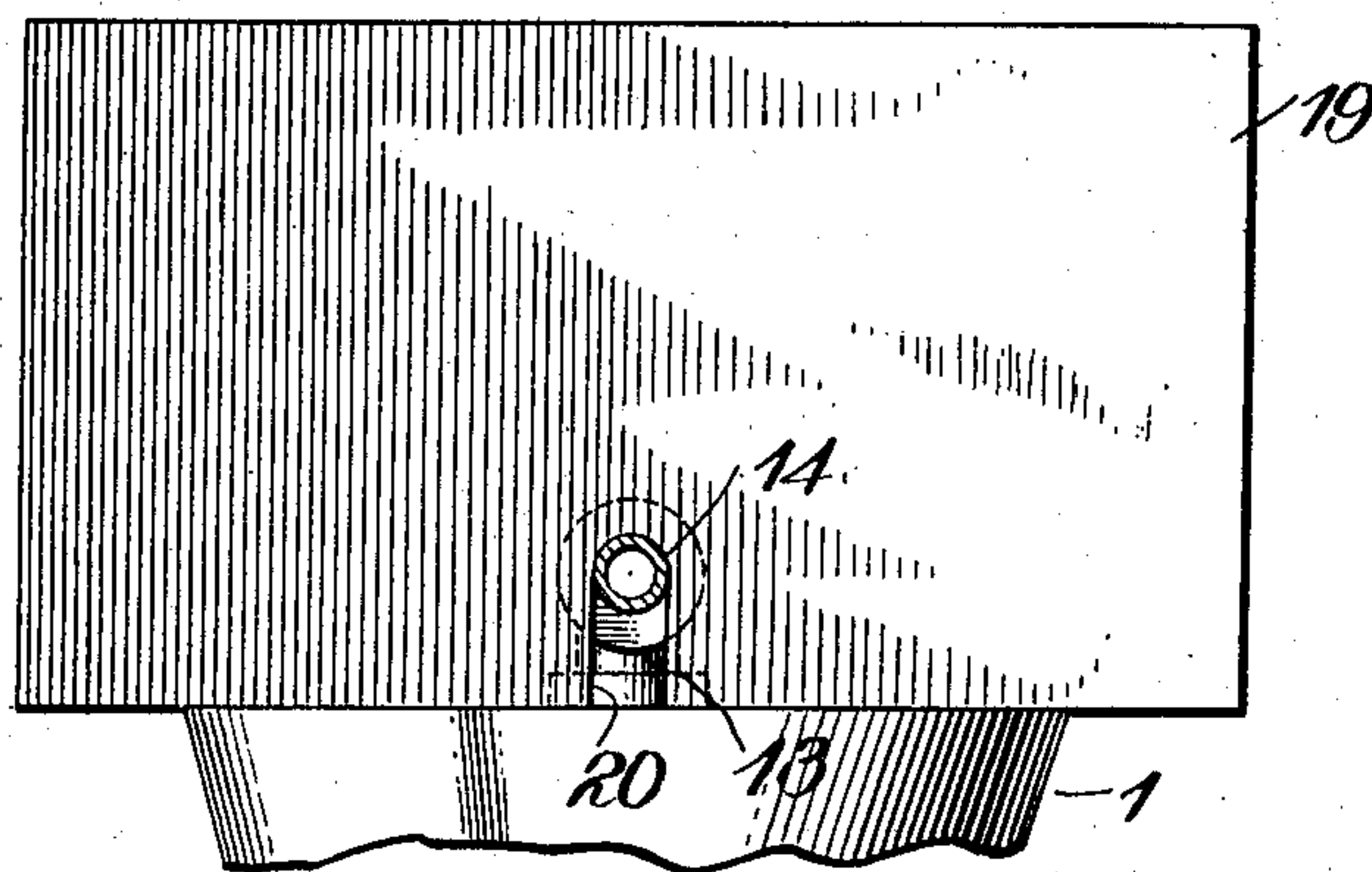
