No. 692,110. Patented Jan. 28, 1902.

D. W. BOWMAN & J. N. CLOUSE.

HYDROCARBON GAS OR VAPOR BURNER AND STOVE.

(Application filed Apr. 22, 1899.)

(No Model.)

Fig. 1.

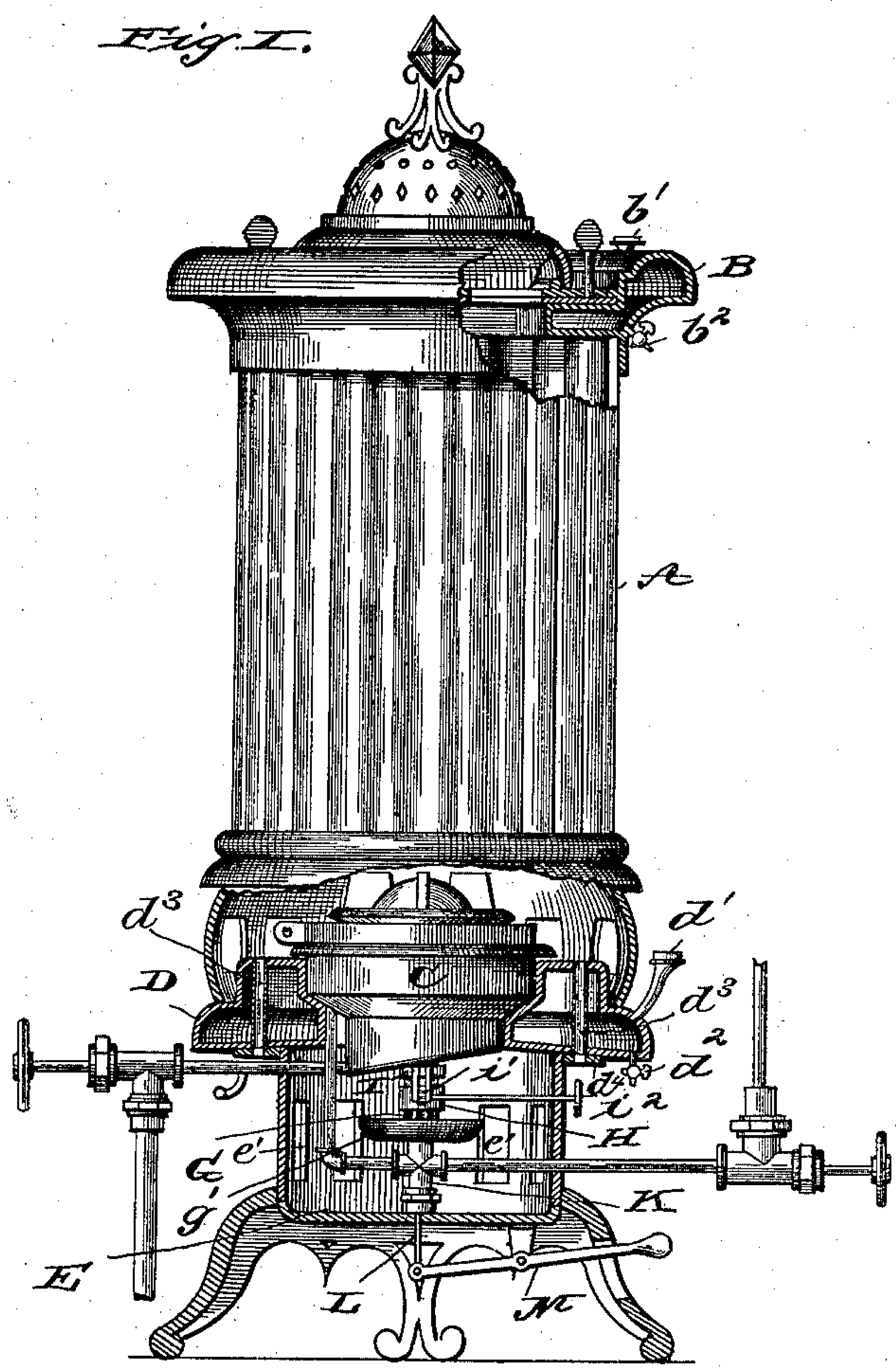


Fig. 2.

