

No. 715,354.

Patented Dec. 9, 1902.

W. D. DAWSON.
OIL BURNER.

(Application filed July 24, 1902.)

(No Model.)

Fig. 1.

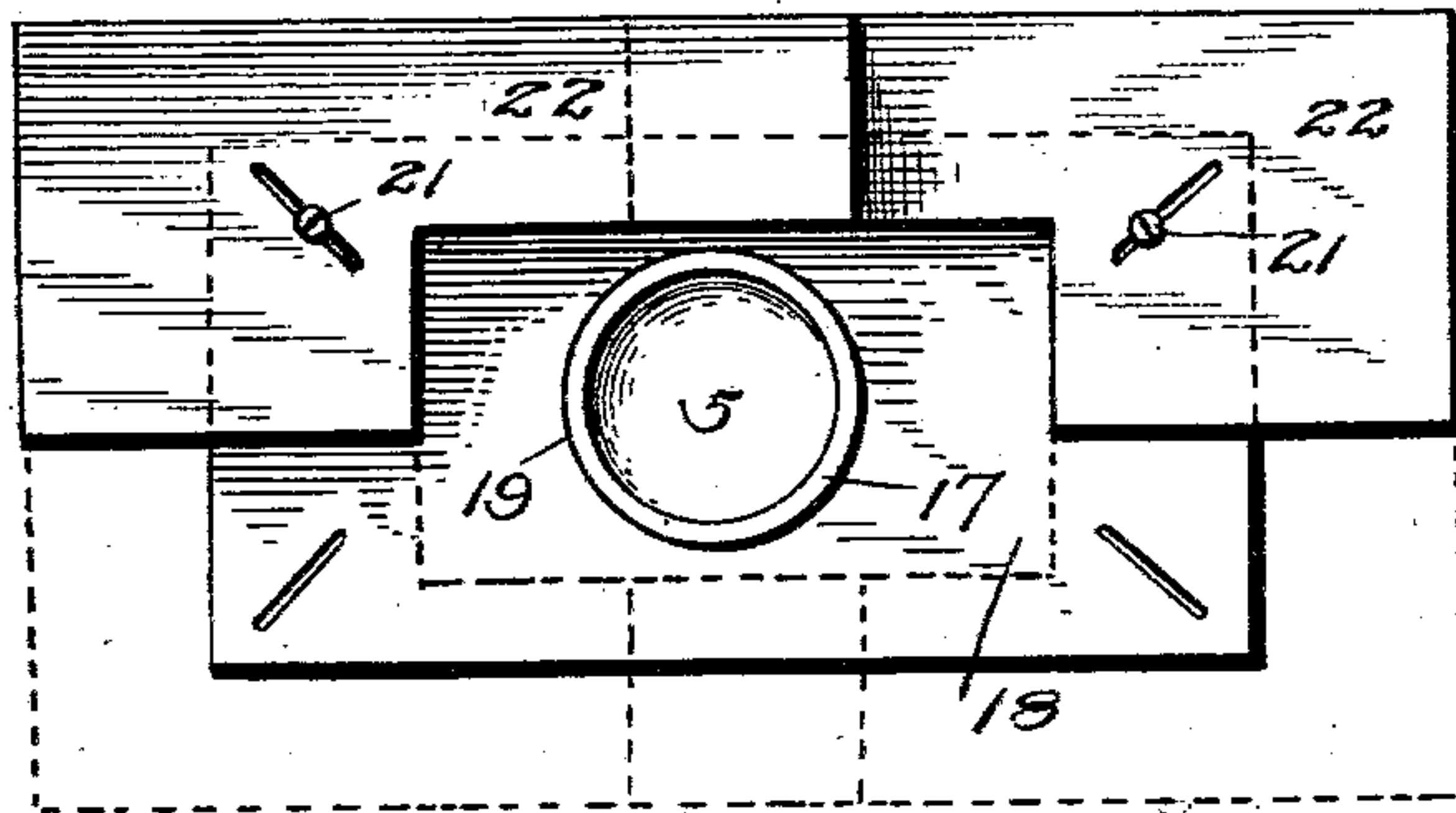


Fig. 2.

