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(54) **Title:** PULLING TOOL FOR HUMAN-POWERED CYCLING VEHICLE

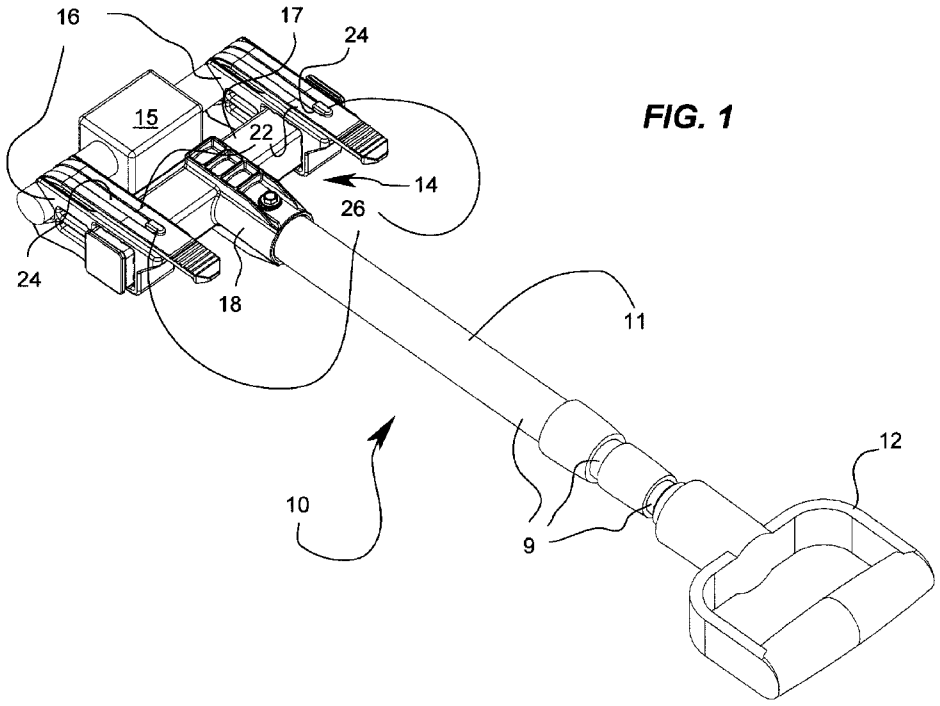


FIG. 1

(57) **Abstract:** A pulling tool for a human-powered wheeled vehicle comprising an arm member including a telescoping shaft member and a handle member; and a connecting member configured to releasably connect to a handlebar of the human-powered wheeled vehicle such that the training tool can be used to direct and control the human-powered wheeled vehicle allowing a rider to learn how to operate the human-powered wheeled vehicle, wherein the connecting member includes a shaft receiving member configured to receive the telescoping shaft member, the shaft receiving member connected to a rectangular support element configured to receive a pair of prong members.

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PULLING TOOL FOR HUMAN-POWERED CYCLING VEHICLE

BACKGROUND OF THE INVENTION

1. Field of the Invention

[1] The present invention relates generally to training tools but more particularly to a pulling and training tool for a human-powered wheeled vehicle.

2. Description of Related Art

[2] It is well known that for a young child, it can take some time before they can make sense of the interaction between pedals, pedaling, and moving the wheels of a tricycle. The same goes with using the handle bar to turn the wheel and direct the tricycle in a given direction. It has been shown that pulling or pushing a tricycle helps the child understand the relationship between the motion of the tricycle and the motion of the pedals as well as understanding the action of the handle bar. Currently, there is a need for a training tool for a human-powered wheeled vehicle, such as a tricycle. Besides training children. The same tool can also be used for pulling when the child is tired of pedaling or too slow.

BRIEF SUMMARY OF THE INVENTION

[3] In one embodiment of the present invention a pulling and training tool for a human-powered cycling or wheeled vehicle is provided, comprising an arm member including a

telescoping shaft member and a handle member; and a connecting member configured to releasably connect to a handlebar of the human-powered wheeled vehicle such that the pulling tool can be used for pulling and controling the human-powered wheeled vehicle allowing a rider to learn how to operate the human-powered wheeled vehicle, wherein the connecting member includes a shaft receiving member configured to receive the telescoping shaft member, the shaft receiving member connected to a rectangular support element configured to receive a pair of prong members.

