

TITLE OF THE INVENTION: STRETCHING EXERCISE MACHINE**TECHNICAL FIELD**

[0001]

The present invention relates to a technique of a stretching exercise machine.

BACKGROUND ART

[0002]

Patent Literature 1 discloses a conventional stretching exercise machine capable of stretching the back of a user. The stretching exercise machine (exercise equipment) disclosed in Patent Literature 1 includes a main body having a frame structure installable on a floor, and the main body includes a chair, a swinging arm, load applying means, a back fitting arm, and the like. This conventional stretching exercise machine is capable of producing an effect of stretching and loosening up a back muscle, i.e., a stretching effect. By stretching the back muscle, it can be expected to produce an effect of correcting the posture of the user in addition to the stretching effect. It is however necessary for the conventional stretching exercise machine to secure an installation space due to its large-scale configuration. It is therefore possible to use the conventional stretching exercise machine only at a place where the stretching exercise machine is installable. In other words, it is impossible to easily use the conventional stretching exercise machine at home and other places.

[0003]

Patent Literature 2 discloses a massage machine of a backpack type capable of easily massaging the back of a user at any place. The massage machine disclosed in Patent Literature 2 includes a treatment element configured to massage the back of the user as a

treatment target with the back covered with the treatment element. The treatment element of the massage machine includes impact force generating means for locally applying an impact force. The massage machine is thus capable of massaging a treatment target (e.g., the shoulders, neck, waist (buttocks), etc. of the user) to which the impact force generating means applies the impact force.

CITATION LIST

[PATENT LITERATURE]

[0004]

PATENT LITERATURE 1: Japanese Utility Model Registration No. 3226003

PATENT LITERATURE 2: Japanese Laid-Open Patent Publication No. 2012-000158

SUMMARY OF THE INVENTION

[TECHNICAL PROBLEM]

[0005]

The massage machine is capable of loosening up a back muscle. However, the massage machine is incapable of producing an effect of stretching and loosening up the back muscle, i.e., a stretching effect.

An object of the present disclosure is to provide a stretching exercise machine of a backpack type that is usable with ease at any place and is capable of producing a stretching effect for the back of a user.

[SOLUTION TO PROBLEM]

[0006]

(1) A stretching exercise machine of the present disclosure includes: a main body part including a pressing mechanism configured to press a body of a user; a pair of strap parts extending from the main body part and hangable from left and right shoulders of the user; and a pair of fastening parts configured to fasten the pair of strap parts to the left and right shoulders of the user. The stretching exercise machine is usable with the main body part put on a back of the user. In a state in which the pair of strap parts are fastened onto the left and right shoulders of the user by the pair of fastening parts, the main body part is put on a region from the left and right shoulders to the back of the user, and the pressing mechanism is placed at a position where the pressing mechanism is pressable against a region between left and right shoulder blades in the back of the user.

[0007]

According to the stretching exercise machine of the present disclosure, the pressing mechanism is capable of pressing the back of the user with the main body part secured to the shoulders of the user. According to this configuration, the stretching exercise machine of the present disclosure is capable of producing the same effect as the effect of pulling the left and right shoulders of the user toward the back and inward. According to the stretching exercise machine of the present disclosure, therefore, it is possible to extend the muscles in the back and to produce the stretching effect.

[0008]

(2) In the stretching exercise machine of the present disclosure according to aspect (1) described above, preferably, the pressing mechanism includes an airbag expandable by inflation and contractable by deflation.

According to the stretching exercise machine having this configuration, it is

possible to press the back of the user, using the airbag expandable by inflation. According to this configuration, it is possible to make the configuration of the pressing mechanism simple and to make the configuration of the stretching exercise machine lightweight and compact.

[0009]

(3) Preferably, the stretching exercise machine of the present disclosure according to aspect (1) or (2) described above further includes a drive mechanism configured to drive the pressing mechanism, the drive mechanism including: a pump configured to supply and discharge air into and from the airbag; and a pipe member connecting the airbag and the pump.

According to the stretching exercise machine having this configuration, it is possible to make the configuration of the drive mechanism, which drives the pressing mechanism, simple. According to this configuration, it is possible to make the configuration of the stretching exercise machine lightweight and compact.

[0010]

(4) In the stretching exercise machine of the present disclosure according to aspect (3) described above, preferably, the drive mechanism further includes a battery for driving the pump, the pair of strap parts include accommodation portions, and the pump and the battery are accommodatable in one of the accommodation portions or are respectively accommodatable in the accommodation portions.

According to the stretching exercise machine having this configuration, it is possible to accommodate the pump and the battery in the pair of strap parts. According to the stretching exercise machine having this configuration, the user is able to freely move while wearing the stretching exercise machine.

[0011]

(5) In the stretching exercise machine of the present disclosure according to any one of aspects (2) to (4) described above, preferably, the airbag includes at least one of: a first airbag configured to press a first treatment target covering a lower region of the treatment target; and a second airbag configured to press a second treatment target covering an upper region of the treatment target, the upper region being located above the first treatment target.

According to the stretching exercise machine having this configuration, it is possible to select, as a treatment target to be pressed by the airbag, one of or both the first treatment target located on the lower side of the back and the second treatment target located on the upper side of the back. According to this configuration, it is possible to select a portion, which is pressed by the airbag, of the back in accordance with the preference of the user.

[0012]

(6) In the stretching exercise machine of the present disclosure according to any one of aspects (2) to (4) described above, preferably, the airbag includes at least one of: a third airbag configured to press a third treatment target covering a left region of the treatment target, the left region being located leftward with respect to a center of the treatment target in a left-right direction; and a fourth airbag configured to press a fourth treatment target covering a right region of the treatment target, the right region being located rightward with respect to the center of the treatment target in the left-right direction.

According to the stretching exercise machine having this configuration, it is possible to select, as a treatment target to be pressed by the airbag, one of or both the third treatment target located on the left side of the back and the fourth treatment target located on the right side of the back. According to this configuration, it is possible to select a portion,

which is pressed by the airbag, of the back in accordance with the preference of the user.

[0013]

(7) In the stretching exercise machine of the present disclosure according to any one of aspects (1) to (6) described above, preferably, the main body part includes: a fabric member having a first surface facing the back of the user with the main body part put on the back, and a second surface located opposite the first surface; and a core member of a plate shape disposed facing the second surface, and the airbag is disposed between the fabric member and the core member.

According to the stretching exercise machine having this configuration, it is possible to restrict the expansion of the airbag toward the core member, using the core member. According to this configuration, it is possible to concentrate the pressing force generated by the airbag on the back of the user and to reliably apply the pressing force generated by the pressing mechanism to the back of the user.

[0014]

(8) In the stretching exercise machine of the present disclosure according to aspect (7) described above, preferably, the main body part further includes a protrusion placeable on the first surface.

According to the stretching exercise machine having this configuration, it is possible to locally apply the pressing force generated by the expansion of the airbag to the back of the user via the protrusion. It is thus possible to locally concentrate and increase the pressing force to be applied to the back of the user.

