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(54) Exercise handle having control device

(57) An exerciser includes an exercise arm having a barrel, a handle element having an axle rotatably engaged into the barrel, a signal generating device attached to the handle element and directed into the barrel for generating a signal into the barrel, and a signal receiving device disposed in the exercise arm for receiving the signal generated by the signal generating device even when the signal generating device and the handle element are rotated relative to the barrel of the exercise arm in order to control such as the resistive devices or retarding devices for the exerciser, the barrel may include a refractive member for refracting the signal generated by the signal generating device toward the signal receiving device.

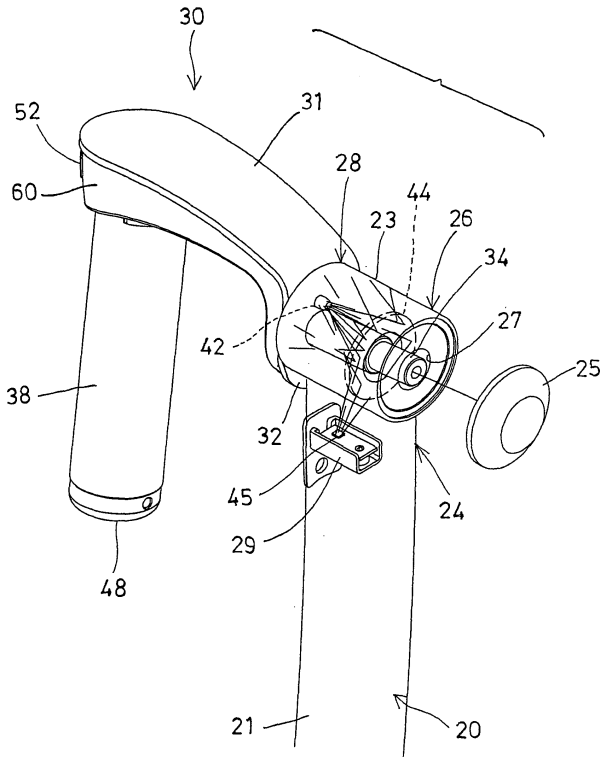

FIG. 5

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Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The present invention relates to a handle, and more particularly to a handle for an exerciser or exercising mechanism including a control device for controlling the exerciser or exercising mechanism, such as the resistive devices and/or the retarding devices and/or the resistance applying devices for the exerciser or exercising mechanism or the like.

[0002] The present invention has a structure that is an extension of European Patent Application EP 05 005 056.6 to Kuo, filed 8 March 2005, pending.

2. Description of the Prior Art

[0003] Typical exercisers or exercising mechanisms or the like comprise one or more handles coupled to one or more rotary members for being held or grasped by the users and for being operated by the users.

[0004] For example, U.S. Patent No. 5,501,648 to Grigoriev, and U.S. Patent No. 5,836,856 to Mattoo et al. disclose two of the typical exercisers or exercising mechanisms or the like each comprising two handles coupled to one or more rotary members for being held or grasped by the users and for being operated by the users to rotate the rotary members.

[0005] However, the handles are solidly attached to the handle bars or handle stems or handle levers and may not be rotated or pivoted relative to the handle bars or handle stems or handle levers such that the handles may not be easily actuated or operated by the users.

[0006] U.S. Patent No. 4,923,193 to Pitzen et al., and U.S. Patent No. 6,361,479 to Hildebrandt et al. disclose two further typical exercisers or exercising mechanisms each also comprising two handles coupled to one or more rotary members for being held or grasped by the users and for being operated by the users to rotate the rotary members.

[0007] However, the handles are also solidly attached or secured to the handle bars or handle stems or handle extensions with fasteners or locking levers and the handles may not be rotated or pivoted relative to the handle bars or handle stems or handle levers such that the handles may not be easily actuated or operated by the users to conduct the exercises.

[0008] U.S. Patent No. 4,961,569 to Roberge, and U.S. Patent No. 5,145,479 to Olschansky et al., and U.S. Patent No. 5,542,893 to Petersen et al., and U.S. Patent Application Publication No. 2005/0227824 A1 to Wu et al. discloses still further typical exercisers or exercising mechanisms comprising two handles coupled to one or more rotary members for being held or grasped by the users and for being operated by the users to rotate the rotary members, and two hand grips rotatably or pivotally attached or secured to the handle bars or handle stems or rocker arms respectively for allowing the hand grips to be rotated or pivoted relative to the handle bars or handle stems or rocker arms.

[0009] However, due to the rotational movement between the hand grips and the handle bars or handle stems or rocker arms, no control devices may be attached or secured to the hand grips and the handle bars or handle stems or rocker arms for controlling the exercisers or exercising mechanisms.

[0010] U.S. Patent No. 6,620,079 to Kuo discloses a still further typical exerciser or exercising mechanism comprising two handles coupled to one or more rotary members for being held or grasped by the users and for being operated by the users to rotate the rotary members, and two switches attached to the handle bars or handle stems or rocker arms respectively for allowing the switches to be easily operated by the users.

[0011] However, no hand grips have been disclosed and rotatably attached to the handle bars or handle stems or rocker arms for supporting the switches; i.e., the switches are attached or secured to the handle bars or handle stems or rocker arms that are pivoted to an upright support of the exercisers or exercising mechanisms, but may not be attached or secured to the hand grips that are rotatably attached to the handle bars or handle stems or rocker arms.

[0012] The present invention has arisen to mitigate and/or obviate the afore-described disadvantages of the conventional handles for exercisers or exercising mechanisms.

SUMMARY OF THE INVENTION

[0013] The primary objective of the present invention is to provide an exerciser handle including a control device for controlling the exerciser or exercising mechanism, such as the resistive devices and/or the retarding devices and/or the resistance applying devices for the exerciser or exercising mechanism or the like.

[0014] In accordance with one aspect of the invention, there is provided an exerciser comprising a handle including an exercise arm having a barrel provided on an upper portion of the exercise arm, the barrel including a bore formed therein, a handle element including an axle extended therefrom and rotatably engaged into the bore of the barrel for allowing the handle element to be rotated relative to the barrel of the exercise arm with the axle, a signal generating device attached to the handle element and directed into the bore of the barrel for generating a signal into the bore of the barrel, and a signal receiving device disposed in the exercise arm for receiving the signal generated by the signal generating device even when the signal generating device and the handle element are rotated relative to the barrel of the exercise arm.

[0015] The handle includes a bracket disposed in the exercise arm for supporting the signal receiving device. The handle includes a refractive member disposed in the

barrel of the exercise arm for refracting the signal generated by the signal generating device toward the signal receiving device. The refractive member includes a circular shape and engaged onto the axle.

