

## 10 Documents

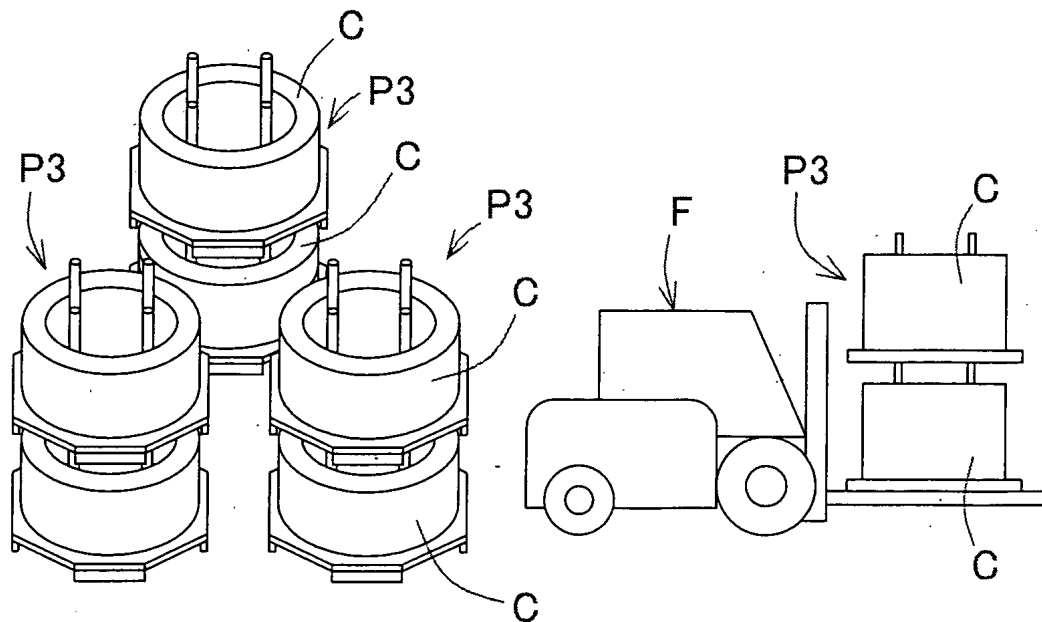
| Publication numbers              | Title                                                                                                                                                                                                                                           | Current assignees                     |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| <a href="#">EP1595809 A1</a>     | <a href="#">Coil</a> -like transport subject <a href="#">pallet</a> , structure for loading <a href="#">coil</a> -like transport subject onto <a href="#">pallet</a> , and method for transporting <a href="#">coil</a> -like transport subject | TOYOTA STEEL CENTER                   |
| <a href="#">EP-949154 A2</a>     | Stage for introducing/discharging heavy article to and from transporting receptacle, method for loading and unloading heavy article, using the stage                                                                                            | TOYOTA STEEL CENTER                   |
| <a href="#">JP11343034 A</a>     | Heavy object outputting inputting stage for conveyance container and heavy object outputting and inputting method                                                                                                                               | TOYOTA STEEL CENTER                   |
| <a href="#">US20060201839 A1</a> | Level wound <a href="#">coil</a> mounted on <a href="#">pallet</a> , and package for same                                                                                                                                                       | HITACHI CABLE                         |
| <a href="#">US20060207307 A1</a> | Method of feeding a <a href="#">pipe</a> from level wound <a href="#">coil</a> , package for level wound <a href="#">coil</a> and packaging method for level wound <a href="#">coil</a>                                                         | HITACHI CABLE                         |
| <a href="#">CN106516346 A</a>    | Novel <a href="#">pallet</a> special for metal coils                                                                                                                                                                                            | QINGDAO YIYU                          |
| <a href="#">JP2008087888 A</a>   | Level wound <a href="#">coil</a> , its manufacturing method, and level wound <a href="#">coil</a> packing body                                                                                                                                  | HITACHI CABLE                         |
| <a href="#">DE8634415 U1</a>     |                                                                                                                                                                                                                                                 | MAFISCO BAUTECHNIK<br>7959 ACHSTETTEN |
| <a href="#">WO200720858 A1</a>   | Storing/carrying method of long glass fiber cake and package                                                                                                                                                                                    | OWENS CORNING<br>MANUFACTURING        |
| <a href="#">US4976365 A</a>      | <a href="#">Pallet</a> and container integrated with <a href="#">pallet</a>                                                                                                                                                                     | SEO DONG J, ...                       |

Family 1/10 - FAMPAT - ©Questel

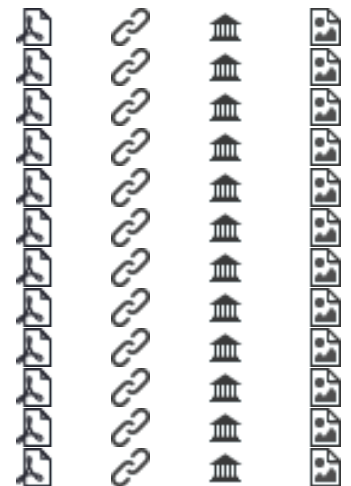
**Title**

(EP1595809)

**Coil-like transport subject** **pallet**, structure for loading **coil-like transport subject** onto **pallet**, and method for transporting **coil-like transport subject**

**Images****Publication numbers with kind code & date**

|                                |    |            |                               |
|--------------------------------|----|------------|-------------------------------|
| <a href="#">JP4322811</a>      | B2 | 2009-06-12 | <a href="#">JP4322811</a>     |
| <a href="#">EP1595809</a>      | B1 | 2008-08-06 | <a href="#">EP1595809</a>     |
| <a href="#">CN100391804</a>    | C  | 2008-06-04 | <a href="#">CN100391804C</a>  |
| <a href="#">US20070065269</a>  | A1 | 2007-03-22 | <a href="#">US20070065269</a> |
| <a href="#">EP1595809</a>      | A4 | 2006-09-06 | <a href="#">EP1595809</a>     |
| <a href="#">CN1741941</a>      | A  | 2006-03-01 | <a href="#">CN1741941</a>     |
| <a href="#">EP1595809</a>      | A1 | 2005-11-16 | <a href="#">EP1595809</a>     |
| <a href="#">TWI237000</a>      | B  | 2005-08-01 | <a href="#">TWI237000</a>     |
| <a href="#">TW200418698</a>    | A  | 2004-10-01 | <a href="#">TW200418698</a>   |
| <a href="#">AU2003207176</a>   | A1 | 2004-08-30 | <a href="#">AU2003207176</a>  |
| <a href="#">JPWO2004069672</a> | A1 | 2004-08-19 | <a href="#">JP2004069672W</a> |
| <a href="#">WO2004/069672</a>  | A1 | 2004-08-19 | <a href="#">WO200469672</a>   |