In one embodiment, the pair of prong members is attached to a first and a second distal end of the rectangular support element. In another embodiment, a pair of end caps configured to secure the pair of prong members to the rectangular support element is provided. In one embodiment, each prong member of the pair of prong members has a cradle formed at its distal end, wherein the cradle is configured to receive the handlebar. In another embodiment, a pair of stretchable straps configured to secure the handlebar into the cradle is provided, wherein each strap of the pair of stretchable straps is fixedly attached to a bottom portion of each prong member of the pair of prong members. In yet another embodiment, each strap of the pair of stretchable straps are secured in each prong member of the pair of prong members via a peg inserted in an elongated slot positioned on a top portion of each prong member. In one embodiment, the telescoping shaft member is configured to be transferable from a retracted position to a protracted position when the plurality of shaft sections is expanded.

[4] In one embodiment, the telescoping shaft member includes a plurality of shaft sections. In one embodiment, the human-powered wheeled vehicle is a tricycle.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[5] Other features and advantages of the present invention will become apparent when the following detailed description is read in conjunction with the accompanying drawings, in which:

[6] FIG. 1 is a pulling tool for a human-powered wheeled vehicle according to an embodiment of the present invention.

[7] FIG. 2A is a side view of the pulling tool for a human-powered wheeled vehicle according to an embodiment of the present invention.

[8] FIG. 2B is a cross-sectional view taken along section line A-A of FIG. 2A.

[9] FIG. 2C is a detailed view of detail B of FIG. 2B.

[10] FIG. 3A is an exploded view of the pulling tool for a human-powered wheeled vehicle according to an embodiment of the present invention.

[11] FIG. 3B is a detailed view of detail C of FIG. 3A.

[12] FIG. 4A showing a telescoping shaft member of the pulling tool in a retracted position according to an embodiment of the present invention.

[13] FIG. 4B showing the telescoping shaft member of the pulling tool in a protracted position according to an embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[14] The following description is provided to enable any person skilled in the art to make and use the invention and sets forth the best modes contemplated by the inventor of carrying out his invention. Various modifications, however, will remain readily apparent to those skilled in the art, since the general principles of the present invention have been defined herein to specifically provide a pulling tool for a human-powered wheeled vehicle.

[15] Referring now to any of the accompanying figures FIGS. 1 – 4B, a pulling tool for a human-powered wheeled vehicle is illustrated. The pulling tool comprises an arm member 10 and a connecting member 14 configured to be connected to handlebars 15 of a human-powered wheeled vehicle (not illustrated). The arm member includes a telescoping shaft member 11 and a handle member 12. In one embodiment, the handle member is attached to one end of the telescoping shaft member, and the other end attaches to a shaft receiving member 18 of the connecting member.

[16] In one embodiment, the connecting member further includes a rectangular support element 17 having a pair of prong members 16, wherein the prong members are attached to the distal ends of the rectangular support element. A pair of end caps 19 is configured to secure the pair of prong members to the rectangular support element. In one embodiment, the pair of end caps are sized and shaped to fit the distal ends of the rectangular support element. In one embodiment each prong member of the pair of prong members has a cradle 20 formed at its distal end, wherein the cradle is configured to receive a handlebar 15, such as a tricycle handlebar.

[17] In one embodiment, a strap 22 in each prong member secures the handle bar in the cradle. In one embodiment, the straps are stretchable, and fixedly attached to a bottom portion 23 of each prong member. In one embodiment, the straps are secured in each prong member via a peg 26 inserted in elongated slot 24. Best seen in FIG. 1 and FIG. 2A, the straps wrap around each prong

member and specifically each cradle, wherein the straps are fixedly attached to the bottom portion and releasably attached at a top portion 25 via the peg as previously described.

[18] Now referring to FIGS. 4A-B, the telescoping shaft member includes a plurality of shaft sections 9 to extend the length of the shaft member as well known in the art. In the preferred embodiment, there are three shaft sections but there could be more or less shaft section depending on the preferred length desired of the shaft member. FIG. 4A shows the telescoping shaft member in a retracted position where as FIG. 4B shows the telescoping shaft member in a protracted position.

[19] During operation, the pulling tool attaches the handlebars of a human-powered wheeled vehicle, such as a tricycle such that when a child rides the vehicle a trainer can hold of the handle member of the arm member can direct the vehicle allowing the child to feel in control creating a bio-feedback reaction helping the child learn to ride the vehicle faster. Also, it is a particular advantage of the invention that the pulling tool allowing the child to feel safe and secure known the trainer, such as a parent is there to guide them. Further, the pulling tool can be used in situation when the child is tired of pedaling or is pedaling too slow.