[0016] The handle element includes an orifice formed therein for receiving the signal generating device. The handle element includes a flap folded from a first end portion of the handle element, and the orifice is formed in the flap. The axle is extended from the flap.

[0017] The handle element includes a hand grip extended from the handle element for being grasped by a user. The handle element includes at least one battery disposed in the hand grip for energizing the signal generating device.

[0018] The handle element includes a circuit board disposed in the hand grip and electrically coupled to the signal generating device, and at least one button electrically coupled to the circuit board for actuating the signal generating device.

[0019] The handle includes a casing engaged with the handle element for covering and shielding the button, and having an opening formed in the casing for engaging with the hand grip, and having at least one aperture formed therein for engaging with the button. The casing includes a depression formed therein and communicating with the opening for engaging with a lid.

[0020] Further objectives and advantages of the present invention will become apparent from a careful reading of the detailed description provided hereinbelow, with appropriate reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0021]

FIG. 1 is a perspective view of an exerciser in accordance with the present invention;

FIG. 2 is a partial plan schematic view of the exerciser;

FIG. 3 is a partial plan schematic view similar to FIG. 2, illustrating the operation of the exerciser handle;

FIG. 4 is another partial plan schematic view illustrating the handle device of the exerciser;

FIG. 5 is a partial exploded view illustrating the handle device of the exerciser;

FIG. 6 is another partial exploded view of the handle device of the exerciser;

FIG. 7 is a further partial exploded view of the handle device of the exerciser;

FIG. 8 is a partial perspective view of the handle device of the exerciser as viewing from one direction of the handle device; and

FIG. 9 is another partial perspective view of the handle device of the exerciser as viewing from the opposite direction of the handle device as shown in FIG. 7.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0022] Referring to the drawings, and initially to FIG. 1, an exerciser 1 in accordance with the present invention comprises a base 10, a pair of or two foot pedals 11 rotatably attached to the base 10 with a spindle 12 and coupled to the resistive devices 13 (FIG. 1) or retarding devices or resistance applying devices or magnetic braking devices for the exerciser 1, a pair of or two handles 20 pivotally attached to the base 10 with a shaft 14 and coupled to the resistive devices 15 (FIG. 1) or retarding devices or resistance applying devices or magnetic braking devices for the exerciser 1, several examples of the resistive devices 13, 15 and/or the retarding devices and/or the resistance applying devices for the exercisers 1 have been disclosed in U.S. Patent No. 4,923,193 to Pitzen et al., U.S. Patent No. 5,501,648 to Grigoriev, and U.S. Patent No. 5,836,856 to Mattoo et al., and U.S. Patent No. 6,361,479 to Hildebrandt et al. which may be taken as references for the present invention.

[0023] It is to be noted that various kinds of resistive devices 13, 15 or retarding devices or resistance applying devices or magnetic braking devices for the exercisers 1 have been developed and provided for resisting the rotational movement of the foot pedals 11 and/or the pivotal movement of the handles 20. The above-described resistive devices 13, 15 or retarding devices or resistance applying devices are typical and will not be described in further details. The handles 20 each include an exercise arm 21 having a lower portion 22 pivotally attached to the base 10 with the shaft 14 and having a barrel 23 attached or disposed or provided on an upper portion 24 thereof for rotatably or pivotally attaching a handle member 30 thereto. As shown in FIGS. 4-6, a cover 25 is attached to one end or outer end or front end 26 of the barrel 23 for enclosing or shielding the hollow interior or bore 27 of the barrel 23, and the handle member 30 is rotatably or pivotally attached to the other end or inner end or rear end 28 of the barrel 23.

[0024] For example, the handle member 30 each include an L-shaped bracket or frame or handle element 31 having a flap 32 bent or folded or extended from one end portion 33 of the handle element 31, and an axle 34 extended from the flap 32 or the one end portion 33 of the handle element 31 and rotatably attached or engaged into the hollow interior or bore 27 of the barrel 23 and rotatably attached or secured to the barrel 23 with one or more washers 35 and/or clamping or retaining rings 36 (FIG. 6) for allowing the handle member 30 to be rotated or pivoted relative to the barrel 23 of the exercise arm 21 with the axle 34 (FIGS. 2, 3). It is preferable, but not necessarily that the axle 34 is perpendicular to the flap 32 and parallel to the handle element 31 and parallel to the barrel 23 and perpendicular to the exercise arm 21, the handle element 31 includes one or more orifices 37 formed in the flap 32 and offset from the axle 34 (FIGS. 6, 8), and a hand grip 38 attached or secured to or ex-

tended from the handle element 31 and having a chamber 39 formed in the hand grip 38 (FIG. 6).

[0025] A control device 40 is to be attached to the handle element 31 of the handle member 30 and includes a circuit board 41 (FIG. 6) engaged into the chamber 39 of the hand grip 38, one or more signal generating devices 42 electrically coupled to the circuit board 41 with one or more electric wires 43 and engaged into the orifices 37 of the flap 32 of the handle element 31 (FIGS. 4, 8) and faced or directed into the bore 27 of the barrel 23 for generating a signal, such as an infrared light or other light or sound signals into the bore 27 of the barrel 23, a refractive member 44 disposed in the bore 27 of the barrel 23 and/or engaged onto the axle 34 and clamped or positioned or retained between the washers 35 and/or the clamping or retaining rings 36 for refracting the light or signal generated by the signal generating devices 42 toward or into the exercise arm 21 of the handle 20 and toward a signal receiving device 45 that is disposed or engaged in the exercise arm 21 of the handle 20, best shown in FIGS. 4-6.

[0026] In operation, the signal generating devices 42 may be actuated or operated to generate the light or signal toward the refractive member 44 which may then refract the light or signal toward the signal receiving device 45 that may then be coupled to a central processor device (not shown) of the exerciser 1 in order to actuate or operate the resistive devices 13, 15 (FIG. 1) or retarding devices or resistance applying devices or magnetic braking devices for the exerciser 1 and/or to increase or to decrease the resistance applied to the foot pedals 11 and/or the handles 20. It is preferable that the refractive member 44 includes a ring or circular shape for suitably refracting the light or signal generated by the signal generating devices 42 when the handle element 31 of the handle member 30 is rotated or pivoted relative to the barrel 23 of the exercise arm 21, and the exercise arm 21 includes a bracket 29 disposed therein for supporting the signal receiving device 45.

