

CN103989429 B

Title :
一种足浴盆

One kind of foot tub

Abstract :

本发明公开了一种足浴盆，包括：面壳、底壳以及设于所述面壳顶面的功能按键，所述面壳底部与底壳之间设有空腔，所述空腔内的左右两侧分别对称设有至少一个低频脉冲产生器，所述低频脉冲产生器与所述功能按键电连接，所述空腔内的左右两侧还分别对称设有至少一个扬声器。本发明在面壳底部左右两侧分别设有低频脉冲产生器，通过低频脉冲产生器发出的低频脉冲波使液体振动并不断发生空化现象，模拟人手的按摩节奏对使用者脚底进行按摩，安全舒适，适用于各种体质的使用者。较优的，面壳与底壳的空腔内还设有扬声器，通过扬声器增强液体的声压，加快液体的空化现象，提高本发明的按摩效果。

The present invention discloses a foot bath, comprising: a shell, bottom shell and function keys provided on the top surface of the shell surface, the surface of the shell cavity is provided between the bottom and the bottom shell, the space respectively symmetrical right and left sides of the cavity with at least one low frequency pulse generator, and said low frequency pulse generator electrically connected to the function keys, right and left sides of the cavity, respectively, also symmetrically provided with at least one speaker. The left and right sides of the bottom surface of the housing in the present invention are provided with low frequency pulse generator, low frequency pulse wave emitted by low frequency pulse generator and liquid vibration continue to occur cavitation, hand-simulated massage foot massage rhythm of users, security comfortable, suitable for all kinds of physical user. More excellent, surface shell and bottom shell cavity also has a speaker, the speaker enhanced sound pressure liquid cavitation to accelerate the liquid to improve the massage effect of the present invention.

Claim(s) :

1.一种足浴盆，包括：面壳（1）、底壳（2）以及设于所述面壳（1）顶面的按键，其特征在于，所述面壳（1）底部与底壳（2）之间设有空腔，所述空腔内的左右两侧分别对称设有至少一个低频脉冲产生器（3），所述低频脉冲产生器（3）与所述按键电连接，所述按键控制低频脉冲产生器（3）的工作状态；所述面壳（1）中部设有分隔左右两侧的夹板（6），所述夹板（6）内设空腔且两侧分别设有通孔（61），所述夹板（6）的空腔内设有弱碱性产生片（7），所述弱碱性产生片（7）与所述按键低压电连接，所述弱碱性产生片（7）采用石墨烯或贵金属制成；

所述面壳（1）内设有与所述夹板（6）前后两端外形配合的凹槽（13），所述夹板（6）的顶面一端设有向下凸出且与所述弱碱性产生片（7）电连接的插接母座（8），所述面壳（1）顶面上设有向上凸出且与所述插接母座（8）配合的插接头（9），所述插接头（9）与所述按键低压电连接，所述夹板（6）通过凹槽（13）与面壳（1）可拆卸固定时，插接头（9）配合插入插接母座（8）内。

2.如权利要求1所述的足浴盆，其特征在于，所述面壳（1）底部设有与所述低频脉冲产生器（3）形状配合的圆孔（11），所述低频脉冲产生器（3）顶端设于所述圆孔（11）内，所述圆孔（11）顶面外圈设有一与所述面壳（1）底部密封固定的透明罩（4）。

3.如权利要求2所述的足浴盆，其特征在于，所述面壳（1）底部顶面设有均匀排列的凸点（12），所述凸点（12）排列外形为脚掌形状。

4.如权利要求3所述的足浴盆，其特征在于，所述低频脉冲产生器（3）顶端设于所述面壳（1）底部脚掌形状的涌泉穴位置。

1 a foot bath, include: surface casing (1), Bottom (2) and provided on the surface of the shell (1) the key top surface, wherein the surface shell (1) is provided between the bottom of the pan (2) of the cavity, the cavity of the left and right sides, respectively, symmetric with at least one low frequency pulse generator (3), said low frequency pulse generator (3) and the said key is electrically connected to the low frequency pulse generator control button (3) working condition; the surface shell (1) has a central plywood separated left and right (6), the jaws (6) equipped with a cavity and respectively provided on both sides of the through hole (61), said splint (6) equipped with a cavity to produce a weakly basic sheet (7), generating the weakly basic sheet (7) is connected to the low voltage keys said weakly basic produce sheet (7) using graphene or noble metal;

