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(12) **United States Design Patent** (10) **Patent No.:** **US D878,439 S**
Chen (45) **Date of Patent:** **** Mar. 17, 2020**

(54) **CUTTER HEAD**

(71) Applicant: **CHAMP-AIR REFRIGERATION
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(**) Term: **15 Years**

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(51) **LOC (12) Cl.** **15-09**

(52) **U.S. Cl.**
USPC **D15/139**

(58) **Field of Classification Search**
USPC D8/61, 67, 70, 86; D15/127, 131, 138,
D15/139, 140
CPC . B21D 39/04; B21D 39/203; Y10T 29/49375;
Y10T 29/49863; Y10T 29/4994; B23C
5/02; B23C 5/10; B23C 5/14
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D244,597 S * 6/1977 Bowes, Jr. D15/29
D244,683 S * 6/1977 Bowes, Jr. D15/29
5,810,517 A * 9/1998 Bostic B23C 5/10
407/53
D492,331 S * 6/2004 Matti D15/139
D514,131 S * 1/2006 Brady D15/139
D531,196 S * 10/2006 Watanabe D15/139
D537,693 S * 3/2007 Watanabe D15/139
D537,694 S * 3/2007 Watanabe D15/139
D538,127 S * 3/2007 Watanabe D15/139
D538,128 S * 3/2007 Watanabe D15/139
D544,004 S * 6/2007 Janness D15/139
D549,249 S * 8/2007 Omi D15/139

D555,683 S * 11/2007 Sakata D15/139
D585,918 S * 2/2009 Chiang D15/139
D590,851 S * 4/2009 Frejd D15/139
D602,511 S * 10/2009 Sandoval D15/139
D602,965 S * 10/2009 Frejd D15/139
D607,024 S * 12/2009 Dost D15/139
D620,334 S * 7/2010 Evatt D15/139
D624,097 S * 9/2010 Kenny D15/139
D627,804 S * 11/2010 Fader D15/139
D639,320 S * 6/2011 Frejd D15/139
D647,116 S * 10/2011 Omi D15/139
D647,117 S * 10/2011 Omi D15/139
D648,356 S * 11/2011 Clark D15/29
D649,569 S * 11/2011 Evatt D15/139

(Continued)

FOREIGN PATENT DOCUMENTS

DE 202017107139 U1 * 2/2019 B23C 5/26

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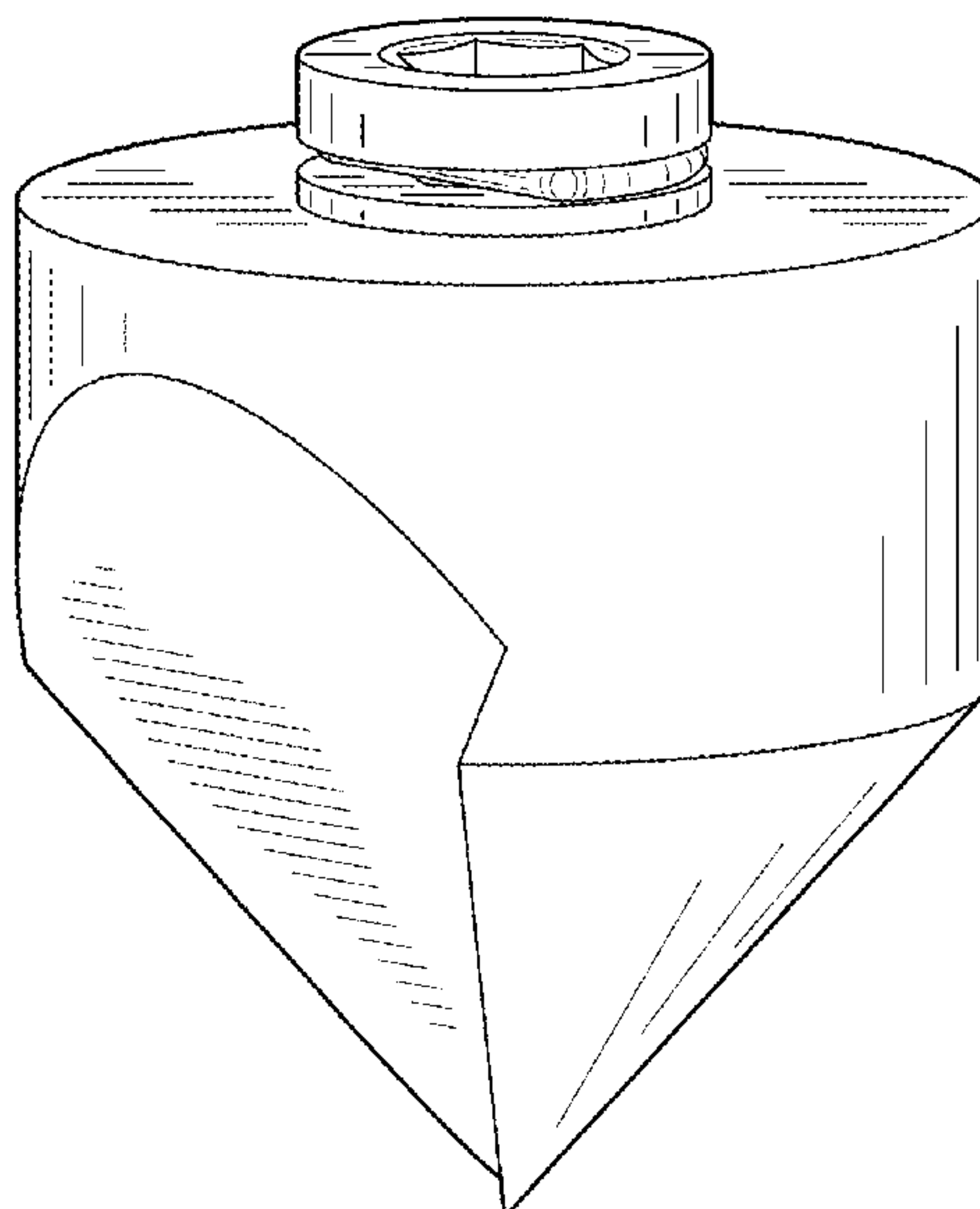
(57) **CLAIM**

