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January 17, 2023

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APPLICATION NUMBER: *17/247,101*
FILING DATE: *November 30, 2020*
PATENT NUMBER: *11465005*
ISSUE DATE: *October 11, 2022*

Certified by

Performing the Functions and Duties of the
Under Secretary of Commerce
for Intellectual Property
and Director of the United States
Patent and Trademark Office

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Inventor Name: Douglas G. Bayerlein

Title: MANUALLY POWERED TREADMILL

Prior Appl. No.: 16/792444

Prior Appl. Filing Date: 2/17/2020

CONTINUING PATENT APPLICATION TRANSMITTAL LETTER

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

Transmitted herewith for filing under 37 C.F.R. § 1.53(b) is a:

[**X**] Continuation [ ] Division [ ] Continuation-In-Part (CIP)

of the above-identified copending prior application in which no patenting, abandonment, or termination of proceedings has occurred. Priority to the above-identified prior application is hereby claimed under 35 U.S.C. § 120 for this continuing application. The entire disclosure of the above-identified prior application is considered as being part of the disclosure of the accompanying continuing application and is hereby incorporated by reference therein.

[**X**] Applicant claims small entity status under 37 CFR 1.27.

Enclosed are:

[**X**] Description, Claims, and Abstract (53 pages).

[**X**] Formal drawings (20 sheets, Figures 1-38).

[**X**] Application Data Sheet (37 CFR 1.76).

[**X**] Executed Declaration (7 pages).

The adjustment to the number of sheets for EFS-Web filing follows:

Number of Sheets		**EFS-Web Adjustment**	**Number of Sheets for EFS-Web**
73	x	75%	55

The filing fee is calculated below at the small entity rate:

	Number Filed		**Included in Basic Fee**		**Extra**		Rate		Fee Totals
Basic Filing Fee							$80.00	=	$80.00
Search Fee							$350.00		$350.00
Examination Fee							$400.00		$400.00
Sequence Listing fee									$0.00
Size Fee	55	-	100	= 0		x	$210.00		$0.00
Total Claims:	20	-	20	= 0		x	$50.00	=	$0.00
Independents:	3	-	3	= 0		x	$240.00	=	$0.00
If any Multiple Dependent Claim(s) present:						+	$430.00	=	$0.00
Surcharge under 37 CFR 1.16(e) for late filing of Executed Declaration or late payment of filing fee						+	$80.00	=	$0.00
Prioritized Examination fee (Track I) under 37 C.F.R. § 1.17 (c)									$0.00
Processing Fee (Track I) under 37 C.F.R. § 1.17 (i)									$0.00
TOTAL FILING FEE:								=	$830.00

The above-identified fees of $830.00 are being paid by credit card via EFS-Web.

The Commissioner is hereby authorized to charge any fees required to secure a filing date and maintain pendency of this application to Deposit Account No. 19-0741.

Respectfully submitted,

Date: Nov. 30, 2020

By: /R.J. McKenna/

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Customer Number: 26371
Telephone: (414) 297-5723
Facsimile: (414) 297-4900

Richard J. McKenna
Attorney for Applicant
Registration No. 35,610

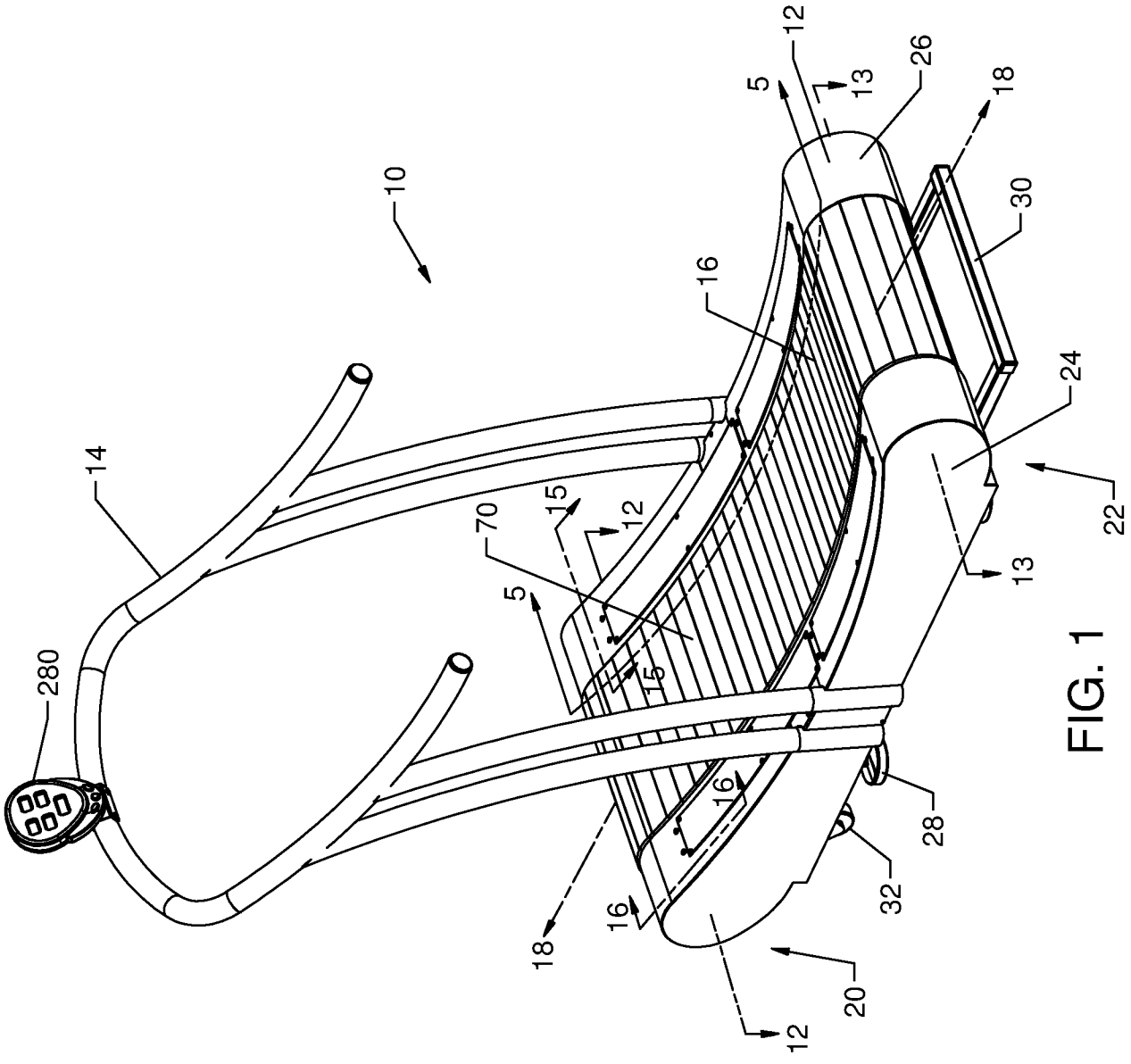


FIG. 1

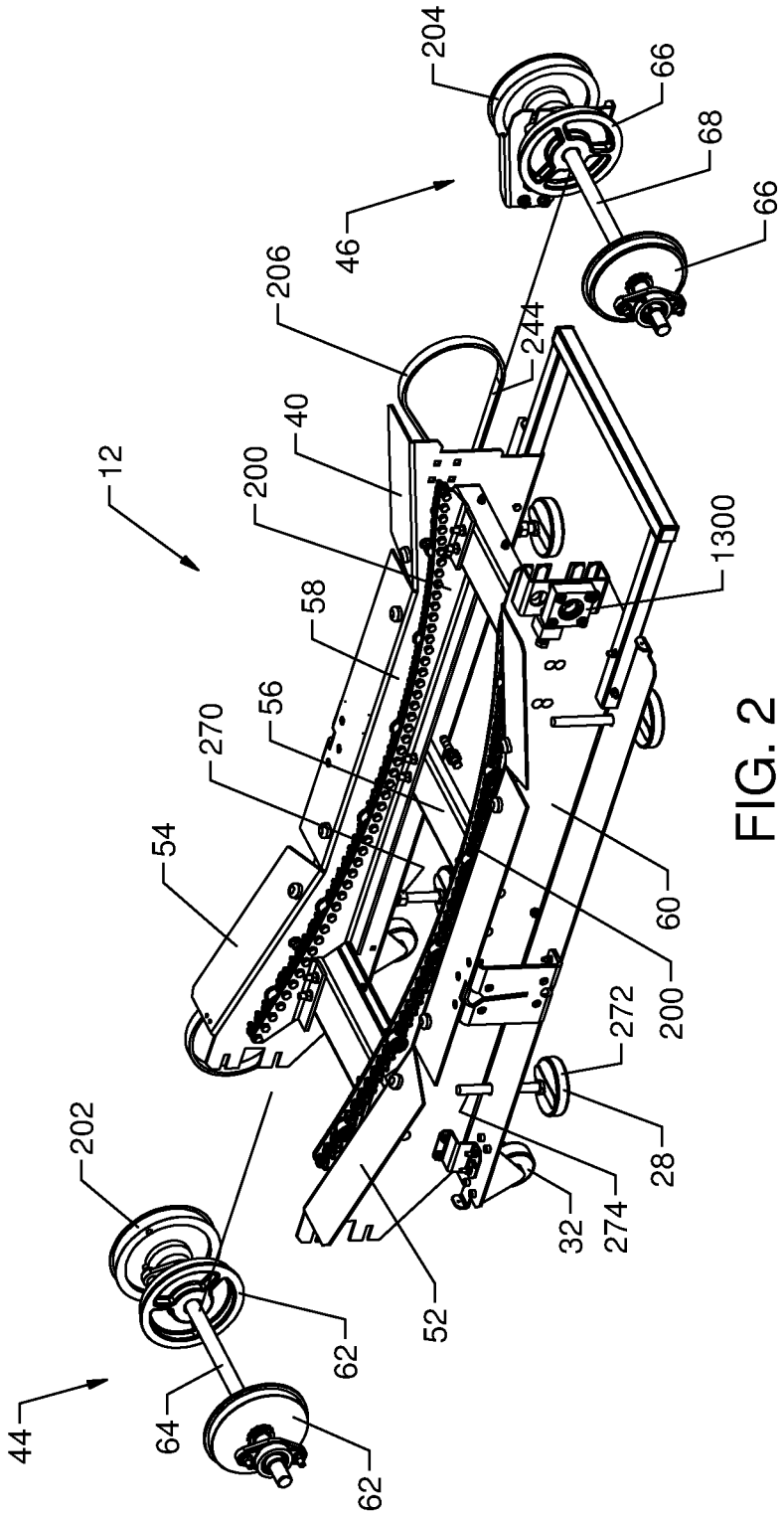

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FIG. 2

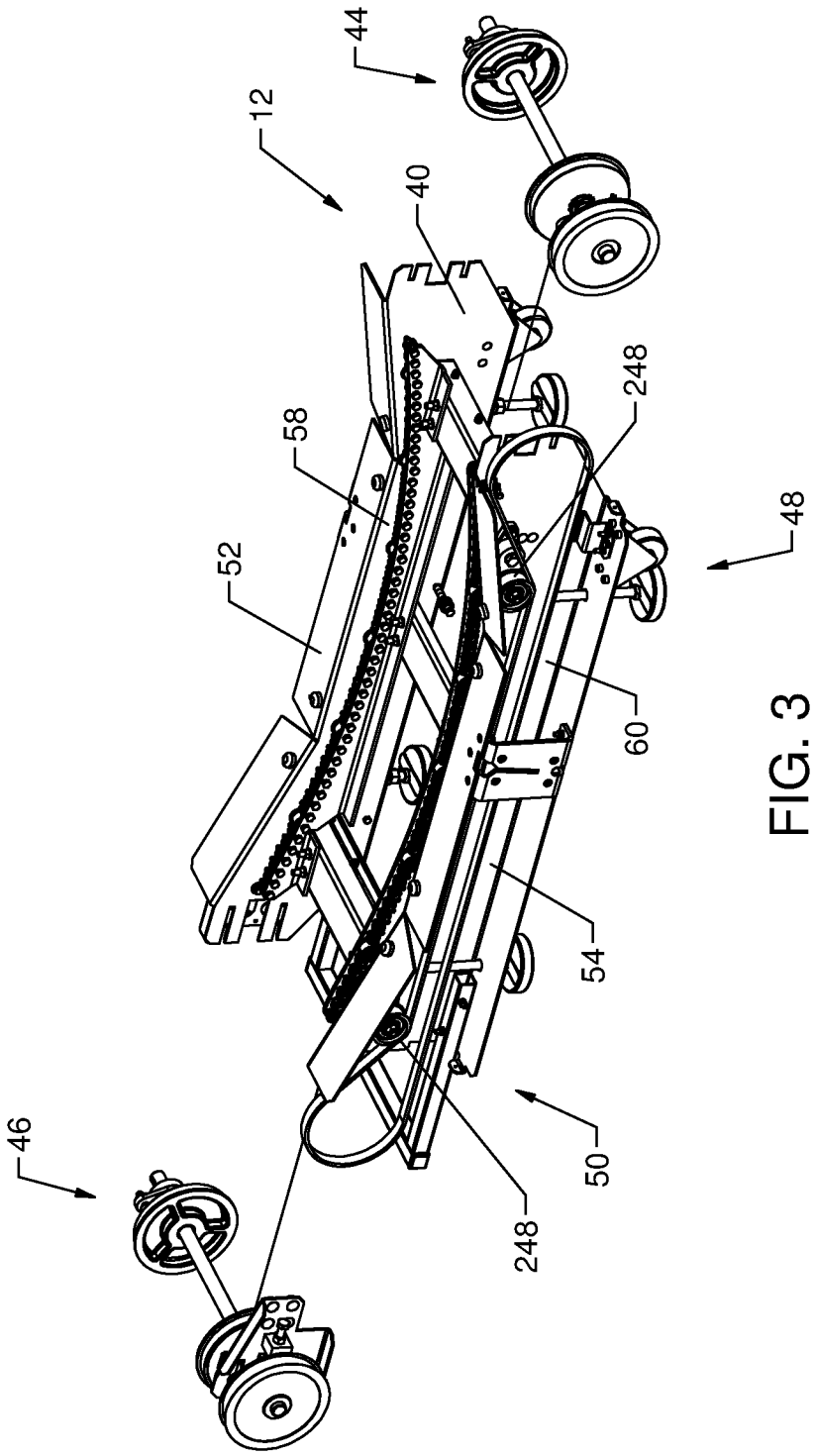


FIG. 3

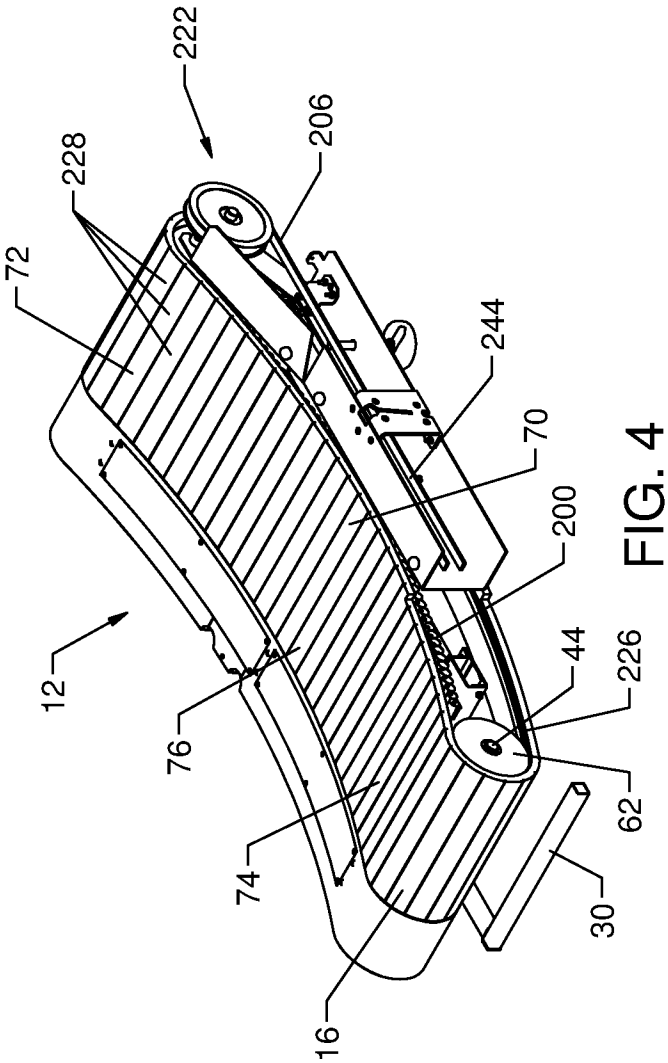

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FIG. 4

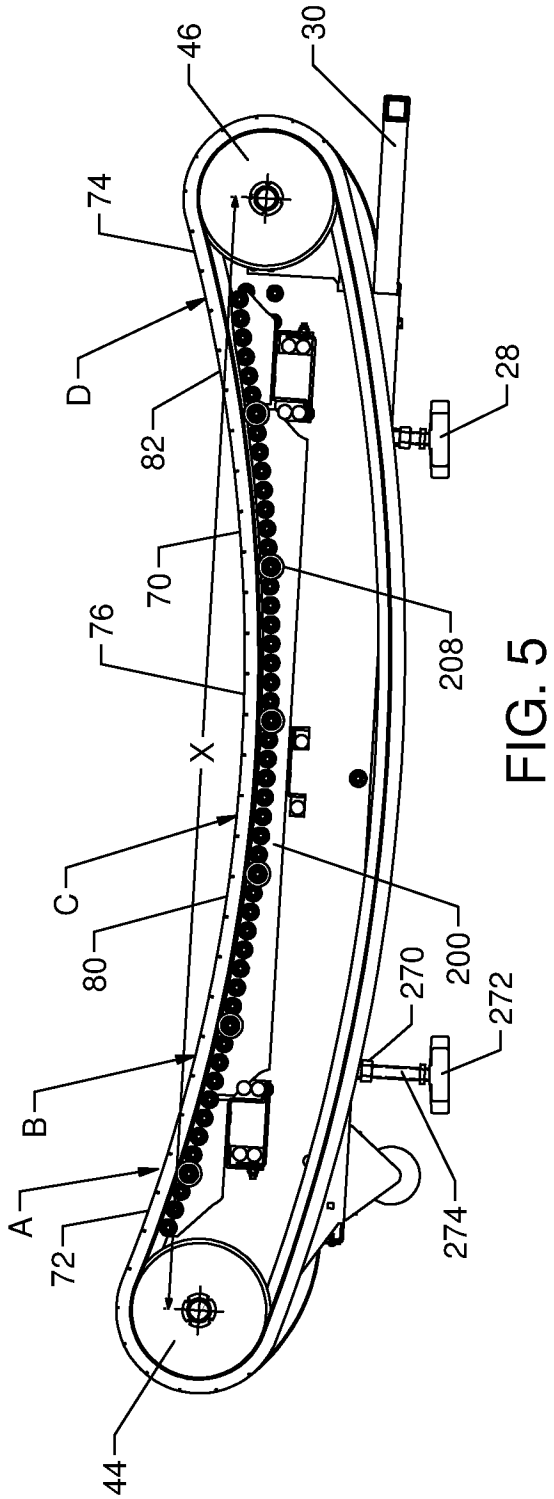

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FIG. 5

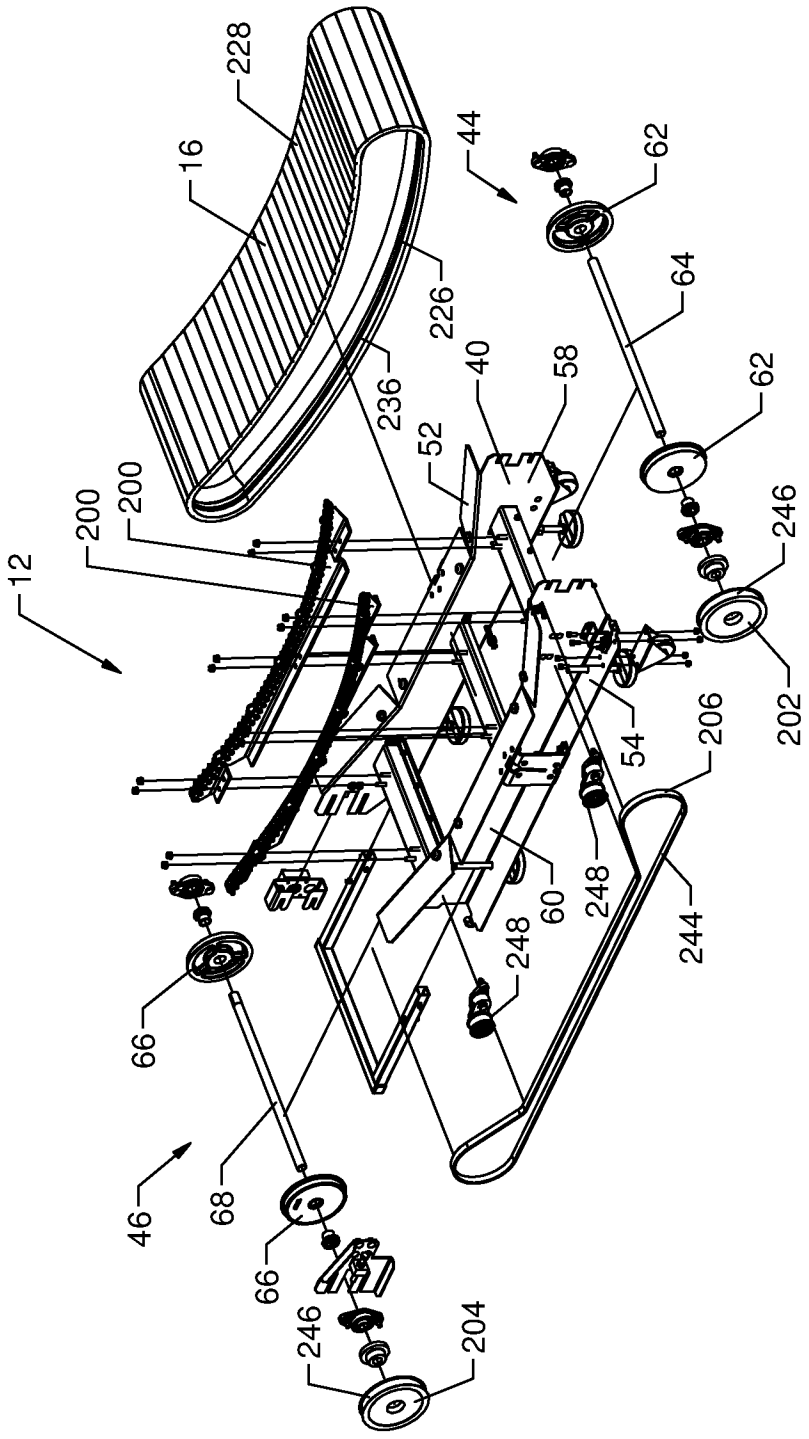

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FIG. 6

FIG. 7a

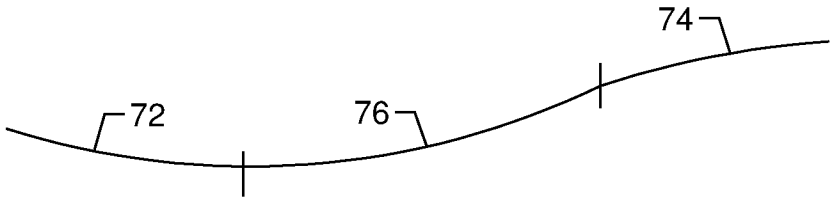


FIG. 7b

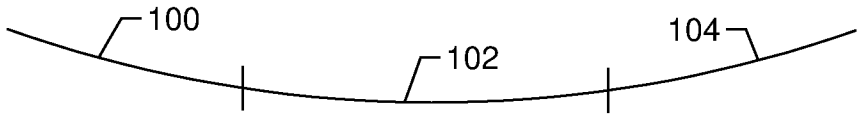


FIG. 7c

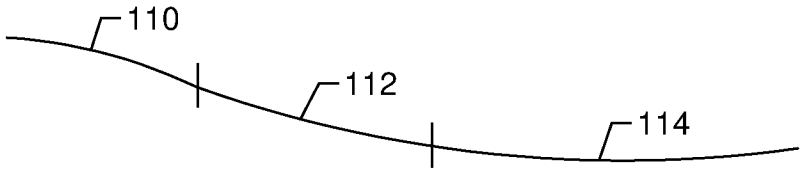


FIG. 7d

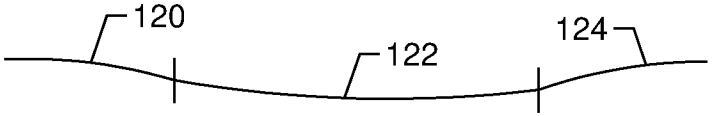
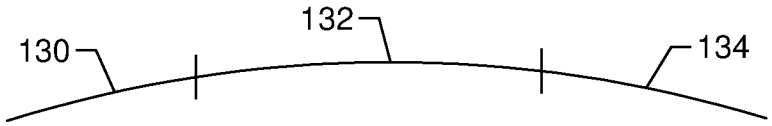


FIG. 7e



LIFECORE Ex. 1002, p. 10

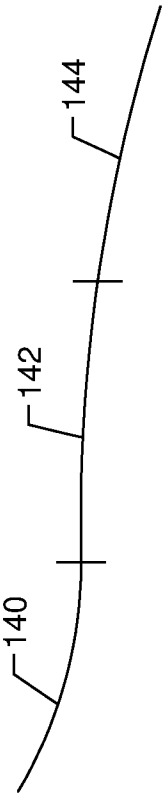


FIG. 7f

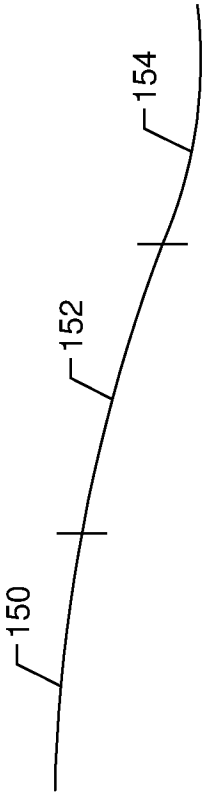


FIG. 7g

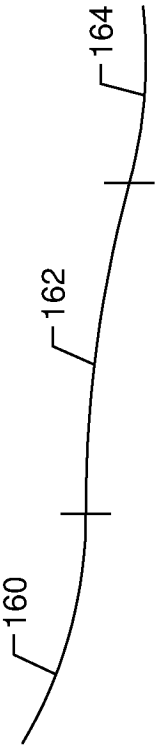


FIG. 7h

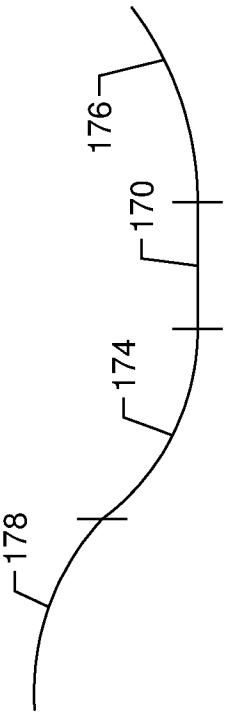


FIG. 7i

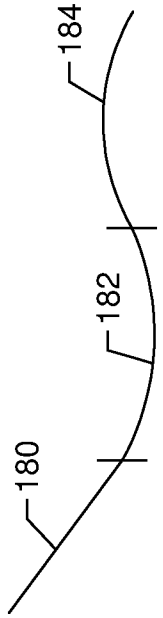


FIG. 7j

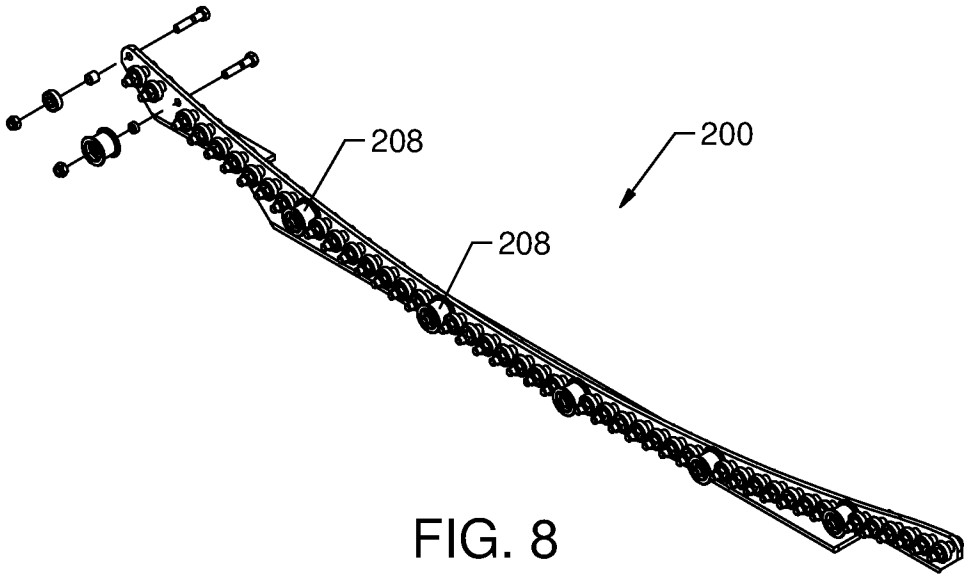


FIG. 8

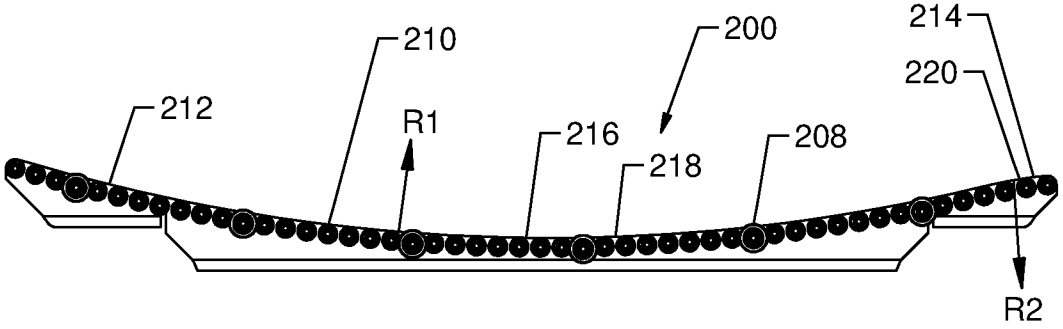


FIG. 9

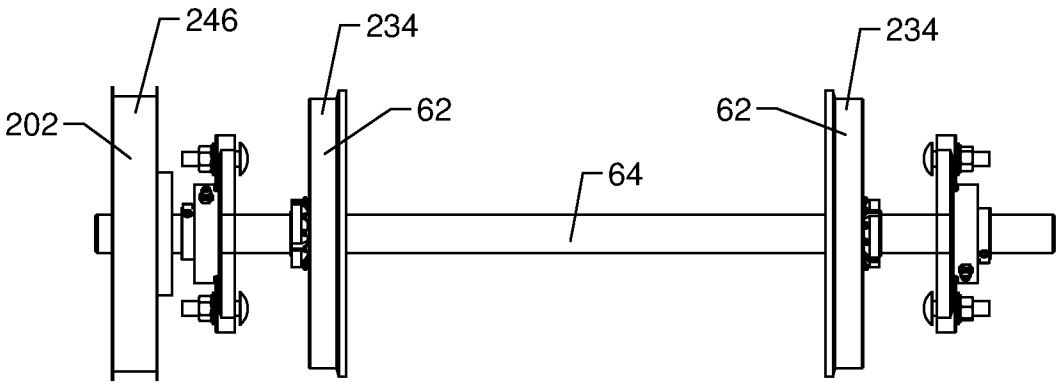


FIG. 10

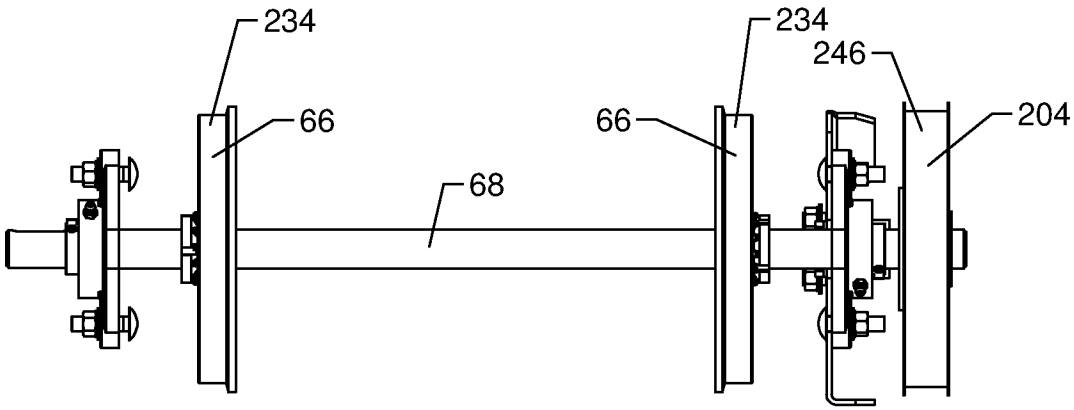


FIG. 11

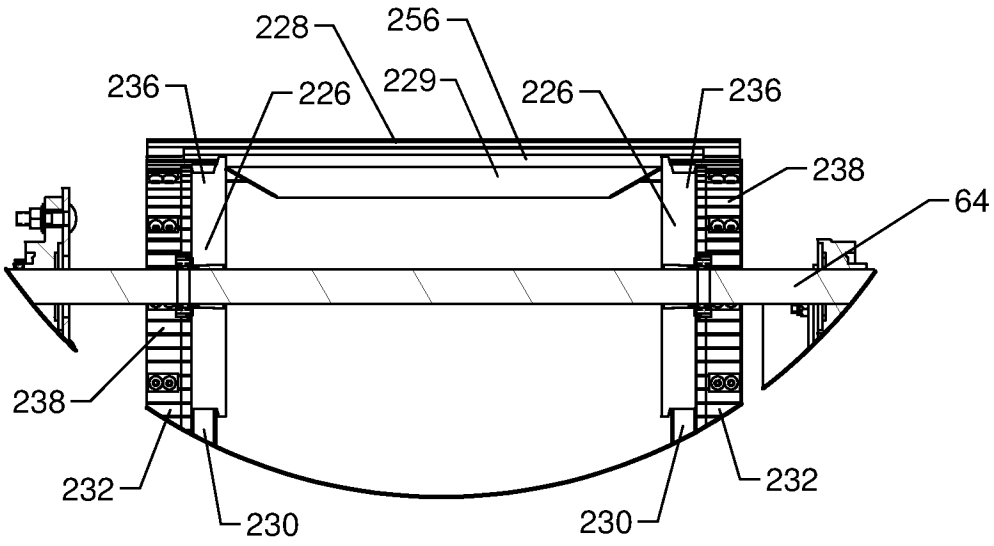

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FIG. 12

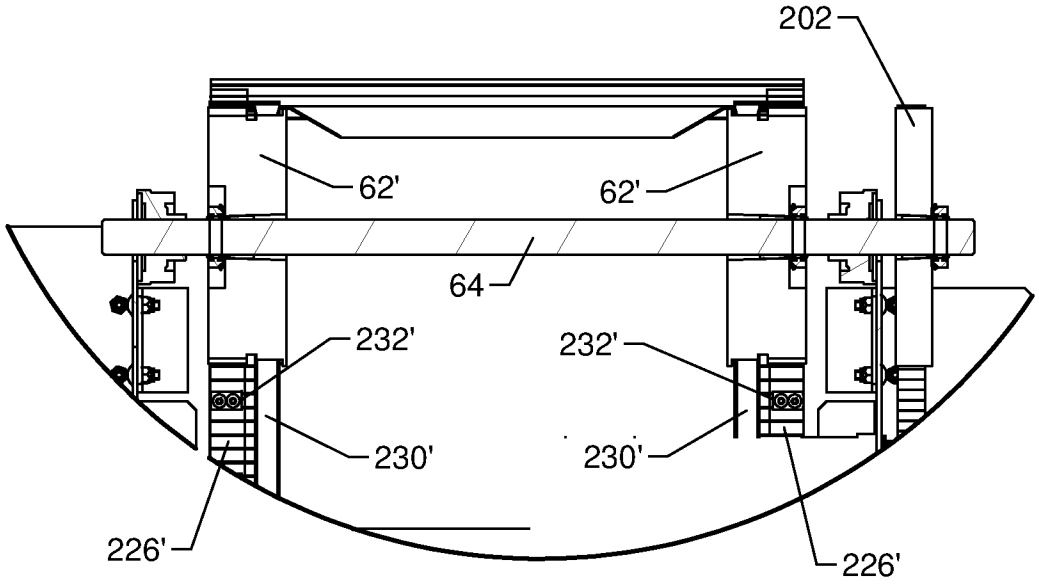

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FIG. 13

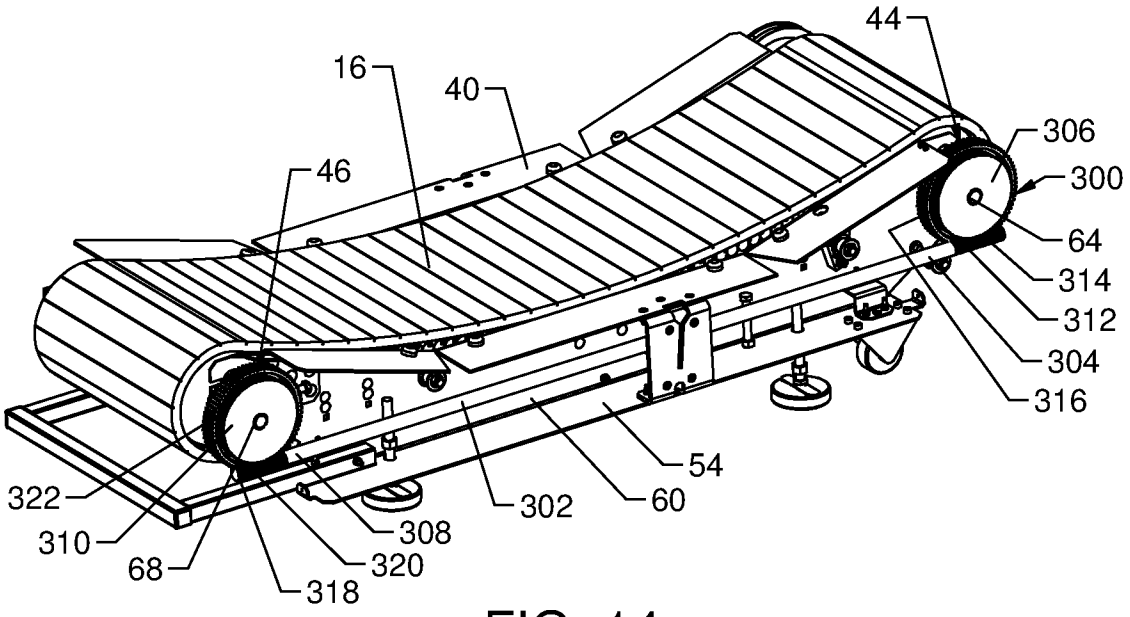

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FIG. 14

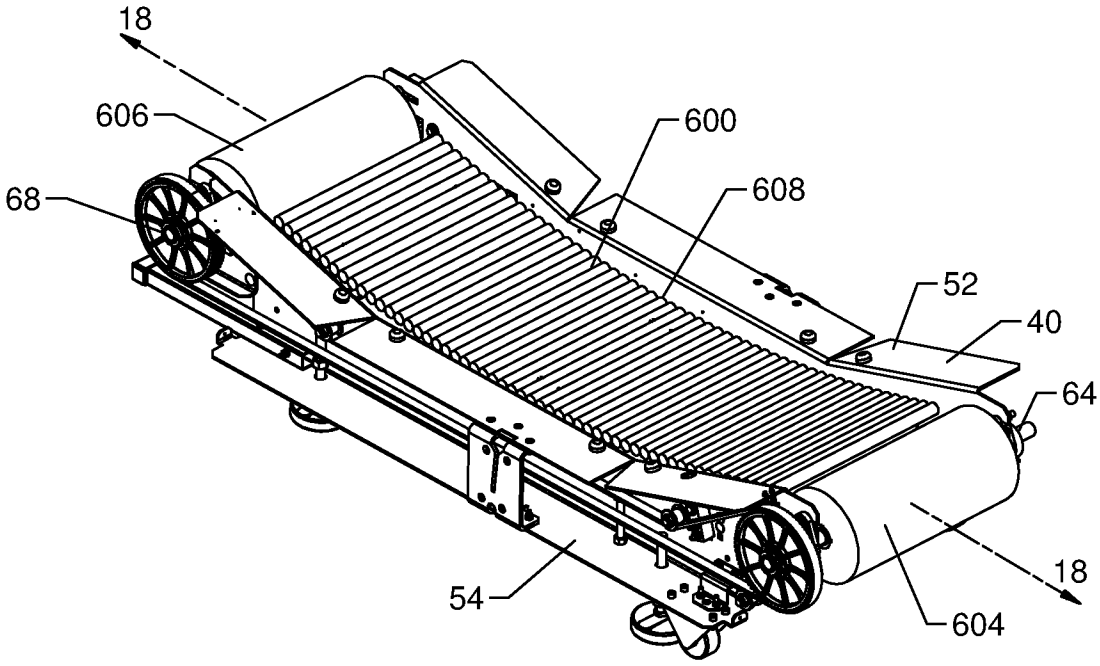

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FIG. 17

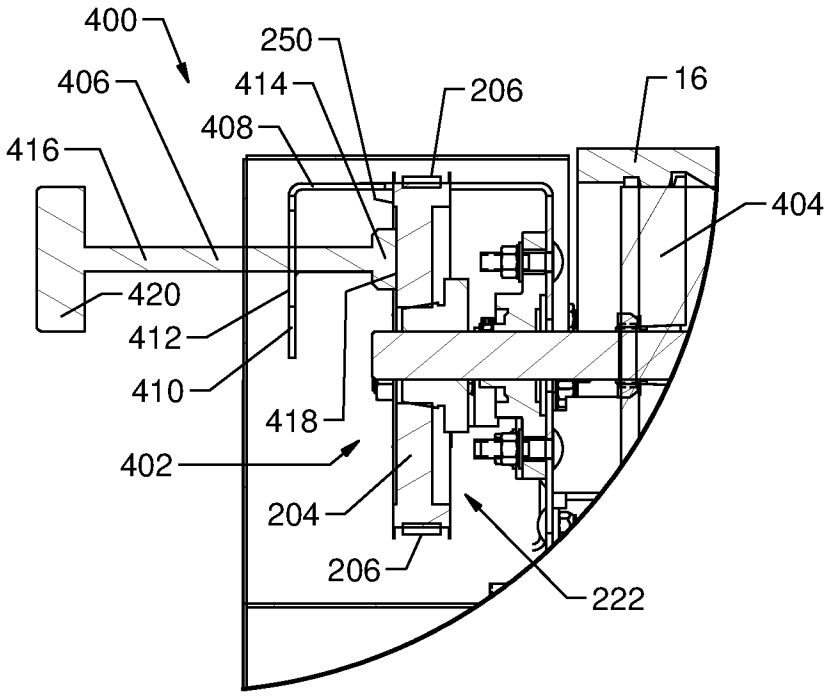

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FIG. 15

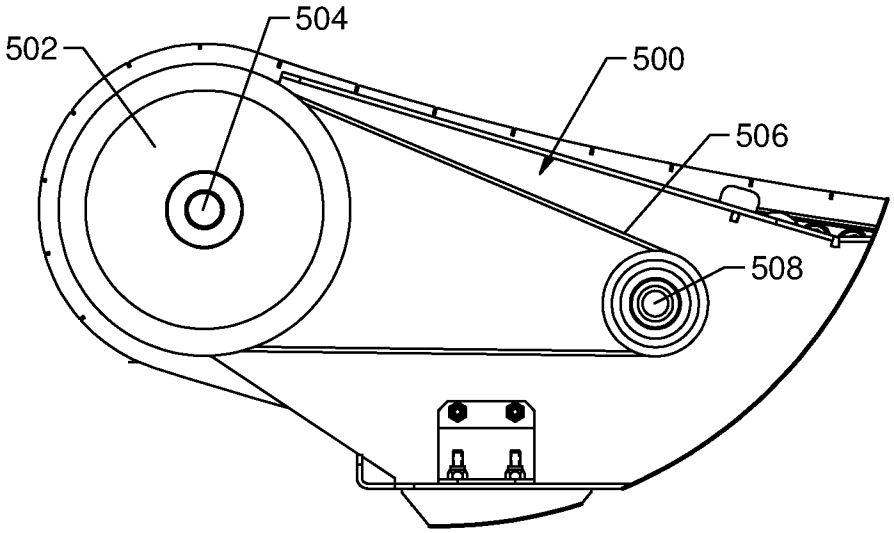

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FIG. 16

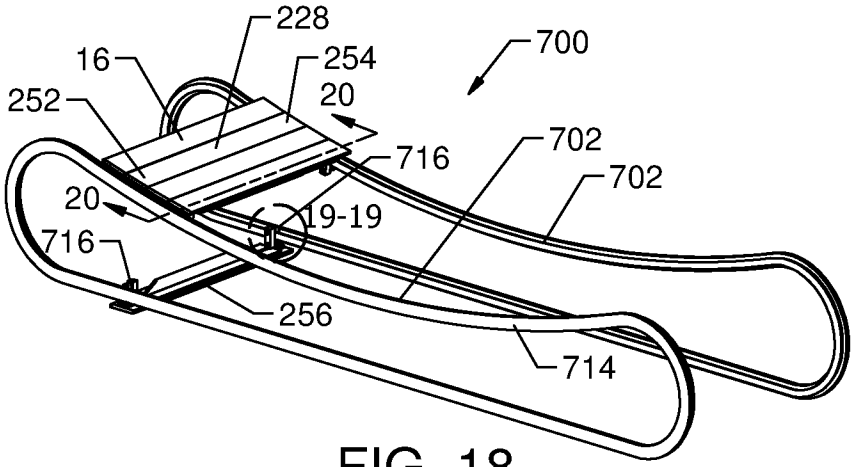


FIG. 18

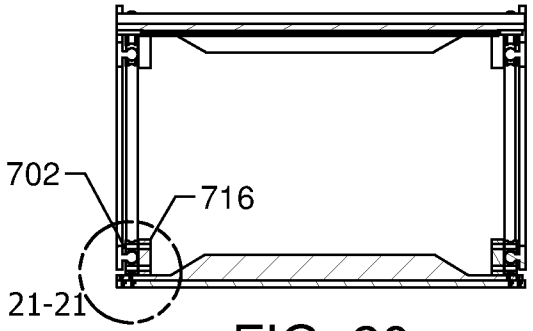


FIG. 20

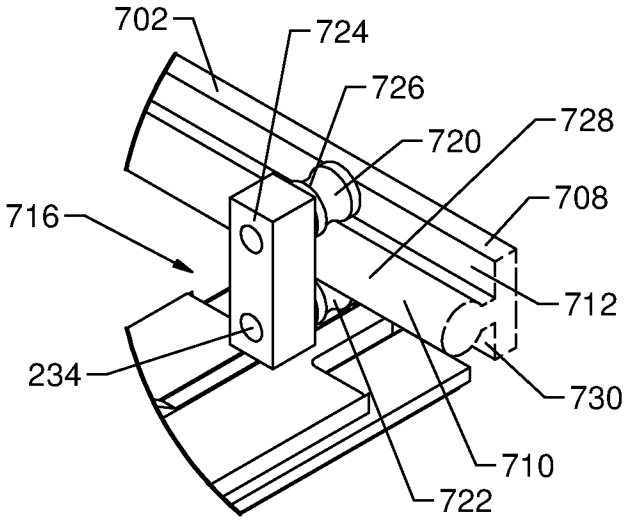


FIG. 19

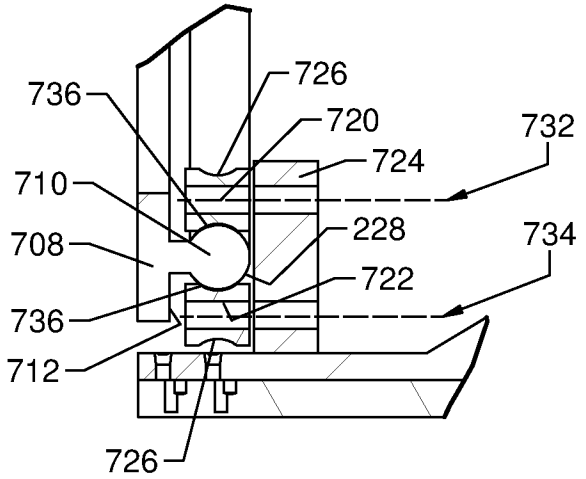


FIG. 21

LIFECORE Ex. 1002, p. 17

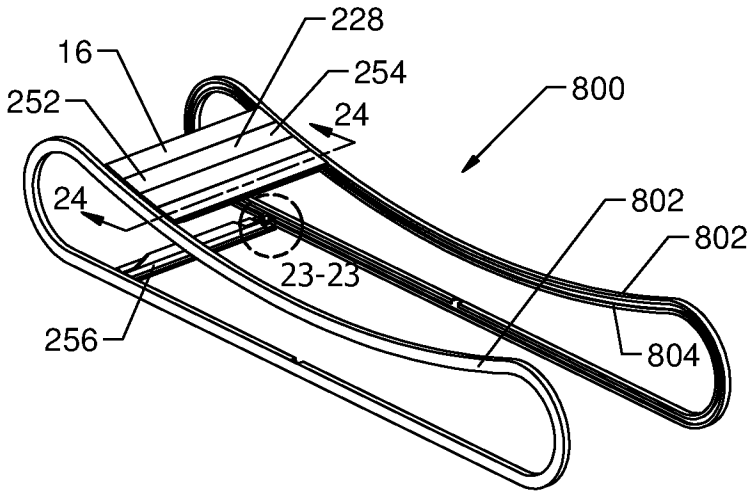


FIG. 22

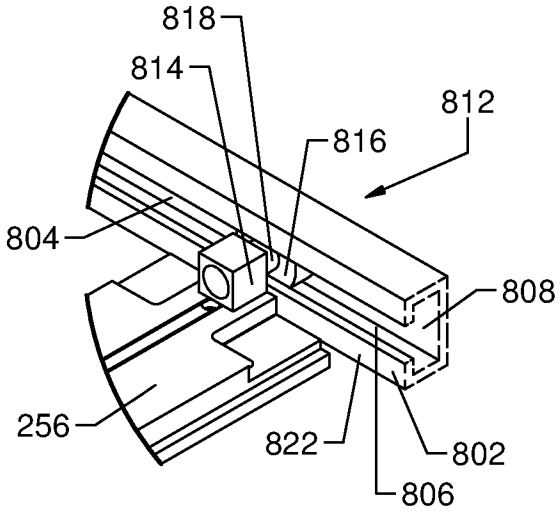


FIG. 23

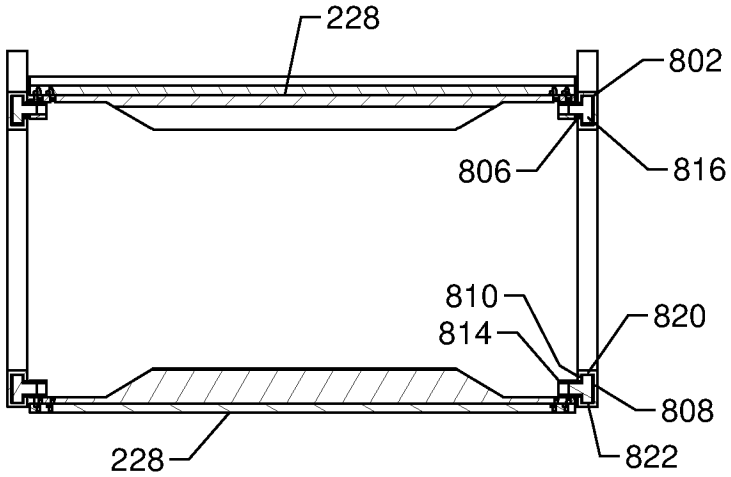


FIG. 24

LIFECORE Ex. 1002, p. 18

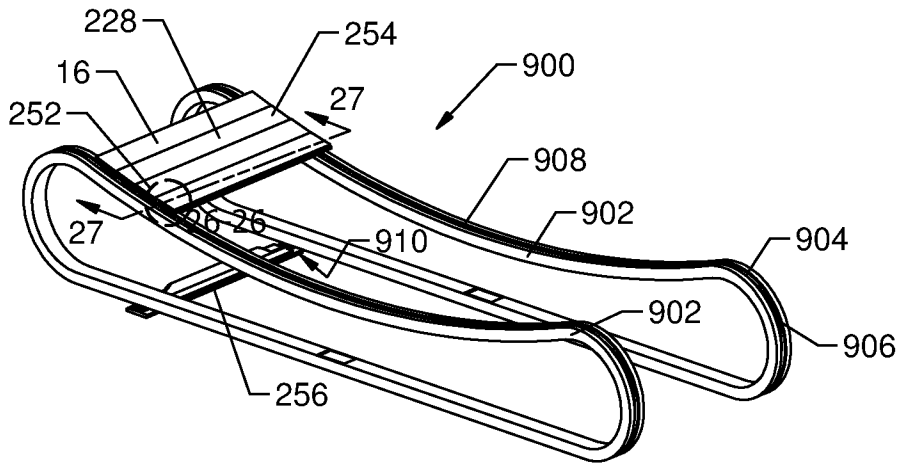


FIG. 25

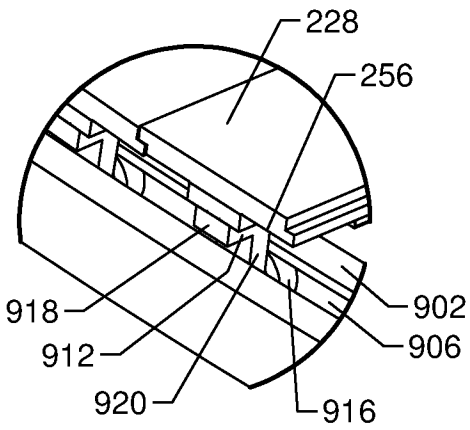


FIG. 26

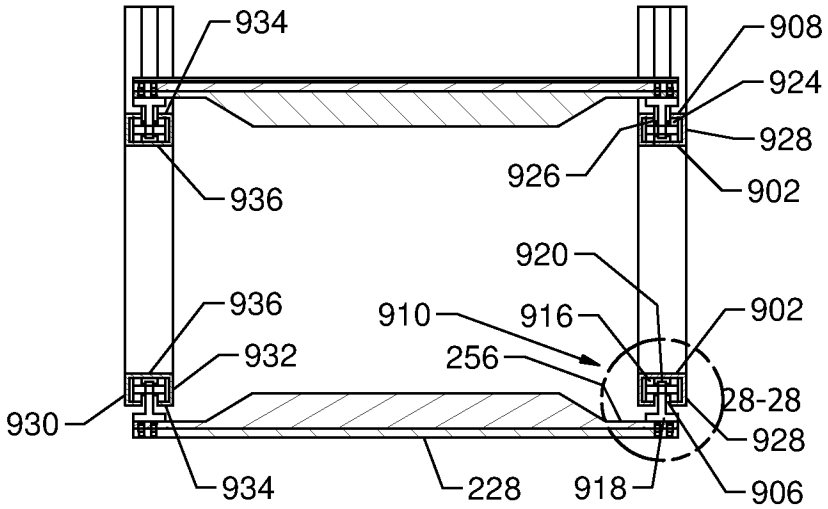


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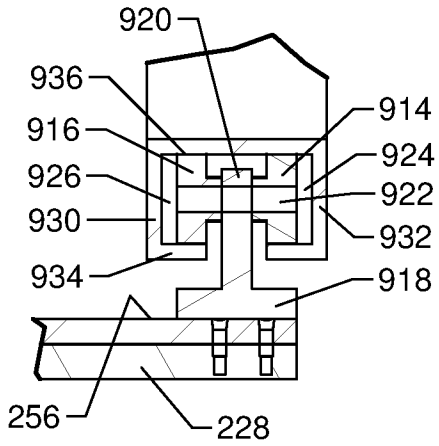


