

No. 734,930.

PATENTED JULY 28, 1903.

J. W. NEUMANN.
LIQUID FUEL BURNER.
APPLICATION FILED AUG. 25, 1902.

NO MODEL.

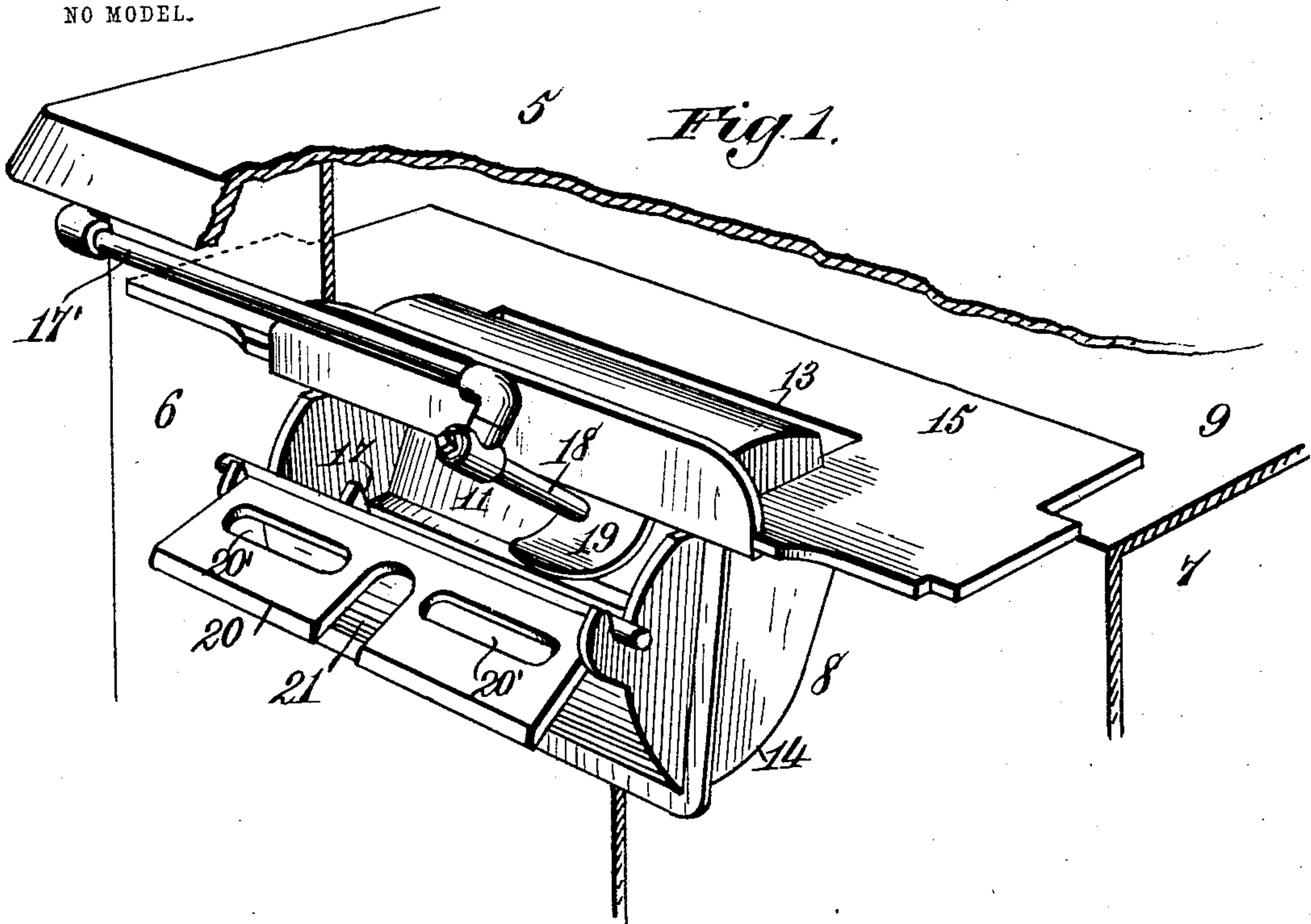
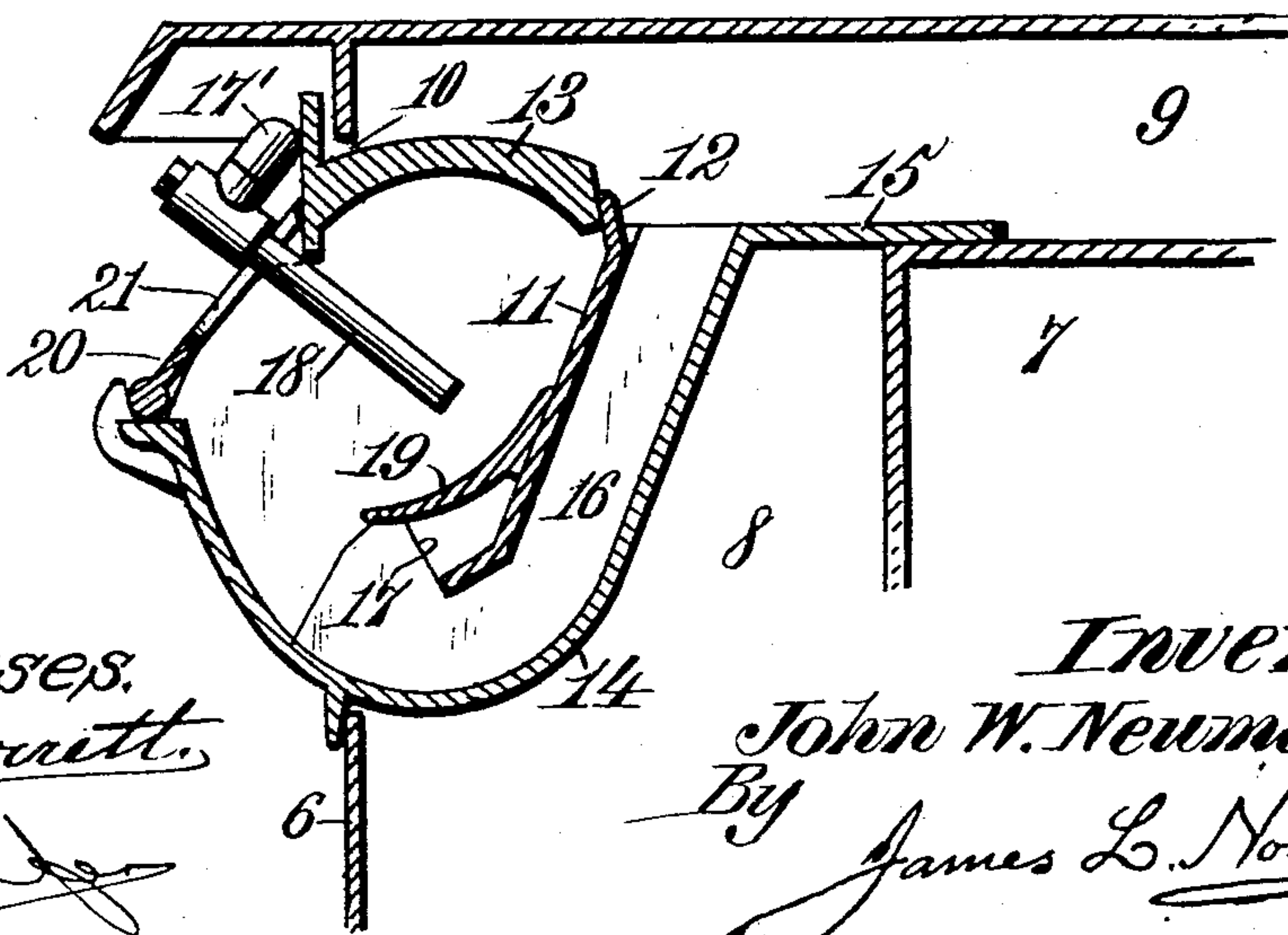


