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(54) **Weight adjustable exercise device**

(57) A weight adjustable exercise device includes a shank having a narrowed neck segment and having a base plate attached to one end member, two or more weights each having a slot for receiving the narrowed neck segment of the shank, and each having an enlarged opening communicating with the slot for receiving the

shank and for retaining the weights to the shank when the weights are offset from the narrowed neck segment of the shank, and a slide slidably attached the shank for engaging with the weights after the weights have been disengaged from the narrowed neck segment of the shank and for retaining the weights to the shank.

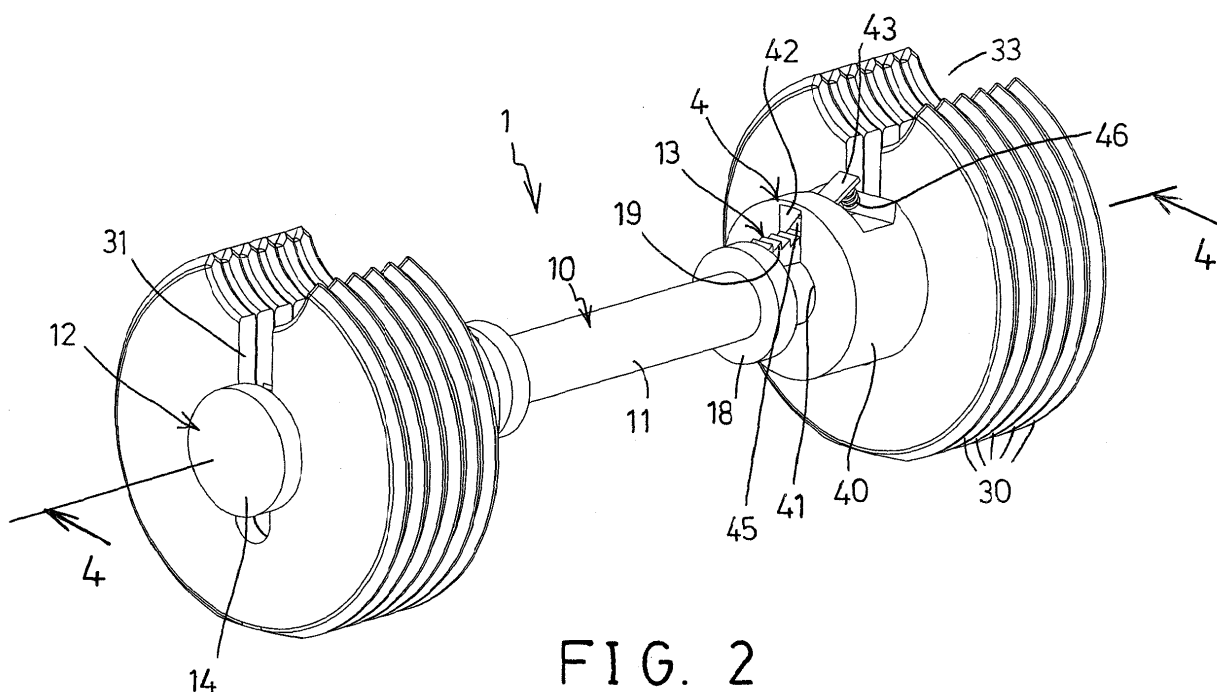


FIG. 2

Description

[0001] The invention relates to a weight adjustable exercise device, such as dumbbell, barbell or kettlebell, including a number of weights easily attached to or disengaged from the weight carrier.

[0002] Typical dumbbells, barbells or kettlebells comprise a number of weights to be attached to the ends of the handle. However, the weights may not be easily and quickly assembled onto the handle.

[0003] In order to solve the afore-mentioned problem the invention provides a weight adjustable exercise device according to claim 1. Advantageous embodiments are laid down in further claims.

[0004] The weights each have an enlarged opening communicating with the slot for receiving the shank and for retaining the weights to the shank when the weights are offset from the narrowed neck segment of the shank. A slide is slidably attached the shank for engaging with the weights after the weights have been disengaged from the narrowed neck segment of the shank and for retaining the weights to the shank

FIG. 1 is a partial exploded view of an exercise device;

FIG. 2 is a perspective view of the exercise device;

FIG. 3 is another partial exploded view;

FIGS. 4, 5 are cross sectional views of the exercise device;

FIG. 6 is another perspective view of the exercise device; and

FIG. 7 is a further partial exploded view of the exercise device.