[20] Although the invention has been described in considerable detail in language specific to structural features, it is to be understood that the invention defined in the appended claims is not necessarily limited to the specific features described. Rather, the specific features are disclosed as exemplary preferred forms of implementing the claimed invention. Stated otherwise, it is to be understood that the phraseology and terminology employed herein, as well as the abstract, are for the purpose of description and should not be regarded as limiting. Therefore, while exemplary illustrative embodiments of the invention have been described, numerous variations and alternative embodiments will occur to those skilled in the art. Such variations and alternate embodiments are contemplated, and can be made without departing from the spirit and scope of the invention.

[21] It should further be noted that throughout the entire disclosure, the labels such as left, right, front, back, top, bottom, forward, reverse, clockwise, counter clockwise, up, down, or other similar terms such as upper, lower, aft, fore, vertical, horizontal, oblique, proximal, distal, parallel, perpendicular, transverse, longitudinal, etc. have been used for convenience purposes only and are not intended to imply any particular fixed direction or orientation. Instead, they are used to reflect relative locations and/or directions/orientations between various portions of an object.

[22] In addition, reference to "first," "second," "third," and etc. members throughout the disclosure (and in particular, claims) are not used to show a serial or numerical limitation but instead are used to distinguish or identify the various members of the group.

CLAIMS

What is claimed is:

1. A pulling tool for a human powered wheeled vehicle comprising:

an arm member including a telescoping shaft member and a handle member; and

a connecting member configured to releasably connect to a handlebar of the human-powered wheeled vehicle such that the pulling tool can be used to direct and control the human-powered wheeled vehicle allowing a rider to be pulled and learn how to operate the human-powered wheeled vehicle, wherein the connecting member includes a shaft receiving member configured to receive the telescoping shaft member, the shaft receiving member connected to a rectangular support element configured to receive a pair of prong members.

2. The pulling tool of claim 1, wherein the pair of prong members is attached to a first and a second distal end of the rectangular support element.

3. The pulling tool of claim 2, further comprising a pair of end caps configured to secure the pair of prong members to the rectangular support element.

4. The pulling tool of claim 3, wherein each prong member of the pair of prong members has a cradle formed at its distal end, wherein the cradle is configured to receive the handlebar.

5. The pulling tool of claim 4, further comprising a pair of stretchable straps configured to secure the handlebar into the cradle, wherein each strap of the pair of stretchable straps is fixedly attached to a bottom portion of each prong member of the pair of prong members.

