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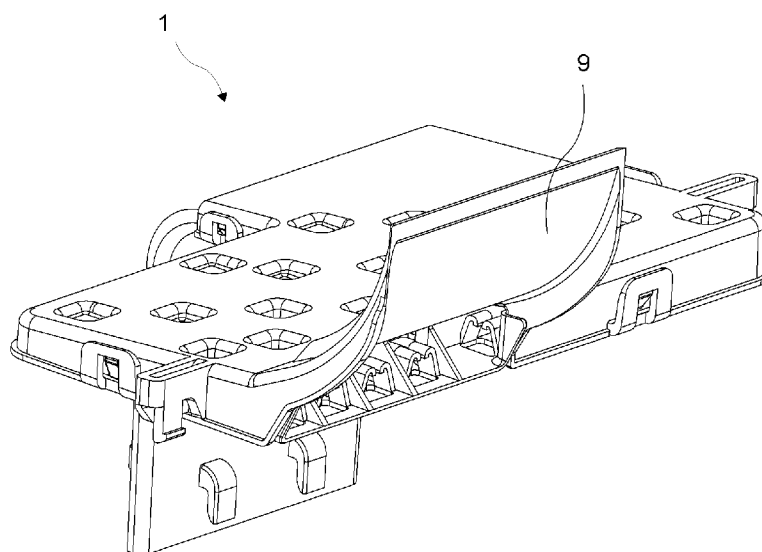
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(54) Title: A CABLE HOLDER SUITABLE FOR USE IN A HOUSEHOLD APPLIANCE

Figure 1



(57) Abstract: The present invention relates to a cable holder (1) suitable for use in a household appliance, comprising a first cover (2), a second cover (3) attachable and detachable on the first cover (2), and at least one cable channel (4) provided on the first cover (2) or the second cover (3), on which the cables are placed.



**Description****A CABLE HOLDER SUITABLE FOR USE IN A HOUSEHOLD APPLIANCE**

- [0001] The present invention relates to a cable holder suitable for use in household appliances.
- [0002] Electricity is transmitted to household appliances by means of cables. Many cables are provided on a household appliance besides the main cable connected at one end to a power socket enabling the household appliance to receive electricity. Proper operation of the household appliance is enabled by connecting the cables accurately. However, the cable connections applied on a household appliance sometimes become complicated. Particularly in household appliances such as dishwashers, the placement and security of the cables become significant as water is also used as well as electricity lines. The cables have to be placed accurately as far away from water and heat as possible. However, due to the fact that the cables are complicated, several problems occur during mounting or use. Cables usually lose function by being squeezed. Also, mounting problems occur due to having a high number of cables. During mounting, problems such as cross connection or inaccurate connection of the cables appear. Cables create a great time and labor loss even when connected accurately. Cable holders of various structures are used to solve this problem.
- [0003] State of the art United States patent document no. US6444903 discloses a cable holder on which cables are placed, composed of two covers having a structure which can be opened and closed, and enabling changing the directions of the cables.
- [0004] The aim of the present invention is to realize a cable holder suitable for use in household appliances.
- [0005] The cable holder suitable for use in household appliances realized to achieve the aim of the present invention and disclosed in the claims, comprises a first cover and a second cover. The first cover and the second cover are detachably attached on each other. At least one cable channel is provided on the first cover or the second cover. The cables are interposed between the first cover and the second cover. The cables are thus

protected from external factors.

