

P. J. ATZBERGER.
GAS BURNER.
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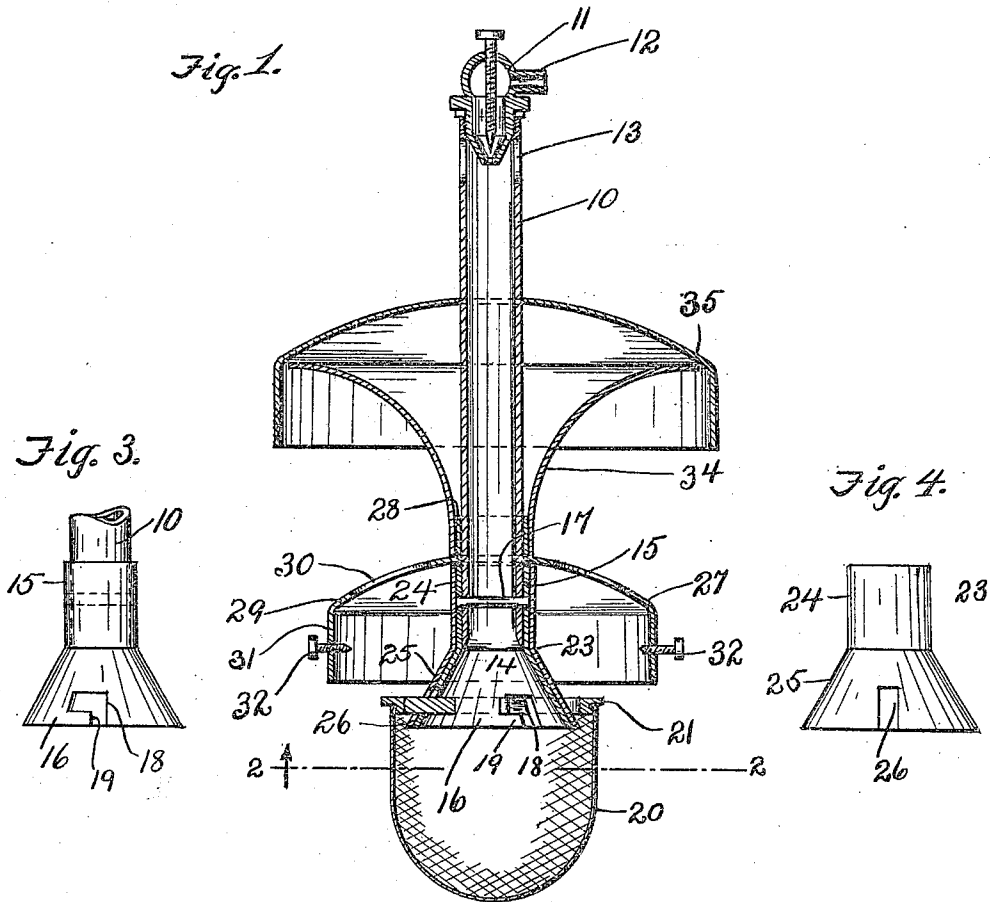
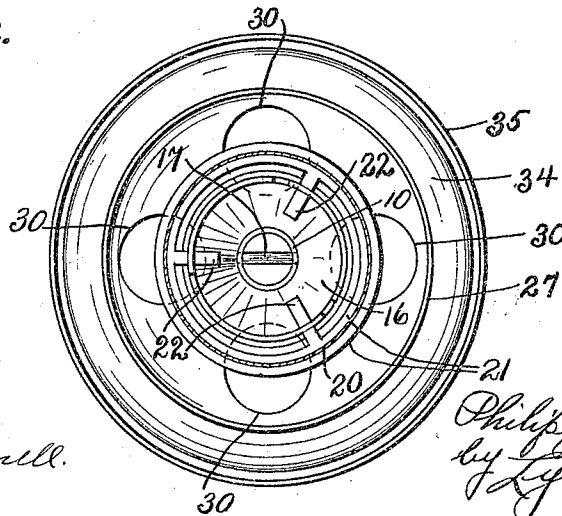


Fig. 2.



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UNITED STATES PATENT OFFICE.

PHILIP J. ATZBERGER, OF CLEVELAND, OHIO.

GAS-BURNER.

949,050.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, PHILIP J. ATZBERGER, a citizen of the United States of America, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Gas-Burners; and I hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

This invention relates to new and useful improvements in gas burners, and particularly to gas burners of the inverted type.

One of the main objects of this invention is the provision of a gas burner having a construction such that the gas will be supplied to all parts of the mantle, with the result that the entire mantle will glow with intense luminosity and the lamp will have an efficiency greater than those in use at the present time.

A further object is the provision of a burner having its parts, particularly those subjected to intense heat, so assembled and supported or united that the heat of the lamp cannot have any material detrimental effect on the lamp.

A still further object is the provision of a burner having a construction such that all the parts can be easily and quickly assembled or taken apart when necessary.

Further objects will appear from the following detailed description.

The invention may be briefly summarized as consisting in certain novel details of construction and combinations and arrangements of parts which will be described in the specification and set forth in the appended claims.

