

[TITLE OF THE DOCUMENT] SPECIFICATION

[TITLE OF THE INVENTION] MESSAGE APPARATUS

[Technical field]

[0001] The present invention relates to a message apparatus for
5 massaging user's body between the waist and buttock regions.

[Background Art]

[0002] An example of a message apparatus for massaging user's
waist and so forth is disclosed in Japanese Unexamined Patent
10 Publication JP-A 2013-75113 (Fig. 5). In JP-A 2013-75113 (Fig. 5),
there is disclosed a cushion having a built-in massager designed to
conform to the shape of the body surface of a user, for massaging a
wide body range and producing a variety of kneading effects.

15 Summary of the Invention

Problems to be solved by the Invention

[0003] The use of the cushion-type message apparatus as disclosed
in JP-A 2013-75113 (Fig. 5) may afford a certain level of waist massage.
However, from the standpoint of a user who wants to have the buttocks
20 or the side of the waist massaged, this message apparatus is not
adapted to achieve his/her desired massage.

[0004] The present invention has been devised in view of the
problem as mentioned supra, and accordingly an object of the present
invention is to provide a message apparatus for massaging user's body
25 between the waist and buttock regions, and more particularly to provide

a massage apparatus capable of massaging a body region to be treated (treatment target region) ranging from the side of the waist to the side of the buttocks of a user.

5 Means for solving the problem

[0005] In order to achieve the above object, the present invention takes the following technical measures.

That is, a massage apparatus pursuant to the present invention is built as a U-shaped massage apparatus comprising: a main body
10 having a built-in driving section; and a pair of extended portions formed so as to extend in leg form from both ends of the main body. In this construction, the paired extended portions are moved close to and away from each other in a widthwise direction under a driving force exerted by the driving section, for giving sandwich-style holding massage to a
15 region to be treated located between the paired extended portions.

[0006] In the invention, it is preferable that the main body is provided with a rotary shaft pointing in the widthwise direction, a driving section for rotatably driving the rotary shaft, and a conversion section for converting a rotative force exerted by the rotary shaft into
20 approaching/separating movement of the paired extended portions, and that the extended portion is attached to the conversion section in a manner such that the front end of the extended portion protrudes outwardly in the widthwise direction beyond the axial end of the rotary shaft.

25 In the invention, it is preferable that the driving section for

rotatably driving the rotary shaft is located centrally of the main body in the widthwise direction, and the rotary shaft is disposed so as to extend from the driving section in the widthwise direction, with its ends supported by bearing portions, and that the conversion section is disposed between the driving section and the bearing portion, and the extended portion has its base end connected to the conversion section, and has its front end protruding outwardly in the widthwise direction beyond the bearing portion.

[0007] In the invention, it is preferable that the front end of the extended portion serves as a treating body for giving sandwich-style holding massage to a body region of a user.

In the invention, it is preferable that the conversion section comprises: a rotary boss portion which is secured to the rotary shaft, and has an endless cam face inclined with respect to the rotary shaft formed at its periphery; an annular fit portion fitted to the periphery of the rotary boss portion for free sliding motion; and rotation restraining means for restraining the annular fit portion from rotating together with the rotary boss portion, and that the base end of the extended portion is secured to the annular fit portion.

[0008] In the invention, it is preferable that the main body has, aside from the extended portion, a treating member, and that the treating member is disposed so as to extend in the same direction as the extending direction of the extended portion while protruding from the main body.

In the invention, it is preferable that the treating member has a

treating element disposed at its front end, and the base end of the treating member is secured to the annular fit portion.

[0009] In the invention, it is preferable that the massage apparatus takes on a covered structure in which the main body and the paired
5 extended portions are covered with a cushion material, and that the back side of the covered structure in U form is arcuately curved.

Effect of the Invention

[0010] According to the massage apparatus of the present invention, it is possible to massage a region to be treated ranging from the side of
10 the waist to the side of the buttocks of a user effectively.

Brief Description of Drawings

[0011]

[Fig. 1] Figure 1 is a perspective view showing how a massage
15 apparatus in accordance with a present embodiment is to be used.

