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

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

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

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(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)

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(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 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;

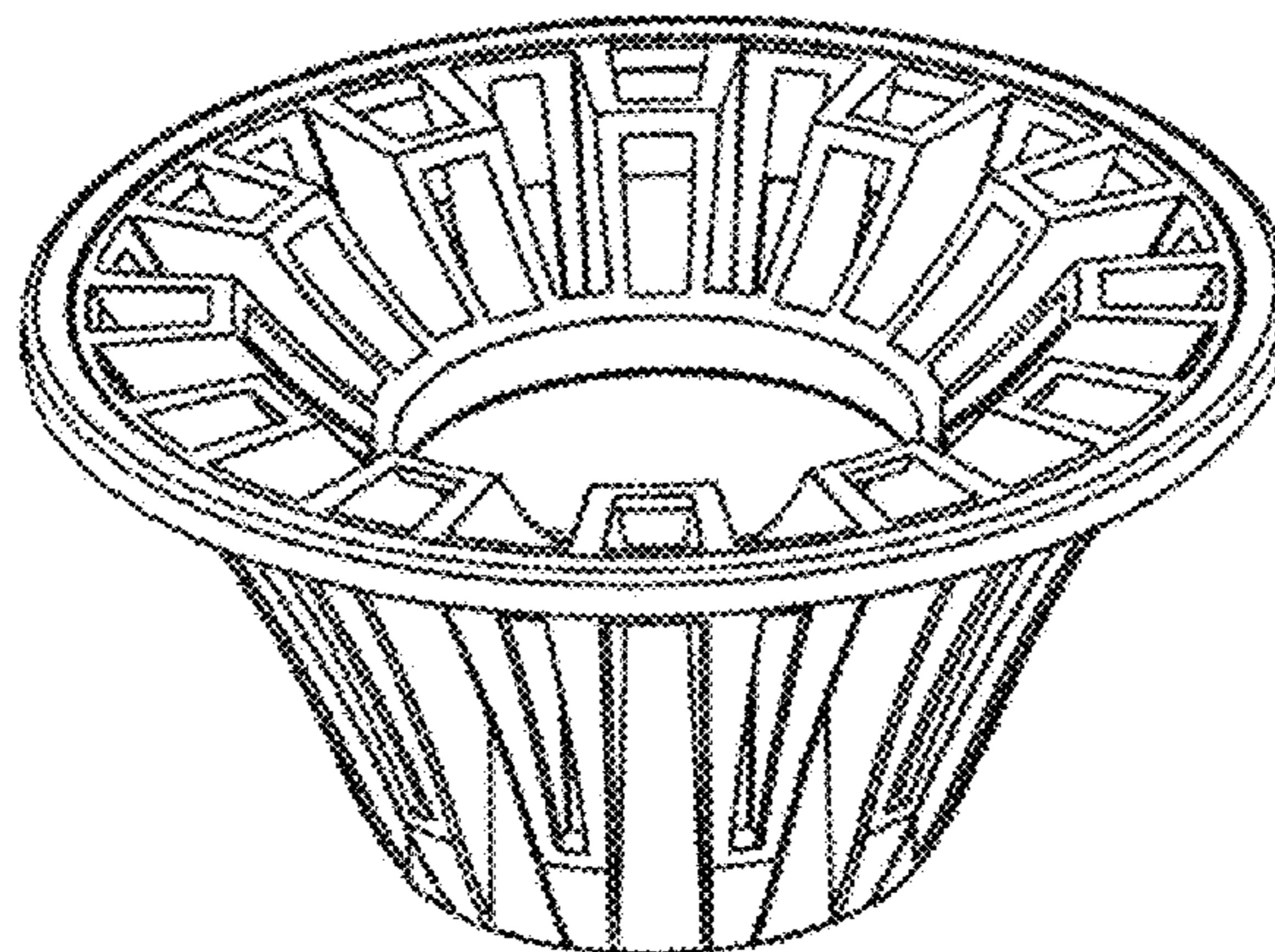
FIG. 7 is a right view thereof with a MR16-GU5.3 base, it being understood that the opposite side not shown is a mirror image thereof;

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**



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(56)

