Dec. 4, 1928. 1,694,006

J. T. FITZSIMMONS

INSTRUMENT PANEL

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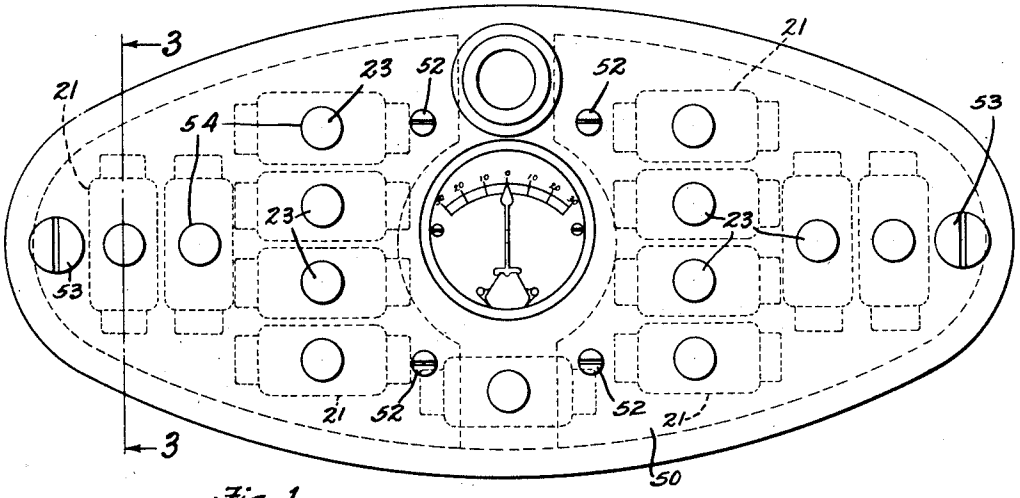


Fig. 1

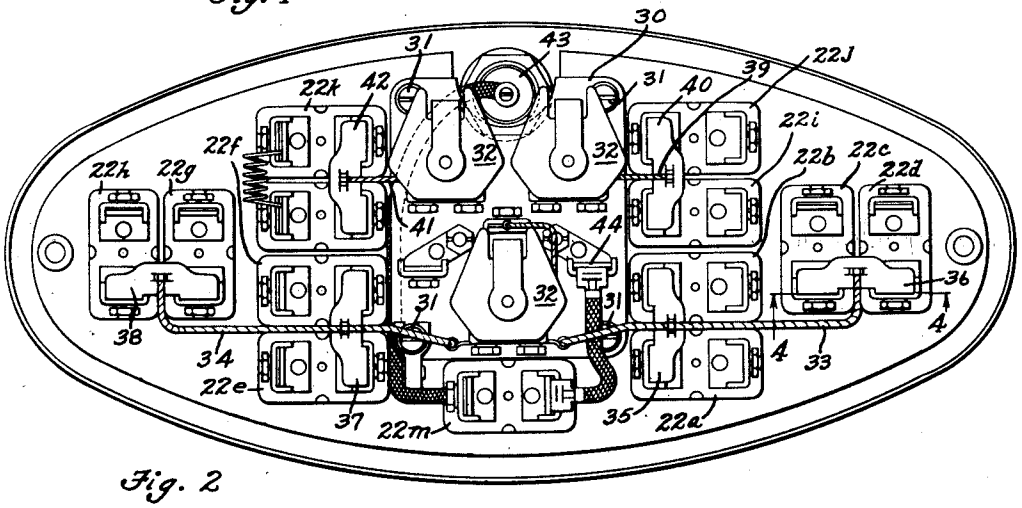


Fig. 2

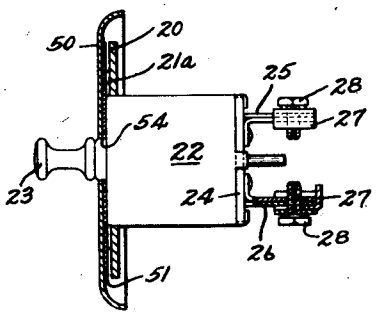


Fig. 3

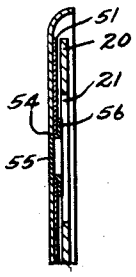


Fig. 5

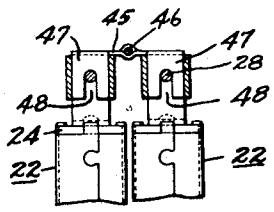


Fig. 4

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UNITED STATES PATENT OFFICE.

