L. E. GRISWOLD.

LIGHTING FIXTURE.

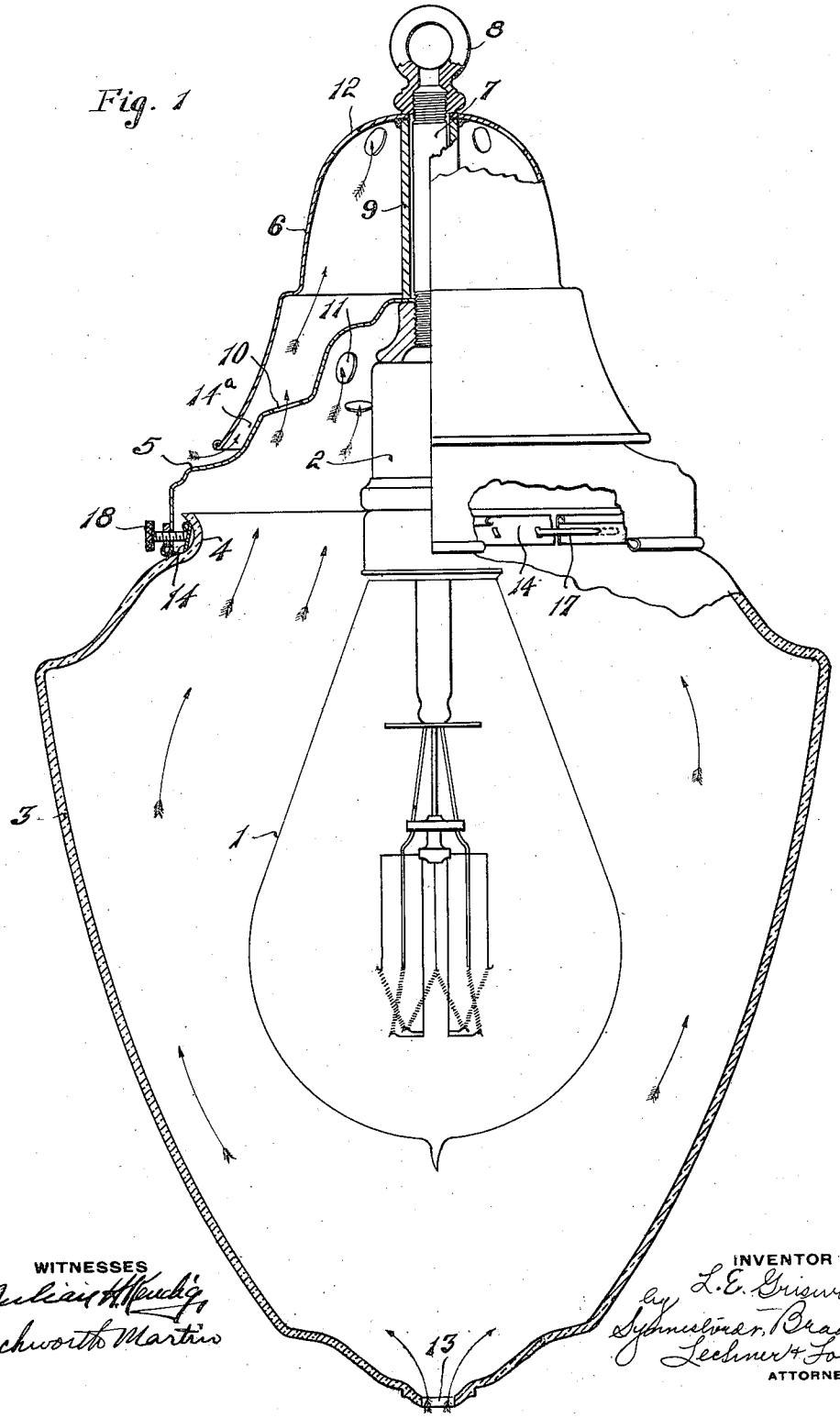
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1,224,162.