[0015]

(9) In the stretching exercise machine of the present disclosure according to aspect (8) described above, preferably, the main body part further includes a pocket in which the protrusion is accommodatable, the pocket being disposed on the first surface.

According to the stretching exercise machine having this configuration, it is possible to easily arrange the protrusion on the first surface in such a manner that the protrusion is accommodated in the pocket. It is also possible to easily change a portion, which is pressed by the protrusion, of the back by changing the position of the protrusion in the pocket.

[0016]

(10) In the stretching exercise machine of the present disclosure according to aspect (9) described above, preferably, the main body part includes a plurality of the pockets.

According to the stretching exercise machine having this configuration, it is possible to select a pocket for accommodating the protrusion from the plurality of pockets. It is thus possible to easily change a portion, which is pressed by the protrusion, of the back in accordance with the preference of the user.

BRIEF DESCRIPTION OF DRAWINGS

[0017]

FIG. 1 is a front view illustrating a stretching exercise machine (a first embodiment) of the present disclosure.

FIG. 2 is a rear view illustrating the stretching exercise machine (the first embodiment) of the present disclosure.

FIG. 3 is a left side view illustrating the stretching exercise machine (the first embodiment) of the present disclosure.

FIG. 4 is a perspective view illustrating the stretching exercise machine of the present disclosure worn by a user.

FIG. 5 is a view illustrating a treatment target of the user subjected to treatment by the stretching exercise machine.

FIG. 6 is a front view illustrating the stretching exercise machine the strap parts of which are expanded upward.

FIG. 7 is a partial sectional view of a main body part.

FIG. 8 is a partial front view illustrating an arrangement of protrusions on the main body part.

FIG. 9 is a partial front view illustrating an arrangement of a pocket and the protrusions on the main body part.

FIG. 10 is a partial sectional view illustrating a fastened state of the main body part and strap parts by fastening parts.

FIG. 11 is a partial sectional view illustrating a loosened state of the main body part and strap parts by the fastening parts.

FIG. 12 is a partial front view illustrating a stretching exercise machine (a second embodiment) of the present disclosure.

FIG. 13 is a view illustrating a first treatment target and a second treatment target of the user subjected to treatment by a second stretching exercise machine.

FIG. 14 is a view illustrating an exemplary arrangement of protrusions and a pocket in the second stretching exercise machine.

FIG. 15 is a partial front view illustrating a stretching exercise machine (a third embodiment) of the present disclosure.

FIG. 16 is a view illustrating a third treatment target and a fourth treatment target of the user subjected to treatment by a third stretching exercise machine.

FIG. 17 is a view illustrating an exemplary arrangement of protrusions and a pocket in the third stretching exercise machine.

DETAILED DESCRIPTION

[0018]

Embodiments of a stretching exercise machine of the present disclosure are described below with reference to the drawings. It should be noted that the embodiments described below merely exemplify the stretching exercise machine of the present disclosure and are not intended to limit the configuration of the stretching exercise machine of the present disclosure to configurations exemplified below.

[0019]

(Outline of stretching exercise machine)

FIG. 1 is a front view illustrating a stretching exercise machine (a first embodiment) of the present disclosure. FIG. 2 is a rear view illustrating the stretching exercise machine (the first embodiment) of the present disclosure. FIG. 3 is a left side view illustrating the stretching exercise machine (the first embodiment) of the present disclosure. FIG. 4 is a perspective view illustrating the stretching exercise machine of the present disclosure worn by a user. FIG. 5 is a view illustrating a treatment target of the user subjected to treatment by the stretching exercise machine. FIGs. 1 to 4 illustrate a stretching exercise machine 10 as an embodiment of the stretching exercise machine of the present disclosure. The stretching exercise machine 10 illustrated in FIGs. 1 to 4 is a first embodiment of the stretching exercise machine 10 of the present disclosure. In the following description, the stretching exercise machine 10 as the first embodiment is also referred to as a first stretching exercise machine 10A. In the following, the term “stretching exercise machine 10” is used in giving a description of a common configuration among the first stretching exercise machine 10A and stretching exercise machines 10 (a second stretching exercise machine 10B and a third stretching exercise machine 10C) as other embodiments.

[0020]

As illustrated in FIG. 4, the stretching exercise machine 10 is of a backpack type that is usable in such a manner that a user U carries the stretching exercise machine 10 on his/her shoulders and back. The stretching exercise machine 10 is used for the purpose of stretching the back B of the user U illustrated in FIG. 5. The stretching exercise machine 10 is capable of producing an advantageous effect of stretching the back B of the user U by pressing a treatment target X on the back B illustrated in FIG. 5. The stretching exercise machine 10 is also capable of producing an advantageous effect of correcting the posture of the user U by stretching the back B of the user U.

[0021]

As illustrated in FIG. 5, the treatment target X corresponds to a region between the left and right shoulder blades K in the back B of the user U. The treatment target X may be a region covering the positions of the shoulder blades K of the user U. In the following description, the left one of the shoulders S is also referred to as a left shoulder S1, the right one of the shoulders S is also referred to as a right shoulder S2, the left one of the shoulder blades K is also referred to as a left shoulder blade K1, and the right one of the shoulder blades K is also referred to as a right shoulder blade K2.

[0022]

In the following description, with respect to a state in which the user U who is in a basic posture appropriately wears the stretching exercise machine 10, the front-rear direction of the user U in the basic posture and a direction corresponding to a direction parallel to the front-rear direction are each defined as the front-rear direction of the stretching exercise machine 10, the left-right direction of the user U in the basic posture and a direction corresponding to a direction parallel to the left-right direction are each defined as the left-right direction of the stretching exercise machine 10, and the up-down direction of the user U

in the basic posture and a direction corresponding to a direction parallel to the up-down direction are each defined as the up-down direction of the stretching exercise machine 10. The term “basic posture” of the user U used herein refers to a posture of the user U whose backbone extends vertically and whose head is located above the backbone, and involves a posture of the user U standing on a horizontal floor, a posture of the user U sitting on, for example, a chair with a horizontal seat, and other postures.

[0023]

(General configuration of stretching exercise machine)

As illustrated in FIGs. 1 to 4, the stretching exercise machine 10 includes a main body part 11, strap parts 12, and fastening parts 13.

[0024]

(Main body part)

FIG. 6 is a front view illustrating the stretching exercise machine the strap parts of which are expanded upward. FIG. 7 is a partial sectional view of the main body part. As illustrated in FIG. 4, the main body part 11 corresponds to a portion to be put on the back B of the user U illustrated in FIG. 5. As illustrated in FIGs. 1 to 4, 6, and 7, the main body part 11 includes an exterior cover 15 and a core member 16 (particularly see FIG. 7).

[0025]

As illustrated in FIGs. 6 and 7, the exterior cover 15 includes a first fabric member 15a serving as the front of the exterior cover 15 and a second fabric member 15b serving as the rear of the exterior cover 15. The exterior cover 15 is in the form of a bag having a space defined therein with the first fabric member 15a and the second fabric member 15b stitched at their outer peripheral edges. The exterior cover 15 accommodates the core member 16 in the space defined therein. The exterior cover 15 (the first fabric

member 15a and the second fabric member 15b) of the present embodiment is made of soft fabric such as artificial leather or mesh fabric. The main body part 11 may include a pad as appropriate.

