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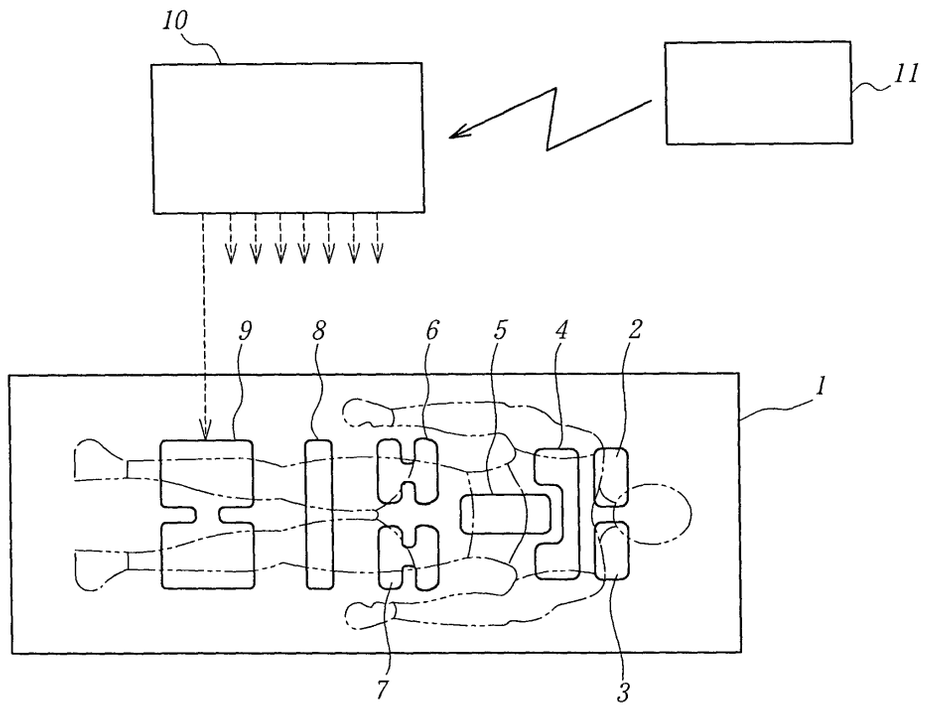
(54) Pneumatic massaging apparatus

(57) A pneumatic massaging apparatus comprises a mat-like member having a surface, an engaging members provided on said surface of the mat-like member, a plurality of air bags and an air supply unit. Each of which has an engaging member provided on a bottom thereof and has a desired configuration, said engaging members of the air bags being detachably engaged with said engaging members on the mat-like member such that each of said air bags can be positioned at desired positions on the mat-like member. The air supply unit for supplying air to each of said air bags in a controllable manner. Therefore, specific portions of a user's body can be massaged effectively in a total massage mode.

FIG. 1



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Description

[0001] The present invention relates to a pneumatic massaging apparatus comprising a mat-like member having a front surface, a plurality of air bags provided on said front surface of the mat-like member, and an air supplying unit for supplying air to said air bags in a controllable manner.

[0002] In a conventional pneumatic massaging apparatus of the kind mentioned above, a plurality of air bags are fixed on the front surface of the mat-like member at predetermined locations corresponding to specific portions of a body of a use who is lying on the mat-like member and the air is supplied to each of the air bags such that all of the specific portions of the user's body can be massaged simultaneously in a total body massage mode. In this conventional pneumatic massaging apparatus, the air bags provided at the predetermined locations of the mat-like member are inflated and the specific portions of the user lying down on the mat-like member pressed by the inflated air bags. Such a pneumatic massaging apparatus is disclosed, for instance, in Japanese Utility Model Laid-open Publication No. 6-1960.

[0003] In the above-mentioned known pneumatic massaging apparatus, the air bags are arranged fixedly on the front surface of the mat-like member at the predetermined locations such that when a user of a standard height and a typical body appearance lies down on the mat-like member with a normal posture, the specific portions of the user's body are correctly brought into contact with the air bags and are massaged in the total body massage mode. As a result, when a user whose height and/or outer appearance are remarkably different from those of the standard person, all the specific portions of such a user could not be correctly brought into contact with the air bags and actually pressed portions of the user's body might be offset from the specific portions to an unacceptable extent. Therefore, the conventional pneumatic massaging apparatus could not be effectively used for a plurality of users having various outer appearances particularly in the total body massage mode.

