



US00D726132S

(12) **United States Design Patent**
Zhai et al.

(10) **Patent No.:** **US D726,132 S**

(45) **Date of Patent:** **** Apr. 7, 2015**

(54) **HEAT SINK FOR LIGHT-EMITTING DIODES (LED)**

(71) Applicant: **Lightera Corporation**, Sunnyvale, CA (US)

(72) Inventors: **Jinhui Zhai**, Fremont, CA (US); **Abdul Salam Assaad**, Foster City, CA (US); **Tao Tong**, Fremont, CA (US)

(**) Term: **14 Years**

(21) Appl. No.: **29/486,438**

(22) Filed: **Mar. 28, 2014**

(51) **LOC (10) Cl.** **13-03**

(52) **U.S. Cl.**
USPC **D13/179; D26/2**

(58) **Field of Classification Search**
CPC F28D 1/0246; F28D 1/0426; F28D 15/02; F28D 15/0266; F28D 15/0275; F28D 15/04; F28F 13/003; F28F 13/12; F28F 1/325; F04D 25/0613; F04D 25/068; F04D 29/281422; F21V 29/2293; F21V 29/2231; G03B 21/16; G06F 1/20; G06F 1/203; H01L 23/34; H01L 23/367; H01L 23/3672; H01L 23/40; H01L 23/4006; H01L 23/4093; H01L 23/427; H01L 23/467; H05K 7/20; H05K 7/20127; H05K 7/20145; H05K 7/20154; H05K 7/20172; H05K 7/20336
USPC D13/179; D26/2, 113, 118, 138; 165/80.3, 104.26, 104.33, 122, 151, 165/185; 257/706, 707, 718-722; 313/46; 361/695, 697, 700, 702, 704, 709, 710, 361/711, 719; 362/231, 249.02, 294, 362/311.02
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D650,496 S * 12/2011 Beregszaszi et al. D26/2
D657,077 S * 4/2012 Beregszaszi et al. D26/2

D661,260 S * 6/2012 Layevsky et al. D13/179
D683,866 S * 6/2013 Zeng et al. D26/2
8,525,396 B2 * 9/2013 Shum et al. 313/46
8,567,989 B2 * 10/2013 Zeng et al. 362/249.02
8,593,044 B2 * 11/2013 Grajcar 313/113
D694,722 S * 12/2013 Shum et al. D13/179
8,690,388 B2 * 4/2014 Lu et al. 362/249.02
2008/0049399 A1 * 2/2008 Lu et al. 361/714
2008/0266866 A1 * 10/2008 Tsai 362/294
2011/0018418 A1 * 1/2011 Yoo 313/46
2012/0268941 A1 * 10/2012 Shih et al. 362/294

(Continued)

