

DESCRIPTION

Title of Invention: MESSAGE MACHINE

Technical Field

[0001] The present invention relates to a massage machine that massages the lower limb, such as the foot and the calf, of a user, and can also massage at least the upper body (such as the back, the waist, each side of the waist, and the buttocks) of the user.

Background Art

[0002] There have been massage chair machines configured to massage at least the upper body (such as the back and the waist) of a seated user. Such massage chair machines include one disclosed in Patent Literature 1, for example.

The disclosed massage chair machine comprises: a seat portion configured for user seating; and a backrest portion mounted at the rear of the seat portion, the backrest portion incorporating a back massaging mechanism for massaging user's back. Moreover, the seat portion is provided at its front with a massager for massaging user's lower limb, or leg. This leg massager is storable under the seat portion.

[0003] Patent Literature 2 discloses an example of such leg massager constructions. The disclosed leg

massager comprises a pair of right-hand and left-hand vertically elongated massaging members extending in a calf-to-foot direction, with a rotating shaft passed through the base ends of the paired massaging members in a right-left direction. The rotating shaft is rotatably driven by a drive section, and the resulting rotational driving force is converted into rocking motion by a converting section, thereby enabling the paired massaging members to sandwich and hold user's leg for squeezing massage to the leg.

Prior Art Reference

Citation List

[0004]

Patent Literature 1: Japanese Unexamined Patent

Publication JP-A 2013-208264

Patent Literature 2: Japanese Unexamined Patent

Publication JP-A 2014-018616

Summary of Invention

Technical Problem

[0005] The construction disclosed in Patent Literature 1 performs effective massage on the upper body, including the back, of a user, and, the construction disclosed in Patent Literature 2 also performs effective massage on the leg, including the foot, of a user.

In this regard, the recent room space limitations may make it difficult to place a massage sofa such as that

disclosed in Patent Literature 1 in a room, e.g. a living room. On the other hand, a leg massager such as that disclosed in Patent Literature 2 is compact enough to be placed in a room, e.g. a living room.

[0006] However, when it is desired to massage at least the upper body (the back, the waist, the buttocks, etc.) of a user, the desired massage cannot be performed without the use of another massager for upper body massage in addition to the leg massager. That is, a space wide enough for the placement of two massage machines is needed, which might be considered impractical.

 In view of the problems as discussed supra, an object of the present invention is to provide a massage machine that, as a single unit, massages the lower limb, such as the foot and the calf, of a user, and can also massage at least the upper body of the user.

Solution to Problem

[0007] In order to fulfill the above object, the present invention provides the following technical means.

 A massage machine embodying the present invention comprises: a first massaging element that massages a first to-be-massaged part of a user; and a second massaging element that massages a second to-be-massaged part of the user. The first massaging element is located on one side of a partition plate in a front-rear direction. The

partition plate is mounted so as to extend in a right-left direction. The second massaging element is located on the other side of the partition plate in the front-rear direction.

[0008] In the present invention, it is preferable that, on the one side, there is disposed a rocking mechanism in which the first massaging elements are moved toward and away from each other relative to the first to-be-massaged part for squeezing massage to the first to-be-massaged part, and that, on the other side, the second massaging element massages the second to-be-massaged part, the second massaging element being disposed in the rocking mechanism, and protruding through an opening of the partition plate.

In the present invention, it is preferable that the massage machine comprises a case body configured for user seating, the case body including a first massage area for massaging the first to-be-massaged part by the first massaging element, and a second massage area for massaging the second to-be-massaged part by the second massaging element.

[0009] In the present invention, it is preferable that the second massage area is defined by a region which is provided on a front side of the case body and allows seating of the user, and the first massage area is defined

by a region which is provided on a rear side of the case body and is formed with an opening for receiving the first to-be-massaged part.

In the present invention, it is preferable that the opening of the first massage area is a rear-facing opening for receiving the first to-be-massaged part insertable from rear.

[0010] In the present invention, it is preferable that the case body comprises the partition plate, and the partition plate is shaped like a chair comprising a seat portion configured for seating of the user and a backrest portion, that the first massage area is provided on a rear side of the backrest portion, that the case body has an interior in which are disposed a pair of right-hand and left-hand massaging members that hold and press, with the first massaging elements, the first to-be-massaged part which has been inserted in the opening of the first massage area from rear, and a massage drive section that imparts rocking motion to the massaging members, and that the second massage area is provided on a front side of the backrest portion, and includes the second massaging element.

[0011] In the present invention, it is preferable that the opening of the first massage area is a front-facing opening for receiving the first to-be-massaged part of the

user insertable from front.

In the present invention, it is preferable that the case body comprises the partition plate, and the partition plate is shaped like a chair comprising a seat portion configured for seating of the user and a backrest portion, that the first massage area is provided on a rear side of the backrest portion, that the case body has an interior in which are disposed a pair of right-hand and left-hand massaging members that hold and press, with the first massaging elements, the first to-be-massaged part which has been inserted in the opening of the first massage area from front, and a massage drive section that imparts rocking motion to the massaging members, and that the second massage area is provided on a front side of the backrest portion, and includes the second massaging element.

[0012] In the present invention, it is preferable that each of the massaging members is provided at its edge with the second massaging element, and that the massage drive section imparts rocking motion to the massaging members, thereby enabling the second massaging element to massage the second to-be-massaged part situated on the seat portion.

In the present invention, it is preferable that the massaging members are each an L-shaped member comprising: a forwardly extending portion extended forwardly from a base

end; and an upwardly extending portion extended upwardly from the base end, and that the second massaging element is attached, in a state for projecting toward the user, to at least one of the forwardly extending portion and the upwardly extending portion.

[0013] In the present invention, it is preferable that the massage drive section includes a single drive motor.

In the present invention, it is preferable that the first to-be-massaged part refers to a leg of the user, the leg including at least foot and calf of the user, and that the second to-be-massaged part refers to a body part of the user, the body part including at least buttocks, waist, and back of the user.

Advantageous Effects of Invention

[0014] The present invention provides a massage machine that, as a single unit, massages the leg, such as the foot and the calf, of a user, and can also massage at least the upper body of the user.

Brief Description of Drawings

[0015]

FIG. 1 is a perspective front view schematically showing a massage machine embodying the present invention as a whole (first embodiment).

FIG. 2 is a perspective rear view schematically showing the massage machine according to the first

embodiment as a whole.

FIG. 3 is a perspective front view schematically showing the internal structure of the massage machine according to the first embodiment.

FIG. 4 is a perspective rear view schematically showing the internal structure of the massage machine according to the first embodiment.

FIG. 5 is a side view of the massage machine according to the first embodiment, as seen from the left side.

FIG. 6 is a plan view of the massage machine according to the first embodiment, as seen from above.

FIG. 7 is a perspective front view schematically showing a rear massaging element as a whole constituting a back massaging mechanism.

FIG. 8 is a perspective front view schematically showing a lower massaging element as a whole constituting a seat's massaging mechanism.

FIG. 9 is a perspective front view schematically showing a massage machine according to a second embodiment as a whole.

FIG. 10 is a perspective front view schematically showing the internal structure of the massage machine according to the second embodiment.

FIG. 11 is a side view of the massage machine

according to the second embodiment, as seen from the left side.

Description of Embodiments

[0016] Embodiments of a massage machine 1 pursuant to the present invention will now be described with reference to the drawings.

The following embodiments are given by way of example of carrying the present invention into effect, and are thus not intended to be limiting of the structural features of the present invention. Moreover, in the drawings, some constituent components are not shown, and imaginary lines, etc. are used to indicate certain components for clarity of illustration.

Moreover, directions as to the massage machine 1, such as a front-rear direction and a right-left, or horizontal direction, are as shown in the drawings. These directions correspond with those as viewed from a user sitting in a seat portion 21 of the massage machine 1 (a user sitting in a chair or the like with the lower limb, or leg L placed in a receiving recess 4 of the massage machine 1). In what follows, the directions shown in the drawings are used as the basis for describing the massage machine 1 embodying the present invention.

