

No. 762,660.

PATENTED JUNE 14, 1904.

L. A. SCHULZE.  
OIL BURNER.

APPLICATION FILED JUNE 22, 1903.

NO MODEL.

Fig. 1.

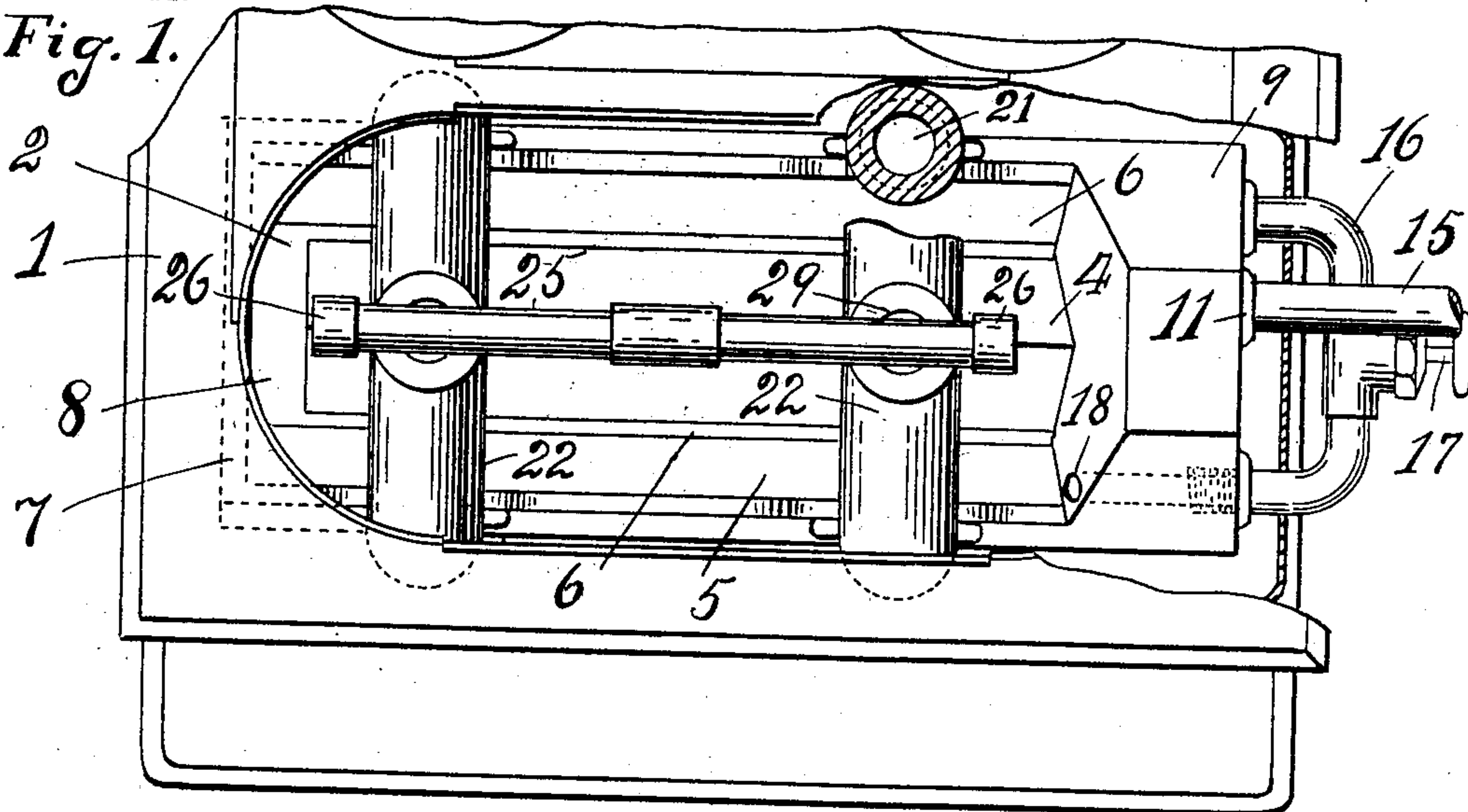


Fig. 2.

