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(54) **THERMAL INSULATION PART CONFIGURED FOR LAUNDRY CARE MACHINE AND LAUNDRY CARE MACHINE**

(57) A thermal insulation part (10) configured for a laundry care machine is provided, including: a first thermal insulation pad (11), a second thermal insulation pad (12), and a girder (13) connecting the first thermal insulation pad (11) to the second thermal insulation pad (12), where the first thermal insulation pad (11) is disposed opposite to the second thermal insulation pad (12), and the first thermal insulation pad (11) and the second thermal insulation pad (12) have a gap (14) that can accom-

modate at least a part of a thermal insulated part. A laundry care machine is provided, including: a first thermal insulated part and a second thermal insulated part that are adjacently disposed, where a thermal insulation part (10) is installed on the first thermal insulated part, and the second thermal insulation pad (12) separates the first thermal insulated part from the second thermal insulated part.

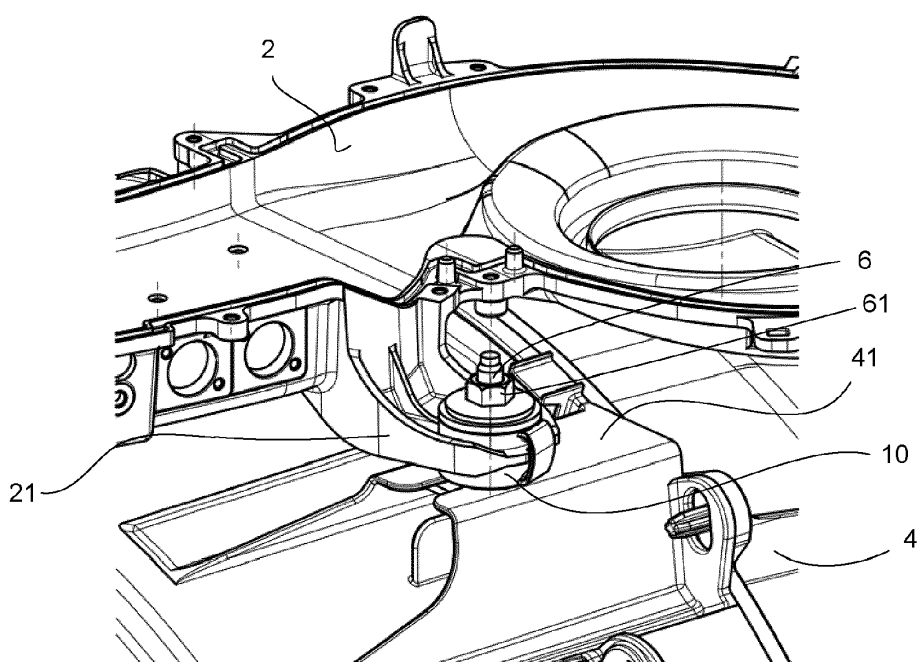


FIG. 1

Description

[0001] The present invention relates to a thermal insulation part of a laundry care machine and a laundry care machine having the thermal insulation part.

[0002] A laundry care machine such as a washing machine, a laundry dryer, and a washer-dryer usually has a high-temperature unit. When the high-temperature unit is fixed to a component whose thermal resistance is relatively poor, a thermal insulation unit is always required to prevent a heating unit from directly touching the component whose thermal resistance is relatively poor, and to insulate heat transfer, thereby avoiding heat loss.

[0003] A relatively common thermal insulation unit is a single thermal insulation pad or two independent thermal insulation pads. Heat of the single thermal insulation pad may be further transferred by using a connection part such as a bolt. However, during installation of the two independent thermal insulation pads, the two thermal insulation pads need to be separately located, and then the two thermal insulation pads are fixed by using connection parts such as bolts. As a result, there are multiple operations and the thermal insulation pad is hardly located. In addition, once the thermal insulation pad is incorrectly located, the connection part is hardly installed.

[0004] An objective of the present invention is to provide a thermal insulation part that is easy to install.