[0017] Moreover, in this specification, a below-the-knee and above-the-ankle region in human leg L is referred

to as a "calf C", and, a region located below the ankle (including the ankle) and extending from the heel H to the toe T in the leg is referred to as a "foot F". The leg L, including at least the calf C and the foot F, of the user is also referred to as a "first to-be-massaged part".

[0018] Moreover, the back side of human upper body is referred to as a "back B", a region below the back B is referred to as a "waist W", each side of the waist W is referred to as a "waist side part S", and the rear side of a region between the waist W and the leg L is referred to as "buttocks A". The upper body, including at least the back B, the waist W, the waist side part S, the buttocks A, etc., of the user is also referred to as a "second to-be-massaged part".

Moreover, in this embodiment, a first massage area for massaging the first to-be-massaged part (the leg L) is referred to as a "leg massage area", and, a second massage area for massaging the second to-be-massaged part (the back B, the waist W, the waist side part S, the buttocks A, etc.) is referred to as a "seat's massage area".

[0019] The massage machine 1 embodying the present invention comprises: a first massaging element that massages the first to-be-massaged part, such as the foot F (sole U, each side of the foot, instep, heel H, etc.) and the calf C, of the leg L placed in the receiving recess 4;

and a second massaging element that massages the second to-be-massaged part, such as the back B, the waist W, the waist side part S, the buttocks A, etc., of the user sitting in the seat portion 21.

A first embodiment of the massage machine 1 pursuant to the present invention will first be described.

[First Embodiment]

FIGs. 1 to 8 are drawings showing the first embodiment of the massage machine 1 pursuant to the present invention.

[0020] As shown in the drawings such as FIGs. 1 to 8, the massage machine 1 according to this embodiment comprises a case body 2 configured for user seating, the case body 2 including the leg massage area (the first massage area) where massaging members 6 (the first massaging elements) sandwich and hold the first to-be-massaged part (the leg L including at least the foot F, the calf C, etc.) of the user for squeezing massage to the part, and the seat's massage area where a rear massaging element 29 (the second massaging element), a side massaging element 35 (the second massaging element), and a lower massaging element 37 (the second massaging element) each press and rub the second to-be-massaged part (the upper body including at least the back B, the waist W, the waist side part S, the buttocks A, etc.) of the user for pressing

and rubbing massage to the part.

[0021] The massage machine 1 according to this embodiment is designed so that the leg L of the user can be inserted into the case body 2 from the rear.

The leg massage area of this embodiment will first be described.

The leg massage area is a region provided on the rear side of the case body 2 and formed with an opening (receiving recess 4) which receives the leg L (the calf C-to-foot F part) of the user insertable from the rear. That is, in this embodiment, the receiving recess 4 of the leg massage area opens into the rear and upper parts of the rear side for receiving the leg L of the user insertable from the rear.

[0022] The massage machine 1 according to this embodiment is configured to perform "kneading massage" on each of the right and left legs L of the user, as a massage target part (the first to-be-massaged part), by holding and kneading both of the foot F and the calf C constituting the leg L. Moreover, the massage machine 1 according to this embodiment is capable of performing acupressure massage-like "pressing massage" on the sole U concurrently with the kneading massage.

The massage machine 1 according to this embodiment comprises: the receiving recess 4 that receives the leg L

(the foot F, the calf C, etc.) of the user insertable from the rear; a leg massaging mechanism 3 that holds and kneads the leg L of the user for "kneading massage" to the leg L; and the case body 2 that accommodates the leg massaging mechanism 3.

[0023] As shown in the drawings such as FIGs. 1 and 2, as viewed from the front, the case body 2 is a housing of rectangular shape which is longer at the side in the horizontal direction than at the side in the vertical direction, or a housing of square shape. The case body 2 is placeable on a floor surface. The case body 2 is formed with a pair of spaced right-hand and left-hand receiving recesses 4 (openings).

The receiving recess 4 is formed on the rear side of the case body 2 so as to open into the rear and upper parts of the rear side. The receiving recess 4 is shaped as a vertically elongated opening. The receiving recess 4 is internally provided with a lining (not shown). The paired right-hand and left-hand receiving recesses 4 receive the right leg L and the left leg L (the calf C-to-foot F part), respectively, insertable from the rear.

[0024] As shown in the drawings such as FIGs. 3 to 6, inside the case body 2, there are disposed a plurality of support members 5a and 5b that support the leg massaging mechanism 3 from below. Of these members, the support

member 5a is located toward each end of the interior of the case body 2 in the right-left direction. The support members 5a each support the corresponding one of the opposite ends of a rotating shaft 7 mounted in the leg massaging mechanism 3. Meanwhile, the support member 5b is disposed between the paired right-hand and left-hand support members 5a, and lies centrally of the case body 2. The support member 5b supports a gear case 15 of a massage drive section 8 with the rotating shaft 7 passed therethrough. Inside the case body 2, the leg massaging mechanism 3 is supported in a suspended fashion above the bottom surface by the support members 5a and 5b.

[0025] In the leg massage area, the leg massaging mechanism 3 holds and kneads the leg L of the user for "kneading massage" to the leg L.

The leg massaging mechanism 3 comprises: a pair of right-hand and left-hand massaging members 6 spaced apart for sandwiching the leg L, the massaging members 6 being operative to perform kneading massage on the leg L; a rotating shaft 7 mounted with its axis directed horizontally and passed through the base ends of the massaging members 6 in the right-left direction; a massage drive section 8 that rotatably drives the rotating shaft 7; and a converting section 9, located on the base end side of the massaging member 6, for converting the rotational

driving force on the rotating shaft 7 into rocking motion of the massaging member 6.

[0026] That is, on the rear side (one side, or the first side) of the case body 2, there is disposed a rocking mechanism (the massaging member 6, the massage drive section 8, etc.) in which the first massaging elements (the massaging members 6) are moved toward and away from each other relative to the first to-be-massaged part (the leg L including the foot F and the calf C) for squeezing massage to the part.

The massaging member 6 comprises: a forwardly extending portion 10 extended forwardly from the base end; and an upwardly extending portion 11 extended upwardly from the base end. In the following description, the "forwardly extending portion 10" of this embodiment, which is substantially horizontally mounted, is referred to as a "horizontal massaging member 10", and, the "upwardly extending portion 11" of this embodiment, which is substantially vertically mounted, is referred to as a "vertical massaging member 11".

[0027] In this embodiment, the massaging member 6 (the first massaging element) is a substantially L-shaped (boot-like) member formed so as to extend along the leg in the calf C-to-foot F direction as seen in side view. The massaging member 6 is disposed inside the receiving recess

4.

That is, the massaging member 6 comprises: a pair of right-hand and left-hand horizontal massaging members 10 arranged for sandwiching the foot F, the horizontal massaging members 10 being operative to massage the foot F; and a pair of right-hand and left-hand vertical massaging members 11 arranged for sandwiching the calf C, the vertical massaging members 11 being operative to massage the calf C. The massaging member 6 is constructed by placing the vertical massaging member 11 on the horizontal massaging member 10.

[0028] Inside the case body 2, the horizontal massaging member 10 is mounted so as to extend forwardly and substantially horizontally. That is, the horizontal massaging member 10 is a member extended forwardly from the base end of the massaging member 6.

The horizontal massaging member 10 is fashioned for covering the foot F from the side, or laterally. The front end and the rear end of the horizontal massaging member 10 cover the toe T and the heel H, respectively. Right-hand and left-hand horizontal massaging members 10 are provided as a pair. The horizontal massaging members 10 are operative to press the foot F received in the receiving recess 4 both from the lateral side and from the medial side for squeezing massage to the foot F.

