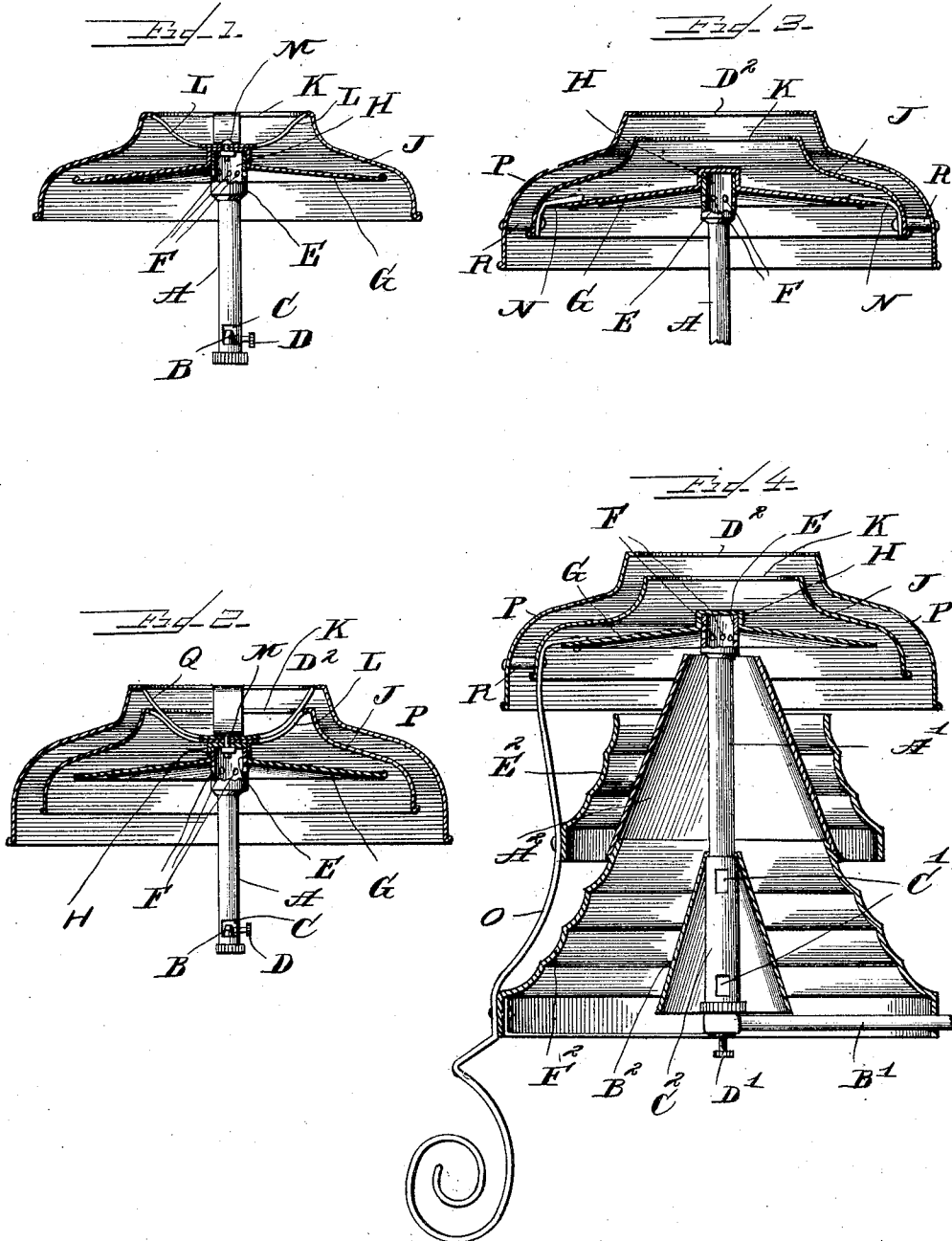


No. 822,374.

PATENTED JUNE 5, 1906.

V. KOST.  
GAS HEATING DEVICE.  
APPLICATION FILED MAY 6, 1904.



WITNESSES

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# UNITED STATES PATENT OFFICE.

VICTOR KOST, OF CHICAGO, ILLINOIS.

## GAS HEATING DEVICE.

No. 822,374.

Specification of Letters Patent.

