

[54] **ELASTIC BAND TYPE EXERCISING DEVICE**

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[58] Field of Search..... 272/82, 83, 79 R, 272/DIG. 4, 75; 24/115 G, 115 R, 81 CC

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[57] **ABSTRACT**

An expander to be used for gymnastic or physio-therapeutic exercises comprising an endless elastic loop and two handles each of which is constituted by two separable halves which define between them an arrangement of internal grooves in such a manner that parts of said loop can be inserted in various configurations within said grooves to adjust the length of the loop according to requirements.

1 Claim, 9 Drawing Figures

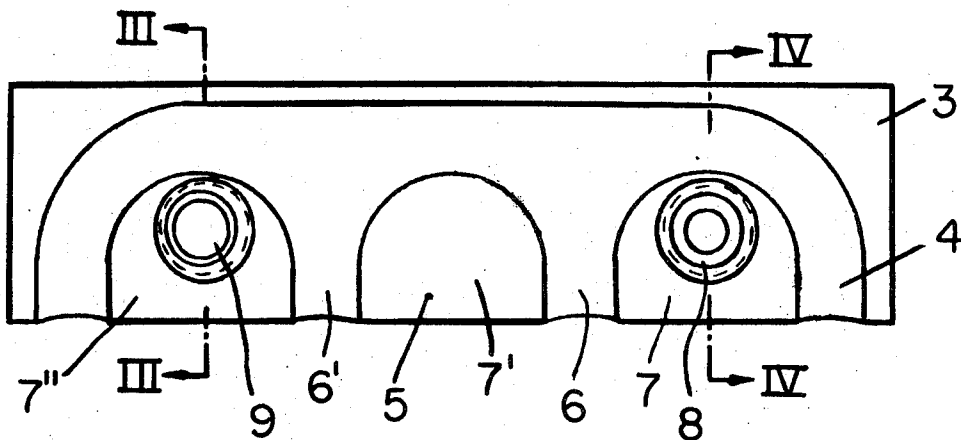
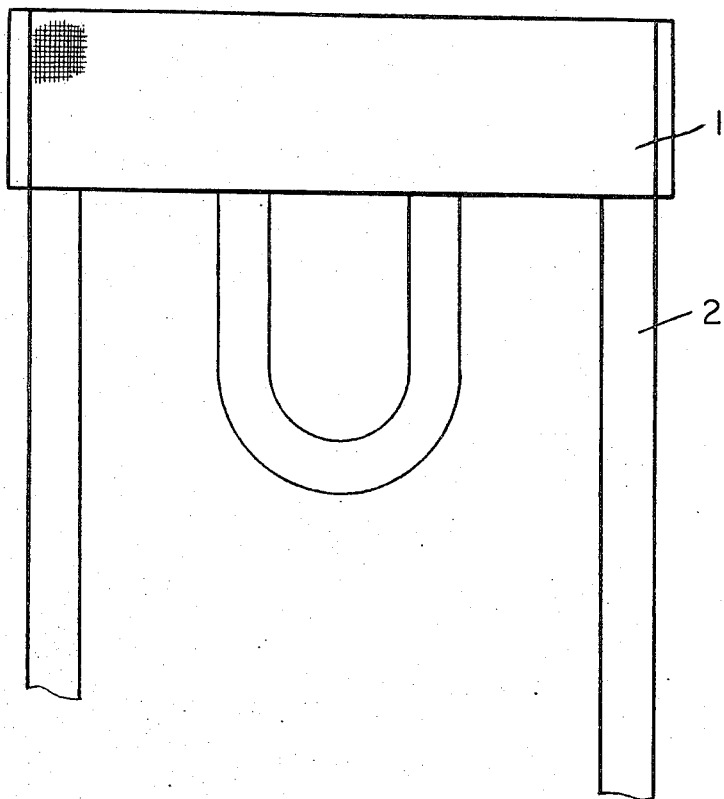
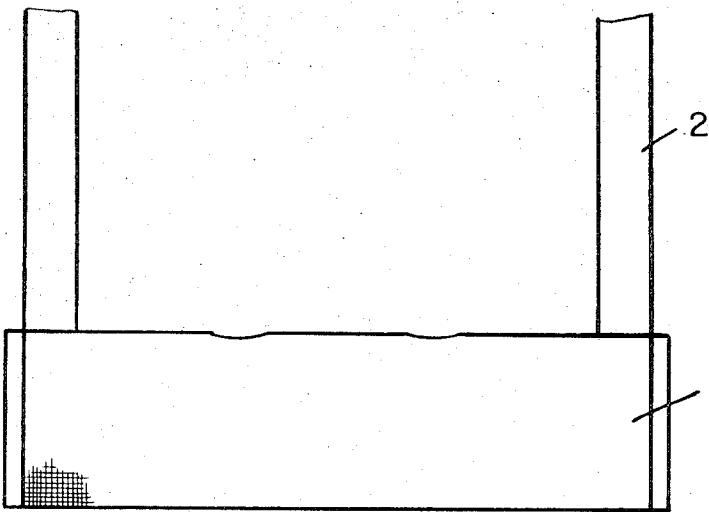
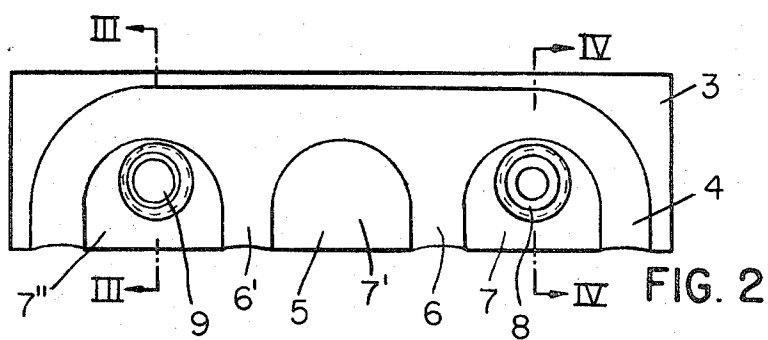
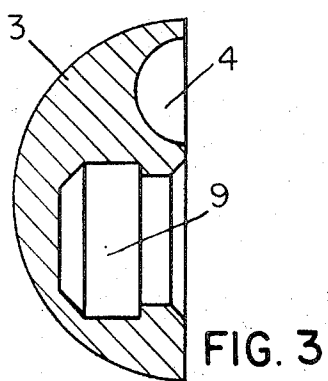
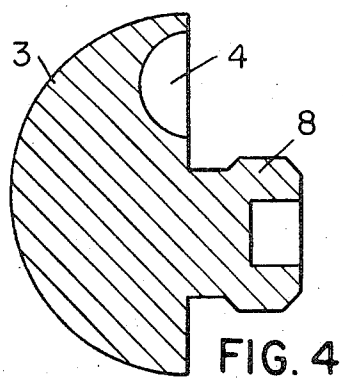
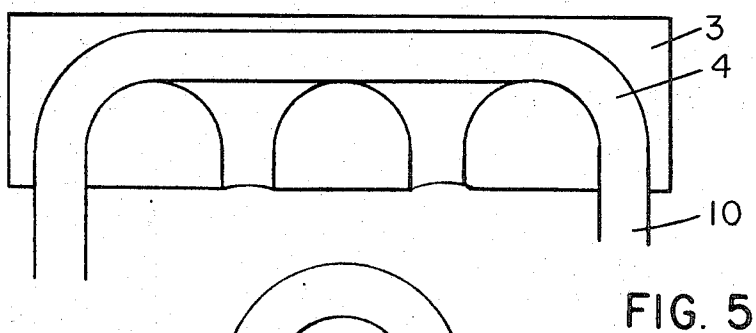
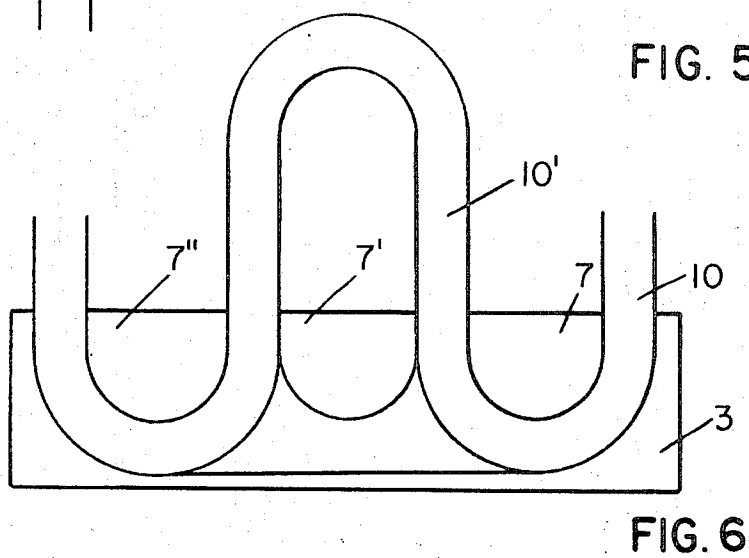