[0027] The control device 40 may further include a plug or socket or terminal or coupler 46 electrically coupled to the circuit board 41, and a bar 50 having a socket or plug or terminal or coupler 51 for electrically coupling to the coupler 46 of the control device 40, and one or more (such as two) knobs or buttons 52, 53 (FIGS. 7, 9) attached to the bar 50 for electrically coupling to the circuit board 41 of the control device 40 with the couplers 46, 51 and for actuating or operating the signal generating devices 42 to generate the light or signal toward the refractive member 44 which may then refract the light or signal toward the signal receiving device 45, and the signal receiving device 45 may then send the signals to the central processor device (not shown) of the exerciser 1 in order to actuate or operate the resistive devices 13, 15 or retarding devices or resistance applying devices or magnetic braking devices for the exerciser 1 and/or to increase or to decrease the resistance applied to the foot pedals 11 and/or the handles 20.

[0028] The control device 40 may further include one or more electric or power sources or batteries 47 (FIG. 6) disposed or engaged in the chamber 39 of the hand grip 38 and electrically coupled to the circuit board 41 for energizing the signal generating devices 42 and/or the other electric parts or elements. A cap 48 may be attached to the outer or free end portion of the hand grip 38 for enclosing or shielding the chamber 39 of the hand grip 38 and for stably retaining the power sources or batteries 47 and the circuit board 41 within the chamber 39 of the hand grip 38. It is preferable that the buttons 52, 53 provided on the handle element 31 of one of the handle members 30 may be provided and used for actuating or operating the resistive device 13 for such as the foot pedals 11, and the buttons 52, 53 provided on the handle element 31 of the other handle member 30 may be provided and used for actuating or operating the resistive device 15 for such as the handles 20.

[0029] As shown in FIGS. 4, 5, and 7, a casing 60 may further be provided and attached or engaged with the handle element 31 for covering or shielding the electric wires 43 and the bar 50 and/or the buttons 52, 53 and/or the parts or elements of the control device 40, and includes an opening 61 formed therein (FIG. 7) for receiving or engaging with the hand grip 38 and for allowing the hand grip 38 to be extended out of the casing 60, and includes one or more apertures 62, 63 formed therein for receiving or engaging with the buttons 52, 53 and for allowing the buttons 52, 53 to be partially extended out of the casing 60 and to be depressed or actuated by the users, and includes a depression 64 formed therein and communicating with the opening 61 for receiving or engaging with a lid 65 which may be secured to the casing 60 and/or the handle element 31 with one or more fasteners 66, and the casing 60 may further be solidly secured to the handle element 31 with one or more further fasteners 67.

[0030] In operation, when the hand grip 38 is held or grasped by the users to operate the handle element 31 of the handle member 30 and/or to rotate the handle element 31 relative to the barrel 23 of the exercise arm 21 of the handle 20, the hands of the user that hold or grasp the hand grips 38 may selectively depress or actuate either of the buttons 52, 53 in order to actuate or operate the resistive device 13 for such as the foot pedals 11 and/or to actuate or operate the resistive device 15 for such as the handles 20 even when the user operates the exerciser 1, and the light or signal generated by the signal generating devices 42 may be emitted toward the refractive member 44 which may then refract the light or signal toward the signal receiving device 45 that may then be coupled to the central processor device of the exerciser 1 in order to actuate or operate the resistive devices 13, 15 or retarding devices or resistance applying devices or magnetic braking devices for the exerciser 1 and/or to increase or to decrease the resistance applied to the foot pedals 11 and/or the handles 20.

[0031] It is to be noted that the signal generating de-

vices 42 may also be arranged or directed toward the signal receiving device 45 directly without being refracted by the refractive member 44, and the signal receiving device 45 may also receive the light or signal from the signal generating devices 42 in order to actuate the central processor device of the exerciser 1 to operate the resistive devices 13, 15 or retarding devices or resistance applying devices or magnetic braking devices for the exerciser 1.

[0032] Accordingly, the exerciser handle includes a control device for controlling such as the resistive devices and/or the retarding devices and/or the resistance applying devices for the exerciser or exercising mechanism or the like.

Claims

1. An exerciser comprising:

a handle including an exercise arm having a barrel provided on an upper portion of said exercise arm, said barrel including a bore formed therein, a handle element including an axle extended therefrom and rotatably engaged into said bore of said barrel for allowing said handle element to be rotated relative to said barrel of said exercise arm with said axle,

a signal generating device attached to said handle element and directed into said bore of said barrel for generating a signal into said bore of said barrel, and

a signal receiving device disposed in said exercise arm for receiving the signal generated by said signal generating device even when said signal generating device and said handle element are rotated relative to said barrel of said exercise arm.

2. The exerciser as claimed in claim 1, wherein said handle includes a bracket disposed in said exercise arm for supporting said signal receiving device.

3. The exerciser as claimed in claim 1, wherein said handle includes a refractive member disposed in said barrel of said exercise arm for refracting the signal generated by said signal generating device toward said signal receiving device.

4. The exerciser as claimed in claim 3, wherein said refractive member includes a circular shape and engaged onto said axle.

5. The exerciser as claimed in claim 1, wherein said handle element includes an orifice formed therein for receiving said signal generating device.

6. The exerciser as claimed in claim 5, wherein said handle element includes a flap folded from a first end portion of said handle element, and said orifice is formed in said flap.

7. The exerciser as claimed in claim 5, wherein said axle is extended from said flap.

8. The exerciser as claimed in claim 1, wherein said handle element includes a hand grip extended from said handle element for being grasped by a user.

9. The exerciser as claimed in claim 8, wherein said handle element includes a circuit board disposed in said hand grip and electrically coupled to said signal generating device, and at least one button electrically coupled to said circuit board for actuating said signal generating device, said handle element further includes at least one battery disposed in said hand grip for energizing said signal generating device, and said handle includes a casing engaged with said handle element for covering and shielding said at least one button, and having an opening formed in said casing for engaging with said hand grip, and having at least one aperture formed therein for engaging with said at least one button; said casing includes a depression formed therein and communicating with said opening for engaging with a lid.