[0005] For the foregoing objective, technical solutions embodied as a thermal insulation part and a laundry care machine are provided as claimed in the respective independent claim. Facultative preferred embodiments of the invention are claimed in respective dependent claims, described in the subsequent description and exhibited in the attached drawing, respectively. Also, preferred embodiments of the thermal insulation part imply preferred embodiments of the laundry care machine, and vice versa, even if not described herein specifically. The invention also includes combinations of the features of preferred embodiments disclosed or implied as further preferred embodiments themselves.

[0006] Accordingly a technical solution used in the present invention is: A thermal insulation part configured for a laundry care machine, including: a first thermal insulation pad, a second thermal insulation pad, and a girder connecting the first thermal insulation pad to the second thermal insulation pad, where the first thermal insulation pad is disposed opposite to the second thermal insulation pad, and the first thermal insulation pad and the second thermal insulation pad have a gap that can accommodate at least a part of a thermal insulated part.

[0007] The beneficial effects of using the foregoing technical solution are that: the first thermal insulation pad is connected to the second thermal insulation pad by using the girder, so that a part includes two thermal insulation pads, and the two thermal insulation pads may be installed by means of one operation. In addition, during the installation, a gap between the first thermal insulation pad and the second thermal insulation pad may be

aligned to the thermal insulated part and then the thermal insulated part is directly pushed into the gap. Therefore, the thermal insulated part is installed in place by means of such a simple operation.

[0008] Preferably, the girder is disposed on a first side of the first thermal insulation pad and the second thermal insulation pad, and the girder has elasticity, so that the first thermal insulation pad and the second thermal insulation pad can relatively open along a second side opposite to the first side. Such a structure makes matching between the first thermal insulation pad, the second thermal insulation pad, and the thermal insulated part closer, so that it is not necessary to set a relatively large tolerance for the installation.

[0009] Preferably, the first thermal insulation pad, the second thermal insulation pad, and the girder connecting the first thermal insulation pad to the second thermal insulation pad are integrally made of plastic.

[0010] Preferably, the first thermal insulation pad and the second thermal insulation pad are respectively provided with a first hole and a second hole that are coaxially arranged, so as to enable a fixing part to pass through.

[0011] Preferably, hollows are provided on at least one of the first thermal insulation pad and the second thermal insulation pad. By means of setting the hollows, used materials are reduced and thermal performance of air within the hollows is improved.

[0012] Another objective of the present invention is to provide a laundry care machine having a thermal insulation pad that is easy to install.

[0013] For the foregoing objective, a technical solution used in the present invention is: a laundry care machine, including a first thermal insulated part and a second thermal insulated part that are adjacently disposed, where the thermal insulation part described in the foregoing is installed on the first thermal insulated part, and the second thermal insulation pad separates the first thermal insulated part from the second thermal insulated part.

[0014] Preferably, the first thermal insulated part is provided with a third hole that is coaxial with the first hole and the second hole, and the fixing part passes through the first hole, the second hole, and the third hole, and connects to the thermal insulation pads, the first thermal insulated part, and the second thermal insulated part.

[0015] The first thermal insulated part may be implemented as a high-temperature metal part, and the second thermal insulated part may be implemented as a plastic part.

[0016] The first thermal insulated part may be implemented as an air heating channel wall, and the second thermal insulated part may be implemented as a laundry care bucket.

[0017] In the following and the accompany drawing, the present invention is further described by preferred embodiments using a laundry dryer and a thermal insulation part installed on the laundry dryer as an example. In the drawing:

FIG. 1 is a schematic assembling diagram of a thermal insulation part of a laundry dryer, an air heating channel wall, and a laundry care bucket;

FIG. 2 is an axially sectional view along the center location of the thermal insulation part in FIG. 1; and

FIG. 3 is a schematic three-dimensional view of a thermal insulation part.