[Fig. 2] Figure 2 is a perspective view showing the appearance of the massage apparatus of the embodiment.

[Fig. 3] Figure 3 is a perspective view showing the internal structure of the massage apparatus of the embodiment.

20 [Fig. 4] Figure 4 is a plan view showing the internal structure of the massage apparatus of the embodiment.

[Fig. 5] Figure 5 is a view of the internal mechanism of the massage apparatus of the embodiment as seen from the front.

[Fig. 6] Figure 6 is a sectional view taken along the line A-A shown
25 in Fig. 5 (bottom sectional view).

[Fig. 7] Figure 7 is a view showing the structure of rotation restraining means.

Modes for Carrying out the Invention

[0012] Hereinafter, an embodiment of a massage apparatus pursuant to the present invention will be explained with reference to the drawings.

In the following description, directions as shown in the drawings such as Fig. 2, namely a front-rear direction, a right-left, or horizontal direction (widthwise direction), and a top-bottom, or vertical direction are used to illustrate a massage apparatus 1. The front-rear direction, the horizontal direction, and the vertical direction conform to a direction from the front to the rear of a user U wearing the massage apparatus 1 as shown in Fig. 1, a direction from the right to the left of the user U, and a direction from the top to the bottom of the user U, respectively.

As shown in Fig. 1, the massage apparatus 1 in accordance with the first embodiment is designed to be worn around the waist of the user U by him/herself. Specifically, the massage apparatus 1 is designed as a belt-like unit in the form of the letter U (or the letter C) as seen in plan view, with its lengthwise ends bent forward, and its lengthwise intermediate part curved so as to expand greatly backward. That is, the user U wears this massage apparatus 1 by inserting his/her waist into a space defined by the curve. The lengthwise ends of the massage apparatus 1 ("extended portions 4" that will hereafter be described) extend forwardly so as to reach the lateral sides of the body of the user U, for holding a body region to be treated (treatment target

region: the sides of user's waist, buttocks, etc.) from the right and the left in sandwich style (holding the region in the directions indicated by black arrows in Figs. 1 and 2) to massage the to-be-treated region.

[0013] Specifically, as shown in Figs. 3 to 7, the massage apparatus 1 comprises: a main body 3 having a built-in driving section 2; and a pair of extended portions 4, 4 formed so as to extend in leg form from both ends of the main body 3. The massage apparatus 1 is so designed that the paired extended portions 4, 4 are rocked in a holding direction (the directions indicated by arrows in Fig. 3) by exploiting a driving force produced in the main body 3.

Next, at first, the main body 3 and the extended portion 4 constituting the massage apparatus 1 will be described.

[0014] As shown in Figs. 3 and 5, the main body 3 is constructed by fitting a front housing (not shown in the figures) to a rear housing 6. The rear housing 6 has the shape of an inverted T when viewed from the front, and the front housing fitted to substantially the center of the rear housing 6 has the shape of the letter I when viewed from the front.

A rotary shaft 7 with its axis pointing in the widthwise direction (horizontal direction) is disposed in a lower part on the inner wall of the rear housing 6 constituting the main body 3 so as to pass through the interior of the front housing. Moreover, a conversion section 8 for converting a rotative force exerted by the rotary shaft 7 into approaching/separating movement of the paired extended portions 4, 4 is disposed on each of the left and right sides of the rotary shaft 7. In addition, a driving section 2 (electric motor) for rotatably driving the

above-described rotary shaft 7 is disposed on the upper side of the main body 3.

[0015] The driving section 2 comprises an electric motor having a downwardly-pointing drive shaft. At the tip of the drive shaft is disposed a worm gear (not shown) for rotating the rotary shaft 7.

As illustrated in detail in Figs. 5 and 6, a worm wheel 10 which engages with the above-described worm gear is located centrally of the rotary shaft 7 in the horizontal direction, and, a bearing portion (inner bearing 11) for supporting the rotary shaft 7 is disposed on each side of the worm wheel 10. Moreover, the ends of the rotary shaft 7 in the horizontal direction are each supported by a bearing portion (outer bearing 12). Disposed between the inner bearing 11 and the outer bearing 12 is the conversion section 8.

