Oct. 31, 1961 M. NANNI 3,006,646

EXERCISING DEVICES

Filed July 6, 1959

FIG. 1.

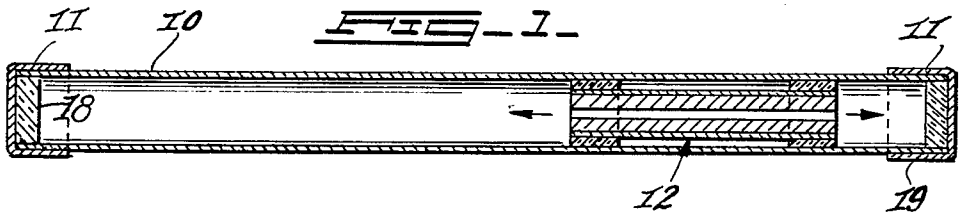


FIG. 2.

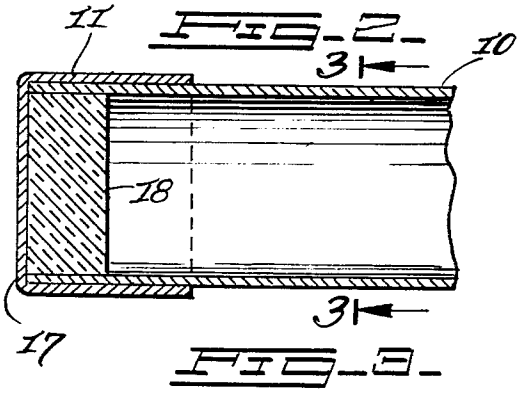


FIG. 3.

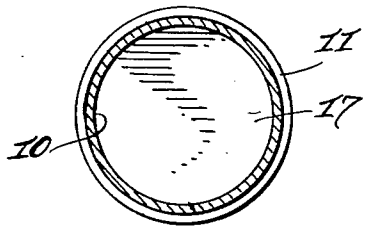


FIG. 5.

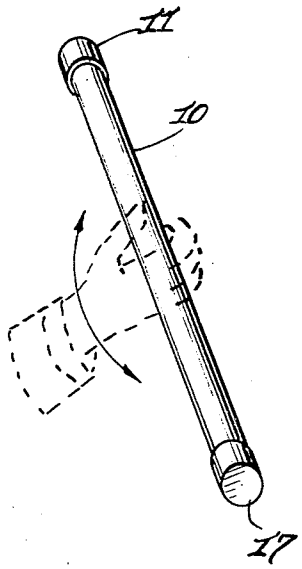
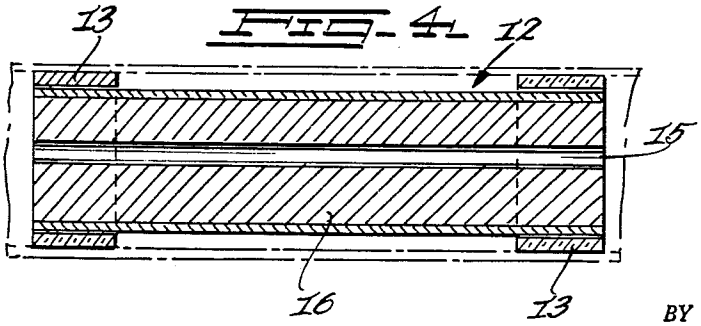


FIG. 4.



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EXERCISING DEVICES

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1 Claim. (Cl. 272—67)

This invention relates to exercising devices of the type consisting basically of an elongated cylindrical bar, and the main object of the invention is the provision of certain new and useful improvements whereby novel and useful results are obtained in the use of the device.

Another object of the invention is the provision of an exercising device in the form of an elongated hollow tube having closures at both ends thereof and provided within with a concentrated weight in the form of a piston adapted to slide in either direction along the tube, the tube and the piston both being preferably cylindrical.

A further object of the invention is the provision of means within the tube and on the piston so that the piston, upon tilting the tube, slides slowly and silently toward the lower end and, upon contacting either end of the tube, the sound of the impact is silenced.