Primary Examiner — Selina Sikder

(74) *Attorney, Agent, or Firm* — Helen Z. Mao

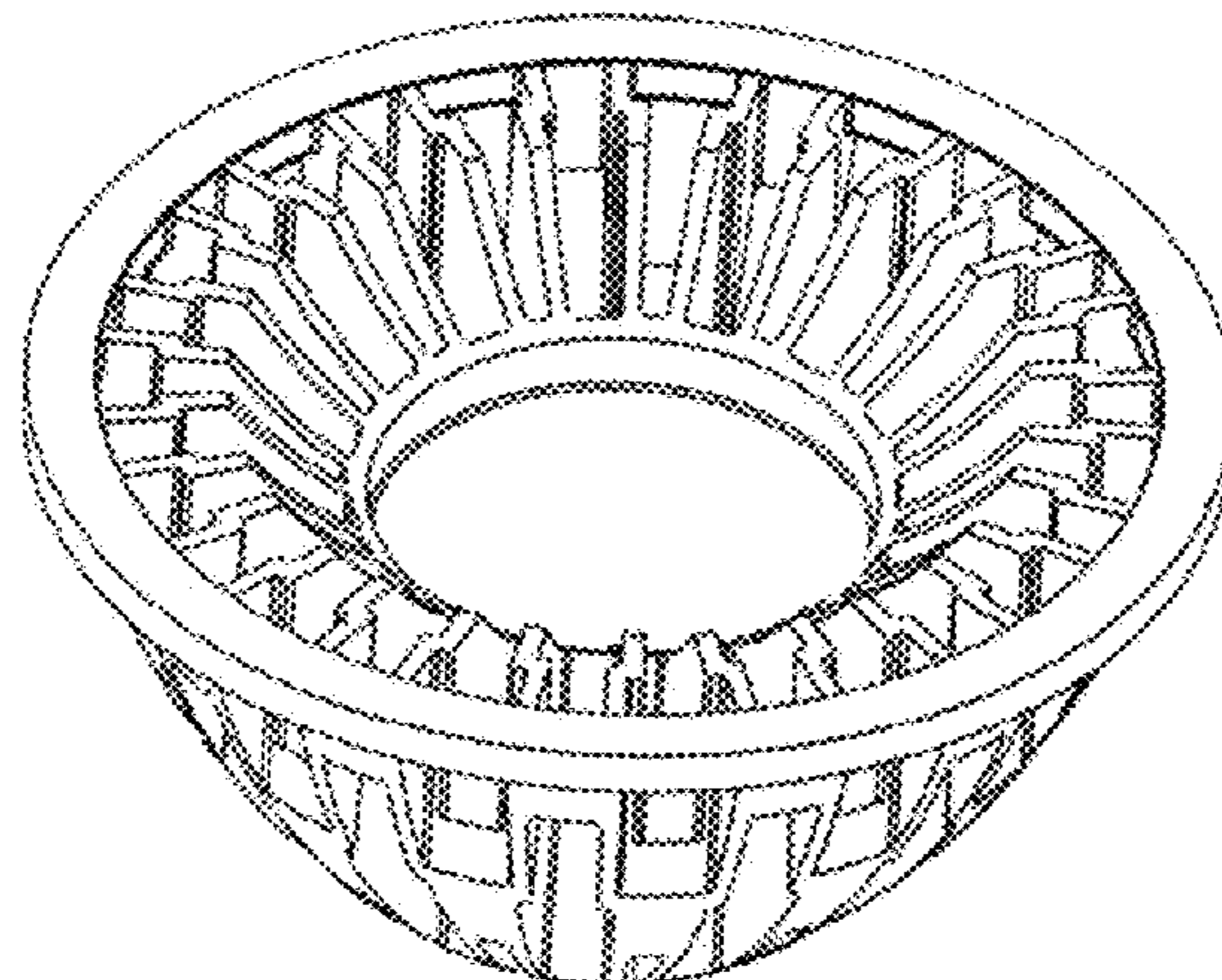
(57) **CLAIM**

The ornamental design for the heat sink for a light-emitting diodes (LED), as shown and described.

DESCRIPTION

FIG. 1 is a perspective view of a first embodiment of a heat sink for LED of our new design;
FIG. 2 is a side view thereof;
FIG. 3 is a top view of thereof;
FIG. 4 is a bottom view thereof;
FIG. 5 is a side view thereof with a PAR base;
FIG. 6 is a front view thereof with a MR16-GU5.3 base, it being understood that the opposite side not shown is a mirror image thereof;
FIG. 7 is a right view thereof with a MR16-GU5.3 base, it being understood that the opposite side not shown is a mirror image thereof;
FIG. 8 is a front view thereof with a MR16-GU10 base, it being understood that the opposite side not shown is a mirror image thereof; and,
FIG. 9 is a right view thereof with a MR16-GU10 base, it being understood that the opposite side not shown is a mirror image thereof.
It will be understood that the broken line showing throughout the drawings is for illustrative purposes only and forms no part the subject design.

1 Claim, 9 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

2013/0301260 A1* 11/2013 Huang 362/235
2013/0322089 A1* 12/2013 Martis et al. 362/311.02

