

1/17 © EPODOC / EPO

- PN - [US2021260440](#) A1 20210826
- PNFP - US11577124 B2 20230214
- PR - US201962899069P 20190911; US202016749564 20200122; US202117316253 20210510
- AP - US202117316253 20210510
- DT - **
- CT - || STSE (A1 B2)
[US3708167](#) A 19730102 [] (POTGIETER J);
[US3752473](#) A 19730814 [] (LALANNE J);
[US3861675](#) A 19750121 [] (HOPPER ROBERT THORENZ);
[US4111414](#) A 19780905 [] (ROBERTS EDWARD A);
[US5433289](#) A 19950718 [] (O'ROURKE MICHAEL J [CA]);
[US2008011545](#) A1 20080117 [] (TURNER NINA L [US]);
[US7540045](#) B2 20090602 [] (NATIV AVINOAM [CA]);
[US2009258761](#) A1 20091015 [] (QUINN ANTHONY [IE]);
[US7621847](#) B2 20091124 [] (LAMLE STEWART [US], et al);
[US8147389](#) B1 20120403 [] (HOOLE RICHARD J [US]);
[US2017232289](#) A1 20170817 [] (POUCHET GREGORY KELVIN [US]);
[US2020384306](#) A1 20201210 [] (CARTER THOMAS CHRISTOPHER [US], et al)
- CCI - [A63B1/00](#) ; [A63B21/00181](#) ; [A63B21/068](#) ; [A63B21/4007](#) ; [A63B21/4009](#) ;
[A63B21/4035](#) ; [A63B23/1218](#)
- CI - A63B1/00 (EP, US)
- A63B21/00181 (EP, US)
- A63B21/068 (EP, US)
- A63B21/4007 (EP)
- A63B21/4009 (EP)
- A63B21/4035 (EP, US)
- A63B23/1218 (EP, US)
- PA - (A1 B2)
WILDER BRYANT [US]
- TI - (A1)
CHIN-UP/PULL-UP EXERCISE APPARATUS
- (B2)
Chin-up/pull-up exercise apparatus
- AB - (A1 B2)
A chin-up/pull-up exercise apparatus is disclosed. The exercise apparatus includes a frame, an overhead assist module, and a chin bar. The chin bar is connected to the frame. The overhead assist module includes a set of pulleys, a **harness**, and a counter-weight. The set of pulleys, which is connected to the frame, is positioned vertically above the chin bar. The counter-weight is connected to the **harness** via a cable traveling on the set of pulleys. The exercise machine enables real, full arm extension pull ups regardless of one's upper body strength with applications for physical therapy; physical exercise training; muscle, tendon, and joint **rehabilitation**; and upper and lower body strength building.

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- PN - [US2021220700](#) A1 20210722
- PNFP - US11083933 B1 20210810

PR	- US202016749564 20200122
AP	- US202016749564 20200122
DT	- *; Rep
CT	- STSE (B1) US3874657 A 19750401 [] (NIEBOJEWSKI FRANK J); US4111414 A 19780905 [] (ROBERTS EDWARD A); US4431184 A 19840214 [] (LEW HYOK S [US], et al); US4619453 A 19861028 [] (PLUMRIDGE LAWRENCE H C [ZA]); US4974836 A 19901204 [] (HIRSCH DAVID E [US]); US5050869 A 19910924 [] (FRATE RICHARD A [US]); US5372556 A 19941213 [] (ROPP JOHN D [US]); US5403253 A 19950404 [] (GAYLORD MITCHELL J [US]); US5423730 A 19950613 [] (HIRSCH DAVID E [US]); US5588940 A 19961231 [] (PRICE ERIC M [US], et al); US2002084139 A1 20020704 [] (RICHARD LIONEL [FR], et al); US2007161469 A1 20070712 [] (LAMLE STEWART [US], et al); US2009258761 A1 20091015 [] (QUINN ANTHONY [IE]); US7621847 B2 20091124 [] (LAMLE STEWART [US], et al); US7867144 B2 20110111 [] (QUINN ANTHONY [IE]); US2016354669 A1 20161208 [] (ROZENBERG ISRAEL [BR]); US2018021623 A1 20180125 [] (BRENDLE DOUGLAS [US]); US2019224524 A1 20190725 [] (SAADALLAH FADI [CH])
CCI	- A63B1/00 ; A63B21/00181 ; A63B21/068 ; A63B21/4007 ; A63B21/4009 ; A63B21/4035 ; A63B23/1218
CI	- A63B1/00 (EP, US) - A63B21/00181 (EP, US) - A63B21/068 (EP, US) - A63B21/4007 (EP) - A63B21/4009 (EP) - A63B21/4035 (EP, US) - A63B23/1218 (EP, US)
PA	- (A1 B1) WILDER BRYANT [US]
TI	- (A1) CHIN-UP/PULL-UP EXERCISE APPARATUS - (B1) Chin-up/pull-up exercise apparatus
AB	- (A1 B1) A chin-up/pull-up exercise apparatus is disclosed. The exercise apparatus includes a frame, an overhead assist module, and a chin bar. The overhead assist module includes a set of pulleys, a harness , and a counter-weight. The set of pulleys is connected to a first vertical location of the frame. The counter-weight is connected to the harness via a cable traveling on the set of pulleys. The chin bar is connected to a second vertical location of the frame. The exercise machine enables real, full arm extension pull ups regardless of one's upper body strength with applications for physical therapy; physical exercise training; muscle, tendon, and joint rehabilitation ; and upper and lower body strength building.

PN - [US2020197743](#) A1 20200625

PR - US201916720408
20191219; US201862781967P
20181219

AP - US201916720408 20191219

DT - *; Rep

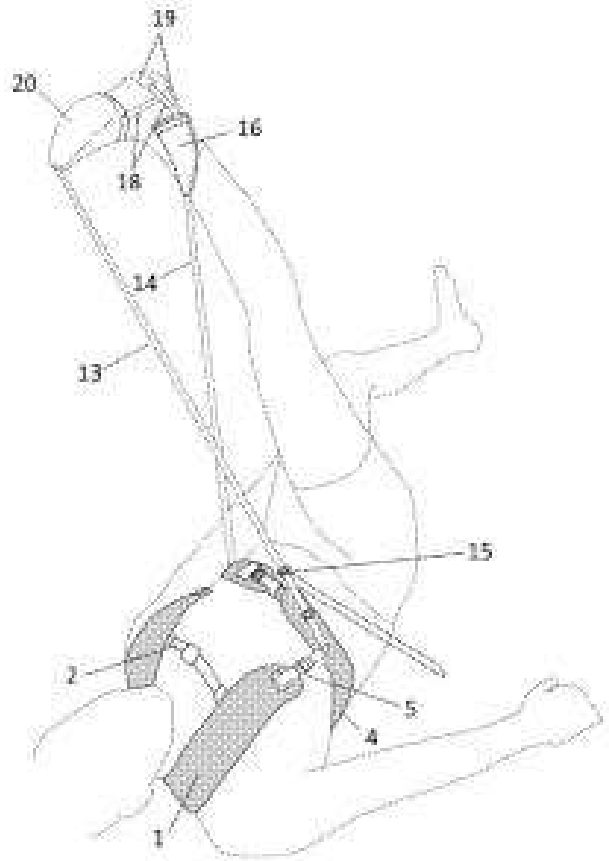
CCI - [A61H1/0237](#) ; [A61H1/0266](#) ;
[A63B21/00185](#) ;
[A63B21/151](#) ; [A63B21/4007](#) ;
[A63B21/4015](#) ;
[A63B21/4025](#) ;
[A63B21/4034](#) ;
[A63B23/03508](#) ;
[A63B23/03541](#) ;
[A63B23/0405](#)

