SPECIFICATION

TITLE OF THE INVENTION

MASSAGE DEVICE

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to a massage device suited for the lower legs.

Description of the Related Art

There is known a massage device that includes paired right and left massage members arranged to sandwich a therapeutic target such as the lower leg (the calf or foot) therebetween and a pressing member arranged between the paired right and left massage members, as disclosed in Japanese Patent No. 3377195.

The paired right and left massage members, which are driven to approach or separate from each other, repeatedly do pressing of and reduce the pressing of the therapeutic target from right and left sides, respectively, thereby performing a kneading massage operation.

On the other hand, the pressing member repeatedly does pressing of and reduces the pressing of a different surface (corresponding to the sole of the foot or the like in the case where the therapeutic target is the foot) from those massaged by the paired right and left massage

members of the therapeutic target sandwiched between the right and left massage members, thereby performing an acupressure massage operation.

A driving mechanism included in the massage device disclosed therein includes a rotary shaft provided in a direction of passing through between the paired right and left massage members, a drive unit driving the rotary shaft to rotate, paired right and left transform units transforming a rotational force of the rotary shaft into approach-separation operation performed by the paired right and left massage members, and an eccentric rotor provided to be integrally rotatable with the rotary shaft so as to transmit the rotational force of the rotary shaft to the pressing member.

Patent Literature 1: Japanese Patent No. 3377195

SUMMARY OF THE INVENTION

The driving mechanism provided in the conventional massage device, of which driving source is rotation of a rotary shaft, is intended to drive the paired right and left massage members to perform the massage operation via the paired right and left transform units and to drive the pressing member to perform the massage operation via the eccentric rotor. That is, the massage operation by the paired right and left massage members and that by

the pressing member are monotonous operation performed on the therapeutic target as a combination of always the same operation patterns. Due to this, the feel of massage obtained by a user is also monotonous.

Furthermore, even in the case where, after the right and left massage members sandwich the therapeutic target therebetween and press therapeutic target from both the right and left sides of the therapeutic target, and the pressing member presses the therapeutic target at timing of loosening the sandwiching state, the therapeutic target escapes in a direction away from the pressing member. Due to this, the massage operation performed by the pressing member is not sufficiently transmitted to the therapeutic target. As a result, the pressing member is often unable to effectively perform the massage operation on the therapeutic target.

The present invention has been achieved in view of the aforementioned circumstances. It is an object of the present invention to provide a lower leg massage device performing massage operation by paired right and left massage members and massage operation by a pressing member and to enable the pressing member to perform effective massage operation.

To attain the object, the present invention takes the following measures. According to one aspect of the

present invention, a massage device includes: paired right and left massage members arranged to sandwich a therapeutic target; a pressing member arranged between the paired right and left massage members; a first driving mechanism driving the paired right and left massage members to approach and separate from each other; and a second driving mechanism driving the pressing member to operate to press the therapeutic target, wherein the massage device further includes a control unit controlling the second driving mechanism to drive the pressing member to repeatedly press the therapeutic target while controlling the first driving mechanism to drive the paired right and left massage members to be kept to be proximate to each other.

It is preferable that the pressing member includes a spinning rotor rotating about a shaft center set in a direction of passing through between the paired right and left massage members, and that a pressing unit pressing the therapeutic target is provided on the spinning rotor.

It is preferable that the first driving mechanism includes: a rotary shaft provided in the direction of passing through between the paired right and left massage members; a driving motor driving the rotary shaft to rotate; and paired right and left transform units

transforming a rotational force of the rotary shaft into approach-separation operation performed by the paired right and left massage members, and that the second driving mechanism drives the spinning rotor of the pressing member to be rotatable integrally with the rotary shaft of the first driving mechanism.

It is preferable that the control unit includes a number-of-revolutions measuring unit measuring number of revolutions of the driving motor, and that the control unit controls the first driving mechanism and the second driving mechanism based on a measurement result of the number-of-revolutions measuring unit.

