United States Patent

Honda et al.

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[54] **FUSE BOX APPARATUS FOR A MOTORCAR**

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[30] **Foreign Application Priority Data**

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[51] **Int. Cl.**.....**H01r 33/00**

[58] **Field of Search** .....339/10, 147 P; 337/187, 188, 337/194, 197, 198, 208, 215; 180/9 D

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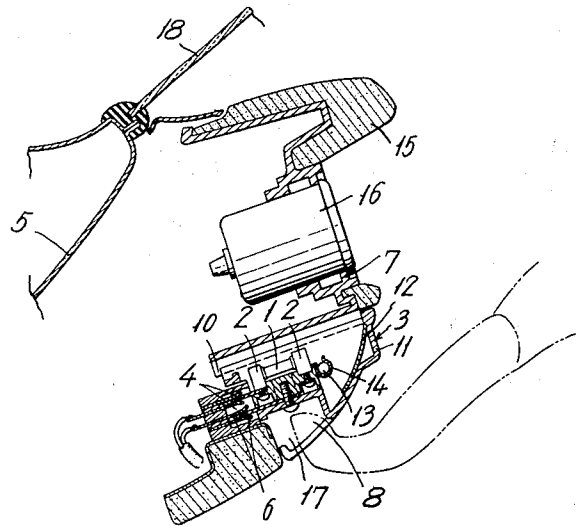
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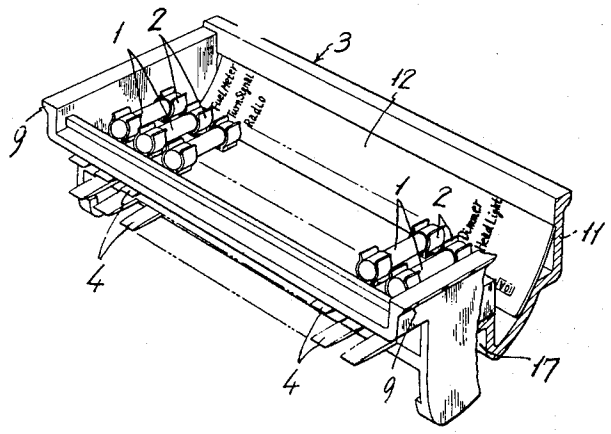
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[57] **ABSTRACT**

A fuse box in a motorcar has several fuse holders removably holding respective fuses and several plugs are electrically connected to the respective fuse holders and extend externally of the fuse box for engaging in plug sockets for respective electric circuits. The plug sockets are mounted in the car body so that the fuse box is removably engaged in a compartment of the body by insertion of the plugs in the plug sockets.

