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**(54) INTERMODAL POCKET WAGON**

(57) The invention relates to a railway transport, to be more specific, to intermodal pocket wagons and can be used for transporting freight trailers on the public railway tracks, as well as for loading and unloading the freight trailers at the specialized terminals. The intermodal pocket wagon consists of the carrying platform and the console joined with a connecting mechanism and equipped with two-axle bogies. The console mounts the horizontal arched beam equipped with screw jack sup-

ports and configured to move transversally against the console and to move an adjacent end of the carrying platform along the arched beam. The arched beam is mounted on the horizontal guide. The beam consists of the central movable and side foldable sections hinged to the central one and located along the console in a folded position. The invention allows the elongation of extension of the arched beam and maintains the compact dimensions of the unit.

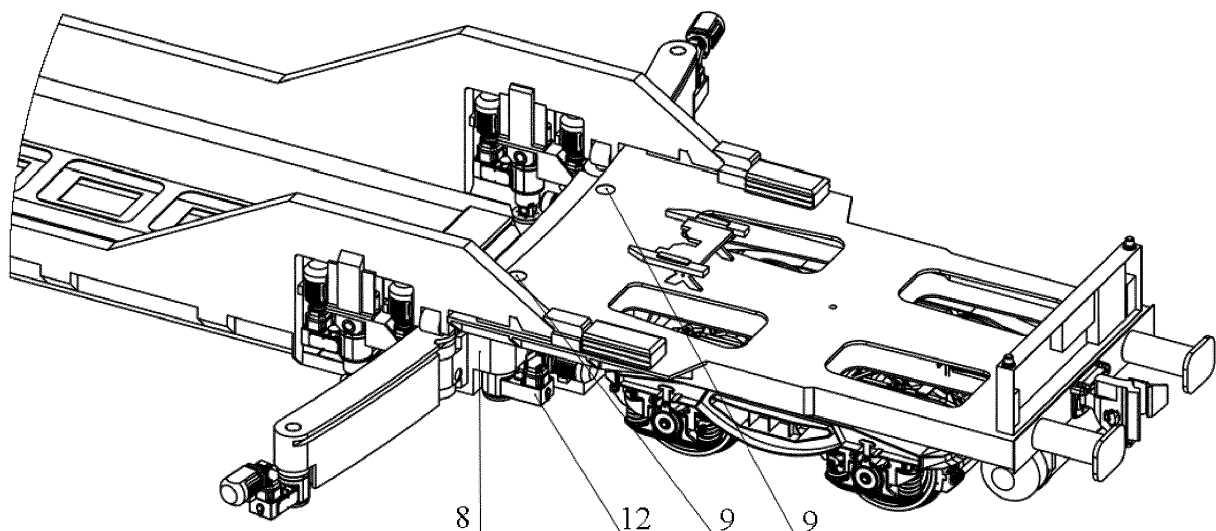


Fig.3

## Description

### FIELD OF THE INVENTION

**[0001]** The invention relates to a railway transport, to be more specific, to intermodal pocket wagons and can be used for transporting freight semitrailers on the public railway tracks, as well as for loading and unloading the freight semitrailers at the specialized terminals.

### BACKGROUND OF INVENTION

**[0002]** State of art gives an intermodal pocket wagon with a carrying platform and a console joined with a connecting mechanism and equipped with two-axle bogies, with the console equipped with a horizontal arched beam with retractable vertical supports and with a possibility to pivot transversally against the chassis and to slide an adjacent end of the carrying platform along the beam (see Patent EP2419312, Cl. B61D 3/04, published on 25.05.2016). The drawbacks of the disclosed device are its large dimensions, a need for an extra fixing for an arched beam for transportation purposes and inconvenience in use due to a narrow space between the carrying platform and its console during the unloading process.

### SUMMARY OF THE INVENTION

**[0003]** The main purpose of the invention is to provide a durable and easy to operate pocket wagon with elongation of extension of the arched beam within the same compact dimensions.

