

(19)



(11)

EP 3 945 012 A1

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
02.02.2022 Bulletin 2022/05

(51) International Patent Classification (IPC):
B63B 15/02 (2006.01) B63B 17/02 (2006.01)

(21) Application number: **21188971.2**

(52) Cooperative Patent Classification (CPC):
B63B 15/02; B63B 17/02; B63B 2015/0016

(22) Date of filing: **30.07.2021**

(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

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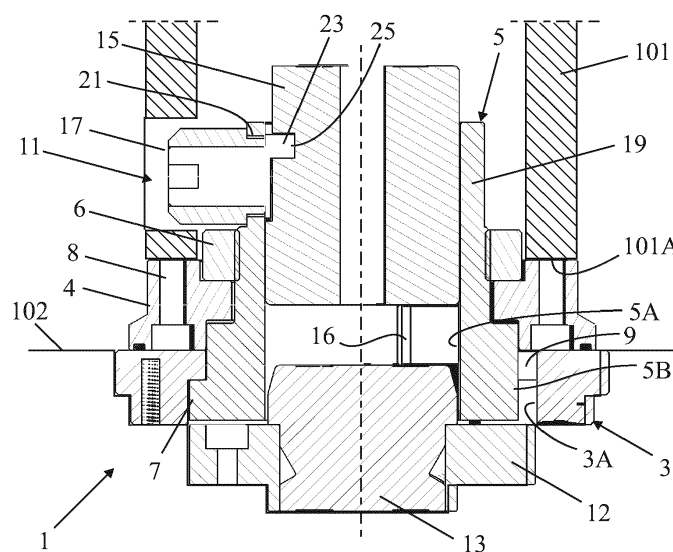
(30) Priority: **31.07.2020 NL 2026194**

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(54) **SECURING DEVICE FOR SECURING A VESSEL MAST TO THE DECK OF A VESSEL, AS WELL AS VESSEL PROVIDED WITH THE SECURING DEVICE**

(57) A securing device 1 has a coupling ring 3 which must be fixedly attached to or in the deck of the vessel and a coupling sleeve 5 which must be fixedly attached to the underside of a vessel's mast. The coupling ring 3 is provided on the inner side 3A and the coupling sleeve 5 is provided on the outer side 5B with projections 7 and/or recesses 9 which together form a bayonet coupling. A blocking device 11 ensures that the coupling ring 3 and the coupling sleeve 5 cannot rotate relative to each

other. This blocking device 11 has a blocking element 13 which is attached to the coupling ring 3 and a blocking body 15 which is slidable in the axial direction in the coupling sleeve 5 between an upper, release position and a lower, blocking position. In the blocking position, the blocking body 15 cooperates with the blocking element 13 such that the blocking body 15 cannot rotate relative to the blocking element 13.

**FIG. 2****EP 3 945 012 A1**

Description

Technical field of the invention

[0001] The invention relates to a securing device for securing an object, in particular a vessel mast, on a deck of a vessel. More particularly, for vessel masts intended to be attached to a tarpaulin or canvas spanning a portion of the deck to create a shaded area.

Background of the invention

[0002] Securing devices for securing a vessel mast to a deck of a vessel are well known. With the known securing devices, the vessel mast is firmly secured to the deck, but this requires relatively much time and the known securing devices take up relatively much space. Often it also has a tube arranged above or below the deck in which the vessel mast is fitted with the lower end.

Summary of the invention

[0003] An object of the invention is to provide a securing device with which an object, in particular a vessel mast, can be secured to a deck of a vessel quickly, simply and watertight. To this end, the securing device according to the invention is characterized in that it:

- comprises a coupling ring that has to be fixedly attached to or in the deck of the vessel and that is provided with an inner side, as well as
- a coupling sleeve that has to be fixedly attached to the underside of the vessel mast and that is provided with an outer side,

wherein the coupling ring on the inner side and the coupling sleeve on the outer side are provided with projections and/or recesses which together form a bayonet coupling.

[0004] By designing the coupling as a bayonet coupling, the vessel mast can be easily and quickly secured to the deck of a vessel.

