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(54) **CONTAINER FOR LARGE-FORMAT PLATE-LIKE ELEMENTS ARRANGED IN AN INCLINED ORIENTATION**

(57) A container for large-format plate-like elements arranged in an inclined orientation, made of metal and with screw joining means, comprising two heads (1) and two sides (2) to be fixed to four corner joints (3), forming as many right angles; two cross-members (4) to be fixed in the central region of the two sides (2) in order to connect

them, also allowing the insertion of the forks of a lift truck; two cross-members (5) to be fixed so as to connect the two sides (2) proximate to the heads (1); a stand (B) to be fixed to the two cross-members (4); two stands (C) to be each fixed to one of the two cross-members (4) and to the cross-member (5) that is closest to the first one.

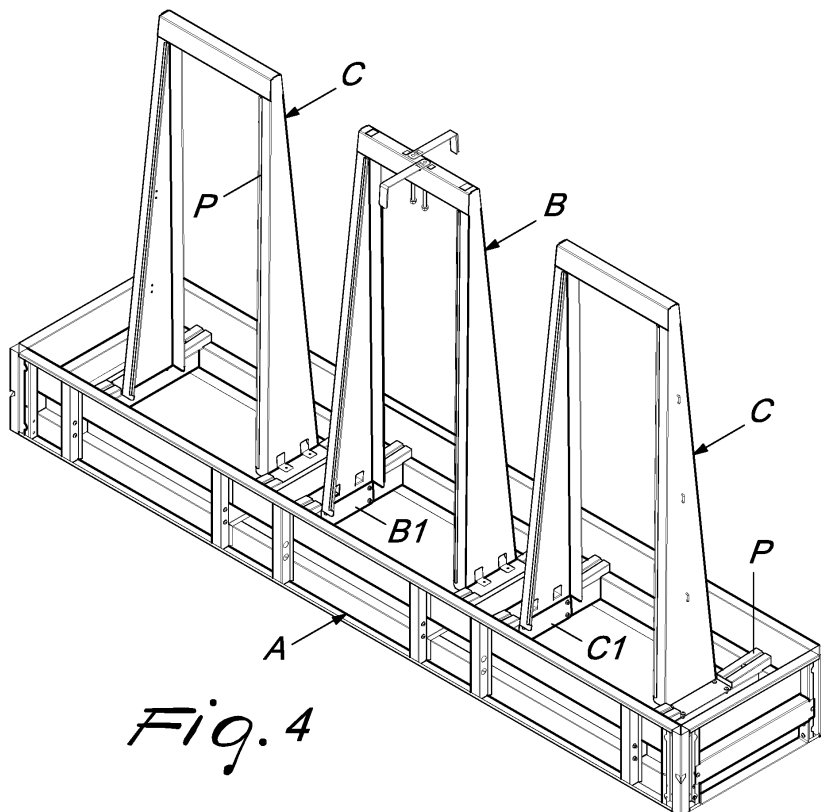


Fig. 4

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Description

[0001] The present invention relates to a container for large-format plate-like elements arranged in an inclined orientation.

[0002] The proprietor of the present application is also the proprietor of the utility model application no. 202016000048906, which relates to a dismountable metallic container for transporting and storing large-format (e.g., 1,600 mm by 3,200 mm) plate-like elements made of cladding material previously shipped in crates that can be termed single-use since they are made of wood and are almost always disposed of after a single use.

[0003] By contrast, the container described and claimed in the preceding utility model application can be disassembled after each use to be stored in a small amount of space while waiting to be used again or to be returned to the company from which it arrived, so that it will reuse it in subsequent shippings of other plate-like elements.

[0004] The more than positive findings of practical testing of such container and of the consequent verification of the advantages that can be obtained in practice have prompted to consider it appropriate to delve further into research until the container according to the invention was devised.

[0005] The aim of the present invention is to provide a container that is metallic and dismountable and allows the shipping of large plate-like cladding elements inside containers, where it is preferable to arrange them in an almost vertical orientation and not stacked horizontally as in the previous version. The invention thus relates to a container as defined in claim 1.

[0006] A preferred embodiment of the container according to the invention is described hereinafter with reference to the drawings, wherein:

Figure 1 is an exploded view of the part of the container that will be termed "basket";

Figure 2 is an elevated perspective view of the so-called basket in the already assembled condition;

Figure 3 is a view of the set of three elements that will be termed "stands" prior to their fixing inside the so-called basket;

Figure 4 is a view of the new container in a fully assembled condition and ready for use;

Figure 5 is an enlarged-scale view of the detail X of Figure 4;

Figure 6 is an elevated perspective view of the new container after the placement of the plate-like elements to be shipped;

Figure 7 is a perspective view, taken from below, of the new container;

Figure 8 is a view of three units of the new container stacked in succession.

