Claims

[Claim 1]

A health promoting apparatus for promoting health of a jetting target object, comprising:

a swirling microbubble generating device that includes a container main body having a cylindrical space having a gas introduction hole formed on one end side thereof and an opening portion formed on the other side thereof, and a pressurized liquid introduction port opened in a tangential direction thereof at a part of a peripheral surface of an inner wall of the cylindrical space and connected to a pipe for feeding pressurized liquid; and

a water tank for accommodating a jetting target to be exposed to microbubbles jetted by the swirling microbubble generating device and liquid containing the microbubbles, wherein a plurality of swirling microbubble generating devices connected to branch pipes branched from the pipe are arranged so as to be opposite to the jetting target, and the opening portions are arranged in the water tank so as to face the jetting target.

[Claim 2]

The health promoting apparatus according to claim 1, wherein the swirling microbubble generating device has a negative potential of minus 40 millivolts in liquid, and generates lots of microbubbles each having a diameter of

10 to 40 μm, most of the microbubbles contracting from just after the generation thereof.

[Claim 3]

The health promoting apparatus according to claim 1, wherein a cap through which microbubbles jetted from the opening portion are jetted like a shower is freely detachably attached on the other side of the swirling microbubble generating device.

[Claim 4]

The health promoting apparatus according to claim 1, wherein the opening portions are arranged such that microbubbles can be proximately jetted to the jetting target.

[Claim 5]

The health promoting apparatus according to claim 1, wherein the water tank is a bathtub, the jetting target object to be accommodated in the bathtub is a jetting target person who bathes while sitting on a seat portion of a chair or a jetting target person who bathes in a lying posture, and the swirling microbubble generating devices are arranged on a bottom surface and a side wall surface of the bathtub.

[Claim 6]

The health promoting apparatus according to claim 1, wherein the jetting target to be accommodated in the water tank is legs of the jetting target person, and the

opening portion is arranged so as to be opposite to legs and so as to face right and left insides of both the legs.

[Claim 7]

The health promoting apparatus according to claim 6, wherein a connecting portion for connecting to an adjacent water tank is provided at a front portion of the water tank, and connecting portions of adjacent water tanks are connected to each other by a handle to provide a foot bathing microbubble apparatus for at least two persons.

[Claim 8]

The heath promoting apparatus according to claim 1, wherein the jetting target to be accommodated in the water tank is feet of a jetting target person sitting on a wheelchair, and the water tank is configured to have a shape which enables insertion of the water tank into a space under a seat surface of the wheelchair, and the opening portions are arranged on a bottom surface of the water tank so as to face undersides of both the feet, and are arranged on a rear surface of the water tank so as to face Achilles tendons of both the feet.

[Claim 9]

The health promoting apparatus according to claim 1, wherein the jetting target accommodated in the water tank is one knee of a jetting target person, and the opening portions are arranged on a bottom surface and a front surface of the water tank.

[Claim 10]

The health promoting apparatus according to claim 1 wherein the jetting target to be accommodated in the water tank is both knees of a jetting target person, and the opening portions are arranged on a rear surface of the water tank, enable proximate jetting of microbubbles via a flexible pipe, and are arranged so as to face front sides of both the knees.

[Claim 11]

The health promoting apparatus according to claim 9, further comprising a chair including a seat portion for supporting buttocks of a jetting target person, and a slope portion for supporting a chest of a jetting target person in a stooped state.

[Claim 12]

The health promoting apparatus according to claim 1, wherein the jetting target to be accommodated in the water tank is an upper limb of a jetting target person, and the opening portions are arranged on a bottom surface of the water tank.

[Claim 13]

The health promoting apparatus according to claim 1, wherein the jetting target to be accommodated in the water tank is upper limbs of a plurality of jetting target persons, and the opening portions are arranged on a plurality of side surfaces of the water tank.

[Claim 14]

The health promoting apparatus according to claim 1, wherein the jetting target to be accommodated in the water tank is a face of a jetting target person, the opening portions are arranged on a bottom surface and a side surface of the water tank, enable proximate jetting of microbubbles via a flexible pipe, and are arranged so as to face the face of the jetting target person.

[Claim 15]

The health promoting apparatus according to claim 1, wherein the jetting target to be accommodated in the water tank is a hand of a jetting target person, and the opening portions are arranged on a bottom surface of the water tank, enable proximate jetting of microbubbles via a flexible tube and are arranged so as to face the hand of the jetting target person.

[Claim 16]

The health promoting apparatus according to claim 1, wherein the jetting target object is a pet as a pet animal, and the opening portions are arranged on a bottom surface or a side surface of the water tank.

[Claim 17]

The health promoting apparatus according to any one of claims 6 to 16, further comprising a movable carriage.

[Claim 18]

The health promoting apparatus according to any one of claims 6 to 16, wherein a volume of the water tank of

each of the swirling microbubble generating devices is 1 liter to 20 liters.

[Claim 19]

The health promoting apparatus according to claim 1, wherein the water tank and a pump for feeding pressurized fluid to the swirling microbubble generating devices arranged in the water tank are provided on separate movable carriages.

[Claim 20]

The health promoting apparatus according to any one of claims 6 to 16, further comprising a heater.

[Claim 21]

The health promoting apparatus according to any one of claims 6 to 16, further comprising a timer for controlling an operation of the health promoting apparatus.

[Claim 22]

The health promoting apparatus according to any one of claims 6 to 16, wherein the health promoting apparatus is capable of controlling a jetting pressure, a flow rate or a liquid temperature of liquid containing microbubbles.