United States Patent [19]

Franklyn

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[45] **Sept. 17, 1974**

[54] **PNEUMATIC CHEST EXERCISER**

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[52] **U.S. Cl.**..... **272/79 C,** 272/DIG. 1, 272/DIG. 4

[51] **Int. Cl.**..... **A63b 21/00**

[58] **Field of Search** ..... 272/82, 79 C, 68; 46/44

[56] **References Cited**

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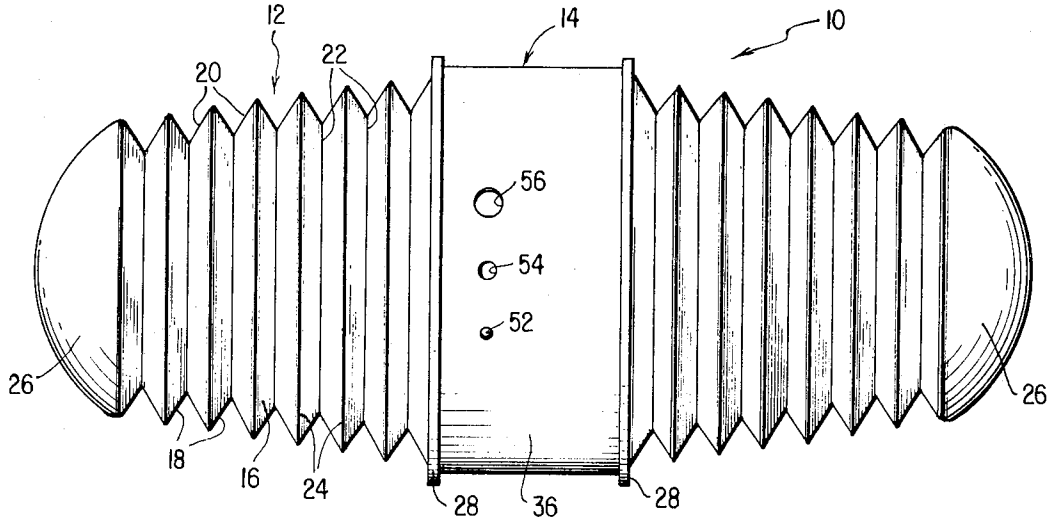
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[57] **ABSTRACT**

An exercise device is provided with a pair of opposed bellows members which are manually collapsible toward a central member. The central member is provided with an inlet and a plurality of different size outlet apertures, and a check valve to control air flow through the inlet aperture. Collapsing of the bellows members toward the central member causes air to be expelled through a selected one of the outlet apertures. The bellows are then released to return to their original position and the exercise is repeated, thus exercising the chest muscles underlying the user's breasts to achieve development thereof.