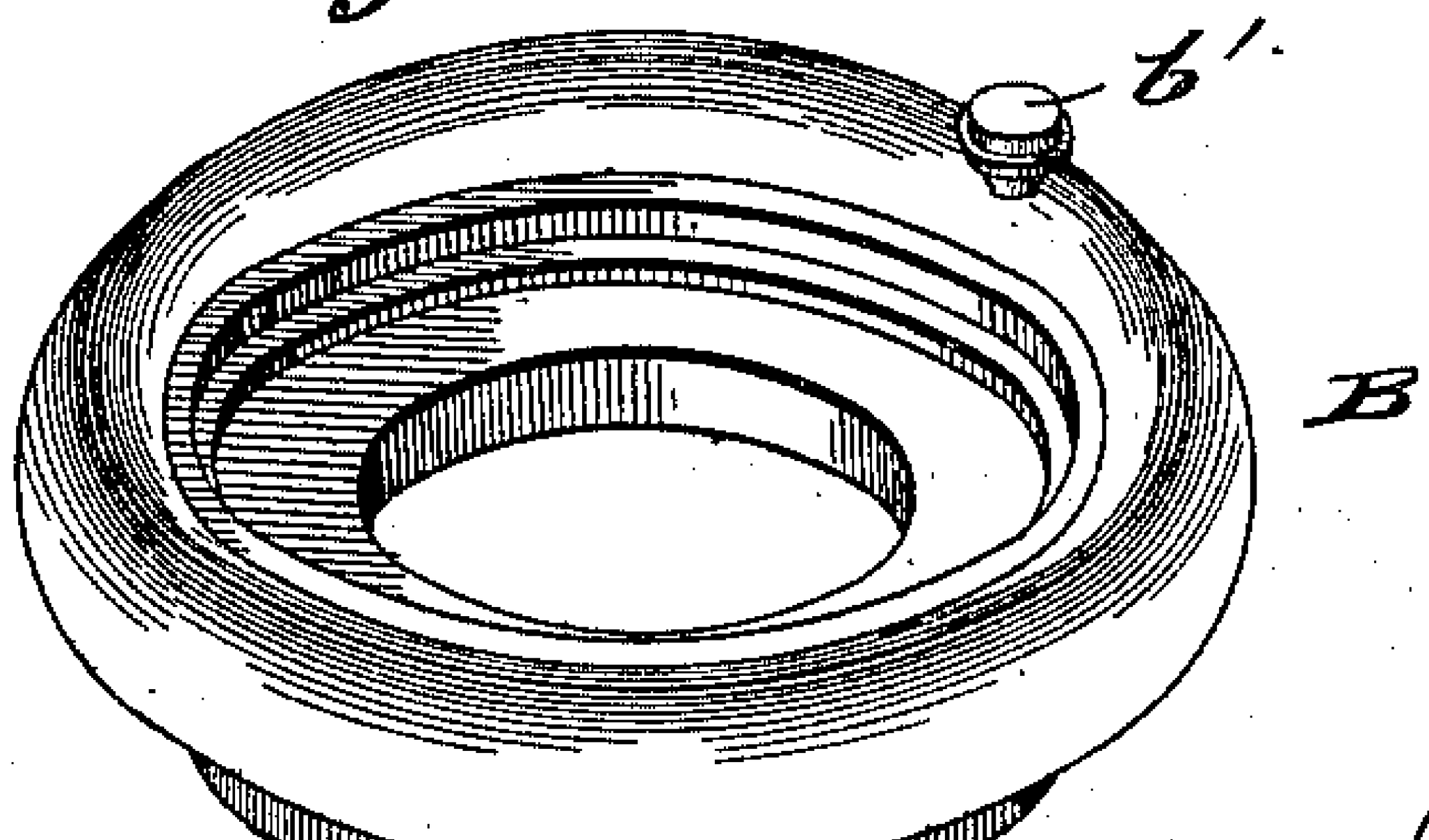
