Jan. 12, 1932. J. E. ESHBAUGH 1,840,494

COMBINATION MOUNTING PLATE FOR INSTRUMENT PANELS

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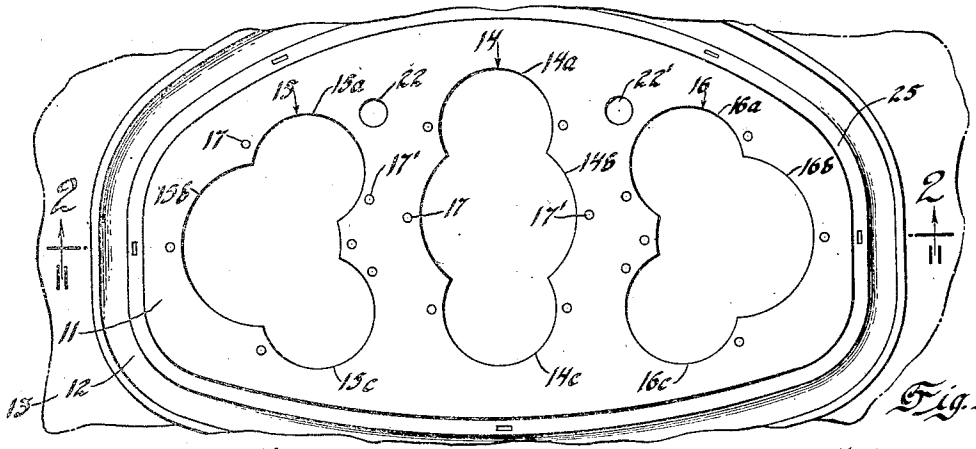


Fig. 1.

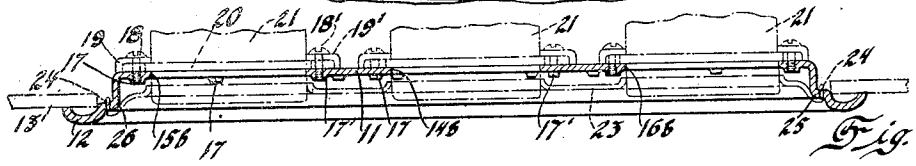


Fig. 2.

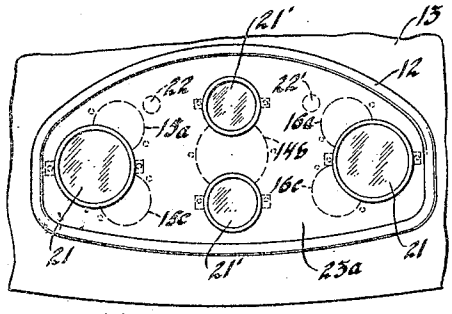


Fig. 3

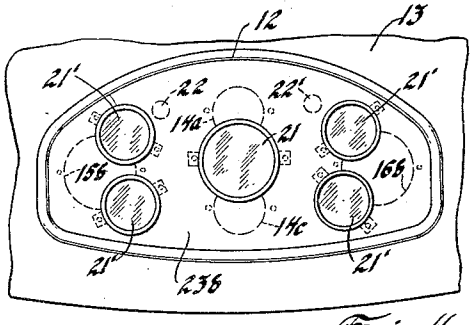


Fig. 4.

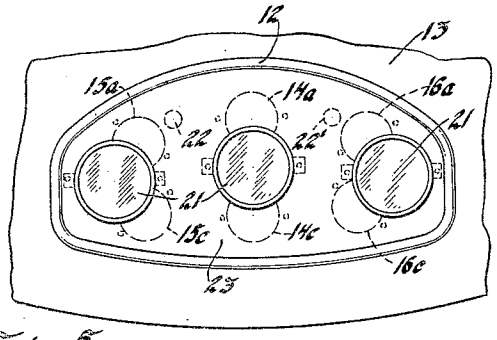


Fig. 5.

Inventor

Jesse E. Eshbaugh

By Blackmore, Spencer & Flint

Attorneys

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UNITED STATES PATENT OFFICE

JESSE E. ESHBAUGH, OF FLINT, MICHIGAN, ASSIGNOR TO A C SPARK PLUG COMPANY, OF FLINT, MICHIGAN, A COMPANY OF MICHIGAN

COMBINATION MOUNTING PLATE FOR INSTRUMENT PANELS

Application filed August 18, 1928. Serial No. 300,494.