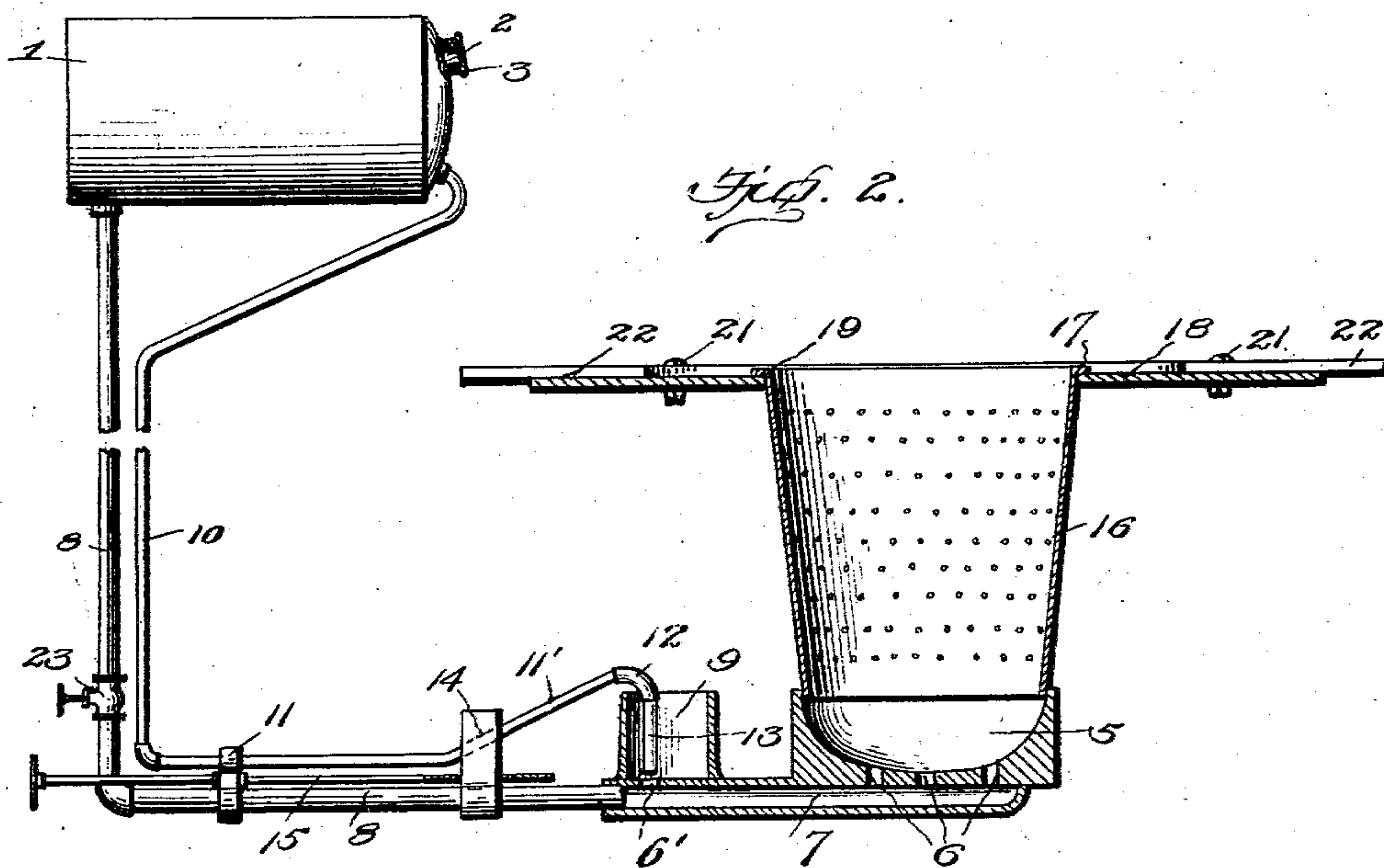


Fig. 3.