- [0006] The cable holder of the invention comprises a cable channel enabling the cables to shift position. The directions of the cables are maintained while shifting position. The cables are conveyed in parallel on the same plane.
- [0007] In an embodiment of the invention, the cable holder comprises a first opening and a second opening provided on the first cover or the second cover. The openings enable the cable channel to open to the outer environment. The cables advance via the openings. The cables shift directions on the same plane at least twice while advancing from one opening to the other. By this, the cables are mounted on desired locations.
- [0008] In an embodiment of the invention, the cable holder comprises a plurality of holder members preventing the cable from escaping the cable channel. The holder members surround the cable and prevent it from moving.
- [0009] In an embodiment of the invention, the cable holder comprises a plurality of pressure members arranged on the first cover or the second cover and vis-a-vis with the cable channel. The pressure members prevent the cables from escaping the cable channel by contacting the cables.
- [0010] In an embodiment of the invention, the cable holder comprises at least one guide arranged opposite the first opening or the second opening, enabling directing of the cables when leaving the cable holder.
- [0011] In an embodiment of the invention, the cable holder comprises a guide having a curved shape. The cables are thus directed without being damaged.
- [0012] In an embodiment of the invention, the cable holder comprises a seat and a protrusion arranged on the first cover or the second cover, enabling the first cover and the second cover to be attached to each other.
- [0013] In an embodiment of the invention, the cable holder is suitable for use in dishwashers.
- [0014] The cable holder realized to achieve the aim of the invention is illustrated in the accompanying drawings, wherein:
- [0015] Figure 1 is a perspective view of the cable holder
- [0016] Figure 2 is an exploded view of the cable holder
- [0017] Figure 3 is a perspective view of the pressure members, and the first or

the second covers.

[0018] Figure 4 is a perspective view of the cable channel, and the first or the second covers.

[0019] The elements in the figures are numbered individually and the correspondence of these numbers are given hereinafter.

1. Cable holder
2. First cover
3. Second cover
4. Cable channel
5. First opening
6. Second opening
7. Holder member
8. Pressure member
9. Guide
10. Protrusion
11. Seat

[0020] The cable holder (1) suitable for use in a household appliance, comprises a first cover (2), a second cover (3) attachable and detachable on the first cover (2), and at least one cable channel (4) provided on one of the covers (2, 3), on which the cables are placed. The cables are placed on the cable channel (4). The cable channel (4) is closed by means of the first cover (2) or the second cover (3). The cables are thus protected from external factors. (Figure 1)

[0021] The cable holder (1) of the invention comprises a cable channel (4) enabling the cables to shift position in the same direction within. The cable holder (1) does not change the direction of the cables. The cables are conveyed in parallel. The cables are thus placed orderly. The cables are prevented from being dispersed, providing ease of mounting.

[0022] In an embodiment of the invention, the cable holder (1) comprises a cable channel (4) provided on the covers (2, 3), enabling the cable to shift direction at least twice on the same plane while advancing from the inlet opening (5) to the outlet opening (6) by means of its geometrical structure, and comprising an inlet opening (5) through which the cables enter the

cable channels (4), and an outlet opening (6) enabling the cables to exit the cable channels (4). The cables can shift direction in the cable channel (4) more than once on the same plane. The cables thus advance to the region they are supposed to reach. The portion of the cable which enters the cable holder (1), and the portion which exits the cable holder (1) are parallel to each other. (Figure 4)

- [0023] In an embodiment of the invention, the cable holder (1) comprises a plurality of holder members (7) provided on the cable channel (4), enabling fixing of the cable in the cable channel (4). The holder members (7) prevent the cables from escaping the cable channel (4) by surrounding them. The cables are thus fixed in the cable channel (4).
- [0024] In an embodiment of the invention, the cable holder (1) comprises a plurality of pressure members (8) arranged on the covers (2, 3) opposite to the cable channel (4) so as to face each other, preventing the cables to escape from the cable channel (4). The pressure members (8) are arranged at the portions where the holder members (7) do not exist, so as to correspond over the cable channel (4). By this, the cable is prevented from escaping the cable channel (4) during advancing from one holder member (7) to the other. (Figure 3)
- [0025] In an embodiment of the invention, the cable holder (1) comprises at least one guide (9) arranged on at least one of the covers (2, 3) so as to be opposite the inlet opening (5) or the outlet opening (6), enabling the cable to advance in vertical direction with respect to the cable channel (4). The guides (9) confront the cables leaving the openings. They enable the cables to advance downwards or upwards.
- [0026] In an embodiment of the invention, the cable holder (1) comprises a guide (9) having a curved shape. The cables are enabled to advance without making a sudden turn by means of the cable holder (1) having a curved shape. The cables are thus prevented from being damaged.
- [0027] In an embodiment of the invention, the cable holder (1) comprises a protrusion (10) and a seat (11) in which the protrusion (10) rests, arranged vis-a-vis on the covers (2, 3), enabling the covers (2, 3) to be attached to each other. The protrusion (10) enables the first cover and the second

