



(12)

EUROPEAN PATENT APPLICATION

(43)

Date of publication:
05.06.2019 Bulletin 2019/23

(51)

Int Cl.:
B61B 1/02 (2006.01) E01F 13/04 (2006.01)

(21)

Application number: 18206351.1

(22)

Date of filing: 14.11.2018

(84) Designated Contracting States: AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR Designated Extension States: BA ME Designated Validation States: KH MA MD TN	(72) Inventors: • GAROFOLI, Endrio 60030 Rosora (AN) (IT) • MATTIOLI, Graziano 60019 Senigallia (AN) (IT)
(30) Priority: 14.11.2017 IT 201700129740	(74) Representative: Manconi, Stefano et al Studio Torta S.p.A. Via Viotti, 9 10121 Torino (IT)
(71) Applicant: General Impianti S.r.l. 60030 Maiolati Spontini (IT)	

(54)

RAILWAY PLATFORM

(57)

A railway platform has a sidewalk (2) for pedestrian use, which extends alongside a railway track (3) and is provided with a delimitation barrier (5) suitable to limit passenger access to the railway track (3); the delimitation barrier (5) having a plurality of uprights (6), which are distributed along the sidewalk (2) for pedestrian use, each being movable between a raised position, in which the upright (6) projects above the sidewalk (2) for pedestrian use, and a lowered position, in which the upright (6) extends under the sidewalk (2) for pedestrian use.

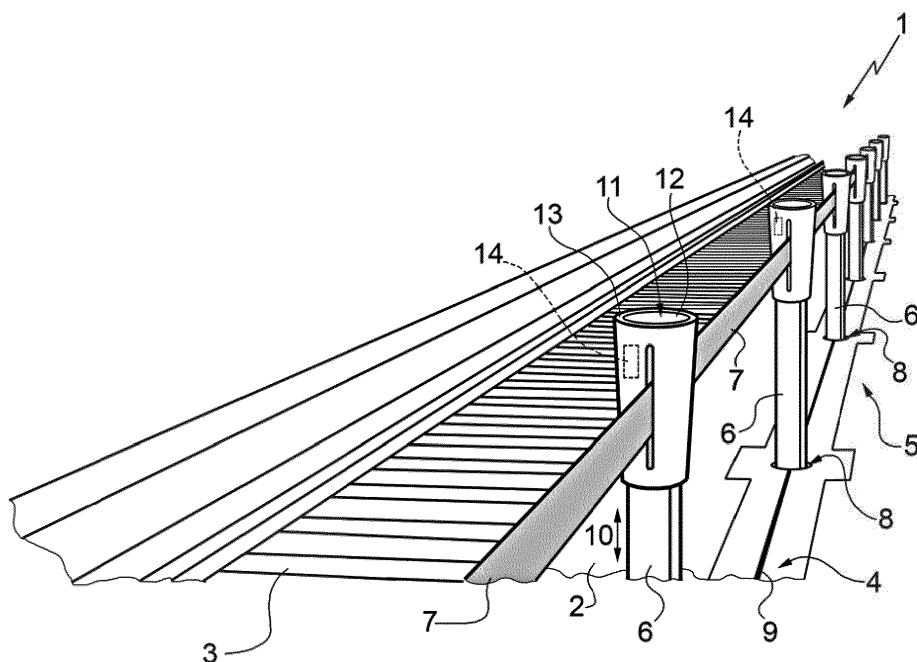


FIG.1

Description

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This patent application claims priority from Italian patent application no. 102017000129740 filed on 14/11/2017.

TECHNICAL FIELD

[0002] The present invention relates to a railway platform.

[0003] In particular, the present invention relates to a railway platform of the type comprising a sidewalk for pedestrian use, which has a substantially horizontal walking surface for passengers, extends alongside at least one railway track, and is equipped with a delimitation barrier suitable to limit passenger access to the railway track.