[0018] As shown in FIG. 1 and FIG. 2, a laundry dryer has an air heating channel 2 that heats air and a laundry care bucket 4 that accommodates laundry. The air heating channel 2 has a channel arm 21 horizontally extending out, and is connected to a connection base 41 of the laundry care bucket 4 by using a bolt 6. In this way, the air heating channel 2 is fixed onto the laundry care bucket 4. The air heating channel 2 is made of metal, and a heating part (not shown in the figure) is disposed inside of the air heating channel 2, so that when the heating part works, the air heating channel 2 has relatively high temperature. The laundry care bucket 4 is made of plastic. The connection base 41 and the laundry care bucket 4 are integrally formed. Due to a limitation from an attribute of the plastic, thermal resistance of the connection base 41 and the laundry care bucket 4 is relatively poor, the high-temperature channel arm 21 needs to be prevented from directly touching the connection base 41. Therefore, a thermal insulation part 10 is configured between the channel arm 21 and the connection base 41 of the laundry care bucket 4, so as to implement thermal insulation.

[0019] Referring to FIG. 3, the thermal insulation part 10 includes a first thermal insulation pad 11 and a second thermal insulation pad 12 that are disposed opposite to each other, and the first thermal insulation pad 11 is connected to the second thermal insulation pad 12 by using a girder 13. The girder 13 in a free state has rigidity that enables the first thermal insulation pad 11 and the second thermal insulation pad 12 to keep a gap 14, and has relatively small elasticity. The girder 13 is disposed on a first side S1 of the first thermal insulation pad 11 and the second thermal insulation pad 12, so that the first thermal insulation pad 11 and the second thermal insulation pad 12 may overcome elasticity and open a relatively small angle along a second side S2 relative to the first side S1, so that the channel arm 21 easily extends into the gap 14 between the first thermal insulation pad 11 and the second thermal insulation pad 12.

[0020] The first thermal insulation pad 11, the second thermal insulation pad 12, and the girder 13 are integrally made of plastic.

[0021] The first thermal insulation pad 11 and the second thermal insulation pad 12 are both disc-shaped, and have thickness that is suitable for thermal insulation. The girder 13 is of a flake structure. The girder 13 provides

necessary elasticity when keeping a stable connection, and the girder 13 is hardly broken.

[0022] The first thermal insulation pad 11 and the second thermal insulation pad 12 are respectively provided with a first hole 15 and a second hole 16 that are coaxially arranged. The channel arm 21 is provided with a third hole 22 that is coaxial with the first hole 15 and the second hole 16.

[0023] During assembling, the gap 14 of the thermal insulation part 10 is aligned to the channel arm 21 and the thermal insulation part 10 is pushed first, so that the channel arm is extended into the gap 14 of the thermal insulation part 10. In this case, the first hole 15, the second hole 16, and the third hole 22 are coaxially aligned. Then the bolt 6 is made to pass through the connection base 41, the second hole 16, the third hole 22, and the first hole 15 and then is fixed. Therefore, a fixed connection is implemented between the connection base 41, the thermal insulation part 10, and the channel arm 21. In this case, the second thermal insulation pad 12 thermally insulates the connection base 41 from the channel arm 21. The first thermal insulation pad 11 thermally insulates the bolt 61 from the channel arm 21.

[0024] In addition, the first thermal insulation pad 11 and the second thermal insulation pad 12 are provided with hollows 18 that are axially extend. By means of setting the hollows 18, used materials are reduced and thermal performance of air within the hollows 18 is improved.

[0025] All modifications made by person of ordinary skill in other related technical fields to the present invention within the scope of the basic technical idea of the present invention are within the protection scope of the present invention.

