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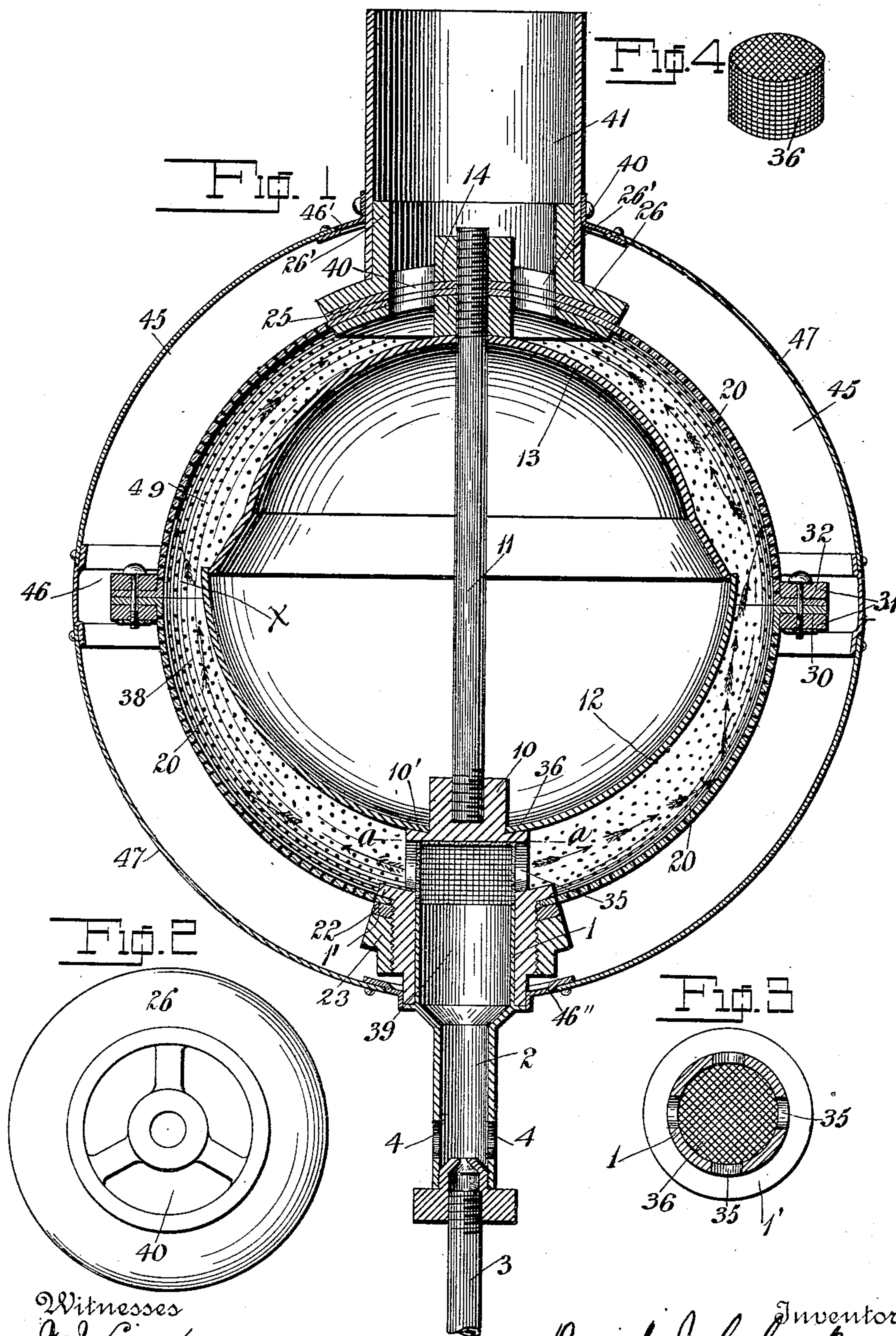
PATENTED JULY 14, 1903.

