Description

The present application relates to plantar hydromassage devices. Such a device is disclosed in US-A-3,837,334.

The general object of the present invention is to provide a device which would permit controlled emission of water jets on the soles of the feet so as to perform localized massage thereof.

In view of said object it was sought to provide a plantar hydromassage device in accordance with claim 1.

In greater detail said means of emission comprise directional nozzles flush-mounted in said support surfaces.

To further clarify the explanation of the innovative principles of the present invention and its advantages compared with the known art there are described below, with the aid of the annexed drawings, possible embodiments as examples of applications of said principles. In the drawings:

FIG. 1 shows a schematic plan view of a first plantar hydromassage device embodied in accordance with the present invention,

FIG. 2 shows a partial cross section along line II-II of FIG. 1

FIG. 3 shows a schematic plan view, with a partial cross-section, of a second plantar hydromassage device embodied in accordance with the present invention, and

FIG. 4 shows a partial cross section view along line IV-IV of FIG. 3

With reference to the figures a plantar hydromassage device applying the innovative principles claimed here and indicated generally by reference number 10 in FIG. 1 comprises inclined top surfaces 11, 12 to support the two feet as shown in broken lines.

The support surfaces comprise, in mirror image, recesses 13, 14 containing directional nozzles 15, 16 connected by a duct 17 to a source of pressurized hot water, e.g. the plumbing system of a bath, by the interposition of electric controls 18 of the known art for controlled regulation of the outward flow from the nozzles 13 and 14. The nozzles 13 and 14 can be connected in pairs involving the same plantar area of both feet so as to have a number of electrical controls half the total number of the nozzles. For example, in the example shown in the drawings each support surface has three nozzles. By pairing the nozzles two by two on said surfaces only three electrical controls may be used.

The electrical controls are controlled by a control device 19, e.g. of the electronic microprocessor type of the known art and therefore, being easy to imagine by those skilled in the art, not further described. The control device is connected to a control panel 20, e.g. of the keyboard type, for manually setting the desired regulation as will be made clear below.

The hydromassage device operates as follows.

Initially the nozzles 13 and 14 are directed in such a manner that they point toward the areas of the soles of the feet which it is desired to massage. The feet are placed on the surfaces 11 and 12 and emission of water from the nozzles is activated by the control and using the panel 20 of the controller 19 which activates the electrical controls 18.

By means of the control panel 20 it is possible to control the controller 19 so as to regulate the electrical controls 18 to obtain the desired intensity and/or cyclical duration of the emissions from the nozzles connected therewith.

Those skilled in the art can readily imagine how it would be possible by using a microprocessor controller 19 to provide appropriate massage programmes. For example the nozzles can be activated with pulsing, sequentially and cyclically, or with the intensity of the water flow increasing and decreasing alternately etc.

The various programmes can be set directly by the user in accordance with his tastes by means of the control panel 20 or can be prememorized in the controller 19 and recalled upon command by the user by means of the same panel 20.

As an example, with reference to FIGS. 3 and 4, there is described a second possible embodiment applying the innovative principles claimed here. In said second embodiment the plantar massage is provided by the guided movement of the feet on the virtually fixed jets instead of moving the water jets by activation of different nozzles as provided in the first embodiment.

Said second embodiment, which is indicated generally by reference number 110, comprises a base 121 supporting horizontal and parallel idling rollers 122, 123 covered with relatively yielding material such as rubber with radial surface roughness as is shown clearly in FIG. 4 as well.

In the space between the rollers there are placed two directional nozzles 115, 116 fed through a duct 117 from a source of water.

The device 110 also includes advantageously a cover 124, generally in the form of an overturned U hinged at the base 121 by means of side arms 125, 126 so as to be movable from the closed or inoperative position as shown in FIG. 3 (and in broken lines in FIG. 4) to the open or operative position (shown in solid lines in FIG. 4).

In addition to supplying when closed a protective element for the device, the cover 124 has the function of a shield against splashing during use of the apparatus 110.

To use the device 110 it is sufficient to open the cover and rest the feet on the rollers as shown

schematically in FIG. 4 so that each foot is positioned over the respective nozzle 115, 116. Said nozzles can be regulated to provide a jet with the desired inclination and optionally the desired intensity.

