

UNITED STATES PATENT OFFICE.

JAMES K. BURLEIGH, OF KALAMAZOO, MICHIGAN, ASSIGNOR TO AMERICAN SIGN COMPANY, OF KALAMAZOO, MICHIGAN.

SIGN.

1,086,021.

Specification of Letters Patent.

Patented Feb. 3, 1914.

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To all whom it may concern:

Be it known that I, JAMES K. BURLEIGH, a citizen of the United States, residing at the city of Kalamazoo, county of Kalamazoo, and State of Michigan, have invented certain new and useful Improvements in Signs, of which the following is a specification.

This invention relates to improvements in signs.

The main objects of this invention are, first, to provide in a sign in which the sign indicia or characters are formed of lenses, an improved means for securing the lenses. Second, to provide in a sign in which the sign indicia or characters are formed of lenses, an improved structure in which the lenses may be adjusted in their proper position in the sign characters or indicia to effectively transmit the light from the lamps.

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

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.

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 front detail view of a sign embodying the features of my invention, a single letter or character only being shown, the parts being shown mainly in conventional form. Fig. II is a detail inside view of the face plate 1, showing one of the lenses in position therein. Fig. III is a detail section taken on a line corresponding to line 3-3 of Fig. I, through one of the lenses and the face plate, a lamp being shown associated therewith to illustrate the relation of the lamps to the lenses. Fig. IV is a detail section taken on a line corresponding to line 4-4 of Fig. III.

In the drawing, similar reference characters refer to similar parts throughout the several views, and the sectional views are taken looking in the direction of the little arrows at the ends of the section lines.

Referring to the drawing, 1 is the sheet metal face plate of a sign. The face plate is, in practice, the wall of a casing in which

the illuminating lamps, preferably electric, are placed.

As the general structure of the sign casing forms no part of my present invention, I do not illustrate or describe such a structure herein. The patent to Smith, No. 962,724, shows a casing structure of the type I employ.

The lenses 2 are arranged in the face plate in groups to form the sign indicia or characters or produce any other suitable design or outline. These lenses are preferably convex and provided with shanks 3, the heads being circular and the shanks oval. The face plates are provided with substantially circular holes 4. The diameter of the heads of the lenses is greater than that of the openings 4 in the face plate. The greatest diameter of the shank of the lens is preferably that of the head. Between the head and the shank at the ends of the oval are grooves 5 and 6. The diameter of the shank between the grooves or transversely of its greatest diameter, is less than that of the opening in the face plate, although preferably approximately the same so as to fit quite snugly therein. The distance between the grooves, that is, the distance between the bottoms of the grooves 5 and 6, is less than the diameter of the opening in the face plate. The groove 6 is deeper than the groove 5 so that the shank may be slipped through the opening and the groove 6 engage with the edge of the opening and the lens slipped laterally until the opposite side of the shank can be passed through the opening when the lens is slipped back to engage the opposite groove with the opening.

A spring 7 is arranged in the groove 6 to bear on the bottom of the groove and against the edge of the opening. This spring holds the lens properly centered in the opening and prevents its rattling or dropping out and also holds it in its adjusted position,—that is, the lens may be rotated in the opening and is held by the friction of the spring in its adjusted position. The groove 6 is provided with shoulders 8 at each end for retaining the spring on its seat when the lens is turned in the opening. The inner end of the lens shank has a refracting surface which is inclined to the axial center of the lens. By the adjustment of this lens, this refracting surface 9 may be brought into

proper relation to the sign lamps shown conventionally, as 11. I have not in this figure, attempted to maintain the relative proportions of the lamp and the lens or their relative positions in the sign, or to illustrate accurately the angles of the reflection, and, in practice, I find it not necessary to be exact as satisfactory results can be secured without such exactness which is one of the great advantages of the structure.

By providing the lenses with the refracting surface, on their shanks, and supporting them so that they can be rotatably adjusted to any desired position in the sign face plate, they may be adjusted so that practically all of the lenses receive and transmit substantially the same amount of light, thus avoiding the necessity of great care in placing the lamps, and the use of shields or reflectors to prevent "spot" lights.

I have illustrated and described my improvements in a simple and practical embodiment thereof. While considerable variation in structural details is possible without departing from my invention, I have not attempted to illustrate or describe such variations as the disclosure made will enable those skilled in the art to which this invention relates to adapt the same as circumstances or taste may dictate.

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

1. A sign comprising a face plate of sheet metal containing a substantially circular opening; a lens having a circular head, and an oval shank, there being plate engaging grooves between the head and shank, the grooves being at the ends of the oval, the diameter of the head exceeding that of the face plate, the greatest diameter of the shank being substantially that of the head, the diameter of the shank between said grooves being less than that of the face plate opening, one of the grooves having spring retaining shoulders at its ends; and a spring arranged in such groove with its ends engaging the edge of the opening.

2. A sign comprising a face plate of sheet metal containing a substantially circular opening; a lens having a head and a shank, there being plate engaging grooves between the head and shank, the diameter of the head exceeding that of the face plate opening, the diameter of the shank between the grooves being less than that of the face plate opening; and a spring arranged in one of said grooves to engage the edge of the face plate opening whereby the said lens is retained in its adjusted positions in said lens opening.

3. A sign comprising a face plate of sheet metal containing a substantially circular

opening; a lens having a head and a shank, there being plate engaging grooves between the head and shank, the diameter of the head exceeding that of the face plate opening, the diameter of the shank between the grooves being less than that of the face plate opening, the shank having a refracting face disposed at an angle to its axis; and a spring arranged in one of said grooves to engage the edge of the face plate opening whereby the said lens is retained in its adjusted positions in said lens opening.