[0026]

When the main body part 11 is put on the back B of the user U illustrated in FIG. 5, the first fabric member 15a comes into contact with the back B. The first fabric member 15a has a first surface 15c to be brought into contact with the back B of the user U and a second surface 15d located opposite the first surface 15c. The second surface 15d faces the second fabric member 15b.

[0027]

The core member 16 is a plate-shaped member made of elastic material. The core member 16 of the present embodiment is made of resin. The core member 16 is accommodated in the space of the exterior cover 15. The core member 16 has a front surface facing the second surface 15d and a rear surface facing the second fabric member 15b.

[0028]

As described above, the main body part 11 has a three-layer structure of the first fabric member 15a, the core member 16, and the second fabric member 15b arranged in this order from front to rear. The main body part 11 accommodates a pressing mechanism 30 (described later) in a space defined between the first fabric member 15a and the core member 16.

[0029]

(Pressing mechanism)

As illustrated in FIGs. 6 and 7, the main body part 11 also includes the pressing mechanism 30. The pressing mechanism 30 is a mechanism configured to press

the treatment target X of the user U illustrated in FIG. 5. The pressing mechanism 30 includes an airbag 40. The airbag 40 expands by inflation and contracts by deflation. The airbag 40 of the present embodiment is a bag-shaped member made of rubber. By the expansion of the airbag 40, the pressing mechanism 30 is capable of generating a pressing force for pressing the treatment target X. In the following description, the airbag 40 of the first stretching exercise machine 10A is also referred to as a first airbag 41.

[0030]

As illustrated in FIG. 7, in the stretching exercise machine 10, the airbag 40 is disposed in the space defined between the first fabric member 15a and the core member 16 of the exterior cover 15. According to this configuration, the core member 16 inhibits the airbag 40 from swelling rearward. In other words, the airbag 40 swells in directions other than rearward. The airbag 40 particularly swells forward. In the stretching exercise machine 10, therefore, the core member 16 disposed rearward of the airbag 40 is capable of reducing a transmission loss of a pressing force generated by the expansion of the airbag 40. In the stretching exercise machine 10, therefore, the pressing mechanism 30 is capable of reliably pressing the treatment target X by the expansion of the airbag 40.

[0031]

In addition, the stretching exercise machine 10 of the present disclosure is capable of causing the airbag 40 to contract by deflation, thereby releasing the pressing of the treatment target X. The stretching exercise machine 10 is capable of causing the airbag 40 to expand or causing the airbag 40 to expand and contract alternately and repeatedly, thereby producing the stretching effect for the back B of the user U (i.e., the treatment target X and a region around the treatment target X).

[0032]

(Strap parts)

As illustrated in FIG. 4, the strap parts 12 correspond to portions to be put on the shoulders S of the user U illustrated in FIG. 5. As illustrated in FIGs. 1 to 4 and 6, the strap parts 12 are band-shaped portions integrated with the main body part 11, and respectively extend from upper left and right ends of the main body part 11. The strap parts 12 are a left strap part 12a to be put on the left shoulder S1 of the user U illustrated in FIG. 5 and a right strap part 12b to be put on the right shoulder S2 of the user U illustrated in FIG. 5.

[0033]

The left strap part 12a extends from the upper left end of the main body part 11, and the right strap part 12b extends from the upper right end of the main body part 11. Therefore, the stretching exercise machine 10 has an approximately “U” shape formed of the main body part 11 and the left and right strap parts 12a and 12b. The left and right strap parts 12a and 12b are arranged side by side in the left-right direction with a clearance that is greater than the width of the neck of the user U.

[0034]

Each of the strap parts 12 includes an exterior cover 17 and a pad (not illustrated). The exterior cover 17 includes a first fabric member 17a and a second fabric member 17b. The first fabric member 17a and the second fabric member 17b are each made of soft fabric such as artificial leather or mesh fabric. The exterior cover 17 is in the form of a bag having a space defined therein with the first fabric member 17a and the second fabric member 17b stitched together with the pad at their outer peripheral edges. The strap part 12 thus has flexibility and shape retainability. The first fabric member 17a is continuously connected to the first fabric member 15a of the exterior cover 15, and the second fabric member 17b is continuously connected to the second fabric member 15b of the exterior cover 15. The space defined in the exterior cover 17 serves as an accommodation portion 18 for accommodating a drive mechanism 50 (described later). The strap part 12 also includes a

holding portion 19 for holding a buckle 22 (described later).

[0035]

Although not described in the present embodiment and not illustrated in the drawings, the stretching exercise machine 10 of the present disclosure may also include a belt member configured to connect the left and right strap parts 12a and 12b at a position in front of the chest of the user U. The use of the belt member allows the left and right strap parts 12a and 12b to be firmly brought into close contact with the body of the user U. This case makes it possible to apply the pressing force generated by the pressing mechanism 30 to the treatment target X more reliably.

[0036]

The user U wears the stretching exercise machine 10 by carrying the left and right strap parts 12a and 12b on his/her left and right shoulders S1 and S2, respectively. In the state in which the user U wears the stretching exercise machine 10 with the strap parts 12 hanging from the shoulders S of the user U, the main body part 11 can be placed on the back B of the user U. As a result, the pressing mechanism 30 (the airbag 40) can be placed at a position where the pressing mechanism 30 (the airbag 40) is pressable against the treatment target X.

[0037]

(Fastening parts)

As illustrated in FIG. 4, the fastening parts 13 correspond to portions configured to fasten the strap parts 12 and the main body part 11 onto the user U. In the stretching exercise machine 10, the fastening parts 13 are used for securing the main body part 11 to the back B of the user U and securing the strap parts 12 to the shoulders S of the user U. The fastening parts 13 are a left fastening part 13a connecting the left strap part 12a and the main body part 11 and a right fastening part 13b connecting the right strap part 12b

and the main body part 11.

[0038]

As illustrated in FIGs. 1 to 4, each of the left and right fastening parts 13a and 13b includes a fastening belt 21, the buckle 22, and a handle 23.

[0039]

The fastening belt 21 is a band-shaped member having flexibility and made of, for example, synthetic fiber such as nylon. The fastening belt 21 of the left fastening part 13a extends from a lower left end of the main body part 11 to the left strap part 12a. The fastening belt 21 of the right fastening part 13b extends from a lower right end of the main body part 11 to the right strap part 12b. Each of the fastening belts 21 has a first end secured to the main body part 11 and a second end to which the handle 23 is mounted.

[0040]

In the state in which the user U in the basic posture wears the stretching exercise machine 10 illustrated in FIG. 4, the fastening belts 21 respectively extend forward from the lower left and right ends of the main body part 11. Each of the fastening belts 21, which extend forward, passes through a slit 12c in the corresponding strap part 12 and is then inserted through the buckle 22 disposed on the front surface of the strap part 12. At the buckle 22, the extending direction of the fastening belt 21 is changed from forward to rearward. The fastening belt 21 passes through the slit 12c again and extends downward from the rear surface of the strap part 12.