[0005] Referring to FIGS. 1-5, a weight adjustable exercise device 1, such as a dumbbell, a barbell or a kettlebell comprises a handle or shank 10 including a hand grip 11 formed on the center, and two end members 12 each having a rack 13, a base plate 14 is attached to each end member 12 with latches or fasteners 15 (FIG. 4) and includes an outer diameter greater than that of the shank 10. The racks 13 are extended out of the end member 12 and parallel to the shank 10, and include a width smaller than the outer diameter of the shank 10, and the shank 10 includes one or more (such as two) notches 16 formed in each end member 12 for forming a narrowed neck segment 17 (FIGS. 1, 3), in which the narrowed neck segment 17 includes an outer diameter smaller than that of the shank 10. The shank 10 may include two stops 18 spaced from each other for forming the hand grip 11.

[0006] A number of U-shaped weights 30 each include a slot 31 having a width no less than the narrowed portion

the narrowed neck segments 17 for receiving the narrowed neck segments 17 and/or the racks 13, the width of the slots 31 of the weights 30 is smaller than the outer diameter of the shank 10, for engaging with only the narrowed neck segments 17 and/or the racks 13 (FIGS. 1, 3-4). The weights 30 each include an enlarged opening 32 communicating with the slot 31 and having a width greater than that of the slots 31 and no less than the outer diameter of the shank 10 for receiving the shank 10, and the weights 30 each include a wide open end 33 for guiding the narrowed neck segment 17 into the slots 31 of the weights 30.

[0007] A locking device 4 includes a ring or slide 40 having a bore 41 (FIGS. 2, 4) for receiving the end member 12 and for engaging with the weights 30 (FIGS. 2, 4), and for anchoring the weights 30 to the shank 10. The slides 40 each include a channel 42 communicating with the bore 41 for receiving the rack 13, a latch 43 partially engaged into the channel 42 and pivotally mounted to the slide 40 with an axle 44 for allowing an actuating end 45 of the latch 43 to engage with the teeth 19 of the rack 13 and to latch the slide 40 and the weights 30 to the shank 10. A spring 46 is disposed between the other end 47 of the latch 43 and the slide 40 for biasing the actuating end 45 of the latch 43 to engage with the teeth 19 of the rack 13 (FIGS. 3-5).

[0008] The selected number of the weights 30 may be easily and quickly engaged onto the shank 10 by engaging the narrowed neck segment 17 into the slots 31 of the weights 30, and the weights 30 may then be disengaged from the narrowed neck segment 17, the slides 40 may then be moved to engage with the weights 30 for locking the weights 30 to the shank 10. The slides 40 may be moved along the shank 10 when the other end 47 of the latch 43 is depressed to compress the spring member 46 and to disengage the actuating end 45 of the latch 43 from the teeth 19 of the rack 13. When the slide 40 is disengaged from the narrowed neck segment 17, the weights 30 may be easily and quickly engaged onto or disengaged from the shank 10, the shank 10 and/or the weights 30 may be enlarged to form and to act as a barbell (FIG. 6).

[0009] As shown in FIG. 7, the shank 101 may include a hand grip 111 formed on the other end 181 for being used as a kettlebell. The notch 16 or the narrowed neck segment 17 is located closer to the other end 181 or the hand grip 111 or distal to the end member 12.

Claims

1. Adjustable exercise device comprising:

a shank (10) including a first end member, a base plate (20) provided on the first end member, and at least two weights (30) each including a slot (31) for receiving the shank, **characterized in**

that:

the shank (10) includes a narrowed neck segment (17),
 the slots (31) of the weights include a width 5
 no less than the narrowed neck segment (17) for receiving the narrowed neck segment,
 the weights (30) each include an enlarged opening (32) communicating with the slot 10
 (31) and having an inner diameter greater than the width of the slots and no less than the outer diameter of the shank (10), and
 a slide (40) is slidably attached onto the shank (10) for engaging with the weights 15
 (30).

latch for engaging with the shank, and the shank (10) includes a rack (13) provided on the second end member for engaging with the second latch.