## References Cited

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

## U.S. PATENT DOCUMENTS

2013/0033165 A1\* 2/2013 Terazawa ..... 313/46 \* cited by examiner

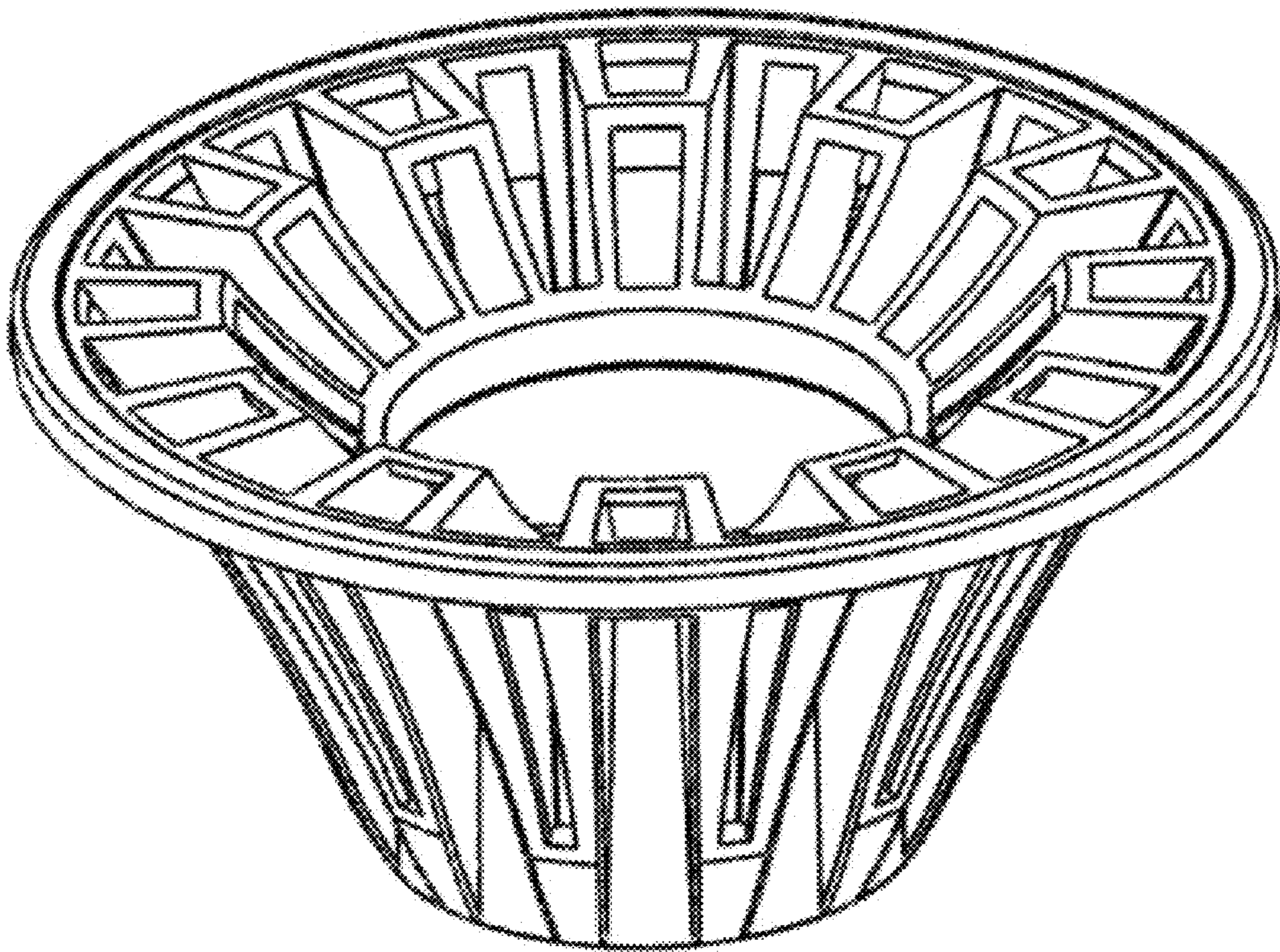


FIG. 1

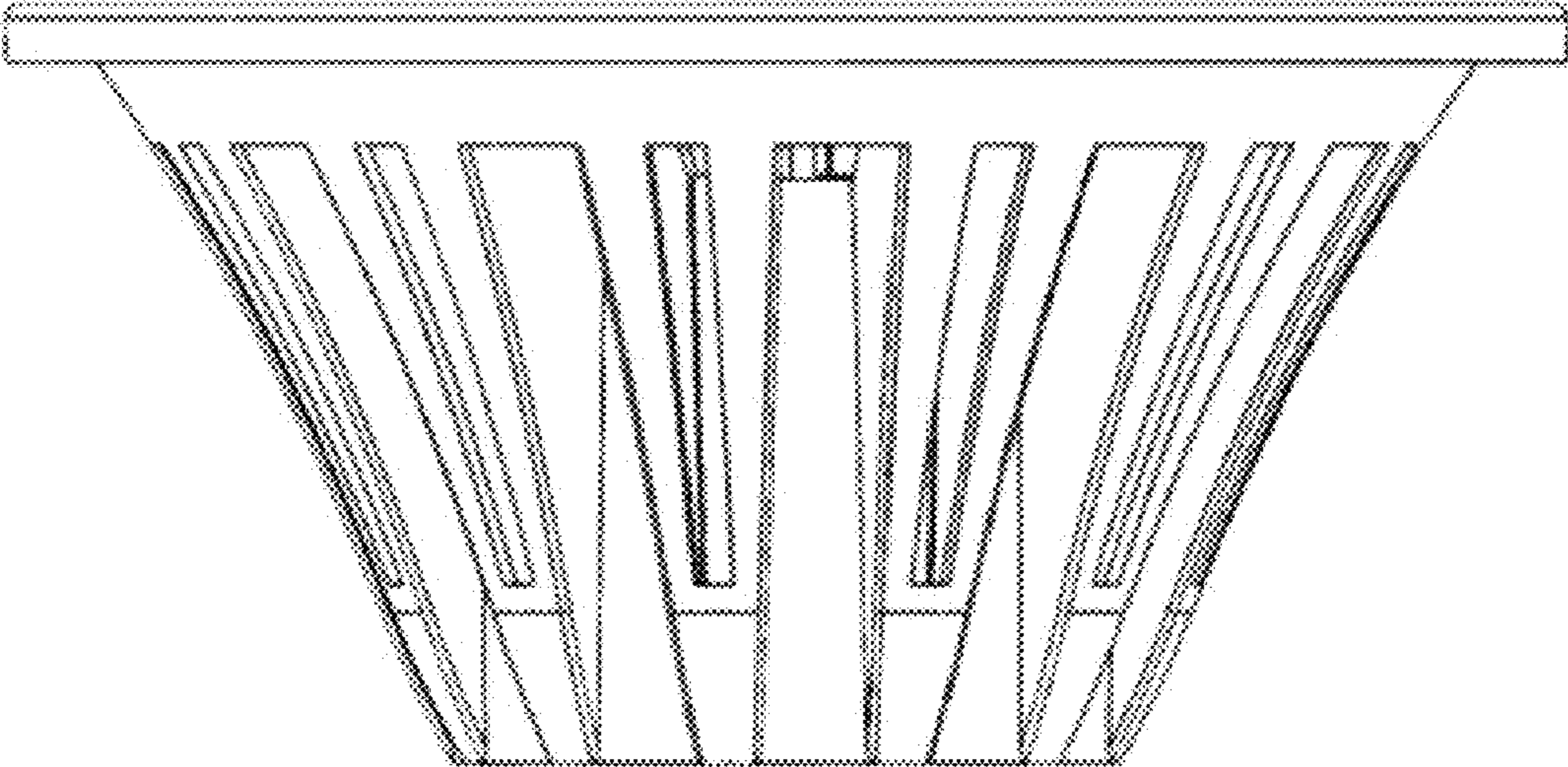


FIG. 2