The ornamental design for a cutter head, as shown and
described.

DESCRIPTION

FIG. 1 is a perspective view of a cutter head showing my
new design;
FIG. 2 is a front elevational view thereof;
FIG. 3 is a rear elevational view thereof;
FIG. 4 is a left side elevational view thereof;
FIG. 5 is a right side elevational view thereof;
FIG. 6 is a top plan view thereof;
FIG. 7 is a bottom plan view thereof; and,
FIG. 8 is another perspective view thereof.
The broken lines depict portions of the article that form no
part of the claimed design.

1 Claim, 8 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

D649,988 S * 12/2011 Frejd D15/139
D682,325 S * 5/2013 Monyak D15/139
D682,326 S * 5/2013 Monyak D15/139
D693,861 S * 11/2013 Sato D15/139
D726,792 S * 4/2015 Velozny D15/139
D734,790 S * 7/2015 O'Malley D15/139
D734,791 S * 7/2015 O'Malley D15/139
D753,737 S * 4/2016 Zeiner D15/139
D765,980 S * 9/2016 Slimane D3/322
D766,691 S * 9/2016 Liu D8/86
D775,676 S * 1/2017 Matti D15/139
D794,691 S * 8/2017 Yano D15/139
D798,921 S * 10/2017 Frota de Souza Filho .. D15/139
D798,922 S * 10/2017 Frota de Souza Filho .. D15/139
D804,551 S * 12/2017 Rhode D15/139
D808,449 S * 1/2018 Buhr D15/139
D837,845 S * 1/2019 Jones D15/138
D840,449 S * 2/2019 Wang D15/139
D844,034 S * 3/2019 Yano D15/139
D844,683 S * 4/2019 Yano D15/139
D845,737 S * 4/2019 Descamps D8/86

D847,231 S * 4/2019 Abe D15/139
D847,883 S * 5/2019 Kobayashi D15/139
D848,495 S * 5/2019 Maeno D15/139
D849,073 S * 5/2019 Spangberg D15/139
D852,245 S * 6/2019 Kobayashi D15/139
D852,246 S * 6/2019 Kobayashi D15/139
D854,586 S * 7/2019 Stanley D15/29
D854,592 S * 7/2019 Matsuda D15/139
D856,387 S * 8/2019 Abe D15/139
D857,069 S * 8/2019 Abe D15/139
D861,754 S * 10/2019 Fukuyama D15/139
2006/0245838 A1 * 11/2006 Napflin B23C 3/12
409/132
2007/0160430 A1 * 7/2007 Chen B23C 5/10
407/54
2013/0051940 A1 * 2/2013 Hobohm B23C 5/10
407/53
2015/0266111 A1 * 9/2015 Cigni B23C 5/10
409/131
2016/0052108 A1 * 2/2016 Miess B24D 18/0009
51/309
2018/0009082 A1 * 1/2018 Farrell B23C 5/10