BACKGROUND ART

[0004] The delimitation barriers currently used in railway platforms are generally of two types.

[0005] According to a first type, the delimitation barrier is defined by a strip of coloured paint made on the walking surface alongside the railway track. In this case, the delimitation barrier is incapable of effectively preventing access to the railway track and therefore has a relatively low level of safety.

[0006] According to the other of the two abovementioned types, the delimitation barrier comprises a plurality of pairs of sliding doors mounted on the sidewalk and distributed alongside the railway track. In this case, the delimitation barrier is relatively large, relatively complex and expensive, and reduces the space available for passengers to board and alight from railway trains.

DISCLOSURE OF INVENTION

[0007] The object of the present invention is to provide a railway platform which is free from the abovementioned drawbacks and which is simple and cost-effective to implement.

[0008] According to the present invention, a railway platform is provided as claimed in the attached claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] The present invention will now be described with reference to the accompanying drawings which illustrate a non-limiting example of an embodiment, wherein:

Figures 1 and 2 are two schematic perspective views of a preferred embodiment of the railway platform of the present invention shown in two different operating positions;

Figure 3 is a schematic perspective view of a first variant of the railway platform of Figures 1 and 2; and Figure 4 is a schematic perspective view of a second variant of the railway platform of Figures 1 and 2.

BEST MODE FOR CARRYING OUT THE INVENTION

[0010] With reference to Figures 1 and 2, number 1 denotes, as a whole, a railway platform comprising a sidewalk 2 for pedestrian use, which extends alongside a railway track 3, and is delimited above by a substantially horizontal walking surface 4 for passengers.

[0011] The platform 1 is provided with a delimitation barrier 5 comprising a plurality of vertical uprights 6 distributed alongside the track 3.

[0012] Each upright 6 is connected to each adjacent upright 6 by a band 7 made of an at least partially rigid material.

[0013] According to a variant not shown, the uprights 6 are connected to each other by a single band 7 extending through the uprights 6.

[0014] The sidewalk 2 comprises, for each upright 6, a respective elongated cavity 8, which extends below the walking surface 4, and opens outwards at the walking surface 4.

[0015] The sidewalk 2 further comprises, for each band 7, a respective slit 9, which extends below the walking surface 4, and opens outwards at the walking surface 4.

[0016] The barrier 5 is movable with an alternating rectilinear motion in a vertical direction 10 orthogonal to the walking surface 4 between a raised position, wherein the uprights 6 and the bands 7 protrude above the walking surface 4 to limit access to the track 3, and a lowered position, wherein the uprights 6 and the bands 7 are fully housed within the related cavities 8 and slits 9.

[0017] In this regard, it should be noted that each upright 6 is movable between its lowered position and its raised position under the thrust of a related actuating device (not shown) which can be activated in a synchronised manner with the actuating devices (not shown) of the other uprights 6 or independently from the actuating devices (not shown) of the other uprights 6.

[0018] Each upright 6 is delimited by an upper face 11 equipped with a pressure sensor 12 and a light warning device 13 of a substantially circular shape. When the upright 6 is in its lowered position:

the face 11 is substantially coplanar with the walking surface 4;

the sensor 12 detects the presence of a passenger on the upright 6; and

the device 13 signals the presence of the upright 6 to the passengers.

[0019] The upright 6 is further provided with a sound warning device 14.

[0020] According to a variant not shown, each upright 6 is equipped with at least one detection sensor suitable

to detect the presence of objects.

[0021] The variant shown in Figure 3 differs from that shown in Figures 1 and 2 solely in that, in it, each band 7 is omitted and replaced with a roll-up sheet 15 attached to a winding roller 16 located inside the sidewalk 2 below the walking surface 4.

[0022] The roller 16 is mounted so as to rotate, under the thrust of a known and not illustrated actuating device, around a substantially horizontal longitudinal axis 17 which is substantially transverse to the direction 10.

