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COMPRESSION AND TWISTING EXERCISE DEVICE HAVING AN INTERNAL
COMPRESSION SPRING WITH INTERLOCKING LIMITING MEANS

Filed Nov. 24, 1961

FIG. 1.

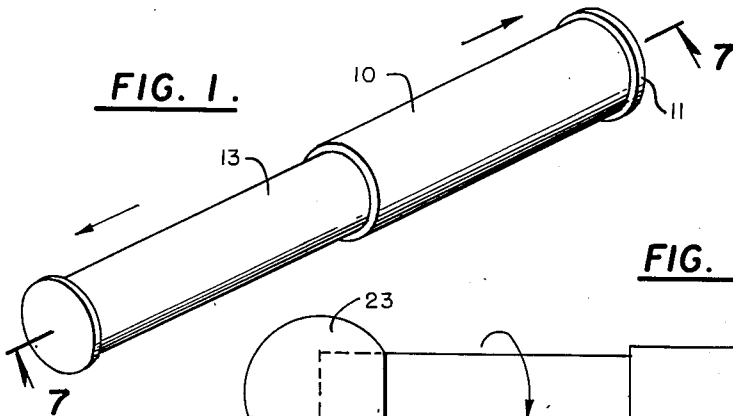


FIG. 2.

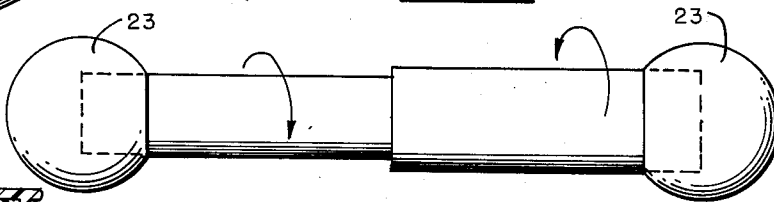


FIG. 3.

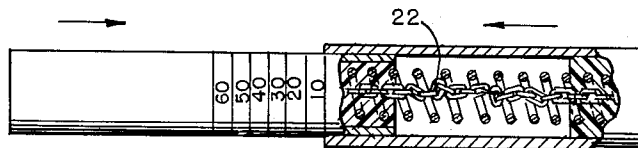


FIG. 4.

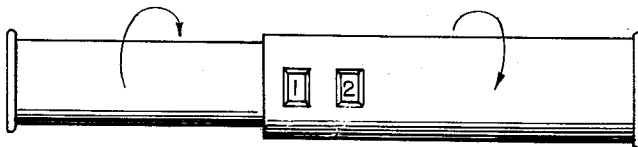


FIG. 5.

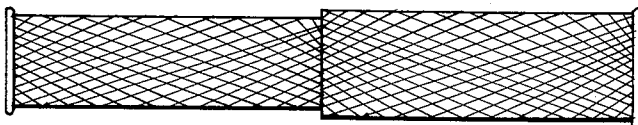
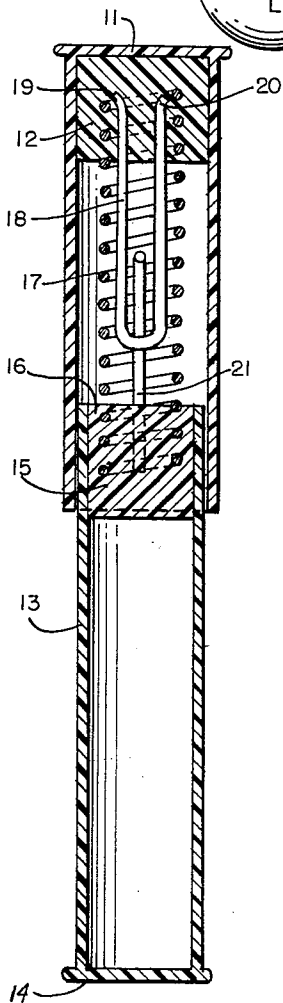


FIG. 6.



FIG. 7.



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This invention relates to exercising devices and more particularly to that form of exercising device that is held and operated by one's two hands.