10 Claims, 6 Drawing Figures



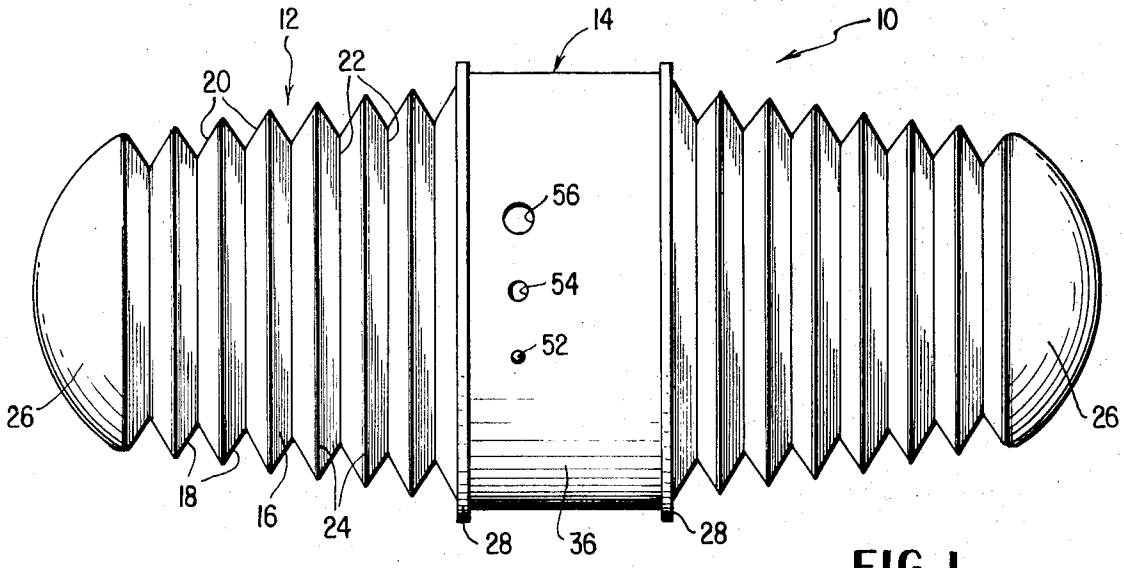


FIG. 1

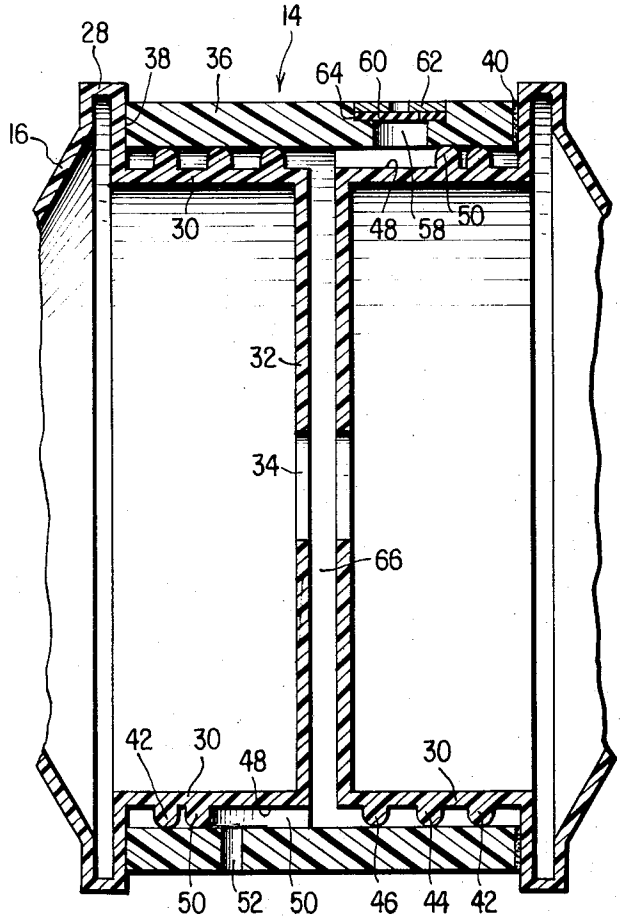


FIG. 2

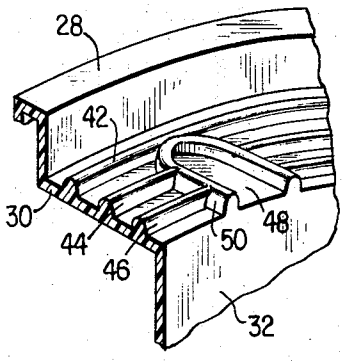


FIG. 3

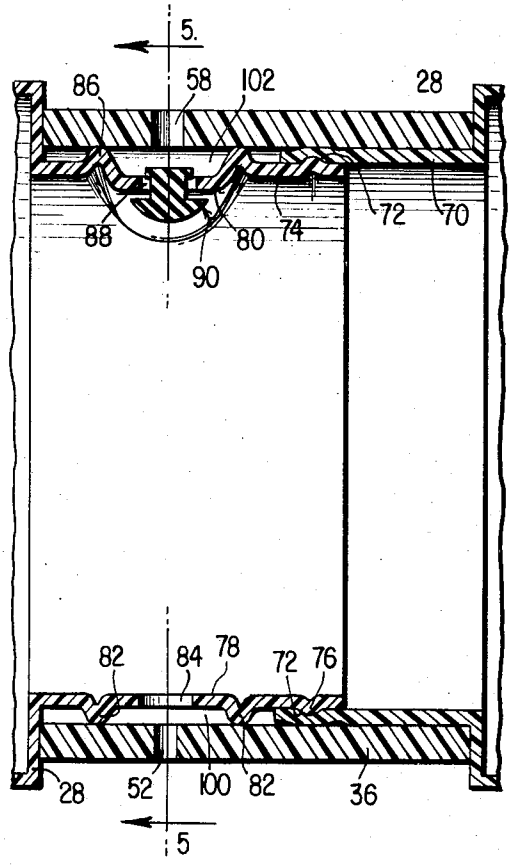


FIG. 4

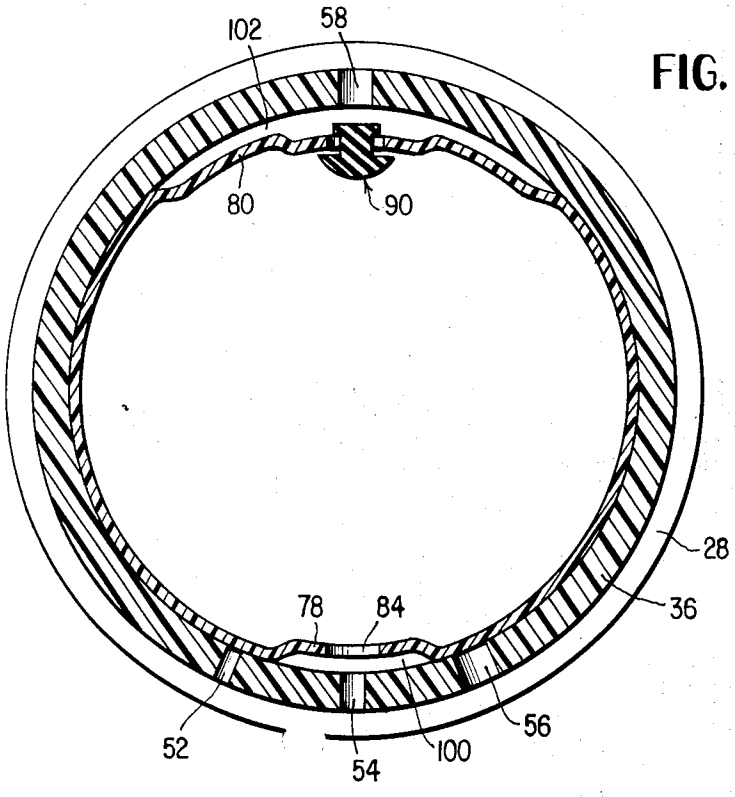


FIG. 5

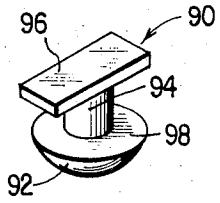


FIG. 6

PNEUMATIC CHEST EXERCISER

This invention relates to an exercise device and more particularly it relates to a device for developing female breasts through exercise of the underlying chest muscles. It has been known and recognized for some time that by using principles of isometric or isodynamic exercise, through the medium of some form of exercise device, it is possible for a woman to develop the chest muscles underlying her breasts and to thereby improve the appearance of her bustline. Examples of such known prior art devices include those shown in U.S. Pat. No. 3,491,216 and in U.S. Pat. No. 3,544,106. In each of these patents, and in other known forms of similar exercise devices, a pair of relatively movable members are separated by a compression spring. The user pushes the opposed members together, acting against the force of the spring, and when the force on the members is relieved, the spring will return such members to their original position.

