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(54) Training apparatus

(57) A training apparatus suitable for training muscles and the stamina of the human body, which apparatus comprises an elongated, bar-shaped member, which includes a guiding member at a first end thereof, over which a rope or cord can be passed, wherein said bar-shaped member is provided near its first end with two first guides for guiding the two parts of the rope or cord on either side of the guiding member, wherein said bar-shaped member is furthermore provided with second guides disposed some distance away from said first guides, which second guides are adjustable at least in circumferential direction over said bar-shaped member.

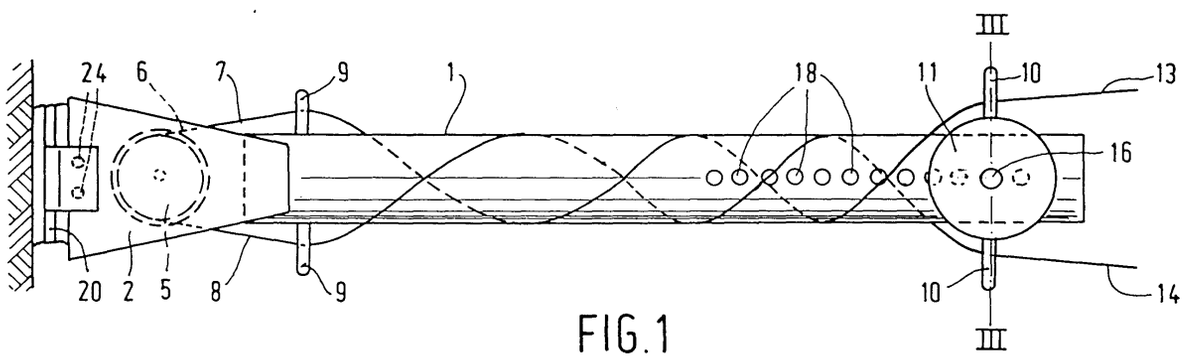

FIG.1

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Description

[0001] The invention relates to an apparatus suitable for training muscles and the stamina of the human body, which apparatus comprises an elongated, bar-shaped member, which includes a guiding member at a first end thereof, over which a rope or cord can be passed, wherein said bar-shaped member is provided near its first end with two first guides for guiding the two parts of the rope or cord on either side of the guiding member, wherein said bar-shaped member is furthermore provided with second guides disposed some distance away from said first guides, which second guides are preferably adjustable in circumferential direction over said bar-shaped member, all this in such a manner that the number of times that the two parts of the rope or cord are wound round the bar-shaped member can be adjusted therewith.

[0002] An apparatus of the kind referred to above is disclosed in US 4,040,627.

[0003] With the apparatus disclosed therein, a rope or cord is passed over the guiding member. The two ends of the rope or cord on either side of the guiding member are passed through the first guides and subsequently wound round the bar-shaped member a few times, after which they are passed through the second guides. The person doing his training exercises can alternately pull at the two ends of the rope or cord. The forces that is to be exerted thereby depends on the number of times that the rope or cord is wound round the bar-shaped member. The number of times that the rope or cord is wound round the bar-shaped member can be regulated quite easily by adjusting the two guides in the circumferential direction. In this manner it becomes possible to regulate the force with which to pull at the rope. Thus, the person doing his training exercises can regulate the force to be exerted and adapt it to the desired circumstances. This enables the person doing his training exercises to work through a predetermined programme, for example starting with a light programme, wherein the rope is only wound once or twice round the bar-shaped member, followed by a more strenuous programme, wherein the rope is wound several times round the bar-shaped member. In practice it has become apparent that setting and changing of the force with which the rope or cord is to be pulled off the bar-shaped member by rotation of the second guides has a few drawbacks. One of said drawbacks is the fact that the free ends of the rope or cord can be twisted together as a result of the rotation of the second guides, so that the person who is training needs to unravel said ends each time. Another drawback is the fact that the direction in which the rope or cord runs in and out will vary according to the position of the two guides, seen in the circumferential direction of the bar-shaped member, which leads to varying friction conditions, which have an adverse effect on the accuracy of the force with which the rope or cord is to be pulled off. The object of the invention is to provide a training apparatus wherein the above drawbacks are eliminated, and which is based on the insight that the force with which the rope or cord is to be pulled off the bar-shaped member depends not only on the number of times that the rope or cord is wound round the bar-shaped member, but also on the length of the windings, or, in other words, on the pitch of the windings. In order to accomplish that objective, the apparatus according to the invention is characterized in that the two second guides are mounted on a sleeve, which is capable of sliding movement in axial direction over said bar-shaped member. In this manner it is quite easy to vary not only the number of times that the rope or cord is wound round the bar-shaped member, but also the length of the windings. This enables a very accurate, practically infinitely variable regulation of the force with which the rope is to be pulled off the bar-shaped member. With the apparatus according to the invention, a first regulation of the force with which the rope is to be pulled off the bar-shaped member can be obtained by winding the rope round the bar-shaped member a number of times by hand or otherwise, following that, it is possible to set and vary said force further, in particular also while carrying out a training programme, by moving the sleeve in axial direction. As a result of this, the length of the windings will become larger or smaller, resulting in a lower or higher resistance for pulling off the rope. A major advantage in this respect is the fact that the second guides will remain oriented in the same, preferably horizontal, plane upon movement in axial direction, so that the two rope ends will continue to meet with the same frictional resistance. Another advantage is the fact that axial movement of the two guides will not result in the outgoing rope ends being twisted together, so that the training programme can be completed without interruption.

