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# (54) SUSPENSION MEMBER AND LAUNDRY TREATMENT DEVICE

(57) The present invention relates to a suspension member (100) and a laundry treatment device. The suspension member (100) includes a first suspension portion (1), a connecting portion (2), and a second suspension portion (3) arranged along a first direction. The first suspension portion (1) is configured to suspend a first drum (4) of a laundry treatment device, the second suspension portion is configured to suspend a second drum (6) of the laundry treatment device, and the connecting portion connects the first suspension portion (1) and the second suspension portion (3). The connecting portion has a stiffness reduction portion (5) configured to reduce a stiffness of the connecting portion.

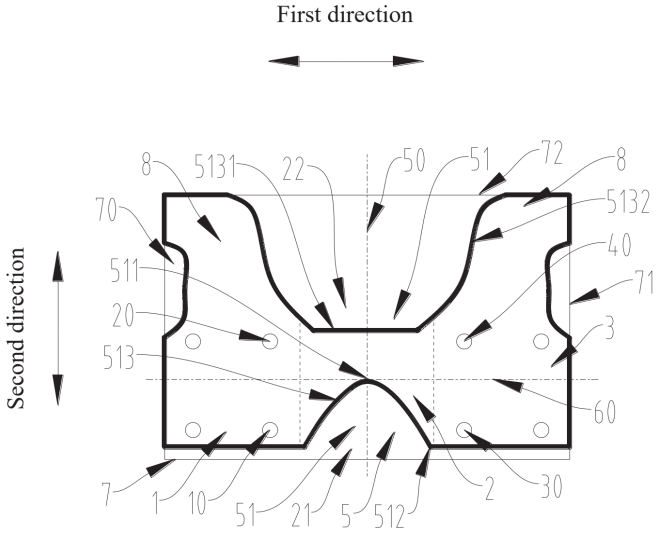



FIG. 2



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## Description

### FIELD

**[0001]** The present invention relates to the field of laundry treatment devices, and more particularly to a suspension member and a laundry treatment device.

### BACKGROUND

**[0002]** **In** a related art, to meet users' needs for partitioned washing, some laundry treatment devices are equipped with double drums or more drums.

### SUMMARY

**[0003]** The purpose of the present invention is to provide a suspension member that may reduce or even avoid resonance between itself and a cylinder.

**[0004]** To achieve the above purpose, the present invention provides a suspension member, which includes a first suspension portion, a connecting portion, and a second suspension portion arranged along a first direction; the first suspension portion is configured to suspend a first drum of a laundry treatment device, the second suspension portion is configured to suspend a second drum of the laundry treatment device, and the connecting portion is connected to the first suspension portion and the second suspension portion; and wherein the connecting portion has a stiffness reduction portion, and the stiffness reduction portion is configured to reduce a stiffness of the connecting portion.

**[0005]** Optionally, the stiffness reduction portion includes at least one notch, and at least part of the at least one notch is formed at the connecting portion.

**[0006]** Optionally, the at least one notch is formed only at the connecting portion.

**[0007]** Optionally, the at least one notch extends across the first suspension portion, the connecting portion, and the second suspension portion.

**[0008]** Optionally, the connecting portion has a first centerline extending along a second direction, the first direction and the second direction are perpendicular to each other, the first drum and the second drum are axisymmetrically arranged with respect to the first centerline, and the at least one notch itself is axisymmetrically arranged with respect to the first centerline.

**[0009]** Optionally, the first suspension portion has a first connection point and a second connection point arranged along a second direction, the first suspension portion is configured to be connected to the first drum through the first connection point and the second connection point, the second suspension portion has a third connection point and a fourth connection point arranged along the second direction, the second suspension portion is configured to be connected to the second drum through the third connection point and the fourth connection point, and the first direction and the second direction are perpendicular to each other;

the first connection point and the second connection point are symmetrically arranged with respect to a second centerline, and the third connection point and the fourth connection point are symmetrically arranged with respect to the second centerline; and

the at least one notch has an outer end and an inner end opposite to the outer end in the second direction, and the inner end is flush with or located at an outer side of the second centerline.

**[0010]** Optionally, the at least one notch has a width in the first direction, and the width of the at least one notch ranges from 240 mm to 250 mm.

**[0011]** Optionally, the connecting portion has a first side and a second side opposite to the first side in a second direction, the first direction and the second direction are perpendicular to each other, and the at least one notch is formed at the first side and/or the second side.

**[0012]** Optionally, the at least one notch has a width in the first direction, and has an outer end and an inner end opposite to the outer end in the second direction; and a width of the outer end of at least one of the at least one notch is greater than a width of the inner end of the at least one of the at least one notch.

**[0013]** Optionally, a projection of the notch in an up-down direction has a contour line, the first direction, the second direction, and the up-down direction are mutually perpendicular, and at least part of the contour line of at least one of the at least one notch is configured as a curve.

**[0014]** Optionally, the contour line of the at least one of the at least one notch is configured as a curve.

**[0015]** Optionally, the contour line configured as the curve is shaped as a crest or a trough of a sine wave.

**[0016]** Optionally, the contour line of the at least one of the at least one notch includes a first sub-contour line and a second sub-contour line, and two sides of the first sub-contour line in the first direction are each connected to the second sub-contour line; and the first sub-contour line is configured as a straight line, and the second sub-contour line is configured as a curve.

**[0017]** Optionally, at least one of the at least one notch is configured as a rectangular opening.

**[0018]** Optionally, the notch is formed at each of the first side and the second side, a projection of the notch in an up-down direction has a contour line, the first direction, the second direction, and the up-down direction are mutually perpendicular, at least part of the contour line of the notch at the first side is configured as a curve, and the notch at the second side is configured as a rectangular opening.

**[0019]** Optionally, two notches are formed at the first side and the second side respectively, and a minimum spacing between the two notches in the second direction ranges from 160 mm to 180 mm.

**[0020]** Optionally, the at least one notch has a depth in

the second direction, and a maximum depth of the notch at the first side ranges from 65 mm to 75 mm.

**[0021]** Optionally, the notch on the second side has a depth in the second direction, and a maximum depth of the notch at the second side ranges from 140 mm to 160 mm.

**[0022]** Optionally, the laundry treatment device includes a cabinet, each of the first suspension portion and the second suspension portion has a mounting portion, and the mounting portion is configured to be connected to at least one wall panel of the cabinet.

**[0023]** Optionally, the notch is formed at the second side of the connecting portion is provided with the notch and the mounting portion is configured to enclose the notch.

**[0024]** Optionally, the cabinet includes a side wall panel and a rear wall panel, and the mounting portion is configured to be connected to at least one of the side wall panel and the rear wall panel.

**[0025]** Optionally, the mounting portion encloses an avoidance opening together with the first suspension portion or the second suspension portion.

**[0026]** Optionally, the stiffness reduction portion includes at least one stiffness reduction hole formed in the connecting portion.

**[0027]** Optionally, the suspension member is configured to have a plate shape, and the at least one stiffness reduction hole is configured as a through hole passing through the suspension member along a thickness direction of the suspension member.

**[0028]** Optionally, the first suspension portion has a first connection point and a second connection point arranged along a second direction, the first suspension portion is configured to be connected to the first drum through the first connection point and the second connection point, the second suspension portion has a third connection point and a fourth connection point arranged along the second direction, the second suspension portion is configured to be connected to the second drum through the third connection point and the fourth connection point, and the first direction and the second direction are perpendicular to each other;

the first connection point and the second connection point are symmetrically arranged with respect to a second centerline, and the third connection point and the fourth connection point are symmetrically arranged with respect to the second centerline; and

the connecting portion has a first side and a second side opposite to the first side in the second direction, and a part of the connecting portion located at a side of the second centerline adjacent to the first side has a plurality of the stiffness reduction holes.

**[0029]** Optionally, a part of the connecting portion located on a side of the second centerline close to the second side has a plurality of the stiffness reduction holes.

**[0030]** Optionally, a diameter of each of the plurality of the stiffness reduction holes located at the side of the second centerline adjacent to the first side is greater than a diameter of each of the plurality of the stiffness reduction holes located at the side of the second centerline adjacent to the second side.

**[0031]** Optionally, a spacing between two adjacent stiffness reduction holes of the plurality of the stiffness reduction holes located at the side of the second centerline adjacent to the first side is less than a spacing between two adjacent stiffness reduction holes of the plurality of the stiffness reduction holes located at the side of the second centerline adjacent to the second side.

**[0032]** Optionally, the connecting portion has a first centerline extending along the second direction, and the first drum and the second drum are axisymmetrically arranged with respect to the first centerline, and

the plurality of the stiffness reduction holes located at the side of the second centerline adjacent to the first side are axisymmetrically arranged with respect to the first centerline, and/or the plurality of the stiffness reduction holes located at the side of the second centerline adjacent to the second side are axisymmetrically arranged with respect to the first centerline.

**[0033]** Optionally, a diameter of the stiffness reduction hole ranges from 65 mm to 75 mm.

**[0034]** Optionally, the stiffness reduction portion comprises a thinning portion, at least part of the connecting portion is provided with the thinning portion, a thickness of the connecting portion at the thinning portion is less than thicknesses of other parts of the connecting portion excluding the thinning portion, or less than a thickness of the first suspension portion or a thickness of the second suspension portion.

**[0035]** Optionally, the suspension member is configured to have a plate shape.

**[0036]** Optionally, the thinning portion is configured to have a flat plate shape.

**[0037]** Optionally, a thickness of the thinning portion ranges from 2 mm to 3 mm.

**[0038]** Optionally, a thickness of the thinning portion ranges from 0.6 mm to 1 mm.

**[0039]** Optionally, the first suspension portion has a first connection point and a second connection point arranged along a second direction, the first suspension portion is configured to be connected to the first drum through the first connection point and the second connection point, the second suspension portion has a third connection point and a fourth connection point arranged along the second direction, the second suspension portion is configured to be connected to the second drum through the third connection point and the fourth connection point, and the first direction and the second direction are perpendicular to each other;

the first connection point and the second connection point are symmetrically arranged with respect to a second centerline, and the third connection point and

the fourth connection point are symmetrically arranged with respect to the second centerline; and the connecting portion has a first side and a second side opposite to the first side in the second direction, and a thickness of a part of the thinning portion located at a side of the second centerline adjacent to the first side is less than a thickness of a part of the thinning portion located at a side of the second centerline adjacent to the second side.

**[0040]** Optionally, the thickness of the thinning portion gradually decreases along a direction from the second side toward the first side.

**[0041]** Optionally, the thickness of the thinning portion decreases in a stepped manner along a direction from the second side toward the first side.

**[0042]** Optionally, the thinning portion includes a first subsection and a second subsection, the first subsection is connected to the first suspension portion, and the second subsection is connected to the second suspension portion; and

a thickness of the first subsection gradually decreases along the first direction toward the second subsection, and/or a thickness of the second subsection gradually decreases along the first direction toward the first subsection.

**[0043]** Optionally, the thinning portion comprises a third subsection connected to the first subsection and the second subsection, and the third subsection is configured to have a flat plate shape.

**[0044]** Optionally, the stiffness reduction portion includes at least one stiffness reduction groove, the connecting portion is at least partially bent to form the at least one stiffness reduction groove, the at least one stiffness reduction groove extends along a second direction and has a length in the second direction, and the first direction and the second direction are perpendicular to each other.

**[0045]** Optionally, the stiffness reduction groove extends through the connecting portion in the second direction.

**[0046]** Optionally, the at least one stiffness reduction groove has a width in the first direction, and the width ranges from 170 mm to 190 mm.

**[0047]** Optionally, the at least one stiffness reduction groove has a depth in the up-down direction, and the depth of the at least one reducing groove ranges from 50 mm to 60 mm.

**[0048]** Optionally, the at least one stiffness reduction groove is configured as an arc-shaped groove or a rectangular groove.

**[0049]** Optionally, the stiffness reduction portion includes one stiffness reduction groove with an opening facing downward, and the first direction, the second direction, and an up-down direction are mutually perpendicular.

**[0050]** Optionally, the stiffness reduction portion includes one stiffness reduction groove with an opening facing upward, and the first direction, the second direction, and an up-down direction are mutually perpendicular.

**[0051]** Optionally, the connecting portion is at least partially and continuously bent to form at least two stiffness reduction grooves, the at least two stiffness reduction grooves are sequentially arranged along the first direction, and openings of two adjacent stiffness reduction grooves of the at least two stiffness reduction grooves face opposite directions.

**[0052]** Optionally, the stiffness reduction portion includes at least two stiffness reduction grooves arranged at intervals along the first direction.

**[0053]** Optionally, at least part of the connecting portion is configured as the stiffness reduction portion, the stiffness reduction portion is made of a predetermined material, and a material stiffness of the stiffness reduction portion is less than material stiffnesses of other parts of the connecting portion excluding the stiffness reduction portion or less than a material stiffness of the first suspension portion or a material stiffness of the second suspension portion.

**[0054]** Optionally, an elastic modulus of the predetermined material ranges from $1\times10^9$ Pa to $2.1\times10^{11}$Pa.

**[0055]** Optionally, the predetermined material includes a metallic material and/or a non-metallic material.

**[0056]** Optionally, the predetermined material includes at least one of plastic or aluminum.

**[0057]** Optionally, the predetermined material is configured as a first metallic material, the first suspension portion and the second suspension portion are made of a second metallic material, and the stiffness reduction portion is welded to the first suspension portion and the second suspension portion.

**[0058]** Optionally, the predetermined material is configured as a first metallic material, the first suspension portion and the second suspension portion are made of a second metallic material, and the stiffness reduction portion is connected to each of the first suspension portion and the second suspension portion via a fastener.

**[0059]** Optionally, the predetermined material is configured as a metallic material, the first suspension portion and the second suspension portion are made of a non-metallic material, and the stiffness reduction portion is connected to each of the first suspension portion and the second suspension portion via a fastener.

**[0060]** Optionally, the first suspension portion has a first connection point and a second connection point arranged along a second direction, the first suspension portion is configured to be connected to the first drum through the first connection point and the second connection point, the second suspension portion has a third connection point and a fourth connection point arranged along the second direction, the second suspension portion is configured to be connected to the second drum through the third connection point and the fourth connection point, and the first direction and the second direction are perpendicular to each other;

the first connection point and the second connection point are symmetrically arranged with respect to a second centerline, and the third connection point and the fourth connection point are symmetrically arranged with respect to the second centerline; and

the connecting portion has a first side and a second side opposite to the first side in the second direction, and at least part of the connecting portion located at a side of the second centerline adjacent to the first side is configured as the stiffness reduction portion.

**[0061]** Optionally, the suspension member is configured to have a plate shape and has a width in the first direction, wherein a width of the connecting portion ranges from 170 mm to 190 mm; and/or each of a width of the first suspension portion and a width of the second suspension portion ranges from 170 mm to 190 mm.

**[0062]** Optionally, the suspension member is integrally formed.

**[0063]** Optionally, the first suspension portion has a first connection point and a second connection point arranged along a second direction, the first suspension portion is configured to be connected to the first drum through the first connection point and the second connection point, the second suspension portion has a third connection point and a fourth connection point arranged along the second direction, the second suspension portion is configured to be connected to the second drum through the third connection point and the fourth connection point, and the first direction and the second direction are perpendicular to each other; and

a part of the suspension member located between the first connection point and the third connection point and between the second connection point and the fourth connection point is configured as the connecting portion.

**[0064]** According to a second aspect of the present invention, a laundry treatment device is provided, which includes the suspension member as described above.

**[0065]** Optionally, the laundry treatment equipment includes a cabinet and a third drum, the suspension member is arranged at a top of the cabinet, and the first drum and the second drum are located above the third drum.

**[0066]** Through the above technical solution, in the suspension member provided by the present invention, since the first suspension portion suspends the first drum and the second suspension portion suspends the second drum. That is, the suspension member suspends at least two drums. This causes the drum to easily resonate with the suspension member when rotating, such as during drying or washing operations. Moreover, since the connecting portion is arranged between the first drum and the second drum, the connecting portion is a part of the suspension member with a largest vibration amplitude when the suspension member oscillates up and down during resonance. The present invention reduces the stiffness of the connecting portion by providing the stiffness reduction portion on the connecting portion, thereby lowering a natural frequency of the connecting portion. Thus, this may allow the natural frequency of the connecting portion to be far from a vibration frequency of the drum on the suspension member, thus reducing or even avoiding resonance between the connecting portion and the drum. That is, the suspension member of the present invention may reduce or even prevent itself from resonating with the drum.