FIG. 28

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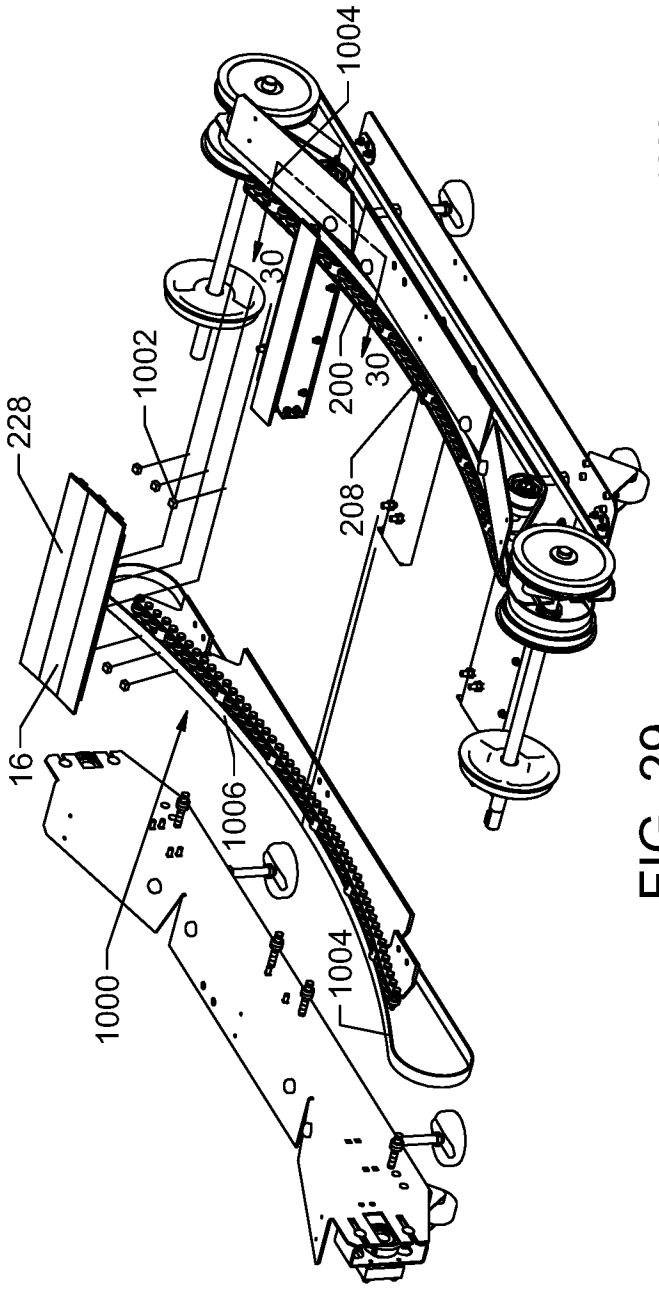

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FIG. 29

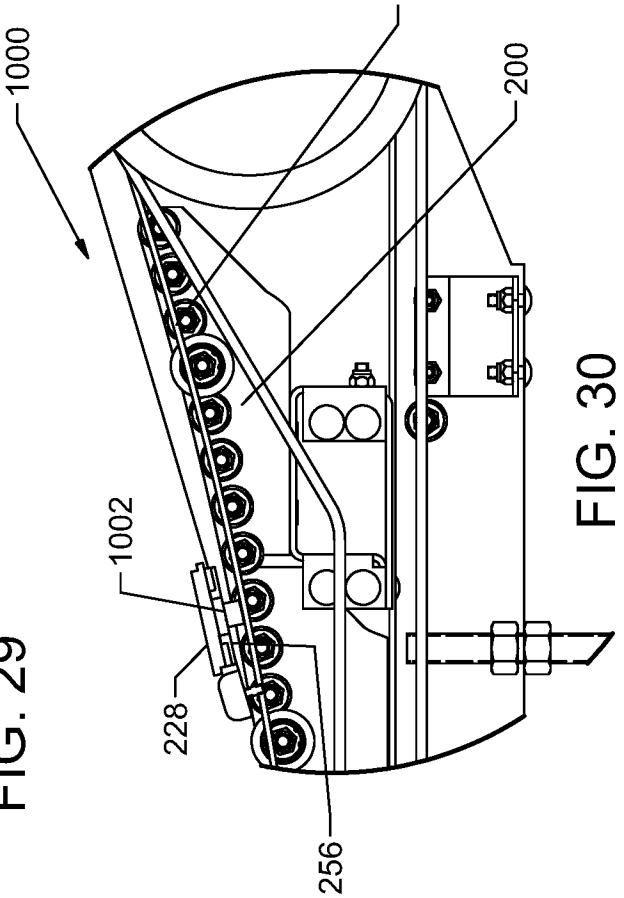

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FIG. 30

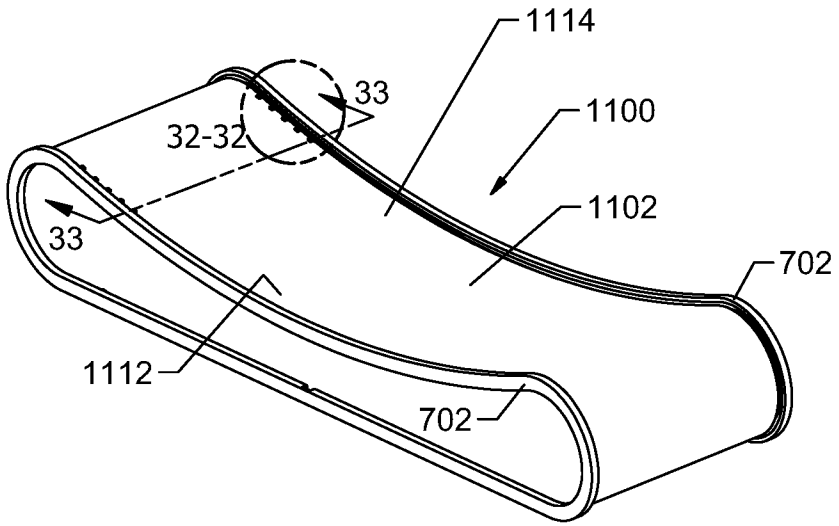


FIG. 31

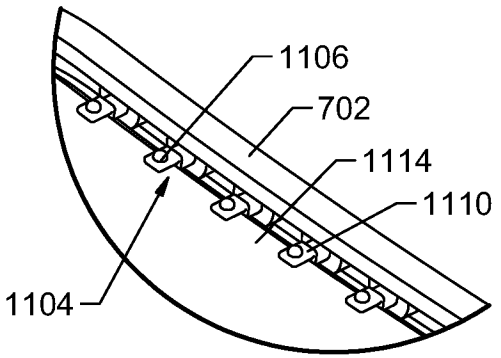


FIG. 32

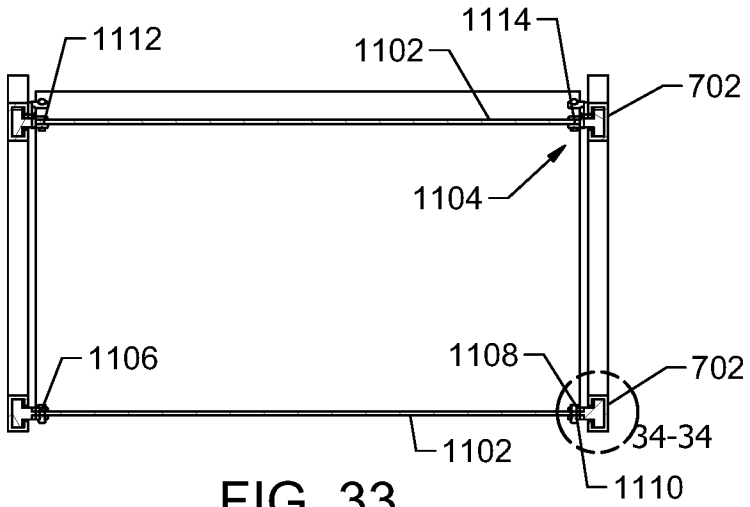


FIG. 33

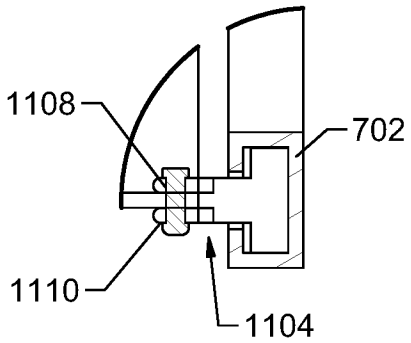


FIG. 34

LIFECORE Ex. 1002, p. 21

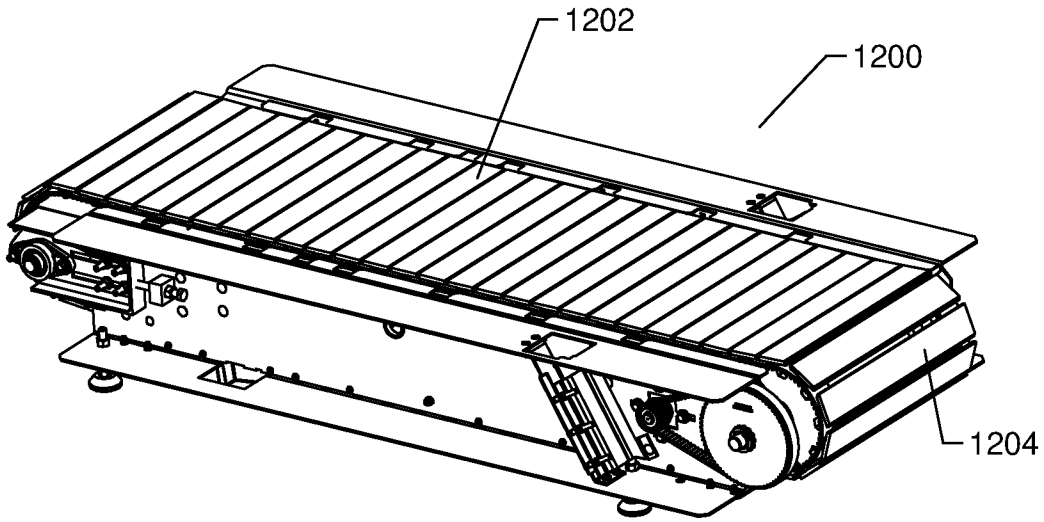


FIG. 35

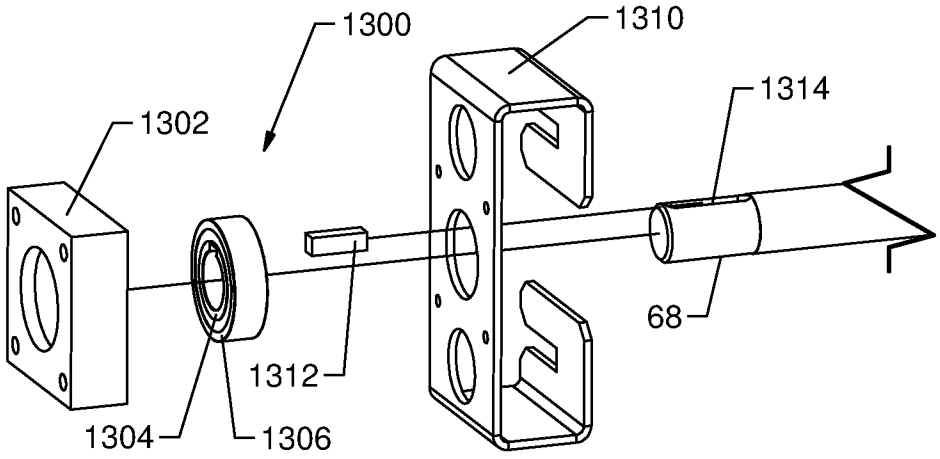


FIG. 36

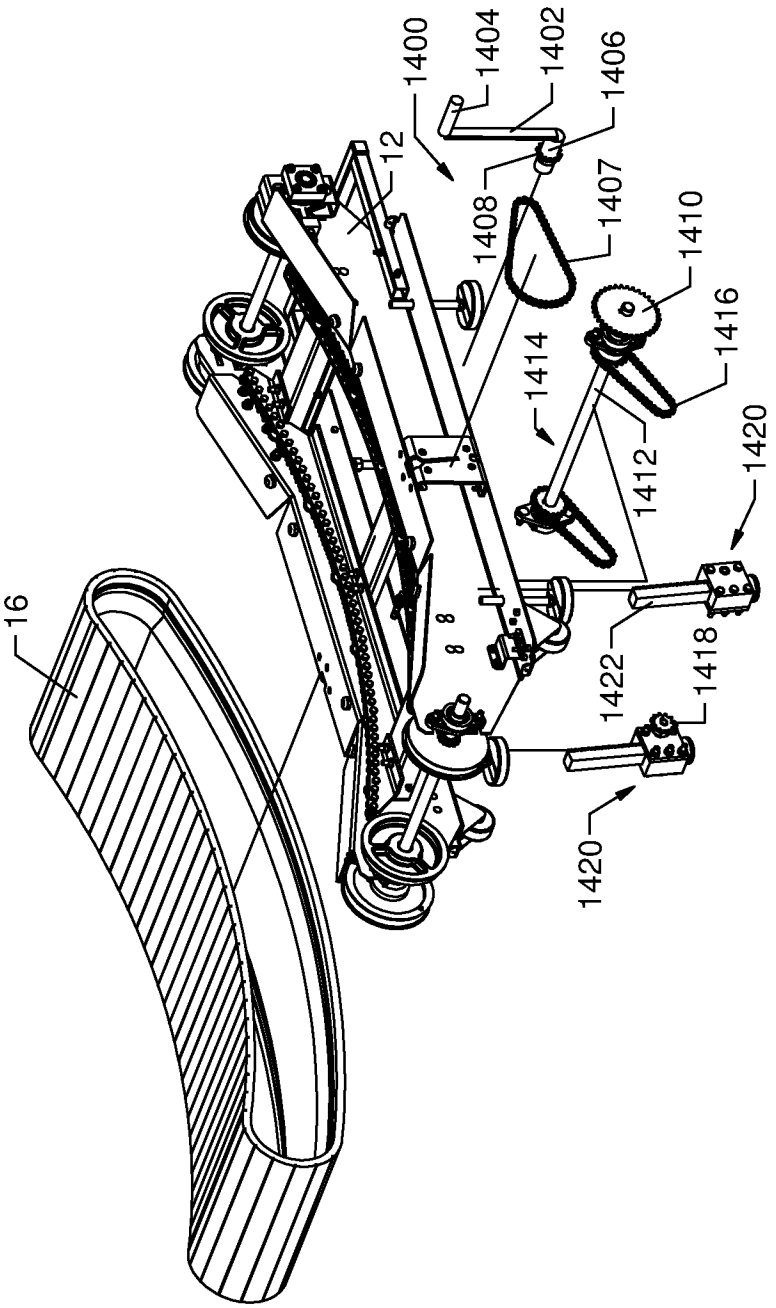

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FIG. 37

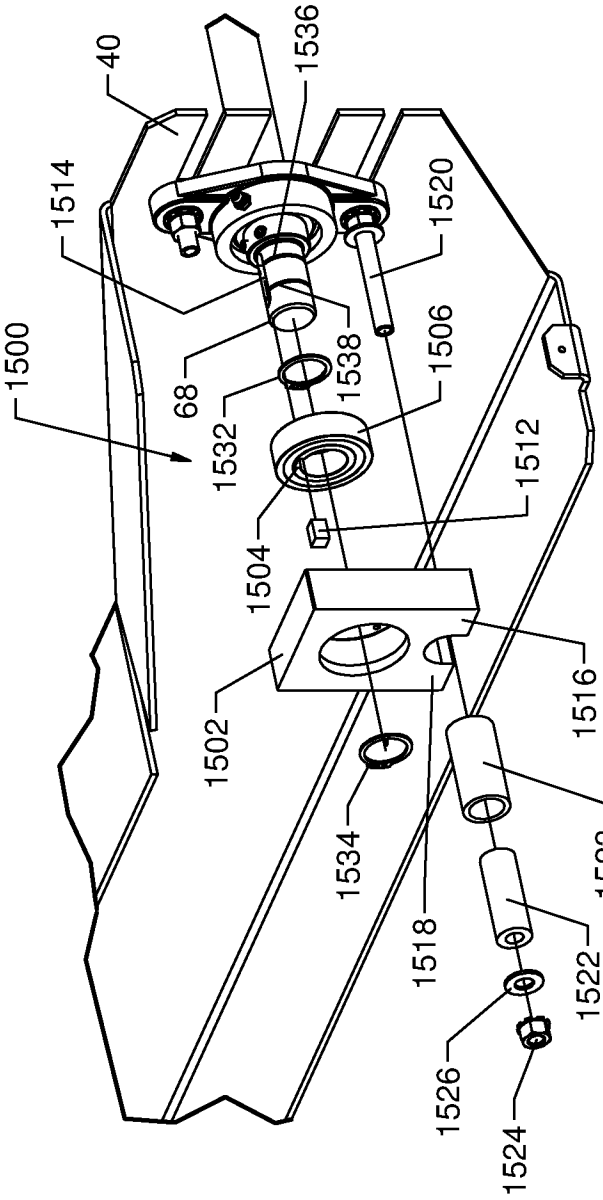

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FIG. 38

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)	097208-0190

Title of Invention	MANUAL TREADMILL AND METHODS OF OPERATING THE SAME

As the below named inventor, I hereby declare that:

This declaration is directed to:

☐ The attached application, or

☒ United States application or PCT international application number 14/076,912 filed on 11/11/2013.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Douglas G. Bayerlein Date (Optional): _____

Signature: Douglas G Bayerlein

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)	097208-0190

Title of Invention	MANUAL TREADMILL AND METHODS OF OPERATING THE SAME

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☒ United States application or PCT international application number 14/076,912 filed on 11/11/2013.

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LEGAL NAME OF INVENTOR

Inventor: Vance E. Emons Date (Optional): 11/25/2013

Signature: Vance E Emons

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)	097208-0190

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LEGAL NAME OF INVENTOR

Inventor: Nicholas A. Oblamski Date (Optional): _____

Signature: _____

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

PTO/AIA/01 (modified)

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)	097208-0190

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I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

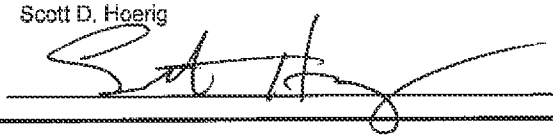
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LEGAL NAME OF INVENTOR

Inventor: Scott D. Hoerig Date (Optional): _____

Signature: 

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)	097208-0190

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LEGAL NAME OF INVENTOR

Inventor: Matthew J. Zank Date (Optional): _____

Signature: _____

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)	097208-0190

Title of Invention	MANUAL TREADMILL AND METHODS OF OPERATING THE SAME

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☒ United States application or PCT international application number 14/076,912 filed on 11/11/2013.

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LEGAL NAME OF INVENTOR

Inventor: Robert L. Zimpel Date (Optional): _____

Signature: _____

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

PTO/AIA/01 (modified)

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)	097208-0190

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LEGAL NAME OF INVENTOR

Inventor: Joel W. Richards Date (Optional): 11/27/13

Signature: Joel Richards

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

4826-3784-6691.1

PTO/AIA/14 (02-18)
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	097208-0311
	Application Number	
Title of Invention	MANUALLY POWERED TREADMILL	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2:

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Douglas	G.	Bayerlein	

Residence Information (Select One) ● US Residency Non US Residency Active US Military Service

City	State/Province	Country of Residence
Oconomowoc	WI	US

Mailing Address of Inventor:

Address 1	34675 Bartlett Road
Address 2	
City	Oconomowoc
State/Province	WI
Postal Code	53066
Country	US

Inventor 2 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Vance	E.	Emons	

Residence Information (Select One) ◉ US Residency Non US Residency Active US Military Service

City	State/Province	Country of Residence
Hartland	WI	US

Mailing Address of Inventor:

Address 1	N79 W28251 Tourmaline Court
Address 2	
City	Hartland
State/Province	WI
Postal Code	53029
Country	US

Inventor 3 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Nicholas	A.	Oblamski	

Residence Information (Select One) ◉ US Residency Non US Residency Active US Military Service

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	097208-0311
	Application Number	
Title of Invention	MANUALLY POWERED TREADMILL	

City	Waukesha	State/Province	WI	Country of Residence	US

Mailing Address of Inventor:

Address 1	W271N525 Jills Dr.		
Address 2			
City	Waukesha	State/Province	WI
Postal Code	53188	Country	US

Inventor 4 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Scott	D.	Hoerig	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Brookfield	State/Province	WI	Country of Residence	US

Mailing Address of Inventor:

Address 1	15755 Sky Cliff Drive		
Address 2			
City	Brookfield	State/Province	WI
Postal Code	53005	Country	US

Inventor 5 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Matthew	J.	Zank	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Milwaukee	State/Province	WI	Country of Residence	US

Mailing Address of Inventor:

Address 1	4677 N. 41st Street		
Address 2			
City	Milwaukee	State/Province	WI
Postal Code	53209	Country	US

Inventor 6 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Robert	L.	Zimpel	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Menomonee Falls	State/Province	WI	Country of Residence	US

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	097208-0311
	Application Number	
Title of Invention	MANUALLY POWERED TREADMILL	

Mailing Address of Inventor:

Address 1	N55 W21289 Logan Dr.		
Address 2			
City	Menomonee Falls	**State/Province**	WI
Postal Code	53051	**Country** i	US

Inventor 7 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Joel	W.	Richards	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Wauwatosa	**State/Province**	WI	**Country of Residence** i	US

Mailing Address of Inventor:

Address 1	2145 N. 65th St.		
Address 2			
City	Wauwatosa	**State/Province**	WI
Postal Code	53213	**Country** i	US

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence Information of this application.**

Customer Number	26371		
Email Address	IPDocketing@foley.com	Add Email	Remove Email

Application Information:

Title of the Invention	MANUALLY POWERED TREADMILL		
Attorney Docket Number	097208-0311	**Small Entity Status Claimed**	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	20	**Suggested Figure for Publication (if any)**	1

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	097208-0311
	Application Number	
Title of Invention	MANUALLY POWERED TREADMILL	

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	● Customer Number	US Patent Practitioner	◯ Limited Recognition (37 CFR 11.9)
Customer Number	26371		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.
When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status			Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation of	16/792444	2020-02-17

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	097208-0311
	Application Number	
Title of Invention	MANUALLY POWERED TREADMILL	

Prior Application Status			Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/792444	Continuation of	15/957721	2018-04-19
Prior Application Status			Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/957721	Continuation of	14/832708	2015-08-21
Prior Application Status			Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
14/832708	Continuation of	14/076912	2013-11-11
Prior Application Status			Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
14/076912	Continuation of	13/235065	2011-09-16
Prior Application Status			Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13/235065	Continuation in part of	PCT/US10/27543	2010-03-16
Prior Application Status			Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
PCT/US10/27543	Claims benefit of provisional	61/161027	2009-03-17
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button.			Add

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)[i] the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

PTO/AIA/14 (02-18)
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	097208-0311
	Application Number	
Title of Invention	MANUALLY POWERED TREADMILL	

Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)

Remove

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button. Add

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	097208-0311
	Application Number	
Title of Invention	MANUALLY POWERED TREADMILL	

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	097208-0311
	Application Number	
Title of Invention	MANUALLY POWERED TREADMILL	

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MANUALLY POWERED TREADMILL

CROSS-REFERENCE TO RELATED PATENT APPLICATIONS

[0001] This application is a continuation of U.S. Patent Application No. 16/792,444, filed February 17, 2020, which is a continuation of U.S. Patent Application No. 15/957,721, filed April 19, 2018, which is a continuation of U.S. Patent Application No. 14/832,708, filed August 21, 2015, which is a continuation of U.S. Patent Application No. 14/076,912, filed November 11, 2013, which is a continuation of U.S. Patent Application No. 13/235,065, filed September 16, 2011, which is a continuation-in-part of prior international Application No. PCT/US2010/027543, filed March 16, 2010, which claims priority to U.S. Provisional Application Serial No. 61/161,027, filed March 17, 2009, all of which are incorporated herein by reference in their entireties.

BACKGROUND

[0002] The present invention relates generally to the field of treadmills. More specifically, the present invention relates to manual treadmills. Treadmills enable a person to walk, jog, or run for a relatively long distance in a limited space. It should be noted that throughout this document, the term "run" and variations thereof (e.g., running, etc.) in any context is intended to include all substantially linear locomotion by a person. Examples of this linear locomotion include, but are not limited to, jogging, walking, skipping, scampering, sprinting, dashing, hopping, galloping, etc.

[0003] A person running generates force to propel themselves in a desired direction. To simplify this discussion, the desired direction will be designated as the forward direction. As the person's feet contact the ground (or other surface), their muscles contract and extend to apply a force to the ground that is directed generally rearward (i.e., has a vector direction substantially opposite the direction they desire to move). Keeping with Newton's third law of motion, the ground resists this rearwardly directed force from the person, resulting in the person moving forward relative to the ground at a speed related to the force they are creating.

[0004] To counteract the force created by the treadmill user so that the user stays in a relatively static fore and aft position on the treadmill, most treadmills utilize a belt that is driven by a motor. The motor operatively applies a rotational force to the belt, causing that portion of the belt on which the user is standing to move generally rearward. This force must be sufficient to overcome all sources of friction, such as the friction between the belt and other treadmill components in contact therewith and kinetic friction, to ultimately rotate the belt at a desired speed. The desired net effect is that, when the user is positioned on a running surface of the belt, the forwardly directed velocity achieved by the user is substantially negated or balanced by the rearwardly directed velocity of the belt. Stated differently, the belt moves at substantially the same speed as the user, but in the opposite direction. In this way, the user remains at substantially the same relative position along the treadmill while running. It should be noted that the belts of conventional, motor-driven treadmills must overcome multiple, significant sources of friction because of the presence of the motor and configurations of the treadmills themselves.

[0005] Similar to a treadmill powered by a motor, a manual treadmill must also incorporate some system or means to absorb or counteract the forward velocity generated by a user so that the user may generally maintain a substantially static position on the running surface of the treadmill. The counteracting force driving the belt of a manual treadmill is desirably sufficient to move the belt at substantially the same speed as the user so that the user stays in roughly the same static position on the running surface. Unlike motor-driven treadmills, however, this force is not generated by a motor.

SUMMARY

[0006] One embodiment of the disclosure relates to a manually operated treadmill comprising a treadmill frame having a front end and a rear end opposite the front end, a front shaft rotatably coupled to the treadmill frame at the front end, a rear shaft rotatably coupled to the treadmill frame at the rear end, and a running belt including a curved running surface upon which a user of the treadmill may run. The running belt is disposed about the front and rear shafts such that force generated by the user causes rotation of the front shaft and the rear shaft and also causes the running surface of the running belt to move from the front shaft toward the

rear shaft. The treadmill is configured to control the speed of the running belt to facilitate the maintenance of the contour of the curved running surface.

[0007] Another embodiment of the disclosure relates to a manually operated treadmill comprising a treadmill frame, a front support member rotatably coupled to the treadmill frame, a rear support member rotatably coupled to the treadmill frame, a running belt including a curved running surface upon which a user of the treadmill may run, wherein the running belt is supported by the front support member and the rear support member, and a synchronizing system configured to cause the front support member and the rear support member to rotate at substantially the same speeds. The force generated by the user causes rotation of the front support member and the rear support member and also causes the running belt to rotate relative to the treadmill frame.

[0008] Another embodiment of the disclosure relates to a manually operated treadmill comprising a treadmill frame, a front shaft rotatably coupled to the treadmill frame, a rear shaft rotatably coupled to the treadmill frame, a running belt including a contoured running surface upon which a user of the treadmill may run, wherein the running belt is disposed about the front and rear shafts such that force generated by the user causes rotation of the front shaft and the rear shaft and also causes the running belt to rotate about the front shaft and the rear shaft without the rotation of the running belt being generated by a motor, and a one-way bearing assembly configured to prevent rotation of the running surface of the running belt in one direction.

[0009] Another embodiment of the disclosure relates to manually operated treadmill comprising a treadmill frame, a running belt including a running surface upon which a user of the treadmill may run, a front support member rotatably coupled to the treadmill frame, the front support member comprising the forwardmost support for the running belt, a rear support member rotatably coupled to the treadmill frame, the rear support member comprising the rearwardmost support for the running belt. The running surface comprises at least in part a complex curve located intermediate the front support member and the rear support member and incorporating a minimum of two geometric configurations.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] FIG. 1 is a perspective view of an exemplary embodiment of a manual treadmill having a non-planar running surface.

[0011] FIG. 2 is a left-hand partially exploded perspective view of a portion of the manual treadmill according to the exemplary embodiment shown in FIG. 1.

[0012] FIG. 3 is a right-hand partially exploded perspective view of a portion of the manual treadmill according to the exemplary embodiment shown in FIG. 1.

[0013] FIG. 4 is a perspective view of the right-hand side of the manual treadmill of FIG. 1 with a portion of the rear of the treadmill cut-away to show a portion of the arrangement of elements.

[0014] FIG. 5 is a cross-sectional view of a portion of the manual treadmill taken along line 5-5 of FIG. 1.

[0015] FIG. 6 is an exploded view of a portion of the manual treadmill of FIG. 1 having the side panels and handrail removed.

[0016] FIG. 7a is a side schematic view of the profile of the running surface of the manual treadmill according to an exemplary embodiment.

[0017] FIGS. 7b-7j are sides schematic views of alternative profiles of the running surfaces of manual treadmills according to alternative exemplary embodiments.

[0018] FIG. 8 is a partially exploded, perspective view of a bearing rail for the manual treadmill according to the exemplary embodiment shown in FIG. 1.

[0019] FIG. 9 is a side elevation view of the bearing rail of FIG. 6.

[0020] FIG. 10 is a top elevation view of a front shaft assembly for the manual treadmill according to the exemplary embodiment shown in FIG. 1.

[0021] FIG. 11 is a top elevation view of a rear shaft assembly for the manual treadmill according to the exemplary embodiment shown in FIG. 1.

[0022] FIG. 12 is a partial, cross-sectional view of the manual treadmill taken along line 12-12 of FIG. 1.

[0023] FIG. 13 is an alternative exemplary embodiment of the partial, cross-sectional view of the manual treadmill similar to FIG. 12.

[0024] FIG. 14 is a perspective view of an alternative embodiment of a synchronizing system integrated into a manual treadmill.

[0025] FIG. 15 is a partial, cross-sectional view of a manual treadmill including an exemplary embodiment of a braking system taken along line 15-15 of FIG. 4.

[0026] FIG. 16 is a partial, cross-sectional view of a manual treadmill including another exemplary embodiment of a braking system taken along line 16-16 of FIG. 4.

[0027] FIG. 17 is a perspective side view of a portion of the manual treadmill according to the exemplary embodiment shown in FIG. 1 including a plurality of rollers used in place of bearing rails.

[0028] FIG. 18 is a side perspective view of a track system for use with the exemplary embodiment of a manual treadmill shown in FIG. 1 and configured to help induce and maintain a running belt in a desired non-planar shape to define a running surface.

[0029] FIG. 19 is a detail view of the track system of FIG. 18 taken along line 19-19.

[0030] FIG. 20 is a partial cross-sectional view of the track system of FIG. 18 taken along line 20-20.

[0031] FIG. 21 is a detail view of the track system of FIG. 20 taken along line 21-21.

[0032] FIG. 22 is a side perspective view of another exemplary embodiment of a track system for use with the exemplary embodiment of a manual treadmill shown in FIG. 1 and configured

to help induce and maintain a running belt in a desired non-planar shape to define a running surface.

[0033] FIG. 23 is a detail view of the track system of FIG. 22 taken along line 23-23.

[0034] FIG. 24 is a partial cross-sectional view of the track system of FIG. 18 taken along line 24-24.

[0035] FIG. 25 is a side perspective view of another exemplary embodiment of a track system for use with the exemplary embodiment of a manual treadmill shown in FIG. 1 and configured to help induce and maintain a running belt in a desired non-planar shape to define a running surface.

[0036] FIG. 26 is a detail view of the track system of FIG. 25 taken along a line 26-26.

[0037] FIG. 27 is a partial cross-sectional view of the track system of FIG. 25 taken along line 27-27.

[0038] FIG. 28 is a detail view of the track system of FIG. 27 taken along line 28-28.

[0039] FIG. 29 is a partially exploded, right-hand perspective view of a track system for use with the exemplary embodiment of a manual treadmill shown in FIG. 1 and configured to help induce and maintain a running belt in a desired non-planar shape to define a running surface.

[0040] FIG. 30 is a detail view of the track system of FIG. 29 taken along line 30-30.

[0041] FIG. 31 is a side perspective view of another exemplary embodiment of a track system for use with the exemplary embodiment of a manual treadmill shown in FIG. 1 and configured to help induce and maintain a running belt in a desired non-planar shape to define a running surface.

[0042] FIG. 32 is a detail view of the track system of FIG. 31 taken along a line 32-32.

[0043] FIG. 33 is a partial cross-sectional view of the track system of FIG. 31 taken along a line 33-33.

[0044] FIG. 34 is a detail view of the track system of FIG. 32 taken along a line 34-34.

[0045] FIG. 35 is a perspective view of an exemplary embodiment of a manual treadmill according to another embodiment having a substantially planar running surface.

[0046] FIG. 36 is a perspective view of a one-way bearing for the manual treadmill according to the exemplary embodiment shown in FIG. 1.

[0047] FIG. 37 is a left-hand partially exploded perspective view of a portion of the manual treadmill according to the exemplary embodiment shown in FIG. 1 including an incline adjustment system.

[0048] FIG. 38 is a perspective view of a one-way bearing for the manual treadmill shown in FIG. 1, according to another embodiment.

DETAILED DESCRIPTION

[0049] Referring to FIG. 1, a manual treadmill 10 generally comprises a base 12 and a handrail 14 mounted to the base 12 as shown according to an exemplary embodiment. The base 12 includes a running belt 16 that extends substantially longitudinally along a longitudinal axis 18. The longitudinal axis 18 extends generally between a front end 20 and a rear end 22 of the treadmill 10; more specifically, the longitudinal axis 18 extends generally between the centerlines of a front shaft and a rear shaft, which will be discussed in more detail below.

[0050] A pair of side panels 24 and 26 (e.g., covers, shrouds, etc.) are preferably provided on the right and left sides of the base 12 to effectively shield the user from the components or moving parts of the treadmill 10. The base 12 is supported by multiple support feet 28, which will be described in greater detail below. A rearwardly extending handle 30 is provided on the rear end of the base 12 and a pair of wheels 32 are provided at the front of the base 12, however, the wheels 32 are mounted so that they are generally not in contact with the ground when the treadmill is in an operating position. The user can easily move and relocate the treadmill 10 by lifting the rear of the treadmill base 12 a sufficient amount so that the multiple support feet 28 are no longer in contact with the ground, instead the wheels 32 contact the

ground, thereby permitting the user to easily roll the entire treadmill 10. It should be noted that the left and right-hand sides of the treadmill and various components thereof are defined from the perspective of a forward-facing user standing on the running surface of the treadmill 10.

[0051] Referring to FIGS. 2–6, the base 12 is shown further including a frame 40, a front shaft assembly 44 positioned near a front end 48 of the frame 40, and a rear shaft assembly 46 positioned near the rear end 50 of frame 40, generally opposite the front end 48. Specifically, the front shaft assembly 44 is coupled to the frame 40 at the front end 48, and the rear shaft assembly 46 is coupled to the frame 40 at the rear end 50 so that the frame supports these two shaft assemblies.

[0052] The frame 40 comprises longitudinally-extending, opposing side members, shown as a left-hand side member 52 and a right-hand side member 54, and one or more lateral or cross-members 56 extending between and structurally connecting the side members 52 and 54 according to an exemplary embodiment. Each side member 52, 54 includes an inner surface 58 and an outer surface 60. The inner surface 58 of the left-hand side member 52 is opposite to and faces the inner surface 58 of the right-hand side member 54. According to other exemplary embodiments, the frame may have substantially any configuration suitable for providing structure and support for the manual treadmill.

[0053] Similar to most motor-driven treadmills, the front shaft assembly 44 includes a pair of front running belt pulleys 62 interconnected with, and preferably directly mounted to, a shaft 64, and the rear shaft assembly 46 includes a pair of rear running belt pulleys 66 interconnected with, and preferably directly mounted to, a shaft 68. The front and rear running belt pulleys 62, 66 are configured to facilitate movement of the running belt 16. The running belt 16 is disposed about the front and rear running belt pulleys 62, 66, which will be discussed in more detail below. As the front and rear running belt pulleys 62, 66 are preferably fixed relative to shafts 64 and 68, respectively, rotation of the front and rear running belt pulleys 62, 66 causes the shafts 64, 68 to rotate in the same direction. The front and rear running belt pulleys 62, 66 are formed of a material sufficiently rigid and durable to maintain shape under load. Preferably, the material is of a relatively light weight so as to reduce the inertia of the pulleys 62, 66. The pulleys 62, 66 may be formed of any material having one or more of these

characteristics (e.g., metal, ceramic, composite, plastic, etc.). According to the exemplary embodiment shown, the front and rear running belt pulleys 62, 66 are formed of cast aluminum. According to another embodiment, the front and rear running belt pulleys 62, 66 are formed of a glass-filled nylon, for example, Grivory® GV-5H Black 9915 Nylon Copolymer available from EMS-GRIVORY of Sumter, SC 29151, which may save cost and reduce the weight of the pulleys 62, 66 relative to metal pulleys. To prevent a static charge due to operation of the treadmill 10 from building on a pulley 62, 66 formed of electrically insulative materials (e.g., plastic, composite, etc.), an antistatic additive, for example Antistat 10124 from Nexus Resin Group of Mystic, CT 06355, maybe may be blended with the GV-5H material.

[0054] As noted above, the manual treadmill disclosed herein includes a force translation system that incorporates a variety of innovations to translate the forward force created by the user into rotation of the running belt and permit the user to maintain a substantially static fore and aft position on the running belt while running. One of the ways to translate this force is to configure the running belt 16 to be more responsive to the force generated by the user. For example, by minimizing the friction between the running belt 16 and the other relevant components of the treadmill 10, more of the force the user applies to the running belt 16 to propel themselves forward can be utilized to rotate the running belt 16.

[0055] Another way to counteract the user-generated force and convert or translate it into rotational motion of the running belt 16 is to integrate a non-planar running surface, such as non-planar running surface 70. Depending on the configuration, non-planar running surfaces can provide a number of advantages. First, the shape of the non-planar running surface may be such that, when a user is on the running surface, the force of gravity acting upon the weight of the user's body helps rotate the running belt. Second, the shapes may be such that it creates a physical barrier to restrict or prevent the user from propelling themselves off the front end 20 of the treadmill 10 (e.g., acting essentially as a stop when the user positions their foot thereagainst, etc.). Third, the shapes of some of the non-planar running surfaces can be such that it facilitates the movement of the running belt 16 there along (e.g., because of the curvature, etc). Accordingly, the force the user applies to the running belt is more readily able to be translated into rotation of the running belt 16.

[0056] As seen in FIGS 1 and 4-5, the running surface 70 is generally non-planar and shown shaped as a substantially complex curve according to an exemplary embodiment. The running surface can be generally divided up into three general regions each having a particular geometric configuration, the front portion 72, which is adjacent to the front shaft assembly 44, the rear portion 74, which is adjacent to the rear shaft assembly 46, and the central portion 76, which is intermediate the front portion 72 and the rear portion 74. In the exemplary embodiment seen in FIGS 1 and 4, the running surface 70 includes a substantially concave curve 80 and a substantially convex curve 82. At the front portion 72 of the running surface 70, the relative height or distance of the running surface 70 relative to the ground is generally increasing moving forward along the longitudinal axis 18 from the central portion 76 toward the front shaft assembly 44. This increasing height configuration provides one structure to translate the forward running force generated by the user into rotation of the running belt 16. To initiate the rotation of the running belt 16, the user places her first foot at some point along the upwardly-inclined front portion 72 of the running surface 70. As the weight of the user is transferred to this first foot, gravity exerts a downward force on the user's foot and causes the running belt 16 to move (e.g., rotate, revolve, advance, etc.) in a generally clockwise direction as seen in FIGS 1 (or counterclockwise as seen in FIG. 4). As the running belt 16 rotates, the user's first foot will eventually reach the lowest point in the non-planar running surface 70 found in the central portion 76, and, at that point, gravity is substantially no longer available as a counteracting source to the user's forward running force. Assuming a typical gait, at this point the user will place her second foot at some point along the upwardly-inclined front portion 72 of the running belt 16 and begin to transfer weight to this foot. Once again, as weight shifts to this second foot, gravity acts on the user's foot to continue the rotation of the running belt 16 in the clockwise direction as seen in FIG. 1. This process merely repeats itself each and every time the user places her weight-bearing foot on the running belt 16 at any position vertically above the lowest point of central portion 76 of the running surface 70 of the of the running belt 16. The upwardly-inclined front portion 72 of the running belt 16 also acts substantially as a physical stop, reducing the chance the user can inadvertently step off the front end 20 of the treadmill 10.

[0057] A user can generally utilize the force translation system of the treadmill 10 to control the speed of the treadmill 10 by the relative placement of her weight-bearing foot along the

running belt 16 of the base 12. Generally, the rotational speed of the running belt 16 increases as greater force is applied thereto in the rearward direction. The generally upward-inclined shape of the front portion 72 thus provides an opportunity to increase the force applied to the running belt 16, and, consequently, to increase the speed of the running belt 16. For example, by increasing her stride and/or positioning her weight-bearing foot vertically higher on the front portion 72 relative to the lowest portion of the running belt 16, gravity will exert a greater and greater amount of force on the running belt 16 to drive it rearwardly. In the configuration of the running belt 16 seen in FIG 1, this corresponds to the user positioning her foot closer to the front end 20 of the treadmill 10 along the longitudinal axis 18. This results in the user applying more force to the running belt 16 because gravity is pulling her mass downward along a greater distance when her feet are in contact with the front portion 72 of the running surface 70. As a result, the relative rotational speed of the running belt 16 and the relative running speed the user experiences is increased. Accordingly, the force translation system is adapted to convert a variable level of force generated by the user into a variable speed of rotation of the belt.

[0058] FIG. 5 illustrates a number of possible locations where a user may position her feet. A-C indicate locations along the front portion 72 of the running surface 70 where a user may place their weight bearing foot. When the user positions her weight bearing foot at location A, she will be running with greater speed than if her weight bearing foot was positioned at locations B or C based upon the fact that the force of gravity is able to have a greater effect as the user's weight bearing foot moves from location A towards the rear of the non-planar running surface 70 as the running belt 16 rotates. At location A, gravity is able to have the greatest impact on the user so that the greatest amount of force is translated into rotation of the running belt 16. A user can decrease her relative running speed by positioning her weight bearing foot at locations B or C. As location B is relatively higher along the front portion 72 than C, gravity is able to exert a greater force on the user and the running belt 16 than if the user's weight bearing foot was positioned at location C.

[0059] Another factor which will increase the speed the user experiences on the treadmill 10 is the relative cadence the user assumes. As the user increases her cadence and places her weight-bearing foot more frequently on the upwardly extending front portion 72, more gravitational force is available to counteract the user-generated force, which translates into

greater running speed for the user on the running belt 16. It is important to note that speed changes in this embodiment are substantially fluid, substantially instantaneous, and do not require a user to operate electromechanical speed controls. The speed controls in this embodiment are generally the user's cadence and relative position of her weight-bearing foot on the running surface. In addition, the user's speed is not limited by speed settings as with a driven treadmill.

[0060] In the embodiment shown in FIGS. 1-6, gravity is also utilized as a means for slowing the rotational speed of the running belt. At a rear portion 74 of the running surface 70, the distance of the running surface 70 relative to the ground generally increases moving rearward along the longitudinal axis 18 from the lowest point in the non-planar running surface 70. As each of the user's feet move rearward during her stride, the rear portion 74 acts substantially as a physical stop to discourage the user from moving too close to the rear end of the running surface. To this point, the user's foot has been gathering rearward momentum while moving from the front portion 72, into the central portion 76, and toward the rear portion 74 of the running surface 70. Accordingly, the user's foot is exerting a significant rearwardly-directed force on the running belt 16. Under Newton's first law of motion, the user's foot would like to continue in the generally rearward direction. The upwardly-inclined rear portion 74, interferes with this momentum and provides a force to counter the rearwardly-directed force of the user's foot by providing a physical barrier. As the user's non-leading foot moves up the incline (see position D in FIG. 5), the running surface 70 provides a force that counters the force of the user's foot, absorbing some of the rearwardly-directed force from the user and preventing it from being translated into increasing speed of the running belt 16. Also, gravity acts on the user's weight bearing foot as it moves upward, exerting a downwardly-directed force on the user's foot that the user must counter to lift their foot and bring it forward to continue running. In addition to acting as a stop, the rear portion 74 provides a convenient surface for the user to push off of when propelling themselves forward, the force applied by the user to the rear portion 74 being countered by the force the rear portion 74 applies to the user's foot.

[0061] One benefit of the manual treadmill according to the innovations described herein is positive environmental impact. A manual treadmill such as that disclosed herein does not utilize electrical power to operate the treadmill or generate the rotational force on the running

belt. Therefore, such a treadmill can be utilized in areas distant from an electrical power source, conserve electrical power for other uses or applications, or otherwise reduce the "carbon footprint" associated with the operation of the treadmill 10.

[0062] A manual treadmill according to the innovations disclosed herein can incorporate one of a variety of shapes and complex contours in order to translate the user's forward force into rotation of the running belt or to provide some other beneficial feature or element. FIG. 7a generally depicts the curve defined by the running surface 70 of the exemplary embodiment shown in FIG 1, specifically, substantially a portion of a curve defined by a third-order polynomial. The front portion 72 and the central portion 76 define a concave curve and the rear portion 74 of the running surface 70 defines a convex curve. As the central portion 76 of the running surface 70 transitions to the rear portion 74, the concave curve transitions to the convex curve. In the embodiment shown, the curvature of the front portion 72 and the central portion 76 is substantially the same; however, according to other exemplary embodiments, the curvature of the front portion 72 and the central portion 76 may differ. Please note, the description of the running surfaces as concave and convex provided herein is related to the relative curve which the user's foot would experience on the running surface 70.

[0063] FIGS. 7b-7h illustrate the side profiles of some exemplary non-planar, contoured running surfaces according to the innovations disclosed herein, each including a front portion, a central portion, and a rear portion. Each portion has a particular geometric configuration that is concave, convex, or linear; collectively, the portions define the non-planar running surface. For example, FIG. 7b shows an exemplary embodiment of the profile of a non-planar surface including a concave front portion 100, a concave central portion 102, and a concave rear portion 104 according to an exemplary embodiment. In this embodiment, the front portion 100, central portion 102, and rear portion 104 each have different curvatures. According to other exemplary embodiments, one or more of the front, central, and rear portions may have the same curvature.

[0064] FIG. 7c shows an exemplary embodiment of the profile of a non-planar surface including a convex front portion 110, a concave central portion 112, and a concave rear portion

114 according to an exemplary embodiment. Once again, this embodiment incorporates a smooth transition between the different curvatures of the front, central, and rear portions.

[0065] FIG. 7d shows an exemplary embodiment of the profile of a non-planar surface including a convex front portion 120, a concave central portion 122, and a convex rear portion 124 according to an exemplary embodiment. In this embodiment, the front portion 120 and the rear portion 122 have different curvatures, but these curvatures may be the same according to other exemplary embodiments.

[0066] FIG. 7e shows an exemplary embodiment of the profile of a non-planar surface including a convex front portion 130, a convex central portion 132, and a convex rear portion 134 according to an exemplary embodiment. In this embodiment, the front portion 130, the central portion 132, and the rear portion 134 each have the same convex curvature, but the curvature of one of more of the front portion 130, the central portion 132, and the rear portion 134 may differ according to other exemplary embodiments.

[0067] FIG. 7f shows an exemplary embodiment of the profile of a non-planar surface including a concave front portion 140, a convex central portion 142, and a convex rear portion 144 according to an exemplary embodiment. In this embodiment, the central portion 142 and the rear portion 144 having the same curvatures, but these curvatures may differ from each other according to other exemplary embodiments.

[0068] FIG. 7g shows an exemplary embodiment of the profile of a non-planar surface including a convex front portion 150, a convex central portion 152, and a concave rear portion 154 according to an exemplary embodiment. In this embodiment, the front portion 150 and the central portion 152 having the same curvatures, but these curvatures may differ from each other according to other exemplary embodiments.

[0069] FIG. 7h shows an exemplary embodiment of the profile of a non-planar surface including a concave front portion 160, a convex central portion 162, and a concave rear portion 164 according to an exemplary embodiment. In this embodiment, the front portion 160 and the rear portion 164 have different curvatures, but these curvatures may be the same according to other exemplary embodiments.

[0070] According to one exemplary embodiment, the non-planar running surface of the manual treadmill 10 is substantially curved, but that curve integrates one or more linear portions (e.g., that replace a "curved portion" or the curve or that are added/inserted into the curve). The linear portions may be substantially parallel to the longitudinal axis 18 or disposed at an angle relative thereto. FIG. 7i illustrates the profile of a non-planar surface wherein a substantially linear portion 170 has been integrated with a concave curve having a first concave portion 174 to one side of the linear portion 170 and a second concave portion 176 to the opposite side of the linear portion 170 according to an exemplary embodiment. In addition to the linear portion 170, the first concave portion 174 and the second concave portion 176, the profile further includes a fourth portion shown as a convex portion 178. According to an another exemplary embodiment, a linear portion may replace all or a portion of the curve. Alternatively, multiple linear portions may be included in a profile of a non-planar surface.

[0071] FIG. 7j illustrates a linear portion 180 provided at the front of the running surface which transitions into a concave curve 182 which then transitions into a convex curve 184.

[0072] According to an exemplary embodiment, the non-planar running surface of the manual treadmill 10 may include (or be so defined as to include) more or less than three portions. For example, FIG. 7g could be interpreted as defined two portions, the first portion including the front portion and the central portion, which comprise a convex curve having the same curvature throughout the front portion 150 and the central portion 152, and the second portion including the rear portion 154 which generally comprises a concave curve. According to some exemplary embodiments, some non-planar running surfaces include at least three or more portions.

[0073] According to an exemplary embodiment, the profile defined by the non-planar running surface is substantially a portion of a curve defined by any suitable second-order polynomial, but, as clearly demonstrated in FIGS. 7a-j, the profile defined by the non-planar running surface can be a portion of a curve that is a third-order polynomial or a fourth-order polynomial. According to yet another exemplary embodiment, the running surface profile can be substantially defined by a first-order polynomial, in other words, the running surface is

substantially planar. An exemplary embodiment of a manual treadmill including a planar running surface will be discussed in more detail below (see e.g., FIG. 35).

[0074] According to an exemplary embodiment, the relative length of each portion of the running surface may vary. In the exemplary embodiment shown, the central portion is the longest. In other exemplary embodiments, the rear portion may be the longest, the front portion may be shorter than the intermediate portion, or the front portion may be longer than the rear portion, etc. It should be noted that the relative length may be evaluated based on the distance the portion extends along the longitudinal axis or as measured along the surface of the running belt itself. One of the benefits of integrating one or more of the various curves or contours into the running surface is that the contour of the running surface can be used to enhance or encourage a particular running style. For example, a curve integrated into the front portion of the running surface can encourage the runner to run on the balls of her feet rather than a having the heel strike the running belt 16 first. Similarly, the contour of the running surface can be configured to improve a user's running biomechanics and to address common running induced injuries (e.g., plantar fasciitis, shin splints, knee pain, etc.). For example, integrating a curved contour on the front portion of the running surface can help to stretch the tendons and ligaments of the foot and avoid the onset of plantar fasciitis.

[0075] One of the difficulties associated with using a running surface that has a non-planar shape is inducing the running belt 16 to assume the non-planar shape and then maintaining the running belt 16 in that non-planar shape when the treadmill is being operated. In addition to discussing this difficultly in more detail below, a number of running belt retention systems providing ways to induce and maintain a belt in a desired non-planar shape to define the running surface are discussed below. Generally, these running belt retention systems are adapted to control the relative contour of the running belt so that the running belt substantially follows the contour of the running surface

[0076] One embodiment of a running belt retention system used to induce the running belt 16 to take-on the non-planar shape and then maintaining that shape, as shown in FIG. 5, is discussed in reference to FIGS. 5-6 and 8–11 in which base 12 is shown further including a pair of opposed bearing rails 200 to support the running belt 16 along with a front synchronizing

belt pulley 202, a rear synchronizing belt pulley 204, and a synchronizing belt 206 all of which are interconnected to the running belt 16. The front rear synchronizing belt pulleys 202, 204 may be formed of the same or different materials as the front and rear running belt pulleys 62, 66.

[0077] Referring to FIGS. 6 and 8-9, in particular, the bearing rails 200 are shown including a plurality of bearings 208 and an upper or top profile 210, shown shaped as a complex curve, according to an exemplary embodiment. The bearing rails 200 shown are supported by and preferably mounted to the frame 40 substantially between the front shaft assembly 44 and the rear shaft assembly 46, the support members or elements about which the running belt 16 is disposed. One bearing rail 200 is coupled to one or more of the cross-members 56 proximate to the inner surface 58 of the left-hand side member 52 and the other bearing rail 200 is coupled to one of more of the cross-members 56 proximate to the inner surface 58 of the right-hand side member 54 thereby fixing the position of the bearing rails 200 relative to the frame 40.

[0078] The bearing rails 200 are preferably configured to facilitate movement of the running belt 16. In the exemplary embodiment seen in FIGS. 8–9, the running belt 16 moves substantially along the top profile 210 of the bearing rails 200. The running belt 16 contacts and is supported in part by the bearings 208 of the bearing rails and bearing 208 are configured to rotate, thereby decreasing the friction experienced by the running belt 16 as the belt moves along the top profile 210. The bearing rails 200 are configured to help achieve the desired shape of the running surface. The shape of the top profile 210 of the bearing rails 200 at least partially corresponds to the desired shape for the running surface 70. The at least somewhat flexible running belt 16 substantially assumes the shape of top profile 210 of the bearing rails 200 by being maintained substantially thereagainst, as will be discussed in more detail later. Accordingly, the running surface 70 has a shape that substantially corresponds to the shape of the top profile 210 of the bearing rails 200. It should be noted that the front and/or rear running belt pulleys may also help define a portion of the shape of the running surface. Also, other suitable shape-providing components may be used in combination with the bearing rails.

[0079] FIG. 9 provides a side view of one of the bearing rails 200 to more clearly show the top profile 210 according to an exemplary embodiment. Similar to the running surface 70,

discussed above, the top profile 210 of the bearing rails 200 can be generally divided up into three general regions, the front portion 212 which is adjacent to the front shaft assembly 44 (see e.g., FIG. 5), the rear portion 214 which is adjacent to the rear shaft assembly 46 (see e.g., FIG. 5), and the central portion 216, intermediate the front portion 212 and the rear portions 214. The central portion 216 is shown as a concave curve 218 that has a radius of curvature R1. The front portion 212 is further shown as a continuation of the concave curve 218 of the central portion 216, and, thus, also has a radius of curvature of R1. The rear portion 214 is shown as a convex curve 220 that has a radius of curvature R2. The front portion 212 is shown disposed substantially tangential to the central portion 216, providing a smooth transition therebetween, and helping provide a smooth shape for the running surface 70. The shape of the rear portion 214 also helps provide a smooth transition for the running belt 16 from the bearing rails 200 onto the rear running belt pulleys 66, which helps ensure as much contact as possible between the running belt 16 and the rear running belt pulleys 66. As the shape of the running surface substantially corresponds to the shape of top profile the bearing rails, the shape of the top profile of the bearing rails can necessarily be any of the shapes and/or have any of the variations (e.g., in length of portions, etc.) discussed above in FIGS. 7a through 7j with reference to possible shapes of the running surface.

[0080] According to an exemplary embodiment, each portion of the top profile is disposed substantially tangential to the portions adjacent thereto. According to other exemplary embodiments, less than all of the adjacent portions are disposed substantially tangential to the portions adjacent thereto, meaning the profile does not have an entirely smooth contour.

[0081] According to an exemplary embodiment shown in FIG. 9, R1 is approximately 7.26 feet. However, it is understood that a radius anywhere from 5 feet to 100-plus feet can be used. The size of the radius which can be used is typically a function of the length of the treadmill which can be accommodated. The range of possible radiuses for a convex bearing rail depends on the shaft-to-shaft distance of the treadmill (see e.g., measurement "x" in FIG. 5, discussed in more detail below). Assuming that the radius of curvature of the curve is R_C, the radius of the front running belt pulley is R_f, and the radius of the rear running belt pulley is R_r, the range of possible radiuses is approximately: $\infty > R_C > (x - R_f - R_r)/2$. For most commercial-available treadmills, x is approximately between 14 inches and 10 feet but the treadmill can certainly be

as great as 25 feet in length. According to the exemplary embodiment shown in FIG. 5, x is approximately 57.8 inches in length. According to another exemplary embodiment, x is approximately 77.2 inches in length, with a radius R1 of approximately 8.67 feet, wherein the greater length x and radius R1 may facilitate use of the treadmill 10 by users with a longer running gait. The limiting factors in the length are the available space to accommodate the treadmill and the relative cost of constructing such a large treadmill.

[0082] When the treadmill 10 is being operated, the running belt 16 is driven rearwardly and the goal is to ensure that the running belt 16 follows the profile defined by a portion of the circumference of the front running pulleys 62, the contoured profile defined by the bearings 208 supported on the bearing rails 200 and finally by a portion of the circumference of the rear running belt pulleys 66. The particular contour which the running belt 16 assumes on the bottom of the base 12 between the rear running belt pulleys 66 and front running belt pulleys 62 is not terribly critical provided that the running belt continues to move with minimal friction and is not subject to excessive wear or obstruction.

[0083] Following the shape of the bearing rails 200 is not the natural tendency of the running belt for the particular contour seen in FIG. 5. Rather, without more, the running belt 16 tends to be pulled upward, away from the curved bearing rails and across the central portion 76 of the treadmill 10. Under the force of gravity, the weight of the running belt 16 coupled with the relative spacing between the front and rear running belt pulleys 62 and 66, respectively, would likely result in the top surface of the running belt 16 assuming a position of the shortest distance between the two pulleys, namely, a substantially straight line between the two pulleys with any excess length of the running belt 16 collecting on the bottom of the treadmill and hanging below the front and rear running belt pulleys 62 and 66, respectively. Therefore, a system of some sort needs to be integrated into a non-planar running surface treadmill to ensure that the running belt 16 follows the desired contour over the running surface.

[0084] Further referring to FIGS. 5–6 and 8–11, one way to ensure that the running belt 16 follows the contour of the bearing rails 200 and the front and rear running belt pulleys 62, 66 is to utilize the weight of the running belt 16 itself in addition to adjusting the relative size of the

front and rear running belt pulleys 62, 66; and/or providing a synchronizing system 222 according to an exemplary embodiment.