CCA - [A61H2001/0248](#) ;
[A61H2001/027](#) ;
[A61H2201/1253](#) ;
[A61H2201/1276](#) ;
[A61H2201/1614](#) ;
[A61H2201/1619](#) ;
[A61H2201/1642](#) ;
[A61H2201/165](#) ;
[A63B2023/006](#) ;
[A63B2209/10](#) ; [A63B2225/09](#)

CI - A61H1/0237 (EP, US)
A61H1/0266 (EP)
A63B21/00185 (EP, US)
A63B21/151 (EP, US)
A63B21/4007 (EP, US)
A63B21/4015 (EP, US)
A63B21/4025 (EP, US)
A63B21/4034 (EP, US)
A63B23/03508 (EP, US)
A63B23/03541 (EP, US)
A63B23/0405 (EP, US)

CA - A61H2001/0248 (EP)
A61H2001/027 (EP)
A61H2201/1253 (EP)
A61H2201/1261 (US)
A61H2201/1276 (EP)
A61H2201/1614 (EP)
A61H2201/1619 (EP)
A61H2201/1642 (EP)
A61H2201/165 (EP)
A63B2023/006 (EP, US)
A63B2209/10 (EP)
A63B2225/09 (EP)

PA - BIELE TEO [US]



- TI - STRETCHING APPARATUS AND METHOD OF STRETCHING
- AB - A hands-free human exercise apparatus and method, including a method of use. The stretching apparatus and method promote beneficial stretching of ambulatory muscles for a broad spectrum of users, to maintain and increase flexibility and dexterity, improved joint health, mobility, or pain management, and facilitating greater balance and proprioception and stimulating **rehabilitation**. The apparatus includes a multi-directional, multi-configurable, and adjustable **harness** comprising a one or dual strap configuration having a unique multi joint activating foot anchor. The apparatus and method facilitate stretching of a single leg, or both legs, through the ambulatory chain of muscles and joints, and with the foot anchor exploiting the flexion of the spine, full extension of the leg and pelvis, and the full flexion of the user's foot.

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- PN - [CN210674098U](#) U 20200605
- PR - CN201921351507U 20190820
- AP - CN201921351507U 20190820
- DT - I
- PA - BEIJING FUSHOU MEDICAL EQUIPMENT TECH CO LTD
- TI - Mobile training device
- AB - The utility model discloses a mobile training device, which relates to the technical field of **rehabilitation** therapy and can comprise a suspension system, a training platform and a posture control device. The suspension system comprises a frame, and an opening is formed in the front end of the frame. The training platform is arranged at the lower part in the frame and is used for human body training; wherein the posture control device is worn on a human body, and the posture control device is connected with the frame; a sliding rail and a tackle are further arranged on the frame, the tackle is arranged on the sliding rail in a sliding mode, a suspension device is installed on the tackle, and the suspension device is connected

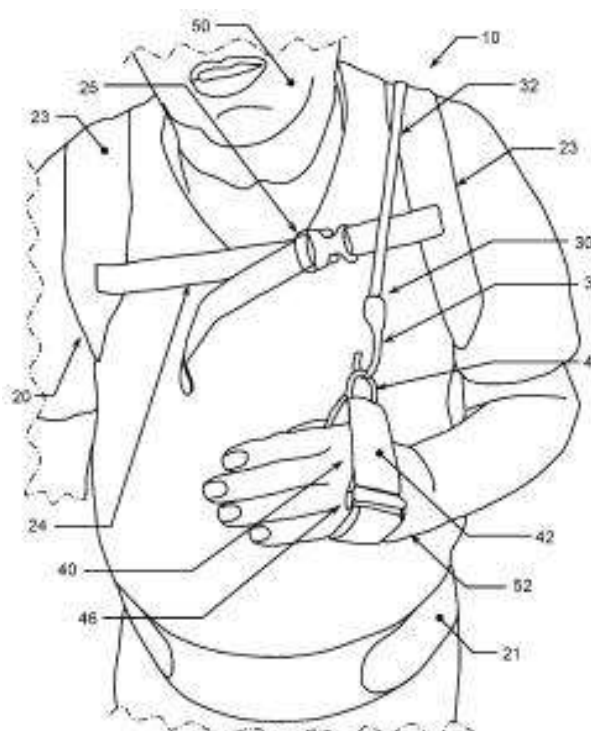
with the posture control **harness**. According to the mobile training device, the posture control guiding training technology is used for achieving the purpose of limb dysfunction recovery in an active movement mode.

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- PN - [CN110354447](#) A 20191022
- PR - CN201910768114 20190820
- AP - CN201910768114 20190820
- DT - I
- CI - A63B21/00181 (CN)
- A63B22/00 (CN)
- CA - A63B2022/0092 (CN)
- A63B2220/80 (CN)
- PA - BEIJING FUSHOU MEDICAL EQUIPMENT TECH CO LTD
- TI - Movement training device
- AB - The invention discloses a movement training device, and relates to the technical field of **rehabilitation** treatment. The movement training device can comprise a suspension system, a training platform and a posture control **harness**; the suspension system comprises a frame; an opening is formed in the front end of the frame; the training platform is arranged below the frame and is used for human body training; the posture control **harness** is worn on a human body; the posture control **harness** is connected with the frame; a sliding rail and a pulley are further arranged on the frame; the pulley is arranged on the sliding rail in a sliding mode; a suspension device is mounted on the pulley; and the suspension device is connected with the posture control **harness**. According to the movement training device disclosed by the invention, the purpose of restoring limb dysfunction is achieved by utilizing an active movement mode of a posture control guide training technology.

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- PN - [US2019105524](#) A1 20190411
- PR - US201816214075 20181208
- AP - US201816214075 20181208
- DT - *; Rep
- CT - || STSE (A1)
[US5203754](#) A 19930420
[A] (MACLEAN COLIN R [US]);
[US5306222](#) A 19940426
[A] (WILKINSON WILLIAM T [US]);
[US5362295](#) A 19941108
[A] (NURGE WILLIAM [US]);
[US5813955](#) A 19980929
[Y] (GUTKOWSKI THADDEUS EDWARD [US], et al)
[Y] 1-20
* claim 2 | Figure 1 | claim 3 |
Figure 3 | claim 4 | claim 5 |
claim 6 | Figure 3, 140, 142,
144, 146 | claim 7 | claim 8 |
claim 9 | claim 10 | claim 11