It is preferable that the control unit controls the second driving mechanism to drive the pressing member so that the spinning rotor reciprocates and rotates in front-rear direction at a rotational angle less than 360 degrees in a state in which the pressing unit contacts the therapeutic target.

By using the massage device according to the present invention, the pressing member arranged between the paired right and left massage members can perform effective massage operation (particularly for pressing the sole of the foot).

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a front perspective view of an exterior of a massage device according to a first embodiment of the present invention;

Fig. 2 is a front perspective view of an internal structure of the massage device according to the first embodiment;

Fig. 3 is a back enlarged perspective view of the internal structure of the massage device according to the first embodiment;

Figs. 4A and 4B are front views of the internal structure of the massage device according to the first embodiment, wherein Fig. 4A shows that right and left massage members are at release positions and Fig. 4B shows that right and left massage members are at sandwiching positions;

Fig. 5A is a cross-sectional view showing a position of the pressing member at the release positions, and Fig. 5B is a cross-sectional view showing a position of the pressing member when the right and left massage members at the sandwiching positions;

Fig. 6 is a timing chart of massage operation performed by the massage device according to the first embodiment; and

Fig. 7 is a cross-sectional perspective view of an internal structure of a massage device according to a

second embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

Embodiments of the present invention are described hereinafter referring to the accompanying drawings.

[FIRST EMBODIMENT]

Figs. 1 to 6 illustrate a massage device according to a first embodiment of the present invention.

A massage device 1 according to the first embodiment is targeted at both right and left legs of a user, and configured to be able to simultaneously perform kneading massage and acupressure massage, which is something like a linear motion, on both a calf L and a foot F that constitute each of the right and left lower legs.

The massage device 1 configured as stated above includes a control unit 3 that controls paired right and left massage members 14 and 15 performing the kneading massage and a pressing member 16 performing the acupressure massage to perform the respective massages in novel operation patterns different from those of conventional massage devices.

In the specification of the present application, it is defined that the "calf L" is a part of the lower leg of a human below the knee and above the ankle, and that the "foot F" is a part of the lower leg below the

ankle. It is also defined herein that an X direction shown in Fig. 1 is a front-rear direction of the massage device 1, a Y direction is a horizontal (width) direction of the massage device 1, and that a Z direction is a vertical direction of the massage device 1.

The massage device 1 according to the first embodiment includes a casing 2 that is quadrangular in a front view and boot-shaped in a side view. Paired right and left therapeutic recesses 4 open forward and upward are juxtaposed on a front surface of the casing 2 to be away from each other. Linings 5 that are elastic, flexible, and appropriately air-permeable are provided in the right and left therapeutic recesses 4, respectively.

As shown in Fig. 2, a support frame 8 that is L-shaped in a side view and that includes a base frame 6 and a back frame 7 upright on a rear end of the base frame 6 is provided in the casing 2. The base frame 6 is equipped with a horizontal massage mechanism 10 whereas the back frame 7 is equipped with a vertical massage mechanism 11. Note that appellation of "horizontal" and "vertical" as in the horizontal massage mechanism 10 and back massage mechanism 11 are given only for the sake of convenience in the specification and not intended to limit usage states of the massage device 1.

The horizontal massage mechanism 10 is described first.

The horizontal massage mechanism 10 includes the paired right and left massage members 14 and 15 juxtaposed to be horizontally away from each other to the extent that the foot F can be fitted into between the paired right and left massage members 14 and 15, the pressing member 16 arranged between the paired right and left massage members 14 and 15, a first driving mechanism 17 driving the paired right and left massage members 14 and 15 to approach and separate from each other, and a second driving mechanism 18 driving the pressing member 16 to operate.

