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

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(54) **MULTI-PARAMETER SONDE AND PORTIONS THEREOF, INCLUDING SENSOR, SENSOR GUARD AND BRUSH THEREOF**

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

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(51) **LOC (10) Cl.** **10-04**

(52) **U.S. Cl.**
USPC **D10/81**

(58) **Field of Classification Search**
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CPC G01N 33/22; G01N 33/221; G01N 33/18;
G01N 33/1806; G01N 33/1813; G01N
33/1893; G01N 33/182; G01N 33/1826;
G01N 33/1833; G01N 2033/184; G01N
33/1846; G01N 33/1853; G01N 33/186;
G01N 33/1866; G01N 2033/1873; G01N
33/01

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,099,920	A	3/1992	Warburton et al.	
5,259,452	A	11/1993	Wittrisch	
D371,517	S *	7/1996	Narayanan	D10/78
5,596,193	A	1/1997	Chutjian et al.	
5,820,416	A	10/1998	Carmichael	
D418,073	S *	12/1999	Kreutzer	D10/81
6,157,029	A	12/2000	Chutjian et al.	
6,305,944	B1	10/2001	Henry et al.	
6,677,861	B1	1/2004	Henry et al.	
6,779,383	B2	8/2004	Lizotte et al.	
6,798,347	B2	9/2004	Henry et al.	
6,928,864	B1	8/2005	Henry et al.	

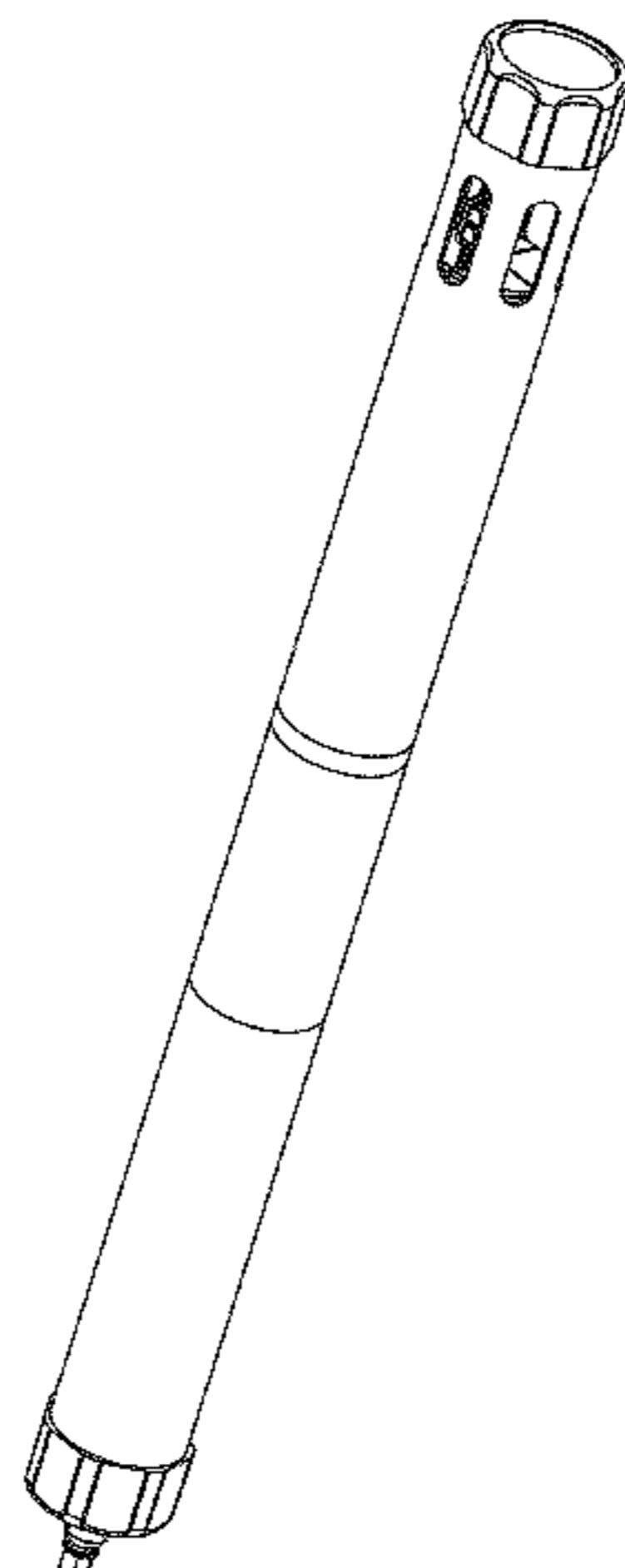
6,938,506	B2	9/2005	Henry et al.	
6,943,686	B2 *	9/2005	Allen	G08B 13/08 340/546
7,007,541	B2	3/2006	Henry et al.	
7,138,926	B2	11/2006	Henry et al.	
7,142,299	B2	11/2006	Tokhtuev et al.	
7,470,917	B1	12/2008	Hoang et al.	
D616,314	S *	5/2010	Akomolede	D10/56
7,832,295	B2	11/2010	Rodriguez et al.	
7,900,528	B2	3/2011	Vincent	
8,488,122	B2	7/2013	Dong et al.	
8,514,066	B2	8/2013	Harmon	
8,542,189	B2	9/2013	Milne et al.	
8,555,482	B2	10/2013	Metzger	
8,797,523	B2	8/2014	Clark	
2007/0140921	A1	6/2007	Mitchell	
2010/0321046	A1	12/2010	Randall et al.	
2013/0090789	A1	4/2013	DeDonato	