REFERENCE NUMERALS

[0026]

1	Laundry dryer
2	Heating air channel
4	Laundry care bucket
6	Bolt
10	Thermal insulation part
11	First thermal insulation pad
12	Second thermal insulation pad
13	Girder
14	Gap
15	First hole
16	Second hole
18	Hollow
21	Channel arm
22	Third hole
41	Connection base
61	Bolt
S1	First side
S2	Second side

Claims

1. A thermal insulation part (10) configured for a laundry care machine, **characterized by** comprising: a first thermal insulation pad (11), a second thermal insulation pad (12), and a girder (13) connecting the first thermal insulation pad (11) to the second thermal insulation pad (12), the first thermal insulation pad (11) is disposed opposite to the second thermal insulation pad (12), and the first thermal insulation pad (11) and the second thermal insulation pad (12) have a gap (14) that can accommodate at least a part of a thermal insulated part. 5
2. The thermal insulation part (10) according to claim 1, **characterized in that** the girder (13) is disposed on a first side (S1) of the first thermal insulation pad (11) and the second thermal insulation pad (12), and the girder (13) has elasticity, so that the first thermal insulation pad (11) and the second thermal insulation pad (12) can relatively open along a second side (S2) opposite to the first side (S1). 10 15 20
3. The thermal insulation part (10) according to claim 1, **characterized in that** the first thermal insulation pad (11), the second thermal insulation pad (12), and the girder (13) connecting the first thermal insulation pad (11) to the second thermal insulation pad (12) are integrally made of plastic. 25 30
4. The thermal insulation part (10) according to claim 1, **characterized in that** the first thermal insulation pad (11) and the second thermal insulation pad (12) are respectively provided with a first hole (15) and a second hole (16) that are coaxially arranged, so as to enable a fixing part to pass through. 35
5. The thermal insulation part (10) according to claim 1, **characterized in that** hollows (18) are provided on at least one of the first thermal insulation pad (11) and the second thermal insulation pad (12). 40
6. A laundry care machine (1), comprising a first thermal insulated part and a second thermal insulated part that are adjacently disposed, **characterized in that** the thermal insulation part (10) according to any one of claims 1 to 5 is installed on the first thermal insulated part, and the second thermal insulation pad (12) separates the first thermal insulated part from the second thermal insulated part. 45 50
7. The laundry care machine (1) according to claim 6, **characterized in that** the first thermal insulated part is provided with a third hole (22) that is coaxial with the first hole (15) and the second hole (16), and the fixing part passes through the first hole (15), the second hole (16), and the third hole (22), and connects to the thermal insulation pads (11, 12), the first thermal insulated part, and the second thermal insulated part. 55
8. The laundry care machine (1) according to claim 6, **characterized in that** the first thermal insulated part is a high-temperature metal part, and the second thermal insulated part is a plastic part.
9. The laundry care machine (1) according to claim 8, **characterized in that** the first thermal insulated part is an air heating channel wall, and the second thermal insulated part is a laundry care bucket (4).

