A trolley to carry a connecting board
Wagen zum Tragen von einer Verbindungsplatte
Chariot permettant de porter une plaque de connexion

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Description

FIELD OF THE INVENTION

[0001] The present invention refers to a trolley to carry a connecting board for truck trailers and semi-trailers, incorporating significant innovations and advantages with regards the present connecting boards used in trailers and semi-trailers.

[0002] More specifically, a trolley carrying a connection board of the kind used in articulated vehicles for the linkage of service and energy ducts between the tractor and the trailer or semi-trailer is described. Said trolley is formed by a device designed to move on two transverse guides located in the front part of a trailer or a semi-trailer.

[0003] The trolley to be described is especially appropriate for avoiding excessive pulls and pinchings in compressed air ducts and electric cables as the tractor forms an angle of a certain magnitude in relation to the longitudinal axle of the trailer or semi-trailer.

[0004] In addition, said trolley, with its side displacement, facilitates the connecting and disconnecting of the above mentioned ducts and cables.

BACKGROUND OF THE INVENTION

[0005] In an articulated transport vehicle there are a number of air ducts and electric cables between the tractor and the trailer or semi-trailer. A connecting board is located in the front part of the trailer, centralizing pressurized air connections for brakes and other devices and electrical connections for signalling systems. Additional connections may exist, such as electrical cables for energy supplies and similar uses.

[0006] Said ducts and cables are subject to open weather conditions and to many flexion and compression stresses between the tractor and the semi-trailer. Said actions are increased when in a manoeuvre the tractor takes an important angle in relation to the longitudinal axle of the trailer.

[0007] In said cases, ducts and cables are stretched and possibly damaged. Above all, air outlets and intakes in the connecting board suffer from an important side drawing.

[0008] Additionally, a problem exists with the connection and disconnection of the cited ducts when a trailer or a semi-trailer is coupled to a tractor, because the available working space is small and uncomfortable. This is especially true in the case of refrigerated semi-trailers, as the operator has to get to the upper part of the tractor body to handle ducts and cables, just in a space where the refrigerating unit is located, so the connecting operation is complex and hard.

[0009] In response to the above mentioned drawbacks, the prior art has proposed several solutions including automatic coupling systems. Most of them, as per patent WO 91/11338, a movable coupling system is provided in the front part of the semi-trailer. These couplings show, as the main feature, a board located on an articulated mounting, as per patent WO 94/26542, or a transverse track or guide for displacement, as per cited patent WO 91/11338 and U.S. patent no. 3.888.513.

DESCRIPTION OF THE INVENTION

[0010] The trolley forming the subject matter of this invention is it described in claim 1.

[0011] Said devices offer improved connecting conditions for users and a strong structure, thus allowing a more dynamic and durable use and a low level of wear and noise.

[0012] In fact, the trolley according to the invention comprises a connecting board including outlets and intakes corresponding to ducts and tubes coming from the tractor. Said board extends rearwards in an upper bracket or support and a lower bracket or support, both mounted on two parallel profiles transversely located in the front part of the trailer or semi-trailer.

[0013] Novelty in this invention consists of the coupling of brackets or supports to profiles, as well as the proper profiles. Each bracket is mounted on the external side of a profile according to a transverse direction, the two brackets externally covering both profiles.

[0014] Each profile is T-shaped, with its end elbowed to define an anchoring rim to the body of the trailer or semi-trailer, to which it is directly fixed.

[0015] The rest of the board support on the guiding profiles is made by two sets of ball-bearings defining a secure stay. Each set is formed by two vertical-axe bearings facing the other set. A wing of each profile is comprised between the bearings of a set. Another ball bearing with its axle horizontal rests on the central, horizontal part of the profile. This arrangement ensures a highly smooth motion on the profiles, resulting in their long duration.

[0016] The lower bracket or support shows its set of bearings in an inverted position in relation to the upper bracket, since the lower profile is inverted with respect to the upper profile.

[0017] The board according to this invention slides on the four sets of ball bearings facing each other. Said bearings adequately withstand side and pulling stresses possibly applied on the board. Also, the whole weight is supported by the horizontal-axe bearings leaning on the upper profile, and said weight being rather low allows a smooth displacement. The horizontal-axe bearings leaning on the lower profile ensure the adequate position of the board on both profiles.

[0018] The open shape of the profiles allows its easy cleaning and low maintenance. The array conditions of outlets and intakes on the connecting board bring about its size and therefore the distance between both profiles defining the guiding of the device.

[0019] The connections of ducts leading to outlets and intakes on the board extend in pipes forming a manifold
A trolley to carry a connecting board, designed for
claims laid flat between the profiles (6) of the device.