The right and left massage members 14 and 15 are paired and two pairs of right and left massage members 14 and 15 are provided as a whole to correspond to the right and left therapeutic recesses 4 of the casing 2, respectively. Each of the massage members 14 and 15 is formed into an upright plate and made of a material having elasticity in thickness direction. Cushion materials, covering materials or the like for relaxing the user's feel of contact of the foot F with the massage members 14 and 15 are provided on opposing inner surfaces of the massage members 14 and 15, respectively.

The first driving mechanism 17 of the horizontal

massage mechanism 10 drives the paired right and left massage members 14 and 15 to reciprocate between sandwiching positions (see Fig. 4B) and release positions (see Fig. 4A) with respect to the foot F fitted into between the massage members 14 and 15, thereby applying the kneading massage operation on the foot F. This first driving mechanism 17 is designed to simultaneously drive the two pairs of massage members 14 and 15.

The first driving mechanism 17 includes a rotary shaft 20 provided in a direction (horizontal direction) of passing through between the massage members 14 and 15, a drive motor 21 (an electric motor) driving this rotary shaft 20 to rotate, and paired transform units 25, 25 transforming a rotational force of the rotary shaft 20 into massage operation performed by the massage members 14 and 15.

The drive motor 21 is switchable between a positive-rotation driving mode and a reverse-rotation driving mode, and transmits rotational driving force to the rotary shaft 20 via a decelerator 26 that includes a worm gear and a worm wheel engaged with the worm gear.

Each of the transform units 25 is arranged in a portion in which the rotary shaft 20 passes through the massage members 14 and 15, and includes a tilt rotor (not shown) fixedly skewered into the rotary shaft 20 and

rotating integrally with the rotary shaft 20. This tilt rotor is fitted into a rotor storage recess provided in each of the massage members 14 and 15 via a bearing externally attached to an outer circumference of the tilt rotor. A rotatable action of the bearing keeps each of the massage members 14 and 15 in a state of being rotatable relatively to the rotary shaft 20.

Furthermore, each transform unit 25 is structured to engage a restriction protrusion (not shown) protruding downward from each of the massage members 14 and 15 with a hole (not shown) that is formed in the base frame 6 of the support frame 8 and that is horizontally long. Engagement of the restriction protrusion with the horizontally long hole prevents each of the massage members 14 and 15 from being driven to rotate along with the tilt rotor. That is, when the rotary shaft 20 rotates, the tilt rotor generates oscillation according to a tilt component around the rotary shaft 20 and only an oscillation component at this time is transmitted to each of the massage members 14 and 15.

Tilt directions of the tilt rotors of the transform units 25 corresponding to the massage members 14 and 15 with respect to the rotary shaft 20 are set opposite between the massage members 14 and 15. Due to this, in the case where the rotary shaft 20 is rotated while front

upper edges and rear upper edges of the massage members 14 and 15 separate from one another, then the front upper edges of the massage members 14 and 15 gradually approach each other and front lower edges thereof gradually separate from each other, and the rear upper edges thereof gradually approach each other. In this way, the massage members 14 and 15 perform sandwiching operation.

After this sandwiching operation, rear lower edges of the massage members 14 and 15 gradually approach each other and the rear upper edges thereof gradually separate from each other. Subsequently, the front lower edges of the massage members 14 and 15 gradually approach and the front upper edges thereof gradually separate. In this way, the massage members 14 and 15 perform release operation. By continuously rotating the rotary shaft 20, the massage members 14 and 15 oscillate undulately in situations of being restricted within a predetermined angle range while alternately repeating the sandwiching operation and the release operation.

In the case where the rotary shaft 20 is driven to rotate in a direction opposite to the above-stated direction, the massage members 14 and 15 perform the sandwiching operation and the release operation in an opposite order. In this way, irrespectively of positive rotation or reverse rotation of the rotary shaft 20, the

massage members 14 and 15 repeatedly perform the sandwiching operation and the release operation. Thus, according to the rotation direction of the rotary shaft 20, it is possible to select whether to move the sandwiching operation from front side to rear side or from the rear side to the front side. It is preferable to consider the difference to be a difference in massage mode, and to switch over between the former mode and the latter mode either automatically or manually.