[0029] Inside the case body 2, the vertical massaging member 11 is mounted so as to extend upwardly and substantially vertically. That is, the vertical massaging member 11 is a member rising upwardly from the base end of the massaging member 6.

The vertical massaging member 11 is fashioned for covering the calf C laterally. Right-hand and left-hand vertical massaging members 11 are provided as a pair. The vertical massaging members 11 are operative to press the calf C received in the receiving recess 4 both from the lateral side and from the medial side for squeezing massage to the calf C.

[0030] In this embodiment, the massaging member 6 is provided at its base end (longitudinally central part) with the converting section 9 that converts the rotational driving force on the rotating shaft 7 into rocking motion of the massaging member 6. That is, in this embodiment, the horizontal massaging member 10 and the vertical massaging member 11 are coupled to each other via the converting section 9 lying between them.

The massaging member 6 comprises: an inside massaging member 6a for pressing the leg L outward; and an outside massaging member 6b, opposed to the inside massaging member 6a, for pressing the leg L inward.

[0031] The inside massaging member 6a and the outside

massaging member 6b are boot-shaped (substantially L-shaped) for holding the leg L from both sides, and arranged in mirror image fashion and in spaced relation to each other in the right-left direction.

For example, for user's left leg (the left leg L), the inside massaging member 6a is brought into contact with the medial side of the left leg, and presses the leg outward (leftward), and, the outside massaging member 6b is brought into contact with the lateral side of the left leg, and presses the leg inward (rightward).

[0032] On the other hand, for user's right leg (the right leg L), the inside massaging member 6a is brought into contact with the medial side of the right leg, and presses the leg outward (rightward), and, the outside massaging member 6b is brought into contact with the lateral side of the right leg, and presses the leg inward (leftward).

The inside massaging member 6a comprises: a horizontal massaging member 10a, positioned for contact with the medial side (big toe-side part) of the foot F, for pressing the medial side of the foot F outward; and a vertical massaging member 11a, positioned for contact with the medial side of the calf C, for pressing the medial side of the calf C outward.

[0033] The outside massaging member 6b comprises: a

horizontal massaging member 10b, positioned for contact with the lateral side (little toe-side part) of the foot F, for pressing the lateral side of the foot F inward; and a vertical massaging member 11b, positioned for contact with the lateral side of the calf C, for pressing the lateral side of the calf C inward.

When the inside horizontal massaging member 10a and the outside horizontal massaging member 10b move toward each other and consequently sandwich the foot F, the inside vertical massaging member 11a and the outside vertical massaging member 11b then move away from each other and consequently release the pressure on the calf F. Subsequently, when the inside horizontal massaging member 10a and the outside horizontal massaging member 10b move away from each other and consequently release the pressure on the foot F, the inside vertical massaging member 11a and the outside vertical massaging member 11b then move toward each other and consequently sandwich the calf C.

[0034] With a repeat of the alternation of the approaching-separating movement of the inside horizontal massaging member 10a and the outside horizontal massaging member 10b and the approaching-separating movement of the inside vertical massaging member 11a and the outside vertical massaging member 11b, the inside massaging member 6a and the outside massaging member 6b (the first massaging

elements) hold and knead the leg L, i.e. the calf C-to-foot F part (the first to-be-massaged part) for "kneading massage" to the leg L. Moreover, when a press massaging member 12 acts in conjunction with the horizontal massaging member 10a, a massaging element 13 is pressed against the sole U at regular intervals for pressing massage to the sole U.

[0035] The rotating shaft 7 is an elongate shaft member. A single rotating shaft 7 is mounted with its axis directed horizontally. The rotating shaft 7 is supported via a bearing (not shown) by the support members 5a and 5b. The rotating shaft 7 is passed through the base ends of the paired right-hand and left-hand massaging members 6 in the right-left direction.

As shown in FIG. 5, the rotating shaft 7 is located between the seat's massage area (the second massage area) and the leg massage area (the first massage area) as seen in side view. That is, the area situated forward of the rotating shaft 7 is the seat's massage area, and, the area situated rearward of the rotating shaft 7 is the seat's massage area.

[0036] The horizontal massaging member 10 is provided at its left side and/or right side with the press massaging member 12 which is operative to perform pressing massage on the sole U such as the arc of the foot. The press

massaging member 12 is an arm-shaped member extended from one side to the other side for massage to the sole U of the foot F received in the receiving recess 4.

The press massaging member 12 is position-adjustable in the front-rear direction for conformity to the shape of the foot F of any size. Moreover, the press massaging member 12 is provided at its tip with the spherical massaging element 13. The massaging element 13 is operative to perform, for example, thumb pressure massage-like sharp pressure massage on the sole U. The massaging element 13 may be rotatably mounted relative to the press massaging member 12.

[0037] That is, in integral relation to the horizontal massaging member 10, the press massaging member 12 repeats a series of following actions: bringing the massaging element 13 near to the sole U; pressing the massaging element 13 upward against the sole U; and moving the massaging element 13 away from the sole U, in synchronization with the operation of the horizontal massaging member 10 to hold the foot F laterally for massage to the foot F.

While the press massaging member 12 is integrally attached to the inside horizontal massaging member 10a in this embodiment, attaching the press massaging member 12 to the outside horizontal massaging member 10b is

satisfactory.

[0038] As shown in the drawings such as FIGs. 1 to 6, the massage drive section 8 (the rocking mechanism) rotatably drives the rotating shaft 7, and the converting section 9 converts the resulting rotational driving force on the rotating shaft 7 into rocking motion, thereby enabling the massaging member 6 comprising the horizontal massaging member 10 and the vertical massaging member 11 (the first massaging element) to perform massage.

The massage drive section 8 includes a single drive motor 14. That is, the massage drive section 8 comprises: the drive motor 14 that produces a rotational driving force; and the gear case 15 that transmits the rotational driving force, with deceleration to a predetermined rate, to the rotating shaft 7. The massage drive section 8 is supported by the support member 5b.

[0039] The drive motor 14 is located intermediate the ends of the interior of the case body 4 in the vertical direction, and located between the right-hand inside massaging member 6a and the left-hand inside massaging member 6a (located substantially centrally of the interior of the case body 2). A rotational drive shaft 14a protrudes downwardly from the drive motor 14. The gear case 15 is disposed below the drive motor 14.

The gear case 15, in which the rotational drive shaft

14a is received, accommodates a plurality of gears 15a. Moreover, the gear case 15 is fitted with the rotating shaft 7 passed therethrough in the right-left direction. That is, the rotational driving force exerted by the drive motor 14 is outputted from the rotational drive shaft 14a, and then transmitted, while being subjected to deceleration to a predetermined rate in the forward-mounted gear case 15, to the rotating shaft 7.

[0040] The converting section 9 is disposed on the base end side of each of the paired massaging members 6. In this embodiment, the converting section 9 is located forward of the base ends of the horizontal massaging member 10 and the vertical massaging member 11.

In this embodiment, the converting section 9 is disposed at the base end of the massaging member 6, i.e., a bend in the substantially L-shaped (boot-shaped) massaging member 6 (a junction between the horizontal massaging member 10 and the vertical massaging member 11). The converting section 9 converts the rotational driving force on the rotating shaft 7 into rocking motion (approaching-separating movements of the horizontal massaging member 10 pair and the vertical massaging member 11 pair) of the massaging member 6 (the first massaging element).

[0041] The converting section 9 comprises: a rotating boss portion 16 rotatably attached to the rotating shaft 7

for unitary rotation with the rotating shaft 7; an annular fit portion 17 located on the base end side of the massaging member 6 and fitted onto the rotating boss portion 16; and a restraining portion 18 that restrains the massaging member 6 from rotating together with the rotating shaft 7.