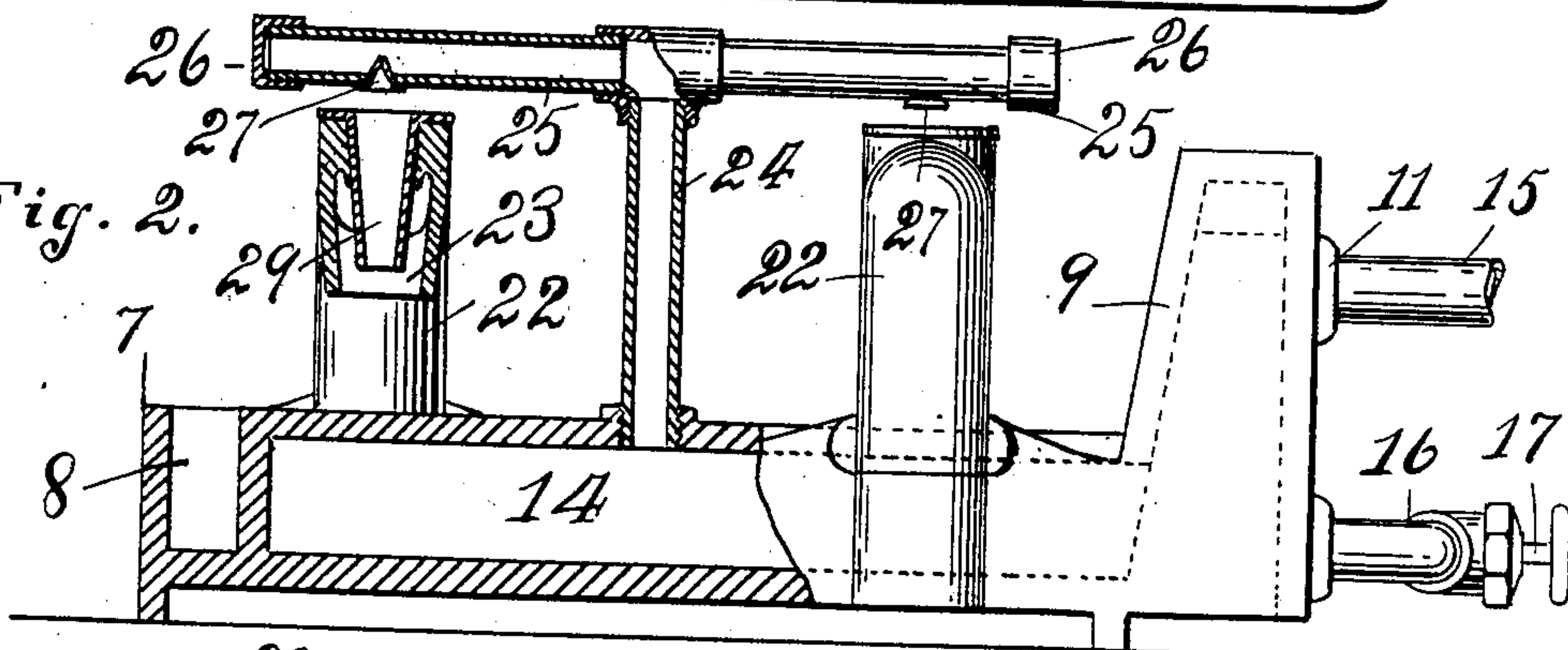


Fig. 3.