4. A sign comprising a face plate of sheet metal containing a substantially circular opening; a lens having a head and a shank and provided with opposed plate engaging grooves between the head and the shank, the diameter of the shank between the grooves being less than that of the opening to permit the introduction of the shank through the opening and the engagement of the grooves; and a spring arranged in one of said grooves to engage the edge of the opening whereby the lens is adjustably retained in said face plate, the end face of the lens being inclined.

5. A sign comprising a face plate of sheet metal containing a substantially circular opening; a lens having a head and a shank, the diameter of the head exceeding that of the face plate opening, one diameter of the shank being greater than that of the face plate opening, the diameter transversely thereto being less than that of the face plate opening, there being plate engaging grooves between the head and the shank; and a spring arranged in one of said grooves to engage the edge of the opening, the shank being provided with an inclined end face.

6. A sign comprising a face plate of sheet metal containing a substantially circular opening, and a lens having a head and a shank, there being plate engaging grooves between the head and the shank, the diameter of the head exceeding that of the face plate opening, the diameter between the grooves being less than that of the opening.

7. A sign comprising a face plate of sheet metal containing a substantially circular opening and a lens having a head and a shank, there being grooves between the head and shank, the diameter of the head exceeding the face plate opening, the diameter of the shank between the grooves being less than that of the face plate opening, the shank having a refracting face disposed at an angle to its axis.

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

JAMES K. BURLEIGH. [L. s.]

Witnesses:

M. PHINA WOODRUFF,
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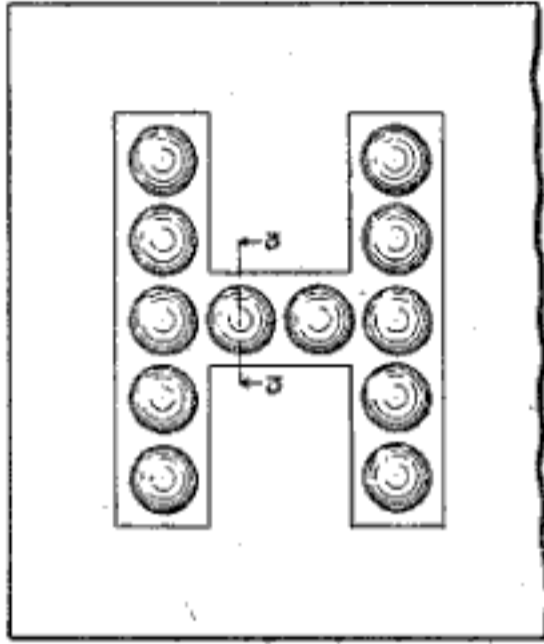


Fig. I.

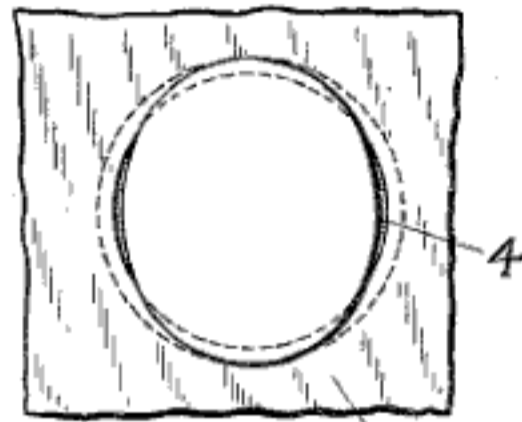


Fig. II.

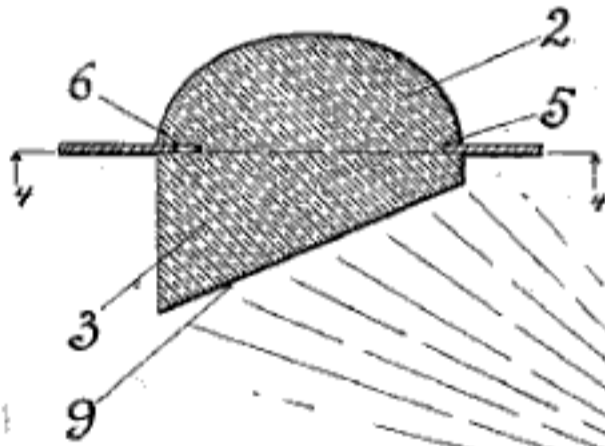


Fig. III.

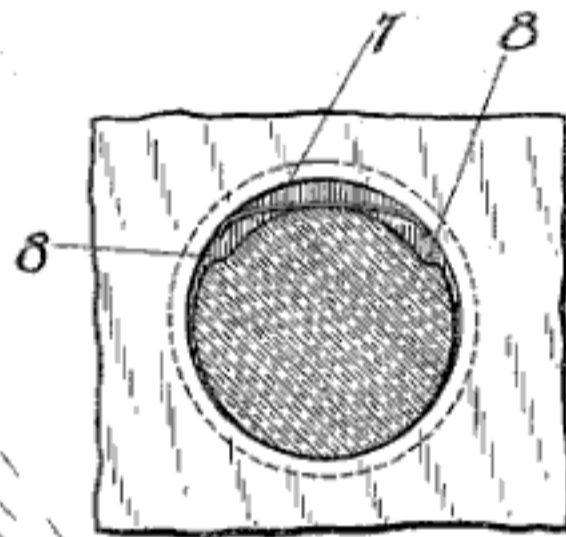
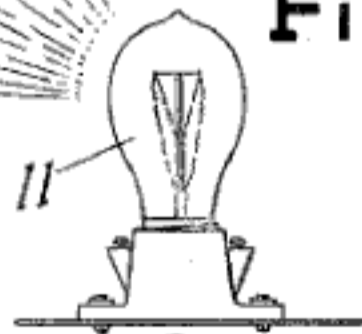


Fig. IV.



Inventor

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