The rotating boss portion 16 is fitted with the rotating shaft 7 passed therethrough, and rotates together with the rotating shaft 7. The rotating boss portion 16 is provided at its outer periphery with a cam surface. In this embodiment, the cam surface is inclined with respect to the rotating shaft 7. That is, the rotating boss portion 16 rotates in inclined relation to the axis of the rotating shaft 7.

[0042] The rotating boss portions 16 (cam surfaces) of, respectively, the inside massaging member 6a and the outside massaging member 6b disposed inside the case body 2 are inclined in opposite directions (in the form of a V as viewed from the front, for example). The inclination of the rotating boss portion 16 (cam surface) may be changed as required.

The annular fit portion 17 is formed on the base end side of the massaging member 6, and fitted onto the rotating boss portion 16 for relative rotation. The inclined rotation of the rotating boss portion 16

externally fitted with the annular fit portion 17 causes the massaging member 6 to rock.

[0043] The restraining portion 18 restrains the annular fit portion 17 from accompanying rotation relative to the rotating boss portion 16. The restraining portion 18 is located forward of the annular fit portion 17. The restraining portion 18 comprises: a restraining pin 19 protruding forwardly from the annular fit portion 17; and a restraining slot 20, provided inside the case body 2, for receiving the restraining pin 19 for sliding movement in the right-left direction.

Thus constructed, the converting section 9 converts the rotational driving force on the rotating shaft 7 into rocking motion of the massaging member 6 to repeat a series of following actions: moving the paired horizontal massaging members 10 toward each other while moving the paired vertical massaging members 11 away from each other; and then moving the paired horizontal massaging members 10 away from each other while moving the paired vertical massaging member 11 toward each other.

[0044] That is, the converting section 9 converts the rotational driving force on the rotating shaft 7 into rocking motion of the massaging member 6 (the first massaging element), thereby enabling the paired right-hand and left-hand horizontal massaging members 10 to apply

squeezing massage to the foot F (the first to-be-massaged part), and causing the paired right-hand and left-hand vertical massaging members 11 to fall toward each other to apply squeezing massage to the calf L (the first to-be-massaged part).

[0045] At this time, along with the operation of the horizontal massaging member 10, the press massaging member 12 rocks to become operative to apply upward pressure to the sole U for acupressure massage-like pressing massage to the sole U.

In this embodiment, the seat's massage area (the second massage area) is situated forward of the leg massage area (the first massage area). The seat's massage area is provided on the front side of the case body 2, and serves as an area for user seating.

[0046] In this embodiment, the case body 2 comprises a partition plate. The partition plate is a chair-shaped member comprising: a seat portion 21 configured for user seating; and a backrest portion 22, disposed at the rear of the seat portion 21, against which the user leans back.

That is, the case body 2 is provided at its lower front side with the seat portion 21. The seat portion 21 has a substantially flat surface dimensioned to be wide enough for user seating. At the rear of the seat portion 21 is disposed the backrest portion 22. The backrest

portion 22 is dimensioned to be wide enough for user leaning. Moreover, the backrest portion 22 is rearwardly inclined.

[0047] The seat portion 21 and the backrest portion 22 as above described constitute the seat's massage area. The seat's massage area is provided on the front side of the backrest portion 22 (the partition plate), and comprises the second massaging element (the rear massaging element 29, the side massaging element 35, and the lower massaging element 37).

In this embodiment, the backrest portion 22 has a height such as to support the region up to the waist W (the region below the back B) of the user sitting in the seat portion 21. The backrest portion 22 (the case body 2) may alternatively be designed to have a height such as to support the region up to the upper part of the back B (for example, the shoulder) of the user sitting in the seat portion 21.

[0048] That is, in the construction according to this embodiment, the first massaging element (the massaging member 6) is located on the rear side (the first side) of the partition plate extended in the right-left direction (the seat portion 21 and the backrest portion 22), and, the second massaging element (the rear massaging element 29, the side massaging element 35, and the lower massaging

element 37) is located on the front side (the other side, or the second side) of the partition plate (the seat portion 21 and the backrest portion 22).

The case body 2 accommodates a seat's massaging mechanism 23 that performs massage on at least the upper body (the back B, the waist W, the waist side part S, the buttocks A, etc.) of the user, and the message drive section 8 that drives the seat's massaging mechanism 23.

[0049] In this embodiment, the message drive section 8 drives both the seat's massaging mechanism 23 and the leg massaging mechanism 3.

The seat's massaging mechanism 23 performs pressing and rubbing massage on one or more of the back B, the waist W, the waist side part S, and the buttocks A of the user (the second to-be-massaged part) in the seat's massage area.

[0050] In this embodiment, the seat's massaging mechanism 23 comprises: a rear massaging portion 24 that presses the back B and the waist W in a rear to front direction for massage; a side massaging portion 25 that presses the waist side part S in an outside to inside direction for massage; and a lower massaging portion 26 that presses the buttocks A in a bottom to top direction for massage.

[0051] Thus, on the front side (the second side) of

the seat portion 21, massage is performed on the second to-be-massaged part (the buttocks A, the waist W, the back B, etc.) with the second massaging element (the rear massaging element 29, the side massaging element 35, and the lower massaging element 37) disposed on the edge of the rocking mechanism (the massaging member 6). The rear massaging element 29, the side massaging element 35, and the lower massaging element 37 each protrude through the corresponding one of openings (holes 27a to 27d) of the partition plate (the seat portion 21 and the backrest portion 22).

[0052] The rear massaging portion 24 protrudes forwardly through the hole 27a (opening) made in the upper part of the backrest portion 22 (the partition plate). The rear massaging portion 24 comprises: a rear arm member 28 attached to the edge of the massaging member 6 (the rocking mechanism); and the rear massaging element 29 (the second massaging element) disposed at the tip of the rear arm member 28.

As shown in FIG. 7, in this embodiment, the rear arm member 28 is attached to the vertical massaging member 11a of the inside massaging member 6a. More specifically, the rear arm member 28 is attached to the inside vertical massaging member 11a so as to protrude obliquely upwardly in the forward direction.

[0053] The rear arm member 28 rocks in the right-left direction along with the horizontal rocking motion of the inside vertical massaging member 11a. The rear arm member 28 is rotatably supported by a support member 30 disposed on the front edge of the inside vertical massaging member 11a. In this embodiment, the support member 30 has the form of split bodies that sandwich and rotatably support the rear arm member 28 from both sides in the right-left direction.

[0054] The spherically shaped rear massaging element 29 (the second massaging element) is disposed at the tip of the rear arm member 28 so as to protrude obliquely upwardly in the forward direction. The rear massaging element 29 is positioned for contact with the back B, the waist W, etc. of the user leaning on the backrest portion 22. The rear massaging element 29 rocks in the right-left direction along with the horizontal rocking motion of the rear arm member 28.

[0055] The rear arm member 28 is provided at its base end with a shaft member 31. The shaft member 31 is mounted with its axis directed in the right-left direction. The shaft member 31 is fitted in a hole 32 made in the support member 30. With the shaft member 31 rotatably supported in the hole 32, the rear arm member 28 is supported for rotational movement in the vertical direction (rotational

movement about the axis of the shaft member 31) relative to the support member 30.

[0056] Moreover, the shaft member 31 is fitted with a spring member 33. The spring member 33 supports the rear arm member 28 in a forwardly and obliquely upwardly projected position. The spring member 33 rotationally moves the rear arm member 28 under a load of predetermined level or higher, and returns the rear arm member 28 to its original position by repulsive force upon release of the load.

For example, during massage on the back B, the waist W, etc., the spring member 33 rotationally moves the rear arm member 28 in the vertical direction, thereby enabling the rear massaging element 29 attached to the rear arm member 28 to move smoothly over the back B, the waist W, etc.

