(No Model.)

W. H. RUSSELL.

Vapor Burner.

No. 243,626. Patented June 28, 1881.

Fig. 1.

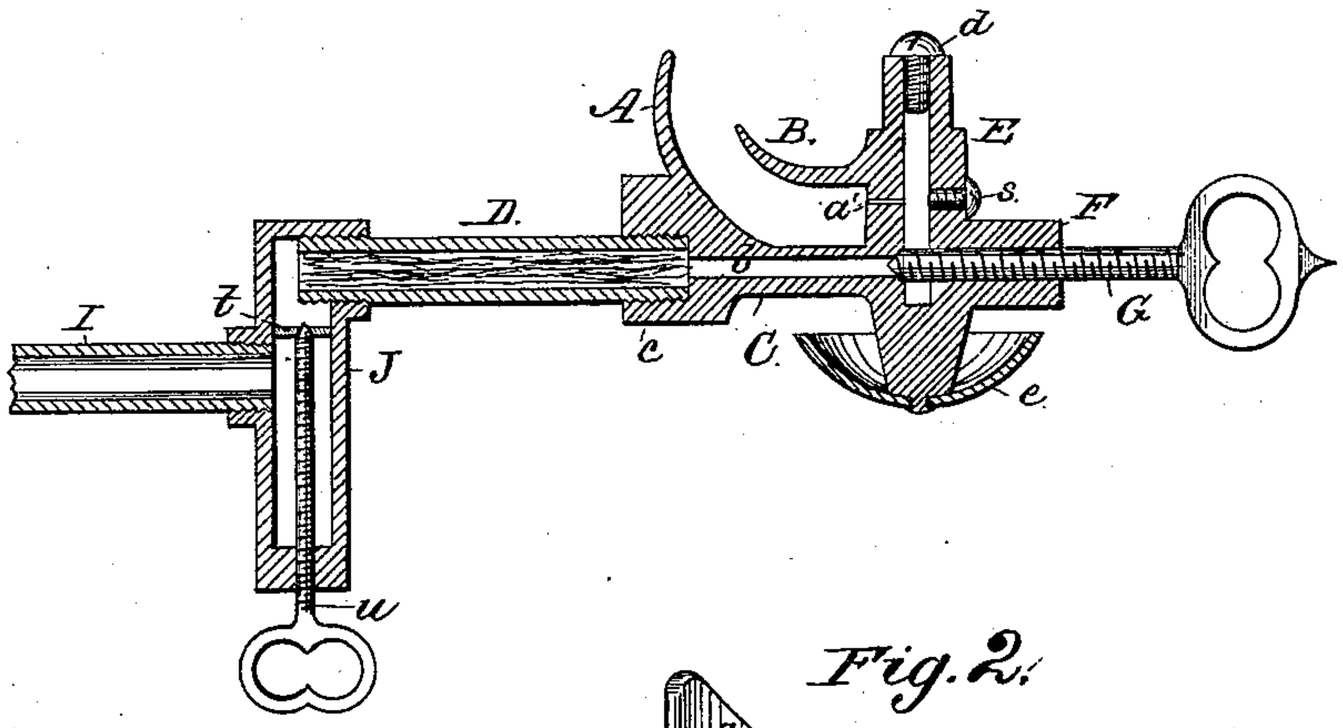


Fig. 2.

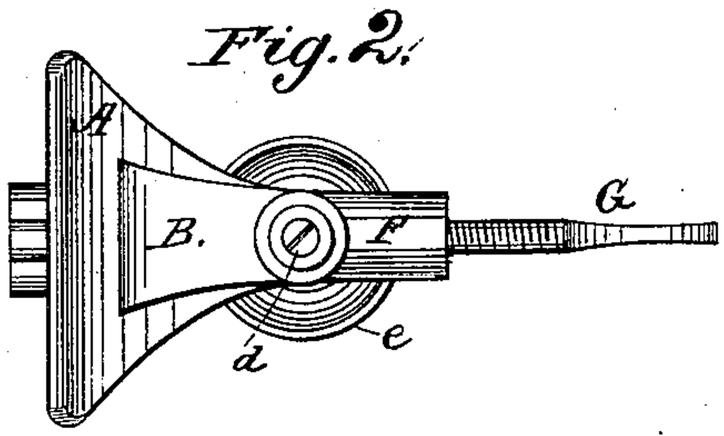
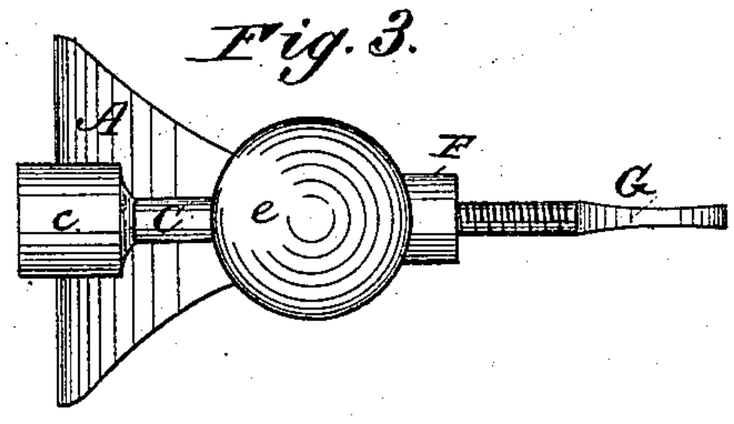


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM H. RUSSELL, OF SEDALIA, MISSOURI.

