

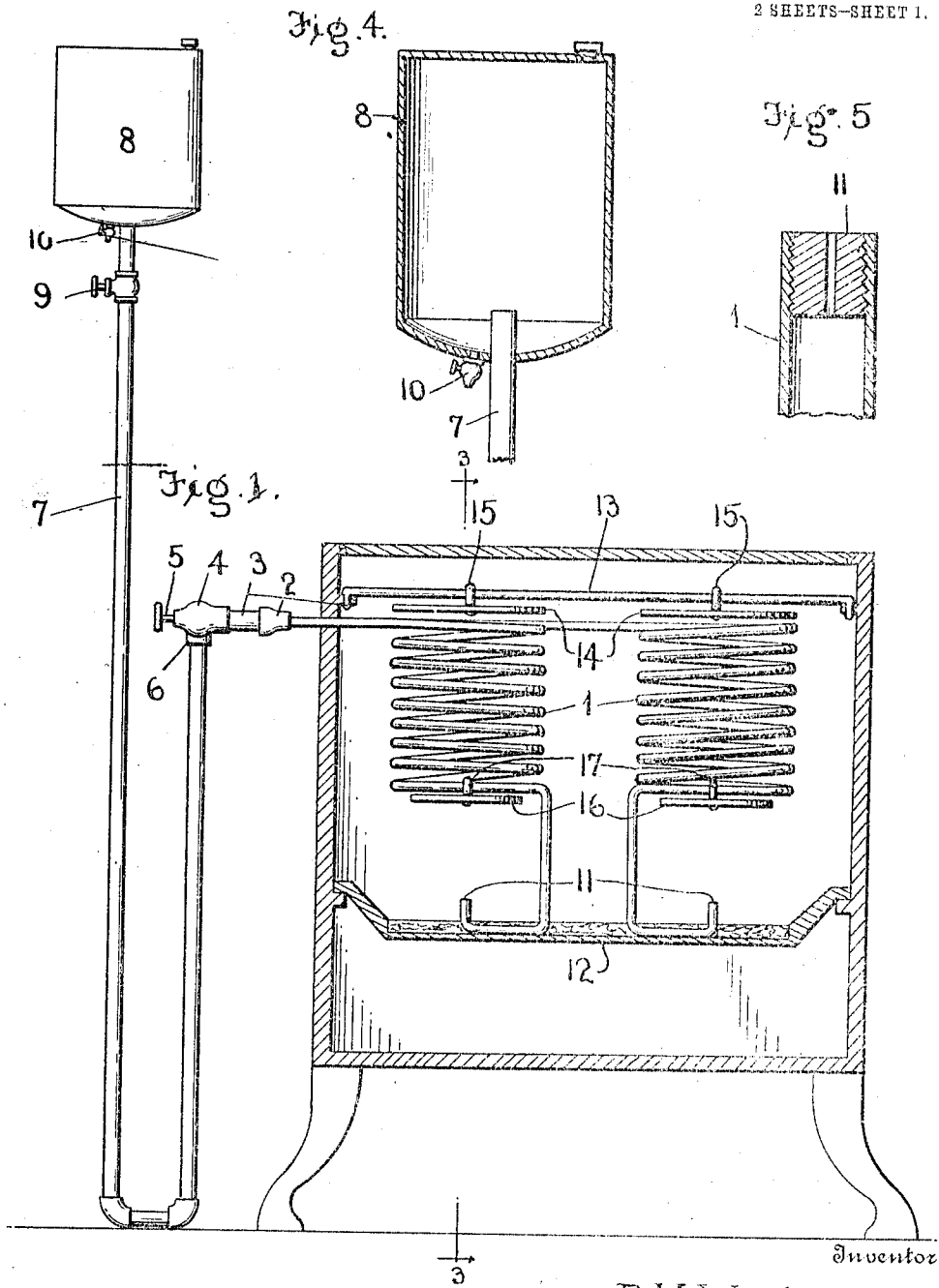
D. M. WOODS.
OIL BURNER.

APPLICATION FILED JULY 23, 1912.

1,055,115.

Patented Mar. 4, 1913.

2 SHEETS-SHEET 1.



Witnesses

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Fig. 2.

