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[21] Appl. No. **839,856**

[22] Filed **July 8, 1969**

[45] Patented **Oct. 19, 1971**

[56] **References Cited**

UNITED STATES PATENTS

2,089,857	8/1937	Robbins	24/126.3
2,493,556	1/1950	Stone	24/136.3 X
2,608,731	9/1952	Summers.....	24/126 K
2,838,819	6/1958	Falkenstein	24/126.3

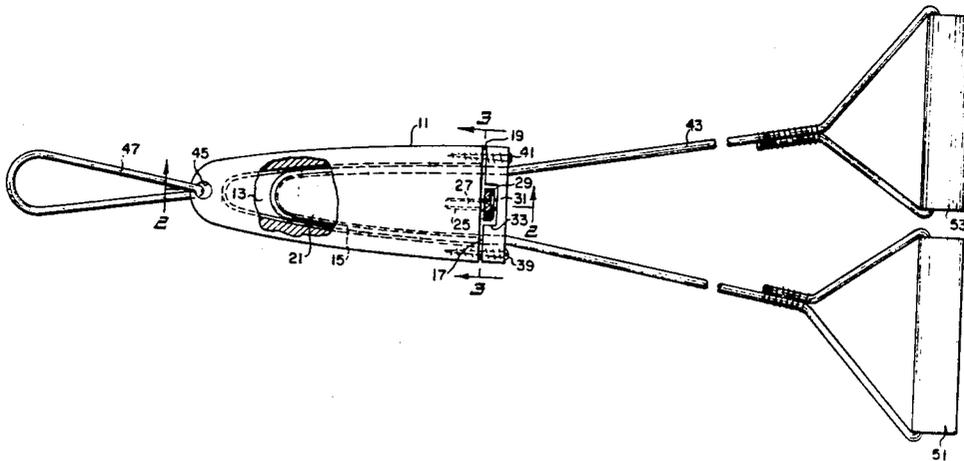
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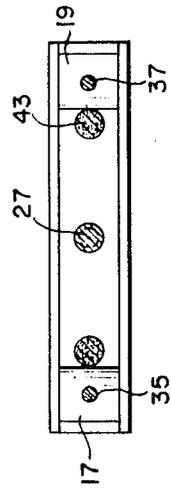
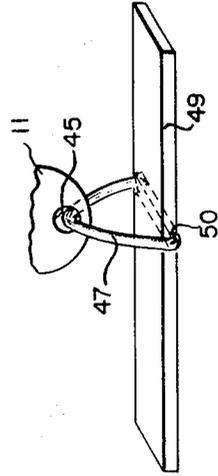
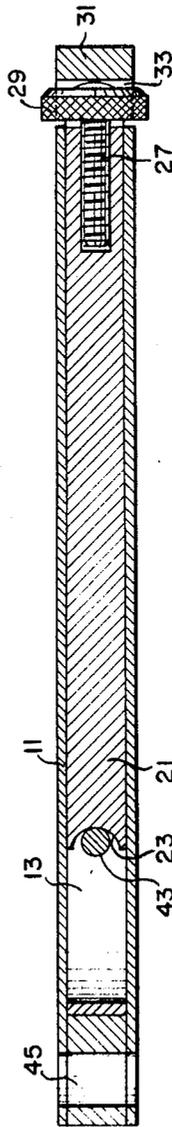
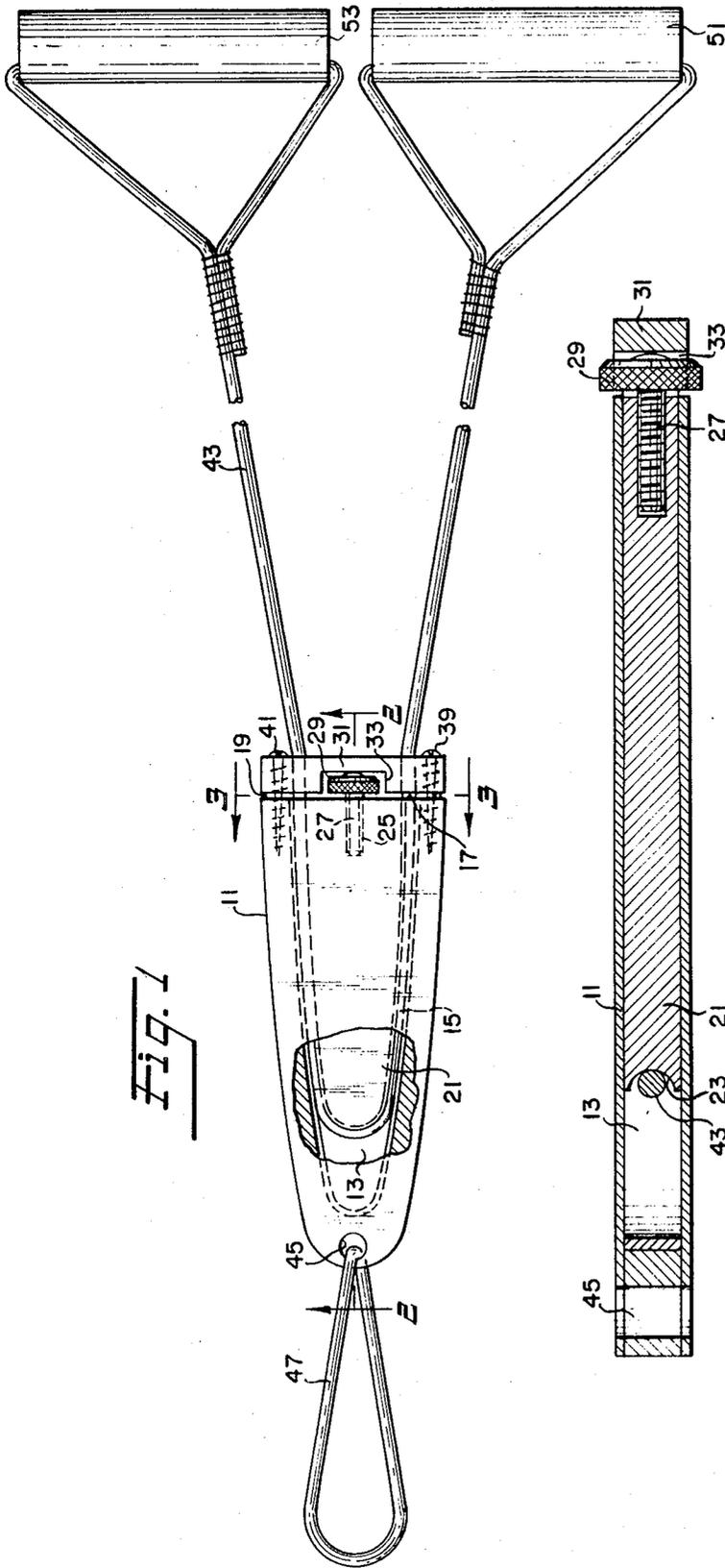
[54] **FRictionAL-RESISTANT-TYPE EXERCISING DEVICE**

