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(54) Emergency switch for an exercise apparatus

(57) The invention relates to an emergency switch for an exercise apparatus having a housing, a safety plug and a microswitch. The safety plug passes through an insertion slot of the housing and is inwardly inserted to the inside of the housing for an electric connection by means of the contact of the distal end of an extension part of the safety plug to a contact key of the microswitch. Meanwhile, an electric disconnection is created

when the safety plug is extracted. In addition, a cut-off button with a push rod is interposed between the safety plug and the microswitch. Besides, the cut-off button projects outwardly from the housing. When the cut-off button is pressed down, the push rod makes use of its slanting guide face to separate the safety plug from the contact key of the microswitch into a disconnection state.

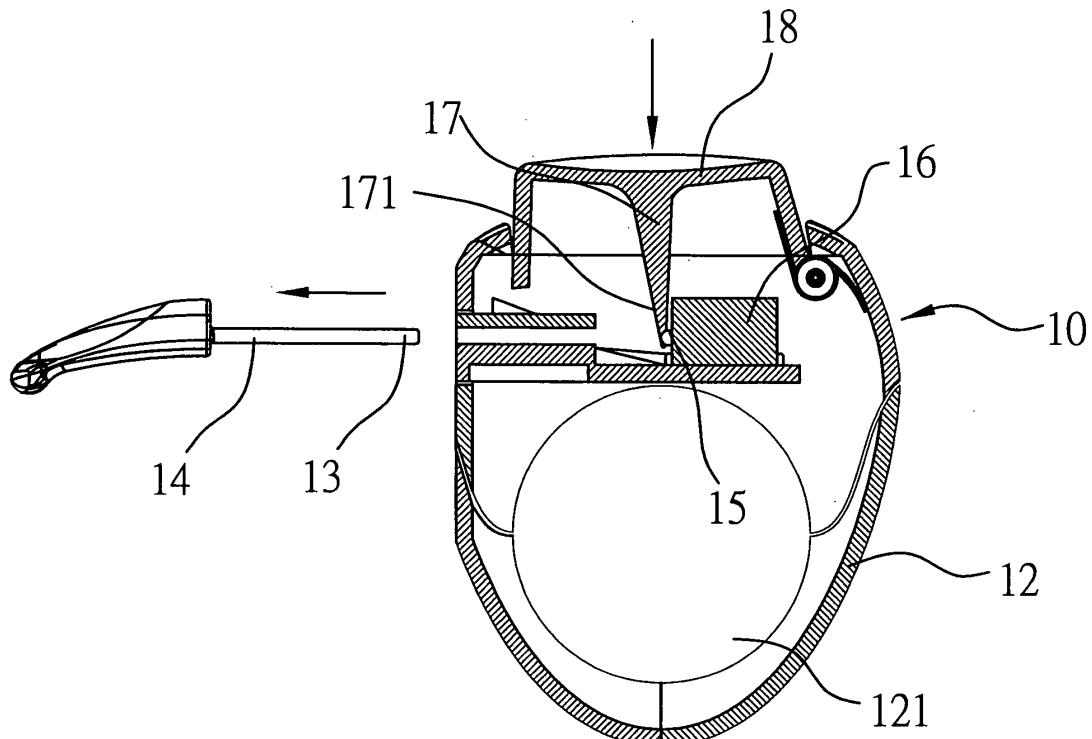


FIG.3

Description

[0001] The invention relates to an emergency switch for an exercise apparatus, and more particularly, to a switch combining a safety plug and a cut-off button in dual mode for disconnection of power supply in an emergency. Therefore, the safety in using the exercise apparatus is more ensured.

[0002] Most of the conventional exercise apparatus (e.g. treadmill, oval-track exercise device, etc.) driven by electric motor include an emergency switch in the circuit controller (so-called electric console) for an immediate cutoff of the power supply to stop the motor, thereby ensuring the safety of the operator.

[0003] The most common way to disconnect power supply is to utilize a safety plug in cooperation with a microswitch having a contact key. An electric connection and disconnection is established by contact and separation of the both elements, respectively. However, the safety plug has to be connected with a band and a clamping element, and the other end of the clamping element is fixed at a certain place of the operator's body. Thus, the safety plug is extracted from the contact with the contact key of the microswitch, thereby cutting off the power supply when the clamping element or the band is outwardly pulled by an external force in an emergency.

