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VEHICLE CEILING WITH LIGHTING FIXTURE

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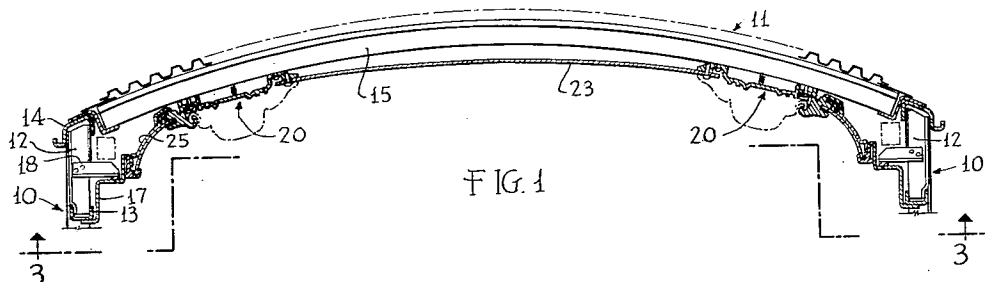


FIG. 1

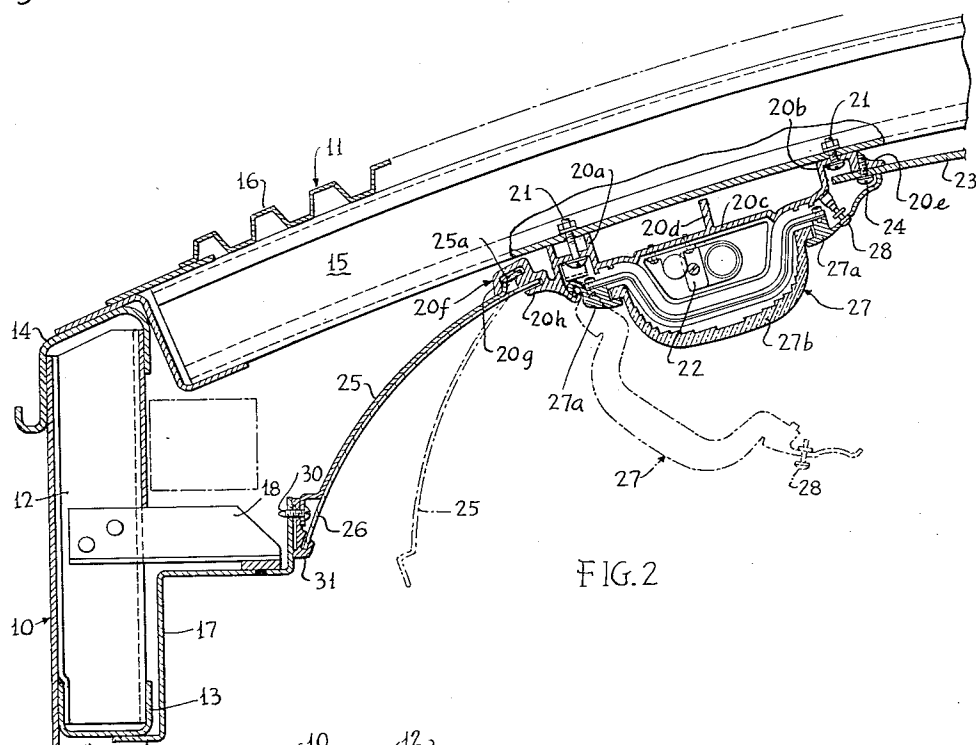


FIG. 2

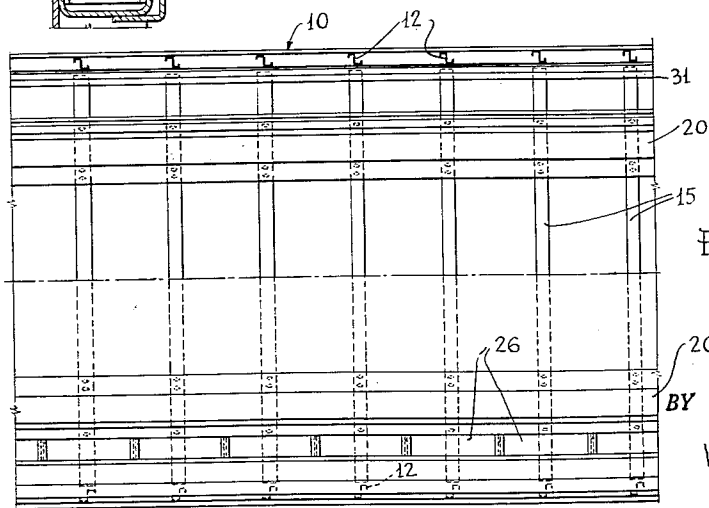


FIG. 3

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VEHICLE CEILING WITH LIGHTING FIXTURE
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15 Claims. (Cl. 240—7.35)

