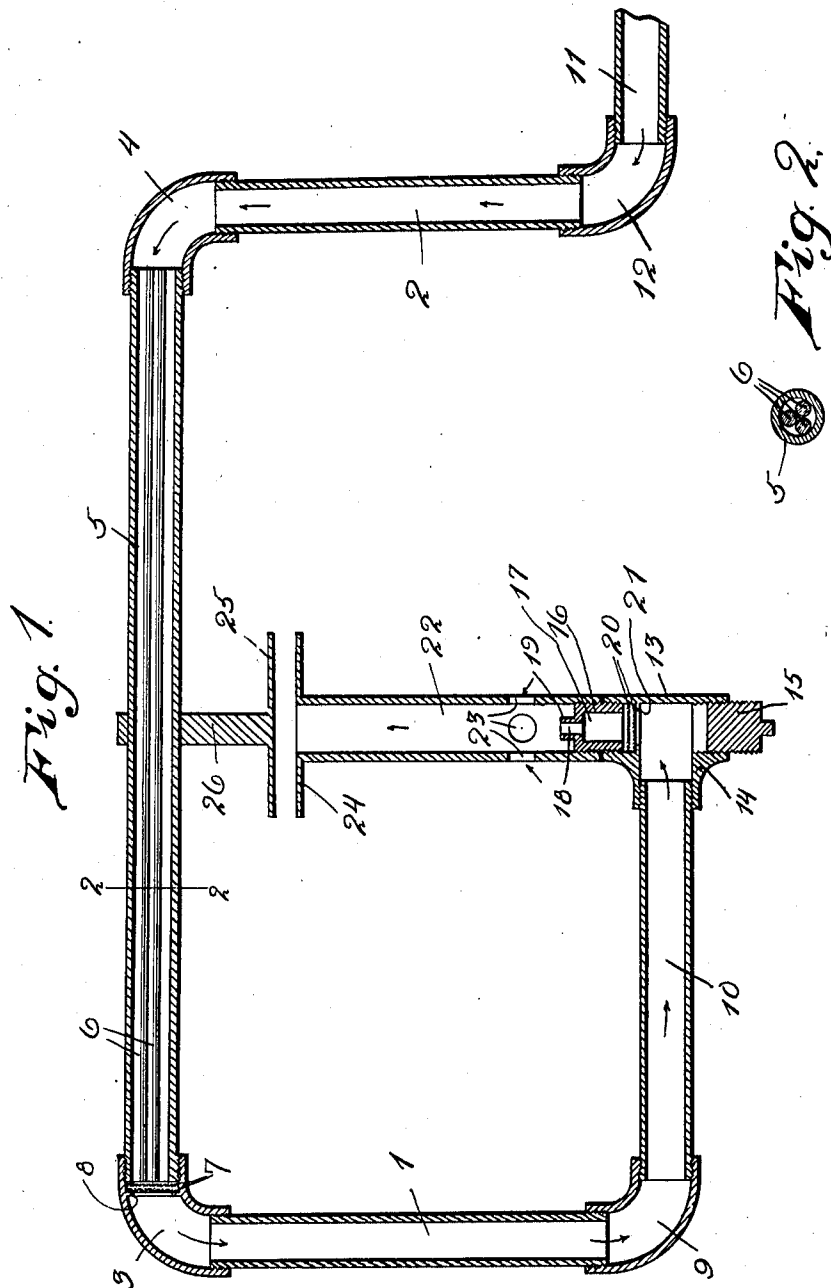


BURNER.

1,021,056.

Patented Mar. 26, 1912.



Witnesses

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BURNER.

1,021,056.

Specification of Letters Patent.

Patented Mar. 26, 1912.

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To all whom it may concern:

Be it known that I, DANIEL H. LYNDE, a citizen of the United States, residing at Rockham, in the county of Faulk and State of South Dakota, have invented certain new and useful Improvements in Burners, of which the following is a specification.

This invention relates to burners adapted to use kerosene or crude oil as fuel.

10 An important object of my invention is to provide a burner structure adapted when in operation to heat the liquid fuel for vaporizing the same before it is ignited.

15 A further object of this invention is to provide novel means whereby the oil or liquid fuel may be readily vaporized.

20 A further object of my invention is to provide a device of the above character, formed of few and readily separable parts, which may be readily cleaned and repaired.

25 A further object of my invention is to provide a burner structure of the above character, which is simple in construction, cheap to manufacture, and reliable in operation.

Other objects and advantages of this invention will be apparent during the course of the following description.

30 In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same, Figure 1 is a central longitudinal vertical sectional view through the entire device, and, Fig. 2 is a cross-sectional view taken on line 2—2 of Fig. 1.