[0004] However, it's uncomfortable and inconvenient for operators to fix the clamping element to their body so that many people don't want to use it. Consequently, the conventional emergency switch doesn't work in an emergency.

[0005] Another type of emergency switch includes a cut-off button on the electric control panel for replacing the above-mentioned safety plug. However, it's difficult for operator in an emergency to press down this emergency button duly and correctly. Therefore, the use of this kind of emergency switch is a little risky.

[0006] In light of the demerits of the prior art, the invention provides an emergency switch for an exercise apparatus that aims to combine the above-mentioned conventional emergency switches in one apparatus and to provide a useful alternative.

[0007] A primary objective of the invention is to provide an emergency switch for an exercise apparatus having a movable safety plug and a fixed cut-off button. In case of emergency, the operator can take either measure for an immediate disconnection of power supply. Therefore, the safety of the operator during the exercise session is more ensured.

[0008] Therefore, a cut-off button with a push rod is interposed between the safety plug and the microswitch. Besides, the cut-off button projects outwardly from the housing. When the cut-off button is pressed down, the push rod makes use of its slanting guide face to separate the safety plug from the contact key of the microswitch into a disconnection state.

[0009] The accomplishment of this and other objects

of the invention will become apparent from the following description and its accompanying drawings of which:

5 FIG. 1 is a cutaway view of a preferred embodiment of the invention;

FIG. 2 is a perspective view of the preferred embodiment of the invention in accordance with FIG. 1;

10 FIG. 3 is a cutaway view of the preferred embodiment of the invention with the extracted safety plug; and

15 FIG. 4 is a schematic drawing of the invention mounted on a mounting tube of the electric console for an exercise apparatus.

[0010] Referring to FIGS. 1 and 2, a preferred embodiment of the invention is shown. From the figures, an 20 individually operated circuit system is provided for establishing an electric connection or disconnection of power supply to a motor (not shown). The emergency switch 10 of the invention includes a housing 12, a safety plug 14 and a microswitch 16. The safety plug 14 passes 25 through an insertion slot 11 of the housing 12 and is inwardly inserted to the inside of the housing 12 for an electric connection by means of the contact of the distal end of an extension part 13 of the safety plug 14 to a contact key 15 of the microswitch 16. Meanwhile, an 30 electric disconnection is created when the safety plug 14 is extracted.

[0011] In addition, a cut-off button 18 with a push rod 17 is interposed between the safety plug 14 and the microswitch 16. Besides, the cut-off button 18 projects outwardly from the housing 12. When the cut-off button 18 is pressed down, the push rod 17 makes use of its slanting guide face 171 to separate the safety plug 14 from the contact key 15 of the microswitch 16 into a disconnection state (see FIG. 3).

[0012] Of course, the housing 12 includes a through hole for putting the emergency switch 10 on a mounting tube 122 of the exercise apparatus. This is a basic installation technique so that no further descriptions are given hereinafter.

[0013] Furthermore, as shown in FIG. 4, the emergency switch 10 of the invention is integrated in a circuit controller 20 (or electric console). In addition to a conventional control panel 22, the circuit controller 20 further contains the cut-off button 18 and the safety plug 14 of the invention.

[0014] The microswitch 16 and the circuit controller 20 are commercially available and have been widely applied to all kinds of exercise apparatuses. Moreover, the operational principle and the circuit connection thereof 55 belong to the prior art. Therefore, no further descriptions are given hereinafter, either.

[0015] After the cut-off button 18 is pressed down to force the safety plug 14 in disconnection with the contact

key 15 of the microswitch 16, the exercise apparatus can be running again only when the operator brings the safety plug 14 to its original position for a closed circuit. In this way, the exercise apparatus can be more safely used and an unintentional activation of the exercise apparatus can be avoided.

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Claims

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1. An emergency switch (10) for an exercise apparatus comprising:

a) a housing (12);

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b) a microswitch (16) disposed within the housing (12);

c) a safety plug (14) passing through an insertion slot (11) of the housing and being inwardly inserted to the inside of the housing for an electric connection by means of the contact of the distal end of an extension part (13) of the safety plug (14) to a contact key (15) of the microswitch while an electric disconnection is created in extracting the safety plug; and

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d) a cut-off button (18) with a push rod (17) interposed between the safety plug (14) and the microswitch (16), the cut-off button (18) projecting outwardly from the housing (12), the push rod having a slanting guide face (171);

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whereby, when the cut-off button (11) is pressed down, the push rod (17) makes use of its slanting guide face (171) to separate the safety plug (14) from the contact key (15) of the microswitch (16) into a disconnection state.