	claim 12 claim 13 claim 14 claim 15 claim 16 claim 17 claim 18 claim 19 claim 20 *; US2005261113 A1 20051124 [A] (WILKINSON WILLIAM T [US]); US2005282689 A1 20051222 [A] (WEINSTEIN ALAN S [US]); US2006040805 A1 20060223 [Y] (WILKINSON WILLIAM T [US]) [Y] 1-20 * Figure 2 claim 2 claim 9 claim 14 *; US8968166 B2 20150303 [A] (CRANKE CHRISTOPHER T [US]); US9295869 B2 20160329 [A] (WASHINGTON NAQAM [US]); US10195475 B2 20190205 [A] (SCHREIBER DANIEL [US], et al)
CCI	- A63B21/0442 ; A63B21/0557 ; A63B21/4025 ; A63B23/1209
CCA	- A63B21/00069 ; A63B21/4005 ; A63B21/4019 ; A63B2209/10
CI	- A61H1/0277 (US) - A63B21/0442 (EP, US) - A63B21/0557 (EP, US) - A63B21/4025 (EP, US) - A63B23/1209 (EP, US)
CA	- A61H1/0281 (US) - A63B21/00069 (EP, US) - A63B21/4005 (EP, US) - A63B21/4019 (EP, US) - A63B2209/10 (EP, US)
PA	- WHITAKER KOREY K [US]
TI	- Rehabilitation and Mobility Improvement Apparatus and Method of Use
AB	- The present invention is a rehabilitation and mobility improvement apparatus (RMIA) and method of use for use in providing increased mobility in persons having reduced strength and mobility

due to for instance injury or illness. The RMIA preferably defines a user wearable **harness** having at least one stretchable bungee cord and an appendage support device. The appendage support device is placed on a mobility reduced appendage (MRA) of the user allowing the user to exercise the MRA without needing to support the entire weight of the MRA. The RMIA is adjustable so as to alter resistance, to exercise a different MRA, and to accommodate users of different sizes.

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- PN - [KR20190012986](#) A 20190211
- PNFP - KR101958908B B1 20190315
- PR - KR20170096819 20170731
- AP - KR20170096819 20170731
- DT - I
- CT - || STSE (A)
[KR20160016263](#) A 20160215 [] (LG ELECTRONICS INC [KR]);
[KR101453482B](#) B1 20141023 [] (CHONBUK NAT UNIVERSITY AUTOMOBILE PARTS & MOLD TECHNOLOGY INNOVATION CT [KR]);
[KR101688016B](#) B1 20161220 [] (KANG SHIN HYUN [KR], et al);
[KR101764061B](#) B1 20170802 [] (KONYANG UNIV IND COOP GROUP [KR]);
[KR20160015463](#) A 20160215 [] (UNIV KOREA RES & BUS FOUND [KR]);
[KR20160061557](#) A 20160601 [] (NAT REHABILITATION CT [KR]);
[JP2002345994](#) A 20021203 [] (HITACHI LTD);
[KR101628117B](#) B1 20160608 []
- CCI - [A43B3/38](#) ; [A43B17/00](#)
- CI - A43B3/38 (EP)
A43B17/00 (EP)
A63B21/4009 (KR)
A63B22/02 (KR)
A63B24/0062 (KR)
A63B24/0087 (KR)
A63B71/0622 (KR)
- CA - A63B2220/40 (KR)
A63B2220/52 (KR)
A63B2220/56 (KR)
A63B2220/833 (KR)
A63B2225/50 (KR)
- PA - (A)

- TI - (A B1)
A DYNAMIC **HARNESS REHABILITATION** TRAINING SYSTEM BASED MOTION RECOGNITION
- AB - (A)
Provided is a motion recognition based dynamic **harness rehabilitation** training system. According to an embodiment of the present invention, the motion recognition based dynamic **harness rehabilitation** training system comprises a gait training device, a smart insole, a smart mirror device, and a terminal. The gait training device has a guide rail to be moved while supporting a user, senses position change of the user, and provides a suitable gait position to the user. The smart insole is positioned in each of left and right plantar surfaces of the user, senses plantar pressure and plantar change of the user, and provides tactile stimulation to the user. The smart mirror device senses posture change of the user, and overlaps and displays information related to a gait training figure of the user and information related to gait training of the user. The terminal collects information related to the position change, information related to the plantar pressure and the plantar change, and the information related to the posture change, analyzes balance of the user, and provides the analysis result to the user. The present invention can increase interest of the user.

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- PN - [WO2019116093](#) A1 20190620
- PR - IN201741045051 20171214
- AP - WO2018IB01516 20181129
- DT - **
- CT - |EP| ISR (A1)
[US2008287268](#) A1 20081120 [Y] (HIDLER JOSEPH [US])
[Y] 3,4,6,7
* paragraph [0074] - paragraph [0094]; figures 16-20,30 *;
[CN101791255](#) A 20100804 [XY] (UNIV SHANGHAI JIAOTONG)
[X] 1,2,5
* figures 1,2; claims 1-10 *
[Y] 3,4,6,7;
[WO2014153201](#) A1 20140925 [Y] (ALTERG INC [US])
[Y] 7
* paragraph [0103] *;
[WO2016005367](#) A1 20160114 [XY] (HOCOMA AG [CH])
[X] 1,2,5
* figures 1-19; claims 1-13 *
[Y] 3,4,6,7;
[WO2016126851](#) A1 20160811 [Y] (GORBEL INC [US])
[Y] 6,7
* paragraph [0229] - paragraph [0235] *;
[WO2016149891](#) A1 20160929 [XY] (INST AUTOMATION CAS [CN])
[X] 1,2,5
* figures 1-5; claims 1-10 *
[Y] 3,4,6,7;
[CN106618941](#) A 20170510 [Y] (UNIV NANKAI)
[Y] 3,4
* figures 1,2; claims 1-3 *;
[WO2018045460](#) A1 20180315 [XP] (TREXO ROBOTICS INC [CA])

[XP] 1,2,5-7* figures 1-10; claims 1-35 *

CCI	- A61H1/024 ; A61H1/0244 ; A61H1/0262 ; A61H1/0266 ; A61H3/008 ; A61H3/04 ; A63B21/00178 ; A63B23/04 ; A63B23/0405 ; A63B69/0064
CCA	- A61H2201/1215 ; A61H2201/123 ; A61H2201/1652 ; A61H2201/1676 ; A61H2201/5007 ; A61H2201/5012 ; A61H2201/5035 ; A61H2201/5053 ; A61H2201/5064 ; A61H2201/5069 ; A61H2203/0406 ; A61H2230/605
CI	- A61H1/024 (EP, US) - A61H1/0244 (EP, US) - A61H1/0262 (EP, US) - A61H1/0266 (EP, US) - A61H3/008 (EP, US) - A61H3/04 (EP, US) - A63B21/00178 (EP, US) - A63B23/04 (EP, US) - A63B23/0405 (EP, US) - A63B69/0064 (EP, US) - G16H20/30 (US) - G16H50/20 (US)
CA	- A61H2003/007 (US) - A61H2003/043 (US) - A61H2201/1215 (EP, US) - A61H2201/123 (EP, US) - A61H2201/149 (US) - A61H2201/163 (US) - A61H2201/1642 (US) - A61H2201/1652 (EP, US) - A61H2201/1659 (US) - A61H2201/1676 (EP, US) - A61H2201/5007 (EP, US) - A61H2201/5012 (EP, US) - A61H2201/5035 (EP, US) - A61H2201/5053 (EP, US) - A61H2201/5058 (US) - A61H2201/5064 (EP, US) - A61H2201/5069 (EP, US) - A61H2203/0406 (EP, US) - A61H2230/605 (EP, US)
PA	- BIONIC YANTRA PRIVATE LTD [IN]
TI	- APPARATUS AND SYSTEM FOR LIMB REHABILITATION
AB	- A robotic limb rehabilitation apparatus and system for a lower limb in a human being is disclosed. The apparatus comprises of a mobile-frame, dynamic weight unloading mechanism and lower extremity exoskeleton device. The mobile-frame structure is constructed using first and second vertical structural support members connected by a horizontal cross bar/beam to which a boom arm assembly is attached. During the rehabilitation exercises the user is secured with a harness and lower extremity exoskeleton device for safe movements. An intelligent algorithm, embedded onto a dedicated processor, actuates various motors to execute the prescribed exercises, while the sensors provide dynamic feedback for corrective

measures to control the exercise routine.