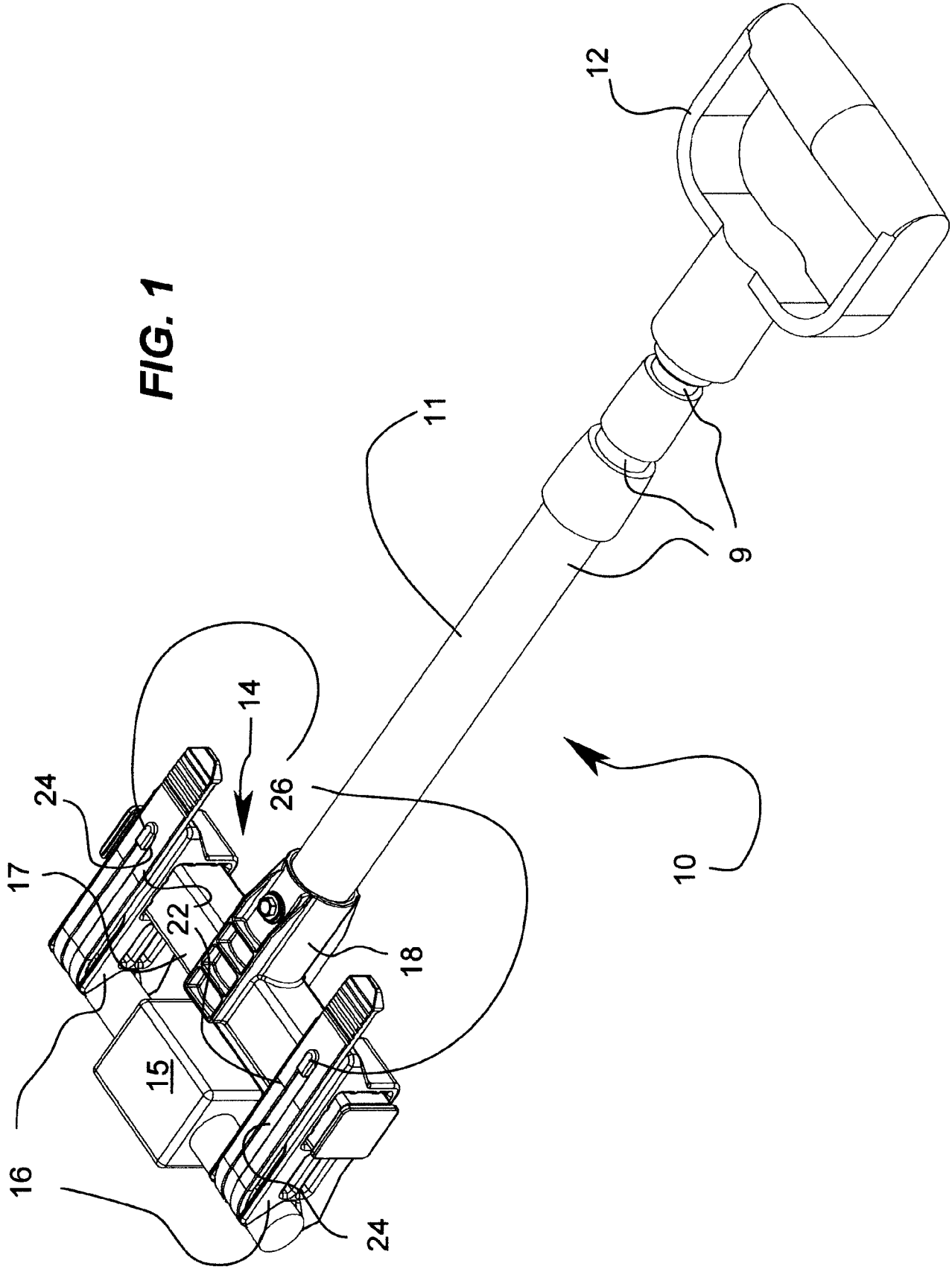
6. The pulling tool of claim 5, wherein each strap of the pair of stretchable straps are secured in each prong member of the pair of prong members via a peg inserted in an elongated slot positioned on a top portion of each prong member.

7. The pulling tool of claim 1, wherein the telescoping shaft member includes a plurality of shaft sections.

8. The pulling tool of claim 7, wherein the telescoping shaft member is configured to be transferable from a retracted position to a protracted position when the plurality of shaft sections is expanded.