The surface shell (1) is provided with the splint (6) shape with front and rear ends of the groove (13), the jaws (6) has a top surface at one end and with a downwardly projecting generating the weakly basic sheet (7) female electrical connector (8) is connected, said surface shell (1) has a top surface and projecting upwardly with the female connector (8) of the mating plug connector (9), the plug connector (9) is connected to the low voltage button, the splint (6) through the recess (13) and the surface shell (1) is removably fixed, plug connector (9) with insertion female connector (8).

- 5.如权利要求1所述的足浴盆，其特征在于：所述空腔内的左右两侧还分别对称设有至少一个扬声器（5）。
- 6.如权利要求5所述的足浴盆，其特征在于，所述空腔内的左右两侧前分别对称设有两个扬声器（5）。
- 7.如权利要求1所述的足浴盆，其特征在于，所述面壳（1）顶面还设有与按键电连接的显示装置（10）。

2. As claimed in claim 1, wherein the foot bath, wherein (1) the bottom surface of the housing is provided with a low frequency pulse generator (3) with the shape of a circle hole (11), said low frequency pulse generator (3) provided on top of the hole (11) within the hole (11) with a top surface of the outer ring (1) with a bottom surface of the housing seal holder the transparent cover (4).
3. Foot tub as claimed in claim 2, wherein said surface shell (1) at the bottom of the top surface has a uniform arrangement of bumps (12), said projections point (12) arranged in the shape of the foot shape.
- Chung
4. Foot tub as claimed in claim 3, wherein said low frequency pulse generator (3) provided on the top surface of the housing (1) at the bottom of the foot shape spring hole location.
- .
- 5 as claimed in claim 1, wherein the foot bath, characterized in that: said left and right sides, respectively, also symmetric cavity with at least one speaker (5).
6. Foot tub as claimed in claim 5, characterized in that the left and right sides of the cavity are symmetrical with two front speakers (5).
7. Foot tub as claimed in claim 1, wherein, wherein said surface casing (1) also has a top surface of a display device electrically connected with the key (10).

Description :
一种足浴盆

技术领域

本发明涉及一种足浴盆。

背景技术

随着生活水平的逐渐提高，人们对自身健康越来越重视，足浴盆开始在日常生活中普及，使用足浴盆泡脚能促进全身血液循环加速和消除体内的疲劳物质。现有的足浴盆一般通过超声波或机械振动进行按摩，采用超声波的方式：由于不同频率和声强的超声波的作用效果不同，无法保证超声波的频率、声强适用各种使用者的体质，有可能对使用者有一定危害。采用机械振动按摩的方式：足浴盆面壳底部一般设有按摩轮，通过使用者双脚来回搓动按摩轮来达到足底按摩的效果，使用起来不方便，影响足浴盆使用的舒适性。

因此，如何设计出一种使用安全方便、适用范围广泛并且按摩效果好的足浴盆是业界亟待解决的技术问题。

发明内容

为解决上述技术问题，本发明提出一种使用安全方便、适用范围广泛并且按摩效果好的足浴盆。

本发明采用的技术方案是，设计一种足浴盆，包括：面壳、底壳以及设于所述面壳顶面的按键，所述面壳底部与底壳之间设有空腔，所述空腔内的左右两侧分别对称设有至少一个低频脉冲产生器，所述低频脉冲产生器与所述按键电连接，所述按键

One kind of foot tub

FIELD

The present invention relates to a foot bath.