[0004] In this manner an apparatus of light and simple construction has been obtained, which makes it possible to work through a precisely adjustable training programme, which is remarkable for its ease of operation and which can be easily transported from one location to another.

[0005] Although it is possible to wind the rope or cord round the bar-shaped member by hand a number of times when starting a training programme, and subsequently regulate the pull-off resistance by moving the sleeve in axial direction, it is according to another embodiment also possible to mount the sleeve rotatably on the bar-shaped member. With this embodiment, the number of windings can be set by rotating the sleeve. Of course it must be possible to secure the second guides in a desired position, and according to another advantageous embodiment, the sleeve is to that end provided with means for securing the bar-shaped member in position, which means may consist of clamping means, whilst it is also possible to secure the sleeve in its desired position by means of one or more pins present in said sleeve, which can mate with openings

formed in the bar-shaped member.

[0006] According to another embodiment of the apparatus, the bar-shaped member is provided at its first end with means by which the apparatus can be connected to a fixedly disposed object, such as a wall or a pillar.

[0007] The invention will now be explained in more detail with reference to the drawing, which schematically illustrate an exemplary embodiment of an apparatus according to the invention.

[0008] Figures 1 and 2 schematically show, not to scale, a training apparatus according to the invention in two views oriented perpendicularly to each other.

[0009] Figure 3 is a sectional view along line III - III.

[0010] Figure 4 shows another embodiment of the sleeve mounted on the bar-shaped member.

[0011] Figures 5 and 6 show the apparatus of Figures 1 and 2 in a situation in which the two guides have been moved axially over the bar-shaped member.

[0012] In the drawing, numeral 1 indicates a bar-shaped member. Said bar-shaped member is provided at a first end thereof with two tie plates 2 and 3, with a pin 4 present therebetween, about which a pulley 5 rotates. Pulley 5 is used for passing cord 6 thereover. The two parts 7 and 8 of cord 6 on either side of pulley 5 are passed through first guides 9 and subsequently wound round bar-shaped member 1 a few times. On the other side of the bar-shaped member 1, the two parts 7 and 8 of the cord are passed through second guides 10, which are mounted on a sleeve 11, which is capable of rotating and sliding movement on bar-shaped member 1. A person doing his training exercises can exert a pulling force on both ends 13 and 14 of said cord, whereby said ends may be provided with handgrips to make it easier to take hold of the cord. The number of times that the two ends of the cord are wound round the bar-shaped member can be varied by rotating sleeve 11 round the bar-shaped member 1. When the desired number of windings of the cord round the bar-shaped member is reached, sleeve 11 can be secured in position by means of pins 16 present therein, which are each urged in the direction of the bar-shaped member by means of a spring 17, thereby engaging in openings 18 formed in the bar-shaped member 1.

