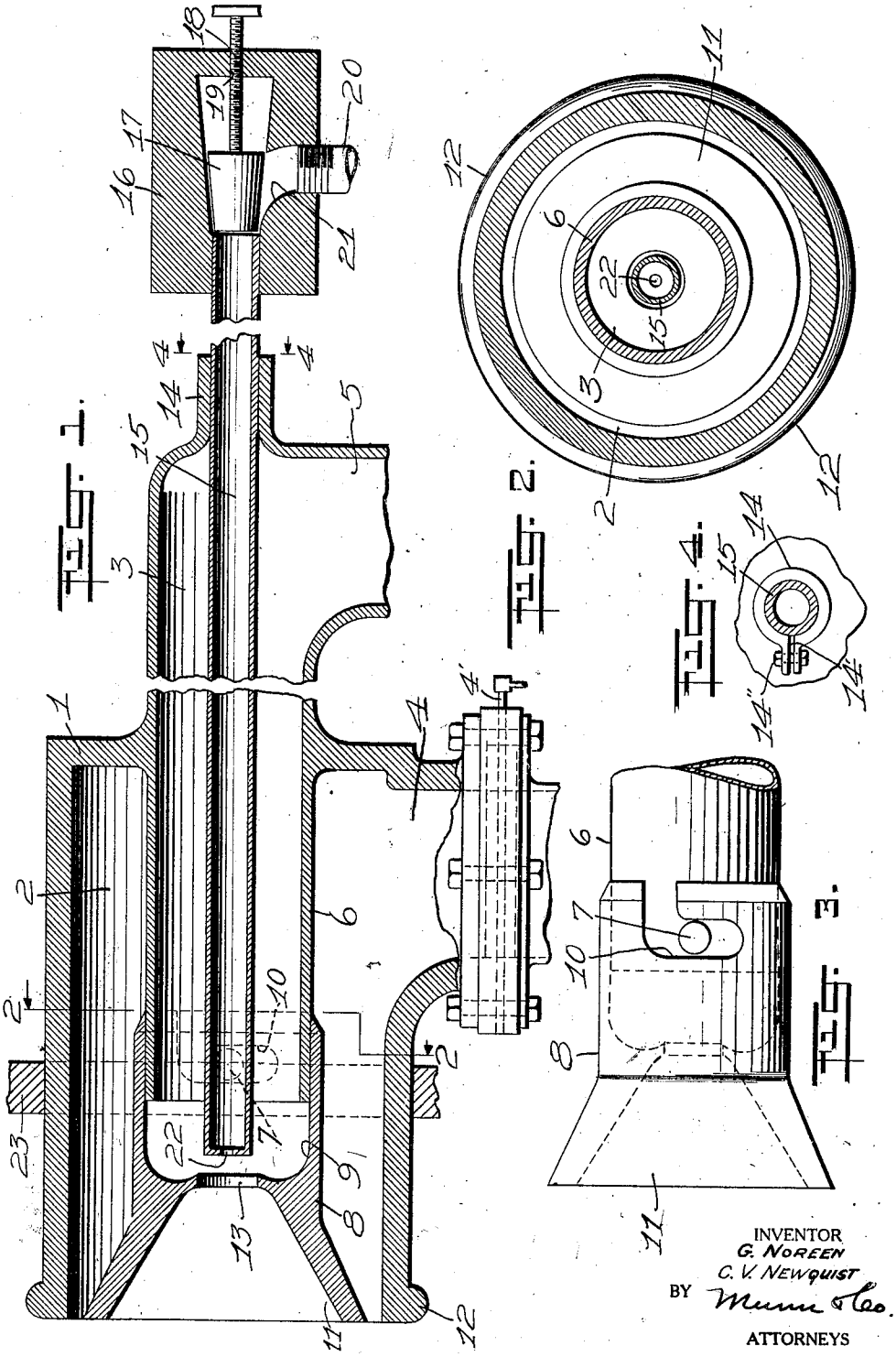
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OIL BURNER

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UNITED STATES PATENT OFFICE.

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OIL BURNER.

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Our invention relates to improvements in oil burners, and it consists in the combinations, constructions, and arrangements herein described and claimed.

An object of our invention is to provide an oil burner which is constructed of a small number of parts, thus rendering the device simple in construction and inexpensive to manufacture.

A further object of our invention is to provide a device of the type described in which the member which contacts with the flame may be readily removed and a new member of the same likeness inserted in its place without removing any other portion of the burner.

