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(72) Inventor: **Boffa, Davide**

20069 Bettola di Pozzo d'Adda (IT)

(74) Representative: **Riccardi, Sergio**

Riccardi & Co.

Via Macedonio Melloni, 32

20129 Milano (IT)

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(71) Applicant: **Boffa, Davide**

20069 Bettola di Pozzo d'Adda (IT)

(54) **Device for active plantar massage and stimulation**

(57) Device for the plantar massage and stimulation comprising motion means operatively associated to mechanical means of contact with at least part of a plantar

surface, where said mechanical means of contact contain a number of elements (6) suitable for the contact with the plantar surface arranged on a surface comparable to that of said plantar surface.

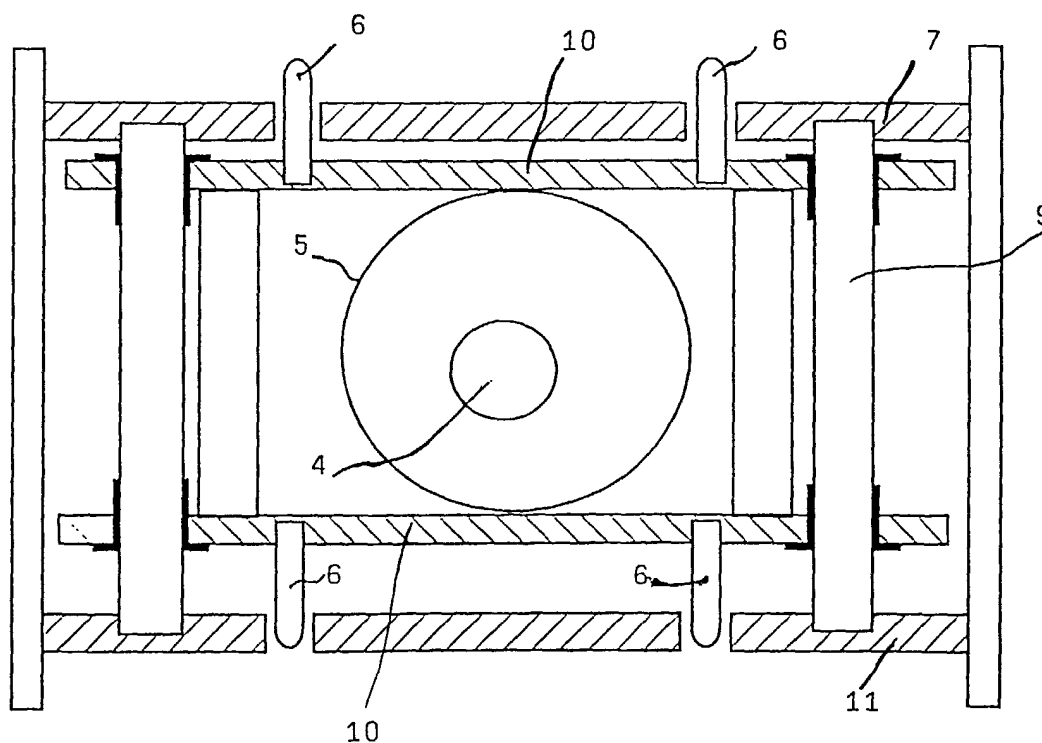


FIG. 3

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Description

[0001] The present invention is about a device for the plantar massage and stimulation.

[0002] The stimulation and the massage of some parts of the foot positively arouse as a result the functions of all the human body's organs, which have distributed their corresponding reflex centers on the plant.

[0003] Today, the execution of such stimulations is mostly carried out manually, leaving to the health operator's ability the outcome of the obtained nerve stimulation, because the poor attempts to carry out the operation in a mechanical way are stuck to vibrating devices that only allow a general foot massage without the proper stimulation of those parts to which said organs' reflex centers belong.

[0004] The known methods and devices thus try to solve the stated problem nevertheless without fully succeeding being subject to the above-mentioned inconveniences and producing, in some cases, a useless waste of time and economic resources.

[0005] The object of the present invention is that of remedying to the inconveniences belonging to the technique's previous condition.