[0085] As discussed above, the running belt 16 is disposed about the front and rear running belt pulleys 62, 66 which in turn are disposed about front and rear shafts 64, 68, respectively. Measured along the longitudinal axis 18 between the centerlines of the front and rear shafts 64, 68, the front and rear shafts 64, 68 are spaced a distance x from each other, as shown in FIG. 5. Accordingly, when positioning the running belt 16 about the front and rear running belt pulleys 62, 66, the length of the running belt 16 provided therebetween must be at least x (e.g., the straight-line distance therebetween). It follows that, when the profile of the running surface 70 is non-planar, the length of the running belt provided between the front and rear shafts 64, 68 will be greater than x.

[0086] In the exemplary embodiment shown in FIG. 5, when positioning the running belt 16 about the front and rear running belt pulleys 62, 66, a length of the running belt 16 sufficient to permit the running belt 16 to correspond to (e.g., follow, be positioned against or above, etc.) the desired contours of the bearing rails 200 and the front and rear running belt pulleys 62, 66 is generally disposed between the front and rear shafts 64, 68. At each location between the front and rear shafts 64, 68, the force of gravity pulls downward on the running belt 16. Generally, this force will help pull the running belt 16 downward and against the desired components of base 12. However, gravity can also cause slippage (e.g., over the front running belt pulley 62, over the rear running belt pulley 66, down along curves of the bearing rail 200, etc.) in an amount that is undesirable and the magnitude of these slippage-problems tends to increase when the treadmill 10 is being operated. Accordingly, the solution typically relies on more than the weight of the running belt alone.

[0087] Further referring to FIGS. 5–6 and 8–11, the preferred embodiment of the running belt 16 is shown including two reinforcing belts shown as endless belts 226 and a plurality of slats 228 according to an exemplary embodiment. The endless belts 226 are configured to provide support for the running belt 16 in order to support the weight of a user. The endless belts 226 are shown disposed on opposite sides of the running belt 16, generally interior to the outer, lateral edge of the slats 228. The endless belts 226 are themselves reinforced, and thus help

stabilize the sides of the running belt and help prevent stretching of the running belt 16. For example, the endless belts may be reinforced with metal wiring, which is surrounded by a molded plastic coating. According to some exemplary embodiments, more or less than two endless belts may be used. According to other exemplary embodiments, other suitable support elements may be used to provide support for the running belt. Further details regarding the structure of the running belt and endless belt structure are seen in US Pat. No. 5,470,293, titled "Toothed-Belt, V-Belt, and Pulley Assembly, for Treadmills," which is incorporated by reference herein.

[0088] The endless belts 226 are further configured to interact with the front running belt pulleys 62 and the rear running belt pulleys 66. The location of each endless belt 226 laterally, along the width of the running belt 16, substantially corresponds to the location of a longitudinally aligned front running belt pulley 62 and rear running belt pulley 66. Each endless belt 226 includes a first or inner portion 230 and a second or outer portion 232 at an interior surface 236 according to an exemplary embodiment. The inner portion 230 is in contact with an exterior surface 234 of the corresponding running belt pulleys 62, 66. According to some exemplary embodiments, the outer portion 232 is also in contact with the exterior surface 234 of the corresponding running belt pulleys 62, 66.

[0089] FIG. 12 illustrates a running belt and running belt pulley combination wherein the exterior surfaces 234 of the front running belt pulleys 62 are substantially smooth and are in contact with the interior surface 236 of the endless belts 226, which is also substantially smooth according to an exemplary embodiment. The outer portion 232 is shown substantially not in contact with the exterior surfaces 234 of the front running belt pulleys 62. The outer portion 232 is further shown including a plurality of teeth 238 (e.g., being toothed); however, according to other exemplary embodiments, the outer portion may be smooth or have any suitable texture and/or configuration. In this embodiment, both of the running belt pulleys come in contact with the inner, substantially smooth portion of the endless belts, and a toothed portion of the endless belts is disposed to the outside of the running belt pulleys on both sides.

[0090] FIG. 13 illustrates an alternative running belt and running belt pulley combination according to an exemplary embodiment. In this exemplary embodiment, the front running belt

pulleys 62' include a first or inner portion 230' and a second or outer portion 232'. The inner portion 230' of the front running belt pulleys 62' is substantially smooth, while the outer portion 232' includes a plurality of teeth, to correspond to the inner and outer portions 230', 232', of the endless belts 226', respectively. In this embodiment, both of the running belt pulleys include an inner, smooth portion and an outer, toothed portion. These portions correspond to an inner, smooth portion of the endless belt and an outer, toothed portion of the endless belt. This endless belt/front running belt pulley configuration is discussed in more detail in U.S. Patent No. 5,470,293, titled "Toothed-Belt, V-Belt, and Pulley Assembly, for Treadmills," which is herein incorporated by reference in its entirety.

[0091] According to still another an exemplary embodiment, a combination of the endless belt/front running belt pulley configurations shown in FIGS. 12 and 13 is used. In this exemplary embodiment, the smooth belt and pulley configuration shown in FIG. 12 is used for the front running belt pulleys and the combination of smooth and toothed belt and pulley configuration shown in FIG. 13 is used for the rear running belt pulleys. In another exemplary embodiment, the configuration shown in FIG. 13 is used for the front running belt pulleys and the configuration shown in FIG. 12 is used for the rear running belt pulleys.

[0092] The slats 228 of the running belt 16 are configured to help support a user of the treadmill 10. The slats 228 may be made of substantially any suitably sturdy material (e.g., wood, plastic, metal, etc.) and extend generally laterally between the endless belts 226. Each slat 228 is coupled at its ends 252, 254 to the second portions 232 of the endless belts 226 using fasteners. According to other exemplary embodiments, the slats may be otherwise coupled to the endless belts (e.g., adhered, welded, etc.) in the manner disclosed in US Pat. No. 5,470,293, titled "Toothed-Belt, V-Belt, and Pulley Assembly, for Treadmills," which is incorporated herein by reference. Each slat is shown to include a portion 229 (e.g., stem, web, etc.) extending inwardly from an interior surface 256 of the slat 228.

[0093] According to an exemplary embodiment, the running belt may be substantially any suitable, continuous loop element, including, but not limited to, a continuous urethane (e.g., polyurethane) loop, a continuous loop made of plastics other than polyurethane, a plastic belt reinforced with reinforcing elements (e.g., metal wire, a relatively harder plastic, wood, etc.), a

continuous foam loop, a loop formed by a plurality of interconnected members (e.g., metallic members, wooden members, etc.) in a manner to provide at least some flexibility, etc.

[0094] Referring to FIGS. 6, 10 and 11, another aspect of the solution to ensuring the running belt 16 follows the desired contour involves the utilizing front running belt pulleys 62 that are slightly larger than the rear running belt pulleys 66. That is, the radius of the front running belt pulleys, R_f, is greater than the radius of the rear running belt pulleys, R_r. Assuming the front running belt pulleys 62 are rotating with the same rotational velocity (e.g., angular speed) as the rear running belt pulleys 66, the tangential velocity of the front running belt pulleys 62 is slightly greater than the tangential velocity of the rear running belt pulleys 66. Thus, as the running belt 16 is driven, the portion of the running belt 16 disposed proximate the front end 20 of the treadmill 10 will be moved over the front running belt pulleys 62 and rearward with slightly greater speed than the rear running belt pulleys 66 move the portion of the running belt 16 proximate thereto. Thus, the front running belt pulleys 62 essentially "push" the running belt 16 rearward, creating a slight amount of excess running belt 16 in the area between the front running belt pulleys 62 and the rear running belt pulleys 66, which helps to counter the force of gravity which would attempt to gather any excess length of running belt 16 on the bottom of the treadmill 10 thereby causing the top surface of the running belt 16 to assume a position of the shortest distance between the two pulleys, namely, a substantially straight line between the two pulleys. Obviously the system cannot tolerate too much excess length of running belt feeding off the front running belt pulley 62 so periodically, a portion of this excess running belt 16 will slip over the rear running belt pulley 66. By specifically balancing the excess running belt 16 coming off the front running belt pulley 62 against the slippage allowed on the rear running belt pulley 66, the running belt 16 will follow the desired concave, convex or linear (or combinations thereof) contours of the running surface.

[0095] If the difference between the radius of the front running belt pulleys 62 and the radius of the rear running belt pulleys 66 is too large, the running belt 16 will begin to bunch up atop the base 12 as too much excess is generated. Accordingly, there is a practical limit of differences between the radius of each of the front running belt pulleys 62 and the radius of each of the rear running belt pulleys 66. Generally, this range may be dependent on the length of the running surface, as measured along the running belt, and/or the shape of the running

surface. According to an exemplary embodiment, the size difference between the radii of the front and rear running belt pulleys, $R_f - R_r$, is within the range of approximately $0 < R_f - R_r, < 0.100$ inches. Preferably, the size difference between the radii of the front and rear running belt pulleys, $R_f - R_r$, is within the range of approximately $0.005 < R_f - R_r, < 0.035$ inches. In one embodiment, the radius of the front running belt pulleys is approximately 7.00" +/- 0.010" and the radius of the rear running belt pulleys is approximately 6.985" +/- 0.010. According to another exemplary embodiment, instead of using front and rear running belt pulleys having a radial size difference, the synchronizing belt pulleys may have a radial size difference. Similar to the differently sized front and rear running belt pulleys, the differently sized front and rear synchronizing pulleys would be used to essentially "push" the running belt rearward, creating a slight amount of excess running belt 16 in the area between the front running belt pulleys and the rear running belt pulleys.

[0096] Another means for ensuring that the running belt 16 follows the desired complex curve is to match the rotational velocity of the front running belt pulleys 62 to that of the rear running belt pulleys 66 utilizing a synchronizing system 222. Further referring to FIGS. 5-6 and 8-11, the synchronizing system 222 is shown generally to comprise the front synchronizing belt pulley 202, the rear synchronizing belt pulley 204, and the synchronizing belt 206 according to an exemplary embodiment.

[0097] The front synchronizing belt pulley 202 is rotatably mounted relative to the front shaft 64, similar to the front running belt pulleys 62. Preferably, the front synchronizing belt pulley 202 is securely mounted directly to the front shaft 64. Similarly, the rear synchronizing belt pulley 204 is fixed relative to the rear shaft 68 and preferably securely mounted to the rear shaft 68. Accordingly, the front synchronizing belt pulley 202 will move with substantially the same rotational speed as the front running belt pulleys 62, and the rear synchronizing belt pulley 204 will move with the same rotational speed as the rear running belt pulleys 66. When the front shaft assembly 44 and the rear shaft assembly 46 are coupled to the frame 40, the front and rear synchronizing belt pulleys 202, 204 are shown disposed exterior to the outer surface 60 of the left-hand side member 52. According to another exemplary embodiment, the front and rear synchronizing belt pulleys may be placed exterior to the outer surface of the right-hand side member of the frame. According to other exemplary embodiments, the synchronizing system

may be disposed substantially between the left-hand side member and the right-hand side member of the frame.

[0098] The synchronizing belt 206 is configured to provide a force that helps ensure that the front and rear shafts 64, 68 are rotating (e.g., moving, spinning, etc.) at the same rotational velocity. The synchronizing belt 206 is shown as an endless belt that is adapted to be supported in tension about the front synchronizing belt pulley 202 and the rear synchronizing belt pulley 204, as shown in FIGS. 4–5. As the running belt pulleys 62, 66 and the synchronizing belt pulleys 202, 204 are both substantially fixed relative to the front shaft 64 and the rear shaft 68, the rotation of the front shaft 64 and the rear shaft 68 causes the front synchronizing belt pulley 202 and the rear synchronizing belt pulley 204 to similarly rotate. In response to the motion of the front synchronizing belt pulley 202 and the rear synchronizing belt pulley 204, the synchronizing belt 206, which connects the front shaft assembly 44 and the rear shaft assembly 46, similarly rotates. Because of the tension in the synchronizing belt 206 and the fact that the synchronizing belt pulleys 202, 204 are the same size, the synchronizing belt 206 provides a counter force in response to any deviation in rotational velocity between the front shaft assembly 44 and the rear shaft assembly 46. For example, if the rear shaft assembly 46 was induced to start moving with greater rotational velocity than the front shaft assembly 44, the tension in the upper portion of the synchronizing belt (i.e., that portion of the synchronizing belt that extends generally between the tops of the synchronizing pulleys) would resist any differential rotation between the front and rear synchronizing belt pulleys 202, 204. Continuing with the example, any discrepancy between the rotational velocity of the front and rear shafts 64, 68 is similarly resisted by the engagement of the synchronizing belt 206. Thus, by constraining the relative motion of the front shaft assembly 44 and the rear shaft assembly 46, the synchronizing system 222 keeps their rotational velocity in sync, substantially preventing the front and rear running belt pulleys 62, 66 from becoming unsynchronized and moving at different rotational velocities.

[0099] So, in practice, the running belt 16 is initially installed on the front and rear running belt pulleys 62, 66 and the running belt 16 is manually positioned in the desired position so that a sufficient length of the running belt 16 is positioned along the top of the treadmill and the running belt 16 assumes the desired contour. While the running belt 16 is maintained in this

position, the synchronizing belt 206 is mounted to the synchronizing belt pulleys 202, 204 and once the synchronizing belt 206 is installed, it effectively resists differential rotation of the running belt pulleys 62, 66 which could result in loss of the desired contour of the running belt 16.

[0100] It should be noted that the tension in the synchronizing belt 206 also helps maintain the position of the synchronizing belt 206 relative to the synchronizing belt pulleys 202, 204. The tension helps enhance friction between an interior surface 244 of the synchronizing belt 206 and exterior surfaces 246 of the synchronizing belt pulleys 202, 204, making it less likely that the synchronizing belt 206 will slip relative to the synchronizing belt pulleys 202, 204.

[0101] One or more tensioning assemblies 248 may be provided to adjust the tension in the synchronizing belt 206 (see e.g., FIGS. 3 and 6 illustrating tensioning assemblies 248). Tensioning assemblies 248 are configured to move portions of the synchronizing belt 206 relative to one another, stretching the synchronizing belt 206 and maintaining this stretch so that the synchronizing belt 206 can provide the necessary resistance to differential rotation of the front and rear running belt pulleys 62, 66. Alternatively, the tensioning assemblies 248 can be adjusted to release some of the tension in the synchronizing belt 206. Releasing some of the tension may be desirable if the synchronizing belt 206 is too tight, causing excess friction between the synchronizing belt 206 that makes it too difficult to rotate the front and rear shaft assemblies 44, 46 (e.g., greater than desired by the user, too great to function, etc.). The tensioning assemblies 248 are also used when the synchronizing belt 206 is being installed and removed. According to another exemplary embodiment, a single tensioning assembly is used in conjunction with one or more stationary idlers. According to still another exemplary embodiments, any devices or elements suitable for maintaining and/or adjusting the tension in the synchronizing belt may be used.

[0102] Referring to FIG. 14, a synchronizing system 300 is shown according to another exemplary embodiment. The synchronizing system 300 would typically be used in lieu of the previously described synchronizing system 222. In this next exemplary embodiment, the synchronizing system 300 is shown comprising a synchronizing shaft 302 mechanically connected at a first end 304 to a front gear 306 and at a second end 308 to a rear gear 310. The

front gear 306 is interconnected with, and preferably directly mounted and fixed relative to, the front shaft 64, and the rear gear 310 is interconnected with, and preferably directly mounted and fixed relative to, the rear shaft 68. Accordingly, the front gear 306 will move with substantially the same rotational speed as the front running belt pulleys 62, and the rear gear 310 will move with the same rotational speed as the rear running belt pulleys 66. When the front shaft assembly 44 and the rear shaft assembly 46 are coupled to the frame 40, the front and rear gears 306, 310 are shown disposed exterior to the outer surface 60 of the right-hand side member 54. According to another exemplary embodiment, the front and rear gears 306, 310 may be placed exterior to the outer surface of the left-hand side member of the frame. According to other exemplary embodiments, the synchronizing system may be disposed substantially between the left-hand side member and the right-hand side member of the frame.

[0103] The synchronizing shaft 302 is configured to provide a force that helps ensure that the front and rear shafts 64, 68 are rotating (e.g., moving, spinning, etc.) at the same rotational velocity. The synchronizing shaft 302 is shown as an elongated, substantially cylindrical member that extends generally between the front shaft 64 and the rear shaft 68. A first threaded portion 312 including a plurality of threads 314 is shown located at the first end 304 of the synchronizing shaft 302 and is configured to mesh with a plurality of teeth 316 of the front gear 306 that is fixed relative to the front shaft 64. A second threaded portion 318 including a plurality of threads 320 is shown located at the second end 308 of the synchronizing shaft 302 and is configured to mesh with a plurality of teeth 322 of the rear gear 310 that is fixed relative to the rear shaft 68.

[0104] The synchronizing shaft 302 rotates in response to the motion of the front gear 306 and the rear gear 310. When the front shaft 64 and the rear shaft 68 rotate in response to the user driving the running belt 16, the front gear 306 and the rear gear 310, which are fixed relative to the front shaft 64 and the rear shaft 68, respectively, similarly rotate. The front gear 306 meshes with and imparts rotational motion to the first threaded portion 312, and, thereby, imparts rotational motion to the synchronizing shaft 302. The rear gear 310 meshes with and imparts rotational motion to the second threaded portion 318, and, thereby, imparts rotational motion to the synchronizing shaft 302.

[0105] Because the synchronizing shaft 302 is rigid and the front and rear gears 306, 310 are the same size, the synchronizing shaft 302 provides a counter force in response to any deviation in rotational velocity between the front shaft assembly 44 and the rear shaft assembly 46. For example, if the rear shaft assembly 46 was induced to start moving with greater rotational velocity than the front shaft assembly 44, the rear gear 310 would be prevented from moving with greater rotational velocity than the front gear 306 because of the synchronizing shaft 302. The second threaded portion 318 is meshed with the rear gear 310. The second threaded portion 318 is fixed relative to the first threaded portion 312. The first threaded portion 312 is meshed with the front gear 306, which is moving with less rotational velocity than the rear gear 310. The front gear 306, being fixed relative to the front shaft assembly 44 which is also traveling at the same rotational velocity, seeks to continue at this rotational velocity. Thus, the force transmitted to the front gear 306 from the rear gear 310 by the synchronizing shaft 302 is met with a counter force. Specifically, the teeth 322 of the front gear 306 counter the force applied thereto by the threads 314 of the first threaded portion 312 at the first end 304. This counter force substantially prevents the rotational velocity of the synchronizing shaft 302, which includes the second threaded portion 318, from increasing. Stated otherwise, the force applied is sufficient to prevent the second end 308 of the synchronizing shaft 302 from rotationally advancing ahead of the first end 304. As the second threaded portion 318 is prevented from experiencing an increase in rotational velocity, the second threaded portion 318 provides a counter force to the rear gear 310. Specifically, the threads 320 of the second threaded portion 318 counter the force applied thereto by the teeth 322 of the rear gear 310. Thus, the synchronizing shaft 302 constrains the relative motion of the front gear 306 and rear gear 310, and, thereby constrains the relative motion of the front shaft assembly 44 and the rear shaft assembly 46.

[0106] Another embodiment of a running belt retention system used to induce and maintain the running belt in a desired non-planar shape to define the running surface is seen in FIG. 15, specifically a braking system 400 configured to help induce and maintain the running belt in a desired non-planar shape to define the running surface is shown according to an exemplary embodiment. Please note, the section lines 15-15 shown in FIG. 4 do not necessarily suggest that the braking system 400 seen in FIG. 15 is integrated into the manual treadmill depicted in FIG. 4, rather, the section line 15-15 is included in FIG. 4 to show one potential location for the

integration of a braking system into a manual treadmill according to the various innovations disclosed herein. The braking system 400 is shown in cooperation with the rear shaft assembly 402 and the synchronizing system 222. The rear shaft assembly 402 differs from the above-discussed rear shaft assembly 46 in that the rear shaft assembly 402 includes a pair of rear running belt pulleys 404 that are substantially the same size as the front running belt pulleys (not shown).

[0107] The braking system 400 has substantially the same effect as the differently sized front and rear running belt pulleys discussed above. That is, the braking system 400 causes a slight amount of excess running belt 16 in the area between the front running belt pulleys and the rear running belt pulleys. More specifically, the braking system 400 causes the rotational velocity of the rear shaft assembly 402 to be slightly lower than the rotational velocity of the front shaft assembly by applying a frictional force to the rear synchronizing belt pulley 204. Thus, the braking system 400 acts on the synchronizing system 222 to force (e.g., urge, push, move, etc.) the rear shaft assembly 402 out of synch with the front shaft assembly.

[0108] The braking system 400 includes a generally elongated member 406 in cooperation with the synchronizing system 222. The elongated member 406 is coupled to the rear shaft assembly 402 by a bracket 408 having a first side 410 spaced a distance apart from an outer surface 250 of the rear synchronizing belt pulley 204. The elongated member 406 is disposed through an aperture 412 of the bracket 408 and includes a first end 414 disposed to the inside of the first side 410 and a second end 416 disposed to the outside of the first side 410. The first end 414 includes a surface 418 configured to contact the outer surface 250 of the rear synchronizing belt pulley 204. The second end 416 includes a knob 420 configured to be gripped by a person (e.g., a user, a trainer, etc.) and to have a rotational force imparted thereto. An exterior surface of the elongated member 406 is at least partially threaded to correspond to threading at an interior surface defining the aperture 412. Rotating the knob 420, and, thereby, the elongated member 406, in one direction, causes the surface 418 to be advanced toward the outer surface 250 of the rear synchronizing belt pulley 204, and rotating the knob 420 in the opposite direction causes the surface 418 to retreat or be moved away from the outer surface 250 of the rear synchronizing belt pulley 204.

[0109] During operation of the treadmill, the surface 418 of the elongated member 406 is substantially in contact with the outer surface 250 of the rear synchronizing belt pulley 204, creating friction therebetween. As the rear synchronizing belt pulley 204 of the synchronizing system 222 is fixed relative to the rear shaft assembly 402, some of the force directed to the rear shaft assembly 402 to impart rotation thereto must be used to overcome the frictional force between the surface 418 of the elongated member 406 and the outer surface of the rear synchronizing belt pulley 204. As the force needed to overcome the frictional force between the surface 418 of the elongated member 406 and the outer surface 250 of the rear synchronizing belt pulley 204 is no longer being directed into rotation of the rear shaft assembly 402, the rotational velocity of the rear shaft assembly 402 is less than the rotational velocity of the front shaft assembly. Thus, the front running belt pulleys of the front shaft assembly will "push" the running belt rearward, creating a slight amount of excess running belt 16 in the area between the front running belt pulleys and the rear running belt pulleys. This excess length of running belt 16 helps to counter the force of gravity, discussed in more detail above. It should be noted that, because the friction between the surface 418 of the elongated member 406 and the outer surface 250 of the rear synchronizing belt pulley 204 is substantially constant during operation, the rotational velocity will be substantially maintained at the lower rotational velocity.

[0110] The length of excess running belt "pushed" rearward by the front running belt pulleys can be varied by adjusting the position of the surface 418 relative to the outer surface 250 of the rear synchronizing belt pulley 204. If one moves the surface 418 laterally closer to the outer surface 250, the friction therebetween will increase, the differential between the rotational velocity of the rear shaft assembly and the front shaft assembly will increase, and the length of the excess will increase. If one moves the surface 418 away from the outer surface 250, the friction therebetween will decrease (or be removed if they are brought out of contact), the differential between the rotational velocity of the rear shaft assembly and the front shaft assembly will decrease, and the length of the excess will decrease.

[0111] According to another exemplary embodiment, the braking system 400 may be used with front and rear running belt pulleys that have a size differential. In such an embodiment,

the braking system 400 would be used to fine tune the length of excess running belt pushed rearward with each rotation of the front and rear running belt pulleys.

[0112] FIG. 16 illustrates another exemplary embodiment of a braking system, shown as braking system 500, configured to help induce and maintain the running belt in a desired non-planar shape to define the running surface. Please note, the section lines 16-16 shown in FIG. 4 do not necessarily suggest that the braking system 500 seen in FIG. 16 is integrated into the manual treadmill depicted in FIG. 4, rather, the section line 16-16 is included in FIG. 4 to show one potential location for the integration of a braking system into a manual treadmill according to the various innovations disclosed herein. The braking system 500 includes a pulley 502 mounted to a rear shaft assembly 504 generally opposite a front shaft assembly, both shaft assemblies having running belt pulleys that are substantially the same size. A belt 506 rotationally couples the pulley 502 to an idler pulley 508. The idler pulley 508 is configured to be adjustable so that it may be moved towards or away from the pulley 502 along an axis generally parallel to the longitudinal axis 18. Though, it should be noted that the idler pulley may be moved relative to the pulley 502 mounted to the rear shaft assembly along an axis other than one generally parallel to the longitudinal axis 18.

[0113] By adjusting the position of the idler pulley 508 relative to the pulley 502, one can adjust the friction between the belt 506 and the pulleys 502, 508. Moving the idler pulley 508 away from the pulley 502, increases the tension in the belt 506, and, accordingly, increases the friction between the belt 506 and the pulleys 502, 508. Moving the idler pulley 508 toward the pulley 502, decreases the tension in the belt 506, and, accordingly, decreases the friction between the belt 506 and the pulleys 502, 508.

[0114] Similar to the discussion of braking system 400, increasing the friction between the belt 506 and the pulleys 502, 508, increases the differential between the rotation of the rear shaft assembly to which the braking system 500 is coupled and the front shaft assembly. As a corollary, decreasing the friction between the belt 506 and the pulleys 502, 508, decreases the differential between the rotational velocity of the rear shaft assembly 504 and the front shaft assembly. As discussed above, the greater the differential, the greater the length of the excess that the front running belt pulleys push rearward.

[0115] FIG. 17 illustrates another exemplary embodiment of a running belt retention system of the treadmill 10 used to help induce and maintain the running belt in a desired non-planar shape to define the running surface. The treadmill 10 is shown including a plurality of rollers 600 used to support the running belt 16 in place of bearing rails 200, discussed above.

[0116] The each roller 600 is shown extending laterally generally between the left-hand side member 52 and the right-hand side member 54 of the frame 40. Along the longitudinal axis 18, the rollers 600 are disposed adjacent to one another generally between one or more front running belt pulleys 604 and one or more rear running belt pulleys 606. Typically, the running belt used with this exemplary embodiment is a continuous polymer belt without slats; the use of a continuous polymer belt having greater flexibility in the lateral direction than running belt 16 improves the ease of movement of the running belt along the rollers 600. However, other suitable continuous belts may be used according to other exemplary embodiment

[0117] In the exemplary embodiment shown, the one or more front running belt pulleys is shown as a single, front running belt pulley 604 that is substantially a large roller, disposed at the front end 48 of the frame 40. Similarly, the one or more rear running belt pulleys is shown as a single, rear running belt pulley 606 that is a substantially a large roller, disposed at the rear portion of the frame 40. According to other exemplary embodiments, any multiple of running pulleys may be used at one or both of the front end and the rear end, such as front running belt pulleys 62.

[0118] Collectively, the rollers 600 define a top profile 608 similar to the top profile 210 defined by the bearing rails 200, discussed above, and provide for a running belt to move therealong. Similar to the top profile of the bearing rails, the top profile 608 defined by the rollers may be varied (e.g., may include a convex portion and a concave portion, may be modeled by a third-order polynomial, may be modeled by a fourth-order polynomial, etc.).

[0119] The front and rear running belt pulleys 604, 606 and the rollers 600 help define the running surface. In use, the running belt is disposed over the front running belt pulley 604, along the top profile 602 defined by the rollers 600, and over the rear running belt pulley 606. The running belt is maintained in a position substantially along these elements primarily by the weight of the running belt; however, according to other exemplary embodiments, a

synchronizing system may also be used to ensure that the running belt is maintained in the desired position.

[0120] Referring to FIGS. 18-21, an embodiment of a running belt retention system including a track system 700 and configured to help induce and maintain the running belt in a desired non-planar shape to define the running surface according to an exemplary embodiment.

[0121] A treadmill according to this exemplary embodiment does not include front and rear shaft assemblies or bearing rails, but, rather, includes a pair of opposed tracks 702 configured to provide for movement of a running belt 16 therealong. The tracks 702 are spaced apart, generally define the path that the running belt 16 will travel, and substantially replicate at least a portion of the running surface. Each track 702 includes a side support wall 708 and a guide portion 710 generally centrally-disposed along the side support wall 708. The guide portion 710 extends from an inner side 712 of the side support wall 708 towards the interior of the treadmill frame, defined generally between the left-hand side member and the right-hand side member. The guide portion 710 generally defines the contour of the running surface that is defined by the running belt 16 when coupled to the tracks 702. An outer side 714 each side support wall 708 is disposed substantially adjacent to an inner surface of one of the side members of the treadmill frame.

[0122] A plurality of roller or wheel assemblies 716 are connected with, preferably mounted directly to or integral with, each of a plurality of slats 228 of the running belt 16. Each a laterally-oriented slat 228 includes a left-hand end 252 generally opposite a right-hand end 254. One of a plurality of wheel assemblies 716 is coupled at each end 252, 254 of each slat 228 at an interior surface 256. The wheel assemblies 716 are configured to be mated with the tracks 702 and provide for motion of the running belt 16 along the tracks 702.

[0123] Each wheel assembly 716 is shown including first roller or wheel 720 and a second roller or wheel 722 rotatably coupled to a support shown as an elongated connecting member 724. The connecting member 724 connects each wheel assembly 716 to a slat 228 and maintains the relative position of the first wheel 720 and the second wheel 722. When coupled to the track 702, the first wheel 720 of a wheel assembly 716 is disposed to one side the guide portion 710 and rotatably movable therealong, and the second wheel 722 of the wheel assembly

716 is disposed generally opposite the first wheel 720 to the other side of the central guide portion 710.

[0124] The wheels 720, 722 and the tracks 702 are shaped such that when they are mated, the wheels 720, 722 cannot be pulled inwardly off of or pushed outwardly off of the track 702. In the exemplary embodiment shown, the guide portion 710 is shown having a substantially-circular cross section 724 and the wheels 720, 722 are shown having circumferentially-disposed arcuate depressions 726 that receive and travel along an outer curved portion 728 and an inner curved portion 730 of the guide portion 710 of the track 702. According to other exemplary embodiments, the wheels and the track guide portion can have substantially any corresponding shapes that provide for the wheels and the track to mate and that provide for movement of the wheels therealong.

[0125] When the running belt 16 is being driven by a user, the interaction of the guide portion 710 and the first and second wheels 720, 722 helps maintain the belt in the desired non-planar shape. As mentioned above, the tracks 702 generally defines the contour of the running surface defined by the running belt 16. Being coupled to the guide portion 710 of the track 702, each wheel assembly 716 rotates about the track 702, following the contour defined thereby.

[0126] If the running belt 16 began to deviate from the desired path, the interaction between the wheels 720, 722 and the guide portion 710 would substantially prevent undesirable shifting. While being rotatably coupled to the elongated connecting member 724, the axes 732 and 734 of the first wheel 720 and second wheel 722, respectively, are a fixed distance apart. Further, the arcuate depressions 726 of the wheels 720, 722 are in contact with the outer curved portion 728 and inner curved portion 730, respectively. Thus, as a result the interactions between the arcuate depressions 726 and the curved portions 728, 730, any movement of a wheel assembly 716 relative to the track 702 other than along the path defined by the track 702 is countered by a force from the guide portion 710. It should also be noted that the interactions between the depressions 726 of adjacent wheel assemblies 716 and the curved portions 728, 730 of the track 702 may also help keep a wheel assembly 716 in place.

[0127] Referring to FIGS. 22-24, the treadmill 10 is shown including another exemplary embodiment of a track system configured to help induce and maintain the running belt in a

desired non-planar shape to define the running surface, shown as a track system 800. Similar to track system 700, a treadmill according to this exemplary embodiment does not include front and rear shaft assemblies or bearing rails, but, rather, includes a pair of tracks 802 configured to provide for movement of a running belt 16 therealong. In this exemplary embodiment, each track 802 is shown as an elongated member having a substantially C-shaped cross section that defines a channel 804 having an opening 806 that faces the interior of the frame 40. An outer wall 808 each of the tracks 802 is disposed substantially adjacent to an inner surface of a left-hand or right-hand side member 52, 54 (shown, e.g., in FIG. 2) such that the openings 806 face each other. The outer wall 808 is substantially opposite an inner wall 810

[0128] As discussed above, the running belt 16 includes a plurality of laterally-oriented slats 228 each having a left-hand end 252 generally opposite a right-hand end 254. One of a plurality of roller or wheel assemblies 812 is coupled at each end 252, 254 of each slat 228 to mate with the tracks 802 and to provide for motion of the running belt 16 along the tracks 802.

[0129] Each wheel assembly 812 is shown including a support shown as a mounting block 814 and a wheel 816 rotatably coupled to the mounting block 814. The mounting block 814 mounted to an interior surface 256 of a slat 228. The wheel 816 is supported relative to the mounting block 814 by an axis 818 that extends substantially parallel to the slats 228 to facilitate positioning the wheel 816 in the channel 804. The wheel 816 is received in the channel 804 and is rotatably movable therewithin to facilitate travel of the running belt 16 along the contour defined by the channel 804. The shape of the channel 804 generally corresponds to the shape of the wheel 816.

[0130] When the running belt 16 is being driven by a user, the walls of the track 802 defining the C-shaped channel 804 help forcibly retain the wheel 816 therein, preventing the wheel from moving in any direction other than along the contour defined by the channel 804, and, thereby, maintaining the running belt 16 in the desired non-planar shape to define the running surface. The outer wall 808 and the inner wall 810 limit the side-to-side, lateral movement of the wheel 816 when it is disposed in the channel 804. Limiting the motion of the wheel 816, similarly limits the motion of the wheel assembly 812 and the slat 228 fixed relative thereto. Further, a first wall 820 substantially opposite a second wall 822 substantially limits the up-and-down

motion of the wheel 816 relative to the channel 804. In circumstances where side-to-side and/or up-and-down motion of the wheel 816 occurs, the walls 808, 810, 820, 822 defining the channel 804, providing counter forces to maintain the wheel 816 in the desired position and help direct the wheel 816 along the desired path.

[0131] Referring to FIGS. 25-28, the treadmill 10 is shown including still another exemplary embodiment of a track system configured to help induce and maintain the running belt in a desired non-planar shape to define the running surface, shown as a track system 900. Similar to track system 800, the treadmill according to this exemplary embodiment does not include bearing rails, but, rather, includes a pair of tracks 902 configured to provide for movement of a running belt 16 therealong. In this exemplary embodiment, each track 902 is shown as an elongated member having a substantially C-shaped cross section that defines a channel 904 having an opening 906 that faces the exterior of the track 902. Stated otherwise, each channels 904 extend about an outer periphery 908 of a tracks 902.

[0132] As discussed above, the running belt 16 includes a plurality of laterally-oriented slats 228 each having a left-hand end 252 generally opposite a right-hand end 254. One of a plurality of roller or wheel assemblies 910 is coupled at each end 252, 254 of each slat 228 to mate with the tracks 902 and to provide for motion of the running belt 16 along the tracks 902.

[0133] Each wheel assembly 910 is shown including a support shown as a connecting bar 912 that is substantially T-shaped and connected to a first wheel 914 and a second wheel 916. A first portion 918 of the connecting bar 912 is fixed relative to the interior surface 256 of a slat 228. A second portion 920 extends substantially perpendicular to the first portion 918 and away from the interior surface 256 of the slat 228. The first wheel 914 and the second wheel 916 are connected to the connecting bar 912 by an axis 922 that extends generally parallel to the first portion 918 and perpendicular to the second portion 920 of the connecting bar 912. The first wheel 914 is disposed to one side of the second portion 920 of the connecting bar 912 and the second wheel 916 is disposed opposite the first wheel 914 to the other side of the second portion 920.

[0134] When the wheel assemblies 910 are mated with the tracks 902, the second portion of the connecting bar 912 extends partially into the channel 904, the first wheel 914 is received

within a first portion 924 of the channel 904 and the second wheel 916 is disposed within a second portion 926 of the channel 904. The first portion 924 of each channel 904 is disposed proximate to an outer surface 928 of the track 902 relative to the second portion 926.

[0135] When the running belt 16 is being driven by a user, the first wheel 914 and the second wheel 916 of a given wheel assembly rotate within the channel 904, facilitating moment of the running belt 16 in the path defined by the track 902. As the running belt 16 is rotated, the slats 228 are disposed generally exterior to the periphery 908 of the track 902. The walls of the track 902 defining the channel 904 help forcibly retain the wheels 914, 916. An outer wall 930 and an inner wall 932 limit the side-to side movement of the wheels 914, 916, either by coming into contact with the wheels 914, 916 themselves or by coming into contact with another part of the wheel assembly 910 (e.g., the connecting bar 912). Limiting the motion of the wheels 914, 916 and the wheel assembly 910 similarly limits the motion of the slat fixed relative thereto, helping each slat, and, thereby, the running belt 16 to follow the desired path. Further, a first wall 934 substantially opposite a second wall 936 substantially limits the up-and-down motion of the wheels 914, 916 relative to the channel 904. In circumstances where side-to-side and/or up-and-down motion of the wheel 916 occurs, the walls 930, 932, 934, 936 defining the channel 904, providing counter forces to maintain the wheels 914, 916 in the desired position and help direct the wheels 914, 916 along the desired path.

[0136] Referring to FIGS. 29-30, the treadmill 10 is shown including another exemplary embodiment of a track system configured to help induce and maintain the running belt in a desired non-planar shape to define the running surface, shown as a track system 1000.

[0137] Instead of using wheel assemblies, such as 716 and 910, discussed above, the treadmill according to this exemplary embodiment utilizes a plurality of magnets 1002 to maintain the running belt 16 in the desired position. One or more magnets 1002 are fixed relative to the interior surface 256 of the slats 228 at locations substantially corresponding to the position of a track 1004, which is typically along the left-hand end 252 and the right-hand end 254 of the slats 228. The magnets 1002 may be coupled by any variety of fasteners or fastening mechanisms. Generally, it is preferable that, when the magnets 1002 are fixed relative to the slats, the fasteners do not directly contact the periphery 1006 of the tracks 1004

to avoid scratching and damage thereto. While it is generally desirable to mount a magnet 1002 to each slat, 228, the number of magnets used will vary depending upon a variety of factors such as the relative weight of the belt and the relative magnetic strength of each magnet.

[0138] The magnets 1002 are configured to magnetically couple the running belt 16 to the track 1004, which is made of metal (e.g., steel) or includes a peripheral metal portion. The magnets 1002 have strength suitable to maintain the running belt 16 in close proximity to a periphery 1006 of the tracks 1004.

[0139] When the treadmill is driven by a user, the force imparted to the running belt 16 is sufficient to permit the magnets to move relative bearing rails, but not to lose the magnetic connection therebetween. According to one exemplary embodiment, as the running belt 16 moves relative to the track 1004, the magnets 1002 are generally spaced a small distance from the periphery 1006 of the track 1004, helping to further reduce the noise associated with operation of the treadmill. According to other exemplary embodiments, the magnets 1002 are in physical contact with the periphery 1006 of the track 1004 in addition to being magnetically coupled thereto.

[0140] According to an exemplary embodiment similar to track system 1000, a plurality of magnets may be positioned on the frame, track, or other fixed component of the treadmill base to apply a downwardly-directed force to the metal slats of the running belt as it passes over the magnets. For example, the magnets may be positioned on the cross-members 56. As the running belt rotates, the portion passing above the magnets will be drawn downward by the force of the magnets, helping maintain that portion of the running belt (i.e., defining the running surface) in the desired shape.

[0141] Referring to FIGS. 31-34, the treadmill 10 is shown including another exemplary embodiment of a track system configured to help induce and maintain the running belt in a desired non-planar shape to define the running surface, shown as a track system 1100.

[0142] The track system 1100 is substantially similar to track system 700, but configured to be operable with a running belt 1102 that is a conventional running belt rather than a slatted running belt 16. The track system 1100 includes a pair of tracks 702 and a wheel assemblies

1104 having substantially the same configuration as wheel assembly 716 with the exception that a securing device shown as a clip 1106 is used to connect the wheel assembly 1104 to the running belt 1102, rather than the elongated connecting member 724. The clip 1106 is shown extending and having a first portion 1108 and a second portion 1110 that opening towards the interior of the treadmill 10 before being secured. When the running belt 1102 shown as a continuous polymer (e.g., urethane) belt is in position, a first edge 1112 of the running belt 1102 is received between a first portion 1108 and a second portion 1110 of the clip 1106 and fixed relative thereto (e.g., by a fastener, etc.). The polymer belt is a urethane belt according to an exemplary embodiment. The urethane belt is desirable heavy enough to help assume the shape of the rollers, but not so thick or heavy that it undesirably impedes movement. The clips extend along the first edge 1112 and the second edge 1114 of the running belt 1102, substantially suspending the belt between the tracks 702. According to an exemplary embodiment, the securing device may be any securing device suitable for securing an edge portion of the running belt 1102 relative thereto (e.g., a bolt, a clamp, etc.).

[0143] According to still another exemplary embodiment, a treadmill has a track system including a pair of tracks and wheel assemblies. The wheel assemblies include hangers (e.g., magnetic hangers) that are received in channels that are interior to the track, the hangers being slidably movable within the channels. According to one exemplary embodiment, the hangers are substantially I-shaped, having one transverse portion received in the channel and the other transverse portion fixed to an interior side of a slat. According to some exemplary embodiments, the system further includes bearing rails that facilitate motion of the running belt itself and the hangers within the track. The hangers and the channel of the track may have any configuration suitable for facilitating movement of the running belt and maintaining the running belt in the desired non-planar shape.

[0144] The above-described ways of inducing and maintaining the running belt in the desired non-planar shape can also be used with or adapted to a manual treadmill having a planar running surface, such as treadmill 1200 having planar running surface 1202 shown in FIG. 35. The treadmill 1200 is shown substantially similar to treadmill 10, but the running surface is substantially planar. Accordingly, the ability to manually drive the treadmill is substantially

dependent on the incline of the running surface 1202 relative to the ground. Ways to adjust this incline for any treadmill disclosed herein will be discussed in more detail later.

[0145] In the exemplary embodiment shown, the running surface 1202 is defined by a running belt 1204 that is disposed about front and rear running belt pulleys of a front and rear shaft assembly, respectively. The running belt 1204 also travels along a pair of bearing rails having a substantially linear top profile that facilitate motion of the running belt 1204.

[0146] As discussed above, the speed controls for the manual treadmill 10 and the various embodiments thereof are generally the user's cadence and relative position of her weight-bearing foot on the running surface. More generally, the running belt 16 of the treadmill 10 is responsive to the weight of the user mounting, dismounting, or running on the treadmill 10. While it is generally desirable for the running belt 16 to be moved rearward, the running belt is capable of rotating forward. Forward rotation of the running belt can create safety concerns. For example, if a user were to mount the treadmill by placing her weight bearing foot at a location (e.g., location D shown in FIG. 5) along the rear portion 74 of the running surface 70, the running belt 16 may move forward and cause them to loose their footing, resulting in an injury or simply an unpleasant user experience.

[0147] A number of safety devices may be used with the treadmill 10 to help prevent undesirable forward rotation of the running belt 16. FIG. 36 illustrates a safety device shown as a one-way bearing assembly 1300 according to an exemplary embodiment. The one-way bearing assembly 1300 is a motion restricting element that is configured to permit rotation of at least one of the front and rear shaft assemblies 44, 46 (and hence the running belt 16) in only one direction, preferably clockwise as seen in FIGS 1 and 5.

[0148] In the exemplary embodiment shown, the one way bearing assembly 1300 is disposed about and cooperates with the rear shaft 68 as shown in FIG. 2. The one-way bearing assembly 1300 comprises a housing 1302 which supports an inner ring 1304 that cooperates with the rear shaft 68 and supports an outer ring 1306 fixed relative to the housing 1302. A plurality of sprags (not shown) are disposed between the inner ring 1304 and the outer ring 1306. The sprags are asymmetric, and, thus, provide for motion in one direction and prevent rotation in the opposite direction. The housing 1302 is fixed to a bracket 1310 that is connected to, and

preferably directly mounted to, the frame 40 to fix the location of the housing 1302 and prevent movement of the housing 1302 in response to the rotation of the rear shaft 68. It should be noted that the location at which the bracket 1310 is mounted to the frame 40 can be adjusted depending on the location of the rear shaft 68, which may change depending on the shape of the non-planar running surface or the desired tension in the running belt. According to another exemplary embodiment, the one-way bearing may be transitionally fit into the housing, rather than press fit. According to yet another exemplary embodiment, the one-way bearing may include rollers in addition to sprags.

[0149] The one-way bearing assembly 1300 further includes a key 1312 that is fixed relative to the inner ring 1304 and configured to cooperate with a keyway 1314 formed in the rear shaft 68. Viewed from the perspective shown in FIGS. 1 and 5, when the running belt 16 is moving rearward, rotating in the clockwise direction, the rear shaft 68 similarly rotates in the clockwise direction. The inner ring 1304 of the one-way bearing assembly 1300 rotates with rotational velocity corresponding to the rotational velocity of the rear shaft 68 because of the interaction between the key 1312 and the keyway 1314. If a force is applied by the user to the running belt 16 that urges the rear shaft 68 to rotate counterclockwise, the one-way bearing assembly 1300 provides a counter force, preventing the counterclockwise rotation of the rear shaft 68 and the forward rotation of the running belt 16. Specifically, as the rear shaft 68 begins to move counterclockwise, the interaction of the key 1312 and the keyway 1314 begins to drive the inner ring 1304 of the one-way bearing assembly 1300 rearward. The sprags become wedged between the inner ring 1304 and the outer ring 1306, preventing the counterclockwise rotation of the inner ring and key 1312 disposed therein. The key 1312, by virtue of its inability to rotate, provides a counterforce to the keyway 1314 as the keyway continues to attempt to rotate counterclockwise. By preventing the keyway 1314 from moving counterclockwise, the one-way bearing assembly 1300 thus prevents the rear shaft 68, the rear running belt pulleys 66, and running belt 16 from rotating counterclockwise as seen in FIGS 1 and 5.

[0150] FIG. 38 illustrates another safety device that may be used with the treadmill 10, shown as a one-way bearing assembly 1500 according to an exemplary embodiment. The one-way bearing assembly 1500 is a motion restricting element that is configured to permit rotation of at

least one of the front and rear shaft assemblies 44, 46 (and hence the running belt 16) in only one direction, preferably clockwise as seen in FIGS 1 and 5.

[0151] In the exemplary embodiment shown, the one-way bearing assembly 1500 is disposed about and cooperates with the rear shaft 68. The one-way bearing assembly 1500 comprises a housing 1502 which supports an inner ring 1504 that cooperates with the rear shaft 68 and supports an outer ring 1506 fixed relative to the housing 1502. A plurality of sprags (not shown) are disposed between the inner ring 1504 and the outer ring 1506. The sprags are asymmetric, and, thus, provide for motion in one direction and prevent rotation in the opposite direction. The one-way bearing assembly 1500 is further shown to include a first snap ring 1532 and a second snap ring 1534, which are configured to seat in a first circumferential groove 1536 and a second circumferential groove 1538 on the rear shaft 68, respectively. When installed, the first snap ring 1532 is supported inboard of and adjacent to the inner ring 1504, and the second snap ring 1534 is supported outboard of and adjacent to the inner ring 1504, thereby further restricting axial motion of the one-way bearing assembly 1500 relative to the rear shaft 68.

[0152] The housing 1502 is supported by a stud 1520 which is coupled to the frame 40. The stud 1520 may be separated or spaced apart from the housing 1502 by a spacer 1522 and a sleeve 1523 which may be restrained on the stud 1520 by a nut 1524 and a washer 1526. The sleeve 1523 of the embodiment shown is formed of rubber and is configured to reduce noise, wear, and shock load between the housing 1502 and the stud 1520 and/or the spacer 1522. The housing 1502 includes a plurality of legs, shown as a first leg 1516 and a second leg 1518, which extend on either side of the stud 1520. Accordingly, the stud 1520 resists rotational motion of the housing 1502 in response to rotation of the rear shaft 68 and may provide sufficient reactive or counter force to the housing 1502 to enable the one-way bearing assembly 1500 to prevent counterclockwise rotation of the rear shaft 68. Supporting the one-way bearing assembly 1500 in this manner negates the need for fixing the housing 1502 to the frame 40 or an intermediary bracket. Accordingly, the housing 1502 may move with the rear shaft 68 (e.g., the housing 1502 may pivot about the stud 1520) as the rear shaft 68 flexes under load, thereby reducing side loading on the inner ring 1504, which in turn reduces wear on, and extends the life of, the one-way bearing assembly 1500.

[0153] It should be noted that the location at which the stud 1520 is mounted to the frame 40 can be adjusted depending on the location of the rear shaft 68, which may change depending on the shape of the non-planar running surface or the desired tension in the running belt. Furthermore, the stud 1520 need not be positioned below or downward from the rear shaft 68, as shown, but may be located in any direction relative to the rear shaft 68. According to another exemplary embodiment, the one-way bearing may be transitionally fit into the housing, rather than press fit. According to yet another exemplary embodiment, the one-way bearing may include rollers in addition to sprags.

[0154] The one-way bearing assembly 1500 further includes a key 1512 that is fixed relative to the inner ring 1504 and configured to cooperate with a keyway 1514 formed in the rear shaft 68. Viewed from the perspective shown in FIGS. 1 and 5, when the running belt 16 is moving rearward, rotating in the clockwise direction, the rear shaft 68 similarly rotates in the clockwise direction. The inner ring 1504 of the one-way bearing assembly 1500 rotates with rotational velocity corresponding to the rotational velocity of the rear shaft 68 because of the interaction between the key 1512 and the keyway 1514. If a force is applied by the user to the running belt 16 that urges the rear shaft 68 to rotate counterclockwise as seen in FIGS. 1 and 5, the one-way bearing assembly 1500 provides a counter force, preventing the counterclockwise rotation of the rear shaft 68 and the forward rotation of the running belt 16. Specifically, as the rear shaft 68 begins to move counterclockwise, the interaction of the key 1512 and the keyway 1514 begins to drive the inner ring 1504 of the one-way bearing assembly 1500 rearward. The sprags become wedged between the inner ring 1504 and the outer ring 1506, preventing the counterclockwise rotation of the inner ring and key 1512 disposed therein. The key 1512, by virtue of its inability to rotate, provides a counterforce to the keyway 1514 as the keyway continues to attempt to rotate counterclockwise. By preventing the keyway 1514 from moving counterclockwise, the one-way bearing assembly 1500 thus prevents the rear shaft 68, the rear running belt pulleys 66, and running belt 16 from rotating counterclockwise as seen in FIGS 1 and 5.

[0155] Other safety devices to help prevent undesirable forward rotation of the running belt 16 may include cam locking systems, which may be particularly well-suited for use in

conjunction with track systems 700, 800, and 900. Also, taper locks, a user operated pin system, or a band brake system with a lever may be utilized.

[0156] Controlling the operation of the running belt 16 in ways in addition to preventing rearward rotation, can help improve the safety of the treadmill and/or help a user adjust the treadmill for a desirable level of performance. Including an incline or elevation adjustment system is one way to provide these benefits. As mentioned above, as the increasing or decreasing of the relative height or distance of the running surface relative to the ground is one way that the operation, most typically the speed, of the treadmill can be adjusted. Accordingly, adjusting the incline of the base of the treadmill results in an adjustment to the speeds a user can achieve and/or how easy or challenging it is for the user to achieve certain speeds.

[0157] Referring back to FIGS. 1-6, a plurality of nuts 270 are fixed, and more preferably welded, to the bottom of the frame 40 allow the feet 28 to be adjusted. The feet 38 include a lower or base portion 272 and a threaded shaft 274 extending vertically upward from the base portion 272 according to an exemplary embodiment. Generally, by increasing the distance between the nuts 270 and the base portions 272 of the feet 28 at the front end 48 of the frame 40 relative to the rear end 50, the incline of the base 12 will increase. Stated otherwise, the angle between the longitudinal axis 18 and the ground will increase. Similarly, the distance between the nuts 270 and the base portions 272 of the feet at the rear end 50 may be decreased relative to the feet 28 at the front end 48, thereby increasing the incline. By increasing the incline, a user is typically able to achieve greater speeds on the treadmill 10.

[0158] Treadmill 1200 shown in FIG. 35 preferably has at least some incline (i.e., the longitudinal axis of the treadmill to be other than parallel to the ground) when in operation as the shape of the running surface, substantially planar, does not provide for increases and decreases in height in and of itself. On the other hand, the longitudinal axes of the treadmills having non-planar running surfaces may be parallel to the ground or at an incline thereto during operation. It should be noted that, while it is generally desirable to have the front shaft at a height at or above the height of the rear shaft, with some running surface configurations, desirable orientations can be achieved by raising the rear shaft to a location above the front shaft relative to the ground.

[0159] In some cases, the user may want to decrease the incline of the treadmill (e.g., to decrease the speeds the treadmill can achieve, etc.). For example, the user may want to utilize a relatively long stride, but does not want to be running at such high speeds. This can be accomplished by lowering the incline of the treadmill from the higher incline position. Once in the lowered position, the same stride the user was using at the higher incline position will typically result in the user running at lower speeds in the lower incline position. This same principle can also be applied for the purposes of safety. That is, keeping the front of the treadmill at a lower incline position or lowering the treadmill to a lower incline position can help prevent a user from achieving speeds that are too great for them (e.g., that would cause them to be off-balance, lose control, be injured, etc.).

[0160] Because the treadmill is preferably manually operated, it does not have an external power source which can be utilized to operate a height adjusting motor as is found in conventional treadmills. Therefore, a manual height adjusting system is preferably integrated into the treadmill. Referring to FIG. 37, an example of a manual incline or elevation adjustment system 1400 is shown according to an exemplary embodiment. A hand crank 1402 configured to be operated by a person, such as the user, is provided allow a user to operate the incline adjustment system 1400 to adjust the incline of the base 12 of the treadmill 10 relative to the ground. The front shaft 64 may be lowered relative to the rear shaft 68 and/or the front shaft 64 may be raised relative to the rear shaft 68 using the hand crank 1402. In an alternative exemplary embodiment, the front shaft may be maintained at a position above the ground, and the rear shaft may be raised or lowered relative thereto adjust the incline.

[0161] Generally, the hand crank 1402 includes a handle portion 1404 disposed parallel to and spaced a distance from a shaft 1406 that is coupled to the frame 40 (e.g., with a bracket). When assembled, a drive belt or chain 1407 is disposed about a gear 1408 that is positioned about the shaft 1406 of the hand crank 1402. Rotational motion can be imparted to the gear 1408 by rotating the handle portion 1404. In response to rotation of the gear 1408, the drive belt 1407 causes a sprocket 1410 is fixed relative to an internal connecting shaft 1412 of the internal connecting shaft assembly 1414 to rotate. The internal connecting shaft assembly 1414 further includes a pair of drive belts or chains 1416 that are operably coupled to gears 1418 of rack and pinion blocks 1420. The rotation of the internal connecting shaft 1412 causes the

drive belts or chains 1416 to rotate gears 1418. As the gears 1418 rotate, a pinion (not shown) disposed within the rack and pinion blocks 1420 imparts linear motion to the racks 1422, thereby operably raising or lowering the base 12 of the treadmill 10 depending on the direction of rotation of the handle portion 1404 of the hand crank 1402.

[0162] According to another exemplary embodiment, an incline adjustment system that is a gas assisted un-weighting incline adjustment system may be utilized. According to other exemplary embodiments, any suitable linear actuator may serve as an incline adjustment system for the manual treadmill disclosed herein.

[0163] According to an exemplary embodiments, the incline of one or more portions of the running surface may be adjusted independent of adjusting the incline of the base. For example, one or more portions of a bearing rail may be configured to be movable relative to one or more other portion of the bearing rail. In one exemplary embodiment, a bearing rail is divided into a first portion and a second portion movable relative to each of the about a pivot point disposed therebetween. A person (e.g., a user, trainer, technician, etc.) can adjust the operational characteristics of the treadmill (similar to the discussion of using running surfaces having different curved profiles above) by merely adjusting the relative position of the bearing rail portions. If the user wants to achieve greater speeds, they may increase the incline of the front portion, while leaving the center and rear portions unchanged. If the user would like to alter the configuration of the treadmill to more strongly encourage running on the balls of their feet, they might increase the incline of the front and rear portions from a higher radius of curvature so that they collectively define a lower radius of curvature. Adjustments to the position of the bearing rails may be imparted using a crank, or other suitable device.

[0164] It is further contemplated that, because the treadmill 10 does not require an electric motor for operation, it is well suited for operation in an aquatic environment. For example, the treadmill 10 may be at least partially submerged in a pool, thereby providing added resistance due to hydrodynamic drag on a user and/or reducing footfall impact due to the buoyancy of the user. Accordingly, a submerged embodiment of the treadmill 10 may be used for training and/or rehabilitation purposes. Modifications may be made to the treadmill 10 for use in an aquatic environment. For example, the treadmill 10 may include sealed bearings and

components formed of corrosion-resistant materials (e.g., plastic, composite, stainless steel, brass, etc.) to extend its useful life. Further, the shape of the running surface 70 may also be modified to compensate for the buoyancy of the user in water and to compensate for the effects of salinity on buoyancy. For example, it is contemplated that the shape of the running surface 70 may be different for a treadmill 10 used in a freshwater environment and a highly saline environment.

