



- (51) International Patent Classification:
E05B 47/02 (2006.01)
- (21) International Application Number:
PCT/US2015/054503
- (22) International Filing Date:
7 October 2015 (07.10.2015)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
62/061,212 8 October 2014 (08.10.2014) US
- (71) Applicant: CANDY HOUSE INC. [US/US]; 645 High St., Palo Alto, CA 94301 (US).
- (72) Inventor; and
(71) Applicant : KU, Che-Ming; No. 55, Sec. 2, Meichuan E. Rd., West Dist., Taichung City, 40354 Taiwan (TW).
- (74) Agent: YANG, Rong; Hamre, Schumann, Mueller & Larson, P.C., P.O. Box 2902, Minneapolis, MN 55402 (US).
- (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))

- (88) Date of publication of the international search report:
21 July 2016

(54) Title: GEAR ASSEMBLY AND A DOOR MOUNT MECHANISM INCLUDING THE SAME

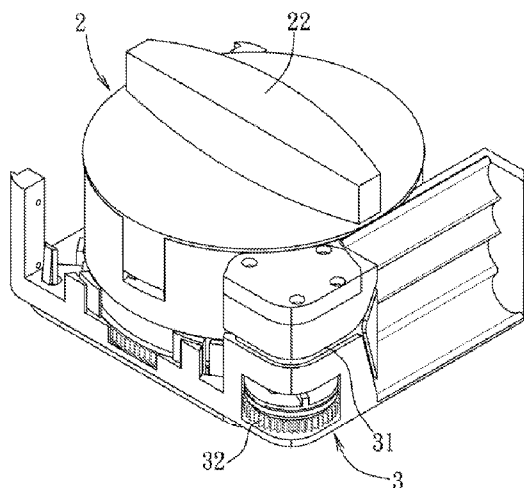


FIG. 2

(57) Abstract: A gear assembly includes a planetary gear set and a clutch. The planetary gear set includes a sun gear, at least one planet gear meshing with the sun gear, a carrier supporting the at least one planet gear, and an outer ring gear meshing with the at least one planet gear. The clutch is operable to engage with and disengage from the planetary gear set to enable the planetary gear set to switch between a first mode and a second mode.



INTERNATIONAL SEARCH REPORT

International application No.

PCT/US15/54503

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - E05B 47/02 (2015.01)

CPC - E05B 47/0012

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)

IPC(8) Classification(s): E05B 47/02, 49/02, 65/06 (2015.01); CPC Classification(s): E05B 47/0002, 47/0004, 47/0012, 2047/0014, 2047/0091, 2047/0095; USPC Classification(s): 70/129, 277, 278.1, 280, 462; 292/142, 144, 244

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)

PatSeer (US, EP, WO, JP, DE, GB, CN, FR, KR, ES, AU, IN, CA, INPADOC Data) ProQuest (Derwent, INSPEC, NTIS, PASCAL, Current Contents Search, Dissertation Abstract Online, Inside Conference); IEEE/IEEExplore; Google/Google Scholar; Keywords: gear*, planetary w2 gear*, sun w2 gear, meshing, teeth, carrier, plate, outer w2 ring, ring w2 gear, clutch, switch*, mode w2 switch*, manual, automatic, electric*, first w2 mode, second w2 mode, door*, door w2 mount*, door w2 lock, deadbolt, smart w2 lock, solenoid, motor

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ---	US 4,691,584 A (TAKAISHI, T et al.) September 8, 1987; figures 2, 4; column 4, lines 5-20 and lines 55-65; column 5, lines 1-10 and lines 35-50	1, 4, 5 ---
Y		6, 10, 14-16, 20
X ---	US 2013/0201591 A1 (STRATTEC SECURITY CORPORATION) August 8, 2013; figures 58, 59; paragraphs [0236], [0238], [0239] - [0241], [0244]	1-3 ---
Y		10, 11, 13
Y	US 2014/0183388 A1 (HERBERT, K et al.) July 3, 2014; paragraph [0080], [0083], [0084]	6, 16
Y	US 7,737,795 B2 (KILBOURNE, MW) May 20, 2008; figure 1A, 3, 5; column 1, lines 25-35; column 3, lines 35-40 and lines 55-67; column 4, lines 1-25;	10, 11, 13, 14, 15, 20

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"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)

"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

"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

"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

"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

"&" document member of the same patent family

Date of the actual completion of the international search

08 December 2015 (08.12.2015)

Date of mailing of the international search report

04 JAN 2016

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

Authorized officer

Shane Thomas

PCT Helpdesk: 571-272-4300
PCT OSP: 571-272-7774