

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
27 April 2006 (27.04.2006)

PCT

(10) International Publication Number  
**WO 2006/045107 A3**

(51) International Patent Classification:

*B60B 1/00* (2006.01)      *B62B 3/00* (2006.01)  
*B60B 3/00* (2006.01)      *B62B 11/00* (2006.01)  
*B62B 1/00* (2006.01)

(21) International Application Number:

PCT/US2005/038221

(22) International Filing Date: 18 October 2005 (18.10.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/619,581      18 October 2004 (18.10.2004)      US

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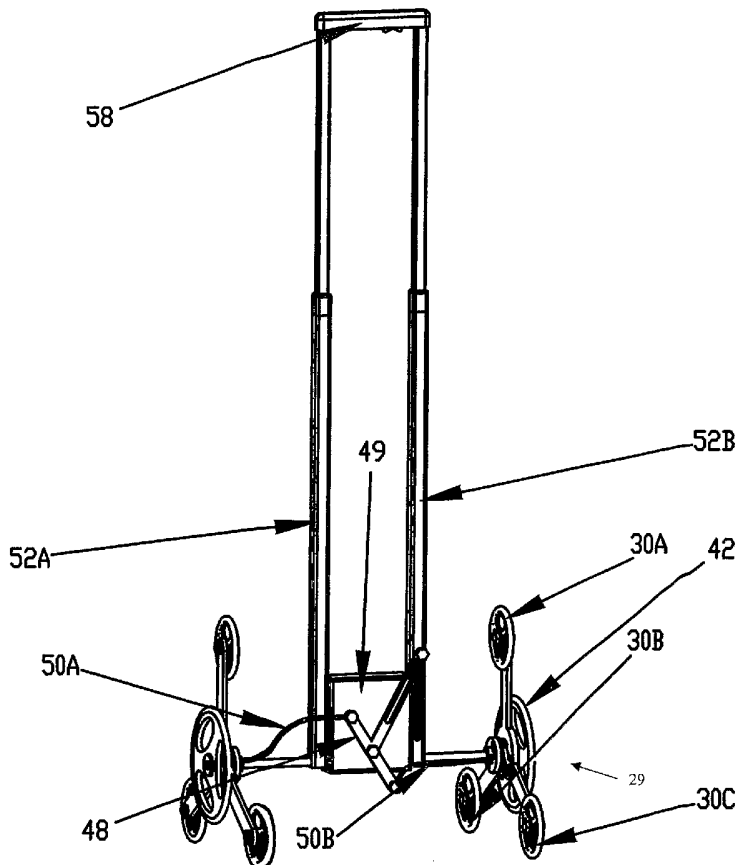
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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: FOLDABLE SPIDER WHEEL FOR ASCENDING AND DESCENDING STAIRS



(57) Abstract: A collapsible spider wheel assembly on a towing device enables storage of the device into a standard rectangular space. Once collapsed, the collapsible spider assembly is protected within the body of the towing device. Furthermore, actuation of the folding and unfolding may be accomplished through the usual telescoping of the carrying handle of such a device, such as in a suitcase embodiment. While the spider wheels are in the open position, the carrying apparatus may exert a drive force to climb up stairs and braking force to descend stairs. The unit operates as a normal wheeled carrying apparatus while traversing a horizontal surface.

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**Published:**

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**(88) Date of publication of the international search report:**

31 August 2006

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/38221

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC: **B60B 1/00**( 2006.01),**3/00**( 2006.01);**B62B 1/00**( 2006.01),**3/00**( 2006.01),**11/00**( 2006.01)

USPC: 280/5.2,5.26,5.28,47.131,47.17,47.18,47.24,47.315,DIG 6,DIG 10;16/18B,18R;190/18A

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. : 280/5.2, 5.26, 5.28, 47.131, 47.17, 47.18, 47.24, 47.315, DIG 6, DIG 10; 16/18B, 18R; 190/18A

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)  
EAST database

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3,283,839 (BROWN ET AL) 08 NOVEMBER 1966 (08.11.1966) - entire document	1,2,7
X	US 4,061,199 (LAST) 06 DECEMBER 1977 (06.12.1977) - entire document	1,2,7
Y	JP 61-146686 (HIDEAKI) 04 JULY 1986 (04.07.1986) - entire document	3
Y	US 5,044,650 (EBERLE JR) 03 SEPTEMBER 1991 (03.09.91) - entire document	10
A	US 6,435,538 B2 (ELLIS ET AL) 20 AUGUST 2002 (20.08.2002) - entire document	8
A	US 6,357,765 B1 (HEIEN) 19 MARCH 2002 (19.03.2002) - entire document	8
A	US 4,790,548 (DECELLES ET AL) 13 DECEMBER 1988 (13.12.1988) - entire document	8



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"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	"&"	document member of the same patent family

Date of the actual completion of the international search

06 May 2006 (06.05.2006)

Date of mailing of the international search report

**28 JUN 2006**

Name and mailing address of the ISA/US

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# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US05/38221

## C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4,457,526 (PERSSON) 03 JULY 1984 (03.07.1984) - entire document	8
A	US 4,142,732 (BOYD) 06 MARCH 1979 (06.03.1979) - entire document	8