

[54] **MUSCLE EXERCISING DEVICE**

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[58] Field of Search 128/2 R, 2 S, 344, 128/64, 349 B; 272/57 R

[56] **References Cited**

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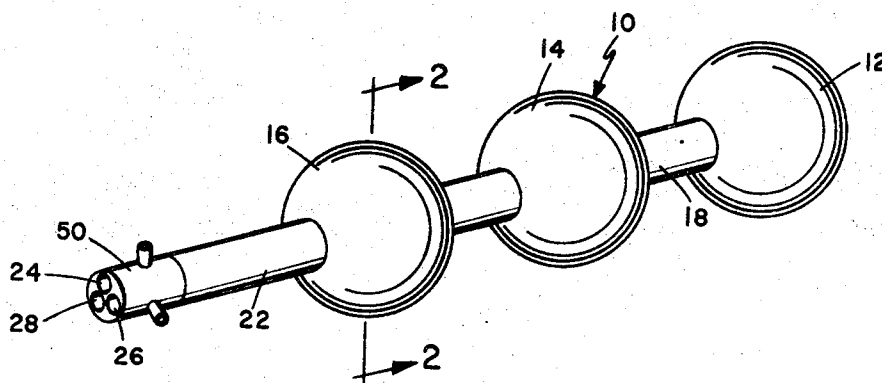
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[57] **ABSTRACT**

A muscle exercising device for exercising the muscles of the vagina, which device has a plurality of separated, flexible, inflatable bulbs that are interconnected and supported by a stem of connecting tubes. The muscular pressures in separate zones of the vagina muscles contract the bulbs causing a change in pressure in the bulbs that is detected by pressure detecting devices connected to the tubes. The pressure transducers or bulbs facilitate tactile cognizance and show the contraction pressures.