Patented June 5, 1906.

Application filed May 6, 1904. Serial No. 206,669.

*To all whom it may concern:*

Be it known that I, VICTOR KOST, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Gas Heating Device, of which the following is a specification.

This invention relates to gas heating devices.

The object of the invention is to provide a construction of gas heating device which is simple, economical, and efficient.

A further object of the invention is to provide a gas heating device wherein the heat generated by the flame of a gas-burner creates an efficient draft of air, thereby not only supplying oxygen to support combustion, but also enabling the heated air to traverse heat-radiating surfaces so arranged as to give off the heat therefrom in an efficient manner.

Other objects of the invention will appear more fully hereinafter.

The invention consists, substantially, in the construction, combination, location, and arrangement of parts, all as will be more fully hereinafter set forth, as shown in the accompanying drawings, and finally pointed out in the appended claims.

Referring to the accompanying drawings and to the various views and reference-signs appearing thereon, Figure 1 is a view in central section of a construction of heating device embodying the principles of my invention in the simplest form thereof and shown applied to a gas-burner. Fig. 2 is a similar view showing the heating device of Fig. 1 with an additional hood. Fig. 3 is a view similar to Fig. 2, showing a slightly-modified arrangement for relatively supporting the hoods. Fig. 4 is a view in central section of a gas heating-stove, showing the application thereto of the form of heating device shown in Fig. 3.

The same part is designated by the same reference-sign wherever it occurs throughout the several views.

Reference-sign A designates a gas-burner tube which in the application of my invention to a heating device is adapted to be supported upon a gas-fixture, as shown in Figs. 1, 2, and 3, or when the device is used as a stove, as shown in Fig. 4 at A', may be of the ordinary construction of a Bunsen burner, receiving the gas at the base thereof through a nozzle B or a gas-supply pipe B', the burner-tubes A A' being provided with suitable open-

ings (indicated at C C') to admit air to be commingled within the tube A A'. The supply of gas into the tube A A' may be regulated or controlled in any convenient manner—as, for instance, by means of the needle-valves D D'. The tube A is provided with an end or tip E, which constitutes the burner proper, said burner being perforated, as indicated at F, at a point below the end of said burner proper, where ignition of the mixed air and gas takes place.

G designates a fire or heater plate which is provided centrally thereof with a seat H, arranged to receive the end of the burner-tube A A', said end of the tube A A' thereby forming a support for the fire or heater plate G. Preferably this heater-plate is somewhat dished and is supported in inverted relation upon the end of the tube A A'. The openings F in the burner, where the ignition of the gases occurs, lie slightly below the under surface of the fire or heater plate G, so that the flame radiating from the openings F impinges against and spreads over the under or dished surface of the fire or heater plate G, thereby heating the same, such flame spreading over the dished under surface of the fire plate or burner to the edges thereof and passing around and upwardly over the edges of said plate. In this manner the fire or heating plate becomes intensely heated, drawing fresh air from below to support combustion, the heated air ascending after spreading over the under surface of the plate and around the peripheral edges of said plate.

J designates a hood in the form of a dish or tray and arranged in inverted relation to inclose the fire plate or disk G, the lower edges of the hood J forming a petticoat to extend over and peripherally inclose the fire or heater plate G, the lower edge of the hood extending below the fire or heater plate. The ascending heated air after passing around the peripheral edges of the fire or heater plate and upwardly is deflected by the hood J toward a central opening (indicated at K) through the base of said hood. The heated air and flame not only serve to heat intensely the fire or heater plate G, but also inclosing hood J, which through radiation and reflection of the heat serves to heat up the surrounding atmosphere. The hood J may be supported in any suitable or convenient manner.

In Fig. 1 I have shown one arrangement wherein the hood J is provided with a spider L, the central part of which rests upon the up-

per side or surface of the inverted seat H of the fire plate or disk, and a bolt M, passing through said spider and seat, clamps the parts together.

5 In Fig. 3 I have shown a slightly-modified arrangement embraced within the spirit and scope of my invention wherein the hood J is supported by arms N, connected at suitable points around the periphery of the fire or heater plate G and suitably bolted or otherwise secured to the inner surface of the hood J, and in Fig. 4 (wherein my invention is shown as applied to a stove) the supporting-leg O serves to support the hood J.

