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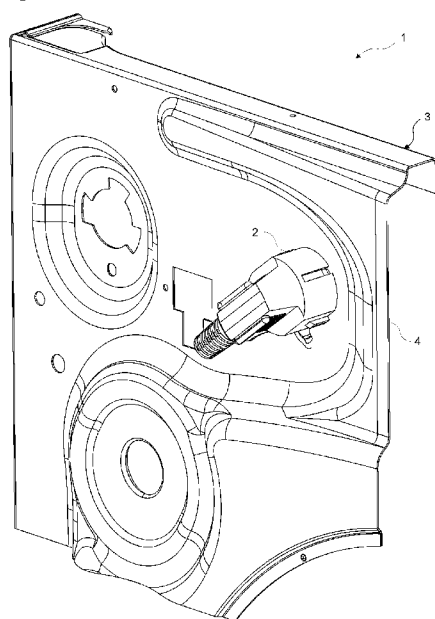
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(54) Title: A WASHER/DRYER COMPRISING A PLUG HOLDER

Figure 1



(57) Abstract: The present invention relates to a washer/dryer (1) comprising a body (3); a plug (2) with at least two terminals that provides the required energy by being connected to the mains; a housing (8) that is arranged on the rear wall (4) of the body (3), and a plug holder (5) that is fitted into the housing (8) and that receives the plug (2).



Description**A WASHER/DRYER COMPRISING A PLUG HOLDER**

- [0001] The present invention relates to a washer/dryer comprising a plug holder whereon the unattached plug is fitted during transport.
- [0002] In washer/dryers, in particular in washing machines, plugs used for electrical connection are not fixed after the production of the washer/dryer or during transport, the metal terminals thereof contact the body of the washer/dryer and cause deformations such as scratch, dent, etc. on the body. Therefore, structures called plug holders are used in particular during transport in order to fix the plug. The complex structure of the plug holder with plastic cover used in the state of the art washer/dryers complicates the production. The plug holder composed of two pieces prolongs the duration of assembly.
- [0003] If without a cover, the plug holder does not pass the spray test. Producing the plug holder with a cover results in the use of additional materials and increase in mold costs, and if the cover is not closed, the above-mentioned problems arise again. Moreover, producing the plug holder with a cover also creates difficulty in assembly.
- [0004] In the state of the art German Patent Application No. DE4428197, a washing machine is disclosed, comprising a plug holder enabling the electric plug to be attached onto the washing machine.
- [0005] Another state of the art document is German Patent Application No. DE19914370. In this document, a washing machine is disclosed, comprising a plug holder with a cover that enables the plug to be attached onto the washing machine during transport.
- [0006] Another state of the art document is German Patent Application No. DE102012213928. In this document, a plug holder enabling the plug to be attached onto the washing machine during transport is disclosed, and a bracket disposed on the rear wall of the washer/dryer is used as the plug holder.
- [0007] The aim of the present invention is the realization of a washer/dryer comprising a plug holder whereon the plug is securely fixed during transport.

- [0008] The washer/dryer realized in order to attain the aim of the present invention, explicated in the first claim and the respective claims thereof, comprises a plug holder that is fixed to the rear wall of the body, and the plug holder comprises thereon at least two channels with one end open allowing the entry of the terminal of the plug and with the other end that remains in the body being closed. By means of the closed channel, when the plug holder is not in use, in other words, when the plug is not attached onto the plug holder, water or the like entering the channel with the end opening outside being open is prevented from entering the body.
- [0009] In the preferred embodiment of the present invention, the plug holder comprises a base and at least two channels that extend outwards from the base perpendicular to the base surface.
- [0010] In another embodiment of the present invention, the channels are produced in the shape, number and form required for the attachment of different type of plugs. In the preferred embodiment of the present invention, although the channels are cylindrical, the plug holder also comprises channel in various forms. Thus, the plug holder can support plugs with two or three terminals.
- [0011] In another embodiment of the present invention, an additional second housing independent of the housing is provided next to the housing. In this embodiment, the plug holder comprises an additional channel thereon that is inserted into said additional housing. Thus, the plug holder is prevented from being spontaneously dislodged from the housing. In this embodiment, the additional housing is circular while the additional channel is cylindrical.
- [0012] In another embodiment of the present invention, the washer/dryer comprises a cover that is attached onto the plug holder and that has channels protrusions extending into the channels. In this embodiment, the rear wall has a connection housing thereon and a connection element that is fitted into said connection housing and that is an extension of the cover. In order to be attached onto the plug holder or detached from the plug holder, the cover rotates around the connection element fitted into the connection housing. The cover is closed when the plug holder is not actively used, any ingress of dust or the like into the channels through the

open end thereof is prevented.