[0041]

The user U pulls the handles 23 on the tip ends of the fastening belts 21 downward, thereby bringing the lower side ends of the main body part 11 close to the strap parts 12. As a result, the main body part 11 is brought into close contact with the back B of the user U. The main body part 11 is thus secured to the back of the user U. Although not

described in the present embodiment and not illustrated in the drawings, a portion of each fastening belt 21 to be brought into contact with the user U may be provided with a pad. The pad interposed between the user U and the fastening belt 21 allows the fastening belt 21 to further bring the main body part 11 into close contact with the back B of the user U, and increases the comfort of the user U wearing the stretching exercise machine 10.

[0042]

Each of the buckles 22 is connected to and held by the loop-shaped holding portion 19 located at almost the center of the corresponding strap part 12. The buckle 22 is capable of preventing the movement of the fastening belt 21 in the extending direction with the tip end (a tip end 27 described later) directed downward, and is capable of permitting the movement of the fastening belt 21 in the extending direction with the tip end raised forward. The function of the buckle 22 is described in detail below.

[0043]

(Drive mechanism)

As illustrated in FIGs. 1, 3, and 6, the stretching exercise machine 10 also includes the drive mechanism 50. The drive mechanism 50 is a mechanism configured to drive the pressing mechanism 30. The drive mechanism 50 includes a pump 51, a battery 52, and an air tube (a pipe member) 53. In the stretching exercise machine 10 of the present disclosure, the pump 51 is accommodated in the accommodation portion 18 of the left strap part 12a, and the battery 52 is accommodated in the accommodation portion 18 of the right strap part 12b. The air tube 53 is accommodated in the left strap part 12a and the main body part 11, and connects the airbag 40 and the pump 51. The pump 51 supplies air into the airbag 40 through the air tube 53 or discharges the air from the airbag 40. The stretching exercise machine 10 includes a wire 54 electrically connecting the pump 51 and the battery 52. The wire 54 is routed inside the right strap part 12b, the main body part 11, and the left

strap part 12a.

[0044]

As illustrated in FIG. 1, the stretching exercise machine 10 includes an operating part 31 disposed on the left strap part 12a. The operating part 31 corresponds to a switch configured to turn the pump 51 on and off. The user U is able to select the ON state or the OFF state of the drive mechanism 50 (the pump 51) through the operating part 31. Specifically, when the user U operates the operating part 31, the pump 51 is activated by electric power supplied from the battery 52, to supply air to the airbag 40. The airbag 40 thus expands. In addition, when the user U operates the operating part 31, the pump 51 is stopped to discharge the air from the airbag 40. The airbag 40 thus contracts.

[0045]

In the stretching exercise machine 10 as the present embodiment, the pump 51 is accommodated in the accommodation portion 18 of the left strap part 12a, and the battery 52 is accommodated in the accommodation portion 18 of the right strap part 12b. In the stretching exercise machine 10 of the present disclosure, however, the arrangement of the pump 51 and the battery 52 is not limited thereto. For example, the pump 51 may be accommodated in the accommodation portion 18 of the right strap part 12b, and the battery 52 may be accommodated in the accommodation portion 18 of the left strap part 12a. In the stretching exercise machine 10 of the present disclosure, alternatively, both the pump 51 and the battery 52 may be accommodated in one of the left and right accommodation portions 18, for example. In the stretching exercise machine 10 of the present disclosure, still alternatively, the pump 51 and the battery 52 may be accommodated in the main body part 11. In the stretching exercise machine 10 of the present disclosure, still alternatively, a part of the drive mechanism 50 may be disposed outside the strap parts 12.

[0046]

In the stretching exercise machine 10, the drive mechanism 50 drives the pressing mechanism 30 (the airbag 40), so that the pressing mechanism 30 (the airbag 40) is capable of pressing the treatment target X of the user U illustrated in FIG. 5. The stretching exercise machine 10 is capable of producing the same effect as the effect of pulling the left and right shoulders S1 and S2 of the user U toward the back B and inward, in such a manner that the pressing mechanism 30 (the airbag 40) presses the treatment target X. Therefore, the stretching exercise machine 10 is capable of extending (stretching) the muscles in the back B around the treatment target X. The stretching exercise machine 10 is thus capable of achieving such a stretching action of expanding the chest of the user U, and is capable of producing an advantageous effect of correcting the posture of the user U.

[0047]

(Protrusions)

FIG. 8 is a partial front view illustrating an arrangement of protrusions on the main body part. As illustrated in FIG. 8, the stretching exercise machine 10 of the present disclosure may include protrusions 60 disposed on the main body part 11.

[0048]

The protrusions 60 correspond to protruding portions disposed on the first surface 15c of the main body part 11. For example, the protrusions 60 are made of natural stone, hard resin, or the like. For example, the protrusions 60 may be in the form of a circular cone, a truncated cone, a quadrangular pyramid, a triangular pyramid, or the like. The protrusions 60 of the present embodiment each include a disc-shaped member.

[0049]

On the first surface 15c, the protrusions 60 are arranged within a range overlapping a placement region of the airbag 40. The protrusions 60 may be removable

from the first surface 15c, using a hook-and-loop fastener or the like. The stretching exercise machine 10 having this configuration is capable of pressing the treatment target X with the protrusions 60 during the expansion of the airbag 40. In this case, the stretching exercise machine 10 is capable of pressing the treatment target X while concentrating the pressing force generated by the pressing mechanism 30 onto contact points of the protrusions 60 with the back B. The stretching exercise machine 10 is thus capable of increasing the pressing force applied to the treatment target X. Although in the present embodiment, the number of the protrusions 60 is two, the stretching exercise machine 10 of the present disclosure may include only one protrusion 60 or may include three or more protrusions 60. Alternatively, the stretching exercise machine 10 of the present disclosure does not necessarily include the protrusions 60.

[0050]

(Pocket)

FIG. 9 is a partial front view illustrating an arrangement of a pocket and the protrusions on the main body part. As illustrated in FIG. 9, the stretching exercise machine 10, which includes the protrusions 60, may include a pocket 70 disposed on the main body part 11. The pocket 70 corresponds to a bag (pocket)-shaped portion in which the protrusions 60 are accommodatable, and includes a fabric member as with the exterior cover 15. On the first surface 15c, the pocket 70 is located within a range overlapping the placement region of the airbag 40.

[0051]

In the case where the stretching exercise machine 10 includes the pocket 70, the protrusions 60 are accommodated in the pocket 70. The protrusions 60 are thus placeable on the first surface 15c. The stretching exercise machine 10 having this configuration is capable of freely changing the arrangement of the protrusions 60 in the

pocket 70. In this case, the arrangement of the protrusions 60 is changed with ease. In the stretching exercise machine 10, a plurality of the protrusions 60 may be accommodated in the pocket 70. The stretching exercise machine 10 of the present disclosure does not necessarily include the pocket 70.