This invention aims primarily at such economies in the manufacture of instrument panels, of varying types, as may be obtainable by the expedient of using, in various panels, a single or universal or standard back plate or mounting plate,—provided with openings having more numerous arcuate edges than are needed in any one installation. A single set of dies may thus be adequate for use in providing back plates which are suitable for alternative incorporation into, say 3-instrument panels, 4-instrument panels, and/or 5-instrument panels.

It is an object of this invention to provide each instrument supporting plate or back plate with intersecting circular or other arcuate edges such that but one style of plate need be kept in stock, for a given series of cars, in quantities suitable to meet a total demand. Such plates may be made up, as required, into different combinations, as fluctuations in demand suggest,—the preferred type of back plate being such that it can be associated with alternative front or face plates constructed so as to conceal by reason of the opacity of the latter any unused apertures or edges in said back plate; and identical back plates may thus be used in the support of several circular instruments (not exceeding, say, six) in various symmetrical or other arrangements.

It is an object of this invention, in the preferred form thereof, to provide a back plate with what may be referred to as a triplicate series of triplicate openings,—a central opening having two axes of symmetry, terminal openings, associated therewith, having only a horizontal axis of symmetry, and all of said openings being formed as if by the intersection of two or more small circles with one another or with a central or intermediate circle which may have a larger radius. The construction here referred to is such that either circular or other arcuate edges of each openings may be used to support an instrument or instruments of suitable diameter; and, in preferred embodiments of this invention, intermediate and large circles being represented, in each case, by segments (which need not together equal 180°) the smaller circles may each be represented by a continuous-edge or arc exceeding 180°; each "circle" may have associated therewith a pair of suitably spaced small openings for the reception of instrument-retaining screws or the like; and each back plate may also be provided with one or more openings for the reception of instrument lights, or the like, and with an annular shoulder for the reception of a front or face plate.

Other objects of this invention, the practice of which may incidentally diminish the weight of back plates and may yield a more valuable "scrap" than can result from the cutting of openings which are each adapted to a single use, may be best appreciated from the following description, taken in connection with the appended claims and the accompanying drawings.

Figure 1 may be referred to as a forward-looking elevational view showing a back plate which is integral with a peripheral retaining flange or bezel, parts being broken away.

Figure 2 is a horizontal sectional view taken substantially as indicated by the line 2—2 of Figure 1 and showing, in dotted lines, parts of an instrument board, an opaque front plate, instruments and retaining means hereinafter referred to.

Figure 3 is a forward-looking elevational view showing an instrument panel as including a supporting plate of the general character illustrated in Figure 1, said plate being used in the support of four instruments.

Figure 4 is a view similar to Figure 3, but showing the use of a back plate, of the same type, in supporting five instruments.

Figure 5 is a view similar to Figures 3 and 4 but showing the use of a back plate, of the same type, in the support of three instruments, in symmetrical arrangement.

Referring first to Figures 1 and 2, a mounting or back plate 11 is shown as comprising a main depressed portion surrounded by a flange or bezel 12 and adapted to interfit within a suitable opening in an instrument board 13; and the said back plate, is shown as provided with three instrument openings,—intermediate opening 14, centrally disposed, and additional openings 15 and 16, sym-

metrically disposed with reference to the intermediate opening 14; and each of said openings may be formed as if by the intersection of circles differing in size.

That is to say, to provide for the support of instruments varying in diameter, the openings 15 and 16, shown as having only a horizontal axis of symmetry, may comprise upper arcuate edges 15*a* (or 16*a*) intermediate arcuate edges of larger circles 15*b* (or 16*b*) and lower arcuate edges 15*c* (or 16*c*); whereas the opening 14, having both horizontal and vertical axes of symmetry, is shown as comprising an upper arcuate edge 14*a*, intermediate arcuate edges 14*b* and lower arcuate edge 14*c*. It will be noted that, in this triplicate series of triplicate openings, the top and bottom arcuate edges in each case exceed 180° in length, whereas the intermediate or central portions of the respective openings are provided by unequal or equal pairs of arcuate edges, oppositely disposed and adapted to co-operate in the retention of instruments interfitting therein; and each portion of each opening is shown as having associated therewith a pair of tapped bosses 17, 17′, suitable for the reception of screws 18, 18′ shown as used in the securing of clips or clamping elements 19, 19′, for the engagement of flanges 20 upon any suitable larger instruments 21 or smaller instruments 21′.