9 Claims, 4 Drawing Figs.

- [52] U.S. Cl..... 272/79 R,
 272/DIG. 3, 272/DIG. 4, 24/126
- [51] Int. Cl..... A63b 21/00
- [50] Field of Search..... 272/79, 67,
 57; 24/126 K, 136 C, 136 K, 136 B, 126.3, 136.3

ABSTRACT: An exercising device having an outer sleeve with a wedge-shaped hollow interior and a solid wedge which is insertable within the sleeve. A rope passes about the solid wedge so as to be frictionally engaged between the wedge and the interior of the sleeve. The position of the wedge is adjustable so as to vary the frictional drag on the rope.





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FRictional-Resistant-Type Exercising Device

The present invention relates generally to exercising devices and more particularly to small portable exercising devices.

In recent years the public has become more and more aware of the need for and value of standard daily exercising routines. This knowledge is extended into the educational field and primarily in the lower grades in an attempt to maintain the fitness of American youth.

Many exercising devices are available for well-equipped gymnasiums and the like. Naturally, these devices are expensive and may only be practical where they are available to a large number of people.

To meet the needs of individuals for daily exercise there have also been developed a number of different types of exercising devices which, when used properly, will afford the necessary muscular activity which is highly recommended by doctors through the country.

In the majority of cases even the smaller devices are relatively expensive and somewhat complicated in their manufacture.

It is, therefore, an object of this invention to provide a portable exercising device for daily exercise usage.

It is a further object of this invention to provide such an exercising device which may be adjusted so as to provide variable force reactions against the force exerted by the user.

It is a further object of this invention to provide such an exercising device which is not only simple to use but is easily and inexpensively manufactured.

These and other objects of the invention will be obvious from the following description when taken in conjunction with the drawing wherein:

FIG. 1 is a plan view of one form of the exercising device of the present invention;

FIG. 2 is a sectional view taken through the lines 2—2 of FIG. 1;

FIG. 3 is a sectional view taken through the lines 3—3 of FIG. 1; and

FIG. 4 is a partial view of the device shown in FIG. 1 as modified by a baseplate member.

Broadly, the present invention comprises a sleeve having a wedge-shaped hollow interior which terminates in an open end. A wedge-shaped member is insertable within the hollow interior of the sleeve and is adapted to substantially mate with the interior thereof. A rope extends about the wedge-shaped member between the member and the inner portion of the sleeve and is removably secured within the wedge-shaped member by means of a cap. There is also provided a means for adjusting the position of the wedge within the sleeve so as to vary the frictional drag on the rope as it is pulled back and forth by the user.

Turning now more specifically to the drawings, there is shown a sleeve 11 which terminates in a flat outer end and which has a wedge-shaped hollow interior 13.

In the embodiment shown in FIGS. 1 through 3 a metal liner 15 is inserted within the sleeve and constitutes the wall of the wedge-shaped hollow interior. The metal liner 15 terminates at either end in flange members 17 and 19.