**[0067]** Additionally, the present invention reduces the stiffness of the connecting portion through the stiffness reduction portion to lower the natural frequency of the connecting portion. That is, a first-order natural frequency and a second-order natural frequency of the connecting portion are lowered. This may allow the first-order natural frequency of the connecting portion to be far from the vibration frequency of the drum during low-speed rotation, thereby preventing the drum from resonating with the connecting portion during low-speed rotation. Therefore, the stiffness reduction portion of the present invention has a good vibration reduction effect when the drum rotates at low speed.

**[0068]** The other features and advantages of the present invention will be explained in detail in the following specific embodiments section.

## BRIEF DESCRIPTION OF THE DRAWINGS

**[0069]** The drawings are intended to provide a further understanding of the present invention, form a part of the specification, and are used to explain the present invention together with the specific embodiments below, but do not constitute a limitation of the present invention. In the drawings:

FIG. 1 is a front view of a laundry treatment device according to an embodiment of the present invention.

FIG. 2 is a top view of a laundry treatment device according to a first embodiment of the present invention, showing a first embodiment of a suspension member.

FIG. 3 is a top view of a laundry treatment device according to the first embodiment of the present invention, showing a second embodiment of a suspension member.

FIG. 4 is a top view of a laundry treatment device according to the first embodiment of the present invention, showing a third embodiment of a suspension member.

FIG. 5 is a top view of a laundry treatment device according to the first embodiment of the present invention, showing a fourth embodiment of a suspension member.

FIG. 6 is a top view of a laundry treatment device according to the first embodiment of the present invention, showing a fifth embodiment of a suspension member.

FIG. 7 is a top view of a laundry treatment device

according to the first embodiment of the present invention, showing a sixth embodiment of a suspension member.

FIG. 8 is a top view of a laundry treatment device according to a seventh embodiment of the present invention, showing a seventh embodiment of a suspension member.

FIG. 9 is a top view of a laundry treatment device in FIG. 8 with dimensions annotated.

FIG. 10 is a top view of a laundry treatment device according to a second embodiment of the present invention.

FIG. 11 is another top view of a laundry treatment device according to a second embodiment of the present invention.

FIG. 12 is a front view of a partial structure of a laundry treatment device according to a third embodiment of the present invention.

FIG. 13 is a side view of a partial structure of a laundry treatment device according to the third embodiment of the present invention.

FIG. 14 is another side view of a partial structure of a laundry treatment device according to the third embodiment of the present invention.

FIG. 15 is another side view of a partial structure of a laundry treatment device according to the third embodiment of the present invention.

FIG. 16 is a top view of a laundry treatment device according to a fourth embodiment of the present invention.

FIG. 17 is a front view of a partial structure of a laundry treatment device according to the fourth embodiment of the present invention.

FIG. 18 is another front view of a partial structure of a laundry treatment device according to the fourth embodiment of the present invention.

FIG. 19 is yet another front view of a partial structure of a laundry treatment device according to the fourth embodiment of the present invention.

FIG. 20 is yet another front view of a partial structure of a laundry treatment device according to the fourth embodiment of the present invention.

FIG. 21 is a top view of a laundry treatment device according to a fifth embodiment of the present invention.

FIG. 22 is a sectional view taken along A-A in FIG. 21.

FIG. 23 is a side view of a laundry treatment device according to the fifth embodiment of the present invention.

## DETAILED DESCRIPTION

**[0070]** Specific embodiments of the present invention are described in detail below with reference to the drawings. It should be understood that the specific embodiments described herein are intended to illustrate and explain the present invention, but not to limit the present invention.

**[0071]** In the present invention, unless otherwise expressly defined, directional terms used, such as "up", "down", "front", "rear", "left", and "right", are defined based on a laundry treatment device. An up-down direction may refer to a gravity direction of the laundry treatment device or a suspension member, a left-right direction may refer to a width direction of the laundry treatment device, and for a front-rear direction, the front may be understood as a side of the laundry treatment device facing a user, i.e., a front side of the laundry treatment device, while the rear is a side facing away from the user, i.e., a rear side of the laundry treatment device. A drum door of the laundry treatment device is usually arranged on the front side of the laundry treatment device. In addition, a first direction and a second direction may refer to directions in the drawings from FIGS. 1 to 23. When the suspension member of the present invention is applied to the laundry treatment device, the first direction may correspond to the left-right direction of the laundry treatment device, the second direction may correspond to the front-rear direction of the laundry treatment device, a first side may correspond to the front side, and a second side may correspond to the rear side. "Inner" and "outer" refer to inner and outer of a contour of each component. Terms such as "first" and "second" used are intended to distinguish one element from another and do not imply sequence or importance. In addition, in the following description, when referring to the drawings, the same references sign in different drawings indicates the same or similar element, which is not repeated in the present invention.

**[0072]** In some laundry treatment devices, the drums are suspended by a suspension member. When the suspension member suspends at least two drums, resonance is likely to occur between the drums and the suspension member during operation.

**[0073]** According to some embodiments of the present invention, a suspension member is provided. As shown in FIGS. 1 to 23, the suspension member 100 includes a first suspension portion 1, a connecting portion 2, and a second suspension portion 3. The first suspension portion 1, the connecting portion 2, and the second suspension portion 3 are arranged along a first direction. The first suspension portion 1 is configured to suspend a first drum 4 of a laundry treatment device, and the second suspension portion 3 is configured to suspend a second drum 6 of the laundry treatment device. The connecting portion 2 connects the first suspension portion 1 and the second suspension portion 3. The connecting portion 2 is provided with a stiffness reduction portion 5 configured to reduce a stiffness of the connecting portion 2.

**[0074]** In the suspension member 100 provided by the present invention, since the first suspension portion 1 suspends the first drum 4 and the second suspension portion 3 suspends the second drum 6. That is, the suspension member 100 suspends at least two drums. This causes the drums to easily resonate with the suspension member 100 during rotating, such as during

drying or washing operations. Moreover, since the connecting portion 2 is arranged between the first drum 4 and the second drum 6, the connecting portion 2 is a part of the suspension member 100 with a largest vibration amplitude when the suspension member 100 oscillates up and down during resonance.

**[0075]** Through the above technical solution, the present invention reduces the stiffness of the connecting portion 2 by providing the stiffness reduction portion 5 in the connecting portion 2, thereby lowering a natural frequency of the connecting portion 2, which, thus, may make the natural frequency of the connecting portion 2 to be far from a vibration frequency of the drum on the suspension member 100, thus reducing or even preventing resonance between the connecting portion 2 and the drums. That is, the suspension member 100 of the present invention may reduce or even prevent itself from resonating with the drums.

**[0076]** Additionally, the present invention reduces the stiffness of the connecting portion 2 through the stiffness reduction portion 5 to lower the natural frequency of the connecting portion 2. That is, a first-order natural frequency and a second-order natural frequency of the connecting portion 2 are both lowered. This may make the first-order natural frequency of the connecting portion 2 to be far from the vibration frequency of the drums during low-speed rotation, thereby preventing the drum from resonating with the connecting portion 2 during low-speed rotation. Therefore, the stiffness reduction portion 5 of the present invention has a good vibration reduction effect when the drum rotates at a low speed.

**[0077]** It should be noted that the present invention does not limit the specific structure and material of the stiffness reduction portion 5, which will be described in detail in the following embodiments. Additionally, it is well known to those skilled in the art that reducing a stiffness of a component may lower a natural frequency of the component. That is, when the stiffness of the connecting portion 2 is reduced, the natural frequency of the connecting portion 2 will also decrease. The natural frequency may include a first-order frequency to an Nth-order frequency, and the higher the order, the higher the natural frequency. For example, the first-order natural frequency is lower than the second-order natural frequency. Furthermore, when the drum rotates at low speed, and a rotation speed of the drum is 400 RPM to 600 RPM, e.g., 500 RPM, the stiffness reduction portion 5 of the present invention may effectively make the natural frequency of the connecting portion 2 away from the vibration frequency of the drum. That is, when the rotation speed of the drum is 500 RPM to 700 RPM, the stiffness reduction portion 5 may effectively avoid resonance between the drum and the connecting portion 2 or even the suspension member 100.

**[0078]** It should also be noted that the above-mentioned drums refers to the drums suspended by the suspension member 100, which may be the first drum 4, and may also be the second drum 6.

**[0079]** In some embodiments of the present invention, the stiffness reduction portion 5 may be configured in any suitable manner. For example, as shown in FIGS. 2 to 9, the stiffness reduction portion 5 may include at least one notch 51, and at least part of the notch 51 is formed in the connecting portion 2. Here, by forming the at least part of the notch 51 in the connecting portion 2, on one hand, a solid structure of the connecting portion 2 corresponding to the notch 51 may be removed from the connecting portion 2, thereby reducing the stiffness of the connecting portion 2 by altering a geometric shape of the connecting portion 2. Removing the solid structure of the connecting portion 2 corresponding to the notch 51 may prevent the part of the solid structure from resonating with the drum. Thus, by reducing the stiffness of the connecting portion 2 and removing the solid structure of the connecting portion 2 corresponding to the notch 51, resonance between the connecting portion 2 and the drums may be effectively reduced or even prevented. During low-speed rotation of the drum, such a configuration may ensure that the first-order natural frequency of the connecting portion 2 is far from the vibration frequency of the drum when rotating at low speed, thus improving the stability of the laundry treatment device when the drum rotates at a low speed and reducing noise generated by the laundry treatment device during operation.

**[0080]** It should be noted that the notch 51 in the present invention may be understood as a mouth-shaped structure with only one side open, that is, a circumference of the notch 51 is unenclosed, i.e., a contour line 513 enclosing the notch 51 does not form a closed loop.

**[0081]** It should also be noted that at least part of the notch 51 being formed at the connecting portion 2 may be understood that in some embodiments, as shown in FIG. 5, the notch 51 is formed only at the connecting portion 2. An advantage of this arrangement is that by defining the entire notch 51 at the connecting portion 2, the stiffness of the connecting portion 2 may be effectively reduced, thus further preventing the drum from resonating with the connecting portion 2 or even the suspension member 100 when the drum rotates at a low speed. When at least two notches 51 are provided, at least one notch 51 may be formed only at the connecting portion 2. In other embodiments, as shown in FIG. 2, a further notch 51 extends across the first suspension portion 1, the connecting portion 2, and the second suspension portion 3. That is, a part of the notches 51 are formed in the first suspension portion 1, the connecting portion 2, and the second suspension portion 3. Such an arrangement, on one hand, may further reduce the stiffness of the suspension member 100, thereby further reducing the stiffness of the connecting portion 2. In other words, when the overall stiffness of the suspension member 100 is reduced, the stiffness of the connecting portion 2 will also decrease accordingly, which helps to make the first-order natural frequency of the connecting portion 2 away from the vibration frequency of the drum during low-speed rotation. On the other hand, the notch 51 configured in

this way has a larger area, which is beneficial for avoiding interference with other components of the laundry treatment device. Here, when at least two notches 51 are provided, at least one notch 51 may extend across the first suspension portion 1, the connecting portion 2, and the second suspension portion 3.

**[0082]** In some embodiments, as shown in FIGS. 2 to 4, FIG. 5, and FIG. 8, the connecting portion 2 has a first side 21 and a second side 22 opposite to the first side 21 in a second direction. The second direction is perpendicular to the first direction. The first side and the second side are each provided with a notch 51. The notch 51 at the first side 21 may be formed only in the connecting portion 2, while the notch 51 at the second side 22 may extend across the first suspension portion 1, the connecting portion 2, and the second suspension portion 3, which is not limited in the present invention.

**[0083]** It should be noted that when the suspension member 100 is applied to the laundry treatment device, the first side 21 may be a front side, and the second side 22 may be a rear side.

**[0084]** In some embodiments of the present invention, as shown in FIGS. 2 to 9, the connecting portion 2 has a first centerline 50 extending in a second direction. The first direction and the second direction are perpendicular to each other. The first drum 4 and the second drum 6 may be arranged symmetrically with respect to the first centerline 50. The notch 51 itself may also be arranged symmetrically with respect to the first centerline 50. In this way, through the symmetrical arrangement of the notch 51 with respect to the first centerline 50, the stiffness of the connecting portion 2 may be symmetrically distributed with respect to the first centerline 50. Thus, when any drum rotates at low speed, the above arrangement may reduce or even prevent resonance between the drum and the connecting portion 2.

**[0085]** In some embodiments of the present invention, as shown in FIGS. 2 to 8, the first suspension portion 1 has a first connection point 10 and a second connection point 20 arranged along the second direction. The first drum 4 may be connected to the first suspension portion 1 via the first connection point 10 and the second connection point 20, i.e., the first suspension portion 1 is configured to be connected to the first drum 4 through the first connection point 10 and the second connection point 20. The second suspension portion 3 has a third connection point 30 and a fourth connection point 40 arranged along the second direction. The second drum 6 may be connected to the second suspension portion 3 via the third connection point 30 and the fourth connection point 40, i.e., the second suspension portion 3 is configured to be connected to the second drum 6 through the third connection point 30 and the fourth connection point 40. The first direction and the second direction are perpendicular to each other. The first connection point 10 and the second connection point 20 may be symmetrically arranged with respect to a second centerline 60, and the third connection point 30 and the fourth connection point 40 may also be symmetrically arranged with respect to the second centerline 60.

**[0086]** The notch 51 has an outer end 512 and an inner end 511 opposite to the outer end 512 in the second direction. The inner end 511 may be flush with the second centerline 60 or located outside of the second centerline 60. Here, the notch 51 has a depth in the second direction, and the inner end 511 is located outside of the second centerline 60, which may be understood as that the second centerline 60 is positioned further inward than the inner end 511, and there is a solid part of the connecting portion 2 between the second centerline 60 and the inner end 511. In this way, this arrangement may prevent the depth of the notch 51 from being excessive and causing the connecting portion 2 to break when the drum rotates. In other words, this arrangement may ensure the reduction in the stiffness of the connecting portion 2 and the stability of the connecting portion 2.

**[0087]** In some embodiments of the present invention, as shown in FIGS. 2 to 9, the notch 51 has a width in the first direction. The width of the notch 51 may range from 240 mm to 250 mm, for example, it may be 245 mm. This may prevent a scenario where if the width of the notch 51 is too small, the impact on the stiffness of the connecting portion 2 is limited; or if the width of the notch 51 is too large, the stiffness of the connecting portion 2 is excessively reduced. That is, this arrangement may ensure both the reduction in the stiffness of the connecting portion 2 and the stability of the connecting portion 2. Here, as shown in FIGS. 8 and 9, when the first side 21 of the connecting portion 2 is provided with the notch 51, the width of this notch 51 may be D1; and when the second side 22 of the connecting portion is provided with the notch 51, the width of this notch 51 may be D2.

**[0088]** In some embodiments of the present invention, and as shown in FIGS. 2 to 8, the connecting portion 2 has a first side 21 and a second side 22 opposite to the first side 21 in a second direction. The first direction and the second direction are perpendicular to each other. The first side 21 and/or the second side 22 is each provided with the notch 51. That is, at least one of the first side 21 and the second side 22 is provided with the notch 51. In some embodiments, the connecting portion 2 may form the notch 51 only at the first side 21. In other embodiments, the connecting portion 2 may form the notch 51 only at the second side 22.

**[0089]** In some embodiments, as shown in FIGS.1 to 9, when the suspension member 100 is applied to the laundry treatment device, a front portion of the first suspension portion 1 may be connected with the first drum 4, and a front portion of the second suspension portion 3 may be connected with the second drum 6. The stiffness reduction portion 5 may be disposed at the first side 21 of the connecting portion 2, i.e., the stiffness reduction portion 5 may be disposed at a front side of the connecting portion 2. Since the drums are disposed at the front, a part of the connecting portion 2 at the first side 21 is prone to resonance with the drums. Therefore, by forming the

stiffness reduction portion 5 at the first side 21 of the connecting portion 2, a probability of resonance between the drum and the connecting portion 2 during low-speed rotation may be further reduced. Here, in some embodiments, when the stiffness reduction portion 5 includes at least one notch 51, the connecting portion 2 may form the notch 51 only at the first side 21. This may ensure effective reduction of the stiffness of the connecting portion 2. Or, the connecting portion 2 may also form the notch 51 on each of the first side 21 and the second side 22, which may further reduce the stiffness of the connecting portion 2, thereby lowering the natural frequency of the connecting portion 2. The above-mentioned arrangement may appropriately reduce the stiffness of the connecting portion 2, and the stiffness of the connecting portion 2 should be greater than or equal to a preset stiffness value to avoid excessively low stiffness of the connecting portion 2.