2. Exercise device as claimed in claim 1, **characterized in that** the slide (40) includes a latch (43) for engaging with the shank. 20
3. Exercise device as claimed in claim 2, **characterized in that** the shank (10) includes a rack (13) for engaging with the latch (43). 25
4. Exercise device as claimed in claim 3, **characterized in that** the slide (40) includes a channel (42) for receiving the rack (13).
5. Exercise device as claimed in claim 3 or 4, **characterized in that** the latch (43) is pivotally attached to the slide (40) with an axle and includes an actuating end (45) for engaging with the rack (13). 30
6. Exercise device as claimed in one of claims 1 to 5, **characterized in that** the shank (10) includes at least one notch for forming the narrowed neck segment (17). 35
7. Exercise device as claimed in one of claims 1 to 6, **characterized in that** the weights (30) each include an open end (33) communicating with the slots (31) for guiding the narrowed neck segment (17) into the slots of the weights. 40
8. Exercise device as claimed in one of claims 1 to 7, **characterized in that** the shank (10) includes a hand grip (11) provided thereon. 45
9. Exercise device as claimed in one of claims 1 to 8, **characterized in that** the shank (10) includes a second end member having a second narrowed neck segment for engaging with the weights, and a second slide (409) attached onto the second end member for engaging with the weights (30). 50
10. Exercise device as claimed in claim 9, **characterized in that** the second slide (40) includes a second 55

