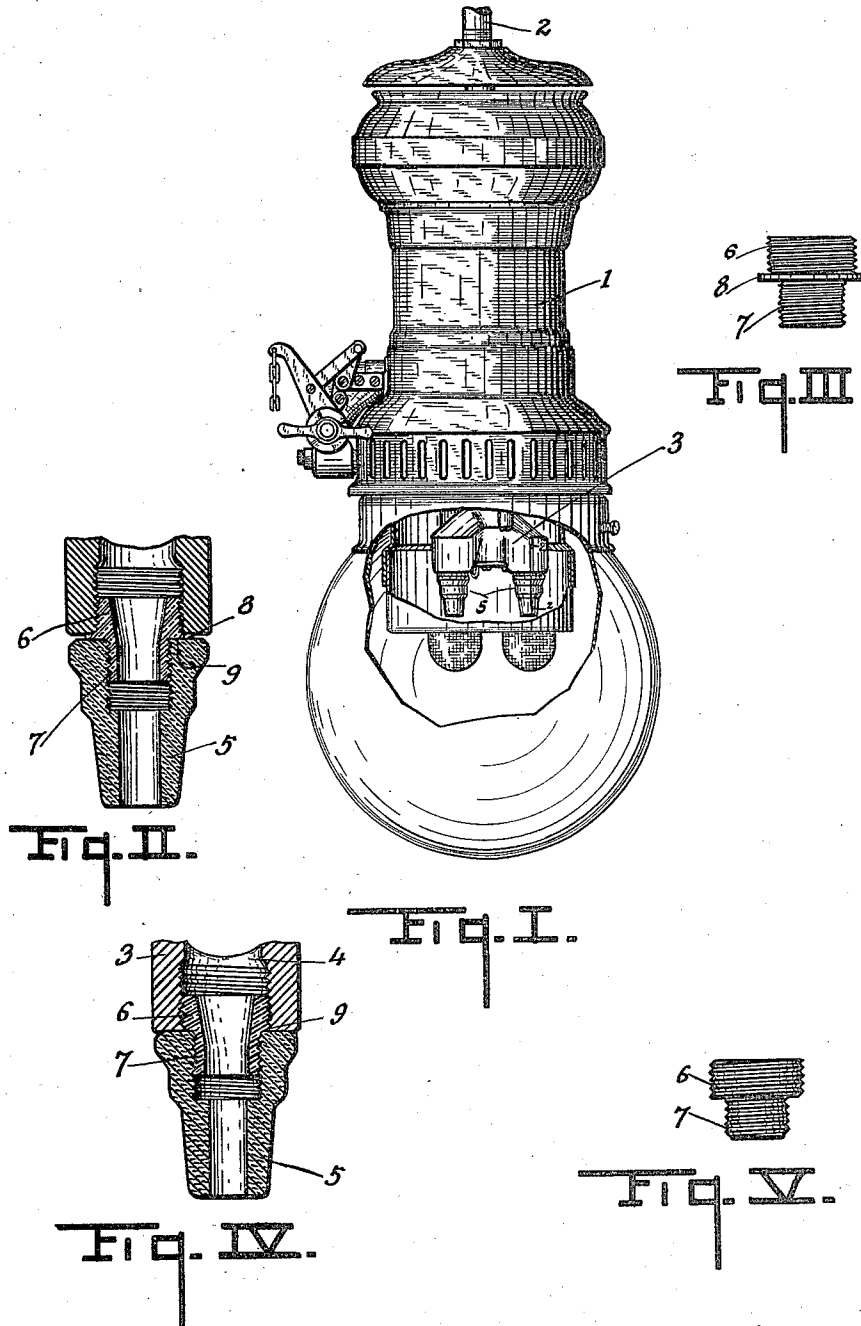


F. J. HUMPHREY.
 INVERTED GAS BURNER.
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1,060,093.

Patented Apr. 29, 1913.



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UNITED STATES PATENT OFFICE.