**Abstract**

(EP1595809)

This invention intends to provide a coiled carrying article **pallet**, which is suited for transporting small quantities of varied types of articles, which can easily, deliberately, efficiently transporting a coiled carrying article to a transport receptacle without damaging the coiled transport article, which can transport the coiled carrying article with transport cost being held down, and which can improve space efficiency for storage, and the like. The **pallet** P1 is a coiled carrying article **pallet** P1 contained in a transport receptacle (container A) while loading the coiled carrying article C, the **pallet** P1 including a **pallet** main body 1, and a stack support means 5, provided on the **pallet** main body, for vertically stacking and supporting another **pallet** P1, and the **pallet** main body 1 includes a mount section 3 on which the axial end face of the carrying article can be mounted, and an abutment section 2 provided on an outer peripheral side of the mount section and arranging a plurality of carrying articles in a zigzag fashion. <IMAGE>

**Inventors**

AOKI TATSUHIKO

ITO NOBUAKI

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**Latest standardized assignees - inventors removed**

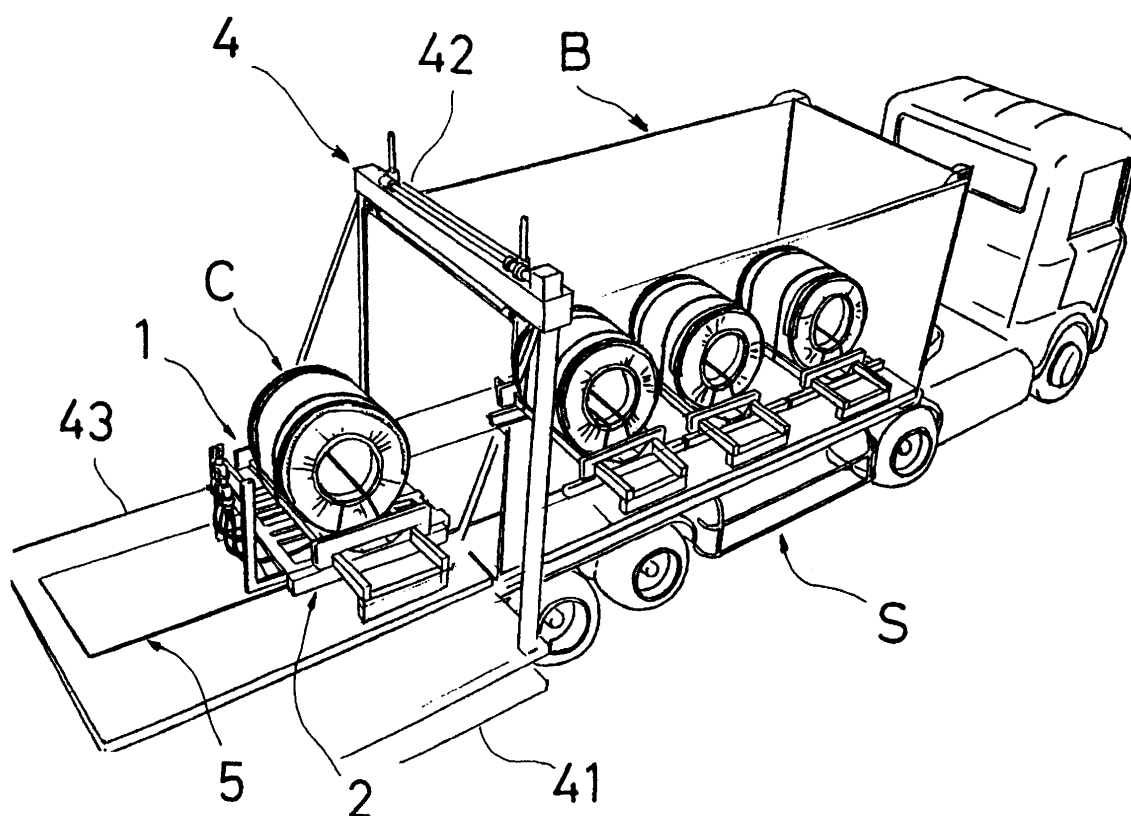
TOYOTA STEEL CENTER

Family 2/10 - FAMPAT - ©Questel

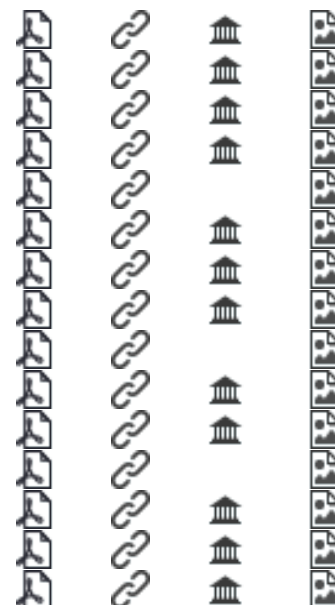
**Title**

(EP-949154)

Stage for introducing/discharging heavy article to and from transporting receptacle, method for loading and unloading heavy article, using the stage