D. J. CLARK.
GAS STOVE.

APPLICATION FILED MAR. 13, 1903.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses
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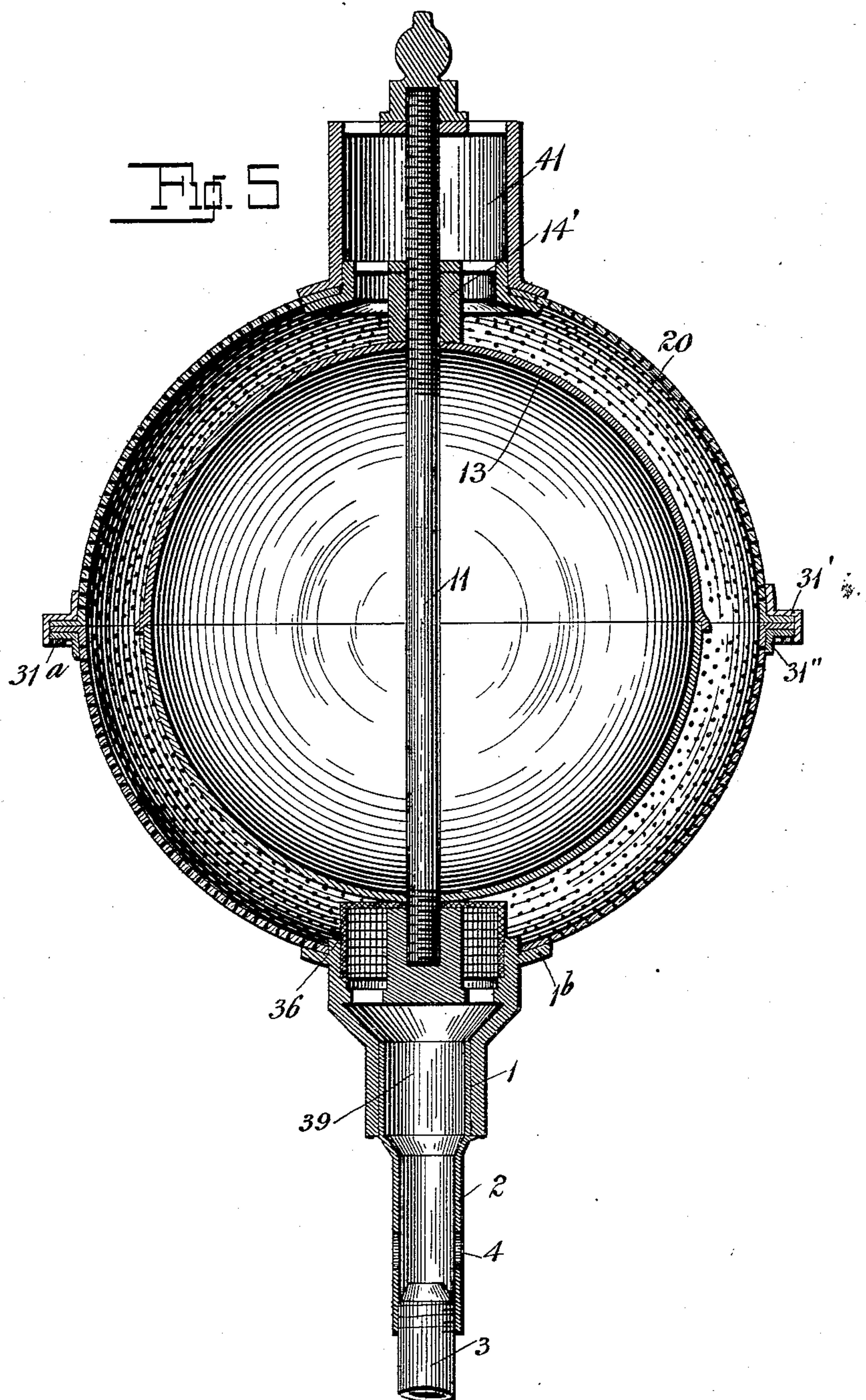
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