

C. A. PILQUIST.
OIL BURNER.
APPLICATION FILED MAR. 10, 1917.

1,232,392.

Patented July 3, 1917.

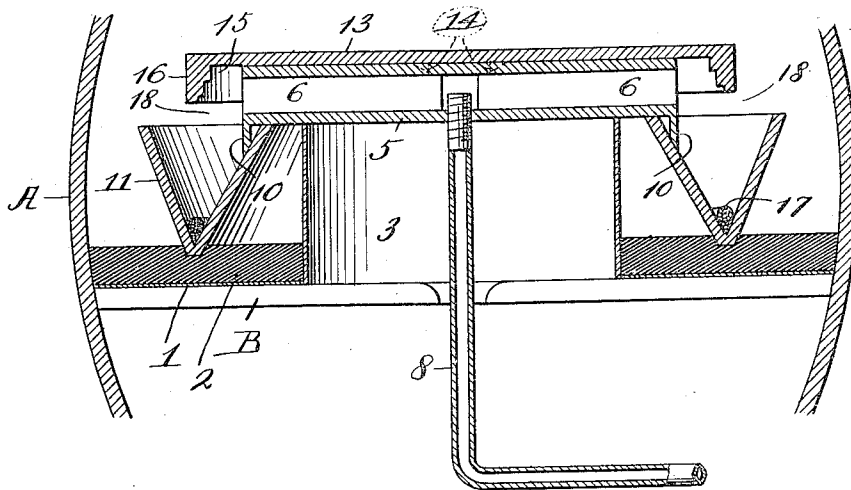


FIG. 1.

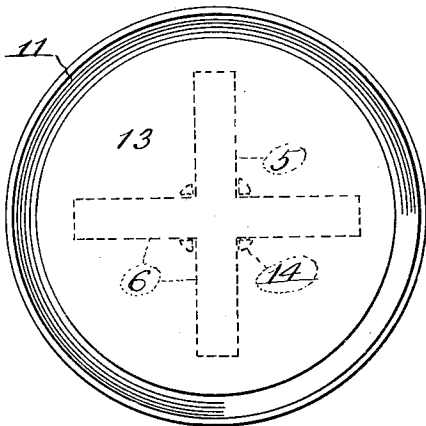


FIG. 2.

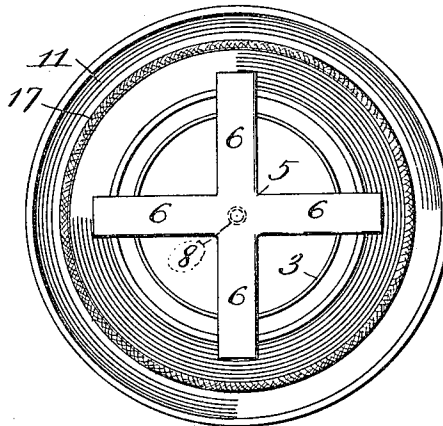


FIG. 3.

WITNESS:
Fred C. Fischer

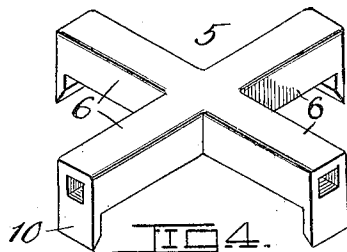


FIG. 4.

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CHARLES A. PILQUIST, OF NESS CITY, KANSAS.

OIL-BURNER.

1,232,392.

Specification of Letters Patent.

Patented July 3, 1917.

Application filed March 10, 1917. Serial No. 153,888.

To all whom it may concern:

Be it known that I, CHARLES A. PILQUIST, a citizen of the United States, residing at Ness City, in the county of Ness and State of Kansas, have invented certain new and useful Improvements in Oil-Burners, of which the following is a specification.

My invention relates to oil burners, and in its preferred form is especially adapted for burning the lighter hydrocarbon oils, such as kerosene, distillate, etc., and one object is to provide a novel arrangement of cooperating parts, all of which mutually contribute to produce a burner in which a thorough combustion of the liquid fuel is effected.

A further object is to provide a burner in which the hydrocarbon oils are first vaporized, mixed with air, then burned, and one which may be used in stoves, ranges, furnaces, or other fire boxes.

A further object of the invention is to improve burners of this type with a view to reducing the number of parts, reducing the cost of construction, and increasing the efficiency or heating capacity.

In carrying out the objects of the invention, generally stated above, it will be understood that the essential features thereof are susceptible of changes in details of structure, and in order that the invention may be fully understood, reference will now be made to the accompanying drawings, wherein:

Figure 1 is a central sectional view of the burner in the firebox of a stove.