**Images****Publication numbers with kind code & date**

|             |    |            |             |
|-------------|----|------------|-------------|
| DE69925622  | T2 | 2006-04-27 | DE69925622  |
| DE69925299  | T2 | 2006-03-09 | DE69925299  |
| DE69925622  | D1 | 2005-07-07 | DE69925622  |
| DE69925299  | D1 | 2005-06-16 | DE69925299  |
| AT296762    | T  | 2005-06-15 | ATE296762   |
| EP1123871   | B1 | 2005-06-01 | EP1123871   |
| DE69917119  | T2 | 2005-05-25 | DE69917119  |
| EP1123872   | B1 | 2005-05-11 | EP1123872   |
| HK1025295   | A1 | 2004-12-17 | HK1025295   |
| DE69917119  | D1 | 2004-06-17 | DE69917119  |
| EP0949154   | B1 | 2004-05-12 | EP-949154   |
| KR100407228 | B1 | 2003-11-28 | KR100407228 |
| US6379107   | B1 | 2002-04-30 | US6379107   |
| EP1123871   | A1 | 2001-08-16 | EP1123871   |
| EP1123872   | A1 | 2001-08-16 | EP1123872   |



|                               |    |            |               |
|-------------------------------|----|------------|---------------|
| <a href="#">EP1123872</a>     | A1 | 2001-08-16 | EP1123872     |
| <a href="#">EP0949154</a>     | A3 | 2000-08-16 | EP-949154     |
| <a href="#">KR19990078365</a> | A  | 1999-10-25 | KR19990078365 |
| <a href="#">EP0949154</a>     | A2 | 1999-10-13 | EP-949154     |

**Abstract**

(EP0949154)

According to one aspect of the present invention, there is provided a method of introducing/discharging a heavy article which enables a **coil**-shape heavy article to easily and directly be introduced into a transporting receptacle (a container or the like) and easily securing the heavy article without a flaw of the **coil**-shape heavy article. According to another aspect of the present invention, there is provided a **pallet**, a carrying vehicle and an introducing/discharging stage suitable for the introducing/discharging method. The introducing/discharging method is a method of introducing the **pallet** on which a heavy article is held into a container by using the introducing/discharging stage. The method has the following steps to be performed sequentially. The **pallet** has a **coil** securing member for securing a heavy article to be placed. When the number of said **pallet** is one, the size of the one **pallet** is substantially the same as the planar size of the container and when the number of said **pallet** is two or more, the size of the combined pallets is substantially the same as the planar size in the container. The carrying vehicle is able to levitate a support frame thereof by discharging gas in a state where the **pallet** loaded with the heavy article has been placed on the support frame. When a control stick is operated, the attitude of the support frame can be controlled. <IMAGE>

**Inventors**

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**Latest standardized assignees - inventors removed**

TOYOTA STEEL CENTER

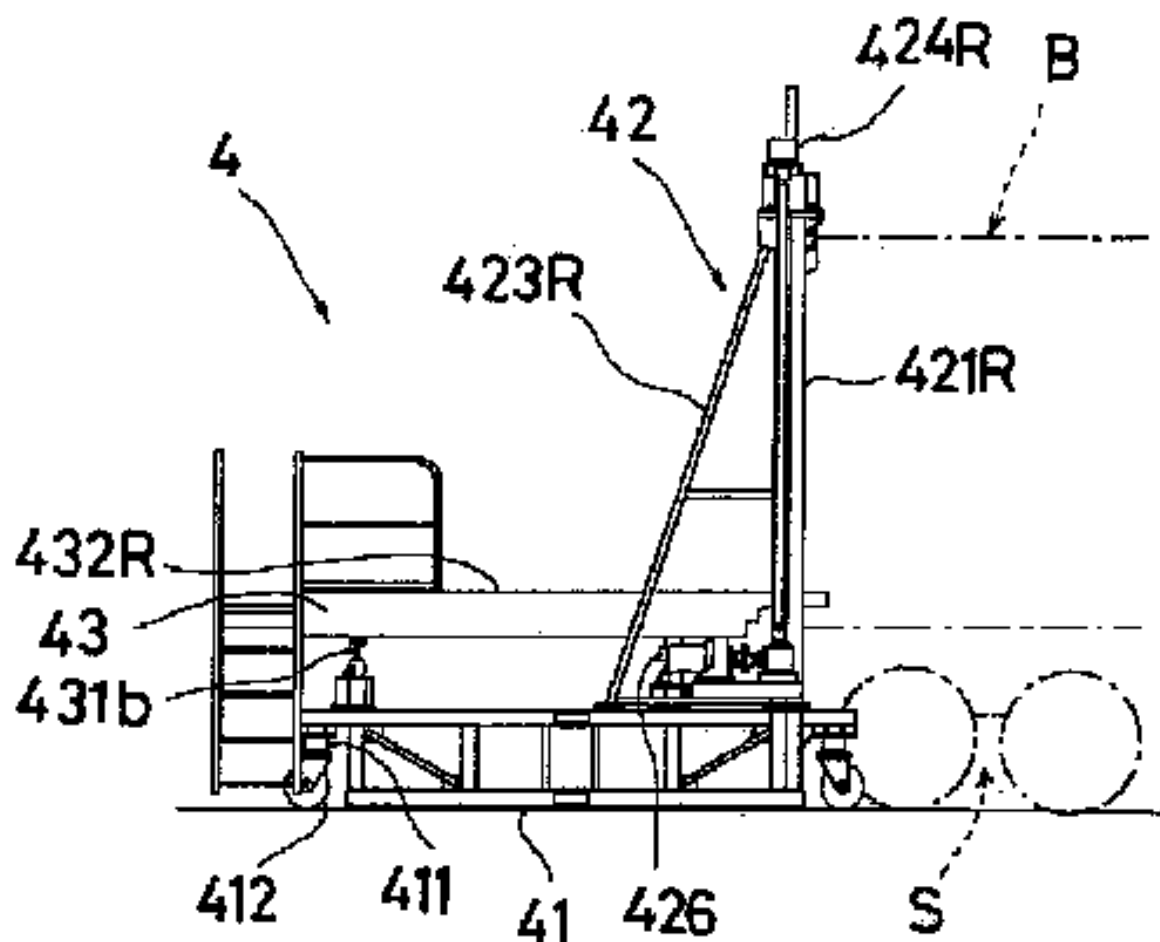
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**Title**

(JP11343034)

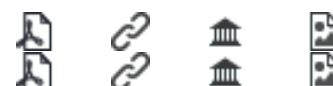
Heavy object outputting inputting stage for conveyance container and heavy object outputting and inputting method

**Images**



#### Publication numbers with kind code & date

|                            |    |            |            |
|----------------------------|----|------------|------------|
| <a href="#">JP3522145</a>  | B2 | 2004-04-26 | JP3522145  |
| <a href="#">JP11343034</a> | A  | 1999-12-14 | JP11343034 |



#### Abstract

(JP11343034)

**PROBLEM TO BE SOLVED:** To provide a heavy object carry out and in stage for a container to carry in a heavy object directly to a container on a chassis by using a conveyance vehicle and a method to carry on and in a heavy object to and from a conveyance container, such as a container, loaded on the chassis.