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INSTRUMENT PANEL.

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This invention relates to improvements in control panels, and particularly that type of control panel used in connection with motor vehicles and in which there is provided a plurality of switches, each of which is operable to control its individual circuit.

It is among the objects of the present invention to provide a panel capable of supporting, independently, a plurality of interchangeable switches which are readily removable for replacement purposes. Another object is to provide such a panel with a face-plate that has a finished appearance, even though said panel does not contain its full quota of switch elements.

Further objects and advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawings, wherein a preferred form of the present invention is clearly shown.

In the drawings:

Fig. 1 is a front view of the control panel;

Fig. 2 is a rear view of the control panel;

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

Fig. 4 is a detailed view of the switch terminals and connecting conductors taken along the line 4—4 of Fig. 2; and

Fig. 5 is a detailed sectional view showing the filler disc in position in one of the face-plate apertures.

The control panel comprises a supporting plate 20 and a face-plate 50 adapted to be placed in juxtaposition with the supporting plate, and means for clamping the two plates together.

The supporting plate 20, as illustrated in the drawing, is provided with a plurality of spaced apertures 21, rectangular in shape, said apertures being adapted to receive switch members 22 having a rectangular body portion. When it is desired to utilize switch members having a different shaped body portion, the apertures in the supporting plate may readily be made to conform to the desired switch.

In Fig. 3, a side elevation of a switch member 22 is shown. At the front of the switch, flanges 21^a are provided, the front surface of said flanges being flush with the front face of the switch. An operating member 23 extends through and beyond the front face of the switch. The back of the switch is provided with an insulating cover-plate 24, through which extends the two terminal blades 25 and 26. These blades are provided with suitable connector clips 27 held on said blades by means of studs 28.

As shown in Fig. 3 the face-plate 50 has its edge curved rearwardly, so that it extends over and beyond the edge of the supporting plate 20. Both of the plates are of similar contour. A fibrous lining 51 is provided on the inner or rear surface of the face-plate, said lining engaging with the front face of the switch members 22 when said face-plate is held in position on the supporting plate 20 by means of screws 52.

Aligned holes in each end of the supporting and face plates, receive screws 53 for securing the control panel to any desirable dashboard, or the like.

The face-plate is provided with a plurality of circular apertures 54 equal in number and similarly spaced as the apertures in the supporting plate. When the two plates are held together, the apertures of both plates are in coaxial alignment.

As shown in Fig. 3, the switch member is shown having its flanges clamped between the fibrous lining on the face-plate and the supporting plate. The body portion of the switch extends through the aperture in the supporting plate, while the operating member 23 of the switch extends through the corresponding aperture in the face-plate. Where no switch member is provided in the supporting-plate aperture, the aperture in the face-plate is open, giving said plate an unfinished appearance. To eliminate this, there is provided at this aperture, a filler disc having an extending button-like portion 55 and flange 56. The portion 55 extends into the aperture 54 of the face-plate and the flange rests against the fibrous lining, so that the surface of the portion 55 is flush with the face-plate, as shown in Fig. 5. The front of the disc is finished the same as the front of the face-plate so that, even though a panel, designed

to take a certain number of switches, has only a portion of the switch receptacles filled, the front of said panel or face-plate will not disclose the absence of such switch members, but will appear finished and complete.

Fig. 1 shows a meter inserted in the panel, with a dash-light located just above, and the ignition switch just below. The meter has a flange which is clamped between the two plates, similar to the clamping of the switch flanges.