2013/0033165 A1* 2/2013 Terazawa 313/46

* cited by examiner

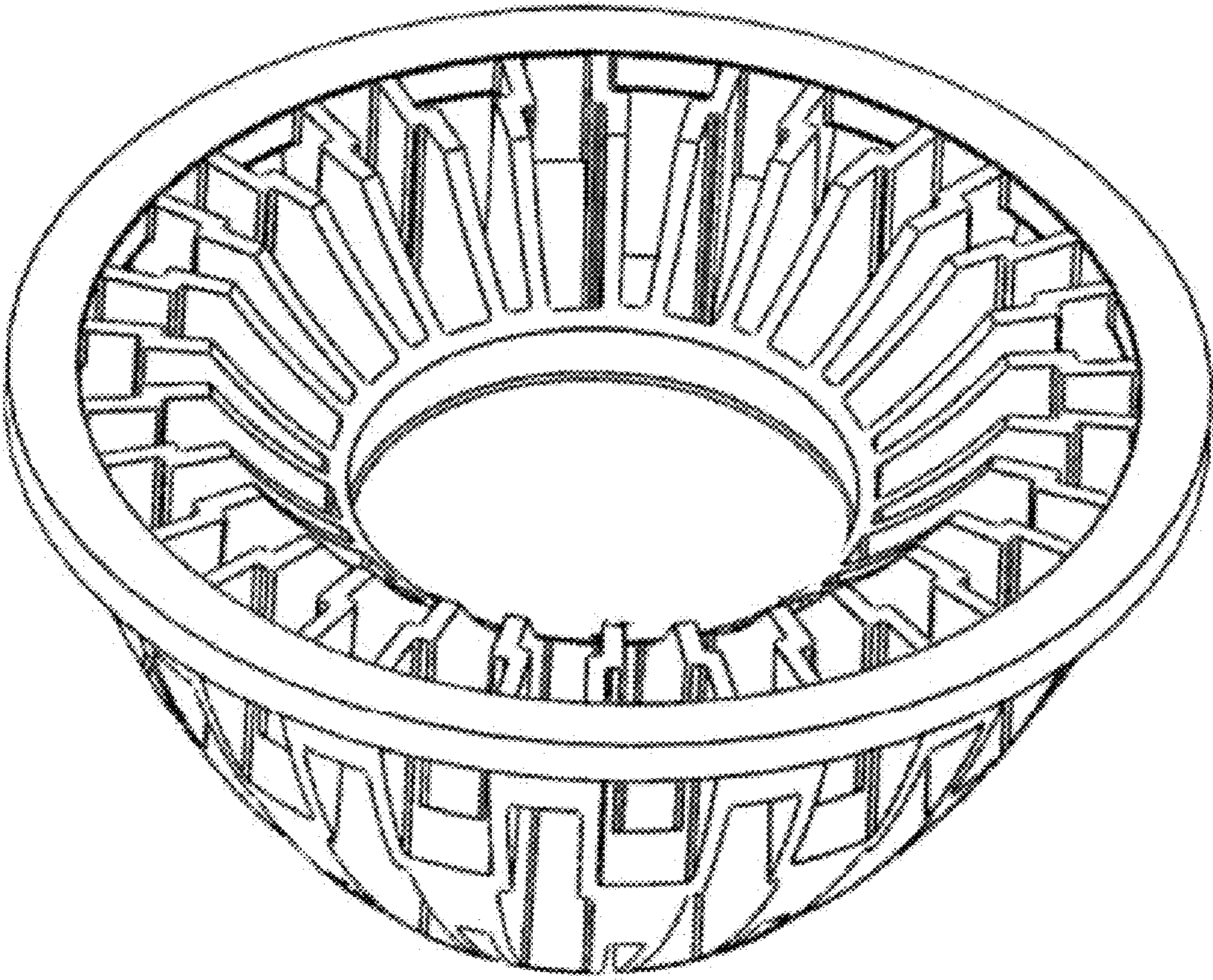


