

J. DU ROSS.
HYDROCARBON BURNER.
APPLICATION FILED MAY 22, 1908.

913,478.

Patented Feb. 23, 1909.

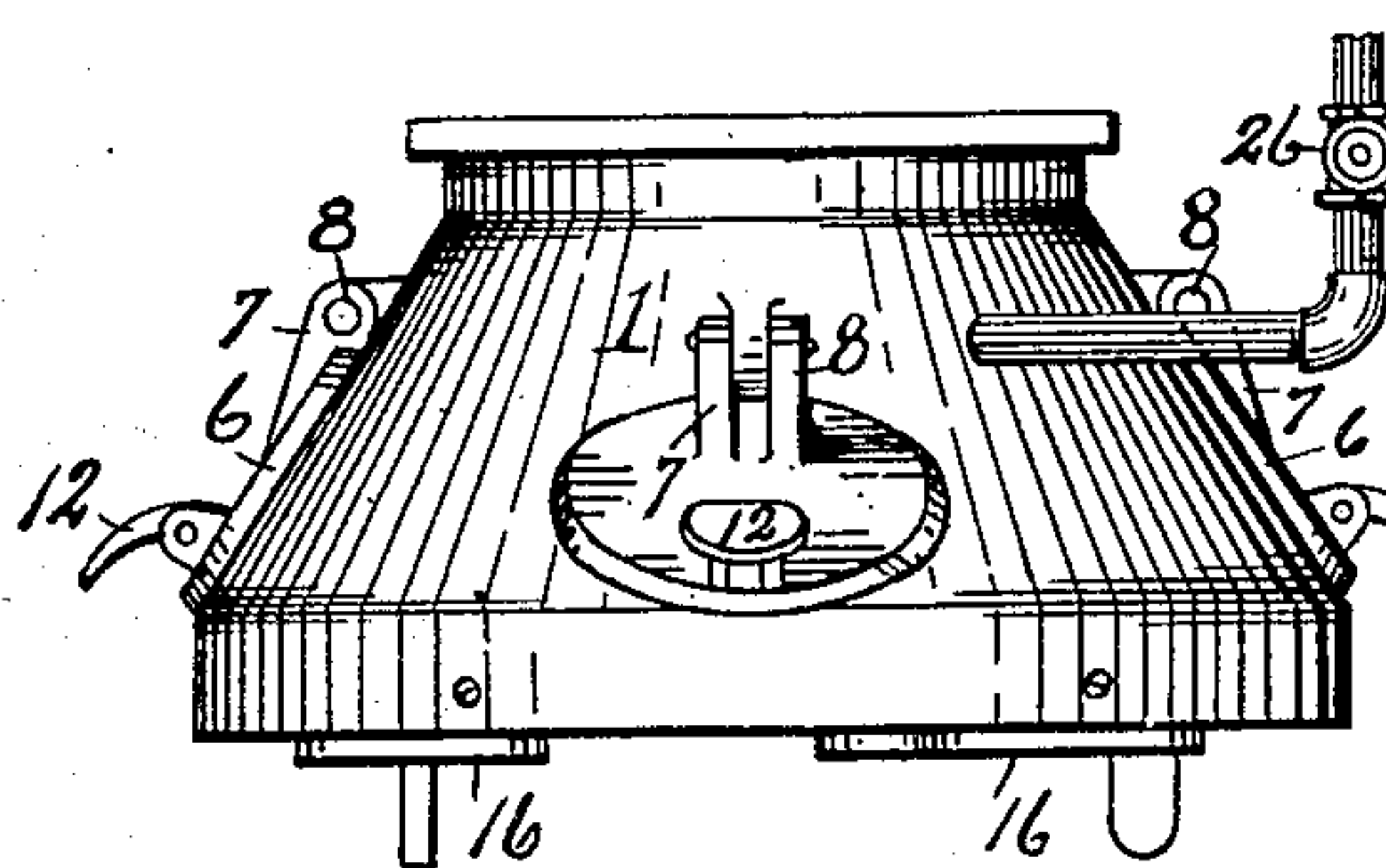


Fig. 1.