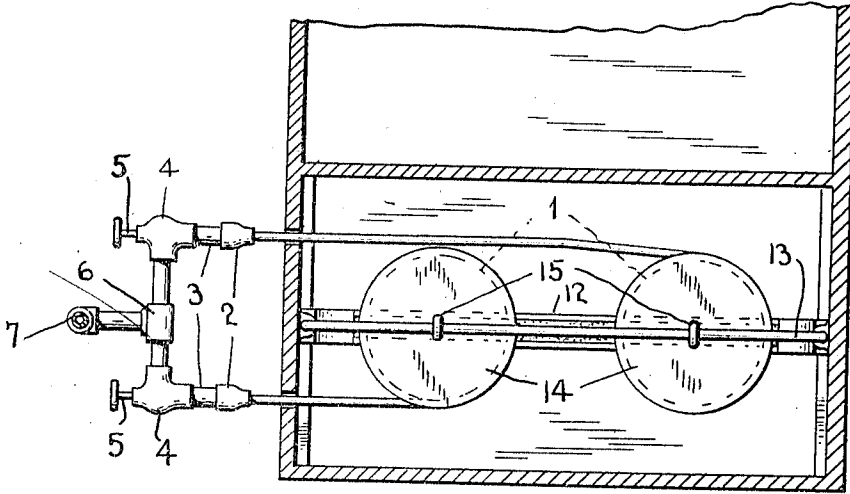
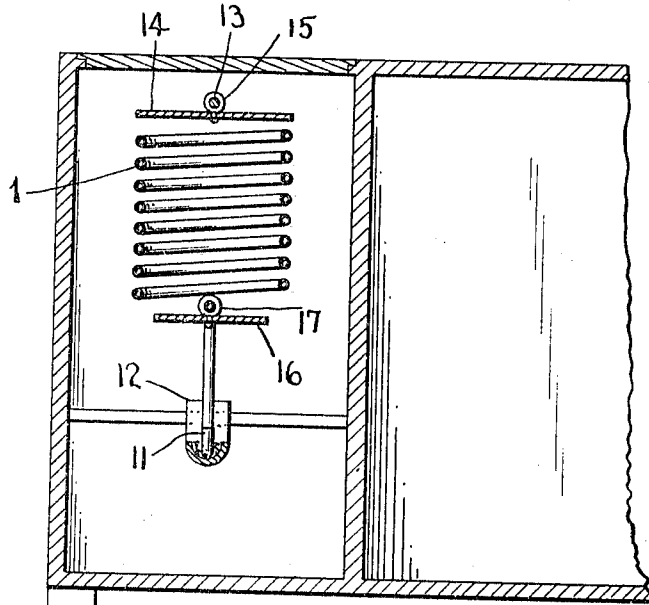


Fig. 3.



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UNITED STATES PATENT OFFICE.

DAVID M. WOODS, OF SACRAMENTO, CALIFORNIA.

OIL-BURNER.

1,055,115.

Specification of Letters Patent.

Patented Mar. 4, 1913.

Application filed July 23, 1912. Serial No. 711,129.

To all whom it may concern:

Be it known that I, DAVID M. WOODS, a citizen of the United States, residing at Sacramento, in the county of Sacramento and State of California, have invented certain new and useful Improvements in Oil-Burners; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in oil burners.

One object of the invention is to provide an oil burner having an improved construction and arrangement of oil heating mechanism whereby the oil is thoroughly vaporized before being discharged from the burner.

Another object is to provide a novel form and arrangement of support for the burner coils which also serves as a means for holding the priming charge of oil.

Another object is to provide a burner of this character having an improved construction and arrangement of flame spreaders whereby the flame below the coils of the burner is spread and deflected around the coils and whereby the flame above the burners is spread and may be deflected in the desired direction.

With these and other objects in view, the invention consists of certain novel features of construction, and the combination and arrangement of parts as will be more fully described and claimed.

In the accompanying drawings: Figure 1 is a vertical longitudinal section through the fire box of a cook stove, showing my improved burner arranged therein; Fig. 2 is a horizontal sectional view of the stove showing a plan view of the burner; Fig. 3 is a vertical cross section on line 3—3 of Fig. 1; Fig. 4 is a detail vertical section of the oil supply tank of the burner; and Fig. 5 is an enlarged vertical section of one of the burner ends of the coil.

My improved burner comprises one or more members in the form of coils 1 of pipe. The coils 1 may be of any suitable size, and are preferably formed from small sized pipe, about one-eighth of an inch in diameter, more or less. The burner may consist of any desired number of coils or members, and is here shown and preferably consists of two coils. The upper ends of the pipes

forming the coils 1 are extended a sufficient distance to project through one end of the fire box of the stove to which the burner is applied, and are provided on their outer ends with couplings or unions 2, whereby said ends of the pipes are connected with branch oil supply pipes 3, said branch pipes being preferably one-fourth of an inch in diameter, and the couplings or unions 2 are reducing couplings to provide for the proper connection between the different sizes of the pipes.

