

Feb. 7, 1939.

A. W. HILLS

2,145,931

INSTRUMENT PANEL

Filed Nov. 11, 1935

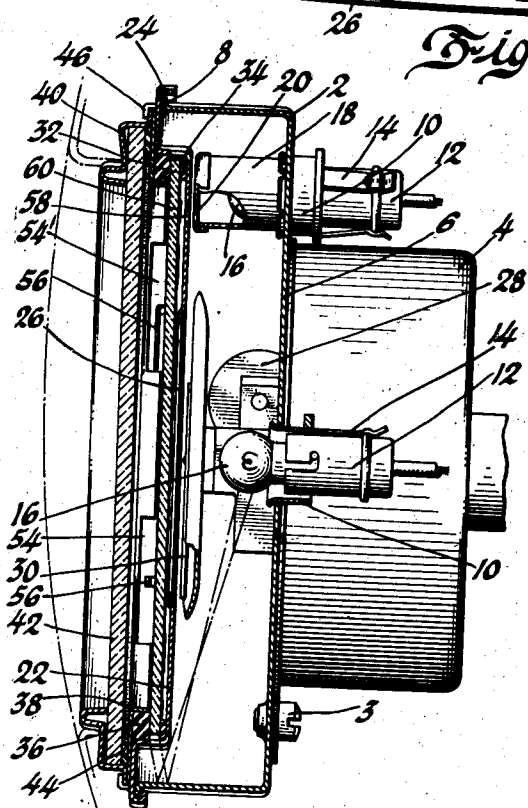
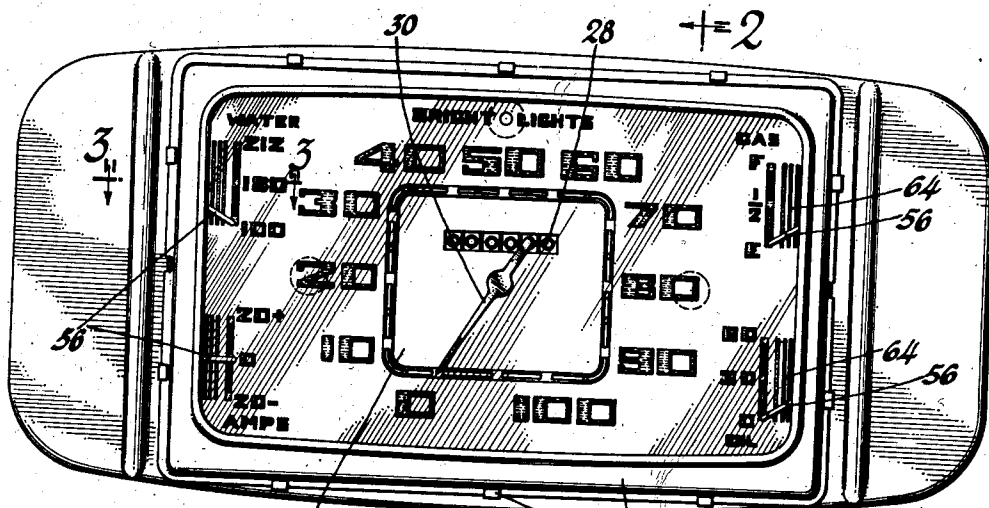


