## United States Patent of Waterproof



## 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, or importing into 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.

Joseph Matal

Performing the Functions and Duties of the Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office

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<ul> <li>Gyeongsangbuk-dol (KR)</li> <li>Gyeongsangbuk-dol (KR)</li> <li>Inventors: Seoung Hun Kim, Daegu (KR); Young Min Jeon, Daegu (KR)</li> <li>Assignee: E—GM TECH, Gumi-si, Gyeongsangbuk-Do (KR)</li> <li>Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 16 days.</li> <li>Appl. No.: 14/770,972</li> <li>PCT Filed: Apr. 4, 2014</li> <li>PCT No.: PCT/KR2014/002905 § 371 (c)(1), (2) Date: Aug. 27, 2015</li> <li>PCT Pub. No.: WO2014/168379 PCT Pub. No.: WO2014/168379 PCT Pub. Date: Oct. 16, 2014</li> <li>Prior Publication Data US 2016/0018098 A1 Jan. 21, 2016</li> <li>Foreign Application Priority Data Apr. 9, 2013 (KR)</li></ul>	12) United States Patent Kim et al.	(10) Patent No.: US 9,791,143 B2 (45) Date of Patent: Oct. 17, 2017
<ul> <li>(7) Applicari: E-GM TECH, Gum-si, Gycongsangbuk-do (KR)</li> <li>(7) Inventors: Seoung Hun Kim, Daegu (KR); Young Min Jeon, Daegu (KR); Young Min Jeon, Daegu (KR)</li> <li>(7) Assignee: E-GM TECH, Gumi-si, Gycongsangbuk-Do (KR)</li> <li>*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 16 days.</li> <li>(2) Appl. No.: 147770.972</li> <li>(2) PCT Filed: Apr. 4, 2014</li> <li>(3) PCT No.: PCT/KR2014002905 § 371 (c)(1), (2) Date: Aug. 27, 2015</li> <li>(3) PCT Pub. No.: WO2014/168379 PCT Pub. Date: Oct. 16, 2014</li> <li>(5) Prior Publication Data US 2016/0018098 A1 Jan. 21, 2016</li> <li>(30) Foreign Application Priority Data Apr. 9, 2013 (KR)</li></ul>	54) DOUBLY-SEALED WATERPROOF FLOODLIGHT AND METHOD FOR SAME	CPC F2IV 31/005 (2013.01); F2IK 9/90
<ul> <li>(12) Mrethols: Second Hun Kim, Daegu (KR): Young Min Jeon, Daegu (KR)</li> <li>(73) Assignee: E—GM TECH, Gumi-si, Gyeongsangbuk-Do (KR)</li> <li>(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 16 days.</li> <li>(21) Appl. No.: 14770,972</li> <li>(22) PCT Filed: Apr. 4, 2014</li> <li>(80) PCT No.: PCT/KR2014/002205 § 371 (c)(1), (2) Date: Aug. 27, 2015</li> <li>(87) PCT Pub. No.: WO2014/168379 PCT Pub. Date: Oct. 16, 2014</li> <li>(50) Prior Publication Data US 2016/0018098 A1 Jan. 21, 2016</li> <li>(51) Frior Publication Priority Data Apr. 9, 2013 (KR)</li></ul>	71) Applicant: E-GM TECH, Gum-si, Gyeongsangbuk-do (KR)	(Continued) (58) Field of Classification Search
<ul> <li>(73) Assignce: E-GM TECH, Gumi-si, Gyeongsangbuk-Do (KR)</li> <li>(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 16 days.</li> <li>(21) Appl. No.: 14770,972</li> <li>(22) PCT Filed: Apr. 4, 2014</li> <li>(86) PCT No.: PCT/KR2014/002905 § 3711 (c)(1), (2) Date: Aug. 27, 2015</li> <li>(87) PCT Pub. No.: WO2014/168379 PCT Pub. Date: Oct. 16, 2014</li> <li>(56) References Cited U.S. PATENT DOCUMENTS</li> <li>(74) Atorney, Agent, or Firm - LRK Patent Law Firm</li> <li>(57) ABSTRACT</li> <li>(56) References Cited U.S. PATENT DOCUMENTS</li> <li>(74) Atorney, Agent, or Firm - LRK Patent Law Firm</li> <li>(57) ABSTRACT</li> <li>(74) Atorney, Agent, or Firm - LRK Patent Law Firm</li> <li>(57) ABSTRACT</li> <li>(57) ABSTRACT</li> <li>(58) Prior Publication Data US 2016/0018098 A1 Jan. 21, 2016</li> <li>(74) Strong Application Priority Data</li> <li>Apr. 9, 2013 (KR)</li></ul>	72) Inventors: Seoung Hun Kim, Daegu (KR); You Min Jeon, Daegu (KR)	CPC F21V 31/005; F21V 29/763; F21V 31/00
<ul> <li>(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 16 days.</li> <li>(21) Appl. No.: 14/770,972</li> <li>(22) PCT Filed: Apr. 4, 2014</li> <li>(86) PCT No.: PCT/KR2014/002905 § 371 (c)(1), (2) Date: Aug. 27, 2015</li> <li>(87) PCT Pub. No.: WO2014/168379 PCT Pub. Date: Oct. 16, 2014</li> <li>(5) Prior Publication Data US 2016/0018098 A1 Jan. 21, 2016</li> <li>(6) Foreign Application Priority Data Apr. 9, 2013 (KR)</li></ul>	<ol> <li>Assignee: E—GM TECH, Gumi-si.</li> </ol>	