35 In the drawings wherein is illustrated a preferred embodiment of my invention, a burner structure is shown comprising two vertical spaced pipes or conduits 1 and 2, to the upper ends of which are attached elbow joints 3 and 4, respectively. An upper horizontally arranged pipe 5 has its opposite ends screw-threaded for engagement with 45 the elbow joints 3 and 4, as shown. Disposed within the pipe 5 are wires 6, which are preferably three in number and arranged to form a pyramid in cross-section, as clearly illustrated in Fig. 2. These wires are of the same length as the pipe 5, and provide a plurality of longitudinal openings extending the entire length of said pipe 5. At the left end of the pipe 5 is disposed a straining device formed of a plurality of screens 55 or sections of wire netting 7. These sections

of wire netting may preferably be two in number and the same are held in place by engagement with an annular flange 8 formed upon the elbow joint 3 and the end of the pipe 5. The vertical pipe 1 has its lower end screw-threaded for engagement with an elbow joint 9, which is correspondingly connected with a lower horizontal pipe 10, extending substantially parallel with the pipe 5.

60 The numeral 11 designates an oil supply pipe, having screw-threaded engagement with an elbow joint 12, which has screw-threaded engagement with the lower end of the vertical pipe 2. The pipe 11 has connection with an oil tank or pump (not shown).

70 The numeral 13 designates a casing having upon one side thereof an internally screw-threaded nipple 14, adapted for engagement with the inner screw-threaded end of the pipe 10. The lower end of the casing 13 is formed open and is internally screw-threaded for engagement with a removable externally screw-threaded plug 15. 80 The upper end portion of the casing 13 is formed open and internally screw-threaded, to receive an externally screw-threaded shell 16. This shell is cylindrical and is provided with a large opening 17 extending through the lower end thereof and leading at its upper end into a small opening 18 formed through a tip 19. The shell 16 is removable and normally holds a straining device in place, which straining device preferably 90 comprises two sections of wire netting or screens 20. These sections of wire netting are supported by an annular flange 21 formed upon the inner surface of the casing 13. A gas burner preferably of the Bunsen 95 burner type is removably mounted upon the shell 16, such gas burner comprising a vertical pipe 22, internally screw-threaded at its lower end for engagement with the external screw-threads of the shell 16. The pipe 22 is provided intermediate its ends and above the shell 16 with any suitable number of openings 23, through which air passes into the pipe 22 for carbureting the gaseous fuel. Suitably connected with the upper end of the pipe 22 is an annular flange 24, extending outwardly and horizontally. Disposed above and spaced from this annular flange is a preferably circular horizontal deflector 25, rigidly connected with 110

a support 26, having an opening formed through the upper end thereof for the reception of the pipe 5.

In the operation of the device, kerosene or crude oil is supplied to the pipe 11, and passes upwardly through the vertical pipe 2 and then through pipe 5 between the wires 6. During the passage of the oil through the pipe 5, the same is heated by the flame from the burner therebelow and is accordingly gasified by the time it reaches the pipe 1. The function of the wires 6 is to increase the heating area that the oil comes in contact with. The gasified fuel passes through pipes 1 and 10 and into the casing 13. The strainers 8 prevent the passage of the solid particles into the pipe 1. The gasified fuel now passes from the casing 13, through the strainers 20 and into the shell 16, from which said gasified fuel is discharged into the vertical pipe 22. Air is supplied through the openings 23 for carbureting the gasified fuel which is ignited when it reaches the flange 24. This flange and deflector provide a horizontal flame, which is positioned below the pipe 5. The plug 13 may be removed when it is desired to clean the casing 13 of sediment or the like. The operation as above given is continuous. When starting the device any heating mechanism may be held below the pipe 5 to primarily vaporize the oil.

I wish it understood that the form of my invention herewith shown and described is to be taken as a preferred example of the

same and that certain changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the sub-joined claim.

Having thus described my invention, I claim:—

In a burner of the character described, a main casing having its opposite ends formed open and internally screw-threaded, a supply pipe leading into said casing intermediate the ends thereof, a screw-threaded plug removably mounted in the lower end of the main casing, said main casing being provided near and spaced from its upper end with a horizontal annular inwardly extending flange, a strainer device supported by said flange, an externally screw-threaded shell fitting in the upper end of the main casing and clamping the strainer device against said flange, said shell having its lower end formed entirely open and its upper end closed and provided with a tip, and a perforated pipe having its lower end screw-threaded to engage the externally screw-threaded shell and adapted to serve as a locking device to prevent improper rotation of said shell.

In testimony whereof I affix my signature in presence of two witnesses.

DANIEL H. LYNDE.

Witnesses:

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