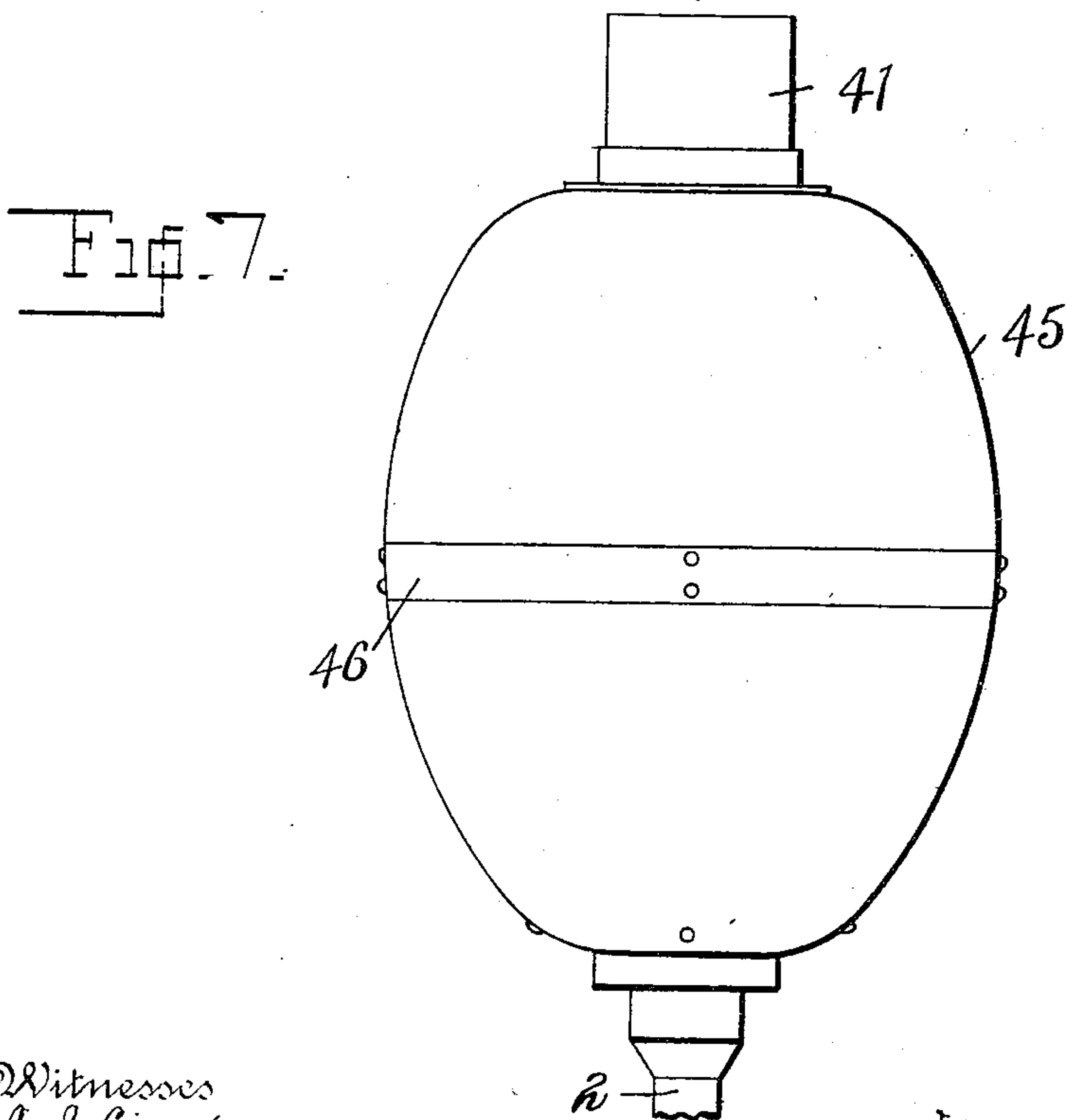
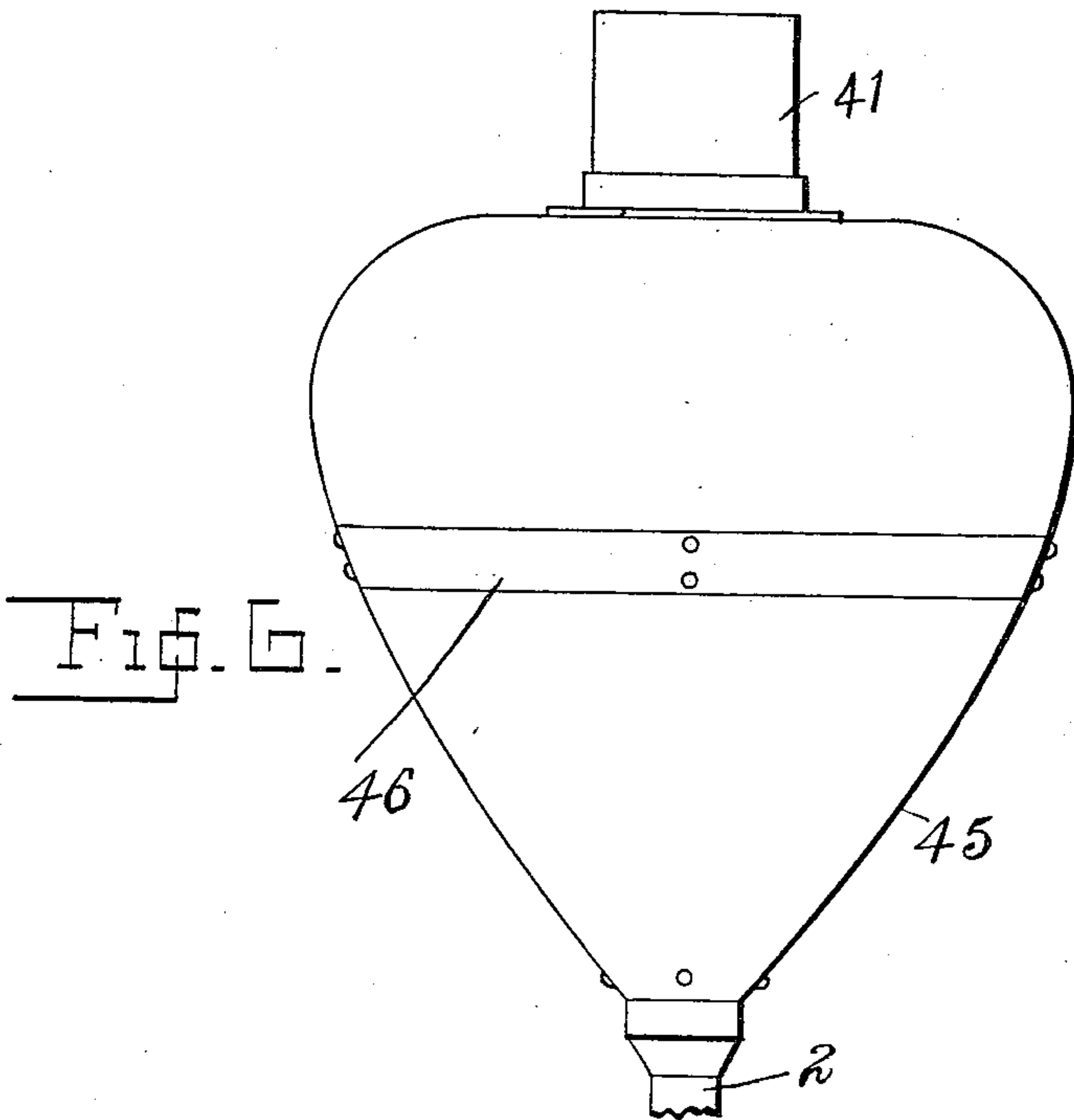
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