In the accompanying drawings, Figure 1 is a vertical sectional view taken through a burner constructed in accordance with my invention. Fig. 2 is a section taken through the mantle, the section being taken substantially along the line 2-2, Fig. 1, looking in the direction indicated by the arrow. Fig. 3 shows in side elevation the lower part of the vertical lamp-supporting and gas-supplying tube and the funnel-shaped member at the lower end of the tube forming the flaring orifice, and showing also the shape of the slots in the conical portion of this member for receiving and supporting the mantle-supporting frame. Fig. 4 shows

in elevation the funnel-shaped locking sleeve which fits over the funnel-shaped member at the lower end of the tube of the burner and locks the mantle-supporting frame in position.

Referring now to the figures of the drawings, 10 represents the vertical burner-supporting and gas-supplying tube which is provided at one end, which in the present case is the upper end, since I have shown my invention applied to a lamp of the inverted type, with a gas regulating valve 11 having a tubular projection 12 which may be connected to a gas fixture in any suitable manner, the tube being also provided near the lower end of the valve with air inlet openings 13. At its lower end the tube is provided with a flaring orifice which is preferably formed by a separate funnel-shaped member 14 having a cylindrical portion 15 which surrounds the lower end of the tube, and an outwardly flaring or conical portion 16 below the end of the tube. This funnel shaped member 14 is preferably secured to the tube by a transverse pin 17 which extends through diametrically opposite openings in the cylindrical portion 15 so that the pin will extend across the tube centrally thereof. This pin 17, aside from uniting the tube 10 and funnel-shaped sleeve 14, performs an important function to be described later. The ends of the pin are preferably flush with the outer surface of the cylindrical portion 15 of the member 14 or at least do not extend beyond the outer surface of this member, and the pin may be fixed in position, or may be loose as desired, so that the two members united by the pin can be readily taken apart.

Near the bottom of the conical portion 16 of the member 14 are a number of bayonet-shaped slots 18 which extend upwardly from the bottom and thence laterally so as to form shoulders 19 for supporting the mantle-frame. The mantle which is shown at 20 is secured in any suitable manner to a frame comprising a ring 21 having inwardly extending lugs or projections 22 spaced equal distances apart, the lugs being, in this case, three in number. These lugs are of a width such that they may be slipped upwardly into the slots 18 and when the frame is turned slightly, will pass into the laterally extending portions of the slots and will rest upon the shoulders 19.

Surrounding the funnel-shaped member 14 is a similarly shaped member 23 slightly larger than the member 14 so that it will fit nicely thereon and may turn freely relative to the same. This funnel-shaped member 23 is provided with a cylindrical portion 24 which surrounds the cylindrical portion 15 of the member 14 and has a close but sliding engagement therewith, and with a flaring or conical portion 25 which fits closely over and rests upon the conical portion 16 of the member 14. The conical portion 25 of the member 23 is provided with three open slots 26, which, when the sleeve is in one position, will register with the open or upwardly extending portions of the bayonet slots 18, but when the member 23 is turned, the conical portion of the latter locks the lugs 22 of the mantle-supporting frame in place and at the same time covers the open portions of the slots 18 so as to prevent the escape of gas through the same.

Supported upon the shoulders formed by the upper ends of the funnel-shaped members 14 and 23, is a globe supporting member 27 having a centrally located and upwardly extending sleeve-like flange 28 which is adapted to be slipped over the tube and to engage the same with a close but sliding fit, and having also a dome-shaped portion consisting of a convex top 29 provided with suitable openings 30 for the escape of the heated air and having inwardly extending screws 32 which are designed to engage and support the globe in the usual manner.

Resting upon the globe-supporting member 27 is a so-called "canopy" for the protection of the ceiling, consisting of two parts, namely, a heat deflecting member 34 and a dome 35. The member 34 has a contracted lower portion, cylindrical in shape, designed to be slipped over the upper cylindrical portion 28 of the globe-supporting member 27 and to fit nicely about the same, and an outwardly flaring concave upper portion, on the top of which the dome 35 rests, the latter having a centrally located opening through which the tube 10 extends.

The funnel-shaped members 14 and 23, the globe supporting member 24, and the members 34 and 35 of the canopy are each in one piece and are preferably formed of sheet metal by stamping or spinning operations, so that in the construction of these parts there are no parts or ends united by solder, brazing or any other means.

The purpose of the flaring orifice at the lower end of the tube 10 is to permit the gas to spread outward against the body or cylindrical portion of the mantle instead of being directed downward in the direction of the length of the tube to the bottom of the mantle. This spreading action of the gas is greatly augmented by the transverse pin 17, which extends across the tube centrally

thereof a short distance above the conical or flaring portion of the orifice, the pin serving to divide the gas, so to speak, and to cause it to pass outwardly along the conical wall as well as in a downward direction. The result of this construction is that all portions of the mantle glow and become highly luminous causing the lamp to have a greater efficiency than those in use at the present time.

