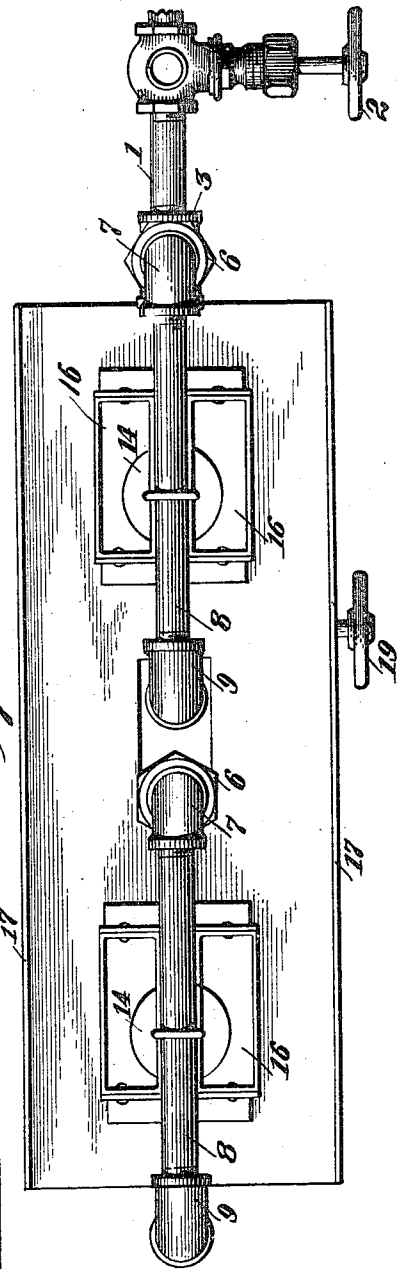
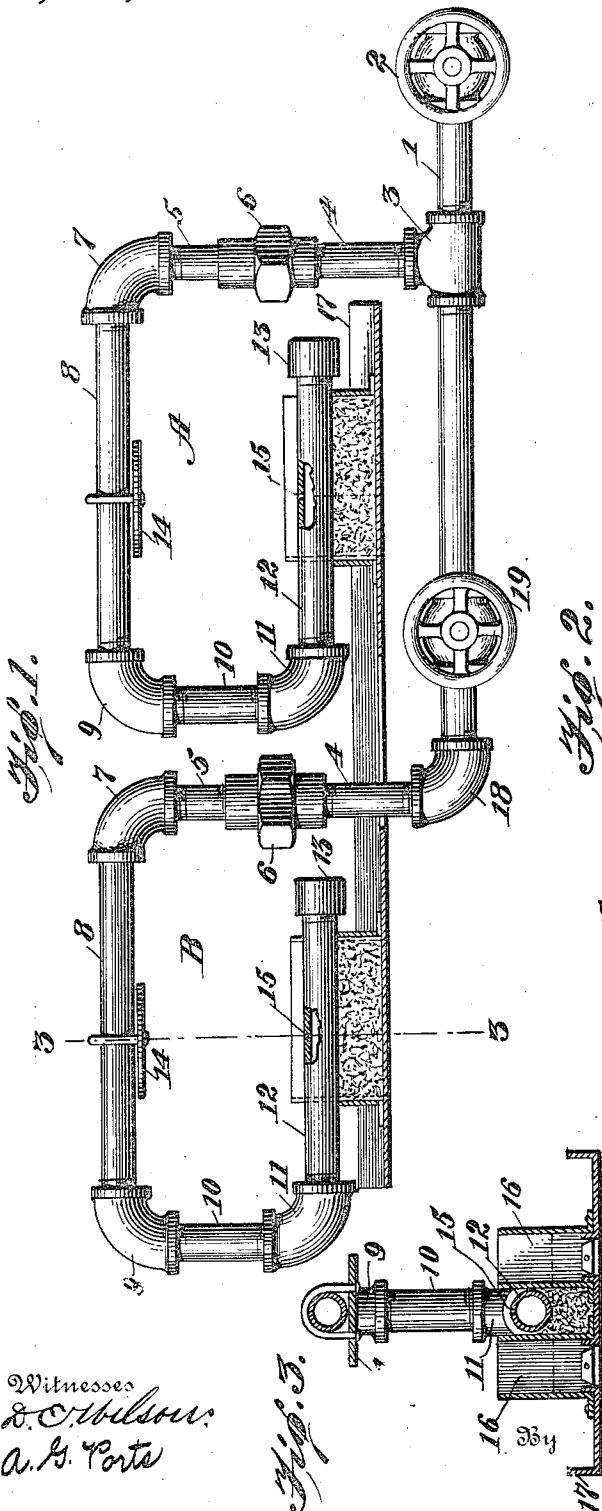


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HYDROCARBON OIL BURNER.
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HYDROCARBON-OIL BURNER.

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To all whom it may concern:

Be it known that I, THOMAS J. CROOK, a citizen of the United States, residing at Wichita, in the county of Sedgwick and State of Kansas, have invented certain new and useful Improvements in Hydrocarbon-Oil Burners, of which the following is a specification.

My invention relates to hydrocarbon oil burners, and the objects thereof are to provide a burner in which the valve controlling the admission of fluid thereto is arranged so as to preclude any possibility of it becoming inoperative by reason of the expansion and contraction of its component parts; to provide a device of the character described involving a plurality of burners any of which may be expeditiously disconnected without in any way interfering with the operation of the active burners or burner; to provide for readily dismantling the burners; and to provide for supplying air adjacent the discharge opening without causing recondensation or otherwise impairing the quality of the gas.