cover to interlock each other by resting on the seat (11). The cables are thus prevented from being damaged by being isolated from the outer environment. (Figure 2)

[0028] In an embodiment of the invention, the cable holder (1) is provided on a dishwasher.

[0029] The aim of the present invention is to realize a cable holder (1) suitable for use on a household appliance. By means of the cable holder (1), cable complexity on household appliances is avoided and the cables are prevented from being damaged. An ease of mounting is also provided. The cable holder (1) comprises a first cover (2) and a second cover (3) attachable on and detachable from each other. A cable channel is provided on one of the covers. The cover which doesn't have the cable channel acts as a protector. The cables are enabled to be fixed on the cable holder (1) by means of the holder members (7) and the pressure members (8) arranged on the covers.

## Claims

1. A cable holder (1) suitable for use in a household appliance, **comprising** a first cover (2), a second cover (3) attachable and detachable on the first cover (2), and at least one cable channel (4) provided on one of the covers (2, 3), on which the cables are placed, **characterized by** the cable channel (4) enabling the cables to shift position in the same direction within.
2. A cable holder (1) according to claim 1, **comprising** an inlet opening (5) through which the cables enter the cable channels (4), and an outlet opening (6) enabling the cables to exit the cable channels (4), provided on the covers (2, 3), **characterized by** the cable channel (4) enabling the cable to shift direction at least twice on the same plane while advancing from the inlet opening (5) to the outlet opening (6) by means of its geometrical structure.
3. A cable holder (1) according to any one of the preceding claims, **characterized by** a plurality of holder members (7) provided on the cable channel (4), enabling fixing of the cable in the cable channel (4).
4. A cable holder (1) according to any one of the preceding claims, **characterized by** a plurality of pressure members (8) arranged on the covers (2, 3) opposite to the cable channel (4) so as to face each other, preventing the cables to escape from the cable channel (4).
5. A cable holder (1) according to any one of the claims 2 to 5, **characterized by** at least one guide (9) arranged on at least one of the covers (2, 3) so as to be opposite the inlet opening (5) or the outlet opening (6), enabling the cable to advance in vertical direction with respect to the cable channel (4).
6. A cable holder (1) according to claim 6, **characterized by** the guide (9) having a curved shape.
7. A cable holder (1) according to any one of the preceding claims, **characterized by** a protrusion (10) arranged vis-a-vis on the covers (2, 3), enabling the covers (2, 3) to be attached to each other, **and by** a seat (11) in which the protrusion (10) rests.
8. A cable holder (1) according to any one of the preceding claims, suitable for use in a dishwasher.