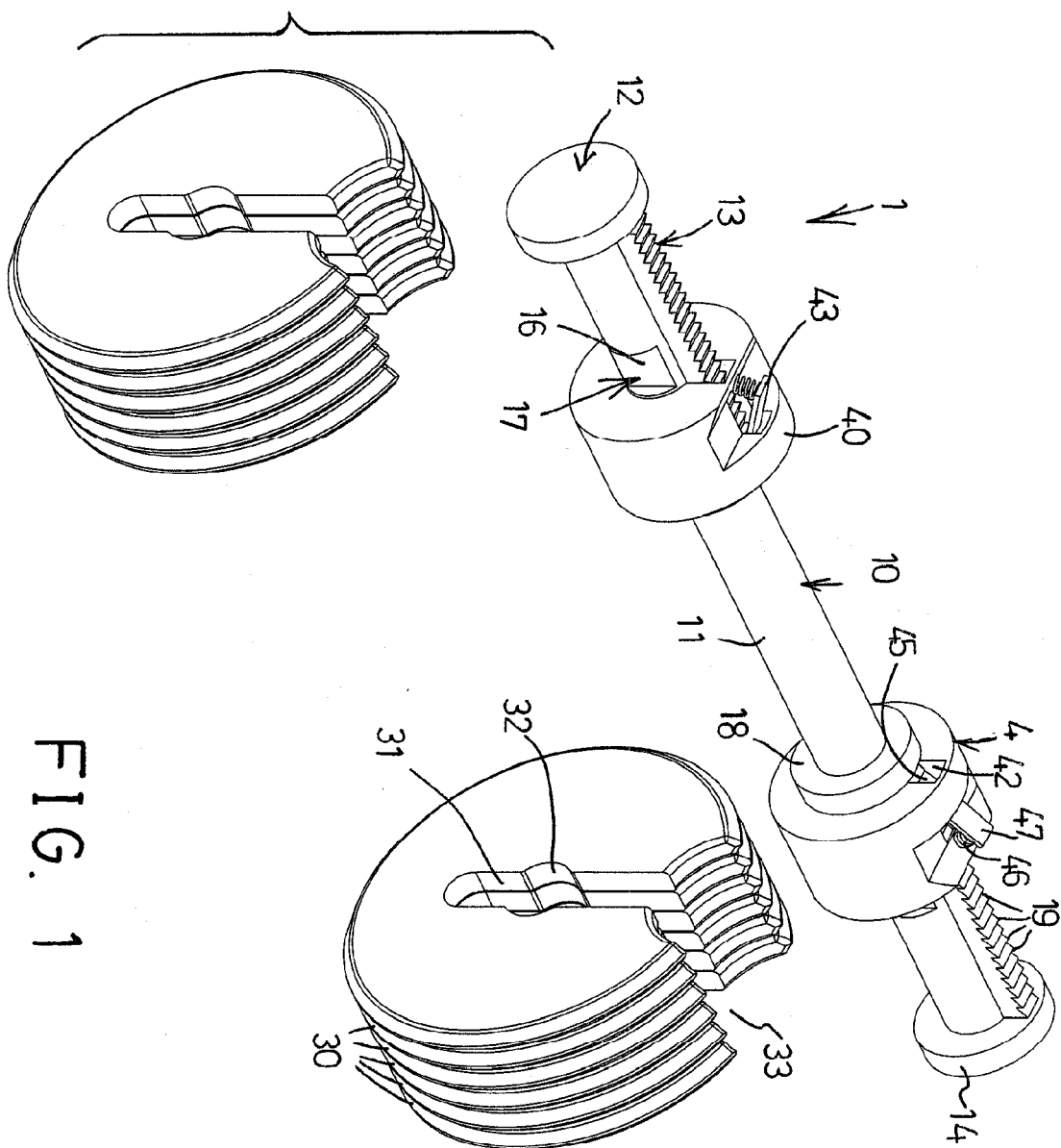
