



(51) International Patent Classification:

E05D 7/06 (2006.01) E05F 1/04 (2006.01)
E05D 7/08 (2006.01) E05F 1/06 (2006.01)

(21) International Application Number:

PCT/NZ2015/050099

(22) International Filing Date:

31 July 2015 (31.07.2015)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

628149 31 July 2014 (31.07.2014) NZ

(71) Applicant: SWING-IT LIMITED [NZ/NZ]; 2 Marie Avenue, Hillsborough, Auckland, 1042 (NZ).

(72) Inventor: RADICH, James Stanley; 2 Marie Avenue, Hillsborough, Auckland, 1042 (NZ).

(74) Agent: GAMBITSIS, Michael Costa; 5a Pacific Rise, Mt Wellington, Auckland, 1060 (NZ).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM,

DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

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

17 November 2016

(54) Title: HINGE ASSEMBLY FOR A WING MEMBER

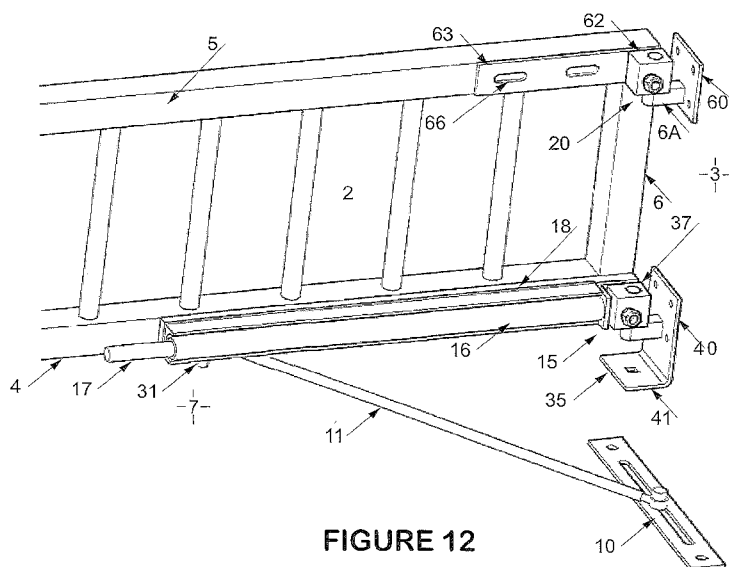


FIGURE 12

(57) Abstract: A hinge assembly (1) includes a first assembly, second assembly, third assembly and fourth assembly being operatively connected to a closure, gate or wing member (2) to allow the wing member to be opened and closed and being supported by a vertical support. The first assembly includes a stay assembly which includes a first base member (10), stay member ((11), 15) and second base member (12) being operatively connected together to allow the wing member to open and close to specific positions. The second assembly includes a first hinge (assembly 15) being operatively connected to a lower part of the wing member allow both vertical and horizontal rotation there about. The third assembly includes a slider assembly including slider housing (16), rod member (17), and housing base (18) being operatively connected (20) together. The fourth assembly includes a second hinge assembly (20) being operatively connected to an upper part of the wing member, to allow a bottom of the wing member to slide out by vertically pivoting about the second hinge assembly. The assemblies are constructed and connected to the wing member to allow both vertical and horizontal rotation planes as caused by the wing member needing to

(25) open and close at least over uneven ground or floor. The stay assembly which includes first and second base members (10) and (12) and stay member (11), extends between the first and second base members and is rotatably connected at its end by rotatable connection thereto, to allow at least horizontal rotation there about the ends wherein the first base member is adjustably and rotatably connected to a support and the second base member is adjustably (30) and rotatably connected to the gate and is not connected to the slider assembly, to be located on the gate at a horizontal distance spaced from the first hinge assembly, with the stay member forming an angle from a face of the wing member to the vertical support.



INTERNATIONAL SEARCH REPORT

International application No.