Fig. 2.



Witnesses.
Robert G. Smith
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Inventor:
John W. Neumann.
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Att'y

UNITED STATES PATENT OFFICE.

JOHN W. NEUMANN, OF LOUISVILLE, KENTUCKY.

LIQUID-FUEL BURNER.

SPECIFICATION forming part of Letters Patent No. 734,930, dated July 28, 1903.

Application filed August 25, 1902. Serial No. 120,969. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. NEUMANN, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented new and useful Improvements in Liquid-Fuel Burners, of which the following is a specification.

This invention relates to a liquid-fuel burner of that kind which is set into the fire-box of a stove or similar heating appliance; and it is in the nature of an improvement of the device disclosed by Letters Patent No. 698,408, granted to me April 22, 1902, and to which reference may be had; and one of the primary objects of the invention is to provide a simple and effective construction wherein the draft is not interfered with to any appreciable extent, so that more perfect combustion will be obtained.

Other objects and advantages of the invention will appear in the following description, while the novelty thereof will be pointed out in the claim succeeding such description, and said invention is clearly shown in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a perspective view of a portion of a cooking-stove, showing my improved burner incorporated therein, parts being broken away. Fig. 2 is a transverse vertical sectional elevation of the same.

Like characters refer to like parts throughout the several figures.

I do not wish to limit the use of the burner in any particular kind of stove; but for the purpose of showing the function of the same I have shown it in a common form of cooking-stove, the top of which is denoted by 5, the front by 6, the oven by 7, the fire-box by 8, and the flue, which extends from said fire-box over said oven to the chimney or like part, by 9. In the front of the stove is an aperture or opening 10, controlled by a damper, as will hereinafter appear, for regulating the admission of atmospheric air to the fire-box. An angularly-disposed plate 11 is mounted in the fire-box, and it has a flange 12 along its upper edge, fitting against the back of the hood 13.

Below the plate 11 is a trough-shaped shield 14, which, it will be apparent, is in the fire-box 8, and the front portion of which ex-

tends through the opening or aperture 10. The rear wall and the sides of this shield 14 extend above the front wall thereof and are horizontally flanged, as at 15, the rear portion of the flange overlapping the top of the oven at the front of the same, while the lateral or side portions thereof uphold the hood 13. The inner faces of the sides of the shield 14 are provided with ribs 16, against which the ends of the plate 11 are fitted, the latter terminating at its lower edge in an obtuse angular flange 17. The ribs at their lower ends are V-notched to receive the flange.

The several parts before described may be united together in any desirable way. Some of them, for example, may be made integral.

Along the front 6 the supply-pipe 17' for the petroleum or other hydrocarbon fluid extends, its inner end terminating substantially centrally of the said front and being provided with a branch 18, extending into the combustion-chamber of the stove through the aperture 10. The outlet of the branch is situated near the forward end of the lip 19 and is adapted to deliver the combustible fluid onto said lip, which, it will be seen, is relatively narrow.

The space between the upper forward edge of the shield 14 and the upper edge of the aperture 10 is intended for the admission of atmospheric air into the combustion-chamber, and the flow of air through this space is controlled by a damper 20, having pintles or journals fitted in suitably-formed bearings in the upper forward side of the shield 14. When the damper is closed, its upper free edge will bear against the front of the stove, said damper when so disposed being at an inclination. The damper has a pair of longitudinal slots 20' and an intermediate transverse open-ended slot 21, through which atmospheric air can pass when the damper is shut, to thereby secure the proper degree of combustion. By reason of the open-ended slot, the open end of which is located in the upper edge of the damper, the supply-pipe, or rather its branch 18, will not interfere with the closing of the damper, as said branch when the damper is closed is adapted to enter such open-ended slot.

The supply-pipe is adapted to be connected with any source of hydrocarbon liquid fuel,

(not shown,) and the branch thereon, which, it will be seen, extends into the stove at an angle, is adapted to deliver the liquid fuel onto the lip 19. In practice the supply-pipe 5 is equipped with a valve (not shown) for controlling the amount of liquid discharged from the pipe and for also cutting off the same.

By reason of the relatively narrow lip 19, onto which the liquid fuel is initially dropped 10 and effectually spread, the draft of the stove is not appreciably affected by its presence, as such lip does not interpose a material obstruction to the inflowing air. In this way I am enabled to secure the highest degree of 15 combustion of the fuel. Said lip is united to the plate carrying the same in any suitable manner—for example, by riveting—and it will be seen that the sides of said narrow lip are open in order to facilitate the passage of liquid fuel therefrom onto the inclined plate 11. 20

Oil being caused to flow through the supply-pipe 17' will drop from the inwardly-extending branch thereof onto the lip 19, which is made concaved upon its upper side to receive a small quantity of oil, which is ignited. 25 The flame and hot gases will ascend and strike the curved under surface of the hood 13, which projects the same forward and then downward along opposite sides of said lip.

Such flames and hot gases then pass below the lower edge of the inclined plate 11, being directed toward the chimney by the bottom and rear inclined wall of the shield 14, the necessary oxygen to maintain combustion being furnished through the damper-regulated opening 10. 30 35

Having described the invention, what I claim is—

In a liquid-fuel burner, the combination of a stove having a fire-box provided with a trough-shaped shield, an inclined plate above said shield, a hood situated above the lower edge of said plate, a liquid-fuel-supply pipe extending into said fire-box, and a lip upon the forward side of said plate located in proximity to the outlet of said supply-pipe and said lip being narrow with respect to said plate, and its sides being open whereby liquid flowing onto said lip can flow sidewise from the same and onto said plate. 40 45 50

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN W. NEUMANN.

Witnesses:

JNO. S. GREEN,
WM. ATWOOD.