**[0090]** In some embodiments of the present invention, as shown in FIGS. 2 and 8, the notch 51 has a width in the first direction, and has an outer end 512 and an inner end 511 arranged opposite to the outer end 512 in the second direction. A width of the outer end 512 of at least one notch 51 is greater than a width of the inner end 511 of the at least one notch 51, so that the at least one notch 51 has a design that is wider at the outer end and narrower at the inner end. An advantage of this arrangement is that since the outer end 512 is arranged relatively outward, designing the outer end 512 to be wider may, on the one hand, help reduce the stiffness of the connecting portion 2, and on the other hand, reduce the impact on the stability of the connecting portion 2. Since the inner end 511 is arranged inward, configuring the inner end 511 to be narrower may ensure a stiffness of an inner side of the connecting portion 2 and improve the stability and reliability of the connecting portion 2.

**[0091]** In some embodiments of the present invention, as shown in FIGS. 2 and 8, a projection of the notch 51 in an up-down direction has a contour line 513. The first direction, the second direction, and the up-down direction are mutually perpendicular. At least part of at least one contour line 513 may be configured as a curve. In this way, the design of the curve may improve the smoothness of the notch 51, thereby avoiding stress concentration at the notch 51 in the connecting portion 2.

**[0092]** In some embodiments, as shown in FIGS. 2 and 8, the contour line 513 of at least one notch 51 may be entirely configured as a curve. That is, the entire contour line 513 of this at least one notch 51 may be configured as a curve. This may further improve the smoothness of the notch 51. Here, in some embodiments, when the contour line 513 of the notch 51 is entirely configured as the curve, a width of the notch 51 at the inner end 511 may be 0 mm.

**[0093]** In some embodiments, as shown in FIGS. 2 and 8, the contour line 513 configured as the curve may be shaped as a crest or a trough of a sine wave. That is, the width of the notch 51 may gradually decrease from a predetermined width to zero. This arrangement may effectively improve the smoothness of the notch 51 and realize a uniform reduction of the stiffness of the connecting portion 2 at the notch 51. Here, when the first side 21 of the connecting portion 2 is provided with this notch 51, this notch 51 may be shaped as a trough of a sine wave; and when the second side 22 of the connecting portion 2 is provided with this notch 51, this notch 51 may be shaped as a crest of a sine wave. It should be noted that the shapes of the crest and the trough of the sine wave are well known to those skilled in the art, which will not be detailed herein. In other embodiments, the contour line 513 configured as the curve may also be a semicircular contour line, which is not limited in the present invention.

**[0094]** In some embodiments, a part of at least one contour line 513 is configured as a curve. For example, as shown in FIGS. 2 and 8, the at least one contour line 513 includes a first sub-contour line 5131 and a second sub-contour line 5132, two sides of the first sub-contour line 5131 in the first direction are each connected with the second sub-contour lines 5132. The first sub-contour line 5131 may be configured as a straight line, and the second sub-contour line 5132 may be configured as a curve. In this way, the first sub-contour line 5131 may be arranged at the inner end 511, and the width of the inner end 511 is greater than zero and may be a predetermined width. Thus, this design of the first sub-contour line 5131 may reduce the manufacturing difficulty of the suspension member 100 and avoid the stress concentration at the notch 51 in the connecting portion 2.

**[0095]** In some embodiments, as shown in FIGS. 3 to 7, at least one notch 51 may be configured as a rectangular opening, and such a rectangular opening design may reduce the manufacturing difficulty of the suspension member 100.

**[0096]** In some embodiments, as shown in FIGS. 3, 4, and 6, both the first side 21 and the second side 22 each may be provided with a notch 51. A projection of the notch 51 in an up-down direction has a contour line 513. The first direction, the second direction, and the up-down direction are mutually perpendicular. The contour line 513 of the notch 51 at the first side 21 is at least partially configured as a curve, and the notch 51 at the second side 22 is configured as the rectangular opening. Here, the contour line 513 of the notch 51 at the first side 21 may be shaped as a crest or a trough of a sine wave. As shown in FIG. 3, when the suspension member 100 is applied to the laundry treatment device, a front portion of the first suspension portion 1 and a front portion of the second suspension portion 3 each may form a avoidance notch 80.

**[0097]** In some embodiments, as shown in FIGS. 2 and 8, the first side 21 and the second side 22 each may be provided with a notch 51. A projection of the notch 51 in an up-down direction has a contour line 513, where the first direction, the second direction, and the up-down direction are mutually perpendicular. The contour line 513 of the notch 51 at the first side 21 is at least partially configured

as a curve, and the notch 51 at the second side 22 may include the above-mentioned first sub-contour line 5131 and second sub-contour line 5132. Here, the contour line 513 of the notch 51 at the first side 21 may be shaped as a crest or a trough of a sine wave.

**[0098]** In some embodiments, as shown in FIG. 5, the first side 21 and the second side 22 may each be provided with the notch 51, and the notch 51 at the first side 21 and the notch 51 at the second side 22 each may be configured as a rectangular opening.

**[0099]** In some embodiments of the present invention, as shown in FIG. 7, the second side 22 may be provided with the notch 51, and the notch 51 may be configured as the rectangular opening.

**[0100]** In some embodiments of the present invention, as shown in FIGS. 8 and 9, two notches 51 are formed at the first side 21 and the second side 22 respectively, and a minimum spacing between the two notches 51 in the second direction ranges from 160 mm to 180 mm, for example, it may be 170 mm. This may prevent the connecting portion 2 from being prone to fracture if the minimum spacing is too small, and avoid excessively high stiffness of the connecting portion 2 if the minimum spacing is too large. Here, as shown in FIG. 9, the above-mentioned minimum spacing may be L3.

**[0101]** In some embodiments of the present invention, as shown in FIGS. 8 and 9, the notch 51 has a depth in the second direction, and a maximum depth of the notch 51 at the first side 21 may range from 65 mm to 75 mm, for example, it may be 70 mm. This may prevent the connecting portion 2 from being prone to fracture if the depth of the notch 51 at the first side 21 is too large, and avoid excessively high stiffness of the connecting portion 2 if the depth of the notch 51 at the first side 21 is too small. Here, as shown in FIG. 9, the maximum depth of the notch 51 at the first side 21 may be L1.

**[0102]** In some embodiments of the present invention, as shown in FIGS. 8 and 9, the notch 51 at the second side 22 has a depth in the second direction, and a maximum depth of the notch 51 at the second side 22 may range from 140 mm to 160 mm, for example, it may be 150 mm. This may prevent the connecting portion 2 from being prone to fracture if the depth of the notch 51 on the second side 22 is too large, and avoid excessively high stiffness of the connecting portion 2 if the depth of the notch 51 on the second side 22 is too small. Here, as shown in FIG. 9, the maximum depth of the notch 51 on the second side 22 may be L2.

**[0103]** In some embodiments of the present invention, as shown in FIGS. 8 and 9, the first suspension portion 1 and the second suspension portion 3 may have a width in the first direction, and the width of the first suspension portion 1 and the width of the second suspension portion 3 each may range from 160 mm to 180 mm, for example, it may be 170 mm. The connecting portion 2 may have a width in the first direction, and the width of the connecting portion 2 may range from 160 mm to 180 mm, for example, it may be 170 mm.

**[0104]** In some embodiments of the present invention, as shown in FIG. 2, the laundry treatment device may include a cabinet 7, and both the first suspension portion 1 and the second suspension portion 3 each may be provided with a mounting portion 8, and each mounting portion 8 may be connected to at least one wall panel of the cabinet 7. In this way, the connection between the mounting portion 8 and the at least one wall panel may effectively improve the connection strength between the suspension member 100 and the cabinet 7, thereby effectively increasing the stiffness of the suspension member 100. This may prevent resonance between the suspension member 100 and the drums when the drum rotates at a high speed. When the suspension member 100 is applied to the laundry treatment device, a rear portion of the first suspension portion 1 and a rear portion of the second suspension portion 3 each may be provided with the above-mentioned mounting portion 8.

**[0105]** It should be noted that by connecting the mounting portion 8 to the at least one wall panel of the cabinet 7, the stiffness of the suspension member 100 may be improved, thereby increasing the natural frequency of the suspension member 100. When the stiffness of the suspension member 100 is increased, the natural frequency of the suspension member 100 will also increase. At the same time, both the first-order natural frequency and the second-order natural frequency of the suspension member 100 will increase. When the drum rotates at a high speed, the vibration frequency of the drum is relatively high. At this time, since the second-order natural frequency of the suspension member 100 is increased, this arrangement may prevent resonance between the drums and the suspension member 100 during high-speed rotation of the drum. In addition, since the stiffness of the connecting portion 2 is reduced, that is, the first-order natural frequency of the connecting portion 2 is relatively low. During low-speed rotation of the drum, when the suspension member 100 oscillates up and down in resonance, the connecting portion 2 is a part of the suspension member with a largest vibration amplitude. Therefore, by effectively reducing the first-order natural frequency of the connecting portion 2, the present invention may effectively prevent resonance between the drums and the connecting portion 2 during low-speed rotation of the drum. Thus, through the above arrangement, the laundry treatment device of the present invention may reduce or even avoid resonance between the drum and the connecting portion 2 during low-speed rotation, as well as reduce or even avoid resonance between the drum and the suspension member 100 during high-speed rotation, thereby effectively improving the reliability of the laundry treatment device and reducing the noise generated by the laundry treatment device.

**[0106]** In some embodiments, when the drum rotates at a high speed of 800 RPM to 1200 RPM, the above design may effectively prevent resonance between the drums and the suspension member 100.

**[0107]** In some embodiments of the present invention,

as shown in FIG. 2, the second side 22 of the connecting portion 2 may be provided with the notch 51. When the suspension member 100 is applied to the laundry treatment device, the second side 22 may be a front side of the connecting portion 2, that is, the front side of the connecting portion 2 may be provided with the notch 51, and the mounting portion 8 is configured to enclose the notch 51 at the second side 22 or the front side of the connecting portion 2. This facilitates the formation of the notch 51, and at this case, the notch 51 may extend across the first suspension portion 1, the connecting portion 2, and the second suspension portion 3.

**[0108]** In some embodiments of the present invention, as shown in FIG. 2, the cabinet 7 includes a side wall panel 71 and a rear wall panel 72, and the mounting portion 8 may be connected to at least one of the side wall panel 71 and the rear wall panel 72, which may further improve the stiffness of the suspension member 100, thereby increasing the natural frequency of the suspension member 100. In some embodiments, as shown in FIG. 2, the mounting portion 8 may be connected to the side wall panel 71 and the rear wall panel 72.

**[0109]** In some embodiments of the present invention, as shown in FIG. 2, the mounting portion 8 encloses an avoidance opening 70 together with the first suspension portion 1 or the second suspension portion 3. In this way, the avoidance opening 70 may be configured to avoid components inside the cabinet 7.

**[0110]** In other embodiments of the present invention, as shown in FIGS. 10 and 11, the stiffness reduction portion 5 may include at least one stiffness reduction hole 52 formed in the connecting portion 2.

**[0111]** Through the above technical solution, in the suspension member 100 provided by the present invention, the configuration of the stiffness reduction hole 52 may, on one hand, remove a solid structure of the connecting portion 2 corresponding to the stiffness reduction hole 52, thereby reducing the stiffness of the connecting portion 2 by changing a geometric shape of the connecting portion 2. Removing the solid structure of the connecting portion 2 corresponding to the stiffness reduction hole 52 may avoid resonance between this part of the solid structure and the drums. Thus, by reducing the stiffness of the connecting portion 2 and removing the solid structure of the connecting portion 2 corresponding to the stiffness reduction hole 52, resonance between the connecting portion 2 and the drums may be effectively reduced or even avoided. When the drum rotates at a low speed, this arrangement may ensure that the first-order natural frequency of the connecting portion 2 is far from the vibration frequency of the drum, thus improving the stability of the laundry treatment device when the drum rotates at a low speed, and reducing the noise during operation of the laundry treatment device.

**[0112]** It should be noted that it is well known to those skilled in the art that reducing a stiffness of a component may lower a natural frequency of the component. That is, when the stiffness of the connecting portion 2 is reduced, the natural frequency of the connecting portion 2 will also decrease. The natural frequency may include a first-order frequency to an Nth-order frequency, and the higher the order, the higher the natural frequency. For example, the first-order natural frequency is lower than the second-order natural frequency. Furthermore, when the drum rotates at a low speed, for example, when a rotation speed of the drum ranges from 400 RPM to 600 RPM, e.g., it may be 500 RPM, the stiffness reduction portion 5 of the present invention may effectively make the natural frequency of the connecting portion 2 away from the vibration frequency of the drums. That is, when the rotation speed of the drum ranges from 500 RPM to 700 RPM, the stiffness reduction portion 5 may effectively avoid resonance between the drum and the connecting portion 2 or even the suspension member 100.

**[0113]** It should also be noted that the stiffness reduction hole 52 is a hole-like structure, that is, a circumferential of the stiffness reduction hole 52 is closed, which is different from the notch 51 with one side open.

**[0114]** In some embodiments of the present invention, as shown in FIGS. 10 and 11, the stiffness reduction hole 52 may be configured as a circular hole, which may prevent stress concentration at the stiffness reduction hole 52 in the connecting portion 2.

**[0115]** In some embodiments of the present invention, the suspension member 100 may be configured to have a plate shape, and the stiffness reduction hole 52 may be configured as a through hole and pass through the suspension member 100 along a thickness direction of the suspension member 100. In this way, this design of the through hole may further reduce the stiffness of the connecting portion 2. In other embodiments, the stiffness reduction hole 52 may also be configured as a blind hole.

**[0116]** In some embodiments of the present invention, as shown in FIGS. 10 to 11, the first suspension portion 1 has a first connection point 10 and a second connection point 20 arranged along a second direction. The first drum 4 may be connected to the first suspension portion 1 via the first connection point 10 and the second connection point 20, i.e., the first suspension portion 1 is configured to be connected to the first drum 4 through the first connection point 10 and the second connection point 20. The second suspension portion 3 has a third connection point 30 and a fourth connection point 40 arranged along the second direction. The second drum 6 may be connected to the second suspension portion 3 via the third connection point 30 and the fourth connection point 40, i.e., the second suspension portion 3 is configured to be connected to the second drum 6 through the third connection point 30 and the fourth connection point 40. The first direction and the second direction are perpendicular to each other. The first connection point 10 and the second connection point 20 may be symmetrically arranged with respect to a second centerline 60, and the third connection point 30 and the fourth connection point 40 may also be symmetrically arranged with respect to the second centerline 60.

**[0117]** The connecting portion 2 has a first side 21 and a second side 22 opposite to the first side 21 in the second direction. A part of the connecting portion 2 located at a side of the second centerline 60 adjacent to the first side 21 may have a plurality of stiffness reduction holes 52, that is, a part of the connecting portion 2 located at front of the second centerline 60 may have a plurality of stiffness reduction holes 52. Here, since a front portion of the first suspension portion 1 is usually connected with the first drum 4, and a front portion of the second suspension portion 3 usually connected with the second drum 6, providing the plurality of stiffness reduction holes 52 in the part of the connecting portion 2 located in front of the second centerline 60 is beneficial to reduce the stiffness of the front portion of the connecting portion 2, thereby further reducing or even avoiding resonance between the drums and the connecting portion 2 when the drum rotates at a low speed.

**[0118]** In some embodiments of the present invention, as shown in FIGS. 10 and 11, a part of the connecting portion 2 located on a side of the second centerline 60 adjacent to the second side 22 may have a plurality of stiffness reduction holes 52, that is, a part of the connecting portion 2 located behind the second centerline 60 may have a plurality of stiffness reduction holes 52. In this way, the stiffness of the connecting portion 2 may be further reduced, thereby reducing the first-order natural frequency of the connecting portion 2, so that the first-order natural frequency of the connecting portion 2 is far from the vibration frequency of the drum when the drum rotates at a low speed.