**SOLUTION:** This heavy object carry out and in stage for a container comprises a support 42; and a table 43. The support 42 is arranged on a chassis S and on the side, where the opening door of the container B is situated, as against the

container B loaded on the chassis S. By fixing the position of a corner metal fitting, the heights of the chassis S and the container B are fixed. The table 43 is arranged adjacently to the opening of the container B, and a conveyance vehicle to carry in a heavy object C in the container B is waited thereat. Further, the table 43 is provided with a support part 431b to independently support weight placed on the table 43. The support 431b causes the height of the upper surface of the table 43 to coincide with the height of a container B floor.

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#### Inventors

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TOYOTA STEEL CENTER

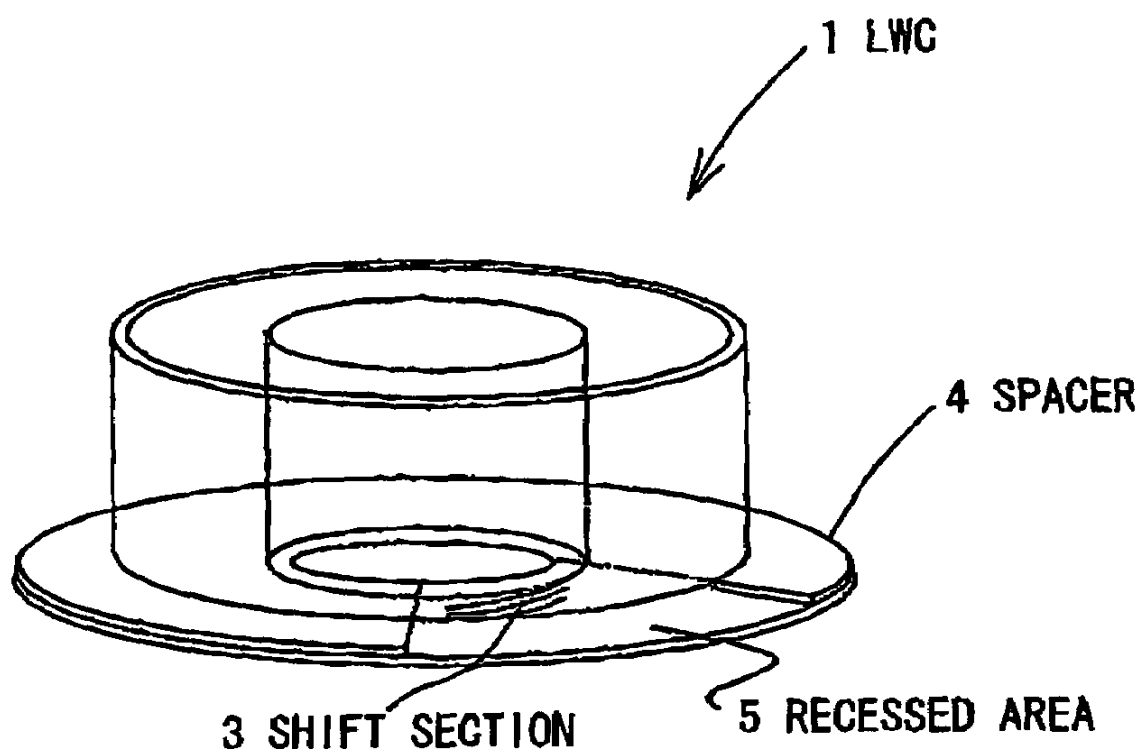
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#### Title

(US7549601)

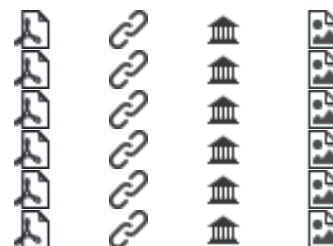
Level wound **coil** mounted on **pallet**, and package for same

#### Images



#### Publication numbers with kind code & date

|               |    |            |               |
|---------------|----|------------|---------------|
| US7549601     | B2 | 2009-06-23 | US7549601     |
| CN100491221   | C  | 2009-05-27 | CN100491221C  |
| JP4046135     | B2 | 2007-11-30 | JP4046135     |
| JP2006290619  | A  | 2006-10-26 | JP2006290619  |
| CN1833974     | A  | 2006-09-20 | CN1833974     |
| US20060201839 | A1 | 2006-09-14 | US20060201839 |



#### Abstract

(US20060201839)

A level wound **coil** (LWC) mounted on **pallet** having; an LWC having a plurality of **coil** layers each of which has a **pipe** wound in alignment winding and in traverse winding; and a **pallet** on which the one or more LWC is mounted or on which

the one or more LWC is mounted through a cushioning material. The LWC has a shift section where the **pipe** is shifted from the m-th **coil** layer to the (m+1)-th **coil** layer on a bottom surface thereof when the LWC is disposed on the mount surface. A start point of a (k+1)-th shift section does not transit, relative to a start point of a k-th shift section, in a reverse direction to a winding direction of the **pipe**. The **pallet** or the cushioning material has a recessed area that is formed at all or a part of a portion of the **pallet** or the cushioning material to face the (k+1)-th shift section not transiting in the reverse direction.