[0165] A number of other devices, both mechanical and electrical, may be used in conjunction with or cooperate with a treadmill according to this disclosure. FIG. 1, for example, shows a display 280 adapted to calculate and display performance data relating to operation of the treadmill according to an exemplary embodiment. The display 280 includes an independent power source (e.g., a battery) that provides for the display 280 to be electrically-operative. The feedback and data performance analysis from the display may include, but are not limited to, speed, time, distance, calories burned, heart rate, etc. For example, a the display may include a sensor that is responsive to the position of a magnet on one of the running belt pulleys. The sensor is configured to recognize every time the magnet rotates past (e.g., moves past, crosses, etc.) a certain location. With this data, the display may calculate the speed at which the user is running and then provide this data to them via a user interface. According to other exemplary embodiments, other displays, cup holders, cargo nets, heart rate grips, arm exercisers, TV mounting devices, user worktops, and/or other devices may be incorporated into the treadmill.

[0166] As utilized herein, the terms "approximately," "about," "substantially," and similar terms are intended to have a broad meaning in harmony with the common and accepted usage by those of ordinary skill in the art to which the subject matter of this disclosure pertains. It should be understood by those of skill in the art who review this disclosure that these terms are intended to allow a description of certain features described and claimed without restricting the scope of these features to the precise numerical ranges provided. Accordingly, these terms should be interpreted as indicating that insubstantial or inconsequential modifications or alterations of the subject matter described and are considered to be within the scope of the disclosure.

[0167] It should be noted that the term "exemplary" as used herein to describe various embodiments is intended to indicate that such embodiments are possible examples, representations, and/or illustrations of possible embodiments (and such term is not intended to connote that such embodiments are necessarily extraordinary or superlative examples).

[0168] For the purpose of this disclosure, the term "coupled" means the joining of two members directly or indirectly to one another. Such joining may be stationary or moveable in nature. Such joining may be achieved with the two members or the two members and any additional intermediate members being integrally formed as a single unitary body with one another or with the two members or the two members and any additional intermediate members being attached to one another. Such joining may be permanent in nature or may be removable or releasable in nature.

[0169] It should be noted that the orientation of various elements may differ according to other exemplary embodiments, and that such variations are intended to be encompassed by the present disclosure.

[0170] It is important to note that the constructions and arrangements of the manual treadmill as shown in the various exemplary embodiments are illustrative only. Although only a few embodiments have been described in detail in this disclosure, those skilled in the art who review this disclosure will readily appreciate that many modifications are possible (e.g., variations in sizes, dimensions, structures, shapes and proportions of the various elements, values of parameters, mounting arrangements, use of materials, colors, orientations, etc.) without materially departing from the novel teachings and advantages of the subject matter recited in the claims. For example, elements shown as integrally formed may be constructed of multiple parts or elements, the position of elements may be reversed or otherwise varied, and the nature or number of discrete elements or positions may be altered or varied. The order or sequence of any process or method steps may be varied or re-sequenced according to alternative embodiments. Other substitutions, modifications, changes and omissions may also be made in the design, operating conditions and arrangement of the various exemplary embodiments without departing from the scope of the present disclosure.

What is Claimed:

1. A manually powered treadmill, comprising:

a frame;

at least one front running belt pulley coupled to the frame;

at least one rear running belt pulley coupled to the frame and spaced a distance from the at least one front running belt pulley;

a running belt at least partially supported by at least one of the at least one front running belt pulley and the at least one rear running belt pulley, wherein the running belt includes a running surface, at least a portion of which is curved;

a safety device coupled to the frame and the running belt, the safety device having a first element and a second element, wherein at least one of the first and second elements is adapted for rotation relative to the frame;

wherein one of the first and second elements of the safety device and the running belt freely rotate in a first direction of rotation relative to the frame, however, in a second direction of rotation, opposite the first direction of rotation, the one of the first and second elements is substantially prevented from rotation relative to the frame to substantially prevent or resist rotation of the running belt relative to the frame.

2. The manually powered treadmill of claim 1, further comprising a front shaft coupled to frame, the front shaft being adapted to support the at least one front running belt pulley.

3. The manually powered treadmill of claim 1, further comprising a rear shaft coupled to frame, the rear shaft being adapted to support the at least one rear running belt pulley.

4. The manually powered treadmill of claim 1, wherein the first and second elements of the safety device at least partly form a one-way bearing.

5. The manually powered treadmill of claim 1, further comprising a braking system coupled to the frame and configured to selectively resist rotational movement of the running belt in the first direction.

6. The manually powered treadmill of claim 1, further comprising a plurality of bearings coupled to the frame, at least one bearing of the plurality of bearings configured to at least partially support the running belt.

7. The manually powered treadmill of claim 1, further comprising a rearwardly extending handle coupled to the frame.

8. The manually powered treadmill of claim 1, wherein the running belt includes at least one slat.

9. The manually powered treadmill of claim 1, wherein one of the first and second elements substantially surrounds the other of the one of the first and second elements.

10. A treadmill, comprising:

a frame;

a rotatable element coupled to the frame;

a running belt at least partially supported by the rotatable element, wherein the running belt includes a running surface, at least a portion of which is curved; and

a first element and a second element, both of which are coupled to the running belt;

wherein one of the first and second elements and the running belt freely rotate in a first direction of rotation relative to the frame, however, in a second direction of rotation, opposite the first direction of rotation, the one of the first and second elements is substantially prevented from rotation relative to the frame to substantially prevent or resist rotation of the running belt relative to the frame.

11. The treadmill of claim 10, wherein only one of the first and second elements is freely rotatable relative to the frame.

12. The treadmill of claim 10, wherein one of the first and second elements substantially surrounds the other of the one of the first and second elements.

13. The treadmill of claim 10, wherein the treadmill is non-motorized.

14. The treadmill of claim 10, wherein the first and second elements at least partly form a one-way bearing.

15. The treadmill of claim 10, further comprising a plurality of bearings coupled to the frame, at least one bearing of the plurality of bearings configured to at least partially support the running belt.

16. The treadmill of claim 10, further comprising a braking system coupled to the frame and configured to selectively resist rotational movement of the running belt in the second direction.

17. A manually powered treadmill, comprising:

a frame;

at least one front running belt pulley coupled to the frame;

at least one rear running belt pulley coupled to the frame and spaced a distance from the at least one front running belt pulley;

a running belt at least partially supported by at least one of the at least one front running belt pulley and the at least one rear running belt pulley, wherein the running belt includes a running surface, at least a portion of which is curved; and

a safety device coupled to the frame and the running belt, the safety device having an element adapted for rotation relative to the frame in a first direction of rotation relative to the frame, however, in a second direction of rotation, opposite the first direction of rotation, the element is substantially prevented from rotation relative to the frame to substantially prevent or resist rotation of the running belt relative to the frame.

18. The manually powered treadmill of claim 17, further comprising a plurality of bearings coupled to the frame, wherein at least one bearing in the plurality of bearings at least partially supports the running belt.

19. The manually powered treadmill of claim 17, further comprising a braking system coupled to the frame, the braking system configured to selectively resist rotation of the running belt.

20. The manually powered treadmill of claim 17, wherein the safety device includes another element, wherein one of the element and the another element substantially surrounds the other of the element and the another element.

ABSTRACT

A treadmill includes a frame; a rotatable element coupled to the frame; a running belt at least partially supported by the rotatable element; and, a first element and a second element, both of which are coupled to the running belt. The running belt includes a running surface, at least a portion of which is curved. Further, one of the first and second elements and the running belt freely rotate in a first direction of rotation relative to the frame. However, in a second direction of rotation, opposite the first direction of rotation, the one of the first and second elements is substantially prevented from rotation relative to the frame to substantially prevent or resist rotation of the running belt relative to the frame.

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ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
17/247,101	11/30/2020 04:34:41 PM ET	097208-0311

Title of Invention

MANUALLY POWERED TREADMILL

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	2042	FILED BY	Laura Buhs
PATENT CENTER #	60112373	AUTHORIZED BY	Richard McKenna
CUSTOMER #	26371	FILING DATE	-
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Douglas G. Bayerlein

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
CARD / 7391	E2020ATG37427916	Laura Buhs

FEE CODE	DESCRIPTION	ITEM PRICE($)	QUANTITY	ITEM TOTAL($)
2111	UTILITY PATENT APPL. SEARCH FEE	350.00	1	350.00
4011	BASIC FILING FEE- UTILITY	80.00	1	80.00
2311	EXAMINATION OF ORIGINAL PATENT APPLICATION	400.00	1	400.00
			TOTAL AMOUNT:	$830.00

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

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CUSTOMER #	26371	FIRST NAMED INVENTOR	Douglas G. Bayerlein
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Richard McKenna

Documents

TOTAL DOCUMENTS: 7

DOCUMENT		PAGES	DESCRIPTION	SIZE (KB)
097208-0311_Trans.pdf		3	Transmittal of New Application	105 KB
097208-0311_ADS1.pdf		11	Application Data Sheet	1227 KB
097208-0311_Application.pdf		53	-	232 KB
097208-0311_Application-SPEC.pdf	(1-48)	48	Specification	222 KB
097208-0311_Application-CLM.pdf	(49-52)	4	Claims	98 KB
097208-0311_Application-ABST.pdf	(53-53)	1	Abstract	93 KB

097208-0311_Figures.pdf	20	Drawings-only black and white line drawings	868 KB
097208-0311_ParentDeclarations.pdf	7	Oath or Declaration filed	3363 KB

Digest

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097208-0311_Figures.pdf	DC9A8E6465C837785C6F400B005963F39E8A221BADF9A833B4A0CA4E92DBD3D55DBDF46948AA4EE9277A3720EBD63F733469280034564ED5FC55A3ABA2DDC3BE

097208-0311_ParentDeclarations.pdf	7D00B1E8344E58FD54E61C1420900E12B7D8289FB4AA9723B8D3AB533E58F057677B5E701FDB73397E5F7E8538CCC987B494F0D1CE43D87AAE2ABEFF8AC32C88

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New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 17/247,101

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	80		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	350		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	400		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	20 minus 20 =	*	x 50 =	0.00	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3 minus 3 =	*	x 240 =	0.00			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	830		TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
17/247,101	11/30/2020	3784	830	097208-0311	20	3

CONFIRMATION NO. 2042

FILING RECEIPT

26371
FOLEY & LARDNER LLP
3000 K STREET N.W.
SUITE 600
WASHINGTON, DC 20007-5109

OC000000121926898

Date Mailed: 12/11/2020

Receipt is acknowledged of this non-provisional utility patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF FIRST INVENTOR, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection.

Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a corrected Filing Receipt, including a properly marked-up ADS showing the changes with strike-through for deletions and underlining for additions. If you received a "Notice to File Missing Parts" or other Notice requiring a response for this application, please submit any request for correction to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections provided that the request is grantable.

Inventor(s)

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Applicant(s)

Woodway USA, Inc., Waukesha, WI;

Power of Attorney: None

Domestic Priority data as claimed by applicant

This application is a CON of 16/792,444 02/17/2020 PAT 10850150
which is a CON of 15/957,721 04/19/2018 PAT 10561883
which is a CON of 14/832,708 08/21/2015 PAT 10265566
which is a CON of 14/076,912 11/11/2013 PAT 9114276
which is a CON of 13/235,065 09/16/2011 ABN
which is a CIP of PCT/US10/27543 03/16/2010
which claims benefit of 61/161,027 03/17/2009

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 12/09/2020
The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 17/247,101**
Projected Publication Date: 03/18/2021
Non-Publication Request: No
Early Publication Request: No
**** SMALL ENTITY ****
Title

MANUALLY POWERED TREADMILL

Preliminary Class

482

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

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Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

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patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

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Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

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Application	Document	Mailroom Date	Attorney Docket No.
17247101	APP.FILE.REC	12/11/2020	097208-0311

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PATENT APPLICATION INFORMATION RETRIEVAL SYSTEM

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	17/164117
Date Submitted: March 5, 2021				**Filing Date**	11/30/2020
				First Named Inventor	Douglas G. Bayerlein
				Art Unit	3784
(use as many sheets as necessary)				Examiner Name	Not yet assigned
Sheet	1	of	18	Attorney Docket Number	097208-0311

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A1	8,308	08-26-1851	SEYMOUR	
	A2	26,914	01-24-1860	MELDRUM	
	A3	83,844	11-10-1868	GOUCHER	
	A4	104,534	06-21-1870	ASHE, ROBERT	
	A5	111,018	01-17-1871	THOMPSON, SAMUEL	
	A6	118,030	08-15-1871	LOVEGHOVE ET AL.	
	A7	144,224	11-04-1873	POTTER, HENRY	
	A8	144,225	11-04-1873	PURPLE, GEORGE	
	A9	171,353	12-21-1875	CONWAY, JESSE	
	A10	179,789	07-11-1876	HEDGES, ISAAC	
	A11	219,439	09-09-1879	BLEND	
	A12	254,293	02-28-1882	EDLEBLUTE ET AL.	
	A13	314,674	03-31-1885	HUBBARD, CHARLES	
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Examiner Signature		Date Considered	

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	17/164117
				Filing Date	11/30/2020
Date Submitted: March 5, 2021				**First Named Inventor**	Douglas G. Bayerlein
				Art Unit	3784
(use as many sheets as necessary)				Examiner Name	Not yet assigned
Sheet	2	of	18	Attorney Docket Number	097208-0311

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A50	5,318,487-A	06-07-1994	GOLEN ET AL.	
	A51	5,368,532	11-29-1994	FARNET, MICHAEL G.	
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	A60	5,577,598-	11-26-1996	SCHOENENBERGER, WILLI	
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	A96	7,618,345	11-17-2009	CORBALIS ET AL.	
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Examiner Signature		Date Considered	

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	17/164117
				Filing Date	11/30/2020
Date Submitted: March 5, 2021				**First Named Inventor**	Douglas G. Bayerlein
				Art Unit	3784
(use as many sheets as necessary)				Examiner Name	Not yet assigned
Sheet	3	of	18	Attorney Docket Number	097208-0311

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A98	7,780,573-B1	08-24-2010	CARMEIN, DAVID E. E.	
	A99	7,789,800	09-07-2010	WATTERSON ET AL.	
	A100	7,806,805	10-05-2010	BARUFKA ET AL.	
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	A325	Introducing the New Force 3 Treadmill Advanced Analysis Package, www.fittech.com.au, believed to be publically available before September 16, 2011, 3 pages.	
	A326	Joint Disputed Claim filed April 19, 2017 between Speedfit LLC and Aurel Astilean versus Woodway USA, Inc., 10 pages.	
	A327	LIEBERMAN ET AL., Running Barefoot, Forefoot Striking & Training Tips, http://www.barefootrunning.fas.harvard.edu/5BarefootRunning&TrainingTips.html, February 26, 2010, 5 pages.	
	A328	LIEBERMAN ET AL., Running Barefoot: Biomechanics of Foot Strike, http://www.barefootrunning.fas.harvard.edu/4BiomechanicsofFootStrike.html, February 26, 2010, 6 pages.	
	A329	LIEBERMAN ET AL., Running Barefoot: Biomechanics of Foot Strikes & Applications to Running Barefoot or in Minimal Footwear, http://www.barefootrunning.fas.harvard.edu/index.html, February 26, 2010, 2 pages.	
	A330	LIEBERMAN ET AL., Running Barefoot: FAQ, http://www.barefootrunning.fas.harvard.edu/6FAQ.html, February 26, 2010, 3 pages.	
	A331	LIEBERMAN ET AL., Running Barefoot: Heel Striking & Running Shoes, http://www.barefootrunning.fas.harvard.edu/2FootStrikes&RunningShoes.html, February 26, 2010, 2 pages.	
	A332	LIEBERMAN ET AL., Running Barefoot: Running Before the Modern Shoe, http://www.barefootrunning.fas.harvard.edu/3RunningBeforeTheModernShoe.html, February 26, 2010, 4 pages.	

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				Art Unit	3784
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	A333	LIEBERMAN ET AL., Running Barefoot: Why Consider Foot Strike, http://www.barefootrunning.fas.harvard.edu/1WhyConsiderFootStrike.html, February 26, 2010, 1 page.	
	A334	LISZEWSKI, ANDREW, "EcoMill Treadmill Generates Its Own Power", June 1, 2009, http://www.ohgizmo.com/2009/06/04/ecomill-treadmill-generates-its-own-power/, 1 page.	
	A335	Memorandum and Order filed December 28, 2016 between Speedfit LLC and Aurel Astilean versus Woodway USA, Inc., 22 pages.	
	A336	Memorandum and Order filed October 10, 2014 between Speedfit LLC and Aurel Astilean versus Woodway USA, Inc., 39 pages.	
	A337	Memorandum and Order filed October 19, 2015 between Speedfit LLC and Aurel Astilean versus Woodway USA, Inc., 11 pages.	
	A338	Memorandum of Law in Support of Plaintiffs' Motion for Leave to Amend the Second Amended Complaint filed July 7, 2015, 13 pages.	
	A339	Memorandum of Law in Support of Plaintiffs' Motion Under 35 USC 256 to Correct Inventorship of SPN 8,308,619 and USPN 8,342,016 between Speedfit LLC and Aurel Astilean versus Woodway USA, Inc., 14 pages.	
	A340	Minute Entry and Order for Markman Hearing, dated June 13, 2018, 2 pps.	
	A341	Minute Entry for Proceedings on November 10, 2015 and Exhibit G.	
	A342	Minute Order Regarding Claim Construction, Speedfit LLC v. Woodway, Docket No. 2:17-cv-00768-KAM-AKT, June 13, 2018, 2 pages.	
	A343	MITSUBISHI ELECTRIC, Melservo-J2 Super Series: Servo Amplifier Instruction Manual, 2007, 402 pages.	
	A344	MOODY, The Effects Resisted Sprint Training on Speed, Agility and Power Production in Young Athletes, believed to be publically available before December 31, 2006, 5 pages.	
	A345	Motion to Dismiss filed October 30, 2015 and Exhibits A - H.	
	A346	NASA, "Combined Operational Load Bearing External Resistance Treadmill (COLBERT)", August 2009, 3 pages.	
	A347	NASA, "International Space Station: Combined Operational Load Bearing External Resistance Treadmill (COLBERT)", July 19, 2017, https://www.nasa.gov/mission_pages/station/research/experiments/765.html, 4 pages.	
	A348	NASA, "International Space Station: Do Tread on Me", August 19, 2009, https://www.nasa.gov/mission_pages/station/behindscenes/colbert_feature.html, 2 pages.	
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	A350	NASA, "Space Shuttle Mission STS-128: Racking Up New Science", Press Kit, August 2009, 116 pages.	
	A351	Nexus Resin Group, 10124 Antistat, believed to be publically available before September 16, 2011, 2 pages.	
	A352	Notice of Motion filed July 7, 2015 between Speedfit LLC and Aurel Astilean versus Woodway USA, Inc., 2 pages.	
	A353	Notice of Motion Under 35 USC 256 to Correct Inventorship of USPN 8,308,619 and USPN 8,342,016 filed June 15, 2015 between Speedfit LLC and Aurel Astilean versus Woodway USA, Inc., 3 pages.	
	A354	Notice of Woodway USA, Inc.'s Motion for Summary Judgment of Invalidity of U.S. Patent Nos. 8,308,619 and 8,343,016 filed June 5, 2017, 9 pages.	
	A355	Notice of Woodway USA, Inc.'s motion to preclude the testimony of plaintiffs' technical expert James Whelan, Case 2:13-cv-01276-KAM-AKT, Document 211, filed 8/8/2018, 3 pps.	
	A356	Opening expert report of Dr. Robert Giachetti re: invalidity of United States Patent No. 8,986,169 and United States Patent No. 9,039,580, Case 3:15-CV-01665-JCH, Document 216-1, filed 4/5/2018, 67 pps., marked on its face as Exhibit 1.	
	A357	Order Denying Motion for Reconsideration (Doc. No. 248), dated June 20, 2018, 12 pps.	
	A358	OSHA 1926.307, 9 pps.	
	A359	Owners Manual for NordicTrack WalkFit Classic Treadmill, received on March 2, 2017, 30 pps.	
	A360	Owners Manual, Force 1, November 29, 2007, 44 pages.	
	A361	Owners Manual, Force 3, January 28, 2009, 45 pages.	
	A362	Owners Manual, The Force, December 18, 2008, 68 pages.	
	A363	Photographs of public display of Speedfit Speedboard by Woodway presented at IHRSA Tradeshow on March 17, 2009, 8 pages	
	A364	Photographs produced to Woodway at least by November 10, 2014 in litigation, Speedfit LLC and Aurel A. Astilean v. Woodway USA, Inc., No. 2:13-cv-01276-KAM-AKT, 11 pages.	
	A365	Plaintiff's memorandum in support of motion for summary judgment of non-infringement and invalidity on Claim 25 of U.S. Patent No. 9,039,580, Case 3:15-CV-01665-JCH, Document 253, filed 6/8/2018, 45 pps.	
	A366	Plaintiff's Reply to Defendant Woodway's Answer, Affirmative Defenses and Counterclaims to Plaintiff's Second Amended Complaint filed March 27, 2015, 6 pages.	

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	A367	Plaintiff's Reply to Defendant Woodway's Answer, Affirmative Defenses and Counter-Claims to Plaintiffs' Supplemental Complaint filed March 17, 2017, 8 pages.	
	A368	Plaintiff's supplemental responses and objections to defendant's first set of interrogatories, Case 2:17-cv-00768-KAM-AKT, Document 38-3, filed 3/14/2018, 22 pps., marked on its face as Exhibit C.	
	A369	Plaintiffs Memorandum of Law in Opposition to Woodway's Motion for Summary Judgement of Invalidity and Opening Claim Construction Brief, Cross-Motion for Summary Judgment Upholding Validity, Cross-Motion for Summary Judgment for Infringement and Motion to Extend the Page Limitation for this Memorandum filed June 6, 2017, 46 pages.	
	A370	Plaintiffs' Initial Claims Construction Memorandum filed July 31, 2017.	
	A371	Plaintiffs' Local Rule 56(a)1 statement of undisputed material facts, Case 3:15-CV-01665-JCH, Document 254, filed 6/8/2018, 14 pps.	
	A372	Plaintiffs' Local Rule 56(a)2 statement of facts in opposition to summary judgment, Case 3:15-CV-01665-JCH, Document 265, filed 6/29/2018, 17 pps.	
	A373	Plaintiffs' Memorandum of Law in further Opposition to Defendant's Motion to Dismiss Certain of Plaintiffs' Claims filed November 19, 2015, 19 pages.	
	A374	Plaintiffs' memorandum of law in support of their motion for partial reconsideration, Case 3:15-CV-01665-JCH, Document 249, filed 5/8/2018, 9 pps.	
	A375	Plaintiffs' motion for partial reconsideration, Case 3:15-CV-01665-JCH, Document 248, filed 5/7/2018, 3 pps.	
	A376	Plaintiffs' motion for summary judgment of non-infringement and invalidity on Claim 25 of U.S. Patent No. 9,039,580, Case 3:15-CV-01665-JCH, Document 252, 2 pps.	
	A377	Plaintiffs' Opposition to Woodway USA, Inc.'s motion for summary judgment of infringement on Claim 25 of U.S. Patent No. 9,039,580, Case 3:15-CV-01665-JCH, Document 264, filed 6/29/2018, 35 pps.	
	A378	Plaintiffs' preliminary invalidity contentions, Case 3:15-CV-01665-JCH, Document 254-16, filed 6/8/2018, 205 pps., marked on its face as Exhibit 16.	
	A379	Plaintiffs' preliminary non-infringement contentions, Case 3:15-cv-01165-JCH, Document 96-3, filed May 2, 2017, 56 pps.	
	A380	Plaintiffs' Reply in Support of motion for partial reconsideration, Case 3:15-CV-01665-JCH, Document 251, filed 5/29, 2018, 4 pps.	
	A381	Plaintiffs' supplemental non-infringement contentions, Case 3:15-CV-01665-JCH, Document 98-8, filed May 2, 2017, 60 pps.	
	A382	Plantar Fascia, http://en.wikipedia.org/wiki/Plantar_fascia, March 3, 2010, 3 pages.	

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	A383	Rebuttal expert report of Kim B. Blair, Ph.D., Case 2:13-cv-01276-KAM-AKT, Document 213-3, filed 8/8/2018, 24 pps., marked on its face as Exhibit C.	
	A384	Rebuttal Expert Report of Kim B. Blair, Ph.D., Case 3:15-CV-01665-JCH, Document 254-15, 184 pps., marked on its face as Exhibit 15.	
	A385	Reply in Opposition to D126 filed November 6, 2015 and Exhibits A and B.	
	A386	Reply Memorandum of Law in Further Support of Plaintiffs' Motion for Leave to Amend the Second Amended Complaint filed July 7, 2015 between Speedfit LLC and Aurel Astilean versus Woodway USA, Inc., 13 pages.	
	A387	Response in Opposition re [117] First Motion to Amend Second Amended Complaint filed July 7, 2015, 2 pages.	
	A388	Response in Opposition to [110] Motion to Amend-Corret-Supplement filed June 15, 2015, 2 pages.	
	A389	Revised Answer to Counterclaims filed December 12, 2014 between Speedfit LLC and Aurel Astilean versus Woodway USA, Inc., 5 pages.	
	A390	ROSS ET AL., The Effects of Treadmill Sprint Training and Resistance Training on Maximal Running Velocity and Power, National Strength and Conditioning Association, March 2009, 10 pages.	
	A391	Rule 56.1 Counter-Statement by Plaintiffs Speedfit LLC, and Aurel A. Astilean filed June 6, 2017, 13 pages.	
	A392	Ruling Re: Plaintiffs' Motion for Summary Judgment of Non-Infringement and Invalidity (Doc. No. 252) and Woodway's Motion for Summary Judgment of Infringement (Doc. No. 255), Chapco, Inc. and Samsara Fitness, LLC v. Woodway USA, Inc., Docket No. 3:15-cv-01665-JCH, July 24, 2018, 26 pages.	
	A393	SEARS, ROEBUCK AND CO., 1986 Spring Summer Centennial Edition Catalog, January 1, 1985, Curved Exerciser models 1 and 2 on pages 496 and 497.	
	A394	Second Amended Complaint filed February 17, 2015 between Speedfit LLC and Aurel Astilean versus Woodway USA, Inc., 18 pages.	
	A395	Second Supplemental Expert Report of Kim B. Blair, PhD., Case 3:15-CV-01665-JCH, Document 254-3, 41 pps., marked on its face as Exhibit 3.	
	A396	SIROTIC ET AL., Physiological and Performance Test Correlates of Prolonged, High-Intensity, Intermittent Running Performance in Moderately Trained Women Team Sport Athletes, Journal of Strength and Conditioning Research, 2007, 7 pages.	
	A397	SIROTIC ET AL., The Reliability of Physiological and Performance Measures During Simulated Team-Sport Running on a Non-Motorised Treadmill, Journal of Science and Medicine in Sport, April 11, 2007, 10 pages.	
	A398	Soccer International, The Red Devil's in the Details, dated June 2010, 4 pages.	

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	A399	SOUTHERN RESEARCH ET AL., "AIMTech Project Brief", October 20, 2015, 2 pages.	
	A400	SOUTHERN RESEARCH ET AL., "Resist Force-Induced Treadmill", 2 pages.	
	A401	Speedfit LLC's Opening Claim Construction Brief, Speedfit LLC and Aurel A. Astilean v. Woodway USA, Inc., Docket No. 2:17-cv-00768-KAM-AKT, March 26, 2018, 9 pages.	
	A402	SPEEDFIT, video produced to Woodway at least by April 28, 2015 in litigation, a copy of which is submitted herewith on DVD, Speedfit LLC and Aurel A. Astilean v. Woodway USA, Inc.	
	A403	SPEEDFIT, video produced to Woodway at least by November 10, 2014 in litigation, Speedfit LLC and Aurel A. Astilean v. Woodway USA, Inc., No. 2:13-cv-01276-KAM-AKT, 21 pages of screenshot excerpts.	
	A404	SPEEDFIT, video produced to Woodway at least by November 10, 2014 in litigation, Speedfit LLC and Aurel A. Astilean v. Woodway USA, Inc., No. 2:13-cv-01276-KAM-AKT, 23 pages of screenshot excerpts.	
	A405	Supplemental Complaint filed February 10, 2017 between Speedfit LLC and Aurel Astilean versus Woodway USA, Inc.	
	A406	Supplemental Declaration of Kadie M. Jelenchick filed June 6.	
	A407	Supplemental declaration of Matthew W. Peters, Case 2:13-cv-01276-KAM-AKT, Document 227, filed 8/8/2018, 1 pg.	
	A408	Supplemental Expert Report of Kim B. Blair, PhD., Case 3:15-CV-01665-JCH, Document 184-8, filed 3/16/2018, 19 pps., marked on its face as Exhibit AA.	
	A409	Supplemental rebuttal expert report of Dr. Robert Giachetti responsive to second supplemental expert report of Dr. Kim Blair dated April 13, 2018, Case 3:15-CV-01665-JCH, Document 254-4, filed 6/8/2018, 18 pps., marked on its face as Exhibit 4.	
	A410	Supplemental rebuttal expert report of Dr. Robert Giachetti responsive to supplemental expert report of Dr. Kim Blair dated March 15, 2018, dated May 14, 2018, 12 pps.	
	A411	SV-M & SV-S Servies Servo Drive User Guide, 1998, 121 pages.	
	A412	TECMACHINE, "Sprint Club: User's Guide", believed to have published 2002, 33 pages.	
	A413	The Australian Competition & Consumer Commission's Mandatory Safety Standard For Treadmills (Supplier Guide), 2009, 20 pps.	
	A414	The Woodway Force Brochure, The Best Way to Train for Speed & Athletic Power, dated May 5, 2005, 2 pages.	
	A415	Third Amended Complaint filed October 23, 2015 between Speedfit LLC and Aurel Astilean versus Woodway USA, Inc. and Exhibits A - H.	

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	A416	Transcript of civil cause for evidentiary hearing before the Honorable Kiyo A. Matsumoto, United States District Judge, Case 2:13-cv-01276-KAM-AKT, Document 213-4, filed 8/8/2018, 10 pps., marked on its face as Exhibit D.	
	A417	Transcript of civil cause for evidentiary hearing before the Honorable Kiyo A. Matsumoto, United States District Judge, Case 2:13-cv-01276-KAM-AKT, Document 227-3, filed 8/8/2018, 5 pps., marked on its face as Exhibit G.	
	A418	Transcript of videotaped deposition of Alex Astilean taken July 10, 2018 for Case 2:17-cv-00768-KAM-AKT, 75 pps.	
	A419	Transcript of videotaped deposition of Dan Bostan, Case 2:13-cv-01276-KAM-AKT, Document 227-2, filed 8/8/2018, 4 pps., marked on its face as Exhibit F.	
	A420	Transcript of videotaped deposition of Speedfit LLC by Alex Astilean taken July 10, 2018 for Case 2:17-cv-00768-KAM-AKT, 38 pps.	
	A421	Video deposition transcript of James D. Whelan taken on September 28, 2015, Case 2:13-cv-01276-KAM-AKT, Document 213-1, filed 8/8/2018, 23 pps., marked on its face as Exhibit A.	
	A422	WOODWAY USA, INC., "Treadmill Owner's Manual", October 2001, 56 pages.	
	A423	WOODWAY USA, INC., EcoMill Promotional Flyer, October 18, 2011, 1 page.	
	A424	WOODWAY USA, INC., Owner's Manual: EcoMill Non-Motorized, June 4, 2010, 35 pages.	
	A425	Woodway USA, Inc.'s Amended Supplemental Counterclaims, Case 3:15-CV-01665-JCH, Document 309, filed 9/14/2018, 28 pps.	
	A426	Woodway USA, Inc.'s Answer, Affirmative Defenses, and Counterclaims to Plaintiffs' First Amended Complaint filed October 24, 2014 and Exhibits 1 and 2.	
	A427	Woodway USA, Inc.'s Answer, Affirmative Defenses, and Counterclaims to Plaintiffs' Second Amended Complaint filed March 6, 2015, 17 pages.	
	A428	Woodway USA, Inc.'s Answer, Affirmative Defenses, and Counterclaims to Plaintiffs' Supplemental Complaint filed February 24, 2017, 18 pages.	
	A429	Woodway USA, Inc.'s first supplemental responses and objections to plaintiff's first set of interrogatories (Nos. 1-7), Case 2:17-cv-00768-KAM-AKT, Document 38-1, filed 3/14/2018, 18 pps., marked on its face as Exhibit A.	
	A430	Woodway USA, Inc.'s List of Claim Terms to be Considered and Proposed Constructions, Speedfit LLC and Aurel A. Astilean v. Woodway USA, Inc., Docket No. 2:17-cv-00768-KAM-AKT, Exhibit D, March 26, 2018, 4 pages.	
	A431	Woodway USA, Inc.'s local rule 56(a)1 statement of undisputed material facts in support of its motion summary judgment of infringement of U.S. Patent No. 9,039,580, Case 3:15-CV-01665-JCH, Document 257, 8 pps.	
	A432	Woodway USA, Inc.'s local rule 56(a)2 statement of facts in opposition to plaintiffs' motion for summary judgment, Case 3:15-CV-01665-JCH, Document 267, filed 6/29/2018, 34 pps.	

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	A435	Woodway USA, Inc.'s memorandum in support of its motion to preclude the testimony of plaintiffs' technical expert James Whelan, Case 2:13-cv-01276-KAM-AKT, Document 212, filed 8/8/2018, 37 pps.	
	A436	Woodway USA, Inc.'s memorandum of law in opposition to plaintiffs' motion for summary judgment of non-infringement and invalidity of Claim 25 of U.S. Patent No. 9,039,580, Case 3:15-CV-01665-JCH, Document 266, filed 6/29/2018, 42 pps.	
	A437	Woodway USA, Inc.'s Memorandum of Law in support of its motion for summary judgment of infringement of U.S. Patent No. 9,039,580, Case 3:15-CV-01665-JCH, Document 256, 38 pps.	
	A438	Woodway USA, Inc.'s Memorandum of Law in Support of Its Motions for Summary Judgment of Invalidity of US Patent Nos. 8,308,619 and 8,343,016 and Opening Claim Construction Brief filed June 6, 2017, 38 pages.	
	A439	Woodway USA, Inc.'s motion for summary judgment of infringement of U.S. Patent No. 9,039,580, Case 3:15-CV-01665-JCH, Document 255, filed 6/8/2018, 3 pps.	
	A440	Woodway USA, Inc.'s Opening Claim Construction Brief, Speedfit LLC and Aurel A. Astilean v. Woodway USA, Inc., Docket No. 2:17-cv-00768-KAM-AKT, March 26, 2018, 15 pages.	
	A441	Woodway USA, Inc.'s opposition to plaintiffs' motion for partial reconsideration, Case 3:15-CV-01665-JCH, Document 250, filed 5/14/2018, 19 pps.	
	A442	Woodway USA, Inc.'s Patents, Speedfit LLC and Aurel A. Astilean v. Woodway USA, Inc., Docket No. 2:17-cv-00768-KAM-AKT, Exhibit B, March 26, 2018, 3 pages.	
	A443	Woodway USA, Inc.'s Reply Claim Construction Brief, Speedfit LLC and Aurel A. Astilean v. Woodway USA, Inc., Docket No. 2:17-cv-00768-KAM-AKT, March 26, 2018, 9 pages.	
	A444	Woodway USA, Inc.'s reply memorandum in further support of its motion to preclude the testimony of Plaintiffs' technical expert James Whelan, Case 2:13-cv-01276-KAM-AKT, Document 226, filed 8/8/2018, 16 pps.	
	A445	Woodway USA, Inc.'s Reply Memorandum in Support of Its Motion to Dismiss filed November 25, 2015, 24 pages.	
	A446	Woodway USA, Inc.'s Responsive Claim Construction Brief filed July 28, 2017, 19 pages.	
	A447	WOODWAY, "Curve Trainer", September 2, 2020, https://www.woodway.com/products/curve-trainer/, page 1.	
	A448	WOODWAY, "Introducing the All New EcoMill Self Powered", published to YouTube on March 25, 2010, https://www.youtube.com/watch?v=NcPH92DAArc.	
	A449	Woodway, Curve 3.0 Specification, May 25, 2011, 1 page.	

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	A450	Woodway, Curve Specification, May 24, 2011, 1 page.	
	A451	Woodway, Curve Specification, May 25, 2011, 1 page.	
	A452	Woodway, Curve XL Specification, May 18, 2011, 1 page.	
	A453	Woodway, Force Specification, April 8, 2008, 1 page.	
	A454	Woodway, Force Specification, May 2, 2011, 1 page.	
	A455	Woodway, Force Specification, May 2, 2012, 1 page.	
	A456	Woodway's USA, Inc.'s Reply in Support of its Motion for Summary Judgment of Invalidity of US Patent Nos. 8,308,619 and 8,343,016 and Reply Claim Construction Brief filed June 6, 2017, 16 pages.	
	A457	Woodway's Opposition to Defendant's Notice of Motion and Motion to Dismiss Case and Transfer Litigation to EDNY, Woodway USA, Inc. v. Aurel A. Astilean, Civ. Dkt. No. 2:13-cv-00681-WERC (E.D. WI), October 18, 2013, 22 pages.	
	A458	Woodways USA, Inc.'s Supplemental Rule 56.1 Statement of Undisputed Material Facts and Responses to Rule 56.1 Counterstatement by Plaintiffs Speedfit LLC and Aurel A. Astilean filed June 6, 2017, 20 pages.	

Examiner Signature		Date Considered	

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Inventor Name:	Douglas G. Bayerlein
Title:	MANUALLY POWERED TREADMILL WITH VARIABLE BRAKING RESISTANCE
Application No.:	17/247101
Filing Date:	11/30/2020
Examiner:	Not yet assigned
Art Unit:	3784
Confirmation No.:	2042

INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR §1.56

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

Applicant submits herewith documents for the Examiner's consideration in accordance with 37 CFR §§1.56, 1.97 and 1.98.

Applicant respectfully requests that each listed document be considered by the Examiner and be made of record in the present application and that an initialed copy of Form PTO/SB/08 be returned in accordance with MPEP §609.

Applicant requests that, in accordance with 37 CFR §1.98(d), the Examiner review all applications relied on for an earlier effective filing date under 35 U.S.C. 120, including Application No. PCT/US10/27543, filed 3/16/2010; Application No. 13/235,065, filed 9/16/2011; Application No. 14/076912, filed 11/11/2013; Application No. 14/832,708, filed 8/21/2015; Application No. 15/957,721, filed 4/19/2018; Application No. 16/792444, filed 2/17/2020, for copies of references of record therein that are not being provided here; although Applicant would be pleased to provide copies of any such documents at the Examiner's request.

The submission of any document herewith is not an admission that such document constitutes prior art against the claims of the present application or that such document is considered material to patentability as defined in 37 CFR §1.56(b). Applicant does not waive any rights to take any action which would be appropriate to antedate or otherwise remove as a competent reference any document submitted herewith.

TIMING OF THE DISCLOSURE

The listed documents are being submitted in compliance with 37 CFR §1.97(b), before the mailing date of the first Office Action on the merits.

Although Applicant believes that no fee is required, the Commissioner is hereby authorized to charge any additional fees which may be due to Deposit Account No. 19-0741.

Respectfully submitted,

Date /3-5-2021/ By /Alexander J. Neuworth/

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Alexander J. Neuworth
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UNITED STATES
PATENT AND TRADEMARK OFFICE

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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
17/247,101	**03/05/2021 11:01:03 AM ET**	**097208-0311**

Title of Invention

MANUALLY POWERED TREADMILL

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	2042	FILED BY	Laura Buhs
PATENT CENTER #	60155498	FILING DATE	11/30/2020
CUSTOMER #	26371	FIRST NAMED INVENTOR	Douglas G. Bayerlein
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Alexander Neuworth

Documents

TOTAL DOCUMENTS: 2

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
097208-0311_IDS.pdf	2	Transmittal Letter	114 KB
097208-0311_SB08.pdf	18	Information Disclosure Statement (IDS) Form (SB08)	239 KB

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DOCUMENT	MESSAGE DIGEST(SHA-512)

097208-0311_IDS.pdf	D49A72C9452BBA9CF623CDA40374E475EB269997E2C7E364B3A2FD59E3AD3C17D90A5478556F0D9ED93E6D357549E85B96CD95D8DC53EE74B0F36C95ACAF1C5F
097208-0311_SB08.pdf	944DD8B4D409D7723FF5A4544780B930AC79DDBF84810CAAB6DE3A3FE2969096545E5C350C7A74309B155D18C26940CD34BBFA94E18693553CCED2FC457DC972

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New Applications Under 35 U.S.C. 111

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National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
17/247,101	11/30/2020	Douglas G. Bayerlein	097208-0311

CONFIRMATION NO. 2042

26371
FOLEY & LARDNER LLP
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SUITE 600
WASHINGTON, DC 20007-5109

PUBLICATION NOTICE

OC000000124192925

Title:MANUALLY POWERED TREADMILL

Publication No.US-2021-0077846-A1
Publication Date:03/18/2021

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

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Application	Document	Mailroom Date	Attorney Docket No.
17247101	NTC.PUB	03/18/2021	097208-0311

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PATENT APPLICATION INFORMATION RETRIEVAL SYSTEM

Substitute for form 1449/PTO				***Complete if Known***	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	17/247101
				Filing Date	11/30/2020
Date Submitted: June 4, 2021				**First Named Inventor**	Douglas G. Bayerlein
				Art Unit	3784
(use as many sheets as necessary)				Examiner Name	Not yet assigned
Sheet	1	of	1	Attorney Docket Number	097208-0311

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	B1	6,761,667	07-13-2004	CUTLER ET AL.	
	B2	8,007,408	08-30-2011	MORAN ET AL.	

Examiner Signature		Date Considered	

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Inventor Name:	Douglas G. Bayerlein
Title:	MANUALLY POWERED TREADMILL WITH VARIABLE BRAKING RESISTANCE
Application No.:	17/247101
Filing Date:	11/30/2020
Examiner:	Not yet assigned
Art Unit:	3784
Confirmation No.:	2042

INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR §1.56

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

Applicant submits herewith documents for the Examiner's consideration in accordance with 37 CFR §§1.56, 1.97 and 1.98.

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Applicant requests that, in accordance with 37 CFR §1.98(d), the Examiner review all applications relied on for an earlier effective filing date under 35 U.S.C. 120, including Application No. PCT/US10/27543, filed 3/16/2010; Application No. 13/235,065, filed 9/16/2011; Application No. 14/076912, filed 11/11/2013; Application No. 14/832,708, filed 8/21/2015; Application No. 15/957,721, filed 4/19/2018; Application No. 16/792444, filed 2/17/2020, for copies of references of record therein that are not being provided here; although Applicant would be pleased to provide copies of any such documents at the Examiner's request.

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TIMING OF THE DISCLOSURE

The listed documents are being submitted in compliance with 37 CFR §1.97(b), before the mailing date of the first Office Action on the merits.

Although Applicant believes that no fee is required, the Commissioner is hereby authorized to charge any additional fees which may be due to Deposit Account No. 19-0741.

Respectfully submitted,

Date /6-4-2021/ By /Alexander J. Neuworth/

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Alexander J. Neuworth
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UNITED STATES
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P.O. Box 1450
Alexandria, VA 22313 - 1450
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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
17/247,101	**06/04/2021 04:48:30 PM ET**	**097208-0311**

Title of Invention

MANUALLY POWERED TREADMILL

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	2042	FILED BY	Laura Buhs
PATENT CENTER #	60208780	FILING DATE	11/30/2020
CUSTOMER #	26371	FIRST NAMED INVENTOR	Douglas G. Bayerlein
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Alexander Neuworth

Documents

TOTAL DOCUMENTS: 2

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
097208-0311_IDS.pdf	2	Transmittal Letter	115 KB
097208-0311_SB08.pdf	1	Information Disclosure Statement (IDS) Form (SB08)	100 KB

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DOCUMENT	MESSAGE DIGEST(SHA-512)

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097208-0311_SB08.pdf	873B64B4A2CACE8B1322E99BE1B01E1905EED92686E9E1BF59B5FBD37B34D2985E2EE033DF6082F37C77C0DD8452C12617AAE784831A2B690B0E1DE74BCA2E19

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New Applications Under 35 U.S.C. 111

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Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	17/247101
Date Submitted: December 6, 2021				**Filing Date**	11/30/2020
				First Named Inventor	Douglas G. Bayerlein
(use as many sheets as necessary)				Art Unit	3784
				Examiner Name	ROBERTSON, JENNIFER MARY DEICHL
Sheet	1	of	1	Attorney Docket Number	097208-0311

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	C1	3,728,261-A	04-17-1973	BILL MITACEK	
	C2	5,018,343-A	05-28-1991	FINKE, DONALD R.	
	C3	5,044,470-A	09-03-1991	NICHOLAS, PAUL	
	C4	5,891,830-A	04-06-1999	KOLTERMANN ET AL.	
	C5	6,056,072-A	05-02-2000	KOLTERMANN ET AL.	
	C6	6,958,032-B1	10-25-2005	SMITH ET AL.	
	C7	7,704,191-B2	04-27-2010	SMITH ET AL.	
	C8	9,595,855-B2	03-14-2017	ASAI ET AL.	
	C9	2004/0244521-A1	12-09-2004	RUSS ET AL.	
	C10	2007/0054781-A1	03-08-2007	BLAYLOCK, ANDREW	
	C11	2009/0062165-A1	03-05-2009	DENIS ET AL.	
	C12	2011/0048809-A1	03-03-2011	DUCKWORTH ET AL.	
	C13	2011/0306527-A1	12-15-2011	BOUFFET ET AL.	
	C14	2012/0149613-A1	06-14-2012	DAVID ET AL.	
	C15	2013/0256064-A1	10-03-2013	BONGAERTS ET AL.	
	C16	2014/0239760-A1	08-28-2014	ASAI ET AL.	
	C17	2015/0210348-A1	07-30-2015	ASTILEAN, ALEX	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Documents	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]
	C18	DE-19922822-A1	12-07-2000	TOLLKIEN, RALF		

Examiner Signature		Date Considered	

Europäisches Patentamt
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Espacenet

DE19922822A1 Moving belt for exercise machine has curved tread surface running over two deflector rollers, support belt, transverse struts and shock absorber elements

Applicants: TOLLKIEN RALF [DE]

Inventors: TOLLKIEN RALF [DE]

Classifications:
IPC ***A63B22/02; B62K5/00; B62M1/00; B62M1/34;*** (IPC1-7): A63B22/02; B62M1/00;

CPC **A63B22/02 (EP); B62K5/00 (EP); B62M1/34 (EP);** A63B22/0285 (EP);

Priorities: DE19922822A 1999-05-19

Application: DE19922822A1·1999-05-19

Publication: DE19922822A1·2000-12-07

Published as: DE19922822A1;**DE19922822B4**

Moving belt for exercise machine has curved tread surface running over two deflector rollers, support belt, transverse struts and shock absorber elements

Abstract

The moving belt has a curved tread surface running between two deflector rollers (2) and possessing an adjustable radius of curvature corresponding to the length of the user's leg. The tread surface is formed by a crawler track in the form of a support belt (12). The surface o f the support belt facing away from the deflector rollers has transverse struts (10) preferably replaceable and between which are shock absorbing elements (4) which, beneath them, have lengthwise runners (14) fitted with rollers.

LIFECORE Ex. 1002, p. 137

(19) BUNDESREPUBLIK DEUTSCHLAND

DEUTSCHES PATENT- UND MARKENAMT

(12) **Offenlegungsschrift**

(10) **DE 199 22 822 A 1**

(51) Int. Cl.[7]:
A 63 B 22/02
B 62 M 1/00

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(22) Anmeldetag: 19. 5. 1999
(43) Offenlegungstag: 7. 12. 2000

DE 199 22 822 A 1

(71) Anmelder:
Tollkien, Ralf, 46535 Dinslaken, DE

(74) Vertreter:
Kreutzer, U., Dipl.-Phys., Pat.-Anw., 45145 Essen

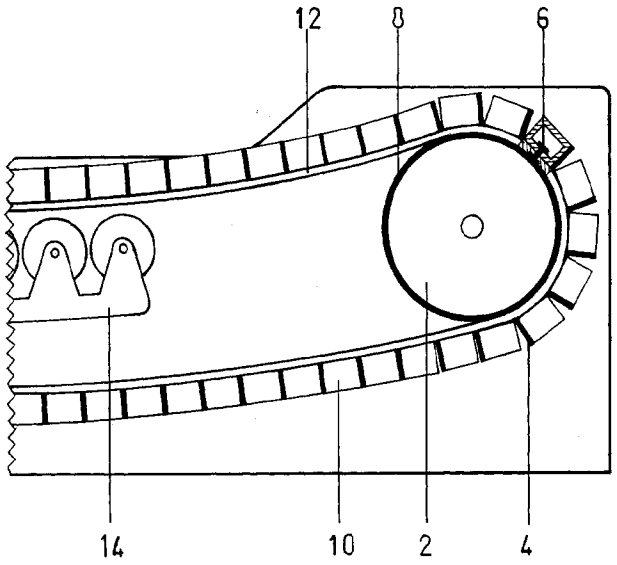
(72) Erfinder:
gleich Anmelder

Die folgenden Angaben sind den vom Anmelder eingereichten Unterlagen entnommen

Prüfungsantrag gem. § 44 PatG ist gestellt

(54) Laufband für das Fitneßtraining und Fahrzeug mit einem Laufbandantrieb

(57) Herkömmliche Laufbänder simulieren das Laufen in einer Ebene, was durch die damit verbundenen Absprung- und Abfangbewegungen nicht nur sehr anstrengend, sondern vor allem auch gelenkbelastend ist.
Das neue Laufband weist in seinem dem Benutzer zugewandten Bereich eine Krümmung auf, deren Radius vorzugsweise einstellbar ist und in etwa der Beinlänge des jeweiligen Benutzers entspricht, so daß eine nicht nur besonders effektive, sondern vor allem auch extrem gelenkschonende Laufbewegung möglich ist.
Das neue Laufband kann auch als Fahrzeugantrieb eingesetzt werden.



DE 199 22 822 A 1

Beschreibung

Die Erfindung betrifft ein Laufband für das Fitneßtraining und ein Fahrzeug mit einem Laufbandantrieb.

Bekannt sind Laufbänder mit einer ebenen Lauffläche, deren Band, umgelenkt mittels zweier Rollen, über eine festen Ebene gleitet. Das Band wird dabei entweder von einem Motor oder vom Benutzer angetrieben und kann in der Regel innerhalb bestimmter Neigungswinkel verstellt werden.

Die herkömmlichen Laufbänder haben den Nachteil, daß sie das Laufen auf einer Ebene imitieren und zumeist einen sehr harten Untergrund aufweisen, was sich vor allem für die Beingelenke belastend auswirkt. Das Laufen auf der Ebene hat den Nachteil, daß der Läufer nach jedem Schritt – d. h. jeweils nach einer kurzen Flugphase, in der der gesamte Körper ohne Bodenkontakt ist – eine sehr energiezehrende Stemmphase mit dem vorderen Bein leisten muß. In dieser Bewegungsphase muß der Großteil der für die gesamte Laufbewegung benötigten Kraft aufgewendet werden: In permanenter rhythmischer Wiederholung muß der Läufer seine in einer Abwärtsbewegung befindliche Körpermasse zunächst einmal auffangen (Kompensationsphase für die Schwerkraftwirkung), um über dem Knie nicht einzuknicken, und darauf sofort sein Körpergewicht wieder nach oben beschleunigen, um dem Körper erneut so viel Höhe zu verleihen, daß jeweils das andere Bein (Schwungbein) ohne Bodenkontakt wieder nach vorn geführt werden kann. Dort wird sodann die nächste Kompensations- und Beschleunigungsphase geleistet, usw. Dagegen ist der Anteil der zur Vortriebserzeugung bzw. zum Halten der Laufgeschwindigkeit benötigten Kraft erheblich geringer.

Das Laufen auf einer Ebene ist also aufgrund der jeweils zu leistenden Stemmphase des vorderen Beines energiezehrend und in der Kompensationsphase aufgrund der Erschütterung und Stauchung der Gelenke insbesondere für Fuß- und Kniegelenke erheblich belastend. In abgeschwächter Form gilt dies auch für das normale Gehen und "Walken", da hier die Flugphasen und die höheren Geschwindigkeitswerte fehlen.

Davon ausgehend liegt der Erfindung die Aufgabe zugrunde, ein Laufband anzugeben, bei dem die energiezehrenden, körperbelastenden Phasen weitgehend entfallen bzw. entschärft werden, um das Laufen für Fitneßsportler generell leichtgängiger bzw. spaßbetonter zu machen und auch Menschen den Zugang zum Laufen zu ermöglichen, die aufgrund der hohen Belastungsintensität des Laufens bisher nicht für diesen Sport zu begeistern waren oder diesen aus gesundheitlichen Gründen nicht mehr ausüben können (z. B. wegen degenerativer oder unfallbedingter Gelenkprobleme oder geringerer Kreislaufbelastbarkeit). Zudem soll das neue Laufband technisch einfach gestaltet sein, so daß es kostengünstig gebaut werden kann und sich sowohl für Sportstudios als auch für den häuslichen Bereich eignet.

Die Aufgabe wird gelöst von einem Laufband mit den Merkmalen des Anspruchs 1. Das Laufband hat den großen Vorteil, daß durch die Krümmung der Lauffläche des Laufbandes gemäß dem Radialbogen der Laufbewegung der Beine das hintere Bein noch Kontakt zur Lauffläche hat, während das vordere bereits wieder Kontakt aufnimmt. Somit fehlt beim Laufen auf dem erfindungsgemäßen Band die Flugphase fast völlig, weshalb der Körperschwerpunkt in einer stabilen Position bleiben kann.

Die Kompensationsphase erfolgt ohne die Druckbelastung einer Stemmphase verteilt auf dem vorderen Drittel des Bandes, welches hier in Anlehnung an den natürlichen Kreisbogen der Beinbewegung bogenförmig nach unten führt. Deshalb ist unmittelbar nach dem Aufsetzen des Beines kein stärkeres Einbeugen des Knies erforderlich wie es bei der punktuell wirkenden Stemmphase beim Laufen auf der Ebene erfolgt. Der Körperschwerpunkt bleibt im wesentlichen auf einer Höhe. Man nimmt quasi vorne-unten Kontakt mit dem Band auf und " zieht das Bein durch".

Direkt im Anschluß an diese energetisch erheblich günstigere Kompensationsphase wird im Verlauf einer mittleren vortriebserzeugenden Phase, in der beim Lauf auf einer ebenen Fläche zusammen mit der Stemmphase die Gegenbeschleunigung des Körpers nach oben geleistet werden muß, das Bein entsprechend seiner natürlichen Kreisbahn nach hinten geführt. In dieser mittleren Bewegungsphase des Beines ist bei der erfindungsgemäßen Technik keine Beschleunigung des Körperschwerpunktes nach oben notwendig, weil zum einen kein Höhenverlust des Körperschwerpunktes zu kompensieren ist, da sich kein derartiger Höhenverlust ergibt, und zum anderen, weil das Bein nach der hinteren Auslaufphase in der nun folgenden Schwungphase aufgrund der gekrümmten Laufbahn ohne die Gefahr eines Bodenkontaktes frei nach vorn geführt werden kann. Die Ausbildung einer steigenden Bahn des Körperschwerpunktes, um das jeweilige Schwungbein ohne Bodenberührung nach vorne führen zu können, ist auf dem erfindungsgemäßen Laufband also nicht nötig.

Der Körperschwerpunkt bleibt in seiner Lage weitestgehend konstant, und der Benutzer läuft oder geht im wahrsten Sinne des Wortes "rund". Durch die annähernd konstante Höhenlage des Körperschwerpunktes, die fehlende gelenkstauchende Stemmphase und die Bewegung der Beine gemäß ihrem natürlichen Kreisbogen wird das Laufen somit erheblich leichter, gelenkfreundlicher und vor allem spaßbetonter. Auch treten hohe Reibungswiderstände, die bei herkömmlichen Laufbändern durch das Gleiten der Lauffläche auf einem ebenen Untergrund entstehen, beim erfindungsgemäßen Laufband nicht auf, weshalb das Band für den Benutzer noch leichtgängiger und der Einsatz eines Hilfsmotors in der Regel überflüssig ist, was die Betriebskosten für ein solches Gerät senkt.

Verstärkt wird die körperschonende Trainingsweise mit dem erfindungsgemäßen Gerät noch durch die Elastizität der Laufbandkonstruktion (Band und Querstreben geben elastisch nach), so daß das Aufsetzen mit der Ferse noch weicher wird. So wird es für den normalen Sportler möglich, schneller oder länger zu laufen als mit herkömmlichen Laufbändern oder im freien Gelände. Anfängern, Schwergewichtigen oder Personen mit gesundheitlichen Schwächen wie Gelenkproblemen oder eingeschränkter Herz-Kreislaufbelastbarkeit finden schnell einen Einstieg ins Laufen und können diesen Fitneßsport wieder unbeschwert ausüben. Aufgrund der außerordentlichen gelenk- und kreislaufschonenden Nutzungsmöglichkeit ist das Laufband insbesondere auch im Reha-Bereich von Kliniken etc. gut einsetzbar.

Weitere Einzelheiten und Vorteile der Erfindung ergeben sich aus der nachfolgenden Beschreibung zweier Ausführungsbeispiele. Es zeigen:

Fig. 1 einen Abschnitt eines Laufbandes in teilweise geschnittener Seitenansicht,

Fig. 2 eine Prinzipskizze eines mittels eines Laufbandes angetriebenen Fahrzeugs in Seitenansicht und

Fig. 3 eine Prinzipskizze des Fahrzeugs gemäß **Fig.** 2 in Frontansicht.