[0016] The worm wheel 10 is secured to the rotary shaft 7 for rotation together with the rotary shaft 7. In this construction, as the drive shaft is rotated, the rotary shaft 7 is rotated correspondingly.

The conversion sections 8, which are intended to convert a rotative motion of the rotary shaft 7 into a holding motion (rocking motion) of the extended portions 4, are designed to transmit a rotative motion of the rotary shaft 7 to the paired extended portions 4, for causing the paired extended portions 4 to move close to and away from each other. The conversion sections 8 include rotary boss portions 13L and 13R, respectively, that are disposed at the left and right end parts, respectively, of the rotary shaft 7 for unitary rotation with the rotary shaft 7.

[0017] The left-side and right-side rotary boss portions 13L and 13R are each a cylindrically-shaped member disposed on an axis concentric with the axis of the rotary shaft 7 for unitary rotation with the rotary shaft 7. The outer peripheries of the rotary boss portions 13L and 13R are provided with cylindrically-shaped endless inclined cam faces 14L and 14R, respectively, that are disposed on an axis inclined with respect to the axis of the rotary shaft 7. Annular fit portions 15L and 15R are externally fitted to the inclined cam faces 14L and 14R, respectively, for free rotation.

[0018] The left-side rotary boss portion 13L and the right-side rotary boss portion 13R have their respective inclined cam faces 14L and 14R inclined in different directions with respect to the axis of the rotary shaft 7. That is, for example, where the inclined cam face 14L of the left-side rotary boss portion 13L is inclined rightwardly in the widthwise direction, then the inclined cam face 14R of the right-side rotary boss portion 13R is inclined leftwardly in the widthwise direction. Thus, the inclined cam faces 14L and 14R are moved in a bilaterally symmetric manner.

[0019] The annular fit portion 15L, 15R is a ring-shaped member within which the rotary boss portion 13L, 13R can be fitted. That is, there is provided a pair of left-side and right-side annular fit portions 15L and 15R, and the annular fit portions 15L and 15R are externally fitted to the inclined cam faces 14L and 14R of the left-side and right-side rotary boss portions 13L and 13R, respectively, for free relative rotation. Moreover, there is provided a pair of treating members 16L

and 16R, which are disposed in the upper parts of the outer peripheries of the annular fit portions 15L and 15R, respectively, for giving kneading massage to a treatment target region located in a position different from the position of the treatment target region to be treated by the extended portion 4, for example, user's back and waist. In the massage apparatus 1 of the present embodiment, the paired treating members 16L and 16R are, like the extended portions 4, disposed so as to protrude forwardly and outwardly of the main body 3, and extend in the same direction as the extending direction of the extended portions 4. A spherical kneading ball (treating element) is attached to the front end of the treating member 16L, 16R.

[0020] As shown in Figs. 6 and 7, on the rear-end side of the annular fit portion 15 is disposed rotation restraining means 17 for restraining the annular fit portion 15L, 15R from rotating together with the rotary boss portion 13L, 13R. The rotation restraining means 17 is composed of a cylindrical restraint projection 18 provided in the annular fit portion 15L, 15R, and a restraint groove 19 formed at the inner wall surface of the rear housing 6.

The restraint projection 18 is situated at the outer periphery of that part of the rear-end side of the annular fit portion 15 which is clear of the above-described treating member 16 (in this embodiment, the outer periphery of the rear end). Moreover, the restraint projection 18 has its projected point fitted in the restraint groove 19 for free movement along the direction of formation of the restraint groove 19. Since the restraint groove 19 is formed along the horizontal direction

(the axial direction of the rotary shaft 7), it follows that the restraint projection 18 can be guidedly moved in the horizontal direction.