#### Inventors

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#### Latest standardized assignees - inventors removed

HITACHI CABLE

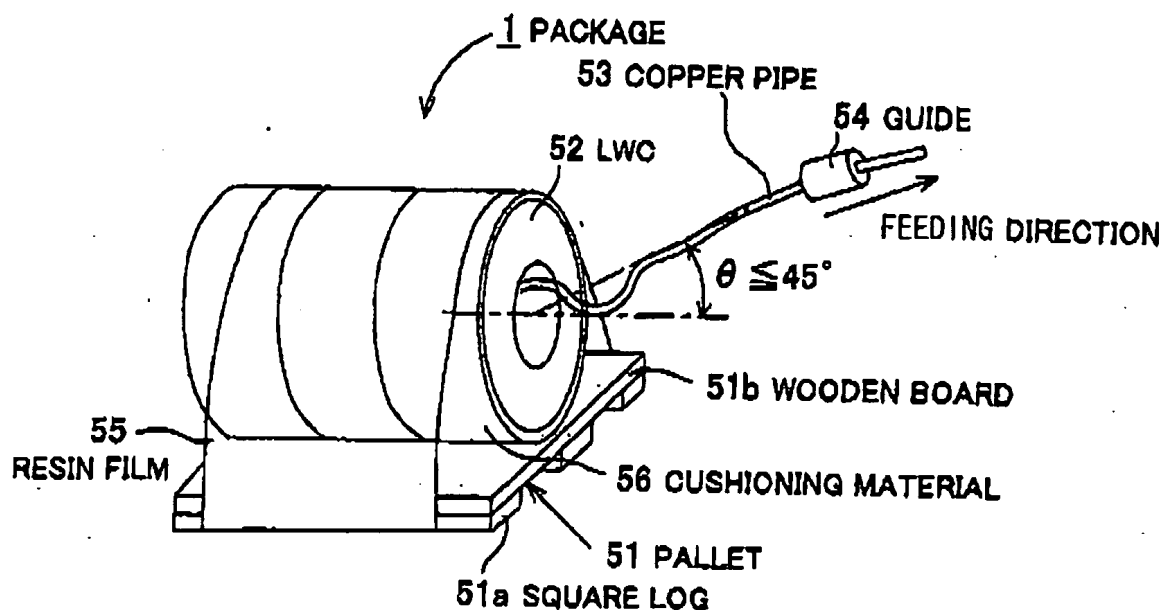
Family 5/10 - FAMPAT - ©Questel

#### Title

(US20060207307)

Method of feeding a **pipe** from level wound **coil**, package for level wound **coil** and packaging method for level wound **coil**

#### Images



#### Publication numbers with kind code & date

|               |    |            |               |
|---------------|----|------------|---------------|
| JP4424225     | B2 | 2009-12-18 | JP4424225     |
| US20060207307 | A1 | 2006-09-21 | US20060207307 |
| JP2006240833  | A  | 2006-09-14 | JP2006240833  |
| CN1827510     | A  | 2006-09-06 | CN1827510     |



#### Abstract

(US20060207307)

A method of feeding a metal **pipe** from an LWC has steps of: mounting the one or more LWC on a mount surface of a **pallet** such that a **coil** center axis of the LWC is parallel to the mount surface of the **pallet**, the metal **pipe** being wound in alignment winding; and feeding the metal **pipe** from an inside of an end face of the one or more LWC.

#### Inventors

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 NOMURA KATSUMI  
 INUI KENICHI  
 HORIGUCHI KEN

**Latest standardized assignees - inventors removed**

HITACHI CABLE

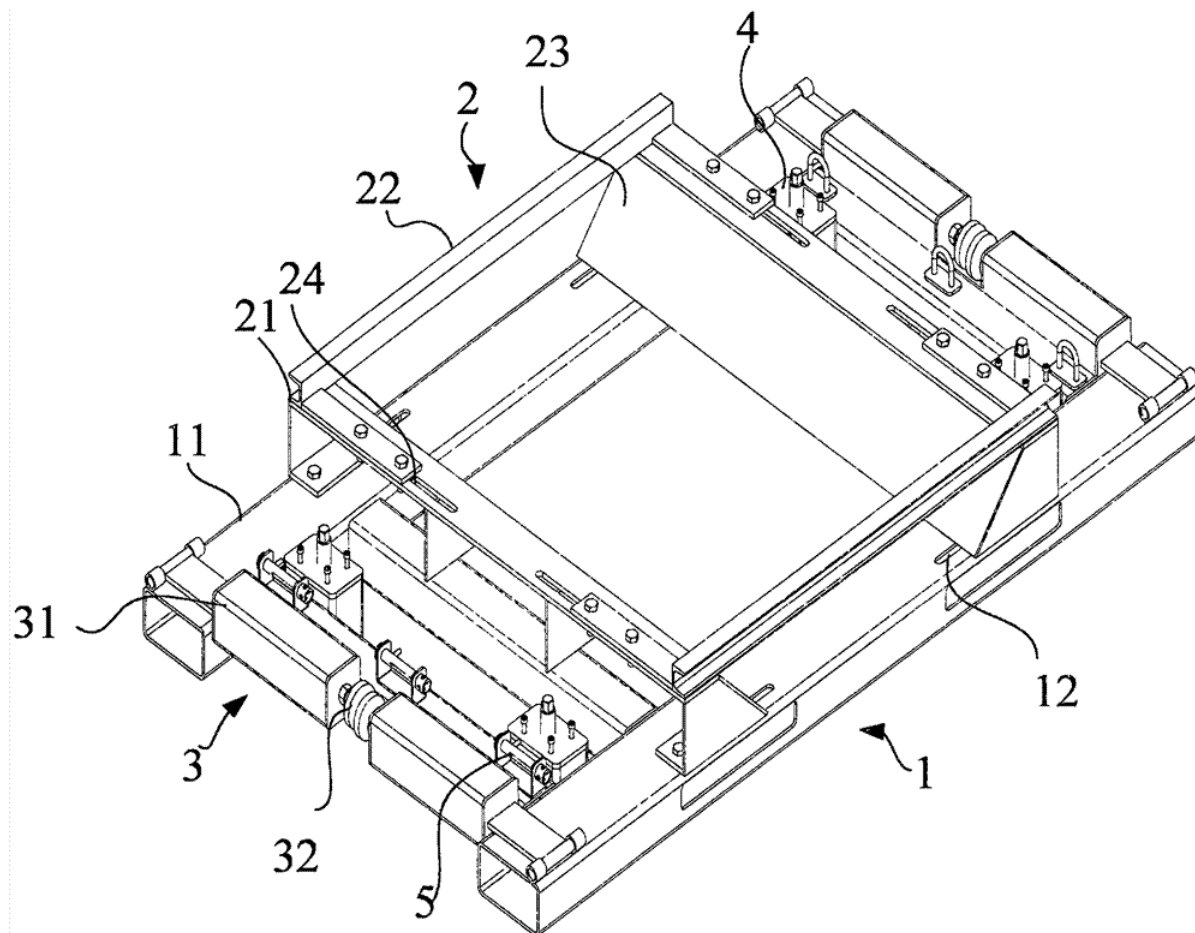
Family 6/10 - FAMPAT - ©Questel

# Title

(CN106516346)