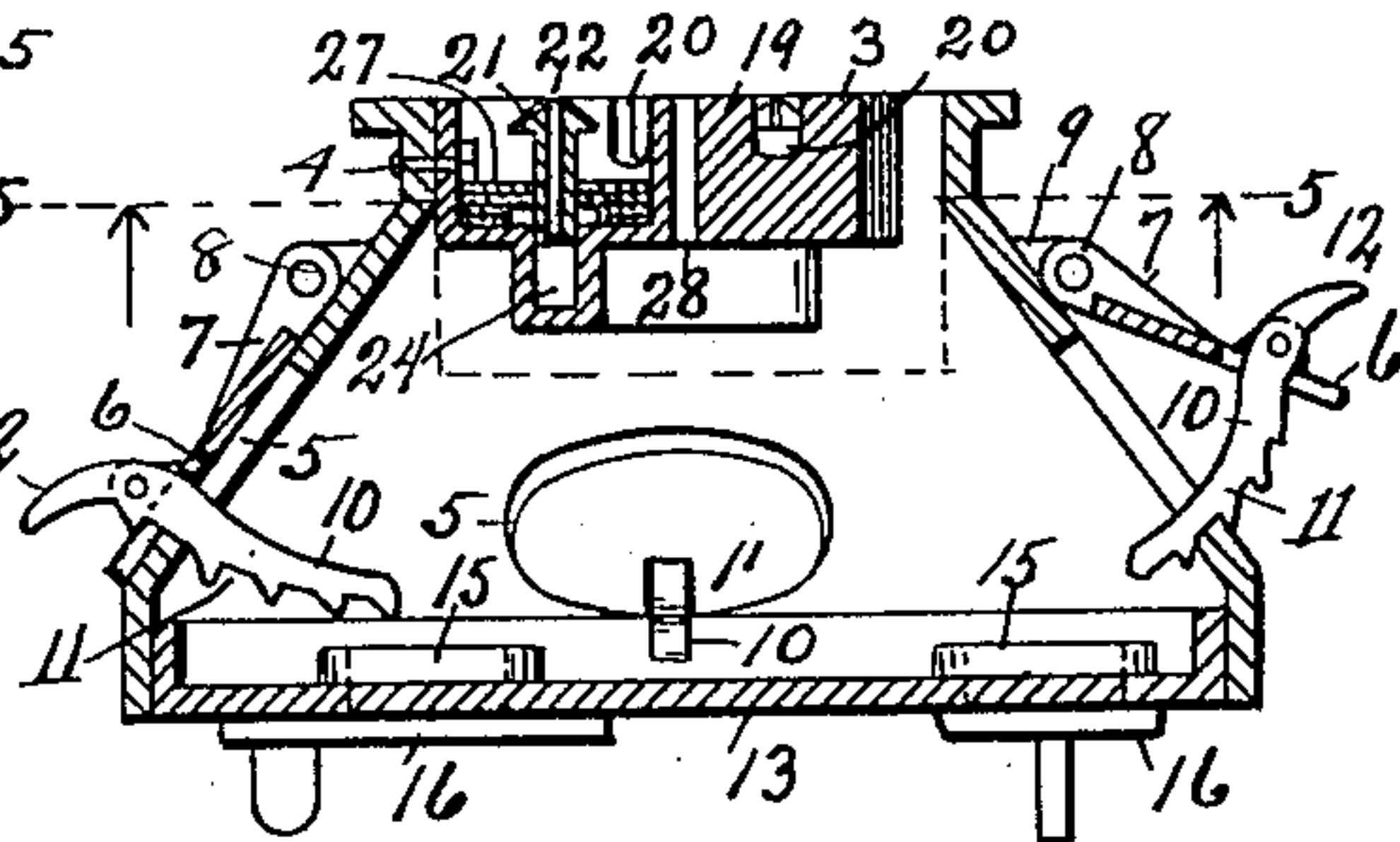


Fig. 4.