**[0004]** This purpose has now been fulfilled by the invention which concerns the intermodal pocket wagon with the carrying platform and the console connected with each other with a connecting mechanism and equipped with two-axle bogies, and the console is outfitted with the horizontal arched beam equipped with retractable vertical supports, and the beam is outfitted to be extracted/retracted transversally against the console and to move an adjacent end of the carrying platform along the beam, the arched beam is mounted on the horizontal guide and consists of the central movable and side foldable sections hinged to the central section and located along the chassis in a folded position. The horizontal guide is preferably attached to the vertically sliding carriage mounted on the console. All sections of the arched beam are preferably equipped with the gear racks interacting with the gear wheels mounted on the carrying platform. The foldable sections are preferably hinged to the central one. Folded sections of the arched beam are preferably to be within the dimensions of the console. The end of the carrying platform adjacent to the console is preferably equipped with independent retractable vertical supports.

### BRIEF DESCRIPTION OF THE DRAWING FIGURES

**[0005]**

Fig. 1 is a general view of the proposed intermodal pocket wagon;

Fig. 2 is a folded position unit A from Fig. 1;

Fig. 3 is the same, unfolded position;

Fig. 4 is the same, a top view;

Fig. 5 is the same with an arched beam at the extreme position;

Fig. 6 is the same with a turned carrying platform;

Fig. 7 is the same with cargo;

Fig. 8 cargo stowage on intermodal pocket wagon in transportation mode.

### DETAILED DESCRIPTION OF THE INVENTION

**[0006]** The disclosed intermodal pocket wagon consists of a carrying platform 1 and a console 2 joined with a connecting mechanism. The console 2 and the rearward end of platform 1 are equipped with two-axle bogies 3. One end of the carrying platform 1 is anchored on the spherical support of its bogie 3, while the other end is attached to the console 2. Position locking mechanisms 4 for the platform 1 and the console 2 securely fasten them in a stowed position of the unit.

**[0007]** A horizontal arched beam mounted on the console 2 consists of three sections: the central movable section 5 and side foldable sections 6 located along the console 2 in a folded position. Sections 6 are hinged to the section 5 and are powered by the electromechanical drives 7. The beam is mounted on a horizontal guide which is attached to a carriage 8 mounted on the console 2 so as to move on the vertical guides 9. All sections 5-6 are equipped with gear racks 10 interacting with gearwheels 11 with the electromechanical drives and attached to the carrying platform 1. Sections 5-6 are equipped with the screw jack supports 12. The arched beam is designed to be transversally extracted against the console 2 and to move along the arched beam by the drive of the adjacent end of the carrying platform 1. Folded sections 5-6 are within the dimensions of the console 2.

**[0008]** The end of the carrying platform 1 adjacent to the console 2 is equipped with independent screw jack supports 13. The platform 1 moves along the arched beam on the rollers 14. The cargo is fastened in a stowed position by a saddle 15.

**[0009]** The intermodal pocket wagon is loaded and unloaded as follows.

**[0010]** Foldable sections 6 are unfolded by the drives to a working position on the loading site. Then, the arched beam is moved by gear rack 10 and gearwheels 11 along the horizontal guide of the carriage 8 towards the semitrailer. Due to the screw jack supports 12, the carriage 8 moves along the guides up to the construction elements of the console 2 and until arched beam touches the rollers 14 of the platform 1. The screw jack supports 12 are fixed against the ground, position locking mechanisms of the platform 1 are disabled.

**[0011]** Then the platform 1 is moved by gear rack 10

and gearwheels 11 on the rollers 14 along the arched beam. The screw jack supports 13 lift the platform 1, the screw jack supports 12 of the arched beam are lifted, the arched beam is shifted to the center. The drives 7 of the foldable sections 6 fold them to the original position.

**[0012]** The screw jack supports 13 lower the end of the platform 1 on the ground. A terminal tractor places the cargo - semitrailer on the platform 1.

**[0013]** The screw jack supports legs 13 lift the platform 1 with the cargo. The foldable sections 6 are unfolded into a working position. Beam sections 5-6 are moved by gear racks 10 and gearwheels 11 along the horizontal guide of the carriage 8. Beam screw jack supports 12 are fixed against the ground, while the screw jack supports 13 lower the platform on the arched beam.