FREDERICK J. HUMPHREY, OF KALAMAZOO, MICHIGAN.

INVERTED GAS-BURNER.

1,060,093.

Specification of Letters Patent.

Patented Apr. 29, 1913.

Application filed December 10, 1912. Serial No. 735,893.

To all whom it may concern:

Be it known that I, FREDERICK J. HUMPHREY, a citizen of the United States, residing at Kalamazoo, Michigan, have invented certain new and useful Improvements in Inverted Gas-Burners, of which the following is a specification.

This invention relates to improvements in inverted gas burners.

10 My improved inverted gas burner is especially designed by me for use in gas lamps of the type illustrated and described in the application of this applicant and Hubert R. Humphrey, filed September 11, 15 1911, Ser. No. 648,704, and I have illustrated the same herein embodied in such a structure as that is the form in which I have embodied the same in practice.

In gas lamps of this type, it has heretofore been the common practice to provide 20 cast iron burner bodies, which are very desirable, with burner tips of porcelain or earthy material, the tips being secured by threading them into the body. The burner 25 bodies, however, being subject to the heat and the action of the gases change very materially, the walls becoming thicker, which breaks the threaded nipples of the burner tips permitting the tips to drop off, thereby 30 destroying the mantles and frequently the globes and rendering the lamp inoperative until repaired. To repair such lamps an entirely new burner body is frequently required although only one of the several 35 burner tips may have been destroyed or broken.

It is the main object of this invention to provide an improved inverted gas burner in which the porcelain or other burner tip 40 members are not likely to be destroyed by the changes in the burner arising from the heat and gases to which it is subjected in use, and further, to provide a burner having these advantages which retains the advantages of the cast iron body and is simple 45 and economical in structure.

Further objects, and objects relating to structural details will definitely appear from the detailed description to follow.

50 I accomplish the objects of my invention by the devices and means described in the following specification.

The invention is clearly defined and pointed out in the claims.

55 A structure which is a preferred embodiment of my invention is clearly illustrated

in the accompanying drawing forming a part of this specification, in which:

Figure I is a side elevation of a gas lamp embodying the features of my invention, 60 parts being broken away to show structural details. Fig. II is a detail section on a line corresponding to line 2-2 of Fig. I, through my improved gas burner. Fig. III is a side elevation of the coupling member 6 65 employed in my improved gas burner. Fig. IV is a detail section corresponding to that of Fig. II, of a modified construction, the modification being in the coupling member and consisting of the omission of the annular flange 8. Fig. V is a side elevation of 70 the coupling member employed in the modification shown in Fig. IV.

In the drawing, similar reference characters refer to similar parts throughout the 75 several views.

Referring to the drawing, the lamp designated generally by the numeral 1, is supported from the gas supply pipe 2.

As the details of the lamp other than the 80 burner, form no part of my present invention, I do not describe the same herein.

The burner body 3 is formed of cast iron and is provided with a plurality of internally threaded burner passages 4. The 85 burner tip members 5 are formed of porcelain, magnesia, lava, or other suitable material of earthy character. The burner tip members 5 are connected to the burner body by coupling members 6 of brass or other 90 suitable copper alloy or material other than iron. These coupling members 6 are externally threaded and threaded into the burner passages 4. The burner tip members 5 are internally threaded to receive the reduced 95 portions 7 of the coupling members which are externally threaded as shown.

The coupling members of the structure shown in detail in Figs. II and III are provided with annular flanges 8 which engage 100 the body member as shown.

The burner tip member 5 is threaded upon the reduced portion with its upper end against the shoulder and under side of the flange of the coupling member. In the structure 105 shown, in Fig. II, the tip members 5 do not contact with the burner bodies at any point.

In the modification shown in Fig. II, the flange 8 is omitted and the coupling member 110 is threaded into the body with the shoulder 9 formed by the reduced portion there-

of substantially flush with the edge of the burners and the tip members are threaded against these shoulders with their upper ends abutting the edge of the body. The coupling members, are in this modification, entirely inclosed and protected from the direct action of the flame and gases of combustion. In the structure shown in Fig. II, this is substantially true as only the thin edge of the flange is exposed and this is in the structure illustrated some distance from the peripheral edge of the tip member so that it is not exposed to the direct action of the flame and gases of combustion.