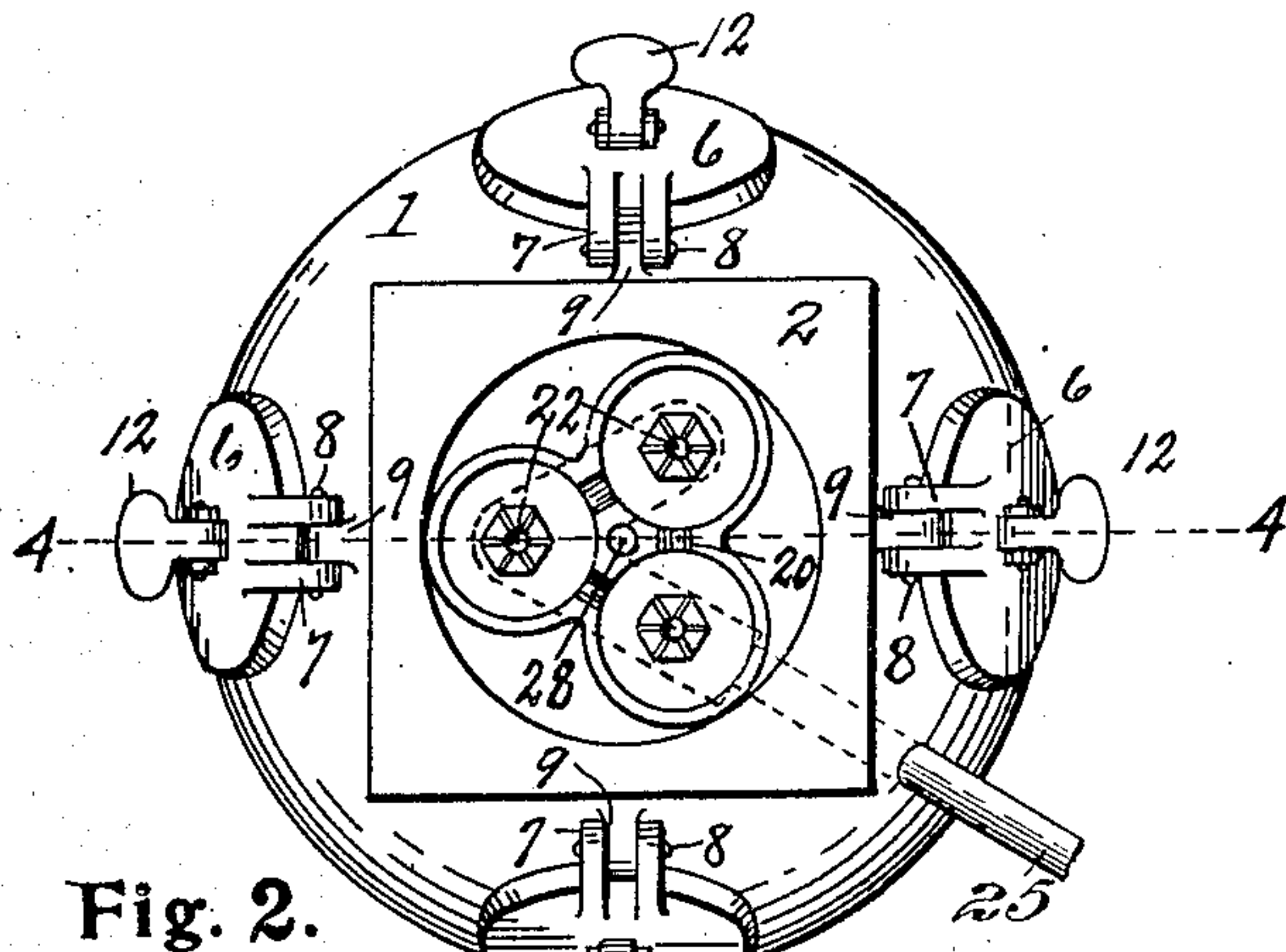


Fig. 2.