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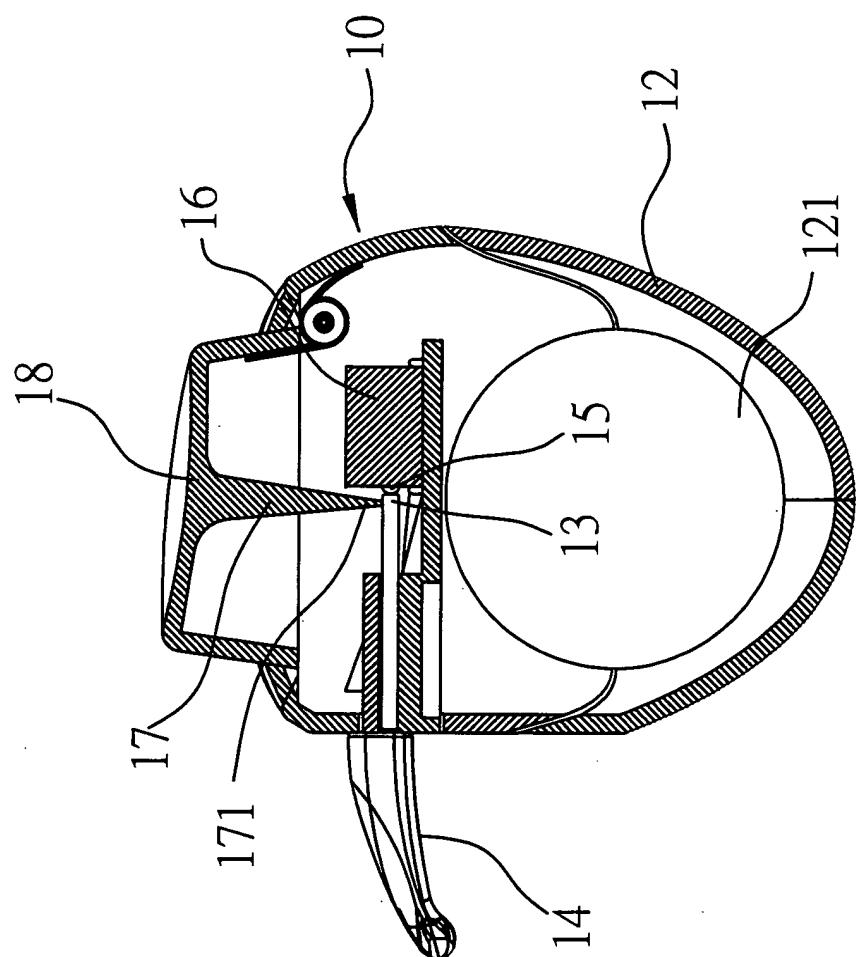
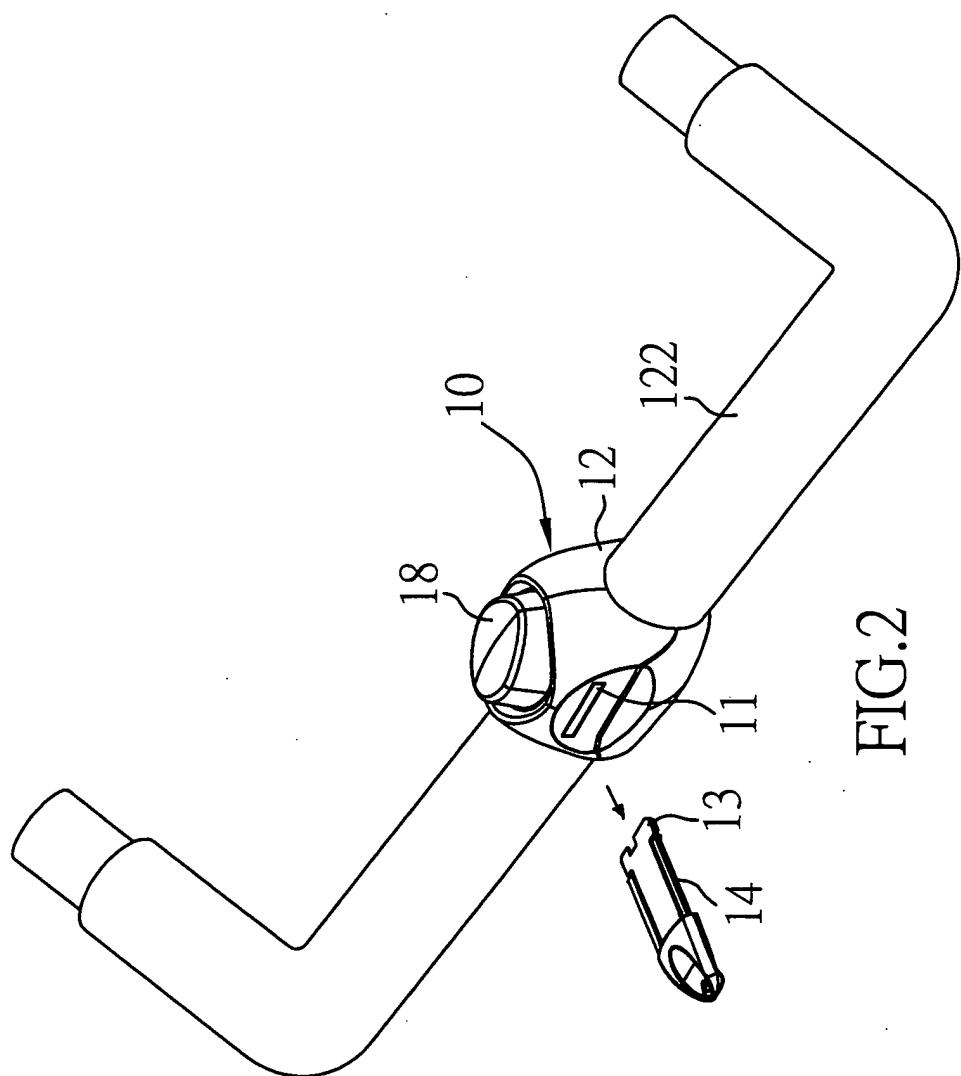