PCT/NZ15/50099

<p>A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - E05D 7/06, 7/08; E05F 1/04, 1/06 (2016.01) CPC - E05D 7/06, 7/085; E05F 1/04, 1/06, 1/068 According to International Patent Classification (IPC) or to both national classification and IPC</p>																																
<p>B. FIELDS SEARCHED</p> <p>Minimum documentation searched (classification system followed by classification symbols) IPC(8) Classifications: E05D 7/00, 7/06, 7/08; E05F 1/04, 1/06 (2016.01) CPC Classifications: E05D 7/0009, 7/06, 7/085, 2007/0072, 15/48, 15/622, 2015/487; E05F 1/04, 1/06, 1/068</p> <p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched CPC Classifications: E05Y 2400/612, 2400/628, 2900/40</p> <p>Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) PatSeer (US, EP, WO, JP, DE, GB, CN, FR, KR, ES, AU, IN, CA, INPADOC Data); hinge, gate, door, wing, open, close, pivot, rotate, swing, lift, raise, slope, slant, incline, uneven, contour, Incline, ground, surface, floor, power, drive, actuate, gear, inner, outer, telescoping, tooth, teeth, slot, channel, horizontal, vertical, slide</p>																																
<p>C. DOCUMENTS CONSIDERED TO BE RELEVANT</p> <table border="1"> <thead> <tr> <th>Category*</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>Y</td> <td>FR 2,545,528 A1 (VIALARD R.) November 9, 1984; figures 1, 2; paragraphs 1-2 of page 4; abstract</td> <td>1-4, 10, 11, 13-16</td> </tr> <tr> <td>Y</td> <td>FR 2,941,738 A1 (PIVA A. et al.) August 6, 2010; figures 1-3; claims 1, 2; abstract</td> <td>1-4, 10, 11, 13-16</td> </tr> <tr> <td>Y</td> <td>WO 2011/122969 A1 (RADICH J. S.) October 6, 2011; figures 29-31; paragraphs 3-4 of page 16</td> <td>3, 4</td> </tr> <tr> <td>Y</td> <td>US 5,293,716 A (ROTHSCHILD A. M.) March 15, 1994; figures 1-3; column 2, lines 5-10</td> <td>15</td> </tr> <tr> <td>A</td> <td>US 4,970,826 A (RICHMOND M. K. et al.) November 20, 1990; entire document</td> <td>1-16</td> </tr> <tr> <td>A</td> <td>US 7,665,794 B2 (KACHOUH C.) February 23, 2010; entire document</td> <td>1-16</td> </tr> <tr> <td>A</td> <td>US 6,935,000 B1 (ARNAUD R. R.) August 30, 2005; entire document</td> <td>1-16</td> </tr> <tr> <td>A</td> <td>US 3,867,790 A (FRANK W.) February 25, 1975; entire document</td> <td>1-16</td> </tr> <tr> <td>A</td> <td>FR 2,927,117 A1 (LAFOND J.) August 7, 2009; entire document</td> <td>1-16</td> </tr> </tbody> </table>			Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	Y	FR 2,545,528 A1 (VIALARD R.) November 9, 1984; figures 1, 2; paragraphs 1-2 of page 4; abstract	1-4, 10, 11, 13-16	Y	FR 2,941,738 A1 (PIVA A. et al.) August 6, 2010; figures 1-3; claims 1, 2; abstract	1-4, 10, 11, 13-16	Y	WO 2011/122969 A1 (RADICH J. S.) October 6, 2011; figures 29-31; paragraphs 3-4 of page 16	3, 4	Y	US 5,293,716 A (ROTHSCHILD A. M.) March 15, 1994; figures 1-3; column 2, lines 5-10	15	A	US 4,970,826 A (RICHMOND M. K. et al.) November 20, 1990; entire document	1-16	A	US 7,665,794 B2 (KACHOUH C.) February 23, 2010; entire document	1-16	A	US 6,935,000 B1 (ARNAUD R. R.) August 30, 2005; entire document	1-16	A	US 3,867,790 A (FRANK W.) February 25, 1975; entire document	1-16	A	FR 2,927,117 A1 (LAFOND J.) August 7, 2009; entire document	1-16
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.																														
Y	FR 2,545,528 A1 (VIALARD R.) November 9, 1984; figures 1, 2; paragraphs 1-2 of page 4; abstract	1-4, 10, 11, 13-16																														
Y	FR 2,941,738 A1 (PIVA A. et al.) August 6, 2010; figures 1-3; claims 1, 2; abstract	1-4, 10, 11, 13-16																														
Y	WO 2011/122969 A1 (RADICH J. S.) October 6, 2011; figures 29-31; paragraphs 3-4 of page 16	3, 4																														
Y	US 5,293,716 A (ROTHSCHILD A. M.) March 15, 1994; figures 1-3; column 2, lines 5-10	15																														
A	US 4,970,826 A (RICHMOND M. K. et al.) November 20, 1990; entire document	1-16																														
A	US 7,665,794 B2 (KACHOUH C.) February 23, 2010; entire document	1-16																														
A	US 6,935,000 B1 (ARNAUD R. R.) August 30, 2005; entire document	1-16																														
A	US 3,867,790 A (FRANK W.) February 25, 1975; entire document	1-16																														
A	FR 2,927,117 A1 (LAFOND J.) August 7, 2009; entire document	1-16																														
<p><input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.</p>																																
<p>* Special categories of cited documents:</p> <table border="0"> <tr> <td>"A" document defining the general state of the art which is not considered to be of particular relevance</td> <td>"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</td> </tr> <tr> <td>"E" earlier application or patent but published on or after the international filing date</td> <td>"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</td> </tr> <tr> <td>"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)</td> <td>"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</td> </tr> <tr> <td>"O" document referring to an oral disclosure, use, exhibition or other means</td> <td>"&" document member of the same patent family</td> </tr> <tr> <td>"P" document published prior to the international filing date but later than the priority date claimed</td> <td></td> </tr> </table>			"A" document defining the general state of the art which is not considered to be of particular relevance	"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	"E" earlier application or patent but published on or after the international filing date	"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	"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)	"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	"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family	"P" document published prior to the international filing date but later than the priority date claimed																					
"A" document defining the general state of the art which is not considered to be of particular relevance	"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																															
"E" earlier application or patent but published on or after the international filing date	"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																															
"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)	"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																															
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family																															
"P" document published prior to the international filing date but later than the priority date claimed																																
<p>Date of the actual completion of the international search 30 August 2016 (30.08.2016)</p>		<p>Date of mailing of the international search report 26 SEP 2016</p>																														
<p>Name and mailing address of the ISA/ Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-8300</p>		<p>Authorized officer Shane Thomas PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774</p>																														