DANIEL JOHNSON CLARK, OF JERSEY CITY, NEW JERSEY, ASSIGNOR, BY MESNE ASSIGNMENTS, TO "SECRETARY," OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

GAS-STOVE.

SPECIFICATION forming part of Letters Patent No. 733,699, dated July 14, 1903.

Application filed March 13, 1903. Serial No. 147,599. (No model.)

To all whom it may concern:

Be it known that I, DANIEL JOHNSON CLARK, a citizen of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Gas-Stoves, of which the following is a specification.

This invention relates to improvements in gas-stoves of the kind that are especially designed to be attached to the ordinary gas-burners for heating purposes.

The object of the invention is to produce a gas-stove that will have the greatest possible area of heat-radiating surface consistent with the least consumption of gas. This is accomplished by constructing the heating parts of the stove of ball-like formation—that is, providing an inner ball of some fireproof material (for instance, metal, clay, or the like) and surrounding the ball with a globe of foraminous material, preferably an asbestos fabric that can be heated to the proper condition.

By the above-described arrangement a combustion-chamber is formed between the ball and globe, and the gases are admitted to this chamber through a Bunsen burner covered by any suitable mantle and provided with gas-outlets interjacent to the ball and globe. The burning gases in this chamber completely envelop the ball and heat the foraminous globe from which the heat is effectually radiated.

If deemed advisable, the stove can be inclosed in any suitable manner—such, for instance, as by a perforated metal shield or a suitable frame provided with transparent sections of mica or the like.

The invention consists in the peculiar construction and arrangement of parts for producing the desired results, all as hereinafter fully described, and more particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a central vertical section of the stove. Fig. 2 is a detail plan view of the top clamping device. Fig. 3 is a detail section on the line *a a*, Fig. 1. Fig. 4 is a detail perspective view of the mantle, and Fig. 5 is a modified

form showing a different arrangement and construction of the parts. Figs. 6 and 7 show further modified forms of the stove.

All the parts are supported on a hollow base-block 1, which is adapted to be connected with and form part of a Bunsen burner 2, that is provided with a gas-inlet 3 and lateral air-inlets 4. This block 1 has a reduced extension 10 on the top thereof, into which is screwed or otherwise secured a rod 11. Resting on the shoulder 10' is a hemispherical shell 12, that is adapted to form the lower half of the heat-reflecting ball. Another hemispherical shell, 13, of reduced diameter engages the inner surface of the lower shell and is securely held by a flanged nut 14 engaging the top of rod 11 and pressing against the top of the shell to bind it in position, as shown in Fig. 1. The ball is preferably constructed of any suitable imperforate material—for instance, metal with a polished exterior surface or fire-clay with a glazed surface. By polishing or glazing the surface of the ball the heat will be reflected against the inner wall of the surrounding globe 20 and tend to effectually increase the radiation of heat.

The block 1 is provided with a flange 1', against the under side of which is supported a hemispherical shell of foraminous material. This shell is held in place against the flange 1' by a washer 22, engaged by a nut 23, that is threaded on the body of the base-block 1. The upper hemisphere of foraminous material is secured to the flanges 14' of the nut 14 by means of a flanged clamping-nut 26, that engages the threaded portion of the rod 11 and is adapted to be drawn into contact with a washer 25, that is interposed between the flanges of the nuts. The two hemispheres of foraminous material are provided with annular flanges 30, that are engaged by annular rings 31 and by means of which the two hemispheres are bound together by fastening devices 32 to form a globe that is adapted to surround the ball 12. A spherical combustion-chamber 38 is formed between the ball and globe into which flow the gases through openings 35 in the mixing-chamber 39 in the

base-block 1. Located at the top of the mixing-chamber is a thimble-shaped screen 36, of any suitable material, that covers the openings 35 and through which the gases pass from the burner into the combustion-chamber. A flue for carrying off the products of combustion is provided for by having openings 40 through the nuts 14 and 26, washer 25, and the globe leading directly into the combustion-chamber. A chimney 41, of any suitable material or form, may be employed, here shown as a cylinder fitting over the cylindrical portion 26' of the nut 26 and resting on the flange of said nut.

