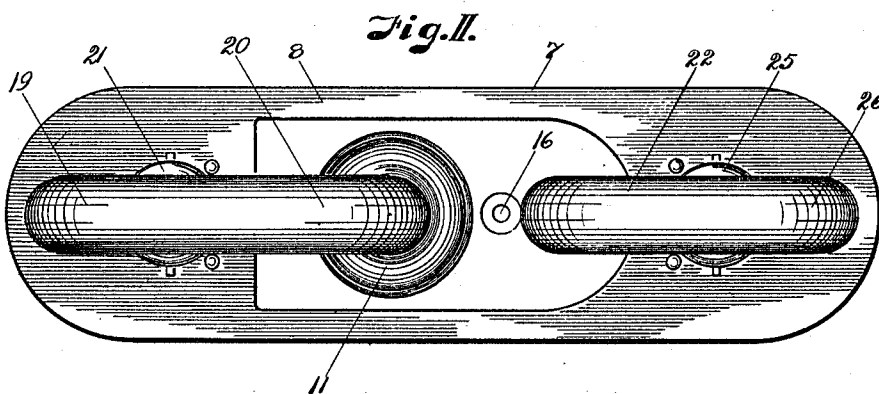
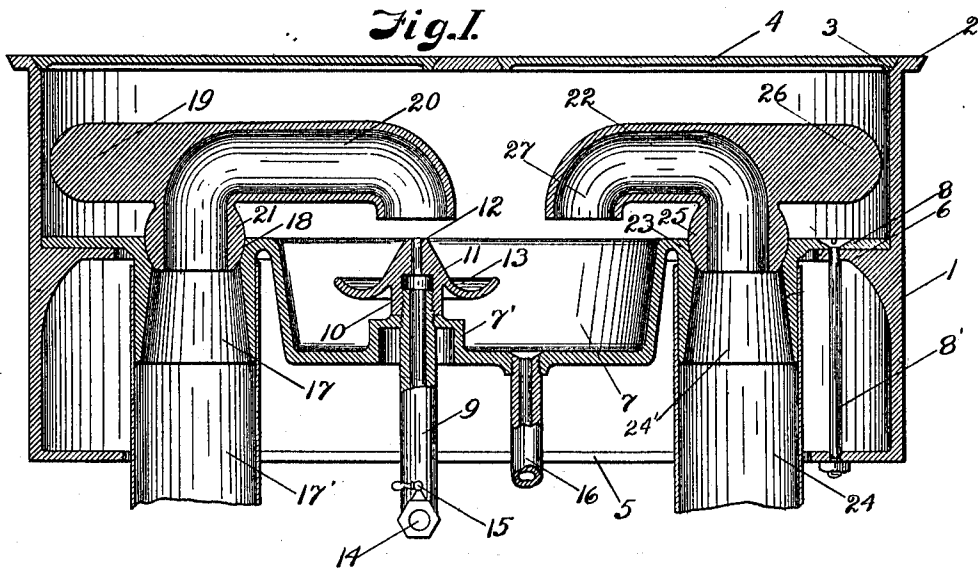


W. B. JOHNSTON.
CRUDE OIL BURNER.
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1,004,573.

Patented Oct. 3, 1911.



WITNESSES.

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CRUDE-OIL BURNER.

1,004,573.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM B. JOHNSTON, a citizen of the United States, residing at Clinton, in the county of Custer and State of Oklahoma, have invented certain new and useful Improvements in Crude-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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to crude oil burners and has for its object to provide a device of this character which is simple in construction, reliable in operation and comprises the improved details of structure hereinafter described and illustrated in the accompanying drawings, in which:—

Figure I is a central vertical section of a burner constructed according to my invention. Fig. II is a plan view of same the outer casing being removed to show the interior more clearly.

Referring more in detail to the parts:— 1 designates the burner case which is preferably rectangular and provided with an upper flange 2, so that when the case 1 is set into a stove opening, (not shown), the flange 2 will seat upon the top of the stove and support the case therein. Near its upper edge, case 1 is provided with a shoulder 3 for receiving the lids 4 which are similar to ordinary stove lids, and are adapted to provide access to the burner when the device is in operation. The bottom of the case is provided with a large opening 5 for the intake of air and for the accommodation of fuel and drain pipes. At about its center, case 1 is provided with a flange 6 which projects a short distance into the interior thereof.

7 designates the burner cup which is of the same shape as the case 1, but smaller, so that it may fit therein; said cup being provided with a flange 8 at its upper edge which is adapted to seat on the case flange 6, and support the cup thereon.

8' designates a bolt which extends through the flange 8 and is attached to the bottom of the case 1, in order to hold the parts firmly together.

At about the center of the burner cup 7 is an upturned portion 7', having an aperture into which a fuel supply pipe 9 is threaded,

the threads on the pipe 9 being extended in order that the upper end of the pipe may project a short distance above the upturned portion 7' to receive the threaded socket 10 of a fuel spreader 11 which screws onto the upper end of the pipe 9 and is adapted to seat on the upturned portion 7'. The fuel spreader 11 has a conical central portion provided with a central aperture 12, through which fuel oil from the pipe 9 may rise and flow over the sides of the fuel spreader 11 onto the saucer like body 13, when the supply is first turned on. The vertical pipe 9 may be connected with a source of supply by a pipe 14, having a control valve 15.