**[0119]** In some embodiments, as shown in FIGS. 10 and 11, a diameter of the stiffness reduction hole 52 located on the side of the second centerline 60 adjacent to the first side 21 is larger than a diameter of the stiffness reduction hole 52 located on the side of the second centerline 60 adjacent to the second side 22. That is, a diameter of the stiffness reduction hole 52 located in front of the second centerline 60 may be larger than a diameter of the stiffness reduction hole 52 located behind the second centerline 60. This may make the stiffness of the front portion of the connecting portion 2 smaller, thereby helping to reduce the stiffness of the front portion of the connecting portion 2, and further reducing or even avoiding resonance between the drums and the connecting portion 2 when the drum rotates at a low speed.

**[0120]** In some embodiments, as shown in FIG. 10, a spacing between two adjacent stiffness reduction holes 52 located at the side of the second centerline 60 adjacent to the first side 21 is smaller than a spacing between two adjacent stiffness reduction holes 52 located at the side of the second centerline 60 adjacent to the second side 22, that is, a spacing between two adjacent stiffness reduction holes 52 located in front of the second centerline 60 is smaller than a spacing between two adjacent stiffness reduction holes 52 located behind the second centerline 60. This may make the stiffness of the front portion of the connecting portion 2 smaller, thereby helping to reduce the stiffness of the front portion of the connecting portion 2, and further reducing or even avoiding resonance between the drum and the connecting portion 2 when the drum rotates at a low speed. The plurality of stiffness reduction holes 52 may be arranged in rows and columns, which is not limited in the present invention.

**[0121]** In some embodiments, as shown in FIGS. 10 and 11, the connecting portion 2 has a first centerline 50 extending along the second direction. The first drum 4 and the second drum 6 may be arranged axisymmetrically with respect to the first centerline 50. The plurality of stiffness reduction holes 52 located at the side of the second centerline 60 adjacent to the first side 21 may be arranged axisymmetrically with respect to the first centerline 50, that is, the plurality of stiffness reduction holes 52 located in front of the second centerline 60 are arranged axisymmetrically with respect to the first centerline 50, and/or the plurality of stiffness reduction holes 52 located at the side of the second centerline 60 adjacent to the second side 22 can be arranged axisymmetrically with respect to the first centerline 50, that is, the plurality of stiffness reduction holes 52 located behind the second centerline 60 are arranged axisymmetrically with respect to the first centerline 50. In this way, through the symmetrical arrangement of the plurality of stiffness reduction holes 52 with respect to the first centerline 50, the stiffness of the connecting portion 2 with respect to the first centerline 50 may be symmetrically distributed. In this way, when any drum rotates at a low speed, such an arrangement may reduce or even avoid resonance between the drum and the connecting portion 2.

**[0122]** In some embodiments, a diameter of the stiffness reduction hole 52 may range from 65 mm to 75 mm, for example, it may be 70 mm. This may prevent the diameter of the stiffness reduction hole 52 from being too large, resulting in poor stability of the connecting portion 2.

**[0123]** In some embodiments of the present invention, as shown in FIGS. 12 to 15, the stiffness reduction portion 5 may include a thinning portion 53. At least part of the connecting portion 2 has the thinning portion 53, and a thickness of the connecting portion 2 at the thinning portion 53 is less than a thickness of other parts of the connecting portion 2 after removing the thinning portion 53, or less than thicknesses of the first suspension portion 1 or the second suspension portion 3.

**[0124]** Through the above technical solution, in the laundry treatment device provided by the present invention, by providing the thinning portion 53 in the connecting portion 2, the thickness of the connecting portion 2 at the thinning portion 53 may be reduced, thereby further reducing the stiffness of the connecting portion 2, and reducing the natural frequency of the connecting portion 2. Therefore, resonance between the connecting portion 2 and the drum may be effectively reduced or even avoided. When the drum rotates at a low speed, such an arrangement may ensure the first-order natural fre-

quency of the connecting portion 2 is far from the vibration frequency of the drum when rotating at a low speed, thus improving the stability of the laundry treatment device when the drum rotates at a low speed, and reducing the noise of the laundry treatment device during operation.

**[0125]** It should be noted that when a thickness of a component becomes thinner, the stiffness of the component will decrease, that is, the natural frequency of the component will also decrease.

**[0126]** In some embodiments, the suspension member 100 may be configured in a plate shape, which facilitates formation of the thinning portion 53.

**[0127]** In some embodiments of the present invention, as shown in FIG. 12, the thinning portion 53 may be configured in a flat plate shape, that is, a thickness of every part of the thinning portion 53 may remain the same.

**[0128]** In some embodiments of the present invention, the thickness of the thinning portion 53 ranges from 2 mm to 3 mm. This can prevent the thinning portion 53 from being too thick, resulting in a small reduction in the stiffness of the connecting portion 2. Here, the thickness of the thinning portion 53 may be less than 2.5 mm.

**[0129]** In some embodiments of the present invention, the thickness of the thinning portion 53 may range from 0.6 mm to 1 mm, for example, greater than or equal to 0.8 mm. This may prevent the thinning portion 53 from being too thin, resulting in poor stability of the connecting portion 2, or even fracture of the connecting portion 2.

**[0130]** In some embodiments of the present invention, as shown in FIGS. 13 to 14, the first suspension portion 1 has a first connection point 10 and a second connection point 20 arranged along a second direction. The first drum 4 may be connected to the first suspension portion 1 via the first connection point 10 and the second connection point 20, i.e., the first suspension portion 1 is configured to be connected to the first drum 4 through the first connection point 10 and the second connection point 20. The second suspension portion 3 has a third connection point 30 and a fourth connection point 40 arranged along the second direction. The second drum 6 may be connected to the second suspension portion 3 via the third connection point 30 and the fourth connection point 40, i.e., the second suspension portion 3 is configured to be connected to the second drum 6 through the third connection point 30 and the fourth connection point 40. The first direction and the second direction are perpendicular to each other. The first connection point 10 and the second connection point 20 may be symmetrically arranged with respect to a second centerline 60, and the third connection point 30 and the fourth connection point 40 may also be symmetrically arranged with respect to the second centerline 60.

**[0131]** The connecting portion 2 has a first side 21 and a second side 22 opposite to the first side 21 in a second direction. A thickness of the thinning portion 53 at a side of the second centerline 60 adjacent to the first side 21 is smaller than a thickness of the thinning portion 53 at a side of the second centerline 60 adjacent to the second side 22. In other words, a thickness of the thinning portion 53 in front of the second centerline 60 may be smaller a thickness of the thinning portion 53 behind the second centerline 60. Here, since a front portion of the first suspension portion 1 is usually connected with the first drum 4 and a front portion of the second suspension portion 3 is usually connected with the second drum 6, configuring the thickness of the part of the connecting portion 2 in front of the second centerline 60 to be smaller helps to reduce the stiffness of the front portion of the connecting portion 2, thereby further reducing or even avoiding resonance between the drum and the connecting portion 2 when the drum rotates at a low speed.

**[0132]** In some embodiments of the present invention, as shown in FIG. 13, the thickness of the thinning portion 53 may gradually decrease along a direction from the second side to the first side, i.e., gradually decrease from the rear to the front. This enables a continuous and gradual change in the thickness of the thinning portion 53.

**[0133]** In some embodiments of the present invention, as shown in FIG. 14, the thickness of the thinning portion 53 may decrease in a stepped manner along the direction from the second side to the first side, i.e., decrease in a stepped manner from the rear to the front. This may enables a stepped change in the thickness of the thinning portion 53.

**[0134]** In some embodiments of the present invention, as shown in FIG. 15, the thinning portion 53 may include a first subsection 531 and a second subsection 532. The first subsection 531 may be connected to the first suspension portion 1, and the second subsection 532 may be connected to the second suspension portion 3. A thickness of the first subsection 531 may gradually decrease along the first direction toward the second subsection 532, and/or a thickness of the second subsection 532 may gradually decrease along the first direction toward the first subsection 531. This may achieve a gradual change in the thickness of the thinning portion 53 along the first direction.

**[0135]** In some embodiments of the present invention, as shown in FIG. 15, the thinning portion 53 further includes a third subsection 533, and the third subsection 533 connects the first subsection 531 and the second subsection 532. The third subsection 533 is configured in a flat plate shape. That is, a thickness of each part of the third subsection 533 remains the same, which helps improve the stability of the thinning portion 53 at the third subsection 533. Here, in some embodiments, the thickness of the third subsection 533 may range from 0.6 mm to 1.0 mm, e.g., 0.8 mm, which is not limited in the present invention.

**[0136]** In some embodiments of the present invention, as shown in FIGS. 16 to 20, the stiffness reduction portion 5 may include at least one stiffness reduction groove 54. The connecting portion 2 is at least partially bent to form the at least one stiffness reduction groove 54. The stiffness reduction groove 54 extends along a second direc-

tion and has a length in the second direction, and the first direction is perpendicular to the second direction.

**[0137]** Through the above technical solution, in the laundry treatment device provided by the present invention, the stiffness reduction groove 54 may be formed by at least partially bending the connecting portion 2. Since this stiffness reduction groove 54 has a length in the second direction, that is, the stiffness reduction groove 54 is configured in a narrow and elongated shape, such an arrangement may reduce the stiffness of the connecting portion 2, thereby lowering the natural frequency of the connecting portion 2. As a result, resonance between the connecting portion 2 and the drum may be effectively reduced or even avoided. When the drum rotates at a low speed, this arrangement may ensure that the first-order natural frequency of the connecting portion 2 is far from the vibration frequency of the drum during low-speed rotation, thus improving the stability of the laundry treatment device when the drum rotates at a low speed, and reducing the noise generated by the laundry treatment device during operation.

**[0138]** It should be noted that when the drum rotates at a low speed, the vibration of the connecting portion 2 may exhibit an up-and-down motion. Here, in the present invention, the stiffness reduction groove 54 is arranged to extend along the second direction and has the length in the second direction, so that the stiffness reduction groove 54 facilitates the up-and-down motion of the connecting portion 2, thereby preventing the connecting portion 2 from resisting its own vibrations in the up-down direction. Thus, resonance between the drum and the connecting portion 2 during low-speed rotation of the drum may be avoided.

**[0139]** It should also be noted that the stiffness reduction groove 54 is formed by at least partially bending the connecting portion 2, rather than by thinning the connecting portion 2. In this case, the thickness of every part of the connecting portion 2 may remain approximately the same. As is well-known to those skilled in the art, a partial depression of a component may form a groove, which is a structure with one end open, different from structures such as holes and openings.

**[0140]** In some embodiments of the present invention, as shown in FIG. 16, the stiffness reduction groove 54 may extend through the connecting portion 2 along the second direction. This facilitates formation of the stiffness reduction groove 54 when the connecting portion 2 is bent.

**[0141]** In some embodiments of the present invention, as shown in FIG. 16, the stiffness reduction groove 54 has a width in the first direction, and the width of the stiffness reduction groove 54 may range from 170 mm to 190 mm, for example, less than or equal to 180 mm.

**[0142]** In some embodiments of the present invention, as shown in FIGS. 17 to 20, the stiffness reduction groove 54 has a depth in the up-down direction, and the depth of the stiffness reduction groove 54 may range from 50 mm to 60 mm, for example, less than or equal to 55 mm. This may prevent the depth of the stiffness reduction groove 54 from being too large, resulting in an excessive space occupied by the stiffness reduction groove 54, and avoid interference between the connecting portion 2 and other components inside the cabinet 7. Additionally, this may avoid a static stiffness of the connecting portion 2 becoming too low due to an overly deep stiffness reduction groove 54, which may lead to fracture of the connecting portion 2.

**[0143]** In some embodiments of the present invention, as shown in FIGS. 17, 18, and 20, the stiffness reduction groove 54 may be configured as a rectangular groove. This facilitates the formation of the stiffness reduction groove 54. Here, a corner of the rectangular groove may be provided with a fillet to avoid stress concentration at the stiffness reduction groove 54 in the connecting portion 2.

**[0144]** In some embodiments of the present invention, as shown in FIG. 19, the stiffness reduction groove 54 may be configured as an arc-shaped groove. This may improve the smoothness of the stiffness reduction groove 54, thereby avoiding stress concentration at the stiffness reduction groove 54 in the connecting portion 2.

**[0145]** In some embodiments of the present invention, as shown in FIGS. 18 and 19, the stiffness reduction portion 5 includes one stiffness reduction groove 54, and an opening of the stiffness reduction groove 54 may face upward. The first direction, the second direction, and the up-down direction are mutually perpendicular. This may utilize a space inside the cabinet 7 for arranging the connecting portion 2, thus avoiding interference between the stiffness reduction groove 54 and a top panel of the cabinet 7 if the opening of the stiffness reduction groove 54 faces downward.

**[0146]** In some embodiments of the present invention, as shown in FIG. 20, the stiffness reduction portion 5 includes one stiffness reduction groove 54, and an opening of the stiffness reduction groove 54 may face downward. The first direction, the second direction, and the up-down direction are mutually perpendicular. This facilitates the formation of the stiffness reduction groove 54.

**[0147]** In some embodiments of the present invention, as shown in FIG. 17, at least part of the connecting portion 2 is bent continuously to form at least two stiffness reduction grooves 54. The at least two stiffness reduction grooves 54 are arranged in sequence along the first direction, and openings of two adjacent stiffness reduction grooves 54 face opposite directions. In this way, the stiffness of the connecting portion 2 may be effectively reduced through the at least two continuously arranged stiffness reduction grooves 54.

**[0148]** In some embodiments of the present invention, the stiffness reduction portion 5 includes at least two stiffness reduction grooves 54, and the at least two stiffness reduction grooves 54 may be formed at intervals along the first direction. In this way, this interval arrangement of two adjacent stiffness reduction grooves 54 may ensure the structural strength and stiffness of a part of the

connecting portion 2 between the two adjacent stiffness reduction grooves 54, thus avoiding fracture of the connecting portion 2.

**[0149]** In some embodiments of the present invention, as shown in FIGS. 21 to 23, at least part of the connecting portion 2 is configured as the stiffness reduction portion 5. The stiffness reduction portion 5 is made of a predetermined material, where a material stiffness of the stiffness reduction portion 5 is lower than a material stiffness of other parts of the connecting portion 2 excluding the stiffness reduction portion 5, or lower than a material stiffness of the first suspension portion 1 or a material stiffness of the second suspension portion 3.

**[0150]** Through the above technical solution, in the laundry treatment device provided by the present invention, by providing the stiffness reduction portion 5 on the connecting portion 2 and making the material stiffness of the stiffness reduction portion 5 relatively lower, the stiffness of the connecting portion 2 may be reduced, thereby lowering the natural frequency of the connecting portion 2. As a result, resonance between the connecting portion 2 and the drum may be effectively reduced or even avoided. When the drum rotates at a low speed, this arrangement may ensure that the first-order natural frequency of the connecting portion 2 is far from the vibration frequency of the drum during low-speed rotation, thus improving the stability of the laundry treatment device when the drum rotates at a low speed and reducing the noise generated by the laundry treatment device during operation.

**[0151]** It should be noted that when factors affecting the stiffness of the stiffness reduction portion 5 and the stiffness of the other parts of the connecting portion 2 remain the same, configuring the material stiffness of the stiffness reduction portion 5 to be lower than the material stiffness of the other parts of the connecting portion 2 excluding the stiffness reduction portion 5 may reduce the stiffness of the connecting portion 2. Similarly, when the entire connecting portion 2 is configured as the stiffness reduction portion 5, and factors affecting the stiffness of the stiffness reduction portion 5, the stiffness of the first suspension portion 1, and the stiffness of the second suspension portion 3 remain the same, configuring the material stiffness of the stiffness reduction portion 5 to be lower than the material stiffness of the first suspension portion 1 or the material stiffness the second suspension portion 3 may also reduce the stiffness of the connecting portion 2. That is to say, the material of the stiffness reduction portion 5 is different from the material of the other parts of the connecting portion 2, or the material of the stiffness reduction portion 5 is different from the material of the first suspension portion 1 and the second suspension portion 3.

**[0152]** In some embodiments, the relatively lower material stiffness of the stiffness reduction portion 5 may be understood as that the stiffness reduction portion 5 is made of a relatively flexible material.

**[0153]** In some embodiments of the present invention, an elastic modulus of the predetermined material may range from $1\times10^{9}$Pa to $2.1\times10^{11}$ Pa. This may avoid an excessively high or low elastic modulus of the predetermined material.