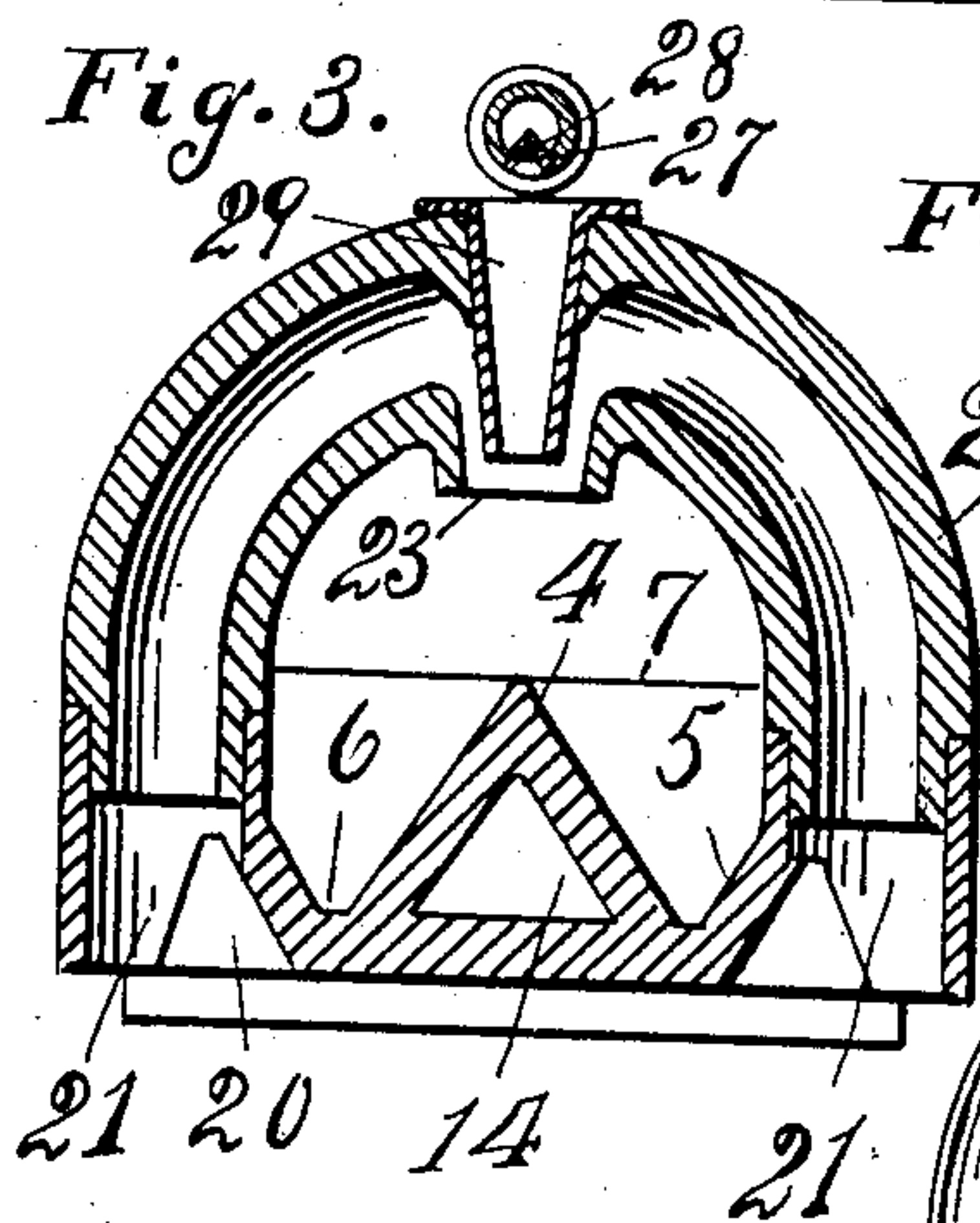


Fig. 6.

