



US010138090B2

(12) **United States Patent**  
**Nakano et al.**

(10) **Patent No.:** **US 10,138,090 B2**  
(45) **Date of Patent:** **Nov. 27, 2018**

(54) **ELEVATOR CAR ROLLING SUPPRESSION DEVICE AND METHOD**

5,524,730 A 6/1996 Roberts  
5,544,721 A \* 8/1996 Roberts ..... B66B 7/043  
187/292  
5,765,663 A \* 6/1998 Jamieson ..... B66B 7/041  
187/292  
5,866,861 A \* 2/1999 Rajamani ..... B66B 7/044  
187/292  
5,896,949 A \* 4/1999 Hamdy ..... B66B 7/027  
187/292  
6,494,295 B2 \* 12/2002 Grundmann ..... B66B 11/028  
187/292

(71) Applicant: **FUJITEC CO., LTD.**, Hikone-shi (JP)

(72) Inventors: **Takahiro Nakano**, Hikone (JP);  
**Motoki Kaneko**, Hikone (JP)

(73) Assignee: **FUJITEC CO., LTD.**, Hikone-shi (JP)

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 333 days.

(Continued)

FOREIGN PATENT DOCUMENTS

(21) Appl. No.: **15/071,517**

CN 1134392 A 10/1996  
CN 100343152 C 10/2007

(22) Filed: **Mar. 16, 2016**

(Continued)

(65) **Prior Publication Data**

US 2016/0272465 A1 Sep. 22, 2016

*Primary Examiner* — Anthony Salata

(74) *Attorney, Agent, or Firm* — The Webb Law Firm

(30) **Foreign Application Priority Data**

Mar. 20, 2015 (JP) ..... 2015-058448

(57) **ABSTRACT**

(51) **Int. Cl.**  
**B66B 1/34** (2006.01)  
**B66B 1/30** (2006.01)  
**B66B 7/04** (2006.01)

An elevator car rolling suppression device capable of suppressing rolling of an elevator car includes a drive unit configured to press a guide unit against a guide rail. The device also includes a position detecting unit configured to detect a position of an elevator car within a shaft, a storage unit configured to store the position of the elevator car within the shaft and an acceleration of the elevator car in association with each other. The device also includes a control unit configured to extract the acceleration in the lateral direction of the elevator car detected by the position detecting unit from the storage unit. The control unit also controls the drive unit so as to adjust the pressing force of the guide unit against the guide rail to a pressing force that is derived from at least the extracted acceleration in the lateral direction of the elevator car.

(52) **U.S. Cl.**  
CPC ..... **B66B 1/30** (2013.01); **B66B 7/042** (2013.01); **B66B 1/3492** (2013.01)

(58) **Field of Classification Search**  
CPC ..... B66B 1/30; B66B 7/042; B66B 1/3492  
USPC ..... 187/247, 292, 391, 393, 394, 409, 410  
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,750,590 A 6/1988 Otsala  
5,329,077 A \* 7/1994 Skalski ..... B66B 1/00  
104/129

**14 Claims, 6 Drawing Sheets**