[0007] With reference to the drawings, the new dismountable container, which is partially traceable back to

the one shown and described in the utility model application no. 202016000048906, in this case is preset for the shipping of large plate-like elements made of cladding material in an inclined orientation, and to allow the stacking of the empty containers when it is not necessary to disassemble them to reduce their bulk further.

[0008] The lower part or basket A of the new container is derived from the container of the preceding patent, from which it differs in the reduced width of the heads 1 with respect to the width of the sides 2 and most of all in the absence of the bottom metal plate on the cross-members 4 and 5 that join horizontally the two sides 2 already joined to the two heads 1 by the four corner joints 3.

[0009] The cross-members 4 and 5, since they no longer have to support the metal plate bottom on which the large plate-like elements are to be arranged horizontally on top of each other, are in fact now used to fix thereto, in the central region, the so-called stands B and C with which the large plates L (Figure 6) are to be supported in an inclined orientation, such plates, by resting on said cross-members, being retained and protected in a downward region by the sides 2 and by the heads 1 of the basket A of the new storage and transport container.

[0010] The so-called stands B and C are rigid metallic elements which, due to their function and after joining to the rest of the new container, can be likened to the rigid supports that have always been used by glassworkers and marble workers to store and ship their plates or slabs. However, these supports cannot be disassembled and are each constituted by a single truncated-pyramid structure which is welded or otherwise fixed stably to a rectangular base frame, moreover without any cross-member and most of all without protrusions or other solutions that can, if necessary, retain or protect the base of the plate-like elements rested thereon.

[0011] The use of the three stands, which have a truncated-pyramid space occupation and are to be fixed at each of the gaps between one cross-member and the next, is intended to allow, after the removal of the plates L, also the fitting in succession of the stands of each container over those of the underlying container, while the verticality of the heads 1 and of the sides 2 causes, as in Figure 8, the perfect stacking of the baskets A from which the sets of three stands protrude.

[0012] Since the cross-members 4 are shaped and arranged so as to be able to insert therein, if necessary, the forks of the lift truck with which to handle the container, the stands B and C are fixed to the sides of said cross-members to prevent the insertion of the forks from being hindered by the presence of the screw fixing means that protrude internally.

[0013] Therefore, the two vertical tabs B1 to be fixed to the two cross-members 4 in the mutually facing sides protrude downward from the central stand B.

[0014] The tabs C1 are fixed in the cross-members 4, in the opposite sides with respect to the ones used to fix the tabs B1 thereat, and extend vertically from one side of each stand C while the tab C2 that protrudes horizon-

tally from the other end of each one of said stands C is fixed to each one of the cross-members 5.

[0015] A pair of hook-shaped retention elements F is pivoted on the top of at least one stand and preferably on the top of the central stand B and is intended to be lifted and rotated in order to engage and disengage the upper edge of the two groups of plate-like elements L rested on the two sides of the stand.

[0016] These are hook-shaped retention elements with two beaks (Figure 5), of which the outermost one F1 can be arranged in front of the group of plates L to be retained (Figure 6) while the other one, F2, rests against a horizontal edge of the stand, ensuring that the retention element F is kept in this configuration even if the beak F1 does not rest against the outer face of the first plate L.

[0017] Finally, since this is a metallic container, preferably made of galvanized sheet metal, adequate protections P, made of rubber or other suitable material, are applied to the stands B and C and to the cross-members 4 and 5 where it necessary to prevent the plate-like elements L from being damaged by any impacts and friction.

[0018] The disclosures in Italian utility model application No. 202018000002488 from which this application claims priority are incorporated herein by reference.

[0019] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. A container for large-format plate-like elements arranged in an inclined orientation, made of metal and with screw joining means, **characterized in that** it comprises: two heads (1) and two sides (2) to be fixed to four corner joints (3), forming as many right angles; two cross-members (4) to be fixed in the central region of the two sides (2) in order to connect them, also allowing the insertion of the forks of a lift truck; two cross-members (5) to be fixed so as to connect the two sides (2) proximate to the heads (1); a stand (B) to be fixed to the two cross-members (4); two stands (C) to be each fixed to one of the two cross-members (4) and to the cross-member (5) that is closest to the first one.
2. The container for large-format plate-like elements arranged in an inclined orientation according to claim 1, wherein the stand (B) and the two stands (C) are fixed to the cross-members (4, 5) in their central region so that the plate-like elements (L), by resting on said cross-members, between the stands and the sides (2), can be retained and protected in a downward region by said sides (2) and by the heads (1).