[0023] According to a variant not shown, the roller 16 is omitted and the sheet 15 folds in an accordion-like manner below the walking surface 4.

[0024] The variant shown in Figure 4 differs from the variant shown in Figures 1 and 2 solely in that, in it, each band 7 is omitted and each upright 6 is equipped with at least one detection sensor 18, which faces a sensor 18 of an adjacent upright 6, and is suitable to detect the presence of objects.

[0025] The uprights 6 are distributed along a light band 19 comprising a plurality of lighting devices 20, for example LED devices, which are mounted alongside the track 3, and are oriented towards the passengers present on the sidewalk 2.

[0026] Operation of the devices 20 is selectively controlled by an electronic control unit 21.

[0027] According to a first operating mode, all the devices 20 are activated when a train (not shown) arrives.

[0028] According to another operating mode, the control unit 21 activates the devices 20 between two uprights 6 when the related sensors 18 detect the presence of a passenger.

[0029] According to a variant not shown, the sensors 18 are mounted on the uprights 6 and/or on the sidewalk 2 and/or in an external support structure.

[0030] The platform 1 has several benefits mainly due to the fact that, when the delimitation barrier 5 is arranged in its raised position, access to the railway track 3 is efficiently restricted with a relatively high level of safety and that, when the delimitation barrier 5 is arranged in its lowered position, the walking surface 4 of the sidewalk 2 is completely clear and does not present any obstacle to passengers boarding or alighting from railway trains (not shown).

Claims

1. A railway platform comprising a sidewalk (2) for pedestrian use, which has a walking surface (4), extends alongside at least one railway track (3) and is provided with a delimitation barrier (5), which is suitable to limit the access of passengers to the railway track (3); and **characterised in that** the delimitation barrier (5) comprises a plurality of uprights (6), which are distributed along the sidewalk (2) for pedestrian use; each upright (6) being movable between a raised position, in which the upright (6) projects

above the walking surface (4), and a lowered position, in which the upright (6) extends under the walking surface (4).

2. The railway platform according to claim 1, wherein, when it is arranged in its lowered position, each upright (6) is substantially coplanar with the walking surface (4).
3. The railway platform according to claim 1 or 2, wherein each upright (6) is delimited by an upper face (11), which is provided with a pressure sensor (12) to detect the presence of a passenger on the upright (6) when the upright (6) is arranged in its lowered position.
4. The railway platform according to claim 3, wherein the upper face (11) is further provided with a light warning device (13).
5. The railway platform according to any one of the preceding claims, wherein each upright (6) is provided with a sound warning device (14).
6. The railway platform according to any one of the preceding claims, wherein the sidewalk (2) for pedestrian use has, for each upright (6), a respective cavity (8), which opens up towards the outside at the walking surface (4) and is engaged in a sliding manner by the upright (6) during its movement between the raised position and the lowered position.
7. The railway platform according to any one of the preceding claims, wherein the uprights (6) are connected to one another by means of at least one band (7) made of an at least partially rigid material; the sidewalk (2) for pedestrian use having, for each band (7), a respective slit (9), which opens up towards the outside at the walking surface (4) and is engaged in a sliding manner by the band (7) during the movement of the uprights (6) between the relative raised positions and lowered positions.
8. The railway platform according to any one of the claims from 1 to 6, wherein the uprights (6) are connected to one another by means of a roll-up sheet (15), which is hooked to a winding roller (16), which is arranged in the sidewalk (2) for pedestrian use under the walking surface (4); the sidewalk (2) for pedestrian use having, for each roll-up sheet (15), a respective slit (9), which opens up towards the outside at the walking surface (4) and is engaged in a sliding manner by the roll-up sheet (15) during the movement of the uprights (6) between the relative raised positions and lowered positions.
9. The railway platform according to any one of the preceding claims, wherein each upright (6) is provided

with at least one first detection device (18) to detect the presence of a passenger.