[0005] In order to prevent the vessel mast from unintentionally becoming detached from the deck, the securing device preferably comprises a blocking device which can block the coupling ring and the coupling sleeve against rotation relative to each other.

[0006] The blocking device preferably comprises:

- a blocking element that has to be fixedly attached to the deck of the vessel, as well as
- a blocking body that is blocked against rotation in the coupling sleeve and that is slidable in the axial direction in the coupling sleeve between an upper, releasing position and a lower, blocking position, in which the blocking body cooperates with the blocking element such that the blocking body cannot rotate relative to the blocking element, and

- a displacement mechanism for displacing the blocking body between the releasing position and the blocking position.

[0007] In the blocking position, the blocking element and the blocking body are preferably positively coupled to each other, wherein a projection on one of the two parts is present in a recess in the other part.

[0008] The displacement mechanism preferably comprises a plug which is screwed into a hole in the wall of the coupling sleeve, and which is provided with an axially projecting pin which is eccentrically with respect to the plug and which is displaceable in a slot in the blocking body, and which extends perpendicular to the axial and radial direction of the blocking body, so that when the plug is rotated, the blocking body is displaced in axial direction.

[0009] An embodiment of the securing device according to the invention is characterized in that it furthermore comprises a pressure cylinder with a pressure piston displaceable therein, the pressure cylinder being fastened to the coupling sleeve and the pressure piston is coupled to the blocking body and can press the blocking body against the blocking element to press or pull the securing device such that there is no play.

[0010] A further embodiment of the securing device according to the invention is characterized in that there are channels in the blocking element and in the blocking body for compressed air and/or water and/or for the passage of electricity lines, wherein in the coupled condition the channels in the blocking body connect in a watertight and airtight manner to the channels in the blocking element. By pressing the blocking body against the blocking element, the pressure cylinder can contribute to obtaining a watertight and air-tight coupling of the channels.

[0011] The invention also relates to a vessel mast provided with a securing device according to the invention.

Brief description of the drawings

[0012] The invention will be further elucidated below on the basis of an exemplary embodiment of the fastening device according to the invention shown in the drawings, wherein:

Figure 1 shows the securing device in top view;
Figure 2 shows the securing device in longitudinal section along line II-II in Figure 1;
Figure 3 shows the coupling ring of the securing device;
Figure 4 shows the coupling sleeve of the securing device; and
Figure 5 shows the fixing device provided with a pressure cylinder.

Detailed description of the drawings

[0013] Figures 1 and 2 show an embodiment of the

securing device according to the invention in top view and longitudinal section, respectively. The securing device 1 has a coupling ring 3 which is fixedly mounted on or in the deck 102 of the vessel and a coupling sleeve 5 which is fixedly mounted on the underside 101A of a vessel's mast 101. The coupling ring 3 is provided on the inner side 3A, see figure 3, and the coupling sleeve 5 is provided on the outer side 5B, see figure 4, with projections 7 and/or recesses 9 which together form a bayonet coupling. A fastening ring 4 is slid onto the coupling sleeve 5, which ring is fastened to the coupling sleeve by a retaining ring 6. The fastening ring 4 is provided with holes 8 through which bolts can be inserted for fastening the fastening ring to the underside 101A of a vessel mast 101.

[0014] The securing device 1 furthermore has a blocking device 11 which can block the coupling ring 3 and the coupling sleeve 5 against rotation relative to each other. This blocking device 11 has a blocking element 13 that is secured to the deck 102 of the vessel by means of a fastening ring 12, as well as a blocking body 15 that is slidable in the coupling sleeve 5 in axial direction. The blocking body 15 is provided with ribs 14 which are slidable in slots 16 present in the inner side 5A, so that the blocking body 15 cannot rotate in the coupling sleeve 5. The blocking body 15 is slidable between an upper, release position and a lower, blocking position. In the blocking position, the blocking body 15 cooperates with the blocking element 13 such that the blocking body 15 cannot rotate relative to the blocking element 13.

