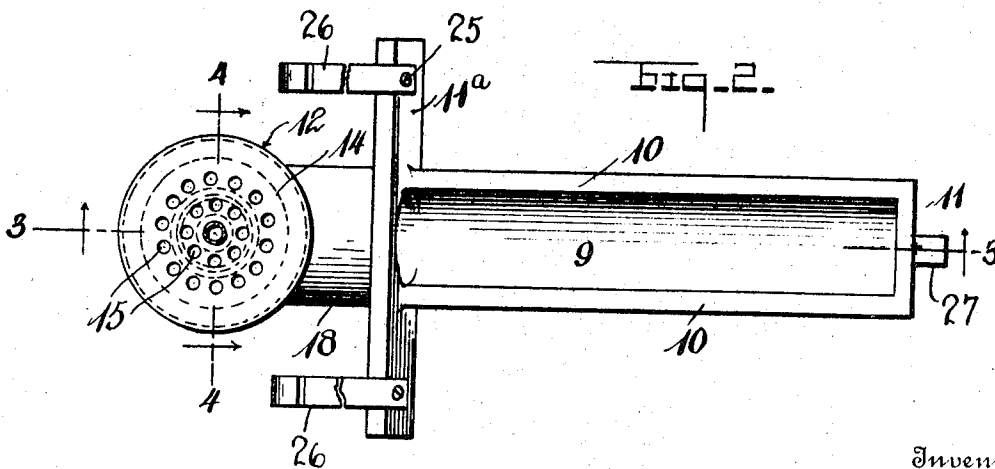
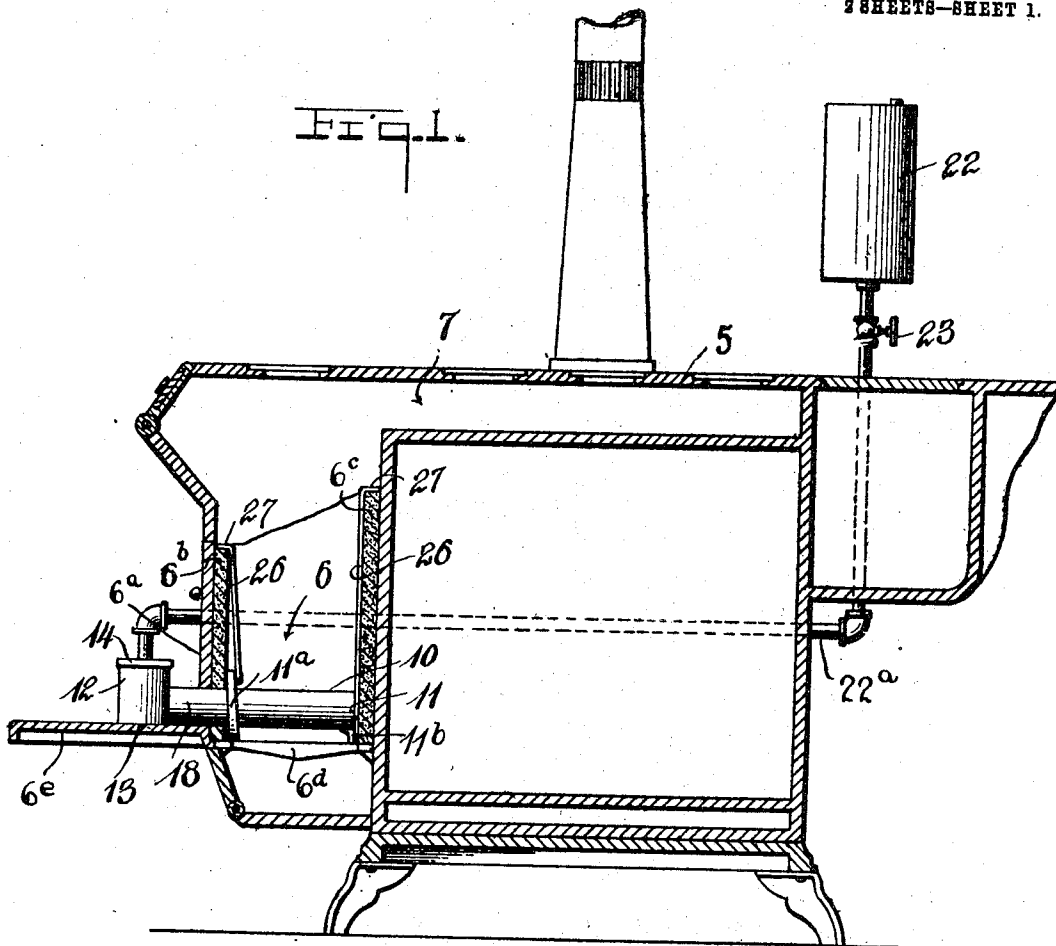


