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(71) Hakija - Sökande - Applicant

1• PEIKKO GROUP OY, Voimakatu 3, 15170 Lahti, (FI)

(72) Keksijä - Uppfinnare - Inventor

1• Kinnunen, Jorma, Lahti, (FI)
2• Varvikko, Kimmo, Lahti, (FI)

(74) Asiamies - Ombud - Agent

Boco IP Oy Ab, Kansakoulukatu 3, 00100 Helsinki

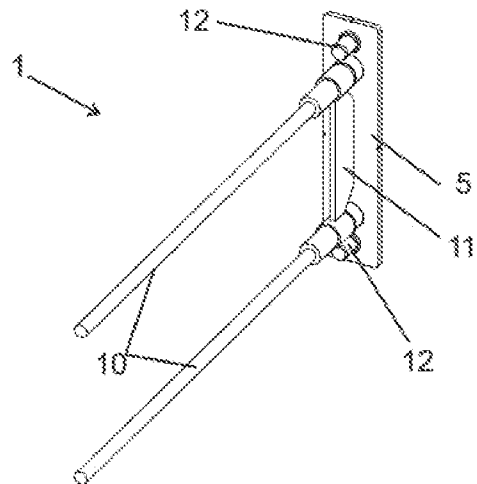
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**PARVEKEKAITEEN LIITTIMEN ANKKUROINTIVÄLINE
FÖRANKRINGSDON FÖR EN BALKONGRÄCKESFÄSTARE
ANCHORING MEANS OF A BALCONY PARAPET CONNECTOR**

(57) Tiivistelmä - Sammandrag - Abstract

Esitetty on parvekekaiteen liittimen (2) ankkurointiväline (1) parvekekaiteen (3) kiinnittämiseen teräsbetoniseen parvekelaattaan (4). Ankkurointiväline (1) käsittää metallista tehdyn ensimmäisen pitkänomaisen osan (5), joka on varustettu ensimmäisellä läpimenevällä reiällä (6) ja toisella läpimenevällä reiällä (7), kaksi metallista tehtyä ja sisäkierteisellä aukolla (9) varustettua hylsymäisestä osaa (8) parvekekaiteesta tulevia kuormia vastaanottavien osien kiinnittämiseen, ja mainittuihin kahteen hylsymäiseen osaan (8) kiinnitetyt ankkurointiosat (10). Mainitut kaksi hylsymäistä osaa (8) ovat kiinnitetyt ensimmäiseen pitkänomaiseen osaan (5) ja toinen metallia oleva pitkänomainen osa (11) on aikaansaatu kahden hylsymäisen osan (8) väliin siten, että toinen pitkänomainen osa (11) on kiinnitetty hylsymäisiin osiin (8) ja ensimmäiseen pitkänomaiseen osaan (5).

Presented is an anchoring means (1) of a balcony parapet connector (2) for securing a balcony parapet (3) to a reinforced concrete balcony slab (4). The anchoring means (1) comprises a first elongated part (5) made of metal that is provided with a first through hole (6) and with a second through hole (7), two sleeve-like parts (8) made of metal and provided with an internally threaded opening (9) for securing members that receive loads from the balcony parapet, and anchoring members (10) attached to said two sleeve-like parts (8). The two sleeve-like parts (8) are attached to the first elongated part (5), and by a second elongated part (11) of metal is provided between the two sleeve-like parts (8) so that the second elongated part (11) being attached to the sleeve-like parts (8) and to the first elongated part (5).



ANCHORING MEANS OF A BALCONY PARAPET CONNECTOR

Field of the invention

The invention relates to an anchoring means of a balcony parapet connector for securing a balcony parapet to a reinforced concrete balcony slab as defined in the preamble of independent claim 1.

Publication WO2007/063187 A1 presents an anchoring means of a balcony parapet connector for securing a balcony parapet to a reinforced concrete balcony slab, the anchoring means comprising a structure that is to be attached to an edge of the reinforced concrete balcony slab during manufacturing and that is provided with threaded/screw-in openings for securing members that receive loads from the balcony parapet, the structure provided with threaded openings comprising an elongated part made of plastic material, in which the threaded openings have been arranged and in which gripping means extending inside the reinforced concrete balcony slab are arranged. The elongated part made of plastic material is provided with at least one hole, on the inner surface of which there is at least one protrusion. The threaded openings are provided by means of sleeve-like parts, which are arranged to be secured to the elongated part by inserting first ends of the sleeve-like parts in the holes, whereby the protrusions on the inner surfaces of the holes give in and deform and thus lock the sleeve-like parts tightly in the holes.