* cited by examiner

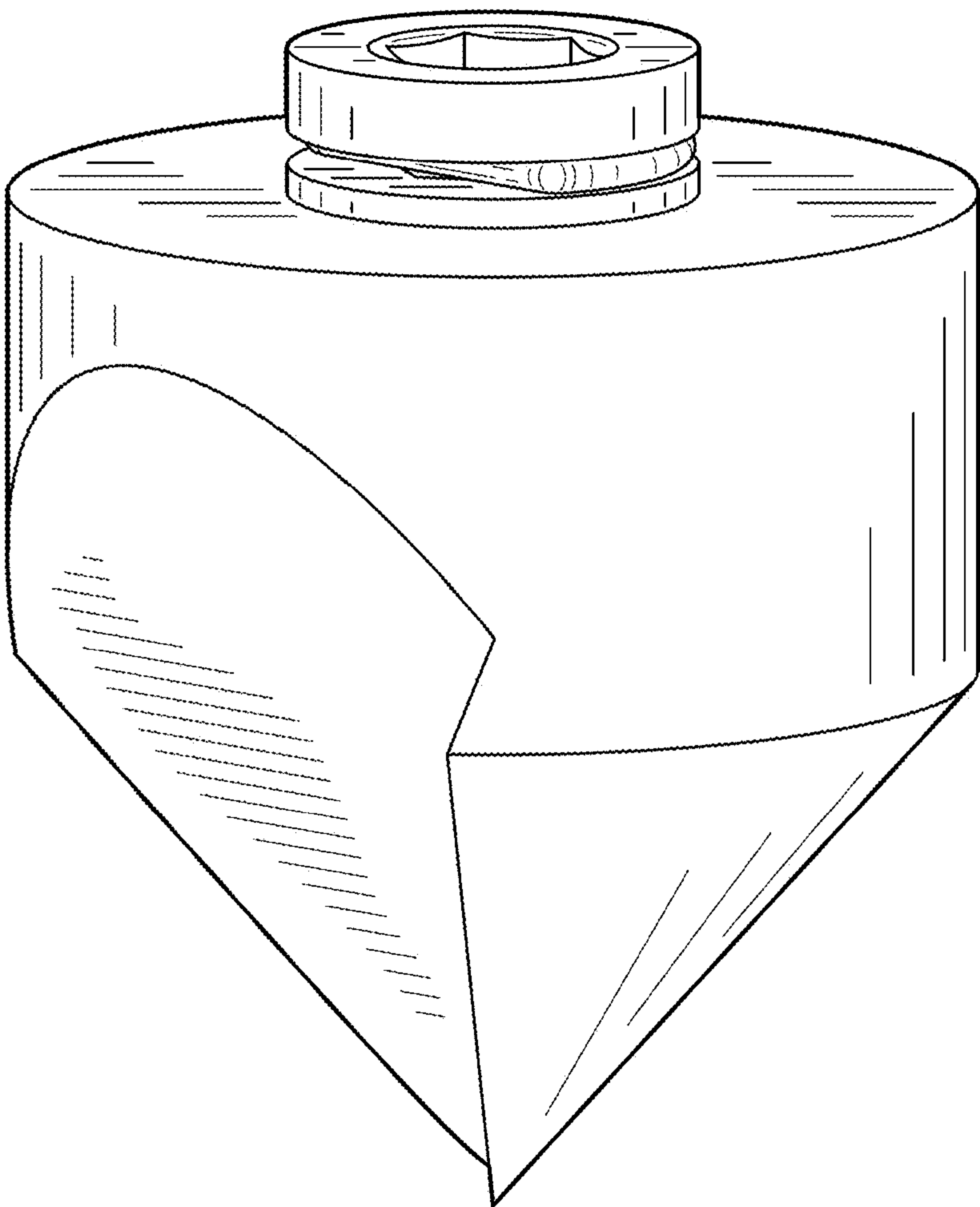


FIG. 1