[0004] In Japanese Utility Model Laid-open Publication No. 53-16390, there is disclosed a known apparatus for massaging back and waist parts of a user's body by means of a single air bag which can be selectively inflated by manually operating a pumping device. In this known massage apparatus, on a mat-like member are provided three engaging members respectively corresponding to an upper portion of back near shoulders, a middle portion of back and a lower portion of back near a waist, and the single air bag is detachably secured any desired one of these engaging members. It should be noted that such a massaging apparatus is designed to perform a partial massage mode and could not be used for the total body massage, and therefore the above mentioned problem does not occur even if the three engaging members are provided at specific positions of a standard body.

[0005] It is therefore an aim of the present invention to provide a pneumatic massaging apparatus, which can solve the above-mentioned problem by arranging a plurality of air bags detachably on a front surface of a mat-like such that the air bags can be correctly brought into contact with desired portions of user's bodies having different heights and outer appearances, and therefore these portions can be effectively massaged in the total body massage mode.

[0006] To attain the above-mentioned aim, according to the invention, a pneumatic massaging apparatus comprises:

a mat-like member having a surface;
an engaging means provided on said surface of the mat-like member;
a plurality of air bags, each of which has an engaging member provided on a bottom thereof and has a desired configuration, said engaging members of the air bags being detachably engaged with said engaging means on the mat-like member such that each of said air bags can be positioned at desired positions on the mat-like member; and
an air supply unit for supplying air to each of said air bags in a controllable manner such that specific portions of a user's body can be massaged effectively in a total massage mode.

[0007] In the pneumatic massaging apparatus according to the invention, said engaging members of the plurality of air bags having an engaging member provided on a bottom thereof are detachably engaged with said engaging means on the mat-like member. Therefore, each of said air bags can be positioned at desired positions on the mat-like member. As a result, by supplying air from the air supply unit to each of air bags arranged on the mat or bed pad according to the massage mode, the specific portions of user having not only standard form but also non-standard form can be appropriately massaged. Therefore, according to the invention, it is provided the pneumatic massaging apparatus to cope with various massage modes, which are adapted to a plurality of users who are different in form.

[0008] In the apparatus according to the present invention, said engaging means may be formed by an engaging member provided on a substantially whole area of said surface of the mat-like member because a degree of freedom for arranging the bag on the sheet can be effectively improved. Moreover, said engaging means may include a plurality of engaging members provided on said desired positions of the mat-like member, each of said engaging members has a surface area which is larger than a surface area of an engaging member of a corresponding air bag.

[0009] In the apparatus according to the present invention, the apparatus may further comprise a cover accommodating said mat-like member and having a por-

tion covering said surface of the mat-like member in a removable fashion.

[0010] In the apparatus according to the present invention, it is preferred that said air bags are formed to massage the specific portions of user's body corresponds to a right shoulder-neck region, a left-shoulder-neck region, an upper back region, a center region of a back, a right hip region, a left hip region, a thigh region and a calf region. All the portions in need of massage in the total massage is possible to be a target of massage using the apparatus according to the invention, since said air bags are formed to massage the specific portions of user's body corresponds the specific portions to be massaged. Especially, since the shoulder-neck region and hip region are respectively parted to left and right, not only pitching action by inflation and deflation of each air bags but also rolling action by alternative inflation and deflation of left and right air bags can be carried out. The three dimensional action due to combination of the pitching action and rolling action remarkably improves massage effect.

[0011] More preferably, the air bags are formed to have different shapes such that each of said eight specific portions can be effectively massaged because each of the specific portions to be massaged can be appropriately massaged.

[0012] In the apparatus according to the present invention, it is preferred that the engaging members of said engaging means and air bags are formed by a Hook-and-Loop fastener. When the engaging members of said engaging means and air bags are formed by a Hook-and-Loop fastener, the respective air bags can be variably arranged on the mat.

[0013] Moreover, each the air bag may be accommodated in a mesh-like bag and said Hook-and-Loop fastener is secured to a bottom of said mesh-like bag. And the Hook-and-Loop fastener may be fused to a bottom of each of said air bags. Therefore, each of air bags is easily engaged with the engaging members provided on the mat at predetermined locations.

[0014] In the apparatus according to the present invention, at least one of said engaging members of said engaging means and air bags may be formed by a raising fabric.

[0015] In the apparatus according to the present invention, it is preferred that said air supply unit comprises a massage mode selection means for selecting one or more of said air bags to be supplied with air to perform a selected one of predetermined massage modes including said total massage mode. Therefore, not only total massage but also predetermined massage modes corresponding to the patterns selected by the user can be carried out. Thus, various use modes of the apparatus are provided.

[0016] In the apparatus according to the present invention, it is preferred that said air supply unit comprises a sequential massage selection means for successively inflating selected air bags in a given order, when a massage mode using a plurality of air bags is selected. Therefore, the respective specific portions selected by the user are periodically pressed, which provides a desired massage effect.

