

(19)



Europäisches Patentamt  
European Patent Office  
Office européen des brevets

(11)

**EP 1 448 865 A1**

(43) Date of publication:  
**25.08.2004 Bulletin 2004/35**

(51) Int. Cl. : **E06C 7/16**

(21) Application number: **03766945.4**

(86) International application number:  
**PCT/US20/03023619**

(22) Date of filing: **29.07.2003**

(87) International publication number:  
**WO 20/04013445 (12.02.2004 Gazette 2004/07)**

(84) Designated Contracting States:  
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR  
HU IE IT LI LU MC NL PT RO SE SI SK TR**  
Designated Extension States:  
**AL LT LV MK**

(72) Inventors:  
, **KIEFFER, Mitchell, I.**  
**Minneapolis, MN 55405 (US)**  
, **Hua, Wang Kuo**  
**Taipei, Taiwan (TW)**  
, **AIZMAN, Craig, S.**  
**St. Louis Park, MN 55416 (US)**

(30) Priority: **02.08.2002 US 211930**

(71) Applicants:  
, **Core Distribution, Inc.**  
**Minneapolis, MN 55405 (US)**  
, **Urban Sporting Goods**  
**Houjie, Dongguan, Guangdong (CN)**

(74) Representative:  
**Reeve, Anna Elizabeth et al**  
**Lloyd Wise,**  
**Commonwealth House, 1-19 New Oxford Street**  
**London WC1A 1LW (GB)**

(54) **EXTENDING LADDER AND ASSOCIATED MANUFACTURING METHODS**

(87) This international application for which the EPO is a designated office has not been republished by the EPO according to article 158(1) EPC.

Cette demande internationale pour laquelle l'OEB est office désigné n'a pas été republiée par l'OEB en vertu de l'article 158(1) CBE.

Diese internationale Anmeldung, für die das EPA Bestimmungsamt ist, würde, gemäß Artikel 158(1) EPÜ, vom EPA nicht wieder veröffentlicht.

**EP 1 448 865 A1**

(19)



Europäisches Patentamt

European Patent Office

Office européen des brevets

(11) Veröffentlichungsnummer:

(11) Publication number:

(11) Numéro de publication:

**EP 1 448 865 A0**

Internationale Anmeldung veröffentlicht durch die  
Weltorganisation für geistiges Eigentum unter der Nummer:

**WO 2020/040134** (art. 158 des EPÜ).

International application published by the World  
Intellectual Property Organisation under number:

**WO 2020/040134** (art. 158 of the EPC).

Demande internationale publiée par l'Organisation  
Mondiale de la Propriété sous le numéro:

**WO 2020/040134** (art. 158 de la CBE).

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
12 February 2004 (12.02.2004)

PCT

(10) International Publication Number  
WO 2004/013445 A1

- (51) International Patent Classification<sup>7</sup>: E06C 7/16
- (21) International Application Number:  
PCT/US2003/023619
- (22) International Filing Date: 29 July 2003 (29.07.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
10/211,930 2 August 2002 (02.08.2002) US
- (71) Applicants: CORE DISTRIBUTION, INC. [US/US];  
Suite 200, 2504 Euclid Place, Minneapolis, MN 55405  
(US). URBAN SPORTING GOODS [CN/CN]; Shuang-  
gang Furniture Road, Houjie, Dongguan, Guangdong  
(CN).
- (72) Inventors: KIEFFER, Mitchell, I.; 2504 Euclid Place,  
Minneapolis, MN 55405 (US). HUA, Wang, Kuo; 8F

Keelun Road, Sec. 3, Taipei, Taiwan (\*\*). AIZMAN,  
Craig, S.; 4225 West 25th Street, St. Louis Park, MN  
55416 (US).

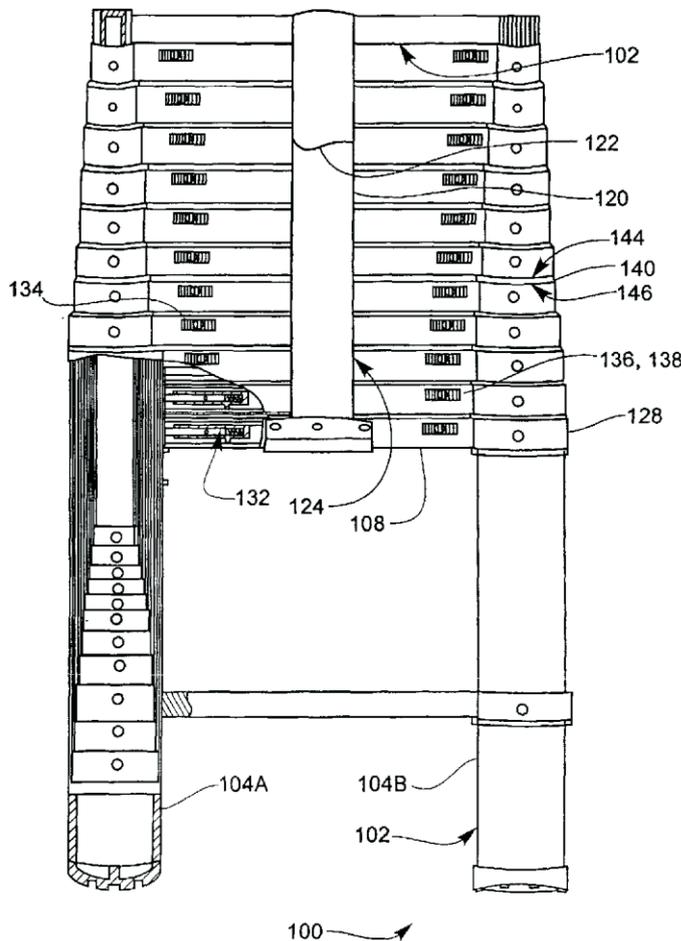
(74) Agent: SEGELBAUM, Charles, D.; Fredrikson & Byron,  
P.A., 4000 Pillsbury Center, 200 South Sixth Street, Min-  
neapolis, MN 55402-1425 (US).

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

(84) Designated States (*regional*): ARIPO patent (GH, GM,  
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),  
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),

[Continued on next page]

(54) Title: EXTENDING LADDER AND ASSOCIATED MANUFACTURING METHODS



(57) Abstract: Extending ladders and associated manu-  
facturing methods are disclosed. A ladder in accordance  
with an exemplary embodiment of the present invention  
comprises a plurality of rung units, each rung unit includ-  
ing a left column, a right column, and a rung extending  
between the left column and the right column. The ladder  
may include a first column assembly including a first col-  
umn and a ring coupled to the first column proximate a dis-  
tal end thereof, and a second column assembly including a  
second column and a sleeve coupled to the second column  
proximate a proximal end thereof. The second column be-  
ing at least partially disposed within a lumen defined by an  
internal surface of the first column. The sleeve includes an  
external guiding surface for contacting the internal surface  
of the first column and the ring includes an internal guid-  
ing surface for contacting an exterior surface of the second  
column.

WO 2004/013445 A1



European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

**Published:**

— *with international search report*

*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.*