R. W. CANE.
OIL BURNER.
APPLICATION FILED SEPT. 27, 1908.

950,041.

Patented Feb. 22, 1910.

2 SHEETS—SHEET 1.



Witnesses
Ernest Crocker
W. O. Miller

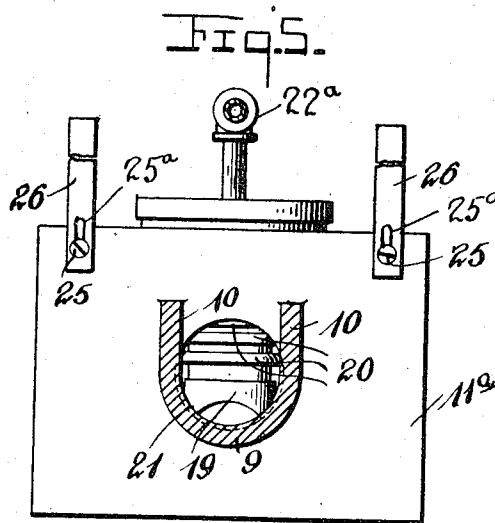
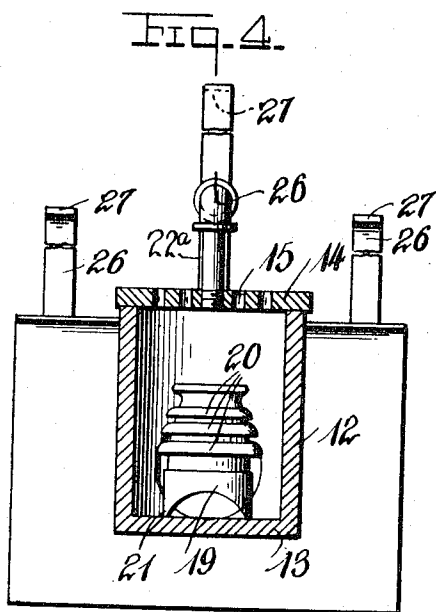
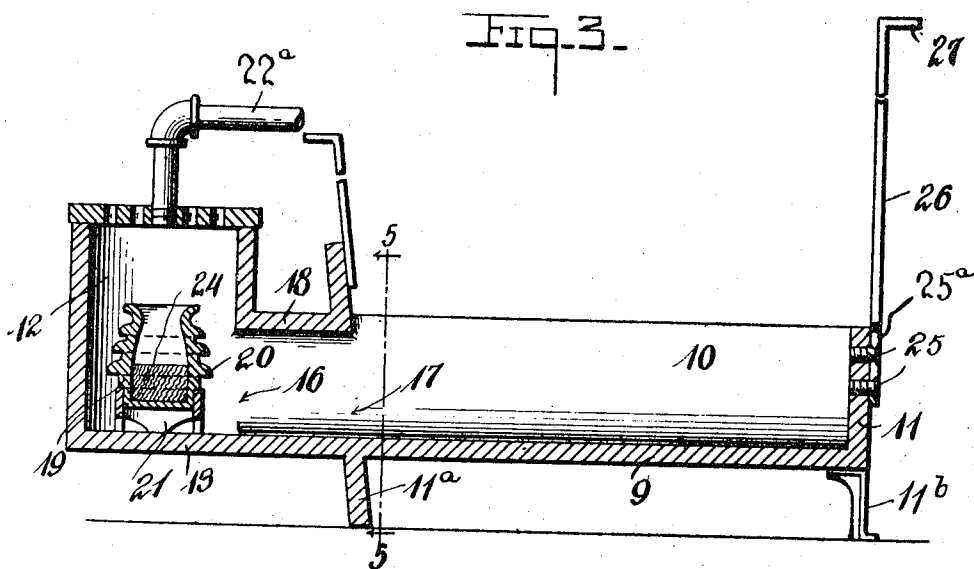
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950,041.

