

No. 768,125.

PATENTED AUG. 23, 1904.

A. H. HERRON.
VAPOR BURNER.

APPLICATION FILED DEC. 1, 1902.

NO MODEL.

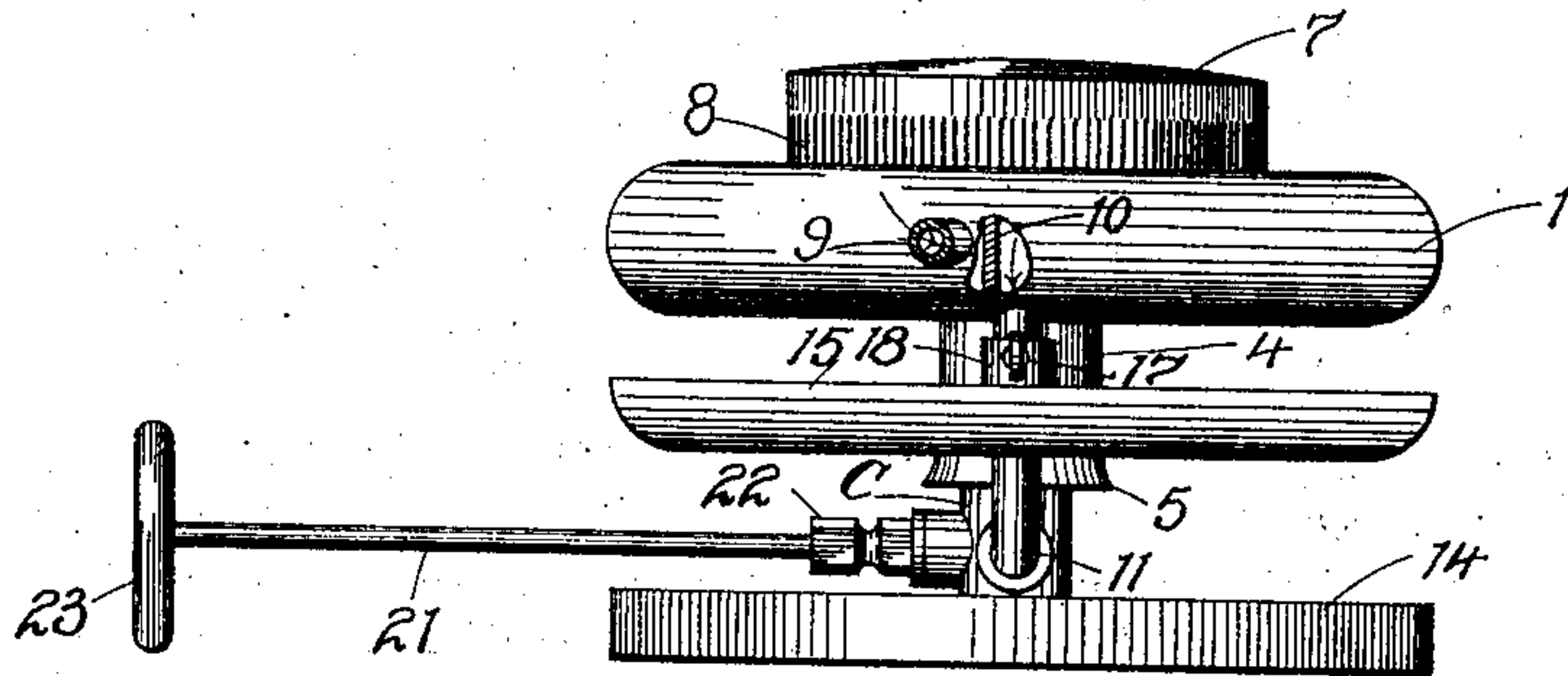


FIG. 1.