Novel **pallet** special for metal coils

# Images



## Publication numbers with kind code & date

|                             |   |            |              |
|-----------------------------|---|------------|--------------|
| <a href="#">CN106516346</a> | B | 2018-03-09 | CN106516346B |
| <a href="#">CN106516346</a> | A | 2017-03-22 | CN106516346  |



## Abstract

(CN106516346)

The invention belongs to the field of logistics equipment, and particularly relates to a novel **pallet** special for metal coils. The novel **pallet** comprises a support and a **coil** supporting rack arranged on the support. The **coil** supporting rack and the support are movably and fixedly connected. The **coil** supporting rack comprises two horizontal rods arranged above the support in parallel, stop rods are arranged between the two horizontal rods in parallel and movably and fixedly arranged on the horizontal rods, and supporting plates are further obliquely and downwards arranged on the horizontal rods. The supporting plates are arranged oppositely to form a funnel between the two horizontal rods, the support is further provided with supporting legs used for stabilizing the whole **pallet**, and the supporting legs are arranged on the support in a turnover mode. Through the movable **coil** supporting rack and the turnover supporting legs, the diversity of conveyed coils and the stability in the long-distance conveying process are further achieved. Meanwhile, according to the novel **pallet** special for

metal coils, great improvement in the transporting history is achieved through the simple structure, and the novel **pallet** is suitable for large-scale application and popularization.

**Inventors**

DONG ZUOBIN

**Latest standardized assignees - inventors removed**

QINGDAO YIYU

Family 7/10 - FAMPAT - ©Questel

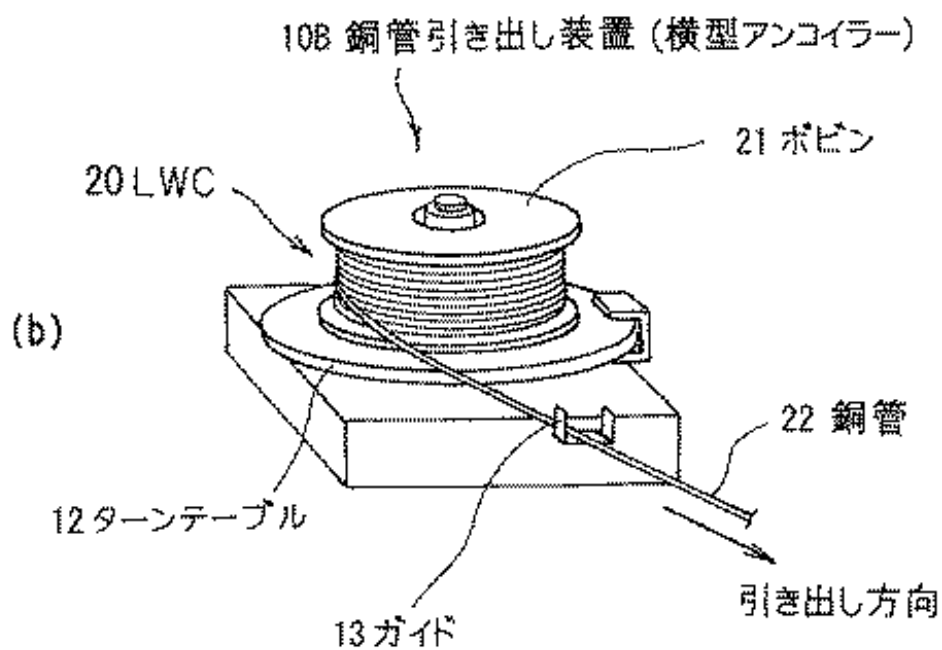
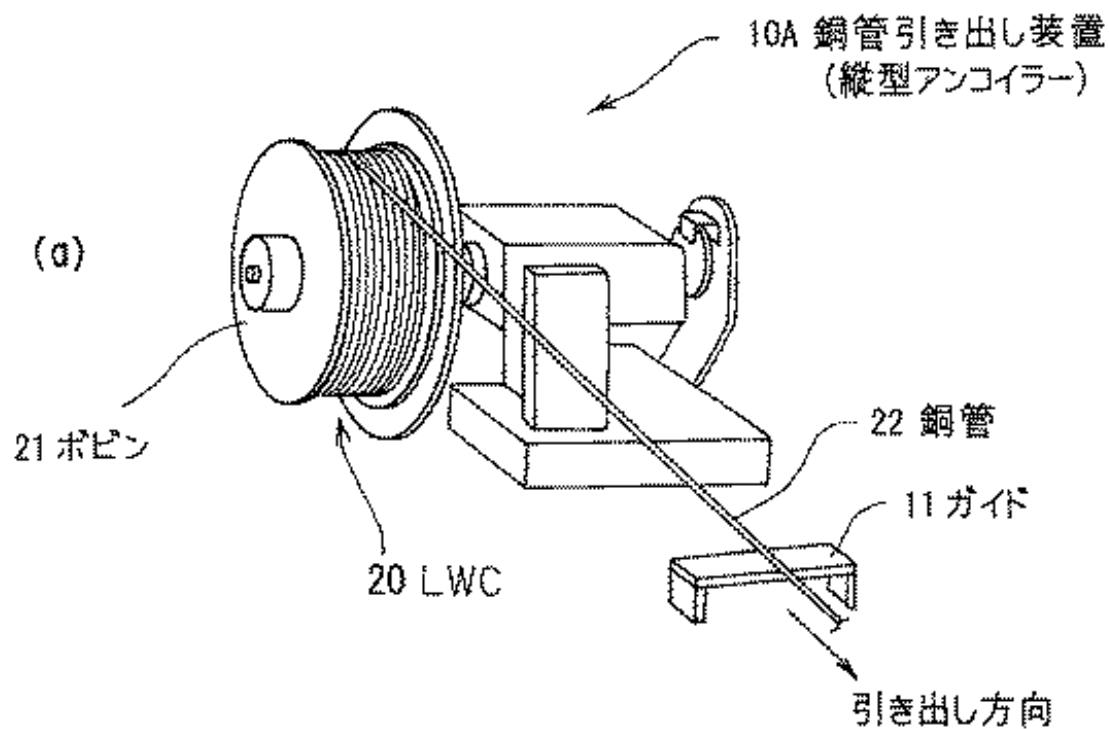
**Title**

