

No. 714,112.

Patented Nov. 18, 1902.

F. M. REED & C. R. UMBENHOWER.

OIL BURNER.

(Application filed July 6, 1900. Renewed Sept. 15, 1902.)

(No Model.)

FIG. 1.

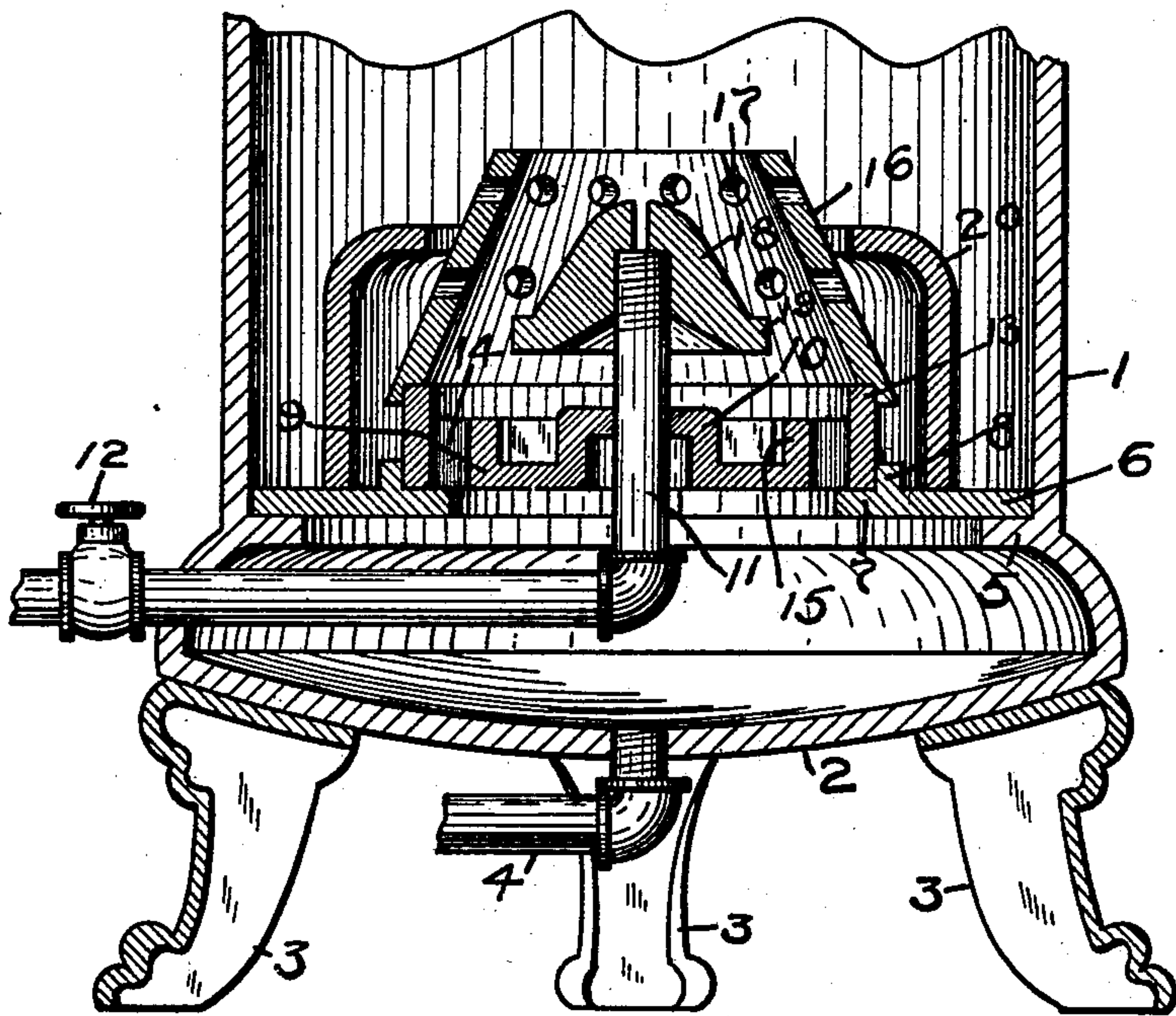


FIG. 2.