[0017] In the apparatus according to the present invention, it is preferred that the air supply unit comprises a air supply time control means for extending or interrupting the air supply to said one or more selected air bags. Therefore, it is possible to extend the time of massaging the specific portions or interrupt massaging the specific portions, according to the user's intention.

[0018] In the apparatus according to the present invention, it is preferred that said air supply unit comprises one or more of an air supply amount control means for adjusting an air supply amount, an air supply period control means for adjusting a period of air supply, an air supply time control means for presetting an air supply time. Therefore, it is possible to carry out the massage at the strength and the speed of air, and the air-supplying time according to the user's intention.

Fig. 1 is a schematic view showing a general arrangement of a first embodiment of the pneumatic massaging apparatus according to the invention;

Fig. 2a is a plan view showing an outer cover accommodating a mat of the pneumatic massaging apparatus of the first embodiment;

Fig. 2b is a cross-sectional view taken on a line A-A of Fig. 2a;

Fig. 2c is a plan view showing an inner bag of the pneumatic massaging apparatus according to the first embodiment;

Fig. 3 is a plan view illustrating an arrangement of various kinds of switches of an air supply unit of the first embodiment;

Fig. 4 is a plan view depicting an arrangement of various kinds of switches of a remote control device in the pneumatic massaging apparatus according to the first embodiment;

Fig. 5 is a schematic plan view representing separate engaging members provided on the surface of inner bag in another embodiment of the pneumatic massage apparatus according to the invention; and

Fig. 6 is a perspective view showing an outer cover accommodating an inner bag having an engage member provided thereon in another embodiment of the pneumatic massage apparatus according to the invention.

[0019] Now the present invention will be explained in detail with reference to embodiments shown in the accompanied drawings.

[0020] Fig. 1 is a schematic view showing a general arrangement of an embodiment of the pneumatic massaging apparatus according to the invention. The pneumatic massaging apparatus, as shown in Fig. 1, comprises a mat 1, total eight air bags 2 to 9 detachably arranged on any desired positions of the mat 1, an air

supply unit 10 for supplying air to each of the air bags 2 to 9, and a remote control device 11 for controlling various kinds of operations of the air supply unit 10. Moreover, the air supply unit 10 is connected to the respective air bags 2 to 9 through air tubes (not shown).

[0021] The mat 1 has an outer configuration of 1950 mm in length, 1000 mm in width, and 50 mm in thickness. As shown in Fig. 2, the mat 1 comprises a mat body 16 made of, e.g. urethane or tourmaline, an inner bag 14 and an outer cover 12. The outer cover 12 is made of e.g. fasper-chinchilla and includes a fastener 13 on three side faces thereof as shown in Fig. 2b.

[0022] A front surface of the inner bag 14 is made of, e.g. French texture, and a rear surface is made of cotton-broad texture. On the whole front surface of the inner bag 14, is provided an engaging member 15 of Hook-and-Loop fastener as shown in Fig. 1c.

[0023] By opening the fastener 13 of the outer cover 12 and turning over a top portion of the outer cover 12, the engaging member 15 secured on the front surface of the inner bag 14 is exposed. Then, the air bags 2 to 9 can be detachably arranged on the thus exposed engaging member 15. To this end, each of the air bags 2 to 9 includes an engaging member 17 secured on a rear surface of the air bag as illustrated in Fig. 2b. The engaging member 17 of the air bag cooperates with the engaging member 15 provided on the inner bag 14, and therefore the air bags 2-9 can be arranged on desired positions on the mat 1.

[0024] Each of the air bags 2-9 is shaped to press each of specific portions of a user's body to be massaged. In this embodiment, the specific portions are a right shoulder-neck region, a left-shoulder-neck region, a upper back region, an center region of a back, a right hip region, a left hip region, a thigh region, and a calf region. The air bags 2 to 9 each is accommodated in a mesh-like bag (not shown) and the engaging member 17 consisting the Hook-and-Loop fastener together with the engaging member 15 is provided on a bottom thereof. Moreover, according to the present invention, the Hook-and-Loop fastener may be directly fused to the bottoms of the air bags 2 to 9 without using the mesh-like bag.

[0025] One or more air bags 2 to 9 selected in accordance with a massage mode can be detachably arranged on the mat 1 at a position or positions determined by a body type or somatotype of the user such as a height and constitution and a posture of the user by engaging the engaging members 15 and 17 with each other. When all the eight air bags 2-9 are selected, all the above mentioned specific portions of the user's body can be massaged in the total massage mode.