[0006] Therefore, the invention's object is a device for the plantar massage and stimulation of simple use, practical and efficient, which allows an effective stimulation of said reflex centers causing the user a pleasant healthy feeling.

[0007] Briefly, according to the invention, a device for the plantar massage and stimulation has been created comprising motion means operatively associated to mechanical means of contact with at least part of a plantar surface, wherein said contact mechanical means contain a number of elements suitable for the contact with the plantar surface arranged on a surface comparable to that of said plantar surface.

[0008] The device for the plantar massage and stimulation according to the invention is characterized in having the features described in claim 1.

[0009] Further useful features are illustrated in the appended claims.

[0010] Other advantages, details and particulars of the device for the plantar massage and stimulation according to the invention, will be better highlighted through an examination of the following description, with reference to the annexed drawings wherein a preferred embodiment is shown in an explanatory but not limiting way.

[0011] Figure 1 is a top view of the device for the plantar massage and stimulation according to the invention.

[0012] Figure 2 is a sectional side view of the device depicted in Figure 1.

[0013] Figure 3 is a cross sectional view of the invented device.

[0014] Regarding the previously described figures, the device 1 for the plantar massage and stimulation ac-

cording to the invention contains a preferably parallelepipedal casing 2 where motion means preferably linked to an electrical motor 3 are arranged inside of it.

[0015] Said motion means comprise a shaft 4 on which a number of cams or notches 5, if possible four of them, are set apart from one another.

[0016] Each cam 5 is linked to contact mechanical means that produce the actual surface contact with the foot plant placed on top of the upper surface 7 (shown in figure 1) or lower surface 11 of the invented device.

[0017] More precisely, said mechanical means include a number of generally cylindrical elongated elements 6 that are constrained to vertically slide relative to the upper surface 7 and lower 11 of said device 1.

[0018] Said elements 6 are placed on plates 10, which are constrained by sliding tracks 9 in order to impose said vertical motion to the elements 6.

[0019] For manufacturing simplicity and also for convenience of this device, two plates 10 parallel to each other for every cam 5, each one supporting said elements 6 in order to allow a motion of the latter outside of the upper surface 7 as well as outside of the lower surface 11, are specifically provided making the use of the device 1 possible on both mentioned surfaces 7, 11.

[0020] The two plates can be directly constrained to each other, as illustrated in figure 3, in a manner that during its motion the cam 5, making a connection with both plates, moves them simultaneously upwards or downwards causing the alternate protrusion of the elements 6 from said surfaces 7, 11.

[0021] Alternatively, such plates 10 are not connected to each other, and interact through elastic means like, for example, springs (not shown) arranged at the ends of said sliding tracks 9. These springs, as it will be better described later on, will allow, during the motion of the cam 5, the alternate movement of the elements 6.

[0022] Said upper 7 and lower 11 surfaces provide a number of holes 8 corresponding to the number of elongated elements 6, such holes being advantageously assembled inside of a surface matching that of a foot plant's projection, therefore also that of a plantar surface.

[0023] Moreover, a different arrangement of holes will be usefully provided for the left foot plant and for the right foot plant.

[0024] It is particularly favourable for the efficiency of the stimulation and the massage of the user's plantar surface, that each cam 5 associated to a certain number of elements 6 be differently linked to the shaft 4, so that every time the device 1 shows a part of the elements 6 outside of the holes 8 making, as it will be better explained afterwards, the massage over such plantar surface more efficient.

[0025] The operation of the device for the plantar massage and stimulation according to the invention is easily understood by the previous description.

[0026] The user will put his/her own foot on top of one said upper 7 or lower 11 surfaces and will turn on,

through a proper switch (not shown), the motor 3. This latter will set in motion the shaft 4 and said cams 5 will begin to rotate. The different plates 10 in contact with them each time will be pushed towards the outside of the casing 2 for example against the resistance of said springs causing to protrude said elements 6 from the apposite holes 8, therefore when, due to its own motion, a cam 5 is no longer in contact with such plate 10, this, pushed by those same springs, returns inside dragging along with it the elements 6 constrained thereto.