**[0014]** The platform 1 with the cargo is moved along the arched beam and fixed on the console 2 with the position locking mechanisms. All operating mechanisms are in a stowed position. The cargo is fixed in the trailer hitch 15.

**[0015]** The disclosed construction for moving and turning the carrying platform of the proposed intermodal pocket wagon allows to increase the elongation of extension of the arched beam while maintaining the compact dimensions of the unit, is durable and improves the operational features due to application of mechanical and electromechanical systems.

5. The intermodal pocket wagon according to claim 1, wherein the folded sections of the arched beam are within the dimensions of the console.

5 6. The intermodal pocket wagon according to claim 1, wherein the end of the carrying platform adjacent to the console is equipped with independent screw jack supports.

## Claims

1. An intermodal pocket wagon with a carrying platform (1) and a console (2) connected with each other with a connecting mechanism and equipped with two-axle bogies (3), and the console is outfitted with a horizontal arched beam equipped with screw jack supports (13), and the beam is outfitted to be moved transversally against the console and to move an adjacent end of the carrying platform along the chassis, is **characterized in that** the arched beam is mounted on a horizontal guide and consists of a central movable (5) section and side foldable sections (6) hinged to the central section and located along the console (2) in a folded position.
2. The intermodal pocket wagon according to claim 1, wherein the horizontal guide is attached to the vertically sliding carriage (8) mounted on the console.
3. The intermodal pocket wagon according to claim 1, wherein all sections of the arched beam are equipped with gear racks (10) interacting with wheel gears (11) mounted on the carrying platform (1).
4. The intermodal pocket wagon according to claim 1, wherein the foldable sections are hinged to the central one.

