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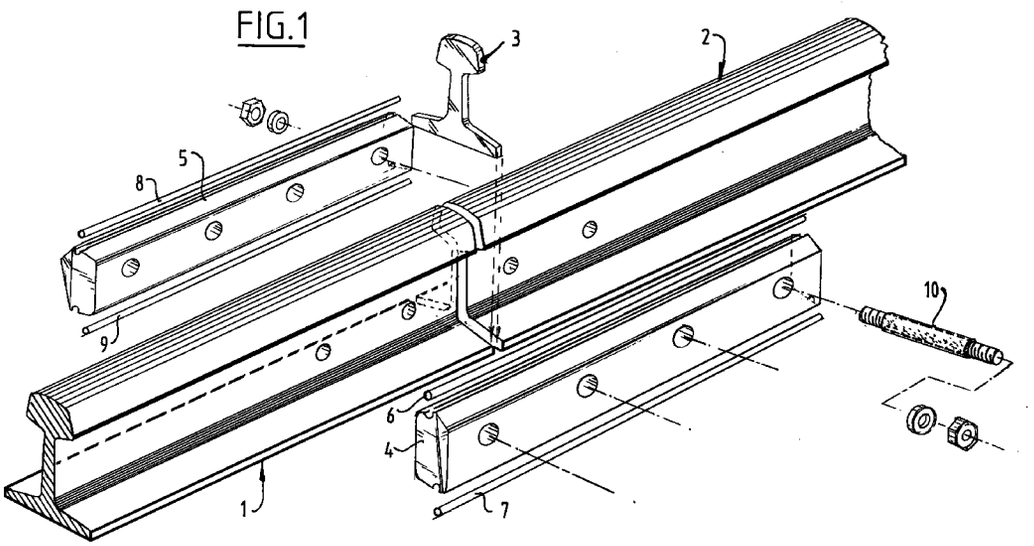
(54) Method for connecting rail bars and rail bar connection obtained according to the method.

(57) Rail bars (1,2) are mutually connected with their end faces in electrically conducting manner by arranging an electrically conducting (6,7,8,9) member on either side of the rail bars. The conducting member (6,7,8,9) is connected clampingly to the rail bar by suitable fixing means (14,5,10), for instance nut-bolt connections, wherein a space results between the rail bars and the connecting plate. This space is filled by means of a curing adhesive (11,12).

FIG.1



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Description

In addition to supporting and guiding rail-bound vehicles, rail bars also have the function of conducting electrical currents and signals.

Stricter requirements are recently being made of the conducting properties of rail bars. This is inter alia the result of the increase in the electrical power of locomotives. The material of rail bars generally has a limited electrical conductivity. Particularly at connecting positions between rail bars located mutually in line problems of electrical conduction can occur since the electrical conductivity is usually limited at these connecting positions. This can result in a temperature stress at this location.

The invention has for its object to obviate this drawback.

This is achieved according to the invention by placing on either side against the rail bar a connecting plate extending in lengthwise direction over both rail bars for connecting, this with interposing of at least one electrically conducting member, clampingly connecting the connecting plates to the rail bar by transversely directed nut-bolt connecting members and introducing a curing adhesive into the space between the rail bar and the connecting plate.

According to the invention a good electrical conductivity is obtained due to the presence of at least one conducting wire, while tensile strain and pressure loads occurring in longitudinal direction can further be absorbed by the combination of the plates and adhesive agents.

Preferably arranged between the end faces of the rail bars for mutual connection is an electrically conducting profile plate.

The conducting member is preferably of copper in order to obtain a high electrical conductivity.

The conducting member is received clampingly between the rail bar and the connecting bar so that a good contact pressure is obtained. After injection of the adhesive the pressure in the injected space is increased by tightening the connecting bolts. Spaces possibly not filled with adhesive are hereby filled and the excess adhesive is pressed outside. This excess adhesive can then be removed with suitable means.

The invention further relates to a rail bar connection consisting of connecting plates placed on either side against rail bars located mutually in line with interposing of conducting wires, nut-bolt connecting means clampingly connecting the connecting plates located on either side of the rail bars and curing adhesive injected into the space between the respective connecting plates and the rail bar.

The invention will be elucidated with reference to an embodiment according to the annexed drawings, in which:

figure 1 shows a perspective view with exploded parts of a connection of two rail bars according to the invention, and

figure 2 shows a cross section of the connecting construction according to figure 1.

According to the invention two rail bars 1, 2 are placed with their end faces against each other with interposing of for instance a profile piece 3. The latter can be of plastic. Connecting plates 4, 5 are placed in overlapping manner on the side of the rail bars 1, 2 for connecting. Copper conducting rods 6, 7 and 8, 9 are herein received clampingly at the top and bottom respectively in figure 1 between connecting plates 4, 5 and both rail bars 1, 2. The connecting plates 4, 5 for instance, and therein the copper conducting rods 6, 7 and 8, 9, are then clamped fixedly by nut-bolt connections 10. The remaining interspace between connecting plates 4, 5 and rail bars 1, 2 is then filled by injecting an adhesive 11, 12 (figure 2). The adhesive 11, 12 then cures.

