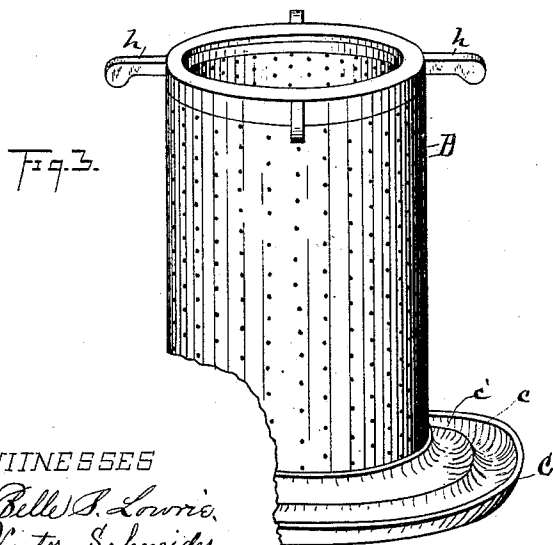
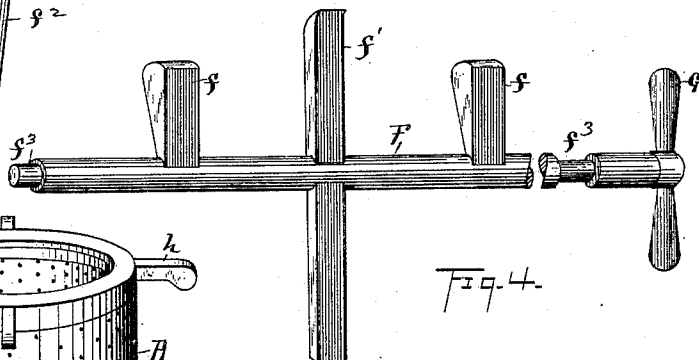
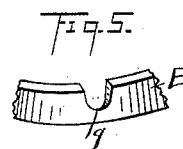
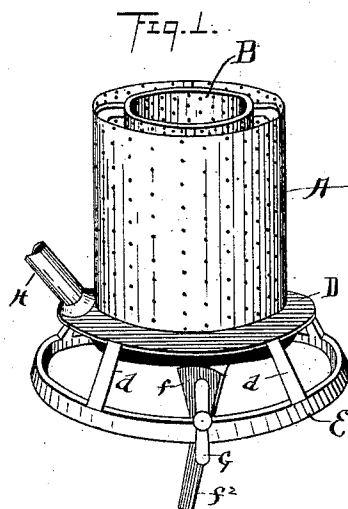
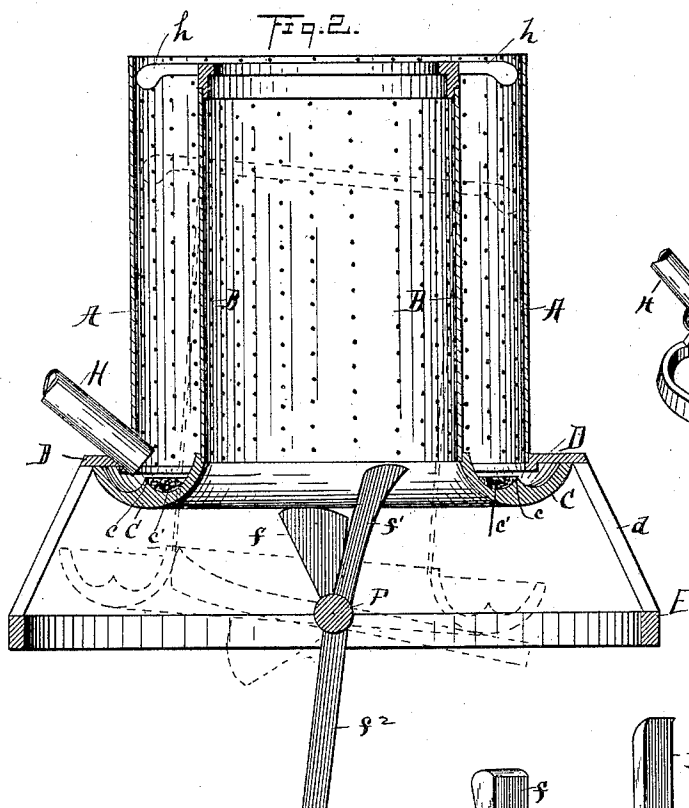


(No Model.)

E. A. THISSELL & W. H. WILDER.
VAPOR BURNER.

No. 465,601.

Patented Dec. 22, 1891.



WITNESSES

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EARL A. THISSELL AND WILLIAM H. WILDER, OF FLORENCE, MASSACHUSETTS.

VAPOR-BURNER.

SPECIFICATION forming part of Letters Patent No. 465,601, dated December 22, 1891.

Application filed March 2, 1891. Serial No. 383,404. (No model.)

To all whom it may concern:

Be it known that we, EARL A. THISSELL and WILLIAM H. WILDER, citizens of the United States, residing at Florence, in the county of Hampshire and State of Massachusetts, have invented certain new and useful Improvements in Vapor-Burners; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to vapor-burners of the type set forth in United States patent to W. R. Jeavons, No. 438,548, October 14, 1890.

