E. M. THOMPSON.

INSTRUMENT DIAL ILLUMINATOR.

APPLICATION FILED JULY 9, 1914.

1,118,969.

Patented Dec. 1, 1914.

Fig. 1.

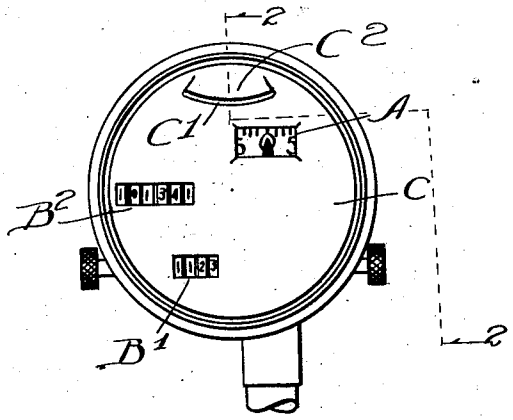


Fig. 2.

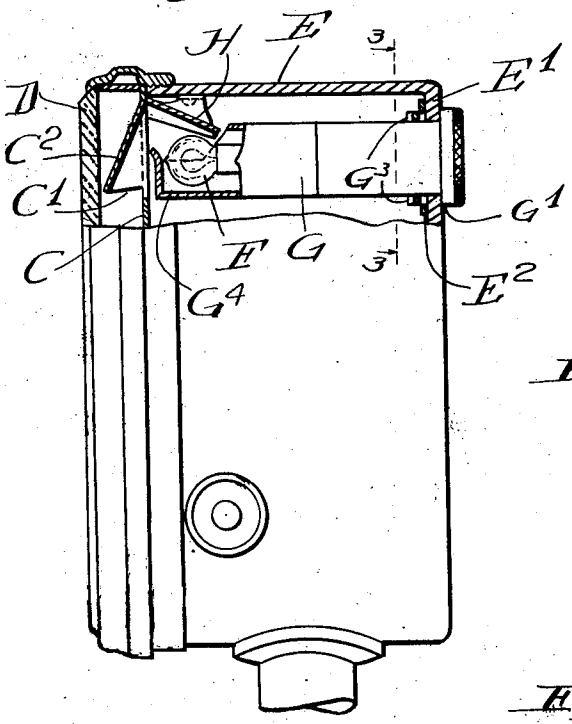


Fig. 3.

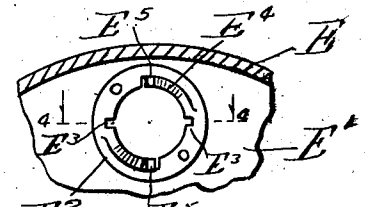
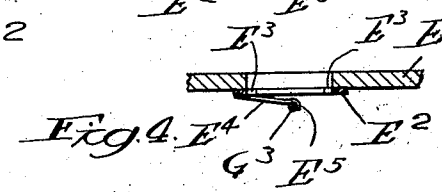


Fig. 4.



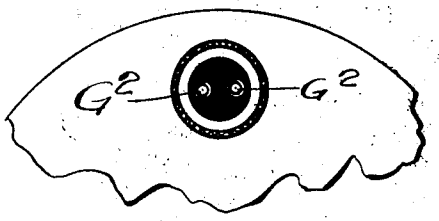


Fig. 5.

Witnesses

Inventor.
Edward M. Thompson

by Burton & Burton

his Attys.

UNITED STATES PATENT OFFICE.

EDWARD M. THOMPSON, OF BELOIT, WISCONSIN, ASSIGNOR TO STEWART-WARNER SPEEDOMETER CORPORATION, OF CHICAGO, ILLINOIS, A CORPORATION OF VIRGINIA.

INSTRUMENT-DIAL ILLUMINATOR.

1,118,969. Specification of Letters Patent. Patented Dec. 1, 1914.

Application filed July 9, 1914. Serial No. 849,891.

To all whom it may concern:

Be it known that I, EDWARD M. THOMPSON, a citizen of the United States, residing at Beloit, in the county of Rock and State of Wisconsin, have invented new and useful Improvements in Instrument-Dial Illuminators, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

This invention relates to improved means for illuminating an instrument dial to render the dial easily readable at night or in dark places.

It consists of the features and elements described and shown in the drawings as indicated by the claims.

In the drawings, the invention is illustrated as applied to a combined speedometer and odometer designed for use on motor vehicles.

Figure 1 is a face view of the instrument indicating the relative positions of the indicating elements which are to be read and the light reflector. Fig. 2 is a view on a larger scale, with parts in section as indicated at line 2—2 on Fig. 1. Fig. 3 is a detail section, taken as indicated at line 3—3 on Fig. 2. Fig. 4 is a detail section taken as indicated at line 4—4 on Fig. 3. Fig. 5 is a rear elevation of the lamp holding plug in position of use.

The instrument illustrated in the drawings consists of a speedometer provided with a rotating dial arranged to appear at a window, A, and trip and total odometer trains mounted to show their indicating dials at windows, B^1 and B^2, respectively. All three windows are formed in a single dial- or cover-plate, C, and the instrument is provided with the usual dial glass, D, spaced away from the plate, C, by a short distance.

