Title (en)

VOLTAGE CLAMP TO ALLOW LOW-TEMPERATURE RECHARGING OF NICKEL-CADMIUM BATTERIES IN EMERGENCY LIGHTING FIXTURES AND METHOD OF USING

Title (de)

SPANNUNGSKLEMME ZUR ERMÖGLICHUNG EINER NIEDERTEMPERATURAUFLADUNG VON NICKEL-KADMIUM-BATTERIEN IN NOTBELEUCHTUNGSEINRICHTUNGEN UND BENUTZUNGSVERFAHREN

Title (fr)

BLOQUEUR DE TENSION PERMETTANT DES RECHARGES À BASSE TEMPÉRATURE DE BATTERIES AU NICKEL-CADMIUM POUR ÉCLAIRAGE D'URGENCE, ET LEUR MÉTHODE D'UTILISATION

Publication

EP 2082477 A4 20130724 (EN)

Application

EP 07854621 A 20071113

Priority

- US 2007084553 W 20071113
- US 55895506 A 20061113

Abstract (en)

[origin: WO2008064008A2] The present invention relates to emergency lighting ballasts having rechargeable batteries, usually of the nickel-cadmium type and more specifically to an apparatus to facilitate the charging of the battery pack at temperatures generally below normal operating ranges of the batteries (such as below 0° C) without damaging the battery. The apparatus includes such as a reverse-biased zener diode which has a breakdown voltage in the reverse mode which is at or below the maximum allowable charging voltage for the battery. Accordingly, when ambient conditions would otherwise allow the charging current of the battery to exceed the allowable level, the clamping zener diode breaks down shunting the excess current away from the battery.

IPC 8 full level

H03D 13/00 (2006.01); **H02J 7/00** (2006.01); **H02J 9/02** (2006.01)

CPC (source: EP US)

H02J 7/0029 (2013.01 - EP US); **H02J 9/02** (2013.01 - EP); H02J 7/00302 (2020.01 - EP US); H02M 1/10 (2013.01 - EP); H02M 7/05 (2021.05 - EP)

Citation (search report)

- [XI] WO 0059094 A2 20001005 - TYCO ELECTRONICS CORP [US]
- [X] EP 0226360 A2 19870624 - POWERPLEX TECHN INC [CA]
- [A] US 6828733 B1 20041207 - CRENSHAW DAVID B [US]
- See references of WO 2008064008A2

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR

DOCDB simple family (publication)

WO 2008064008 A2 20080529; **WO 2008064008 A3 20080731**; AU 2007323912 A1 20080529; BR PI0718845 A2 20140204; CA 2669713 A1 20080529; EP 2082477 A2 20090729; EP 2082477 A4 20130724; MX 2009005116 A 20090818

DOCDB simple family (application)

US 2007084553 W 20071113; AU 2007323912 A 20071113; BR PI0718845 A 20071113; CA 2669713 A 20071113; EP 07854621 A 20071113; MX 2009005116 A 20071113