[0057] Moreover, in order to prevent the rear massaging element 29 from exerting excessive pressing force, the spring member 33 rotationally moves the rear arm member 28 for release of the load to reduce the pressing force to some extent, thereby avoiding pain to the back B, the waist W, etc. In addition, when subjected to a load of predetermined level or higher, the spring member 33 rotationally moves the rear arm member 28 for release of the load, thereby protecting the rear arm member 28 from

damage.

[0058] At the backrest portion 22 constituting the seat's massage area, the rear massaging portion 24 operates so that the rear arm member 28 rocks together with the vertical massaging member 11a (the inside massaging member 6a), thereby enabling the rear massaging element 29 (the second massaging element) to press and rub the back B, the waist W, etc. (the second to-be-massaged part) of the user in a rear to front direction for acupressure massage-like pressing and rubbing massage to the part.

[0059] While the rear arm member 28 is attached to the upper part of the front edge of the vertical massaging member 11a in this embodiment, the location of attachment may be changed as required. Moreover, while the rear arm member 28 is provided as a single component (one on the right hand, one on the left hand) in this embodiment, as in the case of lower arm members 36 as will hereafter be described, two rear arm members 28 may be arranged as a set in the vertical direction (one set on the right hand, one set on the left hand).

Moreover, while the rear massaging element 29 is attached via the rear arm member 28 to the vertical massaging member 11a (the massaging member 6a) in this embodiment, directly attaching the rear massaging element 29 to the vertical massaging member 11a (the massaging

member 6a) is satisfactory.

[0060] The side massaging portion 25 protrudes forwardly through the hole 27b (opening) made in the lower part of the backrest portion 22 (the partition plate). The side massaging portion 25 comprises: a side arm member 34 attached to the edge of the massaging member 6 (the rocking mechanism); and the side massaging element 35 (the second massaging element) disposed at the tip of the side arm member 34.

 In this embodiment, the side arm member 34 is attached to the vertical massaging member 11b of the outside massaging member 6b. More specifically, the side arm member 34 is attached to the lower part of the front edge of the outside vertical massaging member 11b. The side arm member 34 is attached to the outside vertical massaging member 11b so as to protrude obliquely upwardly in the forward direction. The side arm member 34 rocks in the right-left direction along with the horizontal rocking motion of the outside vertical massaging member 11b.

[0061] The side massaging element 35 (the second massaging element) is attached to the tip of the side arm member 34. That is, the side massaging element 35 protrudes forwardly from the tip of the side arm member 34. The side massaging element 35 is rectangularly shaped as seen in side view.

Moreover, the side massaging element 35 has an inwardly bulged form. The side massaging element 35 is positioned for contact with the waist side part S of the user leaning on the backrest portion 22. That is, the side massaging portion 25 is forwardly bent as seen in side view.

[0062] The spacing between the paired right-hand and left-hand side massaging portions 25 is substantially equal to the width of the upper body (the waist W) of the user. That is, the user sitting in the seat portion 21 leans back against the backrest portion 22, with the upper body held between the paired right-hand and left-hand side massaging portions 25.

At the backrest portion 22 constituting the seat's massage area, the side massaging portion 25 operates so that the side arm member 34 rocks together with the outside vertical massaging member 11b (the outside massaging member 6b), thereby enabling the inwardly-bulged side massaging element 35 (the second massaging element) to press the waist side part S (the second to-be-massaged part) of the user in an outside to inside direction for "pressing massage" to the part.

[0063] While the side arm member 34 is attached to the lower part of the front edge of the vertical massaging member 10b in this embodiment, the location of attachment

may be changed as required. For example, the side arm member 34 (the side massaging portion 25) may be attached to the upper edge of the outside horizontal massaging member 10b. Moreover, the side massaging element 35 may be provided with an air bag which is alternately inflated and deflated repeatedly.

[0064] Moreover, while the side massaging element 35 is attached via the side arm member 34 to the vertical massaging member 11b (the massaging member 6b) in this embodiment, directly attaching the side massaging element 35 to the vertical massaging member 11b (the massaging member 6b) is satisfactory.

The lower massaging portion 26 protrudes upwardly through the hole (opening) 27c, 27d made in the seat portion 21 (the partition plate). The lower massaging portion 26 comprises: a lower arm member 36 attached to the edge of the massaging member 6 (the rocking mechanism); and the lower massaging element 37 (the second massaging element) disposed at the tip of the lower arm member 36.

[0065] As shown in FIG. 8, in this embodiment, the lower arm member 36 is attached to the horizontal massaging member 10a of the inside massaging member 6a. There are provided two lower arm members 36 arranged as a set in the front-rear direction, of which one located toward the front is a front lower arm member 36a protruding upwardly through

the hole 27c made in the front part of the seat portion 21, and the other located toward the rear is a rear lower arm member 36b protruding upwardly through the hole 27d made in the rear part of the seat portion 21.

[0066] More specifically, the front lower arm member 36a is attached to the tip of the inside horizontal massaging member 10a. The lower arm member 36a is mounted in an upwardly and obliquely forwardly projected position.

On the other hand, the rear lower arm member 36b is attached to a lengthwise intermediate part of the inside horizontal massaging member 10a. The lower arm member 36b is mounted in an upwardly and obliquely rearwardly projected position.

[0067] The lower arm member 36 rocks in the right-left direction along with the horizontal rocking motion of the inside horizontal massaging member 10a. The lower arm member 36 is rotatably supported by a support member 38 disposed on the front edge of the inside horizontal massaging member 10a. In this embodiment, the support member 38 has the form of split bodies that sandwich and rotatably support the lower arm member 36a, 36b from both sides in the right-left direction.

[0068] A spherically shaped lower massaging element 37a (the second massaging element) is disposed at the tip of the front lower arm member 36a. The lower massaging

element 37a is mounted in an upwardly and obliquely forwardly projected position.

Moreover, a spherically shaped lower massaging element 37b (the second massaging element) is disposed at the tip of the rear lower arm member 36b. The lower massaging element 37b is mounted in an upwardly and obliquely rearwardly projected position.

[0069] The lower massaging element 37 is positioned for contact with the buttocks A, etc. of the user sitting in the seat portion 21. The lower massaging element 37 rocks in the right-left direction along with the horizontal rocking motion of the lower arm member 36.

The front lower arm member 36a is provided at its base end with a shaft member 39a. The shaft member 39a is mounted with its axis directed in the right-left direction. The shaft member 39a is fitted in a hole 40a made in the front part of the support member 38. With the shaft member 39a rotatably supported in the hole 40a, the front lower arm member 36a is supported for rotational movement in the vertical direction (rotational movement about the axis of the shaft member 39a) relative to the support member 38.

[0070] The rear lower arm member 36b is provided at its base end with a shaft member 39b. The shaft member 39b is mounted with its axis directed in the right-left direction. The shaft member 39b is fitted in a hole 40b

made in the rear part of the support member 38. With the shaft member 39b rotatably supported in the hole 40b, the rear lower arm member 36b is supported for rotational movement in the vertical direction (rotational movement about the axis of the shaft member 39b) relative to the support member 38.

[0071] The shaft member 39a is fitted with a spring member 41a. The spring member 41a supports the front lower arm member 36a in an upwardly and obliquely forwardly projected position. The spring member 41a rotationally moves the front lower arm member 36a under a load of predetermined level or higher, and returns the front lower arm member 36a to its original position by repulsive force upon release of the load.

Moreover, the shaft member 39b is fitted with a spring member 41b. The spring member 41b supports the rear lower arm member 36b in an upwardly and obliquely rearwardly projected position. The spring member 41b rotationally moves the rear lower arm member 36b under a load of predetermined level or higher, and returns the rear lower arm member 36b to its original position by repulsive force upon release of the load.

[0072] For example, during massage on the buttocks A, the spring member 41a, 41b rotationally moves the lower arm member 36a, 36b in the front-rear direction, thereby

enabling the lower massaging element 37a, 37b attached to the lower arm member 36a, 36b to move smoothly over the buttocks A.

