

No. 773,765.

PATENTED NOV. 1, 1904.

F. E. NELSON.
OIL BURNING DEVICE.

APPLICATION FILED FEB. 24, 1903.

NO MODEL.

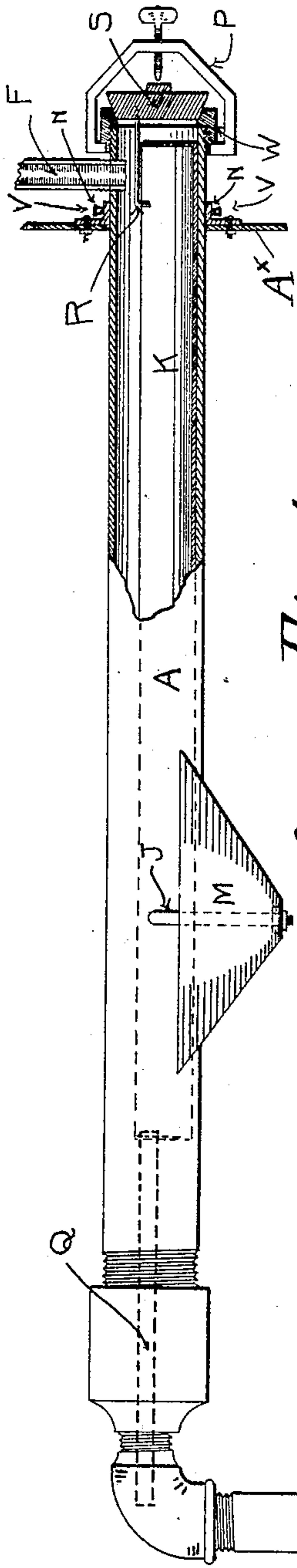


Fig. 1.

