either end can receive the coupling of the oil pipe E', the opposite end of the tube being provided with a suitable cap *e'*. The object of having this tube threaded at each end, is to enable the coupling to

be made on either the right or left hand side of the burner, according to circumstances.

On the body of the burner is a flange *c*, in which are suitable holes for the passage of bolts to fasten the burner to the furnace. 55

After the burner is once set it needs no further adjustment, and the user does not have to be a skilled oil burner operator, as is the case with many of the burners now on the market. 60

The air tube and oil pipe are supplied with a suitable valve for regulating the supply of air and oil to the burner. The oil is fed by gravity, and the air is under pressure. The air takes up the oil as it passes up from the tube E in a thin film, owing to the narrowness of the slot, and divides and carries it to the point of ignition, and after the valves have been once set they can remain in this position indefinitely. The air can be heated before it passes into the burner, but cold air will answer in many cases. 65 70

The burner is simple in construction, being practically of one piece, as the tube is cast into the body, and is therefore a fixture. 75

The burner can be readily cleaned, and its simple construction enables it to be placed in many places where other burners are impracticable, such as small furnaces for heating rivets, bolts, and spring fitters' furnaces, &c., in large factories and machine shops, and for heating any of the ordinary articles which are carried to welding heat. 80

We claim as our invention—

1. The combination in an oil burner, of the body having a reduced tubular section *a*, and a tapered head B to which is coupled the air pipe, with an oil tube situated transversely in respect to the line of the air current, said tube being mounted within the casting of the burner, and having a slot opening directly into the air tube extending transversely across the passage in the burner, said tube being coupled to an oil pipe, substantially as described. 85 90 95

2. The combination of the tubular section *a* of the burner, the enlarged tapered head B adapted to be coupled to the air pipe, a transverse oil tube, a slot therein opening directly into the air tube for the passage of oil from 100

the tube to the interior of the burner, said oil tube being cast in the body of the burner, substantially as described.

3. The combination of the quadrangular tubular section *a*, the enlarged tapered head B, and air tube connected thereto, a transverse oil pipe having a slot opening directly into the air tube forming a communication between the oil pipe and the interior of the burner, a screw thread at each end of the tube, so that the oil pipe may be coupled to either end thereof, substantially as described.

4. The combination of the quadrangular tubular section *a* of the burner, flange *c*, the enlarged tapered head B, screw thread thereon, a coupling by which the air pipe is connected to the head, with a transverse oil tube cast within the body of the burner, and having a slot opening directly into the air tube in its upper side forming a communication between the oil tube and the interior of the burner, and so arranged as to throw a film of

oil into the path of the air as it passes through the burner, with a cap adapted to one end, and oil tube adapted to be secured to the other end, the whole constructed substantially as described.

5. In an oil burner, the combination with the quadrangular tubular section, of an enlarged tapered air tube, having on one side an integral pipe for oil, said pipe provided with a slot opening directly into the air tube, and projecting on both sides of the air tube and adapted to have either end closed, substantially as and for the purposes specified.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

WILLIAM VOLLMER.

NORMAN ST. G. CAMPBELL.

Witnesses:

J. R. MASSEY,

M. A. JONES.