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- PN - [KR101866217B](#) B1 20180611
- PR - KR20170096241 20170728
- AP - KR20170096241 20170728
- DT - I
- CT - || STSE (B1)
[KR101453482B](#) B1 20141023 [] (CHONBUK NAT UNIVERSITY AUTOMOBILE PARTS & MOLD TECHNOLOGY INNOVATION CT [KR]);
[KR101688016B](#) B1 20161220 [] (KANG SHIN HYUN [KR], et al);
[KR20160015463](#) A 20160215 [] (UNIV KOREA RES & BUS FOUND [KR]);
[JP2016209014](#) A 20161215 [] (SHARP KK)
- CI - A63B21/4007 (KR)
- A63B22/02 (KR)
- A63B22/20 (KR)
- A63B24/0087 (KR)
- A63B71/0622 (KR)
- CA - A63B2220/56 (KR)
- A63B2225/54 (KR)
- PA - NAT UNIV CHONBUK IND COOP FOUND [KR]
- TI - A RAIL **HARNESS REHABILITATION** SYSTEM USING A SMART INSOLE
- AB - According to the present invention, a rail **harness rehabilitation** system comprises a walking **rehabilitation** device for the walking training of a user and an insole arranged on the bottom of a user's foot. The walking **rehabilitation** device includes: a moving body to move along a guide rail arranged on a ceiling or in the air; a support **harness** worn on the body of the user to support the user; and a connection wire in which one end thereof is connected to the moving body, and the other end thereof is connected to the support **harness**. The insole includes: a sensor unit to detect motion acceleration of the foot bottom and an angle of the foot bottom with respect to the ground; a vibration unit arranged on a front foot portion and a rear foot portion to supply a tactile stimulus to an area of the foot bottom to come in contact with the ground when the user walks; a communication unit to transmit sensing information of the sensor unit; a battery to supply power to drive the insole; and a wireless patch to wirelessly charge the battery. Accordingly, three-direction acceleration and a three-direction angle of the foot bottom can be measured. Big data for a walking pattern of the user are constructed by the measured data. The big data can be used to provide a fall caution advance warning through vibration feedback.

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- PN - [US2017246069](#) A1 20170831
- PNFP - US10299981 B2 20190528
- PR - US201461967016P 20140307; US201515242988 20150305; US201514639247 20150305; WO2015US18852 20150305
- AP - US201515242988 20150305
- DT - **
- CT - || R141 (A1)
[US3450132](#) A 19690617 [] (RAGON CARL A, et al);

[US4422452](#) A 19831227 [] (BURTON CHARLES V [US]);
[US4639955](#) A 19870203 [] (CARMINATI ARMELLE [FR], et al);
[US5308359](#) A 19940503 [] (LOSSING WALLACE W [US]);
[US5406658](#) A 19950418 [] (OLKKONEN KARI [FI], et al);
[US6685658](#) B1 20040203 [] (DIETZ VOLKER [CH], et al);
[US2004157708](#) A1 20040812 [] (MATTHEWS GEORGE J [US]);
[US2006128537](#) A1 20060615 [] (PHILIPS EDWARD H [US]);
[US7163492](#) B1 20070116 [] (SOTIRIADES ALEKO D [US]);
[US2008113853](#) A1 20080515 [] (JANG SUK HWAN [KR]);
[US2010042022](#) A1 20100218 [] (KIM NAM GYUN [KR], et al);
[US7802331](#) B2 20100928 [] (BROWN BOBBY [US], et al);
[US7846080](#) B2 20101207 [] (BOREN JOHN P [US]);
[US2011143898](#) A1 20110616 [] (TREES DARIN [US]);
[US2015290072](#) A1 20151015 [] (SINGHAL BALRAJ [NZ]);
[US9248071](#) B1 20160202 [] (BENDA SCOTT [US], et al);
[US9616282](#) B2 20170411 [] (THOLKES ALAN [US], et al)

- || STSE (A1)

[US3450132](#) A 19690617 [A] (RAGON CARL A, et al);
[US4422452](#) A 19831227 [X] (BURTON CHARLES V [US])
 [X] 32, 34-35

* Claim 32 | Fig. 1 Col 2-3 Lines 60-19 | Claim 34 | Fig. 1 Col 60-19 | Claim 35 | *;

[US4639955](#) A 19870203 [A] (CARMINATI ARMELLE [FR], et al);
[US5308359](#) A 19940503 [A] (LOSSING WALLACE W [US]);
[US5406658](#) A 19950418 [A] (OLKKONEN KARI [FI], et al);
[US6685658](#) B1 20040203 [A] (DIETZ VOLKER [CH], et al);
[US2004157708](#) A1 20040812 [A] (MATTHEWS GEORGE J [US]);
[US2006128537](#) A1 20060615 [A] (PHILIPS EDWARD H [US]);
[US7163492](#) B1 20070116 [A] (SOTIRIADES ALEKO D [US]);
[US2008113853](#) A1 20080515 [A] (JANG SUK HWAN [KR]);
[US2010042022](#) A1 20100218 [A] (KIM NAM GYUN [KR], et al);
[US7802331](#) B2 20100928 [A] (BROWN BOBBY [US], et al);
[US7846080](#) B2 20101207 [A] (BOREN JOHN P [US]);
[US2011143898](#) A1 20110616 [A] (TREES DARIN [US]);
[US2015290072](#) A1 20151015 [A] (SINGHAL BALRAJ [NZ]);
[US9248071](#) B1 20160202 [A] (BENDA SCOTT [US], et al);
[US9616282](#) B2 20170411 [A] (THOLKES ALAN [US], et al)

- || STSE (B2)