As shown in Figs. 5A and 5B, the pressing member 16 of the horizontal massage mechanism 10 includes a spinning rotor 30 provided to be integrally rotatable with the rotary shaft 20 provided in the first driving mechanism 17, and a large protrusion 31, a small protrusion 32, and a medium protrusion 33 arranged to disperse at predetermined intervals in circumferential and axial directions on an outer circumference of the spinning rotor 30.

The large protrusion 31, the small protrusion 32, and the medium protrusion 33 are formed into discs or hemispheres that are semicircles in a side view and serve as pressing units 42 pressing the therapeutic target, respectively. The large protrusion 31 protrudes most greatly from a center of the rotary shaft 20 in a radial direction, the small protrusion 32 protrudes more lightly

than the large protrusion 31, and the medium protrusion 33 protrudes by a medium protrusion amount between those of the large protrusion 31 and the small protrusion 32.

The second driving mechanism 18 of the horizontal massage mechanism 10 drives the pressing member 16 (that is, the spinning rotor 30) to rotate integrally with the rotary shaft 20, thereby allowing the pressing member 16 to perform massage operation on the foot F fitted into between the paired right and left massage members 14 and 15 so as to press upward the sole of the foot F (rear of the toe, rear of the arch, and rear of the heel).

At a time of rotating the spinning rotor 30 according to rotation of the rotary shaft 20, the second driving mechanism 18 can select whether to move each of the large protrusion 31, the small protrusion 32, and the medium protrusion 33 from rear side to front side or from front side to rear side while pressing the sole of the foot F. It is preferable to consider the difference to be a difference in massage mode, and to switch over between the former mode and the latter mode either automatically or manually.

The vertical massage mechanism 11 is described next.

As shown in Fig. 2, the vertical massage mechanism 11 includes a massage member 35 pressing a portion

obliquely outward off a front surface of the calf L (a position at which the portion avoids direct contact with the shin), a pressing member 36 arranged to oppose the massage member 35 via the calf L and supporting the calf L from rear side of the calf L, and an elevating drive unit 37 vertically and integrally moving the massage member 35 and the pressing member 36.

The massage member 35 and the pressing member 36 are paired, and two pairs of massage members 35 and pressing members 36 are provided to correspond to the right and left therapeutic recesses 4 of the casing 2, respectively.

The elevating drive unit 37 includes a feed screw shaft 38 the front-rear direction of which is set to the vertical direction, and a vertical motion slider 40 including a nut 39 screwed on the feed screw shaft 38. As shown in Fig. 3, the feed screw shaft 38 is driven to rotate via a transmission unit 41 converting a rotational force around a horizontal axis to a rotational force around a vertical axis by the drive motor 21 included in the first driving mechanism 17 of the horizontal massage mechanism 10.

The vertical motion slider 40 vertically moves using a pair of right and left cylindrical portions included in the back frame 7 of the support frame 8 as

guide rails. At a time the vertical motion slider 40 moves vertically, the massage member 35 and the pressing member 36 integrally and vertically move. Accordingly, an acupressure massage is effectively performed on two portions of each calf F, that is, front and rear portions of the calf F.

The control unit 3 (see Fig. 1) included in the massage device 1 according to the first embodiment is described next.

The control unit 3 controls the paired right and left massage members 14 and 15 to approach each other to almost stop, thereby keeping the foot F fitted into between the right and left massage members 14 and 15 in a sandwiched state (see Fig. 4B). In this sandwiched state, the spinning rotor 30 oscillates and reciprocates in the front-rear direction in a predetermined range of oscillation angle (at an angle less than 360 degrees) with the pressing unit 42 (at least one of the large protrusion 31, small protrusion 32, and medium protrusion 33) kept in contact with the therapeutic target (see Fig. 5B). This oscillating operation generates an operation pattern in which any one of the protrusions (such as the large protrusion 31) provided in the pressing member 16 repeatedly presses the sole of the foot F.