- [0013] By means of the present invention, a plug holder wherein the need for using the cover is eliminated is realized, and by means of the channels with closed ends, in cases the plug holder is not actively used, water or the like is prevented from reaching to the interior of the body from the plug holder through the channels.
- [0014] A washer/dryer realized in order to attain the aim of the present invention is illustrated in the attached figures where
- [0015] Figure 1 - is the perspective view of the washer/dryer when the plug is fitted into the plug holder.
- [0016] Figure 2 - is the view of the rear wall, the plug, the housing, and the plug holder.
- [0017] Figure 3 - is the perspective view of the washer/dryer when the plug is fitted into the plug holder with the cover.
- [0018] Figure 4 - is the view of the rear wall, the plug, the cover, and the plug holder.
- [0019] The elements illustrated in the figures are numbered as follows:
1. Washer/dryer
 2. Plug
 3. Body
 4. Rear wall
 5. Plug holder
 6. Base
 7. Channel
 8. Housing
 9. Additional housing
 10. Additional channel
 11. Connection element
 12. Connection housing
 13. Cover
 14. Protrusion
- [0020] The washer/dryer (1) comprises a body (3); a plug (2) with at least two terminals that provides the required energy by being connected to the

mains; a housing (8) that is arranged on the rear wall (4) of the body (3), and a plug holder (5)

- that is fitted into the housing (8),
 - that receives the plug (2),
 - that extends into the body (3) through the rear wall (4),
 - wherein the end thereof opening outside the body (3) is open so as to allow the entry of the terminals of the plug (2),
 - wherein the end thereof remaining in the body (3) is closed, and
 - that has at least two channels (7) the lengths of which are at least as much as the length of the plug (2) terminals
- (Figure 1 and Figure 2).

[0021] In the embodiment of the present invention, when the plug (2) is not in use, especially during transport, the plug holder (5) is fitted into the housing (8) arranged on the rear wall (4). Afterwards, the two terminals of the plug (2) are inserted into the channels (7) through the open ends of the plug holder (5) on the rear wall (4). When the body of the plug (2) bears against the plug holder (5), the attachment of the plug (2) onto the plug holder (5) is completed. When desired to be used, the plug (2) is detached from the plug holder (5), and the washer/dryer (1) is connected to the mains again via the plug (2). By means of the plug holder's (5) channel (7) of which the end remaining in the body (3) is closed and receives the terminal of the plug (2), even if the plug holder (5) is on the body (3), water and the like that may enter the channel (7) from the outside is prevented from reaching the interior of the body (3). Thus, the need for using any cover when the plug holder (5) is not actively used is eliminated. Consequently, material consumption is decreased and ease of assembly is provided. The plug holder (5) does not require the intervention of the user, and any problems such as leaking of water into the body (3) that would arise if the cover were left open are eliminated. Moreover, the production of the plug holder (5) is facilitated and expedited.

[0022] In the embodiment of the present invention, the washer/dryer (1) comprises a base (6) that is provided on the plug holder (5) and that is positioned on the rear wall (4) of the body (3) when the plug holder (5) is

fitted into the housing (8), and at least two channels (7) that extend from the base (6) in a direction perpendicular to the surface of the base (6), with one end on the base being open and the other end being closed. In this embodiment of the present invention, when the plug holder (5) is fitted into the housing (8), the base (6) remains on the rear wall (4) outside the body (3) and the closed ends of the channels (7) extend into the body (3) through the rear wall (4) of the body (3), and when the plug holder (5) is fixed onto the rear wall (4), the closed ends of the channels (7) remain inside the body (3).