[0026] The air supply unit 10 comprises an air pump, various kinds of control circuits, operating panel, etc. The operating panel of the air supply unit 10 includes various switches some of which are provided with indicating lamps as shown in Fig. 3. In other words, the air supply unit 10 includes a power supply ON/OFF switch 21, a time switch for massaging time-setting 22-1 corresponding to massage time of 15 minutes and 22-2 corresponding to massage time of 30 minutes, air strength-setting switches 23-1 to 23-5 corresponding to five stages of air strength, air speed-setting switches 24-1 for use in fast speed; for example, air-supplying repetition period of 8 sec and 24-2 for use in slow speed; for example, air-supplying repetition period of 15 sec, a total massage switch 25, partial massage portion-setting switches 26-1 to 26-8 corresponding to a right shoulder-neck region, a left-shoulder-neck region, a upper back region, an center region of a back, a right hip region, a left hip region, a thigh region, and calf region, and a start/stop switch of massage 27.

[0027] As shown in Fig. 4, the remote control device 11 has a start/stop switch of massage 31, an air strength-setting switch 32, an air speed-setting switch 33, a repeat/delay switch 34, and a massage course-selecting switches 35 to 38. This remote control device 11 comprises not only the same setting items of the air supply unit 10, but also the setting items which are not included in the air supply unit 10, a repeat/delay switch 34.

[0028] When a repeat switch of the repeat/delay switch 34 is pushed, air supply to the air bag preliminarily selected from the air bags 2 to 9 due to pushing any one of the each massage portion-setting switches 26-1 to 26-8 of the air supply unit 10 is extended (e.g. air supply to the very air bag is continued for five minutes). Similarly, when a delay switch of the repeat/delay switch 34 is pushed, air supply to the air bag preliminarily selected from the air bags 2 to 9 due to pushing any one of the each massage portion-setting switches 26-1 to 26-8 of the air supply unit 10 is interrupted or skipped.

[0029] The total massage mode and partial massage modes performed by the pneumatic massaging apparatus according to the present embodiment will be described hereinbelow.

[0030] First, the user lies down on the mat 1 and confirms whether or not the air bags 2-9 are brought into contact with the specific portions of the user's body corresponding to the right shoulder-neck region, left-shoulder-neck region, upper back region, center region of back, right hip region, left hip region, thigh region and calf region.

[0031] When one or more air bags do not correspond to desired portion or portions of the user's body, the user remove the relevant air bag from the engaging member 15 of the mat 1 and replace it onto suitable position on the engaging member 15 such that the relevant air bag can be brought into contact with a desired specific portion.

[0032] Then, the user, after turning on the power supply ON/OFF switch 21, operates one or more of switches that the time switch for massaging time-setting 22-1 or 22-2, any one of the air strength-setting switches 23-1 to 23-5, the air speed-setting switch 24-1 or 24-2, the total massage switch 25 or one or more of the partial

massage portion-setting switches 26-1 to 26-8. The user then lies down on the air bags 2 to 9 arranged on the mat 1 and pushes the start/stop switch 27 to initiate the total massage or selected partial massage.

[0033] Moreover, in the present embodiment, when the total massage is selected, air is supplied to the air bags 2 to 9 sequentially in this order with 8 second or 15 second repetition period. In this case, due to a so-called " breathing action of air-pump ", each air bag is once inflated and then is deflated with a lapse of time, thereby providing a desired massaging effect.

[0034] Moreover, according to the invention, it is possible to carry out " a course-selection massage", in which air is supplied to predetermined one or more air bags in comparison with the total massage or the partial massage, said air bags being preliminarily selected in accordance with a desired pattern. In other words, on the remote control device 11, pushing the start/stop switch 31 and then setting a desired air strength by the air strength-setting switch 32 and setting a desired air speed by the air speed-setting switch 33, and thereafter

(1) pushing the course-selecting switch 35 enables the total massage to be carried out,
(2) pushing the course-selecting switch 36 enables the head-to-foot massage to be carried out, in which air is supplied only to the air bags 2, 3, and 9 in this order with 8 or 15-second period,
(3) pushing the course-selecting switch 37 enables the point massage to be carried out, in which air is supplied to only one air bag selected from the air bags 2 to 9, and
(4) pushing the course-selecting switch 38 enables the calf massage to be carried out, in which air is supplied to only the air bags 8, and 9 in this with 8 or 15-second period.

[0035] Fig. 5 is a plan view showing another embodiment of the engaging means provided on the mat. In the above embodiment, the engaging member 15 of the Hook-and Loop fastener is provided on the whole front surface of the inner bag 14, but in the present embodiment, a plurality of engaging means 15-1 to 15-6 are provided on the front surface of the inner bag 14 at predetermined locations substantially corresponding to the specific portions of a standard body. Each of the engaging members 15-1-15-6 has a surface area which is larger than an engaging member 17 of a corresponding air bag. Therefore, a position of the corresponding air bag on the relevant engaging member on the mat can be adjusted to a limited extent.