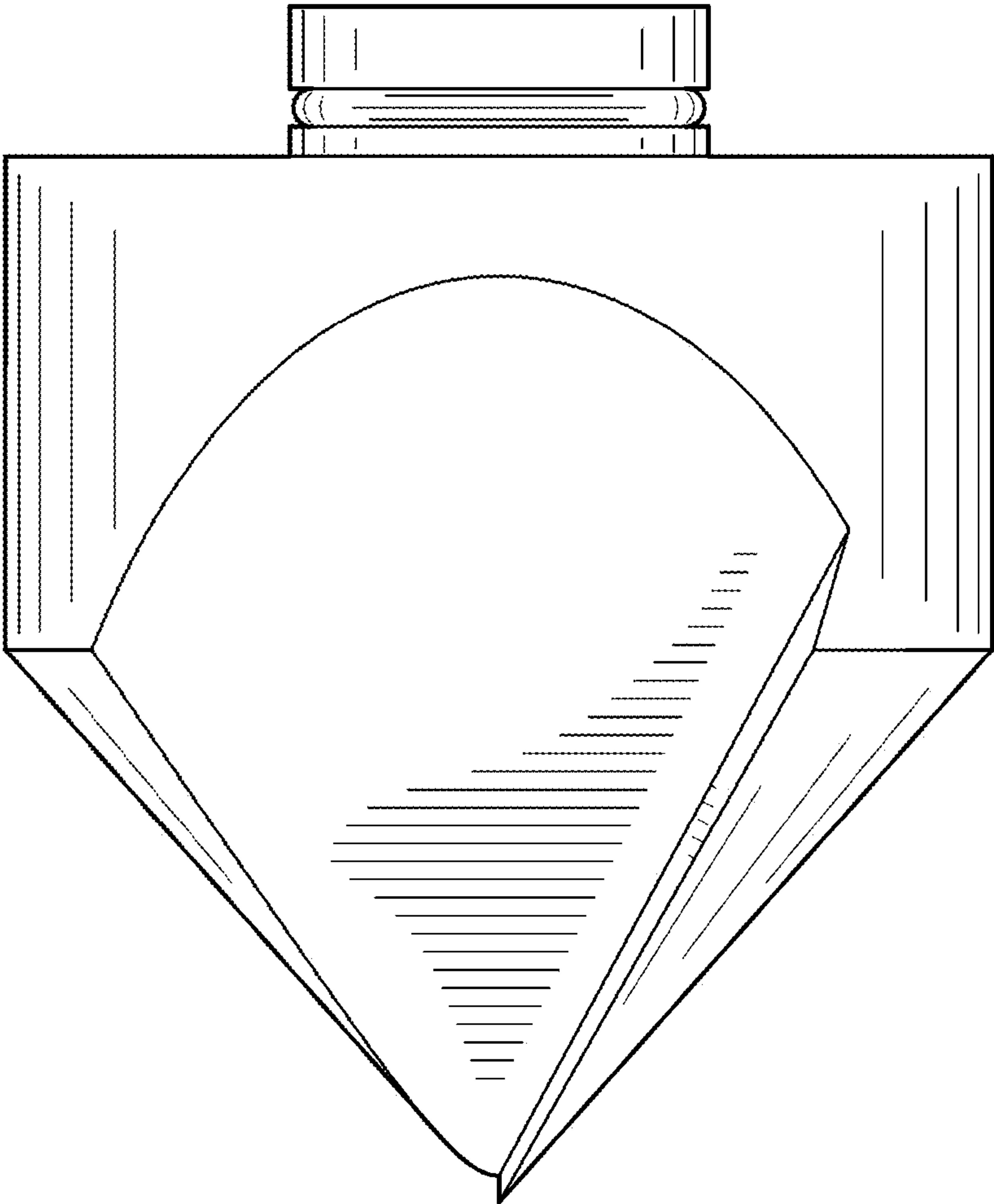


FIG. 2