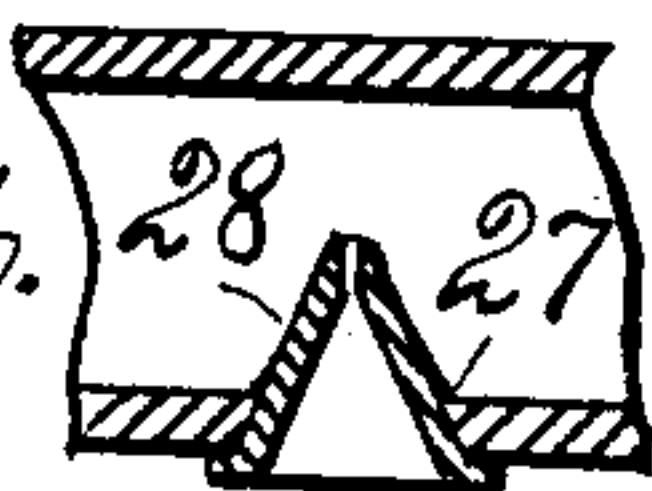


Fig. 5.

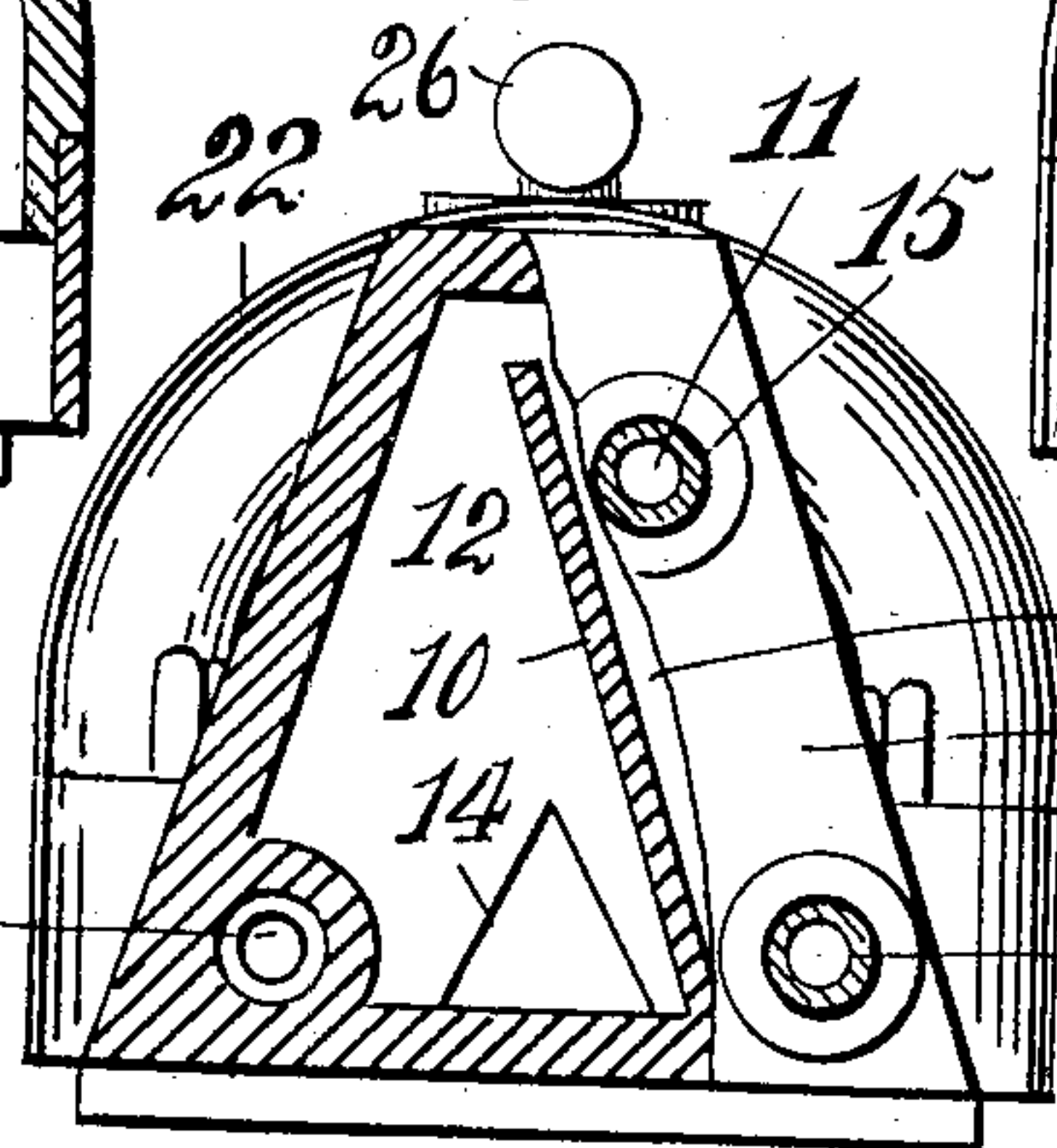
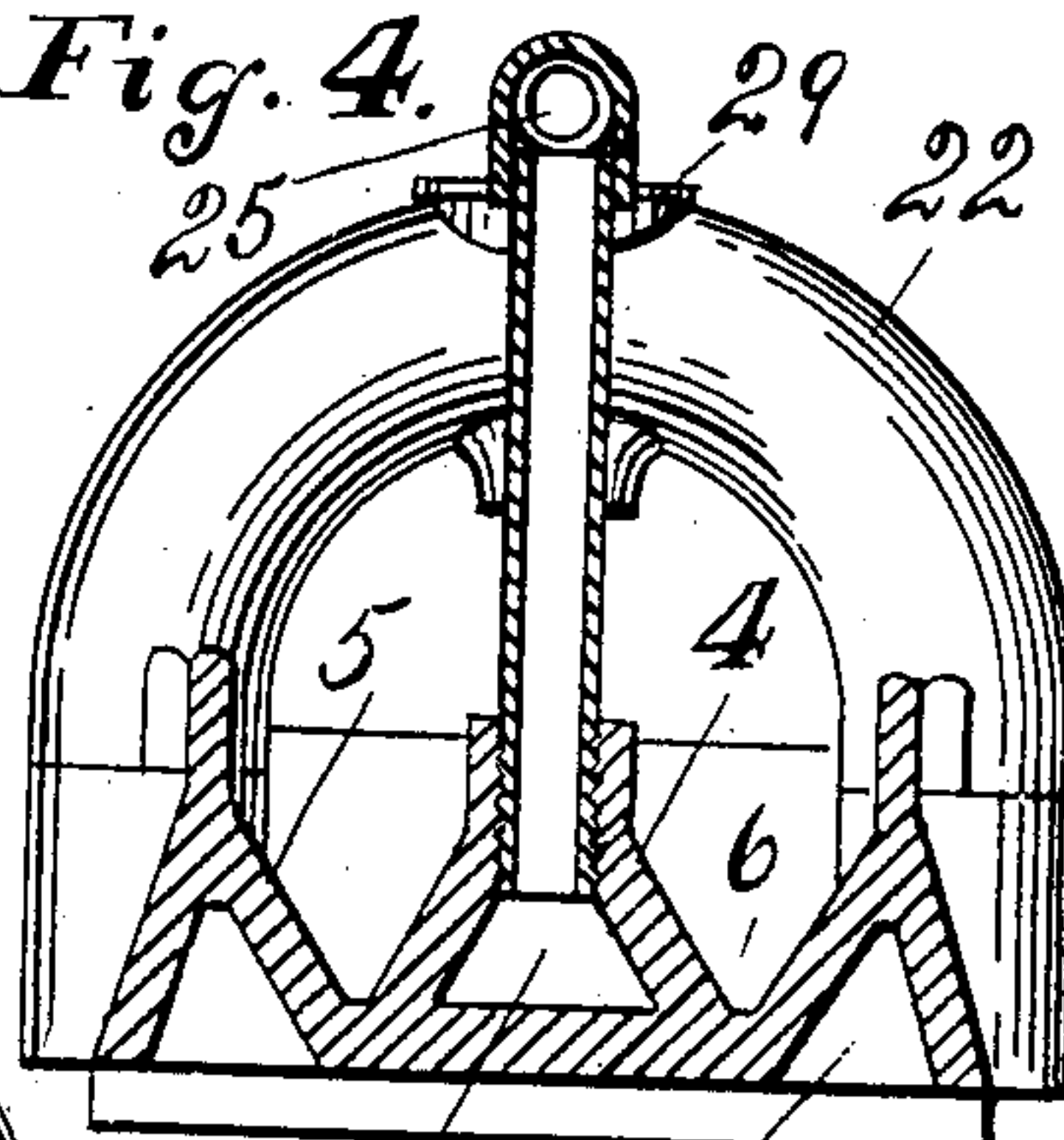