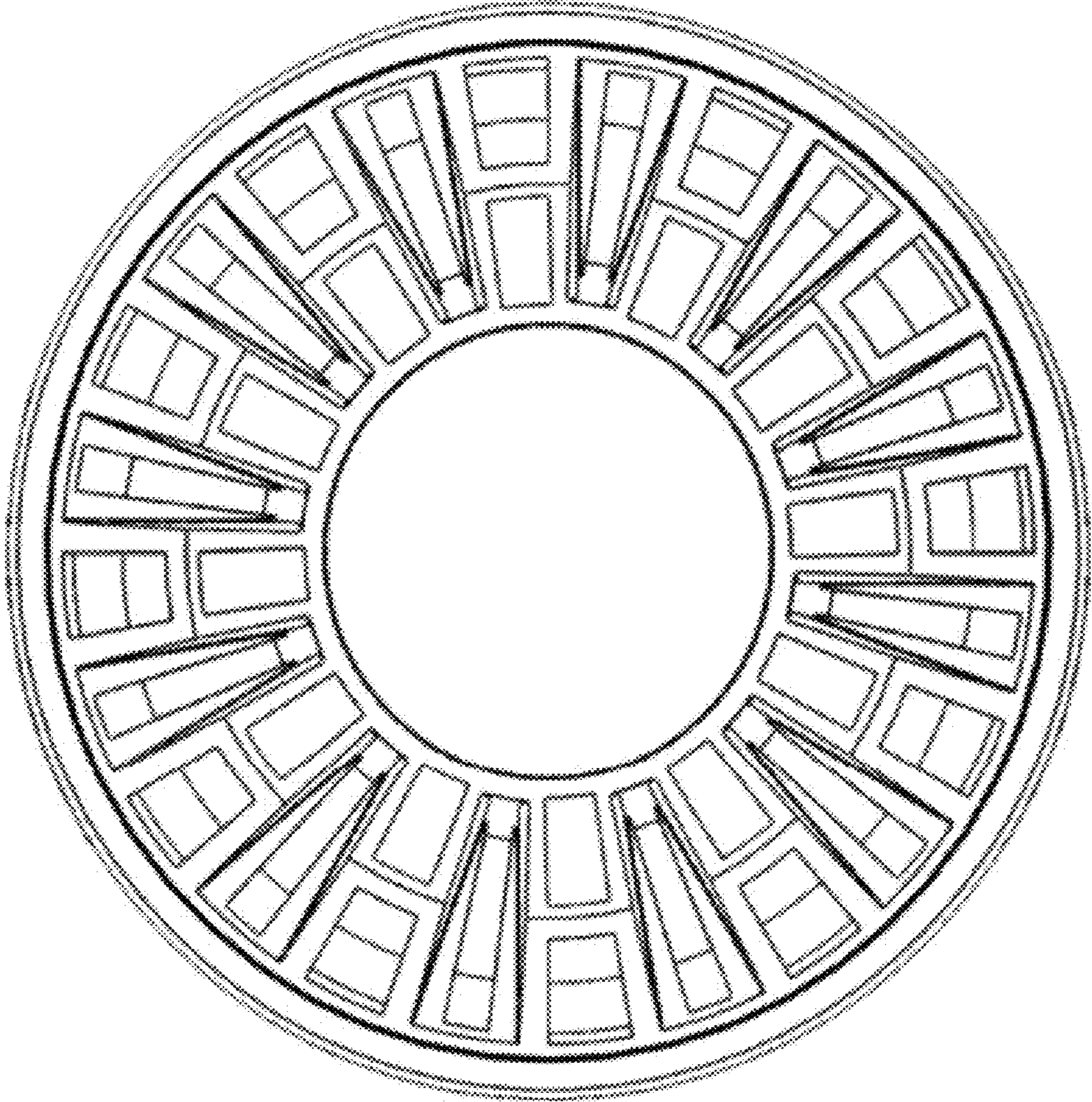


FIG. 3

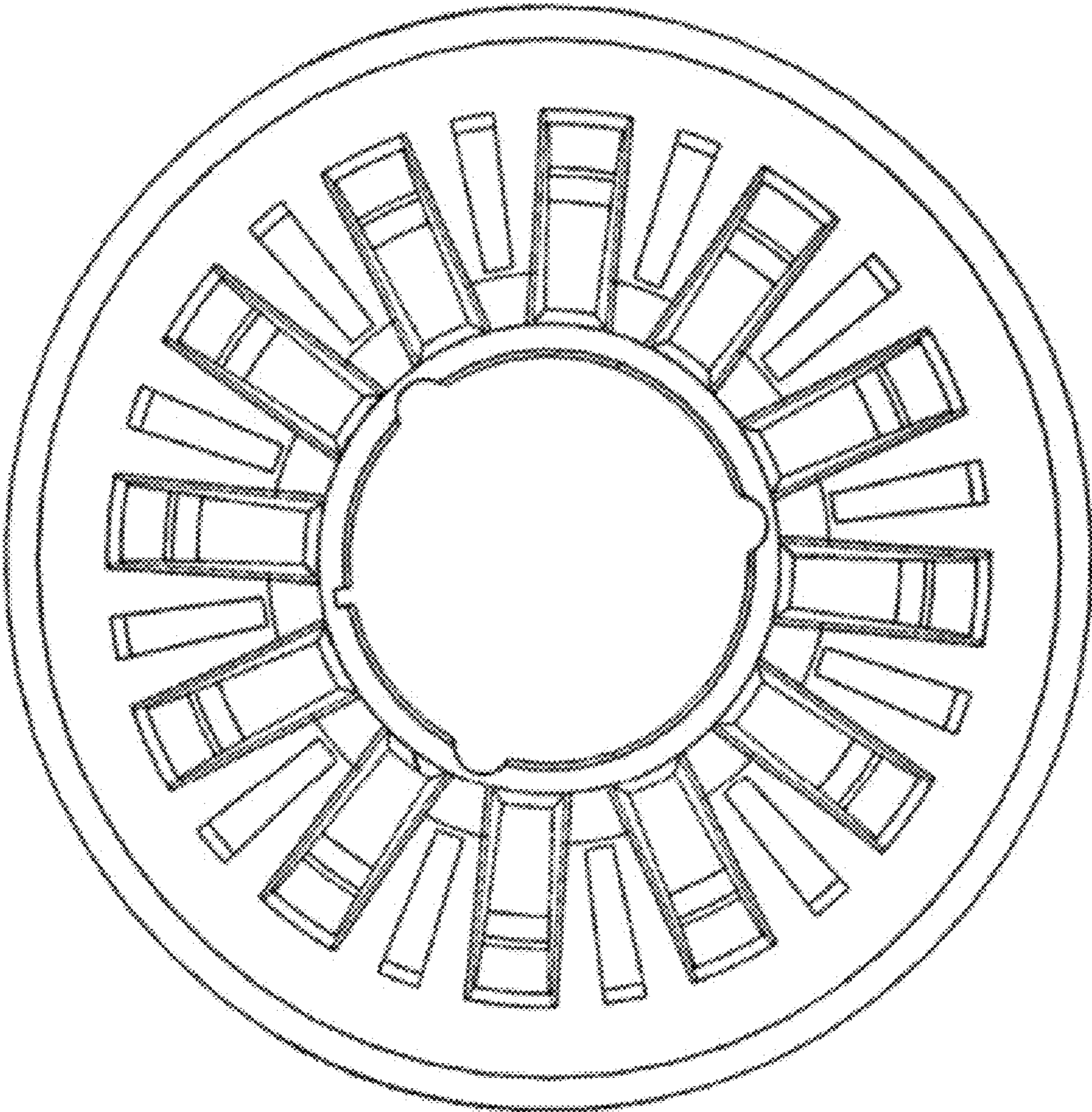


