

Title (en)  
MULTIFUNCTIONAL PHYSICAL EXERCISING APPARATUS AND PROCESS FOR CONTROLLING IT.

Title (de)  
GERÄT FÜR VERSCHIEDENE ARTEN VON KÖRPERÜBUNGEN UND VERFAHREN ZUM STEUERN EINES SOLCHEN GERÄTES.

Title (fr)  
APPAREIL D'EXERCICES PHYSIQUES A MODES MULTIPLES ET PROCEDE DE COMMANDE D'UN TEL APPAREIL.

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Application  
**EP 88907341 A 19880823**

Priority  
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Abstract (en)  
[origin: WO8901769A1] A physical exercising apparatus comprises an exercising element (100) displaced by a user, a motor device (120) which controls the movement of the exercising element by applying to it a counter-reaction force, control means (300, 310, 320) which pilot the motor device according to a predetermined sequence which associates each position reached by the exercising element with a value of the rate of displacement and/or a value of the counter-reaction force. The process for controlling the apparatus comprises cycles which consist in provoking, during displacement of the exercising element according to the initial predetermined sequence, an abrupt forward and/or backward movement between 0.1 and 5 degrees, and then in continuing the displacement of the element according to the initial displacement sequence. The apparatus thereby permits an excitation of the gamma innervation loop during the exercises.

Abstract (fr)  
Un appareil d'exercices physiques comprend un élément d'exercice (100) déplacé par un utilisateur, un dispositif moteur (120) contrôlant le mouvement de l'élément d'exercice en lui appliquant une force en contre-réaction, des moyens de commande (300,310,320) pilotant le dispositif moteur selon une séquence prédéterminée qui associe, à chaque position atteinte par l'élément d'exercice une valeur de vitesse de déplacement et/ou une valeur de force de contre-réaction. Le procédé de commande de cet appareil comprend des cycles qui consistent à provoquer, lors du déplacement de l'élément d'exercice selon la séquence prédéterminée initiale, un brusque mouvement en avant et/ou en arrière compris entre 0,1 et 5 degrés, puis à poursuivre le déplacement de l'élément selon la séquence de déplacement initiale. Cet appareil permet, ainsi, une excitation de la boucle d'innervation  $\gamma$  pendant les exercices. Abstract A physical exercising apparatus comprises an exercising element (100) displaced by a user, a motor device (120) which controls the movement of the exercising element by applying to it a counter-reaction force, control means (300, 310, 320) which pilot the motor device according to a predetermined sequence which associates each position reached by the exercising element with a value of the rate of displacement and/or a value of the counter-reaction force. The process for controlling the apparatus comprises cycles which consist in provoking, during displacement of the exercising element according to the initial predetermined sequence, an abrupt forward and/or backward movement between 0.1 and 5 degrees, and then in continuing the displacement of the element according to the initial displacement sequence. The apparatus thereby permits an excitation of the  $\gamma$  innervation loop during the exercises.

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