10. The railway platform according to any one of the preceding claims, wherein the delimitation barrier (5) further comprises, for each pair of adjacent uprights (6), a respective light warning band (19), which extends between the two uprights (6) and is fitted in the walking surface (4) .
11. The railway platform according to claim 10 and further comprising, for each light warning band (19), at least one respective second detection device (18), which is fitted in a related upright (6) and/or in the walking surface (4) and/or in a support structure in order to detect the presence of a passenger.
12. A railway platform according to claim 11 and further comprising an electronic control unit (21), which is configured to activate each light warning band (19) in response to a signal coming from at least one second detection device (18) associated with the light warning band (19).

10

15

20

25

30

35

40

45

50

55

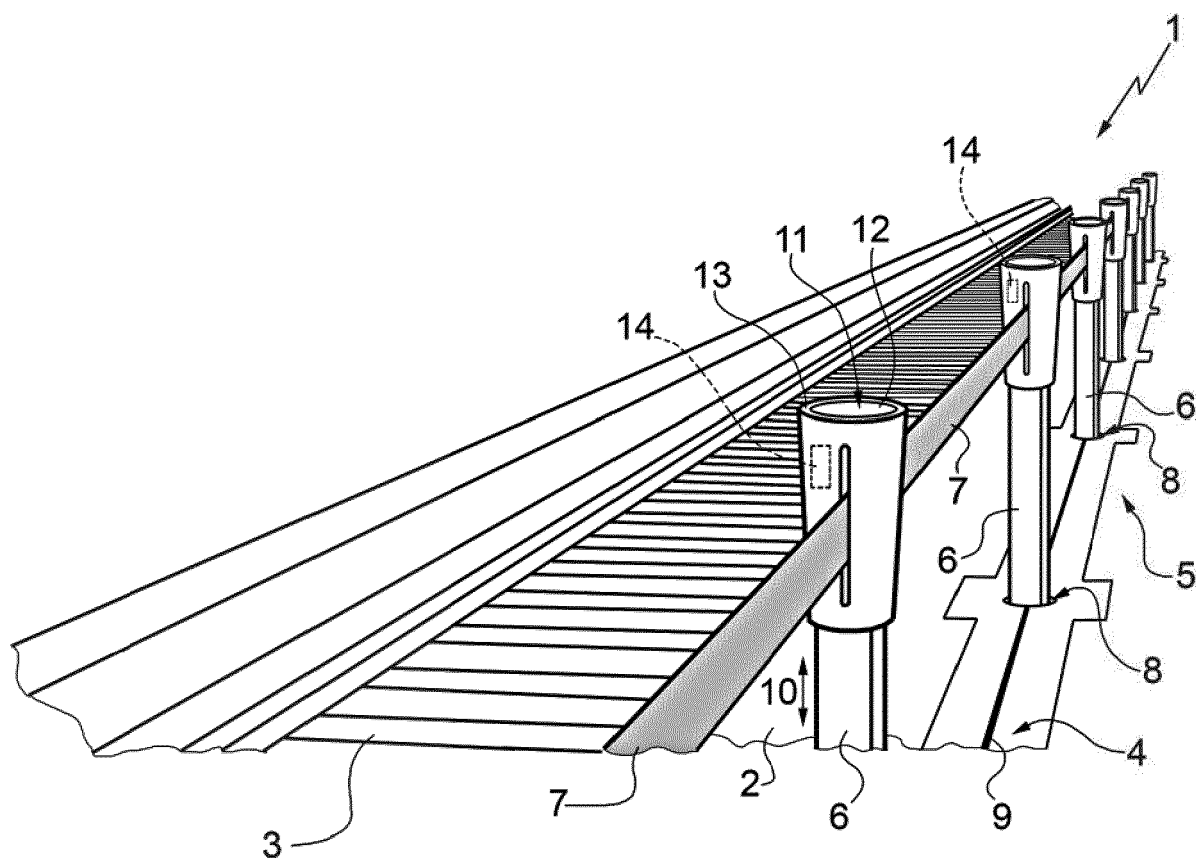


FIG.1

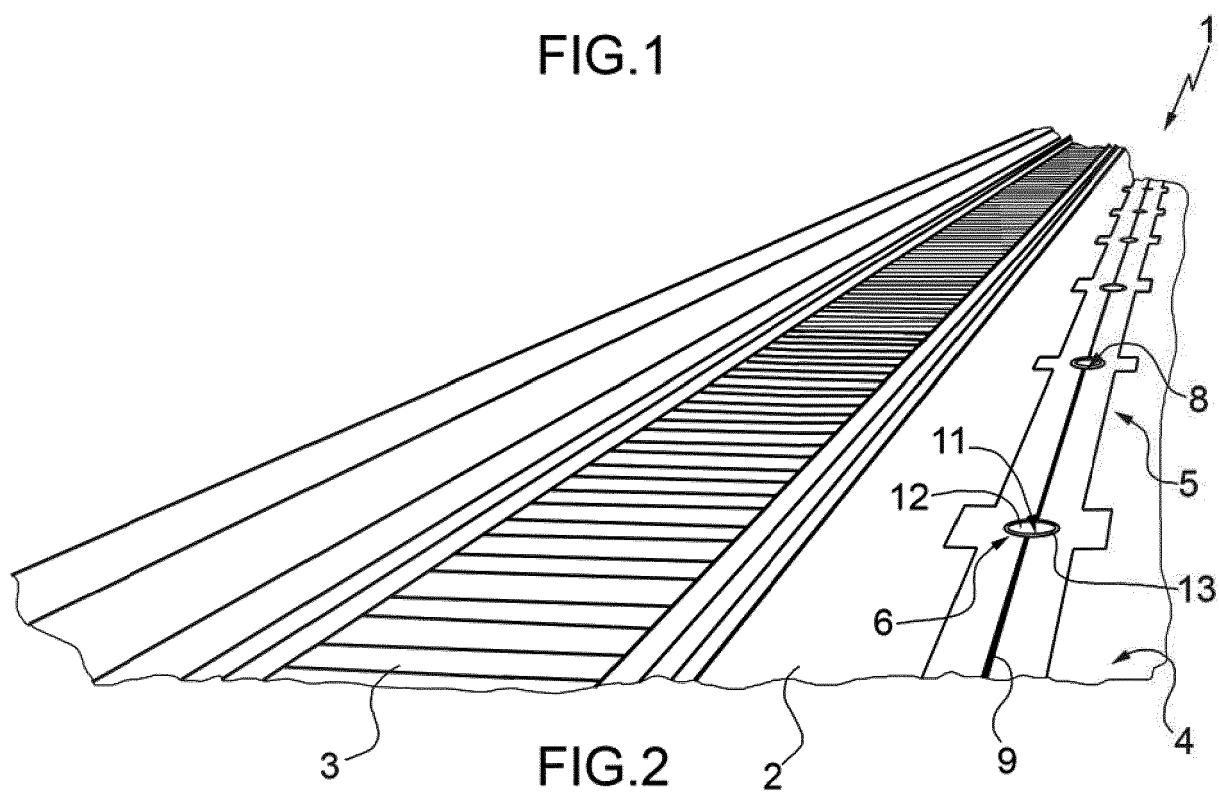
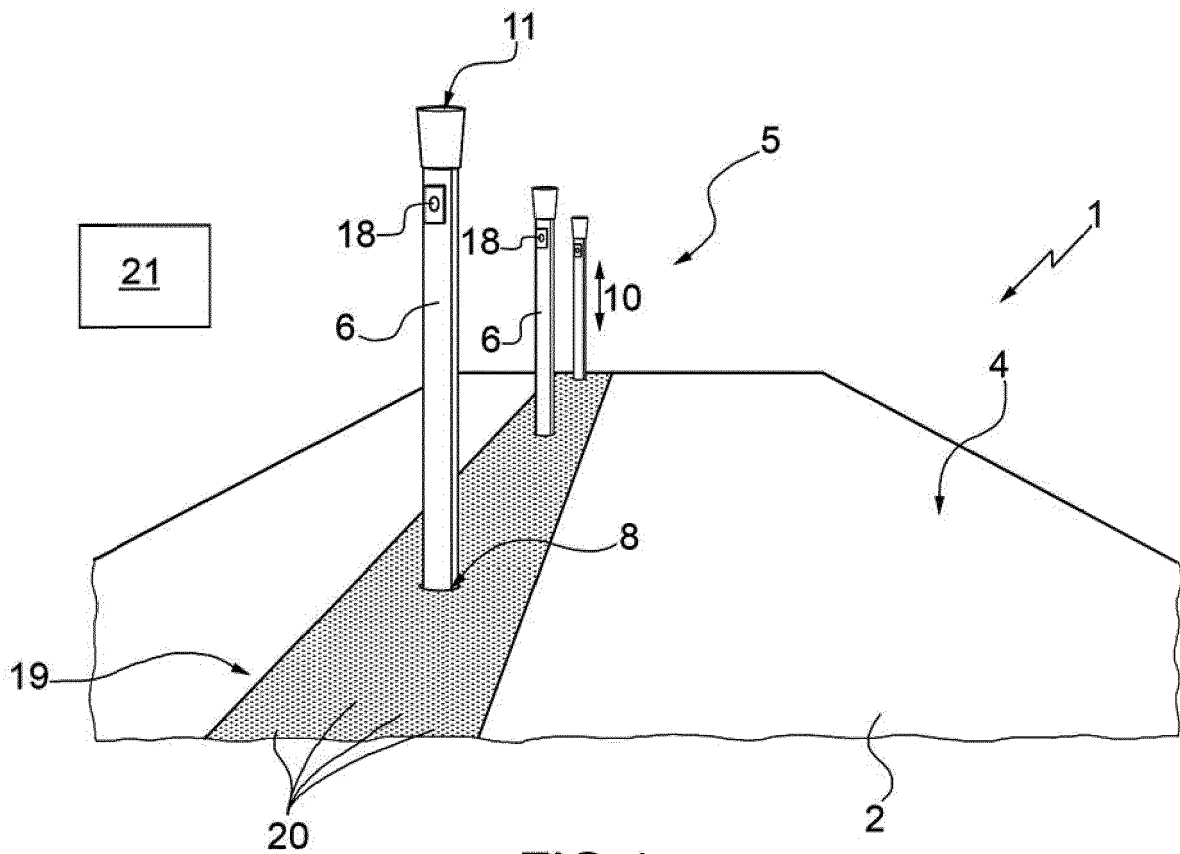
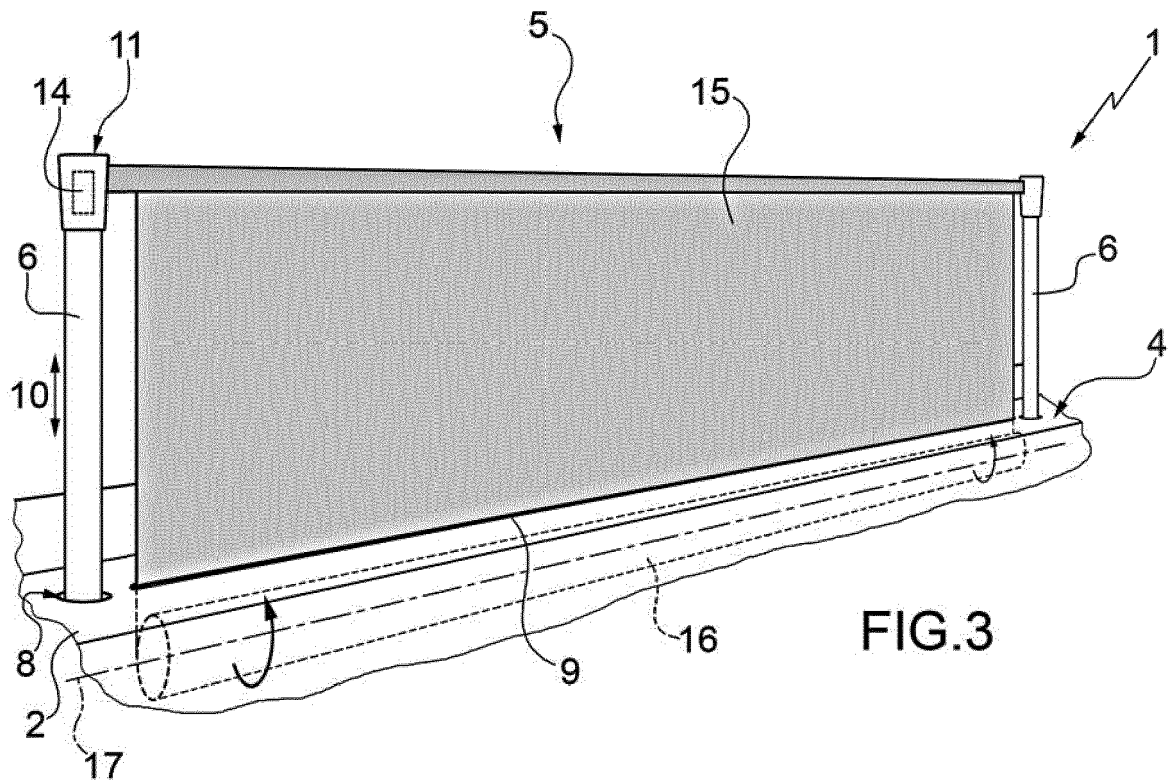