Fig. 2

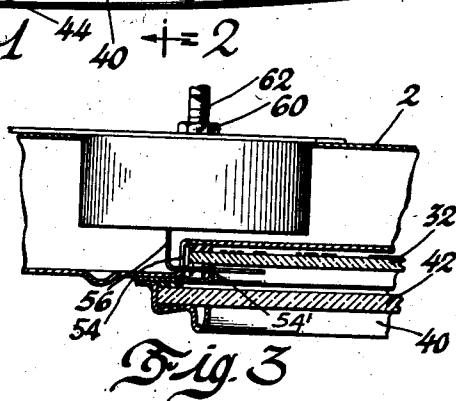


Fig. 3

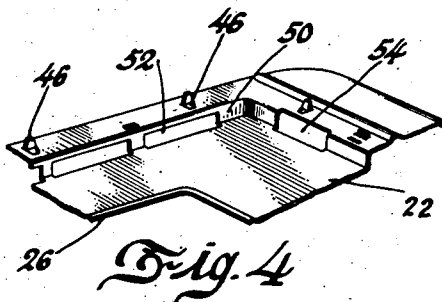


Fig. 4

Inventor
Arthur W. Hills

By Blackman, Spencer & Flint
Attorneys

UNITED STATES PATENT OFFICE

2,145,931

INSTRUMENT PANEL

Arthur W. Hills, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Application November 11, 1935, Serial No. 49,264

3 Claims. (Cl. 116—129)

This invention relates to indicating means and more particularly to instrument panels for use in automobiles.

It is the principal object of my invention to provide an instrument panel which includes all of the necessary readings for proper automobile operation and which has a pleasing appearance.

It is a further object to so illuminate the panel that there will be no glare into the driver's eyes. Further objects of my invention will become evident upon reference to the following specification wherein there are described the embodiments of my invention which are illustrated in the accompanying drawing, in which:

Fig. 1 is a front elevation of the panel of my invention.

Fig. 2 is a vertical sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is a sectional view taken on the line 3—3 of Fig. 1.

Fig. 4 is a perspective view of one corner of the retaining plate of the assembly.

The instrument panel assembly of my invention is composed of a casing 2 which is substantially rectangular in outline and comparatively shallow being open at the front face. Secured to the central portion of the back face by screws 3 is the speedometer assembly 4 the operating parts of which extend through the casing back wall 6 and for a portion of the distance into the center of the casing. The forward edge of the casing 2 is flanged parallel with its base to form flanges 8 the purpose of which will later become evident.

Also carried by the base 6 are a plurality of hollow cylindrical members 10 which carry sockets 12 the latter being pressed onto the circular member 10 and secured therein by a spring portion 14 of the member 10 pressed against the base of the socket. The socket of course carries the usual bulb 16 for illuminating the inside of the casing. Carried at the top center part of the base 6 is a similar type of bulb assembly except that in this case a hood 18 is placed over the bulb 16 and allows the light from the bulb to project through a small opening 20 in the forward face of the hood.

Enclosed in the forward opening in the casing is a sub-assembly which is composed of the parts hereinafter set forth. A retaining plate 22 of the same general outline as the forward portion of the casing is secured to the casing by having flanges 24 projected over the flanges 8 of the casing. The central portion of this retaining plate 22 is pressed inwardly, the main body of the retaining plate being offset a short distance with-

in the casing. At the central portion of the retaining plate there is provided a substantially rectangular opening 26 which is in alignment with the odometer 28 and speed indicating needle 30 so that the mileage and speed indication may be observed through this plate.

Carried within the retaining plate 22 is a glass plate 32 of the same outline as the pressed-in portion, the glass plate being spaced from the retaining plate by a gasket 34. This glass plate carries the various indicia for the different indicating instruments, the numerals being painted on the rear face of the glass plate for all the necessary instruments. The plate in front of the opening 26 in the retaining plate is clear so that the speed and distance indications may be seen through this portion. A second gasket 36 is carried by the retaining plate in front of the glass plate 32 and surrounds the periphery thereof. In order to secure this gasket 36 in place a spacing and retaining ring 38 having notches 54' extends over the gasket 36 and in toward the plate 32 and also surrounds the periphery of the plate.

A clamping bezel 40 is carried upon the front of this assembly and tends to retain the ordinary glass lens 42 over the whole, a gasket 44 being provided between the lens 42 and the retaining ring 38. The edge of the retaining plate 22 has a series of projecting tips 46, these tips being bent over to secure the bezel to the rest of the retaining plate assembly.

