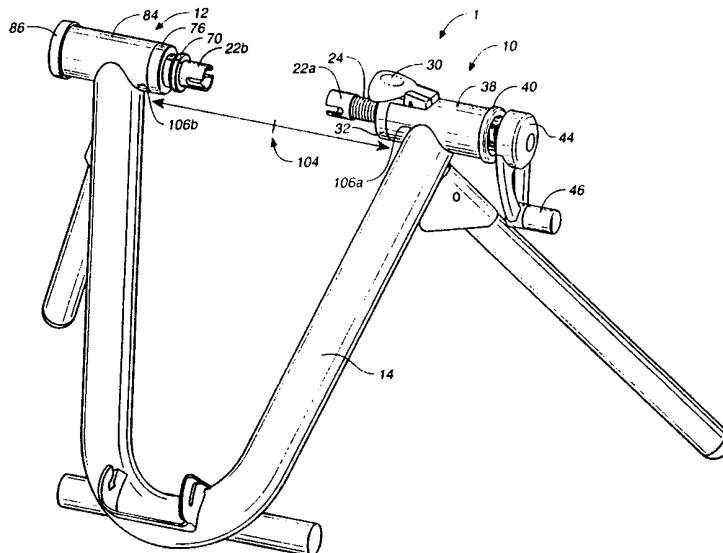




## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>6</sup> : <b>A63B 22/08</b>	<b>A3</b>	(11) International Publication Number: <b>WO 99/02391</b>  (43) International Publication Date: 21 January 1999 (21.01.99)
<p>(21) International Application Number: PCT/US98/14243</p> <p>(22) International Filing Date: 9 July 1998 (09.07.98)</p> <p>(30) Priority Data: 08/890,585 9 July 1997 (09.07.97) US 09/074,471 7 May 1998 (07.05.98) US</p> <p>(71) Applicant: CYCLE-OPS PRODUCTS, INC. [US/US]; 100 Vandam, New York, NY 10013 (US).</p> <p>(72) Inventors: MCCAFFREY, Robert, J.; 221 Lakeshore Drive, Dracut, ME 01826 (US). PAWELKA, Gerhard, Edward-Franz; 33 Forest Street, Lexington, MA 02173 (US). QUINTUS-BOSZ, Harald; 9 Ashland Street, Arlington Heights, MA 02174 (US).</p> <p>(74) Agent: SOBON, Wayne, P.; Fish &amp; Richardson P.C., Suite 100, 2200 Sand Hill Road, Menlo Park, CA 94025 (US).</p>	<p>(81) Designated States: AU, BR, CA, JP, MX, NZ, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).</p> <p><b>Published</b> <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i></p> <p>(88) Date of publication of the international search report: 29 April 1999 (29.04.99)</p>	

## (54) Title: WHEEL ATTACHMENT



## (57) Abstract

One apparatus, and method for removably holding an axle includes an axle attachment (10), the axle attachment removably attachable to an end of the axle, a shaft (24) coupled to the axle attachment, the shaft having threads (25), and a latch (30) that selecting engages the threads of the shaft. Another apparatus, and method for removably holding an axle includes an axle attachment (11), the axle attachment removably attachable to an end of the axle, a shaft (72) coupled to the axle attachment, the shaft having at least one first position holder (74), and a housing (84) around the shaft, the housing having at least one second position holder (92), the second position holder selecting mating with the first position holder.

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INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US98/14243

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) : A63B 22/08  
US CL : 211/17, 20, 22; 482/57, 60-65, 903

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)

U.S. : 211/17, 20, 22; 482/57, 60-65, 903

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

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

APS  
Search Terms: shaft, threads, latch, crossed terms with class 482

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4,938,475 A (SARGEANT et al.) 03 July 1990, entire disclosure.	1-9
Y	US 4,969,642 A (PHILLIPS) 13 November 1990, entire disclosure.	10-21
Y	US 4,603,854 A (KRAUSZ) 05 August 1986, entire document.	10-21

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
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*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

11 FEBRUARY 1999

Date of mailing of the international search report

15 MAR 1999

Name and mailing address of the ISA/US  
Commissioner of Patents and Trademarks  
Box PCT  
Washington, D.C. 20231

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INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US98/14243

**Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)**

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos. :  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos. :  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3.  Claims Nos. :  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

Please See Extra Sheet.

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest  The additional search fees were accompanied by the applicant's protest.  
 No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US98/14243

**BOX II. OBSERVATIONS WHERE UNITY OF INVENTION WAS LACKING**

This ISA found multiple inventions as follows:

This application contains the following inventions or groups of inventions which are not so linked as to form a single inventive concept under PCT Rule 13.1. In order for all inventions to be searched, the appropriate additional search fees must be paid.

Group I, claims 1-9, drawn to an apparatus, having a shaft with threads that are selectively engaged to a latch, for holding an axle.

Group II, claims 10-21, drawn to an apparatus, having a shaft with at least one position holder, and a housing around the shaft having at least another position holder which mates with the first position holder, for holding an axle.

Each group has its own technologically distinct features; thus unity of invention is lacking.