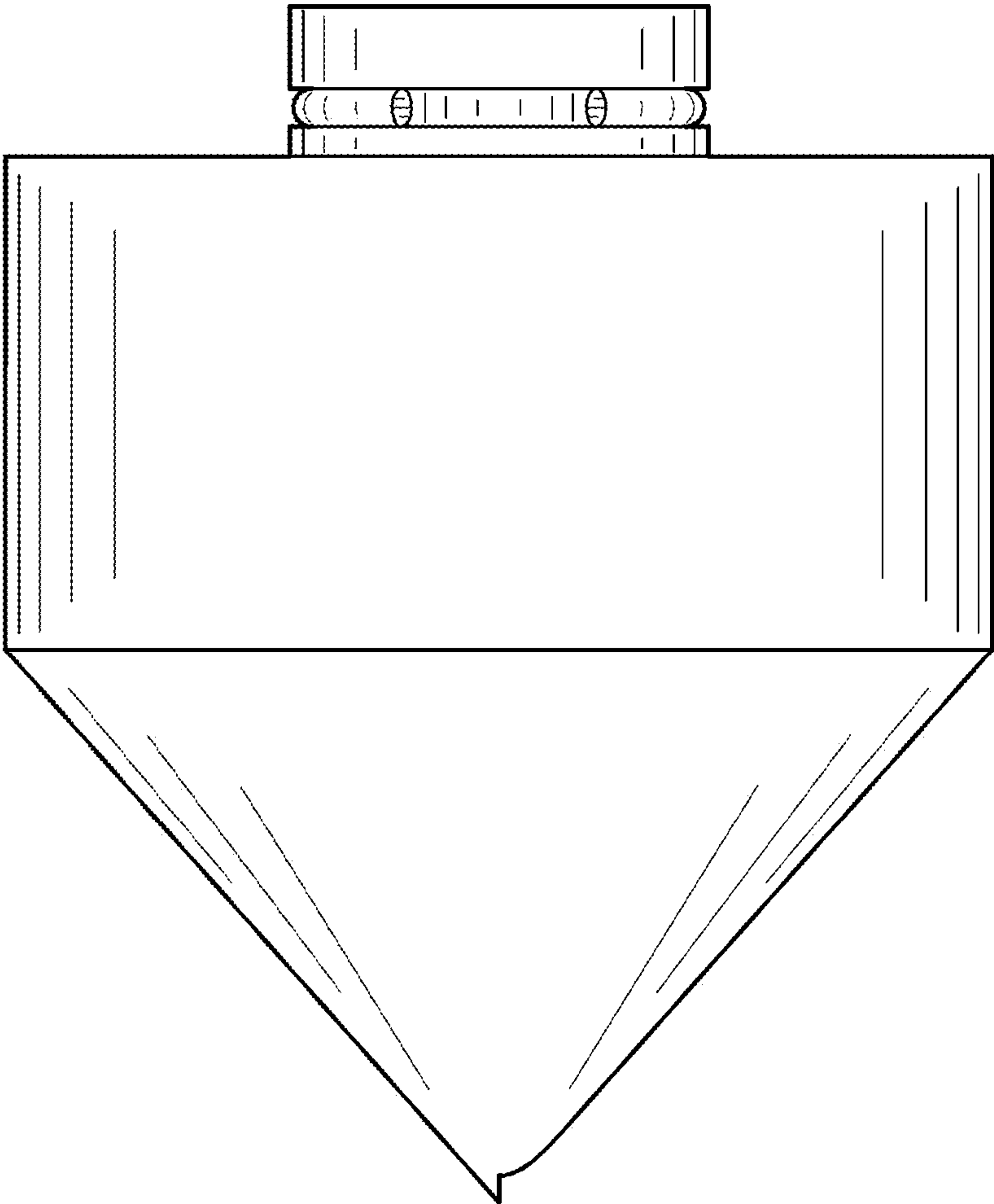


FIG. 3

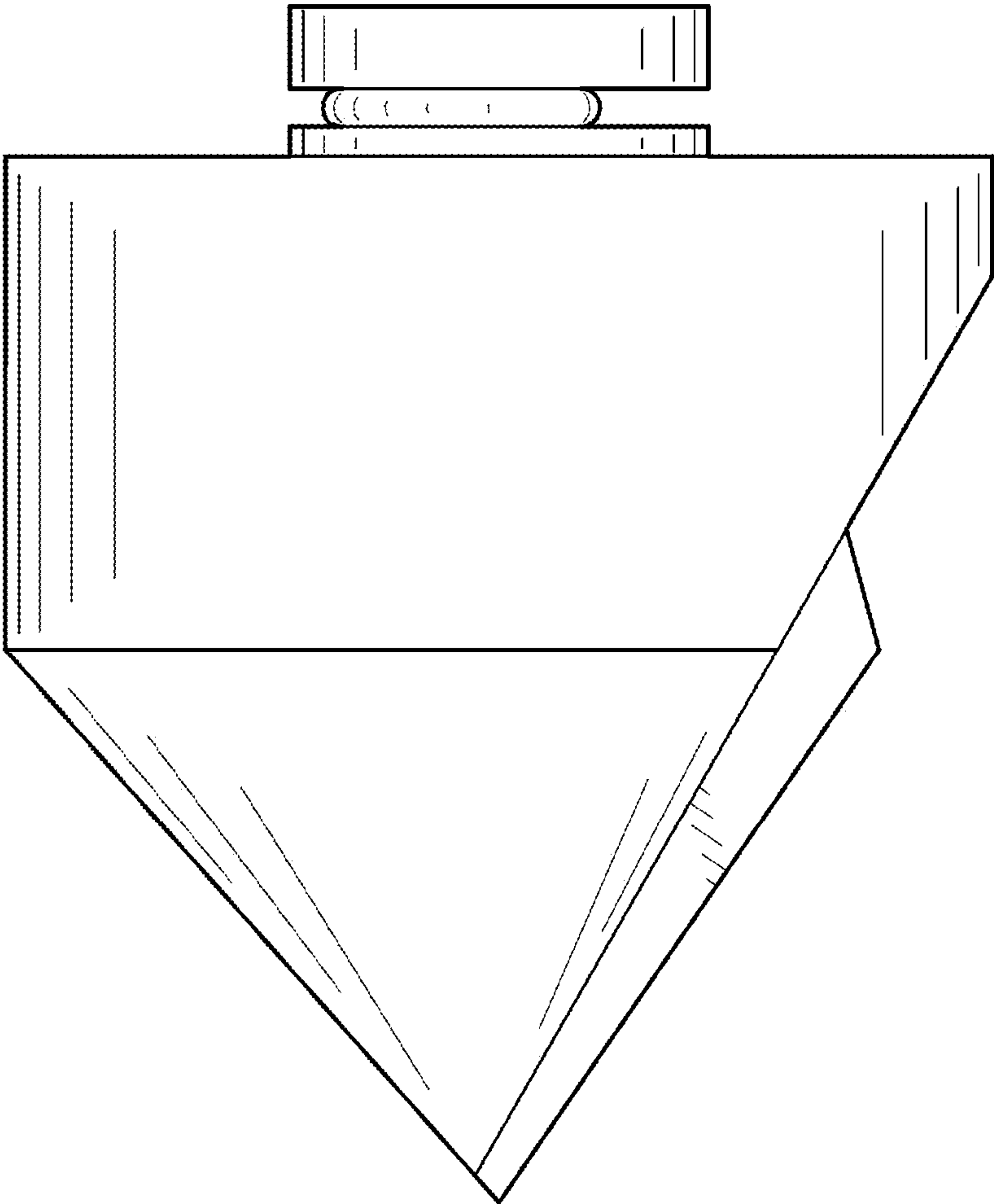