Claims

1. Method for mutually connecting rail bars with their end faces in electrically conducting manner, **characterized by**

   - placing on either side against the rail bar a connecting plate extending in lengthwise direction over both rail bars for connecting, this with interposing of at least one electrically conducting member,
   - clampingly connecting the connecting plates to the rail bar by transversely directed nut-bolt connecting members, and
   - introducing a curing adhesive into the space between the rail bar and the connecting plate.

2. Method as claimed in claim 1, **characterized in that** prior to mutual connection of the rail bars a profile plate is arranged between the end faces of the rail bars for connection.

3. Method as claimed in claim 2, **characterized in that** the profile plate is of conducting material.

4. Method as claimed in claim 1, **characterized in that** the conducting member is of copper.

5. Method as claimed in claim 1, **characterized in that** the conducting member is received clampingly between the rail bar and the connecting plate.

6. Method as claimed in claims 1-5, **characterized in that** after injection of the adhesive the pressure in the injected space is increased.

7. Method as claimed in claim 6, **characterized in that** the pressure is increased by tightening the connecting bolts.

8. Method as claimed in claim 1, **characterized in that** the adhesive is injected.

9. Rail bar connection consisting of connecting plates placed on either side against rail bars located mutually in line with interposing of electrically conducting members, nut-bolt connecting means clampingly connecting to the rail bars the connecting plates located on either side of the rail bars and curing adhesive injected into the space between the respective connecting plates and the rail bar.