Fig. 1 zeigt einen Teil eines Laufbandes ohne Motor in Seitansicht. Um Details in anschaulicher Größe darstellen zu können, ist nur ein Drittel des Bandes dargestellt. Die andere Seite ist spiegelbildlich symmetrisch, die Mitte in analoger Verlängerung der Radialbögen anzuordnen. Die Lauffläche wird von quer zur Laufrichtung angeordneten Quer-

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streben **10** gebildet, die mittels Nieten **6** an einem umlaufenden Tragband **12** befestigt sind. An einer der quer zur Laufrichtung verlaufenden Längsseiten jeder Querstrebe **10** ist eine elastisch verformbare Kunststofflamelle **4** angeordnet, so daß – wie in **Fig.** 1 gut erkennbar – zwei Querstreben **10** nie direkt, sondern stets durch eine Kunststofflamelle **4** gedämpft aneinanderliegen. Die Tragspannung und dementsprechend die Form der Lauffläche wird im Beispiel durch das Zusammenwirken der Querstreben **10**, den dazwischen vorgesehenen elastisch verformbaren Kunststofflamellen **4**, der Verbindung der Querstreben mit dem Laufband (im Beispiel mittels Nieten **6**), und dem Tragband **12** selbst erzielt.

Durch die Anordnung dieser Elemente pressen sich die oberen Kanten der Querstreben, gedämpft durch die Kunststofflamellen, gegeneinander, während die unteren Kanten eine Tendenz zum Auseinanderdriften haben, jedoch gebremst werden durch die Kopplung über die Vernietung zum Band. Das Nachgeben der Lauffläche ergibt sich hier durch die Summierung des Zusammenrückens der losen Verbindungen im oberen Bereich, verstärkt durch das elastische Nachgeben der Lamellen und der Dehnung der Verbindungen im unteren Bereich an den Stopstellen zweier Querstreben. Die Tragspannung bzw. Laufflächenform kann durch Aufbringen unterschiedlicher Lamellen, insbesondere auch bei verschleißbedingtem Nachlassen der Spannung, verstärkt oder sonstwie variiert werden. Bei stärkerer Spannung ergibt sich so eine flachere Laufbahnkrümmung, die daher eher für größere Läufer geeignet ist, deren längere Beine in der Laufbewegung einen größeren und damit pro Streckeneinheit flacheren Radialbogen beschreiben. Auch für schwergewichtige Personen ist eine höhere Laufbandspannung geeignet, damit sich kein zu steiler Laufbahnbogen ergibt.

Jede Umlenkrolle **2** ist im Beispiel mit einer Gummierung **8** versehen, um die Haftreibung zwischen Tragband **12** und Umlenkrollen **2** zu erhöhen und das Aufsetzen der Nietenköpfe auf der Rolle zu dämpfen. An der Außenseite jeder Umlenkrolle und im der Laufseite abgewandten unteren Bereich des Bandes ist die Bandspannung aufgelöst, so daß das Band ohne nennenswerten Widerstand um die Umlenkrollen laufen kann. Da die Abstände zwischen den Querstreben sehr gering sind und die Lamellen sich zudem ausdehnen, wurden hier im sich z. Z. unten befindlichen Abschnitt des Bandes keine Zwischenräume zwischen den Querstreben eingezeichnet. Der Einbau einer rollenbesetzten Kufe **14** an der Unterseite der Lauffläche dient als Sicherungsmaßnahme gegen eine eventuelle Schwingungsresonanzaufschaukelung des Bandes in der Laufbewegung.

Aufgrund seines hohen Wirkungsgrades für die Muskulatur des Menschen und aufgrund der Umsetzung einer größeren vertikalen Energiekomponente der Laufbewegung in Bandvortrieb ist das erfindungsgemäße Laufband auch für den Outdoorbereich geeignet, insbesondere kann es als Fahrzeugantrieb eingesetzt werden. In den **Fig.** 2 und 3 ist ein Fahrzeug mit einem Laufbandantrieb gezeigt.

Das in den **Fig.** 2 und 3 nur schematisch gezeigte, in seiner Gesamtheit mit **20** bezeichnete Fahrzeug besteht im wesentlichen aus einem Fahrgestell **22**, an dem in an sich bekannter Weise vier Räder **24** aufgehängt sind. Bei diesem Ausführungsbeispiel werden die beiden in Fahrtrichtung gesehen hinteren Räder mittels eines üblichen und daher nur angedeuteten Kettentriebs **26** angetrieben, wobei die Antriebskette selbst von der in Fahrtrichtung hinteren Umlenkwalze **28** angetrieben wird, welche selbst wiederum von dem umlaufenden Tragband **30** bewegt wird. Das Tragband **30** kann analog zum Tragband **12** gemäß **Fig.** 1 ausgebildet und insbesondere mit einer Vielzahl von Querstreben versehen sein. Im vorderen Bereich des Fahrzeugs **20** ist eine zweite Umlenkwalze **32** vorgesehen, so daß das Tragband **30** kontinuierlich um die beiden Umlenkwalzen **28** und **32** umlaufen kann. In dem dem Benutzer zugewandten Bereich zwischen den beiden Umlenkwalzen **28** und **32** ist das Tragband **30** nach unten gewölbt, wobei der Wölbungsradius in etwa der Beinlänge eines Benutzers entspricht, so daß sich die oben beschriebene gewünschte gelenkschonende und besonders effektive Laufweise ergibt. Am Fahrgestell **22** ist ferner ein Haltebügel **34** befestigt, der in Höhe des Beckens eines Benutzers mit einer gepolsterten breiten Auflagefläche **36** versehen ist und an dem zwei Brems- und Steuerhebel **38** und **40** befestigt sind. Bei diesem Ausführungsbeispiel wird mit dem Hebel **38** eine nicht weiter gezeigte, nur auf das linke Hinterrad wirkende Bremse und mit dem Hebel **40** eine nur auf das rechte Hinterrad wirkende Bremse betätigt, so daß bei gleichzeitiger Betätigung Hebel **38** und **40** das Fahrzeug im ganzen gebremst, bei Betätigung nur eines der Hebel das Fahrzeug in eine entsprechende Kurvenbewegung gebracht wird.

Beim allmählichen Beschleunigen und beim Tempohalten ist der Großteil der Kraft beim herkömmlichen Laufen wie bereits beschrieben für die Stemmphase aufzubringen. Die zur Vortriebserzeugung benötigte Energie ist vergleichsweise gering. Da das Band in seinem ersten Stück, also im Bereich der Schwerkraftkompensation im ersten Drittei der Schrittweite in seinem Verlauf nach unten-hinten gerichtet ist, wird diese Kompensationsenergie aufgrund der Abwärtskomponente des ersten Teilstücks des Laufbandes auf die tragenden Rollen des Bandes umgesetzt, insbesondere auf die Vorderrolle. So ergibt sich ein guter Vortriebseffekt für das Fahrzeug über die Umsetzung des in der Bilanz überwiegenden vertikalen Energieanteils mittels Bandantrieb auf eine Achse oder die Räder des Outdoorgerätes. Der resultierende Vortriebseffekt ist spätestens dann als sehr gut zu bezeichnen, wenn das Band zusätzlich mit einer leichten Grundsteigung von z. B. 1–2% gebaut wird. Die Steigung kann über eine leicht zu betätigende Hebelmechanik schnell erhöht oder erniedrigt werden, um den Wirkungsgrad des Laufbandes hinsichtlich der Vortriebserzeugung an Gegenwind oder leichte Steigungen im Gelände anpassen zu können.

Noch effektiver bzw. variabler wird die Situation für die Vortriebserzeugung durch den Einsatz der Beckenkonterung. Da hierdurch ein geschlossenes Kraftsystem entsteht, wird die gesamte Laufkraft – und nicht nur ein Teü des vertikalen Energieüberschusses – auf die Straße übertragen. So werden auch schnellere Beschleunigungen möglich, größere Steigungen überwindbar und selbstverständlich höhere Endgeschwindigkeiten erreichbar.

Da das Laufen auf dem erfindungsgemäßen Laufband bei schneller Laufbewegung erheblich leichter ist als das Laufen auf einer Ebene, kann die eingesparte Energie beim Outdoorgerät in die Erzeugung von Vortrieb umgesetzt werden. So sind mit einem derartigen Gerät erheblich höhere Geschwindigkeiten zu erzielen als beim normalen Joggen oder Gehen auf festem bzw. ebenen Untergrund. Damit ist ein neues Breitensportgerät für den Bereich Joggen und Gehen geschaffen.

Als besondere Ausgestaltung ist die Hüft-/Beckenkonterung mit zwei seitlichen Griffen kombiniert, welche mit Bremshebeln und Schaltelementen versehen sein können und z. B. durch Drehung die Lenkbewegung über die Bandkippung unterstützen oder auch alleine bewirken können. So kann man beispielsweise in einer Gefahrensituation durch Ergreifen der vorne-seitlich in Beckenhöhe befindlichen Griffe in einer Aktion bremsen, stützen und lenken.

Patentansprüche

1. Laufband für das Fitneßtraining mit einer zwischen zwei Umlenkrollen (**2**) gebildeten Lauffläche, **dadurch gekennzeichnet**, daß die Lauffläche gekrümmt ist, wobei der Krümmungsradius in etwa der Beinlänge eines Benutzers entspricht.

2. Laufband nach Anspruch 1, dadurch gekennzeichnet, daß der Krümmungsradius verstellbar ist.

3. Laufband nach Anspruch 1 oder 2, dadurch gekennzeichnet, daß die Lauffläche mittels einer um die Umlenkrollen umlaufenden Gleiskette gebildet wird.

4. Laufband nach Anspruch 1 oder 2, dadurch gekennzeichnet, daß die Lauffläche mittels eines um die Umlenkrollen (**2**) umlaufenden Tragbandes (**12**) gebildet wird.

5. Laufband nach Anspruch 4, dadurch gekennzeichnet, daß auf der den Umlenkrollen abgewandten Oberseite des Tragbandes (**12**) Querstreben (**10**) vorzugsweise austauschbar befestigt sind.

6. Laufband nach Anspruch 5, dadurch gekennzeichnet, daß die Querstreben (**10**) derart an dem Tragband (**12**) befestigt sind, daß sie zumindest im Bereich der gekrümmten Lauffläche aufeinander zu gepreßt werden.

7. Laufband nach Anspruch 5 oder 6, dadurch gekennzeichnet, daß zwischen den Querstreben (**10**) Dämpfungselemente (**4**) vorgesehen sind.

8. Laufband nach Anspruch 7, dadurch gekennzeichnet, daß die Dämpfungselemente an einer Längsseite der Querstreben (**12**) befestigte elastisch verformbare Lamellen (**4**) sind.

9. Laufband nach einem der Ansprüche 1 bis 8, dadurch gekennzeichnet, daß unterhalb der Lauffläche Dämpfungselemente vorgesehen sind.

10. Laufband nach Anspruch 9, dadurch gekennzeichnet, daß die unterhalb der Lauffläche vorgesehenen Dämpfungselemente mit Walzen oder Rollen besetzte Längskufen (**14**) sind.

11. Laufband nach Anspruch 10, dadurch gekennzeichnet, daß die Distanz der Längskufen (**14**) zur Lauffläche und/oder die Andruckstärke der Längskufen an eine Gleiskette bzw. ein Tragband (**12**) einstellbar ist.

12. Laufband nach Anspruch 1, dadurch gekennzeichnet, daß die Lauffläche mittels zumindest seitlich geführter Gliederketten gebildet wird, auf oder an denen Querstreben angebracht sind.

13. Laufband nach einem der Ansprüche 1 bis 12, dadurch gekennzeichnet, daß mechanisch, hydraulisch oder pneumatisch betätigbare Abstandselemente zwischen den Querstreben oder Kettengliedern zur Anpassung der Laufflächenkrümmung in unterschiedliche Beinradien und/oder Körpergewichte vorgesehen sind.

14. Laufband nach einem der Ansprüche 1 bis 13, dadurch gekennzeichnet, daß die Kettenglieder bzw. die Querstreben im Querschnitt quer zur Laufrichtung konisch ausgebildet sind.

15. Laufband nach einem der Ansprüche 1 bis 14, dadurch gekennzeichnet, daß die Querstreben oder Kettenglieder an ihrer den Umlenkrollen zugewandten Unterseite eine der Krümmung der Umlenkrollen entsprechende Krümmung aufweisen.

16. Fahrzeug mit wenigstens einer angetriebenen Achse oder einem angetriebenen Rad, dadurch gekennzeichnet, daß das Rad oder die Achse mittels eines Laufbandes nach einem der Ansprüche 1 bis 15 antreibbar ist.

17. Fahrzeug (**20**) nach Anspruch 16, dadurch gekennzeichnet, daß die Neigung des Laufbandes gegen die Laufrichtung einstellbar ist.

18. Fahrzeug nach Anspruch 16 oder 17, dadurch gekennzeichnet, daß das Fahrzeug durch Kippung des Laufbandes um eine Fahrtrichtung weisende Achse durch Positionswechsel des Läufers lenkbar ist.

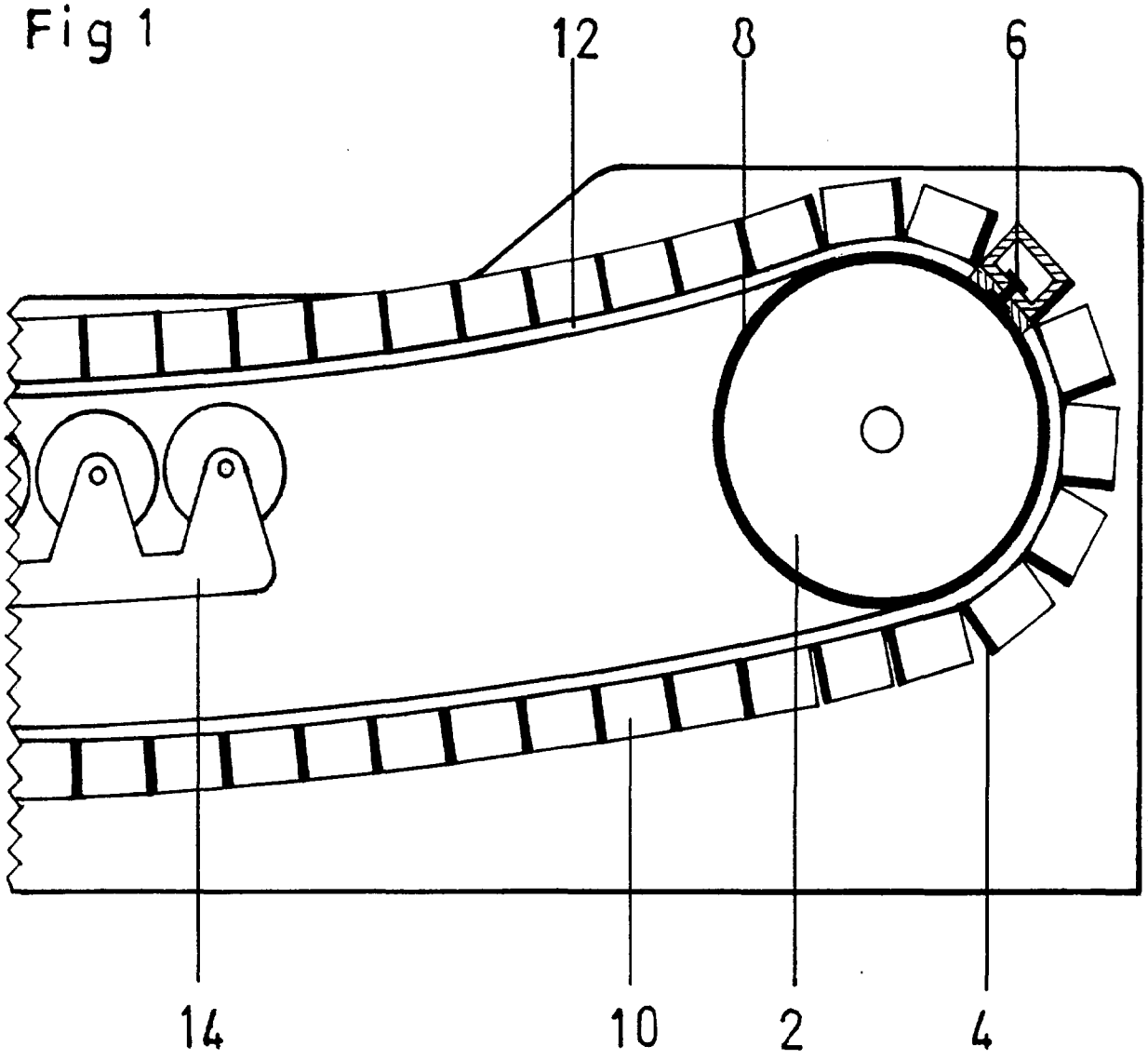
19. Fahrzeug nach einem der Ansprüche 16 bis 18, dadurch gekennzeichnet, daß eine manuell betätigbare Lenk- und/oder Bremsvorrichtung (**38**, **40**) vorgesehen ist.

20. Fahrzeug nach einem der Ansprüche 16 bis 19, dadurch gekennzeichnet, daß Mittel, insbesondere ein Haltebügel (**34**), zur Stützung des Hüft-/Beckenbereiches des Benutzers beim Laufen vorgesehen sind.

Hierzu 2 Seite(n) Zeichnungen

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Int. Cl.[7]: A 63 B 22/02
Offenlegungstag: 7. Dezember 2000

Fig 1



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Offenlegungstag: 7. Dezember 2000

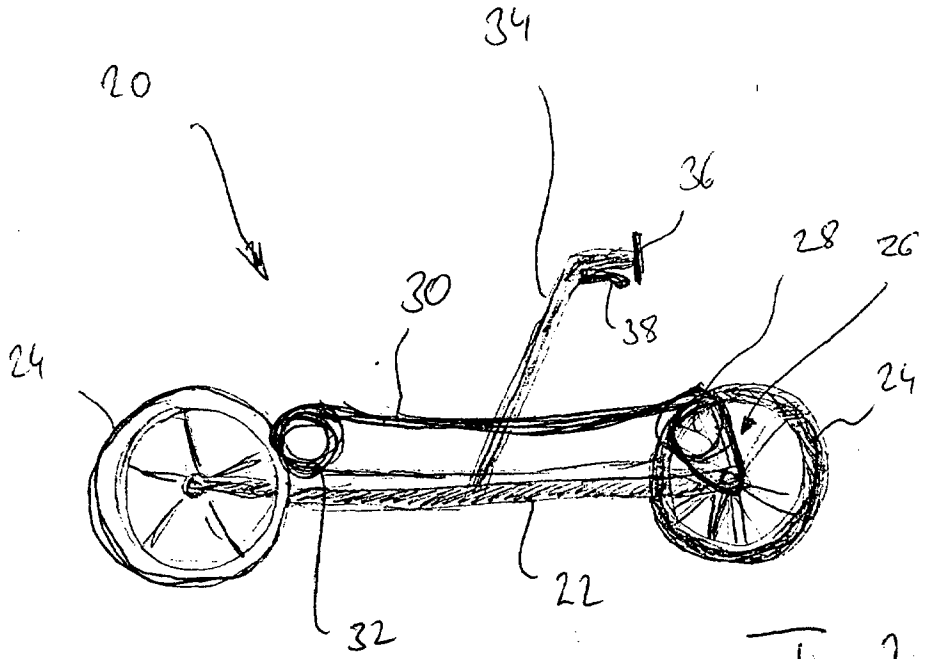


Fig. 2

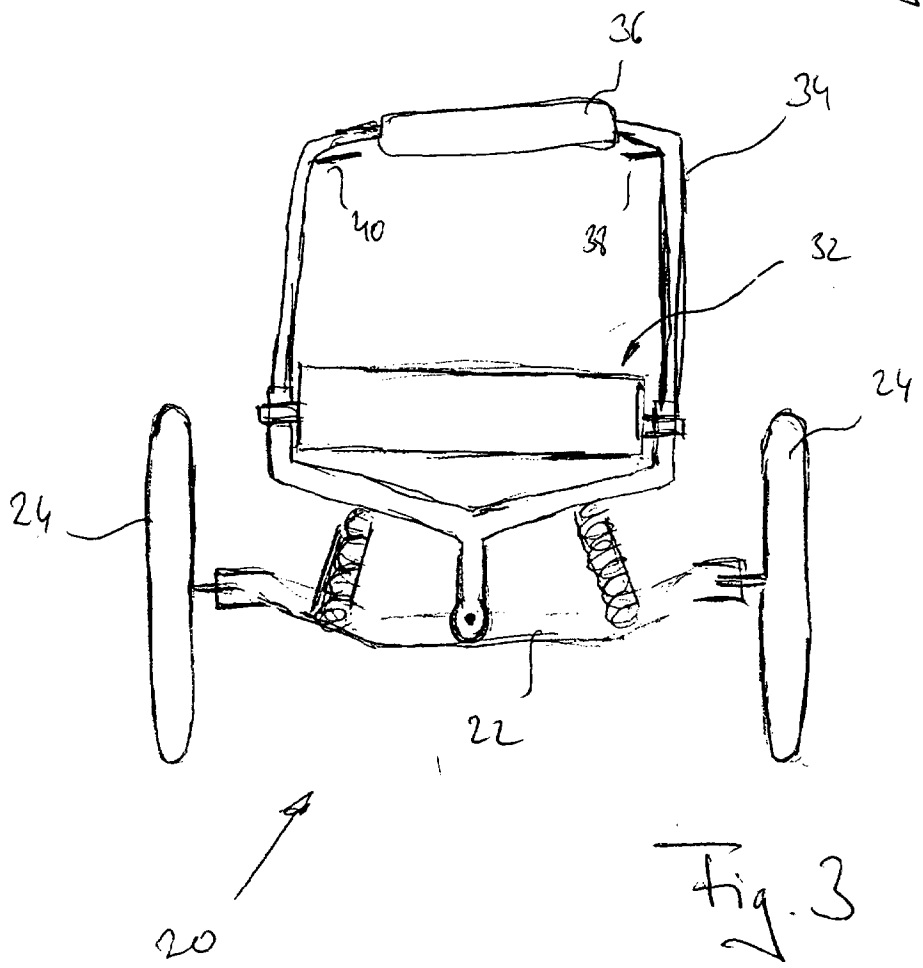


Fig. 3

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Electronic Acknowledgement Receipt

EFS ID:	44444970
Application Number:	17247101
International Application Number:	
Confirmation Number:	2042
Title of Invention:	MANUALLY POWERED TREADMILL
First Named Inventor/Applicant Name:	Douglas G. Bayerlein
Customer Number:	26371
Filer:	Alexander J. Neuworth/Laura Buhs
Filer Authorized By:	Alexander J. Neuworth
Attorney Docket Number:	097208-0311
Receipt Date:	06-DEC-2021
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Application Type:	Utility under 35 USC 111(a)

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	097208-0311_IDS.pdf	118993 a717d4d6c325a370826efe0fd95575d35c1b37f6	no	2

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	097208-0311_SB08.pdf	106222 733498c1ad240213fc820fc965657358f4bc07c4	no	1
Warnings:					
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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Inventor Name:	Douglas G. Bayerlein
Title:	MANUALLY POWERED TREADMILL WITH VARIABLE BRAKING RESISTANCE
Application No.:	17/247101
Filing Date:	11/30/2020
Examiner:	ROBERTSON, JENNIFER MARY DEICHL
Art Unit:	3784
Confirmation No.:	2042

INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR §1.56

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

Applicant submits herewith documents for the Examiner's consideration in accordance with 37 CFR §§1.56, 1.97 and 1.98.

Applicant respectfully requests that each listed document be considered by the Examiner and be made of record in the present application and that an initialed copy of Form PTO/SB/08 be returned in accordance with MPEP §609.

Applicant requests that, in accordance with 37 CFR §1.98(d), the Examiner review all applications relied on for an earlier effective filing date under 35 U.S.C. 120, including Application No. PCT/US10/27543, filed 3/16/2010; Application No. 13/235,065, filed 9/16/2011; Application No. 14/076912, filed 11/11/2013; Application No. 14/832,708, filed 8/21/2015; Application No. 15/957,721, filed 4/19/2018; Application No. 16/792444, filed 2/17/2020, for copies of references of record therein that are not being provided here; although Applicant would be pleased to provide copies of any such documents at the Examiner's request.

The submission of any document herewith is not an admission that such document constitutes prior art against the claims of the present application or that such document is considered material to patentability as defined in 37 CFR §1.56(b). Applicant does not waive any rights to take any action which would be appropriate to antedate or otherwise remove as a competent reference any document submitted herewith.

CONCISE EXPLANATION OF RELEVANCE

Foreign Language

An English abstract is provided for any foreign language documents.

TIMING OF THE DISCLOSURE

The listed documents are being submitted in compliance with 37 CFR §1.97(b), before the mailing date of the first Office Action on the merits.

Although Applicant believes that no fee is required, the Commissioner is hereby authorized to charge any additional fees which may be due to Deposit Account No. 19-0741.

Respectfully submitted,

Date /12-6-2021/ By /Alexander J. Neuworth/

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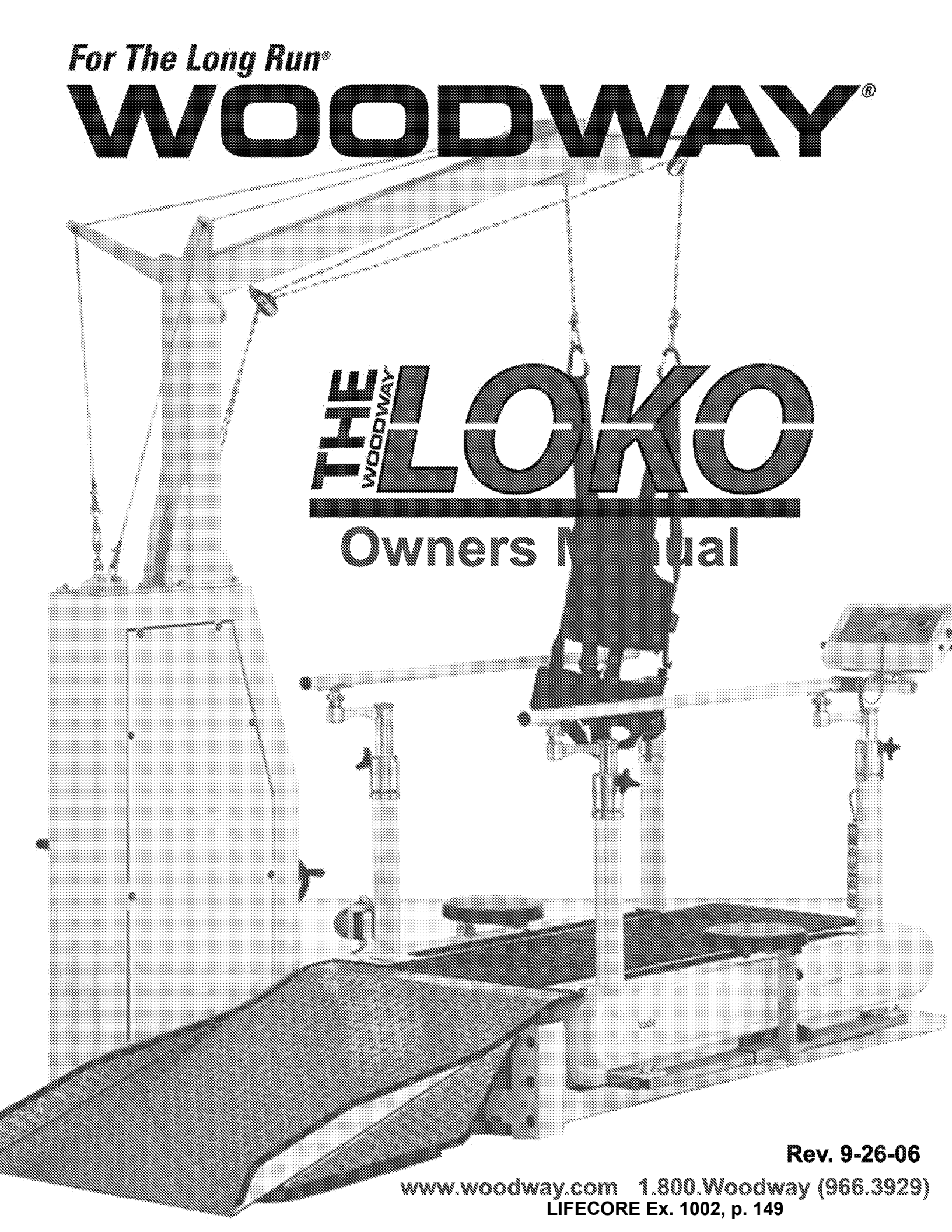
Substitute for form 1449/PTO				***Complete if Known***	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	17/247,101
				Filing Date	11/30/2020
Date Submitted: April 25, 2022				**First Named Inventor**	Douglas G. Bayerlein
				Art Unit	3784
(use as many sheets as necessary)				Examiner Name	ROBERTSON, JENNIFER MARY D.
Sheet	1	of	1	Attorney Docket Number	097208-0311

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[6]
	A1	WOODWAY, "The Woodway LOKO Owners Manual", S55-70 E Standard Manual, September 26, 2006, 47 pages.	

Examiner Signature		Date Considered	

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CHAPTER 1 - INTRODUCTION

1.1 SAFETY INSTRUCTIONS

All basic pertinent precautionary measures must always be taken into account when using a treadmill. Please therefore read this manual carefully and become well acquainted with operation of the unit and with all warning signs fitted to the machine.

1.1.1 Important Safety Regulations

DANGER - The treadmill must be uplugged from the main power source before cleaning to protect from electric shocks.
The surfaces of the treadmill should not be soaked with liquid; the best way to clean the running mat is with a spray or a damp cloth.

CAUTION - Fuses should only be replaced by fuses of the same type and voltage to provide permanent protection from fire.

WARNING - The following points must always be observed to protect from burns, electrical shocks and injuries:

1. Never leave the treadmill connected and running without supervision. Before leaving the machine, stop it and unplug it from the main power source. To do so, switch all control elements to STOP or OFF and then pull the plug out of the socket. This procedure is always necessary when the treadmill is at a standstill and before dismantling any parts.
2. The treadmill must always be continuously monitored when used in the vicinity of children or physically and mentally disabled persons.
3. The treadmill should only be used for the purposes described in this manual.
4. Never operate the treadmill if it has a defective plug, cable or a running surface which is damaged or not functioning correctly.
5. The cable should not come in contact with heating surfaces or sharp edges.
6. No objects of any kind should fall through the openings or onto the moving machine components. Also keep hands, hair, loose clothing, towels etc. away from the moving treadmill.
7. Only qualified maintenance staff may carry out all electrical and mechanical repair work. Please contact your dealer, the Service Centre or approach the WOODWAY factory directly. Only original replacement parts should be used.
8. The treadmill must be connected to a correctly grounded power source. Please consult the section on grounding the system

1.1.2 Grounding the Treadmill

The treadmill must be correctly electrically grounded. In the event of a malfunction or failure of components, the grounding device provides the route of least resistance for the electric current, thus reducing the risk of electric shocks. The unit is equipped with a power source cable with a grounded plug. The plug must be connected to a suitable, correctly fitted and power source.

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DANGER - The plug supplied with the treadmill may not be manipulated in any way. If necessary, a suitable power source must be fitted by a qualified electrician. Adapters and particularly ungrounded adapters should not be used, due to the risk of electrical shocks.

1.1.3 Safety Instructions

Read this manual thoroughly and become well acquainted with the operation and control of the WOODWAY treadmill, series LOKO S.

The following instructions are to be observed when operating the treadmill:

1. Loose clothing and towels may not be placed on the running mat of the treadmill.
2. The area behind the treadmill must be clear and at least 200 cm away from walls or furniture.
3. Always keep hands well away from moving parts.
4. Never allow children near the treadmill without supervision. WOODWAY treadmills are approved for runners with a body weight of up to 159 kg max. and designed for speeds of up to 5 km/h. Should any objects become lodged in the belt or rollers, there is no guarantee that the treadmill will stop immediately.
5. Never get on or off the treadmill while the running surface is moving. Always use the handles or the handrail whenever possible.
6. Always wear suitable shoes, e.g. shoes with a rubber sole or other non-slip shoes. High-heeled shoes or shoes with leather soles are not suitable. Also check that there are no stones lodged in the soles.
7. Training sessions must be stopped immediately in the case of abnormal stress symptoms or pain. If there is any doubt, please consult your doctor.
8. Containers with liquids should never be placed on the treadmill.
9. To rule out the risk of electric shocks, avoid all contact between water and the electric components, such as motor, the power source and plug. Never service your treadmill yourself. Please always contact your WOODWAY dealer or the authorised Service Centre.
10. For safety reasons, the treadmill must always be switched off when adjusting the settings or when any other work is being carried out in the vicinity of the treadmill.

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1.2 TECHNICAL DATA S 55

1.2.1 Mechanical data

Overall dimensions:	172 cm (L) x 104 cm (W) x 150 cm (H)
Weight:	approx. 180 kg
Stand:	four (4) rubber feet
Max. load-bearing capacity:	159 kg
Speed range:	0,00 to 5km/h
Incline range:	----------
Running surface speed precision:	+/- 0,1 km/h
Running surface acceleration:	with DATA MONITOR fully adjustable up to max. speed

1.2.2 Electrical data

Power source connection:	230 V AC 16 A, 50/60 Hz
Motor:	DC with tachometer 1 kW
Drive :	threaded rod and pinion
Resolution:	0,1 %
Lifting motor:	DC motor 150 W
Power source cable:	2,5 m, 2 pole CEE 7/7 (earthed safety plug)
Power source fuse:	10 A slow-acting fuse, 5 x 20 mm (in control)
Fuse for lifting drive:	5 A slow-acting fuse, 5 x 20 mm (in control)

1.2.3 Treadmill

General:	60 slats, width 55 cm, replaceable
Running belt:	rubber on aluminium support
Hardness of running-surface:	approx. 40 Shore D
Running surface:	156 cm x 55 cm
Colour:	black or grey
Support system:	106 ball bearings with 12 V-belt guides
Lateral play:	+/- 2 mm

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1.2 TECHNICAL DATA S 70

1.2.1 Mechanical data

Overall dimensions:	172 cm (L) x 115 cm (W) x 150 cm (H)
Weight:	approx. ~240 kg
Stand:	four (4) rubber feet
Max. load-bearing capacity:	159 kg
Speed range:	0,0 to 5 km/h
Incline range:	----------
Running belt speed precision:	+/- 0,1 km/h
Running belt acceleration:	with DATA MONITOR fully adjustable up to max. speed

1.2.2 Electrical Data

Power source connection:	110 V AC 16 A, 50/60 Hz
Motor:	DC with tachometer 1.5 kW (2 HP)
Drive:	threaded rod and pinion
Resolution:	0,1 %
Lifting motor:	DC motor 150 W
Power source cable:	2,5 m, 2 pole (earthed safety plug)
Power source fuse:	10A slow-acting fuse, 5 x 20 mm

1.2.3 Treadmill

General:	60 slats, width 70 cm, replaceable
Running belt:	rubber on aluminium support
Hardness of running surface:	approx. 40 Shore D
Running surface:	156 cm x 70 cm
Colour:	black or grey
Support system:	106 ball bearings with 12 V-belt guides
Lateral play:	+/- 2 mm

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CHAPTER 2 - INSTALLATION OF THE TREADMILL

In most cases, your WOODWAY treadmill will be delivered completely assembled. Check immediately on delivery for any signs of transport damage. Please report all damage immediately to the transport company and to the factory.

2.1 INSTALLATION SITE

The treadmill must be installed on a flat, sufficiently firm floor surface. When installed in higher storeys, position the system as far as possible in the corner of the room to ensure sufficient stability especially when running at higher speeds. The installation site must be as flat as possible to ensure minimum deflexion of the frame.
The treadmill may not be installed directly on carpet with relatively long pile because of the moving parts on the underside of the treadmill. If necessary, a suitable mat should be placed under the treadmill. This prevents fluff from being caught up in the treadmill, and also reduces wear on the carpet.

2.2 TRANSPORT, STORAGE and DISPOSAL

CAUTION: The treadmill is heavy and may cause injuries if lifted incorrectly.
Always use the supplied carrier poles if the treadmill is to be moved.
Never use the covers to lift or pull the treadmill. If a flat trolley is available, slide the trolley under the treadmill and then move the treadmill to its new position. If the treadmill has to be dismantled, the covers and railings can be taken off for easier transport.

For transport and storage, the following requirements are valid:

Temperature:	-10° C	...	+ 70° C
Relative humidity:	15%	...	85% not condensed
Air pressure:	400 hPa	...	1060 hPa

For operation, the following conditions are valid:

Temperature:	+10° C	...	+ 40° C
Relative humidity:	15%	...	85% not condensed
Air pressure:	700 hPa	...	1060 hPa

STORE IN A CLOSED AND PROPERLY ROOFED AREA.

DISPOSAL:

Disposal of all parts should follow the national regulations for each. Please check with your local disposal and/or recycling centre for regulations.

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2.3 POWER CONSUMPTION

The maximum power consumption of the treadmill when running at maximum speed is 10 A at 240 V AC. The unit must therefore be connected to a correctly grounded and adequately fused power source. Preferably a power source that is not used by any other electrical appliances is recommended. If an extension lead has to be used, it must have the following properties: at least 14 AWG, grounded, max. length 3 m.

2.4 POWER SOURCE

WOODWAY treadmils are supplied with a two-prong plug (CEE 7/7 grounded safety plug) as a standard feature and can therefore only be connected to a CEE 7/7 power source.

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CHAPTER 3 - DESCRIPTION

3.1 TREADMILL AND ITS BEARINGS

3.1.1 Running Surface

The patented running surface consists of 60 individual slats fitted on a set of continuous toothed belts. The toothed belts engage the front crown wheel and this in turn engages the drive motor. This makes it completely impossible for the treadmill to slip. The individual slats consist of two materials: a rubber surface, and an aluminium T-section. This combination of approx. 12 mm rubber on aluminium T-sections makes it "the softest treadmill in the world". The rubber surface is resilient and considerably reduces vibrations. This in turn effectively reduces and delays the occurrence of pain in the legs which frequently accompany long-term running.

The belt design eliminates friction and warmth, thus increasing the life of the treadmill surface.

3.1.2 TRANSPORT SYSTEM

The transport system consists of two support rails, a steel wire reinforced continuous belt and 178 mm 0. The support rails, with 112 ball bearings, reinforce the running surface and substantially reduce wear and friction.

The two lateral continuous belts have several key functions: they hold the slats together, transfer output to and from the motor to the runner and reduce the running surface from slipping out to the left or right.

The two support rails consist of three main components: the support rail, individual ball bearings and mounted roller guides. The smooth area of the lateral belts runs over the ball bearings and roller guides.

The support rails also accommodate all ball bearings and roller guides and distribute local load evenly across the whole running surface.

The ten roller guides support the running surface and prevent it from slipping out to the left or right.

The 56 individual bearings on each side also make an important contribution to even distribution of load across the whole running surface.

The deflection rollers transfer the load to and from the motor and prevent the running surface from slipping. The front deflection roller is equipped with an additional crown gear used by the motor. All deflection rollers are equipped with heavy-duty bearings which also reduce friction.

This unique transport system provides extremely low friction and can even be used without an external drive, simply by pushing the treadmill to get it started.

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3.2 OPERATING THE TREADMILL

Before switching the treadmill on, check that the emergency solenoid is correctly positioned, otherwise the display will not light up.

Press the ON key (ON symbol). The display now lights up.

To adjust speed or incline, press the corresponding buttons and check the display.

Important: read the instructions for the control unit first, see 3.3.2. The button can be released again once the required speed/incline has been reached.

The time and distance can be reset to zero by pressing the RESET button.

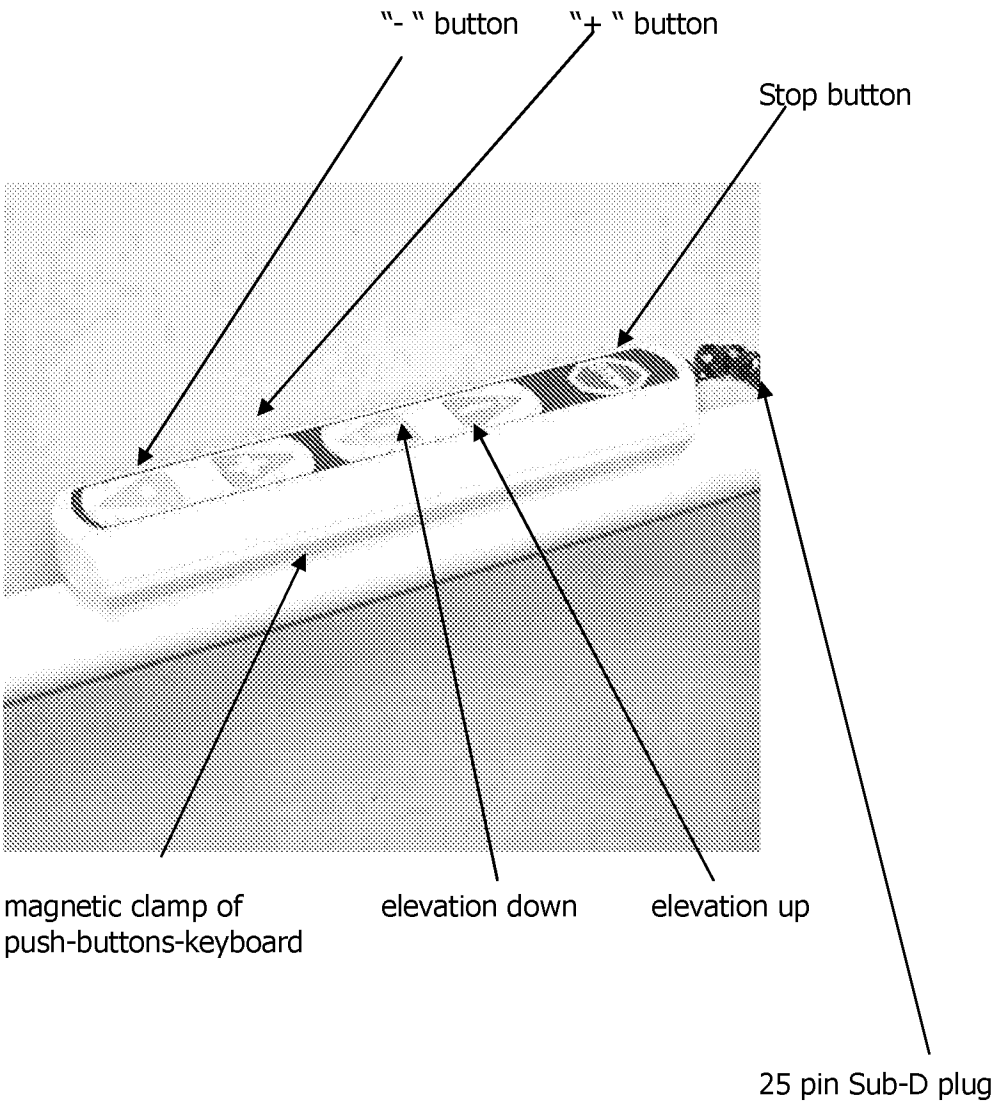
Select between various display modes by pressing the MPH / m/s / km/h button. This does not influence the TIME display.

3.3 OPERATION; DISPLAY; CONTROL

3.3.1 Control panel on the handrail

" + " and " - " BUTTON:	These buttons are used to increase or decrease the running speed of the treadmill. The running speed is increased/ decreased for as long as the button is held down.
INCLINE SYMBOL FOR UP/DOWN	These buttons are used to change the incline. The current value is shown in the display.

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"- " button
"+ " button
Stop button
magnetic clamp of
push-buttons-keyboard
elevation down
elevation up
25 pin Sub-D plug

3.3.2 Operating instruction data monitor

The data monitor described here indicates the current parameters of the lamellar-belt treadmills made by WOODWAY GmbH. The device has 4 multi-digit displays to indicate the current exercise parameters, as well as several LEDs to indicate the control mode.

The data monitor displays the following values:

- Speed of the treadmill in meters per second or kilometres per hour.
- Adjusted incline of the treadmill in per cent.
- The distance run in meters since the belt was last started.
- The energy burned in calories.
- The exercising time.
- The current pulse rate (if the treadmill is fitted with a pulse receiver).
- The control mode of the treadmill (remote control/manual operation/stop mode)

The LEDs to the right on the display indicate the unit of the displayed value, or distinguish between various parameters presented on the same display.

The data monitor is only a display unit with limited capabilities to control the treadmill.

SPEED DISPLAY

The top three-digits indicate the current speed of the treadmill. The displayed speed is in kilometres per hour or meters per second and is set with a key to the right of the display. The two LEDs between the display and key indicate which of the two units is currently activated. The sign in front of the displayed value can be used to indicate a backward running belt in the event that the treadmill offers such a capability.

DISTANCE AND BURNED CALORIES DISPLAY

The display alternates in 10-second cycles between the distance in kilometres from the time the treadmill was last switched on, and the calories burned by the runner. The upper LED indicates distance run, and the lower LED indicates the calories burned.

The values for distance and calories are retained after the treadmill is stopped. They are deleted following renewed start of the treadmill via the hand-rail keypad or the remote control.

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EXERCISE TIME DISPLAY

The exercise duration, just as the distance and calories values, is reset to zero each time the treadmill is restarted. The first part of the display indicates the minutes, the second part the seconds that have passed since the treadmill was started. The two values are separated by two dots which flash in a seconds cycle; the top of the two LEDs to the right of the display flashes to indicate seconds.

The display changes over to hours and minutes when the training duration exceeds one hour. The top LED is then turned off and the bottom starts to flash in its place to indicate the new status.

INCLINE AND PULSE RATE DISPLAY

These two values are also indicated by one and the same display. The incline, just as the speed value, is preceded by a positive or negative sign. However, a negative sign can only be indicated if the treadmill features such a capability. The incline direction can only be changed via PC with a remote control or with the handrail keypad.

After a change of incline, the new value is indicated for 5 seconds on the display. The upper of the two LEDs alongside the display is active for this purpose. The current pulse rate of the runner is displayed after this 5-second period if the incline remains unchanged; this status is indicated by the bottom LED.

Apart from a change of incline, the display returns to the incline value when the radio link to the pulse sensor on the body of the runner is interrupted. The monitor will only display the incline value if the treadmill does not feature a pulse sensor.

TREADMILL CONTROL MODE DISPLAY

The control mode is displayed by five LEDs on the right-hand side of the monitor. The significance of the LEDs (from top to bottom) is as follows:

- Manual control via the handrail keypad is active.
- The treadmill is in stop mode (it is only possible to change the running direction and start the running or pulse programs via a PC in this mode).
- Remote control (running/pulse program) is started from a PC or other accessory unit.
- Change of running direction is possible.
- When reverse running direction is active (the belt runs backwards when it is started with the plus key on the handrail) a negative speed is displayed.

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CONTROL UNIT OF THE DATA MONITOR

The data monitor features three keys and one EMERGENCY STOP switch.

As previously described, the first key changes the unit of speed.

The key underneath changes the running direction of the belt. The treadmill will only react to pressing this key if the LED indicates that the changeover capability is active (fourth mode display LED from the top). A change of running direction is indicated by the running direction LED (fifth from the top).

The button underneath these two keys stops the treadmill during an exercise session. The speed is slowly reduced until the belt comes to stop. The incline adjusted before the key was pressed, is retained. Once the belt has stopped the treadmill is changed over to stop mode (indicated by the second mode LED from the top).

The red mushroom bottom found at the right-hand side of the data monitor by-passes the electronic control and instantly stops the treadmill in an emergency.

WARNING! Instant stop is with a jerk, as opposed to a slowed down stop.

After an EMERGENCY STOP the treadmill must be switched on again for a renewed start.

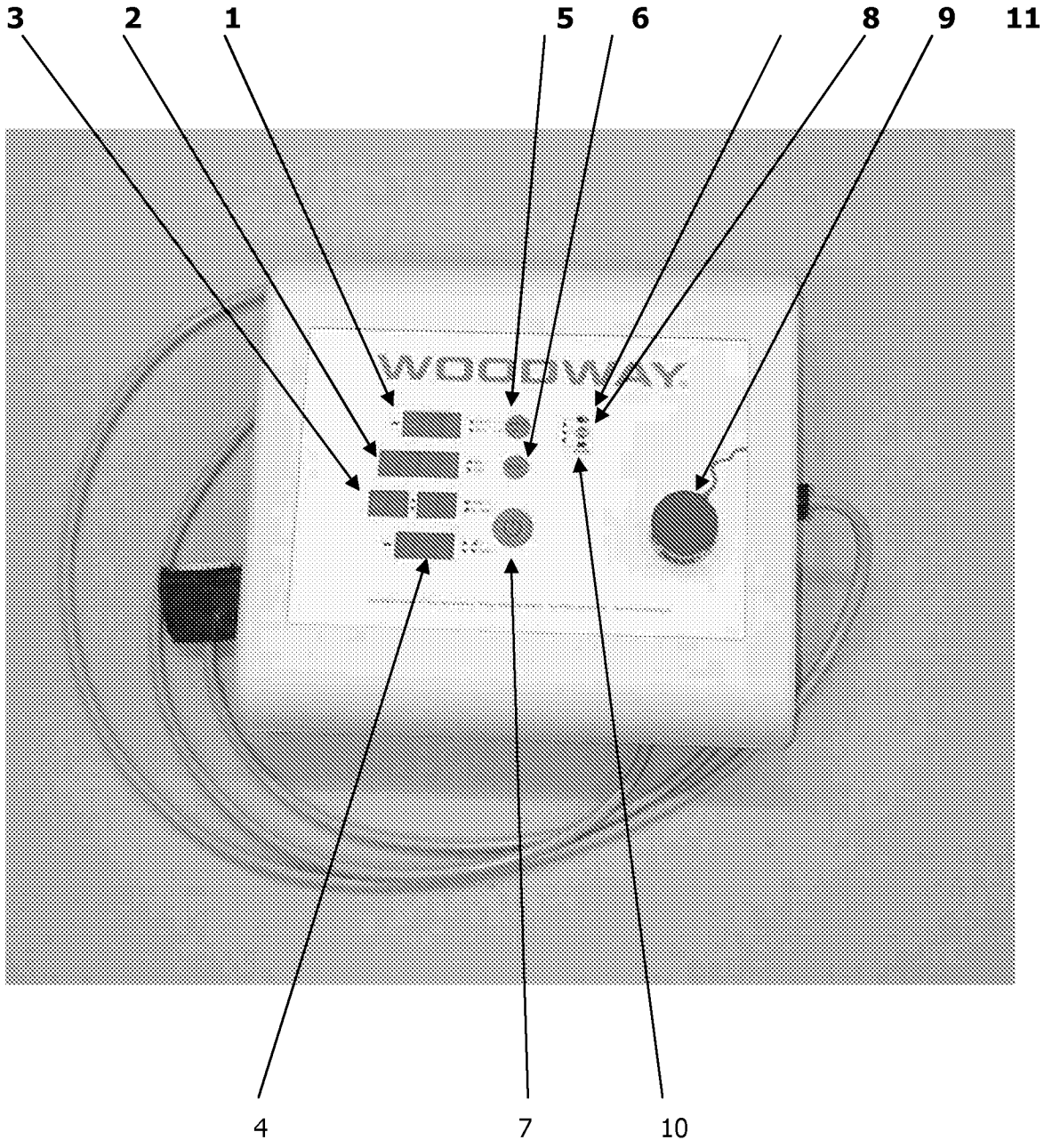
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WOODWAY - Data Monitor (7/97)

(See the following picture)

1. Display of Speed (3 digits)
2. Combined Display of Distance and Calories
   (changes every 10 seconds)
3. Display of Time (4 digits)
4. Combined Display of Inclination and Heart Rate
5. Inclination Displayed When Changed or No Heart Rate
6. Signal Received
7. To Change Unit of Measure
8. To Change Direction of Belt Movement
9. On/Off-Switch
10. Manual Operation
11. To Stop Treadmill
12. To Control The Treadmill by PC
13. Magnetic Switch

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3.3.3 Description of the Treadmill Control

(Prof. Dr.-Ing. Christian Schulz, Mittweida / status 25.03.1996, from V4.2b)

OVERVIEW AND BASIC FUNCTIONS

The WOODWAY treadmill control is equipped with various elements which adjust the speed and incline systems. It allows for complex control sequences and carries out safety and monitoring functions together with pulse measurement. The hardware consists of a micro-controller system based on the SAB80C537 with peripheral switching to the motor control, sensory components and control interfaces.

The following control units can be connected as options for parallel operation:
- function buttons (FASTER / SLOWER / UP / DOWN / STOP / FAST STOP)
- LED display for speed / incline / time / distance / pulse (in preparation)
- WUS (LCD touch display with menu guide and access to complex functions)
- chip card connection component in WUS
- PC / ECG equipment or similar via serial interface (implementing various protocols)

The control assumes the following **basic functions**:
- measurement and control of speed and incline
- measurement of time, distance and pulse
- interpretation of control activities with safety priority control
- time control for running programmes
- interactive pulse control
- entry and monitoring of parameters for limit and operating values
- operating hours counter for switch-on and running time, total distance, incline mode
- monitoring and safety functions

TREADMILL CONTROL: STATUSES AND CONTROL MODES

Once the system has been switched on, the control is in the initial status. It can be switched to four different control modes:
- manual mode / WOODWAY standard protocol
- external protocol (e.g. ECG appliance)
- programme control
- pulse control (interactive)

Each of these control modes has a STOP and a RUN status.

Transition between the control modes can be triggered by RS232 commands or from the hand rail control panel. The WOODWAY standard protocol allows for "remote controlled" manual mode, for direct specification of speed and incline and for a query to see all measured values and some parameters (see command list). Access to the more complex control procedures of the programme control and pulse control or to the internal treadmill parameters is not possible. Accordingly, only the initial status, the STOP mode and the RUN mode are of interest and will be described briefly below.

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In the initial status, speed and incline are both zero; the current time and distance are retained. These are set to 0 on leaving the initial status, i.e. when re-starting.
It is possible to return to the initial status with the WOODWAY standard protocol from all RUN modes by entering the command "treadmill STOP" and then repeating the command again once the treadmill has stopped (corresponding STOP status, current speed = 0). (transition from current STOP status to initial status).

The status **STOP manual mode** can only be reached from the RUN mode by pressing the STOP button or by the RS232 command "STOP treadmill" (interruption). No speed setting commands are accepted in the STOP mode. The current incline, time and distance remain. Re-start is only possible once the treadmill has come to a standstill by pressing the "+" button or entering the RS232 command "release treadmill" and then entering a speed value. In the STOP modes, the STOP button can be pressed or RS232 command "STOP treadmill" entered to return to the initial status.

Enter the command "release treadmill" from the initial status or STOP manual mode to reach the **RUN manual mode.** This is the prerequisite for accepting speed setting commands. The treadmill knows four different possibilities for changing the speed, with separate allocated acceleration rates:

1) "+" / "-" -button (physical buttons or RS232 command "Set buttons!")
2) speed setting command (RS 232 command "set speed!")
3) normal stop (STOP button or RS232 command "STOP treadmill")
4) fast stop (only possible by pressing FAST STOP BUTTON), with maximum acceleration

The maximum, button and RS232 acceleration can be queried in the WOODWAY standard protocol and the RS232 acceleration set here.

On the **Hand rail control panel**, the pressed "+" button (status) has the same effect as the command "release treadmill", and the front flank of the "STOP" button has the same effect as the command "STOP treadmill", each with the corresponding changes in status. The same effect is achieved when the buttons are allocated RS232 commands. There is generally no difference between physical and software button control.

The **TIME-OUT mode** can be activated to monitor correct RS232 communication. This is useful when on-going cyclic data exchange takes place. This mode offers additional safety should the PC programme fail or if the treadmill extension lead should be disconnected. If a correct, complete signal is not received within a set time, the speed set value is set to 0 and the treadmill is stopped (effect as the STOP button). The TIME-OUT time can be changed via RS232 between 0.1 ... 9.9 seconds. A value of 0 deactivates the control function. In the WOODWAY standard protocol, the function is initially inactive. It can be activated at any time via RS232 by entering a time > 0, and deactivated again by setting the time to 0.

It is always possible to **query the current measured values** for speed, incline, time, distance and pulse, regardless of the current control status. The set commands are only accepted when these are permitted in the current control mode. The only setting command of the WOODWAY standard protocol which is also valid in the programme control status, external control status and pulse control status is the command "STOP treadmill".

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RS232 - INTERFACE WITH WOODWAY STANDARD SET OF COMMANDS

The control only needs the lines TxD and RxD. The RS232 control lines are bridged in such a way that there should not be any problems in communicating with a PC running under DOS or WINDOWS. Galvanic separation rules out the risk of any interference in the PC from the treadmill. A crossed zero modem cable is required as used to connect two PCs with normal standard pin configuration.

The interface is configured to the following parameters:
9600 Bd / 8 Bit / no parity / 1 Stopbit

On the software side, the interface is provided with a buffer of 256 bytes for both transmitting and receiving. Transmission and reception take place interrupt-controlled. A command is not interpreted until it is fully present in the buffer. The interpretation proceeds with full control of the command format. Only correct commands are executed. The interface responds to faults with 0Dh (multiple response if necessary). The interface is not blocked by incorrect or garbled commands, and the begin of the next correct command is also recognised. A valid command refreshes the TIME-OUT if this mode is activated. Excessive values for individual parameters are reduced to the maximum tolerable levels without producing fault messages.
The buffer configuration means that several commands can be transmitted to the interface in direct succession. They can be executed in sequence at the maximum possible speed; normal interpretation times are in the ms range. However, the PC programmer is responsible for preventing overflow of the transmission or reception buffer. This is vital to ensure that no overflows occur during successive transmission of several commands which do not wait for a response (add the telegram lengths of command and response, the total must always be less than 256).