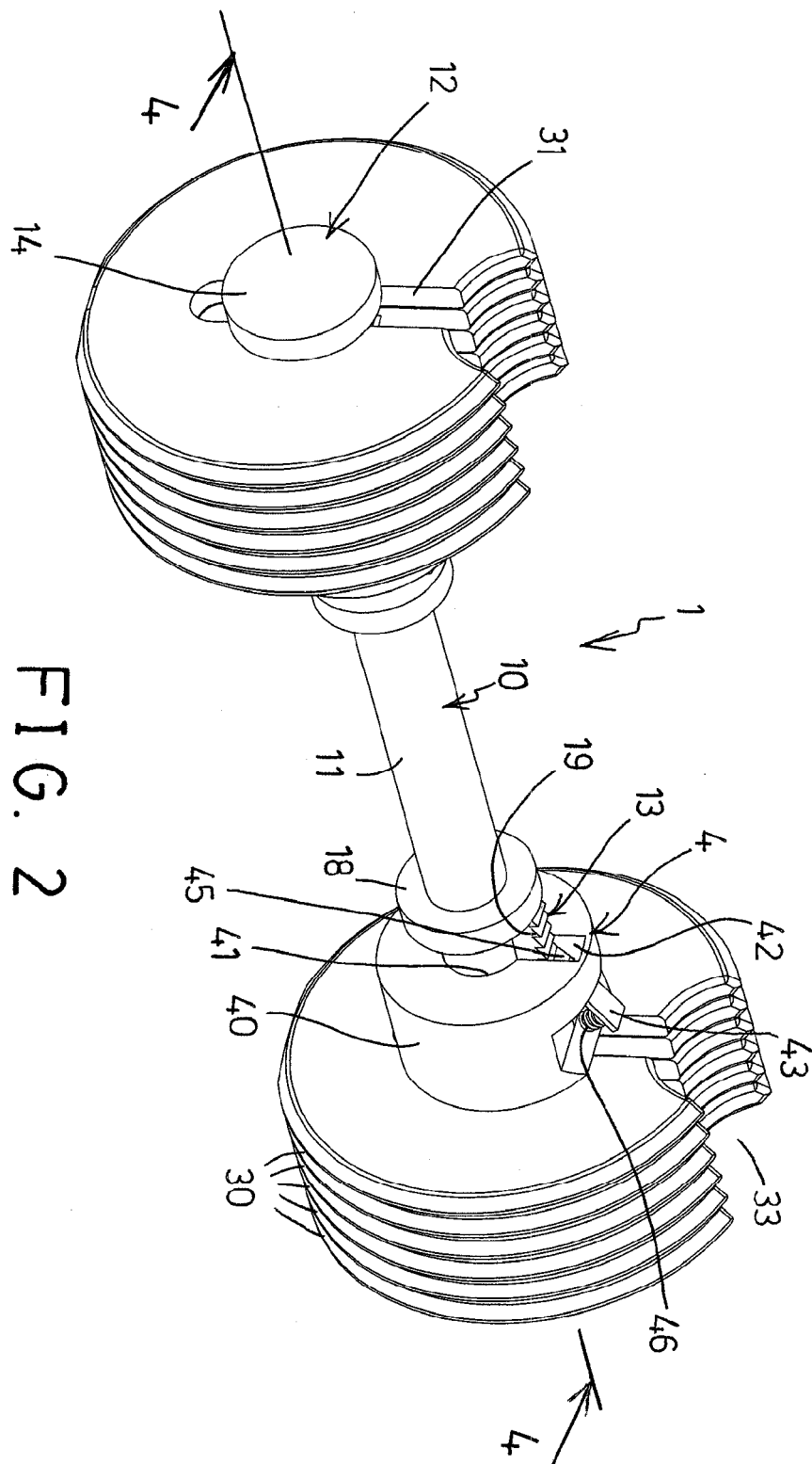