[US3450132](#) A 19690617 [] (RAGON CARL A, et al);
[US4422452](#) A 19831227 [] (BURTON CHARLES V [US]);
[US4639955](#) A 19870203 [] (CARMINATI ARMELLE [FR], et al);
[US5308359](#) A 19940503 [] (LOSSING WALLACE W [US]);
[US5406658](#) A 19950418 [] (OLKKONEN KARI [FI], et al);
[US6685658](#) B1 20040203 [] (DIETZ VOLKER [CH], et al);
[US2004157708](#) A1 20040812 [] (MATTHEWS GEORGE J [US]);
[US2006128537](#) A1 20060615 [] (PHILIPS EDWARD H [US]);
[US7163492](#) B1 20070116 [] (SOTIRIADES ALEKO D [US]);
[US2008113853](#) A1 20080515 [] (JANG SUK HWAN [KR]);
[US2010042022](#) A1 20100218 [] (KIM NAM GYUN [KR], et al);
[US7802331](#) B2 20100928 [] (BROWN BOBBY [US], et al);
[US7846080](#) B2 20101207 [] (BOREN JOHN P [US]);
[US2011143898](#) A1 20110616 [] (TREES DARIN [US]);
[US2015290072](#) A1 20151015 [] (SINGHAL BALRAJ [NZ]);
[US9248071](#) B1 20160202 [] (BENDA SCOTT [US], et al);

[US9616282](#) B2 20170411 [] (THOLKES ALAN [US], et al)

- CCI - [A61H1/0262](#)
- CCA - [A61H2001/0211](#) ; [A61H2201/0142](#) ; [A61H2201/0157](#) ; [A61H2201/10](#) ;
[A61H2201/107](#) ; [A61H2201/1215](#) ; [A61H2201/1409](#) ; [A61H2201/1481](#) ;
[A61H2201/1607](#) ; [A61H2201/1614](#) ; [A61H2201/1621](#) ; [A61H2201/1638](#) ;
[A61H2201/1642](#) ; [A61H2201/1652](#) ; [A61H2201/50](#) ; [A61H2201/5046](#) ;
[A61H2201/5048](#) ; [A61H2201/5064](#) ; [A61H2203/0406](#)
- CI - A61G7/018 (US)
- A61G7/1046 (US)
- A61G7/1051 (US)
- A61H1/0262 (EP, US)
- A61H1/0274 (US)
- A61H3/008 (US)
- A63B21/225 (US)
- A63B21/4007 (US)
- A63B21/4034 (US)
- A63B21/4035 (US)
- A63B22/001 (US)
- A63B22/0023 (US)
- A63B22/0664 (US)
- A63B23/03575 (US)
- CA - A61H2001/0211 (EP, US)
- A61H1/0237 (US)
- A61H2003/007 (US)
- A61H2201/0142 (EP, US)
- A61H2201/0157 (EP, US)
- A61H2201/10 (EP, US)
- A61H2201/107 (EP, US)
- A61H2201/1215 (EP, US)
- A61H2201/1409 (EP, US)
- A61H2201/1481 (EP, US)
- A61H2201/1607 (EP, US)
- A61H2201/1614 (EP, US)
- A61H2201/1621 (EP, US)
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- A61H2201/1642 (EP, US)
- A61H2201/1652 (EP, US)
- A61H2201/50 (EP, US)
- A61H2201/5046 (EP, US)
- A61H2201/5048 (EP, US)
- A61H2201/5064 (EP, US)
- A61H2203/0406 (EP, US)
- A63B2022/0676 (US)
- PA - (A1 B2)
KALINOWSKI EUGENE [US]
- TI - (A1)
MOTORIZED AIR WALKER AND SUSPENSION SYSTEM FOR PARALYZED PERSONS
- (B2)

Motorized air walker and suspension system for paralyzed persons

AB

- (A1)
A system for patient **rehabilitation** is disclosed. The system includes a first movable frame including an articulating bed, wherein the bed is configured to be selectively articulated to an inclined position, a suspension system, wherein the suspension system is disposed within the articulating bed and is selectively adjustable to accommodate varying patient height, a **harness**, wherein the **harness** is selectively engageable with the suspension system, wherein the **harness** is selectively adjustable to accommodate varying patient sizes, a second movable frame including a walker, wherein the walker includes a pair of legs and a motor, wherein approximation of the two movable frames permits the patient to easily utilize the walker from the bed. A method of using the system for patient **rehabilitation** is also disclosed.
- (B2)
A system for patient **rehabilitation** includes a first movable frame including an articulating bed, wherein the bed is configured to be selectively articulated to an inclined position, a suspension system, wherein the suspension system is disposed within the articulating bed and is selectively adjustable to accommodate varying patient height, a **harness**, wherein the **harness** is selectively engageable with the suspension system, wherein the **harness** is selectively adjustable to accommodate varying patient sizes, a second movable frame including a walker, wherein the walker includes a pair of legs and a motor, wherein approximation of the two movable frames permits the patient to easily utilize the walker from the bed.

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PN

- [WO2017070541](#) A1 20170427

PR

- US201514921078 20151023; US201462076984P 20141107

AP

- WO2016US58219 20161021

DT

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CT

- |US| ISR (A1)
[US5213094](#) A 00000000 [Y] (PETER M. BONUTTI)
[Y] 1-15
* See columns 5-11 and figures 1-4, 13. *
- |US| ISR (A1)
[US5253639](#) A 00000000 [Y] (THOMAS L. JOHNSTON)
[Y] 1-15
* See column 11, lines 39-58, claim 1 and figure 18. *
- |US| ISR (A1)
[US5324245](#) A 00000000 [A] (ANTHONY FONTANA et al.)
[A] 1-15
* See claims 1-3 and figures 1-4. *
- |US| ISR (A1)
[US2004049135](#) A1 00000000 [A] (KEITH E. CALLANAN et al.)
[A] 1-15
* See claims 1-4 and figures 3-4. *
- |US| ISR (A1)
[US2005277527](#) A1 00000000 [A] (DIANE GREGERSON)
[A] 1-15
* See claims 1-5 and figures 1-3. *

CCI

- [A61H1/0237](#) ; [A61H1/0274](#)

CCA

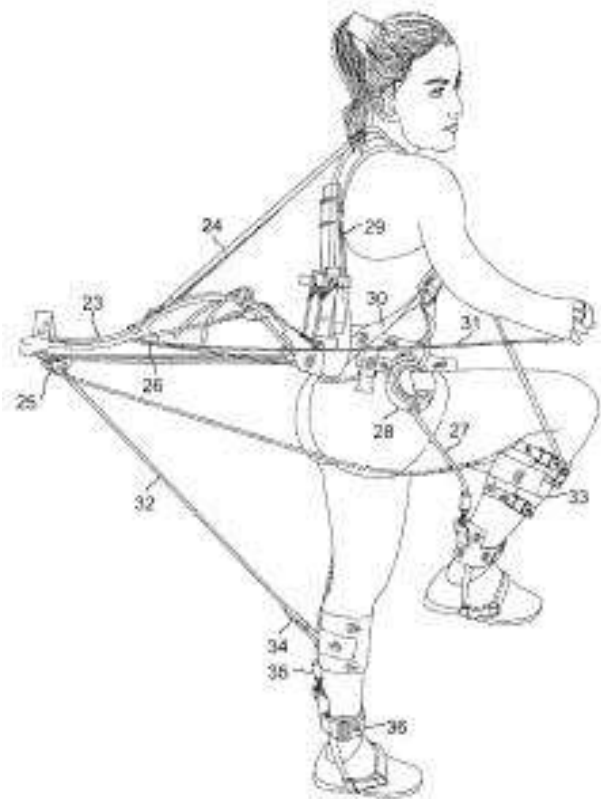
- [A61H2201/1215](#) ; [A61H2201/1253](#) ; [A61H2201/1614](#) ; [A61H2201/1635](#) ;