Figure 1

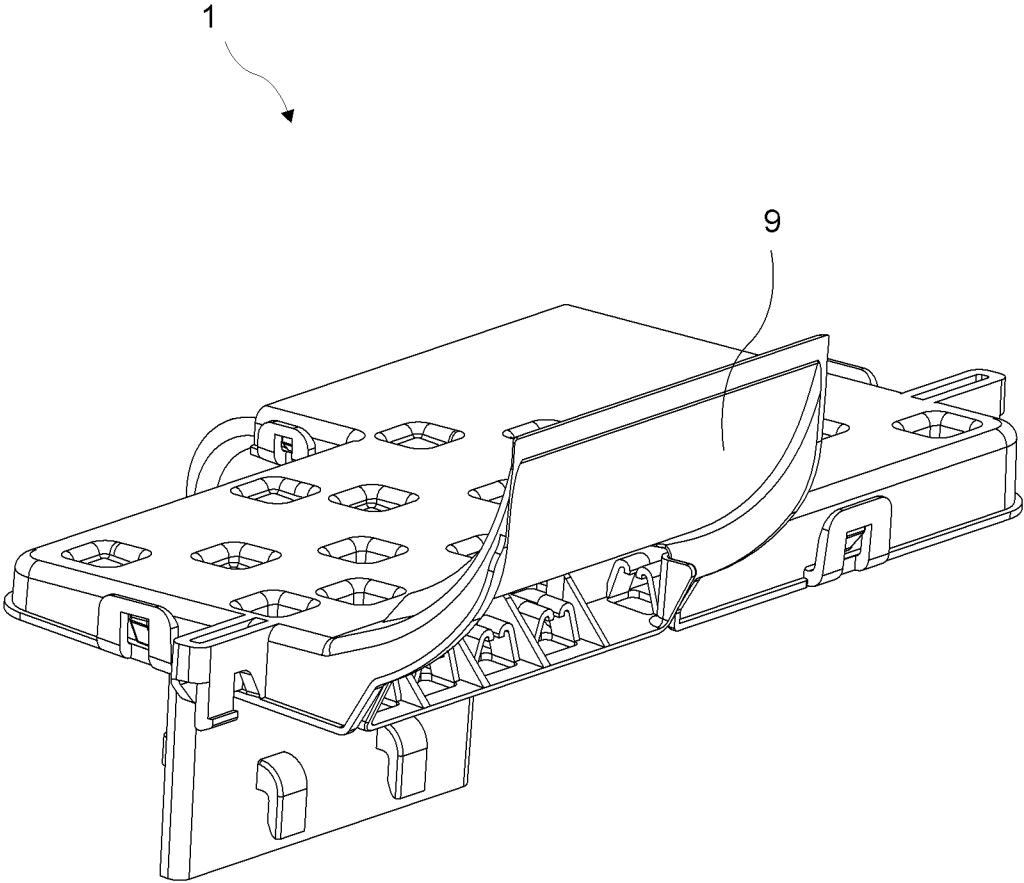




Figure 2