(JP2008087888)

Level wound **coil**, its manufacturing method, and level wound **coil** packing body

**Images**

図 1



## Publication numbers with kind code &amp; date

JP4211835

B2 2008-11-07

JP4211835

JP2008087888

A 2008-04-17

JP2008087888



## Abstract

(JP2008087888)

PROBLEM TO BE SOLVED: To provide a level wound **coil** (LWC), its manufacturing method, and a level wound **coil** packing body for eliminating such trouble that a copper **pipe** is caught when pulling it out of the LWC in an ETTS method.

SOLUTION: When manufacturing the level wound **coil** by constituting a **pipe** by a plurality of **coil** layers wound in an aligned and traversed manner and arranging the **coil** at the  $(m + 1)$ th layer on an outer side of the **coil** at the  $m$ th layer ( $m$  is natural number) so that its second winding is fitted into an outer side recessed part between the pipes of the final winding of the  $m$ th layer **coil** and the winding immediately before the final winding to make both of the numbers of windings of the coils at the (odd number)th layer and the (even number)th layer  $n$  ( $n$  is natural number), any one control factor or more in the predetermined expression are controlled to satisfy the expression.

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#### **Inventors**

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HOFUKU MAMORU

KAWANO SHU

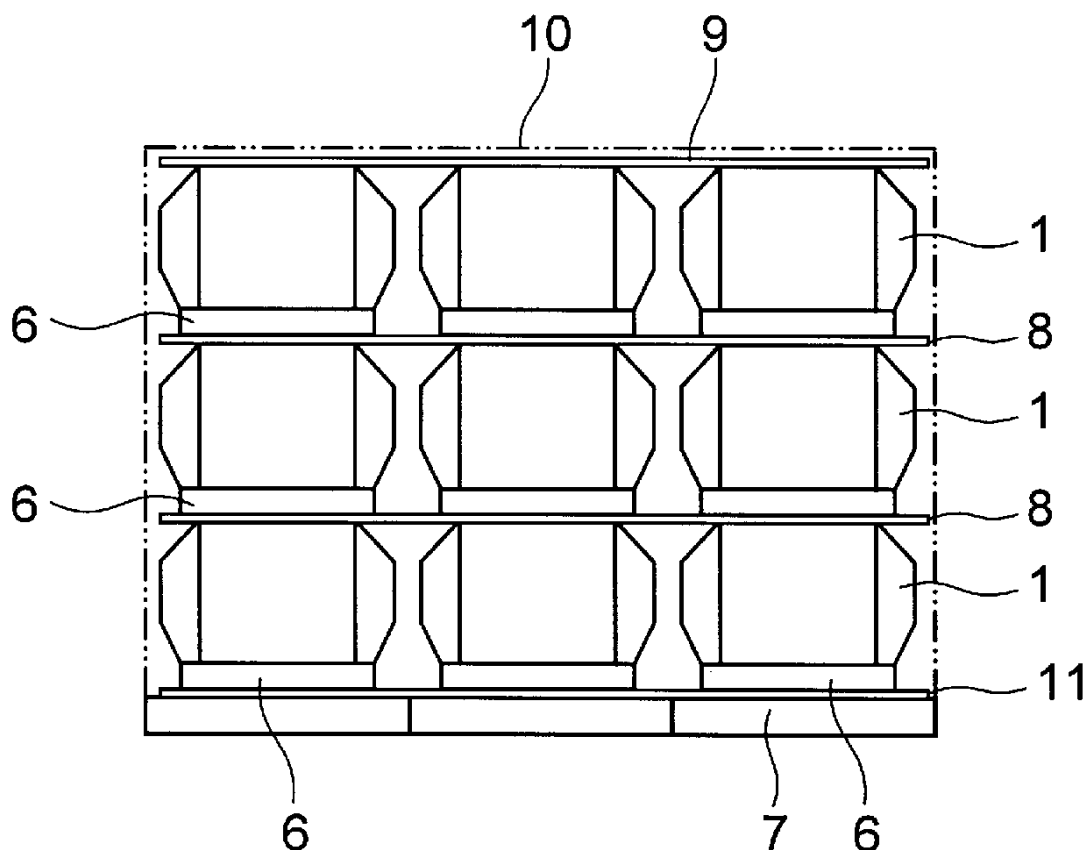
#### **Latest standardized assignees - inventors removed**

HITACHI CABLE

Family 8/10 - FAMPAT - ©Questel

#### **Images**





#### Publication numbers with kind code & date

|                               |    |            |              |
|-------------------------------|----|------------|--------------|
| <a href="#">CN101277878</a>   | B  | 2010-05-19 | CN101277878B |
| <a href="#">CN101277878</a>   | A  | 2008-10-01 | CN101277878  |
| <a href="#">TW200728158</a>   | A  | 2007-08-01 | TW200728158  |
| <a href="#">JP2007045501</a>  | A  | 2007-02-22 | JP2007045501 |
| <a href="#">WO2007/020858</a> | A1 | 2007-02-22 | WO200720858  |



#### Abstract

(WO2007/020858)

A long glass fiber cake is stored and carried in efficient **pallet** package where the edge portion can be protected against damage. A package unit is formed of a plurality of cakes mounted on a **pallet** through tubular attachments. The package unit is provided on the **pallet** in one stage under such a state that the tubular attachment abuts against the outer circumference on the side end of the cake, or the package units are provided in a plurality of stages through platy matters. A protective plate is mounted, as required, on the uppermost package unit and then the assembly of stacked cakes is wrapped with a resin film and shrunk.