FIG. 1

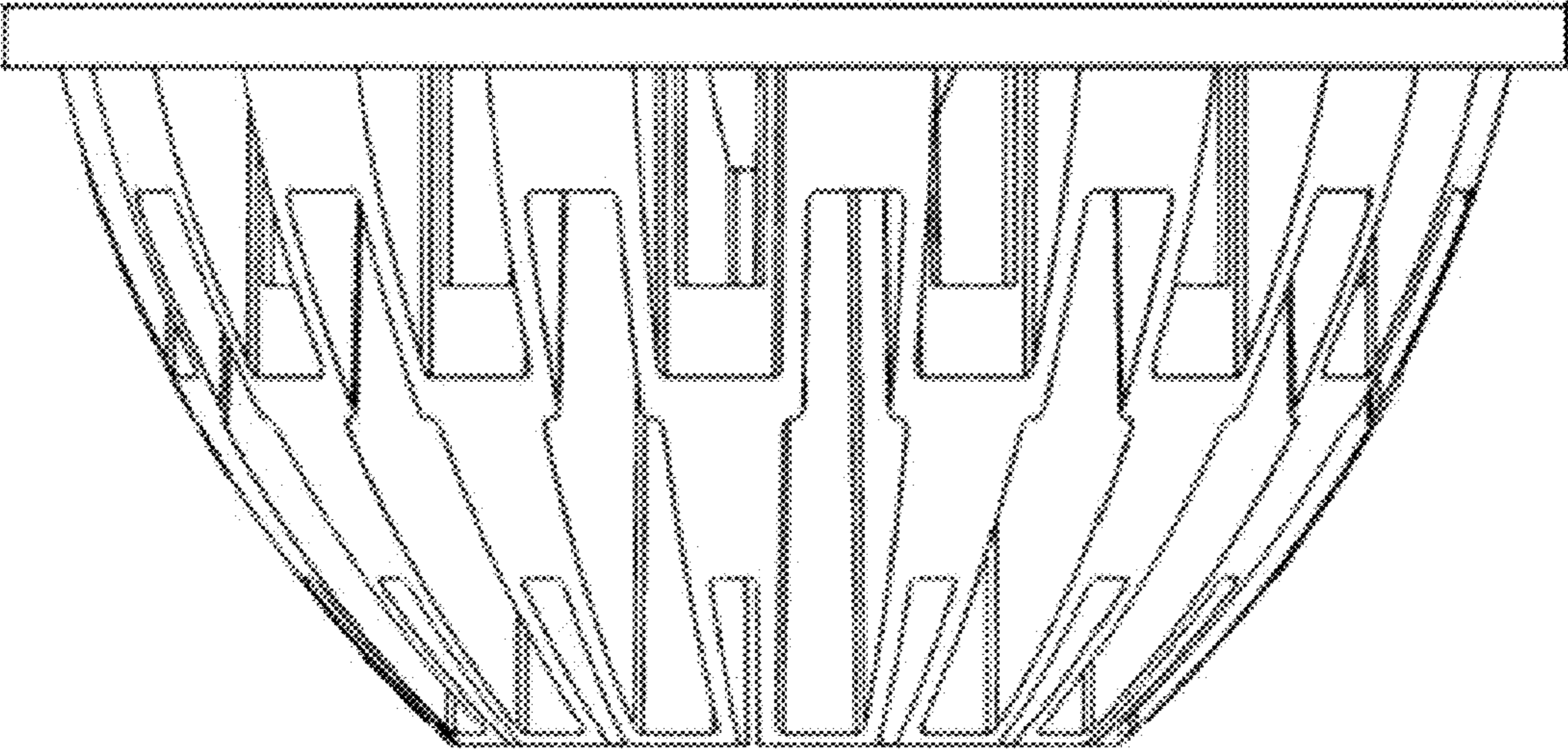


FIG. 2