**[0154]** In some embodiments of the present invention, the predetermined material may include a metallic material, and/or a non-metallic material, which is not limited in the present invention.

**[0155]** In some embodiments of the present invention, the predetermined material may include at least one of plastic and aluminum. For example, in some embodiments, the predetermined material may be made of plastic; and in other embodiments, the predetermined material may be made of aluminum.

**[0156]** In some embodiments of the present invention, the predetermined material is configured as a first metallic material, and the first suspension portion 1 and the second suspension portion 3 may also be made of a second metallic material, the first metallic material and the second metallic material may be of the same material or different material. The stiffness reduction portion 5 is welded to the first suspension portion 1 and the second suspension portion 3. In this way, the stiffness reduction portion 5, the first suspension portion 1 and the second suspension portion 3 are each made of metallic materials, which facilitates the welding of the stiffness reduction portion 5 to the first suspension portion 1 and the second suspension portion 3, and improves the connection strength between the stiffness reduction portion 5 and the first suspension portion 1 as well as the second suspension portion 3.

**[0157]** In some embodiments of the present invention, the predetermined material is configured as a first metallic material, each of the first suspension portion 1 and the second suspension portion 3 is made of a second metallic material, the first metallic material and the second metallic material may be of the same material or different material, and the stiffness reduction portion 5 is connected to the first suspension portion 1 and the second suspension portion 3 through fasteners. In this way, all of the stiffness reduction portion 5, the first suspension portion 1 and the second suspension portion 3 are made of metallic materials, which may prevent the material stiffness of the stiffness reduction portion 5, the material stiffness of the first suspension portion 1, and the material stiffness of the second suspension portion 3 from being too low. Connecting the stiffness reduction portion 5 to the first suspension portion 1 and the second suspension portion 3 via fasteners may not only enhance the stability of the connection but also enable detachable connection between the stiffness reduction portion 5 and the first suspension portion 1, as well as detachable connection between the stiffness reduction portion 5 and the second suspension portion 3.

**[0158]** In some embodiments of the present invention, the predetermined material is configured as a metallic material, the first suspension portion 1 and the second suspension portion 3 are made of non-metallic materials,

and the stiffness reduction portion 5 is connected to the first suspension portion 1 and the second suspension portion 3 through fasteners. In this way, the stiffness reduction portion 5 is made of a different material from the first suspension portion 1 and the second suspension portion 3. In this case, connecting the stiffness reduction portion 5 to the first suspension portion 1 and the second suspension portion 3 via fasteners may not only improve the stability of the connection but also enable detachable connection between the stiffness reduction portion 5 and the first suspension portion 1, as well as detachable connection between the stiffness reduction portion 5 and the second suspension portion 3.

**[0159]** In some embodiments of the present invention, as shown in FIGS. 21 to 23, the first suspension portion 1 has a first connection point 10 and a second connection point 20 arranged along a second direction. The first drum 4 may be connected to the first suspension portion 1 via the first connection point 10 and the second connection point 20, i.e., the first suspension portion 1 is configured to be connected to the first drum 4 through the first connection point 10 and the second connection point 20. The second suspension portion 3 has a third connection point 30 and a fourth connection point 40 arranged along the second direction. The second drum 6 may be connected to the second suspension portion 3 via the third connection point 30 and the fourth connection point 40, i.e., the second suspension portion 3 is configured to be connected to the second drum 6 through the third connection point 30 and the fourth connection point 40. The first direction and the second direction are perpendicular to each other. The first connection point 10 and the second connection point 20 may be symmetrically arranged with respect to a second centerline 60, and the third connection point 30 and the fourth connection point 40 may also be symmetrically arranged with respect to the second centerline 60.

**[0160]** The connecting portion 2 has a first side 21 and a second side 22 opposite to the first side 21 in the second direction. At least part of the connecting portion 2 located at a side of the second centerline 60 adjacent to the first side 21 is configured as the stiffness reduction portion 5, that is, at least part of the connecting portion 2 in front of the second centerline 60 is configured as the stiffness reduction portion 5. Here, since a front portion of the first suspension portion 1 is usually connected with the first drum 4 and a front portion of the second suspension portion 3 is usually connected with the second drum 6, configuring the at least part of the connecting portion 2 in front of the second centerline 60 as the stiffness reduction portion 5 helps reduce the stiffness of a front portion of the connecting portion 2, thereby further reducing or even avoiding resonance between the drum and the connecting portion 2 when the drum rotates at a low speed.

**[0161]** In some embodiments of the present invention, as shown in FIGS. 1 to 23, the first suspension portion 1 has a first connection point 10 and a second connection point 20 arranged along a second direction. The first drum 4 may be connected to the first suspension portion 1 via the first connection point 10 and the second connection point 20, i.e., the first suspension portion 1 is configured to be connected to the first drum 4 through the first connection point 10 and the second connection point 20. The second suspension portion 3 has a third connection point 30 and a fourth connection point 40 arranged along the second direction. The second drum 6 may be connected to the second suspension portion 3 via the third connection point 30 and the fourth connection point 40, i.e., the second suspension portion 3 is configured to be connected to the second drum 6 through the third connection point 30 and the fourth connection point 40. The first direction and the second direction are perpendicular to each other.

**[0162]** A part of the suspension member 100 located between the first connection point 10 and the third connection point 30 and between the second connection point 20 and the fourth connection point 40 may be configured as the connecting portion 2. That is to say, a part of the suspension member 100 located at inner sides of the first connection point 10, the second connection point 20, the third connection point 30, and the fourth connection point 40 is configured as the connecting portion 2.

**[0163]** In some embodiments of the present invention, the suspension member 100 may be integrally formed. This may eliminate the need for connection between the connecting portion 2 and the first suspension portion 1 and the second suspension portion 3, reduces a number of components of the laundry treatment device, and facilitates assembly and maintenance of the laundry treatment device.

**[0164]** According to a second aspect of the present invention, a laundry treatment device is provided. The laundry treatment device includes the suspension member 100 as described above and has all the beneficial effects of the aforementioned suspension member 100, which will not be repeated herein.

**[0165]** In some embodiments of the present invention, as shown in FIG. 1, the laundry treatment device includes a cabinet 7 and a third drum 9. The suspension member 100 is arranged at a top of the cabinet 7, and the first drum 4 and the second drum 6 may be located above the third drum 9. In this way, the first drum 4 and the second drum 6 may be located at an upper left and an upper right of the third drum 9 respectively, so that the first drum 4, the second drum 6 and the third drum 9 may be configured to wash different types of laundry.

**[0166]** In some embodiments of the present invention, as shown in FIG. 1, the third drum 9 may have a larger volume than the first drum 4 and the second drum 6. In this way, the third drum 9 may be configured to wash larger or heavier laundry, while the first drum 4 and the second drum 6 may be configured to wash smaller or lighter laundry.

**[0167]** In some embodiments of the present invention, as shown in FIG. 1, the first suspension portion 1 may be

connected to a side wall panel 71 on a left side of the cabinet 7, and the second suspension portion 3 may be connected to a side wall panel 71 on a right side of the cabinet 7.

**[0168]** The preferred embodiment of the present invention is described in detail above in conjunction with the drawings, however, the present invention is not limited to the specific details in the above embodiments, a variety of simple variants of the technical solution of the present invention may be made within the scope of the technical conception of the present invention, and these simple variants all fall within the protection scope of the present invention.

**[0169]** In addition, it should be noted that the specific technical features described in the specific embodiments, without contradiction, can be combined in any appropriate way, and in order to avoid unnecessary repetition, the various possible combinations are not separately stated in the present invention.

**[0170]** In addition, various embodiments of the present invention may be arbitrarily combined, and as long as they do not contradict the idea of the present invention, they shall also be regarded as the content disclosed in the present invention.

## Claims

**1.** A suspension member (100), comprising a first suspension portion (1), a connecting portion (2), and a second suspension portion (3) arranged along a first direction,
wherein the first suspension portion (1) is configured to suspend a first drum (4) of a laundry treatment device, the second suspension portion (3) is configured to suspend a second drum (6) of the laundry treatment device, and the connecting portion (2) is connected to the first suspension portion (1) and the second suspension portion (3); and wherein the connecting portion (2) has a stiffness reduction portion (5), and the stiffness reduction portion (5) is configured to reduce a stiffness of the connecting portion (2).

**2.** The suspension member (100) according to claim 1, wherein the stiffness reduction portion (5) comprises at least one stiffness reduction hole (52) formed in the connecting portion (2).

**3.** The suspension member (100) according to claim 2, wherein the suspension member is configured to have a plate shape, and the at least one stiffness reduction hole (52) is configured as a through hole passing through the suspension member (100) along a thickness direction of the suspension member (100).

**4.** The suspension member (100) according to claim 2, wherein the first suspension portion (1) has a first connection point (10) and a second connection point (20) arranged along a second direction, the first suspension portion (1) is configured to be connected to the first drum (4) through the first connection point and the second connection point, the second suspension portion (3) has a third connection point (30) and a fourth connection point (40) arranged along the second direction, the second suspension portion (3) is configured to be connected to the second drum (6) through the third connection point and the fourth connection point, and the first direction and the second direction are perpendicular to each other;

the first connection point and the second connection point are symmetrically arranged with respect to a second centerline (60), and the third connection point and the fourth connection point are symmetrically arranged with respect to the second centerline (60); and
the connecting portion (2) has a first side (21) and a second side (22) opposite to the first side in the second direction, and a part of the connecting portion (2) located at a side of the second centerline adjacent to the first side has a plurality of the stiffness reduction holes (52).

**5.** The suspension member (100) according to claim 4, wherein a part of the connecting portion (2) located at a side of the second centerline adjacent to the second side has a plurality of the stiffness reduction holes (52); optionally, a diameter of each of the plurality of the stiffness reduction holes located at the side of the second centerline (60) adjacent to the first side (21) is greater than a diameter of each of the plurality of the stiffness reduction holes (52) located at the side of the second centerline adjacent to the second side (22); and/or
wherein a spacing between two adjacent stiffness reduction holes (52) of the plurality of the stiffness reduction holes (52) located at the side of the second centerline (60) adjacent to the first side is less than a spacing between two adjacent stiffness reduction holes (52) of the plurality of the stiffness reduction holes (52) located at the side of the second centerline (60) adjacent to the second side (22).

**6.** The suspension member (100) according to claim 5, wherein the connecting portion (2) has a first centerline (50) extending along the second direction, and the first drum (4) and the second drum (6) are axisymmetrically arranged with respect to the first centerline (50),
wherein the plurality of the stiffness reduction holes (52) located at the side of the second centerline (60) adjacent to the first side are axisymmetrically arranged with respect to the first centerline (50), and/or the plurality of the stiffness reduction holes (52)

located at the side of the second centerline (60) adjacent to the second side are axisymmetrically arranged with respect to the first centerline (50).

**7.** The suspension member (100) according to claim 1, wherein the stiffness reduction portion (5) comprises a thinning portion (53), at least part of the connecting portion (2) is provided with the thinning portion, a thickness of the connecting portion (2) at the thinning portion is less than a thicknesses of other parts of the connecting portion (2) excluding the thinning portion (53), or less than a thickness of the first suspension portion (1) or a thickness of the second suspension portion (3).

**8.** The suspension member (100) according to claim 7, wherein the first suspension portion (1) has a first connection point (10) and a second connection point (20) arranged along a second direction, the first suspension portion (1) is configured to be connected to the first drum (4) through the first connection point and the second connection point, the second suspension portion (3) has a third connection point (30) and a fourth connection point (40) arranged along the second direction, the second suspension portion (3) is configured to be connected to the second drum (6) through the third connection point and the fourth connection point, and the first direction and the second direction are perpendicular to each other;

the first connection point and the second connection point are symmetrically arranged with respect to a second centerline (60), and the third connection point and the fourth connection point are symmetrically arranged with respect to the second centerline (60); and
the connecting portion (2) has a first side (21) and a second side (22) opposite to the first side in the second direction, and a thickness of a part of the thinning portion located at a side of the second centerline (60) adjacent to the first side is less than a thickness of a part of the thinning portion located at a side of the second centerline adjacent to the second side;
optionally, wherein the thickness of the thinning portion (53) gradually decreases along a direction from the second side toward the first side; or wherein the thickness of the thinning portion (53) decreases in a stepped manner along a direction from the second side toward the first side.

**9.** The suspension member (100) according to claim 8, wherein the thinning portion (53) comprises a first subsection (531) and a second subsection (532), the first subsection is connected to the first suspension portion (1), and the second subsection is connected to the second suspension portion (3); and

a thickness of the first subsection (531) gradually decreases along the first direction toward the second subsection, and/or a thickness of the second subsection (532) gradually decreases along the first direction toward the first subsection;
optionally, the thinning portion (53) comprises a third subsection (533) connected to the first subsection and the second subsection, and the third subsection is configured to have a flat plate shape.

**10.** The suspension member (100) according to claim 1, wherein the stiffness reduction portion (5) comprises at least one stiffness reduction groove (54), the connecting portion (2) is at least partially bent to form the at least one stiffness reduction groove (54), the at least one stiffness reduction groove (54) extends along a second direction and has a length in the second direction, and the first direction and the second direction are perpendicular to each other.

**11.** The suspension member (100) according to claim 10, wherein the stiffness reduction groove (54) extends through the connecting portion (2) in the second direction; and/or

wherein the at least one stiffness reduction groove (54) has a width in the first direction, and the width of the at least one stiffness reduction groove ranges from 170 mm to 190 mm; and/or
wherein the at least one stiffness reduction groove (54) has a depth in an up-down direction, the first direction, the second direction, and the up-down direction are mutually perpendicular, and the depth of the at least one stiffness reduction groove (54) ranges from 50 mm to 60 mm;
optionally, wherein the stiffness reduction portion (5) comprises one stiffness reduction groove (54) with an opening facing downward, and the first direction, the second direction, and an up-down direction are mutually perpendicular; or
wherein the stiffness reduction portion (5) comprises one stiffness reduction groove (54) with an opening facing upward, and the first direction, the second direction, and an up-down direction are mutually perpendicular; or
wherein the connecting portion (2) is at least partially and continuously bent to form at least two stiffness reduction grooves (54), the at least two stiffness reduction grooves (54) are sequentially arranged along the first direction, and openings of two adjacent stiffness reduction grooves (54) of the at least two stiffness reduc-

tion grooves (54) face opposite directions; or
wherein the stiffness reduction portion (5) comprises at least two stiffness reduction grooves (54) arranged at intervals along the first direction.

**12.** The suspension member (100) according to claim 1, wherein at least part of the connecting portion (2) is configured as the stiffness reduction portion (5), the stiffness reduction portion is made of a predetermined material, and a material stiffness of the stiffness reduction portion (5) is less than material stiffnesses of other parts of the connecting portion (2) excluding the stiffness reduction portion (5), or less than a material stiffness of the first suspension portion (1) or a material stiffness of the second suspension portion (3).

**13.** The suspension member (100) according to claim 12, wherein an elastic modulus of the predetermined material ranges from $1\times10^9$ Pa to $2.1\times10^{11}$Pa; and/or

wherein the predetermined material comprises a metallic material and/or a non-metallic material;
optionally, wherein the predetermined material is configured as a first metallic material, the first suspension portion (1) and the second suspension portion (3) are made of a second metallic material, and the stiffness reduction portion (5) is welded to the first suspension portion (1) and the second suspension portion (3); or
wherein the predetermined material is configured as a first metallic material, the first suspension portion (1) and the second suspension portion (3) are made of a second metallic material, and the stiffness reduction portion (5) is connected to each of the first suspension portion (1) and the second suspension portion (3) via a fastener; or
wherein the predetermined material is configured as a metallic material, the first suspension portion (1) and the second suspension portion (3) are made of a non-metallic material, and the stiffness reduction portion (5) is connected to each of the first suspension portion (1) and the second suspension portion (3) via a fastener.