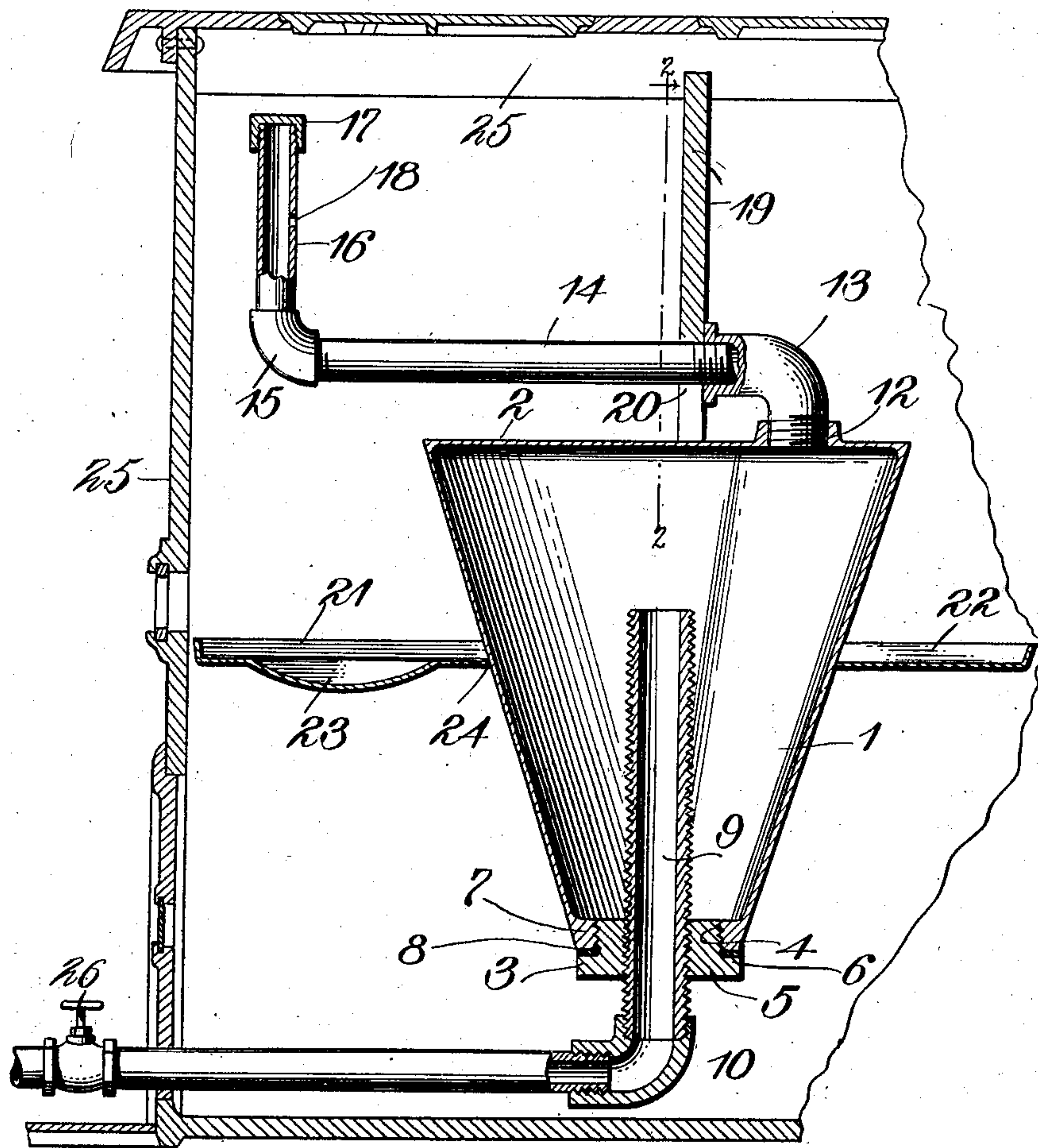