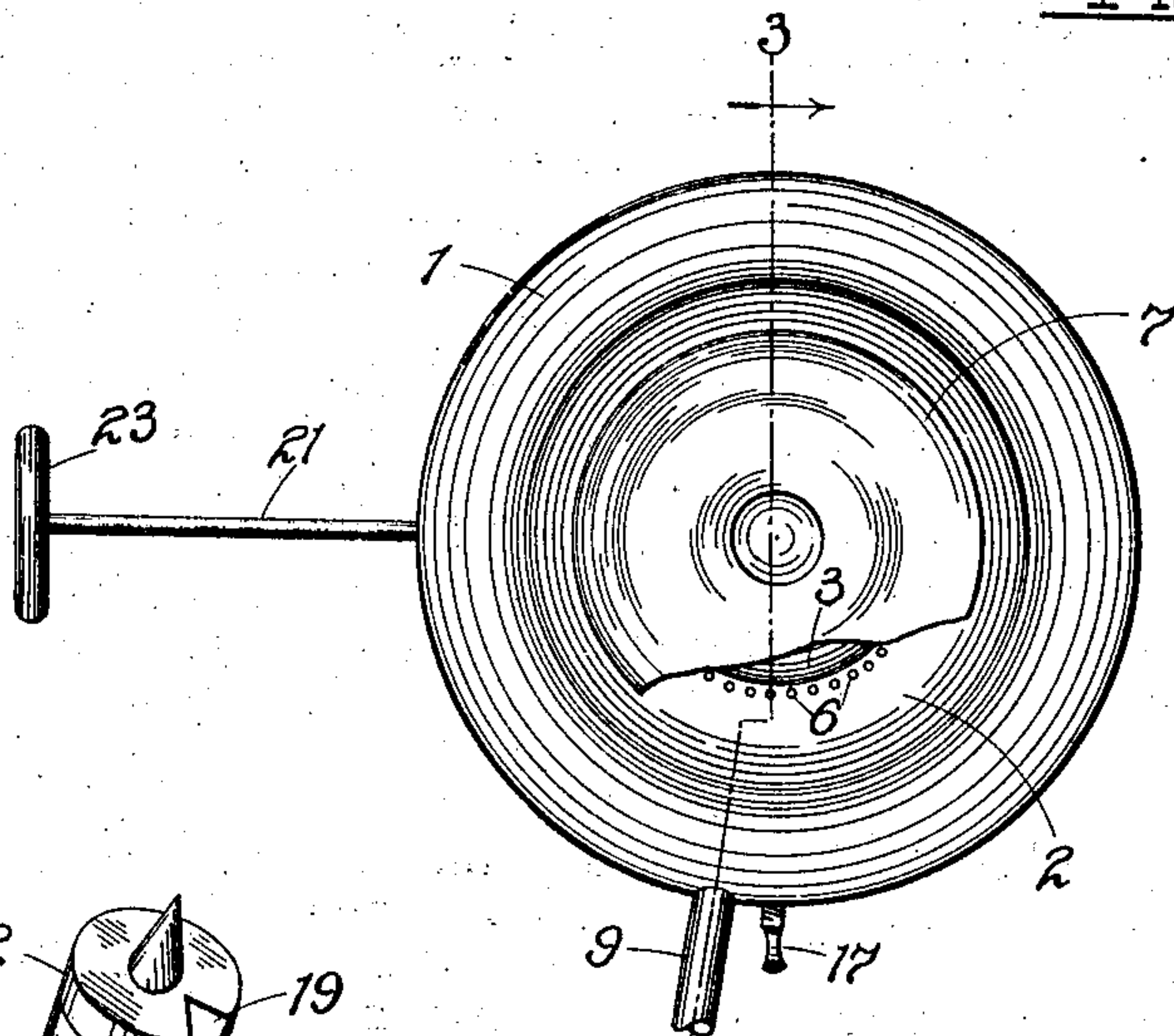


FIG. 2.