11 Claims, 4 Drawing Figures



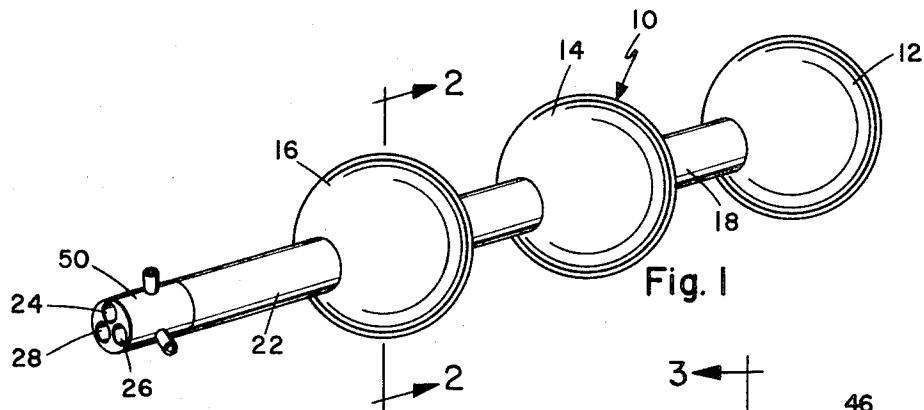


Fig. 1

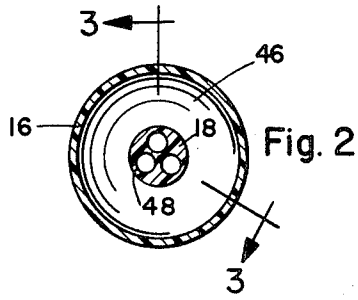


Fig. 2

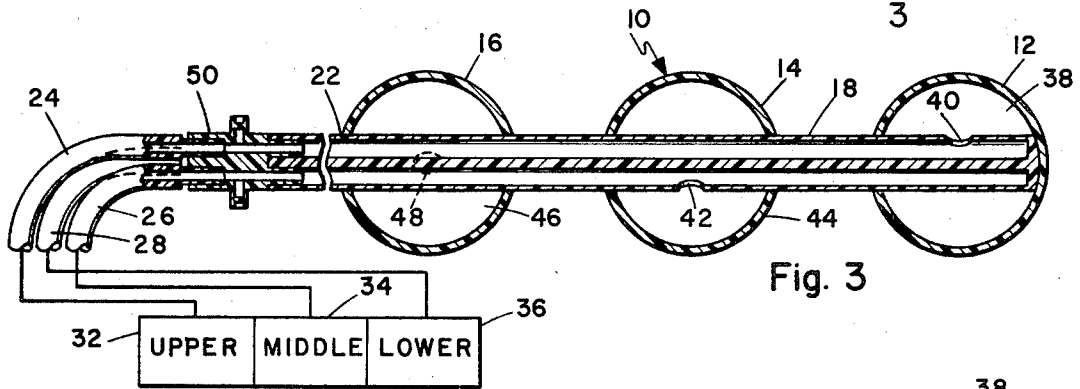


Fig. 3

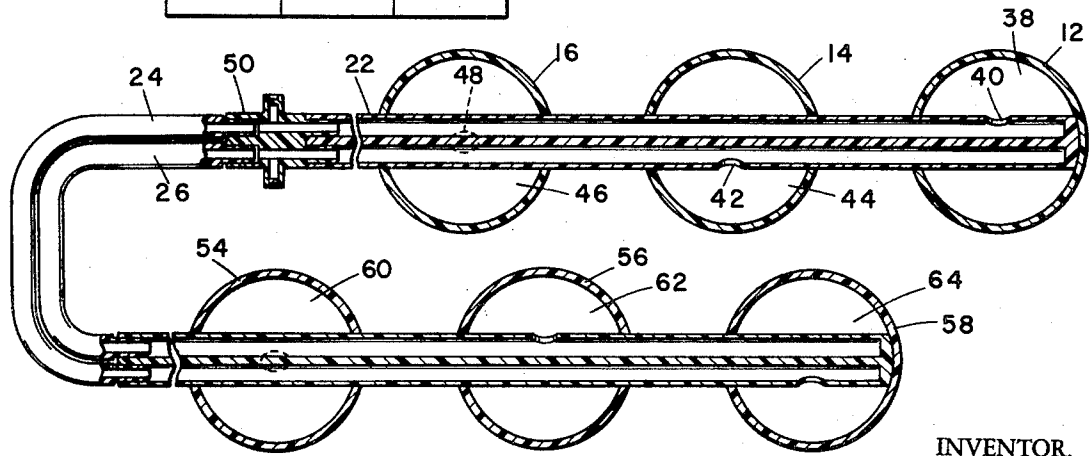


Fig. 4

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MUSCLE EXERCISING DEVICE

BACKGROUND OF THE INVENTION

There are several known devices for measuring the tonus of the muscular system of the vagina, pelvis and adjacent areas and thus facilitate the exercise of these muscles to improve their muscle tone and control and to correct by exercise therapy, weakness of these muscles resulting from disease or the like. Such prior devices often use tubes that are inflated within the vagina and that function only to reflect a particular overall movement of the muscles involved. Other devices employ a long tubular member that may have partitioned sections. However these devices do not provide a separated surface contact with the wall of the vagina and thus do not give any sense of feeling or control by the person exercising with the device or mechanism. Thus only general movement of the muscles is possible and without selective muscle control.

It is therefore advantageous to have a device for exercising the vaginal muscles at particularly selected locations along the wall of the vagina and to provide a quick and easy means for determining the results of the exercise, in a manner that aids a person in the exercising procedure to achieve control of the muscles.

SUMMARY OF THE INVENTION

In an embodiment of this invention, a series or plurality of pressure transducers in the form of ball shaped, flexible and inflatable bulbs are aligned on a central stem. The stem comprises connecting tubes that extend through the bulbs or transducers with each bulb being separately ducted to a particular connecting tube in the stem. The tubes and bulbs are inflated and can then be inserted into the vagina. The muscles of the vagina contract on the bulbs, which changes the air pressure in the bulbs that is reflected in the air pressure in each of the bulbs and its respective connecting tube. The connecting tubes are connected to either visual or remote pressure indicating devices. Since the bulbs have a substantially circular shape, they only make physical or contact with the wall of the vagina at selective locations. Thus observing the compression of individual ones of the bulbs along with tactile cognizance of the bulbs, allows a person to exercise the vagina muscles in a meaningful fashion and also to achieve muscular control. The relative position of the bulbs in the vagina may be selectively moved to achieve muscular exercise of the vagina muscles at different locations along the length of the device, and also will allow certain of the bulbs to be inflated or deflated to allow further control of separate areas of the muscles.

The indicating devices may comprise any known pressure indicating device or may comprise a duplicate of the bulbs and connecting tubes, to facilitate a simplified structure for observing the condition of the pressure within the bulbs during the exercising procedure.

It is therefore an object of this invention to provide a new and improved muscle exercising device for exercising the vaginal muscles.

It is another object of this invention to provide a new and improved device for providing improved muscle tone of the vagina muscles and thereby improving body health.

It is another object of this invention to provide a new and improved exercising device for the vagina muscles, that allows the vagina muscles to be exercised independently from other portions of the vagina muscles.

It is another object of this invention to provide a new and improved muscle exercising device for the vagina muscles that allows the user to contact only certain portions of the exercising device with the muscles, and to observe the contraction of the muscles by a relatively simple and inexpensive display device.

Other objects and many advantages of this invention will become more apparent upon a reading of the following detailed description and an examination of the drawing wherein like reference numerals designate like parts throughout and in which:

FIG. 1 is a partial perspective view of an embodiment of the invention.

FIG. 2 is a cross sectional view taken along lines 2—2 of FIG. 1.

FIG. 3 is a cross sectional view taken along lines 3—3 of FIG. 2 with means for providing visual indication of pressure changes.

FIG. 4 is a view taken partly in cross section which shows a modified embodiment of the invention.