8 Claims, 3 Drawing Figures





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SHEET 1 OF 2

Fig. 1

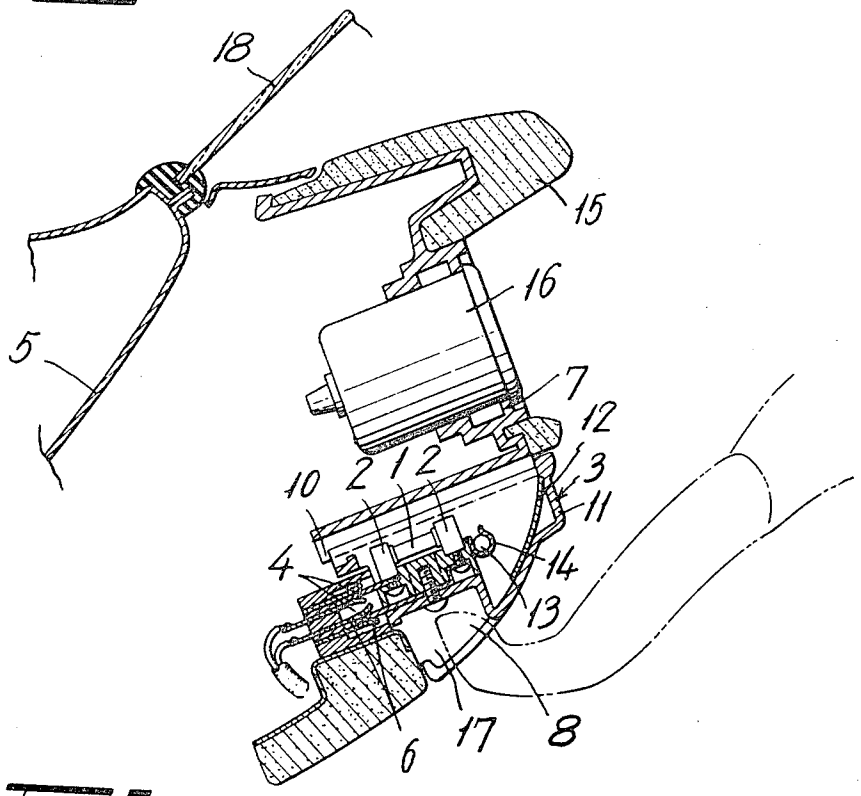
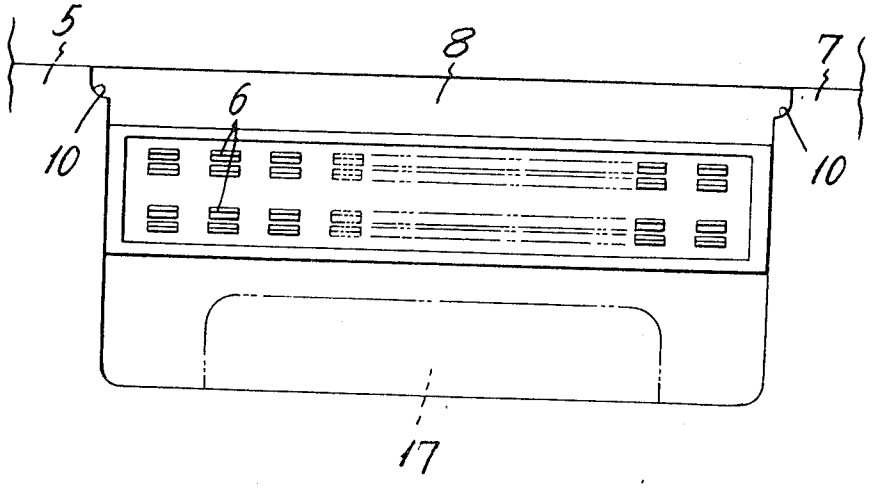
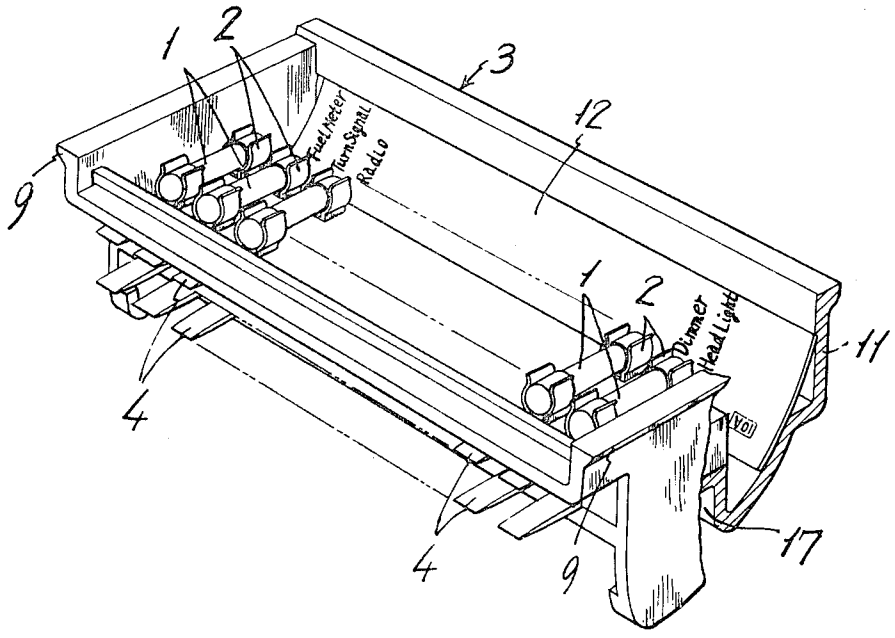


Fig. 3



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Fig. 2



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FUSE BOX APPARATUS FOR A MOTORCAR

BRIEF SUMMARY OF THE INVENTION

The invention relates to a fuse box in a motorcar and particularly to a detachable mounting of the fuse box in the motorcar.

An object of the invention is to provide a fuse box which is readily and safely insertable into and removable from a compartment in the dashboard of a motorcar.

In accordance with the invention there is provided fuse box apparatus for a motorcar, comprising a fuse box, a plurality of fuse holders secured to said box for removably holding respective fuses in said fuse box, a plurality of plugs extending from said box and electrically connected to respective fuse holders, and a plurality of plug sockets mounted in the motorcar for connection with respective electric circuits, said plugs being removably engageable in said sockets to detachably connect the fuse box to the motorcar.

The motorcar has a front panel facing the driver, said front panel having an opening with a compartment therebehind, said fuse box being engageable in said compartment and removable therefrom by passing through said opening.

The plug sockets are mounted at the rear portion of the compartment and the plugs extend from the rear surface of the fuse box for engaging the plug sockets when the fuse box is inserted in the compartment.

The fuse box is slidably and guidably insertable into the compartment by engagement of edge portions on the fuse box in guide grooves in the dashboard.