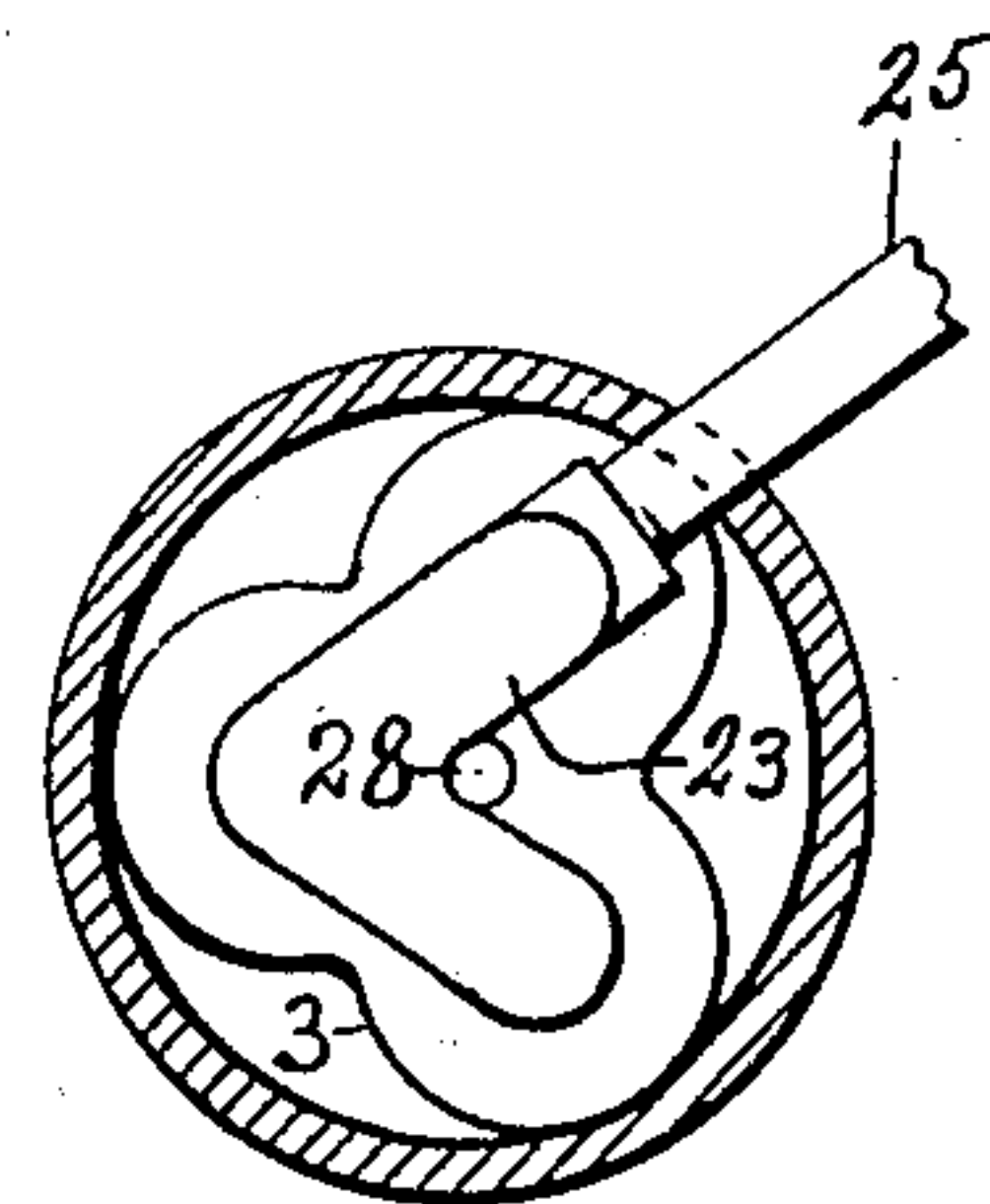


Fig. 5.