Moreover, in order to prevent the lower massaging element 37a, 37b from exerting excessive pressing force, the spring member 41a, 41b rotationally moves the lower arm member 36a, 36b for release of the load to reduce the pressing force to some extent, thereby avoiding pain to the buttocks A. In addition, when subjected to a load of predetermined level or higher, the spring member 41a, 41b rotationally moves the lower arm member 36a, 36b for release of the load, thereby protecting the lower arm member 36a, 36b from damage.

[0073] At the seat portion 21 constituting the seat's massage area, the lower massaging portion 26 operates so that the lower arm member 36a, 36b rocks together with the horizontal massaging member 10a (the inside massaging member 6a), thereby enabling the lower massaging element 37a, 37b (the second massaging element) to press and rub the buttocks A, etc. (the second to-be-massaged part) of the user in a bottom to top direction for acupressure massage-like pressing and rubbing massage to the part.

[0074] While the lower arm member 36 is attached to the front edge (tip side) of the horizontal massaging member 10a in this embodiment, the location of attachment

may be changed as required. Moreover, while two lower arm members 36 are arranged as a set in the front-rear direction (one set on the left hand, one set on the right hand), as in the case of the rear arm member 28 as described earlier, the lower arm member 36 may be provided as a single component (one on the right hand, one on the left hand).

Moreover, while the lower massaging element 37 is attached via the lower arm member 36 to the horizontal massaging member 10a (the massaging member 6a) in this embodiment, directly attaching the lower massaging element 37 to the horizontal massaging member 10a (the massaging member 6a) is satisfactory.

[Second Embodiment]

Next, a second embodiment of the massage machine 1 pursuant to the present invention will be described.

[0075] FIGs. 9 to 11 are drawings showing the second embodiment of the massage machine 1 pursuant to the present invention.

As shown in FIGs. 9 to 11, the massage machine 1 according to the second embodiment is substantially identical in structure with the massage machine according to the first embodiment (refer to FIGs. 1 to 8, etc.).

That is, the massage machine 1 according to the second embodiment likewise comprises a case body 2 with a

leg massage area (a first massage area) for performing squeezing massage on user's leg L (a first to-be-massaged part such as foot F and calf C) and a seat's massage area (a second massage area) for performing pressing massage on at least user's upper body (a second to-be-massaged part such as back B, waist W, waist side part S, buttocks A, etc.). That is, the massage machine 1 according to the second embodiment likewise comprises the case body 2 accommodating a leg massaging mechanism 3, a massage drive section 8, and a seat's massaging mechanism 23.

[0076] More specifically, in this embodiment, the leg massaging mechanism 3 likewise comprises: a pair of right-hand and left-hand massaging members 6 (first massaging elements) spaced apart for sandwiching the leg L; a rotating shaft 7 passed through the base ends of the massaging members 6 in the right-left direction; and a converting section 9 that converts a rotational driving force on the rotating shaft 7 into rocking motion of the massaging members 6. Note that the rotating shaft 7 is provided with a rotative massaging member 42 which is operative to massage the back side of the calf C.

[0077] Moreover, the massaging member 6 (the first massaging element) likewise comprises: a pair of right-hand and left-hand horizontal massaging members 10, each in substantially the shape of an L as seen in side view,

arranged for sandwiching the foot F; and a pair of right-hand and left-hand vertical massaging members 11 arranged for sandwiching the calf C. There are likewise provided an inside massaging member 6a and an outside massaging member 6b arranged at a predetermined spacing. In addition, the horizontal massaging member 10 is likewise provided with a press massaging member 12 and a massaging element 13.

[0078] Moreover, the message drive section 8 likewise comprises a single drive motor 14 and a gear case 15. The converting section 9 likewise comprises: a rotating boss portion 16 rotatably attached to the rotating shaft 7; an annular fit portion 17 fitted onto the rotating boss portion 16; and a restraining portion 18 that restrains the massaging member 6 from rotating together with the rotating shaft 7.

Moreover, the case body 2 likewise comprises a seat portion 21 and a backrest portion 22 (partition plate).

[0079] In this embodiment, the seat's massaging mechanism 23 likewise comprises: a rear massaging portion 24 that performs massage on the back B and the waist W (the second to-be-massaged part); a side massaging portion 25 that performs massage on the waist side part S (the second to-be-massaged part); and a lower massaging portion 26 that performs massage on the buttocks A (the second to-be-massaged part).

Moreover, the rear massaging portion 24 likewise protrudes forwardly from the backrest portion 22 (the partition plate), and comprises: a rear arm member 28 attached to the edge of the massaging member 6; and a rear massaging element 29 (a second massaging element) disposed at the tip of the rear arm member 28. The rear arm member 28 is likewise attached to a vertical massaging member 11a of an inside massaging member 6a. Openings (holes 27a to 27d) made in the partition plate are omitted from the drawings illustrating this embodiment.

[0080] Moreover, the side massaging portion 25 likewise protrudes forwardly from the backrest portion 22 (the partition plate), and comprises: a side arm member 34 attached to the edge of the massaging member 6; and a side massaging element 35 (the second massaging element) disposed at the tip of the side arm member 34. The side arm member 34 is likewise attached to a vertical massaging member 11b of an outside massaging member 6b. The side massaging element 35 likewise has an inwardly bulged form. There are likewise provided right-hand and left-hand side massaging portions 25 arranged at a predetermined spacing.

[0081] The lower massaging portion 26 likewise protrudes upwardly from the seat portion 21 (the partition plate), and comprises: a lower arm member 36 attached to the edge of the massaging member 6; and a lower massaging

element 37 (the second massaging element) disposed at the tip of the lower arm member 36. The lower arm member 36 is likewise attached to a horizontal massaging member 10a of an inside massaging member 6a. There are likewise provided a lower arm member 36a and a lower arm member 36b arranged in the front-rear direction. That is, there are likewise provided a lower massaging element 37a and a lower massaging element 37b arranged in the front-rear direction.

[0082] Moreover, the seat's massage area is likewise provided on the front side of the backrest portion 22 (the partition plate), and comprises the second massaging element (the rear massaging element 29, the side massaging element 35, and the lower massaging element 37).

Note that the second embodiment is distinctly different from the first embodiment in the configuration of the opening (the receiving recess 4) of the leg massage area. That is, the opening (the receiving recess 4) of the leg massage area is a front-facing opening for receiving the leg L of the user insertable from the front.

[0083] More specifically, in this embodiment, the receiving recess 4 is formed in the front side of the case body 2 so as to open into the front and upper parts of the front side. The receiving recess 4 is shaped as a vertically elongated opening. The case body 2 is provided at its front side with a pair of spaced right-hand and

left-hand receiving recesses 4. The receiving recess 4 is internally provided with a lining (not shown). The paired right-hand and left-hand receiving recesses 4 receive the right leg L and the left leg L (the calf C-to-foot F part), respectively, insertable from the front.

[0084] Moreover, the second embodiment is distinctly different from the first embodiment in the arrangement of the rotating shaft 7 as seen in side view.

As shown in FIG. 11, the rotating shaft 7 is disposed behind the leg massage area (located forward of the rear wall of the case body 2) as seen in side view. That is, the area situated forward of the rotating shaft 7 is the leg massage area, and the area situated forward of the leg massage area is the seat's massage area.

[0085] Moreover, the second embodiment is distinctly different from the first embodiment in the way the rear arm member 28 and the lower arm member 36 are mounted. That is, the rear arm member 28 is fixedly attached to the vertical massaging member 11a (the inside massaging member 6a), and, the lower arm member 36 is fixedly attached to the horizontal massaging member 10a.

Note that, in contrast to the first embodiment using the spring members 33 and 41, etc., in this embodiment, the rear arm member 28 and the lower arm member 36 are each constructed of an elastic member which undergoes slight

flexure under a load of predetermined level. Similarly, the rear massaging element 29 and the lower massaging element 37 are each constructed of a slightly flexural elastic member.