[0013] Instead of securing the sleeve 11 in position on the bar-shaped member 1 by means of pins, which engage in openings present in the bar-shaped member, it is also possible to secure the sleeve 11 on the bar-shaped member by means of a clamping force, as is indicated in Figure 4. For example, one or more pins 16 may be used thereby, which pins are provided with screw thread and which are received in screws 25 present in sleeve 11. The sleeve 11 can be secured in any desired position on bar-shaped member 1 by screwing down pins 16 to a greater or lesser degree.

[0014] The force with which the person doing his training exercises must pull at the ends 13 and 14 of the cord so as to move said cord over bar-shaped member 1 strongly depends on the number of times that the cord is wound round bar-shaped member 1. When sleeve 11 is rotated about bar-shaped member 1, guides 10 will also move round said bar-shaped member and thus determine the number of times that the cord is wound round bar-shaped member 1. In this manner a training programme can be set quite easily, for example starting with only one winding round the bar-shaped member 1 and subsequently gradually increasing. The force with which the cord can be pulled off the bar-shaped member 1 not only depends on the number of times that the cord is wound round the bar-shaped member 1, but also on the length of the windings of the cord on bar 1. In order to vary said length of the windings on bar 1, the sleeve 11 is not only capable of rotating movement about bar 1, but also of sliding movement in axial direction over bar 1. In this manner it is made possible not only to vary the number of windings of the cord round bar 1, but also the length of said windings, so that the force with which to pull at the ends 13 and 14 can be varied almost infinitely over a very wide range.

[0015] The situation wherein sleeve 11 and its guides 10 have been moved in the direction of the first guides 9 is shown in Figures 5 and 6. Said figures clearly show that the rise of the windings of the cord on bar-shaped member 1 is much steeper now than in the situation which is shown in Figures 1 and 2. This results in an increase in the force with which the cord can be pulled off bar 1. It will be apparent that it is possible with the apparatus according to the invention to vary the force with which the cord can be pulled off both by varying the number of times that the cord is wound round bar 1 and by varying the rise of the windings or the length of the windings on bar-shaped member 1. This enables a nearly infinitely variable regulation of the force with which to pull at the ends of the cord. Thus, a training programme can be set with great precision.

[0016] A plate 20 is pivotally connected to tie plate 2 so as to make it possible to attach the apparatus to a fixed object, for example a wall. Said plate 20 can be inserted into an opening 21 of a receiving member 22 which is fixed to said wall. Said receiving member 22 is furthermore provided with two openings, into which pins 24, which are fixed to tie plate 3, can be inserted. In this manner the apparatus can be readily attached to a wall, and be easily detached therefrom again in order to be used at another location. It will be apparent that it is also possible to attach the apparatus by means of other fastening elements, for example by means of screws.

[0017] It will be apparent from the foregoing that the invention provides a very simple and readily adjustable training apparatus.

Claims

1. A training apparatus suitable for training muscles and the stamina of the human body, which apparatus comprises an elongated, bar-shaped member,

which includes a guiding member at a first end thereof, over which a rope or cord can be passed, wherein said bar-shaped member is provided near its first end with two first guides for guiding the two parts of the rope or cord on either side of the guiding member, wherein said bar-shaped member is furthermore provided with second guides disposed some distance away from said first guides, which second guides are preferably adjustable in circumferential direction over said bar-shaped member, all this in such a manner that the number of times that the two parts of the rope or cord are wound round the bar-shaped member can be adjusted therewith, characterized in that the two second guides are mounted on a sleeve, which is capable of sliding movement in axial direction over said bar-shaped member.

2. An apparatus according to claim 1, characterized in that the sleeve is also capable of rotating movement about said bar-shaped member.

3. An apparatus according to claim 1 or 2, characterized in that said sleeve is provided with means for securing it in desired position on said bar-shaped member.

4. An apparatus according to claim 3, characterized in that said means for securing the sleeve in position consist of clamping means.

5. An apparatus according to claim 3, characterized in that said means for securing the sleeve in position consist of one or more pins present in said sleeve, which can mate with openings formed in said bar-shaped member.

6. An apparatus according to any one of the preceding claims, characterized in that said bar-shaped member is provided at its first end with means by which the apparatus can be connected to a fixedly disposed object, such as a wall or a pillar.