Objective of the invention

The object is to provide an improved anchoring means of a balcony parapet connector for securing a balcony parapet to a reinforced concrete balcony slab.

Short description of the invention

The anchoring means of is characterized by the definitions of independent claim 1.

Preferred embodiments of the anchoring means are defined in the dependent claims.

List of figures

In the following the anchoring means will be described in more detail by referring to the figures of which

Figure 1 shows an embodiment of the anchoring means,

Figure 2 is another illustration of the anchoring means illustrated in figure 1,

Figure 3 shows in cross section view a balcony parapet that is connected to a reinforced concrete balcony slab by means of a balcony parapet connector including the anchoring means that is illustrated in figure 1 and that is cast into the reinforced concrete balcony slab, and

Figure 4 shows the balcony parapet connector that is used in figure 2 in exploded view.

Detailed description

Next the anchoring means 1 of a balcony parapet connector 2 for securing a balcony parapet 3 to a reinforced concrete balcony slab 4 and some embodiments and variants of the anchoring means 1 will be described in greater detail.

5 The balcony parapet 3 can be a reinforced concrete parapet as illustrated in figure 2. Alternatively can the balcony parapet 3 be made of at least one of metal, glass and concrete.

The balcony parapet connector 2 need not to have all the parts or the configuration/design illustrated in figure 3.

10 The anchoring means 1 is configured to be attached to an edge of the reinforced concrete balcony slab 4 during manufacturing.

The anchoring means 1 comprising a first elongated part 5 that is provided with a first through hole 6 and with a second through hole 7.

15 The anchoring means 1 comprising two sleeve-like parts 8 made of metal and provided with an internally threaded opening 9 for securing members that receive loads from the balcony parapet.

The anchoring means 1 comprising anchoring members 10 attached to said two sleeve-like parts 8.

The first elongated part 5 is made of metal.

20 The two sleeve-like parts 8 are attached to the first elongated part 5 so that the internally threaded opening 9 of one, i.e. a first of said two sleeve-like parts 8 is aligned the first through hole 6 the first elongate part 5 and so that the internally threaded opening 9 of one, i.e. a second of said two sleeve-like parts 8 is aligned the second through hole 7 of first elongated part 5.

25 A second elongated part 11 of metal is provided between the two sleeve-like parts 8 so that the second elongated part 11 is attached to the sleeve-like parts 8 and to the first elongated part 5 of metal.

Due to the construction with the first elongated part 5 being made of metal, the two sleeve-like parts 8 being attached to the first elongated part 5, and the second elongated part 11 of metal being attached to the sleeve-like parts 8 and to the first elongated part 5 of metal, the anchoring means 1 will be rigid, which means that the position of the

30 The first elongate part 5 is preferably, but not necessarily, in the form of an elongated flat bar. The first elongate part 5 is preferably, but not necessarily, made of stainless steel.

The second elongate part 11 is preferably, but not necessarily, in the form of an elongated flat bar. The second elongate part 11 is preferably, but not necessarily, made of stainless steel.

Said two sleeve-like parts 8 are preferably, but not necessarily, made of stainless steel.

35 The anchoring members 10 are preferably, but not necessarily, in the form of ribbed reinforcement bars secured to said two sleeve-like parts 8 by clamping. The anchoring members 10 can alternatively comprise headed studs.

The first elongate part 5 comprising preferably, but not necessarily, rivet nuts 12 for

fastening the anchoring means 1 to formwork during the reinforced concrete balcony slab 4 manufacturing.

Said two sleeve-like parts 8 are preferably, but not necessarily, attached to the first elongated part 5 by welding.

5 The second elongated part 11 is preferably, but not necessarily, attached to the sleeve-like parts 8 and to the first elongated part 5 by welding.

The first elongated part 5 can, as illustrated in the figures, have a first side and a second side that is parallel with the first side so that the first through hole 6 and the second through hole 7 extend through the first elongated part 5, between the first side and the second side of the first elongated part 5, and so that the two sleeve-like parts 8 are attached to the first side of the first elongated part 5.