FIG.2





EUROPEAN SEARCH REPORT

 Application Number
 EP 18 20 6351

5

10

15

20

25

30

35

40

45

50

55

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	JP 2002 348815 A (HIGASHI NIPPON RYOKAKU TETSUDO; HIGASHI NIPPON TRANSPORTEC KK) 4 December 2002 (2002-12-04) * abstract; figures *	1-7,9-12	INV. B61B1/02 E01F13/04
X	US 2016/280237 A1 (THOMPSON KENNETH I [US]) 29 September 2016 (2016-09-29) * paragraphs [0018], [0023]; figures 1,3-8 *	1-7,9-12	
X	JP 2008 285129 A (SANO HIROSHI) 27 November 2008 (2008-11-27) * abstract; figures *	1-6,9-12	
X	US 9 598 090 B1 (MAYSONET IGNACIO R [US]) 21 March 2017 (2017-03-21) * column 6, lines 48-62 * * page 7, lines 26-29 * * page 7, lines 39-12; figures *	1-6,9-12	
X	CN 2 700 391 Y (LIU YIXING [CN]) 18 May 2005 (2005-05-18) * figures *	1,2,6	TECHNICAL FIELDS SEARCHED (IPC) B61B E01F
A	DE 197 33 295 A1 (BAIER OSKAR [DE]) 4 February 1999 (1999-02-04) * the whole document *	10-12	
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 3 April 2019	Examiner Schultze, Yves
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 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 18 20 6351

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
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

03-04-2019

10

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP 2002348815 A	04-12-2002	NONE	
US 2016280237 A1	29-09-2016	EP 3274508 A1 US 2016280237 A1 WO 2016160115 A1	31-01-2018 29-09-2016 06-10-2016
JP 2008285129 A	27-11-2008	NONE	
US 9598090 B1	21-03-2017	NONE	
CN 2700391 Y	18-05-2005	NONE	
DE 19733295 A1	04-02-1999	NONE	

15

20

25

30

35

40

45

50

55

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- IT 102017000129740 [0001]