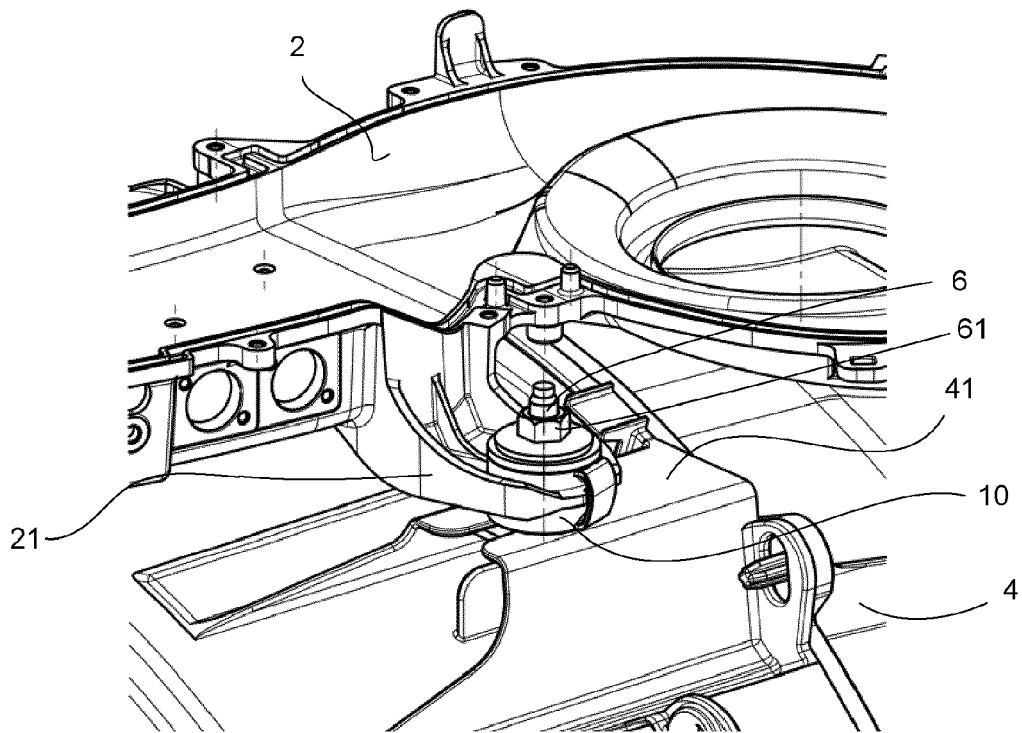


FIG. 1

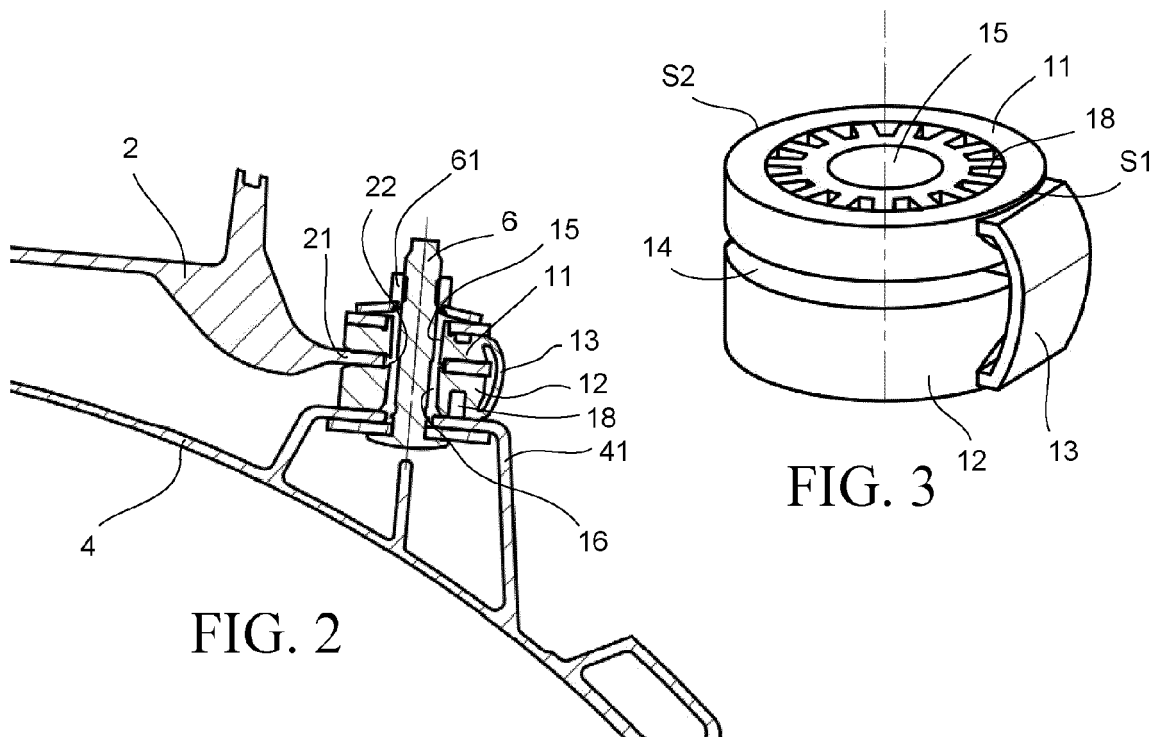


FIG. 2

FIG. 3



EUROPEAN SEARCH REPORT

Application Number
EP 17 18 6868

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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 23 January 2018	Examiner Weinberg, Ekkehard
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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**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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