BACKGROUND

With the gradual improvement of living standards, people are more and more attention to their own health, foot tub began to spread in everyday life, using foot tub feet can promote blood circulation and accelerate the body eliminate fatigue substances. Existing general foot tub by ultrasonic or mechanical vibration massage, ultrasonic way: Due to the different effects of different frequency and intensity of ultrasound can not be guaranteed ultrasonic frequency, sound intensity for a variety of user's body, it is possible the user has certain hazards. Mechanical vibration massage way: bottom foot tub shell surface ships with a massage wheel, rubbing back and forth by the user feet massage foot massage wheel to achieve the effect, inconvenient to use, affecting comfort foot tub use.

So, how to design a safe and convenient to use, and suitable for a wide range of massage effect is good foot tub industry technical problem to be solved.

Summary

控制低频脉冲产生器的工作状态。所述面壳中部设有分隔左右两侧的夹板，所述夹板内设空腔且两侧分别设有通孔，所述夹板的空腔内设有弱碱性产生片，所述弱碱性产生片与所述功能按键低压电连接，所述弱碱性产生片采用石墨烯或贵金属制成。

在本发明的一实施例中，所述面壳底部设有与所述低频脉冲产生器形状配合的圆孔，所述低频脉冲产生器顶端设于所述圆孔内，所述圆孔顶面外圈设有一与所述面壳底部密封固定的透明罩。

所述面壳底部顶面设有均匀排列的凸点，所述凸点排列外形为脚掌形状。

所述低频脉冲产生器顶端设于所述面壳底部脚掌形状的涌泉穴位置。

所述空腔内的左右两侧还分别对称设有至少一个扬声器。

所述空腔内的左右两侧前分别对称设有两个扬声器。

所述面壳内设有与所述夹板前后两端外形配合的凹槽，所述夹板的顶面一端设有向下凸出且与所述弱碱性产生片电连接的插接母座，所述面壳顶面上设有向上凸出且与所述插接母座配合的插接头，所述插接头与所述功能按键低压电连接，所述夹板通过凹槽与面壳可拆卸固定时，插接头配合插入插接母座内。

所述面壳顶面还设有与功能按键电连接的显示装置。

本发明在面壳底部左右两侧分别设有低频脉冲产生器，通过低频脉冲产生器发出的低频脉冲波使液体振动并不断发生空化现象，模拟人手的按摩节奏对使用者脚底进行按摩，安全舒适，适用于各种体质的使用者。较优的，面壳与底壳的空腔内还设有扬声器，通过扬声器增强液体的声压，加快液体的空化现象，提高本发明的按摩效果。再进一步优化的，面壳中部的夹板内还设有弱碱性产生片，弱碱性产生片通电后能使液体产生弱碱性，弱碱性水可消毒杀菌，促进脚底皮肤新陈代谢，进一步提高本发明的按摩效果。

附图说明

下面结合实施例和附图对本发明进行详细说明，其中：

图1是本发明的外观示意图；

图2是本发明的爆炸图；

图3是本发明拆除底壳的背面示意图；

图4是本发明面壳的外观示意图。

具体实施方式

如图1至4所示，本发明提出的足浴盆，包括：面壳1、底壳2以及设于面壳1顶面的按键，面壳1底部与底壳2之间设有空腔，空腔内的左右两侧分别对称设有至少一个低频脉冲产生器3，低频脉冲产生器3与按键电连接，使用时，按动按键开启低频脉冲产生器3。低频脉冲产生器3发出的低频脉冲波对固体和液体都有很强的穿透能力，当盛满液体的容器通入低频脉冲波后，低能量累计时可以使物质微粒作高频运动，由高频运动产生数以万计的微小气泡，即空化泡，部分能量还可以转变为热能，使局部温度升高。高强度的低频脉冲波在含有微米级小气泡的液体中传播时，这些气泡在超声波纵向传播形成的负压区生长，而在正压区迅速闭合，从而在交替正负压强下受到压缩和拉伸，可导致气泡收缩、膨胀以至猛烈爆炸，这种现象称为“空化现象”。通常低频脉冲空化分为稳态空化和瞬间空化两种类型：稳态空化是指在声强较低（一般小于10w/cm）时产生的空化泡，其大小在其平衡尺寸附近振荡，生成周期达数