10 The first through hole 6 and the second through hole 7 can be provided with a removable plug (not shown) at the second side of the first elongated part 5. A purpose of the removable plug is to prevent concrete from entering the first through hole 6 and the second through hole 7 for example in connection with casting of the reinforced concrete balcony slab 4.

15 It is apparent to a person skilled in the art that as technology advanced, the basic idea of the invention can be implemented in various ways. The invention and its embodiments are therefore not restricted to the above examples, but they may vary within the scope of the claims.

Claims

1. An anchoring means (1) of a balcony parapet connector (2) for securing a balcony parapet (3) to a reinforced concrete balcony slab (4), the anchoring means (1) is configured to be attached to an edge of the reinforced concrete balcony slab during (4) manufacturing, wherein the anchoring means (1) comprising
- 5 a first elongated part (5) that is provided with a first through hole (6) and with a second through hole (7),
- two sleeve-like parts (8) made of metal and provided with an internally threaded opening (9) for securing members that receive loads from the balcony parapet, and
- 10 anchoring members (10) attached to said two sleeve-like parts (8),
- characterized**
- by the first elongated part (5) being made of metal,
- by said two sleeve-like parts (8) being attached to the first elongated part (5) so that the internally threaded opening (9) of one of said two sleeve-like parts (8) being aligned the first through hole (6) the first elongate part (5) and so that the internally threaded opening (9) of one of
- 15 said two sleeve-like parts (8) being aligned the second through hole (7) of first elongated part (5),
- and
- by a second elongated part (11) of metal being provided between the two sleeve-like parts (8) so that the second elongated part (11) being attached to the sleeve-like parts (8) and to the first
- 20 elongated part (5).
2. The anchoring means according to claim 1, **characterized**
- by the first elongate part (5) being in the form of an elongated flat bar.
- 25 3. The anchoring means according to claim 1 or 2, **characterized**
- by the first elongate part (5) being made of stainless steel.
4. The anchoring means according to any of the claims 1 to 3, **characterized**
- by the second elongate part (11) being in the form of an elongated flat bar.
- 30 5. The anchoring means according to any of the claims 1 to 4, **characterized**
- by the second elongate part (11) being made of stainless steel.
6. The anchoring means according to any of the claims 1 to 5, **characterized**
- 35 by said two sleeve-like parts (8) being made of stainless steel.
7. The anchoring means according to any of the claims 1 to 6, **characterized**
- by the anchoring members (10) being in the form of ribbed reinforcement bars secured to

said two sleeve-like parts (8) by clamping.

8. The anchoring means according to any of the claims 1 to 7, **characterized**
by the first elongate part (5) comprising rivet nuts for fastening the anchoring means (1) to
5 formwork during the reinforced concrete balcony slab manufacturing (4).
9. The anchoring means according to any of the claims 1 to 8, **characterized**
by said two sleeve-like parts (8) being attached to the first elongated part (5) by welding.
- 10 10. The anchoring means according to any of the claims 1 to 9, **characterized**
by the second elongated part (11) being attached to the sleeve-like parts (8) and to the first
elongated part (5) by welding.
11. The anchoring means according to any of the claims 1 to 10, **characterized**
15 by the first elongated part (5) having a first side and a second side that is parallel with the
first side,
by the first through hole (6) and the second through hole (7) extending through the first
elongated part (5), between the first side and the second side of the first elongated part (5), and
by the two sleeve-like parts (8) being attached to the first side of the first elongated part
20 (5).
12. The anchoring means according to claim 11, **characterized**
by the first through hole (6) and the second through hole (7) being provided with a
removable plug at the second side of the first elongated part (5).

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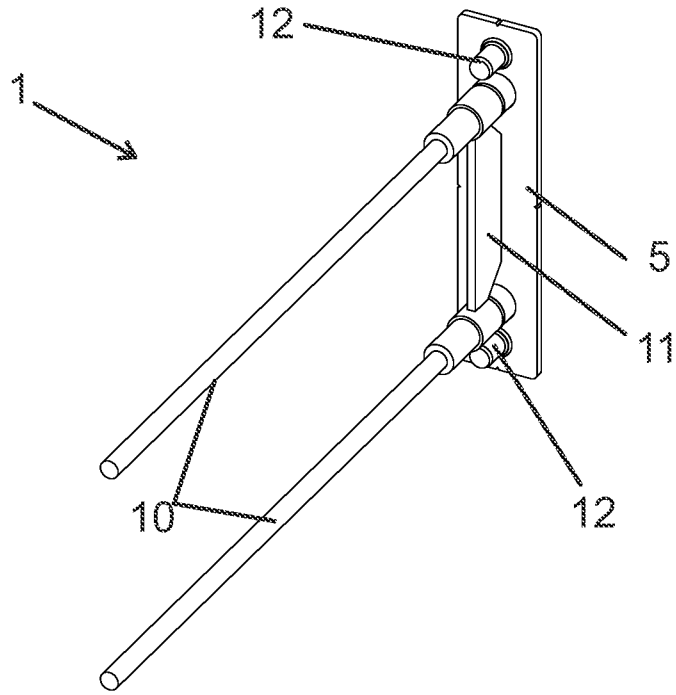