It will be apparent that the parts of the burner can be very easily assembled or taken apart, since the parts can be slipped onto the tube 10 one after another and are supported on one another without the necessity of any special uniting means with the exception of the transverse pin 17.

It is to be noted that in the burner construction which I have shown and described above as well as in the construction of the individual parts, no brazing, soldering or the use of cooperating screw threaded portions are required, with the exception of the threaded connection between the upper end of the tube and the valve 11. Consequently the burner has no seams, joints, or connections which can be loosened or separated by the heat of the burner.

What I claim is,—

1. In a gas burner, a tube adapted to be attached to a gas fixture, said tube having a flaring end, a pin extending across the tube centrally thereof and from side to side a short distance from the flaring end and a mantle supported by said tube, said pin and the flaring end of the tube serving to spread the gas outward into engagement with all parts of the mantle.

2. In a gas burner, a tube adapted to be connected to a gas fixture, a member having a conical portion secured to the lower end of the tube and forming a flaring orifice, said conical portion having bayonet slots, a mantle, a frame carrying said mantle, said frame having arms or lugs adapted to be received in said bayonet slots, and means for locking said frame in the slots comprising a second member having a conical portion which rests on the first member and is adapted to be turned relative thereto.

3. In a gas burner, a tube adapted to be connected to a gas fixture, said tube having at its lower end two funnel-shaped members, one being fixed to the tube and forming a flaring orifice, and the other resting upon said fixed funnel-shaped member and being slidable thereon circumferentially, one of said funnel-shaped members having bayonet slots and the other having straight slots which register with the bayonet slots, a mantle, a frame supporting said mantle, said frame having inwardly extending arms or lugs adapted to be received in the slots of the two members when said slots register and to be locked into the bayonet slots when

the member having the straight slots is turned relative to the other member.

4. In a gas burner, a tube adapted to be attached to a gas fixture, a member having 5 a conical portion forming a flaring orifice for the tube, a transverse pin extending through the tube and securing said member to the tube, and a gas mantle supported by said flaring orifice.

10 5. In a gas burner, a tube adapted to be attached to a gas fixture, a funnel-shaped member at the end of the tube, the conical portion of said member forming a flaring orifice for the tube, and a transverse pin 15 extending through the cylindrical portion of said funnel-shaped member and through the tube for securing said parts together.

6. In a gas burner, a tube adapted to be secured to a gas fixture, a mantle, a mantle-supporting member secured to the lower end 20 of the tube, a globe-holding member supported by the mantle-supporting member and having a centrally located flange-sleeve which surrounds the tube, and a canopy supported on said globe-holding member, said 25 canopy having a contracted neck portion which surrounds the tube.

7. In a gas burner, a tube adapted to be attached to a gas fixture, a mantle, a mantle-supporting member at the lower end of the 30 tube, a globe-holding member supported freely by said mantle-supporting member, and a canopy resting freely on said globe-supporting member, said canopy comprising 35 two parts, one having a lower cylindrical portion which surrounds the tube and rests upon said globe-supporting member and flaring outwardly and upwardly from said cylindrical portion, and the other part being 40 a dome which rests upon the top of said first named part.

8. In a gas burner, in combination, a tube adapted to be attached to a gas fixture, a 45 funnel-shaped member at the lower end of the tube, the cylindrical portion of said member surrounding the tube, and the conical portion forming a flaring orifice, means securing together said tube and funnel-shaped member, a globe-holding member 50 supported on the upper end of said funnel-shaped member and having a cylindrical flange which engages the tube, and a mantle

supported by said funnel-shaped member and extending below the same.

9. In a gas burner, in combination, a tube 55 adapted to be connected to a gas fixture, a funnel-shaped member at the lower end of the tube, means for securing said member and tube together comprising a pin extend- 60 ing through the tube and through the cylindrical portion of said member, a globe-holding member supported on the upper end of said funnel-shaped member and having a cylindrical flange which engages the tube, and a canopy having a contracted neck por- 65 tion which surrounds the tube and is supported by said globe-holding member, and a mantle supported by said funnel-shaped member.

10. In a gas burner, in combination, a 70 tube adapted to be connected to a gas fixture, a funnel-shaped member secured to the lower end of said tube, the conical portion of said member forming a flaring orifice and hav- 75 ing bayonet slots, a gas mantle, a frame supporting said mantle, said frame having inwardly extending lugs adapted to be received in said slots, a second funnel-shaped member surrounding the first-named funnel-shaped member and resting thereon, said 80 second named funnel-shaped member having slots which may register with the bayonet-slots and when turned serving to lock the arms of the frame in the latter, a globe-holding member having a cylindrical up- 85 wardly extending flange which surrounds the tube, said globe-holding member resting freely upon and supported by the upper end of one of said funnel-shaped members, a canopy or heat deflecting member surround- 90 ing the tube and comprising a member having a contracted lower portion which surrounds the flange of the globe-holding member, and flares outwardly and upwardly, and a dome resting on the top of said outwardly 95 flaring portion and supported thereby.

In testimony whereof, I sign the foregoing specification, in the presence of two witnesses.

PHILIP J. ATZBERGER.

Witnesses:

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