In order to solve the above problems, the present invention provides a convenient and safe, wide scope and effect of a good foot massage tub. aspect of the present invention is used to design a foot bath, comprising: defining a cavity between the shell, bottom shell and a key provided on the top surface of the shell surface, the bottom surface of the housing and the bottom case the empty cavity respectively symmetrical right and left sides with at least one low frequency pulse generator, said low frequency pulse generator is electrically connected with the key, the key control low frequency pulse generator operation. The midface plywood shell with a separated left and right sides of the cavity and the plywood sides were equipped with a through hole, said jaw cavity equipped with a weakly basic produce films, the weakly basic generating sheet and electrically connected to the low voltage function keys, using the weakly basic produce graphene sheet or noble metal.

In one embodiment of the present invention, the bottom surface of the housing is provided with the low frequency pulse generator with the shape of the hole, the low frequency pulse generator is provided at the top of the hole inside the circle the top surface of the outer ring has a hole sealed a fixed transparent cover and the bottom surface of the housing.

The top surface of the bottom surface of the housing has a uniform arrangement of bumps, the bumps arranged in shape for the shape of the foot. said low frequency pulse generator provided on the top surface of the bottom of the shell-shaped foot Yongquan position. right and left sides of the cavity, respectively, also symmetrically provided with at least one speaker. front left and right sides of the cavity are symmetrical with two speakers.

The surface of the shell is provided with a groove with the shape of the front and rear ends of the jaws, the top end of the cleat is provided with a downwardly projecting and generating the weakly basic piece electrical connection plug female, face the top surface of the housing and provided with upwardly projecting plug and the female mating plug connector and the plug connector is electrically connected to the low voltage function keys, with groove through the plywood surface shell detachable fixed, plug connector is inserted into the mating female connector.

The top surface of the shell is also provided with a display device electrically connected to the function keys.

In the present invention, the bottom surface of the left and right sides of the shell are provided with low frequency pulse generator, low frequency pulse wave emitted by the low frequency pulse generator and the vibration of the liquid cavitation continue to occur, hand-simulated massage rhythm to be user soles massage, safe and comfortable for the user a variety of physical. More excellent, surface shell and bottom shell cavity also has a speaker, the speaker enhanced sound pressure liquid cavitation to accelerate the liquid to improve the massage effect of the present invention. Further optimization is also provided with

个循环。当扩大到使其自身共振频率与声波频率相等时,发生声场与气泡的最大能量耦合,产生明显的空化作用。瞬态空化则是指在较大的声强(一般大于10w/cm)作用下产生的生存周期较短的空化泡(大都发生在1个声波周期内)。通过空化作用对脚底进行振动按摩,使闲置的自由基重新配对,从而达到保健功效。

面壳1底部设有与低频脉冲产生器3形状配合的圆孔11,低频脉冲产生器3顶端设于圆孔11内,圆孔11顶面外圈设有一与面壳1底部密封固定的透明罩4,面壳1底部的圆孔11外围均匀设有三个锥形孔14,面壳1底部的三个锥形孔14外围设有一圈密封槽15,透明罩4底面设有与锥形孔14配合的锥形柱41、与密封槽15配合的凸圈,将透明罩4的三个锥形柱41插入锥形孔14后,透明罩4底面紧贴面壳1底部顶面,凸圈插入密封槽15内,透明罩4完全与面壳1底部密封。由于透明罩4的穿透力比较好,从而保证低频脉冲波能顺利穿过透明罩4作用于液体。

面壳1底部顶面设有均匀排列的凸点12,凸点12排列外形为脚掌形状,凸点12的设置增强面壳1底部的防滑性,提高本发明使用的安全性。低频脉冲产生器3顶端设于面壳1底部脚掌形状的涌泉穴位置。经常以热水浸泡按摩涌泉穴,既可以温补肾经,益精填髓,舒筋活络,平衡阴阳,又可以舒通心肾,滋生肾水,抑制肾脏虚火,排泄体内毒素杂物;既可以促进下肢血液循环,御寒暖体,缓解肌肉紧张,消除各种疲劳。