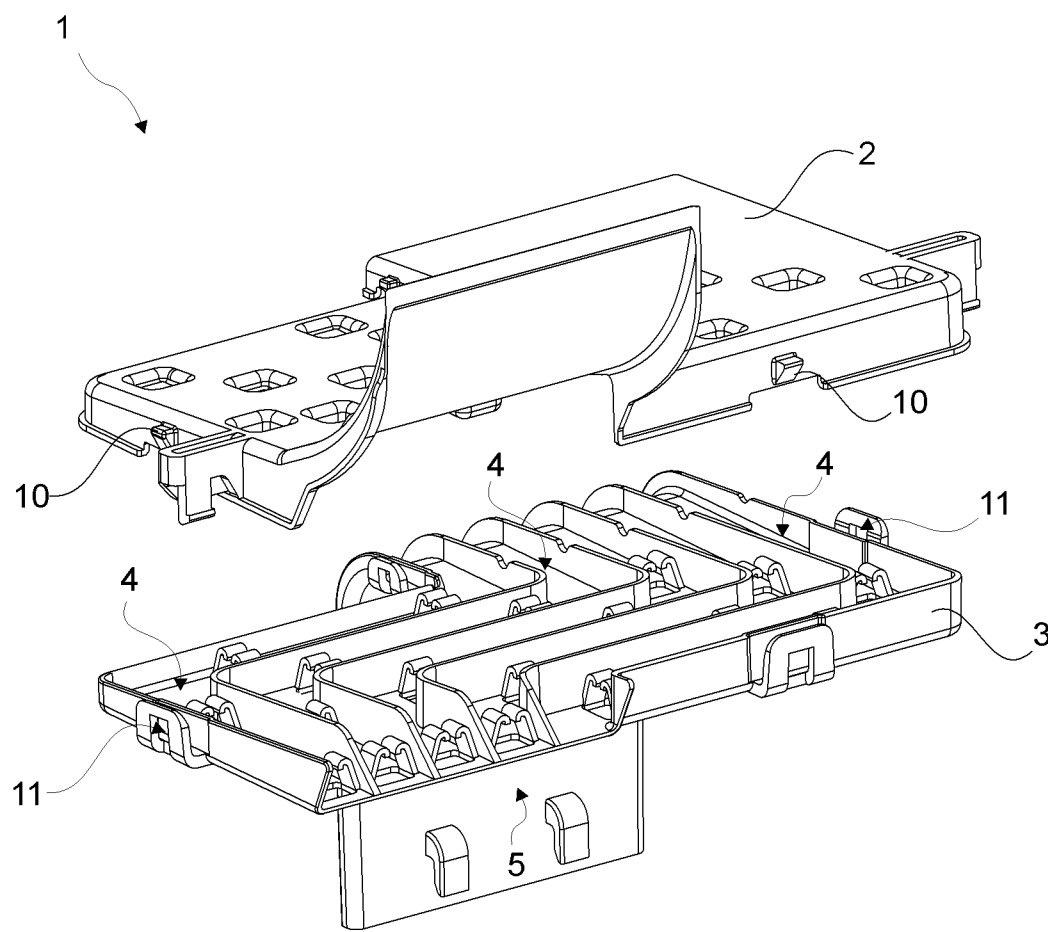


Figure 3