FIG. 4

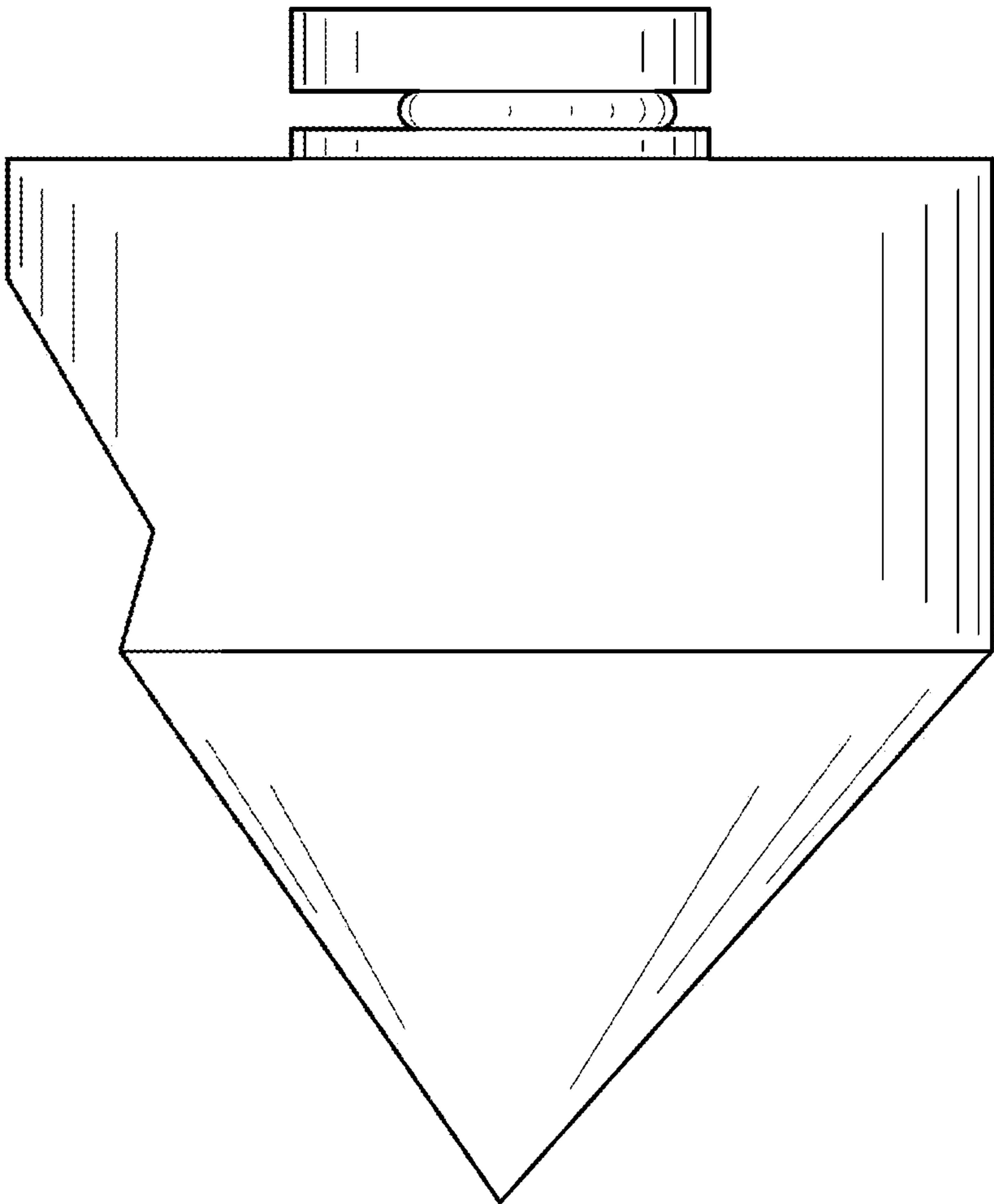


FIG. 5