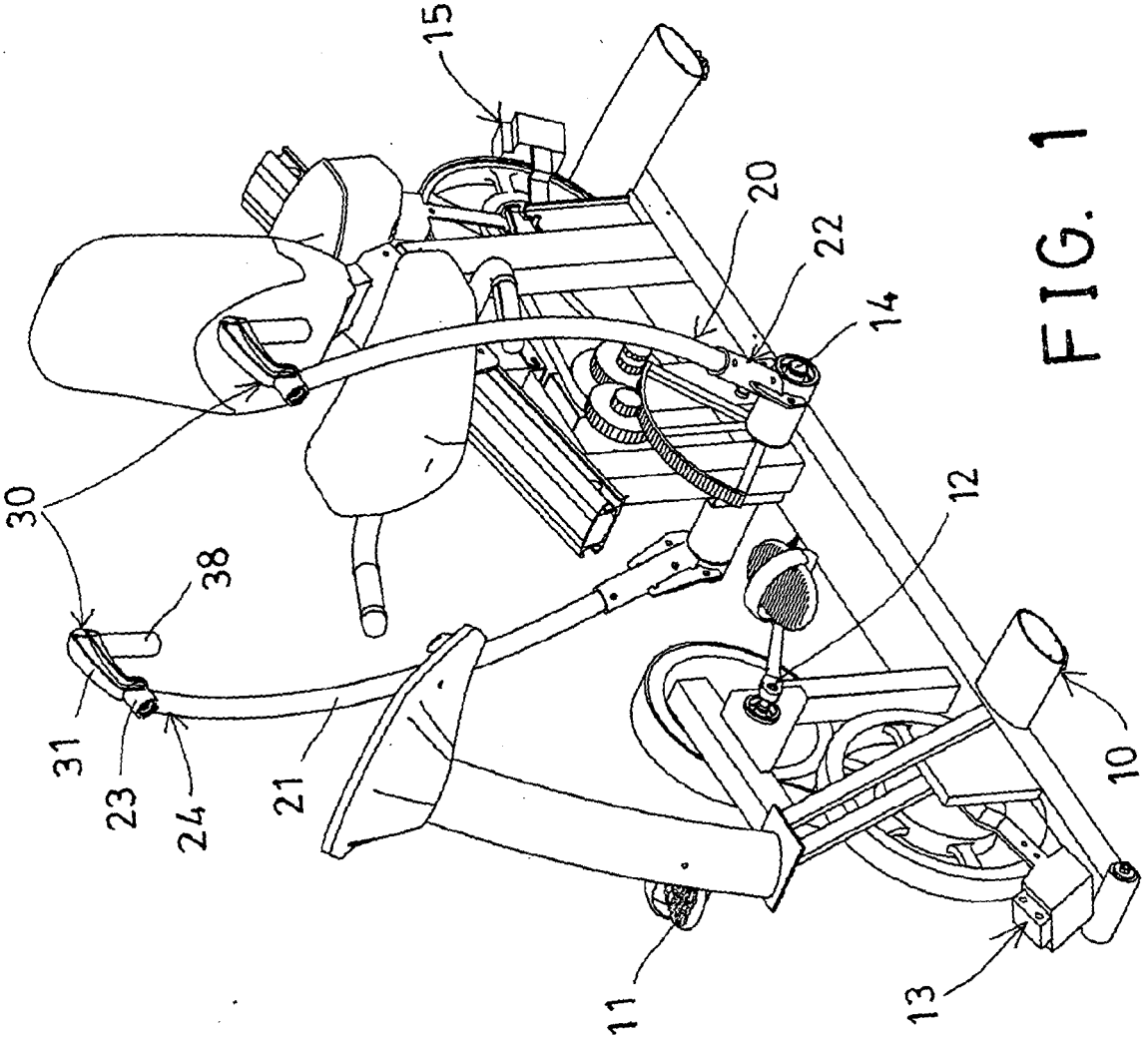

FIG. 1

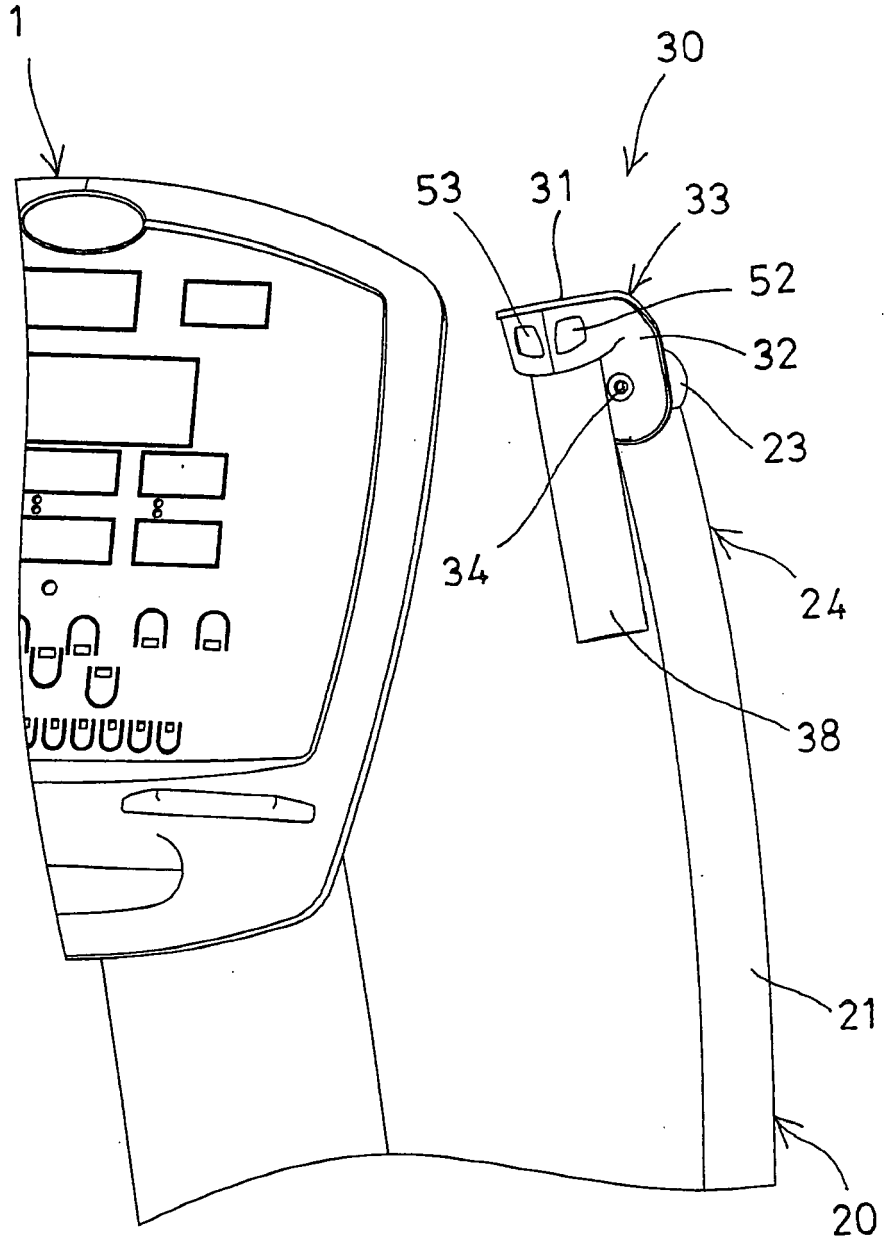

FIG. 2