Patented May 1, 1917

2 SHEETS—SHEET 1.

Fig. 1



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 2

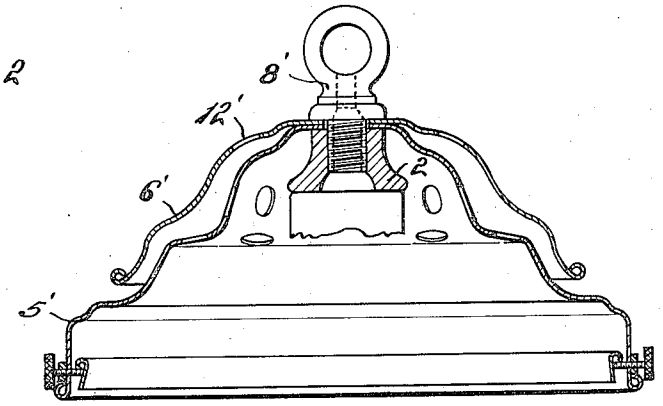


Fig. 3

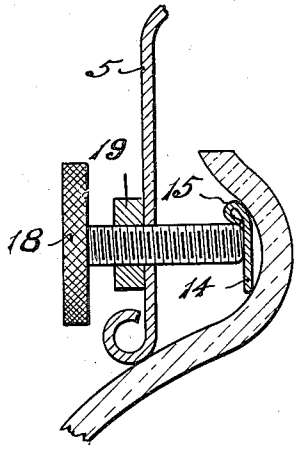
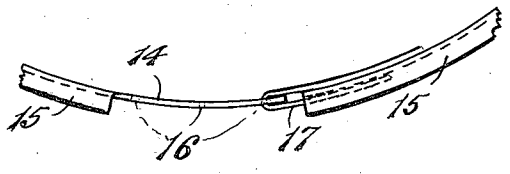


Fig. 4



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UNITED STATES PATENT OFFICE.

LESTER E. GRISWOLD, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR TO MACBETH-EVANS GLASS COMPANY, OF PITTSBURGH, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

LIGHTING-FIXTURE.

1,224,162. Specification of Letters Patent. Patented May 1, 1917.

Application filed December 12, 1914. Serial No. 876,759.

To all whom it may concern:

Be it known that I, LESTER E. GRISWOLD, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Lighting-Fixtures, of which the following is a specification.

The invention relates to lighting fixtures and particularly to those designed for use in lamps involving high temperatures such as the new nitrogen tungsten lamps. The invention has for its primary objects the provision of a means for securing a proper circulation of air through the shade employed thus preventing excessive temperatures tending to injure the lamps; the provision of an improved dust cap construction; and the provision of improved means for securing the attachment between the glass shade and its metal holder, constructed so as to avoid danger of breakage due to the expansion of the glass against the holding screws and so as to prevent the accidental unscrewing of such screws. Certain embodiments of the invention are illustrated in the accompanying drawings wherein—

Figure 1 is a partial side elevation and partial section taken through the fixture, Fig. 2 is a section taken through the holder and dust cap of a modified form of construction, Fig. 3 is an enlarged detailed section through the means for securing the holder and shade together at their juncture, and Fig. 4 is a partial plan view of the holding collar or band, and showing the means for securing the two ends of the band together.

Referring to the general arrangement of parts as shown in Fig. 1; 1 is the source of illumination, in the present case a nitrogen-tungsten lamp supported in the usual socket 2; 3 is the glass shade provided at its upper edge with the neck portion 4; 5 is the shade holder secured to the upper edge of the shade in the manner to be hereinafter described; and 6 is a dust cap.

The socket 2 is supported by the usual tubular member 7, such tubular member being screw-threaded into the socket 2 at one end and into the supporting ring 8 at its other end. The dust cap 6 is held spaced in its proper position by means of the spacing sleeve 9 which is clamped between the holder and the dust cap, the screwing down of the ring 8 serving to hold these parts securely in position.