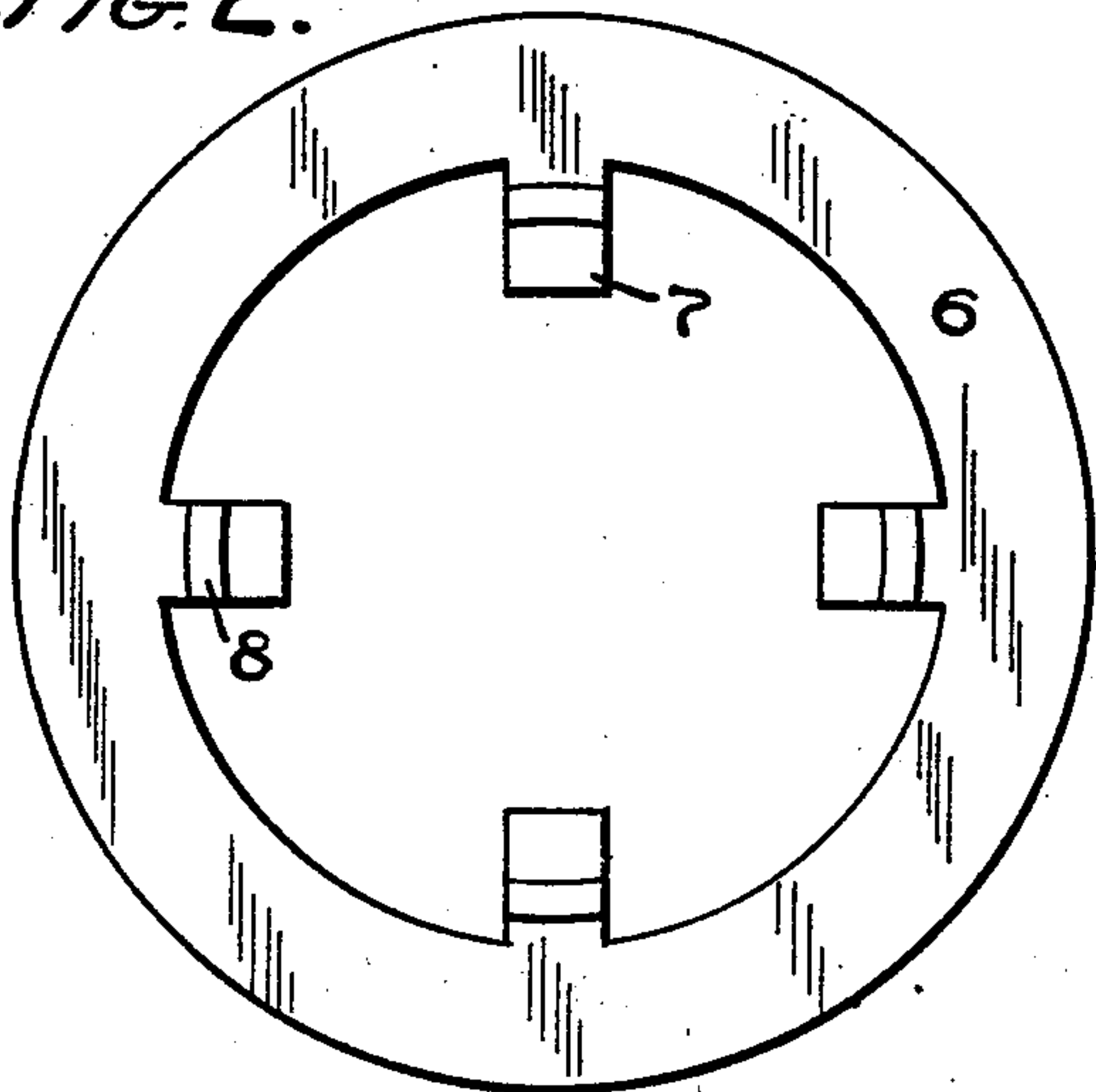
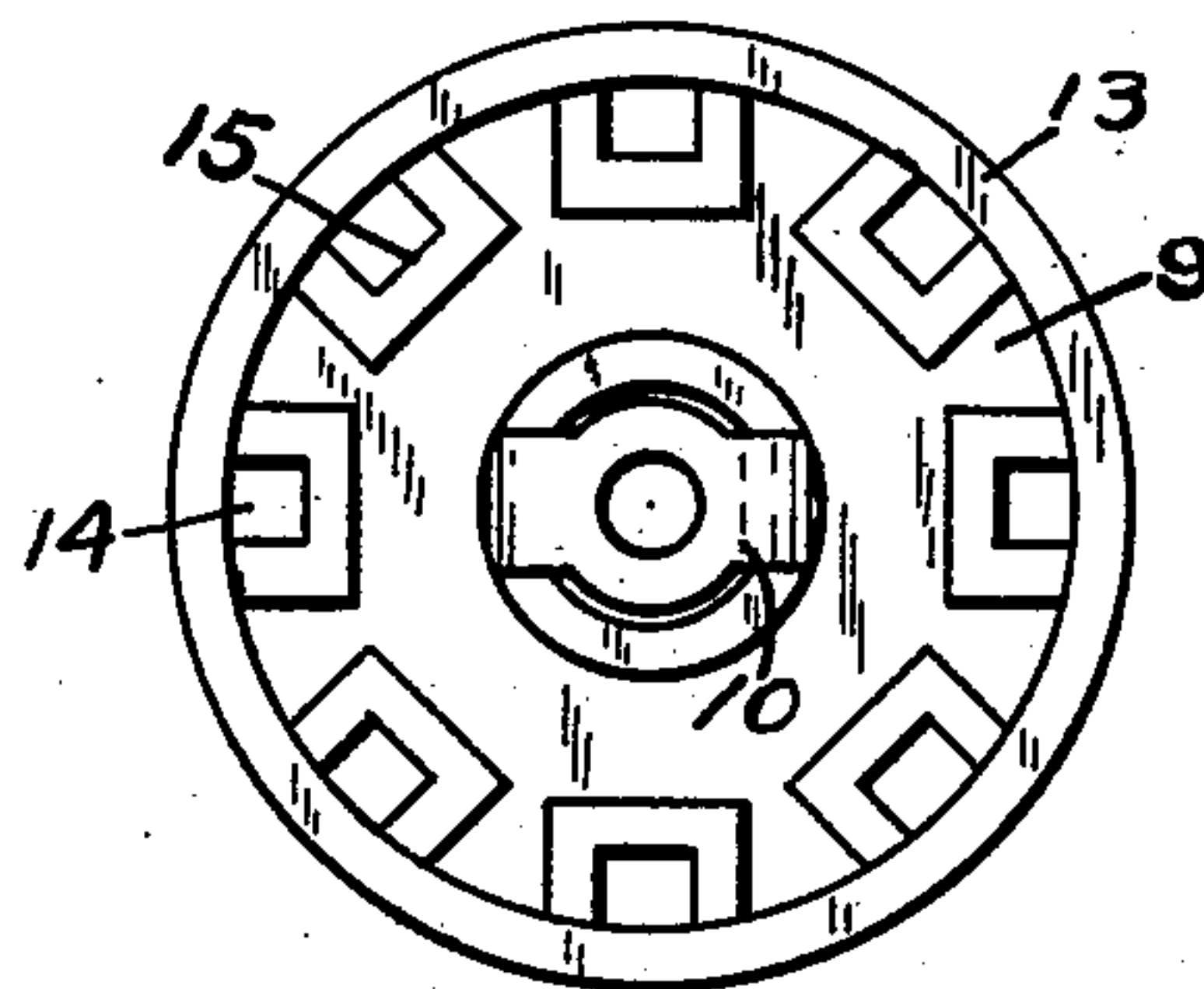