[0036] Fig. 6 is a perspective view illustrating another embodiment of the outer cover accommodating the inner bag. As shown in Fig. 6, an outer cover 12-1 has a lid-like member 12-2 formed in a front surface thereof. When the lid-like member 12-2 is turned over as shown in Fig. 6, the engaging member 15 arranged on the inner bag 14 is exposed through an opening formed in the front surface of outer cover 12-1. After detachably arranging the air bags, the opening may be closed by the lid-like member 12-2.

[0037] While the present invention has been described with reference to some specific embodiments illustrated in the drawings, it is of course that various alternations or modifications may be made without departing from the scope of the invention as defined by the appended claims. For instance, in the above embodiments, the engaging members are formed by the Hook-and-Loop fastener, but they may be constituted by a raising fabric or texture. Alternatively, one of the engaging members formed on the mat and engaging member of the air bags may be made from the raising texture, and the remaining engaging member or members may be formed by a Hook or Loop member.

Claims

1. A pneumatic massaging apparatus comprising:

a mat-like member having a surface;
an engaging means provided on said surface of the mat-like member;
a plurality of air bags, each of which has an engaging member provided on a bottom thereof and has a desired configuration, said engaging members of the air bags being detachably engaged with said engaging means on the mat-like member such that each of said air bags can be positioned at desired positions on the mat-like member; and
an air supply unit for supplying air to each of said air bags in a controllable manner such that specific portions of a user's body can be massaged effectively in a total massage mode.

2. A pneumatic massaging apparatus according to claims 1, wherein said engaging means is formed by an engaging member provided on a substantially whole area of said surface of the mat-like member.

3. A pneumatic massaging apparatus according to claims 1, wherein said engaging means includes a plurality of engaging members provided on said desired positions of the mat-like member, each of said engaging members has a surface area which is larger than a surface area of an engaging member of a corresponding air bag.

4. A pneumatic massaging apparatus according to claim 1, the apparatus further comprising a cover accommodating said mat-like member and having a portion covering said surface of the mat-like member in a removable fashion.

5. A pneumatic massaging apparatus according to

claim 1, wherein said air bags are formed to massage the specific portions of user's body corresponds to a right shoulder-neck region, a left-shoulder-neck region, an upper back region, a center region of a back, a right hip region, a left hip region, a thigh region and a calf region.

6. A pneumatic massaging apparatus according to claim 5, wherein said air bags are formed to have different shapes such that each of said eight specific portions can be effectively massaged.

7. A pneumatic massaging apparatus according to claim 2 or 3, wherein said engaging members of said engaging means and air bags are formed by a Hook-and-Loop fastener.

8. A pneumatic massaging apparatus according to claim 7, wherein each said air bag is accommodated in a mesh-like bag and said Hook-and-Loop fastener is secured to a bottom of said mesh-like bag.

9. A pneumatic massaging apparatus according to claim 7, wherein said Hook-and-Loop fastener is fused to a bottom of each of said air bags.

10. A pneumatic massaging apparatus according to claim 2 or 3, wherein at least one of said engaging members of said engaging means and air bags are formed by a raising fabric.

11. A pneumatic massaging apparatus according to claim 1, wherein said air supply unit comprises a massage mode selection means for selecting one or more of said air bags to be supplied with air to perform a selected one of predetermined massage modes including said total massage mode.

12. A pneumatic massaging apparatus according to claim 11, wherein said air supply unit comprises a sequential massage selection means for successively inflating selected air bags in a given order, when a massage mode using a plurality of air bags is selected.

13. A pneumatic massaging apparatus according to claim 11, wherein said air supply unit comprises a air supply time control means for extending or interrupting the air supply to said one or more selected air bags.

14. A pneumatic massaging apparatus according to claim 11, wherein said air supply unit comprises an air supply amount control means for adjusting an air supply amount.

15. A pneumatic massaging apparatus according to claim 11, wherein said air supply unit comprises an air supply period control means for adjusting a period of air supply.

16. A pneumatic massaging apparatus according to claim 11, wherein said air supply unit comprises an air supply time control means for presetting an air supply time.