- [0023] In the embodiment of the present invention, the washer/dryer (1) comprises an additional housing (9) next to the housing (8), that is independent of the housing (8), and an additional channel (10) that is arranged on the plug holder (5) and that is inserted into said additional channel (9). By means of said additional housing (9) and said additional channel (10), the plug holder (5) is prevented from being inadvertently dislodged from the housing. In the preferred embodiment, the additional housing (9) is positioned just below the housing (8). In this embodiment of the present invention, the additional housing (9) is circular while the additional channel (10) is cylindrical.
- [0024] In another embodiment of the present invention, the channels (7) are cylindrical. In another embodiment of the present invention, in addition to the cylindrical channels (7), channels (7) in various forms are provided. Thus, plugs (2) with two terminals or three terminals can be fitted into the plug holder (5). Moreover, in another embodiment of the present invention, the channels (7) are quadrilateral.
- [0025] In an embodiment of the present invention, the housing (8) and the base of the plug holder (5) have the same form. In the preferred embodiment of the present invention, the housing (8) and the base of the plug holder (5) are in the form of a "bell".
- [0026] In another embodiment of the present invention, the washer/dryer (1) comprises a cover (13) that is fitted into the open ends of the channels (7) when the plug (2) is not fitted onto the plug holder (5). In this embodiment of the present invention, the washer/dryer (1) comprises at least two

protrusions (14) that are provided on the cover (13) so as to extend outwards, and that are inserted into the open ends of the channels (7) when the cover (13) is fitted onto the plug holder (5). The cover (13) is closed when the plug holder (5) is not used, any ingress of unwanted materials into the channels (7) through the open end thereof is prevented.

[0027] In an embodiment of the present invention, the washer/dryer (1) comprises a connection element (11) that is connected to the cover (13) and a connection housing (12) that is arranged on the rear wall (4) and wherein the connection element (11) is fitted. The cover (13) attached to the connection housing (12) by means of the connection element (11) rotates around the connection element (11) in the connection housing (12), moving in the radial direction. When the plug (2) is to be fitted onto the plug holder (5), the cover (13) pivoted sideways and the protrusions (14) fitted into the channels (7) on the plug holder (5) are removed from the channels (7), and the terminals of the plug (2) are fitted into the channels (7) on the base (6) (Figure 3 and Figure 4).

[0028] By means of the channels (7) with one ends being of closed provided in the plug holder (5) of the present invention, water and the like is prevented from reaching the interior of the body (3) when the plug (2) is not fitted onto the plug holder (5). Thus, necessary security measures are taken independent of the user without the need for using a cover. Moreover, the plug holder (5) of the present invention can be easily and quickly produced and the installation thereof can be easily performed by the user.

Claims

1. A washer/dryer (1) **comprising** a body (3); a plug (2) with at least two terminals that provides the required energy by being connected to the mains, and a housing (8) that is arranged on the rear wall (4) of the body (3), **characterized by** a plug holder (5)
 - that is fitted into the housing (8),
 - that receives the plug (2),
 - that extends into the body (3) through the rear wall (4),
 - wherein the end thereof opening outside the body (3) is open so as to allow the entry of the terminals of the plug (2),
 - wherein the end thereof remaining in the body (3) is closed, and
 - that has at least two channels (7) the lengths of which are at least as much as the length of the plug (2) terminals
2. A washer/dryer (1) as in Claim 1, **characterized by** a base (6) that is provided on the plug holder (5) and that is positioned on the rear wall (4) of the body (3) when the plug holder (5) is fitted into the housing (8), and at least two channels (7) that extend from the base (6) in a direction perpendicular to the surface of the base (6), with one end on the base being open and the other end being closed.
3. A washer/dryer (1) as in Claim 1 or Claim 2, **characterized by** an additional housing (9) next to the housing (8), that is independent of the housing (8), and an additional channel (10) that is arranged on the plug holder (5) and that is inserted into said additional channel (9).
4. A washer/dryer (1) as in Claim 3, **characterized by** the additional housing (9) that is arranged just below the housing (8).
5. A washer/dryer (1) as in Claim 3 or Claim 4, **characterized by** the circular additional housing (9) and the cylindrical additional channel (10).
6. A washer/dryer (1) as in any one of the above claims, **characterized by** the cylindrical channels (7).
7. A washer/dryer (1) as in any one of Claim 1 to Claim 5, **characterized by** the quadrilateral channels (7).
8. A washer/dryer (1) as in any one of the above claims, **characterized by** the housing (8) that has the same form as the base (6) of the plug holder (5).

