



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

(10) **Patent No.:** **US 9,411,381 B2**  
(45) **Date of Patent:** **Aug. 9, 2016**

(54) **PORTABLE KEYBOARD**

(71) Applicant: **LG ELECTRONICS INC.**, Seoul (KR)

(72) Inventors: **Seungjin Lee**, Seoul (KR); **Keetae Kim**, Seoul (KR); **Dongguk Kang**, Seoul (KR); **Hojung Lee**, Seoul (KR)

(73) Assignee: **LG Electronics Inc.**, Seoul (KR)

(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **14/627,663**

(22) Filed: **Feb. 20, 2015**

(65) **Prior Publication Data**

US 2015/0198982 A1 Jul. 16, 2015

**Related U.S. Application Data**

(63) Continuation of application No. 13/567,359, filed on Aug. 6, 2012, now Pat. No. 9,019,694.

(30) **Foreign Application Priority Data**

Oct. 31, 2011 (KR) ..... 10-2011-0112103

(51) **Int. Cl.**  
**H05K 5/00** (2006.01)  
**H01R 13/62** (2006.01)  
**G06F 1/16** (2006.01)  
**G06F 3/02** (2006.01)

(52) **U.S. Cl.**  
CPC ..... **G06F 1/1666** (2013.01); **G06F 1/1698** (2013.01); **G06F 3/0221** (2013.01)

(58) **Field of Classification Search**  
CPC ..... G06F 3/02; G06F 1/1616; B41J 5/00  
USPC ..... 361/679.01-679.03, 679.21, 679.51  
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

8,757,908 B2 6/2014 Wu et al.  
2003/0099086 A1 5/2003 Chuang  
2009/0262492 A1 10/2009 Whitchurch et al.  
2011/0311289 A1 12/2011 Wu et al.  
2012/0009000 A1\* 1/2012 Starrett ..... G06F 1/1632 400/472  
2012/0194448 A1 8/2012 Rothkopf

FOREIGN PATENT DOCUMENTS

CN 201974760 U 9/2011  
KR 10-2008-0047643 A 5/2008  
KR 10-2011-0068712 A 6/2011  
KR 10-2011-0089234 A 8/2011

OTHER PUBLICATIONS

Notice of Allowance for parent U.S. Appl. No. 13/567,359 dated Nov. 21, 2014.

\* cited by examiner

*Primary Examiner* — Jerry Wu

(74) *Attorney, Agent, or Firm* — KED & Associates LLP

(57) **ABSTRACT**

A portable keyboard is disclosed, by which portability can be enhanced with a simple configuration. The present invention includes a plurality of key assemblies, a body part and a flexible connecting member. When the portable keyboard is carried, a plurality of the key assemblies are rolled up around an outer circumference of the body part in a manner that the flexible connecting member between a plurality of the key assemblies is folded. When the portable keyboard is used, a plurality of the key assemblies are unfolded by being rolled down centering on the body part in a manner that the flexible connecting member between a plurality of the key assemblies is unfolded.

**19 Claims, 14 Drawing Sheets**