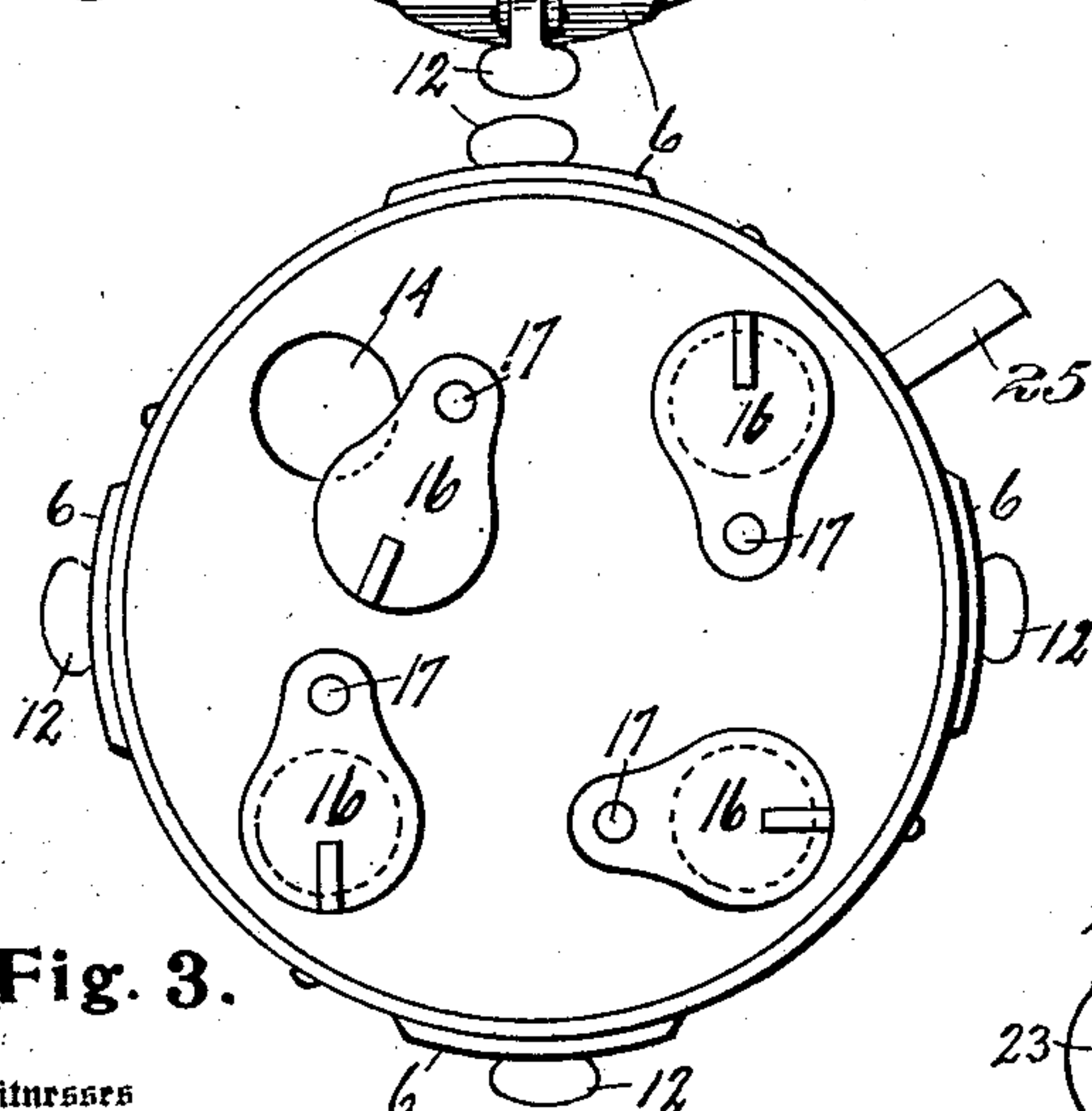


Fig. 3.