It has been quite common practice to provide burner tips having integral threaded nipples threaded directly into the body 3 of the burner. As stated, it is found that, in use, the body 3 being subject to the intense heat and the gases is modified or changed thereby so that the burner tips and nipples are crushed or broken off permitting the burner tip members to drop, destroying the mantles and frequently the chimneys. To repair such lamps frequently necessitates new burner bodies as the bore of the passages are permanently changed and frequently parts of the tip members are embedded or clamped in the distorted threads of the body. It has been attempted to overcome this by making a very loose engagement between the threads of the members, but that is found insufficient owing to the change stated, in which the walls of the body are thickened and permanently changed or modified. By my improvements, this objection is overcome and the changes in the body do not affect the porcelain or other suitable tip member 5 and the same is not destroyed by such changes. The coupling member 8 is protected from the direct action of the heat and is not distorted or destroyed thereby.

My improved gas burner is very economical to produce and as stated, effectively overcomes the objections noted.

The burner tip members should occasion require, may be easily removed as it is found that, while the coupling members 6 do contract and expand somewhat with the heating, they return to substantially normal form when cooled.

The coupling members 6 are preferably formed of brass. Metals other than iron might be used for this purpose, there being several copper alloys which would meet the requirements. While I preferably use burner tip members commonly known as porcelain tips, the tips formed of various earthy materials might be used with quite satisfactory results.

I have illustrated and described my improvements in the form in which I have embodied the same in practice. I have not attempted to illustrate or describe various

modifications possible, for instance, in the form of the burner body, as the disclosure made will, I believe, enable those skilled in the art to embody my improvements as conditions may require.

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

1. In an inverted gas burner, the combination of a cast iron body member having an internally threaded burner passage, a brass coupling member threaded into said body member and provided with a projecting externally threaded reduced portion and an annular flange engaging the body member, the shoulder of the reduced portion being flush with the under side of the flange, and an internally threaded porcelain burner tip member threaded upon the said reduced portion of said coupling member with its upper end engaging the shoulder and flange thereof.

2. In an inverted burner, the combination of a cast iron body member having an internally threaded burner passage, a brass coupling member threaded into said body member and provided with a projecting externally threaded reduced portion, and an internally threaded porcelain burner tip member threaded upon the said reduced portion of said coupling member with its upper end engaging the shoulder thereof.

3. In an inverted burner, the combination of a cast iron body member having an internally threaded burner passage, an externally threaded coupling member of copper alloy threaded into said body member and projecting therefrom, and an internally threaded burner tip member of earthy material threaded upon the projecting portion of said coupling member.

4. In an inverted burner, the combination of an iron body member having an internally threaded burner passage, an externally threaded coupling member of metal other than iron threaded into said body member and projecting therefrom, and an internally threaded burner tip member of earthy material threaded upon the projecting portion of said coupling member.

5. In an inverted burner, the combination of a cast iron body member having an internally threaded burner passage, a brass coupling member threaded into said body member and provided with a projecting externally threaded reduced portion, the shoulder of the reduced portion being substantially flush with the edge of the body member, and an internally threaded porcelain burner tip member threaded upon said reduced portion of said coupling member with its upper end engaging the shoulder thereof and abutting said body member.

6. In an inverted burner, the combination of a cast iron body member having an in-

ternally threaded burner passage, an externally threaded coupling member of metal other than iron threaded into said body member, and an internally threaded burner
5 tip member of earthy material threaded upon said coupling member with its upper end abutting said body member.

In witness whereof, I have hereunto set my hand and seal in the presence of two witnesses.

FREDERICK J. HUMPHREY. [L. s.]

Witnesses:

M. C. EDBERGH,
M. CONYER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."