FIG. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

FRANKLIN M. REED, OF INDIANAPOLIS, AND CORNELIUS R. UMBENHOWER, OF PENDLETON, INDIANA.

OIL-BURNER.

SPECIFICATION forming part of Letters Patent No. 714,112, dated November 18, 1902.

Original application filed November 17, 1899, Serial No. 737,348. Divided and this application filed July 6, 1900. Renewed September 15, 1902. Serial No. 123,548. (No model.)

To all whom it may concern:

Be it known that we, FRANKLIN M. REED, of Indianapolis, county of Marion, and CORNELIUS R. UMBENHOWER, of Pendleton, county of Madison, State of Indiana, have invented a certain new and useful Oil-Burner; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like figures refer to like parts.

Our invention relates to an oil-burner, and this application is a division of a former application by us for a patent on heating-stoves, Serial No. 737,348, filed November 17, 1899.

The object of the invention is to simplify the construction of oil-burners, to promote the complete combustion of fuel, and to provide a burner in which the parts are readily separable, being merely resting upon each other, whereby the device can be easily manipulated and cleaned.

The full nature of our invention will be understood from the accompanying drawings and the description following of one form of device embodying our said invention, and the scope of said invention will be understood from the claims following said description.

In the drawings, Figure 1 is a central vertical section of the burner shown in a stove, the upper part of the stove being broken away. Fig. 2 is a plan of the annular base-plate on which the burner is mounted. Fig. 3 is a plan of the oil-pan or bottom of the burner.

In detail we show in this application the lower part of a stove 1, having a bottom 2, supported by the legs 3. The bottom is centrally depressed, and a pipe 4 leads from a central point of it to carry off any overflow of oil. Above the bottom of the stove there is cast an annular inwardly-extending flange-plate 5, upon which the annular base-plate 6 rests and is therefore readily removable. The annular base-plate 6 is ring-shaped, with an external diameter somewhat greater than the internal diameter of the flange-plate 5 and such as to enable it to fit rather snugly, but loosely, within the wall of the stove. Arms 7 extend inward horizontally from the annular base-plate, and somewhat back from their

ends there are upwardly-extending lugs 8. There are four of these arms here shown.