Supplying the water through the duct 117 and sliding the soles of the feet over the rollers the various areas thereof are struck by the water jets and massaged in a controlled manner. In addition to the massage effect of the water there is the mechanical massage effect of sliding over the shaped rollers 122 and 123.

Naturally the description of devices applying the innovative principles of the present invention is given as an example of said principles and therefore is not to be considered as limiting the scope of the invention claimed here.

For example, in both embodiments the number of nozzles for each foot can be readily increased so as to better localize and articulate the massage action.

Similarly the number of rollers 122, 123 can be different from that illustrated.

The nozzles 115, 116 can also be equipped with programmable modulation means for the jets as shown for the device 110.

Although in the first embodiment the nozzles have been indicated as controlled in symmetrical pairs on both feet so as to minimize the number of control components, it is naturally conceivable to use an electrical control 18 for each nozzle so as to be able to perform different sequences of massage on the individual feet simultaneously.

Furthermore it would be possible to cover the supporting surfaces 11 and 12 with a grille and form an essentially unbroken supporting surface despite the presence of a large number of recesses 13 and 14 of ample diameter.

To make the devices 10, 110 usable outside the containers for collection of the water sprayed by the nozzles there could be included therein channels for conveyance of said water into an appropriate drain as can be readily imagined by those skilled in the art. Lastly the first embodiment could be equipped with a top cover against spraying similar to the one shown in the second embodiment.

Claims

1. Plantar hydromassage device (110) comprising a base (121) supporting rollers (122, 123) arranged horizontally and parallel to each other to extend between opposite sides of the base (121), the rollers (122, 123) being freely rotatable about their axis by sliding of feet soles on their upper periphery, nozzles (115, 116) being disposed in the base (121) for emission of water jets between the rollers (122, 123) and towards the soles on the rollers, a cover (124) being connected to the base for interception of water splashes coming out of the operative device, characterized in that the cover (124) is shaped substantially in form of an overturned U, in proximity of the arms of the U the cover being hinged at the opposite sides of the base by means of side arms (125, 126) to be movable from an inoperative lower position near the base to an operative upper position away from the base, in the lower position the cover (124) including between the arms of the U at least part of the said opposite sides of the base (121) and covering the rollers (122, 121), and in the upper position the cover defining an open space between cover and roller upper peripheries to insert the feet forwardly and support them on the rollers.

2. Plantar hydromassage device in accordance with claim 1, characterized in that the nozzles (115, 116) are two.

3. Plantar hydromassage device in accordance with claim 1, characterized in that the cover (124) is overturned U shaped.

4. Plantar hydromassage device in accordance with claim 1, characterized in that the periphery of the roller (122, 123) is covered with yielding material constructed with radial roughness.

5. Plantar hydromassage device in accordance with claim 1, characterized in that each side arm (125, 126) has a first and a second end, the first end being hinged on the base (121) at a position near to one roller axis, the second end being hinged on the cover (124) at a position near the other roller axis when the cover (124) is in the lower position, whereby the cover moving to upper position moves at least partially away from vertical on the rollers (122, 123).

Patentansprüche

1. Fußsohlen-Hydromassagevorrichtung (110), die eine Grundeinheit (121) aufweist mit Stützrollen (122, 123), die horizontal und zueinander parallel angeordnet sind und sich zwischen entgegengesetzten Seiten der Grundeinheit (121) erstrecken, wobei die Rollen (122, 123), durch Gleiten von Fußsohlen auf ihrem oberen Umfang um ihre Achse frei drehbar sind, Düsen (115, 116) in der Grundeinheit (121) zum Ausstoßen von Wasserstrahlen zwischen den

schematically in FIG. 4 so that each foot is positioned over the respective nozzle 115, 116. Said nozzles can be regulated to provide a jet with the desired inclination and optionally the desired intensity.

Supplying the water through the duct 117 and sliding the soles of the feet over the rollers the various areas thereof are struck by the water jets and massaged in a controlled manner. In addition to the massage effect of the water there is the mechanical massage effect of sliding over the shaped rollers 122 and 123.