Fig. 4.



Witnesses  
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# UNITED STATES PATENT OFFICE.

LOUIS A. SCHULZE, OF SAN FRANCISCO, CALIFORNIA.

## OIL-BURNER.

SPECIFICATION forming part of Letters Patent No. 762,660, dated June 14, 1904.

Application filed June 22, 1903. Serial No. 162,515. (No model.)

*To all whom it may concern:*

Be it known that I, LOUIS ALBERT SCHULZE, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Gas-Generating Oil-Burners, of which the following is a specification.

My invention relates to improvements in oil-burners, the object of my invention being to provide an oil-burner which shall be especially adapted for use in domestic stoves or ranges, which shall be cheap and simple in construction, and in which the oil shall be consumed without smoke, smell, or the deposition of soot.

My invention therefore resides in the novel construction, combination, and arrangement of parts for the above ends hereinafter fully specified, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of the device in position in a stove, the plate of the stove being broken away. Fig. 2 is a broken front view of the device detached. Figs. 3, 4, and 5 are transverse sections thereof on the lines A A, B B, C C, respectively, of Fig. 2. Fig. 6 is an enlarged detail longitudinal section.

Referring to the drawings, 1 represents the front end of a domestic stove, the plate of which is broken away, as shown, to disclose the oil-burner in the fire-box thereof. The principal element of said oil-burner is a casting 2, which is formed with three ridges—a central ridge 4 and side ridges 5—said ridges forming two troughs 6 therebetween. The troughs are closed at the farther end by an end wall 7, but communicate with each other at said farther end by a channel 8. At the near end of the burner the troughs are closed by a retort 9, extending the width of the burner and raised to a considerable height. Said retort 9 has a partition 10, formed integral with the casting in the retort, extending obliquely to a point near the top thereof to one side of the inlet 11 for the oil. The retort is thus divided into two chambers 12 and 13, one of which, 12, communicates with a central conduit 14 of triangular cross-section

formed within the central ridge 4, and the other, 13, communicates with the oil-inlet pipe 15 and also, by means of a union 16, controlled by a cock 17, with the troughs 6 through a perforation 18 in the casting near the retort 9. On the under side of the casting are formed channels 20, which are for the passage of air underneath the casting, said air being thus heated and being conducted through circular holes 21 to arched air-tubes 22, standing on said casting around said holes and extending across the casting. Said air-tubes are provided at the center with downwardly-extending discharge-openings 23, directed upon the central ridge 4. With said central ridge is connected a vertical gas-pipe 24, having secured on the upper end thereof a longitudinal gas-pipe 25, extending horizontally in each direction from said gas-pipe 24 and closed at its ends, as shown at 26. Said pipe has near each end an aperture 27, which is closed by an inwardly-extending small copper cone 28, driven into the aperture 27, having a perforated apex for the escape of gas. By making these cones of copper scaling is avoided, which would clog up the gas-orifices and prevent the successful operation of the device.

29 represents a downwardly-extending conical shell or jacket secured in the top of each arched air-tube, the lower or smaller end of said shell extending within the downwardly-extending air-outlet. The function of this shell or jacket is to form a partition to prevent the gas commingling with the hot air at a point above the connection of air-outlet with the arched tube, insuring that the gas shall be discharged downwardly onto the central ridge.