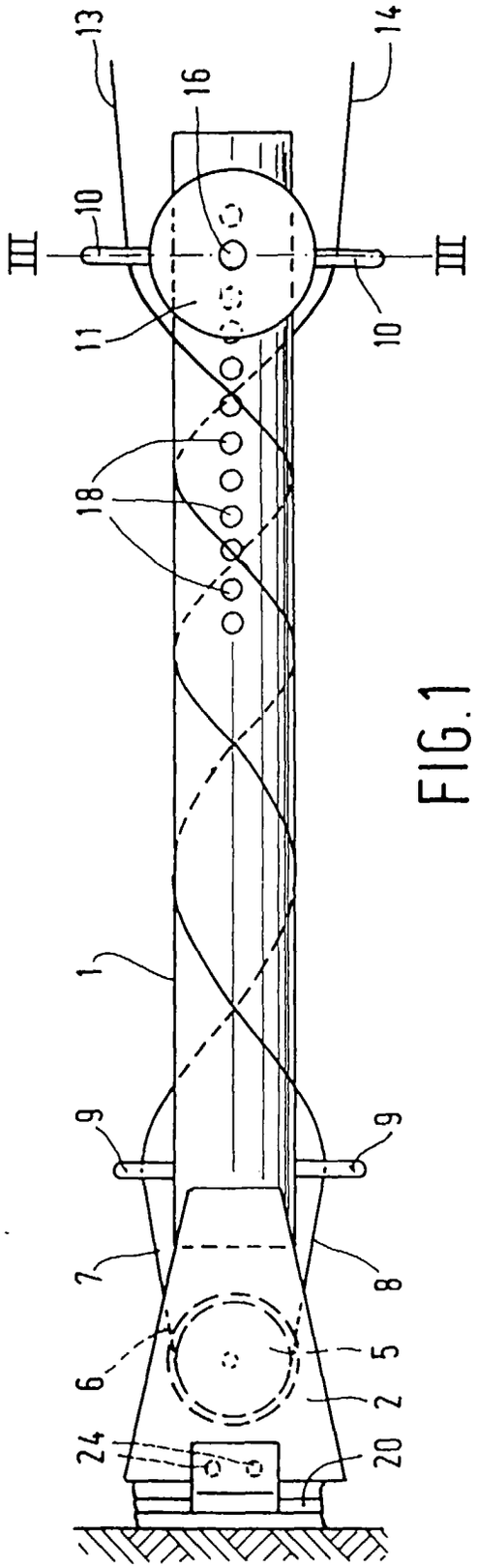
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FIG.1

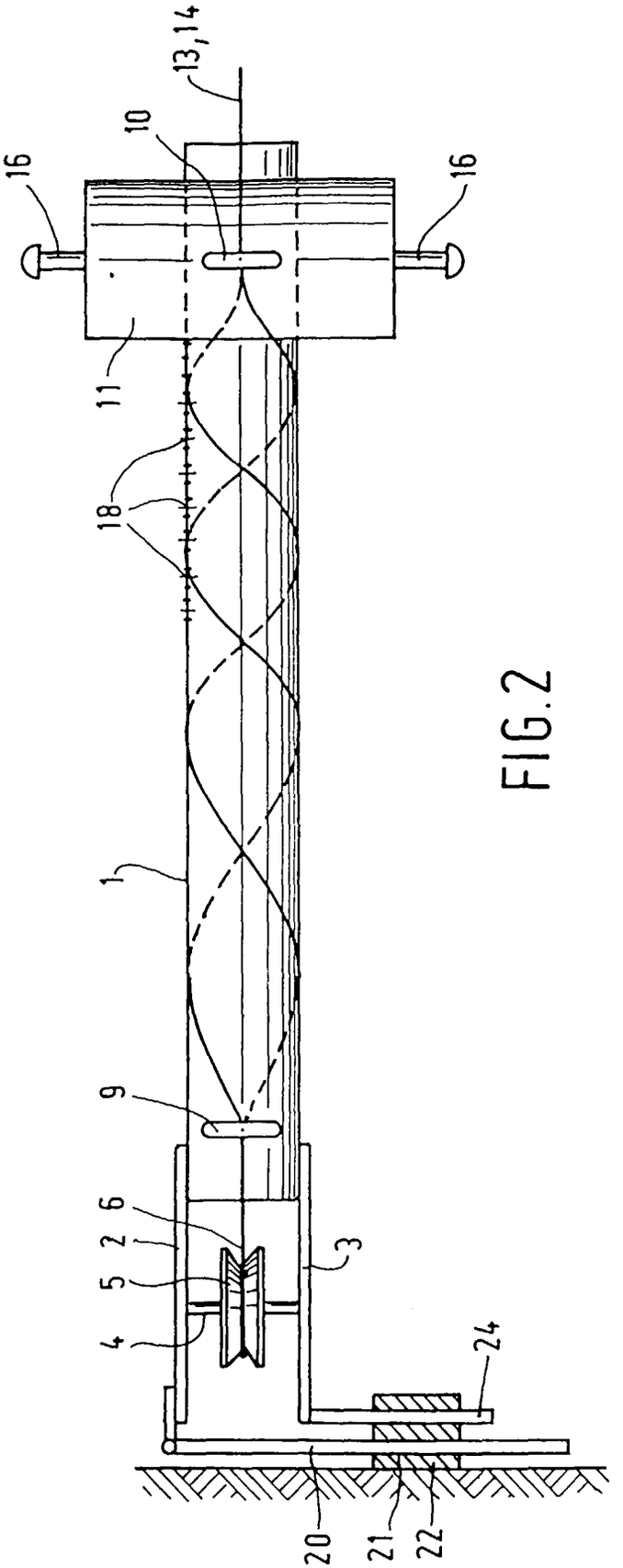
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FIG.2