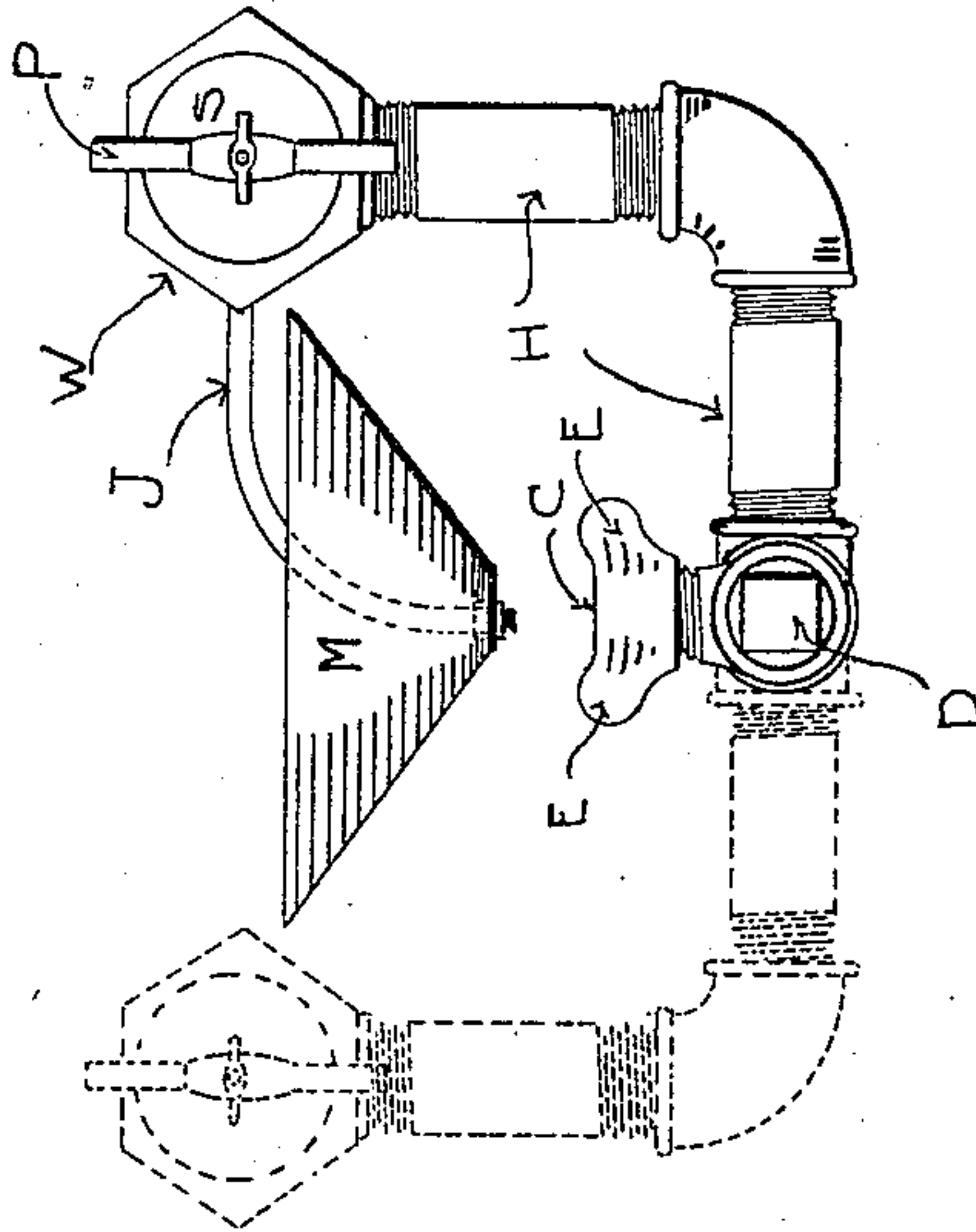


Fig. 2.

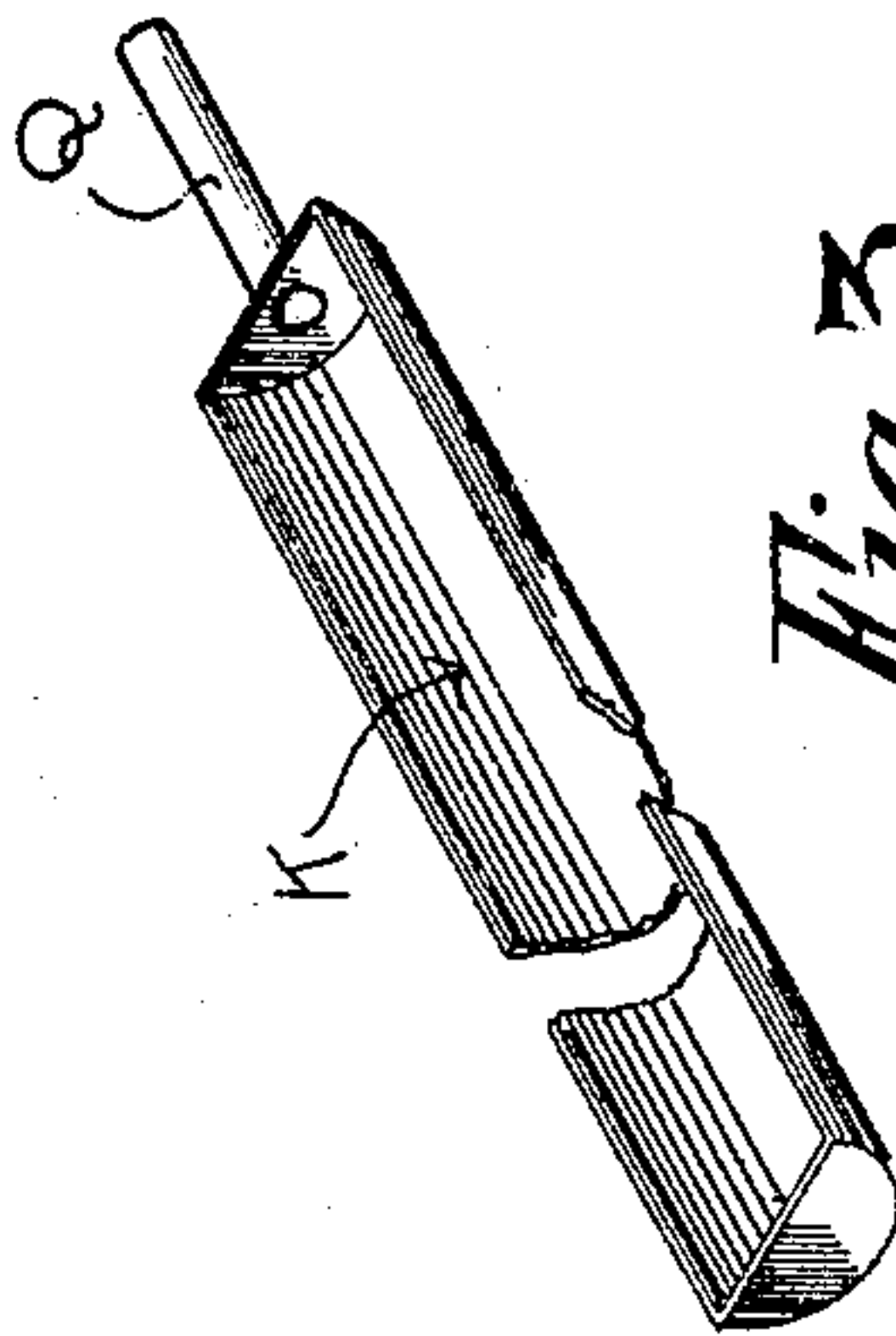


Fig. 3.