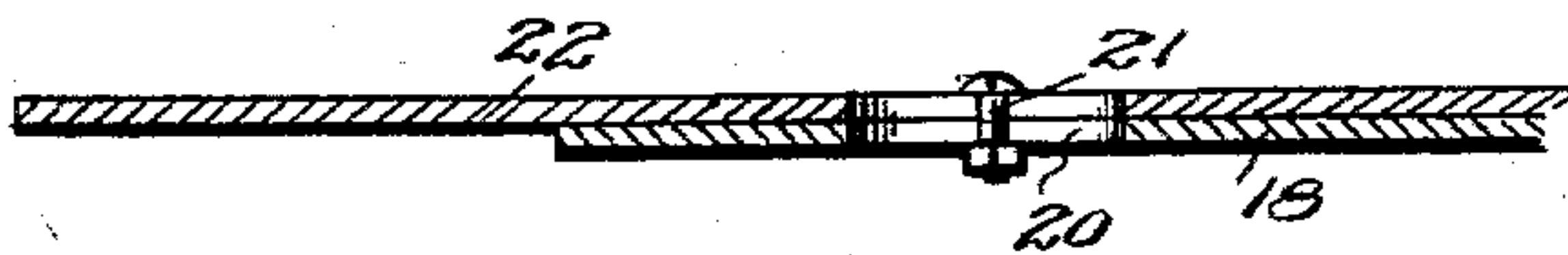
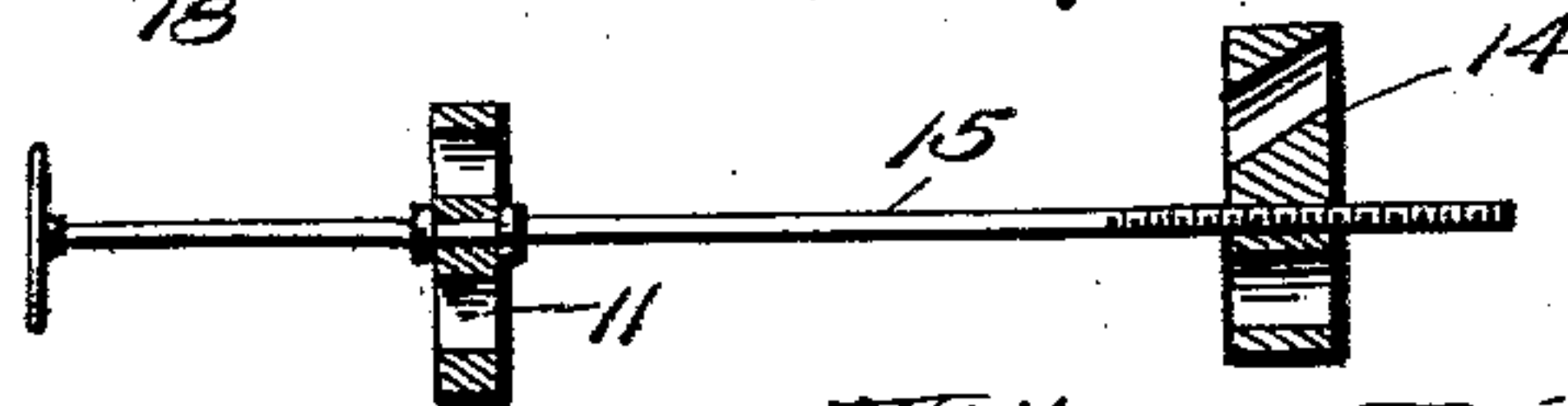


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM D. DAWSON, OF MANGUM, OKLAHOMA TERRITORY.

OIL-BURNER.

SPECIFICATION forming part of Letters Patent No. 715,354, dated December 9, 1902.

Application filed July 24, 1902. Serial No. 116,796. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM D. DAWSON, a citizen of the United States, residing at Mangum, in the county of Greer, Territory of Oklahoma, have invented certain new and useful Improvements in Oil-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.

This invention relates to a crude-oil burner designed for use in connection with stoves, furnaces, &c., for cooking and heating purposes.

The object of the invention is to provide an oil-burner of this character which is simple of construction, efficient in use, and comparatively inexpensive of production and which automatically controls the feed of the oil as required for consumption.

With these and other objects in view the invention consists in certain novel features of construction, combination, and arrangement of parts, which will be hereinafter more fully set forth, and particularly defined in the appended claims.

In the accompanying drawings, Figure 1 is a top plan view of an oil-burner embodying my invention. Fig. 2 is a vertical longitudinal section of the same. Fig. 3 is a detail section showing the adjustable fastening for one of the supporting plate-sections, and Fig. 4 is a detail view of the means for adjusting the air-pipe.

