J. E. EASTMOND.

LAMP GLOBE SHIELD.

APPLICATION FILED FEB. 15, 1910.

976,447. Patented Nov. 22, 1910.

Fig. 1.

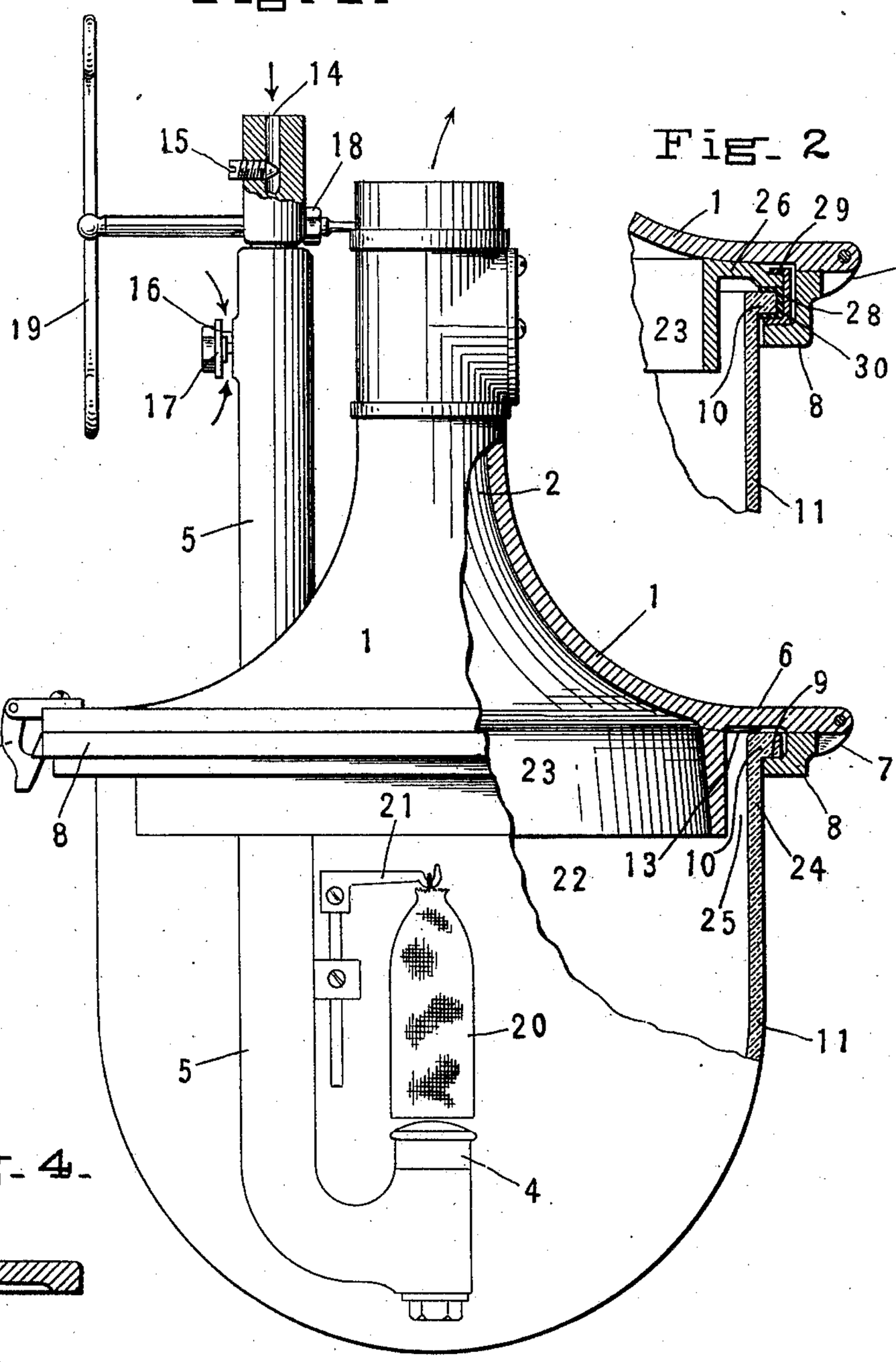


Fig. 2

Fig. 4.