FIG. 1



SHEET 2 OF 3



ELASTIC BAND TYPE EXERCISING DEVICE

The present invention concerns an implement for gymnastics and physiotherapy of the kind comprising two elongated handles and one or more elastic stretching members between said handles, which handles are forced away from each other against the force of said elastic members in order to perform gymnastic or therapeutic exercises. This implement is generally known as an expander and will be so named hereinafter.

There is known an expander in which two or more springs are attached between the handles, each spring being calculated to require a pre-determined tensile force in order to stretch it apart when a handle is held in each hand of the user.

The number of springs and their strength can be varied at the will of the user.

This type of expander is dangerous to use since it happens frequently that the springs become detached from the hook members holding them and may then jump at and injure the user.

Moreover, the use of this expander is unsuitable for some physiotherapeutical exercises, for example one for strengthening the muscles of the neck and leg or arm, in which exercise one handle should extend behind the neck while the other handle should be engaged by the leg or the hand of the user. The springs which in this case must extend along the neck of the user cause him pain.

In order to overcome this last mentioned disadvantage an elastic loop has been in use as an alternative of the implement described above. The main drawback of this expander lies in the fact that its length and therefore the power required to stretch it cannot be adjusted to the requirements of the user.

It is the object of the present invention to provide an expander of the kind aforesaid with which the above-mentioned disadvantages can be overcome and which can be used for all gymnastic and physiotherapeutic exercises for which it is destined to be used.

The invention consists in an expander of the kind aforesaid in which the stretching element is constituted by an endless elastic loop, each handle being made of two separable halves, which, when attached to each other, define between them internal grooves leading to the longitudinal extension of the handle, one groove extending in a curved manner from one end along the length of the handle to the other end, and two spaced grooves perpendicular to the longitudinal extension of the handle and leading into said first-mentioned groove, the loop being held between the two handles by having two oppositely lying sections thereof inserted into the grooves of the handles.

The invention is illustrated, by way of example only, in the accompanying drawings in which:

FIG. 1 is a plan view of the expander according to the invention;

FIG. 2 is a plan view of one half of a handle seen from its inner face;

FIG. 3 is a section thereof taken on line III—III of FIG. 2;

FIG. 4 is a section thereof taken on line IV—IV of FIG. 2;

FIGS. 5 and 6 show two handle halves illustrating the loop inserted in the grooves in two different ways;

FIG. 7 is a front elevation of a holder for use with the expander according to the invention;

FIG. 8 is a section thereof taken on line VIII—VIII of FIG. 7;

FIG. 9 is a plan view thereof with the handle retaining means in closed position.

The expander according to the invention comprises two handles 1 between which an endless loop 2 extends. Each handle 1 is cylindrical in the example shown and is made of any suitable material such as rubber, plastic or the like. Each handle 1 is constituted by two identical semi-cylindrical handle halves 3. As shown in FIG. 2 a semi-cylindrical groove 4 is provided in each half 3, the groove extending from the end of one longitudinal side edge 5 along its length to the other end of said side edge 5, i.e., in a curved configuration, the ends of the groove being thus perpendicular to said side edge 5.

Two further semi-cylindrical grooves 6' are provided and extend from side edge 5 perpendicular to it into groove 4 at equal spacings relative the median plane of the handle half 3. Islands 7, 7', 7'' remain thus between grooves 4, 6, 6' and 4, said islands being rounded off at their inner peripheries.