Many exercising devices have been developed in past years that develop one particular muscle of the body, but none have ever been developed that will help as many muscles as this novel and simply constructed device that I have invented.

It is an object of this invention to provide an exercising device that will exercise and develop the muscles in arms, wrists and shoulders.

Another object of this invention is to provide an exercising device that is compact enough to be carried by anyone traveling even with the most limited baggage space.

Another object of this invention is to provide an exercising device that costs but little to manufacture and can, therefore, be sold at a price within the reach of everyone desiring to exercise their muscles.

Another object of this invention is to provide an exercising device that has but few moving parts and is therefore unlikely to break or get out of order.

Another object of this invention is to provide an exercising device that can be readily used by anyone regardless of age, even the infirmed so long as they can use their hands.

Another object of this invention is to provide an exercising device that is practically indestructible by reason of the high strength materials from which it is constructed.

Another object of this invention is to provide an exercising device that can have any number of different types of grips adapted to it for various uses as will be hereinafter described.

Another object of this invention is to provide an exercising device that contains mechanism to prevent it from being "overloaded" and thus broken by the application of more pressure, tension or twisting than the device can stand.

Another object of this invention is to provide an exercising device that is adjustable and thus can be used by people of varying strength.

With the above objects in view, a more complete understanding of this invention of the exercising device will be had by reference to the appended drawing in which:

FIGURE 1 is a pictorial view of one form of my invention ready for use.

FIGURE 2 is a side view of a modified form of my invention.

FIGURE 3 is a side view of an optional form of my invention with it partly broken open to show its internal construction.

FIGURE 4 is a side view of still another form of my invention.

FIGURE 5 is a side view of still another form of my invention.

FIGURE 6 is a side view of one end of still another form of my invention.

FIGURE 7 is a sectional view taken substantially along line 7—7 of FIGURE 1 as viewed in the direction indicated by the arrows.

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Similar reference characters refer to similar parts throughout the several views of the drawing.

Having reference now to the drawing in detail, there is generally indicated by the character 10 a cylinder having a closed end 11 in which is secured a plug 12. A second cylinder 13 also having a closed end 14 is slidably adapted to slide in the first mentioned cylinder as clearly shown in FIGURES 3 and 7 of the appended drawing. The first mentioned cylinder has its plug 12 pushed down and firmly secured in the closed end 11 while the second stated cylinder 13 also has a plug, herein noted by the reference character 15, firmly secured in the said cylinder's open end 16. This said construction of the cylinders 10 and 13 is typical for all forms of this invention with the exception of the closed ends 11 and 14 which may be flanged if desired as is clearly shown in FIGURES 1, 4, 5 and 7 of the appended drawings.

Looking now at FIGURE 7, it will be seen that a coil spring 17 is located within the cylinders and has one end embedded in the plug 12 while the other end of the same spring is firmly secured in the second mentioned plug 15. This coil spring is that part of the invention that makes exercising possible.

A rigid member 18 that may be made of steel rod that is U-shaped in plan form is located within the confines of the said coil spring 17 and has its free ends 19 and 20 embedded in the said plug 12 while a like member 21 is also located within the confines of the same spring 17 and has its ends embedded in plug 15, the two members 18 and 21 being interlocked in the manner so well illustrated by FIGURE 7 of the appended drawings that they come into contact with one another before the said coil spring has reached its maximum expansion or twisting and thus the spring and its connecting parts are prevented from being damaged by the device's user. In the optional form of my invention shown in FIGURE 3, the members which I call limit loops are replaced by a chain 22.

The construction of this novel exercising device has now been basically described with the exception of variations in its closed ends 11 and 14 and other minor details that will be mentioned in the description of the use of this invention.

It is obvious from the above described construction of this new invention that the cylinders 10 and 13 can not only be twisted but compressed and pulled outward by reason of the fact that cylinder 13 slidably fits into cylinder 10 and that any motion of the cylinders is arrested by the aforesaid coiled spring 17.