Referring now more particularly to the drawings, the numeral 1 represents an air-tight tank provided with an opening 2, closed by a cap or cover 3, adapted to close the opening air-tight. Located below this tank is a burner-bowl 5, which is in communication through ports 6 with a channel 7, which communicates with an oil-supply pipe 8, through which oil from the tank 1 is conducted to said bowl. Also communicating with the channel 7 through a port 6' is a cup 9, in which the oil is adapted to rise to the same level as in the burner-bowl 5. Extending from the tank 1 is an air-pipe 10, which at a point adjacent to the cup 9 extends immediately above the oil-supply pipe 8 and is connected thereto by a coupling 11. Between the cup 9 and this coupling 11 the air-pipe is provided with an

upwardly-inclined portion 11', adapted to have a slight yielding action in a vertical plane and provided at its free end with an elbow 12, connected with a short pipe-section 13, which extends downward into the cup 9, so as to be closed or sealed by the oil rising in said cup to a point above its normal level. This pipe-section 13 may be adjusted vertically to regulate its position in the cup 9 to adapt it to be sealed or closed at different levels of the oil by means of a block 14, sliding on the oil-supply pipe 8 and engaging the inclined portion 11' of the air-pipe 10, said block being formed with a screw-threaded aperture to receive the threaded end of an adjusting screw or shaft 15, journaled in the coupling 11, whereby upon the operation of said screw in one direction the block 14 may be moved along the pipe to raise or lower the inclined portion 11' of the pipe 10 to adjust the pipe-section 13 in the cup 9.

It will be noted that by making the education end of the air-pipe adjustable, as described, the level at which the oil is cut off may be varied or regulated without in any manner varying the position of the tank, thus enabling the air-pipe to be made of any length and the tank to be located at such a remote distance from the stove that an explosion of its contents from the heat of the stove cannot possibly occur.

A frusto-conical burner-drum 16 is fitted at its lower or reduced end in the bowl 5 and is formed at its upper end with a flange 17 to rest upon the upper surface of a supporting-plate 18, which latter is provided with an opening 19, through which the drum extends. This plate 18 is adapted to be suitably supported in the fire-box of a stove or furnace and is adjustable to suit different sizes of fire-boxes. To this end it is provided at its corners with slots 20, extending toward the center of the plate and receiving the bolts 21 upon adjustable sections 22 to fasten the latter to the plate 18. The adjustable sections 22 are of L form and cooperate to provide a rectangular outer supporting-frame, which incloses the central portion of the plate 18 and whose ends are arranged to overlap, thus allowing said sections to be adjusted toward and from the center of the plate to decrease or increase the size of the latter and

fit fire-boxes of different sizes. By loosening up the said bolts 21 the sections 22 may be moved inward or outward and then clamped in adjusted position by tightening the nuts of said bolts, which exert a clamping pressure to hold the screw securely fastened to the plate 18. The oil-supply pipe 8 may be provided with one or more valves 23 to control the flow of oil to the burner-bowl 5. It will be understood, of course, that while I have shown in the present instance a single burner connected to the pipe 8 any desired number may be employed, as circumstances may require, to suit the size of the fire-box and furnish any required degree of heat.

In the operation of the burner the valve 23 is opened to allow oil to flow into the pipe 8, whence it passes into the channel 7 and thence through the feed-ports 6 into the bowl 5 and cup 9. When the oil reaches the desired level, that contained in the bowl 5 is ignited, and the flames and products of combustion rising therefrom pass upward into the burner-drum 16, through the perforations of which currents of air are drawn which intermix with the smoke and products of combustion and oxygenate the same, thus causing perfect combustion after the manner of a Bunsen burner, producing an intense heat in the fire-box of the stove and effecting practically the entire consumption of all the combustible elements of the oil. Should from any possible cause the supply of oil to the bowl 5 and cup 9 be greater than the amount which is being consumed, the rising of the oil above its normal level in the cup 9 will close or seal the end of the pipe 13, thus preventing entrance of air to the tank 1 through the pipe 10, and thereby cutting off the flow of oil to the pipe 8. By this means the supply of oil to the burner is automatically controlled and in the operation of the burner is prevented from feeding faster than it is being consumed in the bowl 5 and drum 16, thus obviating all liability of explosions or accidents from an excess feed of oil. This result, it will be understood, is attained by employing an air-tight tank, to which air is introduced to compensate for the outflow of oil through the pipe 10, and arranging the open end of said pipe formed by the section 13 so as to be sealed by the oil when the latter rises above its normal level.