Within the instrument casing, E, and above mechanisms housed thereby there is located an electric light bulb, F, whose light this invention is designed to utilize for illumination of the indicating means in the dial plate, C. The lamp, F, is carried in the usual screw socket, which is mounted in a plug, G, of insulating material arranged to be inserted through an opening in the back wall, E^1, of the casing, E. On this wall there is secured a locking plate, E^2, having entrance notches, E^3, designed to admit the pins, G^3, which extend from the body of the plug, G. Just beyond each of the notches, E^3, a curved strip, E^4, is sprung out from the plate, E^2, to bear against the pin, G^3, as it is rotated in the plate, and the end of this spring, E^4, is bent to form a stop for limiting such rotation; preferably this bent end, E^5, is rounded back slightly from the plane of the spring, E^4, so as to partially embrace the pin, G^3, for more securely retaining it. The insertion of the plug, G, is definitely limited by its terminal flange, G^1, which is stopped against the back wall, E^1, of the casing. Preferably this flanged end of the plug, G, contains terminal sockets, G^2, adapted to receive lead wires from the source of electric current for energizing the lamp, F. The other end of the plug, G, from which the lamp, F, projects is fitted with a hood, G^4, surrounding substantially the lower half of the lamp and having its inner surface polished or enameled to serve as a reflector for directing the light upward.

Secured to the wall of the casing, E, just above the position of the lamp, F, is a fixed reflector, H, inclined sufficiently to throw the light rays outward past the plane of the dial plate, C, and through the opening, C^1, therein. Said opening, C^1, is provided with a shield, C^2, whose inner surface is also treated to constitute a reflector, and from which the rays of light coming from the reflector, H, are directed downwardly and slightly back toward the windows, A, B^1, B^2, for illuminating the several indicators of the instrument. Thus while the light from the lamp, F, is perfectly screened so that no direct rays can reach the eye of the driver, the instrument dials are nevertheless rendered luminous and easily readable.

By virtue of the removable nature of the plug, G, which together with the hood, G^4, is of such diameter throughout its whole length as to pass freely through the aperture of the locking-plate, the renewal of the lamp, F, when it burns out becomes a very simple matter, not requiring the use of any tools or expert knowledge.

I claim:—

1. In an instrument having an apertured dial plate, a source of light positioned behind the plane of said plate and means whereby said light serves to illuminate the dial, comprising a hood positioned to intercept the light and directed through the aperture and comprising a reflecting surface at the opposite side of the aperture

from the light, positioned and extending obliquely across the axis of the aperture, for reflecting the light over the dial-plate.

2. In an instrument having a dial plate and a dial glass spaced apart therefrom, the plate having an aperture, a hood over said aperture sloping from the plane of the plate toward the plane of the glass, and a source of light behind the plane of the plate adapted to illuminate the dial by reflection from said hood.

3. In an instrument having an apertured dial plate, an electric lamp positioned behind the plane of said plate and means whereby said lamp may serve to illuminate the dial comprising means for directing the light through the dial-plate, near the margin thereof, and a reflector positioned in front of the dial-plate in the path of the light thus directed through the latter, and at an oblique angle thereto, for directing the light over the dial-plate.

4. In an instrument having an apertured dial plate, an electric lamp positioned behind the plane of said plate and means whereby said lamp may serve to illuminate the dial comprising a hood positioned to intercept the light coming through the aperture and adjusted to reflect such light on to the dial plate together with a reflector at the lamp, and an intermediate reflector positioned to receive the light from the lamp reflector and to deflect such light through the aperture of the dial.

5. In an instrument having a casing and an apertured dial-plate which forms a front closure for the casing, an electric lamp and a plug on which said lamp is mounted; the casing-wall back of the dial-plate being apertured to receive said plug, the plug with the lamp therein being adapted to be inserted and withdrawn through such aperture; locking-means for retaining the plug in position with the lamp positioned within the casing back of the plane of the dial-plate and substantially opposite the aperture therein; means for directing the light through the aperture, and a reflector in front of the dial-plate extending obliquely across the path of the light directed through the aperture, for reflecting the light over the dial-plate.

6. In an instrument having a casing and an apertured dial plate, a plug and an electric lamp mounted thereon, the casing being apertured to admit said plug, and means whereby said lamp may serve to illuminate the dial comprising a reflecting hood carried on the plug over the lamp for directing the light in one general direction, and a reflecting hood positioned to intercept the light coming through the aperture of the dial plate and adjusted to reflect such light back on to said plate.

7. In an instrument having a casing and an apertured dial plate, a plug and an electric lamp mounted thereon, the back wall of the casing being apertured to admit said plug; a reflecting hood carried on the plug over the lamp and arranged to project the light toward the top of the casing; a fixed reflector in the casing positioned to intercept such light and reflect it through the aperture of the dial plate, and a hood over said aperture adjusted to reflect said light back against the dial plate.

In testimony whereof, I have hereunto set my hand at Beloit, Rock Co., Wisconsin this 2nd day of July, 1914.

EDWARD M. THOMPSON.

Witnesses:
H. N. ADAMS,
R. A. EDGAR.