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Command	Code (decimal)	Command (hex) - PC -> Interface	Response (hex) - Interface -> PC
Current speed? (mm/s)		C7 cntrl -	C7 thousand hundred ten unit 0D
Maximum speed? (mm/s)	199	C1 cntrl -	C1 thousand hundred ten unit 0D
Set speed! (mm/s)	193	A3 thousand hundred ten unit cntrl -	A3 0D
Current direction?	163	C0 cntrl -	C0 byte 0D
Set direction!	192	B8 byte cntrl -	B8 0D
	184		
Button acceleration? (m/s²)		CD cntrl -	CD ten unit tenth hundredth 0D
RS232 acceleration? (m/s²)	205	C9 cntrl -	C9 ten unit tenth hundredth 0D
Maximum acceleration? (m/s²)	201	C3 cntrl -	C3 ten unit tenth hundredth 0D
Set RS232 acceleration! (m/s²)	195	A5 cntrl -	A5 ten unit tenth hundredth 0D
	165		
Current incline? (degrees)		C8 cntrl -	C8 "0"/"-" ten unit tenth 0D
Set incline! (degrees)	200	A4 "0"/"-" ten unit tenth cntrl -	A4 0D
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STOP treadmill!		A8 cntrl -	A8 0D
Release treadmill!	168	A9 cntrl -	A9 0D
STOP status?	169	D7 cntrl -	D7 byte 0D
Set TIME-OUT! (sec)	215	AE unit tenth cntrl -	AE 0D
Current TIME-OUT? (sec)	174	CE cntrl -	CE unit tenth 0D
	206		
Status buttons!		DB cntrl -	DB byte 0D
Set buttons!	219	BB byte cntrl -	BB 0D
	187		
Current pulse? (pulse/min)		CB cntrl -	CB thousand hundred ten unit 0D
	203		
Current distance? (km,m)		CA cntrl -	CA 100km 10km km 100m 10m m
Set distance! (km,m)	202		0D
	186	BA 100km 10km km 100m 10m m cntrl -	BA
Current time? (hhmmss)			0D
Set time! (hhmmss)	204		
	167	CC cntrl -	CC 10h h 10min min 10sec sec
Version number? (Vx.y)			0D
Serial number? (4 digits)	209	A7 10h h 10min min 10sec sec cntrl -	A7
	212		0D
		D1 cntrl -	C7 "V" "x" "." "y" 0D
		D4 cntrl -	C1 thousand hundred ten unit 0D

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Remarks:

* **cntrl** means 1 ASCII character between 00h and 1Fh (Control character)

* all value transfer data are individual ASCII figures (0...9 corresponds to 30h...39h)

* **"0"/"-"** means plus sign respectively 0 or minus sign (2Bh resp.. 30h or 2Dh) for positive or negative incline

* meaning of **byte** for the corresponding commands:

"STOP status?":	D7..2 no meaning / D1 = STOP button / D0 = STOP mode (always 0 - inactive / 1 - active)
"Status buttons?":	D7..4 no meaning / D3 - "down" / D2 - "up" / D1 - "slower" / D0 - "faster" (always 0 - not pressed / 1 - pressed)
"Set buttons!":	D7..5 no meaning / D4 - deactivate all buttons (D3..0 ignore) D3 - "down" / D2 - "up" / D1 - "slower" / D0 - faster" (always 0 - deactivate / 1 - activate)
"Set direction!":	D7..1 no meaning / D0 = 0 - backwards / D0 = 1 - forwards (Only executed when current speed = 0 and treadmill in reverse mode)
"current direction?"	D7..1 no meaning / D0 = 0 - backwards / D0 = 1 - forwards

* The interface responds to format faults or non-interpretable data telegrams with 0Dh (multiple response if necessary)

For queries, fault reports/criticism, please approach WOODWAY GmbH or contact Prof. Dr.-Ing. Christian Schulz, Mittweida, Tel./fax +49 (0) 3727 - 91139

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ATTENTION:
In the case of danger, (i.e. fall of the patient), the treadmill has to be stopped immediately by using the emergency stop devices.

ATTENTION:
Every use of the emergency stop switch leads to an interruption of the main power supply, which is connected with an emergency stop.

3.4.1 Magnetic Emergency Stop Switch (Lanyard System)

Function: The magnetic emergency stop switch consists of a contact-free switch (break contact) which is mounted on the WUS/data monitor or on the handrail. The circuit is closed through a magnet. The magnet is connected with a line, which is attached at the clothing of the runner by a clip. As soon as the magnet tears off of the contact-free surface an interruption of the 230 V – main power supply will be shut off and an emergency stop will be initiated.

The magnet has to be replaced on the red surface with the yellow circle!

ATTENTION:
With every use the magnetic emergency stop switch has to be connected to the runner (line and clip).

3.4.2 Emergency Stop Switch On Handrail

Function: The emergency stop switch (mushroom-shape), mounted beside the right handrail, is to be used in an emergency. When pressing the emergency stop switch an interruption of the 230 V – main power supply will be caused and an emergency stop will be initiated.

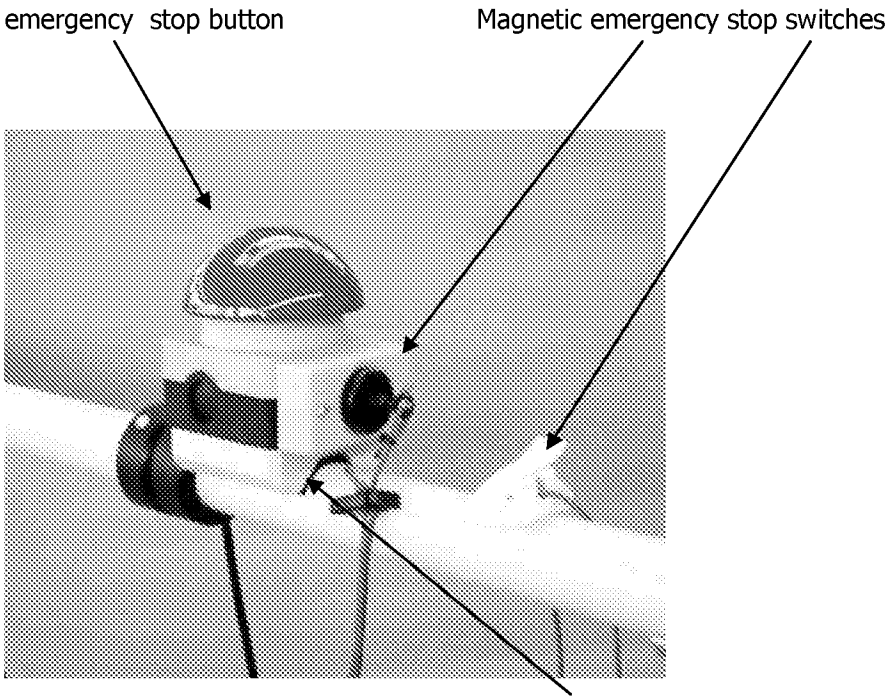
Release the emergency stop switch by firmly raising the red mushroom head !

ATTENTION:
For getting off in emergencies jump straddling onto the side-covers and then stop the treadmill.

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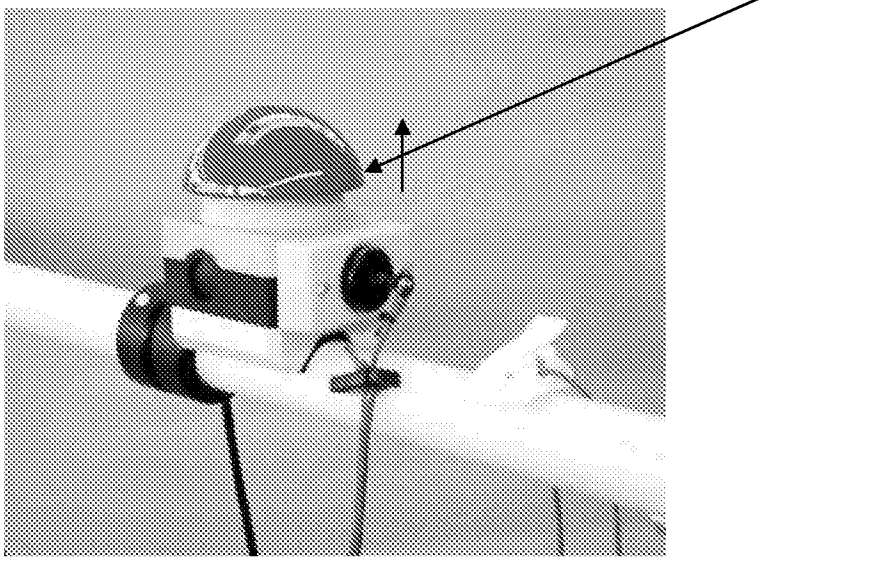
3.4.3 Get Off In Emergencies

In emergencies, first jump straddling onto the side-covers in order to let the running-surface run free underneath the legs. Then stop the treadmill with the normal stop or with one of the emergency stop devices.



emergency stop - released -

emergency stop - closed - -safety stop- lift up firmly



Emergency stop switch with magnetic clamp

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3.4.4 Electrical Current Limiting Of The Belt Drive

The treadmills are equipped with a current limit control function, which reduces power consumption and increases safety. If the running belt is blocking for more than 10 seconds (this means the motor current limit is exceeded) the motor current will be reduced to 6 A. This is always recommended when something gets caught in the belt so that the belt stops automatically. Once the current limit control has been triggered, the torque of the motor is reduced to a minimum to prevent damage to the motor and electric system.

3.5 LIFTING SYSTEM (INCLINE)

The treadmills in the LOKO S 55 series are fitted with a lifting mechanism consisting of a threaded spindle and pinion, with a maximum incline angle of 0 %. The lifting system is started by a DC gear motor, with the drive power being transferred to a set of pinions by a chain and chain wheel. These pinions raise and lower the treadmill by means of the threaded spindle, are fitted with rubber feet, and absorb a large proportion of the weight of the treadmill and the body weight of the running during an incline run.

The feedback system consists of two parts: the potentiometer unit and the end switches. Resolution is 0,1 % / degrees, precision +/- 0,4 % / degrees.

The feedback potentiometer tells the data monitor where the lifting system is. The potentiometer makes 6 revolutions.

The end switches limit the distance covered by the lifting system and are constantly in use. The data monitor recognises when the treadmill has triggered the 0% end switch.

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CHAPTER 4 - MAINTENANCE OF THE TREADMILL



Before carrying out any work on the treadmill, switch off the device and pull the power plug.

General

Cleaning and Inspection

Through regular and preventive cleaning and inspection, you will be able to extend the life of your treadmill and maintain its new appearance. Furthermore, problems may be detected at an early stage which may otherwise go unnoticed potentially causing expensive repairs. In the following, you will find instructions on regular maintenance and inspection. If your treadmill is operated in an extremely contaminated environment or in case of especially rough service conditions, the cleaning and inspection intervals should be shortened appropriately.
Never use sharp brushes or caustic cleaning agents as they may affect the paint and plastic surfaces. Moreover, the entire treadmill unit and deck **must not** be soaked with liquid as this may damage the sensitive electronic system.

We recommend annual service or service intervals tuned to the actual intensity of use on the basis of a maintenance contract.

BEFORE SWITCH-ON

- Check the main power supply cable, power plug, power socket, and power input at the device.

IMMEDIATE MAINTENANCE :

If

- liquid has penetrated into the device;
- cables or connectors show signs of or are damaged;
- the device generates unusual noises.

WEEKLY:

- Clean handrail, manual display and external covers.
- Check power cable for cracks, cuts, or exposed wires.
- Check the overall conditions of the treadmill.
- Vacuum-clean the area under the treadmill (for this purpose, set the uphill gradient to max.)

EVERY SIX (6) MONTHS:

- Vacuum-clean the inside of the treadmill (pull power plug and remove external covers).
- Check whether all nuts and screws are firmly tightened. Retighten any loose screws/nuts.
- Clean the tread surface.
- Check the drive belt.
- Slightly grease the toothed V belt (tread belt) and the drive belt.

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(For low-noise reasons, use Molykote or an equivalent grease type.)
- Clean the speed sensor and the related encoder disk.

Treadmills for Professional Use in Sports

Prescribed regular inspections (according to BGV A4 (VBG 4) Unfallverhütungsvorschrift)*
(electrical systems and stationary equipment)

* (BVG = Professional Association Regulations A4 (former VGB 4) Accident Prevention Regulation)

Prescribed inspection interval for treadmills = 4 years

These inspections may only be carried out by an authorized electrician.

Visual inspection

- Check the connecting cable of the device (power cord) for visible external damage and the strain relief (if provided) for its correct seat.
- Check all plug connections in the device for their correct seat and for damage.
- Check the correct seat of all protective conductor connections.
- Replace all damaged or illegible warning symbols and signs.

Electrical inspections according to VDE 0701/0702*
(*VDE = Association of German electrical engineering technicians)

Protective conductor resistance measurement - <0.3 Ohm
Insulation resistance measurement - >0.5 MOhm
Replacement leakage current measurement - <3.5 mA

The measurements must be carried out using authorized test equipment according to VDE 0701//0702 (*).

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Prescribed regular inspections (according to BGV A4 (VBG 4) Unfallverhütungsvorschrift)*

* (BVG = Professional Association Regulations A4 (former VGB 4) Accident Prevention Regulation)

Prescribed inspection interval for treadmills = 4 years
(We recommend an inspection cycle of 1 year.)

These inspections may only be carried out by an authorized electrician or by a person who is autorized by the manufacturer.

Visual inspection

- Check the connecting cable of the device (power cord) for visible external damage and the strain relief (if provided) for its correct seat.
- Check all plug connections in the device for their correct seat and for damage.
- Check the correct seat of all protective conductor connections.
- Replace all damaged or illegible warning symbols and signs.

Electrical inspections according to VDE 0751*
(*VDE = Association of German electrical engineering technicians)

Protective conductor resistance measurement -	<0.3 Ohm
Insulation resistance measurement -	>2 MOhm
Replacement leakage current measurement -	<1 mA

The measurements must be carried out using authorized test equipment according to VDE 0751 (*).

Woodway does not prescribe a **metrological inspection (MTK "Messtechnische Kontrolle") according to MPBetreib §11*** as all Woodway treadmills are equipped with a speed sensor with light barrier granting a real-time „distance and speed measurement".
*(Medical Product Operator Regulation)

In case of display variations the measuring unit must be cleaned.

If, however, a metrological inspection is requested you may obtain a form from WW and have this inspection carried out by our Woodway customer service.

DAILY PRIOR TO USE:

- Check the wire guides and the knots or other ties.
- Check the belts.

IMMEDIATE MAINTENANCE:

In case of

- functional problems or malfunctions.

WEEKLY:

Check

- all wires for wear
- all pulley suspensions
- all pulleys for damage or wear
- all safety-relevant screw and bolt connections for loosening

EVERY SIX (6) MONTHS:

- Fastening of the T rail or check the fastening.

ANNUALLY – EVERY TWELVE (12) MONTHS:

- Replacement of all ropes
- Replacement of all pulleys
- Overall check of the entire system

The maintenance intervals or the replacement of the parts as prescribed by us may be varied depending on the intensity of use. (max. 24 months)

4.2 LUBRICATION

4.2.1 Bearings

All bearings of the treadmill are lubricated for life and do not need additional lubrication.

4.2.2 Running mat

The teeth at the edge of the running surface are greased to reduce running noises. They can be re-greased every 6 months or as needed.

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If the running mat scrapes on the drive pulleys at the side, a small amount of lubricating grease (Molykote or similar) can be applied to the edges of the slats to reduce running noises. Do not use too much grease as this only leads to an unnecessary accumulation of dust and dirt.

4.2.3 Drive belt

Similar to the running mat, the edges of the drive belt can also be coated with a thin layer of grease in so far as the belt audibly "squeaks"; only a minimum amount of grease should be used.

4.2.4 Lifting system (incline)

The lifting system of the LOKO S70 is already lubricated in the factory. It only needs to be checked after many hours of use or when used in very dusty surroundings. If lubrication is required, a small quantity of grease is applied to the chains and lifting spindles.

Note: Please remember: too much grease is superfluous and only causes unnecessary accumulations of dirt and grease.

4.3 SETTINGS AND CALIBRATION

4.3.1 Lift end switch

CAUTION: Incorrect adjustment of the end switches can cause damage to the potentiometer.

1. If the lifting potentiometer has not been adjusted, the lift is set so that the display of the data screen shows 0%. The end switch cam is positioned in such a way that it pushes the end switch lever up and thus triggers the upper end switch. The end switch for maximum lift is adjusted by tightening the incline pick-up.
2. Check calibration of the lifting system.
   Measuring range: 1 cm difference in height to 100 cm = 1% incline.

4.3.2 Feedback potentiometer

Calibration is not necessary when the potentiometer has not been adjusted or worked loose.

4.3.3 Calibrating the lifting system

The lifting system does not need to be calibrated.
The current lift value is shown in the incline display.

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4.3.4 Running-belt

The running surface does not normally need to be regularly adjusted. However, belt tension must be checked after replacement of the running surface belt or other accessory parts. See section 6.7, replacing the running mat belt, and the corresponding adjustment procedures.

NOTE: Sometimes the frame bends as a result of movement of the treadmill. If the machine seems to be generally "wobbly", the person using the treadmill can try to press the railing to side or the other. This is one possibility for straightening the frame again and it is not necessary to adjust the feet.

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CHAPTER 5 - TROUBLESHOOTING

5.1. GENERAL

Apart from the minor maintenance work described in this manual, the person using the treadmill should NEVER try to maintain and repair the appliance. If necessary, please contact your WOODWAY dealer, your Service Centre, or contact the factory.

If you have problems with the treadmill, please note the following data before contacting the Service Centre:

- Appliance designation, model and serial number of the treadmill
- What happened immediately before the fault occurred?
- Did the fault happen suddenly or gradually?
- If you hear unusual noises, where do they come from?
- Was anyone using the treadmill at this point in time?
- Describe any other possibly relevant symptoms.

5.2 NO DISPLAY

If the treadmill display does not light up when the appliance has been switched on, please first check the following:

- fuse(s) - replace any blown fuses
- power supply (mains socket)
  Connect another appliance (radio, ventilator etc.,) to the same socket. Check the main fuse and main switch. Connect the treadmill to another socket.
- Is the treadmill connected to the main power supply?

5.3. THE RUNNING SURFACE DOES NOT MOVE

5.3.1 Running surface loose (can be moved by hand)

- Is the display working? If not, see section 5.2, "NO DISPLAY".
  If the display and/or lifting mechanism are functioning correctly, disconnect from the main power supply, then wait at least 60 seconds before switching on again.
- when you press the "+" button

5.3.2 Running surface moves very sluggishly

First check whether there is anything scraping against the running surface (abnormal wear)

5.3.3 The running surface gets stuck

Check whether anything is jammed in the running surface and remove if at all possible.

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5.4 LIFTING MECHANISM DOES NOT WORK

- Check whether the end switches of the lifting mechanism have been triggered
- Check whether the lifting motor makes unusual noises (seizure of the threaded spindle? Motor blocked?).

5.5 INCORRECT OR FLASHING DISPLAYS

Probable cause: power supply voltage too low.
Too much load on the same line: disconnect other appliances connected to the same socket. The treadmill should be preferably only connected via a dedicated cable and socket.

5.6 SQUEAKING NOISES

Possible causes:
- Bearing noise: lubricate the bearings or replace them.
- Drive belt rubs against the drive pulley: apply a light coat of grease to the edge of the drive.
- Running mat rubs against the drive pulley: apply a light coat of grease to the edge of the running surface.

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CHAPTER 6 - REPLACING PARTS

6.1 OUTER COVERING

Removal:

1. Disconnect the treadmill from the main power supply and remove the two (2) large screws in the outer covering using a cross-recess screwdriver. The covers can then be lifted up from the frame of the treadmill.

Replacement:

1. Position the two outer coverings on both sides of the frame. Then tighten the large screws. It is important to check whether the treadmill scrapes on the covering panels by moving the running surface backwards and forwards. If this is in fact the case, the screws must be loosened again and the covers moved away from the running surface.

6.2 MANUAL DISPLAY

Required tools: cross-recess wrench / 10 mm / 10 mm ring forked wrench.

Removal:

1. Unscrew the fastening screws on the back of the plastic housing until the front section can be removed.
2. Lift the entire unit out of the housing.
3. Disconnect the BUS cable by pulling the plug only (never pull the cable).

Replacement:

1. Connect the cable and plug again.
2. Then carefully insert the complete display from above, taking care not to crush the cables.
3. Insert the small screws through the back of the housing.
4. Switch on the power supply and check that the treadmill works properly.

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6.3 TREADMILL DRIVE MOTOR

The instructions are supplied with the new or replacement motor.

6.4 DRIVE MOTOR PULLEY

Is mounted to the new or replacement motor .

6.5 REPLACING THE DRIVE BELT

Required tools: 2 ring fork wrenches 17, 17 / 10 socket nut, ratchet

Removal:

1. Mark the position of the right-hand bearing support. This bearing holds the front shaft on the frame. Then measure the distance between the upper and lower part of the treadmill belt (in the middle). This measurement is made exactly between the inner edges of the belt teeth and the value is kept for future reference.
2. Unscrew the two screws of the bearing support, but DO NOT REMOVE.
3. Take the drive belt off the drive motor.
4. Remove the outer bearing screw and pull the drive belt out from under the bearing support.
5. Replace the outer bearing screw and nut. The nut must sit firmly on the screw.
6. Remove the inner bearing screw and pull the drive belt out from under the bearing support (alternatively, cut the old belt). Place the new drive belt under the bearing support (with the teeth UPWARDS).

Replacement:

1. Install the inner bearing block. Remove the outer bearing block and pull the drive belt out from the under the block. Then position the drive belt in the pulley on the front shaft, checking that the teeth engage correctly. Then replace the screw and all other parts.
2. Pull the front shaft using a rod or C clamp to pull the running belt tight. Measure the clearance between the running mat surfaces and adjust the value noted above. This should be approx. 20.5 cm (optimum running).
3. Screw the bearing block screws to approx. 6.9 kpm.
4. Check that the drive belt runs correctly in both pulleys and can be moved easily in the middle by a width of 1 - 2 fingers.
5. Then push the mat on by hand and ensure that it runs smoothly and is not blocked anywhere.
6. Switch the treadmill on and let it run at the various speeds. If any unusual vibrations or noises occur, switch the treadmill off and check the dimensions. If the noises and vibrations persist, please contact your representative or the factory.
7. Replace the outer covers.

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6.6 HAND RAIL

Removal:

1. Disconnect the treadmill from the mains and remove the outer covers.
2. Disconnect the cable coming out of the hand rail.
3. Remove the two attachment screws at each side of the treadmill. Pull the hand rail out, ensuring that the cable harness(es) are not crushed or cut through.

Replacement:

In reverse order to remove.

6.7 RUNNING MAT

Repairs to the running mat system (running mat/deflection rollers) should only be carried out by the WOODWAY customer service or following consultation with the factory.

6.8 REPLACING THE INDIVIDUAL SLATS

Required tools:
T20 TORX element: 10" extension and/or electric screwdriver

Removal:

1. Disconnect from the main power supply and remove the side covering. Turn the running surface until the defect slat is at the front underneath the appliance. The screws are most easily accessible in this position.
2. Remove the two screws and plates on either side. Then take the defect slat crosswise off the belt.

WARNING: WHEN REPLACING THE SLAT; IT IS VITAL THAT NEW PARTS ARE USED: IF THE OLD SCREWS ARE USED AGAIN THE NEW SLAT COULD COME LOOSE FROM THE RUNNING SURFACE AND CAUSE SEVERE INJURIES.

Replacement:

1. Place the new slat crosswise on the running surface. Screw in two new screws on either side.

NOTE: All four (4) screws must be positioned in the slat before tightening the individual screws.

2. Then mount the covers back in position.

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6.9 BEARING GUIDE

Required tools: 17 socket wrench element with 3" extension; 1/2" wrench
17 ring fork wrench

Removal:

1. Remove the covers. See section 6.1.
2. Remove the bearing guide fastening screws.
3. Unscrew the threaded pins in the bearing sleeve.
4. Then pull the bearing guide from the side using an extractor device.

Replacement:

1. In reverse order to removal. Tighten the screws to 7.5 kpm (screw the studs tight).

6.10 BELT ROLLER GUIDE AND TRACK ROLLERS

Required tools: 13 socket wrench element and wrench with 3" extension
13 ring fork wrench

Removal:

1. Disconnect the appliance and remove the protective covering from the side concerned. See section 6.1.
2. Remove the roller unit, screw and nut. Then install a new roller using the old screw and nut. Tighten the screw and nut to 2,6 kpm.

6.11 FRONT DEFLECTION ROLLER

To be replaced by the WOODWAY customer service or following consultation with the factory:

6.12 REAR DEFLECTION ROLLER

To be replaced by the WOODWAY customer service or following consultation with the factory:

6.13.1 End switches

1. Remove the right-hand side covering. See section 6.1.
2. Disconnect the cable from the old end switch unit and install a new end switch unit.
3. Remove the end switch and bracket.

Replacement:

1. Install the new end switch unit and then replace the side cover panels.

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6.13.3 Incline motor

Required tools: 10 mm socket wrench element or wrench

Removal:

1. Remove the side cover panels. See section 6.
2. Loosen the motor cable and disconnect from the control unit.
3. Unscrew the four attachment screws of the incline motor and remove the motor.
4. Remove the motor screws and pull the motor out of the frame.

Replacement:

1. In reverse order to removal.
2. The screws of the incline motor are tightened to 1,7 kp.

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CHAPTER 7

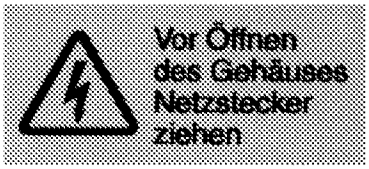
7.1 SYMBOL DESCRIPTION / EXPLANATION OF GRAPHICAL SYMBOLS



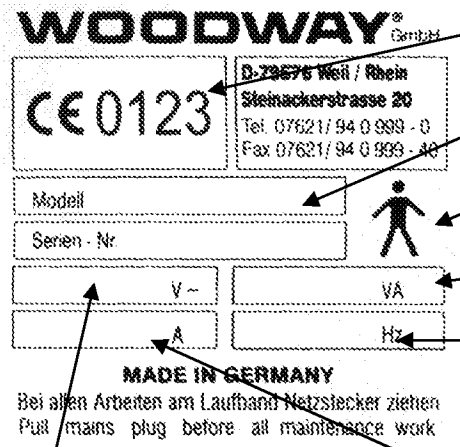
ground



ATTENTION: Current-carring components



ATTENTION:
Hot components are localted inside this
Housing
Pull out mains plug before opening the housing



CE-certification with certifying authority

model / typ

Safetey symbol EN 601-1 Typ B
IEC 878-02-02

Power consumption

Mains frequency

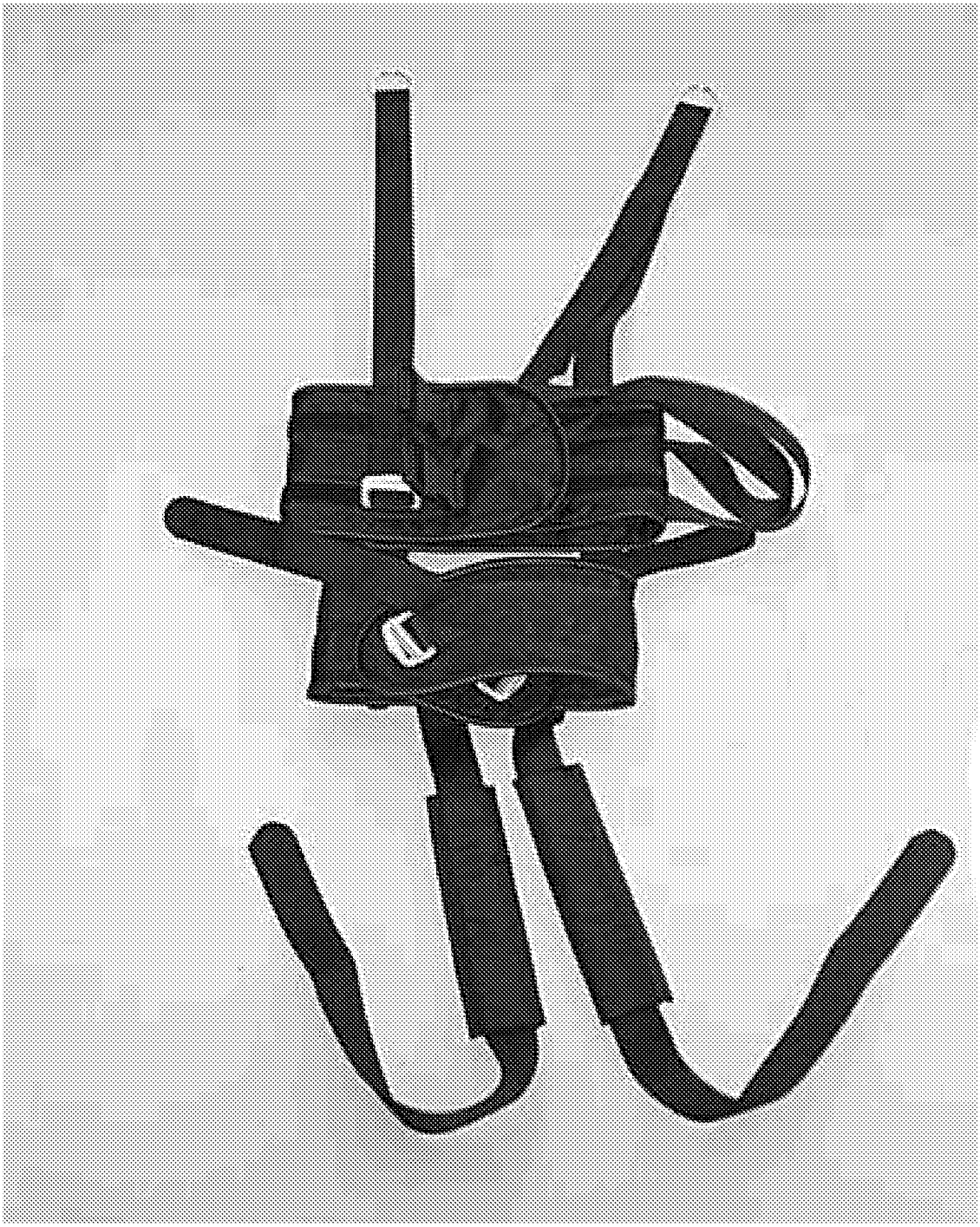
intensity of current A

power supply required ,
for example XXX V

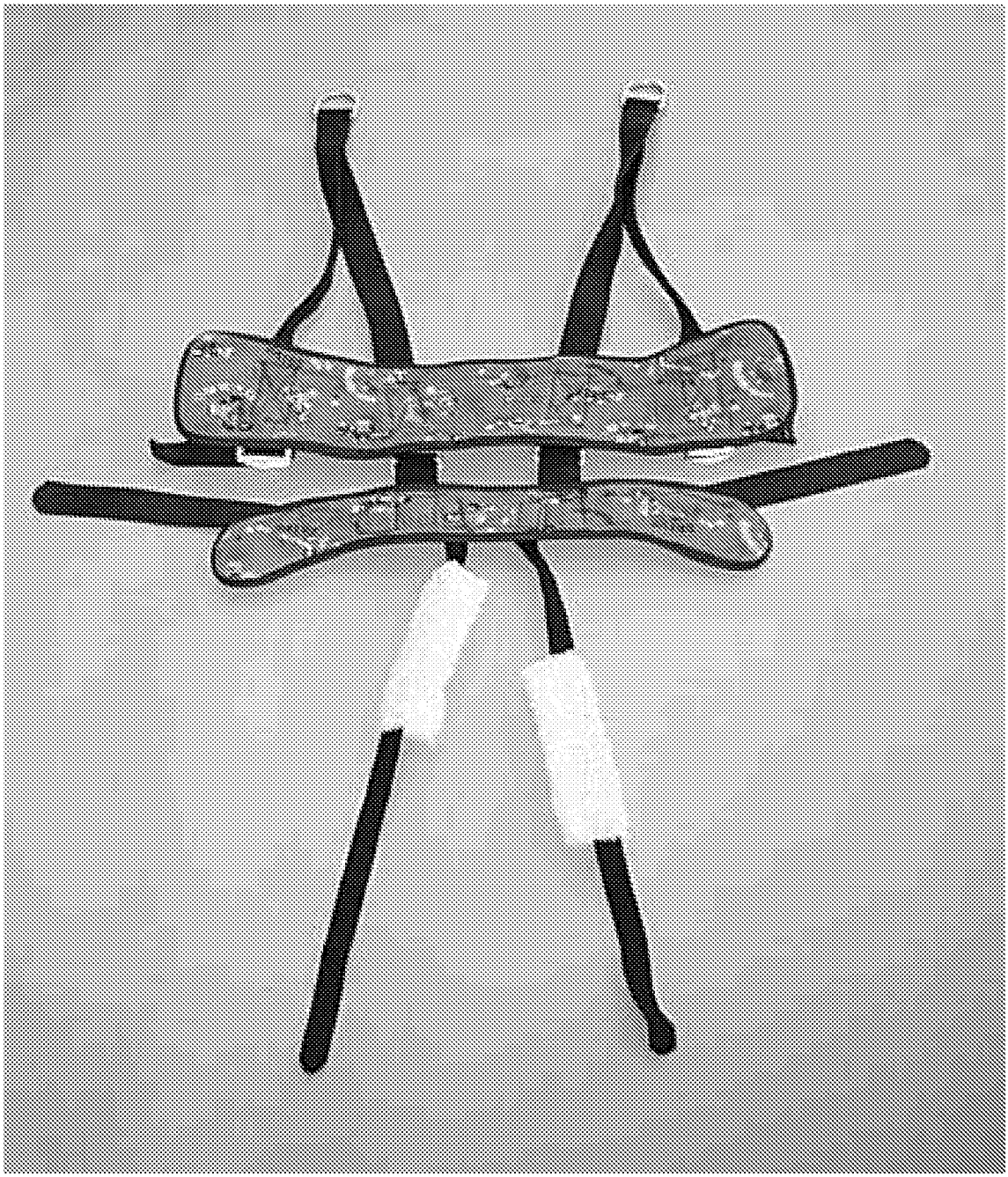
7.2 LOKO ACCESSORIES

7.2.1 The Harness

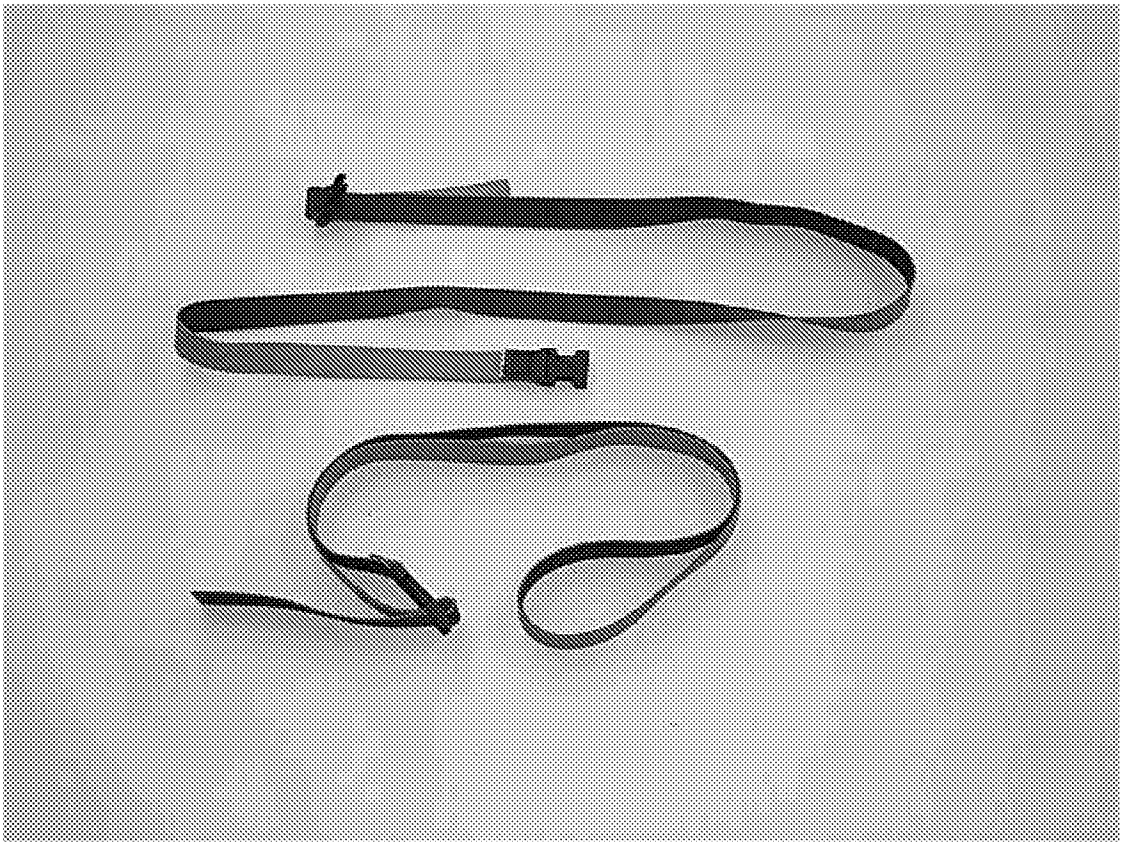
Harness size 1 / 2 system „Wernig"



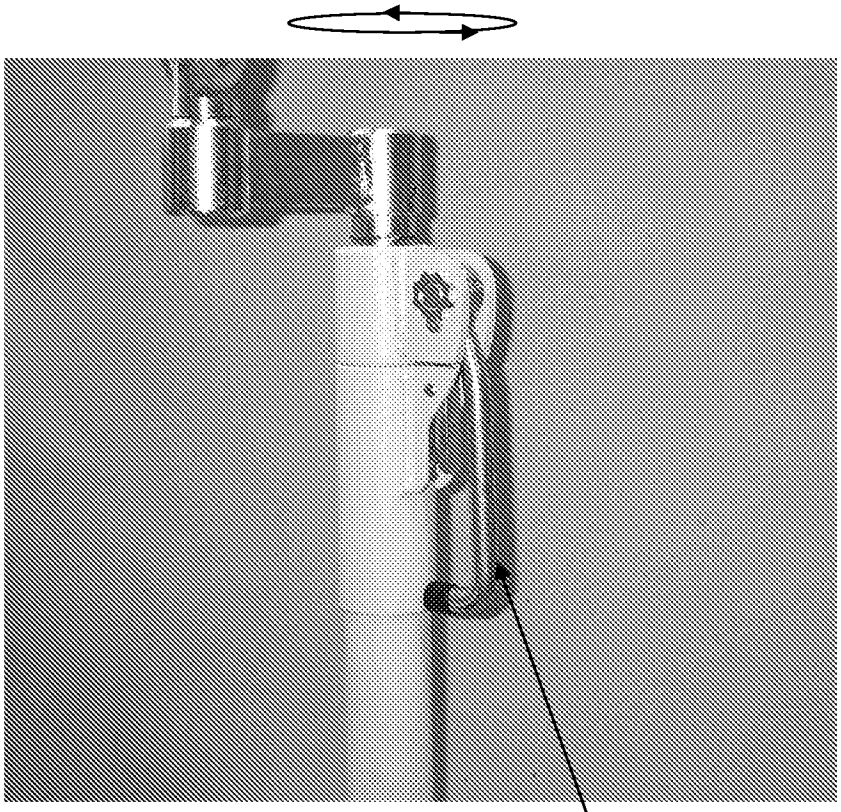
Harness size 0 of children system „Wernig“ (optional)



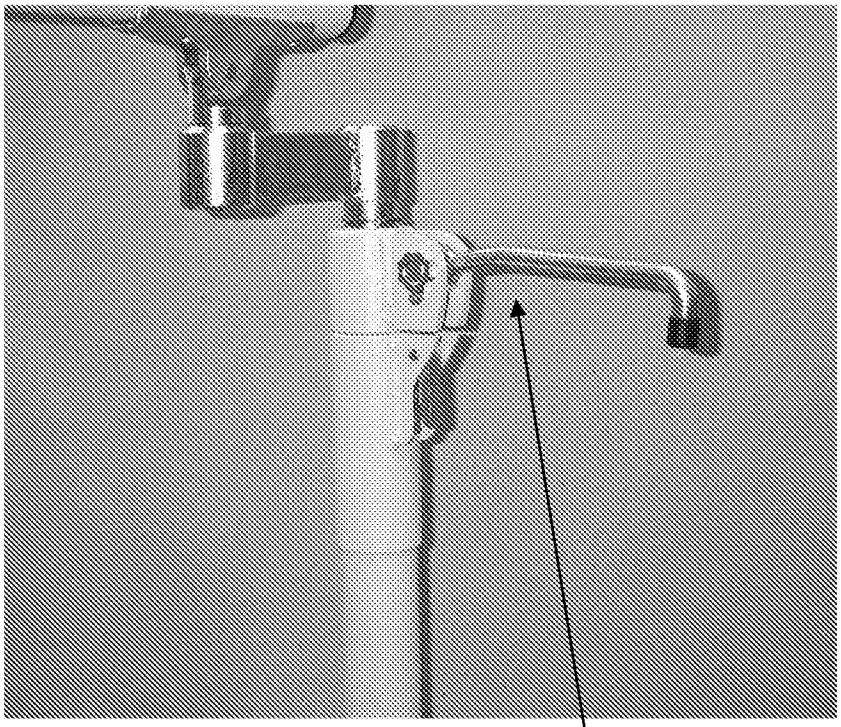
7.2.2 Diagonal fixation



Paralell bars handrail

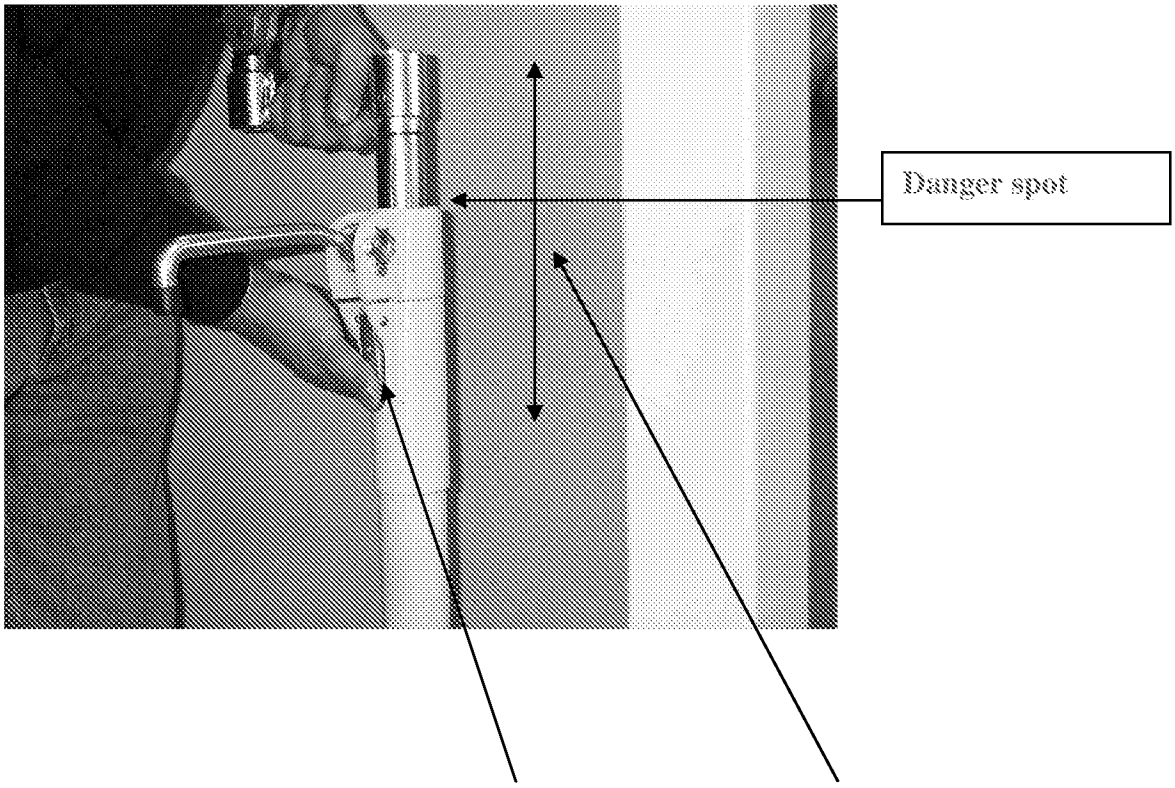


closed and fixed



open, ready for adjusting

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Achtung:

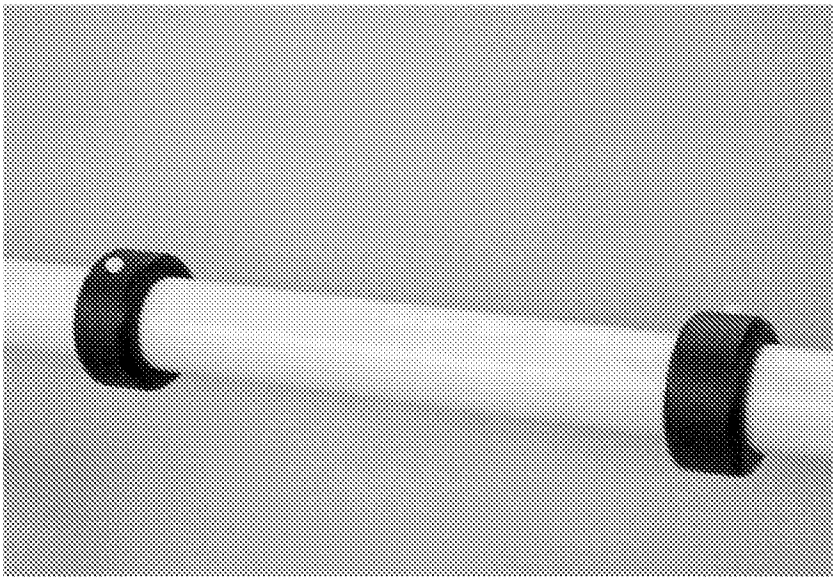
Bei der Verstellung des Holmes darf dieser nicht am Verstellholm gefasst werden, sondern nur in der gezeigten Art am Ausleger.

Grund :
Durch eventuell nicht saubere Einrasung der Sperre (z.B. Ermüdung der Rastfedern, Abnützung der Raste) kann es zum Abrutschen des Holmes kommen, was eventuell zu Verletzungen des Bedieners führen könnte.
Selbst bei einer Fehlerfreien Funktion ist diese Gefahrenstelle zu meiden.

Bei der Schulung der mit dem Laufband arbeitenden Personen muss nochmals Gesondert auf diese Gefahrenstelle hingewiesen werden

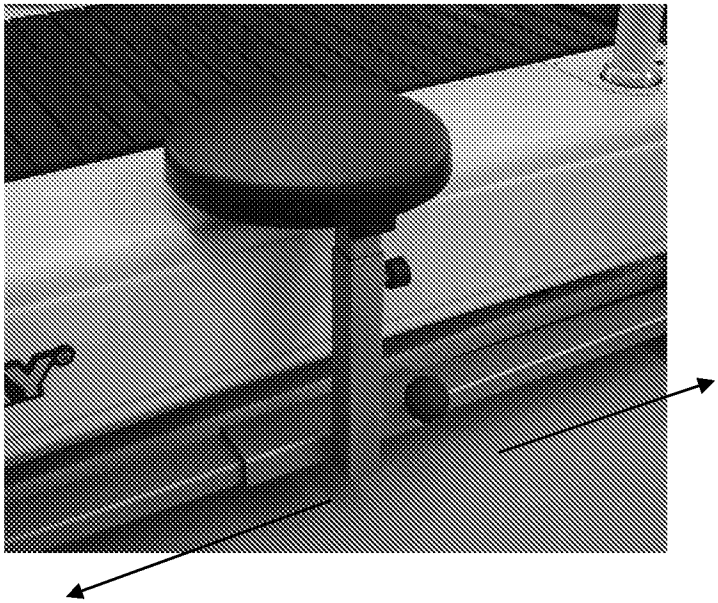
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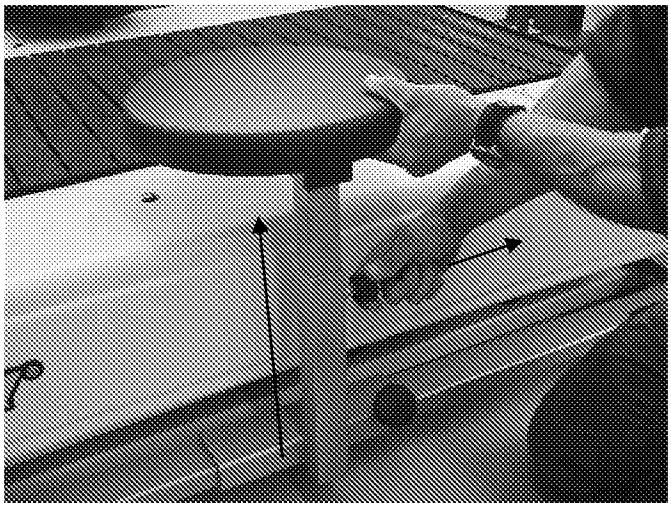
Fixing rings



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seat slide







Electronic Acknowledgement Receipt

EFS ID:	45555433
Application Number:	17247101
International Application Number:	
Confirmation Number:	2042
Title of Invention:	MANUALLY POWERED TREADMILL
First Named Inventor/Applicant Name:	Douglas G. Bayerlein
Customer Number:	26371
Filer:	Alexander J. Neuworth/Joshua Krusell
Filer Authorized By:	Alexander J. Neuworth
Attorney Docket Number:	097208-0311
Receipt Date:	25-APR-2022
Filing Date:	30-NOV-2020
Time Stamp:	16:51:39
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	097208_0311_IDS.pdf	115687 e51e89f2733a5f690d0b195ec144e1d85089ddb7	no	2

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	097208_0311_SB08.pdf	102597 ca75417a069f18991c937efddc1b88762ab66d2f	no	1
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
3	Non Patent Literature	A1--WOODWAY___The_Woodway_LOKO_Owners_Manual.pdf	3587864 a2e0b6c41ec36862ef37215c8f472600db09a49e	no	47
Warnings:					
Information:					
		Total Files Size (in bytes):	3806148		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Inventor Name:	Douglas G. Bayerlein
Title:	MANUALLY POWERED TREADMILL
Application No.:	17/247,101
Filing Date:	11/30/2020
Examiner:	ROBERTSON, JENNIFER MARY DEICHL
Art Unit:	3784
Confirmation No.:	2042

INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR §1.56

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

Applicant submits herewith a document for the Examiner's consideration in accordance with 37 CFR §§1.56, 1.97 and 1.98.

Applicant respectfully requests that the listed document be considered by the Examiner and be made of record in the present application and that an initialed copy of Form PTO/SB/08 be returned in accordance with MPEP §609.

The submission of any document herewith is not an admission that such document constitutes prior art against the claims of the present application or that such document is considered material to patentability as defined in 37 CFR §1.56(b). Applicant does not waive any rights to take any action, which would be appropriate to antedate or otherwise remove as a competent reference any document submitted herewith.

TIMING OF THE DISCLOSURE

The listed document is being submitted in compliance with 37 CFR §1.97(b), before the mailing date of the first Office Action on the merits.

Although Applicant believes that no fee is required, the Commissioner is hereby authorized to charge any additional fees which may be due to Deposit Account No. 19-0741.

Respectfully submitted,

Date /4-25-2022/ By /Alexander J. Neuworth/

FOLEY & LARDNER LLP
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Alexander J. Neuworth
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Registration No. 72,021

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
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Alexandria, Virginia 22313-1450
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/247,101	11/30/2020	Douglas G. Bayerlein	097208-0311	2042

26371 7590 05/20/2022

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EXAMINER	
ROBERTSON, JENNIFER MARY DEICHL	

ART UNIT	PAPER NUMBER
3784	

NOTIFICATION DATE	DELIVERY MODE
05/20/2022	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ipdocketing@foley.com

Office Action Summary	Application No. 17/247,101	Applicant(s) Bayerlein et al.	
	Examiner JENNIFER ROBERTSON	Art Unit 3784	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 11/30/2020.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL.** 2b) ☑ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1-20 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1-20 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☑ The drawing(s) filed on 11/30/2020 is/are: a)☑ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

DETAILED ACTION

Notice of Pre-AIA or AIA Status

The present application is being examined under the pre-AIA first to invent provisions.

Claim Rejections - 35 USC § 103

The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4, 6-7, 10-11, 13-15, and 17-18 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Cutter (US 3,642,279) in view of Magid (US 5,538,489).

Regarding claim 1, Cutter teaches a manually powered treadmill, comprising: a frame (11, 12, 45, 15); at least one front running belt pulley (25) coupled to the frame; at least one rear running belt pulley (20) coupled to the frame and spaced a distance from the at least one front running belt pulley; a running belt (30) at least partially supported by at least one of the at least one front running belt pulley and the at least one rear running belt pulley, wherein the running belt includes a running surface, at least a portion of which is curved (See Fig. 1).

Cutter fails to teach a safety device coupled to the frame and running belt. Magid teaches a treadmill having a frame, a running belt, and a safety device (61, 62) coupled to the frame and the running belt, the safety device having a first element (61) and a second element (62), wherein at least one of the first and second elements is adapted for rotation relative to the frame (ratchet gear 61 is rotatable relative to the frame); wherein one of the first and second elements of the safety device and the running belt freely rotate in a first direction of rotation relative to the frame (ratchet gear 61 is

rotatable relative to the frame), however, in a second direction of rotation, opposite the first direction of rotation, the one of the first and second elements is substantially prevented from rotation relative to the frame to substantially prevent or resist rotation of the running belt relative to the frame (pawl 62 inhibits rotation of the ratchet gear and the belt in a second direction). It would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the device taught by Cutter by providing a safety device, as taught by Magid, in order to prevent accidental reverse motion of the belt.

Regarding claim 2, Cutter teaches a front shaft (24) coupled to frame, the front shaft being adapted to support the at least one front running belt pulley.

Regarding claim 3, Cutter teaches a rear shaft (21) coupled to frame, the rear shaft being adapted to support the at least one rear running belt pulley.

Regarding claim 4, Cutter in view of Magid teaches the first and second elements of the safety device at least partly form a one-way bearing (Magid's safety device forms a one-way bearing).

Regarding claim 6, Cutter teaches a plurality of bearings (18) coupled to the frame, at least one bearing of the plurality of bearings configured to at least partially support the running belt.

Regarding claim 7, Cutter teaches a rearwardly extending handle (33- shown as rearwardly extending in Fig 1) coupled to the frame.

Regarding claim 10, Cutter teaches a treadmill, comprising: a frame (11, 12, 45, 15); a rotatable element (25) coupled to the frame; a running belt (30) at least partially supported by the rotatable element, wherein the running belt includes a running surface, at least a portion of which is curved (see Fig. 1).

Cutter fails to teach a first element and a second element, both of which are coupled to the running belt; wherein one of the first and second elements and the running belt freely rotate in a first direction of rotation relative to the frame, however, in a second direction of rotation, opposite the first

direction of rotation, the one of the first and second elements is substantially prevented from rotation relative to the frame to substantially prevent or resist rotation of the running belt relative to the frame.

Magid teaches a treadmill having a frame, a running belt, a first element (61) and a second element (62), wherein one of the first and second elements of the safety device and the running belt freely rotate in a first direction of rotation relative to the frame (ratchet gear 61 is rotatable relative to the frame), however, in a second direction of rotation, opposite the first direction of rotation, the one of the first and second elements is substantially prevented from rotation relative to the frame to substantially prevent or resist rotation of the running belt relative to the frame (pawl 62 inhibits rotation of the ratchet gear and the belt in a second direction). It would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the device taught by Cutter by providing a safety device, as taught by Magid, in order to prevent accidental reverse motion of the belt.

Regarding claim 11, Cutter in view of Magid teaches only one of the first and second elements is freely rotatable relative to the frame (ratchet gear 61 is rotatable, while pawl 62 is not).

Regarding claim 13, Cutter teaches the treadmill is non-motorized (Cutter's treadmill is user-propelled).

Regarding claim 14, Cutter in view of Magid teaches the first and second elements of the safety device at least partly form a one-way bearing (Magid's safety device forms a one-way bearing).

Regarding claim 15, Cutter teaches a plurality of bearings (18) coupled to the frame, at least one bearing of the plurality of bearings configured to at least partially support the running belt.

Regarding claim 17, Cutter teaches a manually powered treadmill, comprising: a frame (11, 12, 45, 15); at least one front running belt pulley (25) coupled to the frame; at least one rear running belt pulley (20) coupled to the frame and spaced a distance from the at least one front running belt pulley; a running belt (30) at least partially supported by at least one of the at least one front running belt pulley

and the at least one rear running belt pulley, wherein the running belt includes a running surface, at least a portion of which is curved (see Fig. 1).

Cutter fails to teach a safety device coupled to the frame and running belt. Magid teaches a treadmill having a frame, a running belt, and a safety device (61, 62) coupled to the frame and the running belt, the safety device having an element (61) adapted for rotation relative to the frame in a first direction of rotation relative to the frame (ratchet gear 61 is rotatable relative to the frame in a forward direction); however, in a second direction of rotation, opposite the first direction of rotation, the element is substantially prevented from rotation relative to the frame to substantially prevent or resist rotation of the running belt relative to the frame (pawl 62 inhibits rotation of the ratchet gear and the belt in a second direction). It would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the device taught by Cutter by providing a safety device, as taught by Magid, in order to prevent accidental reverse motion of the belt.

Regarding claim 18, Cutter teaches a plurality of bearings (18) coupled to the frame, at least one bearing of the plurality of bearings configured to at least partially support the running belt.

Claims 5, 16, and 19 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Cutter (US 3,642,279) in view of Magid (US 5,538,489) as applied to claims 1, 10, and 17, respectively, above, and further in view of Bostic (US 5,492,517).