[Operation Mode]

The following describes the mode of operating the message machine 1 embodying the present invention.

[0086] The mode of operating the leg massaging mechanism 3 will first be described.

After sitting in a common chair or seat, the user places the leg L (the first to-be-massaged part) in the receiving recess 4 (the opening in the leg massage area) of the message machine 1 set in front of the chair.

For the message machine 1 according to the first embodiment, the user inserts the leg L into the receiving recess 4 from the rear. For the message machine 1 according to the second embodiment, the user inserts the leg L into the receiving recess 4 from the front.

[0087] The leg massaging mechanism 3 is set in motion when the user turns the power to the message machine 1 ON. The drive motor 14 of the message drive section 8 produces a rotational driving force which is outputted via the rotational drive shaft 14a to the gear case 15. After being inputted to the gear case 15, the rotational driving force is subjected to deceleration to a predetermined rate

by the plurality of gears 15a, and then transmitted to the rotating shaft 7.

Upon rotation of the rotating shaft 7, the converting section 9 converts the rotational driving force into rocking motion (approaching-separating movements of the horizontal massaging member 10 pair and the vertical massaging member 11 pair) of the massaging member 6 (the first massaging element). The rotation of the rotating shaft 7 causes the front ends of, respectively, the paired horizontal massaging members 10a and 10b to move toward each other for pressing and holding the toe T laterally. At this time, the lengthwise intermediate parts and the rear ends of, respectively, the horizontal massaging members 10a and 10b stay away from each other. That is, the heel H side of the foot is free of the pressing force.

[0088] Meanwhile, the upper ends of, respectively, the paired vertical massaging members 11a and 11b stay slightly away from each other. That is, the paired vertical massaging members 11a and 11b stand ready to hold the calf C laterally.

Then, the lengthwise intermediate parts of, respectively, the paired horizontal massaging members 10a and 10b move toward each other for pressing and holding the instep-side part of the foot laterally. At this time, the tips of, respectively, the horizontal massaging members 10a

and 10b move away from each other, whereas the rear ends thereof move toward each other. That is, the heel H side is to be pressed. Meanwhile, the upper ends of, respectively, the paired vertical massaging members 11a and 11b move toward each other for pressing and holding the calf C laterally.

[0089] Subsequently, the rear ends of, respectively, the paired horizontal massaging members 10a and 10b move toward each other for pressing and holding the heel H side laterally. At this time, the lengthwise intermediate parts of, respectively, the horizontal massaging members 10a and 10b move away from each other, and the tips thereof stay away from each other. Meanwhile, the upper ends of, respectively, the paired vertical massaging members 11a and 11b move further toward each other for pressing further and holding the calf C laterally.

[0090] For the massage machine 1 according to the second embodiment, upon rotation of the rotating shaft 7, the rotative massaging member 42 becomes operative to massage the back side of the calf C.

Thus, the following movements are repeated: the paired horizontal massaging members 10a and 10b (the first massaging elements) move toward and away from each other for pressing and holding the toe T, the instep, and the heel H of the foot F (the first to-be-massaged part)

successively in the order named; and the paired vertical massaging members 11a and 11b (the first massaging elements) move toward and away from each other for pressing and holding the calf C (the first to-be-massaged part) from below upward. This makes it possible to stimulate blood flow to the upper part of the leg L (from the foot F (toe T) to the upper part of the calf C). That is, the massage machine 1 embodying the present invention allows the user to experience effective massage for promoting blood circulation in the leg L.

[0091] Next, the mode of operating the seat's massaging mechanism 23 will be described.

After sitting in the seat portion 21 of the seat's massage area, the user bends the upper body backward and leans back against the backrest portion 22. The seat's massaging mechanism 23 is set in motion when the user turns the power to the massage machine 1 ON. The drive motor 14 of the massage drive section 8 produces a rotational driving force which is outputted via the rotational drive shaft 14a to the gear case 15. After being inputted to the gear case 15, the rotational driving force is subjected to deceleration to a predetermined rate by the plurality of gears 15a, and then transmitted to the rotating shaft 7.

[0092] Upon rotation of the rotating shaft 7, the converting section 9 converts the rotational driving force

into rocking motion (approaching-separating movements of the horizontal massaging member 10 pair and the vertical massaging member 11 pair) of the massaging member 6. The rotation of the rotating shaft 7 causes the front ends of, respectively, the paired vertical massaging members 11a and 11b to move toward each other.

At this time, the rear massaging portion 24 (the rear arm member 28) attached to the inside vertical massaging member 11a (the inside massaging member 6a) rocks substantially horizontally. That is, the left-hand rear arm member 28 and the right-hand rear arm member 28 rock outwardly in the right-left direction.

[0093] The left-hand rear massaging element 29 (the second massaging element) and the right-hand rear massaging element 29 (the second massaging element) move away from each other.

Meanwhile, the side massaging portion 25 (the side arm member 34) attached to the outside vertical massaging member 11b (the outside massaging member 6b) rocks substantially horizontally. That is, the left-hand side arm member 34 and the right-hand side arm member 34 rock inwardly in the right-left direction. The left-hand side massaging element 35 (the second massaging element) and the right-hand side massaging element 35 (the second massaging element) move toward each other.

[0094] Moreover, when the front ends of, respectively, the paired horizontal massaging members 10a and 10b move toward each other in response to the rotation of the rotating shaft 7, the lower massaging portion 26 (the lower arm member 36a, 36b) attached to the inside horizontal massaging member 10a (the inside massaging member 6a) rocks substantially horizontally. That is, the left-hand lower arm member 36a, 36b and the right-hand lower arm member 36a, 36b rock outwardly in the right-left direction. The left-hand lower massaging element 37a, 37b (the second massaging element) and the right-hand lower massaging element 37a, 37b (the second massaging element) move away from each other.

[0095] Subsequently, when the front ends of, respectively, the paired vertical massaging members 11a and 11b move away from each other, the left-hand rear arm member 28 and the right-hand rear arm member 28 rock inwardly in the right-left direction. The left-hand rear massaging element 29 and the right-hand rear massaging element 29 move toward each other. Meanwhile, the left-hand side arm member 34 and the right-hand side arm member 34 rock outwardly in the right-left direction. The left-hand side massaging element 35 and the right-hand side massaging element 35 move away from each other.

[0096] Moreover, when the front ends of, respectively,

the paired horizontal massaging members 10a and 10b move away from each other, the left-hand lower arm member 36a, 36b and the right-hand lower arm member 36a, 36b rock inwardly in the right-left direction. The left-hand lower massaging element 37a, 37b and the right-hand lower massaging element 37a, 37b move toward each other.

Thus, the following movements are repeated: the paired vertical massaging members 11a and 11b move toward and away from each other for enabling the rear massaging element 29 (the second massaging element) to press and rub the back B, the waist W, etc. (the second to-be-massaged part) of the user in a rear to front direction for acupressure massage-like pressing and rubbing massage to the part, as well as enabling the side massaging element 35 (the second massaging element) to press the waist side part S (the second to-be-massaged part) of the user in an outside to inside direction for "pressing massage" to the part; and the paired horizontal massaging members 10a and 10b move toward and away from each other for enabling the lower massaging element 37a, 37b (the second massaging element) to press and rub the buttocks A (the second to-be-massaged part), etc. of the user in a bottom to top direction for acupressure massage-like pressing and rubbing massage to the part. This makes it possible to relax the muscles, etc. of the back B, the waist side part S, the

buttocks A, etc., and thereby allow the user to experience effective massage for easing muscle tension and promoting blood circulation in the upper body, etc.

