

Sept. 11, 1934.

C. R. WILSON

1,973,456

OIL BURNER

Filed Feb. 1, 1932

2 Sheets-Sheet 1

Fig. 1.

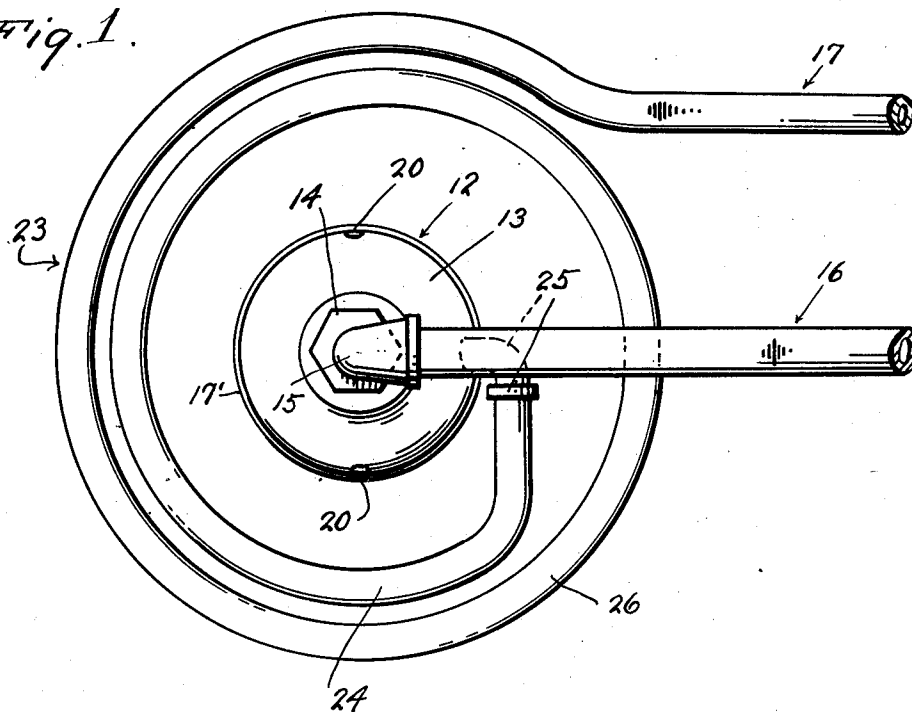
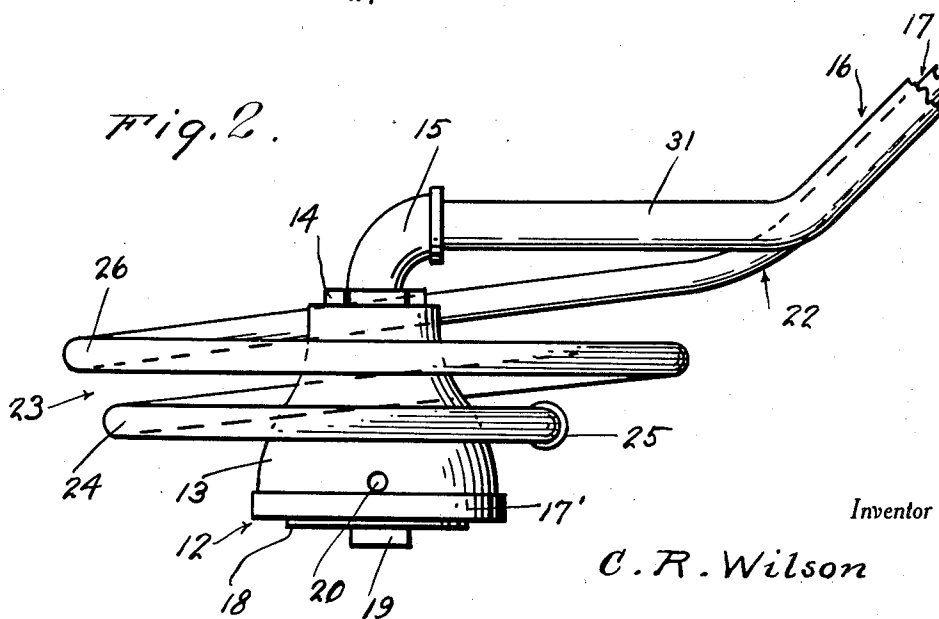


Fig. 2.