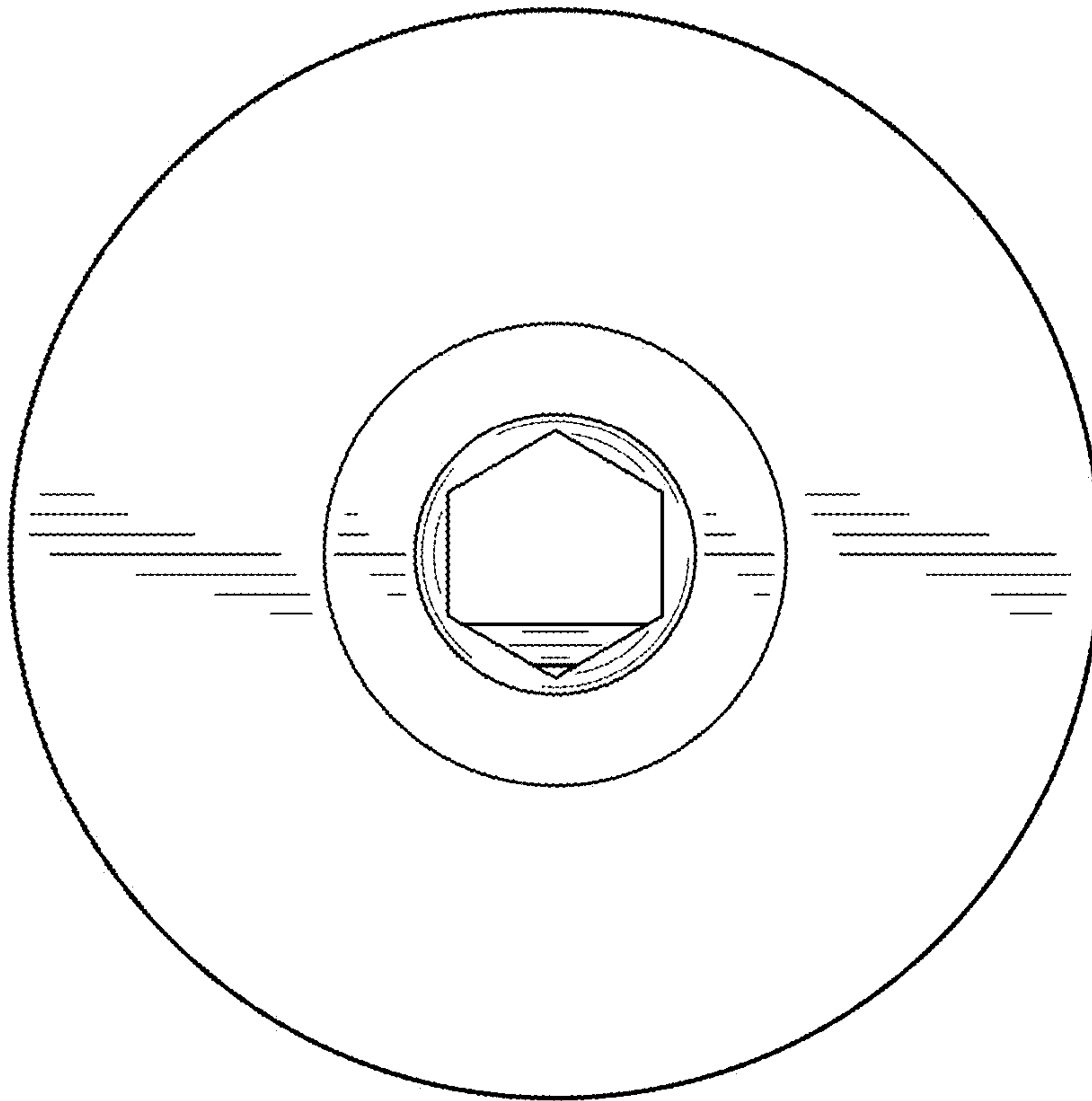


FIG. 6

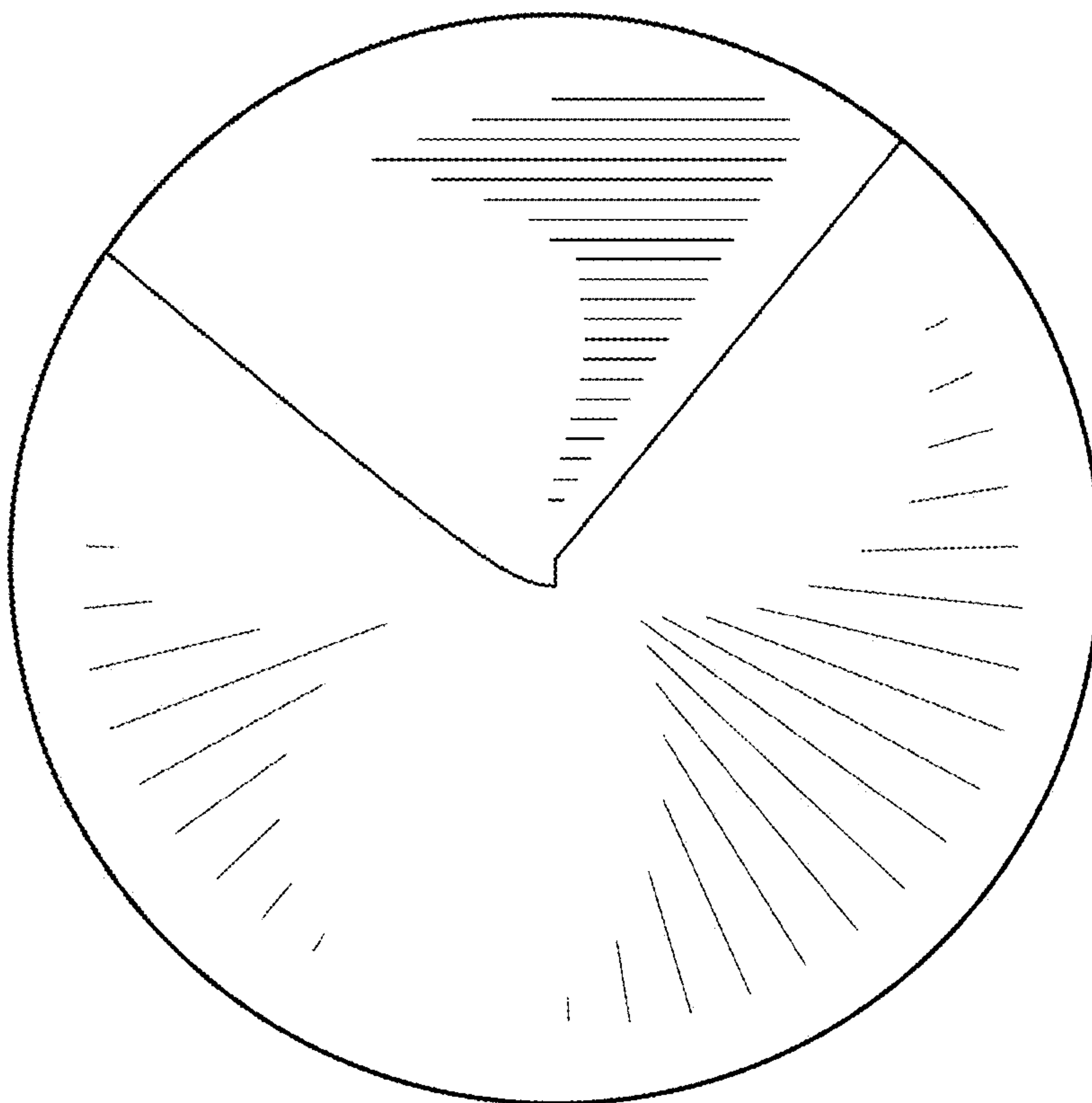