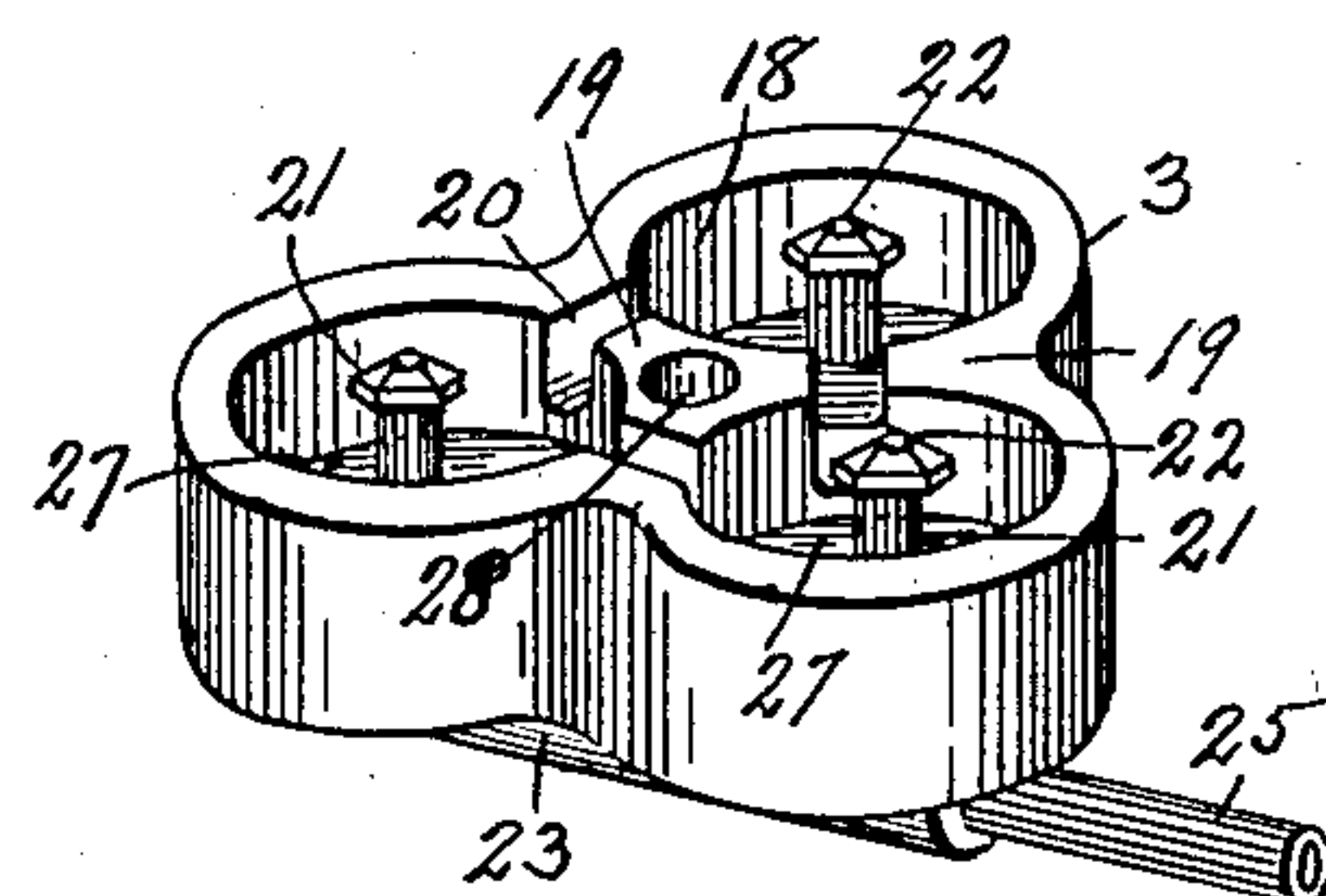


Fig. 6.