<ul> <li>(21) Appl. No.: 14770,972</li> <li>(22) PCT Filed: Apr. 4, 2014</li> <li>(36) PCT No.: PCT/KR2014/002905 <ul> <li>§ 371 (c)(1),</li> <li>(2) Date: Aug. 27, 2015</li> </ul> </li> <li>(37) PCT Pub. No.: WO2014/168379 <ul> <li>PCT Pub. Date: Oct. 16, 2014</li> </ul> </li> <li>(30) Prior Publication Data <ul> <li>US 2016/0018098 A1 Jan. 21, 2016</li> </ul> </li> <li>(30) Foreign Application Priority Data <ul> <li>Apr. 9, 2013 (KR)</li> <li>(KR)</li> <li>(2006.01)</li> <li>(2015.01)</li> <li>(Continued)</li> </ul> </li> <li>(Continued)</li> </ul> <li>(Continued)</li>	<ul> <li>Notice: Subject to any disclaimer, the term of patent is extended or adjusted under</li> </ul>	this 362/101 35 9,039,238 B2 * 5/2015 Kim
<ul> <li>PCT Filed: Apr. 4, 2014</li> <li>PCT No.: PCT/KR2014/002905 § 371 (c)(1), (2) Date: Aug. 27, 2015</li> <li>PCT Pub. No.: WO2014/168379 PCT Pub. Date: Oct. 16, 2014</li> <li>PCT Pub. Oct</li></ul>		(Continued)
<ul> <li>(86) PCT No.: PCT/KR2014/002905</li> <li>§ 371 (c)(1),</li> <li>(2) Date: Aug. 27, 2015</li> <li>(87) PCT Pub. No.: WO2014/168379</li> <li>PCT Pub. Date: Oct. 16, 2014</li> <li>(65) Prior Publication Data US 2016/0018098 A1 Jan. 21, 2016</li> <li>(67) ABSTRACT</li> <li>(79) ABSTRACT</li> <li>(70) ABSTRACT</li> <li>(70) ABSTRACT</li> <li>(71) ABSTRACT</li> <li>(72) Date: Aug. 27, 2015</li> <li>(72) PCT Pub. Date: Oct. 16, 2014</li> <li>(71) Prior Publication Data US 2016/0018098 A1 Jan. 21, 2016</li> <li>(72) Foreign Application Priority Data</li> <li>(73) Apr. 9, 2013 (KR)</li></ul>		Assistant Examiner - William N Harris
<ul> <li>\$ 371 (c)(1),</li> <li>(2) Date: Aug. 27, 2015</li> <li>(87) PCT Pub. No.: WO2014/168379 PCT Pub. Date: Oct. 16, 2014</li> <li>(65) Prior Publication Data US 2016/0018098 A1 Jan. 21, 2016</li> <li>(30) Foreign Application Priority Data Apr. 9, 2013 (KR)</li></ul>	101/RR2014/002905	
<ul> <li>(87) PCT Pub. No.: WO2014/168379 PCT Pub. Date: Oct. 16, 2014</li> <li>(65) Prior Publication Data US 2016/0018098 A1 Jan. 21, 2016</li> <li>(87) Foreign Application Priority Data Apr. 9, 2013 (KR)</li></ul>	(3) 5	A doubly-sealed waterproof floodlight includes a heat dis-
<ul> <li>(65) Prior Publication Data US 2016/0018098 A1 Jan. 21, 2016</li> <li>(30) Foreign Application Priority Data Apr. 9, 2013 (KR)</li></ul>		with a sealing material, doubly-sealed, and integrally
US 2016/0018098 A1 Jan. 21, 2016 30) Foreign Application Priority Data Apr. 9, 2013 (KR)	PCT Pub. Date: Oct. 16, 2014	portion includes a sealing portion formed on a side end of
<ul> <li>(30) Foreign Application Priority Data</li> <li>Apr. 9, 2013 (KR)</li></ul>		the heat dissipation portion, coated with the sealing material, and coupled to the cover. The cover includes a coupling
Apr. 9, 2013       (KR)	US 2016/0018098 A1 Jan. 21, 2016	portion formed on the top end of a side surface thereof. The
<ul> <li>Int. Cl. F21V 31/00 (2006.01) F21V 29/00 (2015.01) (Continued)         (Continued)         (Continued)</li></ul>	0) Foreign Application Priority Data	ing material is filled for adhering and coupling the heat
51) Int. Cl.       F21V 31/00       (2006.01)       is flatly formed at a position lower than the protruding support portion, and in which the sealing material coated on the sealing portion is filled.         F21V 29/00       (2015.01)       12 Claims, 7 Drawing Sheets	Apr. 9, 2013 (KR) 10-2013-00388	from the sealing groove, and a bottom surface portion which
(Continued) 12 Claims, 7 Drawing Sheets	F21V 31/00 (2006.01)	support portion, and in which the sealing material coated on
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