Referring now to the drawing, the muscle exercising device 10 has pressure transducers in the form of inflatable, flexible bulbs 12, 14 and 16. These bulbs are interconnected by a stem of connecting tubes 18 that are inserted at one end into the bulb 12 and pass through the central portion of bulbs 14 and 16 with an end portion 22 on which is connected an inflating device 50. Each of the connecting tubes is connected to a particular transducer or inflatable bulb with duct 40 connecting tube 26 to the interior volume 38 of bulb 12, with duct or opening 42 connecting the connecting tube 24 to the volume 44 of bulb 14 and connecting tube 28 is connected by duct or opening 48 to the volume 46 of the bulb 16. The inflatable device 50 comprises a normal air valve that communicates with each of the connecting tubes. Any suitable air valve 50 can be used for inflating the tubes and their respective bulbs, individually.

As illustrated in FIG. 3, each of the tubes 24, 26, and 28 are connected to respective pressure detecting devices 32, 34, and 36, which devices display the particular pressure in the respective connecting tubes and their inflated bulbs. The pressure indicating devices 32, 34 and 36 may comprise borden tubes, mercury tubes, expandable gas bags, or any other suitable pressure indicating devices.

In operation of the embodiment, the gas inflated bulbs 12, 14 and 16 with the stem 18 are inserted into the vagina. The bulbs normally have sufficient diameter to contact the walls of the vagina to facilitate tactile cognizance. The user then contracts the vagina muscles in a manner to exert compressive forces on the bulbs increasing the air pressure in the bulbs, which is reflected in the pressure indicators 32, 34 and 36 that show the pressure being exerted by the muscles on each of the bulbs individually. By such indications, the user can learn to contract individual ones of the muscles. It should be recognized that the bulbs 12, 14 and 16 may be selectively inflated or their location may be changed by moving the exercising device 10 to different locations within the vagina. The bulbs would generally be

made of any flexible material that has only a slight expansion capability, but which material is flexible and readily deformable.

Referring to FIG. 4, the muscle exercising device 10 is connected to a substantially identical structure through the end connections 22 of the respective connecting tubes that form the stem for the expandable bulbs. The inflating device 50 inflates the bulbs and connecting tubes of each of the members through a single air valve connection for each of the connecting tubes.

In operation, expansion or contraction of bulbs 12, 14 and 16 cause a concurrent contraction or expansion of the bulbs 58, 56 and 54 because of the respective pressures of the air in volumes 64, 62 and 60. This expansion or contraction of bulbs 58, 56 and 54 visually shows the user which of the bulbs the user is exercising and to what extent. This embodiment allows relatively inexpensive embodiments of the invention to be made and sold.

The device may be permanently filled with a gas such as air or the like, or the bulbs and stems may be inflated by the inflatable device 50 as desired. The use of the three bulbs make it possible to squeeze the bulbs individually or in some degree of combination that is shown in the indicator devices. While three bulbs are shown, which are considered to be an optimum arrangement, two bulbs or a greater number of bulbs may also be similarly employed.

Having described my invention, I now claim:

1. A device for exercising the vaginal muscles comprising,

a plurality of separated, flexible, inflatable bulbs being held in aligned and spaced positions for insertion into the vagina,
said bulbs being held in spaced position by a plurality of connecting tubes with each of said connecting tubes having an opening to only one of said bulbs,
said connecting tubes have a cross sectional area substantially smaller than the cross sectional area of said bulbs,
and means for being connected to said tubes for indicating changes in air pressure in each of said bulbs.

2. In a device as claimed in claim 1 including, means for separately inflating each of said plurality of inflatable bulbs.

3. A device as claimed in claim 1 in which, said connecting tubes having a total diameter that is

less than one half of the diameter of each of said bulbs.

4. In a device as claimed in claim 1 including, a second plurality of inflatable bulbs being held in aligned and spaced positions by a second plurality of connecting tubes with each of said second connecting tubes having an opening to only one of said second plurality of inflatable bulbs,

and said second connecting tubes being connected to said connecting tubes, whereby changes in contraction or expansion of each of said plurality of inflatable bulbs cause expansion or contraction in the respective ones of said second plurality of inflatable bulbs because of the air pressure relationship therebetween.

5. A device as claimed in claim 5 in which, said second plurality of inflatable bulbs and said second plurality of connecting tubes having substantially the same configuration as said plurality of inflatable bulbs and plurality of connecting tubes.

6. A device as claimed in claim 5 in which, said plurality of inflatable bulbs and said second plurality of inflatable bulbs respectively comprise three inflatable bulbs,

and said bulbs are selectively inflatable.

7. A device as claimed in claim 1 in which, said inflatable bulbs comprise readily deformable material.

8. A device as claimed in claim 1 in which, said bulb having a molded ball shape in the non-inflated condition said connecting tubes extending in the form of a stem from the end bulb to and through the other bulbs with said opening in said connecting tubes in the respective bulb,
and each of said bulbs being sealed around said connecting tubes passing therethrough with said bulbs being spaced from each other.

9. A device is claimed in claim 1 in which, each of said bulbs having a molded circular configuration in the non-inflated condition with substantially the same diameters.

10. In a device as claimed in claim 1 in which, said bulbs comprising three ball shaped inflatable members.

11. In a device as claimed in claim 1 in which, said bulbs consisting of three ball shaped inflatable members.

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