[0015] For displacing the blocking body 15 between the releasing position and the blocking position, the securing device 1 is provided with a displacing mechanism which has a plug 17, which is screwed into a hole 21 present in the wall 19 of the coupling sleeve 5. This plug 17 is provided with an axially projecting pin 23 which is present eccentrically with respect to the plug 17 and which is displaceable in a slot 25 which is present in the blocking body 15. This slot 25 extends perpendicular to the axial and radial direction of the blocking body 15. As a result, when the plug 17 is rotated, the blocking body 15 is displaced in axial direction.

[0016] The securing device 1 can furthermore be provided with a pressure cylinder 33 with a pressure piston 35 movable therein, see figure 5. The pressure cylinder 33 is in that case attached to the coupling sleeve 5 and the pressure piston 35 is in that case coupled to the blocking body 15 and can press blocking body 15 forcefully against blocking element 13.

[0017] Furthermore, In the blocking element and in the blocking body, channels are present (not visible in the figures) for compressed air and/or water and/or for the passage of electricity lines. In the coupled condition, the channels in the blocking body connect water-tightly and air-tightly to the channels in the blocking element.

[0018] Although the invention has been elucidated in the foregoing with reference to the drawings, it should be noted that the invention is by no means limited to the

embodiment shown in the drawings. The invention also extends to all embodiments deviating from the embodiment shown in the drawings within the framework defined by the claims.

Claims

1. A securing device (1) for securing an object, in particular a vessel mast (101) on a deck of a vessel, comprising:

- a coupling ring (3) that has to be fixedly attached to or in the deck of the vessel and that is provided with an inner side (3A), as well as
- a coupling sleeve (5) that has to be fixedly attached to the underside (101A) of the vessel mast (101) and that is provided with an outer side (5B),

wherein the coupling ring (3) on the inner side (3A) and the coupling sleeve (5) on the outer side (5B) are provided with projections (7) and/or recesses (9) which together form a bayonet coupling.

2. Securing device (1) according to claim 1, **characterized in that** it further comprises a blocking device (11) which can block the coupling ring (3) and the coupling sleeve (5) against rotation relative to each other.

3. Securing device (1) according to claim 2, **characterized in that** the blocking device (11):

- comprises a blocking element (13) to be fixedly attached to the deck of the vessel, as well as
- a blocking body (15) which is blocked against rotation in the coupling sleeve (5) and which is slidable in the axial direction in the coupling sleeve (5) between an upper, releasing position and a lower, blocking position in which the blocking body (15) cooperates with the blocking element (13) such that the blocking body (15) cannot rotate relative to the blocking element (13), and
- a displacement mechanism for displacing the blocking body (15) between the releasing position and the blocking position.

4. Securing device (1) according to claim 3, **characterized in that** the displacement mechanism comprises a plug (17) which is screwed into a hole (21) present in the wall (19) of the coupling sleeve (5), and which is provided with an axially projecting pin (23) which is eccentric to the plug (17) and which is displaceable in a slot (25) present in the blocking body (15) and which extends perpendicular to the axial and radial direction of the blocking body (15), so that when the

plug (17) is rotated, the blocking body (15) is displaced in axial direction.

5. Securing device (1) according to claim 3 or 4, **characterized in that** it furthermore comprises a pressure cylinder (33) with a pressure piston (35) displaceable therein, the pressure cylinder (33) being fastened to the coupling sleeve (5) and the pressure piston (35) is coupled to the blocking body (15) and can press the blocking body (15) against the blocking element (13) to press or pull the securing device such that there is no play. 5 10
6. Securing device (1) according to claim 3 or 4, **characterized in that** channels are present in the blocking element and in the blocking body for compressed air and/or water and/or for the passage of electricity lines, wherein in the coupled condition the channels in the blocking body connect in a watertight and airtight manner to the channels in the blocking element. 15 20
7. Vessel mast (101) provided with a securing device (1) according to any one of the preceding claims. 25