On the outer ends of the branch pipes 3 are valve casings 4 in which are arranged needle valves 5, whereby the flow of oil to the coils is controlled. The valve casings 4 are connected by a T-coupling 6 with an oil supply pipe 7 which extends downwardly a sufficient distance to engage the floor or other support, and thence upwardly, and is connected at its upper end to an oil supply tank 8 arranged at a sufficient elevation to provide a gravity feed for the oil. The pipe 7 is provided at a suitable point with a cut-off valve 9, and the upper end of the pipe projects a suitable distance up into the tank 8 to prevent sediment settling on the bottom of the tank from passing into the pipe. The bottom of the tank 8 is preferably depressed or concaved, and has therein a drain cock 10 whereby the sediment may be removed from the tank when desired.

The opposite or lower ends of the pipes forming the coils 1 are bent laterally and extend across the lower ends of the coils from one side to the other and then extend downwardly and inwardly at right angles, and have their extremities turned upwardly to a suitable distance to form burner tips 11. The extremities of the pipes forming the tips 11 are closed by suitable plugs which are bored to form a burner opening of suitable size, said openings being preferably formed with a No. 60 wire drill.

The right angularly projecting lower ends of the coil pipes are engaged with a channel-shaped coil or burner supporting bar 12 which is of sufficient length to reach from one end to the other of the fire box and has its ends bent upwardly and engaged with suitable supports on the ends of the fire box. The bar 12 when thus arranged takes the place of the grate, which may be removed from the fire box when my improved burner is arranged therein. The channel-shaped bar 12 also serves as a receptacle

for the priming charge of oil for primarily heating the coils 1, and to facilitate this use of the bar 12 the groove therein is preferably provided with a packing of asbestos or other absorbent fire-proof material upon which the oil from the burner tips overflows when the valves 5 are open.

Arranged across from one end to the other and suitably supported in the upper portion of the fire box is a spreader supporting bar 13, on which, above each coil 1, are supported upper flame spreaders 14, said spreaders being preferably in the form of circular plates or disks of suitable size to spread the flame when coming into engagement with the lower sides thereof. The plates or disks forming the spreaders are provided on their upper sides with suitable clips 15, whereby they are secured to the bar 13 and may be tilted to a greater or less extent for deflecting the flame toward the front or rear sides of the fire box, as desired. Supported on the transversely disposed lower portions of the coil pipes which extend across the lower ends of the coils, are lower spreaders 16 in the form of circular plates or disks of less diameter than the upper spreader disks 14. The spreaders 16 are secured to their supporting pipes by suitable clips 17 as shown. The spreaders 16 are provided to deflect and spread the flame outwardly and around the burner coils 1, whereby the latter are rapidly heated and the oil therein thoroughly vaporized before being discharged from the burner tips 11.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention as claimed.

Having thus described my invention, what I claim is:

1. A burner of the class described comprising an oil supply pipe a coil having one end connected with said oil supply pipe and having its opposite end bent laterally across the lower end of the coil, thence downwardly and inwardly, and having its extremity bent upwardly to form a burner tip, a valve to control the flow of oil to the coil, an upper spreader suitably supported above the coil, a lower spreader supported on the laterally bent lower end of the coil pipe above said burner tip, and means to support the burner in the fire box, said supporting means forming a receptacle for the priming charge of the burner.

2. An oil burner comprising an oil supply pipe a coil having one end connected with said oil supply pipe and having its opposite end bent to form a spreader support, said end being then extended downwardly and inwardly and having its extremity turned upwardly below the center of the coil to form a burner tip, a lower spreader supported on said spreader supporting end of the pipe, a spreader supporting bar arranged above the coil, an upper spreader adjustably secured to said bar, a channel-shaped burner supporting bar arranged below the burner coil and adapted to receive the downwardly extended lower end of the oil pipe whereby the coil is supported, and an absorbent fire-proof packing arranged in said bar to receive a priming charge of oil from said burner tip, and which, when ignited, will primarily heat the coil.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

DAVID M. WOODS.

Witnesses:

J. O. PREWETT,
ALBERT D. SMITH.