FIG. 1



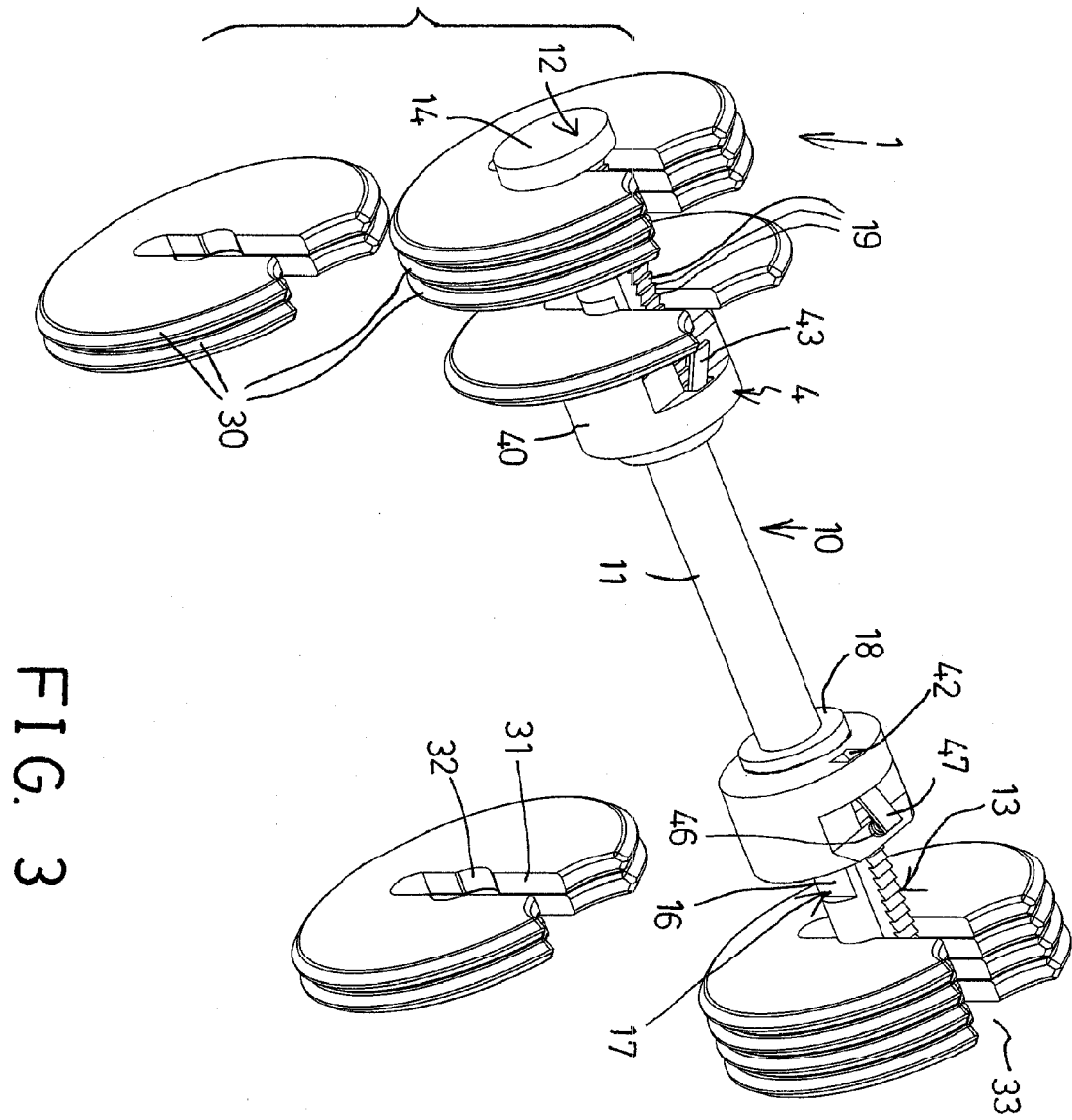


FIG. 3

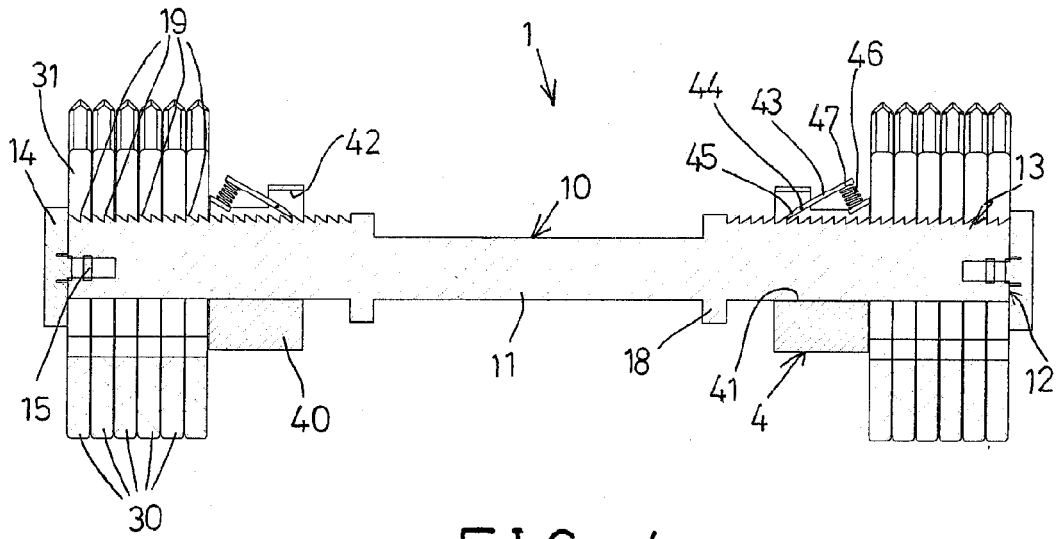


FIG. 4

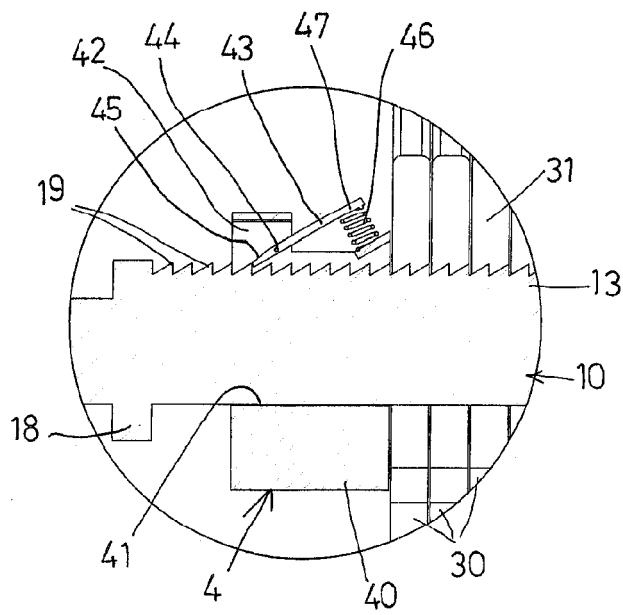


FIG. 5

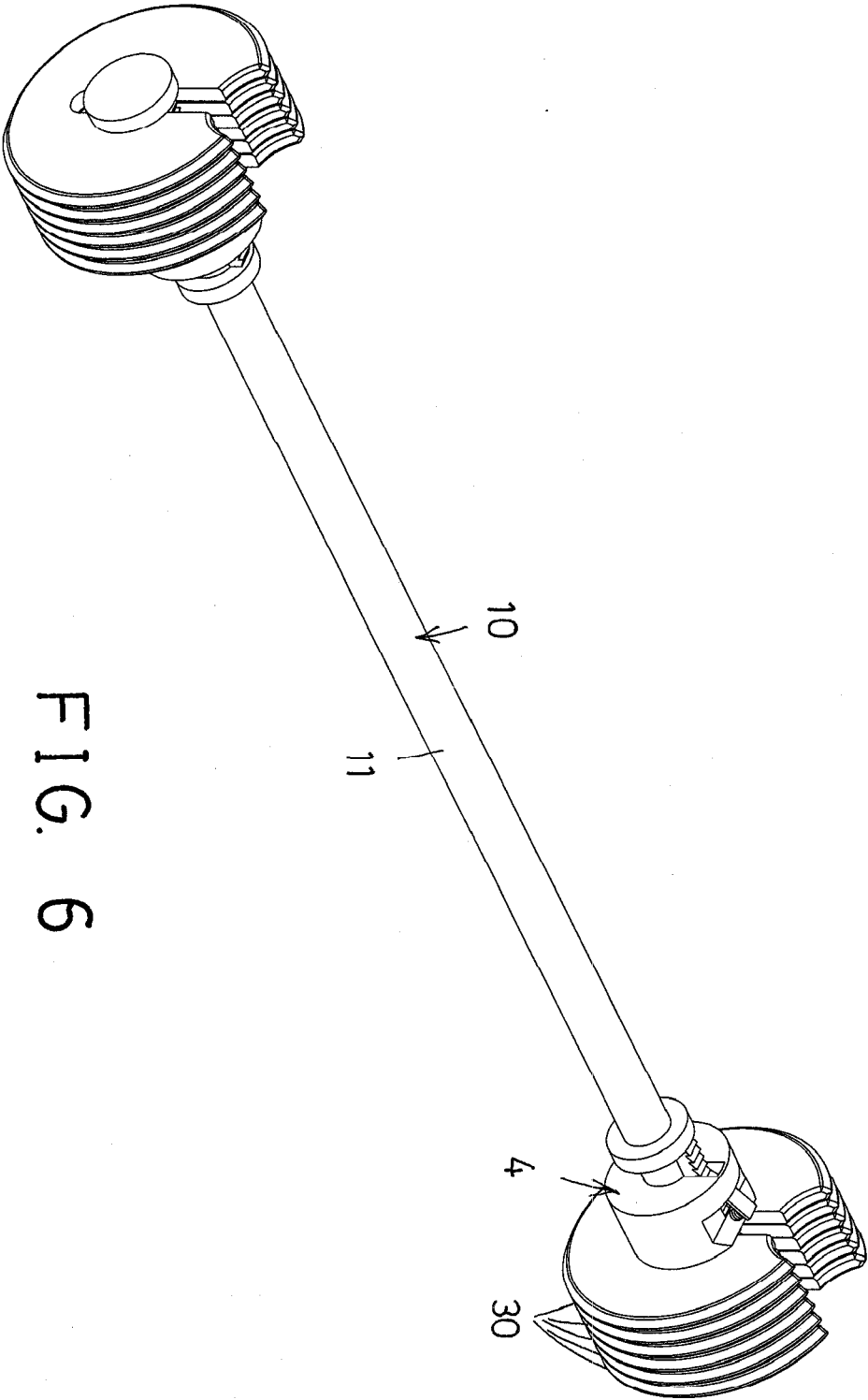
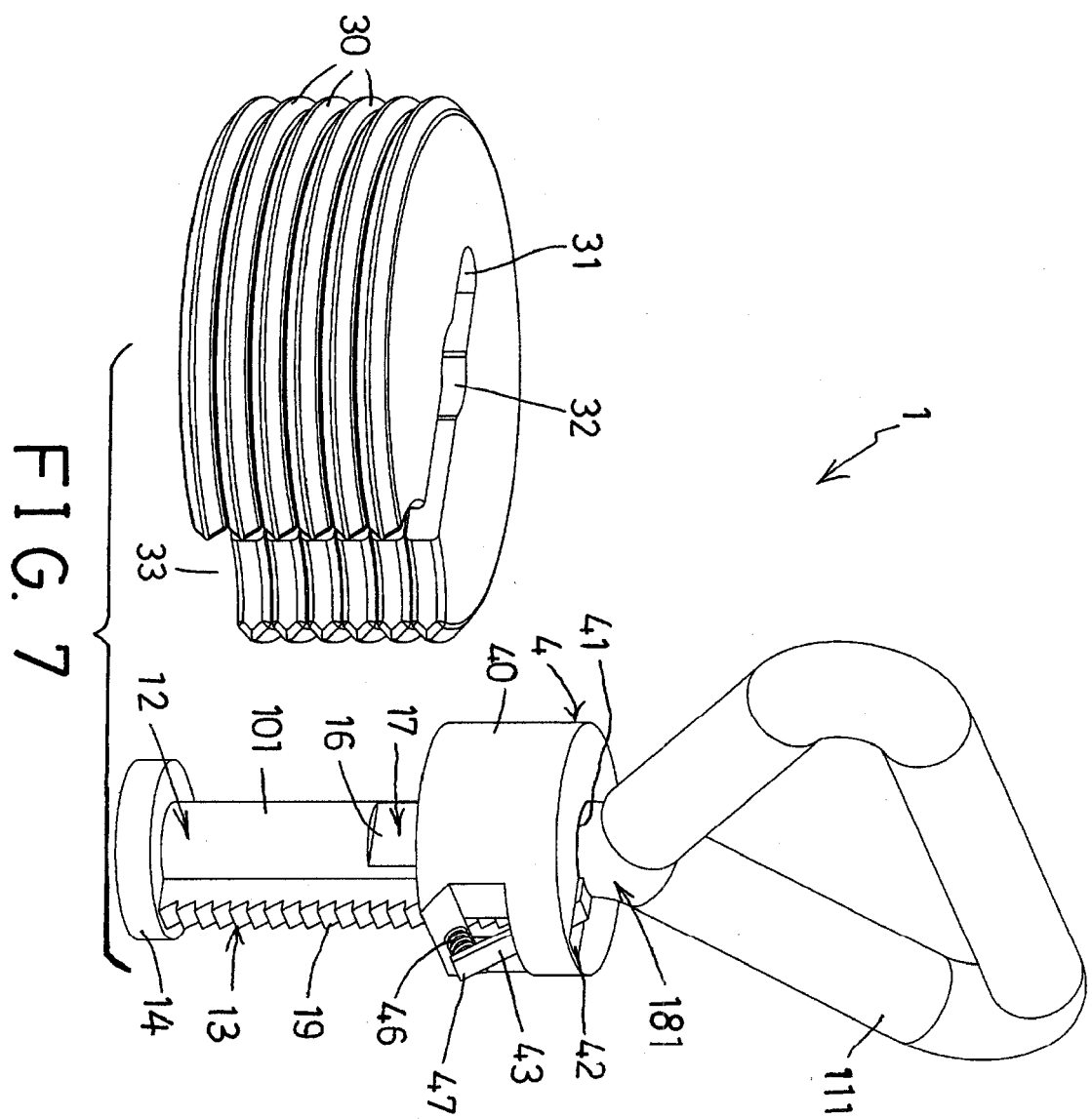


FIG. 6





EUROPEAN SEARCH REPORT

Application Number
EP 09 15 7689

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	SU 1 639 675 A1 (SP K B PROIZV OBEDINENIYA TRUB [SU]) 7 April 1991 (1991-04-07) * abstract; figures 1,2 *	1-5,8-10	INV. A63B21/072
A	US 2 640 696 A (ADALBERT LEMIEUX) 2 June 1953 (1953-06-02) * column 1, line 49 - column 2, line 55; figures 1-7 *	1-5,8-10	
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A	WO 2008/039013 A (SONG EUN SUB [KR]) 3 April 2008 (2008-04-03) * paragraph [1495]; figures 1-11 *	1,6-9	
			TECHNICAL FIELDS SEARCHED (IPC)
			A63B
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		16 September 2009	Oelschläger, Holger
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 09 15 7689

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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16-09-2009

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