The holder 5 is provided with two series of perforations 10 and 11, and the dust cap is provided at its upper end with the series of perforations 12. It will be seen that the perforations 12 are so located that none of the light which escapes through the perforations 10 and 11 will reach these perforations 12. As a result no light spots on the ceiling above the fixture will show. The provision of the perforations 12 serve to permit of a proper circulation of air through the fixture so that injuriously high temperatures are avoided. The provision of the perforations 10 and 11 in conjunction with the perforations 12 and a perforation 13 at the extreme lower end of the shade 3 permits of a vigorous upward circulation of air through the shade, holder and dust cap such as could not be secured if the perforations 12 were not employed and if the air instead of passing out through such perforations had to flow downwardly and pass out through the space 14^a intermediate the lower edge of the dust cap and the holder 5. This circulation of air is most important in cases where nitrogen lamps working at high temperatures are employed, as in such cases and with closed shades or globes, the temperature rises to a point at which a rapid deterioration of the lamp is caused. Another advantage incident to the free upward circulation lies in the fact that the opening 13 at the lower end of the shade 3 may be made much smaller than if a dust cap without perforations were employed, so that the area of direct light from the lamp is reduced in size and the appearance of the fixture improved.

Another feature of invention in my apparatus consists in the use of a band or collar 14 shown in enlarged detail in Figs. 3 and 4. This band is made of sheet metal and is curved at its upper edge with a bead 15. As indicated in Fig. 4, the bead 15 is cut off at one end of the band, and this portion of the band from which the bead is removed is provided with a plurality of perforations 16. The other end of the band has secured to it by brazing or any other suitable means a thin flexible strip of metal 17 which is passed through one of the perforations 16 and bent back upon itself as indicated in Fig. 4. The two ends of the band are thus adjustably se-

cured together so that the same band can be used with globes or shades of differing diameters. The band is engaged by a plurality of thumb screws 18 which are threaded through bosses 19 secured adjacent the lower edge of the holder 5. There are a number of advantages incident to the use of the collar or band 14 instead of having the screws directly engage the glass. One advantage lies in the fact that there is less breakage since the spring of the material of the band permits it to give slightly when the glass expands under the influence of the heat. This yielding or springing of the band is permitted by reason of the fact that it engages the glass at its upper and lower edges only, the portion intermediate these edges being free of the glass. The pressure on the glass is also more evenly distributed thus tending to resist the breakage. Another advantage lies in the fact that the screws 18 do not accidentally and gradually become unscrewed as in the case where screws are used in direct engagement with the glass. In this latter construction and incident to the turning of the glass past the screws in washing, the screws gradually become retracted, and the shades sometimes eventually become detached from their holders and fall. I have found that the use of the band 14 prevents this unscrewing action, as the band acts somewhat as a spring nutlock upon the screw and when the globe or shade is turned with respect to its holder, the glass turns in the collar 14 and there is no movement between the band and the screw tending to retract the screw. The bead 15 serves to position the screws and prevent their slipping upward upon the band or collar.

Fig. 2 illustrates a modification wherein the holder 5′ is similar to that of Fig. 1, but wherein the dust cap 6′ is different due to the fact that the tubular supporting member 7 of Fig. 1 is dispensed with. In this construction the supporting ring 8′ is screwed directly into the socket 2, and the upper edges of the holder and dust cap are clamped between the parts 2 and 8′. The dust cap is provided with perforations 12′ corresponding with those in the dust cap of Fig. 1, and this construction is employed where for any reason it is desired to get the cap as close to the holder as possible. In other respects the construction corresponds throughout with that of Fig. 1.

What I claim is:

1. The combination with a glass shade having a curved neck and a metal holder for such shade, of a spring metal collar in the form of a band with its ends adjacent, lying in said neck so that its upper and lower edges only touch the neck, and screws extending through the holder and engaging the band.

2. The combination with a glass shade having a curved neck and a metal holder for such shade, of a spring metal collar in the form of a band with its ends adjacent, lying in said neck so that its upper and lower edges only touch the neck, a bead on the collar, and screws extending through the holder and engaging the band.

3. The combination with a glass shade having a neck and a metal holder for the shade, of a spring metal collar lying in the neck and engaging the neck at the upper and lower edges of the collar but out of contact with the neck between such edges, and holding screws extending through the holder and engaging the band intermediate its edges.

4. The combination with a glass shade having a neck and a metal holder for the shade, of a collar comprising a metal band of sheet metal bent into annular form with a part of the band intermediate the upper and lower edges thereof out of contact with the glass neck, and screws extending through the holder and engaging the part of the band which is out of contact with the glass.

In testimony whereof I have hereunto signed my name in the presence of the two subscribed witnesses.

L. E. GRISWOLD.

Witnesses:
ARCHWORTH MARTIN,
M. L. JONES.