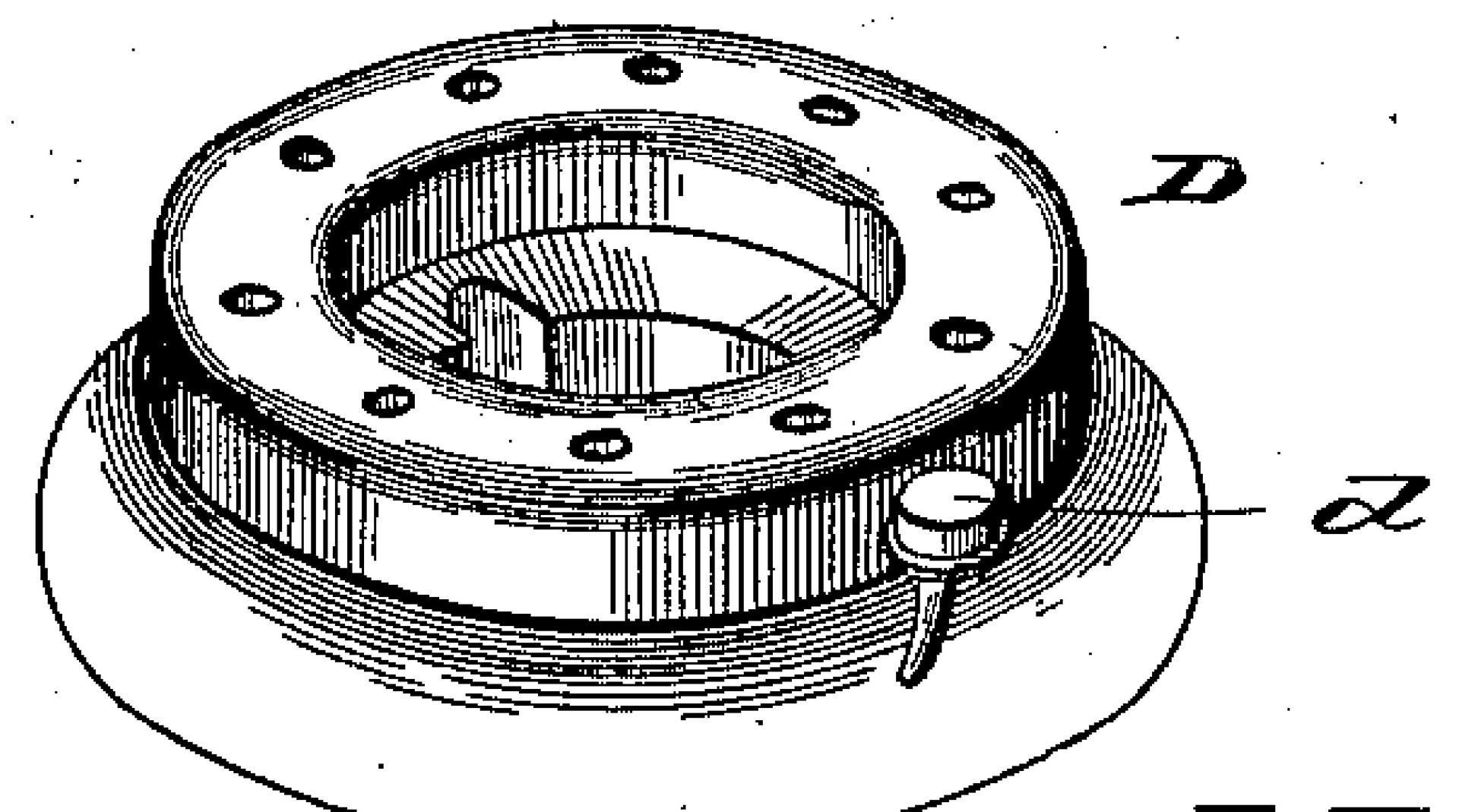