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2 SHEETS—SHEET 2.



Witnesses

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UNITED STATES PATENT OFFICE.

ROBERT W. CANE, OF CLEVELAND, OKLAHOMA.

OIL-BURNER.

950,041.

Specification of Letters Patent.

Patented Feb. 22, 1910.

Application filed September 27, 1909. Serial No. 519,692.

To all whom it may concern:

Be it known that I, ROBERT W. CANE, a citizen of the United States, residing at Cleveland, in the county of Pawnee, State of Oklahoma, have invented certain new and useful Improvements in Oil-Burners; and I do hereby 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 hydro-carbon burners and more particularly to that type employed in connection with heating stoves and ranges.

One object of the invention is the provision of a device which may be readily applied to most any form of range or heating stove now in use.

Another object is the provision of a device provided with an oil cup and a receptacle for the oil cup so constructed that when the latter is heated to a certain degree the oil dropping into the cup will be vaporized and mixed with the air in the receptacle or chamber whereby a mixture of hydro-carbon vapor and air will be burned.

With these and other objects in view, as will more fully hereinafter appear, the present invention consists in certain novel details of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and more particularly pointed out in the appended claims, it being understood that various changes, in the form, proportion, size, and minor details of the device may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings forming part of the specification:—Figure 1 is a longitudinal section taken through an ordinary range and showing my improved device applied thereto. Fig. 2 is a detail plan view of the device. Fig. 3 is a vertical sectional view taken approximately on the line 3—3 of Fig. 2. Fig. 4 is a vertical sectional view taken on the line 4—4 of Fig. 2. Fig. 5 is a sectional end elevation taken on the line 5—5 of Fig. 3 and looking in the direction of the arrow.

Similar numerals of reference are employed to designate corresponding parts throughout.

A range of the usual form is indicated

generally by the numeral 5, 6 being the usual fire box provided with the front door or removable plate 6^a, 7 being the flue leading from the fire box to the smoke pipe and the front and rear bricks in the fire box being indicated respectively at 6^b, 6^c. My improved oil burner is especially adapted for use in connection with such a range and in Fig. 1 is shown with its pan 9 extending transversely of and located in the bottom of the fire box. Said pan is trough-shaped and has side walls 10, its inner end wall 11 bearing against the inner brick 6^c. At the outer end of the pan is a transversely disposed plate 11^a which extends laterally beyond opposite sides of the pan and also extends somewhat above and below the pan, the lower edge of the said plate being shown in Fig. 1, as bearing on the grate bars 6^d of the range and the said plate being shown as bearing against the inner side of the front brick 6^b. At the inner end of the said pan are supporting feet 11^b which also bear upon the grate bar.

What will subsequently be termed a combustion chamber is designated by the numeral 12, and is a hollow cylindrical structure of convenient length and diameter and closed at its upper and lower ends by the plates 13 and 14. The upper of these plates 14 is provided with a plurality of air inlet openings 15, and on one side of the chamber an opening 16 is formed. A similar opening 17 is formed in the intermediate portion of the front end plate 11 of the pan and surrounding this opening and formed integral with the end 11 and combustion chamber 12 or otherwise secured thereto is a tubular connection 18, which serves to unite the combustion chamber with the pan and constitutes a neck which extends through openings in the door 6^a and the front brick 6^b. The combustion chamber rests upon the hearth 6^c of the range.