An oil-pan 9 is made so that it will rest upon the arms 7 within the lugs 8. This fit is likewise snug but loose, whereby the oil-pan can be readily lifted out of place. This oil-pan is centrally apertured and has about said aperture the upwardly-extending sleeve 10, through which the oil-supply pipe 11 extends. This pipe is provided with a suitable valve 12. The oil-pan also has an external upwardly-extending rim 13, and about the periphery of the oil-pan there are several openings 14, that are also protected by upwardly-extending walls 15. From this description of the oil-pan it is seen that the oil cannot escape unless the amount is sufficient to flow over the walls 15, and air can readily pass up through the oil-pan by means of the openings 14 for supplying air or oxygen for combustion purposes. The central sleeve of the oil-pan has at its upper end a horizontal inward extension, as shown, for the purpose of fitting rather tightly about the oil-supply pipe.

On the oil-pan we mount a hood 16, formed like the frustum of a hollow cone, with its base resting on the outer rim 13 of the oil-pan. Said hood is provided with perforations 17, miscellaneously placed, as desired.

On the upper end of the oil-supply pipe we mount the outlet-dome 18, the opening therefrom being central, whereby the incoming oil will flow down therefrom in all directions. It preferably has about its base a slight horizontal rim or extension 19. It is thus observed that the hood embraces the dome, and they should be so placed relative to each other that the outlet-opening of the hood will be somewhat above the dome. As herein shown, the hood is centrally threaded and screws on the upper threaded end of the oil-supply pipe, whereby it is readily removable.

Surrounding the hood and oil-pan there is an outer hood or casing 20, which loosely rests upon the base-plate and extends nearly as high as the hood and is contracted at its upper end somewhat, but is arranged so as to leave a narrow opening between it and the hood all around the hood.

The operation of this burner will be under-

stood from the following description thereof: When the oil is turned on through the supply-pipe before the fire is started, it of course overflows through the orifice in the dome and runs down on the oil-pan and is lighted. Soon the parts become heated, especially the upper end of the oil-supply pipe, the dome, and the oil-pan. When such parts have become heated, the oil flowing through and on them readily volatilizes and the vapor or gas therefrom arises, and as it rises it becomes mixed with air that is drawn upward through the various openings in the oil-pan. The oxygen from the air and the carbon from the volatilized oil thus mingle within the hood, some, however, forcing its way through the perforations in the hood into the chamber surrounding the lower part of the hood within the casing 20. When the device is thus in full operation, the flame arises slowly from the upper end of the hood and also through the slight opening between the hood and surrounding casing. The flame from the gas coming out of the chamber between the hood and the casing tends to heat the outside of the hood, and this, with the flame at the upper end of the hood, keeps it heated, thus aiding in the formation of readily-combustible gases.

From the description of the construction it is obvious that the parts are readily removed. The dome is quite accessible through the hood, and when the dome is removed the other parts can all be lifted out of the stove. The dome should be held on the oil-supply pipe to resist the pressure of oil therein and prevent too great a supply entering the oil-pan, air entering below the burner through a damper of any form, none, however, appearing in the half of the stove herein shown.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The combination of a feed-pipe, a vaporizing and distributing dome at the end thereof, a hood surrounding the dome open and contracted at its upper end and provided with perforations on substantially the same level as the dome, a casing surrounding the hood, and means for supplying air to the hood beneath the dome and to the casing, the

casing being spaced from the hood and formed to deflect the air in the direction of the hood.

2. An oil-burner consisting of an oil-pan provided with an upwardly-extending rim, a series of openings through the pan provided with upwardly-extending walls, a central opening surrounded by a sleeve, an oil-supply pipe extending up through said central opening, and a hood mounted on said pan with its upper end open and contracted.

3. The combination of a pan, a feed-pipe extending therethrough and provided with a dome above the pan, a hood resting on the pan, open and contracted at its upper end and provided with perforations, and a casing surrounding the pan and hood and spaced therefrom, the upper end of the casing extending inwardly and terminating a short distance from the hood, and means for supplying air to the hood beneath the dome and to the casing.

4. An oil-burner consisting of a suitable support, an annular base-plate resting on said support with inwardly-extending arms having lugs thereon, an oil-pan resting loosely on said arms within the lugs and having openings through it, means for supplying oil centrally to said oil-pan, and a hood resting on said oil-pan with its upper end open and contracted.

5. An oil-burner consisting of a base-plate with a central opening, an oil-pan mounted on the base-plate over said opening having openings through it, means for supplying oil centrally to the oil-pan, a perforated hood mounted on the oil-pan with its upper end open and contracted, and a casing surrounding the oil-pan and the hood not as high as the hood and with its upper end contracted so as to leave but a small opening around the hood.

In witness whereof we have hereunto affixed our signatures in the presence of the witnesses herein named.

FRANKLIN M. REED.

CORNELIUS R. UMBENHOWER.

Witnesses:

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