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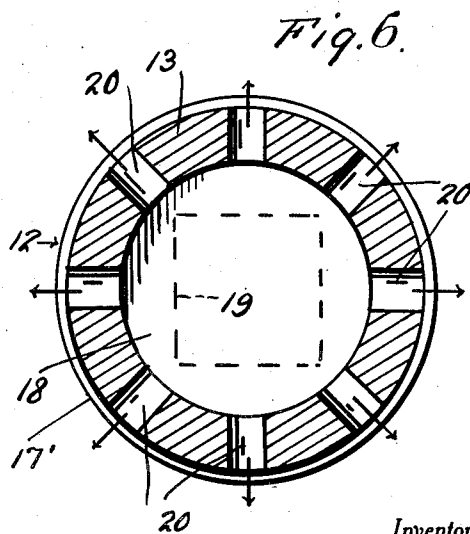
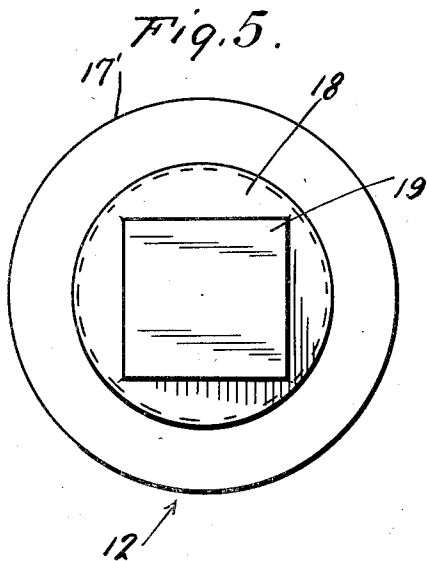
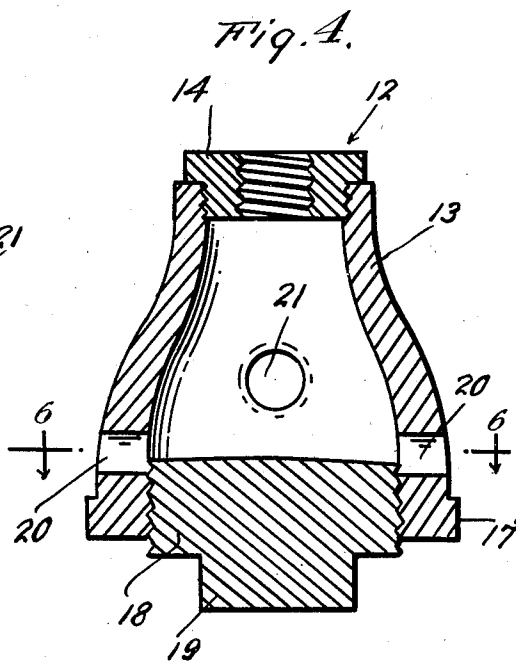
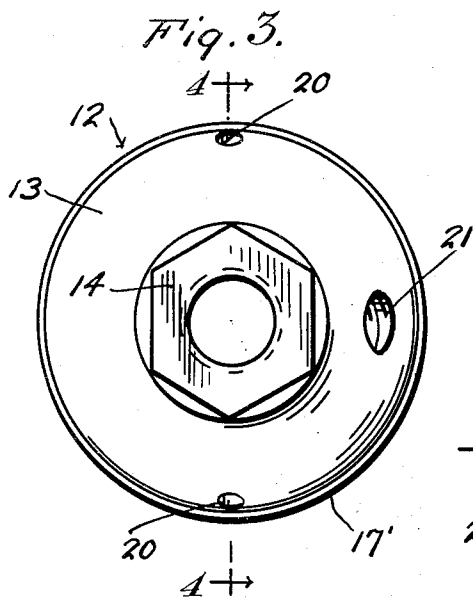
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UNITED STATES PATENT OFFICE

1,973,456

OIL BURNER

Charles Robert Wilson, Ardmore, Okla.