#### Inventors

TOMINAGA MASAHIKO

FUJINUMA YOSHIO

#### Latest standardized assignees - inventors removed

OWENS CORNING MANUFACTURING

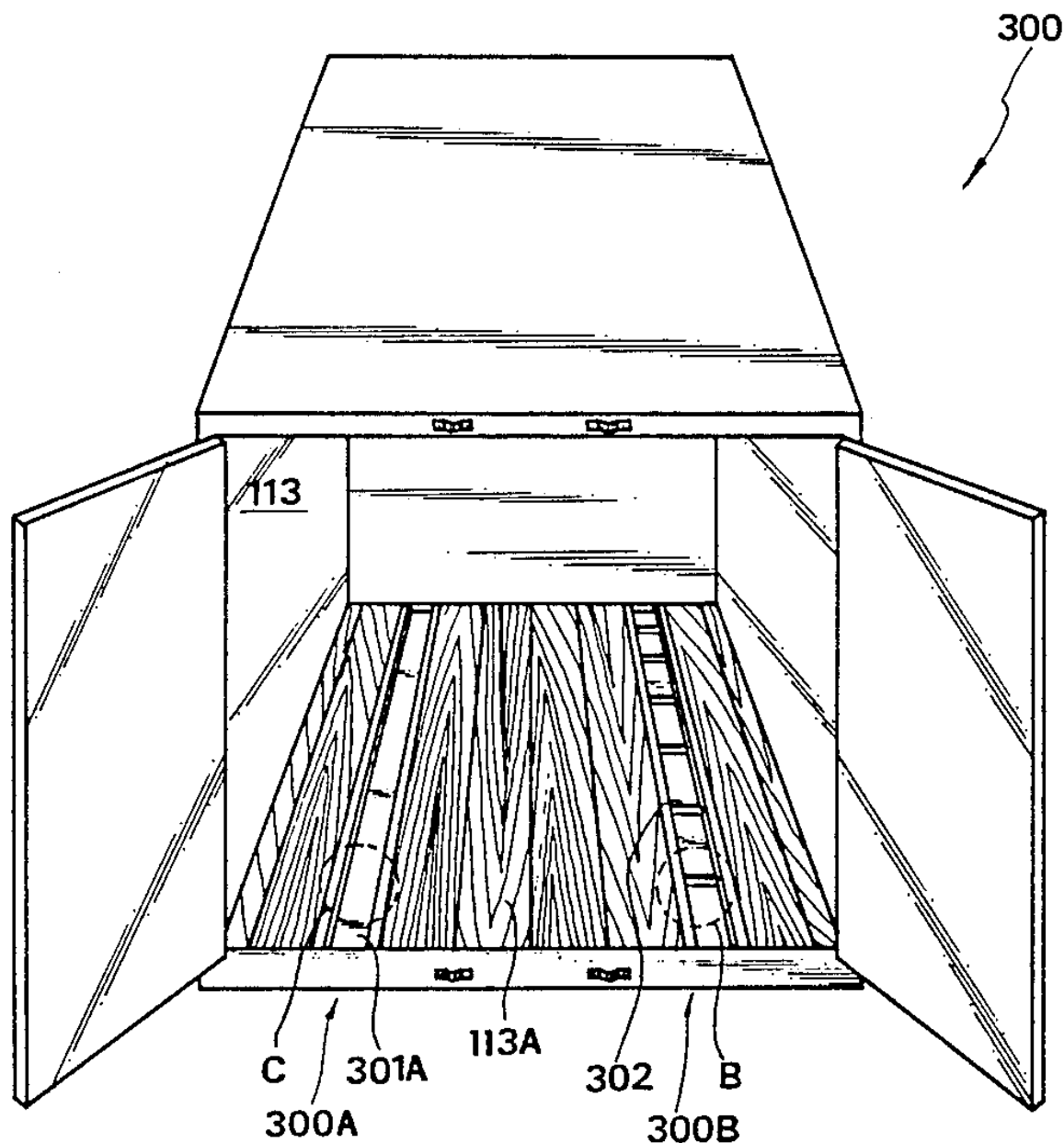
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#### Title

(US4976365)

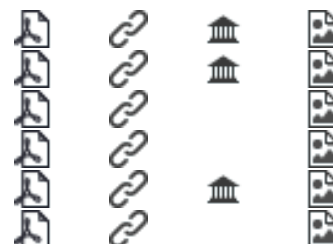
**Pallet** and container integrated with **pallet**

#### Images



#### Publication numbers with kind code & date

|                             |    |            |               |
|-----------------------------|----|------------|---------------|
| <a href="#">GB2247664</a>   | B  | 1994-06-29 | GB2247664     |
| <a href="#">GB2247664</a>   | A  | 1992-03-11 | GB2247664     |
| <a href="#">KR920001714</a> | B1 | 1992-02-24 | KR920001714   |
| <a href="#">KR910004433</a> | A  | 1991-03-28 | KR19910004433 |
| <a href="#">US4976365</a>   | A  | 1990-12-11 | US4976365     |
| <a href="#">GB9019385</a>   | D0 | 1990-10-17 | GB9019385     |



#### Abstract

(US4976365)

A **pallet** which comprises a four sided platform with forklift tine receiving channels disposed at each side of the platform is disclosed. Horizontal surface engaging wheels are disposed on the bottom of the platform for supporting the platform and for enabling the platform to be moved along a horizontal surface. Vertical surface engaging rollers are disposed on the first and the third sides of the platform for preventing frictional engagement of the first and the second sides of the platform with a vertical surface. An automatic connecting and retracting means is positioned at the second side of the platform for enabling the automatic retraction of the connecting and retracting device upon contact of the device with a wall. A coupling apparatus is positioned at the fourth side of the platform for enabling an interconnection of the platform with a second platform having the automatic connecting and retracting device operatively positioned thereon to interconnect with the coupling structure of the platform upon contact with the automatic connecting and retracting device of the second platform

to thereafter enable simultaneous movement of the platforms along the horizontal plane.

**Inventors**

SEO DONG J