The fuse box is hollowed-out and has a finger engaging portion to slide the fuse box in drawerlike fashion between an engaged position in the compartment and a retracted position.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a sectional side view of one embodiment of a fuse box installation according to this invention,

FIG. 2 is a perspective view, partly broken away, of a fuse box of the invention, and

FIG. 3 is a front view of an opening of a compartment in a car body for receiving the fuse box.

DETAILED DESCRIPTION

The drawing shows a fuse box **3**, in which are arranged a plurality of fuse holders **2** removably holding respective fuses **1**. The fuse box **3** is provided with a plurality of external plugs **4** electrically connected to the respective fuse holders **2**, and a plurality of plug sockets **6** for respective electric circuits are mounted on the car body **5**, so that the fuse box **3** can be removably mounted by insertion of its plugs **4** in the plug sockets **6**. The plug sockets are each constituted by resilient plate portions and the plugs engage between the plate portions whereby the latter resiliently deform and frictionally hold the plugs and thereby the fuse box.

In the illustrated embodiment, a front panel **7** in front of the driver's seat within the car body **5** is provided with a compartment **8** therebehind, and the fuse box **3** is formed in the shape of a draw which is capable of being removably mounted in the compartment **8** such that when the fuse box **3** is so mounted, the plugs **4** projecting from the rear surface of the fuse box **3** are engaged with the plug sockets **6** disposed at the rear of the compartment **8**. The fuse box **3** is slidably mounted in compartment **8** by engagement of a pair of guide edges **9** of the fuse box in a pair of guide grooves **10** of the body **5**. Numeral **11** denotes a front plate of the fuse box **3**, and plate **11** is so designed as to serve as a closure for the front of the compartment **8** and is shaped to extend substantially flush with the surface of the front panel **7**. The fuse box **3** has an indication board **12** for indicating the fuses of the various electric circuits

and it also has a fuse holder **14** for a spare fuse **13**. Numeral **15** denotes padding on the front panel **7**, numeral **16** denotes a measuring instrument attached to the front panel **7**, numeral **17** denotes a finger engaging portion at the lower portion of the plate **11**, and numeral **18** designates the front windshield of the car.

It can be arranged that the fuse box **3** be composed of two separate boxes, i.e., a main fuse box and a subsidiary fuse box, the fuses for interior lights and parking lamps being provided within the subsidiary fuse box. This offers the convenience that the fuses within the main fuse box can be inspected at night while the fuses in the subsidiary box remain intact and hence the interior lights can be turned on as can the parking lights thereby minimizing the danger of the motorcar being struck from behind due to lack of lights.

In this apparatus, inspection or replacement of the fuses **1** can be simply effected by detaching the fuse box **3** from the vehicle body **5**, and since the arrangement is such that the fuse box **3** is removably mounted in the compartment **8**, the fuse box **3** comes to be positioned near the driver's seat so that the handling thereof by the driver is simplified, and since the fuses **1** are otherwise ordinarily concealed, the driver is safe from danger.

What is claimed is:

1. Fuse box apparatus for a motorcar having a front panel facing the driver, said front panel having an opening with a compartment therebehind, and said compartment having an upper cover plate, said apparatus comprising; a fuse box being engageable in said compartment and removable therefrom by passing through said opening, a plurality of plugs extending from said box and electrically connected to respective fuse holders, and a plurality of plug sockets mounted in the motorcar for connection with respective electric circuits, said plugs being removably engageable in said sockets to detachably connect the fuse box to the motorcar, said fuse box having a front surface which is substantially flush with the front panel of the motorcar when the fuse box is inserted into said compartment, and said fuse box having an opening positioned adjacent said upper cover plate when said fuse box is inserted into said compartment, said "opening" has been inserted facilitating access to said fuse box when the latter is moved outwardly of said compartment so as to permit inspection and servicing thereof.

2. Apparatus as claimed in claim **1** wherein said compartment has a rear portion whereat said plug sockets are mounted.

3. Apparatus as claimed in claim **2** wherein said fuse box has a rear surface beyond which said plugs extend for engaging said plug sockets when the fuse box is inserted into said compartment.

4. Apparatus as claimed in claim **1** comprising means on said fuse box for slidably engaging the motorcar to insert the fuse box into the compartment and remove the same therefrom.

5. Apparatus as claimed in claim **4** wherein said means on the fuse box for slidably engaging the motorcar includes edge portions guidably supported in guide grooves provided in said motorcar.

6. Apparatus as claimed in claim **5** wherein said fuse box is hollowed-out and slides in drawerlike fashion from an engaged position in said compartment to a disengaged position therefrom.

7. Apparatus as claimed in claim **6** wherein said fuse box includes a finger engaging portion for moving the fuse box between the engaged and disengaged positions.

8. Apparatus as claimed in claim **1** wherein said plug sockets each comprise resilient plate portions in which respective plugs are frictionally engaged.

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