Cutter fails to teach a braking system. Magid teaches a treadmill comprising a braking system coupled to a frame and configured to selectively resist rotational movement of a running belt in a first direction (column 2 lines 41-53). It would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the device taught by Cutter by providing a braking system, as taught by Bostic, in order to allow the user to control the difficulty of their workout.

Claim 8 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Cutter (US 3,642,279) in view of Magid (US 5,538,489) as applied to claim 1 above, and further in view of Schonenberger (US 4,334,676).

Cutter fails to teach the running belt includes at least one slat. Schonenberger teaches a treadmill having a running belt comprising a plurality of slats (4). It would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the device taught by Cutter by providing the running belt with slats in order to provide a more supportive running surface. Such a modification involves the mere substitution of one well-known running belt structure with another to yield predictable results which fail to distinguish the invention over the prior art.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on nonstatutory double patenting provided the reference application or patent either is shown to be commonly owned with the examined application,

or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. See MPEP § 717.02 for applications subject to examination under the first inventor to file provisions of the AIA as explained in MPEP § 2159. See MPEP § 2146 *et seq.* for applications not subject to examination under the first inventor to file provisions of the AIA. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The USPTO Internet website contains terminal disclaimer forms which may be used. Please visit www.uspto.gov/patent/patents-forms. The filing date of the application in which the form is filed determines what form (e.g., PTO/SB/25, PTO/SB/26, PTO/AIA/25, or PTO/AIA/26) should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp.

Claims 1-20 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-25 of U.S. Patent No. 11,179,589. Although the claims at issue are not identical, they are not patentably distinct from each other because the limitations of the present claims are all recited by or obvious over the patent claims.

Claims 1-20 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-30 of U.S. Patent No. 10,850,150. Although the claims at issue are not identical, they are not patentably distinct from each other because the limitations of the present claims are all recited by or obvious over the patent claims.

Claims 1-20 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-59 of U.S. Patent No. 10,561,884. Although the claims at issue are not identical, they are not patentably distinct from each other because the limitations of the present claims are all recited by or obvious over the patent claims.

Claims 1-20 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-52 of U.S. Patent No. 10,561,883. Although the claims at issue are not identical, they are not patentably distinct from each other because the limitations of the present claims are all recited by or obvious over the patent claims.

Allowable Subject Matter

Claims 9, 12, and 20 would be allowable if a Terminal Disclaimer were filed to overcome the double patenting rejection(s), set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach or make obvious the combinations of limitations required by claims 9, 12, or 20. In particular, the cited references do not disclose the treadmill as claimed, wherein one of the first and second elements substantially surrounds the other of the one of the first and second elements.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER ROBERTSON whose telephone number is (571)272-5001. The examiner can normally be reached Monday-Friday, 8:30 am to 6:00 pm PST.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, LoAn Jimenez can be reached on 571-272-4966. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of published or unpublished applications may be obtained from Patent Center. Unpublished application information in Patent Center is available to registered users. To file and manage patent submissions in Patent Center, visit: https://patentcenter.uspto.gov. Visit https://www.uspto.gov/patents/apply/patent-center for more information about Patent Center and https://www.uspto.gov/patents/docx for information about filing in DOCX format. For additional questions, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JENNIFER ROBERTSON
Primary Examiner
Art Unit 3784

/JENNIFER ROBERTSON/
Primary Examiner, Art Unit 3784

Notice of References Cited	Application/Control No. 17/247,101	Applicant(s)/Patent Under Reexamination Bayerlein et al.	
	Examiner JENNIFER ROBERTSON	Art Unit 3784	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-3642279-A	02-1972	Cutter; John W.	A63B22/02	482/54
*	B	US-5538489-A	07-1996	Magid; Sidney H.	A63B22/0292	482/69
*	C	US-5492517-A	02-1996	Bostic; James R.	A63B21/157	482/110
*	D	US-4334676-A	06-1982	Schonenberger; Rolf	A63B22/02	482/54
*	E	US-11179589-B2	11-2021	Bayerlein; Douglas G.	A63B22/0235	1/1
*	F	US-10850150-B2	12-2020	Bayerlein; Douglas G.	A63B21/157	1/1
*	G	US-10561884-B2	02-2020	Bayerlein; Douglas G.	A63B21/157	1/1
*	H	US-10561883-B2	02-2020	Bayerlein; Douglas G.	A63B23/04	1/1
	I					
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FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/247,101	Bayerlein et al.
	Examiner	Art Unit
	JENNIFER ROBERTSON	3784

CPC - Searched*		
Symbol	Date	Examiner
A63B22/02-0228,0285-0292	05/17/2022	JR

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Reviewed family application history	05/17/2022	JR
Applicant and inventor search	05/17/2022	JR
Text search	05/17/2022	JR

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
	Text search	05/17/2022	JR

/JENNIFER ROBERTSON/ Primary Examiner, Art Unit 3784	

PTO/SB/08 (modified)

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	17/247101
				Filing Date	11/30/2020
Date Submitted: June 4, 2021				**First Named Inventor**	Douglas G. Bayerlein
				Art Unit	3784
(use as many sheets as necessary)				Examiner Name	Not yet assigned
Sheet	1	of	1	Attorney Docket Number	097208-0311

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	B1	6,761,667	07-13-2004	CUTLER ET AL.	
	B2	8,007,408	08-30-2011	MORAN ET AL.	

Examiner Signature	/JENNIFER ROBERTSON /	Date Considered	05/17/2022

4837-0081-8663.1

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.R./

PTO/SB/08 (modified)

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	17/164117
Date Submitted: March 5, 2021				**Filing Date**	11/30/2020
				First Named Inventor	Douglas G. Bayerlein
				Art Unit	3784
(use as many sheets as necessary)				Examiner Name	Not yet assigned
Sheet	1	of	18	Attorney Docket Number	097208-0311

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A1	8,308	08-26-1851	SEYMOUR	
	A2	26,914	01-24-1860	MELDRUM	
	A3	83,844	11-10-1868	GOUCHER	
	A4	104,534	06-21-1870	ASHE, ROBERT	
	A5	111,018	01-17-1871	THOMPSON, SAMUEL	
	A6	118,030	08-15-1871	LOVEGHOVE ET AL.	
	A7	144,224	11-04-1873	POTTER, HENRY	
	A8	144,225	11-04-1873	PURPLE, GEORGE	
	A9	171,353	12-21-1875	CONWAY, JESSE	
	A10	179,789	07-11-1876	HEDGES, ISAAC	
	A11	219,439	09-09-1879	BLEND	
	A12	254,293	02-28-1882	EDLEBLUTE ET AL.	
	A13	314,674	03-31-1885	HUBBARD, CHARLES	
	A14	374,811	12-13-1887	SAVAGE, GEORGE	
	A15	411,986	10-01-1889	FRAZEUR ET AL	
	A16	641,424	01-16-1900	TAITEL ET AL	
	A17	759,296	05-10-1904	MORAIRTY	
	A18	767,221	08-09-1904	HAGEN	
	A19	783,769	02-28-1905	WRIGHT	
	A20	931,394	08-17-1909	DAY	
	A21	1,016,729	02-06-1912	BARRETT, TIMOTHY R.	
	A22	1,211,765	01-09-1917	SCHMIDT	
	A23	2,117,957	05-17-1938	HELLER	
	A24	2,399,915-A	05-07-1946	DRAKE, WARD A.	
	A25	2,512,911	06-27-1950	BENICE	
	A26	2,842,365	07-08-1958	KELLEY	
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Date Submitted: March 5, 2021				**First Named Inventor**	Douglas G. Bayerlein
				Art Unit	3784
(use as many sheets as necessary)				Examiner Name	Not yet assigned
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	17/164117
				Filing Date	11/30/2020
Date Submitted: March 5, 2021				**First Named Inventor**	Douglas G. Bayerlein
				Art Unit	3784
(use as many sheets as necessary)				Examiner Name	Not yet assigned
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	A265	ANDREWS ET AL., The Effect of An 80-Minute Intermittent Running Protocol on Hamstrings Strength Abstract, NSCA Presentation, July 15, 2006, 1 page.	
	A266	Answer to Counterclaims filed November 14, 2014 between Speedfit LLC and Aurel Astilean versus Woodway USA, Inc., 8 pages.	
	A267	ASTILEAN, ALEX, YouTube Video entitled "SpeedFit – Speedboard – First Curve Prototype" retrieved from the internet at: https://www.youtube.com/watch?v=dO9h-F-JVCU on April 6, 2015, 49 pages of screenshots.	
	A268	BALDOR, AC Servo Control Installation and Operating Manual, MN766, 2007, 247 pages.	
	A269	BALDOR, Series 23H, AC Servo Control Operating Manual, 1999, 138 pages.	
	A270	BIODEX MEDICAL SYSTEMS, INC., "THE BIODEX RTM REHABILITATION TREADMILL OPERATION MANUAL", believed to have published 2002, 48 pages.	
	A271	BRUGHELLI ET AL., Effects of Running Velocity on Running Kinetics and Kinematics, Journal of Strength and Conditioning Research, April 2011, 7 pages.	
	A272	BUCHHEIT ET AL., "Assessing Stride Variables and Vertical Stiffness with GPS-Embedded Accelerometers: Preliminary Insights for Monitoring of Neuromuscular Fatigue on the Field", December 2015,	
	A273	Chapco, Inc. and Samsara Fitness LLC's notice pursuant to 34 U.S.C. §282, Case 3:15-CV-01665-JCH, Document 310, filed 9/14/2018, 4 pps.	
	A274	Claim Construction Order, Speedfit LLC and Aurel A. Astilean v. Woodway USA, Inc., Docket No. 2:13-cv-01276-KAM-AKT, November 20, 2017, 23 pages.	
	A275	Complaint for Declaratory Judgment of Patent Invalidity and Correction of Inventorship, Woodway USA, Inc. v. Aurel A. Astilean, Civ. Dkt. No. 2:13-cv-00681-WEC (E.D. WI), June 13, 2013, 6 pages.	
	A276	COOLTHINGS, "Woodway EcoMill: A Non-Motorized Treadmill with Electronic Displays", June 4, 2009, https://www.coolthings.com/woodway-ecomill-a-non-motorized-treadmill-with-electronic-displays/, 1 page.	
	A277	Curvature, http://en.wikipedia.org/wiki/Curvature, March 3, 2010, 1 page.	
	A278	Decision and Order Denying Defendant's Motion to Dimiss or to Transfer and Staying Case Pending Decision from Eastern District New York District Court, Woodway USA, Inc. v. Aurel A. Astilean, Civ. Dkt. No. 2:13-cv-00681-WEC (E.D. WI), December 18, 2013, 7 pages.	
	A279	Declaration of Aurel A. Astilean filed June 15, 2015 between Speedfit LLC and Aurel Astilean versus Woodway USA, Inc. and Exhibit A.	
	A280	Declaration of Aurel A. Astilean, Speedfit LLC and Aurel A. Astilean v. Woodway USA, Inc., Docket No. 2:17-cv-00768-KAM-AKT, Exhibit 1, March 26, 2018, 5 pages.	
	A281	Declaration of Dan Bostan filed June 15, 2015 between Speedfit LLC and Aurel Astilean versus Woodway USA, Inc. and Exhibit A.	

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	A282	Declaration of John F. Vodopia filed June 6, 2017.	
	A283	Declaration of John F. Vodopia in Further Support of Plaintiffs' Motion for Leave to Amend filed July 7, 2015 and Exhibits A - C.	
	A284	Declaration of John F. Vodopia In Support of Plaintiffs' motion for Leave to Amend filed July 7, 2017 and Exhibits A - F.	
	A285	Declaration of John F. Vodopia in Support of Plaintiffs' Motion Under 35 USC 256 to Correct Inventorship of USPN 8,308,619 and USPN 8,342,016 filed June 15, 2015 between Speedfit LLC and Aurel Astilean versus Woodway USA, Inc. and Exhibits A - H.	
	A286	Declaration of Kadie M. Jelenchick filed July 7, 2015 and Exhibits A – G.	
	A287	Declaration of Kadie M. Jelenchick filed June 15, 2015 and Exhibits A, B and E.	
	A288	Declaration of Kadie M. Jelenchick filed June 6, 2017.	
	A289	Declaration of Matthew W. Peters, Case 2:13-cv-01276-KAM-AKT, Document 213, filed 8/8/2018, 2 pps.	
	A290	Declaration of Nicholas Oblamski filed June 15, 2015, and Exhibit A, 11 pages.	
	A291	Declaration of Nicholas Oblamski, Speedfit LLC and Aurel A. Astilean v. Woodway USA, Inc., Docket No. 2:17-cv-00768-KAM-AKT, Exhibit 1, March 26, 2018, 12 pages.	
	A292	Declaration of Robert Giachetti, Case 3:15-CV-01665-JCH, Document 88-2, filed May 1, 2017, 20 pps., marked on its face as Exhibit 1.	
	A293	Declaration of Thomas B. Decea filed November 19, 2015 between Speedfit LLC and Aurel Astilean versus Woodway USA, Inc.	
	A294	Defendant Woodway USA, Inc.'s responses and objections to plaintiffs' first set of interrogatories, Case 3:15-CV-01665-JCH, Document 254-22, 17 pps., marked on its face as Exhibit 22.	
	A295	DISCOVERY CHANNEL, "Wreckreation Nation", Season 1, Episode 8, first aired February 24, 2009, 9 pages of screenshot excerpts.	
	A296	Docket Report, Speedfit LLC and Aurel A. Astilean v. Douglas G. Bayerlain, Civ. Dkt. No. 2:13-cv-01276-KAM-AKT (E.D.N.Y.), December 19, 2013, 8 pages.	
	A297	Docket Report, Woodway USA, Inc. v. Aurel A. Astilean, Civ. Dkt. No. 2:13-cv-00681-WEC (E.D. WI), December 19, 2013, 3 pages.	
	A298	EMS-Grivory Grivory GV-5H Black 9915 Nylon Copolymer, 50% Glass Fiber Filled, As Conditioned, believed to be publically available before September 16, 2011, 2 pages.	

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	A299	Excerpt from U.S. Application No. 14/076,912, Exhibit F, Speedfit LLC and Aurel A. Astilean v. Woodway USA, Inc., Docket No. 2:17-cv-00768-KAM-AKT, March 26, 2018, 4 pages.	
	A300	Expert report of Dr. Robert Giachetti, Case 3:15-CV-01665-JCH, Document 216-2, filed 4/5/2018, 31 pps., marked on its face as Exhibit 2.	
	A301	Expert report of James D. Whelan, P.E., report dated August 26, 2015, Case 2:13-cv-01276-KAM-AKT, Document 212-2, filed 8/8/2018, 19 pps., marked on its face as Exhibit 2.	
	A302	Expert report of James D. Whelan, P.E., report dated July 27, 2015, Case 2:13,cv-01276-KAM-AKT, Document 212-1, filed 8/8/2018, 62 pps., marked on its face as Exhibit 1.	
	A303	Expert report of James D. Whelan, P.E., report dated June 12, 2018, 30 pps.	
	A304	Expert report of James D. Whelan, P.E., report dated September 28, 2018, 10 pps.	
	A305	Expert Report of Kim B. Blair, Ph.D., Case 3:15-CV-01665-JCH, Document 254-7, filed 6/8, 2018, 135 pps., marked on its face as Exhibit 7.	
	A306	First Amended Complaint (Jury Trial Demanded), Speedfit LLC and Aurel A. Astilean v. Douglas G. Bayerlein, Civ. Dkt. No. 2:13-cv-01276-KAM-AKT (E.D.N.Y.), June 17, 2013, 16 pages.	
	A307	First Amended Complaint filed June 17,2013 between Speedfit LLC and Aurel Astilean versus Woodway USA, Inc., 16 pages.	
	A308	HALL, The Rotary TREADWHEEL, available at least as early as November 2011, 1 page.	
	A309	HDT EXPEDITIONARY SYSTEMS, INC., "KineAssist-MX Owner's Manual vG", 2015, 73 pages.	
	A310	HERSHER, Perfect Landing, http://news.harvard.edu/gazette/story/2010/01/different-strokes/, January 27, 2010, 5 pages.	
	A311	HOPKER ET AL., Familiarisation and Reliability of Sprint Test Indices During Laboratory and Field Assessment, Journal of Sports Science and Medicine, December 1, 2009, 5 pages.	
	A312	http://www.gettyimages.com/detail/463782507, Animal treadmill c. 1872, Museum of Science and Industry, Chicago, 3 pps.	
	A313	http://www.gettyimages.com/license/542395667, 1930 era treadmill, 1 page.	
	A314	http://www.mpiwg-berlin.mpg.de/resrep00_01/Jahresbericht_2_2_section.html, 27 pps.	
	A315	Integrated Performance Systems, LLC, Conditioning in a Professional Athlete Case Study, 2005, 1 page.	

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	A316	Integrated Performance Systems, LLC, Lower Extremity Rehabilitation & Assessment Case Study, 2005, 2 pages.	
	A317	Integrated Performance Systems, LLC, Youth Athlete-Speed Training Case Study, 2005, 2 pages.	
	A318	International Preliminary Report for Application No. PCT/US2010/026731, mail date September 29, 2011, 7 pages.	
	A319	International Preliminary Report for Application No. PCT/US2010/027543, mail date September 29, 2011, 9 pages.	
	A320	International Search Report and Written Opinion for Application No. PCT/US2010/026731, mail date May 4, 2010, 8 pages.	
	A321	International Search Report and Written Opinion for Application No. PCT/US2010/027543, mail date May 12, 2010, 10 pages.	
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	A326	Joint Disputed Claim filed April 19, 2017 between Speedfit LLC and Aurel Astilean versus Woodway USA, Inc., 10 pages.	
	A327	LIEBERMAN ET AL., Running Barefoot, Forefoot Striking & Training Tips, http://www.barefootrunning.fas.harvard.edu/5BarefootRunning&TrainingTips.html, February 26, 2010, 5 pages.	
	A328	LIEBERMAN ET AL., Running Barefoot: Biomechanics of Foot Strike, http://www.barefootrunning.fas.harvard.edu/4BiomechanicsofFootStrike.html, February 26, 2010, 6 pages.	
	A329	LIEBERMAN ET AL., Running Barefoot: Biomechanics of Foot Strikes & Applications to Running Barefoot or in Minimal Footwear, http://www.barefootrunning.fas.harvard.edu/index.html, February 26, 2010, 2 pages.	
	A330	LIEBERMAN ET AL., Running Barefoot: FAQ, http://www.barefootrunning.fas.harvard.edu/6FAQ.html, February 26, 2010, 3 pages.	
	A331	LIEBERMAN ET AL., Running Barefoot: Heel Striking & Running Shoes, http://www.barefootrunning.fas.harvard.edu/2FootStrikes&RunningShoes.html, February 26, 2010, 2 pages.	
	A332	LIEBERMAN ET AL., Running Barefoot: Running Before the Modern Shoe, http://www.barefootrunning.fas.harvard.edu/3RunningBeforeTheModernShoe.html, February 26, 2010, 4 pages.	

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	A333	LIEBERMAN ET AL., Running Barefoot: Why Consider Foot Strike, http://www.barefootrunning.fas.harvard.edu/1WhyConsiderFootStrike.html, February 26, 2010, 1 page.	
	A334	LISZEWSKI, ANDREW, "EcoMill Treadmill Generates Its Own Power", June 1, 2009, http://www.ohgizmo.com/2009/06/04/ecomill-treadmill-generates-its-own-power/, 1 page.	
	A335	Memorandum and Order filed December 28, 2016 between Speedfit LLC and Aurel Astilean versus Woodway USA, Inc., 22 pages.	
	A336	Memorandum and Order filed October 10, 2014 between Speedfit LLC and Aurel Astilean versus Woodway USA, Inc., 39 pages.	
	A337	Memorandum and Order filed October 19, 2015 between Speedfit LLC and Aurel Astilean versus Woodway USA, Inc., 11 pages.	
	A338	Memorandum of Law in Support of Plaintiffs' Motion for Leave to Amend the Second Amended Complaint filed July 7, 2015, 13 pages.	
	A339	Memorandum of Law in Support of Plaintiffs' Motion Under 35 USC 256 to Correct Inventorship of SPN 8,308,619 and USPN 8,342,016 between Speedfit LLC and Aurel Astilean versus Woodway USA, Inc., 14 pages.	
	A340	Minute Entry and Order for Markman Hearing, dated June 13, 2018, 2 pps.	
	A341	Minute Entry for Proceedings on November 10, 2015 and Exhibit G.	
	A342	Minute Order Regarding Claim Construction, Speedfit LLC v. Woodway, Docket No. 2:17-cv-00768-KAM-AKT, June 13, 2018, 2 pages.	
	A343	MITSUBISHI ELECTRIC, Melservo-J2 Super Series: Servo Amplifier Instruction Manual, 2007, 402 pages.	
	A344	MOODY, The Effects Resisted Sprint Training on Speed, Agility and Power Production in Young Athletes, believed to be publically available before December 31, 2006, 5 pages.	
	A345	Motion to Dismiss filed October 30, 2015 and Exhibits A - H.	
	A346	NASA, "Combined Operational Load Bearing External Resistance Treadmill (COLBERT)", August 2009, 3 pages.	
	A347	NASA, "International Space Station: Combined Operational Load Bearing External Resistance Treadmill (COLBERT)", July 19, 2017, https://www.nasa.gov/mission_pages/station/research/experiments/765.html, 4 pages.	
	A348	NASA, "International Space Station: Do Tread on Me", August 19, 2009, https://www.nasa.gov/mission_pages/station/behindscenes/colbert_feature.html, 2 pages.	
	A349	NASA, "International Space Station: Treadmill with Vibration Isolation and Stabilization System (TVIS)", May 17, 2018, https://www.nasa.gov/mission_pages/station/research/experiments/976.html, 5 pages.	

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	A351	Nexus Resin Group, 10124 Antistat, believed to be publically available before September 16, 2011, 2 pages.	
	A352	Notice of Motion filed July 7, 2015 between Speedfit LLC and Aurel Astilean versus Woodway USA, Inc., 2 pages.	
	A353	Notice of Motion Under 35 USC 256 to Correct Inventorship of USPN 8,308,619 and USPN 8,342,016 filed June 15, 2015 between Speedfit LLC and Aurel Astilean versus Woodway USA, Inc., 3 pages.	
	A354	Notice of Woodway USA, Inc.'s Motion for Summary Judgment of Invalidity of U.S. Patent Nos. 8,308,619 and 8,343,016 filed June 5, 2017, 9 pages.	
	A355	Notice of Woodway USA, Inc.'s motion to preclude the testimony of plaintiffs' technical expert James Whelan, Case 2:13-cv-01276-KAM-AKT, Document 211, filed 8/8/2018, 3 pps.	
	A356	Opening expert report of Dr. Robert Giachetti re: invalidity of United States Patent No. 8,986,169 and United States Patent No. 9,039,580, Case 3:15-CV-01665-JCH, Document 216-1, filed 4/5/2018, 67 pps., marked on its face as Exhibit 1.	
	A357	Order Denying Motion for Reconsideration (Doc. No. 248), dated June 20, 2018, 12 pps.	
	A358	OSHA 1926.307, 9 pps.	
	A359	Owners Manual for NordicTrack WalkFit Classic Treadmill, received on March 2, 2017, 30 pps.	
	A360	Owners Manual, Force 1, November 29, 2007, 44 pages.	
	A361	Owners Manual, Force 3, January 28, 2009, 45 pages.	
	A362	Owners Manual, The Force, December 18, 2008, 68 pages.	
	A363	Photographs of public display of Speedfit Speedboard by Woodway presented at IHRSA Tradeshow on March 17, 2009, 8 pages	
	A364	Photographs produced to Woodway at least by November 10, 2014 in litigation, Speedfit LLC and Aurel A. Astilean v. Woodway USA, Inc., No. 2:13-cv-01276-KAM-AKT, 11 pages.	
	A365	Plaintiff's memorandum in support of motion for summary judgment of non-infringement and invalidity on Claim 25 of U.S. Patent No. 9,039,580, Case 3:15-CV-01665-JCH, Document 253, filed 6/8/2018, 45 pps.	
	A366	Plaintiff's Reply to Defendant Woodway's Answer, Affirmative Defenses and Counterclaims to Plaintiff's Second Amended Complaint filed March 27, 2015, 6 pages.	

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	A367	Plaintiff's Reply to Defendant Woodway's Answer, Affirmative Defenses and Counter-Claims to Plaintiffs' Supplemental Complaint filed March 17, 2017, 8 pages.	
	A368	Plaintiff's supplemental responses and objections to defendant's first set of interrogatories, Case 2:17-cv-00768-KAM-AKT, Document 38-3, filed 3/14/2018, 22 pps., marked on its face as Exhibit C.	
	A369	Plaintiffs Memorandum of Law in Opposition to Woodway's Motion for Summary Judgement of Invalidity and Opening Claim Construction Brief, Cross-Motion for Summary Judgment Upholding Validity, Cross-Motion for Summary Judgment for Infringement and Motion to Extend the Page Limitation for this Memorandum filed June 6, 2017, 46 pages.	
	A370	Plaintiffs' Initial Claims Construction Memorandum filed July 31, 2017.	
	A371	Plaintiffs' Local Rule 56(a)1 statement of undisputed material facts, Case 3:15-CV-01665-JCH, Document 254, filed 6/8/2018, 14 pps.	
	A372	Plaintiffs' Local Rule 56(a)2 statement of facts in opposition to summary judgment, Case 3:15-CV-01665-JCH, Document 265, filed 6/29/2018, 17 pps.	
	A373	Plaintiffs' Memorandum of Law in further Opposition to Defendant's Motion to Dismiss Certain of Plaintiffs' Claims filed November 19, 2015, 19 pages.	
	A374	Plaintiffs' memorandum of law in support of their motion for partial reconsideration, Case 3:15-CV-01665-JCH, Document 249, filed 5/8/2018, 9 pps.	
	A375	Plaintiffs' motion for partial reconsideration, Case 3:15-CV-01665-JCH, Document 248, filed 5/7/2018, 3 pps.	
	A376	Plaintiffs' motion for summary judgment of non-infringement and invalidity on Claim 25 of U.S. Patent No. 9,039,580, Case 3:15-CV-01665-JCH, Document 252, 2 pps.	
	A377	Plaintiffs' Opposition to Woodway USA, Inc.'s motion for summary judgment of infringement on Claim 25 of U.S. Patent No. 9,039,580, Case 3:15-CV-01665-JCH, Document 264, filed 6/29/2018, 35 pps.	
	A378	Plaintiffs' preliminary invalidity contentions, Case 3:15-CV-01665-JCH, Document 254-16, filed 6/8/2018, 205 pps., marked on its face as Exhibit 16.	
	A379	Plaintiffs' preliminary non-infringement contentions, Case 3:15-cv-01165-JCH, Document 96-3, filed May 2, 2017, 56 pps.	
	A380	Plaintiffs' Reply in Support of motion for partial reconsideration, Case 3:15-CV-01665-JCH, Document 251, filed 5/29, 2018, 4 pps.	
	A381	Plaintiffs' supplemental non-infringement contentions, Case 3:15-CV-01665-JCH, Document 98-8, filed May 2, 2017, 60 pps.	
	A382	Plantar Fascia, http://en.wikipedia.org/wiki/Plantar_fascia, March 3, 2010, 3 pages.	

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	A383	Rebuttal expert report of Kim B. Blair, Ph.D., Case 2:13-cv-01276-KAM-AKT, Document 213-3, filed 8/8/2018, 24 pps., marked on its face as Exhibit C.	
	A384	Rebuttal Expert Report of Kim B. Blair, Ph.D., Case 3:15-CV-01665-JCH, Document 254-15, 184 pps., marked on its face as Exhibit 15.	
	A385	Reply in Opposition to D126 filed November 6, 2015 and Exhibits A and B.	
	A386	Reply Memorandum of Law in Further Support of Plaintiffs' Motion for Leave to Amend the Second Amended Complaint filed July 7, 2015 between Speedfit LLC and Aurel Astilean versus Woodway USA, Inc., 13 pages.	
	A387	Response in Opposition re [117] First Motion to Amend Second Amended Complaint filed July 7, 2015, 2 pages.	
	A388	Response in Opposition to [110] Motion to Amend-Corret-Supplement filed June 15, 2015, 2 pages.	
	A389	Revised Answer to Counterclaims filed December 12, 2014 between Speedfit LLC and Aurel Astilean versus Woodway USA, Inc., 5 pages.	
	A390	ROSS ET AL., The Effects of Treadmill Sprint Training and Resistance Training on Maximal Running Velocity and Power, National Strength and Conditioning Association, March 2009, 10 pages.	
	A391	Rule 56.1 Counter-Statement by Plaintiffs Speedfit LLC, and Aurel A. Astilean filed June 6, 2017, 13 pages.	
	A392	Ruling Re: Plaintiffs' Motion for Summary Judgment of Non-Infringement and Invalidity (Doc. No. 252) and Woodway's Motion for Summary Judgment of Infringement (Doc. No. 255), Chapco, Inc. and Samsara Fitness, LLC v. Woodway USA, Inc., Docket No. 3:15-cv-01665-JCH, July 24, 2018, 26 pages.	
	A393	SEARS, ROEBUCK AND CO., 1986 Spring Summer Centennial Edition Catalog, January 1, 1985, Curved Exerciser models 1 and 2 on pages 496 and 497.	
	A394	Second Amended Complaint filed February 17, 2015 between Speedfit LLC and Aurel Astilean versus Woodway USA, Inc., 18 pages.	
	A395	Second Supplemental Expert Report of Kim B. Blair, PhD., Case 3:15-CV-01665-JCH, Document 254-3, 41 pps., marked on its face as Exhibit 3.	
	A396	SIROTIC ET AL., Physiological and Performance Test Correlates of Prolonged, High-Intensity, Intermittent Running Performance in Moderately Trained Women Team Sport Athletes, Journal of Strength and Conditioning Research, 2007, 7 pages.	
	A397	SIROTIC ET AL., The Reliability of Physiological and Performance Measures During Simulated Team-Sport Running on a Non-Motorised Treadmill, Journal of Science and Medicine in Sport, April 11, 2007, 10 pages.	
	A398	Soccer International, The Red Devil's in the Details, dated June 2010, 4 pages.	

Examiner Signature		Date Considered	

4816-9688-3675.1

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /D.G.B./

PTO/SB/08 (modified)

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	17/164117
				Filing Date	11/30/2020
Date Submitted: March 5, 2021				**First Named Inventor**	Douglas G. Bayerlein
				Art Unit	3784
(use as many sheets as necessary)				Examiner Name	Not yet assigned
Sheet	15	of	18	Attorney Docket Number	097208-0311

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[6]
	A399	SOUTHERN RESEARCH ET AL., "AIMTech Project Brief", October 20, 2015, 2 pages.	
	A400	SOUTHERN RESEARCH ET AL., "Resist Force-Induced Treadmill", 2 pages.	
	A401	Speedfit LLC's Opening Claim Construction Brief, Speedfit LLC and Aurel A. Astilean v. Woodway USA, Inc., Docket No. 2:17-cv-00768-KAM-AKT, March 26, 2018, 9 pages.	
	A402	SPEEDFIT, video produced to Woodway at least by April 28, 2015 in litigation, a copy of which is submitted herewith on DVD, Speedfit LLC and Aurel A. Astilean v. Woodway USA, Inc.	
	A403	SPEEDFIT, video produced to Woodway at least by November 10, 2014 in litigation, Speedfit LLC and Aurel A. Astilean v. Woodway USA, Inc., No. 2:13-cv-01276-KAM-AKT, 21 pages of screenshot excerpts.	
	A404	SPEEDFIT, video produced to Woodway at least by November 10, 2014 in litigation, Speedfit LLC and Aurel A. Astilean v. Woodway USA, Inc., No. 2:13-cv-01276-KAM-AKT, 23 pages of screenshot excerpts.	
	A405	Supplemental Complaint filed February 10, 2017 between Speedfit LLC and Aurel Astilean versus Woodway USA, Inc.	
	A406	Supplemental Declaration of Kadie M. Jelenchick filed June 6.	
	A407	Supplemental declaration of Matthew W. Peters, Case 2:13-cv-01276-KAM-AKT, Document 227, filed 8/8/2018, 1 pg.	
	A408	Supplemental Expert Report of Kim B. Blair, PhD., Case 3:15-CV-01665-JCH, Document 184-8, filed 3/16/2018, 19 pps., marked on its face as Exhibit AA.	
	A409	Supplemental rebuttal expert report of Dr. Robert Giachetti responsive to second supplemental expert report of Dr. Kim Blair dated April 13, 2018, Case 3:15-CV-01665-JCH, Document 254-4, filed 6/8/2018, 18 pps., marked on its face as Exhibit 4.	
	A410	Supplemental rebuttal expert report of Dr. Robert Giachetti responsive to supplemental expert report of Dr. Kim Blair dated March 15, 2018, dated May 14, 2018, 12 pps.	
	A411	SV-M & SV-S Servies Servo Drive User Guide, 1998, 121 pages.	
	A412	TECMACHINE, "Sprint Club: User's Guide", believed to have published 2002, 33 pages.	
	A413	The Australian Competition & Consumer Commission's Mandatory Safety Standard For Treadmills (Supplier Guide), 2009, 20 pps.	
	A414	The Woodway Force Brochure, The Best Way to Train for Speed & Athletic Power, dated May 5, 2005, 2 pages.	
	A415	Third Amended Complaint filed October 23, 2015 between Speedfit LLC and Aurel Astilean versus Woodway USA, Inc. and Exhibits A - H.	

Examiner Signature		Date Considered	

4816-9688-3675.1

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.R./

PTO/SB/08 (modified)

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	17/164117
				Filing Date	11/30/2020
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				Art Unit	3784
(use as many sheets as necessary)				Examiner Name	Not yet assigned
Sheet	16	of	18	Attorney Docket Number	097208-0311

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[6]
	A416	Transcript of civil cause for evidentiary hearing before the Honorable Kiyo A. Matsumoto, United States District Judge, Case 2:13-cv-01276-KAM-AKT, Document 213-4, filed 8/8/2018, 10 pps., marked on its face as Exhibit D.	
	A417	Transcript of civil cause for evidentiary hearing before the Honorable Kiyo A. Matsumoto, United States District Judge, Case 2:13-cv-01276-KAM-AKT, Document 227-3, filed 8/8/2018, 5 pps., marked on its face as Exhibit G.	
	A418	Transcript of videotaped deposition of Alex Astilean taken July 10, 2018 for Case 2:17-cv-00768-KAM-AKT, 75 pps.	
	A419	Transcript of videotaped deposition of Dan Bostan, Case 2:13-cv-01276-KAM-AKT, Document 227-2, filed 8/8/2018, 4 pps., marked on its face as Exhibit F.	
	A420	Transcript of videotaped deposition of Speedfit LLC by Alex Astilean taken July 10, 2018 for Case 2:17-cv-00768-KAM-AKT, 38 pps.	
	A421	Video deposition transcript of James D. Whelan taken on September 28, 2015, Case 2:13-cv-01276-KAM-AKT, Document 213-1, filed 8/8/2018, 23 pps., marked on its face as Exhibit A.	
	A422	WOODWAY USA, INC., "Treadmill Owner's Manual", October 2001, 56 pages.	
	A423	WOODWAY USA, INC., EcoMill Promotional Flyer, October 18, 2011, 1 page.	
	A424	WOODWAY USA, INC., Owner's Manual: EcoMill Non-Motorized, June 4, 2010, 35 pages.	
	A425	Woodway USA, Inc.'s Amended Supplemental Counterclaims, Case 3:15-CV-01665-JCH, Document 309, filed 9/14/2018, 28 pps.	
	A426	Woodway USA, Inc.'s Answer, Affirmative Defenses, and Counterclaims to Plaintiffs' First Amended Complaint filed October 24, 2014 and Exhibits 1 and 2.	
	A427	Woodway USA, Inc.'s Answer, Affirmative Defenses, and Counterclaims to Plaintiffs' Second Amended Complaint filed March 6, 2015, 17 pages.	
	A428	Woodway USA, Inc.'s Answer, Affirmative Defenses, and Counterclaims to Plaintiffs' Supplemental Complaint filed February 24, 2017, 18 pages.	
	A429	Woodway USA, Inc.'s first supplemental responses and objections to plaintiff's first set of interrogatories (Nos. 1-7), Case 2:17-cv-00768-KAM-AKT, Document 38-1, filed 3/14/2018, 18 pps., marked on its face as Exhibit A.	
	A430	Woodway USA, Inc.'s List of Claim Terms to be Considered and Proposed Constructions, Speedfit LLC and Aurel A. Astilean v. Woodway USA, Inc., Docket No. 2:17-cv-00768-KAM-AKT, Exhibit D, March 26, 2018, 4 pages.	
	A431	Woodway USA, Inc.'s local rule 56(a)1 statement of undisputed material facts in support of its motion summary judgment of infringement of U.S. Patent No. 9,039,580, Case 3:15-CV-01665-JCH, Document 257, 8 pps.	
	A432	Woodway USA, Inc.'s local rule 56(a)2 statement of facts in opposition to plaintiffs' motion for summary judgment, Case 3:15-CV-01665-JCH, Document 267, filed 6/29/2018, 34 pps.	

Examiner Signature		Date Considered	

4816-9688-3675.1

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				Art Unit	3784
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	A433	Woodway USA, Inc.'s Memorandum in response to Plaintiffs' Motion for Leave to Amend the Second Amended Complaint filed July 7, 2015, 16 pages.	
	A434	Woodway USA, Inc.'s Memorandum in Response to Plaintiffs' Motion Under 35 USC 256 to Correct Inventorship of USPN 8,308,619 and USPN 8,342,016 filed June 15, 2015, 20 pages.	
	A435	Woodway USA, Inc.'s memorandum in support of its motion to preclude the testimony of plaintiffs' technical expert James Whelan, Case 2:13-cv-01276-KAM-AKT, Document 212, filed 8/8/2018, 37 pps.	
	A436	Woodway USA, Inc.'s memorandum of law in opposition to plaintiffs' motion for summary judgment of non-infringement and invalidity of Claim 25 of U.S. Patent No. 9,039,580, Case 3:15-CV-01665-JCH, Document 266, filed 6/29/2018, 42 pps.	
	A437	Woodway USA, Inc.'s Memorandum of Law in support of its motion for summary judgment of infringement of U.S. Patent No. 9,039,580, Case 3:15-CV-01665-JCH, Document 256, 38 pps.	
	A438	Woodway USA, Inc.'s Memorandum of Law in Support of Its Motions for Summary Judgment of Invalidity of US Patent Nos. 8,308,619 and 8,343,016 and Opening Claim Construction Brief filed June 6, 2017, 38 pages.	
	A439	Woodway USA, Inc.'s motion for summary judgment of infringement of U.S. Patent No. 9,039,580, Case 3:15-CV-01665-JCH, Document 255, filed 6/8/2018, 3 pps.	
	A440	Woodway USA, Inc.'s Opening Claim Construction Brief, Speedfit LLC and Aurel A. Astilean v. Woodway USA, Inc., Docket No. 2:17-cv-00768-KAM-AKT, March 26, 2018, 15 pages.	
	A441	Woodway USA, Inc.'s opposition to plaintiffs' motion for partial reconsideration, Case 3:15-CV-01665-JCH, Document 250, filed 5/14/2018, 19 pps.	
	A442	Woodway USA, Inc.'s Patents, Speedfit LLC and Aurel A. Astilean v. Woodway USA, Inc., Docket No. 2:17-cv-00768-KAM-AKT, Exhibit B, March 26, 2018, 3 pages.	
	A443	Woodway USA, Inc.'s Reply Claim Construction Brief, Speedfit LLC and Aurel A. Astilean v. Woodway USA, Inc., Docket No. 2:17-cv-00768-KAM-AKT, March 26, 2018, 9 pages.	
	A444	Woodway USA, Inc.'s reply memorandum in further support of its motion to preclude the testimony of Plaintiffs' technical expert James Whelan, Case 2:13-cv-01276-KAM-AKT, Document 226, filed 8/8/2018, 16 pps.	
	A445	Woodway USA, Inc.'s Reply Memorandum in Support of Its Motion to Dismiss filed November 25, 2015, 24 pages.	
	A446	Woodway USA, Inc.'s Responsive Claim Construction Brief filed July 28, 2017, 19 pages.	
	A447	WOODWAY, "Curve Trainer", September 2, 2020, https://www.woodway.com/products/curve-trainer/, page 1.	
	A448	WOODWAY, "Introducing the All New EcoMill Self Powered", published to YouTube on March 25, 2010, https://www.youtube.com/watch?v=NcPH92DAArc.	
	A449	Woodway, Curve 3.0 Specification, May 25, 2011, 1 page.	

Examiner Signature		Date Considered	

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.R./

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	A450	Woodway, Curve Specification, May 24, 2011, 1 page.	
	A451	Woodway, Curve Specification, May 25, 2011, 1 page.	
	A452	Woodway, Curve XL Specification, May 18, 2011, 1 page.	
	A453	Woodway, Force Specification, April 8, 2008, 1 page.	
	A454	Woodway, Force Specification, May 2, 2011, 1 page.	
	A455	Woodway, Force Specification, May 2, 2012, 1 page.	
	A456	Woodway's USA, Inc.'s Reply in Support of its Motion for Summary Judgment of Invalidity of US Patent Nos. 8,308,619 and 8,343,016 and Reply Claim Construction Brief filed June 6, 2017, 16 pages.	
	A457	Woodway's Opposition to Defendant's Notice of Motion and Motion to Dismiss Case and Transfer Litigation to EDNY, Woodway USA, Inc. v. Aurel A. Astilean, Civ. Dkt. No. 2:13-cv-00681-WERC (E.D. WI), October 18, 2013, 22 pages.	
	A458	Woodways USA, Inc.'s Supplemental Rule 56.1 Statement of Undisputed Material Facts and Responses to Rule 56.1 Counterstatement by Plaintiffs Speedfit LLC and Aurel A. Astilean filed June 6, 2017, 20 pages.	

Examiner Signature	/JENNIFER ROBERTSON /	Date Considered	05/17/2022

4816-9688-3675.1

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PE2E SEARCH - Search History (Prior Art)

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L25	108	(US-20160150084-$ | US-0003871-$ | US-0003872-$ | US-0007886-$ | US-0009668-$ | US-0011642-$ | US-0018917-$ | US-0019973-$ | US-0020907-$ | US-0023039-$ | US-0077465-$ | US-0080679-$ | US-0087922-$ | US-0096064-$ | US-0122035-$ | US-0123396-$ | US-0147079-$ | US-0150084-$ | US-0157267-$ | US-0166877-$ | US-0170666-$ | US-0182356-$ | US-0186787-$ | US-0209059-$ | US-0215589-$ | US-0216607-$ | US-0231934-$ | US-0263429-$ | US-0266091-$ | US-	(USPAT)	OR	OFF	OFF	2018/07/06 01:19 PM

		0270705-$ | US- 0280960-$ | US- 0287165-$ | US- 0287266-$ | US- 0296789-$ | US- 0306456-$ | US- 0367175-$ | US- 0367851-$ | US- 1211765-$ | US- 2117957-$ | US- 2842365-$ | US- 20020147079-$ | US- 20030186787-$ | US- 20040018917-$ | US- 20040077465-$ | US- 20050009668-$ | US- 20050209059-$ | US- 20060003871-$ | US- 20060003872-$ | US- 20060122035-$ | US- 20060287165-$ | US- 20070123396-$ | US- 20080020907-$ | US- 20080287266-$ | US- 20090170666-$ | US- 20090215589-$ | US- 20090280960-$ | US- 20100216607-$ | US- 20110266091-$ | US- 20120019973-$ | US- 20120157267-$ | US- 20120231934-$ | US- 20120270705-$ | US- 20140011642-$ | US- 20140080679-$ | US- 20140087922-$ | US- 20150306456-$ | US- 20150367175-$ | US- 20160023039-$ | US- 20160096064-$ | US- 20160166877-$ | US- 20160263429-$ | US- 20160296789-$ | US- 20160367851-$ | US- 20170007886-$ | US- 20170182356-$ | US- 2860541-$ | US- 3637206-$ | US- 3642279-$ | US- 3968543-$ | US- 3148743-$ | US- 3201120-$ | US- 4334676-$ | US- 4389047-$ | US- 4544152-$ | US- 4548405-$ | US- 4576352-$ | US- 4614337-$ | US-					

		4635928-$ | US- 4659074-$ | US- 4726581-$ | US- 4886266-$ | US- 4938469-$ | US- 5162988-$ | US- 5242339-$ | US- 5290205-$ | US- 5368532-$ | US- 5411279-$ | US- 5411455-$ | US- 5431612-$ | US- 5470293-$ | US- 5538489-$ | US- 5575740-$ | US- 5577598-$ | US- 5643144-$ | US- 5669856-$ | US- 5683332-$ | US- 5709632-$ | US- 5856736-$ | US- 5887579-$ | US- 5897461-$ | US- 6042514-$ | US- 6053848-$ | US- 6095952-$ | US- 6146315-$ | US- 6152854-$ | US- 6180210-$ | US- 6334839-$ | US- 6348025-$ | US- 6500097-$ | US- 6740009-$ | US- 6824502-$ | US- 6837830-$ | US- 6893382-$ | US- 6923746-$ | US- 7090620-$ | US- 7179205-$ | US- 7410449-$ | US- 7560822-$ | US- 7618345-$ | US- 7717828-$ | US- 7780573-$ | US- 7789800-$ | US- 7806805-$ | US- 8241187-$ | US- 8308619-$ | US- 8343016-$ | US- 8690738-$ | US- 8734300-$ | US- 8864627-$ | US- 8920347-$ | US- 9005085-$ | US- 9352188-$ | US- 9429511-$ | US- D736866-$).DID.					
L26	1	("3642279").PN.	(USPAT; USOCR)	OR	OFF	OFF	2018/07/06

							01:30 PM
L27	0	("20060278165").PN.	(USPAT; USOCR)	OR	OFF	OFF	2018/07/06 01:31 PM
L28	0	("20060287165").PN.	(USPAT; USOCR)	OR	OFF	OFF	2018/07/06 01:32 PM
L29	0	("200600287165").PN.	(USPAT; USOCR)	OR	OFF	OFF	2018/07/06 01:32 PM
L30	1	("20060287165").PN.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2018/07/06 01:33 PM
L31	1	("6095952").PN.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2018/07/06 01:35 PM
L32	33	(US-20140011642-$ or US-20120270705-$ or US-20080287266-$ or US-20060287165-$ or US-20100216607-$ or US-20170182356-$).did. or (US-8343016-$ or US-8308619-$ or US-6053848-$ or US-5709632-$ or US-3637206-$ or US-1211765-$ or US-5833577-$ or US-4406451-$ or US-4635928-$ or US-5897461-$ or US-5538489-$ or US-5411455-$ or US-8968161-$ or US-6152854-$ or US-8714346-$ or US-9352188-$ or US-6180210-$ or US-3669238-$ or US-3642279-$ or US-7513832-$ or US-9486681-$ or US-0219439-$ or US-9005085-$ or US-8864627-$ or US-6923746-$ or US-5577598-$).did. or (US-3489408-$).did.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2018/07/06 01:36 PM
L33	19	L32 and (resistance brak$3)	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2018/07/06 01:36 PM
L34	2765	A63B22/02-0292.cpc.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2018/07/06 01:39 PM
L35	644	L34 and manual	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2018/07/06 01:39 PM
L36	451	L35 and (resistance brak$3)	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	OFF	OFF	2018/07/06 01:39 PM

			IBM_TDB)				
L37	1956	A63B22/02-0228.cpc.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2018/07/06 01:45 PM
L38	324	L37 and manual and (resistance brak$3)	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2018/07/06 01:46 PM
L39	888	L37 not motor	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2018/07/06 01:46 PM
L40	383	L37 and resistance not motor	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2018/07/06 01:46 PM
L41	264	L37 and "one way"	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2018/07/06 01:54 PM
L42	40	L37 and slat	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2018/07/06 01:56 PM
L43	43	(US-20140011642-$ or US-20120270705-$ or US-20080287266-$ or US-20060287165-$ or US-20100216607-$ or US-20170182356-$ or US-20160263429-$).did. or (US-8343016-$ or US-8308619-$ or US-6053848-$ or US-5709632-$ or US-3637206-$ or US-1211765-$ or US-5833577-$ or US-4406451-$ or US-4635928-$ or US-5897461-$ or US-5538489-$ or US-5411455-$ or US-8968161-$ or US-6152854-$ or US-8714346-$ or US-9352188-$ or US-6180210-$ or US-3669238-$ or US-3642279-$ or US-7513832-$ or US-9486681-$ or US-0219439-$ or US-9005085-$ or US-8864627-$ or US-6923746-$ or US-5577598-$).did. or (US-	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2018/07/06 01:59 PM

		5104120-$ or US-3554541-$ or US-4363480-$ or US-4625962-$ or US-5110117-$ or US-5492517-$ or US-5429563-$ or US-4334676-$).did. or (US-3489408-$ or US-3332683-$).did.					
L44	12	L43 and plastic	(USPAT)	OR	OFF	OFF	2018/07/06 02:00 PM
L45	119	L37 and resistance with rear	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2018/07/06 02:02 PM
L46	34	L37 and resistance with rear with (pulley roller)	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2018/07/06 02:02 PM
L47	21	L37 and resistance same (flywheel friction$4) with rear with (pulley roller)	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2018/07/06 02:03 PM
L48	54	L37 and flywheel with rear	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2018/07/06 02:09 PM
L49	68	("1211765" | "3554541" | "3642279" | "4389047" | "4616822" | "4938473" | "5100127" | "5125361" | "5391129" | "5431612" | "5575740").PN. OR ("5709632").URPN.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2018/07/06 02:17 PM
L50	38	("1211765" | "20120010048" | "20120010053" | "20120157267" | "3489408" | "3637206" | "3642279" | "3669238" | "4614337" | "5470293" | "5577598" | "5709632" | "6053848" | "6146315" | "6348025").PN. OR ("8343016").URPN.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2018/07/06 02:24 PM
L51	11	L43 and height with adjust$4	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2018/07/06 02:29 PM
L52	1	("4023795").PN.	(USPAT; USOCR)	OR	OFF	OFF	2018/07/07 03:24 PM
L53	4	(("5709632") or ("5538489") or ("2399915")).PN.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2019/02/14 10:53 AM
L54	3	(("5378213") or	(US-PGPUB; USPAT;	OR	OFF	OFF	2019/12/19

		("20050202936") or ("20180001134")).PN.	USOCR)				10:06 AM
L55	2	(("6652424") or ("20120010048")).PN.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2019/12/19 10:07 AM
L56	0	(L54 L55) and clutch	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2019/12/19 10:08 AM
L57	44	(US-20140011642-$ or US-20120270705-$ or US-20080287266-$ or US-20060287165-$ or US-20100216607-$ or US-20170182356-$ or US-20160263429-$).did. or (US-8343016-$ or US-8308619-$ or US-6053848-$ or US-5709632-$ or US-3637206-$ or US-1211765-$ or US-5833577-$ or US-4406451-$ or US-4635928-$ or US-5897461-$ or US-5538489-$ or US-5411455-$ or US-8968161-$ or US-6152854-$ or US-8714346-$ or US-9352188-$ or US-6180210-$ or US-3669238-$ or US-3642279-$ or US-7513832-$ or US-9486681-$ or US-0219439-$ or US-9005085-$ or US-8864627-$ or US-6923746-$ or US-5577598-$).did. or (US-5104120-$ or US-3554541-$ or US-4363480-$ or US-4625962-$ or US-5110117-$ or US-5492517-$ or US-5429563-$ or US-4334676-$ or US-5688209-$).did. or (US-3489408-$ or US-3332683-$).did.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2019/12/19 10:08 AM
L58	353388	"4" and clutch	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2019/12/19 10:08 AM
L59	4	L57 and clutch	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2019/12/19 10:09 AM
L60	1	("4023795").PN.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2019/12/19 10:09 AM

L61	44	(US-20140011642-$ or US-20120270705-$ or US-20080287266-$ or US-20060287165-$ or US-20100216607-$ or US-20170182356-$ or US-20160263429-$).did. or (US-8343016-$ or US-8308619-$ or US-6053848-$ or US-5709632-$ or US-3637206-$ or US-1211765-$ or US-5833577-$ or US-4406451-$ or US-4635928-$ or US-5897461-$ or US-5538489-$ or US-5411455-$ or US-8968161-$ or US-6152854-$ or US-8714346-$ or US-9352188-$ or US-6180210-$ or US-3669238-$ or US-3642279-$ or US-7513832-$ or US-9486681-$ or US-0219439-$ or US-9005085-$ or US-8864627-$ or US-6923746-$ or US-5577598-$).did. or (US-5104120-$ or US-3554541-$ or US-4363480-$ or US-4625962-$ or US-5110117-$ or US-5492517-$ or US-5429563-$ or US-4334676-$ or US-5688209-$).did. or (US-3489408-$ or US-3332683-$).did.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2020/03/24 10:09 AM
L62	32	L61 and friction	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2020/03/24 10:09 AM
L63	1	("8308619").PN.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2020/03/24 10:10 AM
L64	1	("10561883").PN.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2020/03/24 12:44 PM
L65	19	((("WOODWAY") near3 ("USA") near3 ("INC"))).AS,AANM.	(USPAT)	OR	ON	ON	2020/03/24 12:46 PM
L66	319	((("BAYERLEIN") near3 ("Douglas")) OR (("EMONS") near3	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2020/03/24 12:47 PM

		("Vance")) OR (("OBLAMSKI") near3 ("Nicholas")) OR (("HOERIG") near3 ("Scott")) OR (("ZANK") near3 ("Matthew")) OR (("ZIMPEL") near3 ("Robert")) OR (("RICHARDS") near3 ("Joel"))).INV.					
L67	3227	A63B22/02-0292.cpc.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2020/03/24 12:48 PM
L68	403	L67 and @pd>="20180701"	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2020/03/24 12:48 PM
L69	0	L65 not L66	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2020/03/24 12:48 PM
L70	21	L66 and (clutch "one-way").clm.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2020/03/24 12:48 PM
L71	48	L68 and (clutch "one-way")	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2020/03/24 12:50 PM
L83	111	("2460017" | "2873848" | "3967720" | "4204673" | "4325421" | "4334676" | "4423864" | "4548316" | "4562920" | "4743008" | "4872664" | "5336146" | "5411279").pn. OR ("5538489").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2022/04/27 10:41 PM
L84	2900	A63B22/02-0228,0285-0292.cpc.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2022/04/27 10:43 PM
L85	12173	A63B22/02-0228,0285-0292.cpc.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO)	OR	ON	ON	2022/04/27 10:43 PM
L86	735	85 AND (one ADJ way)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV,	OR	ON	ON	2022/04/27 10:44 PM

			MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO)				
L87	291	85 AND (one ADJ way) WITH (bearing clutch)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO)	OR	ON	ON	2022/04/27 10:44 PM
L88	10562	A63B22/02.cpc.	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO)	OR	ON	ON	2022/04/27 10:52 PM
L89	40	((US-20080287266-A1 OR US-20060287165-A1 OR US-20100216607-A1 OR US-20160263429-A1).did. AND PGPB.dbnm.) OR ((US-8308619-B1 OR US-6053848-A OR US-5709632-A OR US-3637206-A OR US-1211765-A OR US-5833577-A OR US-4406451-A OR US-4635928-A OR US-5897461-A OR US-5538489-A OR US-5411455-A OR US-8968161-B2 OR US-6152854-A OR US-	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/05/17 11:11 AM

		8714346-B2 OR US-9352188-B2 OR US-6180210-B1 OR US-3669238-A OR US-3642279-A OR US-7513832-B2 OR US-0219439-A OR US-9005085-B2 OR US-8864627-B2 OR US-5577598-A OR US-5104120-A OR US-3554541-A OR US-4363480-A OR US-4625962-A OR US-5110117-A OR US-5492517-A OR US-5429563-A OR US-4334676-A OR US-5688209-A OR US-6923746-B1 OR US-2512911-A).did. AND USPT.dbnm.) OR ((US-3489408-A OR US-3332683-A).did. AND USOC.dbnm.)					
L90	40	((US-20080287266-A1 OR US-20060287165-A1 OR US-20100216607-A1 OR US-20160263429-A1).did. AND PGPB.dbnm.) OR ((US-8308619-B1 OR US-6053848-A OR US-5709632-A OR US-3637206-A OR US-1211765-A OR US-5833577-A OR US-4406451-A OR US-4635928-A OR US-5897461-A OR US-5538489-A OR US-5411455-A OR US-8968161-B2 OR US-6152854-A OR US-8714346-B2 OR US-9352188-B2 OR US-6180210-B1 OR US-3669238-A OR US-3642279-A OR US-7513832-B2 OR US-0219439-A OR US-9005085-B2 OR US-8864627-B2 OR US-5577598-A OR US-5104120-A OR US-3554541-A OR US-4363480-A OR US-	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/05/17 11:11 AM

		4625962-A OR US-5110117-A OR US-5492517-A OR US-5429563-A OR US-4334676-A OR US-5688209-A OR US-6923746-B1 OR US-2512911-A).did. AND USPT.dbnm.) OR ((US-3489408-A OR US-3332683-A).did. AND USOC.dbnm.)					
L91	25	89 AND resist$4	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/05/17 11:11 AM
L92	29	((("WOODWAY") near3 ("USA") near3 ("INC"))).AS,AANM.	(USPAT)	OR	ON	ON	2022/05/17 11:39 AM
L93	66	((("BAYERLEIN") near3 ("Douglas")) OR (("EMONS") near3 ("Vance")) OR (("OBLAMSKI") near3 ("Nicholas")) OR (("HOERIG") near3 ("Scott")) OR (("ZANK") near3 ("Matthew")) OR (("ZIMPEL") near3 ("Robert")) OR (("RICHARDS") near3 ("Joel"))).INV.	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/05/17 11:41 AM
L94	250	("0000001" OR "20040244521" OR "20070054781" OR "20090062165" OR "20110048809" OR "20110306527" OR "20120149613" OR "20130256064" OR "20140239760" OR "20150210348" OR "5018343" OR "5044470" OR "5891830" OR	(US-PGPUB; USPAT)	OR	ON	ON	2022/05/17 11:45 AM

		"6056072" OR "6958032" OR "7704191" OR "9595855" OR "8007408" OR "0000002" OR "0026914" OR "0061280" OR "0083844" OR "0104534" OR "0111018" OR "0118030" OR "0144224" OR "0144225" OR "0171353" OR "0179789" OR "0219439" OR "0254293" OR "0314674" OR "0374811" OR "0411986" OR "0641424" OR "0759296" OR "0767221" OR "0783769" OR "0931394" OR "10010748" OR "10143884" OR "1016729" OR "10183191" OR "10293204" OR "10478666" OR "10561883" OR "1211765" OR "20010018917" OR "20020147079" OR "20030148853" OR "20030186787" OR "20040018917" OR "20040077465" OR "20040097341" OR "20040241631" OR "20040242631" OR "20050009668" OR "20050202936" OR "20050209059" OR "20050272562" OR "20060003871" OR "20060003872" OR "20060122035" OR "20060287165" OR "20070021278" OR "20070027001" OR "20070123396" OR "20070167289" OR "20070202995" OR "20070225130" OR "20070298935" OR					

		"20080015094" OR "20080020907" OR "20080026914" OR "20080119332" OR "20080132385" OR "20080287266" OR "20090105047" OR "20090156363" OR "20090170666" OR "20090215589" OR "20090280960" OR "20100087298" OR "20100216607" OR "20100222182" OR "20110266091" OR "20110275497" OR "20120010048" OR "20120010053" OR "20120019973" OR "20120157267" OR "20120231934" OR "20120264569" OR "20120270705" OR "20140011642" OR "20140080679" OR "20140087922" OR "20140171272" OR "20150119202" OR "20150157895" OR "20150306456" OR "20150352400" OR "20150367175" OR "20160023039" OR "20160096064" OR "20160144224" OR "20160144225" OR "20160166877" OR "20160263429" OR "20160296789" OR "20160367851" OR "20170007886" OR "20170113093" OR "20170128769" OR "20170182356" OR "20170274248" OR "20170312582" OR "20180014755" OR "20180104534" OR "20180111018" OR "20180111023" OR "20180229065" OR "20190054344" OR "20190083843" OR "20190083844" OR "20190118030" OR "20190168067" OR "20190314674" OR "20190374811" OR					

		"20200171353" OR "20200179789" OR "20200188760" OR "20200254293" OR "2117957" OR "2399915" OR "2512911" OR "2842365" OR "3637206" OR "3642279" OR "3870297" OR "3968543" OR "4334676" OR "4389047" OR "4406451" OR "4544152" OR "4548405" OR "4576352" OR "4614337" OR "4635928" OR "4659074" OR "4726581" OR "4886266" OR "4938469" OR "5031901" OR "5094447" OR "5145480" OR "5162988" OR "5242339" OR "5290205" OR "5310392" OR "5368532" OR "5378213" OR "5411279" OR "5411455" OR "5431612" OR "5470293" OR "5492517" OR "5538489" OR "5575740" OR "5577598" OR "5607376" OR "5616951" OR "5643144" OR "5669856" OR "5683332" OR "5688209" OR "5709632" OR "5856736" OR "5887579" OR "5897461" OR "6042514" OR "6053848" OR "6095952" OR "6146315" OR "6152854" OR "6180210" OR "6328676" OR					

		"6334836" OR "6334839" OR "6348025" OR "6454679" OR "6468189" OR "6500097" OR "6616578" OR "6652424" OR "6740009" OR "6824502" OR "6837830" OR "6893382" OR "6923746" OR "7090620" OR "7115073" OR "7179205" OR "7410449" OR "7560822" OR "7608023" OR "7618345" OR "7717828" OR "7789800" OR "7806805" OR "7837596" OR "7862483" OR "8007422" OR "8075450" OR "8152177" OR "8206269" OR "8241187" OR "8308619" OR "8343016" OR "8496566" OR "8512209" OR "8585561" OR "8676170" OR "8690738" OR "8734300" OR "8864627" OR "8876668" OR "8920347" OR "8986169" OR "9005085" OR "9039580" OR "9044635" OR "9192810" OR "9216316" OR "9233272" OR "9254409" OR "9305141" OR "9314667" OR "9352188" OR "9429511" OR "9498696" OR "9694234" OR "9713742" OR "9824110" OR "9914015" OR					

		"9956450" OR "9974997" OR "D333887" OR "D484554" OR "D562416").pn.					
L95	8	("D566209" OR "D672827" OR "D682372" OR "D736866" OR "D751156" OR "D788792" OR "D820362" OR "D837312").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2022/05/17 11:45 AM
L96	21	89 AND handle	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/05/17 11:52 AM

PE2E SEARCH - Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
N78	0	(treadmill and bearing and belt and braking and safety and race).clm.	(US-PGPUB; USPAT)	OR	ON	ON	2020/10/02 11:12 AM
N79	1	(treadmill and belt and braking and safety and ring).clm.	(US-PGPUB; USPAT)	OR	ON	ON	2020/10/02 11:12 AM
N80	0	(treadmill and belt and braking and safety and race).clm.	(US-PGPUB; USPAT)	OR	ON	ON	2020/10/02 11:13 AM
N81	5	(treadmill AND pulley AND belt AND curved AND rotation AND prevented).clm.	(US-PGPUB; USPAT)	OR	ON	ON	2022/05/17 01:37 PM

PTO/SB/08 (modified)

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	17/247101
Date Submitted: December 6, 2021				**Filing Date**	11/30/2020
				First Named Inventor	Douglas G. Bayerlein
(use as many sheets as necessary)				Art Unit	3784
				Examiner Name	ROBERTSON, JENNIFER MARY DEICHL
Sheet	1	of	1	Attorney Docket Number	097208-0311

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	C1	3,728,261-A	04-17-1973	BILL MITACEK	
	C2	5,018,343-A	05-28-1991	FINKE, DONALD R.	
	C3	5,044,470-A	09-03-1991	NICHOLAS, PAUL	
	C4	5,891,830-A	04-06-1999	KOLTERMANN ET AL.	
	C5	6,056,072-A	05-02-2000	KOLTERMANN ET AL.	
	C6	6,958,032-B1	10-25-2005	SMITH ET AL.	
	C7	7,704,191-B2	04-27-2010	SMITH ET AL.	
	C8	9,595,855-B2	03-14-2017	ASAI ET AL.	
	C9	2004/0244521-A1	12-09-2004	RUSS ET AL.	
	C10	2007/0054781-A1	03-08-2007	BLAYLOCK, ANDREW	
	C11	2009/0062165-A1	03-05-2009	DENIS ET AL.	
	C12	2011/0048809-A1	03-03-2011	DUCKWORTH ET AL.	
	C13	2011/0306527-A1	12-15-2011	BOUFFET ET AL.	
	C14	2012/0149613-A1	06-14-2012	DAVID ET AL.	
	C15	2013/0256064-A1	10-03-2013	BONGAERTS ET AL.	
	C16	2014/0239760-A1	08-28-2014	ASAI ET AL.	
	C17	2015/0210348-A1	07-30-2015	ASTILEAN, ALEX	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Documents	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]
	C18	DE-19922822-A1	12-07-2000	TOLLKIEN, RALF		

Examiner Signature	/JENNIFER ROBERTSON /	Date Considered	05/17/2022

4880-6956-1605.1

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /JR/

PTO/SB/08 (modified)

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	17/247,101
Date Submitted: April 25, 2022				**Filing Date**	11/30/2020
				First Named Inventor	Douglas G. Bayerlein
				Art Unit	3784
(use as many sheets as necessary)				Examiner Name	ROBERTSON, JENNIFER MARY D.
Sheet	1	of	1	Attorney Docket Number	097208-0311

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[6]
	A1	WOODWAY, "The Woodway LOKO Owners Manual", S55-70 E Standard Manual, September 26, 2006, 47 pages.	