With such known forms of exercise device, there exists the clear danger that in squeezing the members together in front of her chest, the user may inadvertently pinch her skin between the members or between the convolutions of the spring. Additionally, the compressive force needed to operate such a known form of exercise device is dependent entirely upon the force of the compression spring inserted in the device, and cannot be readily altered. Thus, for some users, the degree of compression might require too great an exertion of strength while for other users, the degree of compression would be satisfactory or too light.

In an endeavor to overcome these deficiencies and shortcomings associated with known forms of prior art exercise devices, it is an object of the present invention to provide a satisfactory form of exercise device which is not dependent upon compressive spring forces for its operation.

Another object of the present invention is to provide an exercise device in which the compressive forces can be adjusted, as desired, to accommodate the size and strength of different users.

Another object of the present invention is to provide an attractive, efficient form of exercise device which can be manufactured relatively inexpensively, yet which is capable of extended periods of operation without failure.

Other objects, advantages and salient of the present invention will become apparent from the following detailed description which discloses two preferred embodiments of the invention.

The foregoing objects are attained generally by providing a pair of opposed bellows members, each of which has a handle at the outer end thereof which is adapted to be inserted into the palm of the user's hands. The inner ends of the bellows members are disposed within a central member which is provided with aperture means to control air flow into and out of the device. A plurality of outlet apertures can be provided, having differing sizes, with only one such aperture being usable at any one time. However, by selective adjustment of these outlet apertures, the degree of force needed to collapse the bellows members toward the central member can be controlled.

Referring now to the drawings, which form a part of this original disclosure:

FIG. **1** is a side elevational view of an exercise device in accordance with the principles of the present invention;

FIG. **2** is a transverse sectional view through the central portion thereof;

FIG. **3** is a fragmentary prospective view showing the inner end portion of one of the bellows members;

FIG. **4** is a view similar to FIG. **2,** but showing a modified form of the present invention;

FIG. **5** is a sectional view taken along the line **5—5** of FIG. **4**; and

FIG. **6** is a prospective view of the check valve of FIGS. **4** and **5.**

Referring now to the drawings in further detail, there is shown in FIG. **1** an exercise device in accordance with the principles of the present invention, such device being generally designated **10.** The device **10** includes a pair of opposed bellows members generally designated **12** and a central member generally designated **14.**

Each bellows member **12** includes a pleated or corrugated section **16** which is manually collapsible, much in the manner of an accordian or concertina. That is, the pleated portion **16** includes a series of inwardly directed folds **18** which merge together at their inner and outer edges with a series of outwardly directed folds **20.** As such a series of inner fold lines **22** are provided along the inner junctures and a series of outer fold lines **24** are provided along the outer junctures.

As can best be seen in FIG. **2,** the corrugated portions **16** of the bellows is formed of sheet material, preferably a plastic such as low density polyethylene. The cross-sectional configuration of each bellows member **12** is generally circular and the size thereof gradually increases from the outer end toward the central member **14,** as shown in FIG. **1.**

A dome shaped handle means **26** is attached at the outer end of each bellows member **12.** The handle **26** can be formed integrally with the remainder of the bellows or can be formed separately therefrom and attached thereto. In any event, however, the domed configuration of the handle **26** serves to assure that it will fit comfortably in the palm of a user's hand. The pleated portion **16** of each bellows member **12** terminates in an enlarged shoulder **28** which fits on opposite sides of the central member **14,** as shown in FIGS. **1** and **2.**

Referring to FIG. **2,** it can be seen that the inner end of each bellows member includes a reduced diameter circular portion **30** which fits within the central member **14** and which terminates in an inner end wall **32** having a hole **34** formed in the center thereof.