From the foregoing description, taken in connection with the accompanying drawings, the construction and mode of operation of the invention will be readily understood, and it will be seen that by the construction of the parts as shown and described a simple and effective form of burner is provided, and that after the burner has been preliminarily started it requires little or no attention, as the supply of oil to the burner-bowl is automatically governed and under no condition can be fed thereto in a greater quantity than that being consumed. In filling the tank it will be understood that the valve 23 is pre-

liminarily closed; but after the tank has been filled the valve can be opened without flooding the burner, as the flow of the oil will be automatically regulated, according to its level in the cup 9.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. An oil-burner comprising an air-tight tank, a burner, an oil-supply pipe leading from the tank to the burner, means governing the level of the oil-supply to the burner for admitting or cutting off the inlet of air to the tank to control the flow of air therefrom to the oil-supply pipe, and means for varying the level at which the inlet of air is cut off without varying the position of the tank, substantially as set forth.

2. An oil-burner comprising an air-tight oil-tank, a burner, an oil-supply pipe leading from the tank to the burner, an air-pipe connected at one end to the tank and extending therefrom in proximity to the burner, said pipe serving to conduct air to the tank to compensate for the outflow of oil, a receptacle in communication with the oil-supply pipe and burner, and in which the outer end of the air-pipe is arranged so that the rising of the oil above its normal level will close said pipe and cut off the flow of oil to the burner, and means for varying the level at which the oil seals said air-pipe without varying the position of the tank, substantially as set forth.

3. An oil-burner comprising an oil-tank, a burner, an oil-supply pipe connecting the tank and burner, an oil-cup in communication with the tank and burner, an air-pipe connected at one end to the tank and having its opposite end extending into the cup and carried by an adjustable portion of the pipe, a sliding block for raising and lowering said adjustable portion of the pipe to adjust the position of the end of the pipe in the cup, and means for sliding said block, substantially as set forth.

4. An oil-burner comprising an oil-tank, a burner, an oil-supply pipe connecting the tank and burner, an oil-cup in communication with the burner and oil-supply pipe, an air-pipe connected at one end with the tank and having its opposite end arranged within the cup and adapted to be sealed upon the rise of the oil above its normal level, and means for adjusting the air-pipe within the cup to adapt it to be sealed at different levels, substantially as set forth.

5. An oil-burner comprising an oil-tank, a burner, an oil-supply pipe connecting the tank and burner, an oil-cup in communication with the tank and burner, an air-pipe connected at one end to the tank and having its opposite end extending into the cup and carried by an adjustable portion of the pipe, and means for raising and lowering said adjustable portion of the pipe to adjust the position of the end of the pipe in the cup, substantially as set forth.

6. An oil-burner comprising an air-tight

5 tank, a burner, an oil-supply pipe leading from the tank to the burner, an air-pipe connected to the tank and having an inlet sealed by the supply of oil above a certain level to the burner to cut off the inlet of air to the tank and prevent the further flow of air therefrom, and means whereby the position of said inlet may be varied without varying the position of the tank to change the level at which the pipe is sealed, substantially as set forth.

10 7. An oil-burner comprising an oil-tank, a burner, an oil-supply pipe connecting the tank and burner, an air-pipe connected at one end to the tank and having its opposite end adjustably mounted in the cup, a bracket connecting said pipes, a block sliding on the oil-supply pipe for raising and lowering the adjustable end of the air-pipe, and an adjusting-screw mounted upon the bracket and connected to the block to slide the latter, substantially as described.

25 8. An oil-burner comprising an oil-reservoir, a burner, in communication therewith, and means for admitting or cutting off the inlet of air to the reservoir to control the flow of oil to the burner, such means being regulable

independent of any change in the position of the reservoir to effect the cut off of air to the reservoir at variable levels of the oil at the burner, whereby the supply of air compensating for the outflow of oil from the reservoir may be cut off at any desired level of the oil at the burner without moving the reservoir, substantially as set forth.

9. In an oil-burner, the combination with a burner, of a rectangular supporting-plate therefor provided with slots at its corners, a rectangular adjustable frame comprising L-shaped lapping plate-sections, and bolts adjustably connecting said sections to the slots, whereby said sections may be moved outward or inward to increase or decrease the size of said plate while maintaining the rectangular formation, substantially as described.

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

WILLIAM D. DAWSON.

Witnesses:

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