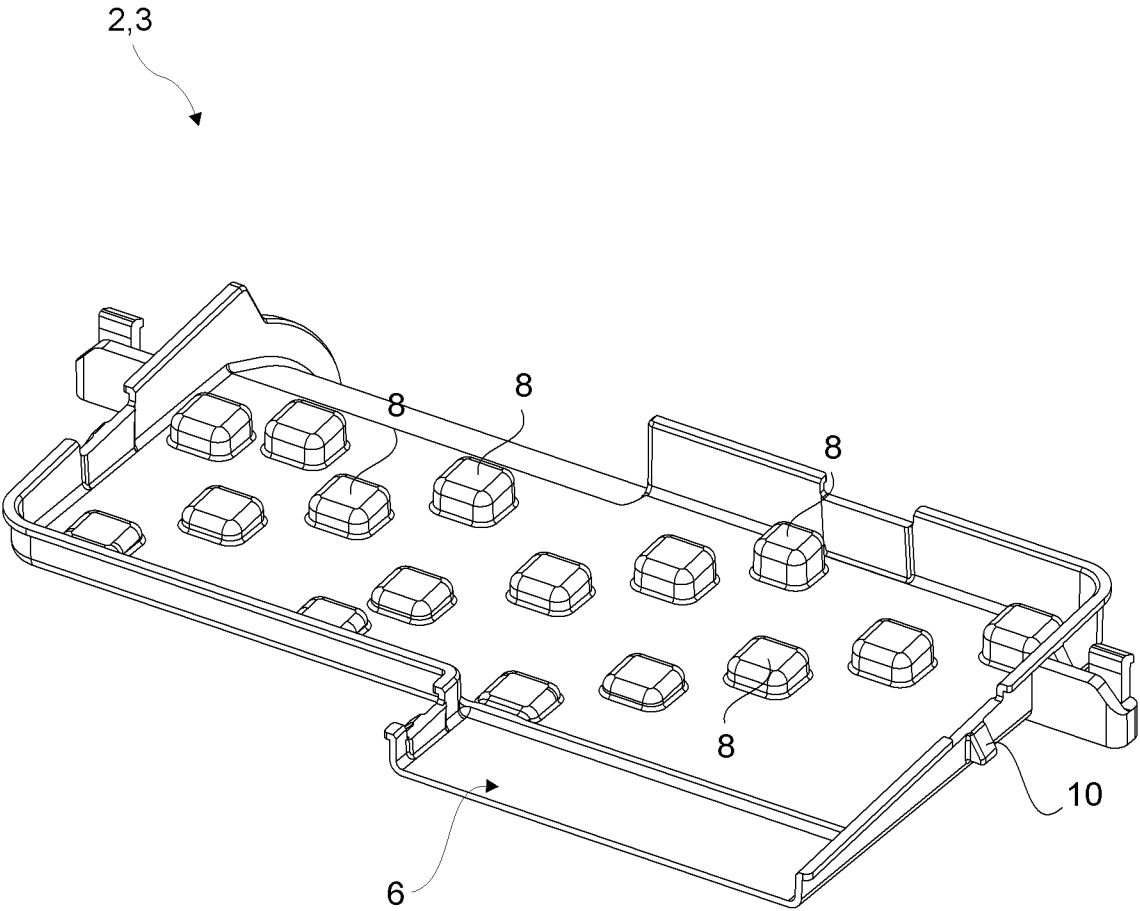
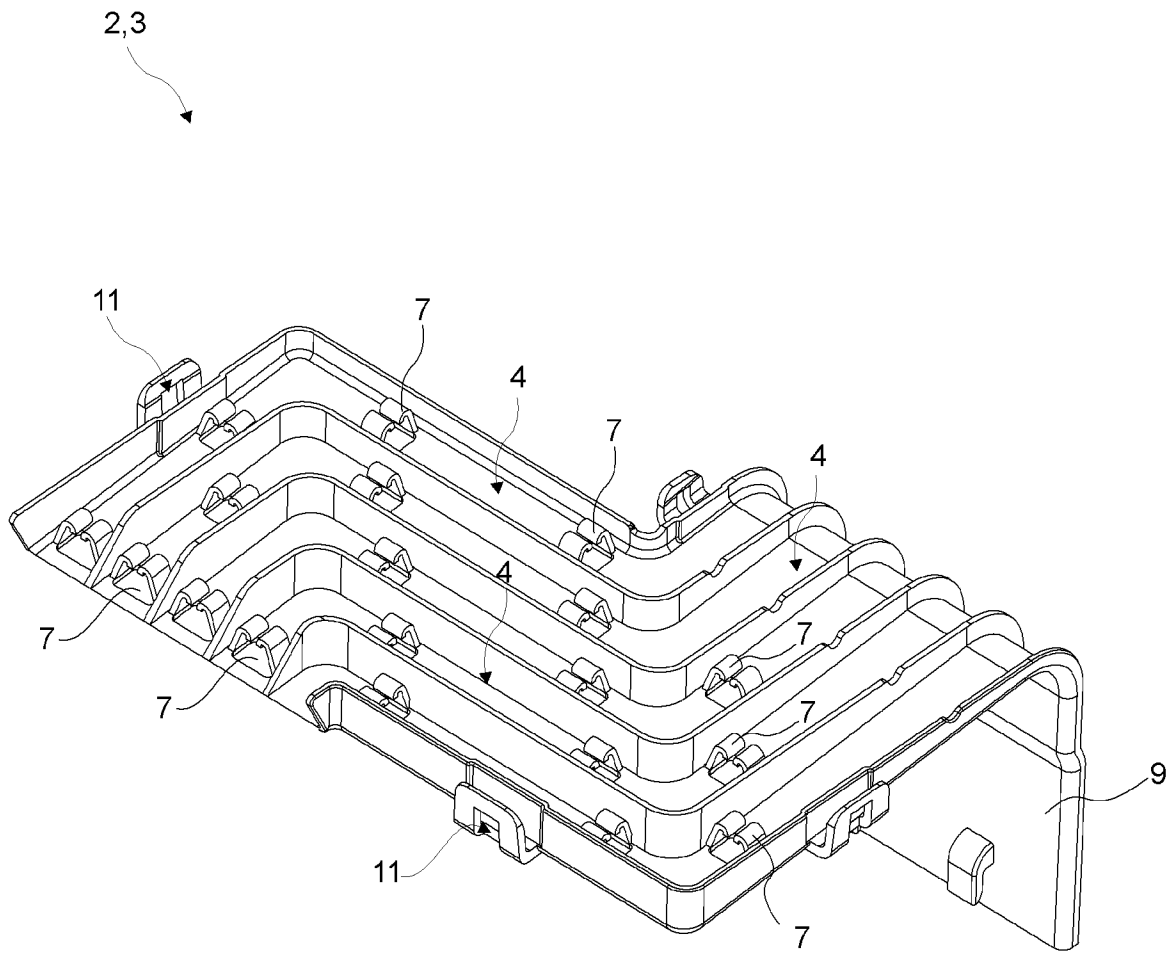


