No. 743,976. PATENTED NOV. 10, 1903.

L. E. COLEMAN.

HYDROCARBON BURNER.

APPLICATION FILED JULY 12, 1902.

NO MODEL.

Fig. 1.

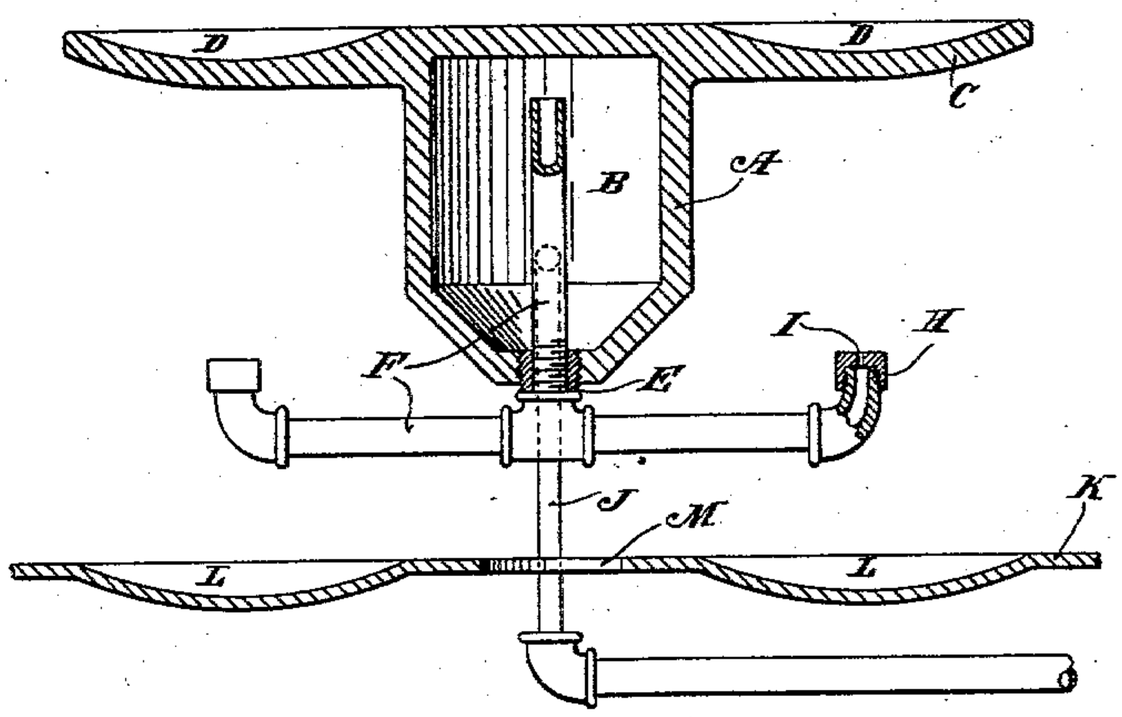
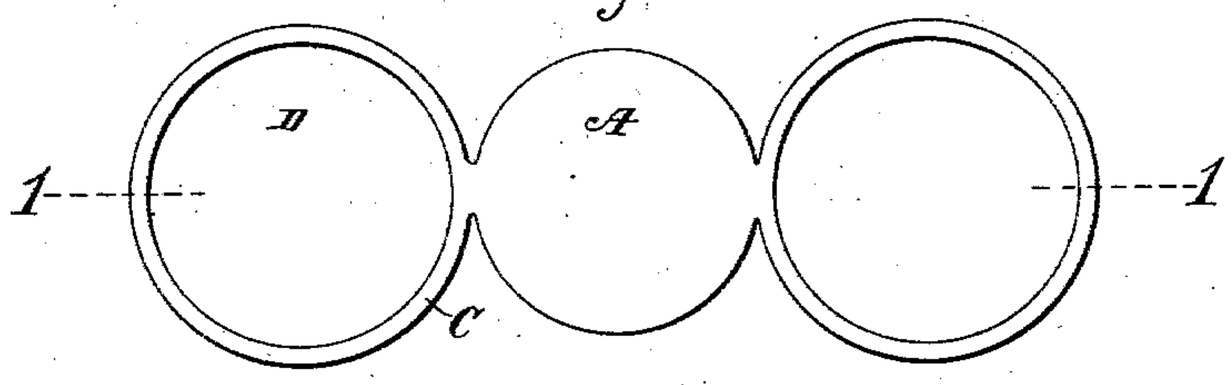


Fig. 2.



WITNESSES

Chas. L. Hyde.

M. L. Nickerson.

INVENTOR

Lucius E. Coleman

BY Hazard & Harpham

ATTORNEYS.

No. 743,976. Patented November 10, 1903.

UNITED STATES PATENT OFFICE.

LUCIUS E. COLEMAN, OF SANTA ANA, CALIFORNIA, ASSIGNOR TO E. B. JOHNSON, OF ORANGE, CALIFORNIA, AND J. S. HATFIELD AND G. J. STOCK, OF ANAHEIM, CALIFORNIA.