[A61H2201/164](#)

- CI - A61H1/0237 (EP, US)
- A61H1/0274 (EP, US)
- CA - A61H1/00 (US)
- A61H2201/1215 (EP, US)
- A61H2201/1253 (EP, US)
- A61H2201/1614 (EP, US)
- A61H2201/1635 (EP, US)
- A61H2201/164 (EP, US)
- PA - THOMAS WILLIAM [US]
- TI - JOINT **REHABILITATION** APPARATUS
- AB - A **rehabilitation** apparatus (10) for facilitating joint movement in a patient having a limb with a joint, apparatus (10) including actuation member (12) and actuation strap (14) extending from actuation member (12), actuation member (12) selectively retracting actuation strap (14), actuation strap (14) having strap end (16) engageable with the limb of the patient. Security strap (18) is connected to actuation member (12). When the limb of the patient is engaged with strap end (16) of actuation strap (14) and actuation member (12) retracts actuation strap (14), actuation strap (14) produces a force on the limb. Security strap (18) can be a **harness** receivable about patient's upper torso (50). Apparatus (10) can further include brace (64), the joint of the patient's limb receivable in brace (64), actuation strap (14) engageable with brace (64), actuation strap (14) producing a force on the limb via brace (64).

12/17 © EPODOC / EPO

- PN - [US2016008655](#) A1 20160114
- PNFP - US9731162 B2 20170815
- PR - US201514858108
- 20150918; US201462096519P
- 20141223
- AP - US201514858108 20150918
- DT - *; Rep
- CT - || R141 (A1)
- [US7297090](#) B2 00000000 [];
- [US6280365](#) B1 00000000 [];
- [US6132346](#) A 00000000 [];
- [US5176377](#) A 00000000 [];
- [US8323127](#) B2 00000000 []
- || STSE (B2)
- [US5176377](#) A 00000000 [];
- [US6132346](#) A 00000000 [];
- [US6280365](#) B1 00000000 [];
- [US7297090](#) B2 00000000 [];
- [US8323127](#) B2 00000000 []
- CCI - [A63B21/0414](#) ;
- [A63B21/0442](#) ;
- [A63B21/0555](#) ;
- [A63B21/0557](#) ; [A63B21/065](#) ;
- [A63B21/4005](#) ;
- [A63B21/4007](#) ;

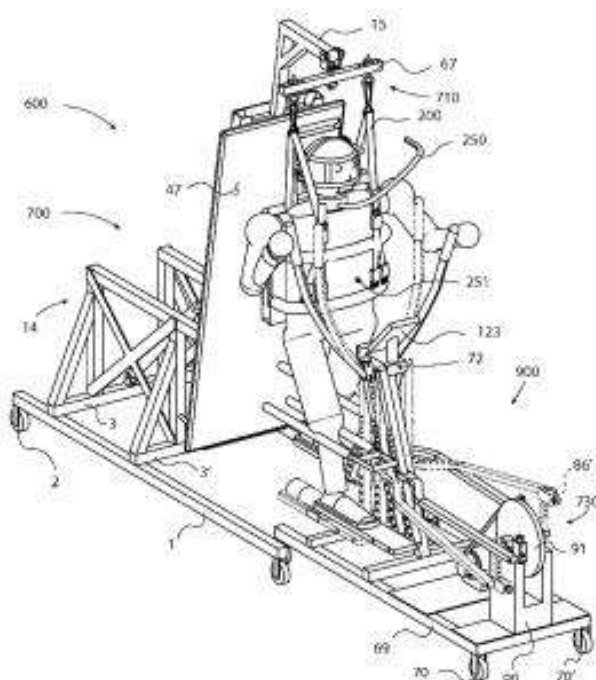


	A63B21/4011 ; A63B21/4013 ; A63B21/4015 ; A63B21/4019 ; A63B21/4043 ; A63B23/03575 ; A63B69/0028
CCA	- A63B2069/0031
CI	- A63B21/0414 (EP, US) - A63B21/0442 (EP, US) - A63B21/0555 (EP, US) - A63B21/0557 (EP, US) - A63B21/065 (EP, US) - A63B21/4005 (EP, US) - A63B21/4007 (EP, US) - A63B21/4011 (EP, US) - A63B21/4013 (EP, US) - A63B21/4015 (EP, US) - A63B21/4019 (EP, US) - A63B21/4043 (EP, US) - A63B23/03575 (EP, US) - A63B69/0028 (EP, US)
CA	- A63B2069/0031 (EP, US)
PA	- (A1 B2) MARTIN REPHEL DEMARCO [US]
TI	- (A1) Free-Motion Dynamic Resistance Trainer for Sports and Rehabilitation Movement Training - (B2) Free-motion dynamic resistance trainer for sports and rehabilitation movement training
AB	- (A1 B2) A free-motion dynamic resistance trainer to be used to train the muscular coordination, dynamic stability and gait mechanics of athletes and physical therapy patients. Adjustable tension shock cords or bungee cords and resistance tubing are used in conjunction with a spinal support harness and jib in order to allow for the adjustment of progressive

resistance and to create a heightened sense of proprioceptive awareness in those muscles and joints that are meant to be targeted depending upon the particular movement pattern being exercised. While providing resistance to improve strength and stamina, the shock cords or bungee cords and resistance tubing simultaneously guide and assist the trainee through certain aspects of each movement in order to train muscle memory of the proper kinetic sequence and body positioning. The apparatus, which is meant to be worn, can be used during sport specific movements other than running, in order to train and improve performance in myriad sports and activities.

13/17 © EPODOC / EPO

- PN - [US2015250675](#) A1 20150910
- PNFP - US9421144 B2 20160823
- PR - US201461967016P
20140307; US201514639247
20150305
- AP - US201514639247 20150305
- DT - *; Rep
- CT - || R141 (A1)
[US6685658](#) B1 20040203 [] (DIETZ VOLKER [CH], et al);
[US7137959](#) B2 20061121 [] (PHILLIPS EDWARD H [US]);
[US7163492](#) B1 20070116 [] (SOTIRIADES ALEKO D [US]);
[US2015141209](#) A1 20150521 [] (CHEN FU-CHEN [TW], et al)
- || STSE (B2)
[US6685658](#) B1 20040203 [] (DIETZ VOLKER [CH], et al);
[US7137959](#) B2 20061121 [] (PHILLIPS EDWARD H [US]);
[US7163492](#) B1 20070116 [] (SOTIRIADES ALEKO D [US]);
[US2015141209](#) A1 20150521 [] (CHEN FU-CHEN [TW], et al)