FIG 1

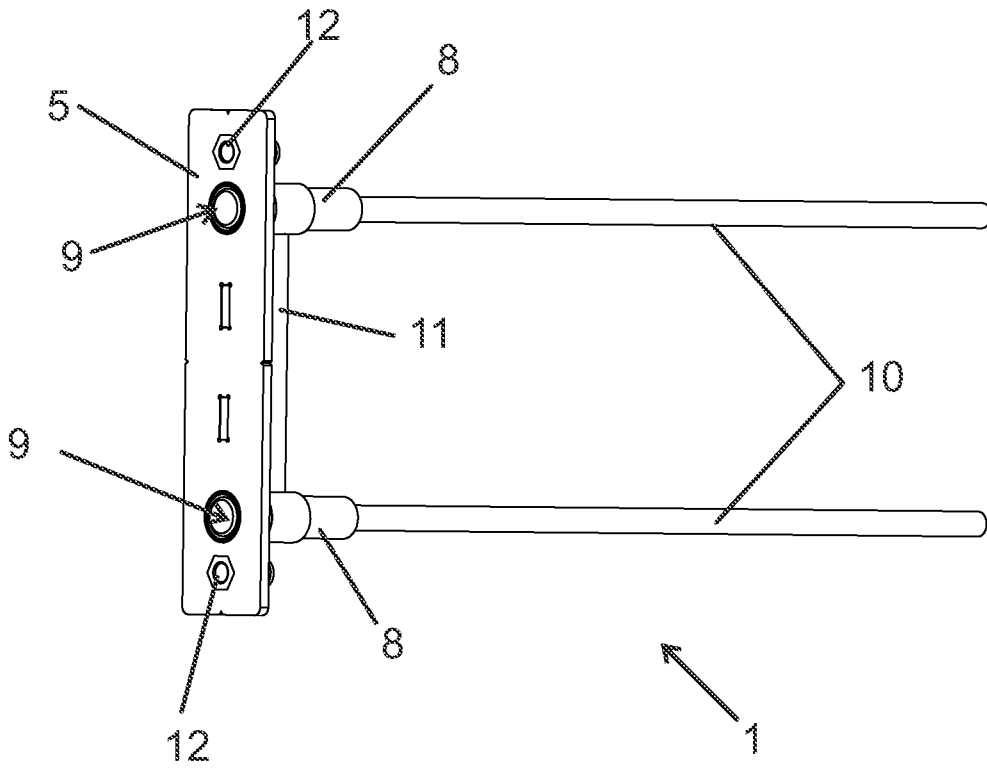


FIG 2

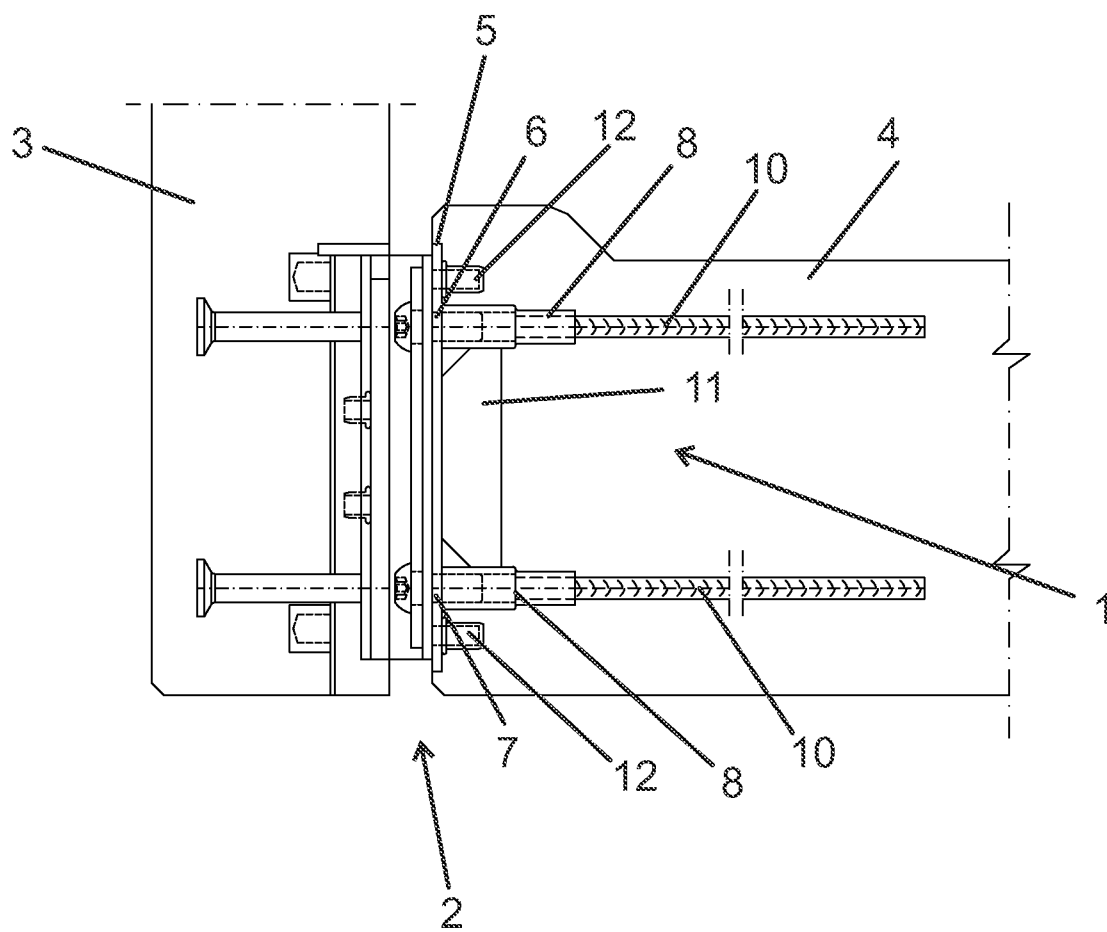


FIG 3

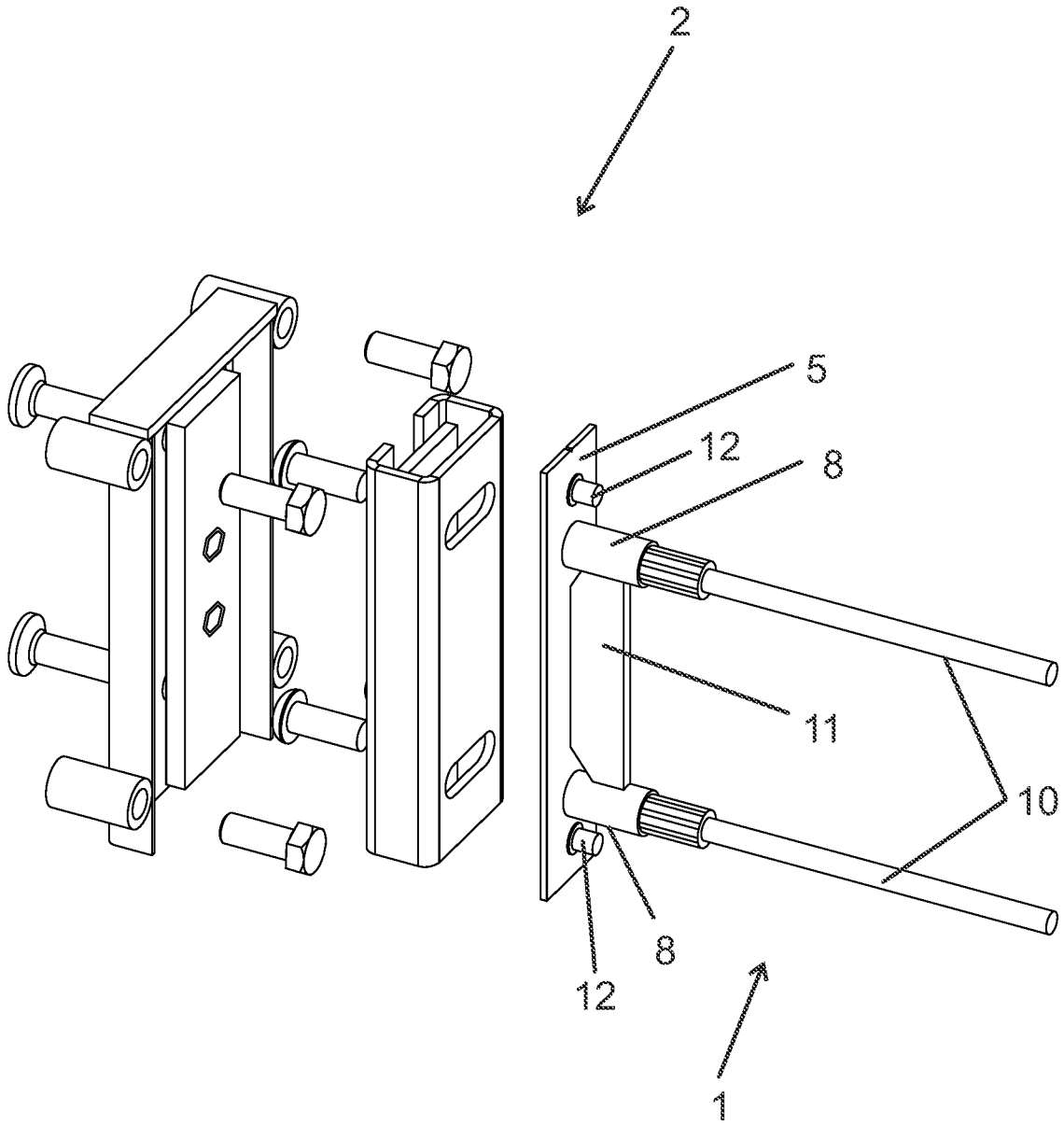


FIG 4

PATENT APPLICATION No.	CLASSIFICATION	
20235178	IPC E04B 1/00 (2006.01) E04F 11/18 (2006.01) E04B 1/41 (2006.01) E04C 5/02 (2006.01)	CPC E04B 1/0038 E04F 11/1812 E04B 1/41 E04C 5/02
PATENT CLASSES SEARCHED (classification systems and classes)		
IPC: E04B, E04C, E04F		
DATABASES CONSULTED DURING THE SEARCH		
EPODOC, EPO-Internal full-text databases, Full-text translation databases from Asian languages, WPIAP, IPRally		

DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*)	Bibliographic data on the document and relevant passages	Relevant to claims