[0027] If instead the different pairs of plates 10 were directly constrained to each other (Fig. 3), the motion of each cam 5 would directly control their translatory motion, which, due to the kind of constraint, will be such that while a plate gets closer towards the outer surface, the other one will move towards the inside.

[0028] In any case, the various cams 5 being fixed in a different manner on the shaft 4, said elements 6 will connect with the foot resting on the surface 7 or 11 in an alternating sequence executing an appropriate massage on said lower end of the body.

[0029] Specifically a pressure will be exerted on the various reflex centers corresponding to the different organs, improving the blood circulation of such plantar areas and consequently the functioning of those organs connected to them. This occurs dissolving the crystalline sediments at the nervous terminals that prevent the natural flow of impulses that the nervous terminals transmit to the organs themselves for their ideal functioning.

[0030] Obviously, several modifications, additions, variations and/or substitutions could be made to the illustrative embodiment described in an explanatory but not limiting way, without falling out of the scope of protection as also recited in the following appended claims.

Claims

1. A device for the plantar massage and stimulation comprising motion means operatively associated to mechanical means of contact with at least part of a plantar surface, **characterized in that** said mechanical means of contact contain a number of elements (6) suitable for the contact with the plantar surface arranged on a surface comparable to that of said plantar surface.
2. The device for the plantar massage and stimulation according to claim 1, **characterized in that** said motion means include a shaft (4), to which a number of cams (5) are fixed that during the rotation of such shaft (4) interact with said mechanical means of contact.
3. The device for the plantar massage and stimulation according to claim 1, **characterized in that** said mechanical means of contact comprise a number of plates (10) each one constrained to translate on sliding tracks (9) and having a number of said elements (6) suitable for the contact with such plantar surface
4. The device for the plantar massage and stimulation according to claim 2, **characterized in that** said shaft (4) is driven by an electrical motor (3).
5. The device for the plantar massage and stimulation according to claim 3, **characterized in that** it is provided a pair of said plates (10) linked to each cam (5).
6. The device for the plantar massage and stimulation according to claim 5, **characterized in that** each plate (10) of every pair is directly constrained to one another.
7. The device for the plantar massage and stimulation according to claim 5, **characterized in that** elastic means are provided at the ends of each sliding track (9) that interact with every single plate (10) of each pair.
8. The device for the plantar massage and stimulation according to claim 7, **characterized in that** said elastic means consist of springs.
9. The device for the plantar massage and stimulation according to claim 1, **characterized in that** said surface analogous to that of a plantar surface is both made on a lower surface (11) and on an upper surface (7), of said device (1) each of such lower and upper surfaces (7, 11) contain a number of holes (8) corresponding to said number of elements (6).
10. The device for the plantar massage and stimulation according to claim 9, **characterized in that** said arrangement of holes (8) and elements (6) is different for the plantar stimulation of a right foot compared to that of a left foot.

