

[54] WEIGHT LIFTING EXERCISING DEVICE

[76] Inventor: **Olle Blomqvist**, Fack, 100 51,
Stockholm 28, Sweden

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abandoned.

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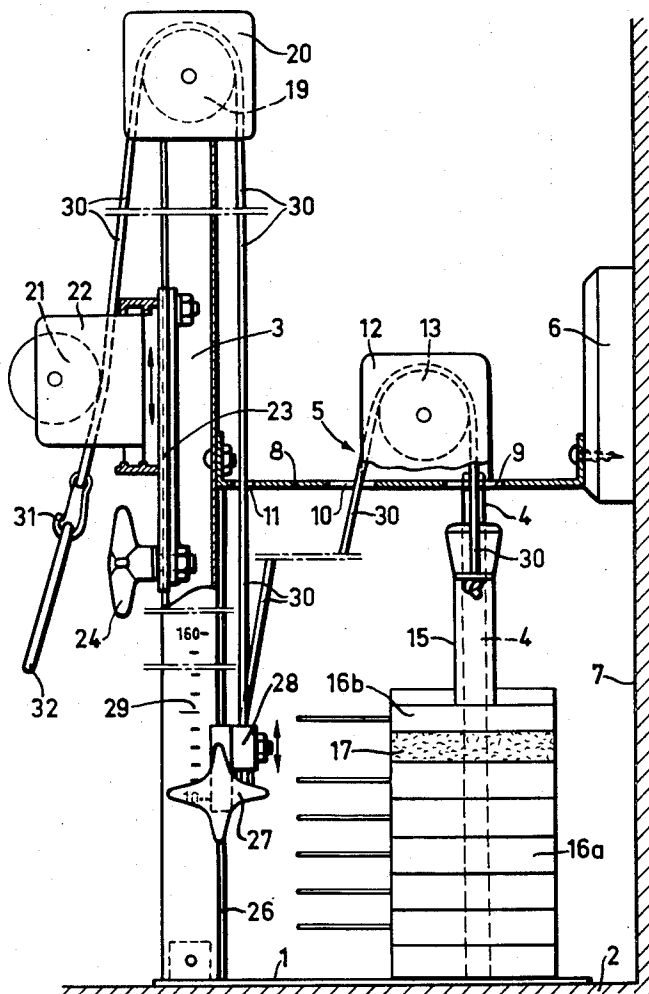
Primary Examiner—Richard C. Pinkham
Assistant Examiner—William R. Browne
Attorney, Agent, or Firm—Cushman, Darby & Cushman