To this end the invention consists in the construction and arrangement of parts in such manner that the burner-bowl may be conveniently lowered and the oil fed thereto in that position for initial starting and then raised to operative position, in which the oil is vaporized and distributed before being consumed, all substantially as shown and described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a burner constructed according to this invention. Fig. 2 is a central vertical section of the burner enlarged over Fig. 1, and showing the movable parts in both full and dotted lines. Fig. 3 is a perspective view of the inner combustion-tube and the vaporizing-bowl alone, said parts in this construction being permanently united. Fig. 4 is a detail view of the operating spindle or shaft with its attached parts, constructed as hereinafter fully described. Fig. 5 is a view of a section of the base-rim, in which is shown the notch that serves as a bearing for the operating-spindle.

A is the outer combustion-tube, and B the inner combustion-tube, constructed and arranged in relation to each other and the bowl in the usual way.

C is the vaporizing bowl or trough, provided with two concentric channels separated by a rib *c*, and the inner channel contains an absorbent strand *c'* of asbestos, mineral wool, or other non-combustible material, which serves for initial starting of the burner, as hereinafter more fully described. The inner

tube B is rigidly fixed to the edge of the bowl C, and these two parts in this instance operate together.

D is an inwardly-projecting rim or ring formed at the top of the base-frame, upon which the burner is supported in the stove. This frame is preferably of skeleton form, having a base-rim E and standards *d* or their equivalent connecting the said base and the flat ring D. This ring or rim D extends inwardly such distance as to practically overlap the outer channel in the vaporizing-bowl, forming a cover for the same. The bowl is of such size as to rest at its outer edge in the angle of the said rim and the standards *d* and fits closely upon the rim, so as to avoid the admission of air at this point. The outer combustion-tube A is fixed to the inner edge of the said rim D, and these parts are stationary on the stove. When the burner is in operation, the parts occupy the position shown in full lines, Figs. 1 and 2, and when it is to be started they are lowered to position shown in dotted lines in Fig. 2. This of course presupposes the use of the heavier hydrocarbons, which are not easily ignited, especially from a cold metallic surface. When these heavier oils are used, as we shall suppose they are in this instance, the bowl C is lowered by means of the spindle F and the cams *f* thereon arranged to come beneath the bowl C at opposite sides and serving as its means of support when in raised position. The spindle F also has two central arms *f'* and *f''* on opposite sides at its center, the arm *f'* coming against the inner portion of the bowl when it is lowered and conveying it to one side on the cams *f* and serving to bring the inner circumferential groove of the bowl C, containing the wicking *c'*, beneath the drip of the supply-pipe H, when the said wick may become saturated with oil for initially starting the burner. Meantime the other arm *f''* serves as a stop beneath the opposite side of the bowl to prevent the spindle from turning further than shown and required. A light being applied to the oil-saturated wick *c'* and a flame started, the bowl C is at once restored to working position. The oil now drips in the outer channel, the heat from the wick-flame soon

heats the outer channel to a vaporizing condition, and vaporization and distribution of vapor go on, as fully explained in the patent above referred to. The spindle F is shown
5 here as turned down or otherwise suitably constructed at f^3 to adapt it to bearings in the lower or base rim, as shown, for example, at g , Fig. 5, and a key or handle G serves to turn the spindle.

10 In the vertical movements herein provided for it is desirable that the inner tube should have suitable lateral support, and arms h are fixed to its top for this purpose.

The operation of the burner is obvious from
15 the foregoing description and need not be more fully explained. If for any reason it should become necessary to remove the burner-bowl for cleaning or the like, it is easily done by simply lifting the spindle F out of
20 the way, when the bowl is free.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a burner, the vaporizing-bowl and a
25 spindle having projections upon which the bowl is supported, substantially as described.

2. A burner having a bowl adapted to be lowered and raised, and a spindle arranged centrally beneath the bowl and having pro-
30 jections bearing against the bottom of the bowl, substantially as described.

3. The burner having a fixed outer frame, a bowl within the frame arranged to be lowered and raised, and a spindle having cam-

shaped projections forming supports for the
bowl, substantially as described. 35

4. In a burner, the movable bowl and the spindle having projections to carry the bowl, and an arm to bear laterally against the bowl when lowered, substantially as described. 40

5. In a burner, the outer frame having an inwardly-extending rim at its top, the vaporizing-bowl, and a spindle having projections to support the bowl against said rim, substantially as described. 45

6. The frame having the outer combustion-tube fixed thereon, the bowl carrying the inner combustion-tube, guides at the top of said tube, and a spindle with projections to lower and raise the bowl, substantially as described. 50

7. The burner having the vertically movable vaporizing-bowl, the supporting-frame, and the spindle having projections to carry said bowl, and two oppositely-projecting arms at or near its center, substantially as described. 55

8. The burner-frame, the bowl movable vertically therein, a spindle having projections carrying said bowl, and an arm on said spindle to limit its rotation when the bowl is
lowered, substantially as described. 60

Witness our hands to the foregoing specification this 13th day of February, 1891.

EARL A. THISSELL.

WILLIAM H. WILDER.

Witnesses:

H. K. PARSONS,

W. J. ANGELL.