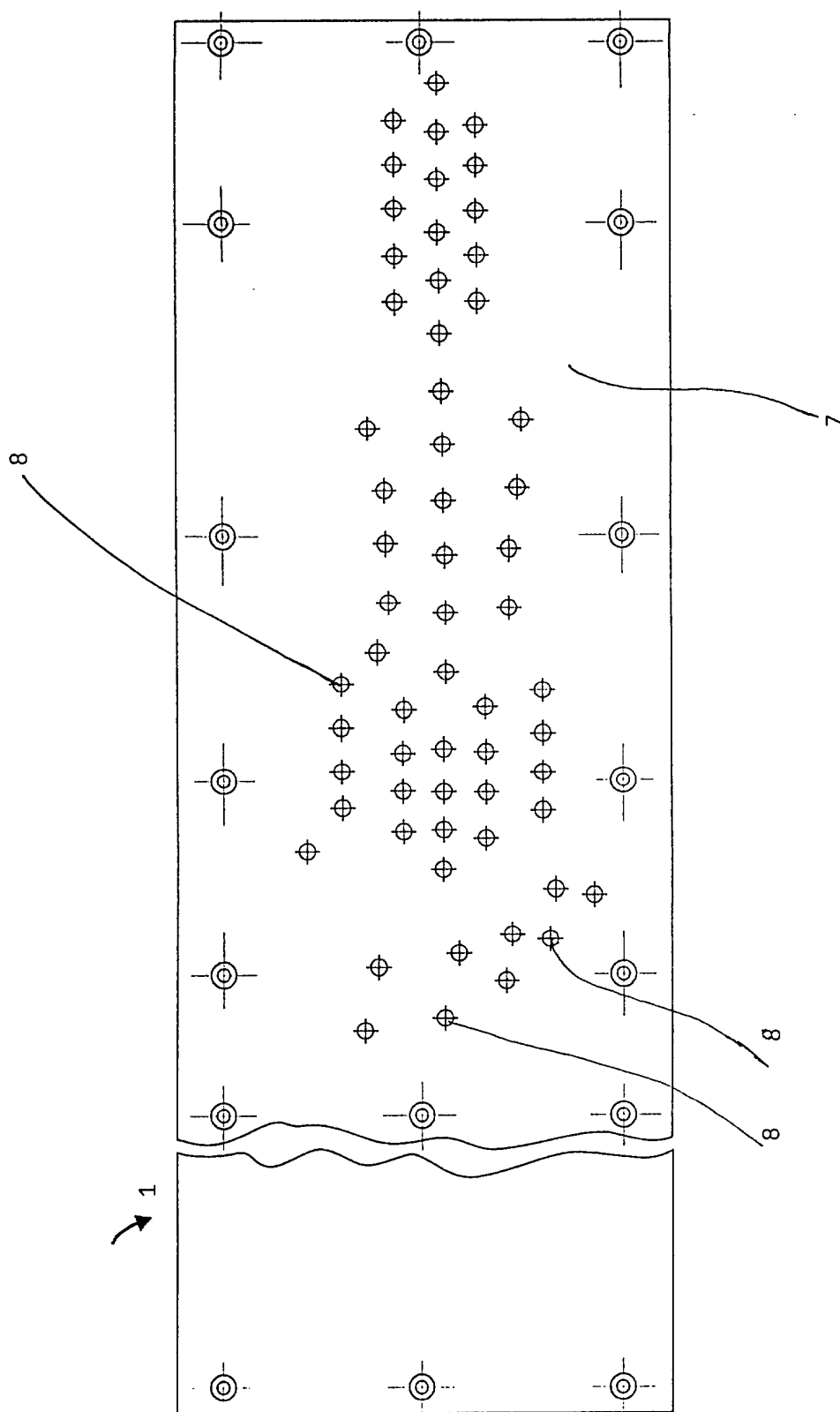


FIG. 1

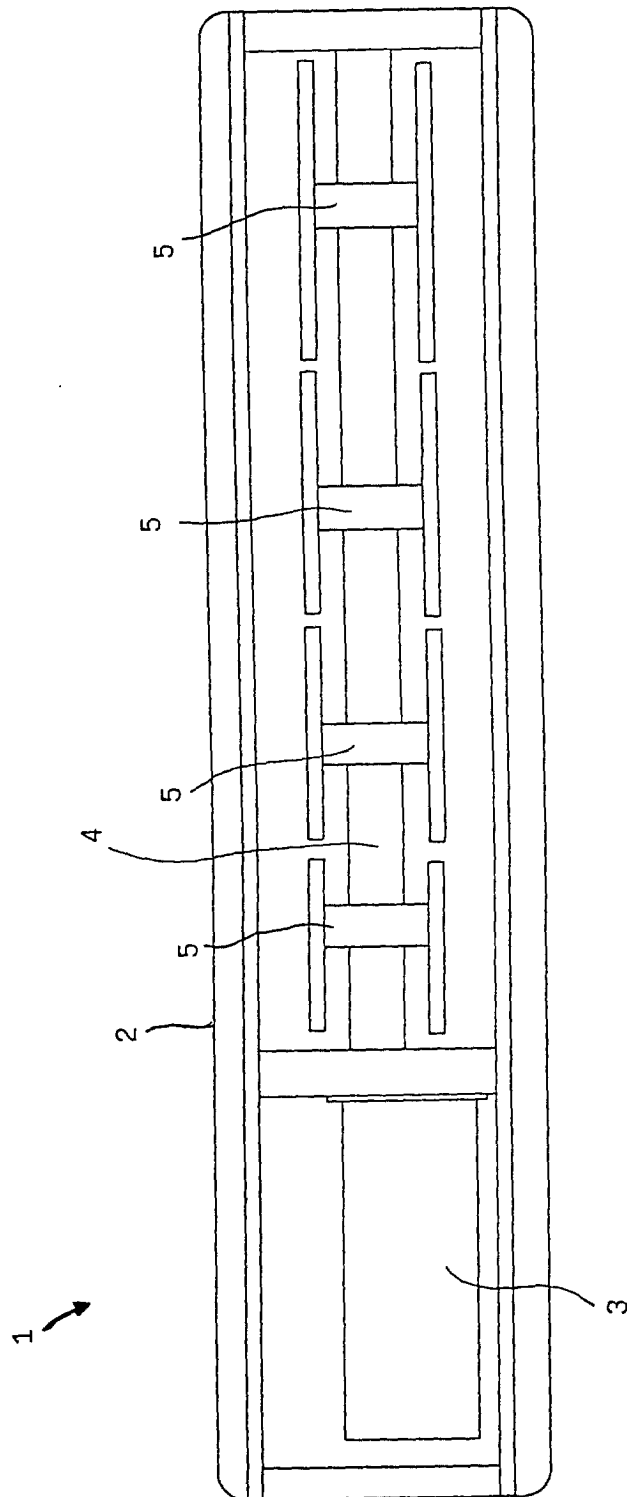