The central member **14** is formed as a circular ring or sleeve **36,** formed of a plastic material such as polyvinylchloride or a styrene extrusion. The side edges **38** of the ring **36** abut against the shoulders **28** of the bellows members. If desired, an adhesive **40** can be inserted between the side edge **38** and the shoulder **28** to thus retain one particular bellows member against rotation relatively to the ring **36.**

Referring to FIGS. **2** and **3,** it can be seen that the inner end **30** of the bellows member is provided with three spaced circumferential beads or ridges, identified as **42, 44** and **46.** Each of these beads or ridges is adapted to frictionally fit against the inner surface of the central ring member **36.** The bead or ridge **42,** which is closest to the shoulder **28** of the bellows mem-

ber is continuous and uninterrupted. The center bead **44** and the bead **46** which is closest to the inner end of the bellows member are interrupted at one point about their periphery to provide a flat portion **48** surrounded by a horseshoe-shaped bead **50.** This flat or land portion **48** is adapted to be aligned with the inlet and outlet aperture means in the central member **14.**

Referring again to FIG. **1,** it can be seen that there are three holes **52, 54** and **56,** which progressively increase in size. These holes form the outlet aperture means in the central member ring **36.** The circumferential spacing of these holes about the ring **36** is greater than the size of the flat portion **48.** As a result, the flat portion **48** can be rotated, by rotation of the lefthand bellows member in FIG. **1,** to align the flatened portion **48** with a selected one of the apertures. On the opposite of the ring **36,** there is provided an inlet aperture means in the form of a hole **58** which is adapted to be aligned with the land portion **48** on the righthand bellows member of FIG. **1.** A check valve **60** and retaining washer **62** are mounted in a countersunk portion **64** at the outer end of the outlet aperture means **58.** The check valve is provided with a severed central flap which seats against the inner surface of the washer **62** when air pressure is applied outwardly through the aperture **58,** to thus prevent air escaping therefrom.

In using the apparatus described in FIGS. **1–3,** the user would first rotate the lefthand bellows member to align the land portion **48** thereof with a selected one of the outlet apertures. Then, the handle means **26** for each bellows member is cupped in the palm of the user's hand and these handles are then pushed toward the central member to collapse the bellows. The air contained within the bellows expells through the holes **34** in the bellows end wall **32,** passes through the passage **66** formed between the adjacent end walls and reaches the flat or land portion **48** on each bellows. The air is thus expelled through the outlet aperture **52** but is prevented from being expelled through the inlet aperture **58** by means of the check valve mounted therein. The user continues to compress the bellows members until they are fully compressed. Then, when force is released, the bellows members tend to elastically recover their initial distended position, and as they recover to this original position, air is drawn in through the inlet opening means, as well as through the outlet opening means. However, because the size of the inlet opening is considerably greater than the size of the outlet opening, the air can quickly rush into and fill the interior of the device **10.** It should be apparent that the larger the size of the outlet opening hole, the less force must be exerted to expel the air therethrough. Thus, by properly selecting a particular outlet aperture, the user can control the amount of force which she wishes to exert in collapsing the bellows members. The central member or ring **36,** abutted by the shoulders **28** of the bellows members, serve to provide the device with rigidity and also serves as a stop for collapsing of the bellows members.

Referring now to the embodiment shown in FIGS. **4–6,** it will be seen that the inner ends of the two bellows member interlock within the central member or ring **36.** The inner portion of the righthand bellows member extending inwardly from the shoulder **28** thereof includes a portion **70** which fits tightly and frictionally against the interior of the ring member **36** in such a manner as to normally prevent rotation of the righthand bellows member. The portion **70** is provided with corrugations **72** which form screw threads and the inner portion **74** of the lefthand bellows member is provided with a raised thread portion **76** adapted to screw into the corrugations **72.** In other words, the left and right bellows members can be interlocked by a screw-fit type arrangement. As will be noted, both bellows members have entirely open inner ends so that air flow extends completely from one bellows member directly into the other bellows member. The inner end portion **74** of the lefthand bellows member is provided with a pair of depressed portions **78** and **80** adapted to align with the inlet and outlet apertures in the central ring member **36.** The depressed portion **78** which cooperates with the outlet apertures is surrounded by a bead or ridge **82** which seals against the inner surface of the ring **36.** An opening or hole **84** is provided in the depressed portion **78.** The depressed portion **80** is likewise surrounded by a sealing bead or ridge **86** which seals against the inner surface of the ring **36** and is likewise provided with a center hole **88.** A check valve **90** is mounted within the hole **88** and as can be seen from FIG. **6,** the check valve **90** includes a button portion **92,** a center shank **94** and a top bar **96.** So long as the valve **90** is in the position shown in FIG. **4,** air can pass through the aperture **88,** around the shank **94** and along the sides of the bar **96.** However, when air is being discharged from the device, as when the bellows are collapsed, the button portion **92** will be lifted upwardly until the flat surface **98** thereof seats against the depressed portion **80,** thus preventing air flow through the aperture **88.** As a result of the arrangement shown in FIGS. **4** and **5,** there is formed an outlet air chamber **100** which can be selectively aligned with one of the three outlet openings **52, 54** and **56** and there is also provided an inlet air chamber **102** which is aligned with the inlet air opening **58.**