9. The pulling tool of claim 1, wherein the human-powered wheeled vehicle is a tricycle.

FIG. 1



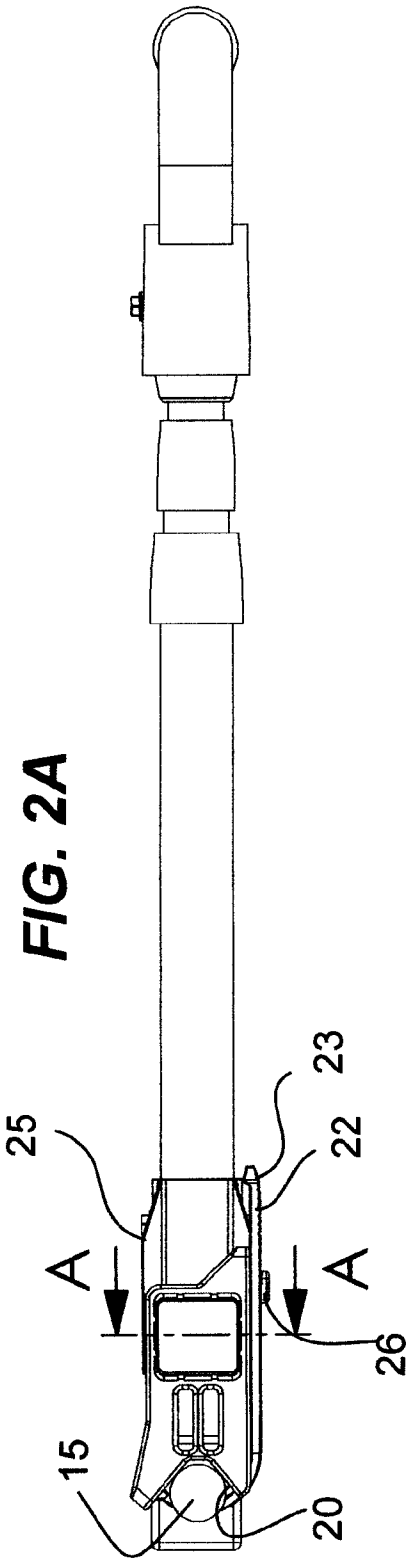


FIG. 2A

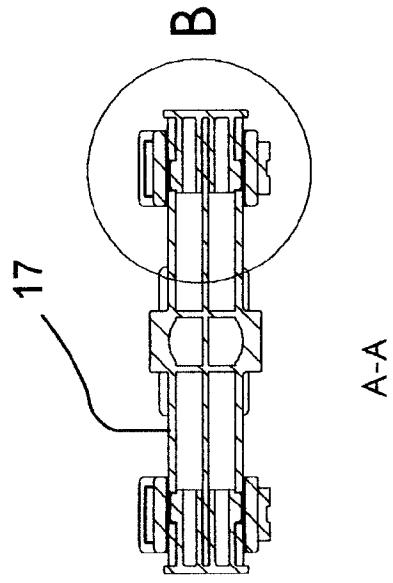


FIG. 2B

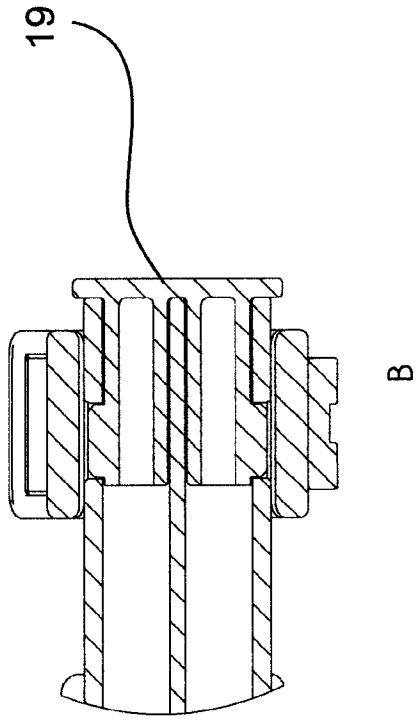


FIG. 2C

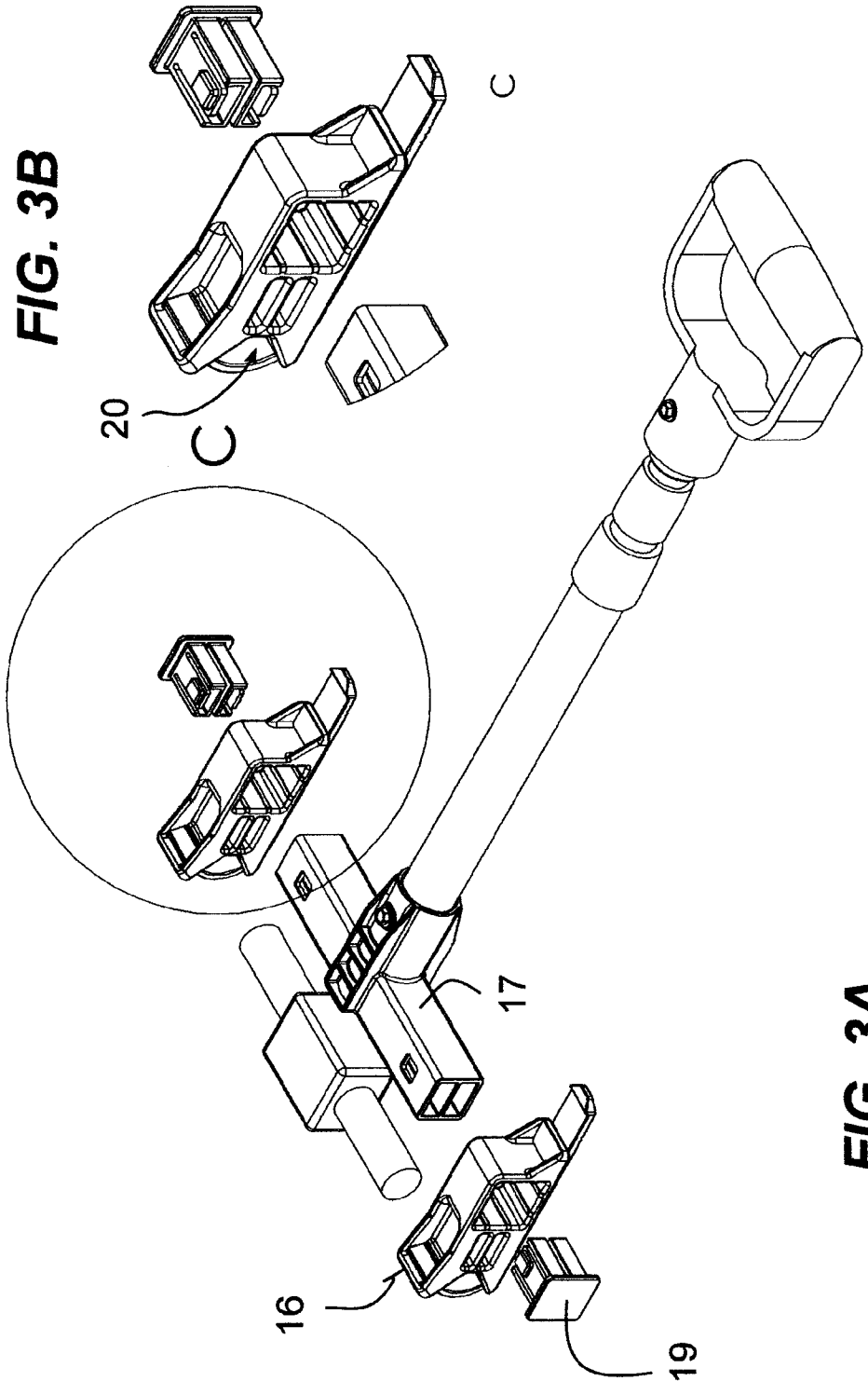


FIG. 3B

FIG. 3A

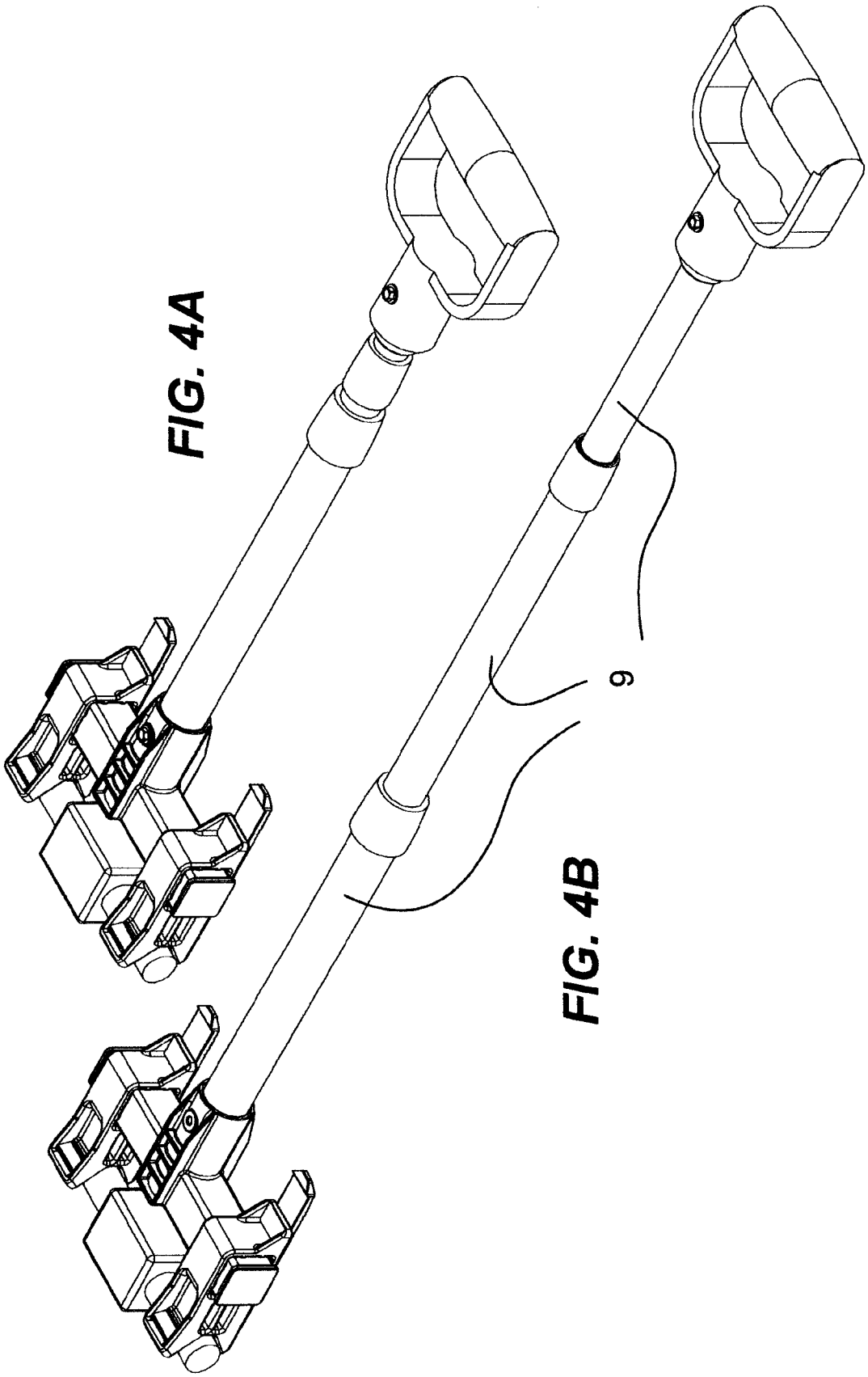


FIG. 4A

FIG. 4B

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CA2017/000195

A. CLASSIFICATION OF SUBJECT MATTER
IPC: ***B62H 7/00*** (2006.01) , ***B62K 9/02*** (2006.01) , ***G05G 1/00*** (2006.01)

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC: B62H-007/00; B62K-009/02; G05G-001/00; B62K-005/00; B62K-005/02; B62H-003/02
CPC: B62H-007/00; B62K-009/02; G05G-001/00; B62K-005/00; B62K-005/02; B62H-003/02

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic database(s) consulted during the international search (name of database(s) and, where practicable, search terms used)
Questel Orbit (FAMPAT)