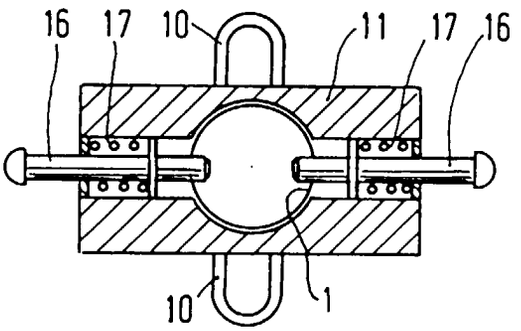

FIG. 3

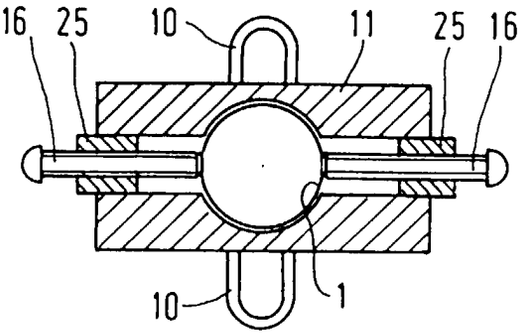

FIG. 4

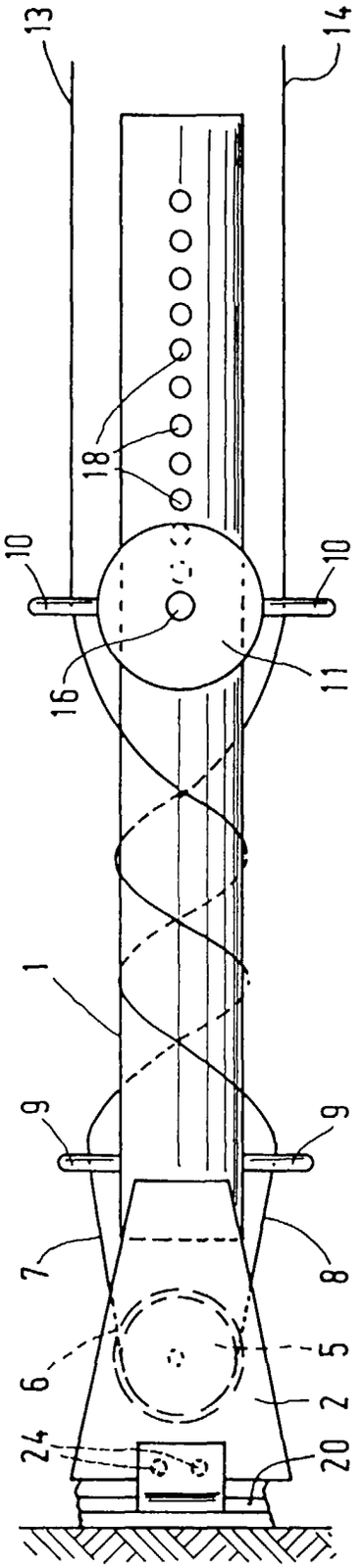
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FIG. 5