FIG. 4

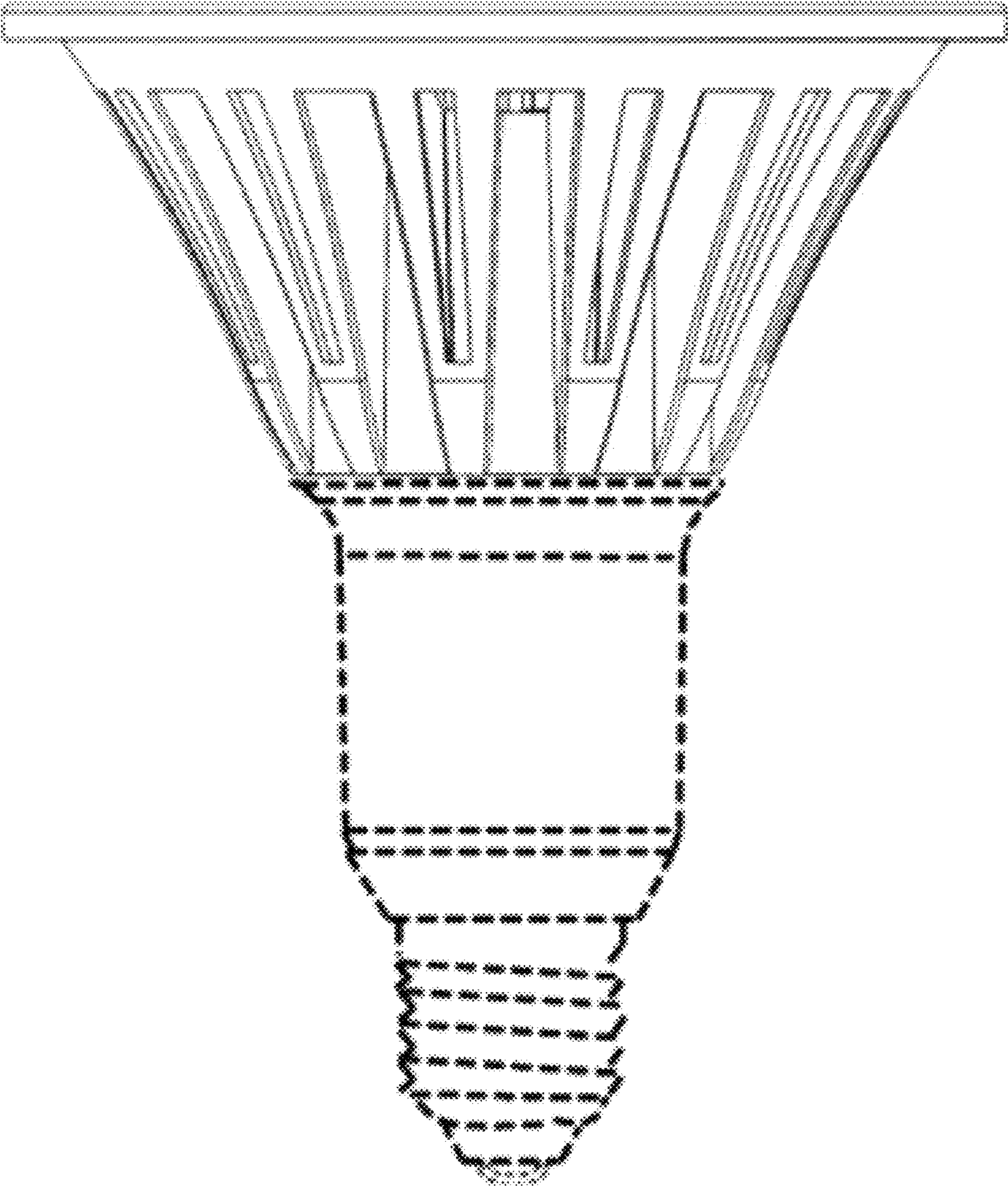


FIG. 5

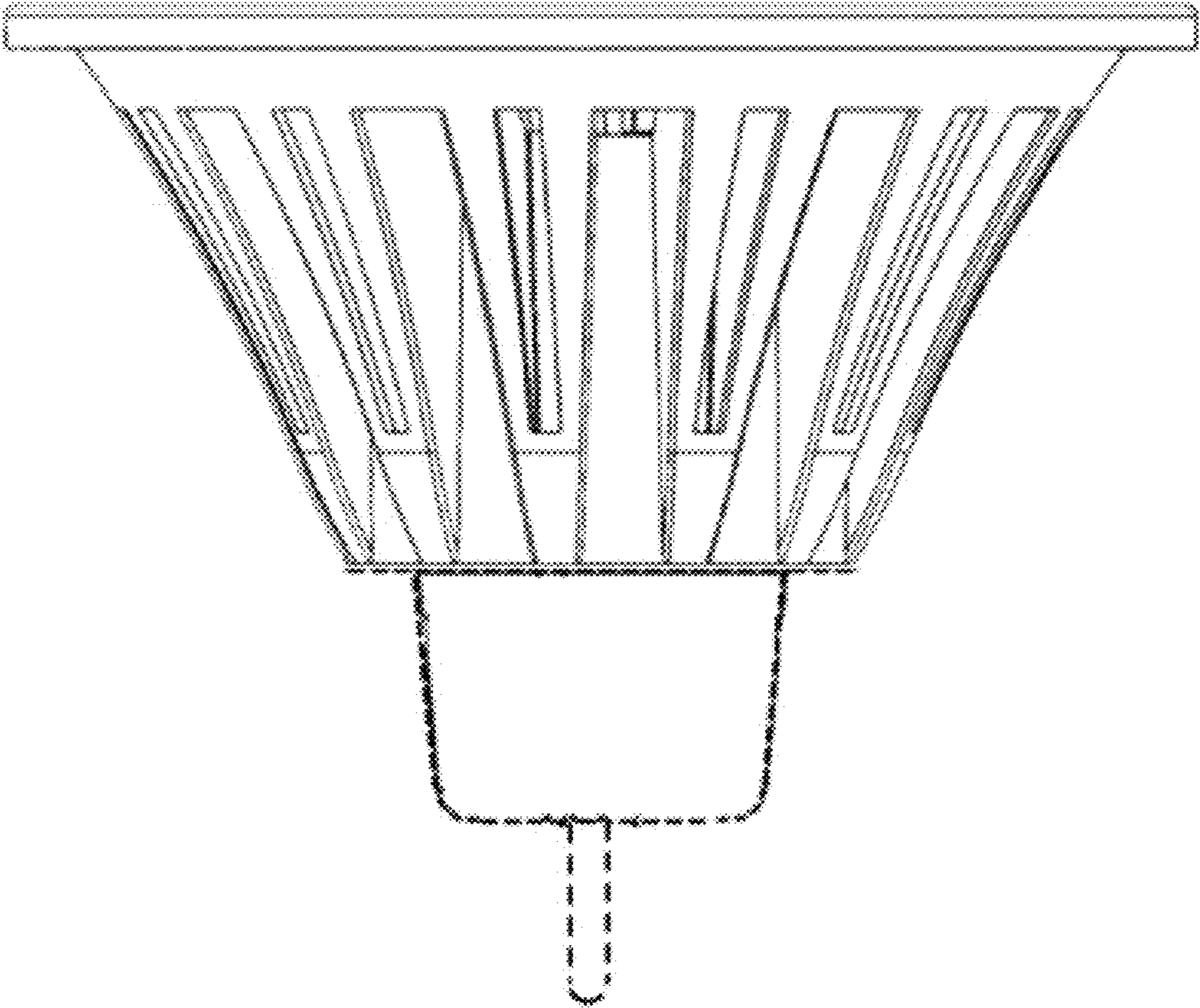