3. The container for large-format plate-like elements arranged in an inclined orientation according to claim 1, wherein the stands (B, C) have the same truncated-pyramid space occupation so that they can be fitted one inside the other in succession when they are disconnected from the rest of the container, and when they are joined to all the rest and after the removal of the plate-like elements (L) it being possible, in this case, to proceed by fitting the three stands of each container over those of the underlying container and until perfect stacking of the baskets (A) from which the sets of three stands protrude is achieved.
4. The container for large-format plate-like elements arranged in an inclined orientation according to claim 1, wherein two vertical tabs (B1) protrude from the central stand (B) in a downward region and are to be arranged adjacent and fixed to the mutually facing sides of the two cross-members (4).
5. The container for large-format plate-like elements arranged in an inclined orientation according to claim 1, wherein at least one of two tabs that protrude downward from each of the two stands (C), in particular the stand (C1), is vertical so that it can be arranged adjacent and fixed to one of the cross-members (4) on the side that is opposite with respect to the one to which one of the tabs (B1) is to be fixed.
6. The container for large-format plate-like elements arranged in an inclined orientation according to claim 1, wherein a pair of hook-shaped retention elements (F) is pivoted on the top of at least one stand (B or C), to be lifted and rotated in order to engage and disengage the upper edge of the two groups of plate-like elements (L) rested against the two sides of the stand.
7. The container for large-format plate-like elements arranged in an inclined orientation according to claim 6, wherein each one of the two hook-shaped retention elements (F) is provided with two beaks, of which the outermost one (F1) can be arranged in front of the group of plate-like elements (L) to be retained while the other one (F2) rests against a horizontal edge of the stand, ensuring that the retention element (F) is kept in this orientation even if the beak (F1) does not rest against the outer face of the first of the plate-like elements (L) to be retained.