**14.** The suspension member (100) according to claim 12, wherein the first suspension portion (1) has a first connection point (10) and a second connection point (20) arranged along a second direction, the first suspension portion (1) is configured to be connected to the first drum (4) through the first connection point and the second connection point, the second suspension portion (3) has a third connection point (30) and a fourth connection point (40) arranged along the second direction, the second suspension portion (3) is configured to be connected to the second drum (6) through the third connection point and the fourth connection point, and the first direction and the second direction are perpendicular to each other;

the first connection point (10) and the second connection point (20) are symmetrically arranged with respect to a second centerline (60), and the third connection point and the fourth connection point are symmetrically arranged with respect to the second centerline; and
the connecting portion (2) has a first side (21) and a second side (22) opposite to the first side in the second direction, and at least part of the connecting portion (2) located at a side of the second centerline adjacent to the first side is configured as the stiffness reduction portion (5).

**15.** A laundry treatment device, comprising the suspension member (100) according to any one of claims 1 to 14.

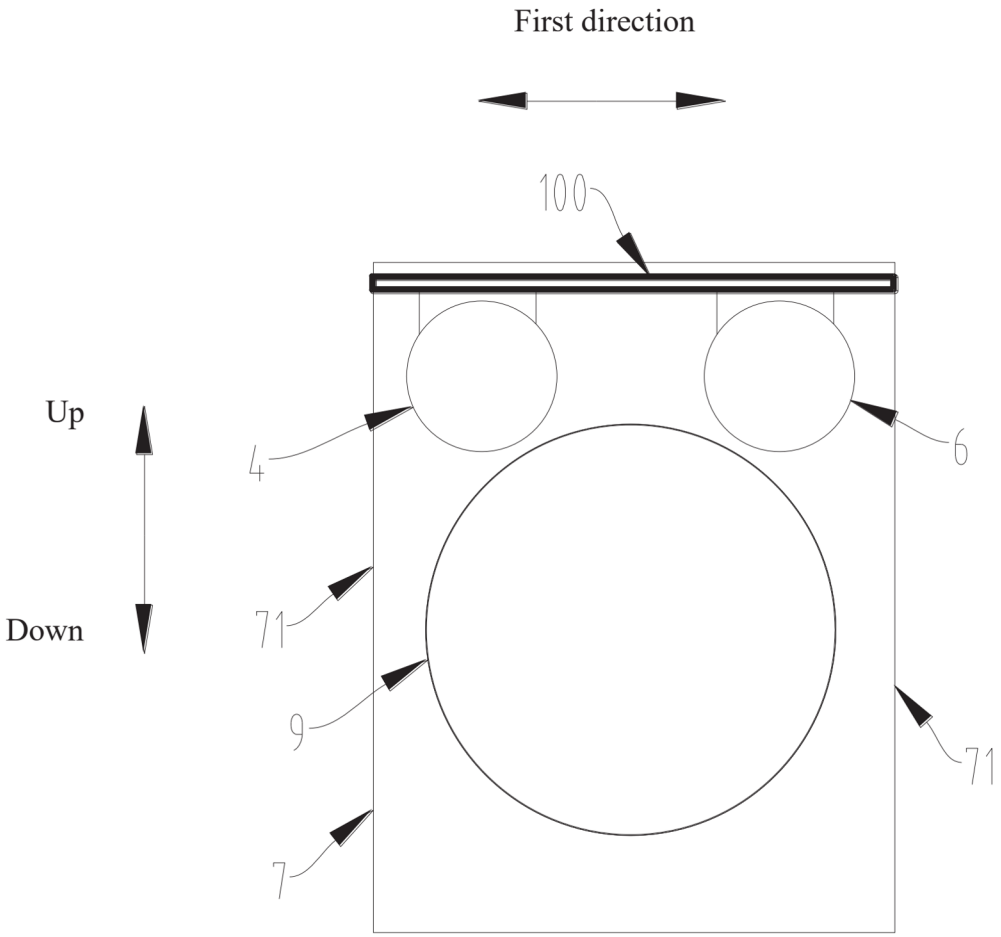

First direction
100
Up
Down
4
6
71
9
71
7

FIG. 1

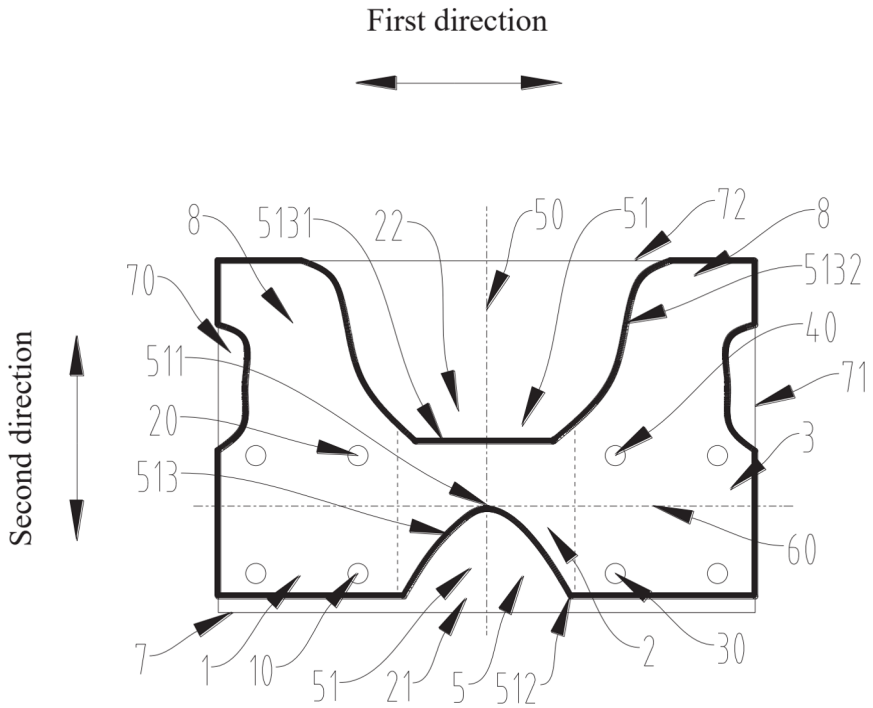

First direction
Second direction
8
5131
22
50
51
72
8
5132
70
40
511
71
20
3
513
60
7
1
10
51
21
5
512
2
30

FIG. 2

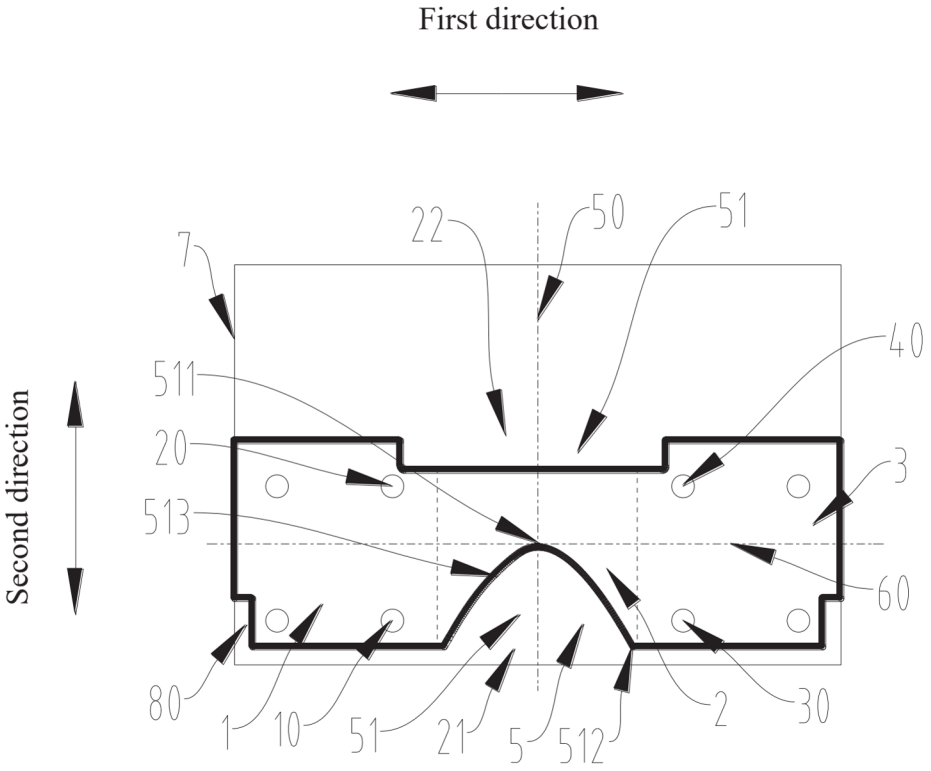

First direction
Second direction
7
22
50
51
40
511
20
3
513
60
80
1
10
51
21
5
512
2
30

FIG. 3

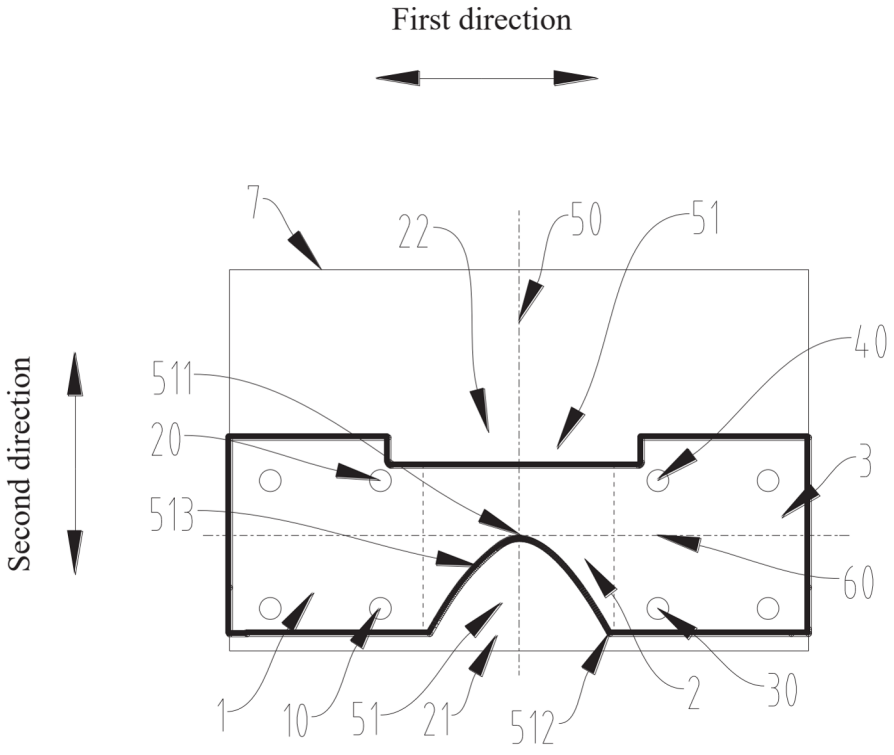

First direction
Second direction
7
22
50
51
40
511
20
3
513
60
1
10
51
21
512
2
30