Figure 4



# INTERNATIONAL SEARCH REPORT

International application No  
PCT/EP2017/077622

A. CLASSIFICATION OF SUBJECT MATTER  
INV. H02G3/04  
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
H02G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|------------------------------------------------------------------------------------|-----------------------|
| X         | US 2005/217888 A1 (ARAI HIROAKI [JP] ET AL) 6 October 2005 (2005-10-06)            | 1-4,7,8               |
| Y         | abstract; figures 3,5                                                              | 5,6                   |
|           | -----                                                                              |                       |
| X         | US 2005/045361 A1 (ARAI HIROAKI [JP] ET AL) 3 March 2005 (2005-03-03)              | 1                     |
| Y         | pages 3-5; figures 1-6                                                             | 5,6                   |
| A         |                                                                                    | 7                     |
|           | -----                                                                              |                       |
| X         | US 6 444 903 B2 (YAZAKI CORP [JP]) 3 September 2002 (2002-09-03)                   | 1                     |
|           | cited in the application                                                           |                       |
|           | figures 1-6                                                                        |                       |
|           | -----                                                                              |                       |
| A         | EP 1 241 758 A1 (GATTERBAUER RUPERT JR [AT]) 18 September 2002 (2002-09-18)        | 1,3,7                 |
|           | figures 1-7                                                                        |                       |
|           | -----                                                                              |                       |



Further documents are listed in the continuation of Box C.



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Name and mailing address of the ISA/

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2017/077622

| Patent document<br>cited in search report | Publication<br>date | Patent family<br>member(s) | Publication<br>date         |
|-------------------------------------------|---------------------|----------------------------|-----------------------------|
| US 2005217888                             | A1                  | 06-10-2005                 | JP 4469648 B2 26-05-2010    |
|                                           |                     |                            | JP 2005295728 A 20-10-2005  |
|                                           |                     |                            | US 2005217888 A1 06-10-2005 |
| US 2005045361                             | A1                  | 03-03-2005                 | JP 4184897 B2 19-11-2008    |
|                                           |                     |                            | JP 2005057967 A 03-03-2005  |
|                                           |                     |                            | US 2005045361 A1 03-03-2005 |
| US 6444903                                | B2                  | 03-09-2002                 | JP 3739074 B2 25-01-2006    |
|                                           |                     |                            | JP 2001177944 A 29-06-2001  |
|                                           |                     |                            | US 2001017214 A1 30-08-2001 |
| EP 1241758                                | A1                  | 18-09-2002                 | AT 5234 U1 25-04-2002       |
|                                           |                     |                            | AT 277442 T 15-10-2004      |
|                                           |                     |                            | DE 50103744 D1 28-10-2004   |
|                                           |                     |                            | DK 1241758 T3 17-01-2005    |
|                                           |                     |                            | EP 1241758 A1 18-09-2002    |
|                                           |                     |                            | ES 2228792 T3 16-04-2005    |