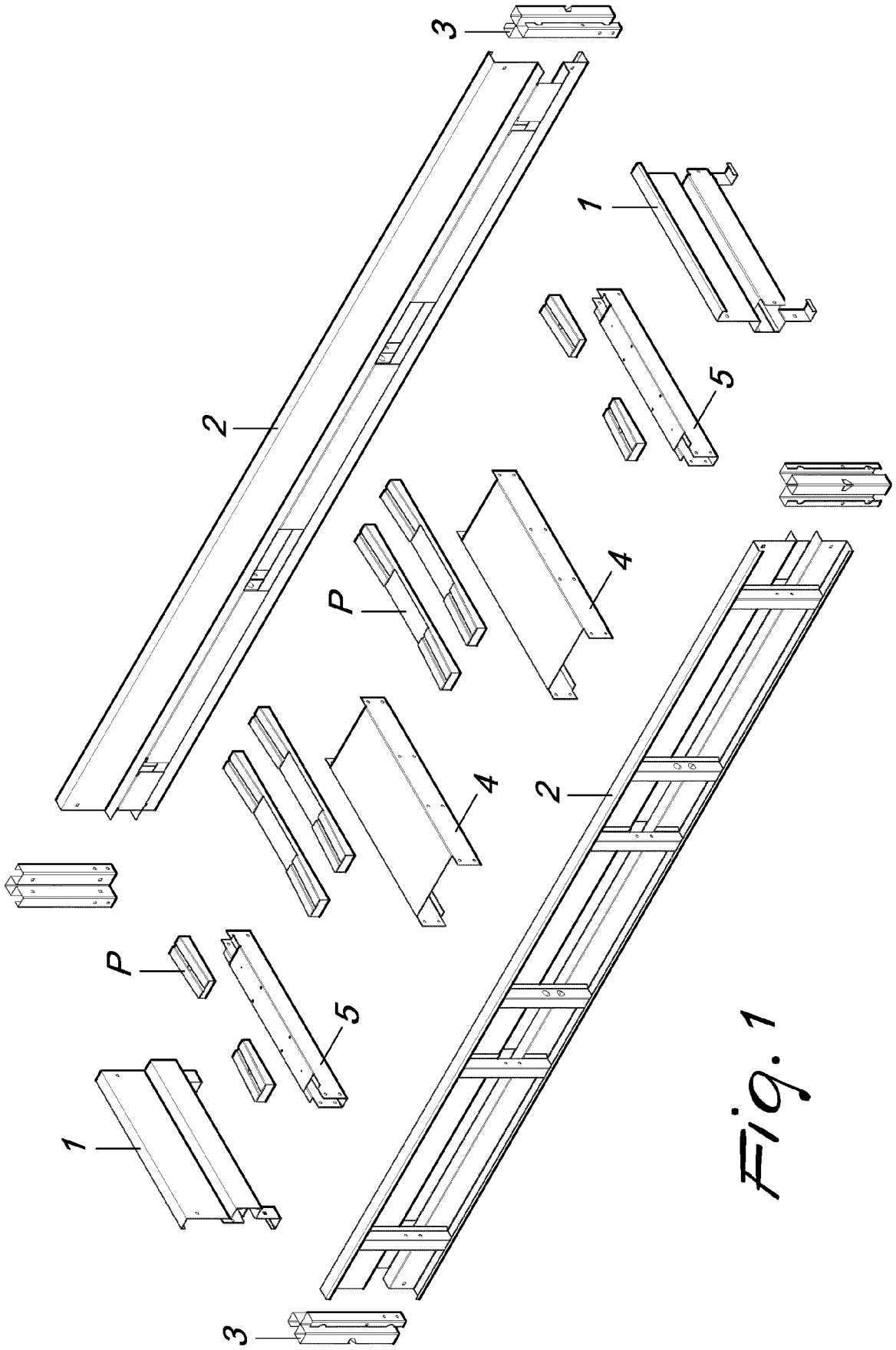
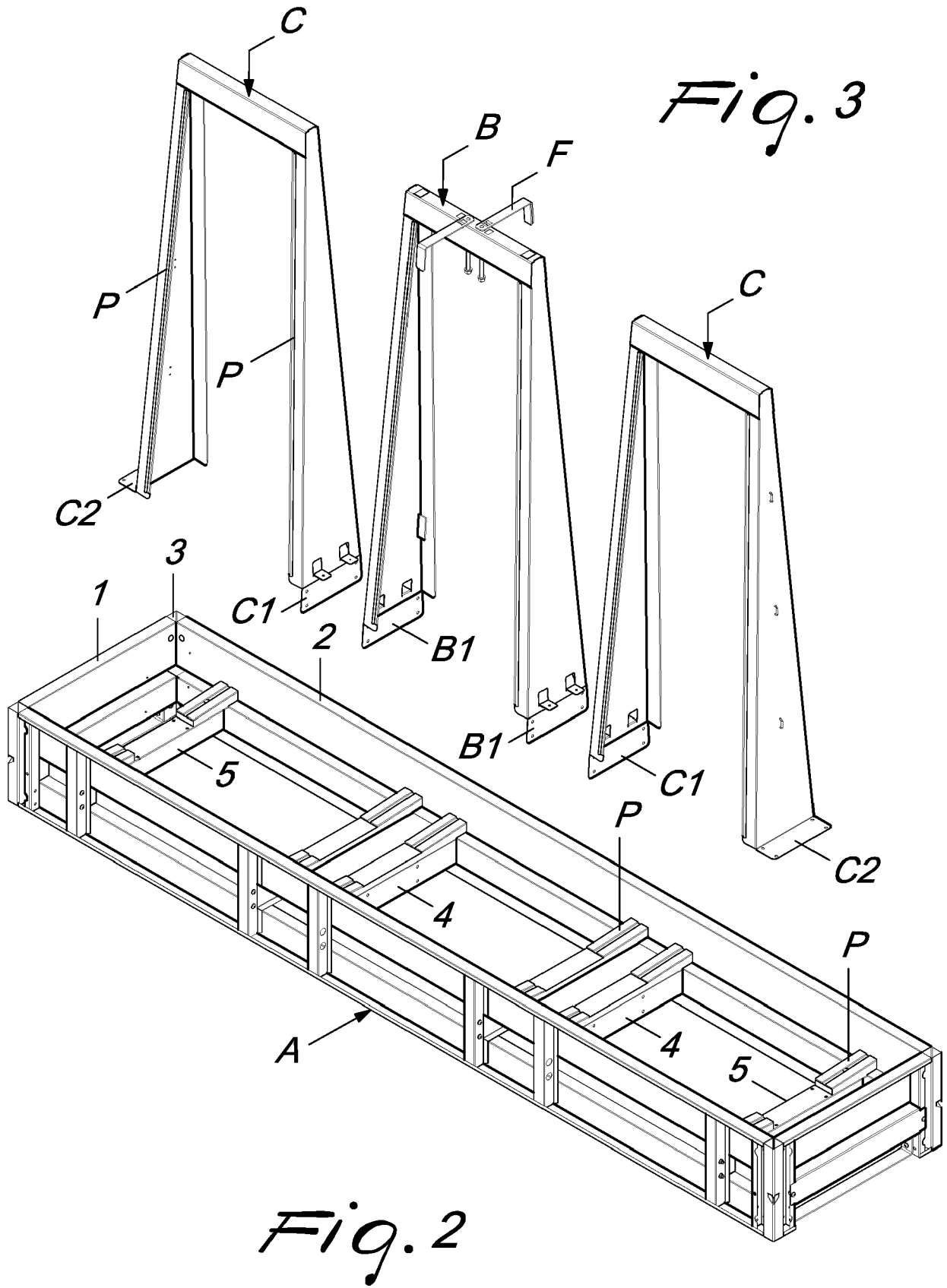