FIG. 4

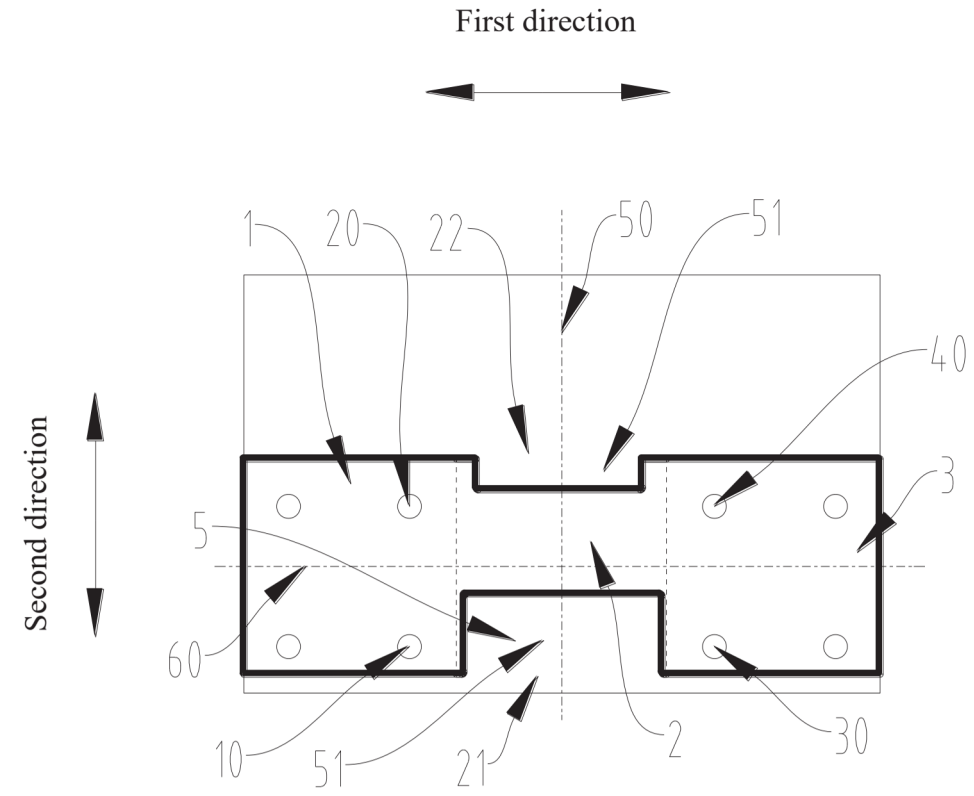

First direction
Second direction
1
20
22
50
51
40
3
5
60
10
51
21
2
30

FIG. 5

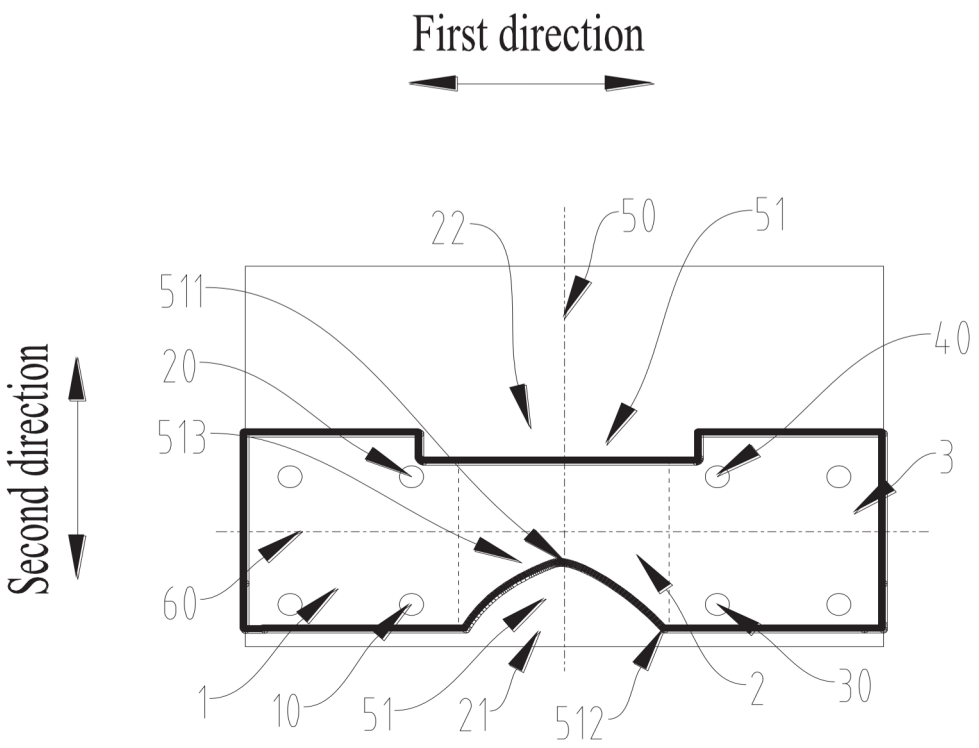

First direction
Second direction
22
50
51
511
20
513
40
3
60
1
10
51
21
512
2
30

FIG. 6

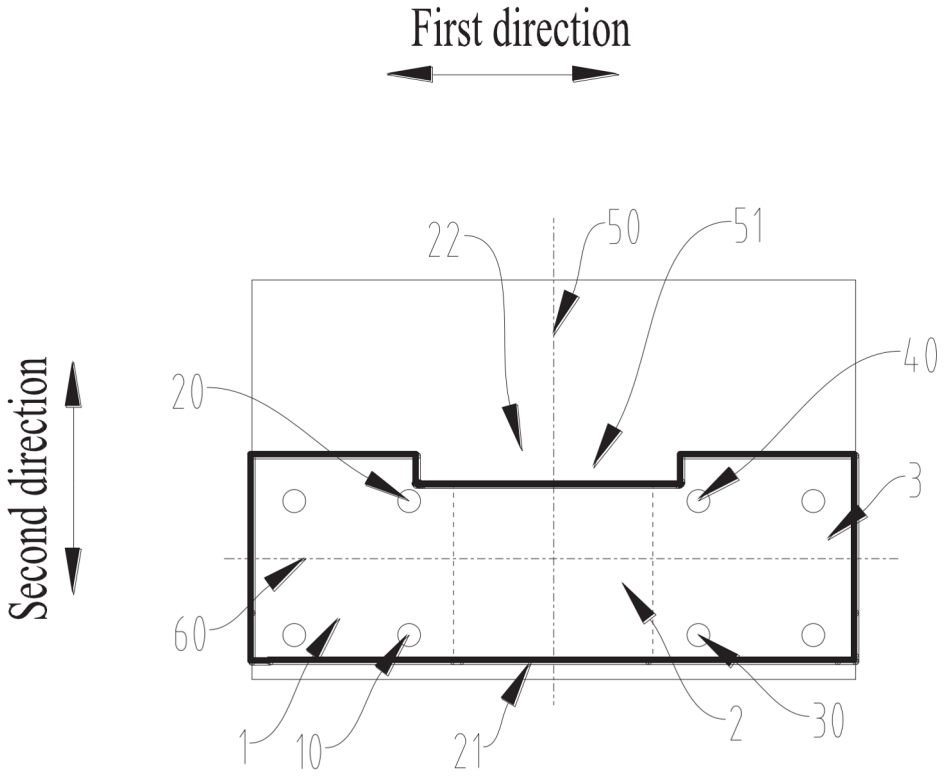

First direction
Second direction
22
50
51
40
20
3
60
1
10
21
2
30

FIG. 7

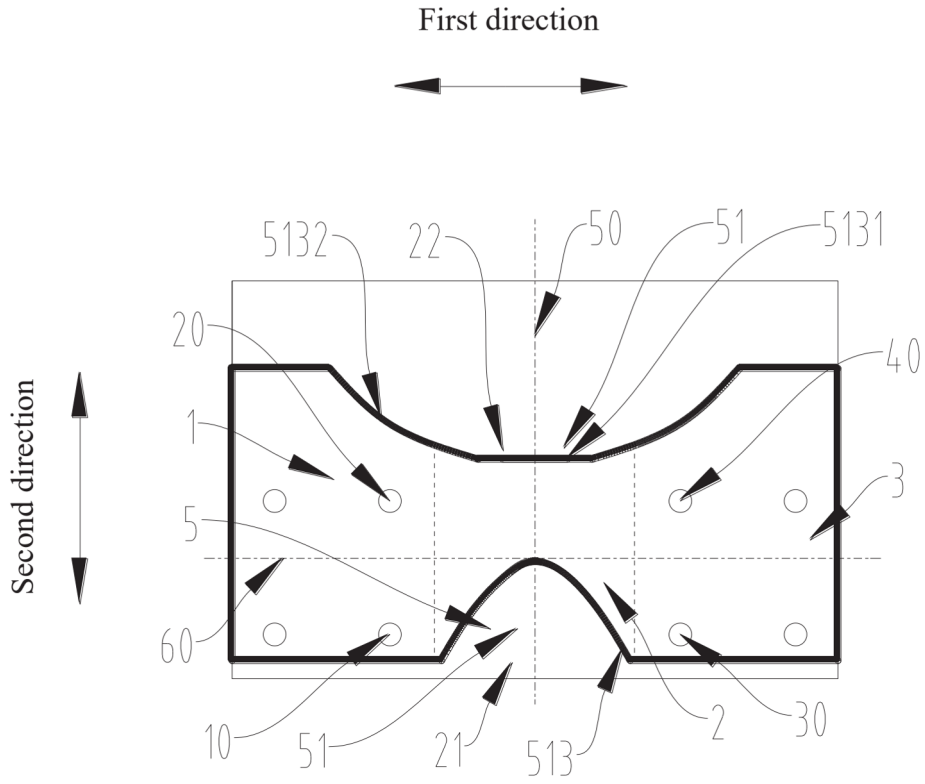

First direction
Second direction
5132
22
50
51
5131
20
40
1
3
5
60
10
51
21
513
2
30