The device may be made of various sizes, lengths and weights, including the piston, so that it may be used by persons of all ages and physiques. One important use of the device is by children or older people whose use of the hands, fingers, or arms has been reduced by injury or crippling diseases such as arthritis, distrophy, etc., the particular dimensions of the parts of the device as well as their weights being dependent upon the ability of the child or older person to manipulate it.

The above as well as other and additional objects will be clarified in the following description wherein reference numerals refer to like-numbered parts in the accompanying drawing. It is to be noted that the drawing is intended primarily for the purpose of illustration and that it is therefore neither desired nor intended to limit the invention necessarily to any or all of the exact details of construction shown or described except insofar as they may be deemed essential to the invention.

Referring briefly to the drawing:

FIG. 1 is an axial sectional view through an exercising device embodying features of the present invention.

FIG. 2 is a fragmentary enlargement of FIG. 1.

FIG. 3 is a sectional view taken on the line 3—3 of FIG. 2.

FIG. 4 is an enlarged axial sectional view of the piston of the device.

FIG. 5 is a perspective view illustrating one way in which the device may be used to improve the strength of the hand or fingers of a child or other person who has suffered debilitation of such members, or of the wrist.

Referring in detail to the drawing, the numeral **10** indicates a hollow tube or pipe having both interior and exterior surfaces smooth and preferably made of any suitable metallic material. Caps **11** seal both ends of the tube.

Slidably mounted within the tube is a piston **12** also cylindrical in form and made of any suitable heavy metallic material. At each end of the piston a leather sleeve **13** is secured thereon in any manner such as, for example, by means of cement of one type or another. The piston **12** illustrated includes the tubular body **14** filled with lead except for an axial passage **15** therethrough, the lead being indicated at **16**. However, the piston may also be made of a solid cylinder of suitable metal, or it may be provided with closures at both ends and an axial tube of the dimensions of the passage **15** therethrough and through the closures, with the interior of the tube filled with mercury which is heavier than lead.

At each end of the elongated tube **10** and within the end cap **11**, a relatively thick disk **18** of rubber is mounted against the end wall **17** of the cap. The interior wall of the tube **10** is lubricated to permit smooth yet slow sliding of the piston therein upon tilting the device.

As the device is tilted and the piston moves slowly toward the lower end thereof, it is apparent that the center of gravity of the device moves slowly downward. This shifting of the weight in the device in a gradually increasing degree below the point at which it is held and conversely in a gradually diminishing degree above that point, demands a similarly gradually increasing effort of the crippled fingers, hand, wrist or other member or members of the user. This form of exercising the incapacitated or partly incapacitated members of the user is of great benefit in overcoming the debility.

For healthy adults who wish to increase the power of their muscles, the device is made on a scale of larger dimensions and weights of the parts thereof.

For both debilitated and healthy or normal persons the results of exercising in the manner described with the instant device, are different from and in a number of ways superior than those which may be obtained by the use of dumb bells, bar bells, or other similar devices, for the latter are of a static nature, that is, they are solid and unitary with the center of gravity always positioned at a given point.

The snug yet slidable engagement of the lubricated sleeves **13** of the piston with the interior walls of the elongated tube or pipe, assure a slow movement of the piston in the tube, and the axial passage **15** through the piston is also made sufficiently small in diameter to assure a slow descent of the piston whenever the device is tilted. When the piston meets the end of its travel in either direction of the tube **10**, its impact against the cushion **19** is silent although it can be felt by the user.

The invention having thus been described, what is claimed and desired to be secured by Letters Patent is as follows:

A device of the class and for the purpose described comprising an elongated cylindrical tube enclosing an unobstructed smooth cylindrical compartment of constant diameter throughout having closure caps sealing the ends thereof, a concentrated weight consisting of a cylindrical piston having a length substantially smaller than the length of said compartment slidably mounted in the compartment between said closure caps and having an unobstructed restricted passage extending longitudinally therethrough, a lubricant on the walls of said compartment, cushioning means on the opposed inner sides of the closure caps adapted to be contacted by the piston at the opposite extremes of its movement in said compartment, said piston having longitudinally spaced sleeve gaskets thereon in snug engagement with the compartment walls whereby upon tilting of the tube at an angle to the horizontal the piston moves by gravity toward the downwardly tilted end thereof at a slow substantially constant speed independent of the angle of tilt.

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