[0052]

(Fastened state and loosened state of main body part by fastening parts)

FIG. 10 is a partial sectional view illustrating a fastened state of the main body part and strap parts by the fastening parts. FIG. 11 is a partial sectional view illustrating a loosened state of the main body part and strap parts by the fastening parts. As illustrated in FIGs. 10 and 11, each of the buckles 22 includes a support end 24, a middle frame 25, a lower frame 26, and the tip end 27. The buckle 22 has a first belt insertion hole 28 located between the middle frame 25 and the lower frame 26, and a second belt insertion hole 29 located between the lower frame 26 and the tip end 27.

[0053]

The support end 24 corresponds to a frame of an approximately prismatic shape, and is laterally provided on an upper end of the buckle 22. The support end 24 defines an upper edge of the buckle 22. The support end 24 is inserted through the loop-shaped holding portion 19 on the corresponding strap part 12 and is rotatably held by the holding portion 19. Therefore, the buckle 22 is connected to the strap part 12 in a turnable manner with the support end 24 as a fulcrum.

[0054]

The middle frame 25 corresponds to a frame of an approximately flat plate shape, and is laterally provided at the middle of the buckle 22 in the up-down direction. The middle frame 25 is inclined downward at the front of the buckle 22, and defines an upper

outer peripheral edge of the first belt insertion hole 28.

[0055]

The lower frame 26 corresponds to a frame of an approximately prismatic shape, and is laterally provided below the middle frame 25. The lower frame 26 extends between left and right side edges of the buckle 22. The lower frame 26 defines a lower outer peripheral edge of the first belt insertion hole 28 and an upper outer peripheral edge of the second belt insertion hole 29.

[0056]

The first belt insertion hole 28 is a hole located between the middle frame 25 and the lower frame 26. The corresponding fastening belt 21, which extends forward from the main body part 11, is inserted through the first belt insertion hole 28 from the rear of the buckle 22 toward the front of the buckle 22. The second belt insertion hole 29 is a hole located between the lower frame 26 and the tip end 27. The fastening belt 21, which is inserted through the first belt insertion hole 28 to protrude beyond the front of the buckle 22 and is then bent in a “U” shape along the lower frame 26, is inserted through the second belt insertion hole 29 from the front of the buckle 22 toward the rear of the buckle 22. Each of the first belt insertion hole 28 and the second belt insertion hole 29 is a through hole that is substantially equal in width to the fastening belt 21.

[0057]

The fastening belt 21 passes through the slit 12c in the corresponding strap part 12 from the rear of the strap part 12, and then is inserted through the first belt insertion hole 28 to protrude beyond the front of the buckle 22. The fastening belt 21 is then bent in the “U” shape along the lower frame 26. At this time, the extending direction of the fastening belt 21 is changed from forward to downward along the lower frame 26, and then is changed from downward to rearward. Thereafter, the fastening belt 21 is inserted through the second

belt insertion hole 29 and passes through the slit 12c in the strap part 12 to protrude beyond the rear of the strap parts 12 again. Thereafter, the extending direction of the fastening belt 21 is changed downward at the rear of the strap part 12.

[0058]

Since the surface of the upper fastening belt 21 and the surface of the lower upper fastening belt 21 come into contact with each other in the slit 12c, the fastening belt 21 is restricted of displacing in the extending direction. In addition, since the fastening belt 21 is wound around the lower frame 26 of the buckle 22 in the “U” shape, a frictional force between the fastening belt 21 and the lower frame 26 restricts the displacement of the fastening belt 21 in the extending direction. The stretching exercise machine 10 of the present disclosure is capable of restricting the displacement of the fastening belt 21 in the extending direction, using the buckle 22 having this configuration.

[0059]

The user U pulls the handle 23 on the second end of each fastening belt 21 downward, thereby reducing a length L between an end point P of the fastening belt 21 on the main body part 11 and a contact point Q of the fastening belt 21 with the lower frame 26. As a result, a distance between the main body part 11 and the strap parts 12 is reduced, so that the main body part 11 and the strap parts 12 are put on the user U. At this time, the main body part 11 is brought into close contact with the back B. In this description, the state in which the main body part 11 is fastened onto the back B by the fastening parts 13 is referred to as a fastened state. In this description, the length L of the fastening belt 21 between the end point P and the contact point Q in the fastened state is defined as a first length L1.

[0060]

In the fastened state (the state in which the main body part 11 is fastened onto the back B by the fastening parts 13), the user U lifts the lower end of each strap part 12 up,

thereby turning the buckle 22 forward and upward with the support end 24 as a fulcrum. At this time, the portion of the fastening belt 21, which extends rearward and downward from the lower frame 26, is lifted up as the lower frame 26 is turned forward and upward. A clearance is thus created between the fastening belt 21 wound around the lower frame 26 and the lower frame 26 to release the restriction to the displacement by the lower frame 26, so that the fastening belt 21 becomes displaceable in the extending direction.

[0061]

This results in an increase of the length L between the end point P of the fastening belt 21 on the main body part 11 and the contact point Q of the fastening belt 21 with the lower frame 26. At this time, the main body part 11 is not brought into close contact with the back B, so that the main body part 11 and the strap parts 12 become removable from the user U. In this description, the state in which the fastening of the main body part 11 onto the back B by the fastening parts 13 is loosened is referred to as a loosened state. In this description, the length L of the fastening belt 21 between the end point P and the contact point Q in the loosened state is defined as a second length L2. The second length L2 is greater than the first length L1 ($L2 > L1$).

[0062]

The stretching exercise machine 10 of the present disclosure is capable of easily adjusting the length L of the fastening belt 21 between the end point P and the contact point Q to the first length L1 through the simple operation of the handle 23 by the user U. Therefore, the user U is able to easily put the stretching exercise machine 10 on the back B. The stretching exercise machine 10 of the present disclosure is also capable of adjusting the length L of the fastening belt 21 between the end point P and the contact point Q to the second length L2 through the simple operation of the strap part 12 by the user U. Therefore, the user U is able to easily remove the stretching exercise machine 10 from the back B.

[0063]

(First stretching exercise machine 10A as first embodiment)

The first stretching exercise machine 10A illustrated in FIGs. 1 to 4 and 6 includes the one airbag 40 (the first airbag 41).

[0064]

The first stretching exercise machine 10A having this configuration is capable of pressing the treatment target X of the user U with the first airbag 41. The first stretching exercise machine 10A is capable of producing the same effect as the effect of pulling the left and right shoulders S1 and S2 of the user U toward the back B and inward, in such a manner that the first airbag 41 presses the treatment target X. Therefore, the first stretching exercise machine 10A is capable of extending (stretching) the muscles in the back B around the treatment target X and is capable of producing the advantageous effect of correcting the posture of the user U.

[0065]

(Stretching exercise machine as second embodiment)

FIG. 12 is a partial front view illustrating a stretching exercise machine (a second embodiment) of the present disclosure. FIG. 13 is a view illustrating a first treatment target and a second treatment target of the user subjected to treatment by a second stretching exercise machine. FIG. 14 is a view illustrating an exemplary arrangement of protrusions and a pocket in the second stretching exercise machine. The stretching exercise machine 10 illustrated in FIG. 12 is a second embodiment of the stretching exercise machine 10 of the present disclosure. In the following description, the stretching exercise machine 10 as the second embodiment is also referred to as a second stretching exercise machine 10B. The second stretching exercise machine 10B is different from the foregoing first stretching exercise machine 10A illustrated FIG. 1, in a respect that the second stretching exercise

machine 10B includes a plurality of airbags 40. With regard to the other respects, the second stretching exercise machine 10B is equal in configuration to the first stretching exercise machine 10A. In the following, the configuration of the second stretching exercise machine 10B different from that of the first stretching exercise machine 10A is described, but the same configurations are not described.