The operation of the device is as follows: Oil having been admitted through the oil-pipe 15 flows downward into the bottom of the chamber 13 and thence along the union 16, the stop-cock 17 being opened, flowing into the trough 6 on the front side of the stove and round by the channel 8 into the trough on the rear side. When a suitable quantity of oil has thus been admitted, the oil is ignited and the stop-cock is turned off. The combustion of the oil in the trough heats the casting and all the parts of the burner, including the re-



tort, until the oil in the retort is sufficiently hot that the vapor therefrom rises above the partition and escapes into the chamber on the left. From said chamber it passes into the  
 5 central conduit 14, thence out by means of the gas-pipes 24 and 25, discharging into the conical shell 29, when it is commingled with the hot air discharged from the arched air-tube 22. At this point thorough combustion  
 10 takes place and the flames strike the central ridge 4, thoroughly heating the whole casting. The vaporized oil is still further heated in passing along the central conduit and up the vertical gas-pipe, and since the air which sup-  
 15 plies combustion is also greatly heated the combustion is very perfect and no smoke, smell, or deposition of soot can take place. The sharp central ridge serves to divide the flames and to prevent noise.

20 While I have in the drawings shown but one oil-burner in a stove, it will be understood that for larger stoves or ranges two or even more may be employed, and whereas I have herein shown the preferred form of my inven-  
 25 tion I do not desire to be limited thereto, as many changes and modifications in form or construction may be made without departing from the spirit of my invention.

I claim—

30 1. In an oil-burner, a casting having a central ridge and side ridges, forming troughs therebetween, the central ridge having a conduit therein, the troughs having a connecting-channel, a retort at the supply end of the cast-  
 35 ing having a partition therein dividing the retort into two chambers, one of said chambers communicating with the central conduit, and the other communicating with the oil-inlet pipe, and a union with a valve therein connect-  
 40 ing the latter chamber with the said troughs, substantially as described.

2. An oil-burner, a casting having a central ridge and side ridges forming troughs there-  
 45 duit therein, means for admitting oil to said conduit, an oil-pipe leading upward from said central ridge, and having a downward-dis-charge opening, the side ridges having air-channels thereunder, and means for conduct-  
 50 ing the air from said channels to a point be-

low said discharge-opening, substantially as described.

3. An oil-burner comprising an oil-supply pipe having a downward-discharge opening, a hot-air tube having a downwardly-extend- 55 ing portion and a shell in said downwardly-extending portion around said opening whereby the oil-vapor and hot air are caused to commingle below the top of said downwardly-extending portion, substantially as described. 60

4. In an oil-burner, the combination of a casting having a ridge, said ridge having formed therewithin a conduit for the oil, a pipe leading vertically upward from said con- 65 duit, a horizontal pipe connected with said vertical pipe and having a discharge-orifice through its under side, a hot-air tube supported by said casting and having a down-wardly-extending portion, said orifice dis- 75 charging into said downwardly-extending portion, said portion and orifice being directed toward said ridge and a shell in said downwardly-extending portion around said orifice whereby the oil-vapor and hot air are caused to commingle below the top of said 75 downwardly-extending portion, substantially as described.

5. In an oil-burner, the combination of a casting having a ridge, said ridge having therewithin a conduit for the flow of oil, a 80 pipe leading vertically upward from said conduit, a horizontal pipe connected with said vertical pipe having a plurality of orifices through its under side, a corresponding plu- 85 rality of hot-air tubes supported by said casting and having downwardly-extending portions, said orifices discharging into said down-wardly-extending portions, and tubular shells around said orifices and within said down- 90 wardly-extending portion whereby the oil-vapor and hot air are caused to commingle at a point below the top of said downwardly-extending portions, substantially as described.

In witness whereof I have hereunto set my hand in the presence of two subscribing wit- 95 nesses.

LOUIS A. SCHULZE.

Witnesses:

FRANCIS M. WRIGHT,  
 BESSIE GORFINKEL.