CCI	- <u>A61H1/0262</u>
CCA	- <u>A61H2001/0211</u> ; <u>A61H2201/0142</u> ; <u>A61H2201/0157</u> ; <u>A61H2201/10</u> ; <u>A61H2201/107</u> ; <u>A61H2201/1215</u> ; <u>A61H2201/1409</u> ; <u>A61H2201/1481</u> ; <u>A61H2201/1607</u> ; <u>A61H2201/1614</u> ; <u>A61H2201/1621</u> ; <u>A61H2201/1638</u> ; <u>A61H2201/1642</u> ; <u>A61H2201/1652</u> ; <u>A61H2201/50</u> ; <u>A61H2201/5046</u> ; <u>A61H2201/5048</u> ; <u>A61H2201/5064</u> ; <u>A61H2203/0406</u>
CI	- A61G7/018 (US) - A61G7/1046 (US) - A61G7/1051 (US) - A61H1/0262 (EP, US) - A61H1/0274 (US) - A61H3/008 (US) - A63B21/225 (US) - A63B21/4007 (US) - A63B21/4034 (US) - A63B21/4035 (US) - A63B22/001 (US) - A63B22/0023 (US) - A63B22/0664 (US) - A63B23/03575 (US)
CA	- A61H2001/0211 (EP, US) - A61H1/0237 (US) - A61H2003/007 (US) - A61H2201/0142 (EP, US) - A61H2201/0157 (EP, US) - A61H2201/10 (EP, US) - A61H2201/107 (EP, US) - A61H2201/1215 (EP, US) - A61H2201/1409 (EP, US) - A61H2201/1481 (EP, US) - A61H2201/1607 (EP, US) - A61H2201/1614 (EP, US) - A61H2201/1621 (EP, US) - A61H2201/1638 (EP, US) - A61H2201/1642 (EP, US)

	- A61H2201/1652 (EP, US) - A61H2201/50 (EP, US) - A61H2201/5046 (EP, US) - A61H2201/5048 (EP, US) - A61H2201/5064 (EP, US) - A61H2203/0406 (EP, US) - A63B2022/0676 (US)
PA	- (A1 B2) KALINOWSKI EUGENE [US]
TI	- (A1) MOTORIZED AIR WALKER AND SUSPENSION SYSTEM FOR PARALYZED PERSONS - (B2) Motorized air walker and suspension system for paralyzed persons
AB	- (A1 B2) A system for patient rehabilitation is disclosed. The system includes a first movable frame including an articulating bed, wherein the bed is configured to be selectively articulated to an inclined position, a suspension system, wherein the suspension system is disposed within the articulating bed and is selectively adjustable to accommodate varying patient height, a harness, wherein the harness is selectively engageable with the suspension system, wherein the harness is selectively adjustable to accommodate varying patient sizes, a second movable frame including a walker, wherein the walker includes a pair of legs and a motor, wherein approximation of the two movable frames permits the patient to easily utilize the walker from the bed. A method of using the system for patient rehabilitation is also disclosed.

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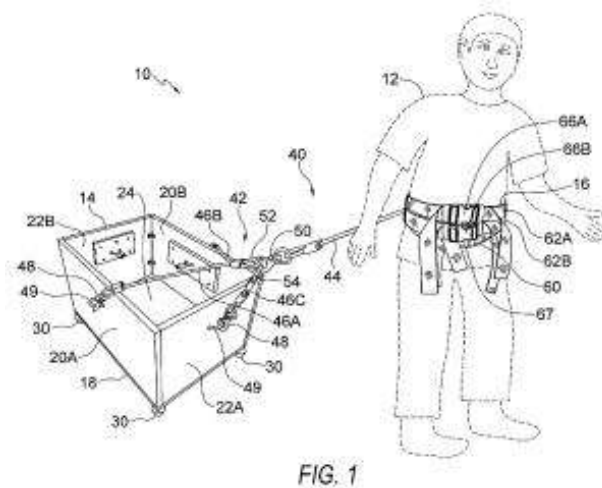
PN - [WO2009023954](#) A1 20090226

PR - US20070843412 20070822

AP - WO2008CA01439 20080807

DT - *; Rep

CT - |CA| ISR (A1)
[US5950570](#) A 19990914
 [XY] (DICKERSON LATEIF GRAHAM [US])
 [X] Claims 1, 6 to 9, 13, 15, 23, 24 and 27
 * Figures 1, 3 and 4; Column 2, line 6 to column 3, line 25 *
 [Y] Claims 10, 14, 16 to 21 and 28;
[US2005272572](#) A1 20051208
 [XY] (LEWIS ROBERT [US])
 [X] Claims 1 to 3, 5, 13, 16, 17, 22 to 24 & 27
 * Figures 5 and 6; Paragraphs 0027 to 0030, 0032 and 0035 *
 [Y] Claims 10, 14 to 16, 18 to 21 and 28;
[US6139029](#) A 20001031
 [Y] (SHAW JAMES H [US])
 [Y] Claims 10, 13 and 15
 * Figures 1, 6 and 7; Column 2, lines 49 to 62; column 4, lines 60 to 64 *;
[USD304635S](#) S 19891114
 [Y] (BARRETT WILLIAM H, et al)
 [Y] Claims 13, 16 and 17
 * Entire document *;
[US6932027](#) B1 20050823
 [Y] (WHITNEY CHARLES [US])
 [Y] Claims 18 and 23
 * Figure 2; Column 3, lines 25 to 31; column 4, lines 35 to 37 *;
[US5411461](#) A 19950502
 [Y] (THOMASCIK TERRANCE A [US])
 [Y] Claim 18
 * Figures 1 to 6; Column 2, lines 23 to 54 *;
[US6520290](#) B1 20030218
 [Y] (CARTER CHARLES L [US])
 [Y] Claims 18 to 21, 23 and 28
 * Figure 1A; Column 4, line 61 to column 5, line 36 *;
[US6663328](#) B2 20031216



	[Y] (SCHMIDT GAIL E [US], et al) [Y] Claims 13 and 14 * Figures 2 and 4 to 6; Column 6, lines 54 to 63; column 7, lines 26 to 51; column 8, line 43 to column 9, line 5 *; US4991689 A 19910212 [A] (COLE BARRY A [US]) [A] Claims 18 to 21 * Figure 4 *
CCI	- A45F3/14 ; A63B21/0004 ; A63B21/06 ; A63B21/4009 ; A63B23/0405 ; A63B23/047
CCA	- A63B22/20
CI	- A45F3/14 (EP, US) - A63B21/0004 (EP, US) - A63B21/06 (EP, US) - A63B21/4009 (EP, US) - A63B23/0405 (EP, US) - A63B23/047 (EP, US)
CA	- A63B22/20 (EP, US)
PA	- WARRINGTON EGBERT [CA]
TI	- TOWED EXERCISE APPARATUS
AB	- An apparatus for exercise and rehabilitation includes a carriage which is towed by an operator walking forward. A hitch assembly is couplable between the carriage and a harness worn by the operator. The hitch assembly includes a tow line extending from the harness and a threepronged attachment couplable between the tow line and the carriage. Weights may be placed in the carriage to increase the resistance provided by the carriage. A bar may extend upwardly from a base of the carriage to receive the weights.