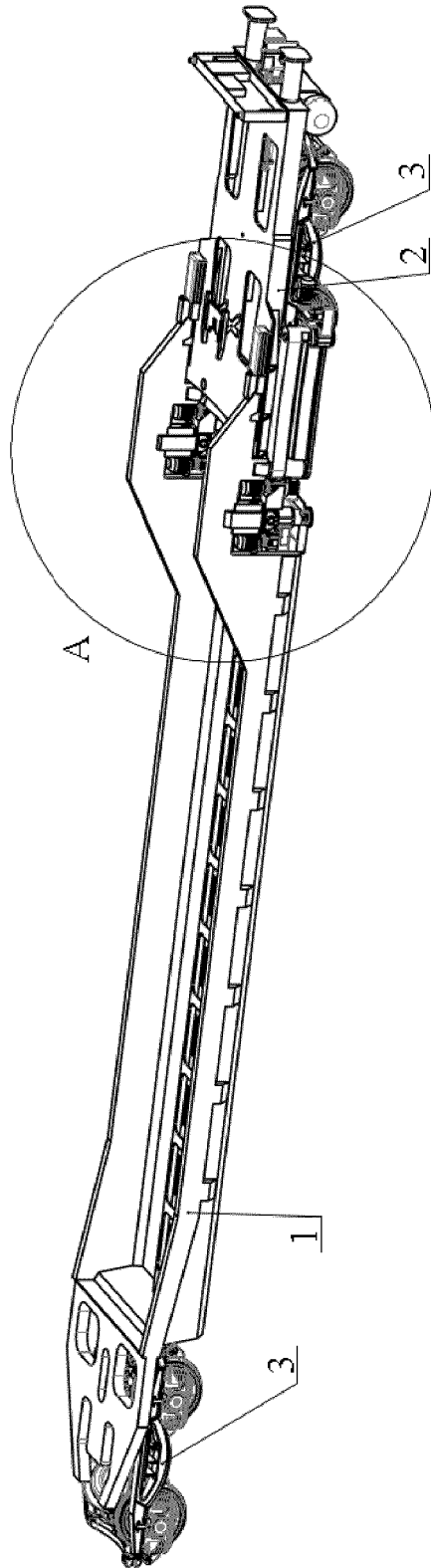


Fig.1

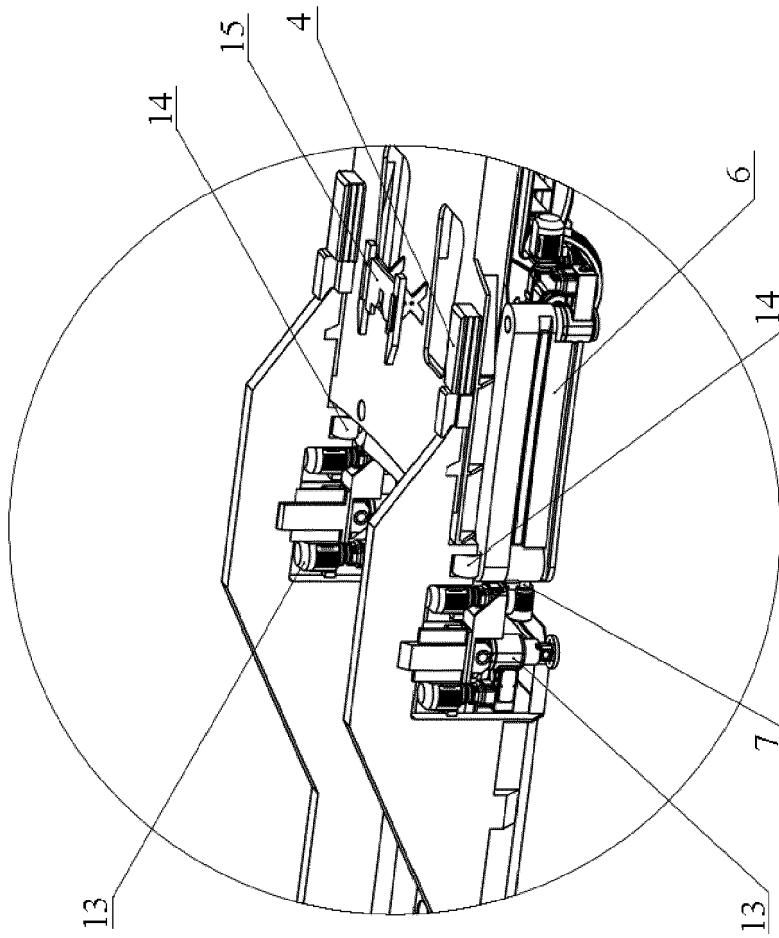


Fig.2

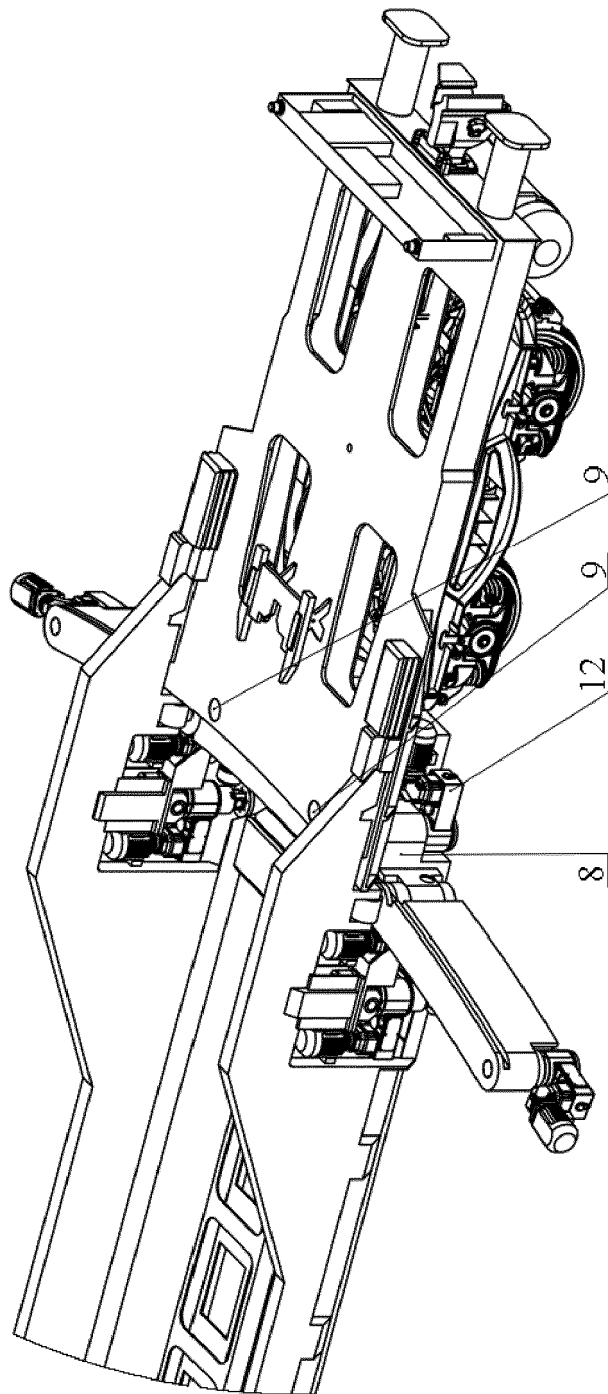


Fig.3

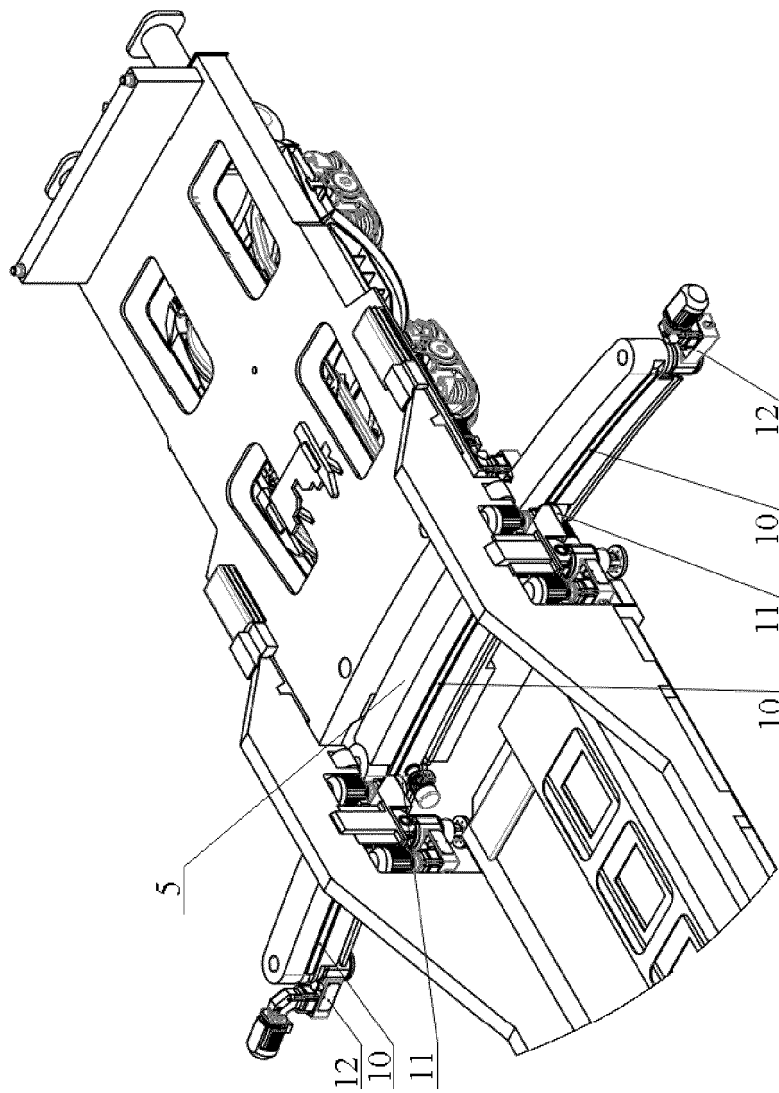


Fig.4