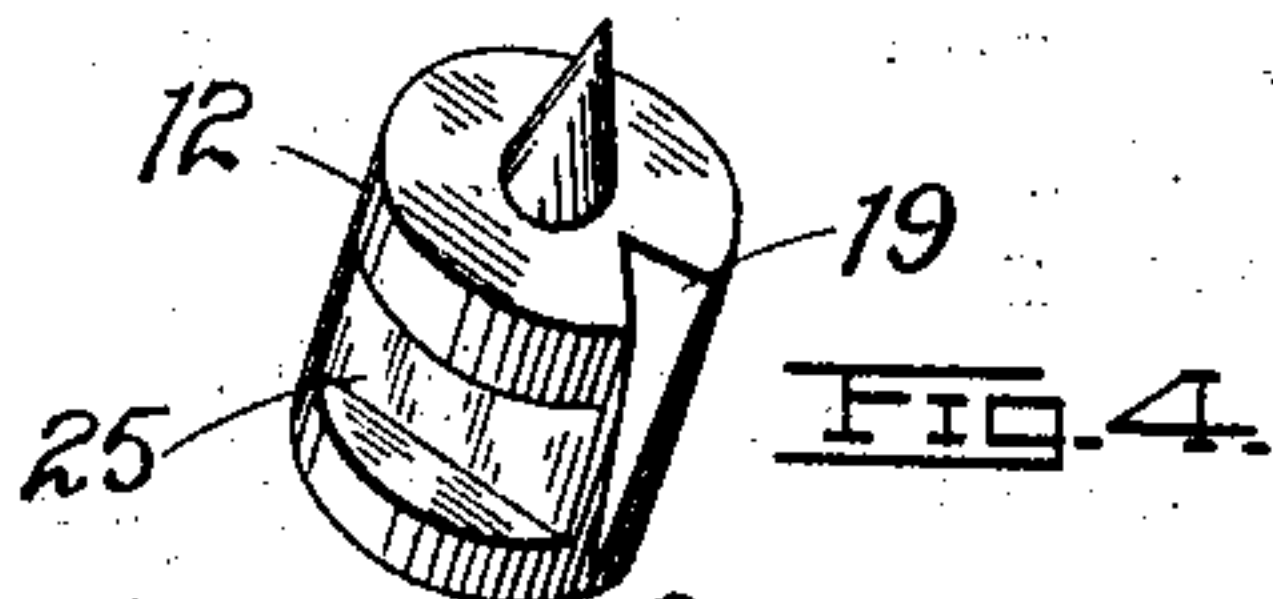


FIG. 4.