PN - [WO9638206](#) A1 19961205

PR - ES19950001443U 19950530

AP - WO1996ES00115 19960524

DT - *; Rep

CT - | EP | ISR (A1)
[US4205839](#) A 00000000
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[US1374697](#) A 00000000
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 * page 1, lines 20-77 *
 * page 2, lines 26-111; figures 4-7 *;
[US2716027](#) A 00000000
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[US4125257](#) A 00000000
 [A] (LEW)
 [A]
 * abstract *
 * column 4, line 41 -
 column 5, line 4 *
 * column 5, line 64 -
 column 6, line 5 *

CCI - [A63B21/154](#) ; [A63B23/03575](#)

CCA - [A63B7/02](#) ; [A63B21/06](#) ;
[A63B2208/0285](#)

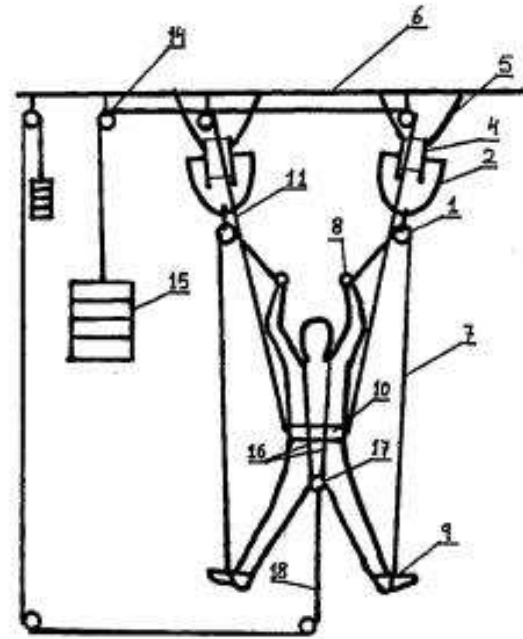
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 - A63B23/03575 (EP)

CA - A63B7/02 (EP)
 - A63B21/06 (EP)
 - A63B2208/0285 (EP)

PA - QUESADA DE LA CUESTA OSCAR
 LUI [ES]

TI - GYMNASTIC
 AND **REHABILITATION**
 APPARATUS

AB - The gymnastic
 and **rehabilitation** apparatus
 operates as follows: one hand
 holds one end of a rope which
 passes over a pulley, and the
 other end of the rope supports
 the foot on the same body side
 as the hand. The same applies
 to the other body side. The user
 wears a **harness** to which are



attached two ropes which, via pulleys, are connected to a movable counterweight which relieves weight from the user's body. The pulleys which support the feet and the hands are mounted on a roller bearing system about a round tube, and inside which the rope attached to the **harness** may slide. The counterweight may be provided with an electromechanical system which can eliminate part of the weight in the counterweight, and consequently the user can control more easily the operations of getting on the apparatus and coming down from the apparatus. In order to avoid any uncontrolled swinging of the apparatus, a pair of free ropes may be included as a vertical necklace, on which ropes rings can run. With the disclosed apparatus, the user literally floats in the space and is substantially free to move in any desired position. By selecting the level of difficulty of the motions, the apparatus can be used by users of all ages, to play with, or to use it for gymnastics and **rehabilitation** purposes.

16/17	© EPODOC / EPO
PN	- ES1031204U U 19951201
PNFP	- ES1031204Y Y 19960516
PR	- ES19950001443U 19950530
AP	- ES19950001443U 19950530
DT	- I
CCI	- A63B21/154 ; A63B23/03575
CCA	- A63B7/02 ; A63B21/06 ; A63B2208/0285
CI	- A63B21/154 (EP) - A63B23/03575 (EP)
CA	- A63B7/02 (EP) - A63B21/06 (EP) - A63B2208/0285 (EP)
PA	- (U Y)

QUESADA DE LA CUESTA OSACAR LU [ES]

TI - (U)
GYMNASTIC AND **REHABILITATION** APPARATUS

AB - (U)
The gymnastic and **rehabilitation** apparatus operates as follows: one hand holds one end of a rope which passes over a pulley, and the other end of the rope supports the foot on the same body side as the hand. The same applies to the other body side. The user wears a **harness** to which are attached two ropes which, via pulleys, are connected to a movable counterweight which relieves weight from the user's body. The pulleys which support the feet and the hands are mounted on a roller bearing system about a round tube, and inside which the rope attached to the **harness** may slide. The counterweight may be provided with an electromechanical system which can eliminate part of the weight in the counterweight, and consequently the user can control more easily the operations of getting on the apparatus and coming down from the apparatus. In order to avoid any uncontrolled swinging of the apparatus, a pair of free ropes may be included as a vertical necklace, on which ropes rings can run. With the disclosed apparatus, the user literally floats in the space and is substantially free to move in any desired position. By selecting the level of difficulty of the motions, the apparatus can be used by users of all ages, to play with, or to use it for gymnastics and **rehabilitation** purposes.

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PN - [EP0788816](#) A1 19970813

PR - WO1996ES00115
19960524; ES19950001443U
19950530

AP - EP19960914214 19960524

DT - **

CCI - [A63B21/154](#) ; [A63B23/03575](#)

CCA - [A63B7/02](#) ; [A63B21/06](#) ;
[A63B2208/0285](#)

CI - A63B21/154 (EP)

- A63B23/03575 (EP)

CA - A63B7/02 (EP)

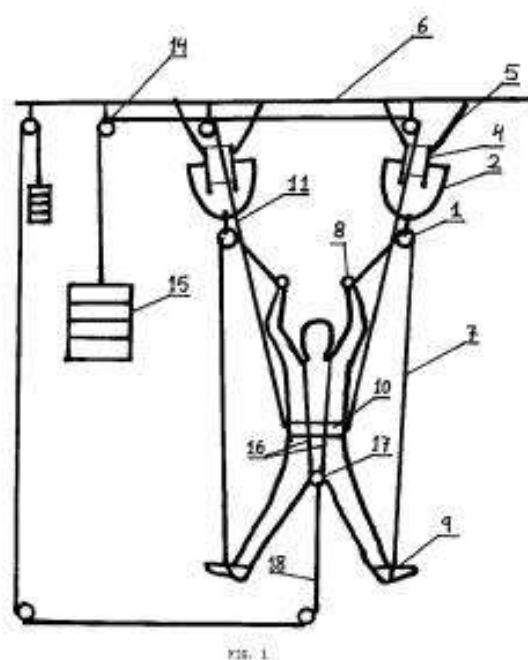
- A63B21/06 (EP)

- A63B2208/0285 (EP)

PA - QUESADA DE LA CUESTA OSCAR
LUI [ES]

TI - GYMNASTIC
AND **REHABILITATION**
APPARATUS

AB - The gymnastic
and **rehabilitation** apparatus
operates as follows: one hand
holds one end of a rope which
passes over a pulley, and the
other end of the rope supports
the foot on the same body side
as the hand. The same applies
to the other body side. The user



wears a **harness** to which are attached two ropes which, via pulleys, are connected to a movable counterweight which relieves weight from the user's body. The pulleys which support the feet and the hands are mounted on a roller bearing system about a round tube, and inside which the rope attached to the **harness** may slide. The counterweight may be provided with an electromechanical system which can eliminate part of the weight in the counterweight, and consequently the user can control more easily the operations of getting on the apparatus and coming down from the apparatus. In order to avoid any uncontrolled swinging of the apparatus, a pair of free ropes may be included as a vertical necklace, on which ropes rings can run. With the disclosed apparatus, the user literally floats in the space and is substantially free to move in any desired position. By selecting the level of difficulty of the motions, the apparatus can be used by users of all ages, to play with, or to use it for gymnastics and **rehabilitation** purposes.

<IMAGE>