Oct. 13, 1964 C. SARANGA 3,153,168

SEALED BEAM HEADLIGHT

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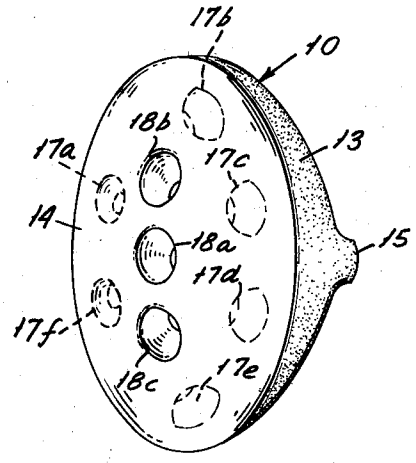


FIG. 1.

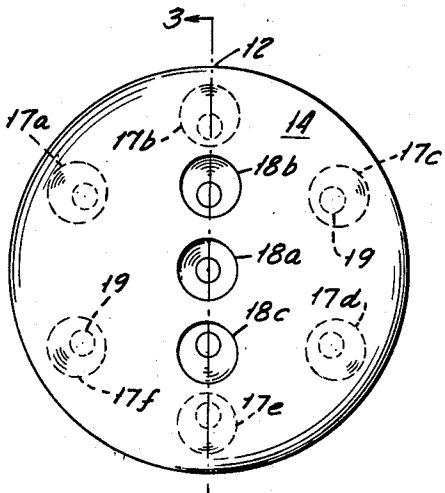


FIG. 2.

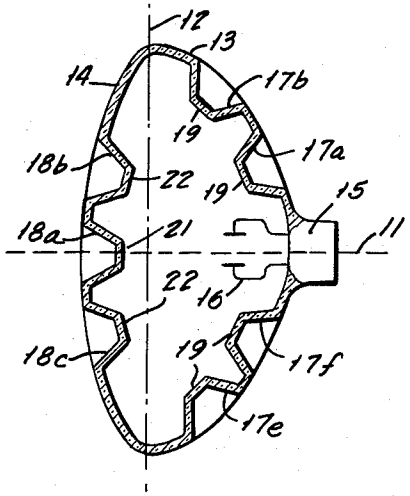


FIG. 3.

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SEALED BEAM HEADLIGHT

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This invention relates to a sealed beam headlight, and more particularly to such a headlight suitable for producing diffuse illumination.

It is among the objects of the invention to provide a sealed beam headlight which produces a diffuse light beam useful for resolving images over relatively long distances, and yet which minimizes, if not eliminates, concomitant glare.

A further object of the invention is to provide such a headlight which can be simply and economically manufactured by known mass production techniques.

Other objects and advantages of the invention will be apparent from the following detailed description thereof.

In accordance with this invention, a non-glare headlight is provided which comprises a concave support and a convex face plate hermetically secured to said support, and involves a lighting filament mounted centrally of the support, a first group of frustoconically shaped reflectors formed in the support disposed annularly of the filament and a second group of frustoconically shaped reflectors formed in the face plate spaced linearly thereof. The second group of reflectors includes a centrally disposed collector aligned with the filament, and a pair of receivers positioned on opposite sides of the collector and having internal faces so located that perpendicular bisectors thereof define a projected area encompassing the filament. Unexpectedly, when the identified groups of frustoconically shaped reflectors are arranged relative to the lighting filament in the aforesaid manner, a non-glare headlight is provided which produces a long distance or so-called "country" beam for automotive headlamps, which beam is nevertheless sufficiently dispersed that it need not be reduced, as by conventional manual switching means or automatic dimmers, to reduce glare for other vehicles.

The full nature of the invention will be best understood from the following description of a preferred embodiment thereof, illustrated in the accompanying drawing in which:

FIGURE 1 is a perspective view of a headlight embodying the invention;

FIGURE 2 is a front elevation of the headlight of FIGURE 1; and

FIGURE 3 is a longitudinal section through the headlight, viewed in the direction of line 3—3' in FIGURE 2.

Referring to the drawing, a headlight is shown comprising a sealed envelope **10** defined, with respect to a pair of imaginary axes **11** and **12**, by a concave support **13** and a convex face plate **14** secured thereto. Mounted centrally of and within the support **13** extending longitudinally of the horizontal axis **11** in a socket **15** is a light filament **16**. It will be understood that any of the conventional headlamp filaments, connected to a battery or other power source by well known means, may be utilized in the practice of the present invention.