In operation, the device of FIGS. **4** and **5** operates exactly in the same manner as the device of FIGS. **1** and **2.** That is, when the user presses the handle members **46** toward one another and toward the center member to collapse the bellows, the air is discharged through the hole **84,** the outlet air chamber **100** and through the selected outlet aperture. During such collapsing, the check valve **90** prevents air from escaping through the inlet aperture means **58.** When pressure on the bellows is released to permit the same to elastically recover to its original distended position, the check valve **90** returns to the position of FIG. **4** and air can flow in through the inlet opening means **58,** through the inlet air chamber **102** and into the interior of the two bellows members. At this time, air can also flow inwardly through the outlet aperture and the outlet air chamber **100.**

After reading the foregoing detailed description, it should be apparent that the objects set forth at the outset of the specification have been successfully achieved by the present invention. Various modifications apparent to those skilled in the art may be made without departing from the spirit and scope of the present invention as defined in the appended claims.

What is claimed is:

1. A device for developing female breasts through exercise of the underlying chest muscles, which comprises:

a pair of opposed bellows members, each of which includes an inner end and an outer end;

handle means connected to said bellows members out ends;

a central member;

said bellows members inner ends being disposed within said central member;

said central member having outlet aperture means therein to permit air to be discharged when said bellows members are collapsed by manually pushing said handle means toward said central member;

said central member also having inlet aperture means; and

valve means to control air flow from said inlet aperture means into the interior of said bellows members.

2. A device as defined in claim **1** wherein said valve means consists of a check valve which closes when said bellows members are collapsed, thus preventing air from escaping through said inlet aperture means, but which opens as said bellows members are released to return to their distended position.

3. A device as defined in claim **1** wherein each of said bellows members includes a shoulder spaced from the inner end thereof and wherein said shoulders abut against said opposite sides of central member.

4. A device as defined in claim **3** wherein each of said bellows members is substantially circular in cross-sectional configuration and wherein said central member is formed as a ring.

5. A device as defined in claim **4** wherein each of said bellows members progressively increases in diameter from its outer end to its shoulder.

6. A device as defined in claim **5** wherein each of said handle means is generally dome shaped in configuration and is adapted to fit into the palm of a user's hand.

7. A device as defined in claim **1** further including a first depressed portion in one of said bellows members, between the shoulder and the inner end thereof, said depressed portion forming with said central member, an inlet air chamber.

8. A device as defined in claim **7** wherein said inlet air chamber is aligned with said inlet aperture means and wherein said valve means is mounted within said first depressed portion to control air flow from said inlet air chamber into the interior of said bellows members.

9. A device as defined in claim **7** further including a second depressed portion in one of said bellows members, said depressed portion forming with said central member, an outlet air chamber.

10. A device as defined in claim **9** wherein said outlet aperture means comprises a plurality of apertures of differing sizes and wherein said bellows members having said second depressed portion therein is movable relatively to said central member to align said outlet air chamber with a selected aperture of a selected size.

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