In the horizontal side portions 50 of the retaining plate there is provided a series of openings 52 and 54, the latter being aligned with notches 54'. The openings 52 are provided at the top and bottom for the purpose of allowing light rays from the bulbs 16 in back of the plate to be reflected from the casing, the inner surface of which is painted a light color to aid reflection, and onto the edge of the glass plate 32 after which these rays reflect back and forth within the glass plate and illuminate the indicia painted on the rear face thereof. The openings 54 are provided in the two ends and through these openings the various indicating needles 56 project over the forward face of the plate 32 to give an indication of the condition of the various parts to which they are connected. The inside face of the retaining plate 22 is painted in a light color to give a more pleasing appearance and assist in improving the visibility of the indicia. In this connection it should be pointed out that it is necessary to space the glass dial plate from the retaining plate, accomplished by gasket 34, so that the background or retaining plate will appear

black when the glass dial is illuminated regardless of what color it is painted. This is due to the fact that the light rays are within the glass dial and illuminate whatever is in actual contact with the dial such as the indicia but whatever is out of contact will not be lighted and will therefore appear black.

It has been before mentioned that one of the lights in the casing has a hooded member 18 provided therefor which allows light to pass from the opening 20 in the forward end thereof. In alignment with this opening 20 there is provided a further opening 58 in the retaining plate 22 which allows a spot of light to be thrown upon a painted portion 60 on the rear face of the plate 32. This particular bulb is connected in the series with the headlights and so gives the operator an indication as to when his bright lights are illuminated and when they are out.

The various operating instruments necessary to operate the needles 56 are secured to the casing in any suitable manner such as by welding. The bolts 62 and nuts 60 act as connections for the electric lines thereto.

It will thus be evident that in this particular structure the speedometer shaft does not project through the glass plate nor does any other part of the indicating apparatus, the speedometer needle being visible through the clear portion of the plate and the other various needles passing through openings in the side of the retaining plate and lying in front of the glass plate. The various indicating indicia for the smaller instruments are painted on the rear face of the glass plate 32 as in the case of the speedometer and also a series of parallel vertical lines 64 is also painted adjacent each one of these needles 56 the purpose of which is to enable the needles to be more clearly visible at night and causing a more pleasing appearance than solid color in the day time. It should be pointed out that in this structure also it is unnecessary to remove the forward assembly, the assembly containing the glass plate and lens, in order to service the speedometer but the latter may be removed from the rear of the casing without disturbing any other part.

I claim:

1. In an instrument panel, a casing, an indicating instrument carried thereby, a pressed-out plate having an opening therein, said plate carried by the casing with the opening in alignment with the instrument, transparent means carried by the pressed-out portion of the plate, indicia painted on the inner face of the transparent means, said plate having side openings therein, indicating needles extending through the side openings to lie over the transparent means and operating means for the needles supported by the casing.

2. In an instrument panel, a casing, a speedometer mounted therein having an indicating needle, a retaining plate fitting in the front of the casing, the main body of which is pressed inwardly and having a plurality of openings in the side portions and an opening in the center, the speedometer needle being visible through the latter, a glass plate fitting within the pressed-out portion, indicia painted on the glass plate, a source of light within the casing whereby light rays enter the edge of the glass plate through part of the openings in the side portions, a plurality of other indicating instruments carried in the casing, an indicating needle for each instrument, said needles projecting through the remainder of the side openings and over the forward face of the glass plate.

3. In an instrument panel, a casing, a plurality of indicating instruments carried thereby having movable needles, a retainer plate closing the front of the casing and having a plurality of openings throughout its side portions and an opening at its center, a transparent plate carried in the pressed-out portion of the retainer plate, indicia on the transparent plate adjacent the instruments, some of said needles extending through the side openings over the face of the transparent plate and some being positioned behind and visible through the plate and illuminating means carried by the casing and providing rays entering the transparent plate through other of the side openings to provide edge illumination for the transparent plate.

ARTHUR W. HILLS.