A first group of frustoconically shaped reflectors **17** are formed in the support **13**, disposed annularly of the filament **16**. As illustrated in the drawing, it is preferred to provide six such reflectors spaced symmetrically of the filament, reflectors **17***a*, **17***b* and **17***c* being disposed above the horizontal axis **11** with which the filament is aligned and reflectors **17***d*, **17***e* and **17***f* being disposed below such axis. Similarly, reflectors **17***a* and **17***f* are disposed to the left of axis **12**, viewing FIGURE 2, reflectors **17***b* and **17***e* are aligned with the axis and reflectors **17***c* and **17***d* are disposed to the right of the axis.

A second group of frustoconically shaped reflectors **18** are formed in the face plate **14**, disposed in straight line relation aligned with the vertical axis **12**. The second group of reflectors consists of a centrally disposed collector **18***a* aligned with the filament **16** coaxially of the horizontal axis **11**, and a pair of receivers **18***b* and **18***c* positioned on opposite sides of the collector **18***a*.

The two groups of frustoconically shaped reflectors **17** and **18** are inwardly tapering truncated projections formed in the support **13** and face plate **14**, respectively. The reflectors **17***a* to **17***f* are asymmetrical, the minor bases or internal reflective faces **19** thereof facing the reflective face **21** of the collector **18***a* in such a manner that a perpendicular line concentrically through each such reflective face **19** would intersect one of the reflective surfaces of the collector **18***a*. In this manner light reflected from the collector is reflected in turn to the first group of reflectors **17** and transmitted diffusely therefrom through the face plate **14**.

Similarly, the receivers **18***b* and **18***c* are formed asymmetrically, the minor bases or internal reflective faces **22** thereof facing the filament **16** such that perpendicular lines directed concentrically through such faces determine a projected area substantially coextensive with and including such filament. In this manner, light transmitted from the filament to the internal reflective faces **22** of the receivers is reflected back to the support and transmitted outwardly therefrom through the face plate **14**.

There is thus produced a diffused beam of light transmitted through the face plate which facilitates image resolution over relatively great distances without producing concomitant glare. It will, of course, be understood that the above proposed mechanism of operation of the non-glare headlight is intended as illustrative and is not limiting of the invention.

The projections **17***a* to **17***f* and **18***a* to **18***c* described above may be silvered or otherwise treated by conventional means to impart reflective properties thereto. Since these and other changes may be made in the specific embodiment of the non-glare headlight described without departing from the scope of the invention, it is intended that all matter contained in the above description shall be interpreted as illustrative and not in a limiting sense.

What is claimed is:

1. A non-glare sealed beam headlight comprising a concave support and a convex face plate hermetically secured to said support; a light filament mounted centrally of said support; a first group of frustoconically shaped reflectors formed in said support disposed annularly of said filament; and a second group of frustoconically shaped reflectors formed in said face plate linearly thereof, said second group of reflectors comprising a centrally disposed collector aligned with said filament, and a pair of receivers disposed on opposite sides of said collector and having internal faces so disposed that perpendicular lines directed concentrically through said faces define a projected area encompassing said filament.

2. A non-glare sealed beam headlight comprising a concave support and a convex face plate hermetically secured to said support; a lighting filament mounted centrally of and within said support extending axially thereof, a first group of six frustoconically shaped reflectors formed in said support, disposed symmetrically of said filament and tapering inwardly of said support; and a second group of frustoconically shaped reflectors formed in said face plate, disposed in straight line relation and tapering inwardly of said face plate, said second group of reflectors including a centrally disposed collector having

an internal reflective face positioned coaxially of said filament in alignment therewith and a pair of receivers disposed on opposite sides of said collector having internal reflective faces which are so disposed that perpendicular lines directed concentrically of said faces determine a closed projected area including said filament.

3. A non-glare sealed beam headlight comprising a concave support and a convex face plate hermetically secured to said support; a lighting filament mounted centrally of and within said support; a first group of six frustoconically shaped reflectors formed in said support, said first group of reflectors disposed symmetrically of said filament and each of said reflectors tapering asymmetrically inwardly of said support such that the minor base of each said reflector defines a reflective face disposed such that a perpendicular line directed concentrically thereof intersects the minor base of the hereinafter set forth collector; and a second group of frustoconically shaped reflectors formed in said face plate, said second

group of reflectors disposed in straight line relation and including a centrally disposed collector positioned symmetrically of and having a reflective face coaxial with said filament, and a pair of receivers disposed on opposite sides of said collector and asymmetrically tapering inwardly towards said filament such that their minor bases define reflective faces disposed such that perpendicular lines directed concentrically thereof determine a projected area substantially coextensive with the area of, and including, said filament, whereby light transmitted from said filament to the reflective faces of said receivers is reflected back to said support and transmitted outwardly therefrom through said face plate, and light transmitted from said filament to the reflective faces of said collector is reflected back to said support and transmitted outwardly therefrom through said face plate, thereby producing a diffused non-glare beam of light.

No references cited.