[0097] The present invention provides the massage machine that, as a single unit, massages the leg L such as the foot F and the calf C (the first to-be-massaged part) of the user with the first massaging element, and can also massage the upper body such as the back B, the waist W, the waist side part S, the buttocks A, etc. (the second to-be-massaged part) of the user with the second massaging element.

It should be understood that the embodiments as disclosed herein are considered in all respects as illustrative only and not restrictive.

[0098] In particular, for such matters as not explicitly specified in the disclosure of the embodiments, e.g. working conditions, operating conditions, and the dimensions, weights, etc. of the structural components, those that do not depart from the practical range which is normally complied with by persons skilled in the art and conform to matters of common knowledge among the skilled persons are adopted herein.

For example, the length of each of the inside massaging member 6a and the outside massaging member 6b provided in the massage machine 1, the angle of inclination

of each of the inside massaging member 6a and the outside massaging member 6b with respect to the rotating shaft 7, and the spacing between the right-hand and left-hand inside massaging members 6a, as well as the spacing between the right-hand and left-hand outside massaging members 6b, may be properly changed as required in accordance with the range of massage treatment.

[0099] While, in the embodiments, the rear massaging element 29, the side massaging element 35, and the lower massaging element 37 are attached to the massaging member 6 via the rear arm member 28, the side arm member 34, and the lower arm member 36, respectively, directly attaching these elements to the massaging member 6 is satisfactory.

Moreover, while, in the embodiments, the massaging member 6 is formed by joining the horizontal massaging member 10 (the forwardly extending portion) and the vertical massaging member 11 (the upwardly extending portion) into one substantially L-shaped (boot-like) member as seen in side view, it is satisfactory to form the massaging member 6 by separately disposing the horizontal massaging member 10 and the vertical massaging member 11 in a substantially L-shaped arrangement as seen in side view.

[0100] For the basic device configurations of the leg massaging mechanism 3, etc. as described heretofore, reference may be had to Japanese Unexamined Patent

Publication JP-A 2019-180468 and Japanese Unexamined Patent
Publication JP-A 2019-000159, for example.

Reference Signs List

[0101]

- 1 Message machine
- 2 Case body
- 3 Leg massaging mechanism
- 4 Receiving recess
- 5a Support member
- 5b Support member
- 6 Massaging member (First massaging element, Rocking
mechanism)
- 6a Inside massaging member
- 6b Outside massaging member
- 7 Rotating shaft
- 8 Message drive section (Rocking mechanism)
- 9 Converting section
- 10 Horizontal massaging member
- 10a Inside horizontal massaging member
- 10b Outside horizontal massaging member
- 11 Vertical massaging member
- 11a Inside vertical massaging member
- 11b Outside vertical massaging member
- 12 Press massaging member
- 13 Massaging element

- 14 Drive motor
- 14a Rotational drive shaft
- 15 Gear case
- 15a Gear
- 16 Rotating boss portion
- 17 Annular fit portion
- 18 Restraining portion
- 19 Restraining pin
- 20 Restraining slot
- 21 Seat portion (Partition plate)
- 22 Backrest portion (Partition plate)
- 23 Seat's massaging mechanism
- 24 Rear massaging portion
- 25 Side massaging portion
- 26 Lower massaging portion
- 27a Hole (in upper part of Backrest portion)
- 27b Hole (in lower part of Backrest portion)
- 27c Hole (in front part of Seat portion)
- 27d Hole (in rear part of Seat portion)
- 28 Rear arm member
- 29 Rear massaging element (Second massaging element)
- 30 Support member
- 31 Shaft member
- 32 Hole (in Support member)
- 33 Spring member

34 Side arm member
 35 Side massaging element (Second massaging element)
 36 Lower arm member
 36a Lower arm member
 36b Lower arm member
 37 Lower massaging element (Second massaging element)
 37a Lower massaging element (Second massaging element)
 37b Lower massaging element (Second massaging element)
 38 Support member
 39a Shaft member
 39b Shaft member
 40a Hole
 40b Hole
 41a Spring member
 41b Spring member
 42 Rotative massaging member
 B Back (Second to-be-massaged part)
 W Waist (Second to-be-massaged part)
 S Waist side part (Side of the body) (Second to-be-massaged part)
 A Buttocks (Second to-be-massaged part)
 L Leg (First to-be-massaged part)
 C Calf (First to-be-massaged part)
 F Foot (First to-be-massaged part)
 T Toe

S Sole

H Heel

CLAIMS

1. A massage machine, comprising:
 - a first massaging element that massages a first to-be-massaged part of a user; and
 - a second massaging element that massages a second to-be-massaged part of the user,
 - the first massaging element being located on one side of a partition plate in a front-rear direction,
 - the partition plate being mounted so as to extend in a right-left direction,
 - the second massaging element being located on an other side of the partition plate in the front-rear direction.
2. The massage machine according to claim 1, wherein
 - on the one side, there is disposed a rocking mechanism in which the first massaging elements are moved toward and away from each other relative to the first to-be-massaged part for squeezing massage to the first to-be-massaged part, and
 - on the other side, the second massaging element massages the second to-be-massaged part,
 - the second massaging element being disposed in the rocking mechanism, and protruding through an opening of the

partition plate.

3. The message machine according to claim 2, comprising:
a case body configured for user seating,
the case body including a first massage area for
massaging the first to-be-massaged part by the first
massaging element, and a second massage area for massaging
the second to-be-massaged part by the second massaging
element.

4. The message machine according to claim 3, wherein
the second massage area is defined by a region which
is provided on a front side of the case body and allows
seating of the user, and
the first massage area is defined by a region which
is provided on a rear side of the case body and is formed
with an opening for receiving the first to-be-massaged
part.

5. The message machine according to claim 4, wherein
the opening of the first massage area is a rear-
facing opening for receiving the first to-be-massaged part
insertable from rear.

6. The message machine according to claim 5, wherein

the case body comprises the partition plate,
the partition plate is shaped like a chair comprising
a seat portion configured for seating of the user and a
backrest portion,

the first massage area is provided on a rear side of
the backrest portion,

the case body has an interior in which are disposed a
pair of right-hand and left-hand massaging members that
hold and press, with the first massaging elements, the
first to-be-massaged part which has been inserted in the
opening of the first massage area from rear, and a massage
drive section that imparts rocking motion to the massaging
members, and

the second massage area is provided on a front side
of the backrest portion, and includes the second massaging
element.

7. The massage machine according to claim 4, wherein
the opening of the first massage area is a front-
facing opening for receiving the first to-be-massaged part
of the user insertable from front.

8. The massage machine according to claim 4, wherein
the case body comprises the partition plate,
the partition plate is shaped like a chair comprising

a seat portion configured for seating of the user and a backrest portion,

the first massage area is provided on a rear side of the backrest portion,

the case body has an interior in which are disposed a pair of right-hand and left-hand massaging members that hold and press, with the first massaging elements, the first to-be-massaged part which has been inserted in the opening of the first massage area from front, and a massage drive section that imparts rocking motion to the massaging members, and

the second massage area is provided on a front side of the backrest portion, and includes the second massaging element.

9. The massage machine according to claim 8, wherein each of the massaging members is provided at its edge with the second massaging element, and

the massage drive section imparts rocking motion to the massaging members, thereby enabling the second massaging element to massage the second to-be-massaged part situated on the seat portion.

10. The massage machine according to claim 9, wherein the massaging members are each an L-shaped member

comprising: a forwardly extending portion extended forwardly from a base end; and an upwardly extending portion extended upwardly from the base end, and

the second massaging element is attached, in a state for projecting toward the user, to at least one of the forwardly extending portion and the upwardly extending portion.

11. The message machine according to claim 6, wherein the message drive section includes a single drive motor.

12. The message machine according to any one of claims 1 to 11, wherein

the first to-be-massaged part refers to a leg of the user, the leg including at least foot and calf of the user, and

the second to-be-massaged part refers to a body part of the user, the body part including at least buttocks, waist, and back of the user.