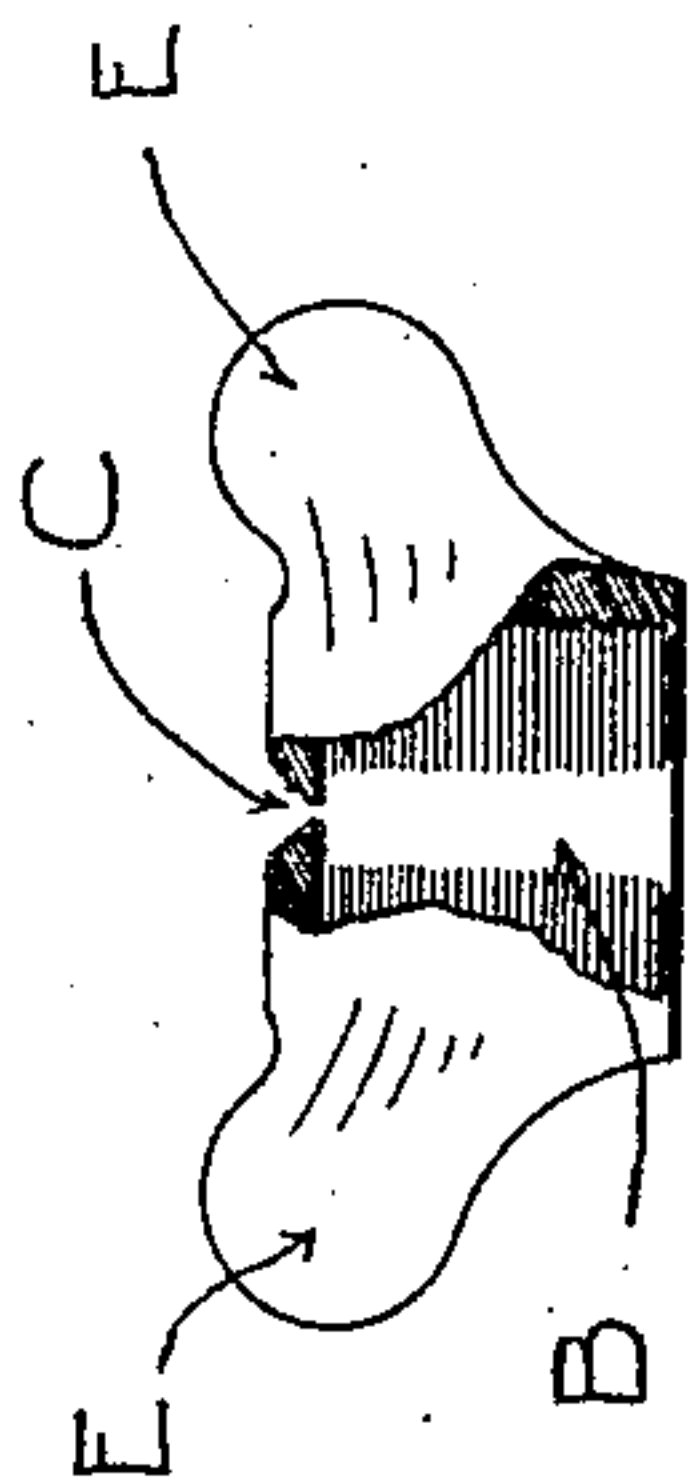


Fig. 4.

Witnesses.

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FRANK ERNEST NELSON, OF SANTA BARBARA, CALIFORNIA.

OIL-BURNING DEVICE.

SPECIFICATION forming part of Letters Patent No. 773,765, dated November 1, 1904.

Application filed February 24, 1903. Serial No. 144,834. (No model.)

To all whom it may concern:

Be it known that I, FRANK ERNEST NELSON, a citizen of the United States, residing at Santa Barbara, in the county of Santa Barbara and State of California, have invented a new and useful Oil-Burning Device, of which the following is a specification.

My invention pertains to oil-burners; and it consists in the peculiar and advantageous burner hereinafter described and claimed.