On the back of the supporting plate 20 an insulating plate 30 is held against the back of the meter, by means of screws 31. This plate supports circuit breakers 32, so constructed and arranged as to be connected in the various work circuits as protective devices. Each circuit breaker supports one or more rigid conductors by means of which the various switch members are connected to the source of current. In Fig. 2, the lower circuit breaker is shown, provided with conductors 33 and 34 extending to the right and left, respectively. The conductor 33 has two double clips 35 and 36 connected thereto, the clip 35 connecting switch members 22^a and 22^b to said conductor 33, while the clip 36 connects switch members 22^c and 22^d thereto. Conductor 34 has double clips 37 and 38 which connect switch members 22^e and 22^f, as well as 22^g and 22^h, to said conductor, respectively.

The upper, right circuit breaker 32, as regards Fig. 2, is connected to switches 22^i and 22^j by conductor 39 and double clip 40, while the left circuit breaker 32 is connected to switch members 22^k and 22^l by conductor 41 and double clip 42. Switch 22^m, for ignition and cowl light 43, is connected directly to terminal 44 of the meter.

In Fig. 4, the double clip is shown comprising a main body portion 45 to which is connected the conductor as at 46. Two depending ears 47 are provided, each having a slot 48. The ears 47 are adapted to be inserted between the clip 27 and terminal blade 25 of the respective switches, and held therebetween by stud 28. Terminal 26 of the respective switches is connected to the respective work devices.

The conductors 33, 34, 39 and 41 are made of rigid material, so that they will be maintained in proper position relative to the corresponding aperture in the supporting plate, if no switch member is provided in that aperture. Thus, for instance, switch members 22^c and 22^d could be removed and still the conductor 33 would maintain the double clip 36 in proper position relative to the apertures in the conducting plate that contained these switches. The rigidity of the conductors prevents swaying of the clips and possible engagement with any grounding surface.

This device permits easy removal and replacement of any switch member. Supposing, for instance, that the headlight switch was inoperative and all the others operative: Headlights being necessary and dome-light not, the operator would first remove screws 52 and 53, then remove the face-plate from the supporting plate. He could then disconnect the headlight and dome-light switch from their respective conductors. The dome-light switch could then be inserted in the headlight switch aperture, and the panel again assembled and clamped in place by screws 52 and 53. No taping of terminals is necessary because the rigidity of the conductor would hold the dome light terminal safely out of engagement with any grounding surface. Thus, it can be seen that all of the switch members are interchangeable with a minimum amount of work necessary to effect a change.

While the form of embodiment of the invention as herein disclosed, constitutes a preferred form, it is to be understood that other forms might be adopted, all coming within the scope of the claims which follow.

What is claimed is as follows:

1. A control panel comprising in combination, an apertured mounting plate adapted to support electrical devices; terminals insulatingly supported on said plate; a substantially rigid conductor extending from each terminal and spaced from said mounting plate, each of said conductors having a portion located adjacent to certain of the apertures in the mounting plate; and connector clips electrically connected with and supported by the conductors so that said clips align with the respective apertures and may be connected with the work devices contained therein.

2. A control panel comprising in combination, a mounting plate provided with a pair of apertures; a terminal insulatingly supported on said plate; a substantially rigid conductor extending from the terminal in spaced relation to the mounting plate and having a portion aligning with the pair of apertures, centrally of the pair; and a double connector clip carried by the conductor and electrically connected therewith adjacent the pair of apertures.

3. A control panel comprising in combination, a mounting plate provided with apertures into which electrical devices are adapted to be inserted from one side of the mounting plate; terminals insulatingly supported on the other side of said plate; and substantially rigid conductors extending from said terminals in spaced relation to the plate, each conductor having a connector clip located adjacent to an aperture so that the electrical devices when inserted into the apertures from the one side of the plate may be electrically connected with their respective connector clips on the opposite side of said plate.

4. A control panel comprising in combina-

tion, a supporting plate apertured to receive a plurality of electrical switches; circuit breakers insulatingly mounted on said supporting plate; a substantially stiff conducting wire secured to each circuit breaker and extending therefrom but spaced from the supporting plate; and connector clips supported on the said conducting wires, each clip being held in proper alignment with a respective aperture in the supporting plate.

In testimony whereof I hereto affix my signature.

JOHN T. FITZSIMMONS.