[0021] In the rotation restraining means 17 thusly constructed by fitting the restraint projection 18 into the restraint groove 19 provided at the inner wall surface of the rear housing 6, the restraint projection 18, while being able to move horizontally, is restrained against vertical movement. Therefore, the annular fit portion 15L, 15R can be rocked from side to side in the horizontal direction while being restrained from rotating together with the rotary boss portion 13. This makes it possible to convert the rotative motion of the rotary shaft 7 into a horizontal rocking motion of the annular fit portion 15L, 15R.

[0022] Meanwhile, the extended portions 4, which embody a structural feature of the massage apparatus 1 of the present invention, are horizontally elongated flat-plate members that perform sandwich-style holding massage on a to-be-treated region, such as the waist and buttocks, of the user U by being rockably moved close to and away from each other under the driving force of the rotary shaft 7 transmitted thereto via the above-described conversion section 8.

The extended portion 4 is configured so that it extends outwardly in the widthwise direction from the annular fit portion 15 of the conversion section 8 disposed at each end (axial end) of the rotary shaft 7 in the horizontal direction, and is then bent forwardly from the widthwise outer side, with the tip of the bend protruding forwardly through the widthwise outer side.

[0023] Specifically, as shown in Fig. 6, for example, where the

right-side extended portion 4 is concerned, the right-hand part of the above-described rotary shaft 7 is supported by two bearing portions, namely the inner bearing 11 disposed inwardly in the widthwise direction and the outer bearing 12 spaced outwardly a short distance away from the inner bearing 11 in the widthwise direction. In a region between these two bearings 11 and 12 spaced apart in the widthwise direction by a short distance, the rotary boss portion 13R secured to the rotary shaft 7 is disposed, and, the annular fit portion 15R is disposed on the outer-periphery side of the rotary boss portion 13R. Moreover, the base-end side of the above-described right-side extended portion 4 is secured to the end face of the right side (widthwise outer side) of the annular fit portion 15R.

[0024] Specifically, the base end of the extended portion 4 protrudes outwardly in the widthwise direction from the right-side end face of the annular fit portion 15R, is bent forwardly at a steep angle from the tip of the protrusion, and is whereafter extended while being gently curved toward the front (in Fig. 4, the extent of outward protrusion is represented as a length "X").

As shown in the drawings such as Figs. 3 to 5, the extended portion 4 is so shaped that the front-end side is larger in width than the base-end side, and this broad front-end side serves as a treating body for treating a to-be-treated region. Furthermore, the extended portion 4 is disposed so that its front end protrudes outwardly in the widthwise direction beyond the outer bearing 12 (in other words, the end of the rotary shaft 7).

[0025] As shown in Fig. 2, in the interest of enhancement in the effect of massage to a to-be-treated region such as the lateral sides of user U's waist and buttocks, for example, dimple-like projections 22 are formed in that part of a cover 21 which corresponds to the treating body
5 20 on an as needed basis.

Although the above description deals with the right-side extended portion 4, the left-side extended portion 4 is also provided with constituent components that play the same roles as in the right-side extended portion 4. The components of the right-side extended portion
10 4 and the components of the left-side extended portion 4 are disposed bilaterally symmetrically in respect of only their arrangement and movement.

[0026] In order to provide sufficient massage effect to a to-be-treated region such as the waist and buttocks, the extended portion 4
15 should preferably be elongated in the horizontal direction so as to cover a wider range of the buttocks. However, the longer is the extended portion 4, and also the greater is the extent to which the front end of the extended portion 4 protrudes outwardly in the widthwise direction, then the larger is torsional moment applied to the extended portion 4
20 during massaging treatment, which may result in occurrence of deformation, for example, the extended portion 4 yields to the torsional moment and consequently spreads out excessively in the widthwise direction, or the rotary shaft 7 yields to the torsional moment and is consequently warped forwardly.

25 [0027] In view of the foregoing, in the massage apparatus 1 of the

present invention, the inner bearing 11 and the outer bearing 12 are arranged at a narrow spacing on each of the left and right sides of the rotary shaft 7 to which is attached the extended portion 4 via the conversion section 8, so that the rotary shaft 7 which bears the
5 extended portion 4 can be supported in a short span. This helps protect the rotary shaft 7 against deformation.