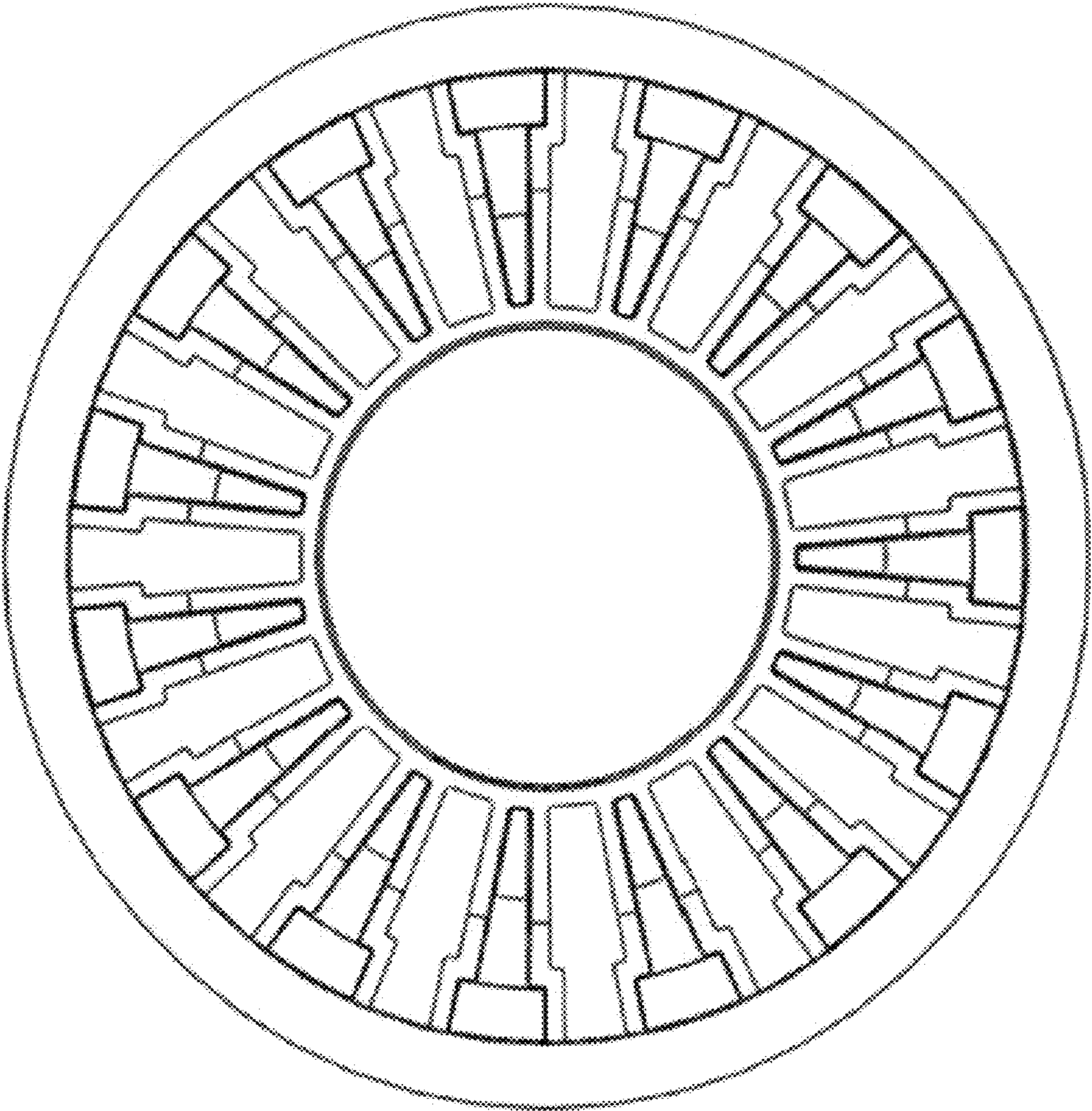


FIG. 3

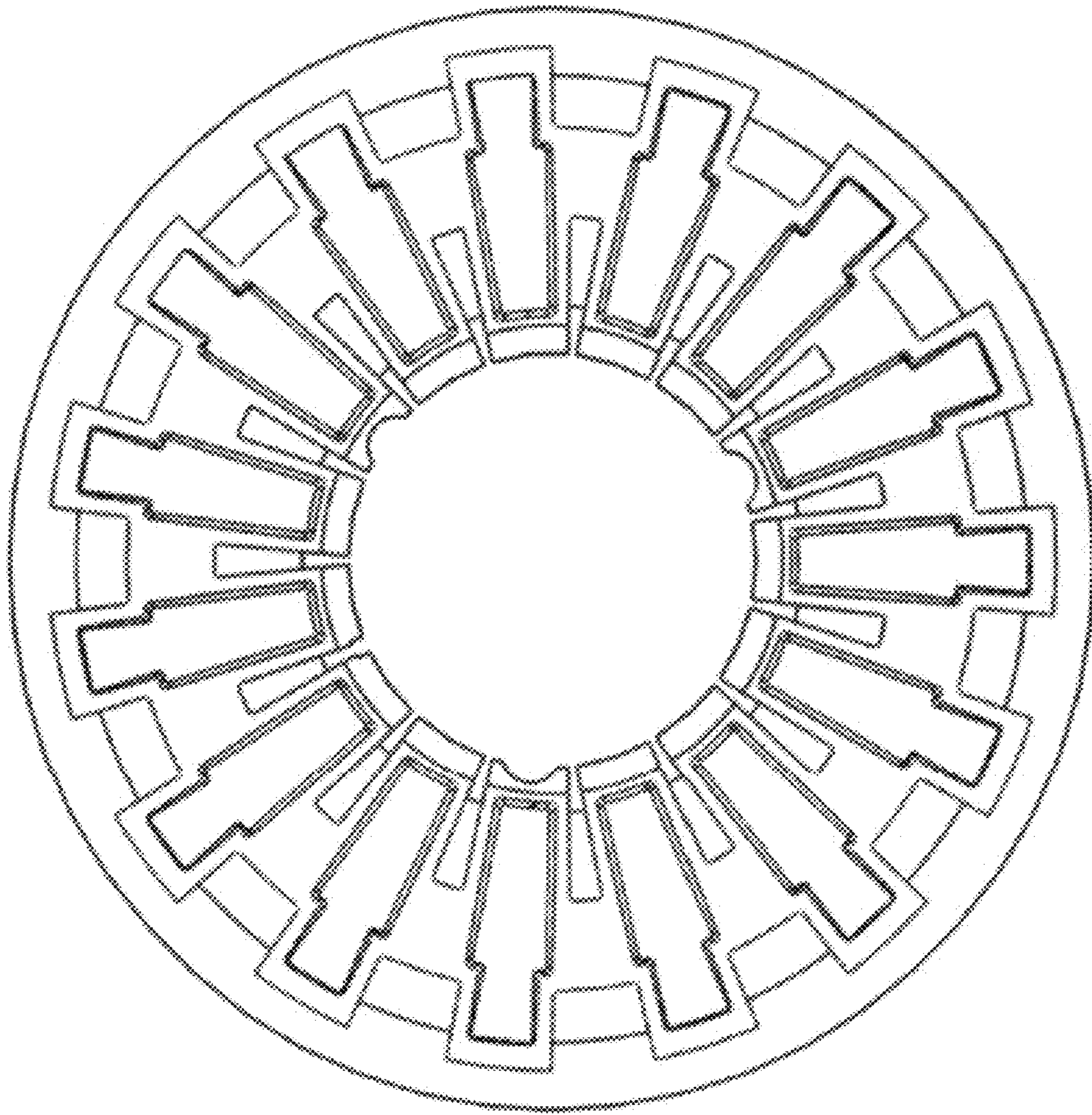