FIG. 7

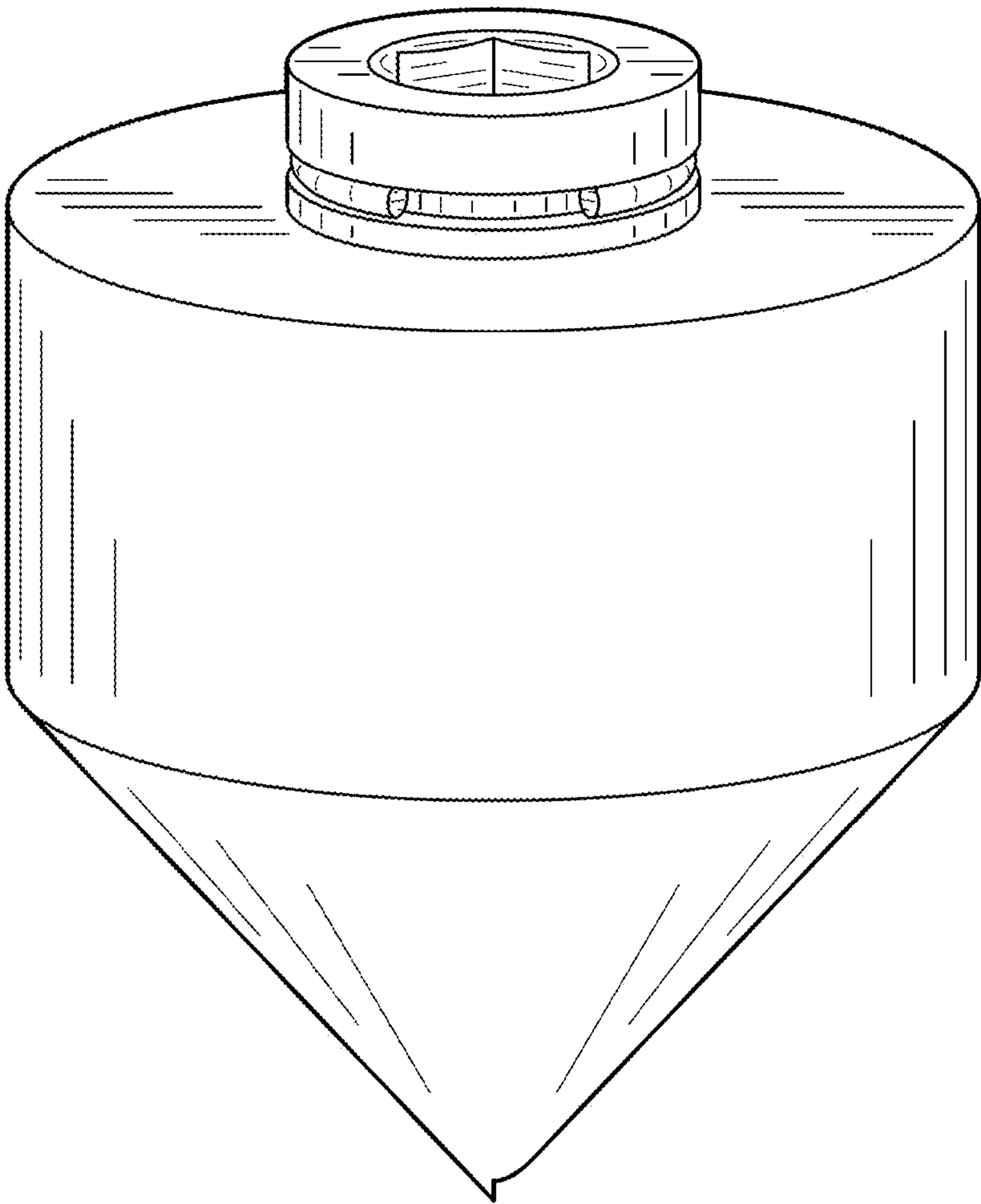


FIG. 8