9. A washer/dryer (1) as in any one of the above claims, **characterized by** a cover (13) that is fitted into the open ends of the channels (7) when the plug (2) is not fitted into the plug holder (5).
10. A washer/dryer (1) as in Claim 9, **characterized by** at least two protrusions (14) that are provided on the cover (13) so as to extend outwards, and that are inserted into the open ends of the channels (7) when the cover (13) is fitted onto the plug holder (5).
11. A washer/dryer (1) as in Claim 9, **characterized by** a connection element (11) that is connected to the cover (13), and a connection housing (12) that is arranged on the rear wall (4) and wherein the connection element (11) is fitted.

Figure 1

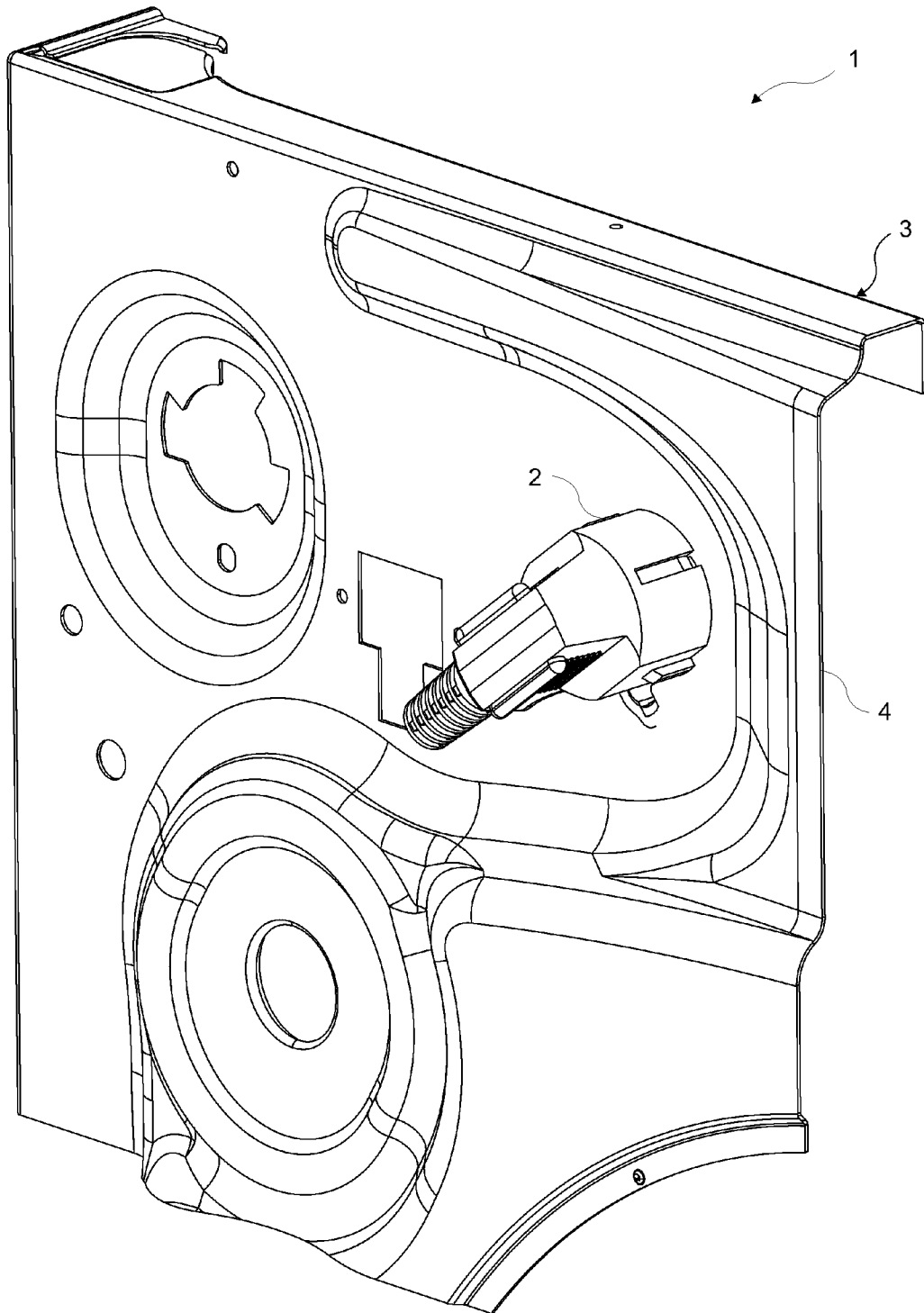


Figure 2

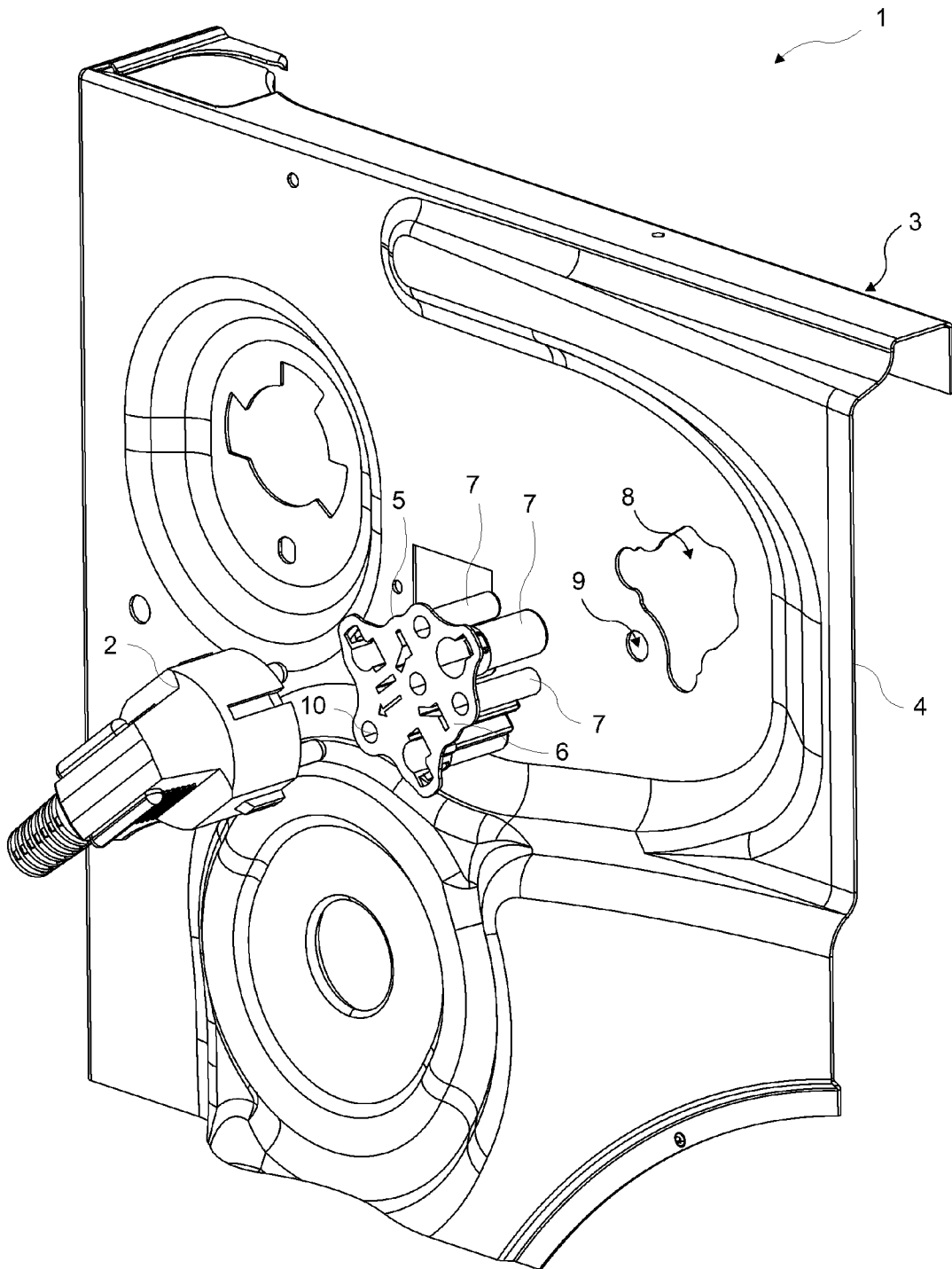


Figure 3

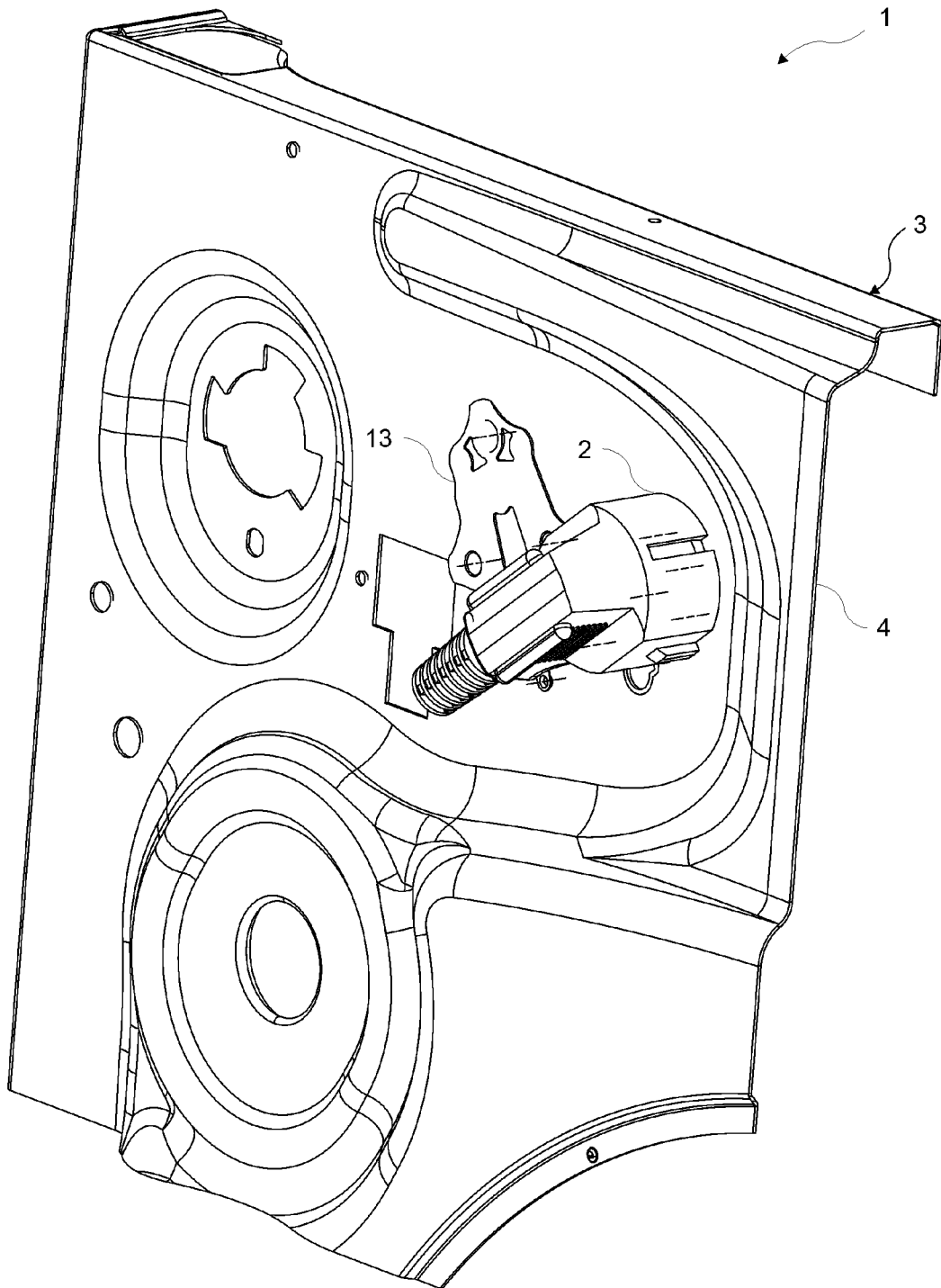
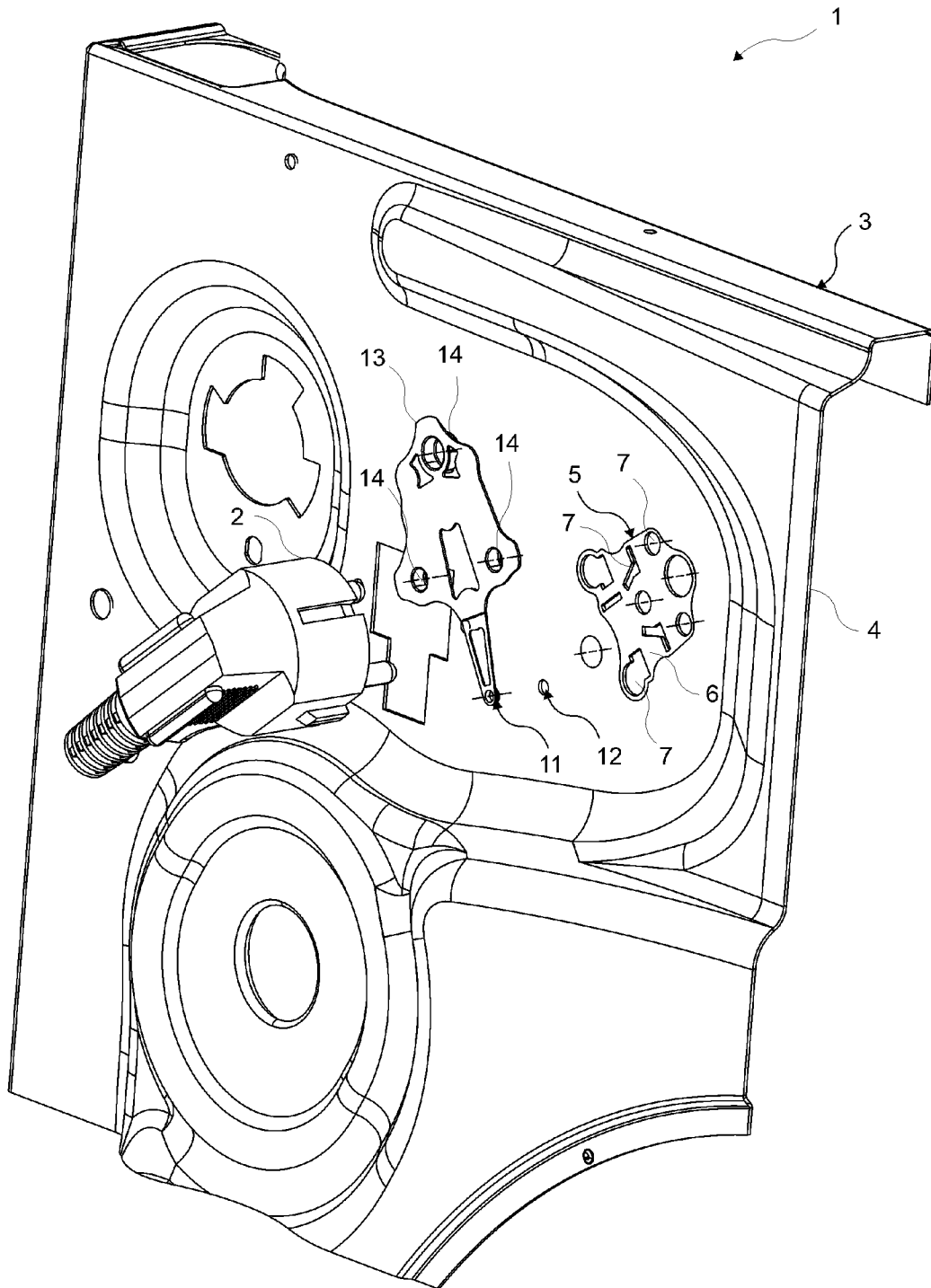