To actually exercise with this device one grips the cylinder 13 in the right hand and cylinder 10 in the left hand. Twist cylinder 13 clockwise and cylinder 10 counterclockwise to limit without releasing. Relax pressure and allow the cylinders to return. By repetition of this motion the muscles in the arms and wrist are exercised. By reversing the direction of rotation of cylinders 13 and 10 additional muscles are exercised. Still gripping the tubes as before, apply pressure to compress the cylinder 13 further into cylinder 10 causing compression of the coiled spring 17. This exercises the shoulder, chest and arm muscles. Relax and repeat. Still gripping the cylinders as before, pull cylinder 13 from cylinder 10. Relax and repeat. This exercises still additional shoulder, chest and arm muscles. A rubber ball 23 is now secured on the outer ends of cylinders 10 and 13 (FIGURE 2 of the appended drawing) and by squeezing and releasing the balls the hand muscles are exercised.

Experimentation has shown that when this novel exercising device is equipped with a coil spring having approximately a twenty-five pound working pressure that somewhere between fifty and seventy-five twisting opera-

tions fatigue an adult's muscles and a lesser number do the same thing when the cylinders are compressed and pulled out again.

The cylinders 10 and 13 may be made of any clear material such as a plastic or of non-transparent and stronger material such as steel. The closed ends 11 and 14 may be modified to have a flange such as shown in FIGURES 1, 4, 5 and 7 of the appended drawing. The outer end of cylinder 13 may be provided with a covering of ridges such as shown in FIGURE 5 of the cylinders may have end members similar to the one indicated at the left of FIGURE 6 of the appended drawing. In fact there is no limit to the modifications and changes in both form and materials of this invention nor the ways in which it can be used.

From the foregoing it will now be seen that there is herein provided an improved exercising device which accomplishes all of the objects of this novel invention, and others, including many advantages of great practical utility and commercial importance.

As many embodiments may be made of this inventive concept, and as many modifications may be made in the embodiment hereinbefore shown and described, it will be understood that all matter herein is to be interpreted merely as illustrative and not in a limiting sense.

Havin gnaw described my invention, what I claim as new and desire to secure by Letters Patent is:

1. An exercising device of the character described, comprising a pair of transparent cylinders, one of which is slidably mounted into the other, each one of the cylinders having a closed outer end that is integral with the cylinder and a plug secured in the open end of one cylinder and in the closed end of the second cylinder, and a coiled spring within the said device, one end of the said coiled spring being secured in one plug and the other end of the same coiled spring being secured within the other plug and U-shaped members limiting the movement of the said coiled spring, the said members being attached to the plugs and within the confines of the said coiled spring, the said coiled spring providing resistance to any movement of either one of the said cylinders thereby resulting in an exercising device when the said device has one of its cylinders held in each hand which applies movement to the said cylinders.

2. An exercising device of the character described, comprising a pair of transparent cylinders, one of which

is slidably mounted into the other, each one of the cylinders having a flanged closed outer end that is integral with the cylinder and a plug secured in the open end of one cylinder and in the closed end of the second cylinder, and a coiled spring within the said device, one end of the said coiled spring being secured in one plug and the other end of the same coiled spring being secured within the other plug and U-shaped members limiting the movement of the said coiled spring, the said members being attached to the plugs and within the confines of the said coiled spring, the said coiled spring providing resistance to any movement of either one of the said cylinders thereby resulting in an exercising device when the said device has one of its cylinders held in each hand which applies movement to the said cylinders.

3. An exercising device of the character described, comprising a pair of transparent cylinders, one of which is slidably mounted into the other, each one of the cylinders having a closed outer end that is integral with the cylinder and a plug secured in the open end of one cylinder and in the closed end of the second cylinder, and a coiled spring within the said device, one end of the said coiled spring being secured in one plug and the other end of the same coiled spring being secured within the other plug and U-shaped members limiting the movement of the said coiled spring, the said members being attached to the plugs and within the confines of the said coiled spring, the said coiled spring providing resistance to any movement of either one of the said cylinders thereby resulting in an exercising device when the said device has one of its cylinders held in each hand which applies movement to the said cylinders and a rubber ball secured to each closed end of the said exercising device.

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