FOREIGN PATENT DOCUMENTS

EP	1851537	9/2013
WO	WO2006/088829	8/2006

OTHER PUBLICATIONS

U.S. Appl. No. 14/937,240, filed Nov. 10, 2015, Baltz et al.
U.S. Appl. No. 14/937,170, filed Nov. 10, 2015, Scott et al.
U.S. Appl. No. 14/937,152, filed Nov. 10, 2015, McKee.
U.S. Appl. No. 14/937,138, filed Nov. 10, 2015, Scott et al.
Sonde Wikipedia, accessed Nov. 4, 2015.
Teledyne Isco AQ700 Water Quality Multi-Parameter Sonde, 2 pages, Sep. 2013.
YSI EXO1 Multiparameter Sonde, <http://www.ysi.com/productsdetail.php?EXO1-Water-Quality-Sonde-89>, webpage publicly available at least as early as Oct. 2014.
YSI EXO2 Multiparameter Sonde, <https://www.ysi.com/EXO2>, webpage publicly available at least as early as Oct. 2014.
Hydrolab HL4 <http://hydrolab.com/hydrolab-hl4-multiparameter-sonde/>, webpage publicly available at least as early as May 6, 2014.
Ott Hydrolab DS5 <http://www.ott.com/products/water-quality/hydrolab-ds5-multiparameter-data-sonde/>, webpage publicly available at least as early as Oct. 2014.
In Situ Troll 9500 Multiparameter Sonde, <https://in-situ.com/products/water-quality-testing-equipment/troll-9500-multiparameter-sonde/>, webpage publicly available at least as early as Apr. 1, 2015.
In Situ Aqua Troll 600 Multiparameter Sonde, <https://in-situ.com/products/water-quality-testing-equipment/aqua-troll-600-multiparameter-sonde/>, webpage publicly available at least as early as Sep. 14, 2015.



In Situ AquaTroll 600 Product Information, <https://in-situ.com/blog/introducing-the-aqua-troll-600-water-quality-platform-2/>, webpage publicly available at least as early as Sep. 21, 2015.

In Situ Water Quality Testing Equipment Products, <https://in-situ.com/product-category/water-quality-testing-equipment/>, webpage publicly available at least as early as Apr. 1, 2015.