Fig. 1



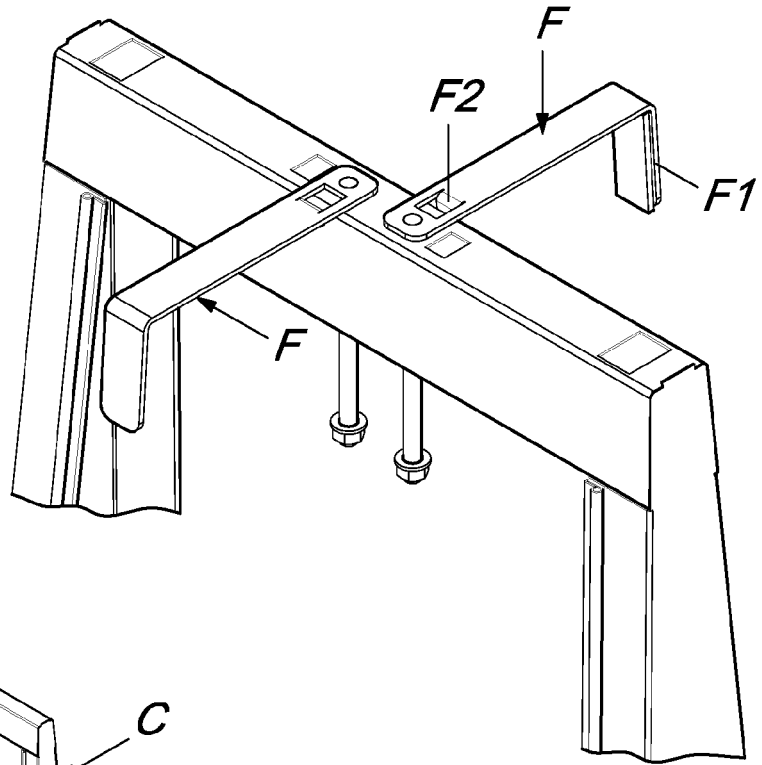


Fig. 5

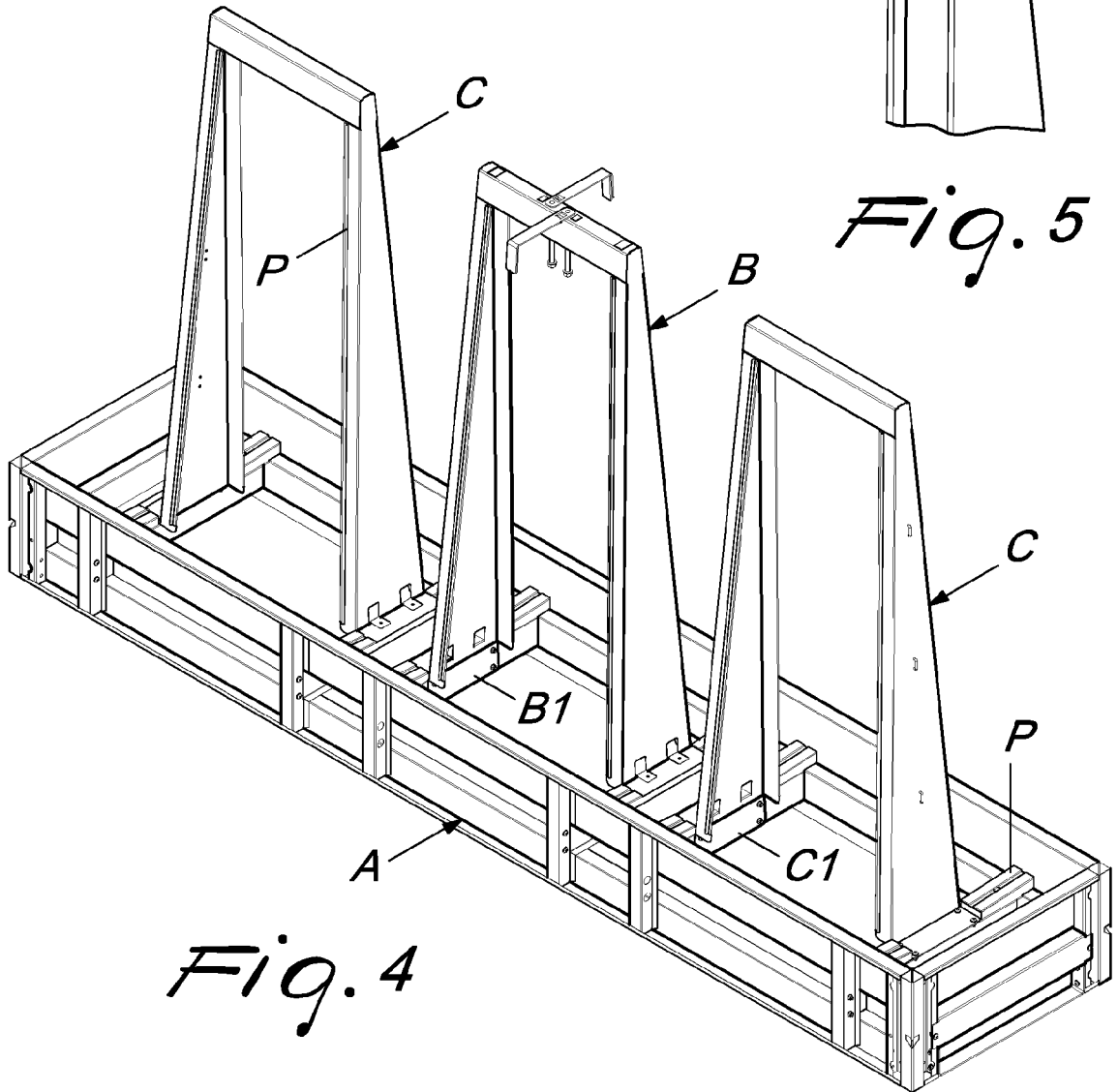


Fig. 4

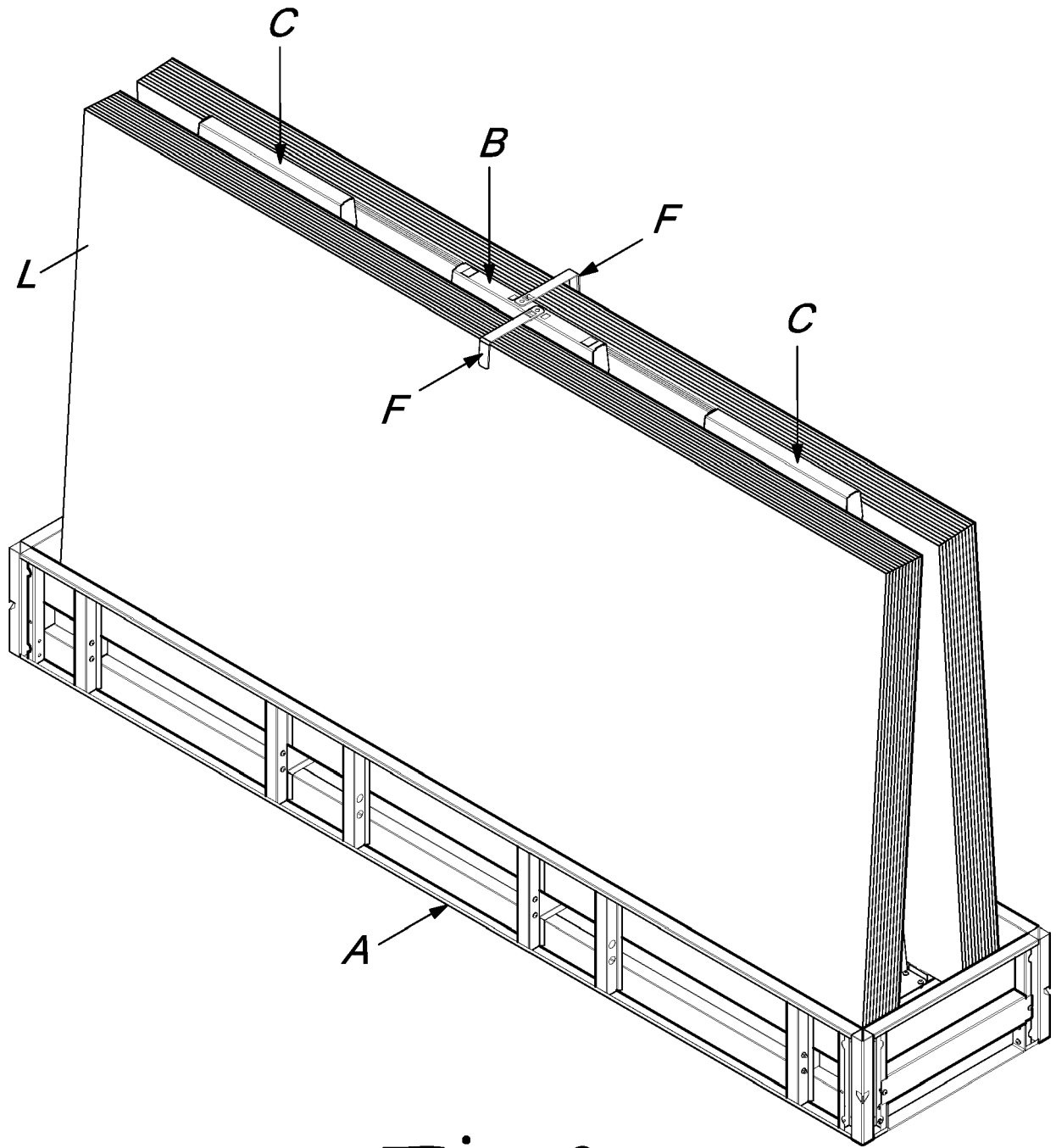


Fig. 6

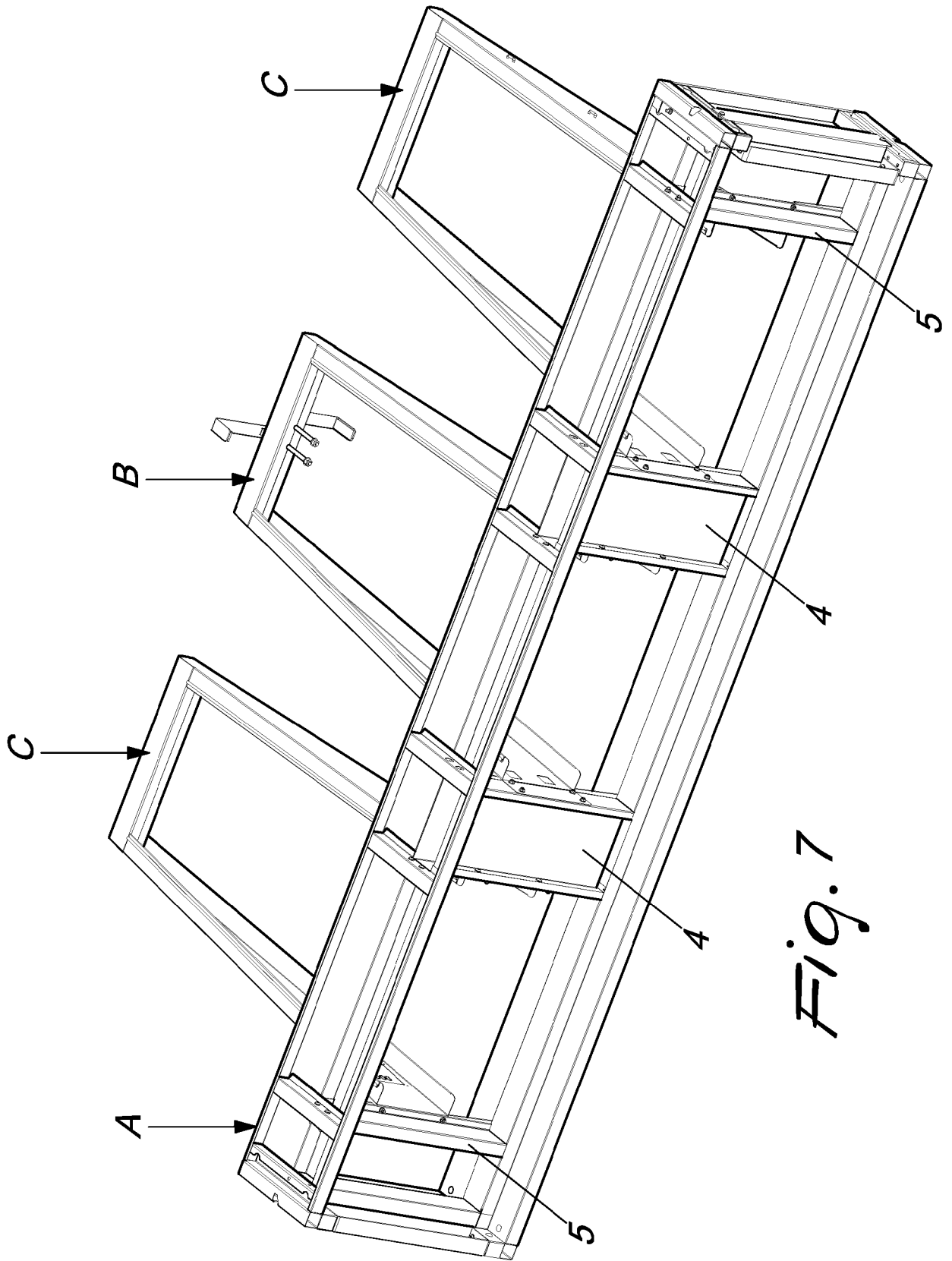


Fig. 7

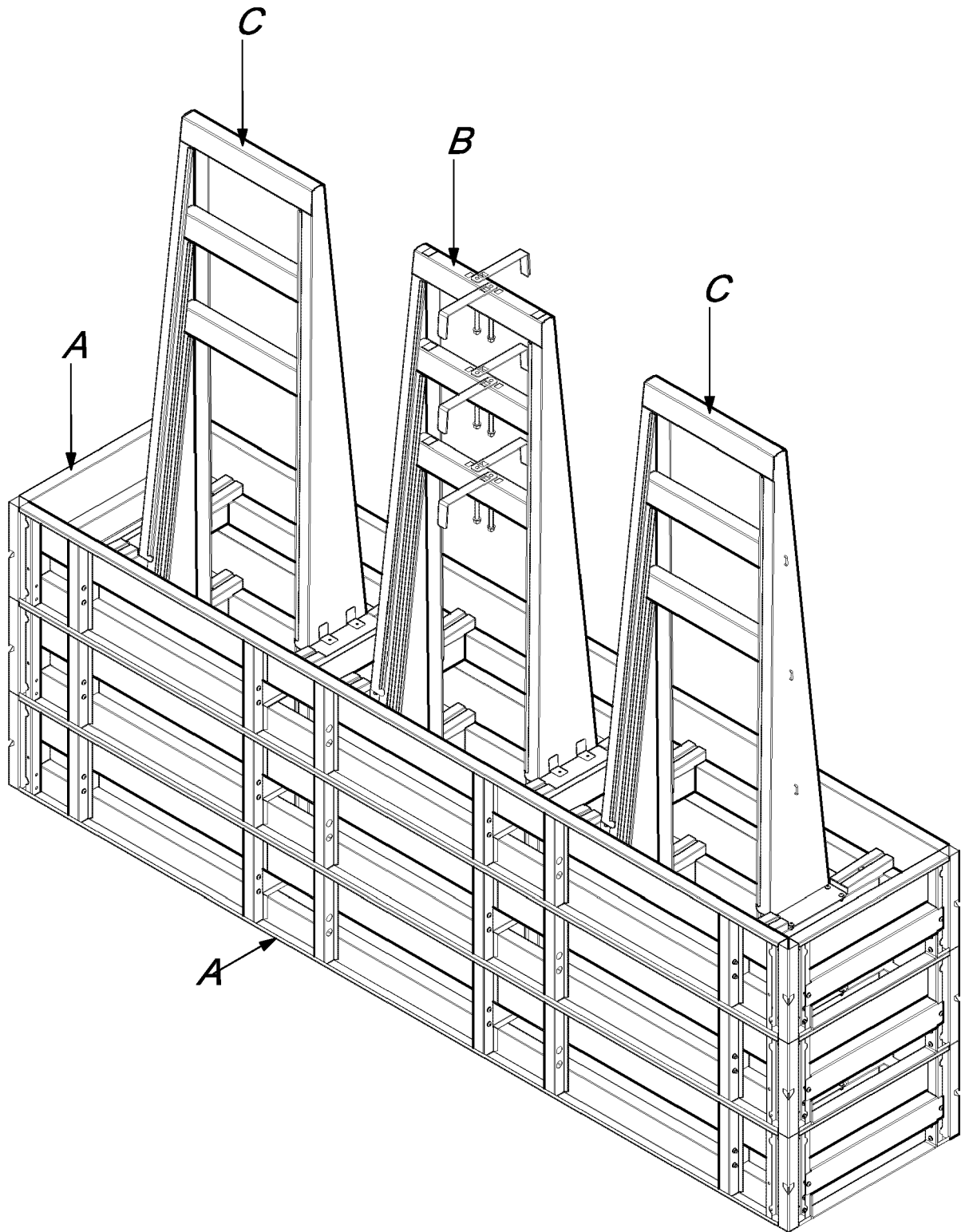


Fig. 8



EUROPEAN SEARCH REPORT

Application Number
EP 19 17 2232

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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A	----- CN 105 480 565 A (BEIJING RUILIHENGYI LOGISTICS TECH CO LTD) 13 April 2016 (2016-04-13) * figures 1,2 *	1-7	ADD. B65D19/44
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			TECHNICAL FIELDS SEARCHED (IPC)
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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 6 August 2019	Examiner Fitterer, Johann
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5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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06-08-2019

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REFERENCES CITED IN THE DESCRIPTION

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