HYDROCARBON-BURNER.

SPECIFICATION forming part of Letters Patent No. 743,976, dated November 10, 1903.

Application filed July 12, 1902. Serial No. 115,331. (No model.)

To all whom it may concern:

Be it known that I, LUCIUS E. COLEMAN, a citizen of the United States, residing at Santa Ana, county of Orange, State of California, have invented new and useful Improvements in Hydrocarbon-Burners, of which the following is a specification.

My invention relates to a burner designed to burn the light grades of crude petroleum, kerosene, and distillate from crude petroleum; and the objects thereof are to produce a burner which will burn such fuel with a minimum amount of smoke and which is of simple construction and is easily operated and cleaned. I accomplish these objects by the burner described herein and illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section on the line 1 1 of Fig. 2. Fig. 2 is a plan of the top of the burner.

In the drawings, A is the casing of the removable vertical retort-chamber B, which is preferably made of cast-iron. Cast integral with the top of the retort-chamber are the spreader-plates C, having cup-shaped depressions D in the top. The bottom of the retort-chamber is preferably cone-shaped for convenience in cleaning it. In the bottom of the casing of the retort-chamber is screwed a bushing E, through which passes in threaded contact the vapor-pipe F, which extends from near the top of the retort through the bottom thereof, where it branches into two or more branches, each of which terminates in an upturned end or burner-tip H below the center of the spreader-plates, which is provided with a vapor-port I, through which the vapor is discharged upward against the center of the spreader-plate. The object in using a bushing in the bottom of the retort-chamber is to facilitate cleaning the chamber, and, if desired, it may be omitted and the vapor-pipe be screwed directly into the bottom of the casing of the retort-chamber. Liquid fuel is supplied into the retort-chamber through supply-pipe J, which supports and holds the retort-chamber in place in the combustion-chamber. (Not shown.)

Extending from end to end and from side to side of the combustion-chamber (not shown) is bed-plate K, which is provided below the burner-tips with starting-cups L, which will hold a sufficient quantity of liquid fuel, which when burned will heat the retort hot enough to generate the liquid fuel into vapor. The bed-plate is provided with draft-opening M, disposed centrally between the burner-tips, in which position less noise is produced than if a draft-opening were disposed immediately below the burner-tip.

In the operation of my burner liquid fuel is permitted to run through the retort-chamber and vapor-pipe to fill the starting-cups, (which will wash out any sediment that may be deposited therein,) when it is lighted and the supply turned off. As soon as the retort is sufficiently heated the supply of liquid fuel is again turned on, which is vaporized in the retort, and the vapor passes out through the burner-tips and is projected against the spreader-plates, where it mixes with the air and burns in a clear white flame with but little, if any, smoke. It will be observed that the vapor is taken from the retort near the top and is led centrally therethrough and out at the bottom and that the pipes which carry the vapor are not subjected to the direct action of the flame, thereby greatly prolonging the life of the pipe. Another advantage in this construction is that any residuum which may be deposited in the retort-chamber is deposited therein below the mouth of the vapor-pipe, and therefore will not clog it. There is a small amount of residuum deposited in the retort-chamber, which can easily be cleaned out by unscrewing the chamber from the bushing without disturbing any of the other parts, which leaves a good-sized opening, through which such deposit may be removed, the conical shape of the bottom rendering its removal much easier than if the bottom were level.

If desired, one of the spreader-plates and one of the branches of the vapor-pipe may be dispensed with; but in such case the burner would not be capable of producing as large a fire as if both were used. The depressions in the top of the spreader-plates may be filled with zinc shaving, (say about an ounce being put therein once a week,) which will volatilize when the fire is hot and will cut any soot

which may be deposited in the stove or pipe in starting the fires.

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

1. A hydrocarbon-burner comprising a removable vertical retort-chamber; a spreader-plate affixed to the casing of said retort-chamber at the top thereof; a vapor-pipe commencing within said chamber extending from near the top of said retort-chamber out through the bottom thereof and extending thence and terminating centrally below the spreader-plate; a burner-tip on the end of said vapor-pipe below the spreader-plate; a fuel-supply pipe opening into said retort-chamber; a bed-plate below the vapor-pipe having a draft-opening therethrough disposed to one side of the burner-tip.

2. A hydrocarbon-burner comprising a removable vertical retort-chamber; spreader-plates affixed to the casing of said chamber at the top thereof, one on each side thereof; a vapor-pipe commencing within said chamber near the top thereof and extending out through the bottom thereof and branching into branches, each one of which branches terminates below a spreader-plate; a burner-tip on the end of each branch; a fuel-supply pipe opening into said retort-chamber; a bed-plate below the vapor-pipe having a draft-opening extending therethrough between the said burner-tips, and having starting-cups therein disposed below said burner-tips.

In witness that I claim the foregoing I have hereunto subscribed my name this 30th day of June, 1902.

LUCIUS E. COLEMAN.

Witnesses:
J. HOWARD BELL,
I. L. HARGRAVE.