Examiner's Report for corresponding CA Application No. 163113, dated Nov. 16, 2015, 3 pages.

* cited by examiner

Primary Examiner — Antoine D Davis

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(57) **CLAIM**

The ornamental design for a multi-parameter sonde and portions thereof, including sensor, sensor guard and brush thereof, as shown and described.

DESCRIPTION

FIG. 1 is a top, perspective view of a multi-parameter sonde with the sensor guard, sensors and brush connected, showing our new design in a sonde-ready configuration; the portion visible through the passages of the sensor guard is illustrated in detail in FIGS. 13-17;

FIG. 2 is a bottom, perspective view thereof, with the brush (see FIGS. 19-26) observable through the passages;

FIG. 3 is a side view thereof, it being understood the other side is identical in that the surface shape is cylindrical, with the passages shown toward the right of the design having a total number of passages of 6 and are circumferentially aligned with an equal spacing between adjacent passages;

FIG. 4 is a top view thereof illustrating the end-cap that covers the right-end of the design;

FIG. 5 is a bottom view thereof;

FIG. 6 is a top, side, rear perspective view of a second embodiment of our design of FIG. 1, with the sensor guard portion in an alternate flipped position to provide a sonde-stored configuration, it being understood that all other surfaces are the same of those of FIGS. 1-5, with the exception that the plurality of openings of the sensor guard are positioned toward the bottom of the multi-parameter sonde so that the sensor ends are covered in a liquid-tight configuration;

FIG. 7 is a side view thereof;

FIG. 8 is a top perspective view of a third embodiment of our new design of FIG. 1, the sensor guard portion thereof in a removed configuration with a cap covering one end thereof;

FIG. 9 is a bottom perspective view thereof;

FIG. 10 is a side view thereof;

FIG. 11 is a bottom perspective view thereof;

FIG. 12 is a bottom view thereof, it being understood that the top view corresponds to FIG. 4;

FIG. 13 is a top perspective view of a fourth embodiment, of our new design of FIG. 1, with the sensor guard of FIGS. 8-12 removed therefrom;

FIG. 14 is a side view thereof, it being understood the other side is identical in that the surface shape is cylindrical;

FIG. 15 is a top perspective view of the distal sensor ends illustrating four sensors and brush of FIGS. 19-26 extending therefrom;

FIG. 16 is a close-up view of the distal end of FIG. 15;

FIG. 17 is a top view thereof;

FIG. 18 is a top perspective view of FIG. 16 with the brush removed therefrom;

FIG. 19 is top, front, inner side view of a fifth embodiment of our new design of FIGS. 1-7 and 13-17, the brush portion thereof;

FIG. 20 is a top, front and outer side view thereof;

FIG. 21 is a bottom, front and outer side view thereof;

FIG. 22 is a bottom, front and inner side view thereof;

FIG. 23 is a top, rear and outer side view thereof;

FIG. 24 is a top, rear and inner side view thereof;

FIG. 25 is a bottom, rear and outer side view thereof;

FIG. 26 is a bottom, rear and inner side view thereof;

FIG. 27 is a top, front, side perspective view of a sixth embodiment of our new design of FIGS. 1-7 and 13-18, the sonde base portion thereof, with the sensor guard, sensors and the brush/central support portions removed therefrom;

FIG. 28 is a side view thereof, it being understood the other side is identical in that the surface shape is cylindrical;

FIG. 29, is a top perspective view showing removal of one of the sensors (see, e.g., FIGS. 30-42) to further illustrate the embodiment of FIGS. 27-28 is from removal of the sensors and central support portion, the surface numbering indicia (1 and 2) on the sonde base portion beneath the sensors do not form part of the claimed design;

FIG. 30 is a top and outer surface perspective view of a seventh embodiment of our new design of FIGS. 1-7 and 13-18, a sensor thereof;

FIG. 31 is a first inner-side view thereof;