FIG. 1

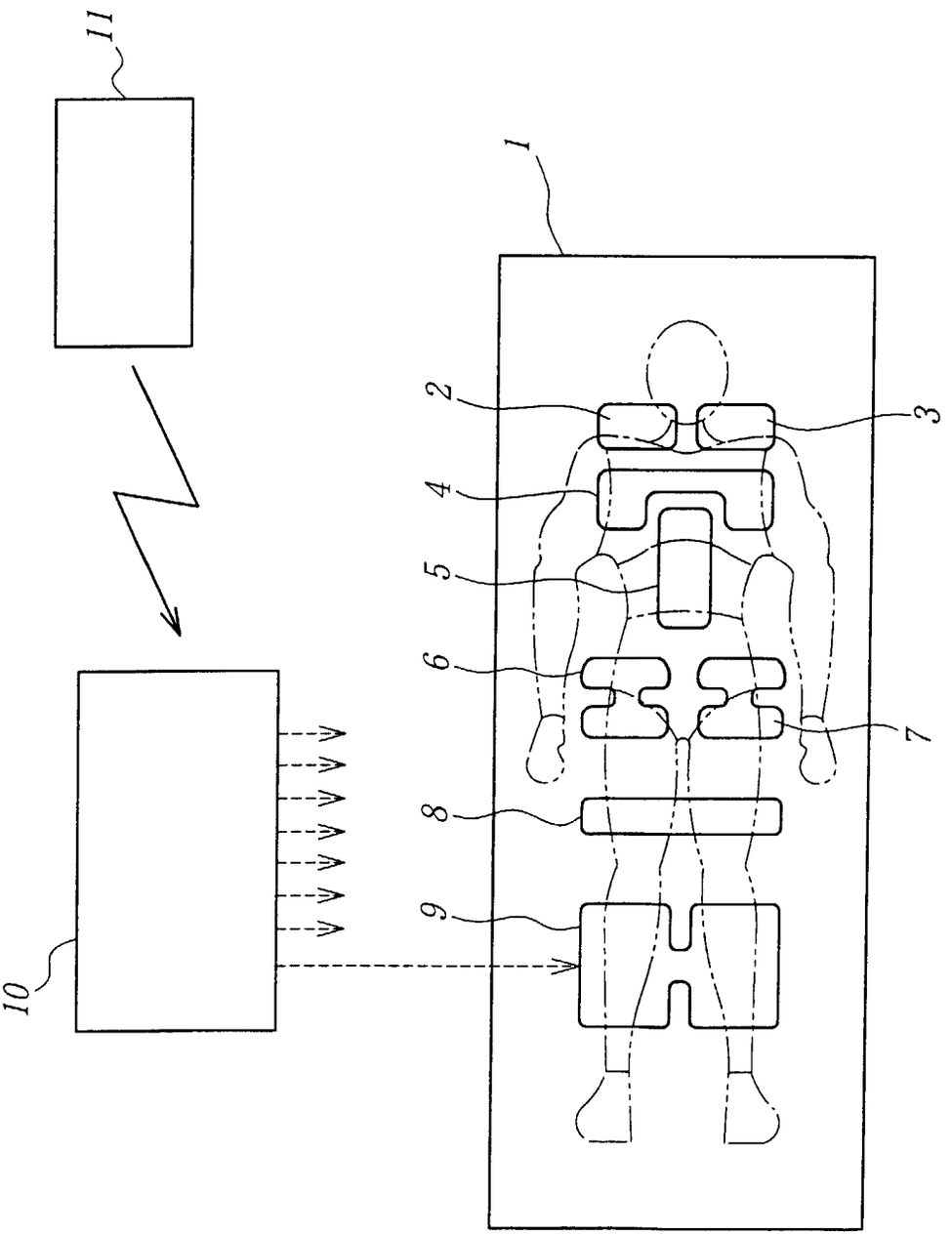


FIG. 2a

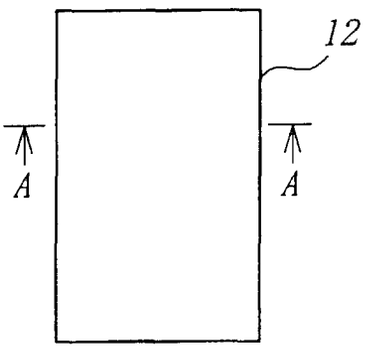


FIG. 2c

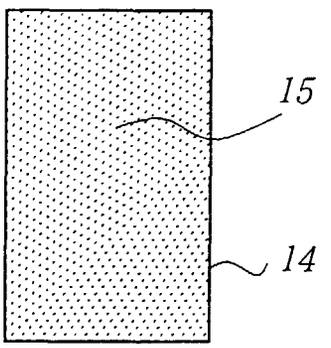


