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(54) Title: PORTABLE REMOVABLE APPARATUS FOR POWERING A BICYCLE

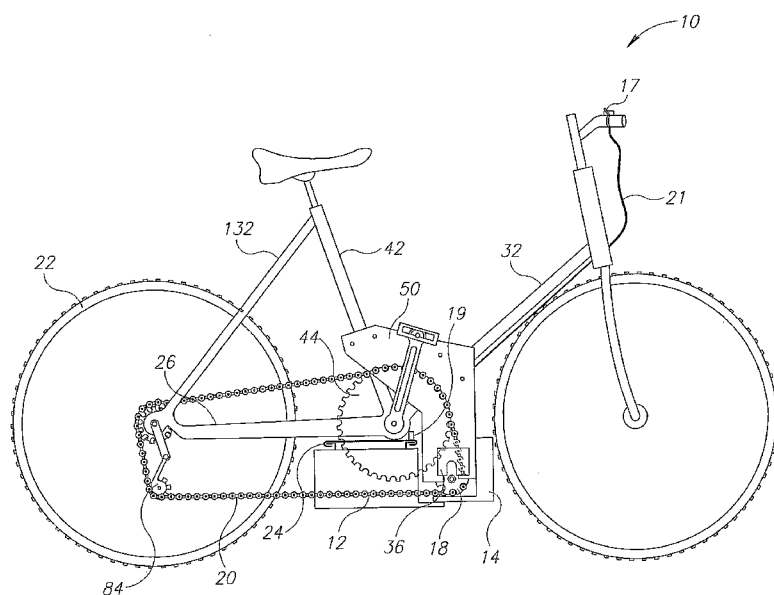


FIG.1

(57) Abstract: A portable removable apparatus for powering a bicycle driven by a chain is disclosed. The apparatus includes a portable and removable drive unit for propelling the bicycle. The drive unit includes an electric motor and a shaft rotatable by the motor, with a sprocket coaxially affixed to the shaft and adapted to engage to a portion of the chain. The apparatus also includes a bracket adapted to be fixed to a frame of the bicycle and to be in bearing contact with the shaft for supporting the shaft. The apparatus further includes at least one additional support for supporting the drive unit on the bicycle frame so that lateral torque on the drive unit when engaged with the chain and operating is substantially eliminated. Another embodiment is disclosed in which the drive unit includes a flexible belt looped around a drive pulley connected to the motor and an idler pulley.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL 09/00110

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - B62D 61/02 (2009.01)

USPC - 180/220

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)

USPC - 180/220

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC - 180/219-224, 228, 231 (keyword limited, see terms below)

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

PubWEST(PGPB,USPT,EPAB,JPAB); Google. Search Terms Used: electric, bicycle, bike, motor, portable, removable, power, take off, uninstall, derailleur, variable ratio transmission, gear shift, guide, tension, jockey, drive, idle, pulley, belt, timing belt, bearing, sprocket, gear, shaft, chain, bracket, support, clamp, torque,

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2005/009831 A2 (Young) 03 February 2005 (03.02.2005)	1, 3-13
-----	entire document, especially: Fig. 3a, 5, 7, 9 pg. 5, ln 28-33 pg. 6, ln 7-16, pg. 7, ln 26-29, pg. 10, ln 26-33, pg. 11, ln 1, pg. 16, ln 8-22, pg. 17, ln 1-29, pg. 19, ln 9-33, pg. 20, ln 29-33 to pg. 21, ln 1-4, pg. 23, ln 13-17	-----
Y		2, 14-24
Y	US 5,934,401 A (Mayer et al.) 10 August 1999 (10.08.1999) Fig. 2, col. 4, ln 1-24	2, 23
Y	US 6,011,366 A (Murakami et al.) 04 January 2000 (04.01.2000) Fig. 2, 3, col. 5, ln 13-54	14-22, 24
A	WO 2006/090213 A2 (Sasnowski, et al.) 31 August 2006 (31.08.2006) entire document	1-24

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