Application February 1, 1932, Serial No. 590,273

1 Claim. (Cl. 158—56)

This invention relates to an improved oil burner particularly adaptable for use in domestic cooking stoves and susceptible of efficient operation through the use of fuel oil, kerosene, crude oil, or such low grade products as used crank case oil.

The object of the invention is to provide a simple and economical burner head and piping arrangement capable of developing the requisite degree of heat and desirable because of its unique ability to fulfill the requirements of a structure of this class in an efficient and otherwise satisfactory manner.

The structural details and their relative arrangement and association will become more readily apparent from the following description and drawings.

In the drawings:

Figure 1 is a plan view of the improved oil burner.

Figure 2 is a side or edge elevation of the structure shown in Figure 1.

Figure 3 is a top plan view of the burner head.

Figure 4 is a central vertical section on the line 4—4 of Figure 3.

Figure 5 is a bottom plan view of the burner head.

Figure 6 is a horizontal section on the line 6—6 of Figure 4, showing the addition of supplemental flame ports.

The burner head is generally denoted by the numeral 12 and comprises a hollow bell-shaped casting 13 whose reduced truncated end is internally screw-threaded to accommodate the threads of a nut 14 forming a union or connection for the elbow-coupling 15. The fuel supply line 16 is connected to this elbow 15.

The base of the casting 13 is formed with a reinforced marginal rim 17 and is internally screw-threaded to accommodate a cleaning plug 18 having a suitable tool grip 19. The shell or casting 13 is also formed with one or more flame discharge ports or orifices 20 located at suitable points within the vicinity of the plug 18.

The numeral 21 designates a screw-threaded hole into which a water supply line is tapped. The water supply line is generally denoted by the numeral 17. A feature of the part 17 is that it is made up of a suitable number of pipe sections coupled together by appropriate unions and it is formed with a vaporizing coil generally denoted by the numeral 23. The coil comprises a lower convolution 24 whose discharge end is

attached by a suitable coupling 25 to the casting 13 through the hole 21.

The coil also includes a larger upper convolution 26, these convolutions being graduated to provide the desired progressive entry of the steam or vapor into the burner head. Of course, when the water enters the burner head it is virtually converted into a vapor. For this reason the coil surrounds the burner head for preheating and vaporization of the water.

The inclined portions of the water supply and fuel lines are provided with any suitable type of cut-off and regulating valves. Particular attention is called to the portion 31 of the fuel supply line which is disposed in an approximately horizontal plane and merges with the inclined portion of the fuel supply line. This arrangement makes it possible for an even flow of oil thereby eliminating the possibility of an over-supply of oil such as might be possible if this arrangement were not provided.

Evidently there is a certain back pressure produced at this particular point of connection of the oil supply pipe with the burner head caused from excessive heat from the burner. When the burner cools suddenly however, superfluous oil enters. This is eliminated by the arrangement illustrated in the drawings.

Experiments with a burner constructed in accordance with the arrangement herein illustrated reveals that it will use approximately twenty-five percent water in volume to seventy-five percent oil. Moreover, as before pointed out, the incoming water entering the coils is vaporized and converted into steam or a vapor which provides an appropriate combustible fuel mixture and minimizes carbon deposits.

It is manifest that the parts utilized in the complete structure have been especially selected to provide unification and appropriate co-ordination in function and purpose, and the particular arrangement of piping forming the vaporizing coil and top intake of fuel adds to the unique assembly, with the result that efficient performance is practically assured.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts provided that such changes fall within the scope of the appended claim.

I claim:

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In an oil burner construction, a vertically disposed burner head comprising a hollow bell-shaped casing internally screw-threaded at its upper and lower ends and provided with jet outlet openings adjacent its lower end, a drain plug screw threaded in the lower end thereof, an elbow having one end thereof screw threaded in the upper end of said casing, a fuel oil supply pipe connected to the other end of said elbow and extending horizontally therefrom for a portion of its length and then being inclined upwardly, and a multiple convolution preheating coil surrounding said casing and having its lower free end connected to said casing, the upper portion of said coil being adapted to be connected to a source of water supply and being inclined upwardly.

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