FIG. 8

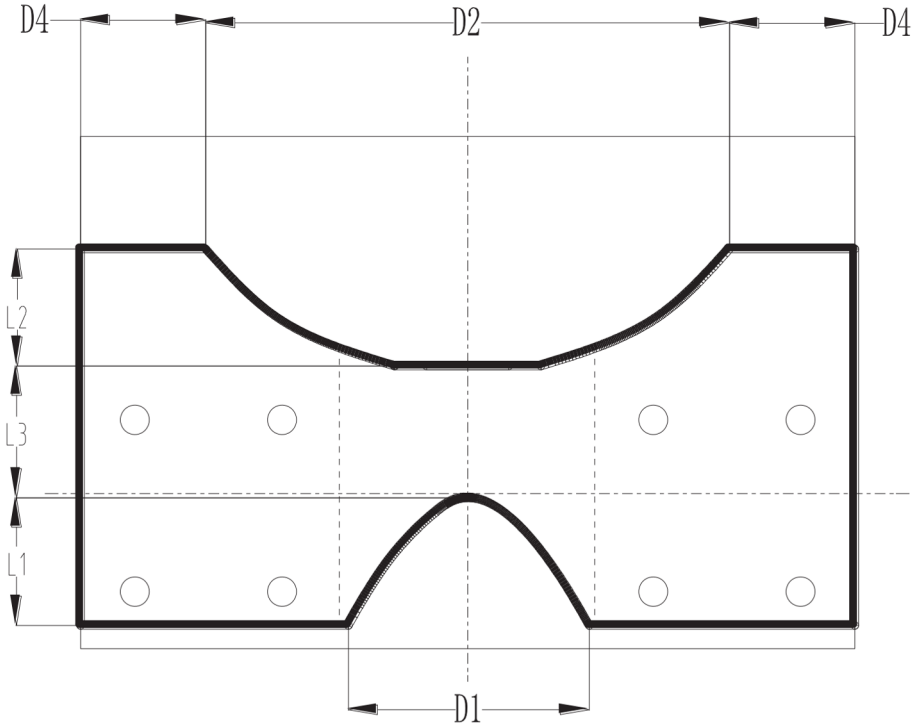

D4
D2
D4
L2
L3
L1
D1

FIG. 9

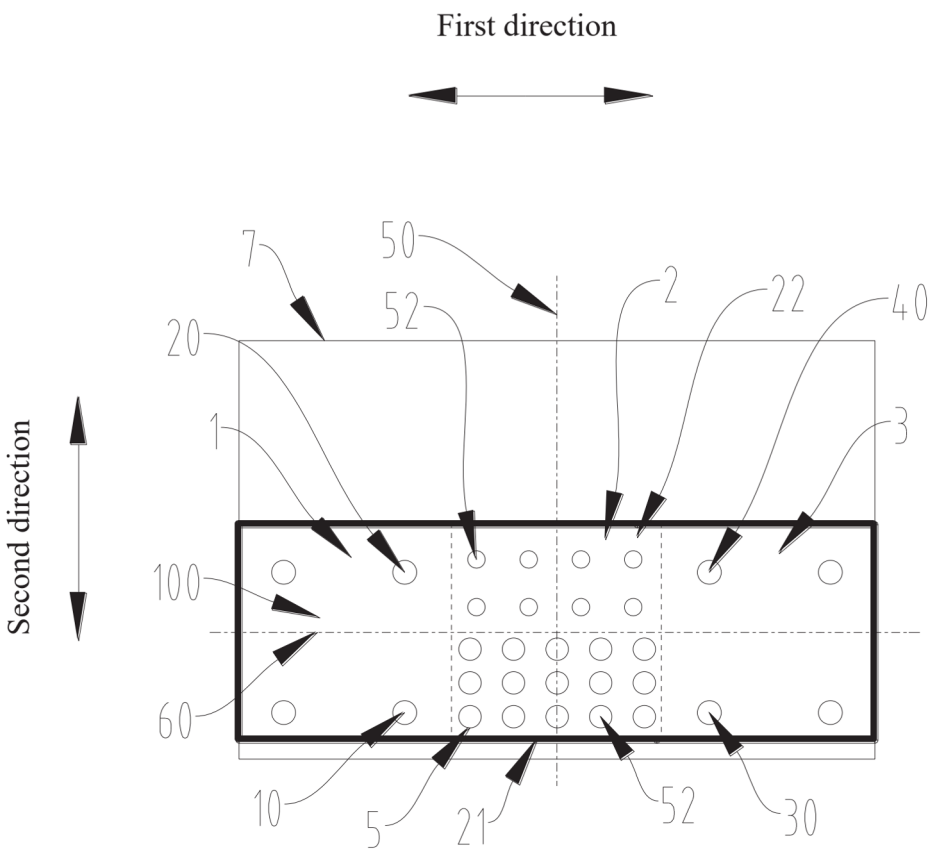

First direction
Second direction
7
50
52
2
22
40
20
1
3
100
60
10
5
21
52
30

FIG. 10

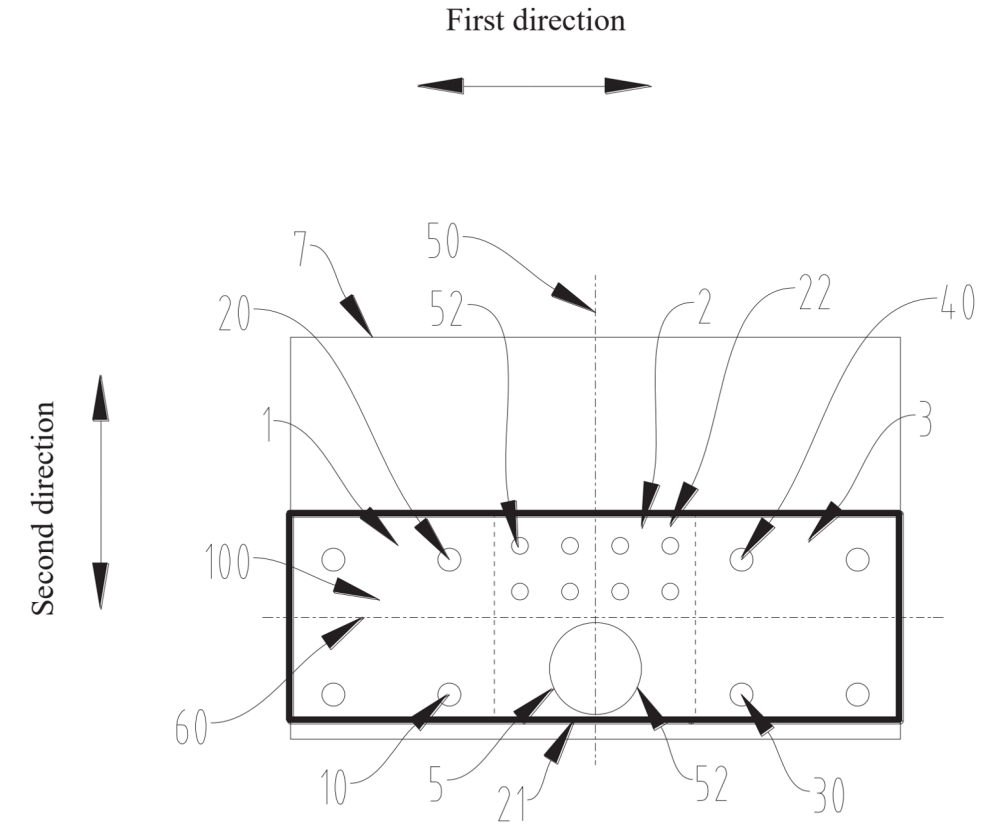

First direction
Second direction
7
50
20
52
2
22
40
1
3
100
60
10
5
21
52
30

FIG. 11

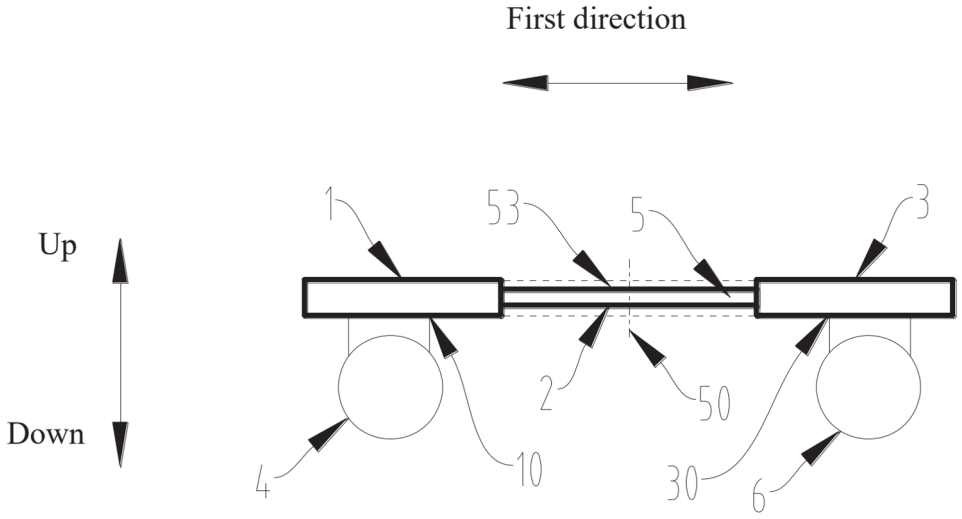

First direction
Up
Down
1
53
5
3
2
50
4
10
30
6

FIG. 12

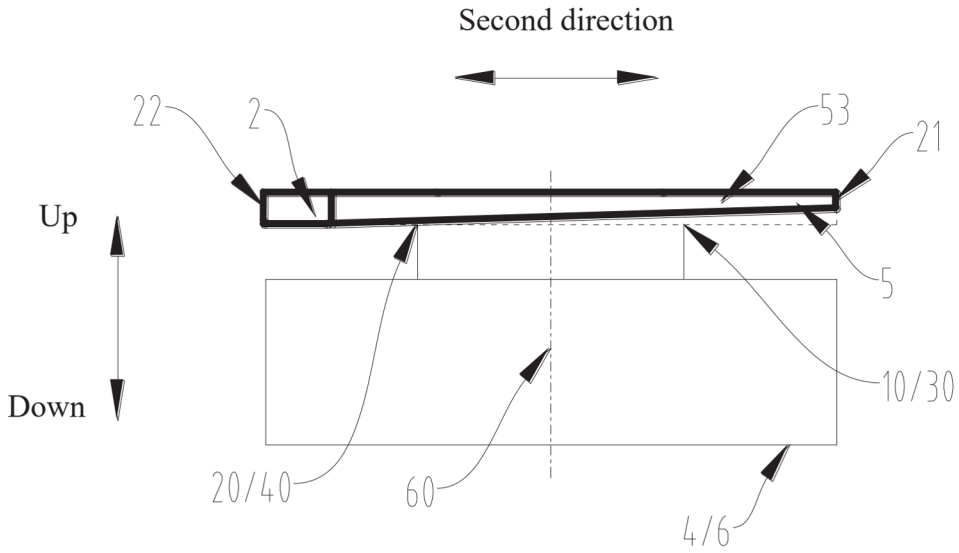

Second direction
22
2
53
21
Up
5
Down
10/30
20/40
60
4/6

FIG. 13

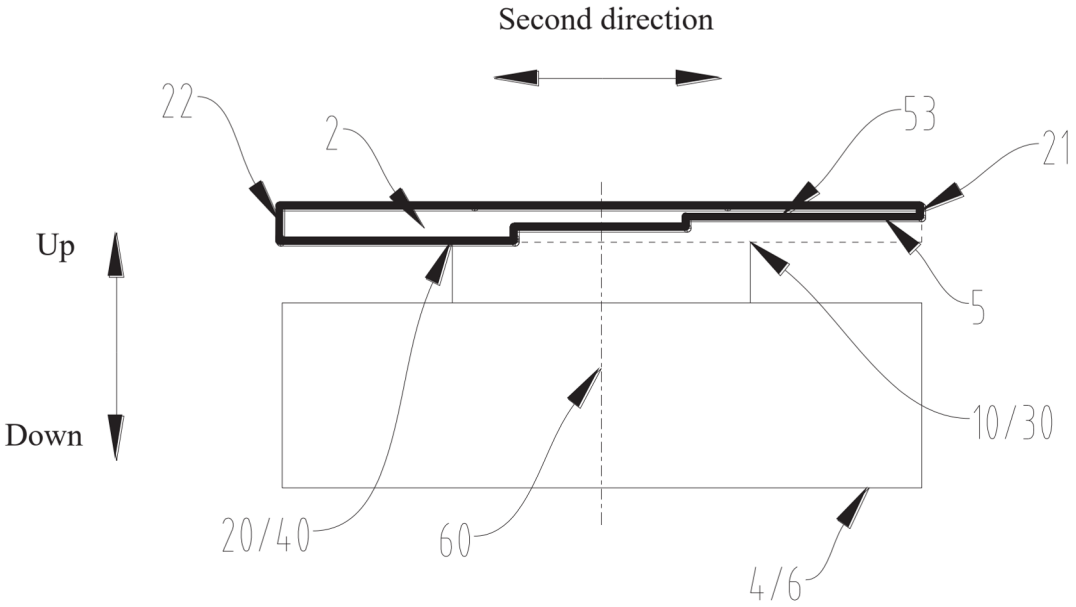

Second direction
22
2
53
21
Up
5
Down
10/30
20/40
60
4/6

FIG. 14

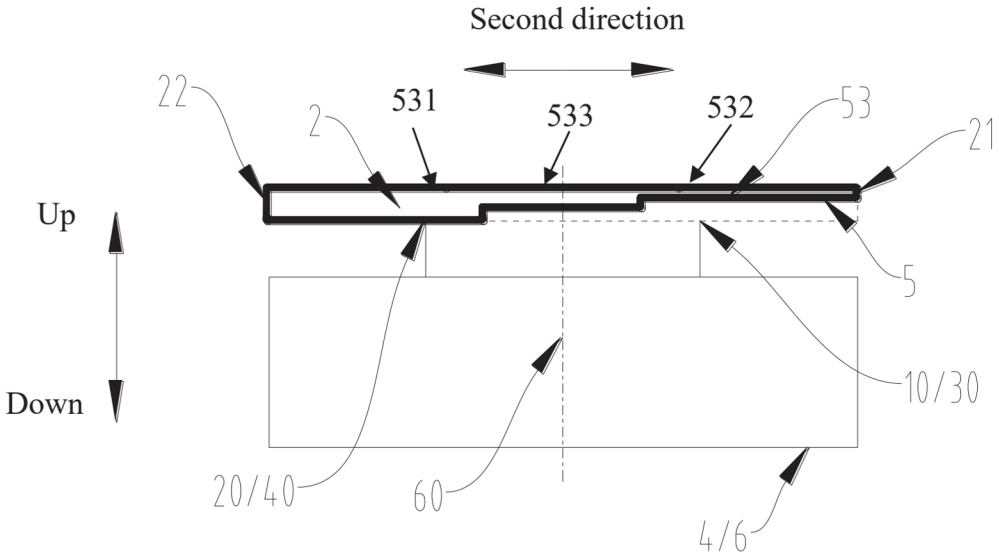

Second direction
22
2
531
533
532
53
21
Up
Down
5
10/30
20/40
60
4/6

FIG. 15

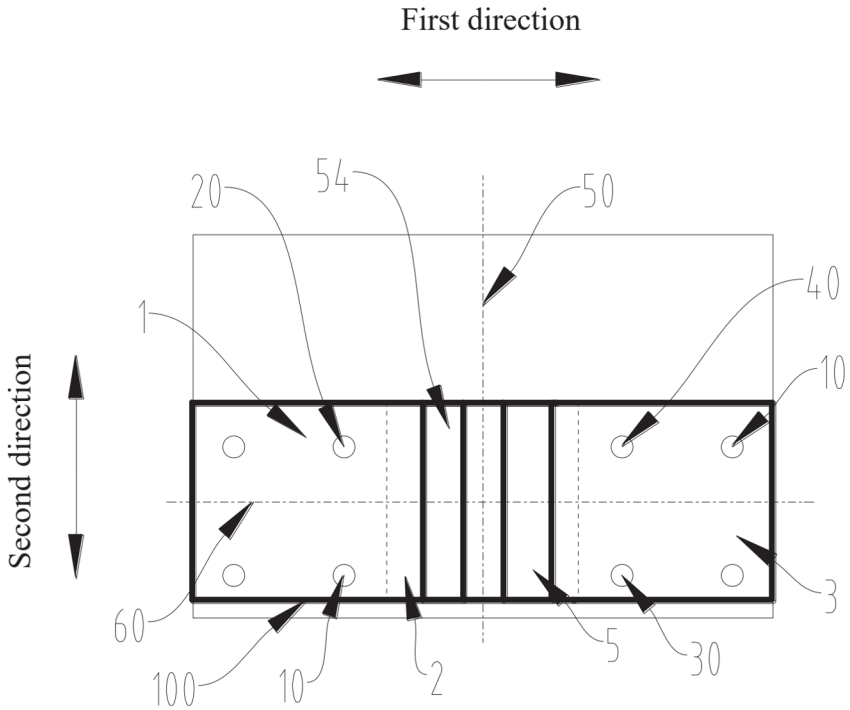

First direction
Second direction
20
54
50
1
40
10
60
100
10
2
5
30
3

FIG. 16

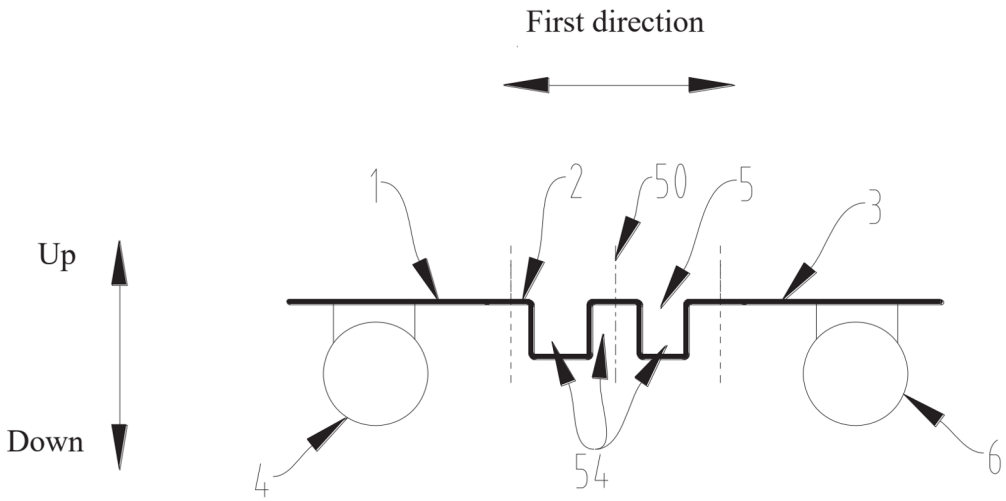



FIG. 17

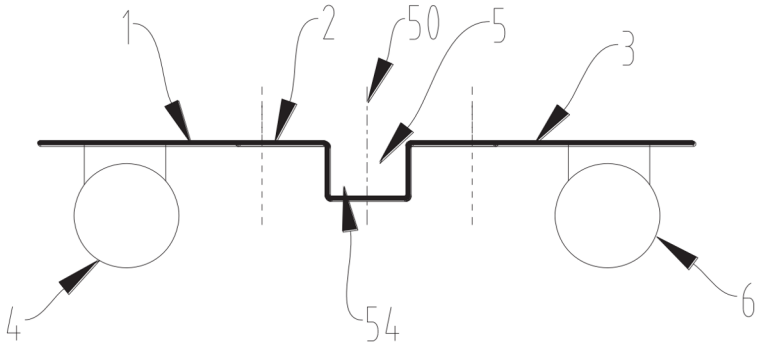



FIG. 18

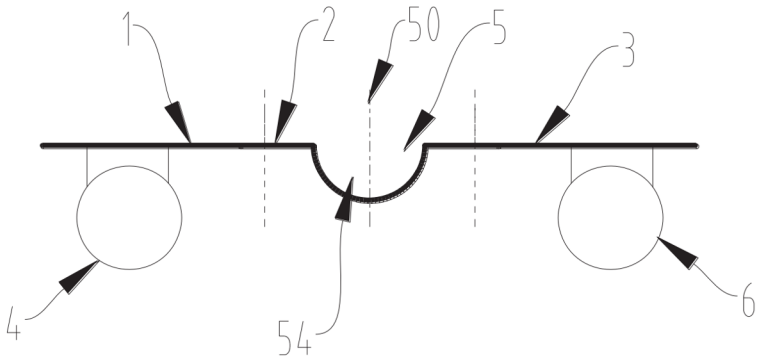



FIG. 19

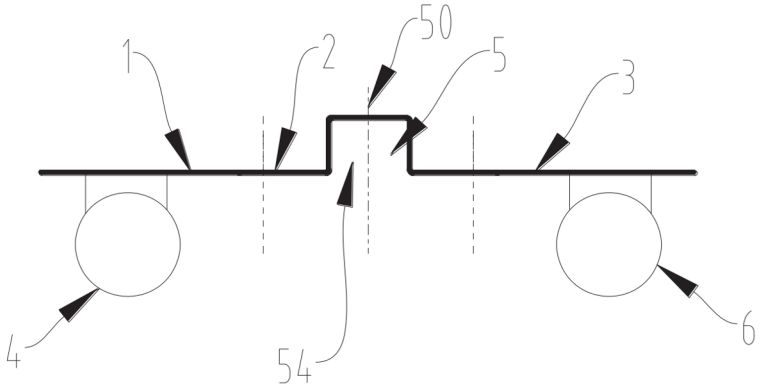



FIG. 20

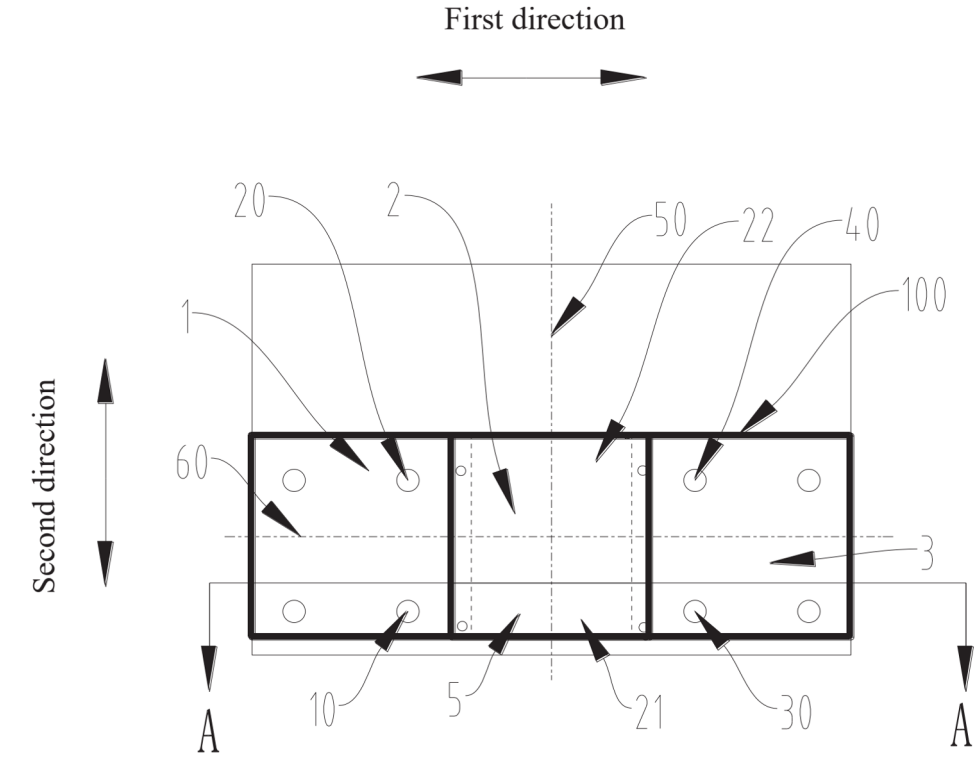

First direction
Second direction
20
2
50
22
40
100
1
60
3
10
5
21
30
A
A

FIG. 21

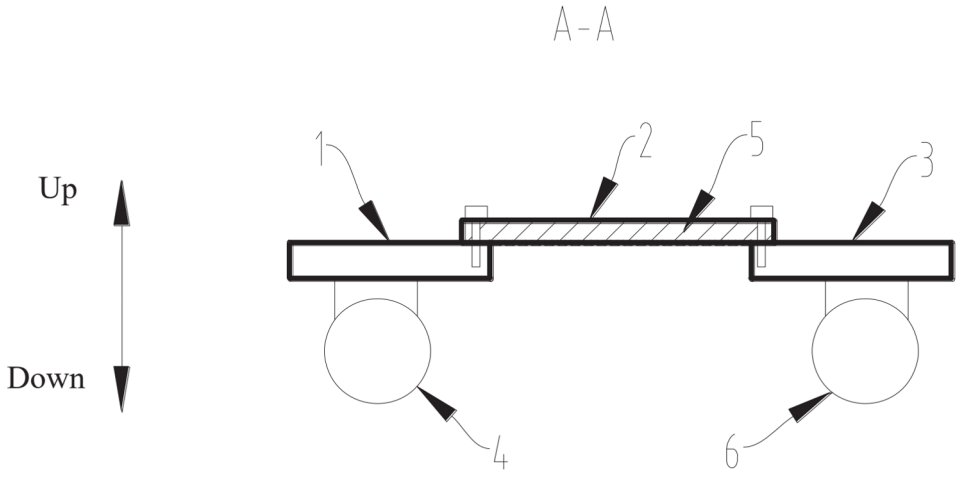

A-A
Up
Down
1
2
5
3
4
6

FIG. 22

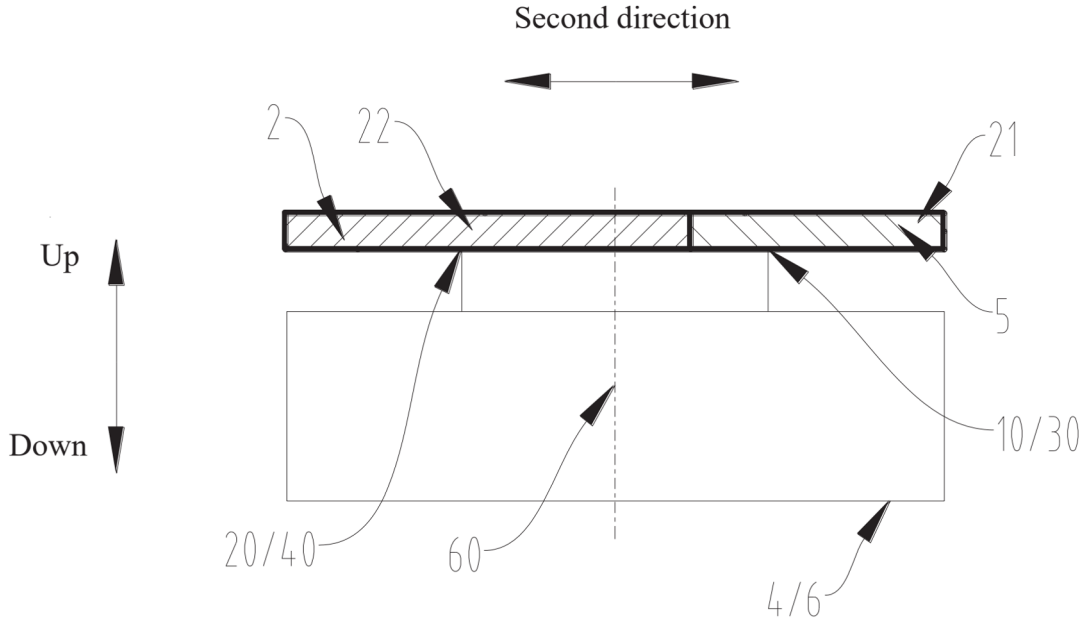



FIG. 23

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# EUROPEAN SEARCH REPORT

Application Number
EP 26 16 0031

## DOCUMENTS CONSIDERED TO BE RELEVANT

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| A | * the whole document * | 2-6 | |
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D06F

The present search report has been drawn up for all claims

| Place of search | Date of completion of the search | Examiner |
|---|---|---|
| Munich | 13 July 2026 | Stroppa, Giovanni |

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13-07-2026

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