Moreover, as indicated by a round mark (numeral 23) in Fig. 6, in the massage apparatus 1 of the present invention, the base end of the extended portion 4 is positioned so as to graze a somewhat frontward
10 part of the above-described outer bearing 12. So long as the base end of the extended portion 4 and the outer bearing 12 are arranged close to each other, when the extended portion 4 yields to the torsional moment and is consequently about to expand in the widthwise direction, the base-end side of the extended portion 4 is brought into contact with the
15 outer bearing 12, thereby protecting the extended portion 4 against bending, as well as avoiding excessive application of torsional moment to the rotary shaft 7. That is, the base-end side of the extended portion 4 and the outer bearing 12 serve as a stopper mechanism 23 for preventing the extended portion 4 from undergoing bending under
20 torsional moment. Even if the extended portion 4 is widened and the stopper mechanism 23 operates during massaging treatment, since the stopper mechanism 23 is covered with a cushion material such as urethane (refer to Figs. 2 and 3, details will hereafter be described), it never occurs that the user comes in contact with the stopper mechanism
25 23, wherefore user's safety can be ensured.

[0028] Next, a description will be given below as to a method to massage a to-be-treated region such as user's waist with use of the massage apparatus 1 thus far described, in other words, how the massage apparatus 1 of the present invention is to be operated.

5 For example, in order to massage a to-be-treated region such as user's waist and buttocks with use of the above-described massage apparatus 1, at first, the user U wears the massage apparatus 1 by setting it around his/her waist.

[0029] The next step is to align the extended portion 4 (treating
10 body 20) with a desired body region to be treated, such as the waist or buttocks, and actuate the electric motor of the massage apparatus 1. When it is desired to attain an enhanced massage effect, it is advisable for the user to receive massaging treatment while being seated in a chair or the like so that the treating body 20 and the treating member
15 16 can be firmly pressed against the to-be-treated region.

Upon driving the driving section 2 (electric motor) in that way, the drive shaft of the driving section 2 is rotated, and the resultant rotatably driving force is transmitted to the rotary shaft 7 through the worm gear and the worm wheel 10, thereby causing the rotary shaft 7
20 to rotate about an axis pointing in the horizontal direction. As the rotary shaft 7 is thusly rotated, the inclined cam face 14 of the rotary boss portion 13 is rotated about an axis inclined with respect to the axis of rotation of the rotary shaft 7. In consequence, the annular fit portion 15 externally fitted to the inclined cam face 14 of the rotary
25 boss portion 13 is subjected to a force which causes it to rotate about

an axis inclined with respect to the axis of the rotary shaft 7.

[0030] However, the annular fit portion 15 is provided with the above-described rotation restraining means 17, wherefore the restraint projection 18 of the rotation restraining means 17 is fitted in the restraint groove 19 formed at the inner wall surface of the rear housing 6 to restrain relative rotation of the annular fit portion 15. Thus, it never occurs that the annular fit portion 15 is rotated together with the rotary boss portion 13, and, the restraint projection 18 is guidedly moved horizontally along the direction of formation of the restraint groove 19, thereby permitting a horizontal rocking motion of the annular fit portion 15. That is, as the rotary shaft 7 is rotated, the annular fit portion 15 is rocked in the horizontal direction, and also the extended portion 4 disposed at the horizontal end face of the annular fit portion 15 is rocked in the horizontal direction correspondingly.

[0031] As has already been described, since the inclined cam faces 14 of the left-side and right-side rotary boss portions 13 are inclined in different directions in a bilaterally symmetric manner, it follows that the left-side and right-side annular fit portions 15 are rocked in different directions in a bilaterally symmetric manner, wherefore the left-side and right-side extended portions 4 are rocked reversely in the horizontal direction. This makes it possible to apply a force to a to-be-treated region intermittently in a direction to hold the region in sandwich style, and thereby massage the to-be-treated region.

Accordingly, the massage apparatus 1 of the present invention is capable of massaging a to-be-treated region ranging from the waist to

the buttocks of the user U, in particular, a to-be-treated region ranging from the side of the waist to the side of the buttocks, with a high degree of effectiveness.