Naturally the description of devices applying the innovative principles of the present invention is given as an example of said principles and therefore is not to be considered as limiting the scope of the invention claimed here.

For example, in both embodiments the number of nozzles for each foot can be readily increased so as to better localize and articulate the massage action.

Similarly the number of rollers 122, 123 can be different from that illustrated.

The nozzles 115, 116 can also be equipped with programmable modulation means for the jets as shown for the device 110.

Although in the first embodiment the nozzles have been indicated as controlled in symmetrical pairs on both feet so as to minimize the number of control components, it is naturally conceivable to use an electrical control 18 for each nozzle so as to be able to perform different sequences of massage on the individual feet simultaneously.

Furthermore it would be possible to cover the supporting surfaces 11 and 12 with a grille and form an essentially unbroken supporting surface despite the presence of a large number of recesses 13 and 14 of ample diameter.

To make the devices 10, 110 usable outside the containers for collection of the water sprayed by the nozzles there could be included therein channels for conveyance of said water into an appropriate drain as can be readily imagined by those skilled in the art. Lastly the first embodiment could be equipped with a top cover against spraying similar to the one shown in the second embodiment.

Claims

1. Plantar hydromassage device (110) comprising a base (121) supporting rollers (122, 123) arranged horizontally and parallel to each other to extend between opposite sides of the base (121), the rollers (122, 123) being freely rotatable about their axis by sliding of feet soles on their upper periphery, nozzles (115, 116) being disposed in the base (121) for emission of water jets between the rollers (122, 123) and towards the soles on the rollers, a cover (124) being connected to the base for interception of water splashes coming out of the operative device, characterized in that the cover (124) is shaped substantially in form of an overturned U, in proximity of the arms of the U the cover being hinged at the opposite sides of the base by means of side arms (125, 126) to be movable from an inoperative lower position near the base to an operative upper position away from the base, in the lower position the cover (124) including between the arms of the U at least part of the said opposite sides of the base (121) and covering the rollers (122, 121), and in the upper position the cover defining an open space between cover and roller upper peripheries to insert the feet forwardly and support them on the rollers.

2. Plantar hydromassage device in accordance with claim 1, characterized in that the nozzles (115, 116) are two.

3. Plantar hydromassage device in accordance with claim 1, characterized in that the cover (124) is overturned U shaped.

4. Plantar hydromassage device in accordance with claim 1, characterized in that the periphery of the roller (122, 123) is covered with yielding material constructed with radial roughness.

5. Plantar hydromassage device in accordance with claim 1, characterized in that each side arm (125, 126) has a first and a second end, the first end being hinged on the base (121) at a position near to one roller axis, the second end being hinged on the cover (124) at a position near the other roller axis when the cover (124) is in the lower position, whereby the cover moving to upper position moves at least partially away from vertical on the rollers (122, 123).

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1. Fußsohlen-Hydromassagevorrichtung (110), die eine Grundeinheit (121) aufweist mit Stützrollen (122, 123), die horizontal und zueinander parallel angeordnet sind und sich zwischen entgegengesetzten Seiten der Grundeinheit (121) erstrecken, wobei die Rollen (122, 123), durch Gleiten von Fußsohlen auf ihrem oberen Umfang um ihre Achse frei drehbar sind, Düsen (115, 116) in der Grundeinheit (121) zum Ausstoßen von Wasserstrahlen zwischen den

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Rollen (122, 123) angeordnet und gerichtet gegen die auf den Rollen befindlichen Sohlen, einer Abdeckung (124) mit der Grundeinheit verbunden zum Abfangen von Wasserspritzern, die aus der in Betrieb befindlichen Vorrichtung kommen dadurch gekennzeichnet, daß die Abdeckung (124) im wesentlichen wie ein umgedrehtes U gestaltet ist, in der Nähe der Schenkel des U die Abdeckung an entgegengesetzten Seiten der Grundeinheit mit Hilfe von Seitenarmen (125, 126) gelenkig verbunden ist, beweglich von einer unteren Ruheposition nahe der Grundeinheit bis zu einer betriebsfähigen oberen Position von der Grundeinheit weg, in der unteren Position der Abdekkung (124) schließt sie zwischen den Schenkeln des U wenigstens einen Teil der entgegengesetzten Seiten der Grundeinheit (121) ein und deckt die Rollen (122,123) ab, und in der oberen Position der Abdeckung definiert sie einen Freiraum, um die Füße vorwärts einzuführen und auf den Rollen abzustützen.