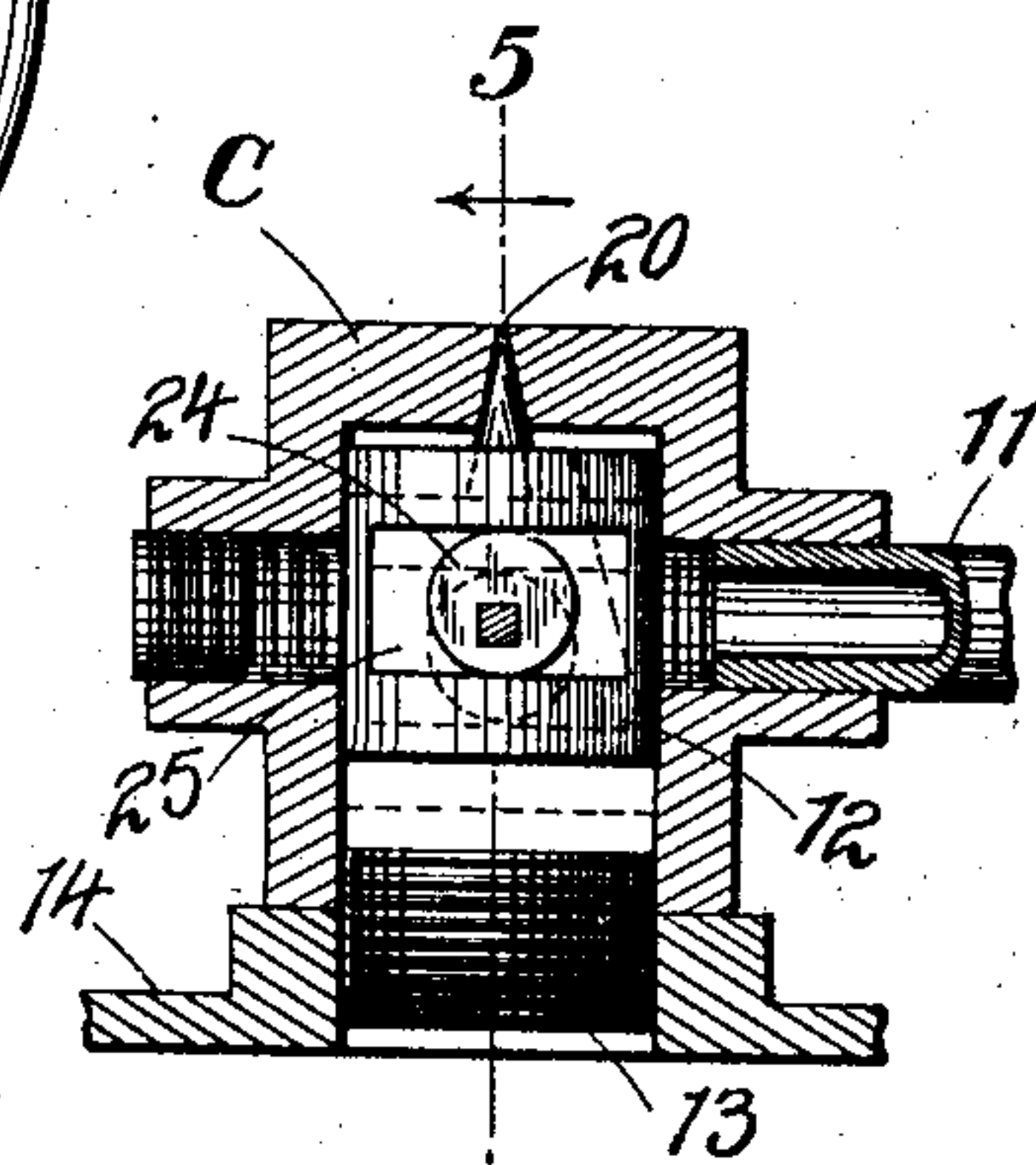


FIG. 5.