A	JP 2002121818 A (EMOTO KOGYO KK) 26 April 2002 (26.04.2002) figures 1, 2 and 8 & abstract [online] EPOQUENET EPODOC & WPI & machine translation into English by Clarivate Analytics [online] [retrieved 14.09.2023] EPOQUENET TXPJPOEA paragraphs [0001] and [0011]-[0031]	1 – 12
D, A	WO 2007063187 A1 (PEIKKO FINLAND OY [FI]) 07 June 2007 (07.06.2007) whole document, particularly paragraphs [0001] and [0010]-[0016]; figures 1-7	1 – 12

Continued on the next sheet

- *) X Document indicating that the invention is not novel or does not involve an inventive step with respect to the state of the art.
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Further information given in the annex

Date	Senior Patent Examiner
15.09.2023	Veli-Pekka Autio
	Telephone +358 29 509 5000

PATENT APPLICATION No.

20235178

DOCUMENTS CONSIDERED TO BE RELEVANT, CONTINUED

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A	JP H11256679 A (TOKYU KENSETSU KK) 21 September 1999 (21.09.1999) figures 1-3 & abstract [online] EPOQUENET EPODOC & WPI & machine translation into English by Clarivate Analytics [online] [retrieved 04.09.2023] EPOQUENET TXPJPEA paragraphs [0001] and [0006]-[0016]	1 – 12
A	DE 202015008660 U1 (HERRMANN FRANK [DE]) 22 March 2017 (22.03.2017) whole document, particularly paragraphs [0001] and [0034]-[0067]; figures 1, 3, 4 and 10	1 – 12
A	FI 13135 Y1 (PEIKKO GROUP OY [FI]) 04 March 2022 (04.03.2022) whole document, particularly page 2, line 32 – page 5, line 34; figures 1-12	1 – 12