空腔内的左右两侧还分别对称设有至少一个扬声器5,通过扬声器5增强液体的声压,加快液体的空化现象,提高本发明的按摩效果。本实施例中,空腔内的左右两侧前分别对称设有两个扬声器5。

面壳1中部设有分隔左右两侧的夹板6,夹板6内设空腔且两侧分别设有通孔61,夹板6的空腔内设有弱碱性产生片7,弱碱性产生片7与按键低压电连接,弱碱性产生片7采用石墨烯或贵金属制成。通电后,弱碱性产生片7使液体产生弱碱性,弱碱性水可消毒杀菌,促进脚底皮肤新陈代谢,进一步提高本发明的按摩效果。面壳1内设有与夹板6前后两端外形配合的凹槽13,夹板6的顶面一端设有向下凸出且与弱碱性产生片7电连接的插接母座8,面壳1顶面上设有向上凸出且与插接母座8配合的插接头9,插接头9与功能按键低压电连接,夹板6通过凹槽13与面壳1可拆卸固定时,插接头9配合插入插接母座8内。通过夹板6与面壳1的可拆卸固定连接,本实施例中,夹板6采用左侧板62和右侧板63固定连接构成,往足浴盆添加液体时可将夹板6拆卸下来,添加液体后将夹板6插入面壳1凹槽13内即可固定夹板6,使用起来十分方便。

面壳1顶面还设有与按键电连接的显示装置10,本实施例中,显示装置为显示屏10,通过显示屏10显示足浴盆内的液体温度等,提高本发明的实用性。底面2底端还设有四个防滑支脚16,防滑支脚底面均匀设有向下凸出的圆点,防止足浴盆使用过程中的滑动。

以上所述仅为本发明的较佳实施例而已,并不用以限制本发明,凡在本发明的精神和原则之内所作的任何修改、等同替换和改进等,均应包含在本发明的保护范围之内。

an inner surface of the plywood shell in the middle of a weakly basic produce sheet after sheet energized to produce a weak alkaline liquid to make a weak alkaline, weak alkaline water disinfection, soles of the feet to promote skin metabolism, to further improve the massage effect of the present invention.

Brief Description of the

The following Examples and drawings of the present invention will be described in detail, including:

Figure 1 is a schematic view of the appearance of the present invention;

2 is an exploded view of the present invention;

Figure 3 is a schematic view of the back of the bottom case dismantle invention;

Figure 4 is a schematic diagram of the present invention, the appearance of the surface of the shell.

DETAILED DESCRIPTION as shown in Figure 1-4, the present invention provides a foot bath, comprising: a housing 1 is provided between the second surface, and a bottom case 2 provided on a side surface of the shell buttons, the bottom surface of the housing 1 and the bottom case cavity, the cavity left and right sides, respectively, symmetric with at least one low frequency pulse generator 3, low frequency pulse generator 3 is connected to power button, use, press the button is on low frequency pulse generator 3. Low frequency pulse wave low frequency pulse generator 3 issue of solid and liquid has a very strong ability to penetrate, when introduced into a container filled with liquid low-frequency pulse, low energy accumulated when particulate matter can make high frequency motion from high frequency movement of tens of thousands of tiny bubbles that cavitation bubbles, part of the energy can be also converted into heat, so that the local temperature. When low-frequency pulse high-intensity small bubbles containing micron liquid spread, these bubbles in ultrasonic longitudinal propagation the negative pressure zone formed by growth, and rapidly closed in positive zone, resulting in alternating positive and negative pressure is compressed and pull extension, can lead to shrinkage of the bubble, as well as expansion of a violent explosion, a phenomenon called "cavitation." Cavitation is usually divided into low-frequency pulse steady and transient cavitation cavitation in two types: steady cavitation refers to the cavitation bubbles in sound intensity is low (usually less than 10w / cm) when generated, the size of its balance size near the oscillation generation period of several cycles. When it extended to the self-resonant frequency of the acoustic wave frequency equal to the maximum energy coupling occurs sound field and bubbles, resulting in significant cavitation. Transient cavitation refers to a short in the larger sound intensity (generally greater than 10w / cm) produced by interaction lifecycle cavitation bubbles (mostly occur within a sound wave cycles). By cavitation on foot vibration massage, idle radical re-pair to achieve health benefits.