Fig. 3.



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UNITED STATES PATENT OFFICE.

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HYDROCARBON GAS OR VAPOR BURNER AND STOVE.

SPECIFICATION forming part of Letters Patent No. 692,110, dated January 28, 1902.

Application filed April 22, 1899. Serial No. 714,046. (No model.)

To all whom it may concern:

Be it known that we, DANIEL W. BOWMAN, a resident of Toledo, Lucas county, Ohio, and JOSEPH N. CLOUSE, a resident of St. Louis, State of Missouri, citizens of the United States of America, have invented certain new and useful Improvements in Hydrocarbon Gas or Vapor Burners and Stoves, of which the following is a specification.

Our invention relates to improvements in stoves, such as are used for heating purposes, and, further, such as are used for burning all kinds of gas, vapor, and oil fuel; and the objects of our invention are, first, to produce more heat with a less consumption of gas or oil; second, to adapt one stove to the uses of various fluid fuels; third, to combine in the structure of a stove a reservoir for the purposes of heating water and heating the draft of cold air before it enters the fire-chamber and at the same time to protect the generating-chamber of the burner from becoming so intensely heated as to cause it to carbonize, and, fourthly, to produce a slight moisture to the air in the room where the stove is used. We attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical elevation of the stove and burner complete. Fig. 2 is an enlarged perspective view of the upper water ring or reservoir. Fig. 3 is an enlarged perspective view of the lower water ring or reservoir.

Similar letters refer to similar parts throughout the several views.

Referring to the drawings, A is an upper casing, forming a combustion and heating chamber of the stove, which is capped above by an ornamental ring molding and a dome-cover above; but in this case it is extended downward and inward and formed into a hollow water ring or reservoir B, which is provided with a filling and vent funnel b' and a faucet b^2 for drawing off the water as desired. Next below the upper combustion and heating chamber A is the upper burner-chamber, which is the lighting and operating chamber, just over the burner, in which is shown a burner C, which rests onto and inside of a lower water ring or reservoir D, which also forms a portion of the outside molding of the stove and extends inward to the burner and is provided with an outside filling and vent funnel d' and drawing-faucet d^2. Below this upper burner-chamber and the reservoir D is a lower burner-chamber or air-chamber E, formed by a lower cylindrical casing provided with air-inlet openings e' e' and is secured to the base of the stove below. These water-reservoirs B and D when the stove and water are heated throw off a moisture into the air from the evaporation of the water. Also the lower reservoir or water-ring D is designed to serve other purposes, as follows: It forms a cooler for the generating-chamber of the burner, it being all around it, and thus prevents it from becoming intensely heated and by the intense heat carbonizing on the inside, and, further, there are a series of tubes d^3, extending vertically through this lower water-ring D, and a damper-ring plate d^4, attached to the under side of the water-ring D, which oscillates and serves to open or cover the lower ends of the said vertical tubes d^3. These tubes d^3 are designed to be passages for the external cold air into the fire-chamber, and they serve to heat that air before it gets into the fire-chamber, thus increasing the heating capacity of the stove.

Having described the various leading parts of these improvements and their relation to the other minor parts of the stove and burner, it is readily to be seen that the purposes of the upper and lower water rings or reservoirs are to provide in connection with the stove and burner a ready and efficient means of heating water for the usual conveniences and necessities of the same, and the lower water-ring serves to keep the lower parts of the burner cool and prevents carbonization in them.

We do not claim, broadly, all that is shown in the drawings; but

What we do claim as new, and desire to secure by Letters Patent, is—

In a heating-stove, the combination of a lower cylindrical casing provided with air-inlet openings, a water-ring supported on said casing, an upper casing forming a combustion and heating chamber supported on said

ring, and having a suitable outlet, a burner within the inner periphery of the ring and supported thereby, said ring having a series of damper-controlled air-tubes extending vertically therethrough, and adapted to supply air from without the stove to the interior of the upper casing as specified.

Signed by us at the city of St. Louis, State of Missouri, this 20th day of April, 1899.

DANIEL W. BOWMAN.
JOSEPH N. CLOUSE.

Witnesses:
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