Figure 4



INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2018/078600

A. CLASSIFICATION OF SUBJECT MATTER
INV. H01R13/60 A47L15/42 D06F39/00 D06F39/12 H01R13/447
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)
H01R A47L D06F

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	DE 33 24 187 A1 (BOSCH SIEMENS HAUSGERAETE [DE]) 17 January 1985 (1985-01-17) page 3, paragraph 3 - page 7, paragraph 1; figures 1-4	1-8
X	DE 33 24 186 A1 (BOSCH SIEMENS HAUSGERAETE [DE]) 17 January 1985 (1985-01-17) page 8, paragraph 2; figure 1	1-8
A	DE 19 20 063 U (BONN WASCHMASCHINEN [DE]) 22 July 1965 (1965-07-22) figures 1,2	1,2,6
A	WO 2010/010031 A1 (BSH BOSCH SIEMENS HAUSGERAETE [DE]; ALBENIZ GARRAZA MIGUEL ANGEL [ES];) 28 January 2010 (2010-01-28) abstract; figures 1,2	1,2,6
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Further documents are listed in the continuation of Box C.



See patent family annex.

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INTERNATIONAL SEARCH REPORT

International application No
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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE 70 25 297 U (MIELE & CIE [DE]) 8 October 1970 (1970-10-08) figure 1 -----	1
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

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