Examiner Signature	/JENNIFER ROBERTSON /	Date Considered	05/17/2022

4864-1129-7307.1

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /JR/

Bibliographic Data

Application No: 17/247,101

Foreign Priority claimed: ○ Yes ◉ No

35 USC 119 (a-d) conditions met: ☐ Yes ☑ No ☐ Met After Allowance

Verified and Acknowledged: /JENNIFER ROBERTSON / Examiner's Signature | Initials

Title: MANUALLY POWERED TREADMILL

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
11/30/2020	482	3784	097208-0311
RULE			

APPLICANTS

Woodway USA, Inc., Waukesha, WI, UNITED STATES

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Matthew J. Zank, Milwaukee, WI, UNITED STATES

Robert L. Zimpel, Menomonee Falls, WI, UNITED STATES

Joel W. Richards, Wauwatosa, WI, UNITED STATES

CONTINUING DATA

This application is a CON of 16792444 02/17/2020 PAT 10850150

16792444 is a CON of 15957721 04/19/2018 PAT 10561883

15957721 is a CON of 14832708 08/21/2015 PAT 10265566

14832708 is a CON of 14076912 11/11/2013 PAT 9114276

14076912 is a CON of 13235065 09/16/2011ABN

13235065 is a CIP of PCT/US10/27543 03/16/2010

PCT/US10/27543 has PRO of 61161027 03/17/2009

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

12/09/2020

**** SMALL ENTITY ****

STATE OR COUNTRY

UNITED STATES

ADDRESS

FOLEY & LARDNER LLP
3000 K STREET N.W.
SUITE 600
WASHINGTON, DC 20007-5109
UNITED STATES

FILING FEE RECEIVED

$830

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From: PAIR_eOfficeAction@uspto.gov
Cc: PAIR_eOfficeAction@uspto.gov
Subject: Private PAIR Correspondence Notification for Customer Number 26371

May 20, 2022 05:47:43 AM

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WASHINGTON, DC 20007-5109
UNITED STATES

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Application	Document	Mailroom Date	Attorney Docket No.
17247101	CTNF	05/20/2022	097208-0311
	892	05/20/2022	097208-0311
	1449	05/20/2022	097208-0311
	1449	05/20/2022	097208-0311
	1449	05/20/2022	097208-0311
	1449	05/20/2022	097208-0311

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Monday - Friday 6:00 a.m. to 12:00 a.m.

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POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:

☑ Practitioners associated with Customer Number: 26371

OR

☐ Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

As attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignments documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:

☑ The address associated with Customer Number: 26371

OR

☐	Firm or Individual Name		
	Address		
	City		
	Country		
	Telephone		Email

Assignee Name and Address: Woodway USA, Inc.
W229 N591 Foster Court
Waukesha, WI 53186

A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/SB/96 or equivalent) is required to be Filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of The practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature	Douglas B. Bartelt	Date	9-12-12
Name	Douglas G Bartelt	Telephone	262-548-6635 ext. 107
Title	President		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: Woodway USA, Inc.

Application No./Patent No.: 17/247,101 Filed/Issue Date: 11/30/2020

Titled: MANUALLY POWERED TREADMILL

Woodway USA, Inc. , a corporation

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.

states that it is:

1. ☒ the assignee of the entire right, title, and interest in;

2. ☐ an assignee of less than the entire right, title, and interest in (The extent (by percentage) of its ownership interest is _____ %); or

3. ☐ the assignee of an undivided interest in the entirety of (a complete assignment from one of the joint inventors was made)

the patent application/patent identified above, by virtue of either:

A. ☒ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 051830, Frame 0380, or for which a copy therefore is attached.

OR

B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: _____ To: _____

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☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☒ As required by 37 CFR 3.73(b)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (*i.e.*, a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Alexander J. Neuworth/ 8/22/2022

Signature Date

Alexander J. Neuworth Foley & Lardner LLP Attorney

Printed or Typed Name Title

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The information provided by you in this form will be subject to the following routine uses:

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5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
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TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT	Docket Number (Optional) 097208-0311

In re Application of: Woodway USA, Inc.

Application No.: 17/247,101

Filed: 11/30/2020

For: MANUALLY POWERED TREADMILL

The owner*, Woodway USA, Inc., of 100 percent interest in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of **prior patent** No. 11179589 as the term of said **prior patent** is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the **prior patent** are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the owner does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term of the **prior patent**, "as the term of said **prior patent** is presently shortened by any terminal disclaimer," in the event that said **prior patent** later:

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

2. ☑ The undersigned is an attorney or agent of record. Reg. No. 72,021

/Alexander J. Neuworth/ — Signature
08-22-2022 — Date

Alexander J. Neuworth — Typed or printed name

(414) 319-7029 — Telephone Number

☑ Terminal disclaimer fee under 37 CFR 1.20(d) included.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

*Statement under 37 CFR 3.73(b) is required if terminal disclaimer is signed by the assignee (owner). Form PTO/SB/96 may be used for making this certification. See MPEP § 324.

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3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
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9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT	Docket Number (Optional) 097208-0311

In re Application of: Woodway USA, Inc.

Application No.: 17/247,101

Filed: 11/30/2020

For: MANUALLY POWERED TREADMILL

The owner*, Woodway USA, Inc., of 100 percent interest in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of **prior patent** No. 10850150 as the term of said **prior patent** is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the **prior patent** are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the owner does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term of the **prior patent**, "as the term of said **prior patent** is presently shortened by any terminal disclaimer," in the event that said **prior patent** later:

expires for failure to pay a maintenance fee;
is held unenforceable;
is found invalid by a court of competent jurisdiction;
is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;
has all claims canceled by a reexamination certificate;
is reissued; or
is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

Check either box 1 or 2 below, if appropriate.

1. ☐ For submissions on behalf of a business/organization (e.g., corporation, partnership, university, government agency, etc.), the undersigned is empowered to act on behalf of the business/organization.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

2. ☑ The undersigned is an attorney or agent of record. Reg. No. 72,021

/Alexander J. Neuworth/ — Signature
08-22-2022 — Date

Alexander J. Neuworth — Typed or printed name

(414) 319-7029 — Telephone Number

☑ Terminal disclaimer fee under 37 CFR 1.20(d) included.

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TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT	Docket Number (Optional) 097208-0311

In re Application of: Woodway USA, Inc.

Application No.: 17/247,101

Filed: 11/30/2020

For: MANUALLY POWERED TREADMILL

The owner*, Woodway USA, Inc., of 100 percent interest in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of **prior patent** No. 10561884 as the term of said **prior patent** is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the **prior patent** are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

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expires for failure to pay a maintenance fee;
is held unenforceable;
is found invalid by a court of competent jurisdiction;
is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;
has all claims canceled by a reexamination certificate;
is reissued; or
is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

Check either box 1 or 2 below, if appropriate.

1. ☐ For submissions on behalf of a business/organization (e.g., corporation, partnership, university, government agency, etc.), the undersigned is empowered to act on behalf of the business/organization.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

2. ☑ The undersigned is an attorney or agent of record. Reg. No. 72,021

/Alexander J. Neuworth/ — Signature
08-22-2022 — Date

Alexander J. Neuworth — Typed or printed name

(414) 319-7029 — Telephone Number

☑ Terminal disclaimer fee under 37 CFR 1.20(d) included.

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TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT	Docket Number (Optional) 097208-0311

In re Application of: Woodway USA, Inc.

Application No.: 17/247,101

Filed: 11/30/2020

For: MANUALLY POWERED TREADMILL

The owner*, Woodway USA, Inc., of 100 percent interest in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of **prior patent** No. 10561883 as the term of said **prior patent** is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the **prior patent** are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

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is found invalid by a court of competent jurisdiction;
is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;
has all claims canceled by a reexamination certificate;
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is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

2. ☑ The undersigned is an attorney or agent of record. Reg. No. 72,021

/Alexander J. Neuworth/ — Signature
08-22-2022 — Date

Alexander J. Neuworth — Typed or printed name

(414) 319-7029 — Telephone Number

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Electronic Patent Application Fee Transmittal

Application Number:	17247101
Filing Date:	30-Nov-2020
Title of Invention:	MANUALLY POWERED TREADMILL
First Named Inventor/Applicant Name:	Douglas G. Bayerlein
Filer:	Richard J. McKenna/Tonya Tetzl
Attorney Docket Number:	097208-0311

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
STATUTORY OR TERMINAL DISCLAIMER	2814	4	170	680
		Total in USD ($)		**680**

Electronic Acknowledgement Receipt

EFS ID:	46459602
Application Number:	17247101
International Application Number:	
Confirmation Number:	2042
Title of Invention:	MANUALLY POWERED TREADMILL
First Named Inventor/Applicant Name:	Douglas G. Bayerlein
Customer Number:	26371
Filer:	Richard J. McKenna/Tonya Tetzl
Filer Authorized By:	Richard J. McKenna
Attorney Docket Number:	097208-0311
Receipt Date:	22-AUG-2022
Filing Date:	30-NOV-2020
Time Stamp:	16:54:32
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$680
RAM confirmation Number	E20228LG55183716
Deposit Account	
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment/Request for Reconsideration-After Non-Final Rejection	097208-0311_Response_NFOA.pdf	149900 843bd03aa893bb26140dd1b214d6796623597565	no	9
Warnings:					
Information:					
2	Power of Attorney	097208-0311_POA_Woodway-signed.pdf	334106 dbbbbcfc18bca424b473ac33c84a497d2ba4c6e7	no	1
Warnings:					
Information:					
3	Assignee showing of ownership per 37 CFR 3.73	097208-0311_Statement373.pdf	422641 80b7f1d3db0e4fc3850ed4cd5b1f69f42e94f7e4	no	2
Warnings:					
Information:					
4	Terminal Disclaimer Filed	097208-0311_TerminalDisclaimer-1.pdf	1013545 0bd4f312ce3fe8631de17c969ba188068b0d9485	no	2
Warnings:					
Information:					
5	Terminal Disclaimer Filed	097208-0311_TerminalDisclaimer-2.pdf	1013388 ad3b2515cc7f5ff23fa6e6201a13eb7b779ca2a6	no	2
Warnings:					
Information:					
6	Terminal Disclaimer Filed	097208-0311_TerminalDisclaimer-3.pdf	1013892 334c222f54882e358414fd0d846ce343c93e1701	no	2
Warnings:					
Information:					

7	Terminal Disclaimer Filed	097208-0311_TerminalDisclaimer-4.pdf	1014080 7a65d8f419c132cfd3289432ae0107fd7a1aded1	no	2
Warnings:					
Information:					
8	Fee Worksheet (SB06)	fee-info.pdf	38355 df6bc4f1853a30cb27f7ae00ced593cb5afe0c06	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	4999907		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Application Number	Application/Control No.	Applicant(s)/Patent under Reexamination	
* 17/247,101 *	17/247,101	Bayerlein et al.	
	Examiner	**Art Unit**	
	ROBERTSON, JENNIFER MARY DEICHL	3784	

Document Code - DISQ	**Internal Document - DO NOT MAIL**

TERMINAL DISCLAIMER	☑ APPROVED	☐ DISAPPROVED
Date Filed: 22 August 2022	**This patent is subject to a Terminal Disclaimer**	

Approved/Disapproved by:

/JEAN PROCTOR/

Technology Center: OPLC

Telephone: (571)272-1040

4 td's

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Inventor Name:	Douglas G. Bayerlein
Title:	MANUALLY POWERED TREADMILL
Appl. No.:	17/247,101
Filing Date:	11/30/2020
Examiner:	ROBERTSON, JENNIFER MARY DEICHL
Art Unit:	3784
Confirmation Number:	2042

AMENDMENT AND REPLY UNDER 37 C.F.R. § 1.111

Mail Stop AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

This communication is responsive to the Non-Final Office Action mailed May 20, 2022, concerning the above-referenced patent application.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this document.

Remarks begin on page 6 of this document.

Please amend the application as follows:

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A manually powered treadmill, comprising:

a frame;

at least one front running belt pulley coupled to the frame;

at least one rear running belt pulley coupled to the frame and spaced a distance from the at least one front running belt pulley;

a running belt at least partially supported by at least one of the at least one front running belt pulley and the at least one rear running belt pulley, wherein the running belt includes a running surface, at least a portion of which is curved;

a safety device coupled to the frame and the running belt, the safety device having a first element and a second element, the first element substantially surrounding the second element or the second element substantially surrounding the first element ~~wherein at least one of the first and second elements is adapted for rotation relative to the frame~~;

wherein one of the first and second elements of the safety device and the running belt freely rotate in a first direction of rotation relative to the frame, however, in a second direction of rotation, opposite the first direction of rotation, the one of the first and second elements is substantially prevented from rotation relative to the frame to substantially prevent or resist rotation of the running belt relative to the frame.

2. (Original) The manually powered treadmill of claim 1, further comprising a front shaft coupled to frame, the front shaft being adapted to support the at least one front running belt pulley.

3. (Original) The manually powered treadmill of claim 1, further comprising a rear shaft coupled to frame, the rear shaft being adapted to support the at least one rear running belt pulley.

4. (Original) The manually powered treadmill of claim 1, wherein the first and second elements of the safety device at least partly form a one-way bearing.

5. (Original) The manually powered treadmill of claim 1, further comprising a braking system coupled to the frame and configured to selectively resist rotational movement of the running belt in the first direction.

6. (Original) The manually powered treadmill of claim 1, further comprising a plurality of bearings coupled to the frame, at least one bearing of the plurality of bearings configured to at least partially support the running belt.

7. (Original) The manually powered treadmill of claim 1, further comprising a rearwardly extending handle coupled to the frame.

8. (Original) The manually powered treadmill of claim 1, wherein the running belt includes at least one slat.

9. (Cancelled)

10. (Currently Amended) A treadmill, comprising:

a frame;

a rotatable element coupled to the frame;

a running belt at least partially supported by the rotatable element, wherein the running belt includes a running surface, at least a portion of which is curved; and

a first element and a second element, both of which are coupled to the running belt, and wherein the first element substantially surrounds the second element or the second element substantially surrounds the first element;

wherein one of the first and second elements and the running belt freely rotate in a first direction of rotation relative to the frame, however, in a second direction of rotation, opposite the first direction of rotation, the one of the first and second elements is substantially prevented from rotation relative to the frame to substantially prevent or resist rotation of the running belt relative to the frame.

11. (Original) The treadmill of claim 10, wherein only one of the first and second elements is freely rotatable relative to the frame.

12. (Cancelled)

13. (Original) The treadmill of claim 10, wherein the treadmill is non-motorized.

14. (Original) The treadmill of claim 10, wherein the first and second elements at least partly form a one-way bearing.

15. (Original) The treadmill of claim 10, further comprising a plurality of bearings coupled to the frame, at least one bearing of the plurality of bearings configured to at least partially support the running belt.

16. (Original) The treadmill of claim 10, further comprising a braking system coupled to the frame and configured to selectively resist rotational movement of the running belt in the second direction.

17. (Currently Amended) A manually powered treadmill, comprising:

a frame;

at least one front running belt pulley coupled to the frame;

at least one rear running belt pulley coupled to the frame and spaced a distance from the at least one front running belt pulley;

a running belt at least partially supported by at least one of the at least one front running belt pulley and the at least one rear running belt pulley, wherein the running belt includes a running surface, at least a portion of which is curved; and

a safety device coupled to the frame and the running belt, the safety device having an element adapted for rotation relative to the frame in a first direction of rotation relative to the frame, however, in a second direction of rotation, opposite the first direction of rotation, the element is substantially prevented from rotation relative to the frame to substantially prevent or resist rotation of the running belt relative to the frame; and

wherein the safety device includes another element, wherein one of the element and the another element substantially surrounds the other of the element and the another element.

18. (Original) The manually powered treadmill of claim 17, further comprising a plurality of bearings coupled to the frame, wherein at least one bearing in the plurality of bearings at least partially supports the running belt.

19. (Original) The manually powered treadmill of claim 17, further comprising a braking system coupled to the frame, the braking system configured to selectively resist rotation of the running belt.

20. (Cancelled)

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and the reasons that follow.

Status of Claims

Claims 1, 10, and 17 are currently amended. Claims 9, 12, and 20 are cancelled. No claims are new. Support for the amendments to claims 1, 10, and 17 may be found at least at currently cancelled claims 9, 12, and 20. No new matter has been added. These amendments are made without prejudice or disclaimer.

After amending the claims as set forth above, claims 1-8, 10-11, and 13-19 remain pending in this application for examination. Applicant respectfully requests favorable reconsideration of these claims.

Allowable Subject Matter

On page 8 of the Office Action, the Examiner stated that "Claims 9, 12, and 20 would be allowable if a Terminal Disclaimer were filed to overcome the double patenting rejection(s), set forth in this Office action and to include all of the limitations of the base claim and any intervening claims."

Applicant has amended independent claim 1 to include the allowable subject matter of claim 9, amended independent claim 10 to include the allowable subject matter of claim 12, and amended independent claim 17 to include the allowable subject matter of claim 20. Based on the foregoing, Applicant respectfully submits that each of independent claims 1, 10, and 17 recites allowable subject matter.

Claim Rejections Under 35 U.S.C. § 103

Claims 1-4, 6-7, 10-11, 13-15, and 17-18 were rejected under pre-AIA 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 3,642,279 ("Cutter") in view of U.S. Patent No. 5,538,489 ("Magid"). Claims 5, 16, and 19 were rejected under pre-AIA 35 U.S.C. § 103 as being unpatentable over Cutter in view of Magid as applied to claims 1, 10, and 17, respectively above, and further in view of U.S. Patent No. 5,492,517 ("Bostic"). Claim 8 was rejected under pre-AIA 35 U.S.C. § 103 as being unpatentable over Cutter in view of Magid as applied to claim 1 above, and further in view of U.S. Patent No. 4,334,676 ("Schonenberger"). The references, combination of the references relied upon, and the claim rejections based thereon are respectfully traversed.

Without acquiescing to the rejections, Applicant has amended independent claims 1, 10, and 17 to recite the indicated allowable subject matter. Therefore, Applicant respectfully submits that the rejections of independent claims 1, 10, and 17 under Section 103 are moot and overcome. Claims 2-8, 11 and 13-16, and 18-19 depend from independent claims 1, 10, and 17, respectively. All of these claims are patentable for similar reasons. *See* 35 U.S.C. § 112.

Based on the foregoing, Applicant respectfully requests withdrawal of the claim rejections under Section 103.

Double Patenting

Claims 1-20 were rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-25 of U.S. Patent No. 11,179,589. Claims 1-20 were rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-30 of U.S. Patent No. 10,850,150. Claims 1-20 were rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-59 of U.S. Patent No. 10,561,884. Claims 1-20 were rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-52 of U.S. Patent No. 10,561,883.

Without acquiescing to the rejections, Applicant is submitting a terminal disclaimer herewith to overcome the nonstatutory double patenting rejections. Withdrawal of same is respectfully requested.

Concluding Remarks

It is submitted that each outstanding objection and rejection to the present application has been overcome, and that the present application is in condition for allowance. Applicant requests consideration and allowance of all pending claims.

It should also be noted that although Applicant has only addressed certain claims or claimed features herein, other claims, features, or combinations of features may also be patentable for additional reasons. Further, the failure to address any statement by the Examiner should not be interpreted as acquiescence or agreement with such statement. Applicant expressly reserves the right to rebut any statement presented by the Examiner and to set forth additional and/or alternative reasons for patentability during prosecution of the present application or in any other future proceeding.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance prosecution.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application, or credit any overpayment, to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date /8-22-2022/ By /Alexander J. Neuworth/

FOLEY & LARDNER LLP
Customer Number: 26371
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Attorneys for Applicant

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UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
17/247,101	11/30/2020	Douglas G. Bayerlein	097208-0311

CONFIRMATION NO. 2042

POA ACCEPTANCE LETTER

26371
FOLEY & LARDNER LLP
3000 K STREET N.W.
SUITE 600
WASHINGTON, DC 20007-5109

OC000000136010870

Date Mailed: 08/25/2022

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 08/22/2022.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/hsarwari/

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
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Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 17/247,101	Filing Date 11/30/2020	☐ To be Mailed

ENTITY: ☐ LARGE ☑ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $50 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $240 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	08/22/2022	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 17	Minus	** 20	= 0		x $50 =	0
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	= 0		x $240 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	LIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/JAMES W TUNSTALL/
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".	
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.	

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Aug 25, 2022 03:29:52 AM

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Application	Document	Mailroom Date	Attorney Docket No.
17247101	N570	08/25/2022	097208-0311

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Monday - Friday 6:00 a.m. to 12:00 a.m.

Thank you for prompt attention to this notice,

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PATENT APPLICATION INFORMATION RETRIEVAL SYSTEM

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NOTICE OF ALLOWANCE AND FEE(S) DUE

26371 7590 08/31/2022

FOLEY & LARDNER LLP
3000 K STREET N.W.
SUITE 600
WASHINGTON, DC 20007-5109

EXAMINER
ROBERTSON, JENNIFER MARY DEICHL

ART UNIT	PAPER NUMBER
3784	

DATE MAILED: 08/31/2022

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/247,101	11/30/2020	Douglas G. Bayerlein	097208-0311	2042

TITLE OF INVENTION: MANUALLY POWERED TREADMILL

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$600	$0.00	$0.00	$600	11/30/2022

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

LIFECORE Ex. 1002, p. 285

PART B - FEE(S) TRANSMITTAL

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By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

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26371 7590 08/31/2022

FOLEY & LARDNER LLP
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WASHINGTON, DC 20007-5109

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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/247,101	11/30/2020	Douglas G. Bayerlein	097208-0311	2042

TITLE OF INVENTION: MANUALLY POWERED TREADMILL

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$600	$0.00	$0.00	$600	11/30/2022

EXAMINER	ART UNIT	CLASS-SUBCLASS
ROBERTSON, JENNIFER MARY DEICHL	3784	482-054000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/AIA/122 or PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/AIA/47 or PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. Fees submitted: ❑ Issue Fee ❑ Publication Fee (if required) ❑ Advance Order - # of Copies _____

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

❑ Electronic Payment via EFS-Web ❑ Enclosed check ❑ Non-electronic payment by credit card (Attach form PTO-2038)

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

❑ Applicant asserting small entity status. See 37 CFR 1.27

❑ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

LIFECORE Ex. 1002, p. 286

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/247,101	11/30/2020	Douglas G. Bayerlein	097208-0311	2042

26371 7590 08/31/2022

FOLEY & LARDNER LLP
3000 K STREET N.W.
SUITE 600
WASHINGTON, DC 20007-5109

EXAMINER	
ROBERTSON, JENNIFER MARY DEICHL	
ART UNIT	**PAPER NUMBER**
3784	

DATE MAILED: 08/31/2022

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

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OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 17/247,101	Applicant(s) Bayerlein et al.	
	Examiner JENNIFER ROBERTSON	Art Unit 3784	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to the amendment filed 08/22/2022.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are 1-8,10-11 and 13-19 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information , please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some* c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☐ Examiner's Amendment/Comment
6. ☐ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/JENNIFER ROBERTSON/
Primary Examiner, Art Unit 3784

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/247,101	Bayerlein et al.
	Examiner	Art Unit
	JENNIFER ROBERTSON	3784

CPC - Searched*		
Symbol	Date	Examiner
A63B22/02-0228,0285-0292	05/17/2022	JR

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Reviewed family application history	05/17/2022	JR
Applicant and inventor search	05/17/2022	JR
Text search	05/17/2022	JR
updated	08/25/2022	JR

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
	Text search	05/17/2022	JR
	updated	08/25/2022	JR

/JENNIFER ROBERTSON/ Primary Examiner, Art Unit 3784	

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/247,101	Bayerlein et al.
	Examiner	**Art Unit**
	JENNIFER ROBERTSON	3784

CPC								
Symbol							**Type**	**Version**
A63B	/	21	/	0053			F	2013-01-01
A63B	/	22	/	0023			I	2013-01-01
A63B	/	21	/	157			I	2013-01-01
A63B	/	22	/	0285			I	2013-01-01
A63B	/	21	/	0054			I	2015-10-01
A63B	/	22	/	0017			I	2015-10-01
A63B	/	21	/	0055			I	2015-10-01
A63B	/	22	/	02			I	2013-01-01
A63B	/	22	/	0235			I	2013-01-01
A63B	/	23	/	04			I	2013-01-01
A63B	/	2230	/	06			A	2013-01-01
A63B	/	2230	/	75			A	2013-01-01

CPC Combination Sets									
Symbol							**Type**	**Set**	**Ranking**	**Version**
	/		/							

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	17	
/JENNIFER ROBERTSON/ Primary Examiner, Art Unit 3784	25 August 2022	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office — Part of Paper No.: 20220825

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Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/247,101	Bayerlein et al.
	Examiner	**Art Unit**
	JENNIFER ROBERTSON	3784

INTERNATIONAL CLASSIFICATION				
CLAIMED				
A63B21/005	/	21	/	005
A63B22/00	/	22	/	00
A63B21/00	/	21	/	00
A63B22/02	/	22	/	02
A63B23/04	/	23	/	04

NON-CLAIMED				
	/		/	

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**

CROSS REFERENCES(S)						
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	17	
/JENNIFER ROBERTSON/ Primary Examiner, Art Unit 3784	25 August 2022	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office

Part of Paper No.: 20220825

LIFECORE Ex. 1002, p. 292

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/247,101	Bayerlein et al.
	Examiner	**Art Unit**
	JENNIFER ROBERTSON	3784

☑ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	17	
/JENNIFER ROBERTSON/ Primary Examiner, Art Unit 3784	25 August 2022	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office

Part of Paper No.: 20220825

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PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
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L3	27	L2 and height with threaded	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2016/10/23 05:45 PM
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L5	11	treadmill and deichl.xa.	(US-PGPUB; USPAT)	OR	OFF	OFF	2017/05/01 08:22 PM
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L31	1	("6095952").PN.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2018/07/06 01:35 PM
L32	33	(US-20140011642-$ or US-20120270705-$ or US-20080287266-$ or US-20060287165-$ or US-20100216607-$ or US-20170182356-$).did. or (US-8343016-$ or US-8308619-$ or US-6053848-$ or US-5709632-$ or US-3637206-$ or US-1211765-$ or US-5833577-$ or US-4406451-$ or US-4635928-$ or US-5897461-$ or US-5538489-$ or US-5411455-$ or US-8968161-$ or US-6152854-$ or US-8714346-$ or US-9352188-$ or US-6180210-$ or US-3669238-$ or US-3642279-$ or US-7513832-$ or US-9486681-$ or US-0219439-$ or US-9005085-$ or US-8864627-$ or US-6923746-$ or US-5577598-$).did. or (US-3489408-$).did.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2018/07/06 01:36 PM
L33	19	L32 and (resistance brak$3)	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2018/07/06 01:36 PM
L34	2765	A63B22/02-0292.cpc.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2018/07/06 01:39 PM
L35	644	L34 and manual	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2018/07/06 01:39 PM
L36	451	L35 and (resistance brak$3)	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	OFF	OFF	2018/07/06 01:39 PM

			IBM_TDB)				
L37	1956	A63B22/02-0228.cpc.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2018/07/06 01:45 PM
L38	324	L37 and manual and (resistance brak$3)	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2018/07/06 01:46 PM
L39	888	L37 not motor	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2018/07/06 01:46 PM
L40	383	L37 and resistance not motor	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2018/07/06 01:46 PM
L41	264	L37 and "one way"	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2018/07/06 01:54 PM
L42	40	L37 and slat	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2018/07/06 01:56 PM
L43	43	(US-20140011642-$ or US-20120270705-$ or US-20080287266-$ or US-20060287165-$ or US-20100216607-$ or US-20170182356-$ or US-20160263429-$).did. or (US-8343016-$ or US-8308619-$ or US-6053848-$ or US-5709632-$ or US-3637206-$ or US-1211765-$ or US-5833577-$ or US-4406451-$ or US-4635928-$ or US-5897461-$ or US-5538489-$ or US-5411455-$ or US-8968161-$ or US-6152854-$ or US-8714346-$ or US-9352188-$ or US-6180210-$ or US-3669238-$ or US-3642279-$ or US-7513832-$ or US-9486681-$ or US-0219439-$ or US-9005085-$ or US-8864627-$ or US-6923746-$ or US-5577598-$).did. or (US-	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2018/07/06 01:59 PM

		5104120-$ or US-3554541-$ or US-4363480-$ or US-4625962-$ or US-5110117-$ or US-5492517-$ or US-5429563-$ or US-4334676-$).did. or (US-3489408-$ or US-3332683-$).did.					
L44	12	L43 and plastic	(USPAT)	OR	OFF	OFF	2018/07/06 02:00 PM
L45	119	L37 and resistance with rear	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2018/07/06 02:02 PM
L46	34	L37 and resistance with rear with (pulley roller)	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2018/07/06 02:02 PM
L47	21	L37 and resistance same (flywheel friction$4) with rear with (pulley roller)	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2018/07/06 02:03 PM
L48	54	L37 and flywheel with rear	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2018/07/06 02:09 PM
L49	68	("1211765" | "3554541" | "3642279" | "4389047" | "4616822" | "4938473" | "5100127" | "5125361" | "5391129" | "5431612" | "5575740").PN. OR ("5709632").URPN.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2018/07/06 02:17 PM
L50	38	("1211765" | "20120010048" | "20120010053" | "20120157267" | "3489408" | "3637206" | "3642279" | "3669238" | "4614337" | "5470293" | "5577598" | "5709632" | "6053848" | "6146315" | "6348025").PN. OR ("8343016").URPN.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2018/07/06 02:24 PM
L51	11	L43 and height with adjust$4	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2018/07/06 02:29 PM
L52	1	("4023795").PN.	(USPAT; USOCR)	OR	OFF	OFF	2018/07/07 03:24 PM
L53	4	(("5709632") or ("5538489") or ("2399915")).PN.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2019/02/14 10:53 AM
L54	3	(("5378213") or	(US-PGPUB; USPAT;	OR	OFF	OFF	2019/12/19

		("20050202936") or ("20180001134")).PN.	USOCR)				10:06 AM
L55	2	(("6652424") or ("20120010048")).PN.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2019/12/19 10:07 AM
L56	0	(L54 L55) and clutch	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2019/12/19 10:08 AM
L57	44	(US-20140011642-$ or US-20120270705-$ or US-20080287266-$ or US-20060287165-$ or US-20100216607-$ or US-20170182356-$ or US-20160263429-$).did. or (US-8343016-$ or US-8308619-$ or US-6053848-$ or US-5709632-$ or US-3637206-$ or US-1211765-$ or US-5833577-$ or US-4406451-$ or US-4635928-$ or US-5897461-$ or US-5538489-$ or US-5411455-$ or US-8968161-$ or US-6152854-$ or US-8714346-$ or US-9352188-$ or US-6180210-$ or US-3669238-$ or US-3642279-$ or US-7513832-$ or US-9486681-$ or US-0219439-$ or US-9005085-$ or US-8864627-$ or US-6923746-$ or US-5577598-$).did. or (US-5104120-$ or US-3554541-$ or US-4363480-$ or US-4625962-$ or US-5110117-$ or US-5492517-$ or US-5429563-$ or US-4334676-$ or US-5688209-$).did. or (US-3489408-$ or US-3332683-$).did.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2019/12/19 10:08 AM
L58	353388	"4" and clutch	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2019/12/19 10:08 AM
L59	4	L57 and clutch	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2019/12/19 10:09 AM
L60	1	("4023795").PN.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2019/12/19 10:09 AM

L61	44	(US-20140011642-$ or US-20120270705-$ or US-20080287266-$ or US-20060287165-$ or US-20100216607-$ or US-20170182356-$ or US-20160263429-$).did. or (US-8343016-$ or US-8308619-$ or US-6053848-$ or US-5709632-$ or US-3637206-$ or US-1211765-$ or US-5833577-$ or US-4406451-$ or US-4635928-$ or US-5897461-$ or US-5538489-$ or US-5411455-$ or US-8968161-$ or US-6152854-$ or US-8714346-$ or US-9352188-$ or US-6180210-$ or US-3669238-$ or US-3642279-$ or US-7513832-$ or US-9486681-$ or US-0219439-$ or US-9005085-$ or US-8864627-$ or US-6923746-$ or US-5577598-$).did. or (US-5104120-$ or US-3554541-$ or US-4363480-$ or US-4625962-$ or US-5110117-$ or US-5492517-$ or US-5429563-$ or US-4334676-$ or US-5688209-$).did. or (US-3489408-$ or US-3332683-$).did.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2020/03/24 10:09 AM
L62	32	L61 and friction	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2020/03/24 10:09 AM
L63	1	("8308619").PN.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2020/03/24 10:10 AM
L64	1	("10561883").PN.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2020/03/24 12:44 PM
L65	19	((("WOODWAY") near3 ("USA") near3 ("INC"))).AS,AANM.	(USPAT)	OR	ON	ON	2020/03/24 12:46 PM
L66	319	((("BAYERLEIN") near3 ("Douglas")) OR (("EMONS") near3	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2020/03/24 12:47 PM

		("Vance")) OR (("OBLAMSKI") near3 ("Nicholas")) OR (("HOERIG") near3 ("Scott")) OR (("ZANK") near3 ("Matthew")) OR (("ZIMPEL") near3 ("Robert")) OR (("RICHARDS") near3 ("Joel"))).INV.					
L67	3227	A63B22/02-0292.cpc.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2020/03/24 12:48 PM
L68	403	L67 and @pd>="20180701"	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2020/03/24 12:48 PM
L69	0	L65 not L66	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2020/03/24 12:48 PM
L70	21	L66 and (clutch "one-way").clm.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2020/03/24 12:48 PM
L71	48	L68 and (clutch "one-way")	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2020/03/24 12:50 PM
L83	111	("2460017" | "2873848" | "3967720" | "4204673" | "4325421" | "4334676" | "4423864" | "4548316" | "4562920" | "4743008" | "4872664" | "5336146" | "5411279").pn. OR ("5538489").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2022/04/27 10:41 PM
L84	2900	A63B22/02-0228,0285-0292.cpc.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2022/04/27 10:43 PM
L85	12173	A63B22/02-0228,0285-0292.cpc.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO)	OR	ON	ON	2022/04/27 10:43 PM
L86	735	85 AND (one ADJ way)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV,	OR	ON	ON	2022/04/27 10:44 PM

			MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO)				
L87	291	85 AND (one ADJ way) WITH (bearing clutch)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO)	OR	ON	ON	2022/04/27 10:44 PM
L88	10562	A63B22/02.cpc.	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO)	OR	ON	ON	2022/04/27 10:52 PM
L89	40	((US-20080287266-A1 OR US-20060287165-A1 OR US-20100216607-A1 OR US-20160263429-A1).did. AND PGPB.dbnm.) OR ((US-8308619-B1 OR US-6053848-A OR US-5709632-A OR US-3637206-A OR US-1211765-A OR US-5833577-A OR US-4406451-A OR US-4635928-A OR US-5897461-A OR US-5538489-A OR US-5411455-A OR US-8968161-B2 OR US-6152854-A OR US-	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/05/17 11:11 AM

		8714346-B2 OR US-9352188-B2 OR US-6180210-B1 OR US-3669238-A OR US-3642279-A OR US-7513832-B2 OR US-0219439-A OR US-9005085-B2 OR US-8864627-B2 OR US-5577598-A OR US-5104120-A OR US-3554541-A OR US-4363480-A OR US-4625962-A OR US-5110117-A OR US-5492517-A OR US-5429563-A OR US-4334676-A OR US-5688209-A OR US-6923746-B1 OR US-2512911-A).did. AND USPT.dbnm.) OR ((US-3489408-A OR US-3332683-A).did. AND USOC.dbnm.)					
L90	40	((US-20080287266-A1 OR US-20060287165-A1 OR US-20100216607-A1 OR US-20160263429-A1).did. AND PGPB.dbnm.) OR ((US-8308619-B1 OR US-6053848-A OR US-5709632-A OR US-3637206-A OR US-1211765-A OR US-5833577-A OR US-4406451-A OR US-4635928-A OR US-5897461-A OR US-5538489-A OR US-5411455-A OR US-8968161-B2 OR US-6152854-A OR US-8714346-B2 OR US-9352188-B2 OR US-6180210-B1 OR US-3669238-A OR US-3642279-A OR US-7513832-B2 OR US-0219439-A OR US-9005085-B2 OR US-8864627-B2 OR US-5577598-A OR US-5104120-A OR US-3554541-A OR US-4363480-A OR US-	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/05/17 11:11 AM

		4625962-A OR US-5110117-A OR US-5492517-A OR US-5429563-A OR US-4334676-A OR US-5688209-A OR US-6923746-B1 OR US-2512911-A).did. AND USPT.dbnm.) OR ((US-3489408-A OR US-3332683-A).did. AND USOC.dbnm.)					
L91	25	89 AND resist$4	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/05/17 11:11 AM
L92	29	((("WOODWAY") near3 ("USA") near3 ("INC"))).AS,AANM.	(USPAT)	OR	ON	ON	2022/05/17 11:39 AM
L93	66	((("BAYERLEIN") near3 ("Douglas")) OR (("EMONS") near3 ("Vance")) OR (("OBLAMSKI") near3 ("Nicholas")) OR (("HOERIG") near3 ("Scott")) OR (("ZANK") near3 ("Matthew")) OR (("ZIMPEL") near3 ("Robert")) OR (("RICHARDS") near3 ("Joel"))).INV.	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/05/17 11:41 AM
L94	250	("0000001" OR "20040244521" OR "20070054781" OR "20090062165" OR "20110048809" OR "20110306527" OR "20120149613" OR "20130256064" OR "20140239760" OR "20150210348" OR "5018343" OR "5044470" OR "5891830" OR	(US-PGPUB; USPAT)	OR	ON	ON	2022/05/17 11:45 AM

		"6056072" OR "6958032" OR "7704191" OR "9595855" OR "8007408" OR "0000002" OR "0026914" OR "0061280" OR "0083844" OR "0104534" OR "0111018" OR "0118030" OR "0144224" OR "0144225" OR "0171353" OR "0179789" OR "0219439" OR "0254293" OR "0314674" OR "0374811" OR "0411986" OR "0641424" OR "0759296" OR "0767221" OR "0783769" OR "0931394" OR "10010748" OR "10143884" OR "1016729" OR "10183191" OR "10293204" OR "10478666" OR "10561883" OR "1211765" OR "20010018917" OR "20020147079" OR "20030148853" OR "20030186787" OR "20040018917" OR "20040077465" OR "20040097341" OR "20040241631" OR "20040242631" OR "20050009668" OR "20050202936" OR "20050209059" OR "20050272562" OR "20060003871" OR "20060003872" OR "20060122035" OR "20060287165" OR "20070021278" OR "20070027001" OR "20070123396" OR "20070167289" OR "20070202995" OR "20070225130" OR "20070298935" OR					

		"20080015094" OR "20080020907" OR "20080026914" OR "20080119332" OR "20080132385" OR "20080287266" OR "20090105047" OR "20090156363" OR "20090170666" OR "20090215589" OR "20090280960" OR "20100087298" OR "20100216607" OR "20100222182" OR "20110266091" OR "20110275497" OR "20120010048" OR "20120010053" OR "20120019973" OR "20120157267" OR "20120231934" OR "20120264569" OR "20120270705" OR "20140011642" OR "20140080679" OR "20140087922" OR "20140171272" OR "20150119202" OR "20150157895" OR "20150306456" OR "20150352400" OR "20150367175" OR "20160023039" OR "20160096064" OR "20160144224" OR "20160144225" OR "20160166877" OR "20160263429" OR "20160296789" OR "20160367851" OR "20170007886" OR "20170113093" OR "20170128769" OR "20170182356" OR "20170274248" OR "20170312582" OR "20180014755" OR "20180104534" OR "20180111018" OR "20180111023" OR "20180229065" OR "20190054344" OR "20190083843" OR "20190083844" OR "20190118030" OR "20190168067" OR "20190314674" OR "20190374811" OR					

		"20200171353" OR "20200179789" OR "20200188760" OR "20200254293" OR "2117957" OR "2399915" OR "2512911" OR "2842365" OR "3637206" OR "3642279" OR "3870297" OR "3968543" OR "4334676" OR "4389047" OR "4406451" OR "4544152" OR "4548405" OR "4576352" OR "4614337" OR "4635928" OR "4659074" OR "4726581" OR "4886266" OR "4938469" OR "5031901" OR "5094447" OR "5145480" OR "5162988" OR "5242339" OR "5290205" OR "5310392" OR "5368532" OR "5378213" OR "5411279" OR "5411455" OR "5431612" OR "5470293" OR "5492517" OR "5538489" OR "5575740" OR "5577598" OR "5607376" OR "5616951" OR "5643144" OR "5669856" OR "5683332" OR "5688209" OR "5709632" OR "5856736" OR "5887579" OR "5897461" OR "6042514" OR "6053848" OR "6095952" OR "6146315" OR "6152854" OR "6180210" OR "6328676" OR					

		"6334836" OR "6334839" OR "6348025" OR "6454679" OR "6468189" OR "6500097" OR "6616578" OR "6652424" OR "6740009" OR "6824502" OR "6837830" OR "6893382" OR "6923746" OR "7090620" OR "7115073" OR "7179205" OR "7410449" OR "7560822" OR "7608023" OR "7618345" OR "7717828" OR "7789800" OR "7806805" OR "7837596" OR "7862483" OR "8007422" OR "8075450" OR "8152177" OR "8206269" OR "8241187" OR "8308619" OR "8343016" OR "8496566" OR "8512209" OR "8585561" OR "8676170" OR "8690738" OR "8734300" OR "8864627" OR "8876668" OR "8920347" OR "8986169" OR "9005085" OR "9039580" OR "9044635" OR "9192810" OR "9216316" OR "9233272" OR "9254409" OR "9305141" OR "9314667" OR "9352188" OR "9429511" OR "9498696" OR "9694234" OR "9713742" OR "9824110" OR "9914015" OR					

		"9956450" OR "9974997" OR "D333887" OR "D484554" OR "D562416").pn.					
L95	8	("D566209" OR "D672827" OR "D682372" OR "D736866" OR "D751156" OR "D788792" OR "D820362" OR "D837312").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2022/05/17 11:45 AM
L96	21	89 AND handle	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/05/17 11:52 AM
L97	12544	A63B22/02-0228,0285-0292.cpc.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO)	OR	ON	ON	2022/08/25 11:27 AM
L98	81	97 AND @pd>="20220515"	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA,	OR	ON	ON	2022/08/25 11:27 AM

			VN); FPRS; EPO; JPO)				
L99	70	((("BAYERLEIN") near3 ("Douglas")) OR (("EMONS") near3 ("Vance")) OR (("OBLAMSKI") near3 ("Nicholas")) OR (("HOERIG") near3 ("Scott")) OR (("ZANK") near3 ("Matthew")) OR (("ZIMPEL") near3 ("Robert")) OR (("RICHARDS") near3 ("Joel"))).INV.	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/08/25 11:27 AM
L100	31	((("WOODWAY") near3 ("USA") near3 ("INC"))).AS,AANM.	(USPAT)	OR	ON	ON	2022/08/25 11:27 AM
L101	70	((("BAYERLEIN") near3 ("Douglas")) OR (("EMONS") near3 ("Vance")) OR (("OBLAMSKI") near3 ("Nicholas")) OR (("HOERIG") near3 ("Scott")) OR (("ZANK") near3 ("Matthew")) OR (("ZIMPEL") near3 ("Robert")) OR (("RICHARDS") near3 ("Joel"))).INV.	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/08/25 11:27 AM
L102	4	(100 101) AND @pd>="20220515"	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO)	OR	ON	ON	2022/08/25 11:28 AM

PE2E SEARCH - Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
N78	0	(treadmill and bearing and belt and braking and safety and race).clm.	(US-PGPUB; USPAT)	OR	ON	ON	2020/10/02 11:12 AM
N79	1	(treadmill and belt and	(US-PGPUB; USPAT)	OR	ON	ON	2020/10/02

		braking and safety and ring).clm.					11:12 AM
N80	0	(treadmill and belt and braking and safety and race).clm.	(US-PGPUB; USPAT)	OR	ON	ON	2020/10/02 11:13 AM
N81	5	(treadmill AND pulley AND belt AND curved AND rotation AND prevented).clm.	(US-PGPUB; USPAT)	OR	ON	ON	2022/05/17 01:37 PM

To: ipdocketing@foley.com,,
From: PAIR_eOfficeAction@uspto.gov
Cc: PAIR_eOfficeAction@uspto.gov
Subject: Private PAIR Correspondence Notification for Customer Number 26371

Aug 31, 2022 03:31:17 AM

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SUITE 600
WASHINGTON, DC 20007-5109
UNITED STATES

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Application	Document	Mailroom Date	Attorney Docket No.
17247101	NOA	08/31/2022	097208-0311

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UNITED STATES PATENT AND TRADEMARK OFFICE

PATENT APPLICATION INFORMATION RETRIEVAL SYSTEM

Atty. Dkt. No. 097208-0311

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Inventor Name:	Douglas G. Bayerlein
Title:	MANUALLY POWERED TREADMILL
Appl. No.:	17/247,101
Filing Date:	11/30/2020
Examiner:	ROBERTSON, JENNIFER MARY DEICHL
Art Unit:	3784
Confirmation Number:	2042

ISSUE FEE TRANSMITTAL

Mail Stop Issue Fee
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

Enclosed herewith please find Issue Fee Transmittal Form PTOL-85(B).

Fees in the amount of $600.00 for payment of the Issue Fee are being paid by credit card via EFS-Web.

The Commissioner is hereby authorized to charge any additional fees which may be required for this application to Deposit Account No. 19-0741.

Respectfully submitted,

Date: September 1, 2022

By: /R.J. McKenna/

FOLEY & LARDNER LLP
Customer Number: 26371
Telephone: (414) 297-5723
Facsimile: (414) 297-4900

Richard J. McKenna
Attorney for Applicant
Registration No. 35,610

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

26371 7590 08/31/2022

FOLEY & LARDNER LLP
3000 K STREET N.W.
SUITE 600
WASHINGTON, DC 20007-5109

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/247,101	11/30/2020	Douglas G. Bayerlein	097208-0311	2042

TITLE OF INVENTION: MANUALLY POWERED TREADMILL

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$600	$0.00	$0.00	$600	11/30/2022

EXAMINER	ART UNIT	CLASS-SUBCLASS
ROBERTSON, JENNIFER MARY DEICHL	3784	482-054000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/AIA/122 or PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/AIA/47 or PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Foley & Lardner LLP
2
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: Woodway USA, Inc.

(B) RESIDENCE: (CITY and STATE OR COUNTRY): Waukesha, Wisconsin

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ☒ Corporation or other private group entity ❑ Government

4a. Fees submitted: ☒ Issue Fee ❑ Publication Fee (if required) ❑ Advance Order - # of Copies _____

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

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5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

❑ Applicant asserting small entity status. See 37 CFR 1.27

❑ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /R.J. McKenna/ Date Sept. 1, 2022

Typed or printed name Richard J. McKenna Registration No. 35610

LIFECORE Ex. 1002, p. 319

Electronic Patent Application Fee Transmittal

Application Number:	17247101
Filing Date:	30-Nov-2020
Title of Invention:	MANUALLY POWERED TREADMILL
First Named Inventor/Applicant Name:	Douglas G. Bayerlein
Filer:	Richard J. McKenna/Tonya Tetzl
Attorney Docket Number:	097208-0311

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
UTILITY APPL ISSUE FEE	2501	1	600	600

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**600**

Electronic Acknowledgement Receipt

EFS ID:	46539527
Application Number:	17247101
International Application Number:	
Confirmation Number:	2042
Title of Invention:	MANUALLY POWERED TREADMILL
First Named Inventor/Applicant Name:	Douglas G. Bayerlein
Customer Number:	26371
Filer:	Richard J. McKenna/Tonya Tetzl
Filer Authorized By:	Richard J. McKenna
Attorney Docket Number:	097208-0311
Receipt Date:	01-SEP-2022
Filing Date:	30-NOV-2020
Time Stamp:	19:50:47
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$600
RAM confirmation Number	E202291J51194026
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	097208-0311_IssueFee-Transmittal.pdf	111574 0942e01540d5b78b0d463a9689c4890130b64c4d	no	2
Warnings:					
Information:					
2	Issue Fee Payment (PTO-85B)	097208-0311_PartB_IssueFeeTransmittalX.pdf	362606 9e47dda70f5ceeea4da7aa95aaeb593c8e917245	no	1
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	38241 06b8959a48ec1053d0a1e14d99f941f018773adb	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	512421		

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National Stage of an International Application under 35 U.S.C. 371

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New International Application Filed with the USPTO as a Receiving Office

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United States Patent and Trademark Office
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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/247,101	10/11/2022	11465005	097208-0311	2042

26371 7590 09/21/2022

FOLEY & LARDNER LLP
3000 K STREET N.W.
SUITE 600
WASHINGTON, DC 20007-5109

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 110 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

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INVENTOR(s) (Please see PAIR WEB site http://pair.uspto.gov for additional inventors):

Douglas G. Bayerlein, Oconomowoc, WI;
Vance E. Emons, Hartland, WI;
Nicholas A. Oblamski, Waukesha, WI;
Scott D. Hoerig, Brookfield, WI;
Matthew J. Zank, Milwaukee, WI;

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Woodway USA, Inc., Waukesha, WI;

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From: PAIR_eOfficeAction@uspto.gov
Cc: PAIR_eOfficeAction@uspto.gov
Subject: Private PAIR Correspondence Notification for Customer Number 26371

Sep 22, 2022 03:34:12 AM

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Application	Document	Mailroom Date	Attorney Docket No.
17247101	ISSUE.NTF	09/21/2022	097208-0311

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