In the example here shown, an integral button 7 extends from island 7 perpendicular thereto, while a depression 9 is made within island 7''. Owing to the construction of button 8 and depression 9 and the elasticity of the material of the handle halves 3 two such halves can be connected to each other by snapping in the button 8 of one half 3 into the depression 9 of the other half 3 and the button 8 of said other half into the depression 9 of said first mentioned half, whereby a cylindrical handle 1 is formed.

An endless loop 10, which provides the stretching element for said implement is lodged within the cylindrical groove 4 formed by connecting two handle halves as can be seen in FIG. 5.

If it is desired to shorten the extension of loop 10 between the two handles 1, loop 10 is placed into grooves 4, 6 and 6' as shown in FIG. 6, i.e., the loop 10 extends from groove 4 around island 7 and out through groove 6 where it forms a short loop 10', into groove 6, around island 7'' and out through the other end of groove 4. The length of the part of the short loop 10' extending between grooves 6, 6' may be varied according to predetermined requirements.

It is possible within the scope of the present invention to connect the two handle halves 3 by means other than button 8 and depression 9. For example, instead of button 8 and depression 9, throughgoing apertures are counter-sunk at their outer ends and are adapted to house screws and nuts for connecting the two handle halves. Or alternatively, arcuate spring clamps for holding two handle halves together may be provided.

It is also possible to provide two buttons 8 on one handle half and two depressions 9 in the other. The handles 1 may be provided, if desired, with integral hand-grips at their outer ends. They may, furthermore, have any suitable shape other than cylindrical, i.e., flattened at the edge comprising the openings of the groove. They may, furthermore, be made of wood or light-weight metal.

The expander above described can be used for any of the gymnastic or physiotherapeutic exercises for which implements of this kind have been used up to now. It is also possible, for example, to use two expanders according to the invention by inserting one handle of each expander into the ends of a telescopic pipe held,

for example, between the posts of a door opening, a slot being provided at the pipe ends to permit the loops of the expander to extend therethrough. Thus, one or both hands or one or both legs of the user can engage the other handle of each expander in order to carry out special exercises.

As shown in FIG. 7 - 9, a holder may be provided for the handles of the expander to increase the possibilities for its use. This holder comprises a cylindrical shell 11 constituted by a piece of extruded pipe, the bottom 12 of which is swaged inwardly to reduce its diameter. An axially extending slot 13 is provided at the wall of shell 11 from its top to near its bottom, the side edges of the wall bordering the slot being bent outwardly at 14. Near the top of the shell, the border 14 is cut off at 15 thereby creating a shoulder at 15 which constitutes an abutment for a handle-retaining member constituted by an arcuate wire loop 16, the ends 17 of which are bent at right angles and are journaled in apertures 18 provided in two diametrically opposite positions in the shell 11 near its top. Three vertically aligned, spaced holes 19 are made in the wall of the shell lying diametrically opposite to slot 13, the holders 19 being adapted to receive screws (not shown) for mounting the shell 11 to a wall, door post or the like.

To use the expander for certain exercises, a holder above described is mounted to a wall or door post and one handle 1 of the expander above described is slid longitudinally onto the shell 11 so that the two exten-

sions of the loop 2 protrude through slot 13. Retaining loop 16 is swung to abut against shoulder 15, whereby the inadvertent removal of the expander from the shell is prevented. The other handle 1 of the mounted expander can now be grasped by the hand or the foot of the user, or the loop 2 can be slipped over his neck or body so that many physiotherapeutic or gymnastic exercises can be carried out. The possibility of increasing the types of exercises is even greater when two holders for two expanders are mounted side by side on a wall or opposite each other on door posts.

Owing to the border 14, the edges of the shell are prevented from cutting into the loop 2 of an expander. However, it is possible to border the slot 13 with a narrow rail of plastic, rubber or the like. It is furthermore possible, for example, to mount the holder by clamps or suitable means other than screws to its supporting surface.

I claim:

1. An exerciser for gymnastic and physiotherapeutic use, comprising an endless elastic loop, two handles spaced apart, each of said handles being made of two halves, said handles being releasably securable to said elastic loop, the halves of each handle having means to permit the reception within the handles of different lengths of said elastic loop so as to vary the distance between the handles.

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