[0032] As shown in Fig. 2, the main body 2 and the extended portion 4 thus far described are covered with a cushion material such as urethane, and, in addition, a cover 21 such as an artificial leather is placed on the cushion material so as to cover the apparatus as a whole. Moreover, that part of the apparatus which faces the to-be-treated region of the user U, in other words, the treating body 20 disposed at the front end of the extended portion 4 is provided with projections or the like to achieve enhancement in massage effect.

[0033] Moreover, the massage apparatus 1 of this embodiment takes on a covered structure in which the main body 3 and the paired extended portions 4, 4 are covered with the cushion material, and, the back side of the covered structure in U form is arcuately curved. Thus, where the covered structure is so configured that the back side is arcuately curved in U-form, the user is able to change his/her posture, while lying down, with the massage apparatus 1 on; that is, the user is able to have massaging treatment in a lying-down posture. In consequence, the convenience of the massage apparatus 1 can be improved.

[0034] It is noted that, as to matters that are not specified in the embodiment as disclosed hereinabove, for example, working conditions, operating conditions, and the dimensions and weights of constituent components, those that do not depart from the scope of the invention

fulfilled by those skilled in the art but are easily conceivable by persons having ordinary skill in the art are adopted.

For example, although the massage apparatus 1 of the present invention has been described as portable massage equipment in the
5 above-described embodiment, the massage apparatus 1 of the present invention can be mounted in a chair-type massager.

CLAIMS

1. A U-shaped massage apparatus comprising:

a main body having a built-in driving section; and

5 a pair of extended portions formed so as to extend in leg form from both ends of said main body,

said paired extended portions being moved close to and away from each other in a widthwise direction under a driving force exerted by said driving section, for giving sandwich-style holding massage to a region to
10 be treated located between said paired extended portions.

2. The massage apparatus according to claim 1,

wherein said main body is provided with a rotary shaft pointing in the widthwise direction, a driving section for rotatably driving said
15 rotary shaft, and a conversion section for converting a rotative force exerted by said rotary shaft into approaching/separating movement of said paired extended portions,

and wherein said extended portion is attached to the conversion section in a manner such that a front end of said extended portion
20 protrudes outwardly in the widthwise direction beyond an axial end of the rotary shaft.

3. The massage apparatus according to claim 1,

wherein the driving section for rotatably driving the rotary shaft is
25 located centrally of said main body in the widthwise direction, and the

rotary shaft is disposed so as to extend from said driving section in the widthwise direction, with its ends supported by bearing portions, and, the conversion section is disposed between said driving section and the bearing portion,

5 and wherein said extended portion has its base end connected to said conversion section, and has its front end protruding outwardly in the widthwise direction beyond said bearing portion.

4. The massage apparatus according to claim 2 or 3,

10 wherein the front end of said extended portion serves as a treating body for giving sandwich-style holding massage to a body region of a user.

5. The massage apparatus according to any one of claims 2 to 4,

15 wherein said conversion section comprises: a rotary boss portion which is secured to the rotary shaft, and has an endless cam face inclined with respect to the rotary shaft formed at its periphery; an annular fit portion fitted to a periphery of said rotary boss portion for free sliding motion; and rotation restraining means for restraining the
20 annular fit portion from rotating together with said rotary boss portion,

 and wherein the base end of the extended portion is secured to said annular fit portion.

6. The massage apparatus according to any one of claims 1 to 5,

25 wherein said main body has, aside from said extended portion, a

treating member,

and wherein said treating member is disposed so as to extend in the same direction as the extending direction of said extended portion and protrude from said main body.

5

7. The massage apparatus according to claim 6,

wherein said treating member has a treating element disposed at its front end, and a base end of said treating member is secured to said annular fit portion.

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8. The massage apparatus according to any one of claims 1 to 7,

wherein there is provided a covered structure in which the main body and the paired extended portions are covered with a cushion material,

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and wherein a back side of said covered structure in U form is arcuately curved.