This invention relates to a through-running structural ceiling beam, duct and light fixture, especially for vehicles such as railway cars, and has for an object the provision of improvements in this art.

One of the particular objects of the invention is to provide through-running structural load-carrying ceiling beams which tie the carlines together on each side of the car.

Another object is to provide ceiling beams which form concealed wiring ducts running the length of the vehicle, the ducts being divided into parallel high-tension and low-tension wire spaces.

Another object is to provide through-running ceiling beams which on the outer side furnish fittings for the reception of fluorescent lamp tubes and a translucent or transparent closure cover therefor.

Another object is to provide through-running ceiling beams which also furnish anchorage for ceiling panels, one of which may be curved and provided with car card advertising receptacles and removable to give access to usable storage or equipment space therebehind.

The above and other objects and advantages of the invention will be apparent from the following description of an exemplary embodiment, reference being made to the accompanying drawings wherein:

FIG. 1 is a transverse vertical section of the upper portion of a railway car embodying the invention;

FIG. 2 is an enlarged section of the left hand portion of FIG. 1; and

FIG. 3 is a view taken generally on the line 3—3 of FIG. 1, reduced in size, some parts being omitted and the two sides shown somewhat differently.

Herein there is shown the upper part of a portion of the length of a railway car including sidewalls 10 and a roof 11. The sidewall comprises posts 12 and longitudinal beams 13 and 14; and the roof includes carlines 15 and longitudinally corrugated covering 16. On the sides there are bent panels 17 which are secured to brackets 18 and to the sidewalls proper to form the base for a car card support and equipment enclosure.

The present invention comprehends through-running beams 20, one on each side which are irregularly shaped to have considerable strength and rigidity to form load bearing members to which the carlines 15 are connected, as by bolts 21.

The beams may be formed as shaped extrusion members, as of aluminum. At the sides they have base elements 20a, 20b which fit against and are secured to the carlines, placing the intermediate web 20c at a distance from the carlines so that the space therebetween is ample to take the wiring and, if need be, some of the piping of the car. Preferably a rearwardly extending rib 20d is formed integrally on the extrusion to further rigidify it and form a divider between high voltage and low voltage wiring cables.

Lamp fixtures 22 for fluorescent lamp tubes are secured to the outer sides of the webs 20c.

Along the inboard sides the beams are formed with outstanding projections 20e faced on arcs on the outer side to take a center lining panel 23, the panel being secured by screws 24.

At the outboard sides the beams are formed with running edge extension portions 20f forming a groove for

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a removable car card backing plate 25, portion 20g forming a groove for a car card 26, and an overhanging hook-edge extension portion 20h providing groove for the lamp cover 27. The cover includes a frame or bezel 27a carrying a transparent or translucent enclosure member 27b and is secured at one side by screws 28. The frame at one side is provided with a hinge hook edge which cooperates with the hook groove of portion 20h to allow the cover to swing down, as shown in broken lines in FIG. 2.

The outboard edge of the car card backing plate 25 is secured, as by screws 30, to an extrusion molding 31 which, in turn, is secured to the bent panel 16 in any suitable manner. The molding 31 provides a groove for the lower edges of the car cards. The plate 25 can be swung down far enough to be completely removed but has a shoulder 25a engaged with an upstanding edge flange at the groove on the portion 20f to prevent separation when secured in position by the screws 30.

It is thus seen that the ceiling beams serve as load carrying members for the roof, having all the necessary strength needed beyond that supplied by the longitudinally corrugated roof covering; hold the interior lining panelling in place, carry the cables and wires—divided for different types; provide support for the lamp fixtures; and provide support for a removable lamp cover. The car card plate connection provided by the beams prevents separation at the edge when the car card plate is secured in place, no screws or other separate fastening elements being needed at this edge.