Surrounding the stove proper is a casing or shield 45, that can be constructed of any suitable material and in any desired manner, but here shown as composed of a supporting-framework 46, 46', and 46'', to which are attached sheets of mica 47 to form windows for ornamental purposes and through which the condition of the stove may be remarked. This shield is not essential to the construction of the stove and is not employed to increase or diminish the heating qualities thereof.

In the practical demonstration of the invention the burning gases will impinge the foraminous shield, as shown by the course of the arrows in Fig. 1. When the gases reach a point marked X, they will be choked, owing to the fact that the ball and globe are not arranged in concentric relation to each other. The heat at this point will therefore be increased, and in order to accommodate such a condition an annular recess 49 is formed in the ball 12 just above the point marked X, which increases the dimensions of the combustion-chamber and tends to equalize the distribution of heat above the point marked X.

It will be noticed by referring to Fig. 1 that when the burner is constructed in the manner shown the ball and globe are not arranged with concentric relation to each other. The object of this construction is to more equally distribute the burning gases against the foraminous globe. It has been discovered by experiment that when the globe and ball are in concentric relation to each other the construction of the burner, as shown in Fig. 5, is desirable.

A modified form of the stove is shown in Fig. 5, wherein the ball and the foraminous globe surrounding said ball are arranged concentrically and the annular recess in the upper portion of the ball is omitted. The base-block in this form differs from Fig. 1 in that the wire-gauze permits the flame to directly impinge the bottom of the ball. The ball is held in position against the base-block in the same manner as shown in Fig. 1, but the foraminous globe rests on a shoulder 1^b of the base-block. The top of the globe is engaged by an apertured nut 14', which in turn is engaged by an interiorly-threaded cylinder that forms a flue for the combustion-chamber. The foraminous globe is here shown in two sections which are held together by the annu-

larrings 31' and 31'', the under part of the ring 31 having lips 31^a, that are adapted to be bent so that they will engage the under ring 31'', and thereby secure the sections of the foraminous globe together.

Further modified designs in the general contour of the stove are shown in Figs. 6 and 7, the former showing a heart-shaped stove provided with the same general detail of construction and arrangement of parts as shown in Figs. 1 and 2 and the latter a stove of oval formation wherein the general construction and arrangement of parts are the same as in the previously-described stove.

Of course it is obvious that changes in the details of construction and practical application of the stove can be made without in any manner departing from the spirit of the invention.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. In a stove, the combination of a Bunsen burner, a ball supported on said burner, a globe of foraminous material surrounding the ball and forming a combustion-chamber between the ball and globe to receive the gases from the burner.

2. In a stove, the combination of a base-block, a ball supported thereon, a globe of foraminous material surrounding the ball and forming a combustion-chamber between said ball and globe, and a screen-covered Bunsen burner having gas-outlets into the combustion-chamber, for the purpose explained.

3. In a stove, the combination of a base-block, a heat-reflecting ball supported on the block, a globe of foraminous material surrounding the ball to form a combustion-chamber between the ball and globe, and a screen-covered Bunsen burner forming part of the base-block and provided with gas-outlets interjacent to the ball and globe.

4. In a stove, the combination of a Bunsen burner, an annular recessed ball secured thereto, and a globe surrounding the ball and forming a combustion-chamber between the ball and globe and the Bunsen burner so arranged in relation to the ball and globe that the gases are admitted to the combustion-chamber.