It is of interest to note that, referring only to symmetrical arrangements of two or more instruments, a single back plate of the described character may be used in connection with no less than twenty-one alternative arrangements,—including the following:

Two-instrument arrangements,—

15*a*,	16*a*;
15*b*,	16*b*;
15*c*,	16*c*;
14*a*,	14*c*.

Three-instrument arrangement,—

15*a*,	14*a*,	16*a*;
15*a*,	14*b*,	16*a*;
15*a*,	14*c*,	16*a*;
15*b*,	14*a*,	16*b*;
15*b*.	14*b*,	16*b*;
15*b*	14*c*,	16*b*;
16*c*,	14*a*,	16*c*;
15*c*,	14*b*,	16*c*;
15*c*,	14*c*,	16*c*.

Four-instrument arrangement,—

15*a*,	15*c*,	16*a*,	16*c*;
15*a*,	14*a*,	14*c*,	16*a*;
15*b*,	14*a*,	14*c*,	16*b*;
15*c*,	14*a*,	14*c*,	16*c*.

Five-instrument arrangements,—

15*a*,	15*c*,	14*a*,	16*a*,	16*c*;
15*a*,	15*c*,	14*b*,	16*a*,	16*c*;
15*a*,	15*c*,	14*c*,	16*a*,	16*c*.

Six-instrument arrangement,—

15*a*, 15*c*, 14*a*, 14*c*, 16*a*, 16*c*.

Among the foregoing arrangements it is probable that those shown in Figs. 3, 4, and 5 may be of greatest practical importance; but it should be understood that neither the illustrated form of opening nor the use of series of three openings is essential to the principles of this invention; that alternative means might be employed in the securing of instruments in said openings; and that provision of additional openings, as suggested at 22 and 22′, for the reception of concealed or other lights, may be regarded as of subordinate importance or immaterial to the present invention. The disclosure of Figure 5 will be seen to accord with Figure 2 in suggesting the support of three large instruments 21 in the respective central portions defined by edges 15*b*, 14*b* and 16*b* of openings 15, 14 and 16 in a back plate 11, unused portions of said plate openings, including edges 15*a*, 15*c*, 14*a*, 14*c*, 16*a* and 16*c*, being concealed by face plate 23; and in the four-instrument disclosure of Figure 3 (comprising two large instruments 21 and two smaller instruments 21′) as also in the five-instrument disclosure of Figure 4 (comprising one large instrument 21 and four smaller instruments 21′) the respective face plates 23*a* and 23*b* perform like functions; but it will be obvious that the flange 12 may be integral with either a plate 11 or a plate 23 (or 23*a* or 23*b*) and that, instead of securing said plates to one another by means such as tongues 24, extending from a flange 25 through an annular shoulder 26, any desired alternative means might be employed for the purpose here referred to.

Although the foregoing description includes details of but one complete embodiment of the present invention, it should be understood that numerous modifications thereof might easily be devised, without involving the slightest departure from the spirit and scope of said invention.

I claim:

1. For use in an instrument panel including an opaque front plate, a back plate provided with openings, each opening defined by intersecting and interrupted arcuate edges the arcs of which are generated from different positions on the plane of the plate, the length and spacing of said edges of each opening adapting the same to the retention of instruments in alternative but substantially symmetrical arrangements, each of said openings being triplicate in character, each instrument supported from the arcuate edge of one generatrix only.

2. For use in an instrument panel including an opaque front plate, a back plate provided with openings, each opening defined by intersecting and interrupted arcuate edges the arcs of which are generated from different positions on the plane of the plate, the length and spacing of the edges of each opening adapting the same to the retention of instruments in alternative but substantially symmetrical arrangements, each opening being triplicate in character and intermediate portions thereof being of greater diameter

than terminal portions thereof, each instrument supported from the arcuate edge of one generatrix only.

3. For use in an instrument panel including an opaque front plate, a back plate provided with terminal openings and an intermediate opening, each of irregular contour and formed by the intersection of the circumferences of three circles, said terminal openings being substantially symmetrical with reference to a horizontal axis and said intermediate opening being substantially symmetrical with reference to both a horizontal axis and a vertical axis.

4. For use in an instrument panel including an opaque front plate, a back plate provided with terminal openings and an intermediate opening, each of irregular contour and formed by the intersection of the circumferences of three circles, said terminal openings being substantially symmetrical with reference to a horizontal axis and said intermediate opening being substantially symmetrical with reference to both a horizontal axis and a vertical axis, and central portions of said openings being of greater diameter than terminal portions thereof.

In testimony whereof I affix my signature.

JESSE E. ESHBAUGH.