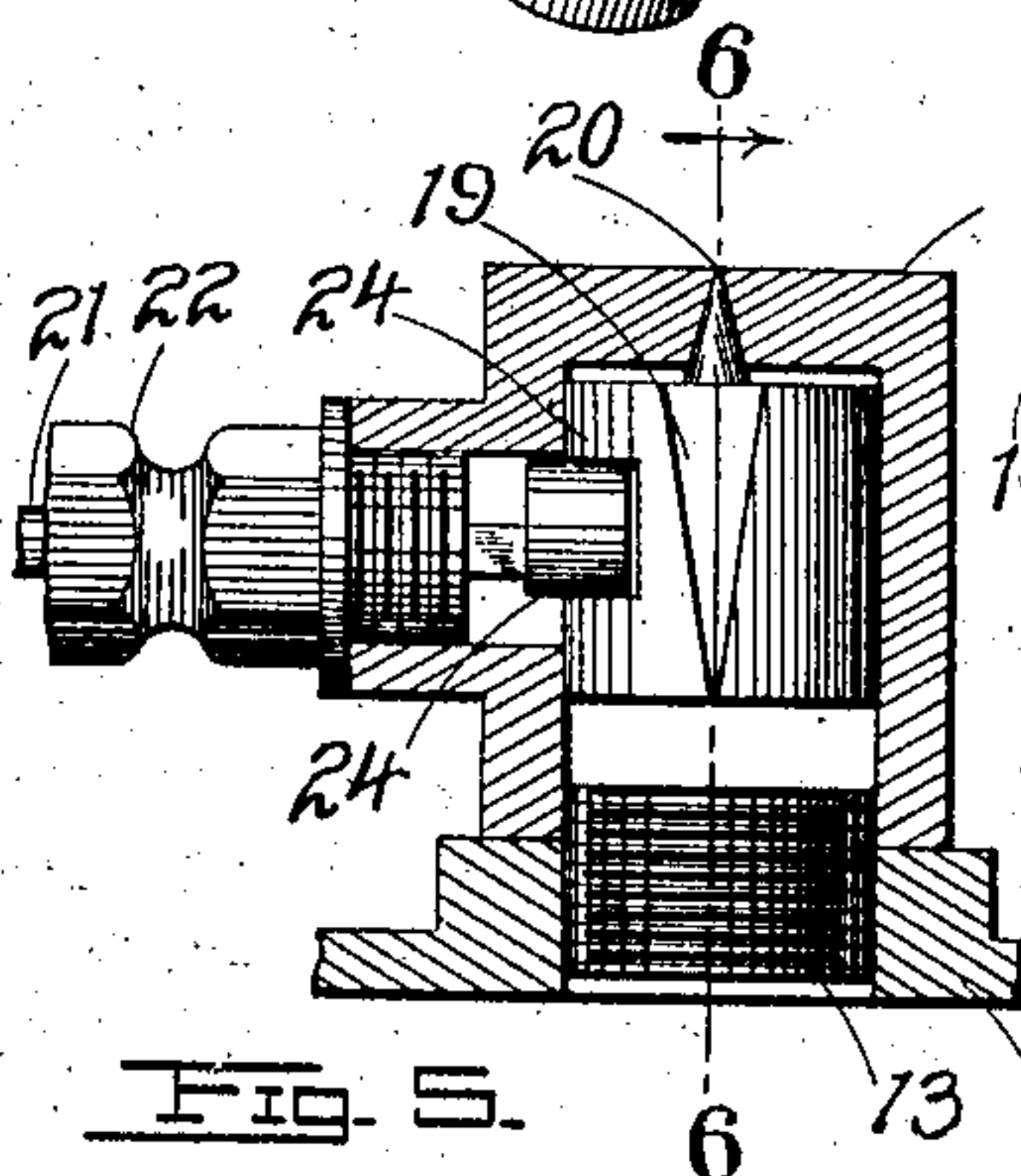


FIG. 6.