[0066]

As illustrated in FIG. 12, the second stretching exercise machine 10B includes the plurality of airbags 40. Specifically, the second stretching exercise machine 10B includes two airbags 40. One of the two airbags 40 of the second stretching exercise machine 10B is referred to as a first airbag 41. The first airbag 41 of the second stretching exercise machine 10B is equal to the first airbag 41 of the first stretching exercise machine 10A. The other one of the two airbags 40 of the second stretching exercise machine 10B is referred to as a second airbag 42. Although the present embodiment exemplifies the second stretching exercise machine 10B including the two airbags 40, the second stretching exercise machine 10B may include three or more airbags 40.

[0067]

The second stretching exercise machine 10B subjects two treatment targets X illustrated in FIG. 13 to treatment. As illustrated in FIG. 13, the second stretching exercise machine 10B subjects the two treatment targets X, i.e., a first treatment target X1 and a second treatment target X2 to treatment. The first treatment target X1 corresponds to a lower region of the treatment target X illustrated in FIG. 5. The second treatment target X2 corresponds to an upper region of the treatment target X illustrated in FIG. 5, and is located above the first treatment target X1. It should be noted that the second stretching exercise machine 10B may subject three or more treatment targets to treatment.

[0068]

In the second stretching exercise machine 10B, the first airbag 41 is configured to press the first treatment target X1, and the second airbag 42 is configured to press the second treatment target X2. In the second stretching exercise machine 10B, the drive mechanism 50 operates the pressing mechanism 30, so that the pressing mechanism 30 presses one of or both the first treatment target X1 and the second treatment target X2 of the user U. It is preferable that in the second stretching exercise machine 10B, the drive mechanism 50 further includes a switch valve capable of switching a destination of air supplied by the pump 51. In this case, the air tube 53 connects the switch valve and the first and second airbags 41 and 42.

[0069]

The second stretching exercise machine 10B having this configuration is capable of extending the muscles in the back B around the first treatment target X1 and is also capable of extending the muscles in the back B around the second treatment target X2. The second stretching exercise machine 10B is thus capable of selecting, as a treatment target, one of or both the first treatment target X1 and the second treatment target X2 in accordance with the physique and preference of the user U, and is capable of more accurately producing the stretching effect.

[0070]

As illustrated in FIG. 14, the second stretching exercise machine 10B may include a plurality of pockets 70 disposed on the first surface 15c of the main body part 11 in order that protrusions 60 are arranged in the respective pockets 70. Specifically, the second stretching exercise machine 10B includes a first pocket 70 (a first pocket 71) at a position corresponding to a placement region of the first airbag 41, and a second pocket 70 (a second pocket 72) at a position corresponding to a placement region of the second airbag 42.

[0071]

According to the second stretching exercise machine 10B having this configuration, it is possible to select a pocket 70 for accommodating the protrusions 60 from the plurality of pockets 70 (the first and second pockets 71 and 72). It is thus possible to easily change a portion, which is pressed by the protrusions 60, of the back B in accordance with the preference of the user U. In the second stretching exercise machine 10B, the protrusions 60 may be directly mounted (without the pockets 70) to the positions corresponding to the placement regions of the first and second airbags 41 and 42 on the first surface 15c of the main body part 11.

[0072]

(Stretching exercise machine as third embodiment)

FIG. 15 is a partial front view illustrating a stretching exercise machine (a third embodiment) of the present disclosure. FIG. 16 is a view illustrating a third treatment target and a fourth treatment target of the user subjected to treatment by a third stretching exercise machine. FIG. 17 is a view illustrating an exemplary arrangement of protrusions and a pocket in the third stretching exercise machine. The stretching exercise machine 10 illustrated in FIG. 15 is a third embodiment of the stretching exercise machine 10 of the present disclosure. In the following description, the stretching exercise machine 10 as the third embodiment is also referred to as a third stretching exercise machine 10C. The third stretching exercise machine 10C is different from the foregoing first stretching exercise machine 10A illustrated in FIG. 1, in a respect that the third stretching exercise machine 10C includes a plurality of airbags 40. With regard to the other respects, the third stretching exercise machine 10C is equal in configuration to the first stretching exercise machine 10A. In addition, the third stretching exercise machine 10C is different from the foregoing second stretching exercise machine 10B illustrated in FIG. 12, in an arrangement of the plurality of

airbags 40. In the following, the configuration of the third stretching exercise machine 10C different from those of the first stretching exercise machine 10A and second stretching exercise machine 10B is described, but the same configurations are not described.

[0073]

As illustrated in FIG. 15, the third stretching exercise machine 10C includes the plurality of airbags 40. Specifically, the third stretching exercise machine 10C includes two airbags 40. One of the two airbags 40 of the third stretching exercise machine 10C is referred to as a third airbag 43. The other one of the two airbags 40 of the third stretching exercise machine 10C is referred to as a fourth airbag 44. Although the present embodiment exemplifies the third stretching exercise machine 10C including the two airbags 40, the third stretching exercise machine 10C may include three or more airbags 40.

[0074]

The third stretching exercise machine 10C subjects two treatment targets X illustrated in FIG. 16 to treatment. As illustrated in FIG. 16, the third stretching exercise machine 10C subjects the two treatment targets X, i.e., a third treatment target X3 and a fourth treatment target X4 to treatment. The third treatment target X3 corresponds to a left region of the treatment target X illustrated in FIG. 5, and this region is located leftward with respect to the backbone of the user U. The fourth treatment target X4 corresponds to a right region of the treatment target X illustrated in FIG. 5, and this region is located rightward with respect to the backbone of the user U. It should be noted that the third stretching exercise machine 10C may subject three or more treatment targets to treatment.

[0075]

In the third stretching exercise machine 10C, the third airbag 43 is configured to press the third treatment target X3, and the fourth airbag 44 is configured to press the fourth treatment target X4. In the third stretching exercise machine 10C, the drive

mechanism 50 operates the pressing mechanism 30, so that the pressing mechanism 30 presses one of or both the third treatment target X3 and the fourth treatment target X4 of the user U. It is preferable that in the third stretching exercise machine 10C, the drive mechanism 50 further includes a switch valve capable of switching a destination of air supplied by the pump 51. In this case, the air tube 53 connects the switch valve and the third and fourth airbags 43 and 44.

[0076]

The third stretching exercise machine 10C having this configuration is capable of extending the muscles in the back B around the third treatment target X3 and is also capable of extending the muscles in the back B around the fourth treatment target X4. The third stretching exercise machine 10C is thus capable of selecting, as a treatment target, one of or both the third treatment target X3 and the fourth treatment target X4 in accordance with the physique and preference of the user U, and is capable of more accurately producing the stretching effect.

