Oct. 26, 1948. J. B. DICKSON 2,452,294

INSTRUMENT LIGHTING

Filed July 16, 1945

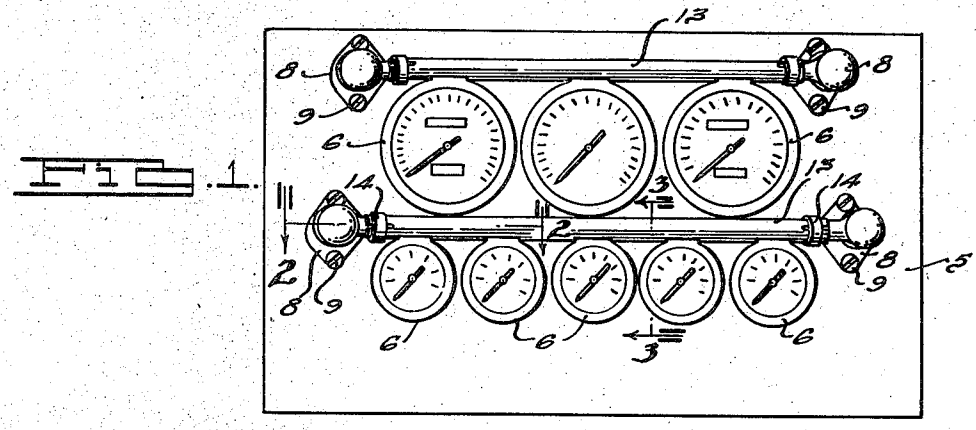

Fig. 1.

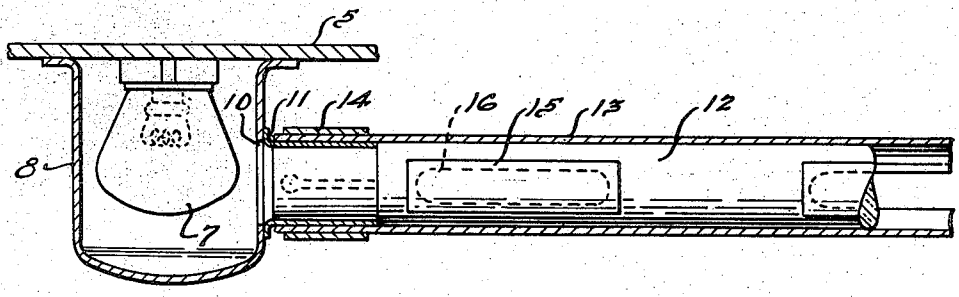

Fig. 2.

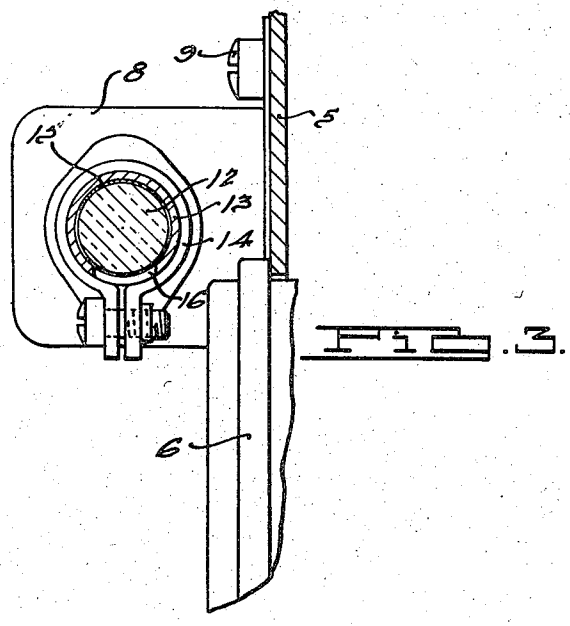

Fig. 3.

INVENTOR.
John B. Dickson.
BY Harness & Harris
ATTORNEYS.

Patented Oct. 26, 1948

2,452,294

UNITED STATES PATENT OFFICE

2,452,294

INSTRUMENT LIGHTING

John B. Dickson, Highland Park, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware

Application July 16, 1945, Serial No. 605,202

2 Claims. (Cl. 240—8.16)

1

This invention relates to improvements in instrument lighting.

An object of the invention is the provision of a simple and efficient system for lighting an instrument or a panel mounting a plurality of indicating dials to be illuminated, and to provide a system which is substantially free from glare and reflected shadows.

Another object of the invention is the provision of a lighting system in which light rays are conducted from a suitable source and diffused from the conductor at one or more selected locations for the purpose of illumination.

A further object of the invention is the provision of a lighting system having the foregoing characteristics and including components which are securely mounted in operative position with respect to the objects to be illuminated and are afforded substantial protection against damage from external sources.