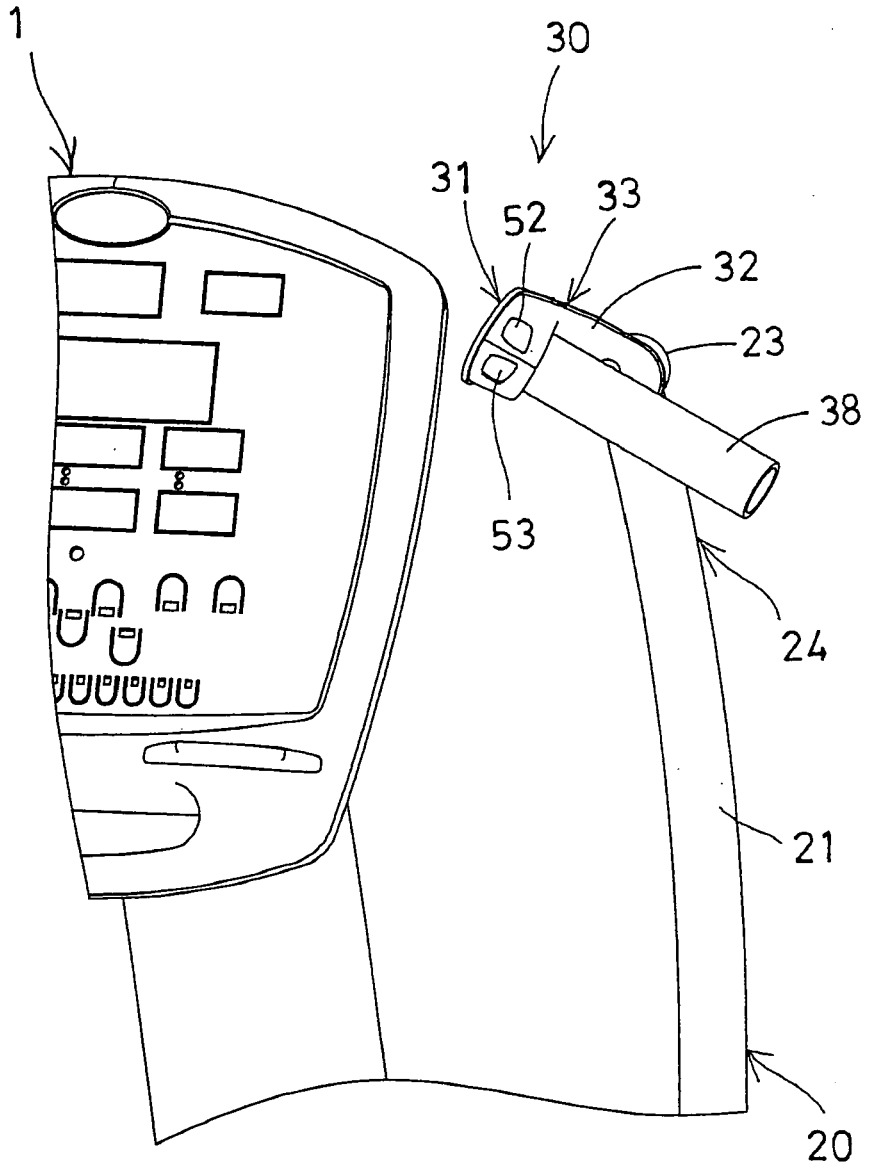

FIG. 3

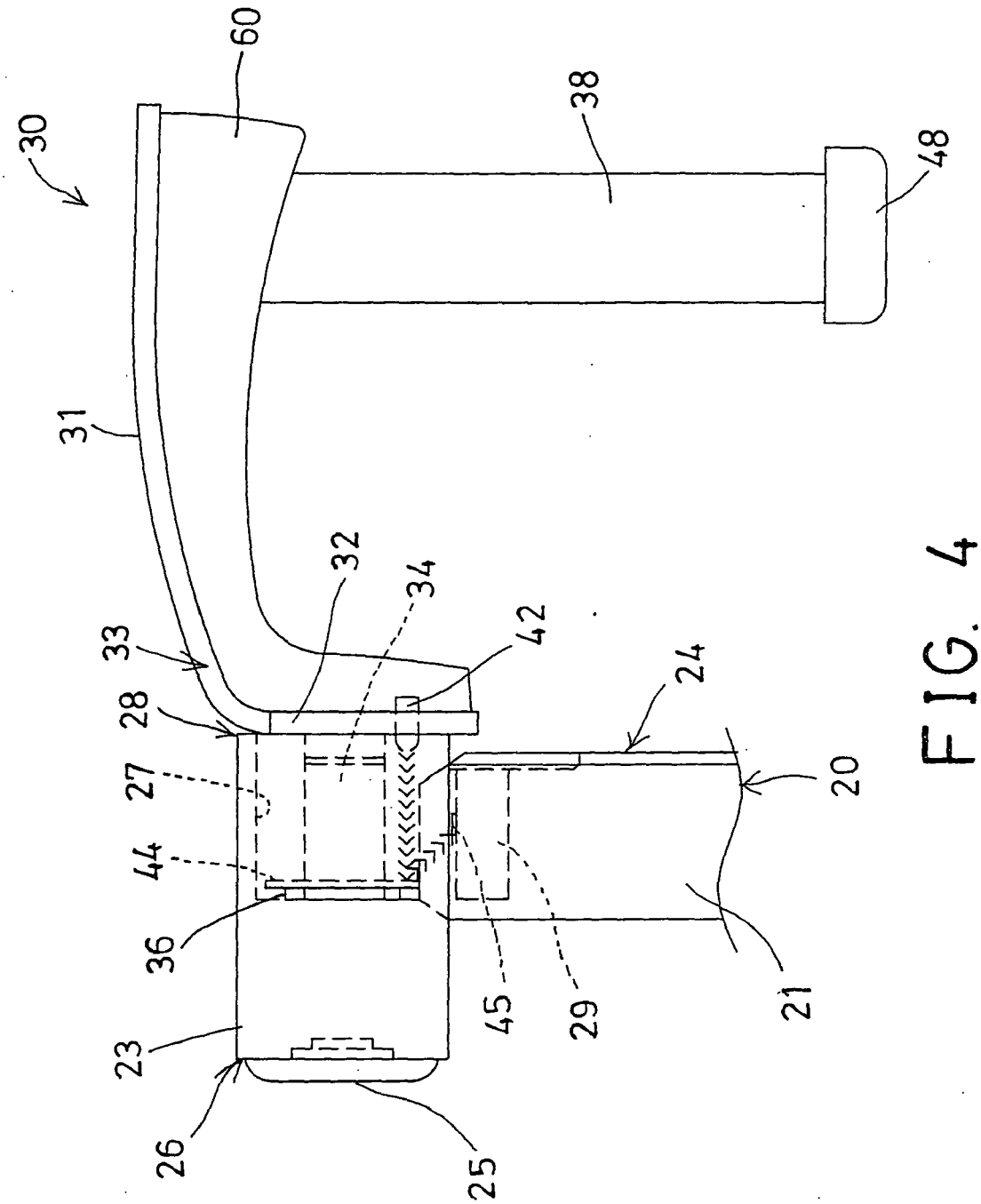

FIG. 4

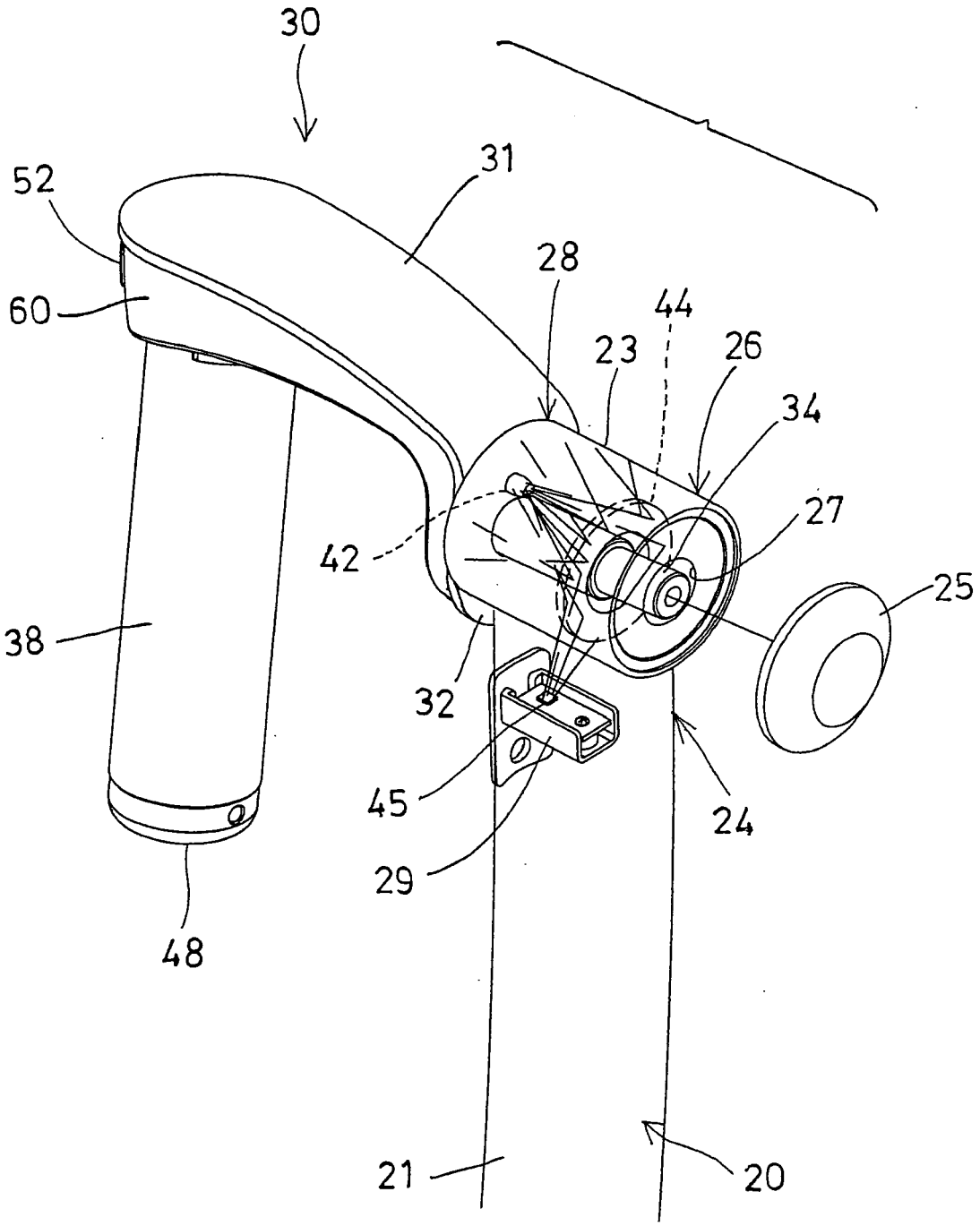