In a manifold of ducts (9) lodged in an articulated chain
the tractor. These outlets and intakes extend afterwards
and intakes (2) to be connected with pipes coming from

1. A trolley to carry a connecting board, according to
holding outlets and intakes (2) to connect air and
electrical ducts in order to mount said trolley in a
transverse guide on the front part of a trailer (10) or
semi-trailer, characterised by the fact that it com-
prises a front panel (1) extended in its upper and
lower parts in two transverse, parallel supports (3)
defining as a whole a laid flat U at the rear, each of
said supports (3) holding two sets of ball bearings
(4, 5) externally located in relation to a respective
profile (6) forming the guide for the device.

2. A trolley to carry a connecting board, according to
claim 1, characterised by the fact that the guide
system consists of two opposed profiles (6) with a
laid-flat T shape cross-section, transversely orient-
ed and with the central, horizontal stretch bent in
right angle, and in that each of the profiles (6) is
straight.

3. A trolley to carry a connecting board, according to
claims 1 and 2, characterised in that each support
(3) holds two sets of three ball bearings (4, 5) in their
ends respectively, said sets of bearings being trans-
versely apart and externally mounted on the re-
spective support (6) forming the guiding system.

4. A trolley to carry a connecting board, according to
claims 1 to 3, characterised in that the ball bear-
ings of each set (4, 5) comprises two bearings (4)
vertically oriented and mounted on the horizontal
stretch of support (3), aligned in parallel and holding
between them a wing (7) integral to the profile,
and in that the ball bearings of each set (4,
5) comprises a third bearing (5) horizontally orient-
ed and applied against the external side of the re-
spective profile (6), adequately adapted to run
along the full length of said side,
and in that the rear edge of each support (3)
is bent inwards the assembly, defining the support
of bearings (5).

Patentansprüche

1. Beweglicher Schlitten mit einem mit Ein- und Aus-
gängen (2) versehenen Anschlussfeld zum An-
schließen von Luft oder elektrischen Leitungen, um
den Schlitten an einer Querführung auf der Front-
seite eines Anhängers (10) oder Sattelanhängers
zu befestigen, dadurch gekennzeichnet, dass
der Schlitten aus einem Frontpanel (1) besteht, wel-
cches sich oben und unten in zwei parallelen Quer-
trägern (3) fortsetzt und somit insgesamt ein im
oberen Teil abgeflachtes U beschreibt, wobei jeder
dieser Querträger (3) zwei Kugellagerineinheiten (4,
5) trägt, die im Bezug auf ein entsprechendes, die
Führung der Einrichtung bildendes Profil (6) außen
liegen.

2. Beweglicher Schlitten mit einem Anschlussfeld
nach Anspruch 1, dadurch gekennzeichnet, dass
das Führungssystem aus zwei einander gegenüber
liegenden Profilen (6) besteht, deren Querschnitt
die Form eines abgeflachten, quer ausgerichteten
3. Chariot mobile portant un panneau de connexions, suivant les revendications 1 et 2, caractérisé en ce que chacun des supports (3) supporte deux ensembles constitués de trois roulements à billes (4, 5) chacun à une extrémité, dont les jeux de roulements sont séparés transversalement entre eux et montés extérieurement sur le support correspondant (6) formant ainsi le système de guidage.

4. Chariot mobile portant un panneau de connexions, suivant les revendications 1 à 3, caractérisé en ce que les roulements à billes de chaque ensemble (4, 5) comportent deux roulements (4) orientés verticalement et montés sur l'élément horizontal du support (3), alignés en parallèle et supportant entre eux une aile (7) intégrale avec le profilé, et en ce que les roulements à billes de chaque ensemble (4, 5) comportent un troisième roulement (5) orienté horizontalement et plaqué contre le côté extérieur du profilé correspondant (6), adapté de façon à en permettre le déplacement sur toute la longueur dudit guide, et en ce que le bord postérieur de chaque support (3) est plié vers l'intérieur de l'ensemble, définissant ainsi le support des roulements (5).

Revendications

1. Chariot mobile portant un panneau de connexions, conçu pour supporter des sorties et des entrées (2) prévues pour le branchements d'air et de conducteurs électriques à fin de monter ledit chariot sur un guide transversal à l'avant d'une remorque (10) ou d'une semi-remorque, caractérisé en ce qu'il comprend un panneau avant (1) dont les parties supérieure et inférieure sont prolongées par deux supports transversaux parallèles (3) qui définissent dans leur ensemble un U aplati dans le haut, chacun desdits supports supportant (3) deux ensembles de roulements à billes (4, 5) situés extérieurement par rapport au profilé correspondant (6) formant le guide du dispositif.

2. Chariot mobile portant un panneau de connexions, suivant la revendication 1, caractérisé en ce que le système de guidage consiste en deux profilés opposés entre eux (6), dont la section transversale prend la forme d'un T aplati, orienté transversalement et pourvu d'un élément central, horizontal, plié en angle droit, et en ce que chacun des profilés (6) est droit.