[0077]

As illustrated in FIG. 17, the third stretching exercise machine 10C may include a plurality of pockets 70 disposed on the first surface 15c of the main body part 11 in order that protrusions 60 are arranged in the respective pockets 70. Specifically, the third stretching exercise machine 10C includes a plurality of pockets 70 (a third pocket 73 and a fourth pocket 74) at positions corresponding to a placement region of the third airbag 43, and a plurality of pockets 70 (a fifth pocket 75 and a sixth pocket 76) at positions corresponding to a placement region of the fourth airbag 44.

[0078]

According to the third stretching exercise machine 10C having this configuration, it is possible to select a pocket 70 for accommodating the protrusions 60 from

the plurality of pockets 70 (the third to sixth pockets 73 to 76). It is thus possible to easily change a portion, which is pressed by the protrusions 60, of the back B in accordance with the preference of the user U. In the third stretching exercise machine 10C, the protrusions 60 may be directly mounted (without the pockets 70) to the positions corresponding to the placement regions of the third and fourth airbags 43 and 44 on the first surface 15c of the main body part 11.

[0079]

(First modification of stretching exercise machine)

In the stretching exercise machine 10 as the present embodiment, each of the fastening parts 13 may include a hook-and-loop fastener (not illustrated) connecting the fastening belt 21 to the corresponding strap part 12. In this case, preferably, the hook-and-loop fastener includes a first hook-and-loop fastener disposed on the strap part 12 and a second hook-and-loop fastener disposed on the fastening belt 21. According to the fastening part including the hook-and-loop fastener, the strap part 12 (shoulder strap belt) is put across the corresponding shoulder S of the user U while the fastening belt 21 is passed under the arm of the user U toward the front or the rear. In this state, the strap part 12 and the fastening belt 21 are joined together by the first hook-and-loop fastener and the second hook-and-loop fastener. At this time, the length of the fastening belt 21 can be adjusted with ease by adjusting the joined position by the first hook-and-loop fastener and the second hook-and-loop fastener. In this case, the configuration of the fastening part can be made simpler, and the strap part 12 and the fastening belt 21 can be put on and removed from the shoulder S of the user U more easily.

[0080]

(Second modification of stretching exercise machine)

The stretching exercise machine of the present disclosure may include, for

example, a trunk belt (not illustrated) extending laterally from the main body part and windable around the trunk of the user. According to this configuration, the trunk belt is wound around the trunk of the user to thereby secure the main body part to the back of the user. This configuration eliminates a necessity of fastening the strap parts onto the shoulders. In this case, each strap part 12 and the corresponding fastening belt 21 may be continuously integrated with each other to serve as an annular belt body. The stretching exercise machine including the trunk belt allows the user to put and remove the main body part to and from the back more easily.

[0081]

In other words, the stretching exercise machine 10 of the second modification includes the main body part 11 including the pressing mechanism 30 configured to press the body of the user U, and the trunk belt (not illustrated) extending from the main body part 11 and windable around the body (the trunk) of the user U. The stretching exercise machine 10 of the second modification is usable with the main body part 11 put on the back B of the user U. In a state in which the trunk belt is wound around the body of the user U, the main body part 11 is put on a region from the left and right shoulders S1 and S2 to the back B of the user U, and the pressing mechanism 30 is placed at a position where the pressing mechanism 30 is pressable against the treatment target X covering the region between the left and right shoulder blades K1 and K2 in the back B of the user U. The stretching exercise machine 10 having this configuration is capable of extending the muscles in the back B of the user U as with the stretching exercise machines 10 as the foregoing embodiments, and is capable of producing the stretching effect for the user U.

[0082]

(Functional effects of the present embodiment)

Functional effects produced by the stretching exercise machine 10 as the

present embodiment are listed below.

(1) The stretching exercise machine 10 as each of the foregoing embodiments includes: the main body part 11 including the pressing mechanism 30 configured to press the body of the user U; the pair of strap parts 12a and 12b extending from the main body part 11 and hangable from the left and right shoulders S1 and S2 of the user U; and the pair of fastening parts 13a and 13b configured to fasten the pair of strap parts 12a and 12b onto the left and right shoulders S1 and S2 of the user U. The stretching exercise machine 10 as each of the foregoing embodiments is usable with the main body part 11 put on the back B of the user U. In the stretching exercise machine 10 as each of the foregoing embodiments, in the state in which the pair of strap parts 12a and 12b are fastened onto the left and right shoulders S1 and S2 of the user U by the pair of fastening parts 13a and 13b, the main body part 11 is put on the region from the left and right shoulders S1 and S2 to the back B of the user U, and the pressing mechanism 30 is placed at the position where the pressing mechanism 30 is pressable against the treatment target X corresponding to the region between the left and right shoulder blades K1 and K2 in the back B of the user U.

[0083]

According to the stretching exercise machine 10 having this configuration, the pressing mechanism 30 is capable of pressing the back B of the user U with the main body part 11 secured to the shoulders S of the user U. In this case, the stretching exercise machine 10 having this configuration is capable of producing the same effect as the effect of pulling the left and right shoulders S of the user U toward the back B and inward.

According to the stretching exercise machine 10 having this configuration, therefore, it is possible to extend the muscles in the back B and to produce the stretching effect.

[0084]

(2) In the stretching exercise machine 10 as each of the foregoing

embodiments, the pressing mechanism 30 includes the airbag 40 expandable by inflation and contractable by deflation.

According to the stretching exercise machine 10 having this configuration, it is possible to press the back B of the user U, using the airbag 40 expandable by inflation.

According to this configuration, it is possible to make the configuration of the pressing mechanism 30 simple and to make the configuration of the stretching exercise machine 10 lightweight and compact.

[0085]

(3) The stretching exercise machine 10 as each of the foregoing embodiments further includes the drive mechanism 50 configured to drive the pressing mechanism 30. In the stretching exercise machine 10 as each of the foregoing embodiments, the drive mechanism 50 includes: the pump 51 configured to supply and discharge air into and from the airbag 40; and the air tube (the pipe member) 53 connecting the airbag 40 and the pump 51.

According to the stretching exercise machine 10 having this configuration, it is possible to make the configuration of the drive mechanism 50, which drives the pressing mechanism 30, simple. According to this configuration, it is possible to make the configuration of the stretching exercise machine 10 lightweight and compact.

[0086]

(4) In the stretching exercise machine 10 as each of the foregoing embodiments, the drive mechanism 50 further includes the battery 52 for driving the pump 51, the pair of strap parts 12 include the accommodation portions 18, and the pump 51 and the battery 52 are accommodatable in one of the accommodation portions 18 or are respectively accommodatable in the accommodation portions 18.

According to the stretching exercise machine 10 having this configuration, it is

possible to accommodate the pump 51 and the battery 52 in the pair of strap parts 12.

According to the stretching exercise machine 10 having this configuration, the user U is able to freely move while wearing the stretching exercise machine 10.

[0087]

(5) In the second stretching exercise machine 10B as the second embodiment, the airbag 40 includes: the first airbag 41 configured to press the first treatment target X1 covering the lower region of the treatment target X; and the second airbag 42 configured to press the second treatment target X2 covering the upper region of the treatment target X, the upper region being located above the first treatment target X1.

