

CLAIMS

1. A back massaging apparatus provided on a backrest part on which a user is allowed to take a backrest posture, comprising:

a massaging mechanism including: left and right paired massaging members each of which is provided with a treatment unit performing a massaging operation; and a drive unit transmitting a massaging operation to the massaging members; and

a projection amount variable mechanism which moves said massaging members so that a projection amount in a back and forth direction of said treatment unit is varied, wherein

a base portion of said massaging members is pivoted on a shaft core installed in a left and right direction and is made swingable about a shaft, and wherein

said projection amount variable mechanism is configured so as to swing said massaging members about the shaft core installed in the left and right direction via side portions of the base portion of said massaging members and render the projection amount in the back and forth direction of said treatment unit to be variable.

2. The back massaging apparatus according to claim 1, wherein said projection amount variable mechanism includes a crank shaft having one end portion coupled to a side portion of the base portion of the massaging members via a universal joint, and wherein

upon pushing and pulling said crank shaft, said massaging

members are configured so as to be swung about the shaft core installed in the left and right direction.

3. The back massaging apparatus according to claim 2, wherein said crank shaft is curved so as not to be interfered with the base portion of said massaging members in a case where said treatment unit is activated so as to be moved backward.

4. The back massaging apparatus according to claim 3, wherein said universal joint is a ball joint, and said ball joint includes: a ball body provided in a state of projecting outward in a width direction from the side part of the base portion of the massaging members; and a jacket body provided on one end portion of said crank shaft and fitted to said ball body from the outside in the width direction.

5. The back massaging apparatus according to claim 4, wherein said massaging mechanism includes: a massaging drive unit driving said massaging members so as to move said treatment units closer to or separate away from each other in the left and right direction to thereby perform a massaging operation; and a tapping drive unit driving said massaging members so as to reciprocally move said treatment units in the back and forth direction or in a vertical direction by repeatedly swinging the base portion of said massaging members about the shaft to thereby perform a tapping massage operation, and wherein

said tapping drive unit is coupled with the other end portion of said crank shaft and said tapping drive unit is allowed to repeatedly push and pull said crank shaft.

6. The back massaging apparatus according to claim 5, wherein said massaging drive unit includes: a first rotating shaft installed in the left and right direction; said massaging members provided so as to be relatively rotatable to the first rotating shaft; and a swing stopper mechanism regulating the massaging members from rotating together with the rotation of said first rotating shaft, wherein

said swing stopper mechanism is configured to have one end portion of said crank shaft coupled to the side part of the base portion of the massaging members via the universal joint and the other end portion of said crank shaft coupled to the tapping drive unit.

7. The back massaging apparatus according to claim 6, wherein said massaging drive unit includes: the first rotating shaft installed in the left and right direction; said massaging members provided so as to be relatively rotatable to the first rotating shaft; and the swing stopper mechanism regulating the massaging members from rotating together with the rotation of said first rotating shaft, wherein

said tapping drive unit is configured to be movable in the vertical direction on said base member, and upon vertical movement

thereof, said crank shaft is configured to be push/pull movable, and said tapping drive unit includes: a second rotating shaft arranged in parallel with said first rotating shaft; and an eccentric drive unit provided in a state of the second rotating shaft being eccentric, and wherein

said eccentric drive unit is coupled with the other end portion of said crank shaft.

CLAIMS

1. A back massaging apparatus (4) provided on a backrest part (3) on which a user is allowed to take a backrest posture, comprising:

a pair of left and right supporting arms (20) with tip portions thereof projected forward;

a treatment unit (21) provided on each of the tip portions of said supporting arms (20);

a massaging mechanism (10) allowing said treatment unit (21) to cause a massaging operation via each of said supporting arms (20);

a projection amount variable mechanism (14) which moves said supporting arms (20) back and forth so that a projection amount in a back and forth direction of said treatment unit (21) is varied; and

a base member (12) having said massaging mechanism (10) installed thereon and moving in a vertical direction along a vertical movement mechanism (13) which is provided within said backrest part (3), wherein

base portions of said supporting arms (20) are pivoted on a shaft core (26) installed in a left and right direction and are made swingable about said shaft core (26), wherein

said projection amount variable mechanism (14) is configured so as to swing said supporting arms (20) about

said shaft core (26) installed in the left and right direction via side portions in the left and right direction of the base portions of said supporting arms (20) and render the projection amount in the back and forth direction of said treatment unit (21) to be variable, wherein

said projection amount variable mechanism (14) includes a crank shaft (36) having one end portion coupled to said side portions in the left and right direction of the base portions of said supporting arms (20) via a universal joint, and wherein

upon pushing and pulling said crank shaft (36), said supporting arms (20) are configured so as to be swung about said shaft core (26) installed in the left and right direction.

2. The back massaging apparatus according to claim 1, wherein said universal joint is a ball joint, and said ball joint includes: a ball body (28B) provided in a state of projecting outward in the left and right direction from the side parts of the base portions of said supporting arms (20); and a jacket body (28A) provided on one end portion of said crank shaft (36) and fitted to said ball body (28B) from the outside in the left and right direction.

3. The back massaging apparatus according to claim 1 or 2, wherein said massaging mechanism (10) includes: a massaging drive unit (23) driving said supporting arms (20) so as to move said treatment units (21) closer to or separate away from each other in the left and right direction to thereby perform a massaging operation; and a tapping drive unit (24) driving said supporting arms (20) so as to reciprocally move said treatment units (21) in the back and forth direction or in the vertical direction by repeatedly swinging the base portions of said supporting arms (20) about the shaft to thereby perform a tapping massage operation, and wherein

said tapping drive unit (24) is coupled with the other end portion of said crank shaft (36) and said tapping drive unit (24) is allowed to repeatedly push and pull said crank shaft (36).

4. The back massaging apparatus according to claim 3, wherein said massaging drive unit (23) includes: a first rotating shaft (26) installed in the left and right direction; said supporting arms (20) provided so as to be relatively rotatable to the first rotating shaft (26); and a swing stopper mechanism (28) regulating said supporting arms (20) from rotating together with the

rotation of said first rotating shaft (26), wherein
said swing stopper mechanism (28) is configured to have one end portion of said crank shaft (36) coupled to the side parts in the left and right direction of the base portions of said supporting arms (20) via said universal joint and the other end portion of said crank shaft (36) coupled to said tapping drive unit (24).

5. The back massaging apparatus according to claim 3 or 4, wherein said massaging drive unit (23) includes: the first rotating shaft (26) installed in the left and right direction; said supporting arms (20) provided so as to be relatively rotatable to the first rotating shaft (26); and the swing stopper mechanism (28) regulating said supporting arms (20) from rotating together with the rotation of said first rotating shaft (26), wherein
said tapping drive unit (24) is configured to be movable in the vertical direction with respect to said base member (12), and upon vertical movement thereof, said crank shaft (36) is configured to be push/pull movable, and said tapping drive unit (24) includes: a second rotating shaft (31) arranged in parallel with said first rotating shaft (26); and an eccentric drive unit (34) provided in a state of being eccentric with respect to said second rotating shaft (31), and wherein

said eccentric drive unit (34) is coupled with the other end portion of said crank shaft (36).