FIG.1



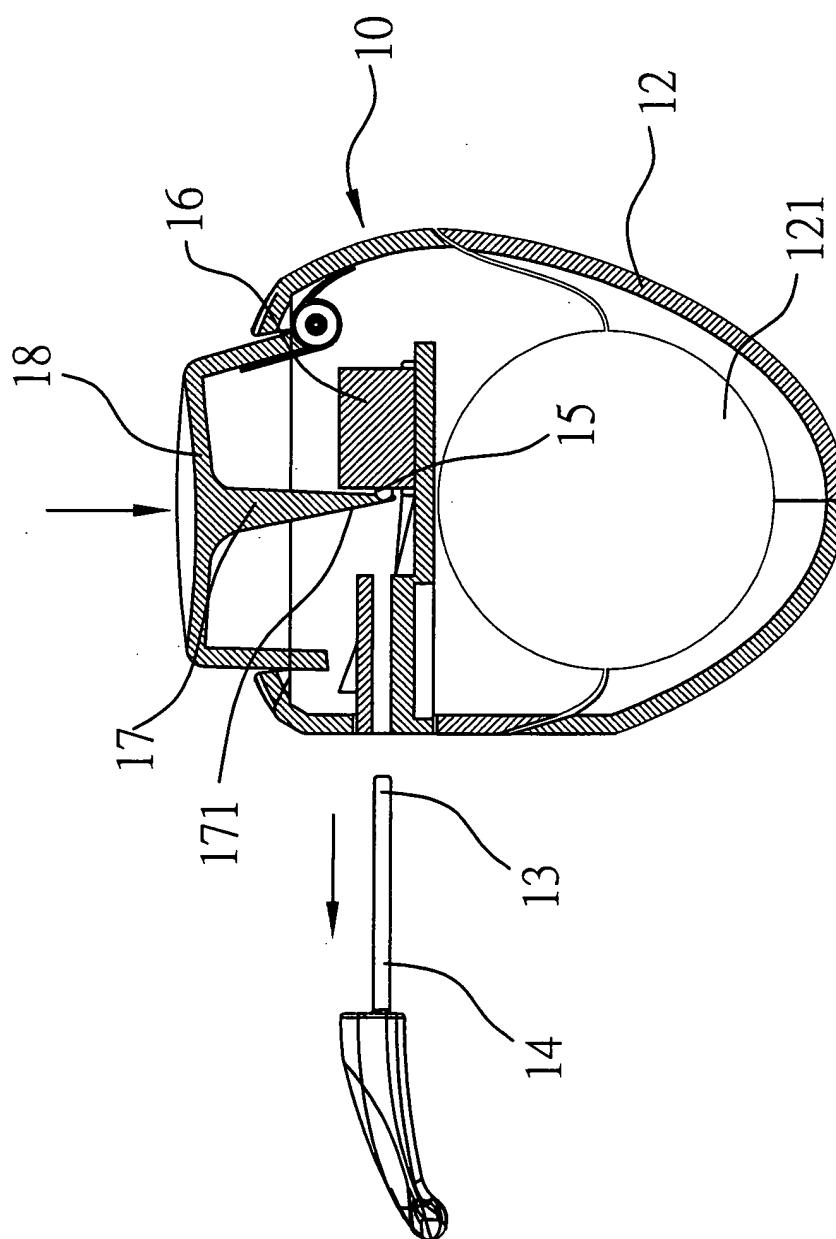


FIG.3

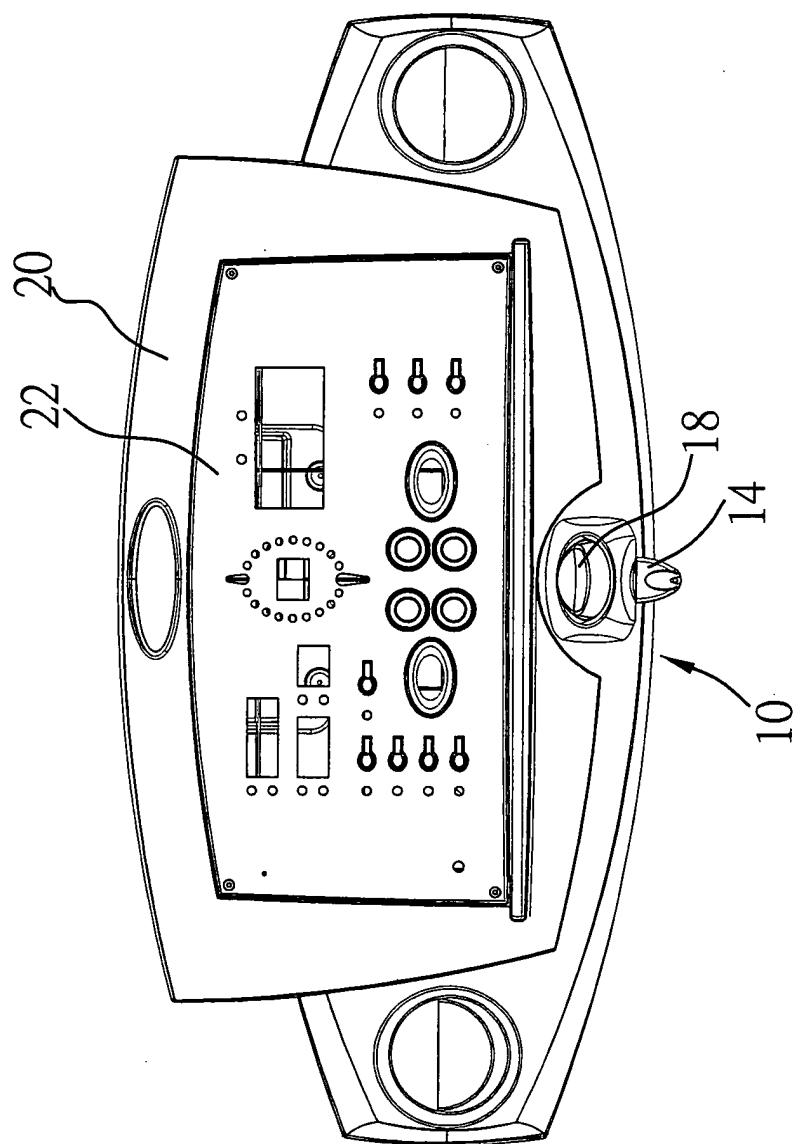


FIG.4



DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
X	WO 01/80265 A (INGLEDEW PETER ; JESSUP ADRIAN GEORGE (GB)) 25 October 2001 (2001-10-25) * the whole document *	1	H01H3/02 H01H27/00
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			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			H01H H01R
The present search report has been drawn up for all claims			
1	Place of search The Hague	Date of completion of the search 12 August 2004	Examiner Ruppert, H
CATEGORY OF CITED DOCUMENTS		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	
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			

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EP 04 00 3965

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 The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

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