Other objects and advantages of the invention will be more apparent from the following description taken in connection with the accompanying drawings in which:

Fig. 1 is a side elevational view of a panel mounting a plurality of dial faces illuminated by the improved system.

Fig. 2 is an enlarged, fragmentary horizontal section taken as indicated by the line 2—2 of Fig. 1.

Fig. 3 is an enlarged, fragmentary vertical section taken as indicated by the line 3—3 of Fig. 1.

Referring to the drawings, the invention is illustrated and described in conjunction with a panel 5 mounting a plurality of indicating dials 6 each having a face to be illuminated. Such panel and dials may be those commonly found in motor vehicles and for compactness the dials are arranged in two rows, each of which is provided with the improved system of illumination. The typical system for the lower row includes a pair of spaced electrical lamps, one of which is shown at 7 inserted in a socket which is mounted on the panel 5 and suitably connected with a source of energy such as a storage battery, not shown. Each lamp 7 is protected and enclosed by a housing 8 detachably secured to the panel 5 by fasteners 9. Each housing 8 has an opening 10 registering with a short sleeve 11 secured to the housing.

A transparent rod 12 extends between the housing 8 and is positioned immediately above the row of dials 6, opposite end portions being respectively supported in the sleeves 11. A tubular casing 13 encloses the rod 12 and has end

2

portions thereof respectively telescoping the sleeves 11 and detachably fixed thereto by a clamp 14. The rod 12 may be formed of clear plastic or glass and has each end face thereof disposed to receive light rays from the adjacent source lamp 7. The rod 12 has the external surface thereof so polished that light rays received at each end face are conducted lengthwise of the rod by internal reflection thereof.

The faces of the dials are illuminated by causing light rays to be emitted from the rod at locations intermediate the ends thereof and respectively registering with such faces. For this purpose there is provided an optical interruption at a portion of the rod surface at the above locations and as illustrated this interruption is accomplished by a coating 15 preferably, though not necessarily, of paint in optical contact with the rod surface. The surface portion so coated constitutes a light diffusing surface by which light is reflected externally of the rod. Diametrically opposite each such coated portion, the tubular casing 13 is provided with an elongated opening 16 for the passage of externally reflected light therethrough onto the registering dial face 6.

While the optical interruption may be accomplished by notching or etching the rod surface, I nevertheless prefer a coating in optical contact with the surface as the same may be economically applied and does not permit the escape of light rays as results from notching or etching. The coating so applied may be the same color at all locations or of different colors at selected locations to correspondingly change the color of light emitted at the selected locations. The area of the coated surface portions may be relatively varied to thereby increase or decrease the intensity of the lighting of the different dials.

The light conducting rod 12 may have a cross section other than round as shown and the casing 13 therefor may be correspondingly varied. This casing is light impervious and prevents the escape of stray light rays and serves as a shield for the diffusing surface when the latter acts as a light source, secondary to the primary source 7.

Although but one specific embodiment of the invention has herein been shown and described, it will be understood that various changes in the size, shape and arrangement of parts may be made without departing from the spirit of the invention.

I claim:

1. In a panel including a plurality of dial faces to be illuminated, a source of light mounted on said panel, a housing for said source having an

opening, a sleeve carried by said housing in registration with said opening, a transparent rod arranged lengthwise in juxtaposed relation to said dial faces and having one end thereof disposed at said casing opening to receive light rays from said source and supported in said sleeve, said rod having an external surface for optically transmitting light rays from said one rod end toward the other end by internal reflection thereof, a coating of paint in optical contact with selected portions of said rod surface respectively registering with said dial faces operable to effect reflection of light rays externally of said rod at locations thereof opposite said painted surface portions, and a light impervious casing for said rod having an end portion telescoping said sleeve for support thereby and having openings therein at said locations for the passage of externally reflected light rays, and otherwise constituting a shield for said rod throughout the length thereof including said coated surfaces.

2. In a panel including a plurality of dial faces to be illuminated, a source of light, a transparent rod arranged lengthwise in juxtaposed relation to said dial faces and having one end thereof disposed to receive light rays from said source, said rod having an external surface operable to transmit rays lengthwise of said rod by internally reflecting the same, axially spaced optical interruptions on said external surface respectively registering with said dial faces and operable to effect reflection of light rays externally of said rod at locations thereof opposite said optical interruptions, and a light impervious casing for said rod having openings therein at said locations for the passage of externally reflected light rays, and otherwise constituting a shield for said rod throughout the length thereof including said optical interruptions.

JOHN B. DICKSON.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,188,821	Rylsky	Jan. 30, 1940
2,207,117	Collins	July 9, 1940
2,214,595	Rights	Sept. 10, 1940

FOREIGN PATENTS

Number	Country	Date
236,863	Great Britain	July 16, 1925