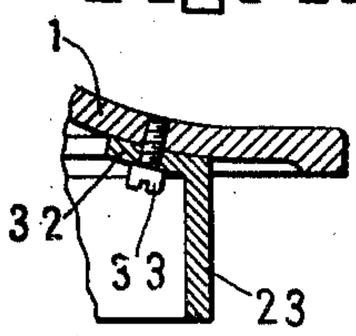
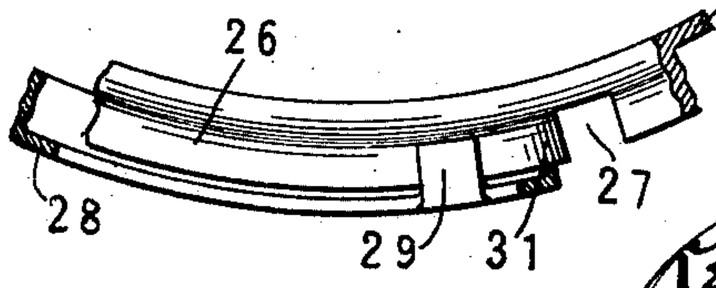


Fig. 3.



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LAMP-GLOBE SHIELD.

976,447. Specification of Letters Patent. **Patented Nov. 22, 1910.**

Application filed February 15, 1910. Serial No. 544,071.

To all whom it may concern:

Be it known that I, JOHN E. EASTMOND, a citizen of the United States, and a resident of the borough of Brooklyn, county of Kings, city and State of New York, have invented certain new and useful Improvements in Lamp-Globe Shields, set forth in the following specification.

This invention relates broadly to an improvement in lamps, the object of which is to protect the glass lamp globes from breaking, particularly in the neighborhood of their rims.

The specific lamp embodiment illustrated is that of an incandescent gas-mantle lamp having a canopy supporting a dependent transparent glass globe and together forming an inclosure for the gas-mantle and burner and in connection with which there is an exhaust duct connecting with the inclosure formed by the canopy and globe to effect a forced draft by atmospheric pressure to force air into the burner from the outside of the inclosure.

Particularly in lamps of this class, in which the globe rim is clamped to an outside seat provided by the canopy, there is a great tendency for the glass globes to crack in the vicinity of the rim. This may be caused by the unequal cooling effect of air leaking over the rim of the glass globe into the inclosure or by the localized heating of certain parts of the metallic globe seat by radiated heat from the source of light or by other cause.

In any event it is an object of the present invention to prevent the breakage of the rims of globes seated on and supported by a metallic canopy or other metallic member. For this purpose it has been found to be sufficient to provide a metallic flange spaced inwardly from the seat in which the globe rim is mounted and preferably to fix this flange to the metallic canopy or other supporting member. The flange should be such as to form an opaque shield of heat conducting material between the source of light and the rim of the glass globe and leave an air space between the same and the globe rim.

The invention will be clearly understood from the following specification, which should be read in connection with the accompanying drawings, which form part of this application and in which,—

Figure 1 is an elevation, with parts in vertical section, showing the invention; Fig. 2 is a fragmentary detail vertical elevation showing a modification; Fig. 3 is a top plan view showing part of the construction in Fig. 2; and Fig. 4 is a fragmentary vertical elevation showing a further modification.

Referring now more in detail to the drawings,—1 indicates the metallic canopy for the lamp which is shown in the form of an inverted trumpet-like shell providing at its upper portion the exhaust duct 2 which is commonly connected to an exhaust means such as an exhaust fan. The Bunsen burner 4 is centrally supported below the canopy 1 and depends therefrom by means of the mixing tube 5, which pierces the canopy 1 and forms an air tight closure therewith.

The flattened outer rim 6 of the canopy 1 has secured to it by means of the hinge 7 a supporting ring 8 providing a seat 9 for the flange 10, formed at the rim of the depending glass globe 11. The catch 12 serves to clamp and hold the ring 8 in position and permits its swinging open on the hinge 7, when released. Springs such as that indicated by 13 serve to press the globe flange 10 firmly against its seat 9 for the purpose of making a tight closure therewith. The supporting ring 8 forms a part of the canopy construction and makes a substantially air tight closure therewith when clamped in position by the catch 12.

The gas inlet duct for the burner 4 is indicated by 14 and is under the control of the valve screw 15. The air inlet for the mixing duct 5 is indicated by 16 and the size of this opening may be regulated by the adjustable cap 17. A cut off valve 18 for the supply of gas is indicated and it is controlled by the pull lever 19.

The Bunsen burner 4 is shown provided with the usual mantle 20 supported by the frame 21 secured to the mixing tube 5.