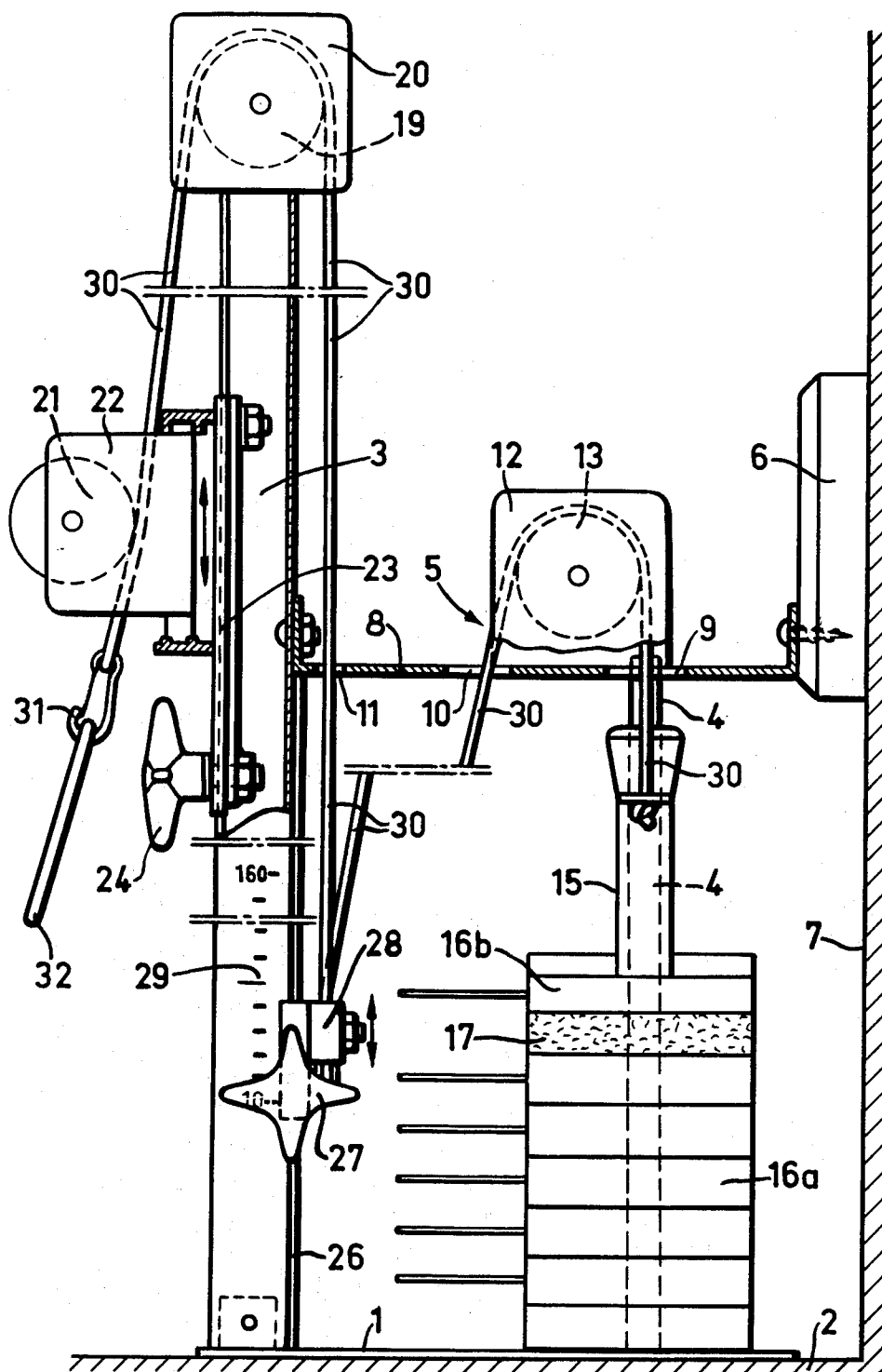
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ABSTRACT

A physical exercise equipment, in the form of a pulling apparatus, having a weight, to which a string is attached, which is reeved over a number of pulleys, and a hand grip at the free end of the string. At least one of said pulleys is a displaceable lockable sheeting pulley, through the displacement of which the length of a looped portion of the string and accordingly also the length of the free end portion of the string is adjustable. The height of the sheeting pulley may be read on a scale.

3 Claims, 1 Drawing Figure





WEIGHT LIFTING EXERCISING DEVICE

This is a continuation of application Ser. No. 30,440, now abandoned, filed Apr. 21, 1970.

This invention relates to an improvement in pulling apparatus or similar physical exercise equipment of the kind comprising a load means, such as a weight, a string attached to said weight, a number of pulleys over which said string runs, and grip means at the free end of the string remote from said weight.

Pulling apparatus of this kind are usually so mounted, pairwise or individually, near a wall to which the apparatus is/are secured, that the string extends substantially in a vertical plane. The last pulley or the like ("the height pulley") which is located nearest to the free end portion of the string and over which the string runs is usually adjustable with respect to its height position in order to permit accommodation of the height position of the handle or grip means, which is provided at said end of the string, to the tallness of the person or patient who is about to utilize the apparatus.

As a consequence hereof known apparatus of this kind suffer from the drawback that the length of said free end portion of the string is dependent of the height position or level to which the height pulley is adjusted.

The principal object of the invention is to eliminate this drawback and to provide a pulling apparatus in which the length of the free end portion of the string is independent of the momentary height position of the height pulley. This object is achieved thanks to the fact that at least one of said pulleys is a displaceable and lockable sheeting pulley, through the displacement of which the length of the loop and accordingly also the length of the free end portion of the string is adjustable. Thanks to this new design the further advantage is gained, that the length of the free end portion of the string may be adjusted while maintaining a constant height position of the height pulley.

Further advantages and features of the apparatus according to the invention will become apparent from the following particular description and the accompanying drawing, which illustrates a preferred embodiment of the invention in side view and partly in section.