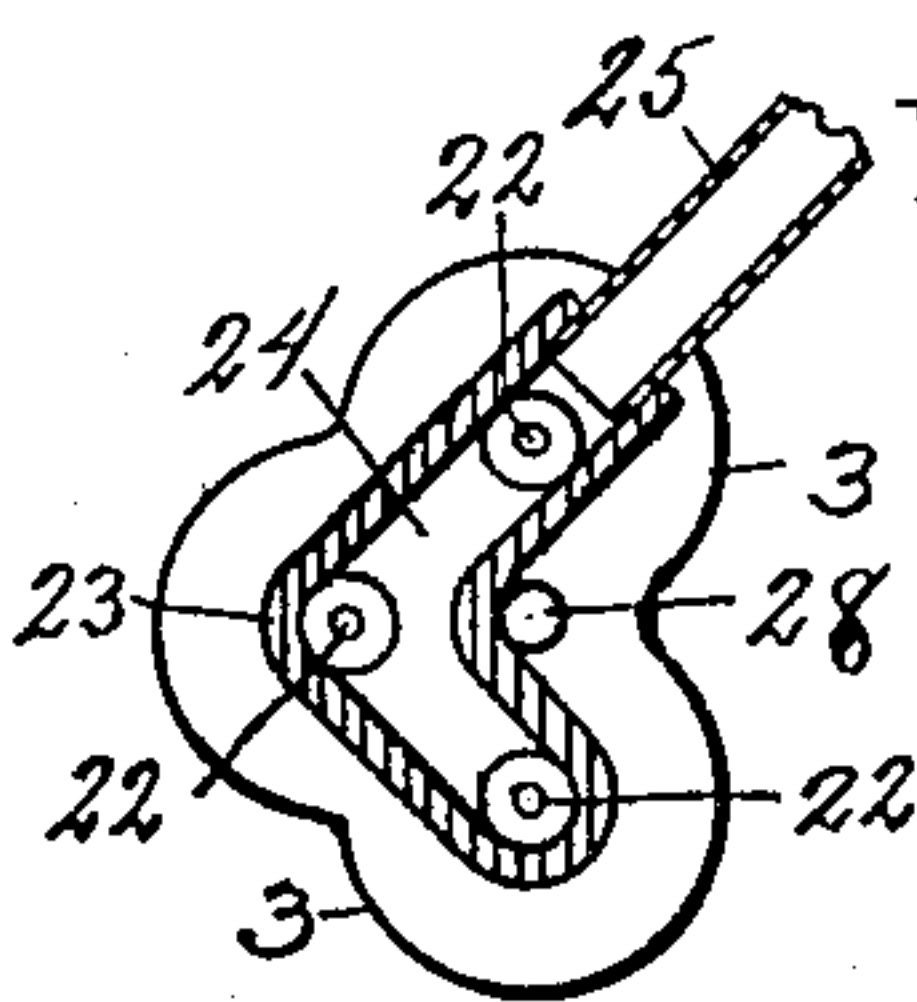


Fig. 7.

Witnesses
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UNITED STATES PATENT OFFICE.

JAMES DU ROSS, OF DETROIT, MICHIGAN.

HYDROCARBON-BURNER.

No. 913,478.

Specification of Letters Patent.

Patented Feb. 23, 1909.

Application filed May 22, 1908. Serial No. 434,329.

To all whom it may concern:

Be it known that I, JAMES DU ROSS, a citizen of the United States, residing at Detroit, in the county of Wayne, State of Michigan, have invented certain new and useful Improvements in Hydrocarbon-Burners; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to a hydrocarbon burner, especially designed for burning hydrocarbon fuel which is rich in carbon, such as kerosene, and the invention consists in the construction and arrangement of parts herein-after more fully set forth and pointed out particularly in the claims.

The object of the invention is to provide a burner of the character described, wherein kerosene oil and other oils of like character may be readily burned in a manner to afford proper combustion and produce an intense heat, the arrangement being such as to enable the inflowing air which supports combustion to be properly regulated and directed to the flame in the burner.

The above object is attained by the structure illustrated in the accompanying drawings, in which:—

Figure 1 is an elevation of a burner involving my invention. Fig. 2 is a plan view thereof. Fig. 3 is an inverted plan. Fig. 4 is a central transverse section, as on line 4—4 of Fig. 2. Fig. 5 is a horizontal section, as on line 5—5 of Fig. 4, showing mainly the bottom of the oil receptacle or tray of the burner. Fig. 6 is a perspective view of said oil receptacle or tray. Fig. 7 is a horizontal section through the cored oil channel of said tray which supplies the nozzles through which oil is fed to the burner.

Referring to the characters of reference, 1 designates the hood of the burner which is in the form of a truncated cone, the top of which is open and supports a rectangular plate 2 having a central aperture in which the fuel receptacle 3 is supported by bolts 4 which pass through the wall of the upper portion of the hood. Formed through the conical wall of the hood on four opposite sides thereof are the apertures 5 adapted to be closed by the lids or doors 6 having the ears 7 which are

