~~Patent~~ Cclaims

1. Car body of a rail vehicle, comprising

   a ~~Longitudinal~~ longitudinal girder (10) ~~for a rail vehicle car body (1)~~ being one single part, comprising

   - a first connection point (12) ~~for a first roof section (4)~~ which in installed position points upward vertically or at an angle in the direction of the car body inner side, ~~characterised by~~;
   - a second connection point (14) ~~for a second roof section (3)~~ which in installed position points in the direction of the car body inner side (B) and which is arranged under the first connection point (12);
   - a third connection point (17) for a car body side wall (2, 8) which in installed position points downward or downward at an angle;

   ~~the longitudinal girder being one single part.~~

   characterized in that

   - at the first connection point (12) a first roof section (4) is affixed,
   - at the second connection point (14) a second roof section (3) is affixed, with the first roof section projecting upward beyond the second roof section,
     or at the second connection point (14) at least one transverse stiffening element is affixed.

2. ~~Longitudinal girder~~ Car body according to claim 1, wherein the longitudinal girder comprises~~ing~~

   - a section (16) which in installed position is a lower section and comprises the third connection point (17);
   - a first protrusion (11) which in installed position projects upward vertically or at an angle in the direction of the car body inner side with a free end that comprises the first connection point (12) ~~for the first roof section (4)~~; and/or
   - a second protrusion (13) which in installed position projects in the direction of the car body inner side (B), is arranged under the first protrusion and has a free end that comprises the second connection point (14) ~~for the second roof section (3)~~.

3.. Car body of a rail vehicle, comprising a side wall which at its upper end comprises

- a first connection point which in installed position points upward vertically or at an angle;
- a second connection point arranged under the first connection point, which in installed position points in the direction of the car body inner side,

characterized in that:

- at the first connection point (12) a first roof section (4) is affixed,
- at the second connection point (14) a second roof section (3) is affixed,

with the first roof section projecting upward beyond the second roof section, or at the second connection point (14) at least one transverse stiffening element is affixed.

4. Car body according to claim 3, wherein the side wall comprises
- a first protrusion which in installed position projects upward vertically or at an angle and has a free end that comprises the first connection point; and/or
- a second protrusion, arranged under the first protrusion, which in installed position projects in the direction of the car body inner side and has a free end that comprises the second connection point.

5~~3~~. Car body ~~Longitudinal girder~~ according to claim 2 or 4, i~~o~~n which in installed position the second protrusion (13) projects beyond the first protrusion (11) in horizontal direction.

6~~4~~. Car body ~~Longitudinal girder~~ according to claim 5~~3~~, i~~o~~n which the depth of the first protrusion and the depth of the second protrusion are dimensioned in such a way that an imagined connecting line from the free end of the first protrusion to the free end of the second protrusion forms an angle of 40° to 50° against the horizontal.

7~~5~~. Car body ~~Longitudinal girder~~ according to claim 2 or one of ~~the previous~~ claims 4-6, i~~o~~n which the second protrusion (13) has at its underside a fastening means (15) for fastening an interior panelling or other components or assemblies.

8~~6~~. Car body ~~Longitudinal girder~~ according to ~~one of the previous~~ claim~~s~~ 2 or one of claims 4 to 7, i~~o~~n which the first protrusion has a drainage duct inside.

~~7. Side wall for a rail vehicle car body which at its upper end comprises~~

- ~~a first connection point for a first roof section which in installed position points upward vertically or at an angle;~~
- ~~a second connection point for a second roof section, arranged under the first connection point, which in installed position points in the direction of the car body inner side.~~

~~8. Car body of a rail vehicle, comprising a longitudinal girder according to one of the claims 1 to 6 or a side wall according to claim 7.~~

~~9. Car body according to claim 8, comprising at least one first roof section and at least one second roof section, with the first roof section projecting upward beyond the second roof section.~~

9~~10~~. Car body according to one of the previous claims~~claim 9~~, on which the first roof section is an arched roof section and the second roof section is a horizontal, or basically horizontal, roof section.

10~~1~~. Rail vehicle, comprising a car body according to one of ~~the~~ claims 1-9~~8 to 10~~.

11~~2~~. Method for the production of a rail vehicle car body with at least one first roof section, and additionally with at least one second roof section or a transverse stiffening element, with the first roof section projecting upward beyond the second roof section, and where in the method

a) a single-piece longitudinal girder is arranged both above the area of the right car body side wall and above the area of the left car body side wall of a car body, the longitudinal girder comprising the following elements:
   - a first connection point for a first roof section which in installed position points upward vertically or at an angle in the direction of the car body inner side;
   - a second connection point for a second roof section or a transverse stiffening element, wherein the second connection point is arranged under the first connection point, ~~which~~ and wherein the second connection point in installed position points in the direction of the car body inner side;
   - a third connection point for a car body side wall which in installed position points downward or downward at an angle;

b) a right and a left car body side wall are joined to the third connection points of the two longitudinal girders;

c) one or more than one first roof sections are joined to the first connection points of the two longitudinal girders and

d) one or more than one second roof sections are joined to the second connection points of the two longitudinal girders, so that the first and second roof sections are arranged in longitudinal direction of the car, ~~and~~ either just one first or just one second roof section is arranged in a longitudinal section of the longitudinal girder and the first roof section projects upward beyond the second roof section,
or at least one transverse stiffening element is joined to the second connection points of the two longitudinal girders.

123. Method according to claim ~~12~~11, characterised in that a joining device, in particular a welding torch, is guided along the second connection point when one or more than one first roof sections are joined to the first connection point.

134. Method according to claim ~~12~~ 11 or ~~13~~12, characterised in that a joining device, in particular a welding torch, is guided along the first connection point when one or more than one second roof sections are joined to the second connection point.

~~15. Use of a longitudinal girder according to one of the claims 1 to 6 or of a side wall according to claim 7 as a component for a rail vehicle car body.~~