16 designates a drain pipe which also extends through the bottom of the burner cup 7, so that an overflow of oil from the fuel spreader 11 may be drained off.

At one end, the flange 8 is provided with a pipe member 17, the upper portion of which is formed into a ball socket 18, and to the lower end of which is attached an air supply pipe 17'.

20 designates a pipe member having a ball 21 at one end adapted to fit into the socket 18, and provided with a counterbalancing weight 19, the other end of the pipe being bent downwardly and adapted to discharge over the center of the fuel spreader 11.

At the opposite end of the burner is a pipe member 24' having a ball socket 23 and air supply pipe 24. Seated in socket 23 is a ball 25 which supports a pipe member 22 having a counterweight 26 and an elbow 27 that depends over the end of the burner cup 7 opposite the fuel supply cup and supplies additional air.

It is apparent that the heat generated in the burner will cause a draft, the entrance of which is through the pipes 17' and 24. As this amount of air passes up through the pipes 20 and 22 and is directed downward by their peculiar form, the flame is spread, thus enveloping the whole upper portion of the case. The products of combustion freed in the burner may pass out through the top of the casing, but as the top of said casing may be of any ordinary construction and is not claimed to be new in itself, no special provision for taking care of such products of combustion has been illustrated. It has been found, however, that by proper regulation, substantially complete combustion is secured, so that little, if any smoke is produced when the burner is in operation.

To use the device in an ordinary cook stove, the front lids of the stove are removed and the case set into the grate opening and supported by the flange 2 which is of sufficient width to engage the top of the stove entirely around the opening. The supply pipe is then connected with the supply source and the drain pipe run to a catch basin, or to such position that waste oil which might be delivered therefrom would do no damage.

To light the burner, a quantity of oil may be let into the saucer like body 13 and ignited to heat the cup and adjacent burner parts, so that a vapor may be generated from subsequent incoming oil. The air supply pipes are then adjusted in their ball joints, so that the proper amount of air may be delivered to mix with the vapor and produce a suitable combustion; the air for the pipes entering through the stove grate and passing up through the apertures 5 in the bottom of case 1, and thence through the pipe members 17 and 22 of the burner cup into the pipes 20 and 27.

It is apparent that by providing the ball and socket joints for the pipes 20 and 27, their positions relative to the burner cup may be varied at will.

Having thus described my invention, what I claim as new therein and desire to secure by Letters Patent is:—

1. In an oil burner the combination with a casing, of a cup located in and spaced from said casing, a fuel supply pipe opening into the cup, a counterweighted air supply pipe having a mouth discharging over the cup and having a universal joint whereby the mouth section may be adjusted relative to the cup, for the purpose set forth.

2. In an oil burner, the combination of a casing having an interior shoulder and provided with an opening in its bottom, a cup, a flange integral with said cup having a broadened area on opposite sides of said cup and adapted to be tightly secured to said shoulder, a fuel supply pipe projected through the bottom of said cup and terminating within the cup chamber, a spreader for said pipe, and a counterweighted air supply pipe universally mounted in one of the broadened areas of said flange and adapted for discharging directly over the fuel supply pipe, substantially as specified.

3. In an oil burner, the combination of a

casing having an interior shoulder and provided with an opening in its bottom, a cup, a flange integral with said cup and having a broadened area on opposite sides of said cup, whereby the cup is supported from said shoulder, a fuel supply pipe projected through the bottom of said cup and terminating within the cup chamber, a spreader for said pipe, a counterweighted air supply pipe universally mounted in one of the broadened areas of the cup flange and adapted for discharge directly over the fuel supply pipe, and a counterweighted air supply pipe universally mounted in the other broadened area of said cup and adapted for discharge into said cup at one side of said fuel supply pipe, substantially as and for the purpose set forth.

4. In an oil burner, a suitable casing having an interior shoulder, a cup, a flange integral with said cup and projecting laterally therefrom, said flange being mounted on and secured to said interior shoulder, a fuel supply pipe extending through the bottom of said cup, a drain pipe adjacent said fuel supply pipe, an air supply pipe universally mounted in said flange and adapted to discharge over said fuel supply pipe at different angles, and means for connecting said air supply pipe with the atmosphere without the burner.

5. In an oil burner, a suitable casing having an interior shoulder, a cup, a flange integral with said cup and projecting laterally therefrom, said flange being mounted on and secured to said interior shoulder, a fuel supply pipe extending through the bottom of said cup and terminating within the cup, a fuel spreader mounted on said fuel supply pipe and located entirely within said cup, an air supply pipe universally mounted in said flange and adapted to discharge over said fuel spreader, an air supply pipe universally mounted in said flange and adapted to discharge into said cup at one side of said fuel spreader, and means of connecting said air supply pipes with the atmosphere without the burner.

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

WILLIAM B. JOHNSTON.

Witnesses:

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