No. 753,825.

PATENTED MAR. 1, 1904.

L. E. COLEMAN.
HYDROCARBON BURNER.
APPLICATION FILED AUG. 31, 1903.

NO MODEL.



Witnesses
E. F. Stewart
Wm. Bagger

Lucius E. Coleman, Inventor.
by *C. A. Howells*
Attorneys

UNITED STATES PATENT OFFICE.

LUCIUS E. COLEMAN, OF SANTA ANA, CALIFORNIA.

HYDROCARBON-BURNER.

SPECIFICATION forming part of Letters Patent No. 753,825, dated March 1, 1904.

Application filed August 31, 1903. Serial No. 171,449. (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, in the county of Orange and State of California, have invented a new and useful Hydrocarbon-Burner, of which the following is a specification.

This invention relates to hydrocarbon-burners of that class which are employed for heating purposes and which are specially adapted to be disposed for operation in the fire-boxes of ordinary cooking or heating stoves.

My invention has for its object to provide a device of this class which shall be simple in construction and inexpensive and which may at the same time be easily manipulated, which shall not be liable to accumulate soot or dirt, and in which the accumulation of carbon within the retort of the device shall be rendered innocuous by the peculiar construction of the device, whereby such accumulations may be removed and disposed of from time to time.

With these and other ends in view my invention consists in the improved construction, arrangement, and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical sectional view of my improved hydrocarbon-burner, showing the same applied in operative position in the fire-chamber of an ordinary cook-stove. Fig. 2 is a sectional detail view taken on the line 2 2 in Fig. 1.

Corresponding parts in the several figures are indicated by similar numerals of reference.

1 designates the retort upon my improved burners, which is of inverted-frustum shape, the sides of said retort being upwardly diverged and said retort being provided with a closely-fitting cover 2, which may be integral therewith. The lower end of the retort has a closure consisting of a bushing 3, comprising a screw-threaded portion 4 and a head 5, projecting beyond said screw-threaded portion, so as to form a flange 6. The lower end of the retort is reinforced, as shown at 7, and interiorly screw-threaded to be engaged by the screw-threaded portion 4 of the bushing.

A washer 8 may be interposed between the flange 6 and the reinforced portion 7 to form a tight joint.

The bushing 3 has a central screw-threaded perforation through which extends the feed-pipe 9, the lower end of which is connected by an L 10 with a pipe 11, leading to the source of supply. The pipe 9 may be extended any desired distance into the retort, said distance being easily regulated, owing to the fact that the said pipe 9 is exteriorly screw-threaded throughout its entire length, thus enabling any desired adjustment to be easily effected.

The top 2 of the retort has an opening 12, in which is fitted an L 13, with which the vapor-pipe 14 is suitably connected. Said vapor-pipe 14 is connected by an L 15 with the vertically-disposed burner-pipe 16, the upper end of which is tightly closed by a cap 17, while the side of said burner-pipe is provided with a minute opening 18. This opening faces a spray-plate 19, the lower edge of which has a notch 20, whereby it is adjusted, straddling the vapor-pipe 14 and leaning against the L 13, as will be clearly seen in Fig. 1. In this manner the said spray-plate may be supported with sufficient security and yet in such a manner as to enable it to be easily detached when it shall be desired to disassemble the parts.

21 designates a bed-plate, which is provided with a surrounding flange 22, which takes the place of the grate usually employed in a stove. In other words, in order to apply my invention the grate is removed from the stove and the bed-plate 21, which is made of a size and shape to correspond with the grate, is mounted in place thereof upon the supports usually provided for such grate. It follows from this that the bed-plate used in connection with my invention may be made of any desired size and shape, provided, of course, that it is provided with the flange 22 and also with a depression 23, whereby it is likewise characterized. This depression is for the reception of any possible overflow, which is likewise confined by the flange 22. The bed-plate is provided with an opening 24, which is of such an area that the retort 1 when seated therein, as shown in Fig. 1, shall project for the greater part of its height below said bed-plate. This

is an important feature of my invention, inas-
much as I thereby avoid any possibility of
overheating the lower part of the retort and
the rapid formation of carbon resulting from
5 such overheating. As will be seen, however,
the lower part of the retort is of ample size to
accommodate any impurities that may accu-
mulate therein for a long time, and it will fur-
ther be seen that by removing the bushing at
10 the bottom of the retort any such impure ac-
cumulations may be readily removed. Let it
here be noted that the bushing is not exposed
to the heat of the flame evolved by the burner
and that consequently there is little or no
15 chance of its becoming fastened in such a man-
ner as to render its removal difficult.