2. Fußsohlen-Hydromassagegerät gemäß Anspruch 1 dadurch gekennzeichnet, daß zwei Düsen (115,116) vorgesehen sind.

3. Fußsohlen-Hydromassagegerät gemäß Anspruch 1 dadurch gekennzeichnet, daß die Abdeckung (124) die Form eines umgekehrten U hat.

4. Fußsohlen-Hydromassagegerät gemäß Anspruch 1 dadurch gekennzeichnet, daß der Umfang der Rollen (122,123) mit nachgiebigem Material belegt ist, das mit einer radialen Rauheit ausgebildet ist.

5. Fußsohlen-Hydromassagegerät gemäß Anspruch 1, dadurch gekennzeichnet, daß jeder Seitenarm (125,126) ein erstes und zweites Ende hat, wobei das erste mit der Grundeinheit (121) nahe der einen Rollenachse gelenkig verbunden ist, das zweite Ende mit der Abdekkung (124) an einer Position nahe der anderen Rollenachse gelenkig verbunden ist, wenn sich die Abdeckung (124) in der unteren Position befindet und, während sich die Abdeckung zu ihrer oberen Position bewegt, sich wenigstens teilweise aus ihrer vertikalen Lage über die Rollen (122,123) weg bewegt.

Revendications

1. Dispositif d'hydromassage (110) de la plante des pieds comportant un socle (121) portant des rouleaux (122, 123) agencés horizontalement et parallèles les uns aux autres en s'étendant entre des côtés opposés du socle (121), les rouleaux (122, 123) pouvant tourner librement autour de leurs axes lorsque la plante des pieds glisse sur leur périphérie supérieure, des buses (115, 116) étant disposées dans le socle (121) pour projeter des jets d'eau entre les rouleaux (122, 123) et en direction des plantes de pieds sur les rouleaux, un couvercle (124) étant raccordé au socle pour l'interception d'éclaboussures provenant du dispositif opérationnel, caractérisé en ce que le couvercle (124) est sensiblement en forme de U renversé, le couvercle étant, à proximité des bras du U, articulé aux côtés opposés du socle au moyen de bras latéraux (125, 126) pour être mobile entre une position basse inactive proche du socle et une position haute active éloignée du socle, le couvercle (124) contenant en position basse entre les bras du U au moins une partie desdits côtés opposés du socle (121) et recouvrant les rouleaux (122, 123), et le couvercle définissant en position haute un espace ouvert entre le couvercle et la partie supérieure de la périphérie des rouleaux pour l'insertion des pieds vers l'avant et leur support sur les rouleaux.

2. Dispositif d'hydromassage des plantes des pieds selon la revendication 1, caractérisé en ce que les buses (115, 116) sont au nombre de deux.

3. Dispositif d'hydromassage des plantes des pieds selon la revendication 1, caractérisé en ce que le couvercle (124) est formé en U retourné.

4. Dispositif d'hydromassage des plantes des pieds selon la revendication 1, caractérisé en ce que la périphérie des rouleaux (122, 123) est recouverte d'un matériau souple présentant des rugosités radiales.

5. Dispositif d'hydromassage des plantes des pieds selon la revendication 1, caractérisé en ce que chaque bras latéral (125,126) a une première et une seconde extrémités, la première extrémité étant articulée au socle (121) à un endroit proche d'un axe de rouleau, la seconde extrémité étant articulée au couvercle (124) à un endroit proche de l'autre axe de rouleau lorsque le couvercle (124) est dans sa position basse, de sorte que le couvercle, en se déplaçant vers cette position haute, s'écarte au moins partiellement de la verticale des rouleaux (122, 123).