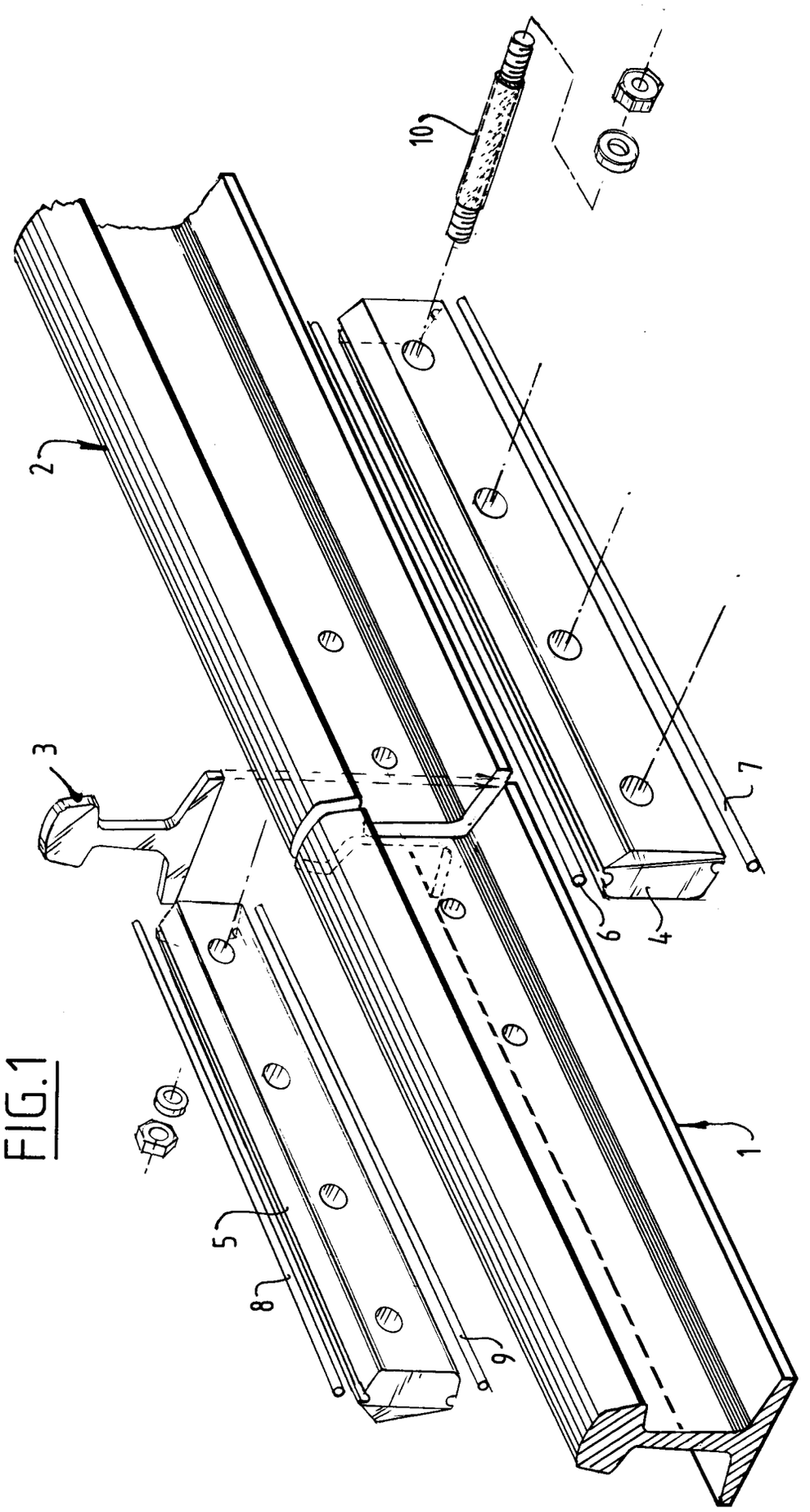

FIG.1

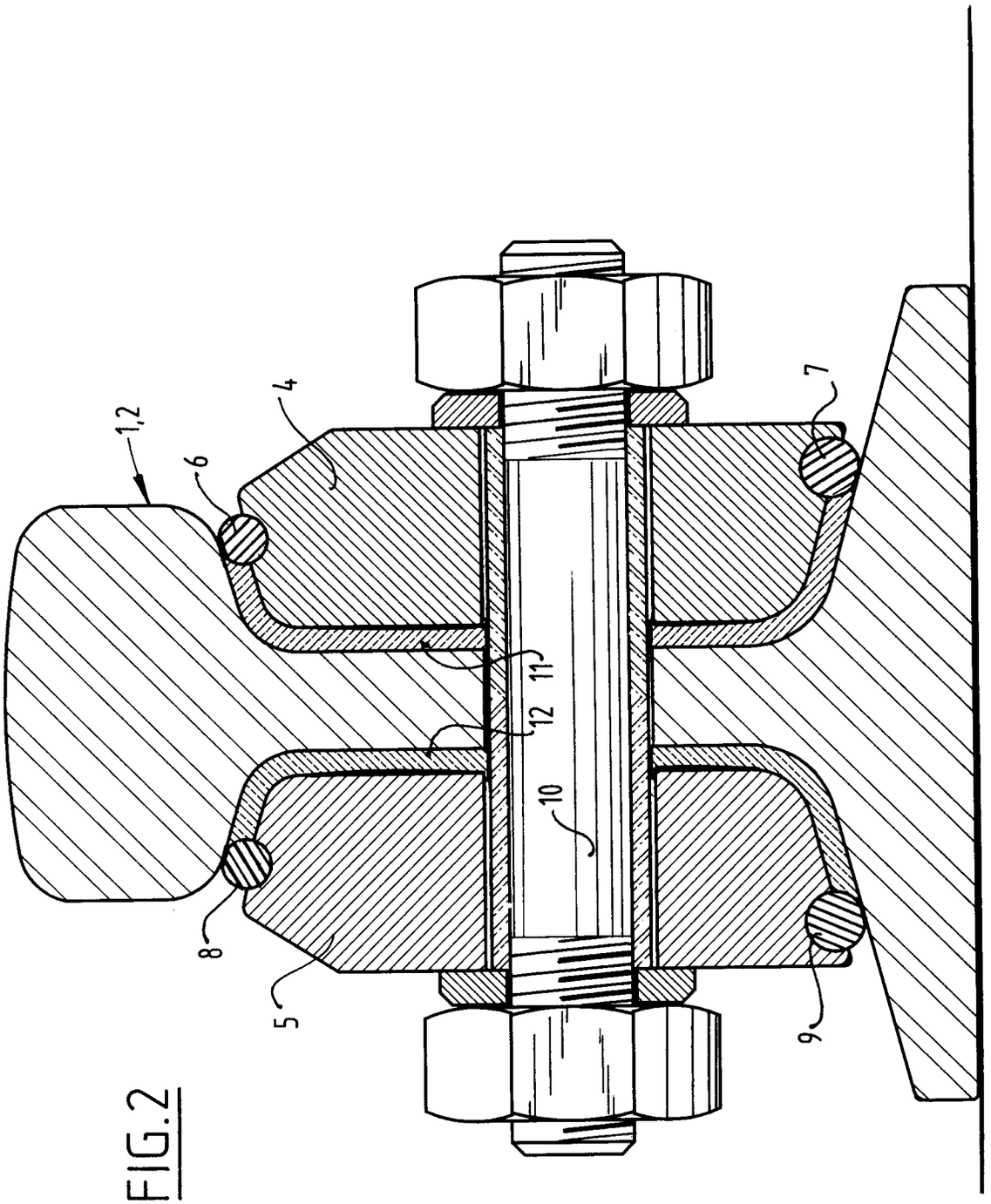

FIG.2

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EUROPEAN SEARCH REPORT

Application Number
EP 96 20 1341

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X Y A	DE-B-12 41 473 (FRANZ CLOUTH RHEINISCHE GUMMIWARENFABRIK AG.) 1 July 1967 * column 3, line 48 - column 6, line 39; figures * ---	1,5-7 2-4 8,9	E01B11/04
Y	AU-A-2 775 171 (PORTEC INC.) 19 October 1972 * claims; figures * ---	2	
Y	US-A-1 507 770 (FEHR) 9 September 1924 * column 1, line 10 - line 22; figures * ---	3	
Y	US-A-2 887 743 (BURKE) 26 May 1959 * column 2, line 65 - line 69; figure 4 * -----	4	

TECHNICAL FIELDS SEARCHED (Int.Cl.6)

E01B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	16 October 1996	Blommaert, S

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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P : intermediate document

T : theory or principle underlying the invention
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