FIG. 4

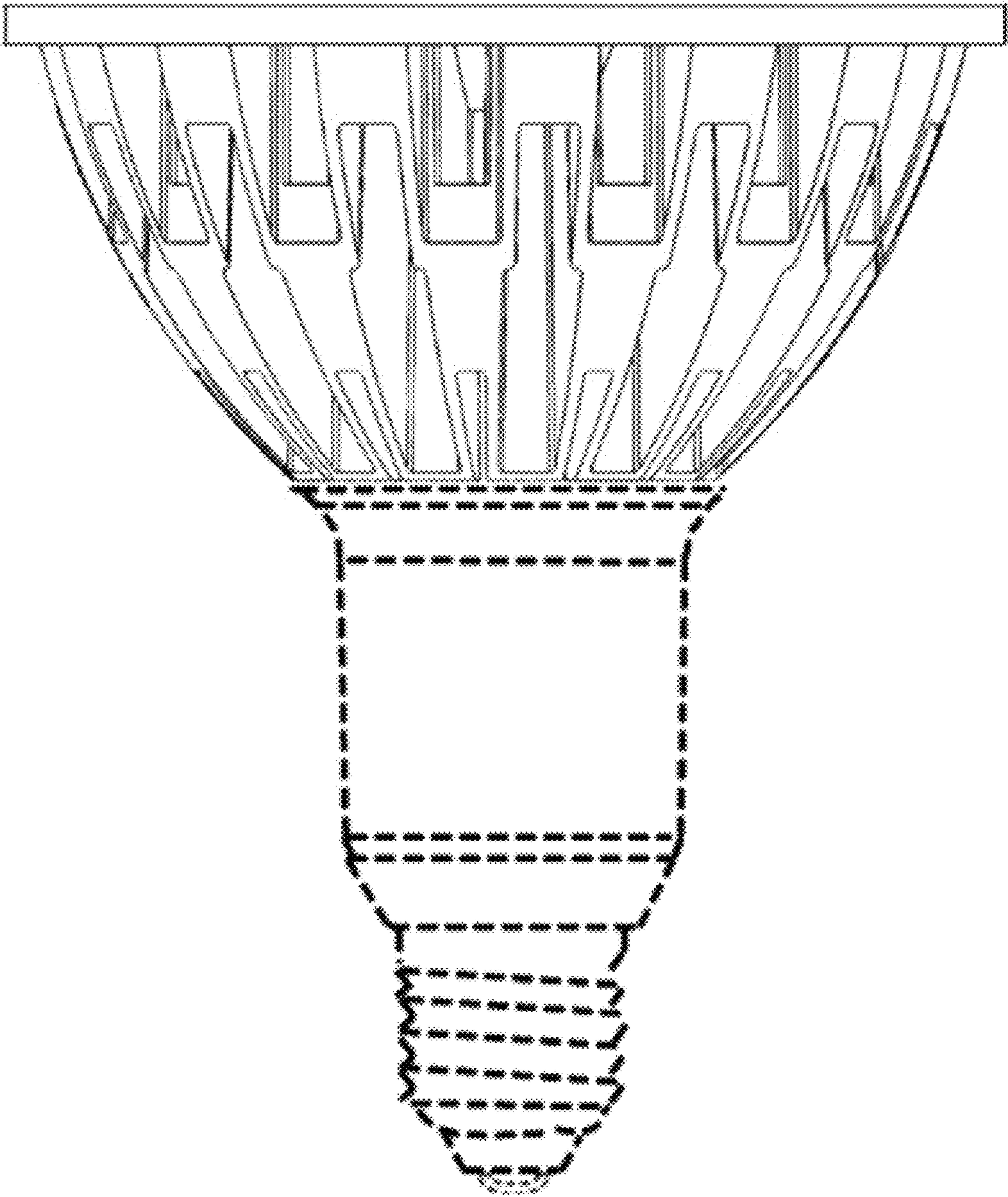


FIG. 5

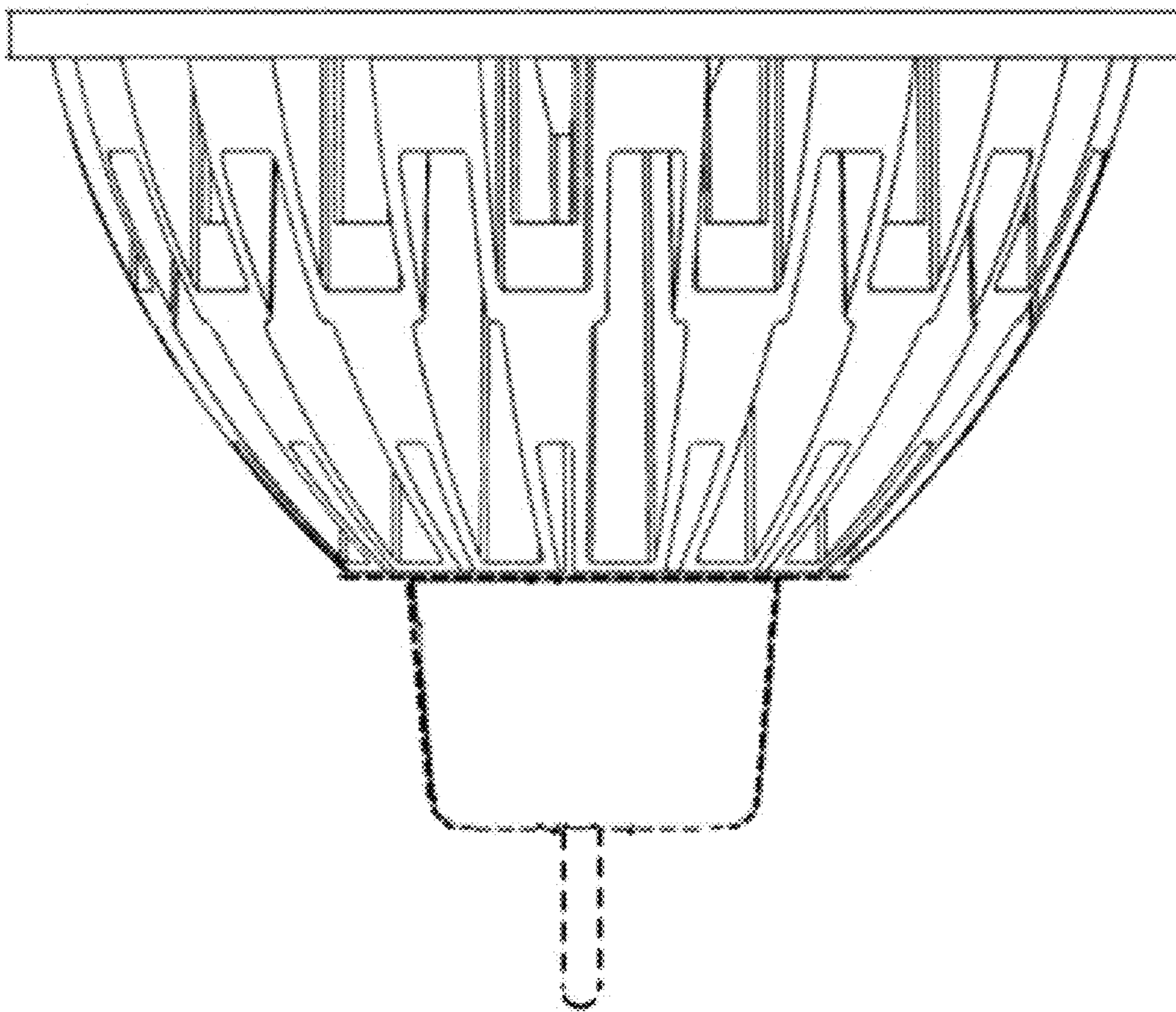