Located within the combustion chamber 12 is what will subsequently be termed an oil cup 19. This member is preferably of metal and on its outer surface is provided with a plurality of corrugations 20. The oil cup is provided on its lower end with a plurality of feet 21, so that the said lower end is spaced from the floor of the combustion chamber, in order that the air in the latter may freely circulate around all sides of the cup.

The usual supply tank or reservoir holding the hydro-carbon substance is designated

by the numeral 22 and is located at a point remote from the stove and above the plane of the latter. Leading from the lower end of this tank or reservoir is a pipe connection 22^a, one end of which is tapped into the upper head 14 of the combustion chamber and directly above the oil cup 19. The connection between the reservoir 22 and combustion chamber 12 is provided with a cut-off valve 23, operating to control the passage of liquid from the tank to the combustion chamber.

By reference now to Fig. 3, it will be seen that the oil cup is interiorly provided with a quantity of asbestos 24 or an analogous substance which serves the purpose of a wick. And it is evident with this construction when oil is permitted to flow from the reservoir and into the combustion chamber it will fall onto the material within the cup. After the material has been completely saturated it may be ignited in the ordinary manner. It will be observed that as the oil within the cup burns the latter will become heated and the draft through the combustion chamber and flue 7 of the stove will be increased since it will be remembered that the front of the fire box of the stove is sealed so that the draw through the flue 7 will be through the throat or passage 18, and the draft or air inlet openings 15 in the head 14 of the combustion chamber. As the heat of the oil cup increases it is evident that the temperature of the combustion chamber will be raised so that as the oil continues to drop into the latter it will be quickly vaporized and mixing with the air in the combustion chamber burn as a gas.

It will be observed that the corrugations 20 on the cup 19 increase the superficial area of the cup and that should oil over-flow from the cup at any time the over-flow oil will drop from corrugation to corrugation and be evenly spread on the surfaces thereof so as to insure the combustion of such oil.

My improved oil burner has its pan also secured in the fire box by means of straps 26. The said straps have their upper ends out-turned to form hooks 27 which engage the upper edges of the bricks 6^b, 6^c. The lower ends of two of these straps are connected near the end portions of the plate 11^a by means of screws 25, which operate in

slots 25^a with which said straps are provided. Another of the straps has its lower end secured to the inner end of the pan by corresponding screws 25 which operate in a similar slot 25^a, the said screws and slots permitting said vertical adjustment of the said straps as may be required to insure the engagement of the hooks with the upper edges of the bricks.

From the foregoing it can be seen that I have provided a device which is exceedingly simple in structure, comparatively inexpensive to manufacture, embodying few parts and these so arranged that the danger of derangement will be reduced to a minimum.

What I claim as new is:—

1. An oil burner of the class described comprising a combustion chamber, an oil cup therein, a pan extending horizontally from the lower side of said combustion chamber, a tubular neck connecting said pan and said combustion chamber, a plate extending from opposite sides of the pan at the point where the latter joins the said neck, and supporting straps connected to said plate and to the inner end of said pan and having means at their upper ends for engagement with the upper edges of bricks in the fire box of a range.

2. In an oil burner for ranges and the like the combination of a pan arranged within the fire-box, a cylinder located exteriorly of the fire-box, a tubular connection between the pan and cylinder, and an oil cup having a corrugated outer surface and located within the cylinder.

3. In an oil burner for ranges and the like the combination of a pan to be arranged within the fire-box, a cylinder located exteriorly of the fire-box, a tubular connection between the pan and cylinder, and an oil cup located within the cylinder and provided with supporting legs for holding its lower end in spaced relation with the lower end of the cylinder.

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

ROBERT W. CANE.

Witnesses:

ALX. W. LEE,
W. W. SMITH.