The control unit 3 controls the first driving

mechanism 17 and the second driving mechanism 18 so as to generate the operation pattern stated above.

Note that it is necessary to determine whether the massage members 14 and 15 are currently at the sandwiching positions or the release position so as to keep the paired right and left massage members 14 and 15 proximate to each other. Therefore, in the first embodiment, the current status of the massage members 14 and 15 are determined by measuring the number of revolutions of the driving motor 21 serving as a drive source driving the paired right and left massage members 14 and 15.

As shown in Fig. 3, the feed screw shaft 38 that the elevating drive unit 37 of the vertical massage mechanism 11 includes for vertically moving the vertical motion slider 40 is equipped with a number-of-revolutions measuring unit 52. The number-of-revolutions measuring unit 52 measures the number of revolutions of the drive motor 21.

This number-of-revolutions measuring unit 52 is configured so that a detection target disc 50 having one notch formed circumferentially is provided on a lower end of the feed screw shaft 38 to be integrally rotatable with the feed screw shaft 38, and so that a photosensor 51 is provided to sandwich the detection target disc 50 between two portions of the photosensor 51. Whenever the

notch of the detection target disc 50 passes through the sandwiching positions of the photosensor 51 according to rotation of the detection target disc 50, the photosensor 51 detects transmitted light. Therefore, it is possible to measure the number of revolutions of the feed screw shaft 38 and eventually that of the drive motor 21.

On the other hand, it is preferable to set the rotational angle at which the pressing member 16 reciprocates in front-rear direction and rotates to have divided angle ranges almost equal with respect to an angle position at which the large protrusion 31 presses the sole of the foot F (almost longitudinally central position) (see Fig. 5B). Specifically, the rotational angle is preferably set in a range of about 30° to 90° with respect to an entire range from a front end to a rear end of the pressing member 16. However, the rotational angle is not limited to this specific angle range but can be set less than 30° or more than 90°.

As stated, in the first embodiment, the pressing member 16 is configured to be driven to integrally rotate with the rotary shaft 20 that is driven to rotate by the drive motor 21 of the first driving mechanism 17. Due to this, the control unit 3 switches over the drive motor 21 between the positive-rotation driving mode and the

reverse-rotation driving mode whenever the drive motor 21 rotates by a predetermined number of revolutions, thereby enabling the pressing member 16 to reciprocate and rotate.

To grasp the current rotational angle position of the pressing member 16 (position at which the large protrusion 31 presses the therapeutic target) and to set the rotational angle range (to set timing of switching over the rotation between the positive rotation and the reverse rotation), the number of revolutions of the drive motor 21 determined by the number-of-revolutions measuring unit 52 is used.

Functions of the massage device 1 according to the first embodiment are described next based on a usage status of the massage device 1.

In the massage device 1, the paired right and left massage members 14 and 15 of the horizontal massage mechanism 10 are in a release state when a power switch or an operation switch (not shown) is turned off. At this time, the massage member 35 and the pressing member 36 of the vertical massage mechanism 11 stop at lowest positions, respectively.

Therefore, a user fits each of the right and left calves L in between the massage member 35 and the pressing member 36 of the vertical massage mechanism 11 and fits

each of the right and left feet F into between the paired right and left massage members 14 and 15 of the horizontal massage mechanism 10.

In the case where the user turns on the operation switch in this state, then the drive motor 21 operates and the elevating drive unit 37 drives the vertical motion slider 40 to start rising in the vertical massage mechanism 11. As a result, the massage member 35 presses a diagonally front side of the calf L, the pressing member 36 presses a rear side of the calf L, and the user gets acupressure massage so that the front and rear pressed positions simultaneously move upward.

The elevating drive unit 37 drives the drive motor 21 to make a reverse rotation so as to move down this vertical motion slider 40 at a time at which the vertical motion slider 40 reaches an upper limit position. Such operation is performed in a plurality of cycles.