15 In Figs. 2, 3, and 4 I have shown an outer hood P, similar in shape to the hood J and similarly arranged in inverted position over said hood J, the lower rim of said outer hood P forming a petticoat to extend below the lower edge or rim of the inner hood J. This outer hood P may be supported in any convenient manner—as, for instance, by means of a spider Q, similar to the spider L and through which the bolt M passes, as shown in Fig. 2, or, if desired, the outer hood P may be supported by bolts R from the inner hood P. This outer hood serves the purpose of ornamentation and also to increase the draft, inasmuch as the inclosing petticoat formed thereby extends below the petticoat of inner hood J, and therefore serves as an additional means for creating a draft of air to the heating plate or disk G and also serves as an additional means for radiating and reflecting the heat generated. Where the heating device is employed in the form of a stove, as shown in Fig. 4, I arrange the burner-tube A' to project through funnels A<sup>2</sup> B<sup>2</sup>, the funnel B<sup>2</sup> being arranged to inclose a sleeve C<sup>2</sup>, which controls the air-opening C' at the lower end of the burner-tube A', thereby forming a draft-funnel for the air which is supplied for mixture with the gas through the openings C'. The funnel A<sup>2</sup> is much larger than funnel B<sup>2</sup> and incloses the same and also the burner-tube A', said funnel A<sup>2</sup> being open at its upper contracted end at a point immediately beneath the burner E, and said funnel is open at its enlarged lower end, thereby forming a flue through which air is drawn to supply the necessary oxygen to maintain combustion at the burner, and the air thus supplied to the burner becoming heated spreads out around the disk-shaped heating-plate G, rising over the peripheral edge of said plate and being inwardly deflected through the central opening F of hood J and serves not only to heat the fire-plate, but also the inner hood J, as well as the outer hood P, said outer hood being similarly provided with a central opening at D<sup>2</sup>, centrally of the base thereof.

If desired, I may support an inclosing sleeve E<sup>2</sup> in any suitable or convenient manner at a point below the burner and fire-plate

and through which the sleeve flue-funnel A<sup>2</sup> extends. In practice the outer surface of the sleeve E<sup>2</sup> may be polished, as may also be the lower portion F<sup>2</sup> of the draft or flue funnel A<sup>2</sup>, for the purpose of reflecting therefrom the heat impinging thereon by reflection or radiation from the fire-plate G or the inclosing hoods J and P, and, if desired, said sleeve E<sup>2</sup> and portion F<sup>2</sup> may be suitably shaped or curved for ornamental purposes and also to secure the desired direction of reflection of the heat from the surfaces thereof. In addition to performing the function of a heat-reflecting surface the sleeve E<sup>2</sup> may be of somewhat conical shape, the smaller or contracted end being presented upwardly, thereby forming an additional flue for creating an air-draft to the point where combustion occurs at the burner E.

It will be observed that the simplest form of my invention (shown in Fig. 1) enters into the construction of each of the other forms shown as practical embodiments of the invention, other parts being merely added to make up the complete devices.

From the foregoing description it will be seen that I provide an exceedingly simple and efficient construction of heating device, and I have found in practice that a heating device embodying the principles of my invention attains a high degree of efficiency not only in heat generation, but the economical use of gas employed.

Having now set forth the object and nature of my invention and various constructions embodying the principles thereof and having described such constructions, their purposes, functions, and modes of operation, what I claim as new and useful and of my own invention, and desire to secure by Letters Patent, is—

1. A heating device comprising a tube having a burner, said burner being perforated through the sides thereof, a fire plate or disk resting and supported directly upon the end of said burner, and an inclosing hood supported in inverted position and in inclosing relation with respect to said fire-plate, the lower rim of said hood forming a petticoat and extending below the peripheral edge of the fire-plate.

2. In a heating device, a burner, a fire plate or disk having a central seat arranged to receive the end of the burner, whereby said plate rests and is supported directly upon the burner, and an inclosing hood supported in inverted relation to inclose said fire-plate, the lower rim of said hood forming a petticoat, said hood having a restricted central opening through the upper portion thereof and of a size smaller than the diameter of the plate.