In the accompanying drawings, forming part of this specification, Figure 1 is a side view, partly in section, of my novel burner. Fig. 2 is an end view of the burner, showing the same as comprising two retorts and the appurtenances thereof. Fig. 3 is a perspective view of the trough or lining removed from its retort; and Fig. 4 is a view, partly in elevation and partly in section and on an enlarged scale, of the vapor-jet nozzle of the burner removed.

Similar letters designate corresponding parts in all of the views of the drawings, referring to which—

A is the retort of the burner, which is open at one end, as shown at the right of Fig. 1.

B is the vapor-jet nozzle.

K is the clean-out lining or trough.

R is a hooked rod for removing the lining or trough from the retort.

H is the pipe leading from the retort and connected, through the medium of a T L, to the vapor-jet nozzle.

D is a plug arranged in the T L and designed to be removed when it is desired to empty the pipe H of accumulations.

F is a pipe for conducting fuel to the trough K.

C is a small perforation through the center of the nozzle B.

E E are wings on said nozzle to facilitate turning thereof.

P is a clamp and set-screw.

S is a tapered and ground plug.

W is a threaded collar provided with slots for the clamp P and having a ground seat to receive the plug S.

M is an inverted cone designed to deflect the flame from nozzle B in the proper direction.

J is a rod which supports the cone N above the nozzle B.

N is an adjustable door-flange which fits loosely over the retort A and is firmly held in place by the set-screws V and is designed to be bolted to an improvised door, and A^x is the said improvised door.

The retort A, Fig. 1, is a hollow tube or box, of wrought or cast iron, provided with a tapped opening at the top to admit the feed-pipe F and also having threaded ends for the connection of the pipe H and the collar W. The nozzle B may be adjusted to throw its flame in any particular direction by turning the T L and the elbows in the pipe H to suit. The trough K, which may be of sheet or cast iron, fits the retort A loosely, extends the full length of the retort, and is provided with an overflow-pipe Q, arranged to discharge into the pipe H. The hook R is threaded at one end to screw into the plug S a little to either side of the vertical center, so as to avoid the drip of oil from the pipe F, and is arranged to engage the trough K when the plug S is removed, so as to assist in the withdrawal of the said trough when desired.

To set the device in place, the side or front door of a range or heater having been removed, a piece of sheet or cast iron A^x of proper size is cut to fit the opening thus made. A hole the size of the retort A should now be cut through this improvised door, and the device is then placed in the fire-box, the end of the retort A passing out through the opening in the door A^x. The flange N is now slipped over the retort A and bolted to the door, and the set-screws V are turned to hold the said flange firmly in place. The collar W is then screwed on the end of the retort A and the plug S and clamp P are properly adjusted. The feed-pipe F may now be screwed into place, when the device will be ready for operation.

In operation, the retort A being previously heated, the feed-valve (not shown) is slightly turned to allow the oil to flow from a source of supply into the trough K in the retort A, where it is instantly converted into gas or vapor and is forced by expansion and gravity down the pipe H and up through the perfora-

tion C in the nozzle B. When a match or torch is then applied to the nozzle B, the device will continue to operate.

For large work under boilers and furnaces I use two retorts set side by side, as shown in Fig. 2.

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

10 1. In an oil-burner, the combination of a retort open at one end, means for normally closing said end of the retort, a lining arranged in the lower portion of the retort and removable through the open end thereof, a
15 hooked rod connected to the said means for closing the retort, and arranged to engage the said lining, a vapor-jet nozzle, a feed-pipe connected to the retort and arranged to discharge into the lining therein, an outlet-pipe connect-
20 ing one extremity of the retort and the vapor-jet nozzle, and provided with a removable plug, and a pipe leading from one end of the lining into said outlet-pipe.

25 2. In an oil-burner, the combination of a retort open at one end, means for normally

closing said end of the retort, a lining arranged in the lower portion of the retort and removable through the open end thereof, a hooked rod connected to the said means for closing the retort and arranged to engage the
30 said lining, a vapor-jet nozzle disposed in a horizontal plane below that of the retort and provided with an upwardly-disposed aperture, a deflector connected with the retort and arranged over the said nozzle, an outlet-pipe
35 connecting one extremity of the retort and the vapor-jet nozzle, and provided with a removable plug, an overflow-pipe extending from one extremity of the lining into said
40 outlet-pipe, and a feed-pipe connected to the retort and arranged to discharge into the lining therein.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK ERNEST NELSON.

Witnesses:

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W. M. KING.