Furthermore, in the horizontal massage mechanism 10, the drive motor 21 operates to start rotation of the rotary shaft 20. In the first driving mechanism 17, the drive motor 21 thereby drives the paired right and left massage members 14 and 15 to repeat the release states and the sandwiching states via the transform units 25, and the paired right and left massage members 14 and 15 perform the kneading massage on the foot F from both of

the left and right sides of the foot F. At the same time, the second driving mechanism 18 drives the pressing member 16 to rotate via the spinning rotor 30, whereby the large protrusion 31 (pressing unit 42) performs the acupressure massage on the sole of the foot F.

It is assumed that either an automatic operation mode program selects or the user manually selects a mode of "repeated pressing of the sole of the foot F" as a control mode of the control unit 3 in these circumstances.

As shown in Fig. 6, in a process in which the paired right and left massage members 14 and 15 repeat the release state (indicated by "open" in Fig. 6) and the sandwiching state (indicated "closed" in Fig. 6) for the foot F, the control unit 3 determines that the paired right and left massage members 14 and 15 are in the sandwiching state (see Fig. 4B) and starts controlling.

Note that operation timing of the paired right and left massage members 14 and 15 is made to match that of the pressing member 16. That is, when the paired right and left massage members 14 and 15 are in the sandwiching state, the pressing member 16 is in a pressing state (indicated by "up" in Fig. 6) in which the large protrusion 31 of the pressing member 16 presses the longitudinally central portion (arch) of the sole of the foot F.

First, the control unit 3 starts from timing at which the paired right and left massage members 14 and 15 are in the sandwiching state and at which the pressing member 16 is in the pressing state. At the timing, the control unit 3 controls the drive motor 21 to continuously rotate so that the large protrusion 31 serving as the pressing unit 42 moves toward the front side of the sole (rear of the toe) or the rear side (rear of the heel) at a predetermined rotational angle.

The control unit 3 determines that the pressing position of the pressing member 16 moves by as much as the predetermined rotational angle and that the large protrusion 31 is in a state of pressing the rear of the toe from a detection signal output from the number-of-revolutions measuring unit 52 (see Fig. 3). In this case, the control unit 3 switches the rotation driving mode of the drive motor 21 to opposite-direction driving mode (indicated by "reverse rotation" of the rotary shaft in Fig. 6). The pressing position of the pressing member 16 thereby moves from the rear of the toe to the arch and further to the rear of the heel.

Next, the control unit 3 determines that the pressing member 16 is in a state of pressing the rear of the heel from the detection signal output from the number-of-revolutions measuring unit 52. In this case,

the control unit 3 switches the rotation driving mode of the drive motor 21 to original-direction driving mode (indicated by "positive rotation" of the rotary shaft in Fig. 6). The pressing position of the pressing member 16 thereby moves from the rear of the heel to the arch and further to the rear of the toe.

In this way, the rotation of the pressing member 16 is switched in the front-rear direction in the predetermined rotational angle range (about 30° to 90°), whereby the pressing member 16 performs the acupressure massage on the sole of the foot F so as to reciprocate longitudinally. During the acupressure massage, the control unit 3 controls the paired right and left massage members 14 and 15 to be kept in the sandwiching state. Due to this, the foot F fitted into between the paired right and left massage members 14 and 15 can be pressed surely and sufficiently by the pressing member 16 without escaping upward due to pressing by the pressing member 16.

The vertical massage mechanism 11 and the horizontal massage mechanism 10 can always operate synchronously or only one of the vertical massage mechanism 11 and the horizontal massage mechanism 10 can operate independently. It is preferable for the user to appropriately select whether to cause the vertical

massage mechanism 11 and the horizontal massage mechanism 10 to synchronously operate or to cause only one of the vertical massage mechanism 11 and the horizontal massage mechanism 10 to operate independently, according to user's desire.

[SECOND EMBODIMENT]

Fig. 7 illustrates the massage device 1 according to a second embodiment of the present invention.