FIG. 2b

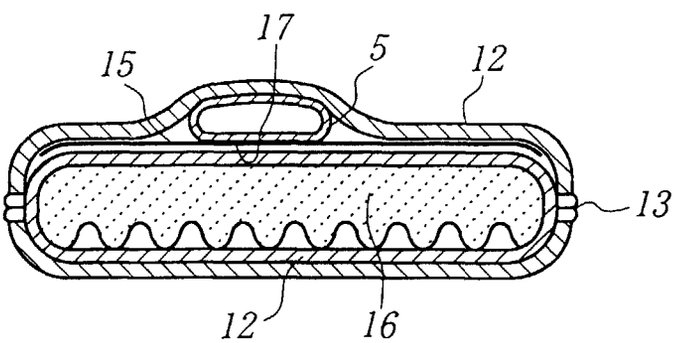


FIG. 3

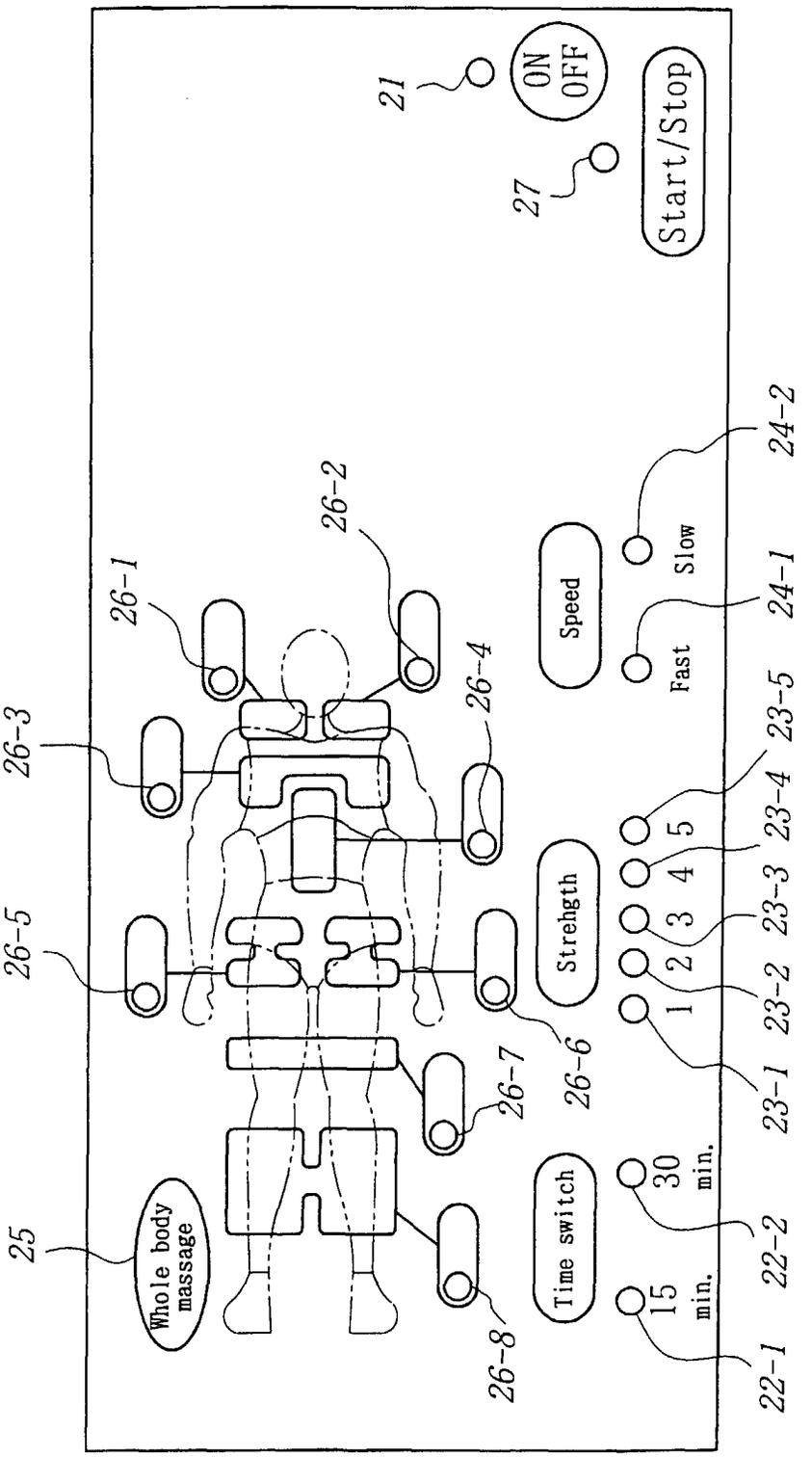
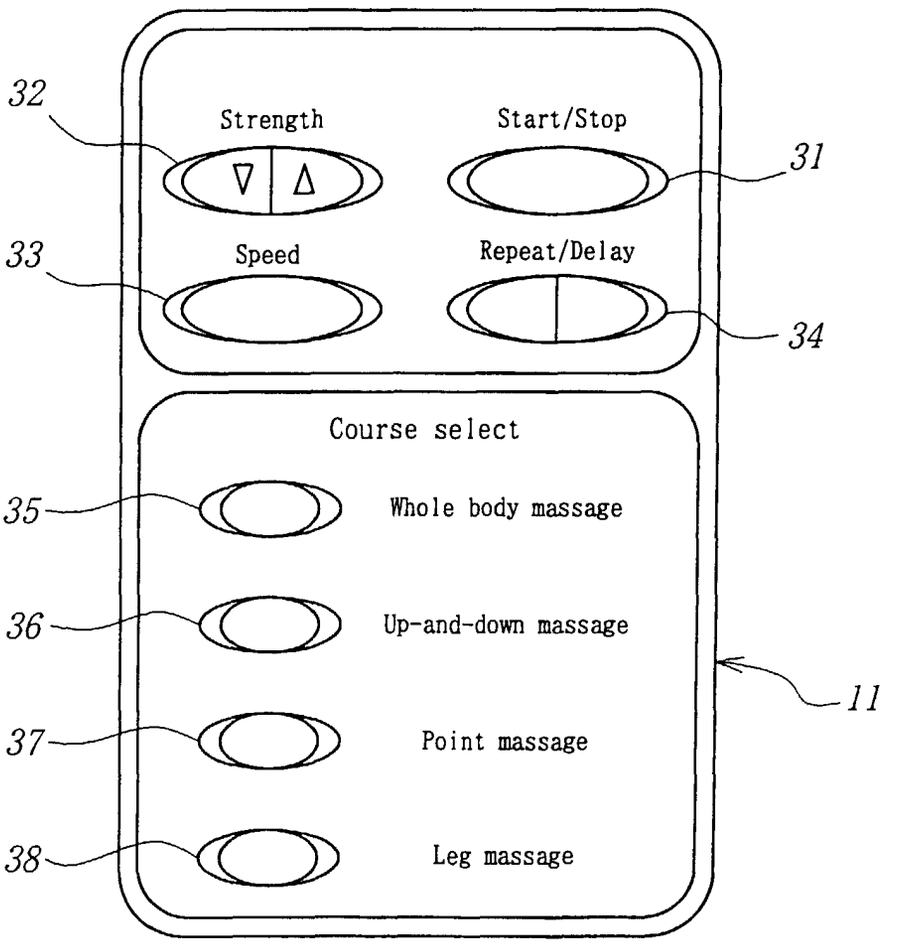