FIG. 6

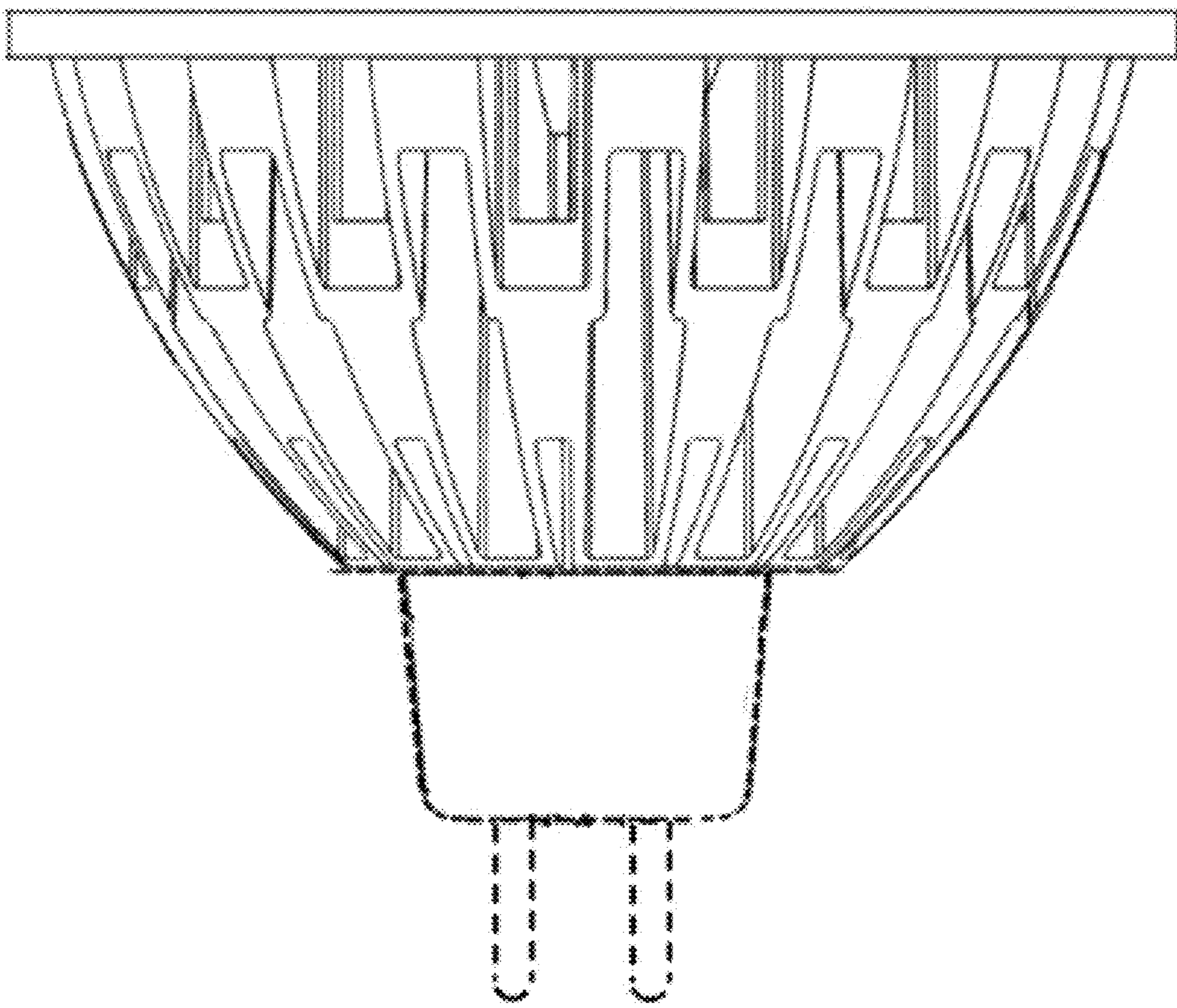


FIG. 7