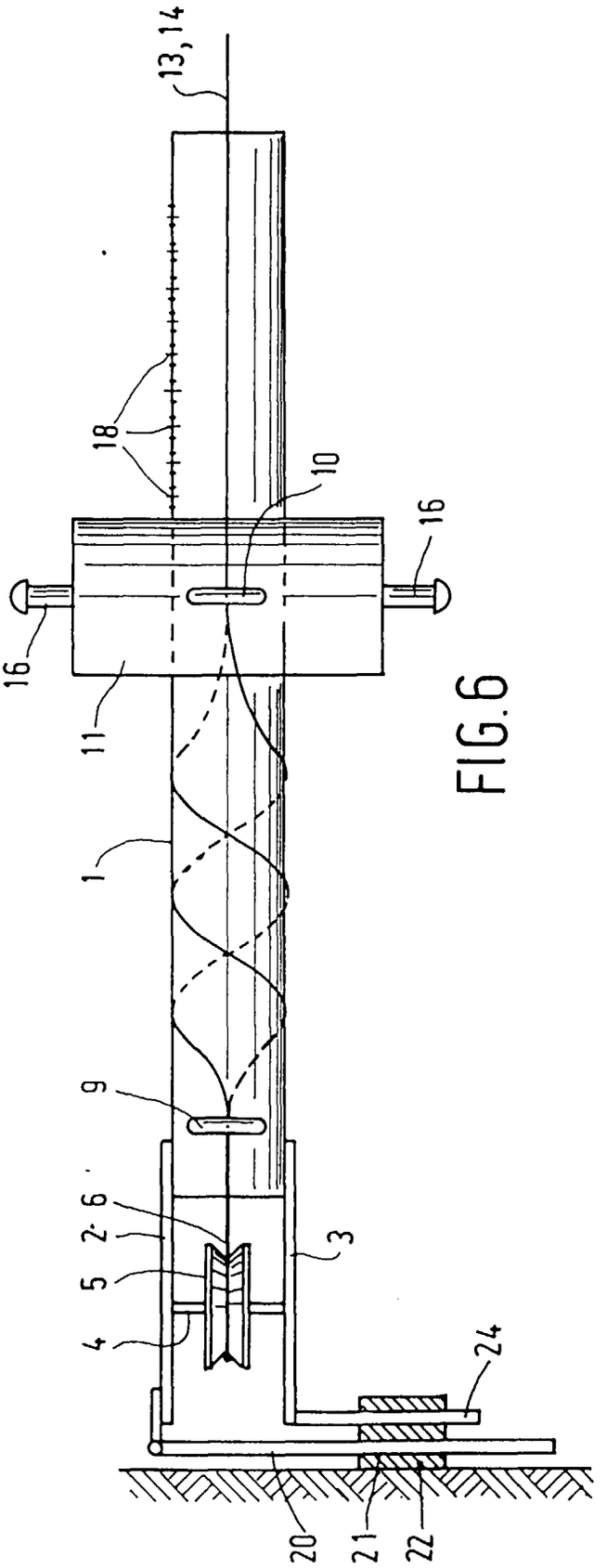
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FIG.6

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EUROPEAN SEARCH REPORT

Application Number
EP 99 20 3840

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	US 5 803 209 A (SUZAKI KIYOSHI) 8 September 1998 (1998-09-08) * column 6, line 53 - column 7, line 35; figures 13-17 *	1,6	A63B21/018
A	US 4 040 627 A (USELDINGER RONALD E) 9 August 1977 (1977-08-09) * column 2, line 11 - line 55; figures * * abstract *	1,6	
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TECHNICAL FIELDS SEARCHED (Int.Cl.7)

A63B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	21 February 2000	Neumann, E

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21-02-2000

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