FIG. 6



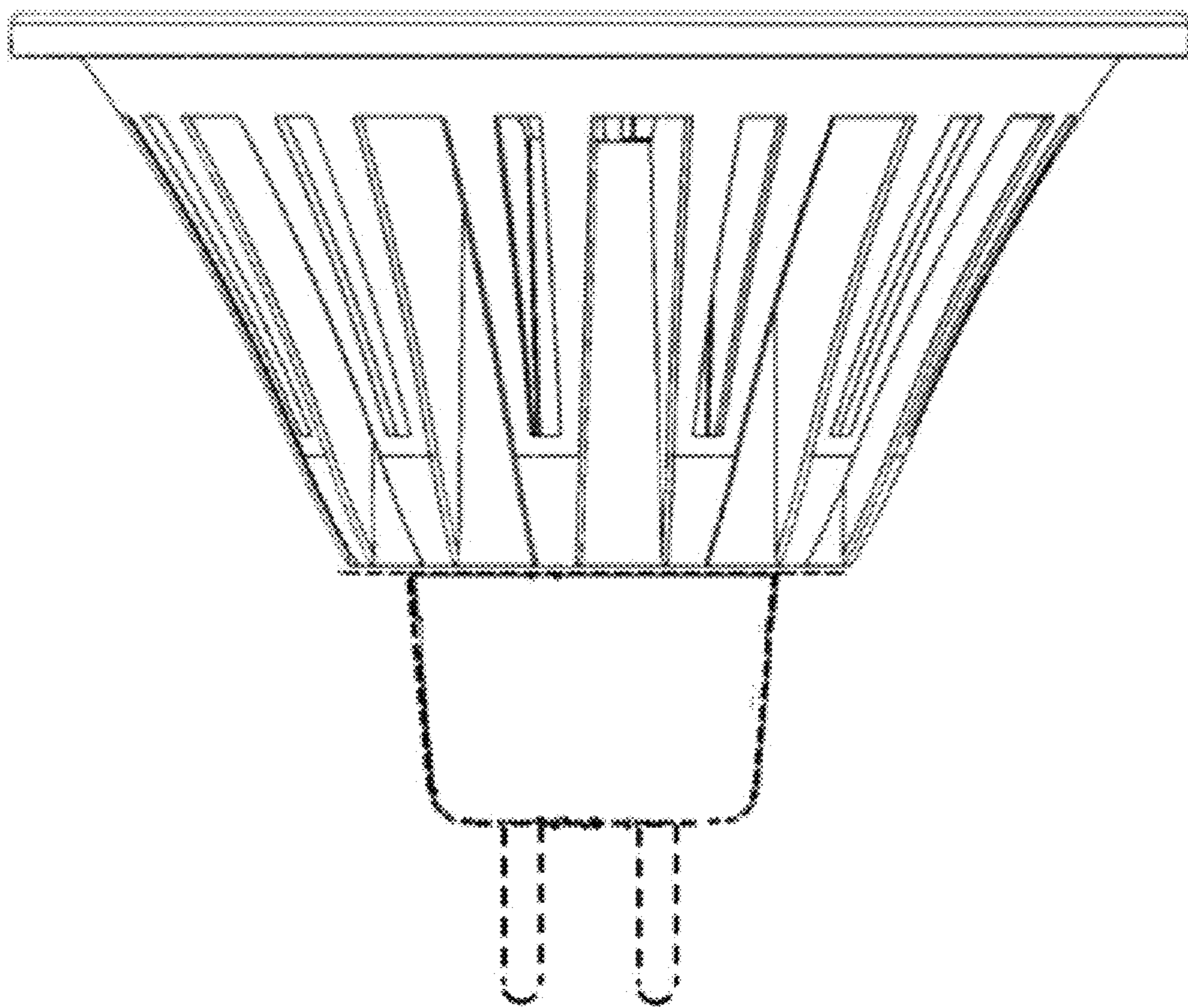


FIG. 7