25 in the drawings designates a portion of
an ordinary stove in the fire-box of which my
improved burner is disposed for operation.
20 From the foregoing description, taken in
connection with the drawings hereto annexed,
the operation and advantages of my invention
will be readily understood. In order to ap-
ply my improved hydrocarbon-burner to a
25 stove, it is only necessary to remove the grate
from such stove and substitute in place thereof
the bed-plate 21, which, as above stated, has
been made of a size and shape corresponding
with that of the grate. The retort is now
30 placed in position in the bed-plate, the pipe
11 leading to the source of oil-supply is con-
nected up, and the device is now in condition
for operation. It is obvious that a valve, as
26, is to be provided upon the oil-pipe in order
35 that the supply of oil may be regulated. In
order to start the fire, the supply-valve is
slightly opened, thus permitting the oil to
overflow the feed-pipe within the retort, the
latter being meanwhile heated by means of a
40 torch or other suitable means until the oil is
vaporized, when it will ascend through the pas-
sages 12, 13, 14, 15, and 16, escaping through
the port 18, from which it is projected against
the spray-plate 19, the spray thus projected
45 being easily ignited, said spray being com-
mingled with air supplied through the ordi-
nary draft-opening in the stove, which said
draft-opening is disposed above the bed-plate
21. The intensity of the flame may be regu-
50 lated by means of the valve 26, and the fire may
be extinguished by closing the valve.

I have in the foregoing described a simple
and preferred construction of my improved
hydrocarbon-burner, and I desire it to be un-
55 derstood that I do not limit myself to the pre-
cise structural details herein set forth, but re-
serve the right to any changes, alterations,
and modifications which may be resorted to
within the scope of my invention and without
60 departing from the spirit or sacrificing the
utility of the same. Thus it may be men-

tioned that, if desired, a plurality of retorts
and burners may be mounted in a single bed-
plate; but this has not been specifically shown,
for the reason that it would amount simply to
65 a duplication of the burner which forms the
subject of this present invention.

Having thus described my invention, I
claim—

1. In a device of the class described, the com- 70
bination of a bed-plate having an opening, an
inverted-frustum-shaped retort seated in said
opening and projecting for the greater part of
its height below said bed-plate, a bushing
forming a closure for the lower end of the re- 75
tort, a feed-pipe adjustably connected with
said bushing, and connecting means between
said feed-pipe and the source of supply.

2. In a device of the class described, a bed- 80
plate having an orifice, an inverted-frustum-
shaped retort seated in said orifice and pro-
jecting for the greater portion of its height
below the bed-plate, a bushing forming a clo-
sure for the lower end of the retort, a feed- 85
pipe connected adjustably with said bushing
and extending upwardly into the retort, con-
necting means between the lower end of the
said feed-pipe and the source of supply, a per-
manent closure for the upper end of the re- 90
tort, a vertically-disposed burner-pipe having
an opening in the side thereof, connecting
means between said burner-pipe and the re-
tort, and a spray-plate disposed in front of and
adapted to receive the discharge from the open- 95
ing in the burner-pipe.

3. In a device of the class described, the com-
bination of a retort, a vapor-pipe extending
from the latter, a vertically-disposed burner-
pipe connected with said vapor-pipe and hav-
ing an opening in the side thereof, and a spray- 100
plate disposed in front of said opening and
having a notch in its lower edge engaging the
vapor-pipe.

4. In a device of the class described, a retort 105
having a permanent closure at its upper end,
an L connected with said closure, a vapor-pipe
connected with the L, a vertically-disposed
burner-pipe connected with said vapor-pipe
and having an opening in the side thereof, and 110
a spray-plate notched in its lower edge to
straddle the vapor-pipe and contacting with
the L connected with the top of the retort, be-
ing thereby supported upon said retort in a
position to receive the discharge from the ori- 115
fice in the burner-pipe.

In testimony that I claim the foregoing as
my own I have hereto affixed my signature in
the presence of two witnesses.

LUCIUS E. COLEMAN.

Witnesses:

F. J. WALKER,
J. HOWARD BELL.