A further object of our invention is to provide a device of the type described in which this removable member protects the remaining portions of the burner from the flame.

A further object of our invention is to provide a device of the type described which burns the oil without wasting any and produces a smokeless flame, the smoke being consumed in the heat.

A further object of our invention is to provide a device of the type described which requires only a low air pressure and a low oil pressure.

Other objects and advantages will appear in the following specification, and the novel features of the invention will be particularly pointed out in the appended claim.

Our invention is illustrated in the accompanying drawings, forming part of this application, in which

Figure 1 is a longitudinally extending sectional view of the device,

Figure 2 is a section along the line 2—2 of Figure 1,

Figure 3 is a fragmentary elevation of a portion of the device, and

Figure 4 is a section along the line 4—4 of Figure 1.

In carrying out our invention, we provide a housing 1 which consists of a casting having a relatively large air compartment 2 and a relatively small air compartment 3. The relatively large air compartment 2 is provided with an air inlet 4. The air entering the inlet 4 is controlled by any suitable means, such as a rotary valve 4′. The relatively small air compartment 3 is provided with an air inlet 5. The relatively small air compartment is formed of an integral cylindrical member 6 which extends within the relatively large air compartment 2 and is centrally disposed therein. A pin 7 is rigidly mounted upon the outer surface of the cylindrical member 6 substantially adjacent the end thereof. A burner head 8 is provided with an opening 9 for receiving the cylinder portion 6. The burner head 8 is further provided with a bayonet slot 10 which is adapted to receive the pin 7. The free end 11 of the burner head 8 is conical-shaped and extends outwardly to the end of the relatively large air compartment. The wall of the relatively large air compartment 2 is provided with an annular bead 12 at the outer edge thereof. An opening 13 provides communication between the conical-shaped portion on the burner head 8 and the relatively small air compartment 3.

The wall of the relatively small air compartment 3 is provided with a reduced cylindrical portion 14 for receiving and retaining an oil tube 15. The cylindrical portion 14 is provided with a slot 14′ and a bolt 14″. One end of the oil tube 15 is provided with a valve casing 16. A valve 17 is movably disposed within the casing and adapted to be positioned against the end of the oil tube 15 for closing the same. The valve 17 is provided with a hand adjusting screw 18 which extends through a threaded opening 19 in the casing 16. An oil inlet pipe 20 is secured to the casing 16 and communicates with the oil tube 15 by means of a passageway 21.

The oil tube 15 is centrally disposed within the relatively small air compartment 3 and extends therethrough to a point substantially adjacent the opening 13 within the burner head 8. The end of the oil tube 15 adjacent the burner head 8 is closed with the exception of a relatively small opening 22.

The casing may be attached to a boiler 23 in any suitable manner so that the air inlets remain upon the outside of the boiler.

From the foregoing description of the various parts of the device, the operation thereof may be readily understood. The oil passes through the oil pipe 20 at low pressure, through the passageway 21, the oil tube 15, and through the relatively small opening 22. At this point, the oil is mixed with air passing through the inlet 5 and the relatively small compartment 3 at low pressure. The mixed oil and air passes through

the opening 13 and becomes ignited in any suitable manner. The flames from the mixed oil and air are guided by the burner head into the boiler. The wall of the relatively large air compartment 2 is thus protected from the direct contact and heat of the flames. This wall is further protected by air passing through the inlet 4 and passing out around the burner head 8. Therefore, the only part in contact with the flame is the burner head 8. This part is simple in construction and may be readily removed by rotation in a clockwise direction and a new burner head readily inserted in its place.

The flow of the oil is controlled by the valve 17 in its movement toward or away from the oil tube 15.

We claim:

A device of the type described comprising a housing having an open end, a cylindrical portion centrally disposed in said housing and integral therewith, said cylindrical portion extending through and beyond said housing, said cylindrical portion forming a relatively large air compartment in said housing and a relatively small air compartment therein, an inlet for said relatively large air compartment, means for controlling the passage of air through said inlet, a pin rigidly mounted upon said cylindrical portion, a burner head having a bayonet slot in one end thereof adapted to receive said pin for removably securing said burner head to said cylindrical portion, the other end of said burner head being conical-shaped and extending outwardly to a position in alignment with the open end of said housing, an oil tube centrally disposed in said cylindrical portion and provided with a relatively small opening in one end thereof, the relatively small opening in said oil tube being in alignment with the central opening of said burner head, the other end of said oil tube being provided with a valve, and means for moving said valve toward or away from said oil tube for varying the amount of oil passing therethrough.

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