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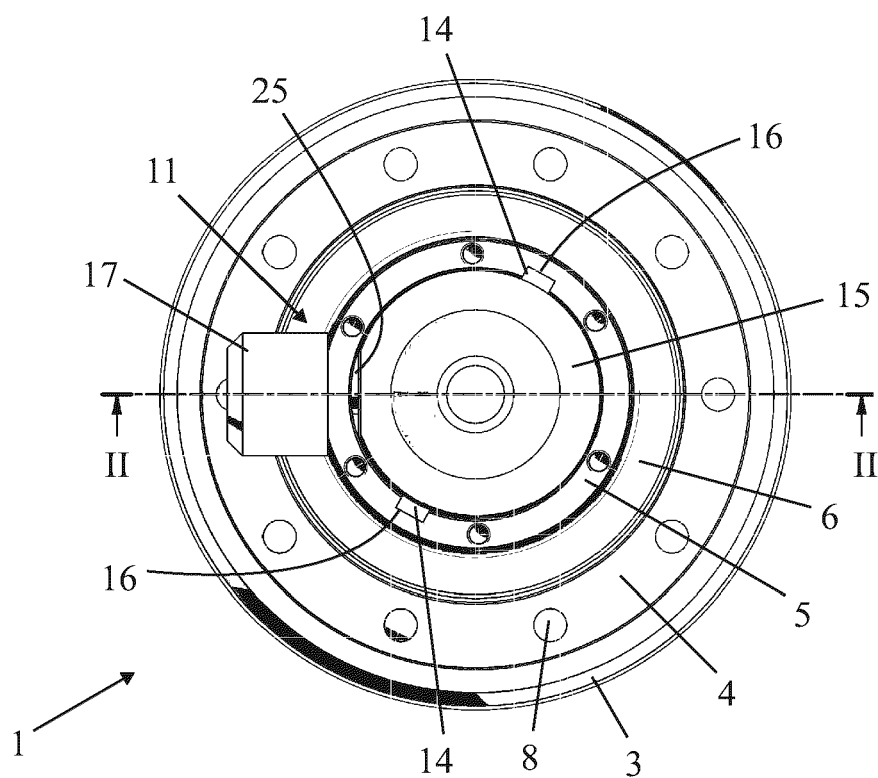