To the accomplishment of the recited objects and others coördinate therewith, the preferred embodiment of my invention resides in that construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and embraced within the scope of the appended claims.

In said drawings: Figure 1 is a vertical sectional elevation of a pair of burners embodying my invention, and Fig. 2 is a plan view thereof. Fig. 3 is a transverse sectional elevation taken along lines 3—3 of Fig. 1.

Generally speaking, my invention comprises in its construction and arrangement a feed pipe connected with any suitable source of supply and having a plurality of manifolds secured at its opposite extremity, each manifold embodying a vaporizer or overlying retort and a burner, and each burner having a pair of air shafts one on either side thereof with an intermediate packing to serve as a protective medium against the cooling proclivity of the incoming air. Furthermore, each manifold is constructed of suitable sections, and the main feed pipe is provided with the desired number of controlling valves, whereby any one or more of the manifolds may be easily and quickly detached without detracting

from the function and activity of the remaining manifolds, the said valves being sufficiently removed from the burners to obviate any likelihood of the same becoming inoperative by reason of the influence of the heat from the burners.

In said drawings, the numeral 1 designates a feed pipe which is connected with any suitable source of hydrocarbon oil supply, and intermediate its terminals there is provided a main controlling valve, as 2. As exhibited in Fig. 1 of the drawings, the length of the feed pipe is intercepted by a T 3, and rising from this T is a short length of pipe 4 which in turn is joined to another short length of pipe 5 by the coupling 6. The short pipe 5 has an elbow 7 fastened to its upper terminal, and in the other end of said elbow is a horizontally disposed pipe 8, having an elbow 9 and a short length of vertical pipe 10, and another elbow 11 terminating in a lower horizontally arranged pipe 12 closed, as at 13. The vertically extending pipes 5 and 10 and the horizontally projecting pipes 8 and 12 lie in parallelism and present a configuration similar to a rectangle. The upper horizontal pipe 8 constitutes a vaporizer or overlying retort and is provided with a longitudinally adjustable deflector 14, while the lower pipe 12 with its medially arranged discharge opening 15 forms the burner of the device.

For the sake of clarity in describing my invention, the construction just set forth will be termed a manifold, and indicated in the drawings by the reference letter A. The burner of this manifold rests between a pair of vertical air shafts 16 which are secured to and extend vertically from a trough, as 17, and furthermore, are relatively spaced to receive any suitable packing, as asbestos. The main feed pipe 1 terminates in a manifold B which is identical with the one previously described, an elbow 18 and a valve 19 providing respectively for the connection and admission of fuel thereto.

In practical operation, valves 2 and 19 are opened to admit the hydrocarbon oil to the manifolds, the same having first been heated. The gas issuing through the apertures 15 is then suitably ignited and the heat evolved will obviously be concentrated upwardly upon the overlying retorts 8 which tend to vaporize the fuel so that it will be in proper condition for combustion upon its arrival at

the burners 12. Obviously, by providing air shafts 16 the air ascending therethrough will considerably aid combustion, and as a consequence of the asbestos packing interposed between the air shafts, burners 12 are not in the least detrimentally affected by the temperature of the air, in other words recondensation of the gas is absolutely prevented.

10 In devices of a similar nature controlling valves are usually located in close proximity to the burner so it frequently happens that the working parts of the valves are considerably expanded by the intense heat from the burners, and this results in a binding or rigid engagement of the operative parts of the valve. This inherent disadvantage is overcome by mounting of the valve 19, for example, below the trough 17 so that it will not be affected by the heat from the burners 12.

Still another feature of my invention is the idea of providing the couplings 6 to insure an expeditious removal of the remaining parts of the manifold when it is desired to detach the same for purposes of repair or the like. In this event, the left hand manifold disclosed in Fig. 1 of the drawings may be readily disconnected by unscrewing the coupling 6 associated therewith and closing the valve 19, whereupon the companion manifold will continue to burn without being in the least affected by such operation.

It should be understood that in its broader aspect the invention comprehends the employment not only of the various means described, but of equivalent means for performing the recited functions. While the arrangement shown is thought at the present time to be preferable, it is desired to reserve the right to effect such modifications and variations thereof as may come fairly within the scope of the appended claims.

What is claimed, is:—

1. In a device of the character described, a burner, a pair of vertical air shafts independent of and spaced from each other and extending upon opposite sides of said burner, and a heat-resisting medium beneath said burner and in the space between said air shafts, whereby recondensation of the fuel is prevented.

2. In a device of the character described, a burner, a pair of vertical air shafts independent of and spaced from each other and extending upon opposite sides of said burner, and a heat-resisting medium beneath said burner and in the space between said air shafts, the said air shafts being at all times opened at the bottom and the space between said air shafts being at all times closed at the bottom.

3. In a device of the character described, the combination of a trough provided with a pair of air shafts independent of each other at each end, a supply pipe beneath said trough, a pair of branch pipes projecting vertically from said supply pipe, one of said branch pipes rising exteriorly of the trough adjacent one of the ends of the latter while the other branch pipe extends through said trough, a U-shaped manifold connected to each branch pipe, each manifold comprising a burner and an overlying retort, each burner being located between a pair of said air shafts and a portion of each burner extending across said air shafts being protected by a heat insulating medium, and independent controlling valves for the burners.

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

THOMAS J. CROOK.

Witnesses:

K. B. RADCLIFFE,

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