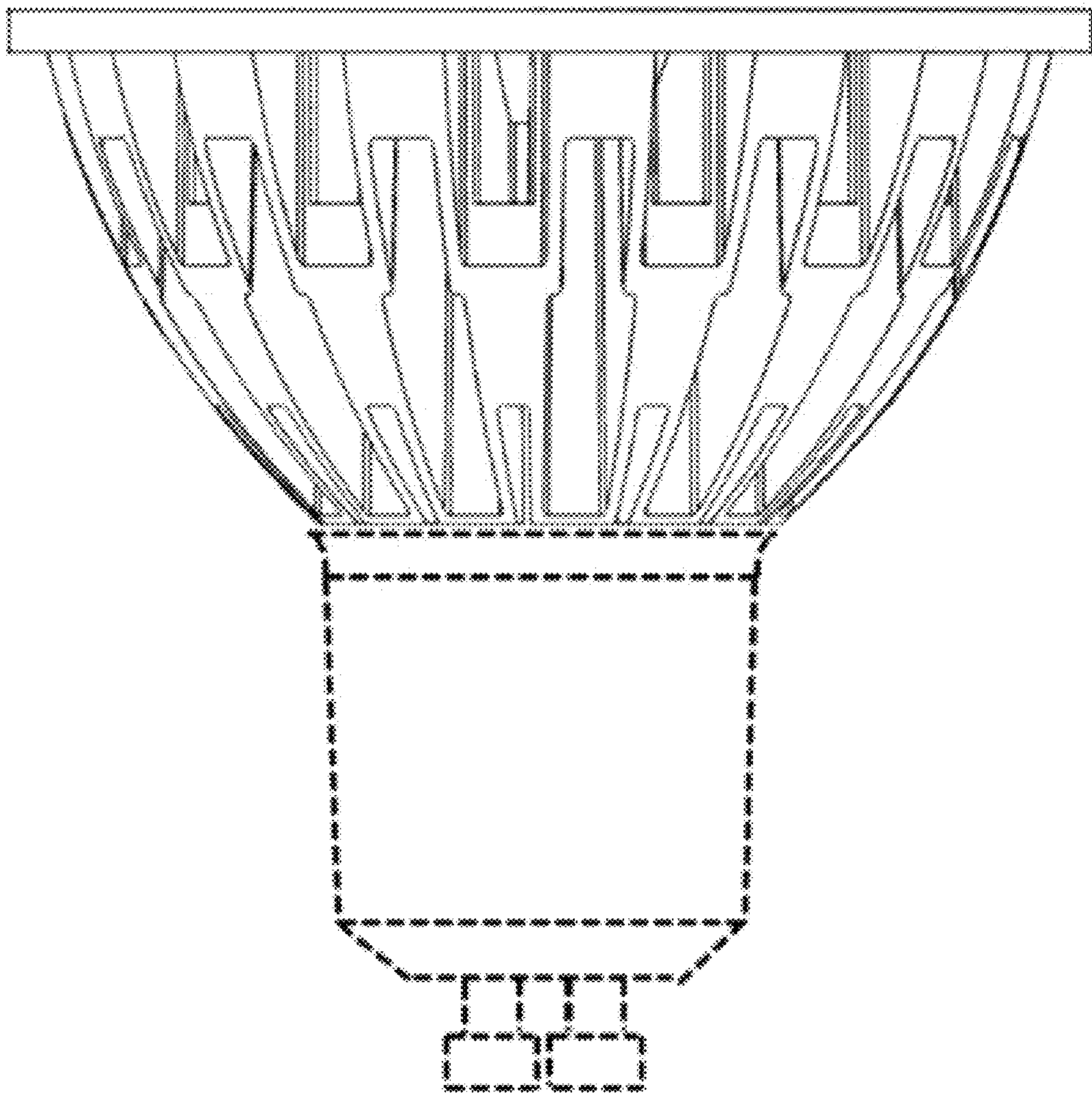


FIG. 8

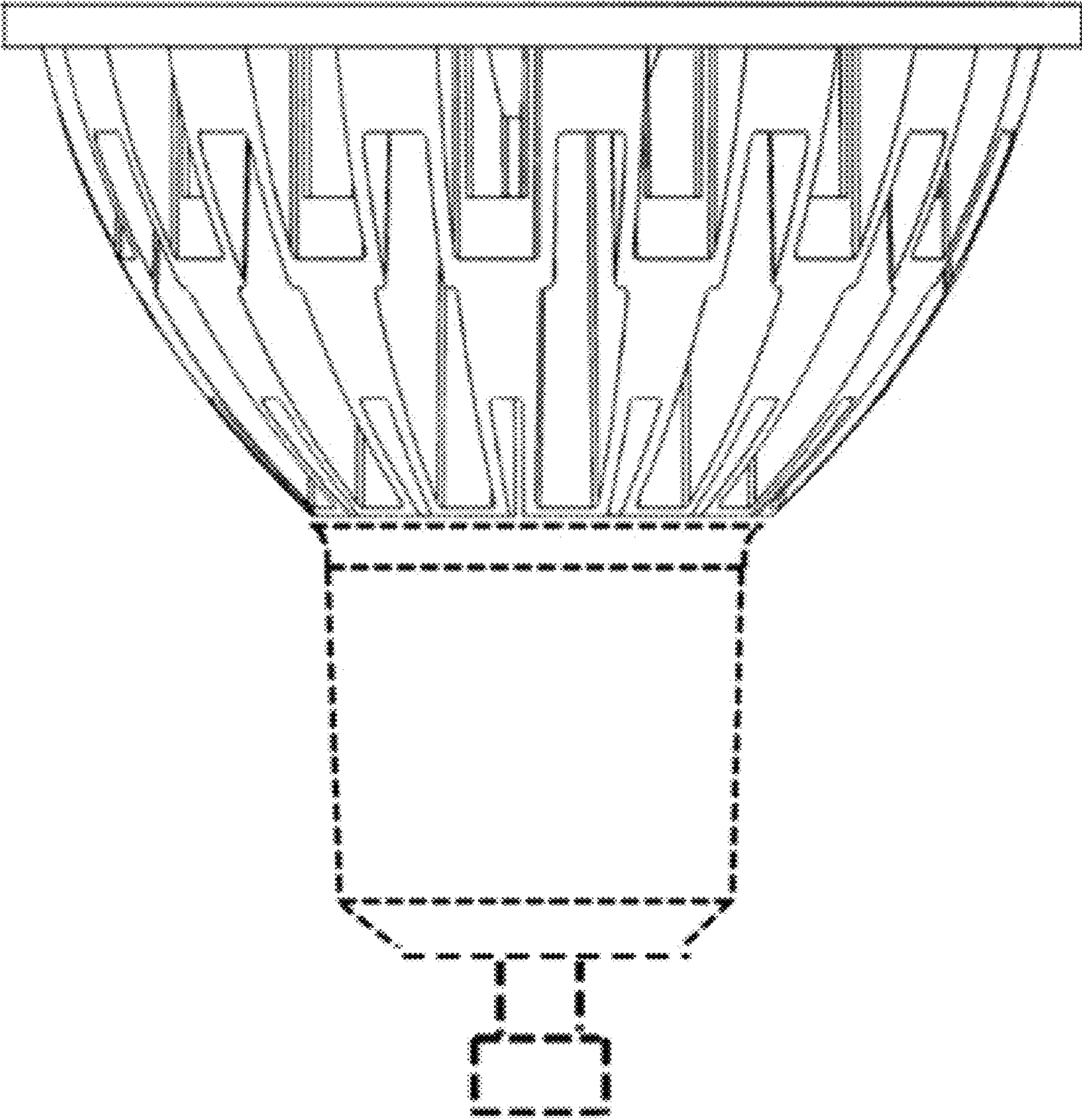


FIG. 9