FIG. 1

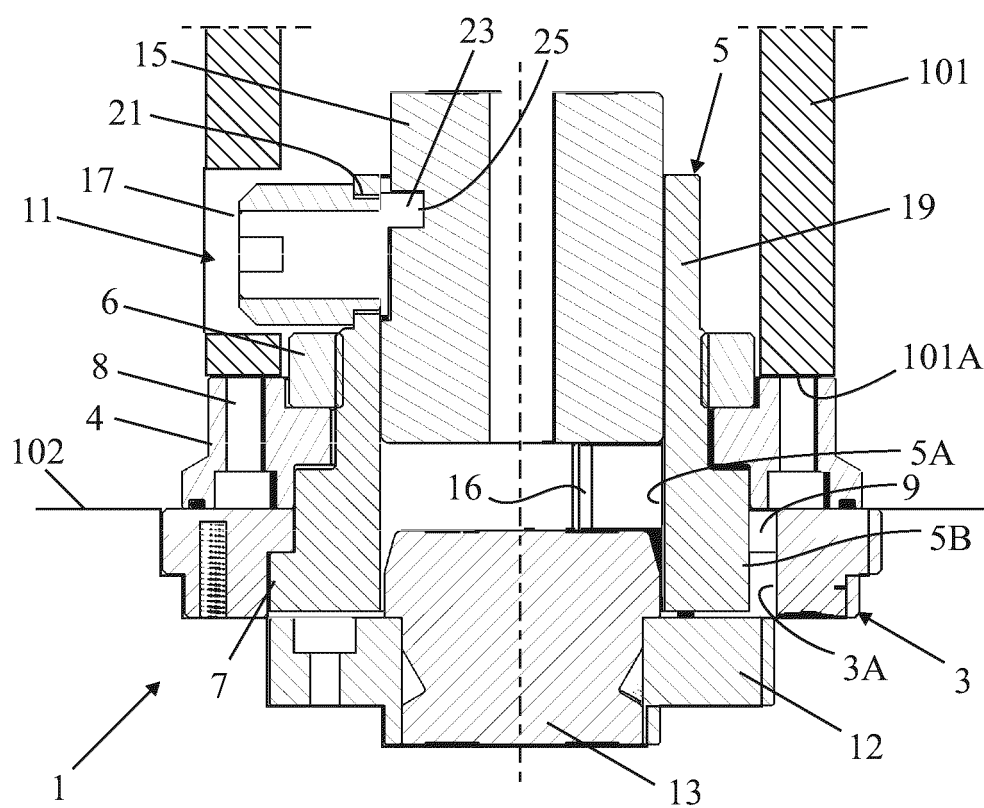


FIG. 2

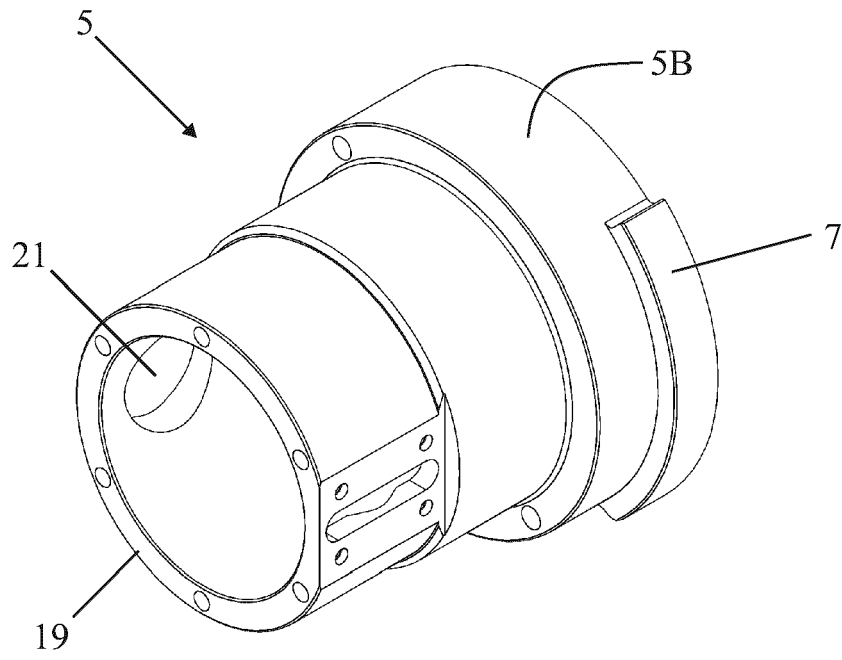


FIG. 3

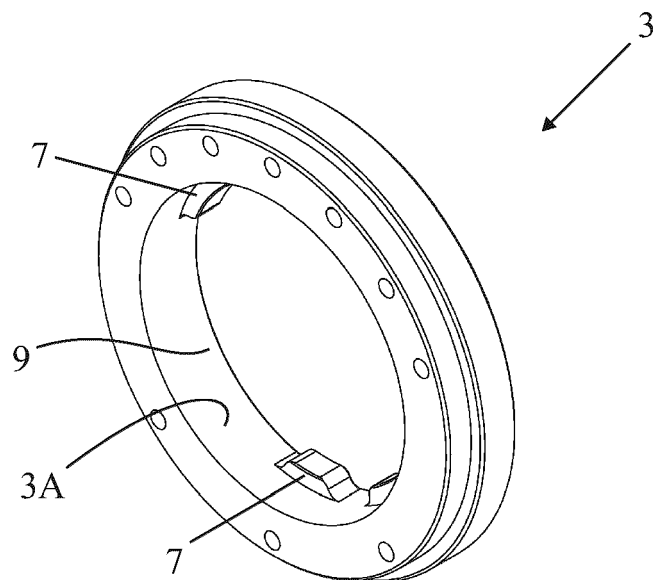


FIG. 4

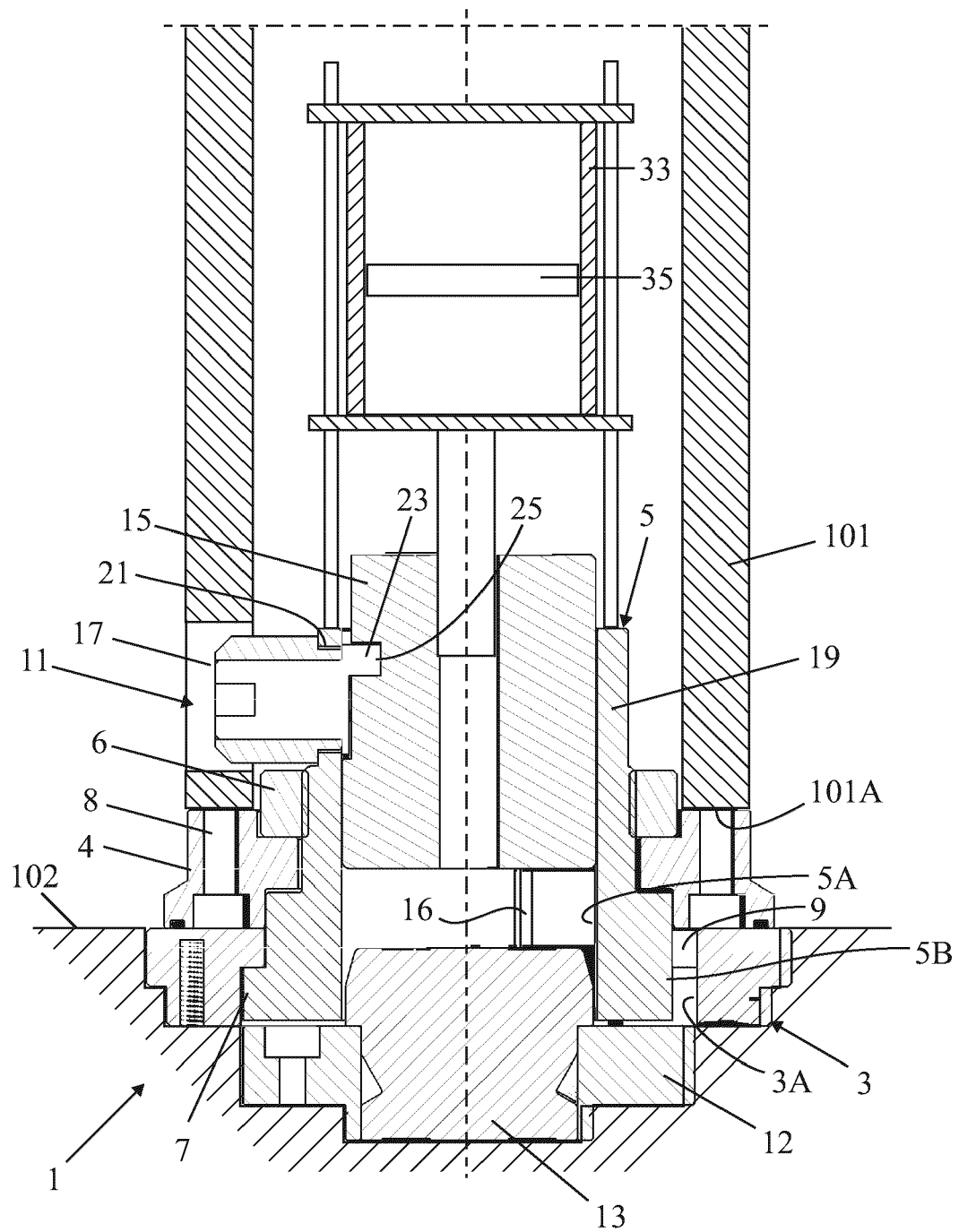


FIG. 5



EUROPEAN SEARCH REPORT

Application Number

EP 21 18 8971

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EPO FORM 1503 03.82 (P04C01)

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Place of search The Hague		Date of completion of the search 17 December 2021	Examiner Knoflachner, Nikolaus
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			

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