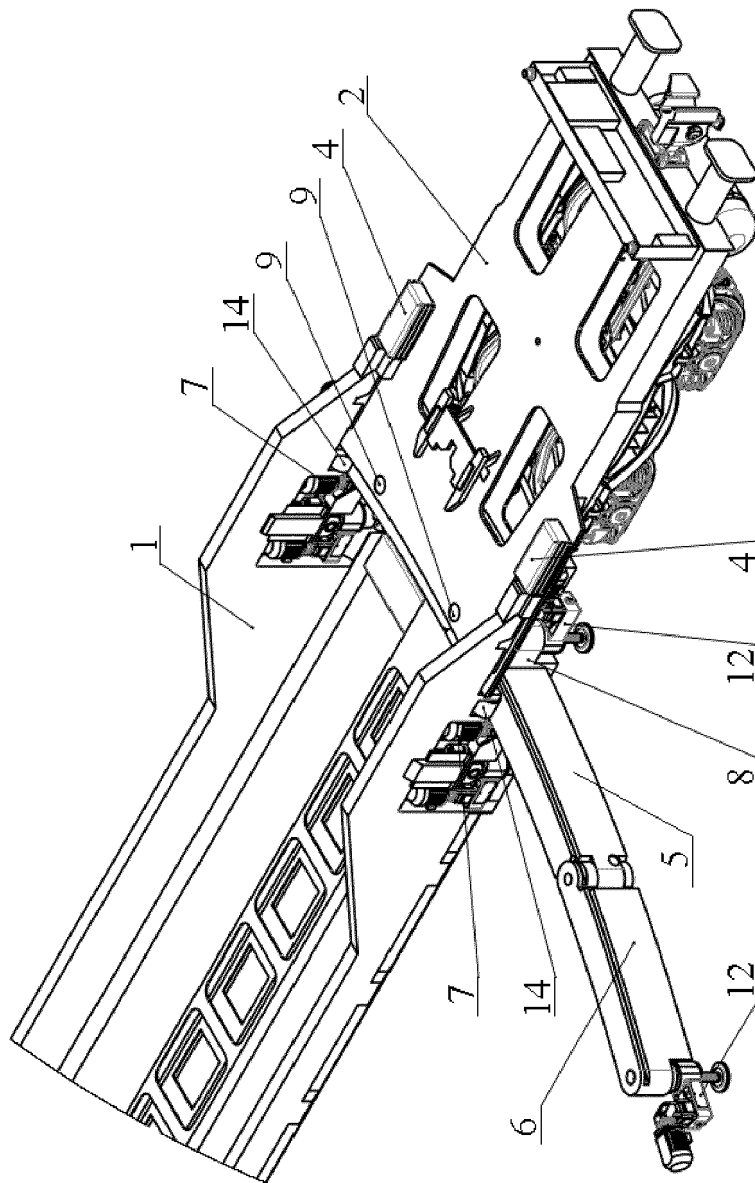


Fig.5



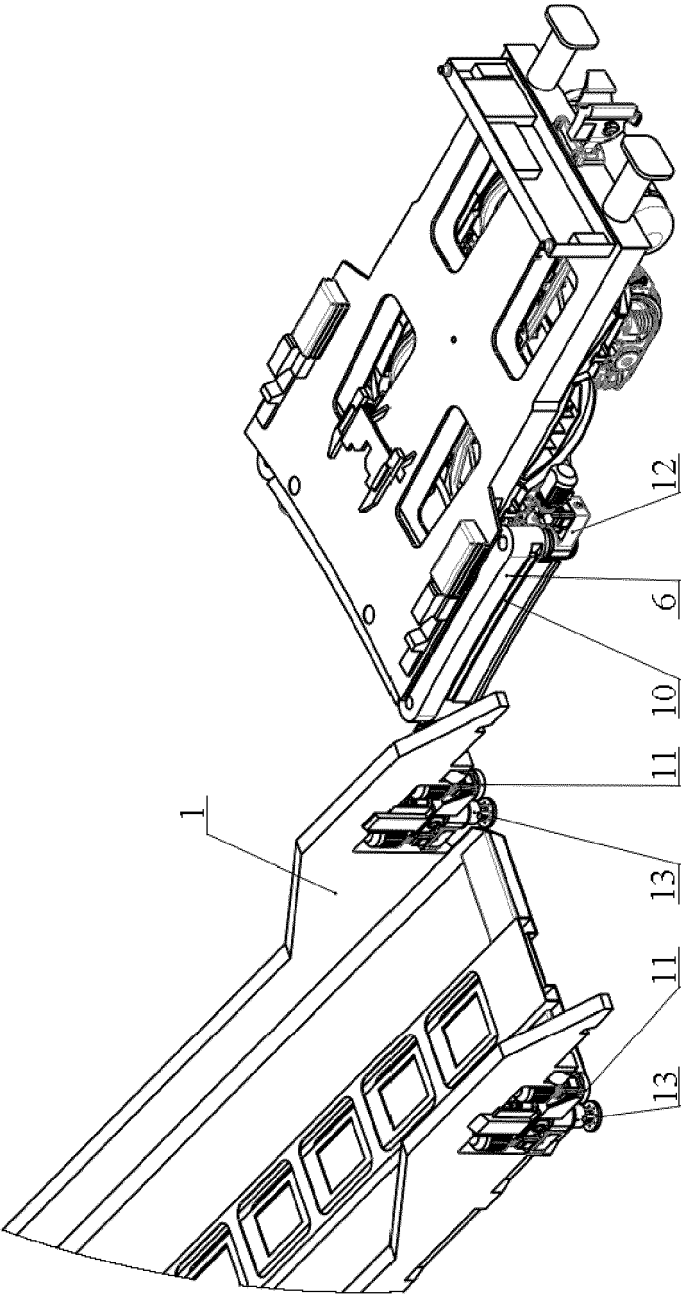


Fig.6

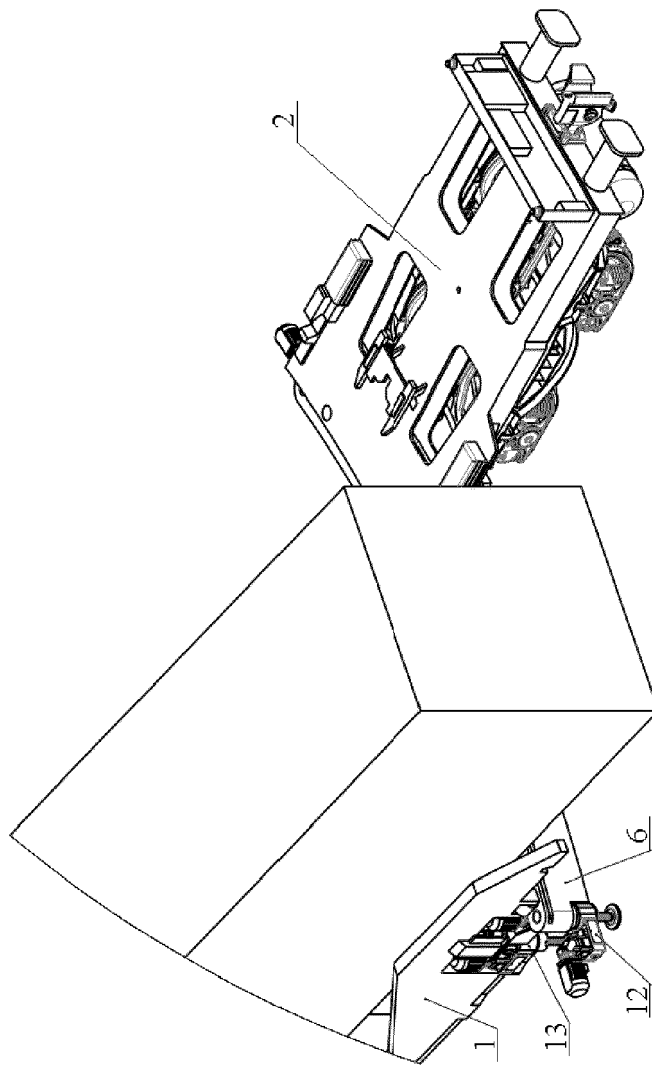


Fig.7

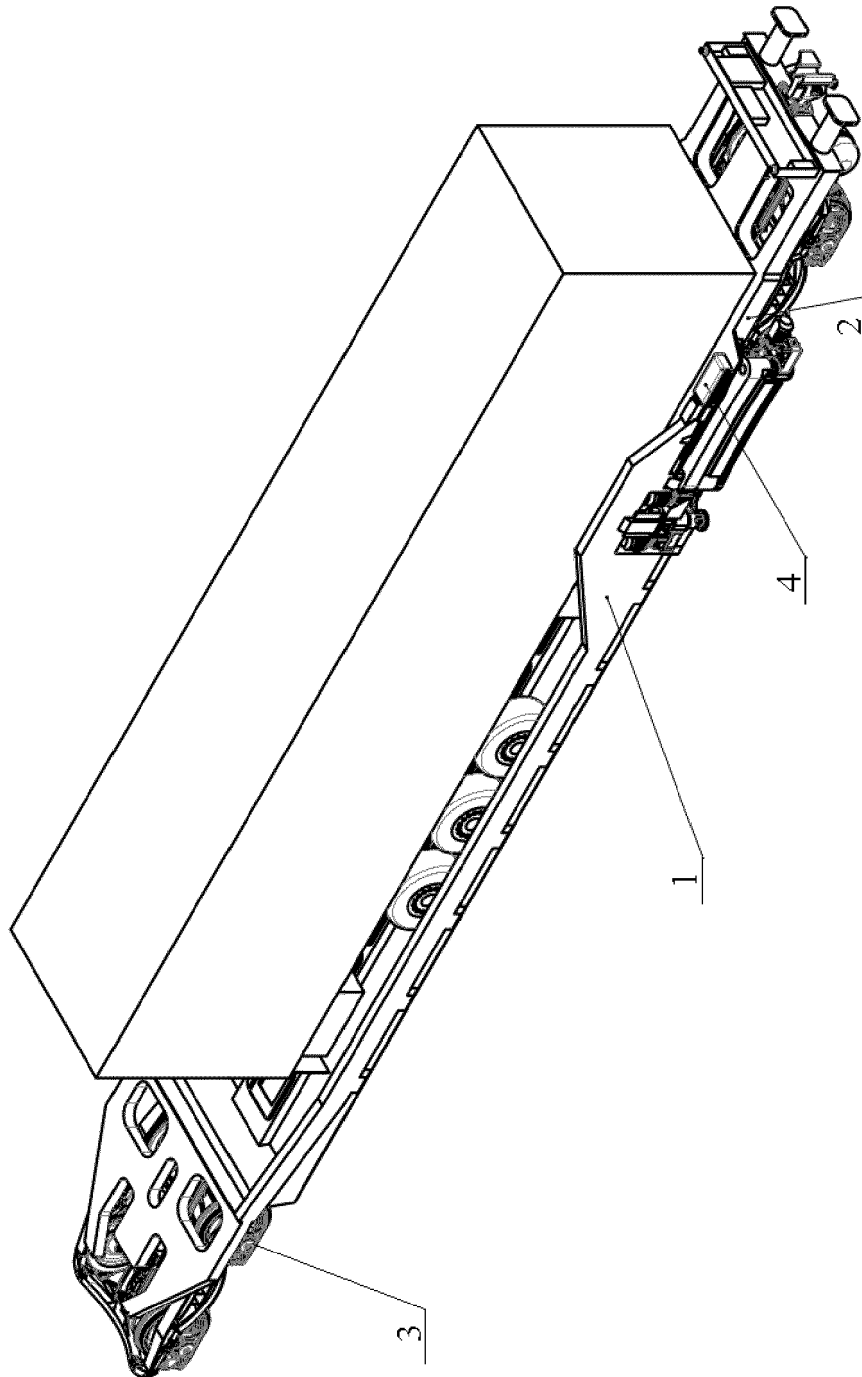


Fig.8



## EUROPEAN SEARCH REPORT

Application Number  
EP 19 21 9219

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			TECHNICAL FIELDS SEARCHED (IPC)
			B61D
The present search report has been drawn up for all claims			
Place of search <b>Munich</b>		Date of completion of the search <b>14 May 2020</b>	Examiner <b>Crama, Yves</b>
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03/02 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
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EP 19 21 9219

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
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14-05-2020

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