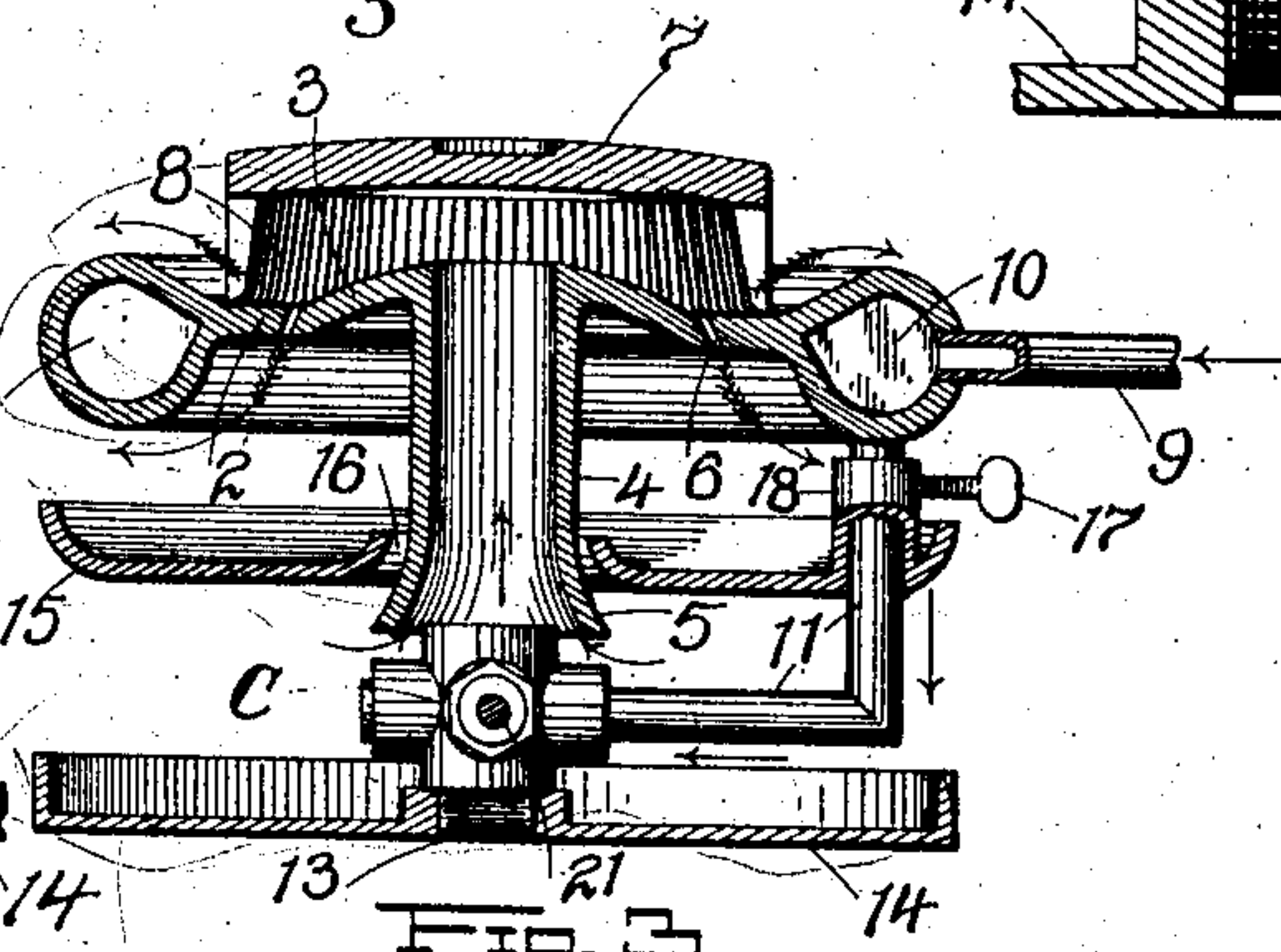


FIG. 7.

WITNESSES:

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VAPOR-BURNER.

SPECIFICATION forming part of Letters Patent No. 768,125, dated August 23, 1904.

Application filed December 1, 1902. Serial No. 133,398. (No model.)

To all whom it may concern:

Be it known that I, AL H. HERRON, a citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Vapor-Burners, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in vapor-burners; and it consists in the novel arrangement and combination of parts more fully set forth in the specification and pointed out in the claim.

In the drawings, Figure 1 is an elevation of the burner. Fig. 2 is a top plan with portions of the hood broken away. Fig. 3 is a vertical section on line 3 3 of Fig. 2. Fig. 4 is a perspective of the valve. Fig. 5 is a vertical section through the valve-casing on line 5 5 of Fig. 6, and Fig. 6 is a section on line 6 6 of Fig. 5.

The object of my invention is to construct a vapor-burner in which the major portion of the heat units generated by the flame may be utilized for purposes of heating the walls of the retort, within which the oil fed to the device is vaporized in its passage to the mouth of the burner, one in which the valve controlling the influx of hydrocarbon to the burner may be manipulated with convenience, such an advantage being eminently desirable where the burner is located inside an ordinary stove and where such manipulation must be effected from the outside of the stove-casing, one in which the desirable path for the flame is always assured, one which is simple, cheap, and durable, and one possessing further and other advantages better apparent from a detailed description of the invention, which is as follows:

Referring to the drawings, 1 represents an annular retort or chamber having an intermediate dish-shaped depression or basin 2 and a central raised portion 3, the portion 3 having depending therefrom a tube 4, provided with a lower flaring mouth 5. Disposed throughout the basin 2 are a series of passages 6, inclined outwardly for a purpose presently to appear. Surmounting the basin 2 and adapted to encircle the passages 6 is a detachable hood 7, whose peripheral wall is provided with a series

of parallel longitudinal slits 8 for the passage of the gas. The wall of the retort 1 is tapped at a convenient point by an oil-supply pipe 9, leading to any suitable source of supply, (not shown,) the point of entry of the pipe being adjacent to a partition or division wall 10, formed across the passage of the retort, as clearly shown in the drawings. Secured to the retort on the opposite side of the division-wall 10 is an angular feed-tube 11, to the horizontal member of which is coupled the burner or valve-casing C, within which the needle-valve 12 is confined. To the lower screw-threaded nozzle 13 of the valve-casing is secured the base-plate 14, the latter being surmounted by an oil-basin 15, having upwardly-turned walls, the tube 4 fully passing through the central opening 16 of said basin. The latter is adjusted to any suitable elevation and held in place by a clamping-screw 17, passed through a sleeve 18, (of the basin,) which encompasses the vertical member of the tube 11, the screw being forced tightly against the tube, when the parts remain clamped in their adjusted position.

When the valve 12 is open, the oil passes past the pyramidal or tapering passage 19, formed in the same, thence past the needle of the valve, and out through the opening 20, formed in the top of the casing, its escape inducing the flow of a current of air into the space between the valve-casing and mouth 5, enveloping said casing, the mixture of air and vapor (the oil having in the meantime been vaporized, as presently to be seen) passing upward through the tube 4 and escaping in two portions, one through the slits 8 and the other through the passages 6, the flames from both series of passages being projected so as to fully envelop or encompass the walls of the retort and converting the oil fed thereto into vapor.

As seen from the drawings, the valve 12 must necessarily be operated vertically for purposes of controlling the discharge-opening 20. To accomplish this readily from the outside of the stove-casing in which the burner is generally utilized, I provide the casing C with a rotatable stem 21, passing through a

suitable gland 22, the outer end of the stem being provided with a hand-disk 23 and the inner end with an eccentric head 24 or cam, said head being confined between the upper and lower walls of a depression or groove 25, formed in the body of the valve. When the eccentric portion of the head is turned upward, it carries the valve with it and causes the needle thereof to close the opening 20. When the stem is turned in the opposite direction, the valve is depressed and the needle retracted from the opening, allowing the vapor to freely escape. The tube 4 with its flaring mouth 5 and the valve-casing C collectively constitute the "mixer"—that is, the vapor and the air are here mixed before passing up through the length of the tube.

In starting the burner sufficient oil is first poured into the basin 15, any overflow (over the inner depressed edges) dripping and being caught by the base-plate 14. The oil is then ignited, when in the course of a few minutes it has raised the temperature of the retort-walls sufficiently to cause them to vaporize in a measure any oil admitted thereto through the pipe 9, after which the oil and vapor, air, and flame take the course as indicated by the arrows in the drawings.

It is of course apparent that the retort may be polygonal instead of annular and that the other details may be departed from without affecting the nature of my invention.

Having described my invention, what I claim is—

In a vapor-burner, an annular retort having an intermediate basin and an inner raised portion, a tube depending from the inner raised portion of the basin having a flaring mouth at its lower end, a transverse partition-wall formed in the retort, an oil-supply pipe coupled to the retort on one side of the partition-wall, a feed-pipe leading from the opposite side of the wall, a valve-casing at the inner end of the feed-pipe, a valve in said casing operating in a line parallel to the axis of the retort, means for controlling said valve from a point outside of the casing, a series of outwardly-inclined passages being formed in the basin aforesaid, a hood inclosing said passages and resting on top of the basin, the peripheral walls of the hood being provided with longitudinal slits or passages for the escape of the vapors and flame above the retort, and the passages serving to conduct the flame below the retort, and an oil-basin capable of adjustment along the feed-pipe occupying a position above the flaring mouth of the depending tube, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

AL H. HERRON.

Witnesses:

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MARY D. WHITCOMB.