The massage device 1 according to the second embodiment is configured as a massage device dedicated to either the feet or the calves and includes only the horizontal massage mechanism 10. The massage device 1 according to the second embodiment includes two pairs of massager members 14 and 15 for the kneading massage and the pressing members 16 for the acupressure massage.

In the massage device 1 shown in Fig. 7, the massage member 14 is provided as a fixed massage member that does not perform any oscillating operation. However, the paired right and left massage members 14 and 15 can massage the foot F while sandwiching the foot F therebetween since the massage member 15 performs the oscillating operation.

The pressing member 16 includes the spinning rotor 30 provided to be eccentric with respect to the rotary shaft 20 and rotating integrally with the rotary shaft

20. That is, an outer circumference of this spinning rotor 30 radially protruding most greatly from the center of the rotary shaft 20 serves as the pressing unit 42 that presses the therapeutic target. In the case where such an eccentric spinning rotor 30 is used, a protrusion protruding from the outer circumference (new protrusion) can be either provided or not provided.

In the massage device 1 according to the second embodiment, the pressing member 16 can operate similarly to that according to the first embodiment and perform massage on the foot F fitted into between the paired right and left massage members 14 and 15 by pressing the foot F in a reciprocating fashion.

The embodiments disclosed herein are considered to be illustrative in all respects and not restrictive. The scope of the invention is indicated not by the foregoing description but by the appended claims, and all variations which fall within the meaning and range of and equivalents thereof are intended to be embraced therein.

For example, the number-of-revolutions measuring unit 52 can be provided in the first driving mechanism 17, that is, in the rotary shaft 20 provided in the direction of passing through between the massage members 14 and 15.

Furthermore, the massage device 1 according to the present invention can be provided as a footrest in front of a seat of a chair-type massager device.

CLAIMS:

1. A massage device comprising:

paired right and left massage members arranged to sandwich a therapeutic target;

a pressing member arranged between the paired right and left massage members;

a first driving mechanism driving the paired right and left massage members to approach and separate from; and

a second driving mechanism driving the pressing member to operate to press the therapeutic target, wherein

the massage device further comprises a control unit controlling the second driving mechanism to drive the pressing member to repeatedly press the therapeutic target while controlling the first driving mechanism to drive the paired right and left massage members to be kept to be proximate to each other as a result of the said approach,

the pressing member includes a spinning rotor rotating about a shaft center set in a direction of passing through between the paired right and left massage members,

a pressing unit pressing the therapeutic target is provided on the spinning rotor, and

a protrusion provided on an outer circumference of the spinning rotor, or an outer circumference radially protruding most greatly from the center of the eccentric rotary shaft serves as the pressing unit, and the configuration of the control unit controlling the first driving mechanism and the second driving mechanism so as that the sole of the foot is in the pressing state on the pressing

member when a user’s foot is in the sandwiching state by the paired right and left massage members.

2. The massage device according to claim 1, wherein

the first driving mechanism includes:

a rotary shaft rotating about the said shaft center provided in the direction of passing through between the paired right and left massage members;

a driving motor driving the rotary shaft to rotate; and

paired right and left transform units transforming a rotational force of the rotary shaft into approach-separation operation performed by the paired right and left massage members, and wherein

the second driving mechanism drives the spinning rotor of the pressing member to be rotatable integrally with the rotary shaft of the first driving mechanism.

3. The massage device according to claim 2, wherein

the control unit includes a number-of-revolutions measuring unit measuring number of revolutions of the driving motor, and

the control unit controls the first driving mechanism and the second driving mechanism based on a measurement result of the number-of-revolutions measuring unit.

4. The massage device according to any one of claims 1 to 3, wherein

the control unit controls the second driving mechanism to drive the pressing member so that the spinning rotor reciprocates and rotates in front-rear direction at a rotational angle less than 360 degrees in a state in which the pressing unit contacts the therapeutic target.