21
ON
OFF
27
Start/Stop
24-2
Slow
24-1
Fast
Speed
26-2
26-1
26-4
26-3
23-5
23-4
5
4
23-3
3
2
23-2
1
23-1
Strehgth
26-6
26-7
26-5
25
Whole body massage
Time switch
30
min.
22-2
15
min.
22-1
26-8

FIG. 4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Strength
Start/Stop
31
33
Speed
Repeat/Delay
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Course select
35
Whole body massage
36
Up-and-down massage
11
37
Point massage
38
Leg massage

FIG. 5

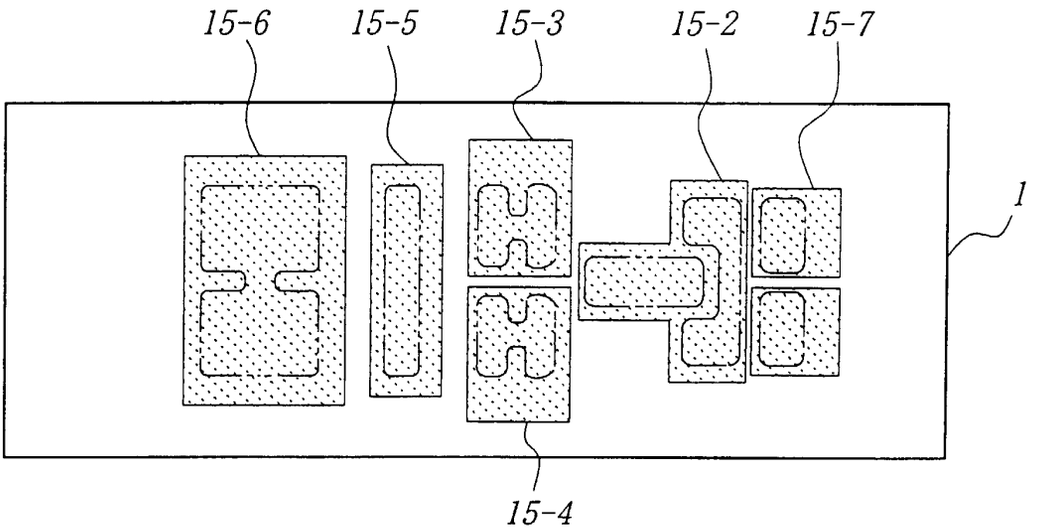

FIG. 6