3. In a heating device, a burner, a dish-shaped fire-plate centrally supported in inverted position directly upon said burner,

and with its periphery below the openings in the burner and a hood suitably supported to inclose said fire-plate, the lower rim of said hood forming a petticoat to extend below said plate.

4. In a heating device, a burner, a dish-shaped fire-plate having a central seat formed therein and arranged to receive the burner, whereby said plate rests and is supported in inverted position directly upon said burner, and an inclosing hood for said plate, means for supporting said hood to provide a space between the inner wall thereof and the periphery of said plate, the lower edge or rim of said hood extending below said plate and forming a petticoat therefor, said hood having a restricted central opening through the upper edge thereof.

5. In a heating device, a burner, a fire-plate centrally supported upon said burner for the flame of the burner to impinge against the under surface thereof, a hood provided with a depending rim arranged to extend below said plate and arranged to inclose said plate, said hood having a central opening through the upper end thereof, and an outer hood inclosing said first-mentioned hood, and having its lower edge arranged to depend below the lower edge of said inner hood to form a petticoat therefor.

6. In a heating device, a burner, a fire-plate supported thereon, an inner and an outer hood supported in inclosing relation with respect to each other and said fire-plate, said outer hood forming a petticoat for the inner hood, and said inner hood forming a petticoat for said fire-plate, said hoods having central openings through the upper edges thereof.

7. In a heating device, a burner, a dish-shaped fire-plate supported in inverted relation upon said burner, an inverted inner and an inverted outer hood arranged the one within the other and supported to provide a space therebetween, the lower edge of said inner hood forming a petticoat for the fire-plate, and the lower edge of said outer hood forming a petticoat for the inner hood.

8. In a heating device, a burner, a dish-shaped fire-plate having a depressed seat formed centrally in the dish surface thereof to receive the end of the burner, whereby said plate is supported in inverted position upon said burner, and an inner and an outer hood, the one arranged within the other, and in inclosing relation with respect to said fire-plate.

9. In a heating device, a burner, a fire-plate resting and directly supported upon the end of said burner, a hood inclosing said fire-plate, the lower edge of said hood forming a petticoat for said plate, and an open-ended funnel surrounding said burner and terminat-

ing at a point below the tip of the burner and beneath said fire-plate.

10. In a heating device, a burner, a fire-plate supported and resting directly upon the end of said burner, a hood inclosing said fire-plate, and an open-ended cone-shaped funnel inclosing said burner, the contracted open end of said funnel being presented toward said fire-plate but terminating below said plate and the tip of the burner.

11. In a heating device, a burner, a dish-shaped fire-plate supported in inverted relation directly upon said burner, an inverted hood forming a petticoat to inclose said plate, and a cone-shaped funnel, open at both ends, surrounding said burner, and having the contracted open end terminating adjacent to the under surface of said fire-plate and below the tip of said burner.

12. In a heating device, a burner, a fire-plate supported upon the end of said burner, an inner and an outer hood, said inner hood forming an inclosing petticoat for said plate, and said outer hood forming an inclosing petticoat for said inner hood, and a funnel, open at both ends, surrounding said burner and having the contracted open end thereof presented toward the under surface of said fire-plate.

13. In a heating device, a burner, a fire-plate supported upon and held from displacement by the end of said burner, an inclosing hood for said plate, and a sleeve supported below said plate and hood, and terminating short of said plate, the outer surface of said sleeve forming a reflector for reflecting the heat from said plate and hood.

14. In a heating device, a burner, a fire-plate supported upon the end thereof, a hood inclosing said fire-plate, and a cone-shaped sleeve supported below said burner and hood, terminating adjacent the plate and serving the double purpose of a reflector of the heat from said plate and hood and to create a draft of air to said burner and plate.

15. In a heating device, a burner, a gas-supply tube delivering to said burner, a fire-plate supported upon the end of said burner, an inverted hood forming an inclosing petticoat for said plate, a funnel surrounding said gas-supply tube and open at both ends, the contracted end of said funnel being presented toward the under surface of said fire-plate, and an inclosing cone-shaped sleeve for said funnel, said sleeve being arranged below said fire-plate and hood.

In witness whereof I have hereunto set my hand, this 3d day of May, 1904, in the presence of the subscribing witnesses.

VICTOR KOST.

Witnesses:

C. H. SEEM,  
S. E. DARBY.