FIG. 5

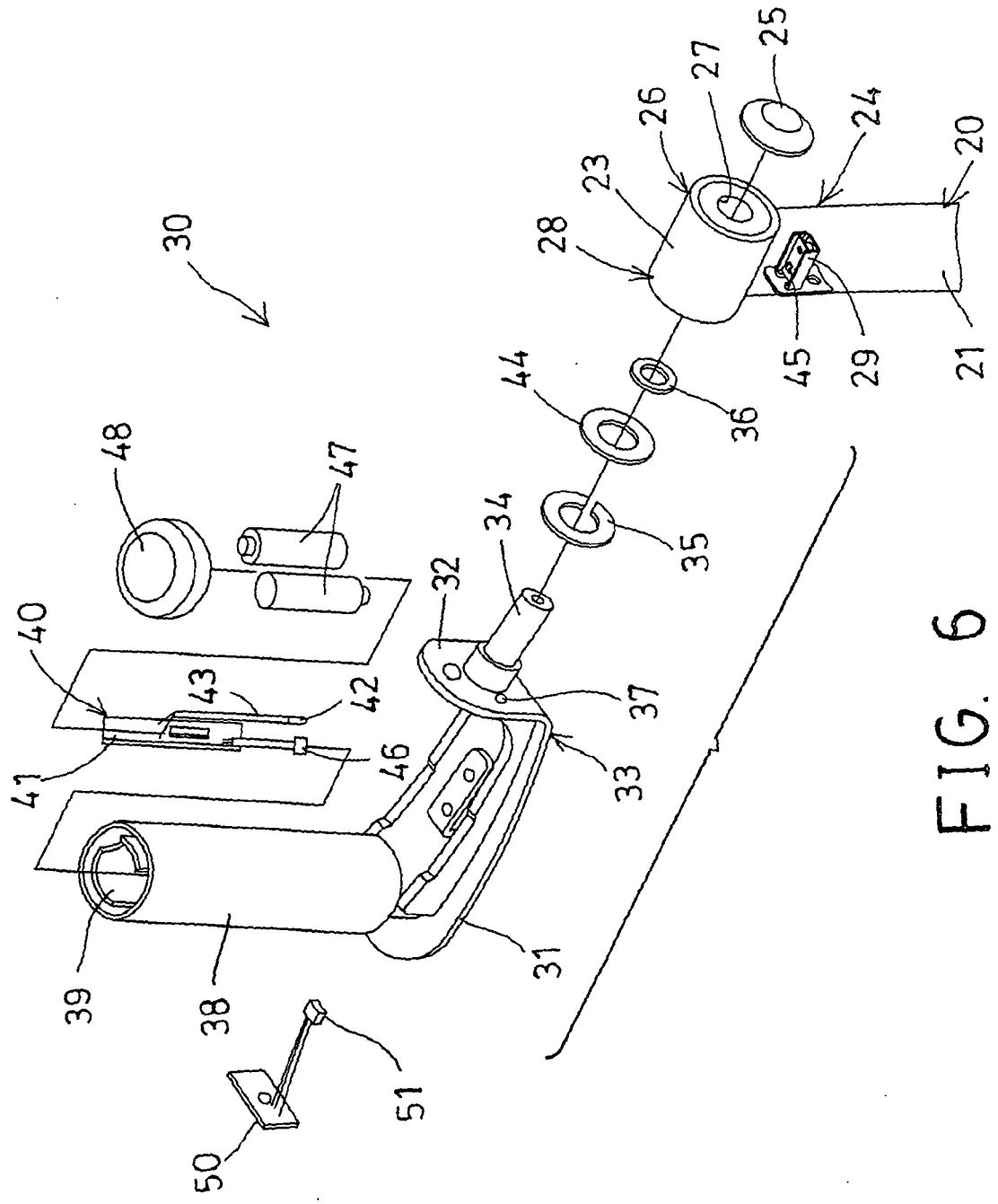
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FIG. 6

