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The Director

of the United States Patent and Trademark Office has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this United States

Patent

grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America, and if the invention is a process, of the right to exclude others from using, offering for sale or selling throughout the United States of America, products made by that process, for the term set forth in 35 U.S.C. 154(a)(2) or (c)(1), subject to the payment of maintenance fees as provided by 35 U.S.C. 41(b). See the Maintenance Fee Notice on the inside of the cover.

Katherine Kelly Vidal

DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

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

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(54) **LED ILLUMINATION DEVICE**
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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 76 days.

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(58) **Field of Classification Search**
CPC H05B 45/39; H05B 45/345; H01L 33/48; H01L 33/62; F21V 23/004; F21V 23/005
See application file for complete search history.

(57) **ABSTRACT**
An LED illumination device includes a circuit substrate, a bridge rectifier, a current-limiting chip, a resistance switching module and an LED group. The bridge rectifier is disposed on the circuit substrate and electrically connected to the circuit substrate. The current-limiting chip is disposed on the circuit substrate and electrically connected to the circuit substrate. The resistance switching module is disposed on the circuit substrate and electrically connected to the circuit substrate. The LED group includes a plurality of LED chips disposed on the circuit substrate and electrically connected to the circuit substrate. The bridge rectifier, the current-limiting chip, the resistance switching module and the LED group are electrically connected with each other. The resistance switching module includes a plurality of resistance switches and a plurality of resistor elements respectively corresponding to the resistance switches, and each of the resistance switches includes a physical switching key that is exposed.

5 Claims, 7 Drawing Sheets