PULL, TOW, CHIL+ OR KID+, TEACH, TRAIN, LEARN+, TRICYCLE, TRAINING W WHEELS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US8801024B2 (GRAINGER, H) 12 August 2014 (12-08-2014) *description, figures; arm 1, handle 7, connecting member 5, 10, support 2, prongs 6 *	1-4, 7-9
Y	GB2444556B (COLLING, S) 6 July 2011 (6-07-2011) *description, figures, shaft 3, handle 7, integrated support member 9, prongs 11, 13*	1-9
A	US8292317B2 (WINTERS, M) 23 October 2012 (23-10-2012) *description, figures; shaft 26, handle 24, prongs 30*	1
Y	WO2014024169A1 (KUSCHLAN, F) 13 February 2014 (13-02-2014) * shaft 48, handle 60, prongs 64 *	1-9
A	FR2823709A1 (CHAPLET, D) 25 October 2002 (25-10-2002) *the whole document*	1

☐ Further documents are listed in the continuation of Box C.

☑ See patent family annex.

*	Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E"	earlier application or patent but published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search 31 October 2017 (31-10-2017)	Date of mailing of the international search report 06 November 2017 (06-11-2017)
Name and mailing address of the ISA/CA Canadian Intellectual Property Office Place du Portage I, C114 - 1st Floor, Box PCT 50 Victoria Street Gatineau, Quebec K1A 0C9 Facsimile No.: 819-953-2476	Authorized officer Darren Hubley (819) 639-7856

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CA2017/000195

Patent Document Cited in Search Report	Publication Date	Patent Family Member(s)	Publication Date
US8801024B2	12 August 2014 (12-08-2014)	US2013320643A1	05 December 2013 (05-12-2013)
		GB201209774D0	18 July 2012 (18-07-2012)
		GB2505636A	12 March 2014 (12-03-2014)
		GB2505636B	03 May 2017 (03-05-2017)
GB2444556B	06 July 2011 (06-07-2011)	GB0624441D0	17 January 2007 (17-01-2007)
		GB2444556A	11 June 2008 (11-06-2008)
US8292317B1	23 October 2012 (23-10-2012)	None	
WO2014024169A1	13 February 2014 (13-02-2014)	EP2882636A1	17 June 2015 (17-06-2015)
		ITPD20120245A1	11 February 2014 (11-02-2014)
FR2823709A1	25 October 2002 (25-10-2002)	None	