In this type of lamp, the exhaust duct 2 tends to maintain a pressure within the lamp inclosure 22 considerably less than atmospheric pressure so that there is a tendency for outside cool air to leak in about the rim of the globe 11 in addition to being drawn in through the proper inlet opening 16. Experience has taught that glass globes such as 11 most frequently crack in the neighborhood of the rim a short distance below the locality of the ring 8. The exact cause for this cracking is somewhat problematical. It may be unequal cooling from leaking air and it may be un-

equal cooling on the interior surface of the globe from interior currents, and it may be unequal heating from radiation from the mantle 20 or burner 4 or it may be all these. In any event it has been found that the provision of the depending flange 23 formed of opaque heat conducting material such as any suitable metal and spaced inwardly from the rim 24 of globe 11 and in contact with the canopy 1 is sufficient to prevent the breakage of globes. This flange 23 is shown in Fig. 1 cast integrally with the canopy 1 and it is arranged concentric with the rim 24 of the globe 11 so that an air space 25 of uniform thickness is provided between it and the rim 24.

The flange 23 shields the globe rim 24 and the outer parts of the canopy 1 from the direct heat and light rays of the source of light and by reason of its heat conducting qualities has a uniform temperature throughout and provides a substantially uniform temperature for these shielded parts. In fact their temperature is lowered on account of the heat absorbed in the flange 23 being conducted to the central part of this canopy 1 and then radiated therefrom into atmosphere.

In Fig. 2 a modification of the arrangement of the flange 23 is shown. In this figure the flange 23 is provided at its top with an outwardly extending rim or ledge 26 provided at suitable intervals with a slot 27. A companion ring shaped member 28 is provided having an angular cross section and, at suitable intervals, with a lug 29 of a size to pass through the slot 27. A packing gasket 30 of suitable material, such as asbestos, is provided for the flange 10 of the globe 11 and this flange with its gasket is clamped in position by sliding the parts 26 and 28 relatively to each other so as to cause each lug 29 to ride up the inclined face 31 provided on the ledge 26. In this manner the depending flange or shield 23 is secured directly to the rim of the globe 11 and it, together with the globe, may be clamped in position by means of the usual hinged ring 8. The arrangement of parts is such that the ledge 26 fits snugly against the underside of the canopy 1, so as readily to give up its heat thereto. It is also to be understood that the flange or shield 23 may be formed separate from the canopy 1 and yet be fixed thereto as by means, such as the lug 32 and screw 33.

It is well understood that the provision of a flange or shield 23 may be advantageous in other lamp constructions than that specifically illustrated and described. Furthermore many advantages are to be had by the use of a shield like 23 constructed of heat non-conducting material such as asbestos board.

What is claimed and what is desired to be secured by Letters Patent of the United States is:—

1. In combination in a lamp structure, a metallic globe-supporting canopy having a solid rim and a continuous outer seat for the globe rim; a central pendent source of light; and a depending metallic flange spaced slightly inwardly from said seat, attached to said solid rim, forming a dead air pocket, and to prevent the unequal heating of various parts of the globe rim and the breakage of the globe.

2. In combination in a lamp structure, a metallic globe-supporting canopy having a solid rim and a continuous outer seat for the globe rim; a central pendent source of light; and a depending metallic flange fixed to said solid rim and spaced slightly inwardly from said seat to prevent the unequal heating of various parts of the globe rim and the breakage of the globe by conducting away radiated heat and forming a dead air pocket about the globe rim.

3. The combination in a lamp structure, a metallic globe-supporting canopy having a solid rim and a continuous outer seat for the globe rim; a central pendent source of light; and a depending metallic flange integral with said solid rim and spaced slightly inwardly from said seat to form a dead air pocket about the inner surface of the globe rim and to prevent the unequal heating of the various parts of the globe rim and the breakage of the globe.

4. In combination in an incandescent gas lamp structure in which the burner is inclosed and the inclosure exhausted to produce the draft from atmospheric pressure, a metallic globe-supporting canopy having a solid rim and an outer seat and means for clamping the globe rim to said seat; a pendent centrally located gas burner; a depending opaque flange of heat conducting material fixed to said solid rim and spaced slightly inwardly from said seat to shield the globe rim from heat radiated from said burner to form a dead air pocket about the inner surface of the globe rim and to protect said globe rim from air currents.

In witness whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

JOHN E. EASTMOND.

Witnesses:

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LEONARD DAY.