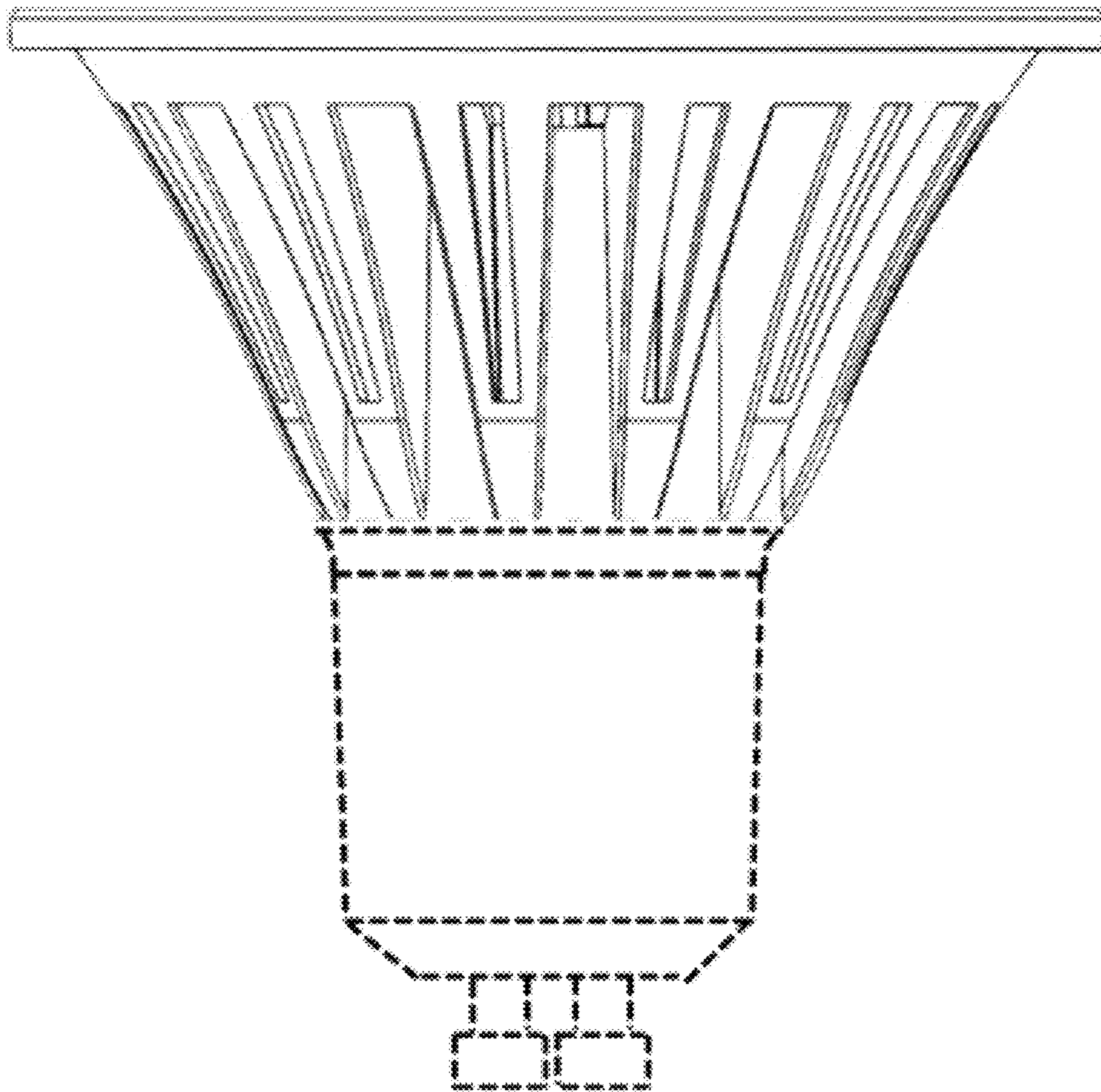


FIG. 8

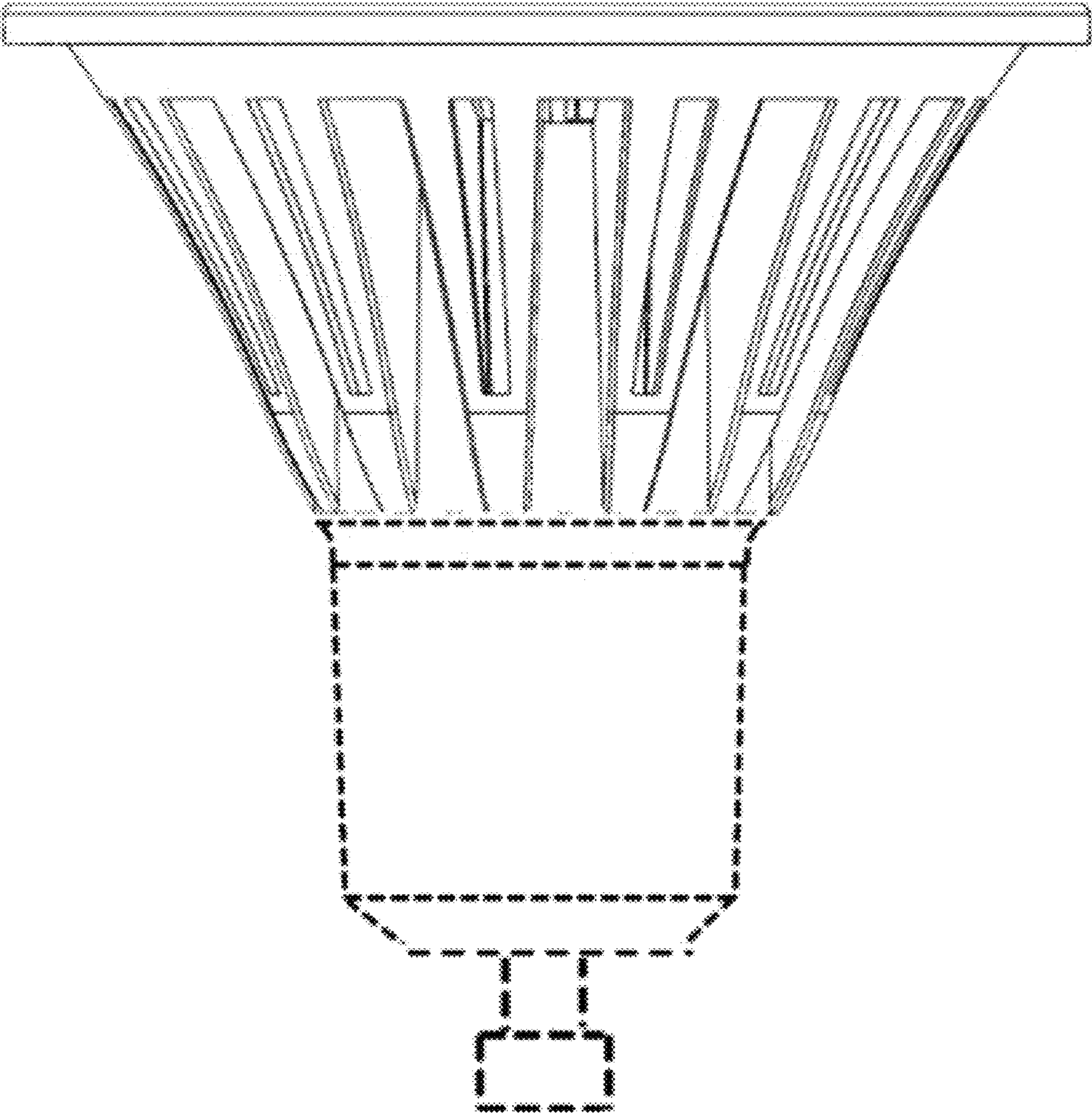


FIG. 9