Fig. 2 is a plan view of the burner removed from the firebox.

Fig. 3 is a plan view of the burner with the flame spreader thereof removed.

Fig. 4 is a detail perspective view of the oil distributor constituting a part of the invention.

A designates the firebox of a stove and B the grate thereof. 1 designates an annular plate which is placed upon the grate B, and covered with asbestos cement 2, laid to a suitable thickness to protect said plate 1 from undue heat.

3 designates a centrally-disposed air supply pipe extending upwardly from the grate B, through a central opening in the plate 1.

5 designates an oil distributor arranged on top of the air supply pipe 3 and embodying a plurality of tubes 6 radiating from a common center to which oil is supplied through a pipe 8, leading upwardly through the air

supply pipe 3 and threaded through the central bottom portion of said oil distributor 5. As disclosed by Fig. 1, the discharge end of the oil supply pipe 8 extends above the inner surface of the bottom of the oil distributor 5. This arrangement insures an equal distribution of oil to the tubes 6, as it overflows from the discharge end of said supply pipe 8.

The outer terminals of the tubes 6 have depending legs 10 which rest in an annular trough-shaped generator 11, arranged concentrically with the air supply pipe 3 and having its lower portion embedded in the cement 2. The cement 2 retains the generator 11 in concentric relation with the pipe 3, while the oil distributor 5 is retained in proper relation to said generator 11 by the depending legs 10.

13 designates a circular flame spreader which rests upon the oil distributor 5, it being held in concentric relation to said oil distributor by depending lugs 14 engaging the sides of the tubes 6 at their point of juncture. The flame spreader 13 has a depending marginal flange 16, to initially deflect the flame downwardly and outwardly. Lugs 15 reinforce the flange 16, and in the modified form, also, support the spreader above the oil distributor.

In practice, the bottom of the generator 11 is provided with a wick 17 and the oil pipe 8 is connected to a suitable source, not shown, the flow of oil through said pipe being controlled by a suitable valve, not shown. As the oil is admitted through the pipe 8 it overflows from the discharge end thereof, thence outwardly through the tubes 6 and into the generator 11, where it saturates the wick 17. The saturated wick is then ignited and as the flame passes upward to escape through the annular opening 18 between the upper outer margin of the generator 11 and the lower edge of the flange 16, it impinges against said flange 16 and the discharge ends of the tubes 6, thus heating the same to a sufficient degree to convert the oil into gas just before it reaches said discharge ends of the tubes 6. As the gas discharges from the tubes 6 it commingles with the air supplied through the pipe 3, thus forming a highly combustible mixture, the flame from which is spread by the spreader 13 and issues from the opening 18 in a continuous annular wall which impinges against the walls of the firebox A and thus quickly heats the same

to a high degree. By thus spreading the flame against the walls of the firebox by means of the spreader 13, it is apparent that greater efficiency and economy of fuel is had, than if the flame merely ascended through the center of the firebox without impinging against the walls thereof. The air becomes heated as it ascends through the pipe 3 and comes into contact with the tubes 6 and the flame spreader 13, and thus readily combines with the highly heated gas discharged from said tubes 6. As the oil supply pipe 8 is not exposed to the flame, it of course, is in no danger of becoming choked with soot or carbon.

Should it become necessary to clean or replace any of the parts, access may be readily had thereto through the stove door and as said parts are all detachable from each other a defective part can be readily replaced without discarding any of the other parts.

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

1. In a burner of the class described, an annular trough-shaped generator, an oil distributor resting upon said generator and consisting of a plurality of tubes radiating from a common center and adapted to discharge oil into the generator, depending legs at the outer ends of said tubes to engage the inner wall of the generator, an oil supply pipe extending upwardly into the central portion of

said oil distributor and from which oil is adapted to overflow into the tubes, and a flame spreader superimposed on said oil distributor, and spaced from the generator to leave an opening, substantially as described.

2. In combination with a firebox, a plate laid upon the grate in said firebox and having a central opening therein, a covering for said plate to protect it from undue heat, an air supply tube communicating with the central opening in the plate, an annular trough-shaped generator having its bottom embedded in the plate covering, an oil distributor superimposed on said generator and the air supply pipe and consisting of tubes radiating from a common center and adapted to discharge oil into the generator, legs depending from the outer ends of said tubes and engaging the generator, an oil supply pipe communicating with the inner center portion of the oil distributor, and a circular flame spreader resting upon the oil distributor and having a downturned marginal flange spaced from the generator to leave an annular opening, for the purpose specified.

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

CHARLES A. PILQUIST.

Witnesses:

STANISLAUS BRAM,
WM. D. MINER.