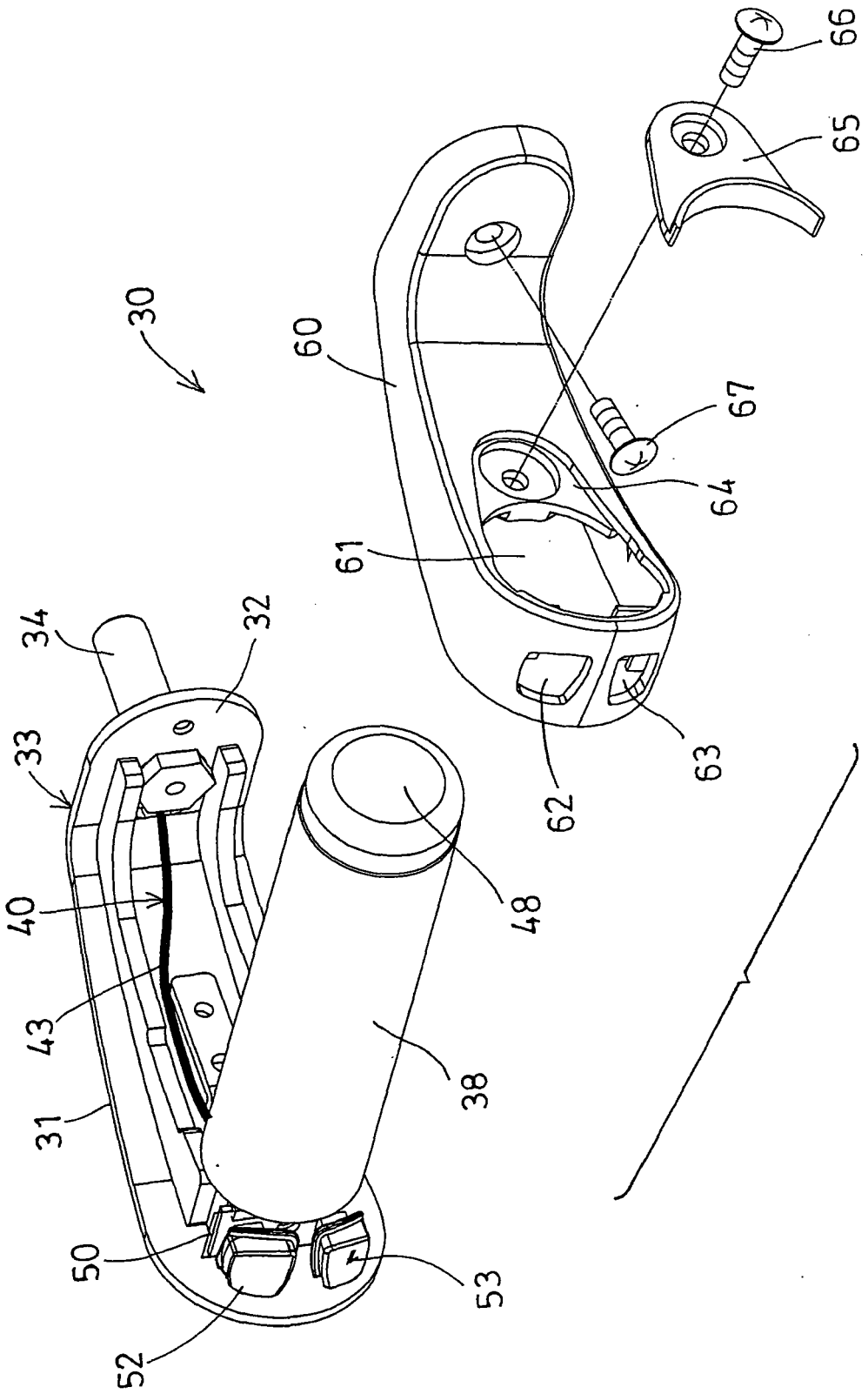

FIG. 7

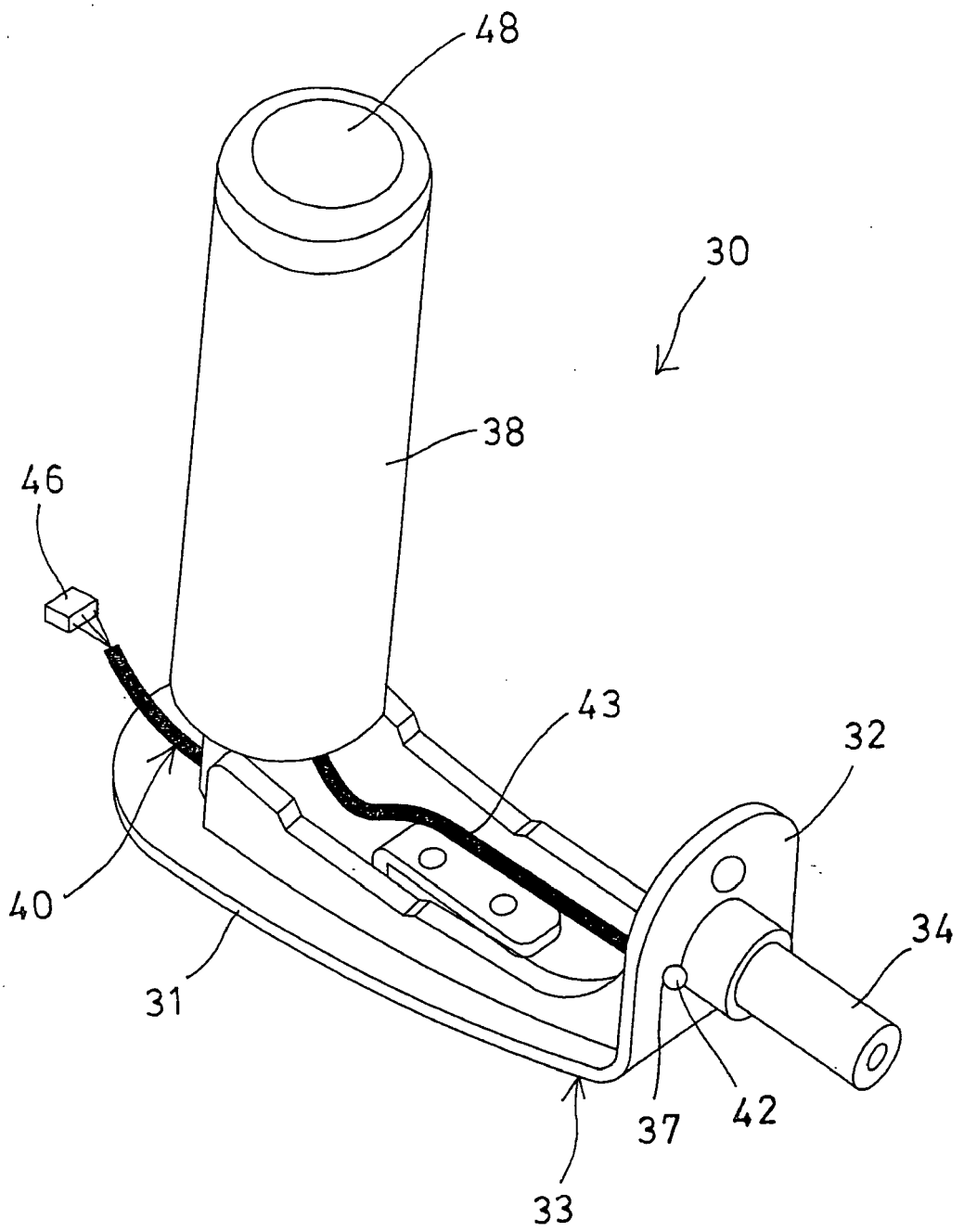

FIG. 8

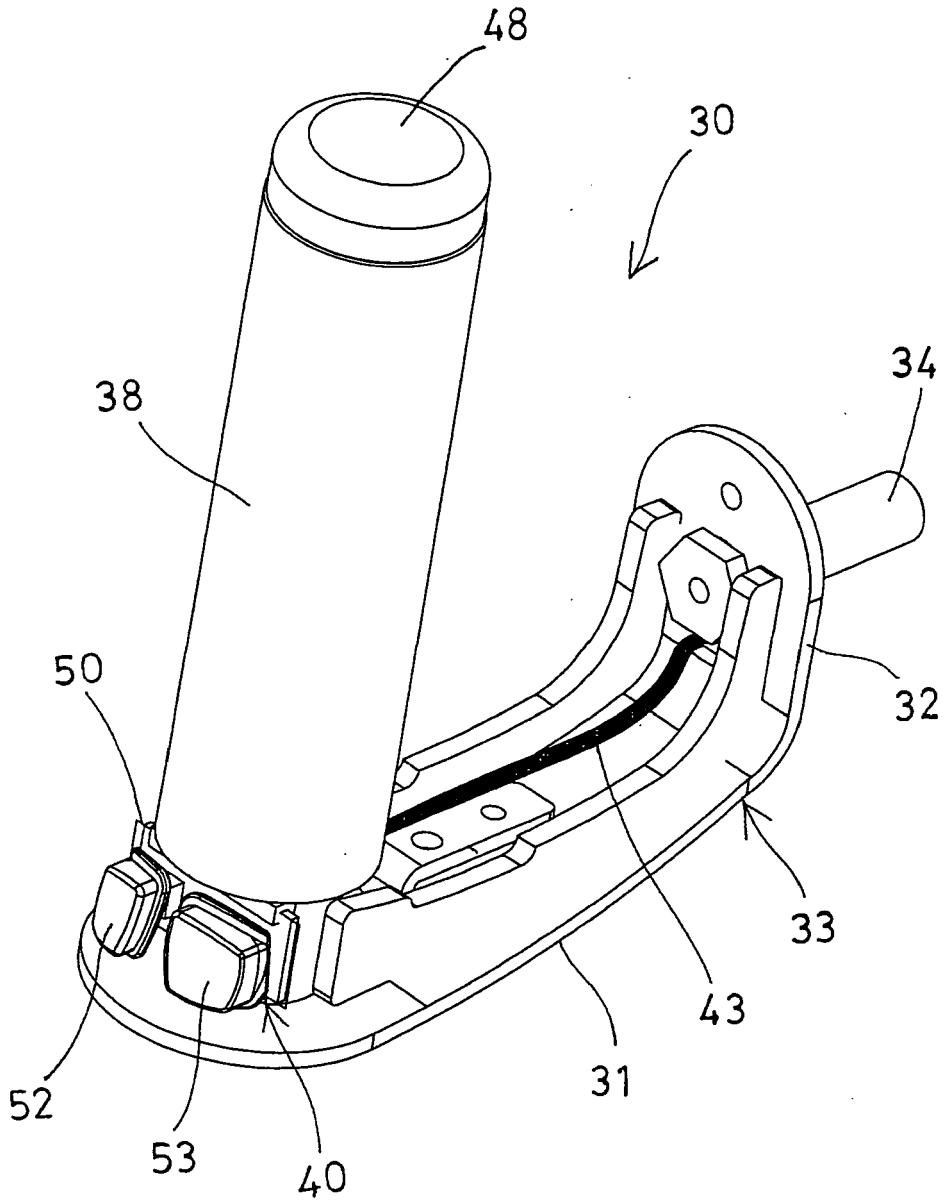

FIG. 9

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 07 02 2764

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,D	EP 1 700 622 A (KUO HAI PIN [TW]) 13 September 2006 (2006-09-13) * the whole document * -----	1	INV. A63B24/00 A63B23/035 ADD. H01H9/06

TECHNICAL FIELDS SEARCHED (IPC)

A63B
G06F
H01H
G05G

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	23 April 2008	Millward, Richard

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 07 02 2764

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23-04-2008

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 1700622 A	13-09-2006	NONE	

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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