1 the bottom surface of the housing is provided with a low frequency pulse generator 3 with the shape of the hole 11, a low frequency pulse generator 3 is provided in the top of the circular hole 11, hole 11 has an outer surface and a bottom surface of the seal housing the transparent cover 4 is fixed, circular bottom surface 11 of the housing 1 is provided with three peripheral uniformly tapered bore 14, the three tapered hole 14 of the bottom surface of the housing 1 is provided around the periphery of the sealing groove 15, the bottom surface of the transparent cover 4 is provided with after the tapered hole 14 with tapered columns 41, 15 cooperating with the sealing bead groove, the transparent cover three tapered column 4 is inserted into the tapered holes 41 14, the bottom surface of the transparent cover 4 against the top surface of the bottom surface of the housing 1, insert sealing bead groove 15, the transparent cover 4 is completely sealed and the bottom surface of the housing 1. Since the transparent cover 4 penetration is better, so as to ensure a smooth low frequency pulse wave through the transparent cover 4 to the liquid. the top surface of the bottom surface of the housing 1 has a uniform arrangement of bumps 12, bumps 12 arranged in the shape of the foot shape, providing a bump 12 enhanced slip resistance of the bottom surface of the housing 1, to improve security in the present invention. Low frequency pulse generator 3 provided on the top surface of the bottom shell 1 position Yongquan foot shape. Often soaked in hot water massage Yongquan, both warm kidney by, Yijing fill the marrow, Shujin, balance of yin and yang, but also heart and kidney Shu Tong, the breeding of renal water, kidney virtual fire suppression, excrete toxins debris; both It can promote lower limb blood circulation, warm warm body, relieve muscle tension, eliminate fatigue.

Left and right sides

cavity, respectively, also symmetrically provided with at least one speaker 5, the pressurized fluid to enhance the sound through the speaker 5, the liquid cavitation accelerate and improve the massaging effect of the present invention. In this embodiment, the front left and right sides of the cavity are symmetrical with two speakers 5.

Central-shell 1 has left and right sides of the plywood partition 6, 6 plywood sides were equipped with a cavity and a through hole 61, the cavity 6 are equipped with plywood sheet 7 to produce a weak alkaline, weak base of produce sheet 7 is connected with the low voltage button, 7 using the weakly basic produce graphene sheet or made of precious metals. After power, weak alkaline liquid to produce sheet 7 to produce a weak alkaline, weak alkaline water disinfection, soles of the feet to promote skin metabolism, to further enhance the massage effect of the present invention. Surface casing 1 equipped with front and rear ends of the shape and the clamp 6 with a groove 13, the top end of the clamp 6 is provided with downwardly projecting and electrically connected to the weakly basic produce sheet 7 Plug female 8-shell a surface is provided with upwardly projecting

plug and female mating plug connector 8 9 9 plug connector is connected to the low voltage function keys, plywood 6 through the recess 13 and the surface shell 1 removably fixed, plug connector 9 8 with the plug inserted in the female. After the adoption of removable splint 6 is fixedly connected with the surface of the housing 1, in this embodiment, the use of plywood 6 left side plate 62 and right side plate 63 is fixedly connected configuration, when added to the foot bath liquid can be removed splint 6, adding a liquid the plywood shell 6 is inserted into the recess surface 13 can be fixed clamp 6, very convenient to use. surface shell surface also has a display device 10 electrically connected to the keys, in this embodiment, the display device as the display 10, the display 10 shows the temperature of the liquid foot bath basin, etc., to improve the utility of the present invention sex. The bottom surface of the bottom 2 also has four anti-skid feet 16, nonskid soles surface evenly with a downwardly projecting dots, foot bath to prevent sliding during use.

The foregoing is only preferred embodiments of the present invention, it is not intended to limit the present invention, any modifications within the spirit and principles of the present invention made, equivalent replacement and improvement, etc., should be included in this within the scope of the invention.

Date translated: 10 February 2016