FIG. 2

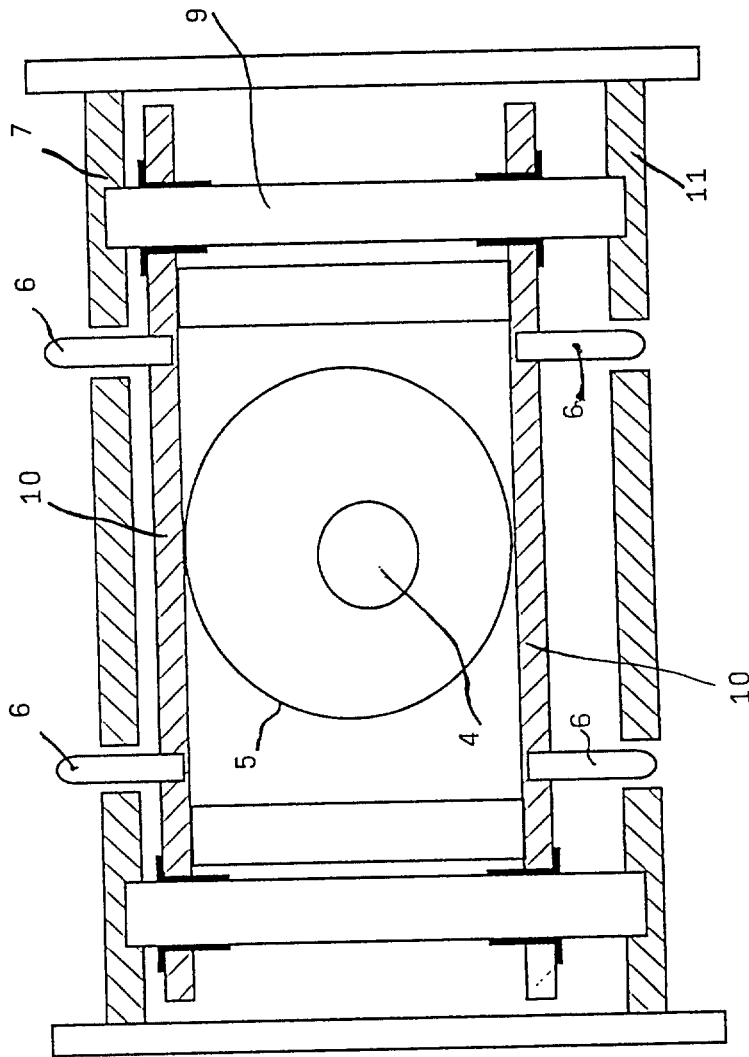


FIG. 3