In the drawing 1 designates a floor plate, which is secured to a floor 2 and to which firstly a profile tube 3 and secondly a pair of guide tubes 4 are secured. The upper ends of the guide tubes 4 are secured to a fastening bracket which is generally designated 5 and one end of which is rigidly secured to the profile tube 3 and the other end of which is screwed on to a wall plate 6 which is in its turn screwed on to a wall 7 close to which the pulling apparatus is erected. The fastening bracket 5 comprises a substantially horizontal base plate 8 having openings 9, 10 and 11 as well as two bearing plates 12 upstanding from the base plate and in which a pulley or roller 13 is rotatably journaled.

The guide tubes 4 constitute guides for a weight packet 15 which contains weights 16a, 16b of which an arbitrary number may be made operative, i.e. load the string, and the remainder are passive or resting. Between the resting weights and the operative ones there is interposed a shock absorbing cushion 17.

At the top of the profile tube 3 a top roller or pulley 19 is journaled between a pair of bearing plates 20. The so called height pulley which is designated 21 is rotatably journaled between a pair of bearing plates 22

which in their turn are secured to a base plate 23 which is displaceable in vertical direction along the profile tube 3 and may be locked thereto by means of a wing screw or the like 24.

To that side of the profile tube 3 which is turned away from the height pulley 21 there is secured a flat iron or the like 26 which constitutes a guide for a sheeting roller or pulley 28. This roller 28 may be displaced in vertical direction along said guide 26 and may be locked thereto by means of a wing screw or the like 27. The level or height position to which said height roller has been set may be read on a scale 29 provided on the profile tube 3. The sheeting pulley is always loaded by the weights 16b. To the mutually interconnected weights 16b there is attached a string 30 which runs through the opening 9 in the fastening bracket 5, over the roller 13, through the opening 10 in the fastening bracket 5, over the sheeting pulley 28, through the opening 11 in the fastening bracket 5 and over the top pulley 19 and the height pulley 21. At the end of the string 30 there is secured a swivel-hook 31 in which a pull handle 32 is secured in its turn.

It is evident that the free end portion of the string 30, i.e. that portion of the string which is located on the opposite side of the height pulley 21 with respect to the top pulley 19 increases or decreases respectively, as the height pulley is displaced upwards and downwards respectively along the profile tube 3. To compensate for such change in length the sheeting pulley 28 provided in accordance with the invention is displaced downwards and upwards respectively along the profile tube 3 and the scale 29, so that the loop formed of the string 30 by the sheeting pulley is lengthened and shortened respectively. Through such displacement of the sheeting pulley 28 and consequent lengthening or shortening of the loop of the string 30 it is evidently possible to vary the effective length of the free end portion of the string even at a constant level or height position of the height pulley 21.

From the above it is apparent that the sheeting pulley 28 according to the invention constitutes an effective compensating means through which it is possible to adjust pulling apparatus of the kind in question more efficiently than hitherto to different lengths of the persons or patients utilizing the apparatus and to varying working conditions. Of course the embodiment described above and illustrated in the drawing is to be regarded merely as a non-limiting example and may as to its details be modified in several ways within the scope of the invention. Thus, it is possible to make even the top pulley 19 adjustable, so that two sheeting loops which are adjustable with respect to their length are obtained. It is, at least in some instances, also possible to utilize such a displaceable top pulley as a sheeting pulley which then forms a substitute for the sheeting pulley 28.

What I claim is:

1. Physical exercise equipment comprising a weight, a cable means so associated with said weight as to be loaded thereby when the equipment is in use, grip means at one free end of the cable means remote from said weight, a first substantially vertical guide means, a grip end pulley which is rotatably mounted for sliding movement on said first guide means to adjust the height of the grip end of said cable means and over which the grip end portion of said cable means runs means for locking said grip end pulley to said first means at any

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selected position between a first lower level and a second higher level, a second substantially vertical guide means extending adjacent to said first guide means and substantially coextensive therewith, a displaceable and lockable sheeting pulley which is mounted for substantially upwardly and downwardly vertical movement on said second guide means past said grip end pulley to adjust the length of the free end portion of said cable means at any position of said grip end pulley, and a top pulley which is rotatably mounted above said higher level and over which said cable means runs on its way from said sheeting pulley to said grip end pulley.

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2. Physical exercise equipment as recited in claim 1, wherein said first and second vertical guide means are disposed on a single vertical member and said top pulley is rotatably mounted at the top of said vertical member.

3. Physical exercise equipment as claimed in claim 2 further including indicia formed upon said vertical member whereby the height of said sheeting pulley and thus the length of the free grip end portion of said cable means may be determined.

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