pivoted at 8 to the lugs 9 on said hood, whereby said doors are adapted to swing upwardly. Passing through and pivoted in each of said doors is a curved arm 10 having upon the under edge of the portion that projects through said door the notches 11. These notches are adapted to engage the bottom margin of the opening 5 in the wall of the hood to maintain the door 6 open to any desired extent, whereby the amount of air admitted to the burner may be regulated. At the base of the conical hood and forming a bottom therefor is a circular disk 13 which is secured to the hood in any suitable manner. For the purpose of affording additional control of the air which is admitted to the burner, said bottom is provided with four apertures 14 surrounded upon the inside by a raised flange 15. Each of said apertures is closed by a lid 16 pivoted at 17 to the under face of the bottom to swing over said aperture and close the same, as clearly shown in Fig. 3. By moving said lids so as to expose more or less of the openings 14, the quantity of air admitted to the burner may be regulated in accordance with all requirements.

On referring to Fig. 6, it will be seen that the oil receptacle or tray 3 has three cells or pockets 18 separated by partitions 19 through each of which is cut a channel 20 for the purpose of establishing communication between said cells, thereby equalizing the oil level therein, preventing the accumulation of an excess of oil in any of the cells or pockets. Projecting centrally from the bottom of each of the cells is an oil feed nozzle 21 having a central aperture 22 therethrough. Upon the bottom of the oil receptacle or tray is a T-shaped casting 23 formed integral therewith, in which is a cored passage 24 into which the lower ends of the nozzles 21 extend. Communicating with the cored passage in said casting is an oil supply pipe 25 which leads to any suitable source of supply and in which is a controlling valve 26. In the bottom of each of the cells or pockets 18 is a layer of asbestos 27, or other non-combustible absorbent from which the oil when ignited is adapted to burn.

In the operation of this burner, the valve 26 is opened to allow oil to flow into the tray 3 through the feed nozzles 21 so as to partially fill the cells of said tray, when it is ignited. The ascending flame from the burning oil causes a strong upward draft which may be perfectly regulated by the doors 6 and

the lids 16 so that the right quantity may be supplied to support a flame of any desired proportion. The position of the oil tray in the upper opening of the conical hood causes the air which passes upwardly through the hood to be directed around said tray, which, because of its shape affords a free passage for the air through the central opening of the hood, an arrangement which allows a sufficient quantity of air to be supplied to the flame under all conditions. To assist in directing air to the center of the point of combustion, a central aperture 28 is formed through the oil receptacle which communicates with the interior of the hood and through which a quantity of air is allowed to pass.

By disposing the draft-regulating doors 6 around the conical hood, and by locating the apertures 14 in the bottom at a point between said draft openings, a perfect control of the air passing to the burner is effected, enabling it to be supplied alike to all sides of the burner and in any desired volume, whereby the combustion of the oil is supported in a manner to produce an intense heat. When the casting which comprises the tray of the burner becomes thoroughly heated, the oil which passes through the passage 24 and nozzles 21 is converted into a gas, at which time the highest efficiency of the burner is attained.

Having thus fully set forth my invention, what I claim as new and desire to secure by Letters Patent, is:—

35 1. In a hydrocarbon burner, the combination of a conical hood having a contracted opening at the top and a closed bottom, draft

openings through the wall of the hood, means for regulating the passage of air through said openings, a tray fixed centrally within the opening at the top of the hood, said tray being of such shape as to afford air passages between it and the wall of said opening, and means for supplying hydrocarbon fuel to said tray. 40 45

2. In a hydrocarbon burner, the combination of a conical hood having an opening at the top and having a closed bottom, draft openings through the bottom of the hood, means for regulating the passage of air through said openings, the conical wall of the hood also having draft openings therethrough provided with means for regulating the passage of air, a hydrocarbon receiving tray at the apex of the conical hood within the opening thereof, there being air passages between the tray and the surrounding wall of the hood, and means for supplying hydrocarbon fuel to said tray. 50 55

3. In a hydrocarbon burner, the combination of a hood adapted to concentrate the air about the burner having a contracted central opening at the top, a tray located within the contracted central opening at the top of the hood having a plurality of communicating oil pockets, oil feed nozzle within each pocket of said tray, and means for supplying oil to said nozzles. 60 65

In testimony whereof, I sign this specification in the presence of two witnesses.

JAMES DU ROSS.

Witnesses:

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I. G. HOWLETT.