VAPOR-BURNER.

SPECIFICATION forming part of Letters Patent No. 243,626, dated June 28, 1881.

Application filed August 6, 1880. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. RUSSELL, of Sedalia, in the county of Pettis and State of Missouri, have invented a new and useful Improvement in Vapor-Burners; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical section of the burner, wick-tube, and screw check-valve. Fig. 2 is a plan view of the burner, and Fig. 3 an underneath view of the same.

My invention is an improvement in that class of gasoline or hydrocarbon burners in which a jet of the heated and volatilized liquid issues through an orifice opening between an upper and lower plate, which spread the flame, and in which a screw-valve regulates the admission of oil to the burner.

My improvement consists in constructing the body portion of the burner in one and the same piece with the spreading-plates by casting them all together and drilling the oil-chamber in the burner; also, in the peculiar arrangement of the spreading-plates to the inlet-tube, as hereinafter more fully described.

In the drawings, A represents the lower and B the upper plate for spreading the flame to give it sufficient air, which plates are on opposite sides of the escape-orifice *a'*. The lower one of these plates is larger and longer than the upper, and turns up and widens at its outer end, and is cast in one piece with a subjacent enlargement, C, that is drilled out to form a channel, *b*, for the oil. This enlargement, near the end of the lower plate, A, is provided with a screw-socket, *c*, which receives the inlet wick-tube D for the oil. The body portion E of the burner is cast in one piece with the other parts and at right angles to the inlet-tube, while the screw-valve extension F is cast in a straight line with the inlet-channel, so that the point of the screw-valve G rests at the junction of the inlet-channel *b* and the channel in the vertical body-section, and regulates the flow of oil from the inlet-section to the escape-orifice *a'*. All these parts, the two spreading-plates, the inlet-section, the vertical body portion, and the screw-valve tube, are cast in one piece, and the oil-channels and screw-valve socket are drilled in the same, the channel in the upright body portion being drilled from the top until it intersects the line of the inlet-channel, and the upper end being afterward closed by a screw-plug, *d*. On the lower pendent part of the vertical body portion is riveted a concave drip-cup, *e*, into which the oil flows when the burner is to be lighted, so that it may be fired to give the necessary preliminary heat to start the volatilizing of the oil.

With this construction of burner, it will be seen that the lower plate, A, against which the flame chiefly impinges, rests directly upon the inlet oil-channel and imparts directly to the entering oil the necessary heat to volatilize it. The screw-valve and drip-cup are also arranged in position for easy and convenient manipulation, while the upper end of the body portion is extended above the plate B to form a point of attachment for a shade-holder.

In making use of my invention I do not confine myself strictly to the relative positions of the inlet-tube D, valve-tube E, and drip-cup, for they may be modified in several ways without departing from the spirit of my invention. Thus, for instance, I may reverse the position of the screw-valve and inlet-tube by placing the inlet-tube where the screw-valve is and the screw-valve where the inlet-tube is; or I may place the screw-valve at the bottom, passing directly up through the drip-cup, and introduce the oil upon either side, the main feature of my invention being the casting the parts all in one piece in such form as will permit the oil-channels to be drilled. I prefer the arrangement shown, however, for when the flame-spreading plates lie toward the inlet-pipe a much better volatilization of the oil takes place.

The escape-orifice between the two plates A and B is drilled like the other channels, a large drill being first used on the opposite side of the body portion from the spreading-plates, and the small orifice then drilled through by a small drill, after which the larger orifice is closed by a screw, *s*.

The inlet-tube D, I fill with a wick, and this wick-tube I connect with the supply-pipe I by means of an elbow-piece, J, which is provided with a partition, *t*, having a hole in the center, which may be closed by a screw check-valve,

u, to let on or cut off the supply of oil. This forms a very desirable addition to the burner.

In defining my invention more clearly, I would state that I am aware of the Patent No. 223,051, in which the body portion of the burner is cast in one piece and drilled out, while the burner proper is made in a separate piece and screwed on.

I am also aware of the Patents No. 102,337 and No. 30,899, in which the flame is directed backward toward the inflowing oil, and I fully disclaim the same.

Having thus described my invention, what I claim as new is—

1. A vapor-burner having two flame-spreading plates, A and B, and a body portion, all cast in one piece, and having the oil-channel drilled first parallel with the plates, then at right angles through the body portion, and then at right angles to this again, so as to open between the plates, substantially as described, and for the purpose set forth.

2. A vapor-burner having two flame-spreading plates, A and B, and a body portion, all cast in one piece, and having the oil-channel drilled first longitudinally through the lower plate, then at right angles up through the body portion, and then parallel with the first line of drilling, and opening between the plates, substantially as described, and for the purpose set forth.

The above specification of my invention signed by me this 24th day of July, A. D. 1880.

WILLIAM H. RUSSELL.

Witnesses:
J. A. CLARK,
J. F. WEEKS.