A wedge-shaped member 21 adapted to mate substantially with the wedge configuration of the interior of the sleeve 11 and is removably inserted therein. In the particular configuration shown, the wedge-shaped member includes a channel 23 about its periphery which is of an arcuate shape.

The outer end of the wedge-shaped member 21 contains an internally threaded borehold 25 in which a threaded bolt 27 is adjustably fitted. Bolt 27 terminates in a knurled knob 29 which extends outwardly beyond the sleeve 11 and beyond the wedge-shaped member 21.

A cap member 31 is placed over the open end of the sleeve and has a reentrant section 33 which fits over the knurled knob 29. The cap member may be removably secured to the sleeve by means of screws 39 and 41 which pass through boreholes 35 and 37 in the flange members 17 and 19 and on into the solid portion of the sleeve 11.

As will be obvious from the drawings, the rope 43 is passed about the wedge-shaped member 21 before it is secured within the sleeve 11.

At the opposite end of the sleeve there is provided a means such as the borehole 45 through which a rope 47 may be secured.

A baseplate member 49 may be associated therewith by passing it though the rope as shown in FIG. 4. Additionally, a notched section 50 may be provided in the baseplate member 49 for holding the rope in one position relative to the baseplate 49.

As is the normal custom in any type of exercising device, there are provided handgrips 51 and 53 secured to rope 43.

The exercising device operates as follows. Either the rope 47 may be secured about any substantially sturdy holding means such as a door knob or the like or the baseplate member 49 may be inserted underneath some type of sturdy structure or attached thereto. Alternately, the person using the device may actually stand on the plate for lifting exercise.

With the knurled knob rotated in its extreme position so as to drive the bolt 27 into the borehole 25, the greatest spacing between the wedge 21 and the inner part of the sleeve 11 occurs. Accordingly, the frictional drag on the rope is at its lowest level. In order to increase the frictional drag, the knurled knob is rotated so that it walks out of the threaded borehold 25. Since the cap 31 prevents the knob 29 from moving outwardly from the sleeve, the opposite reaction will occur. That is, the wedge will be driven further into the hollow section of the sleeve 11. When this occurs, the rope is compressed to a greater extent between the wedge and the inner part of the sleeve and thus, the frictional drag on the rope is increased and greater strength is required to pull the rope back and forth by means of the handles 51 and 53.

It will be obvious that regardless of the type of material used for the sleeve and the wedge, the device will work as described above. However, since a frictional drag is used to exert an opposing force to the user, there will be a substantial amount of heat generated within the device. Accordingly, in order to have the device last for a substantial period of time, the metal liner 15 is inserted within the sleeve and the wedge 21 is made of a good heat conducting material such as many of the well-known metals. With this configuration, the sleeve can be made of a nylon material or the like so as to provide a very lightweight device. The heat will be transferred to the metal wedge and thus will be dissipated outwardly below the cap 31.

It will be obvious that the particular outer geometric configuration of the sleeve and the particular means for securing the device to a wall or a door knob may be varied. Therefore, the above description and the accompanying drawings are to be considered illustrative only and not in any way as a limitation of the invention.

I claim:

1. An exercising device comprising a sleeve having a wedge-shaped hollow interior terminating in an open end, a wedge-shaped member insertable in and adapted to substantially mate with the interior of said sleeve, a threaded bolt in said wedge-shaped member, said bolt terminating in a knob extending beyond the open end of said sleeve, a cap removably secured to the open end of said sleeve, said cap covering said knob, and a rope extending between said wedge-shaped member and the interior of said sleeve and outwardly of said sleeve through said cap.
2. The device of claim 1 wherein said wedge-shaped member is metal.
3. The device of claim 2 further comprising a metal liner about the interior surface of said sleeve opposite said wedge.
4. The device of claim 1 further comprising means at the closed end of said sleeve for allowing a resistive force to be applied thereto.

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5. The device of claim 4 wherein said means at the closed end of said sleeve is a closed loop of rope.

6. The device of claim 5 further comprising a baseplate member passing through said closed loop of rope.

7. An exercising device comprising a sleeve having a wedge-shaped hollow interior terminating in an open end,

a wedge-shaped means insertable in and adapted to be moved toward and away with respect to the interior of said sleeve,

a rope with a section thereof extending around the wedge-shaped means between said wedge-shaped means and the interior of said sleeve when said means occupies said hollow interior of said sleeve,

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means for removably securing said wedge-shaped means to said sleeve which is positioned within said sleeve, and means coupled between said wedge-shaped means and said sleeve for adjusting the position of said wedge-shaped means within said sleeve so as to vary the frictional drag developed between the sleeve and the wedge-shaped means while said means and said sleeve are acting on said rope.

8. The device of claim 7 wherein said wedge-shaped means is metal.

9. The device of claim 7 further comprising a metal liner matingly engaging the interior rope engaging surface of said sleeve opposite said wedge-shaped means.