According to the second stretching exercise machine 10B having this configuration, it is possible to select, as a treatment target to be pressed by the airbag 40, one of or both the first treatment target X1 located on the lower side of the back and the second treatment target X2 located on the upper side of the back. According to this configuration, it is possible to select a portion, which is pressed by the airbag 40, of the back B in accordance with the preference of the user U.

[0088]

(6) In the third stretching exercise machine 10C as the third embodiment, the airbag 40 includes the third airbag 43 configured to press the third treatment target X3 covering the left region of the treatment target X, the left region being located leftward with respect to the center of the treatment target X in the left-right direction, and the fourth airbag 44 configured to press the fourth treatment target X4 covering the right region of the treatment target X, the right region being located rightward with respect to the center of the treatment target X in the left-right direction.

According to the third stretching exercise machine 10C having this configuration, it is possible to select, as a treatment target to be pressed by the airbag 40, one

of or both the third treatment target X3 located on the left side of the back B and the fourth treatment target X4 located on the right side of the back B. According to this configuration, it is possible to select a portion, which is pressed by the airbag 40, of the back B in accordance with the preference of the user U.

[0089]

(7) In the stretching exercise machine 10 as each of the foregoing embodiments, the main body part 11 includes: the first fabric member 15a having the first surface 15c facing the back B of the user U with the main body part 11 put on the back B, and the second surface 15d located opposite the first surface 15c; and the core member 16 of the plate shape disposed facing the second surface 15d. In the stretching exercise machine 10 as each of the foregoing embodiments, the airbag 40 is disposed between the first fabric member 15a and the core member 16.

According to the stretching exercise machine 10 having this configuration, it is possible to restrict the expansion of the airbag 40 toward the core member 16, using the core member 16. According to this configuration, it is possible to concentrate the pressing force generated by the airbag 40 on the back B of the user U and to reliably apply the pressing force generated by the pressing mechanism 30 to the back B of the user U.

[0090]

(8) In the stretching exercise machine 10 as each of the foregoing embodiments, the main body part 11 further includes the protrusions 60 placeable on the first surface 15c.

According to the stretching exercise machine 10 having this configuration, it is possible to locally apply the pressing force generated by the expansion of the airbag 40 to the back B of the user U via the protrusions 60. It is thus possible to locally concentrate and increase the pressing force to be applied to the back B of the user U.

[0091]

(9) In the stretching exercise machine 10 as each of the foregoing embodiments, the main body part 11 further includes the pocket 70 in which the protrusions 60 are accommodatable, the pocket 70 being disposed on the first surface 15c.

According to the stretching exercise machine 10 having this configuration, it is possible to easily arrange the protrusions 60 on the first surface 15c in such a manner that the protrusions 60 are accommodated in the pocket 70. It is also possible to easily change a portion, which is pressed by the protrusions 60, of the back B by changing the positions of the protrusions 60 in the pocket 70.

[0092]

(10) In the second stretching exercise machine 10B as the second embodiment, the main body part 11 includes the plurality of pockets 70 (the first and second pockets 71 and 72). In the third stretching exercise machine 10C as the third embodiment, the main body part 11 includes the plurality of pockets 70 (the third to sixth pockets 73 to 76).

According to the second stretching exercise machine 10B having this configuration, it is possible to select a pocket 70 for accommodating the protrusions 60 from the plurality of pockets 70 (the first and second pockets 71 and 72). According to the third stretching exercise machine 10C having this configuration, it is possible to select a pocket 70 for accommodating the protrusions 60 from the plurality of pockets 70 (the third to sixth pockets 73 to 76). It is thus possible to easily change a portion, which is pressed by the protrusions 60, of the back B in accordance with the preference of the user U.

[0093]

While various embodiments have been described herein above, it is to be appreciated that various changes in form and detail may be made without departing from the spirit and scope presently or hereafter claimed.

REFERENCE SIGNS LIST

[0094]

- 10 stretching exercise machine
- 11 main body part
- 12 strap part
- 13 fastening part
- 16 core member
- 18 accommodation portion
- 30 pressing mechanism
- 40 airbag
- 41 first airbag
- 42 second airbag
- 43 third airbag
- 44 fourth airbag
- 50 drive mechanism
- 51 pump
- 52 battery
- 60 protrusion
- 70 pocket
- U user
- B back
- S shoulder
- X treatment target
- X1 first treatment target

X2 second treatment target

X3 third treatment target

X4 fourth treatment target

CLAIMS

1. A stretching exercise machine comprising:

a main body part including a pressing mechanism configured to press a body of a user;

a pair of strap parts extending from the main body part and hangable from left and right shoulders of the user; and

a pair of fastening parts configured to fasten the pair of strap parts onto the left and right shoulders of the user,

the stretching exercise machine being usable with the main body part put on a back of the user,

wherein in a state in which the pair of strap parts are fastened onto the left and right shoulders of the user by the pair of fastening parts, the main body part is put on a region from the left and right shoulders to the back of the user, and the pressing mechanism is placed at a position where the pressing mechanism is pressable against a treatment target covering a region between left and right shoulder blades in the back of the user.
2. The stretching exercise machine according to claim 1, wherein

the pressing mechanism includes an airbag expandable by inflation and contractable by deflation.
3. The stretching exercise machine according to claim 2, further comprising

a drive mechanism configured to drive the pressing mechanism,

the drive mechanism including:

a pump configured to supply and discharge air into and from the airbag; and

a pipe member connecting the airbag and the pump.

4. The stretching exercise machine according to claim 3, wherein
the drive mechanism further includes a battery for driving the pump,
the pair of strap parts include accommodation portions, and
the pump and the battery are accommodatable in one of the accommodation portions or are respectively accommodatable in the accommodation portions.
5. The stretching exercise machine according to any one of claims 2 to 4, wherein
the airbag includes at least one of: a first airbag configured to press a first treatment target covering a lower region of the treatment target; and a second airbag configured to press a second treatment target covering an upper region of the treatment target, the upper region being located above the first treatment target.
6. The stretching exercise machine according to any one of claims 2 to 4, wherein
the airbag includes at least one of: a third airbag configured to press a third treatment target covering a left region of the treatment target, the left region being located leftward with respect to a center of the treatment target in a left-right direction; and a fourth airbag configured to press a fourth treatment target covering a right region of the treatment target, the right region being located rightward with respect to the center of the treatment target in the left-right direction.
7. The stretching exercise machine according to any one of claims 1 to 6, wherein
the main body part includes:
a fabric member having a first surface facing the back of the user with the main body part put on the back, and a second surface located opposite the first surface; and

a core member of a plate shape disposed facing the second surface, and the airbag is disposed between the fabric member and the core member.

8. The stretching exercise machine according to claim 7, wherein the main body part further includes a protrusion placeable on the first surface.
9. The stretching exercise machine according to claim 8, wherein the main body part further includes a pocket in which the protrusion is accommodatable, the pocket being disposed on the first surface.
10. The stretching exercise machine according to claim 9, wherein the main body part includes a plurality of the pockets.