While one embodiment of the invention has been described for illustrative purposes it is to be understood that there may be various embodiments and modifications within the scope of the invention.

What is claimed is:

1. In a vehicle roof structural ceiling beam for supporting lighting fixtures, ceiling panels, and car plates comprising an I-beam having one horizontal web and two vertical webs, an extension on one of said I-beam vertical webs for supporting a car plate, another extension on the other of said I-beam vertical webs parallel to said horizontal web, a box channel having two vertical webs connected to said other extension of said I-beam vertical web by one of said box channel vertical webs, the other said vertical web of said box channel having a lever arm forming an angle bracket for supporting said ceiling panels, and a thick vertical web connected to said other extension between said I-beam and said box channel, said thick web forming the mutual web of two inverted box-channels formed between said I-beam and said box channel for supporting said lighting fixtures, said channels and said I-beam being interconnected into one continuous through-running beam to form a cross beam of said roof structure.

2. In a vehicle in combination with a roof having carlines and an outer load-bearing roof covering; a through-running inner load-bearing beam connectable to said carlines to form a rigid structure, said beam comprising two laterally disposed channel base elements which fit against said carlines, an intermediate web connecting said base elements and laterally disposed from said carlines to provide a cable space therebehind and a lamp fixture support on the front, an extension on one of said base elements which provides a grooved support for a card plate; and fastening means for securing said beam rigidly to said carlines at said base members.

3. The combination as set forth in claim 2, characterized by the fact that said extension on said base element is further provided with a grooved support for a car card.

4. The combination as set forth in claim 2, charac-

terized by the fact that said extension on said base element is further provided with a pivotal support for a lamp fixture cover frame.

5. The combination as set forth in claim 2, characterized by the fact said web connecting said base elements is further provided with a vertical web connected and normal to said intermediate web for dividing said cable space and defining a mutual web of two channel structure elements.

6. The combination as set for the in claim 2, characterized by the fact that an extension is provided on the other said base element for supporting a ceiling liner.

7. In a vehicle in combination with a roof having carlines and an outer load-bearing roof covering; a through-running inner load-bearing beam connected to said carlines, said beam comprising: two laterally disposed channel base elements which fit against said carlines, an intermediate web connecting said base elements being displaced from said carlines to provide a cable space therebetween, a vertical web connected and normal to said intermediate web for dividing said cable space and providing channel structure elements for supporting a lighting fixture, a first extension on one of said base elements for supporting a ceiling liner, a second extension on the other said base element for supporting one end of a removable card plate, a third extension on the other said base element for supporting one end of a card, a fourth extension on the other said base element for supporting a light cover frame, and fastening means for rigidly connecting said load bearing beam to said carlines at said base elements.

8. The combination as set forth in claim 7, further characterized by the fact that a light cover frame is provided, and supported by said fourth extension and a screw fastener which connects said frame to said beam at said base elements.

9. The combination as set forth in claim 7, further characterized by the fact that a removable card plate is provided, said plate cooperating with said second extension on said base element to slidably fit a groove therein.

10. In a vehicle in combination with a roof having

carlines and an outer load-bearing roof covering, a through-running inner load-bearing beam connectable to said carlines to form a rigid structure, said beam comprising: two laterally disposed channel base elements which fit against said carlines, an intermediate web connecting said base elements and laterally disposed from said carlines to provide a cable space therebehind and a lamp fixture support on the front, an extension on one of said base elements which provides a support for a card plate; and fastening means for securing said beam to said roof.

11. The combination as set forth in claim 10, further characterized by the fact that said extension is further provided with a retaining groove for said card plate and an L-shaped shoulder for locking said card plate in said retaining groove.

12. The combination as set forth in claim 10, further characterized by the fact that said beam is provided with a vertical rib connected on the back of and normal to said web.

13. The combination as set forth in claim 10, further characterized by the fact that the other of said base elements is provided with a horizontal supporting lever for supporting a ceiling liner.

14. The combination as set forth in claim 10, further characterized by the fact that a frame for supporting a light cover is provided which attaches to said beam at said base elements.

15. The combination as set forth in claim 10, further characterized by the fact that a card plate is provided in said card plate support whereby said beam and said card plate form a continuous ceiling cover obviating the requirement for ceiling skin sheets and ceiling panels therebehind.

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