5. In a stove, the combination of a base-block, a ball secured thereto, a globe surrounding the ball and forming a combustion-chamber between the ball and globe, a Bunsen burner forming part of the base-block and provided with gas-outlets interjacent to the ball and globe, means for securing the ball and globe to the base-block, and a shield or guard inclosing the stove, for the purpose explained.

6. In a stove, the combination of a Bunsen burner, an annular recessed ball secured thereto, a globe surrounding the ball and forming a combustion-chamber between the ball and globe and the burner provided with gas-outlets interjacent to the ball and globe.

7. In a stove, the combination of a Bunsen burner, a sectionally-constructed ball provided with an annular recess, means for securing the ball to the burner, a globe of foraminous material secured to the burner and surrounding the ball and forming a combustion-chamber between the ball and globe, and clamping devices engaging the globe, and provided with openings extending into the combustion-chamber, said clamping device engaging the ball-holding means to assist in securing the parts in their relative positions.

8. In a stove, the combination of a Bunsen burner forming part of a base-block, a ball supported thereon, means for securing the ball to the block, a globe of foraminous material surrounding the ball, means for securing the globe to the block, and a clamping device engaging the globe and the ball-holding means to assist in securing the parts in their relative positions.

9. In a stove, the combination of a ball, a globe of foraminous material surrounding the ball to form a combustion-chamber between the ball and globe, a base-block having a gas-mixing chamber and adapted to support the ball and globe, and provided with gas-outlets to the combustion-chamber, a screen covering the gas-outlets, and a Bunsen burner connected with the base-block, for the purpose explained.

10. In a stove, the combination of a base-block, a ball and a globe supported thereon so as to form a combustion-chamber between the ball and globe, the base-block having a mixing-chamber and outlets therefrom to the combustion-chamber, a Bunsen burner forming part of said block, and a screen covering the gas-outlets from the mixing-chamber, for the purpose described.

11. In a stove, the combination of a base-block having a gas-mixing chamber therein, an annular recessed ball supported thereon, a sectionally-constructed foraminous globe surrounding the ball and forming a combustion-chamber between the ball and globe, a Bunsen burner forming part of the base-block, and a screen in the top of the mixing-chamber covering the gas-outlets to the combustion-chamber, for the purpose explained.

12. In a stove, the combination of a base-block, a Bunsen burner forming a part there-

of, an annular recessed ball supported on the base-block, a foraminous globe surrounding the ball and supported on the base-block, the foraminous globe constructed in sections having annular flanges thereon, annular rings engaging the flanges on the globe, and means for securing the annular flanges and rings together, for the purpose described.

13. In a stove, the combination of a base-block, a Bunsen burner forming part of said block, a sectionally-constructed ball, a sectionally-constructed foraminous globe surrounding the ball, a shield incasing the ball and globe, and means for supporting said parts in their relative position, for the purpose explained.

14. In a stove, the combination of a base-block, a ball supported thereon, a tie-rod extending through the ball and engaged by an apertured nut to hold the ball in position, a globe surrounding the ball and forming a combustion-chamber between the ball and globe, means for attaching the globe to the base-block, an apertured clamping device on the tie-rod engaging the globe to secure it to the apertured nut, and said apertured nut and clamping device arranged to form a flue for the combustion-chamber in the manner explained.

15. In a stove, the combination of a base-block, a ball, a globe surrounding the ball and forming a combustion-chamber between the ball and globe, means for securing the ball and globe to the base-block, and an apertured nut and an apertured clamping device adapted to engage the globe to form a flue for the combustion-chamber.

16. In a stove, the combination of a base-block, a ball, a globe surrounding the ball to form a combustion-chamber between the ball and globe, a tie-rod extending through the ball, an apertured nut engaging the ball to hold it in position, and an apertured clamping device engaging the globe, tie-rod and apertured nut to hold the parts in their relative positions, the apertures in the nuts and clamping device forming a flue for the combustion-chamber, as explained.

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