FIG. 32 is a top, second inner-side, central surface perspective view thereof;

FIG. 33 is a second inner-side view thereof;

FIG. 34 is a bottom, first inner-side and central surface perspective view thereof;

FIG. 35 is a bottom, second inner-side, and central surface perspective view thereof;

FIG. 36 is a bottom and outer surface perspective view thereof;

FIG. 37 is a central surface view thereof;

FIG. 38 is an outer surface view thereof;

FIG. 39 is a top surface view thereof;

FIG. 40 is a bottom surface view thereof;

FIG. 41 is a top, first inner-surface, outer perspective view thereof; and,

FIG. 42 is a bottom, central surface view thereof.

Certain drawings are surface shaded. The shaded drawings are provided to further clarify the line drawing surfaces and to show the character and/or contour of all surfaces represented.

Color is not part of the claimed design.

1 Claim, 31 Drawing Sheets

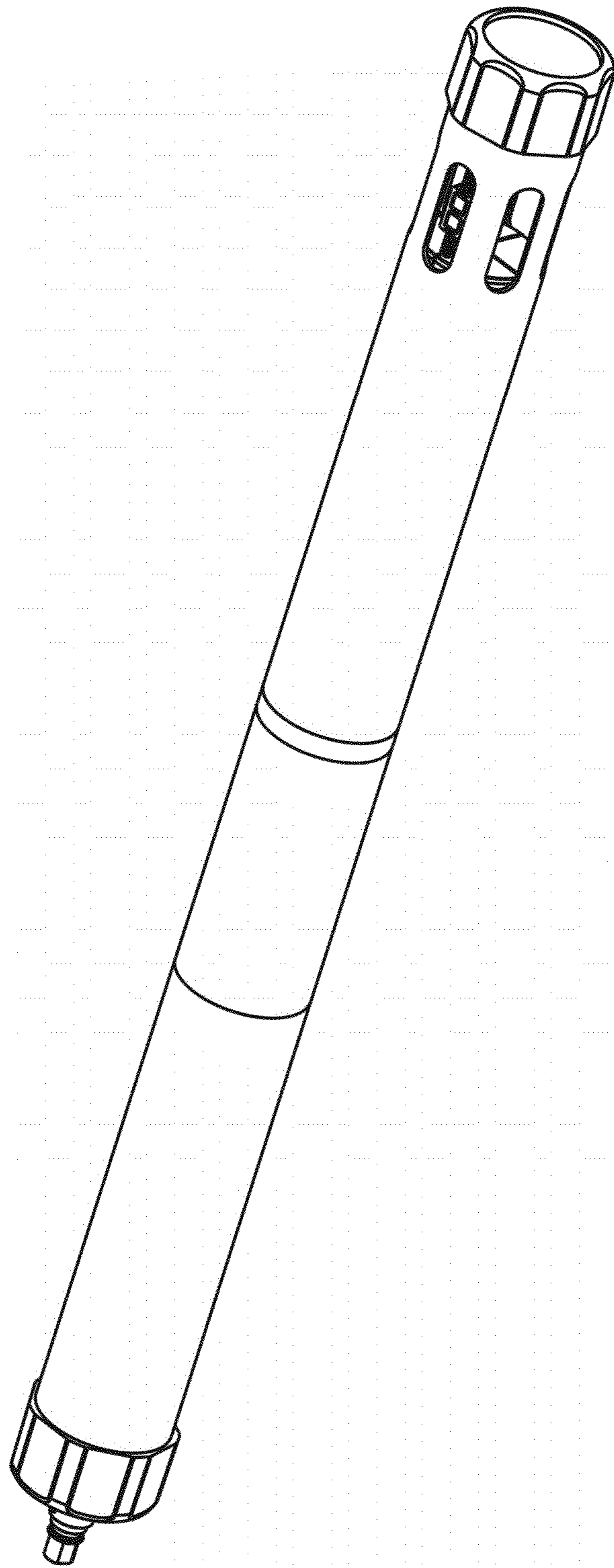


FIG. 1

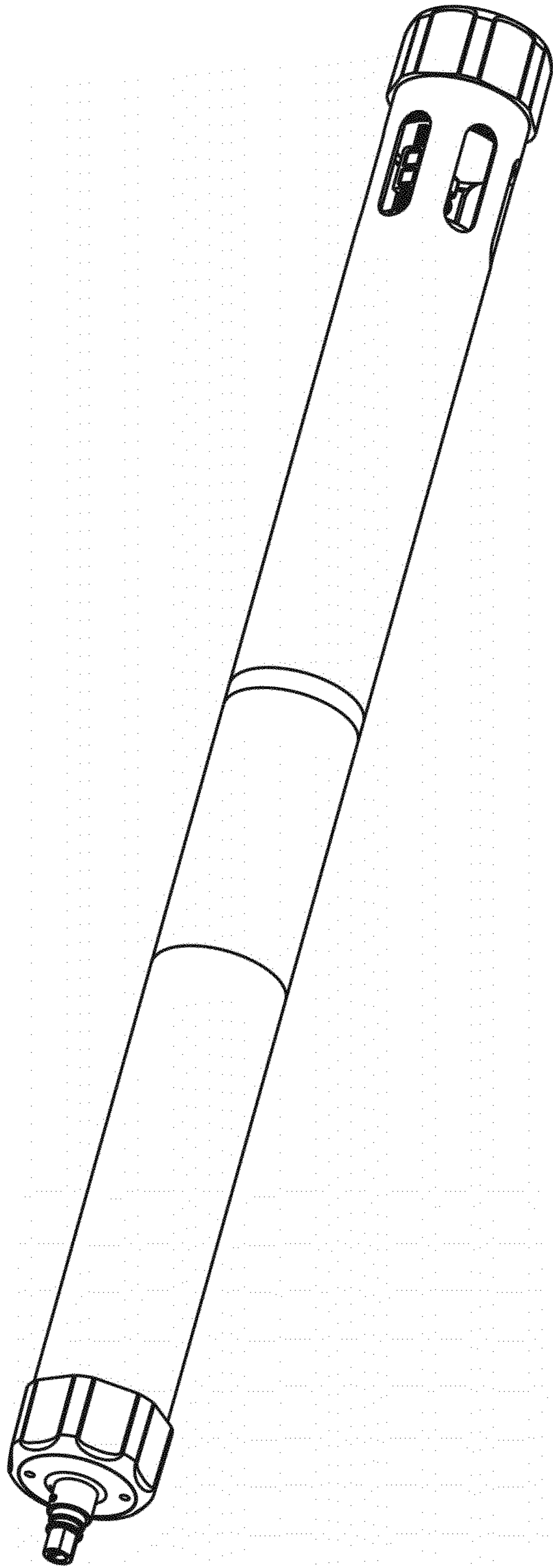


FIG. 2

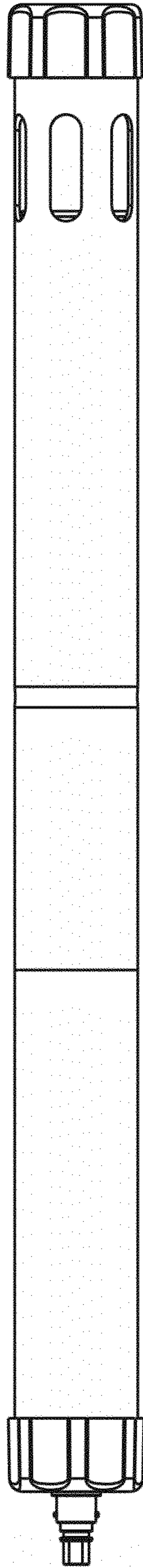


FIG. 3

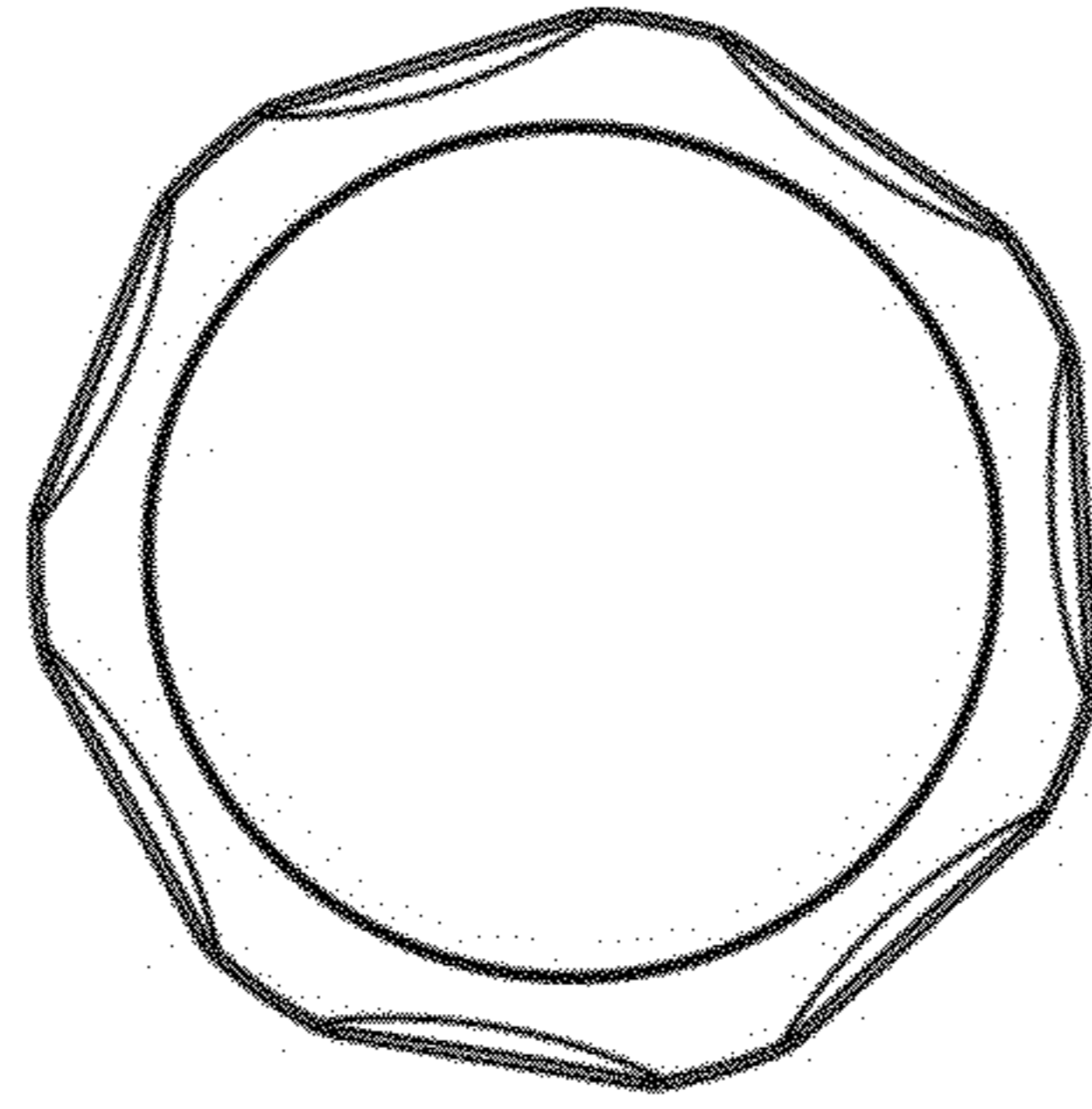


FIG. 4

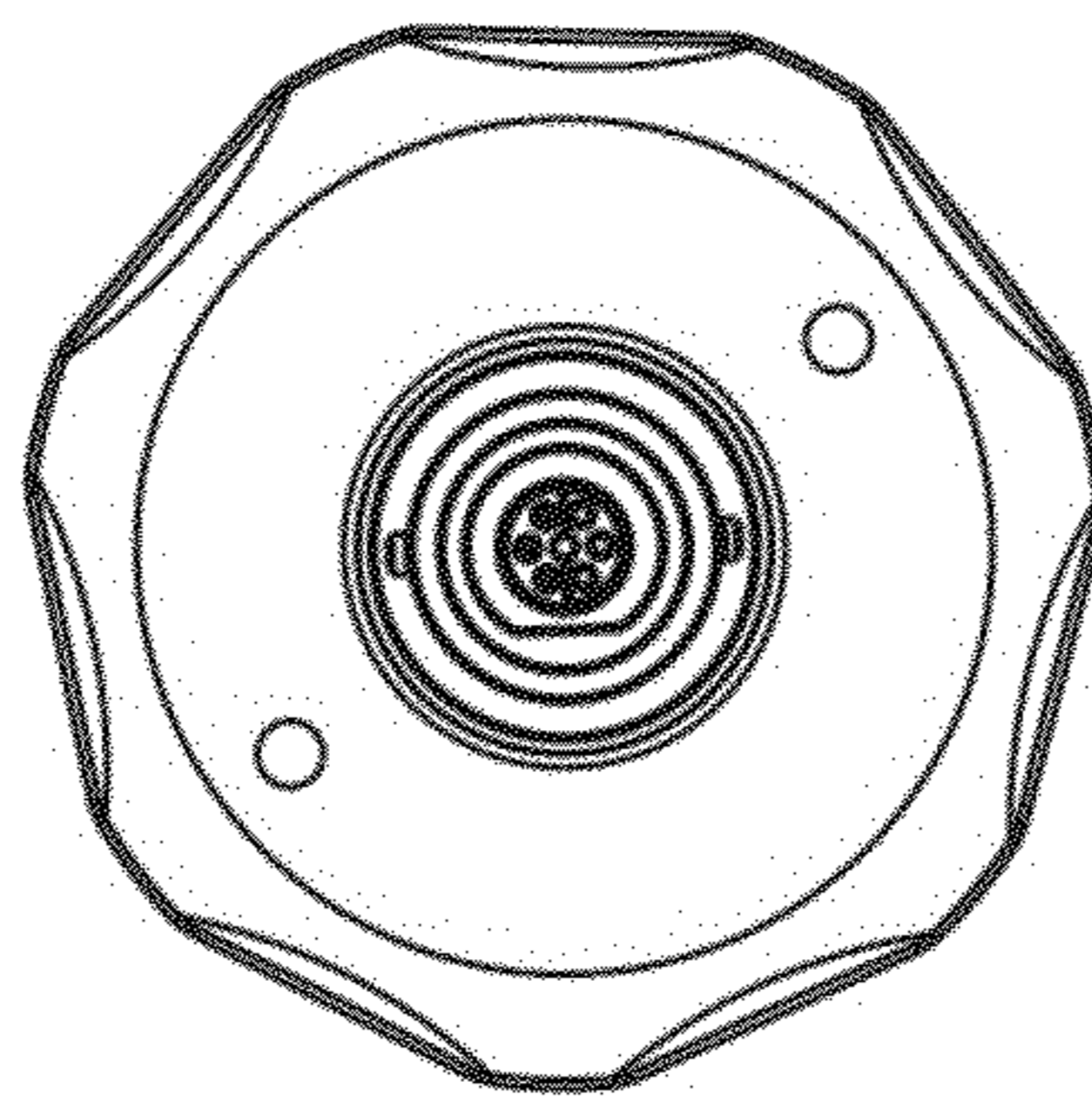


FIG. 5

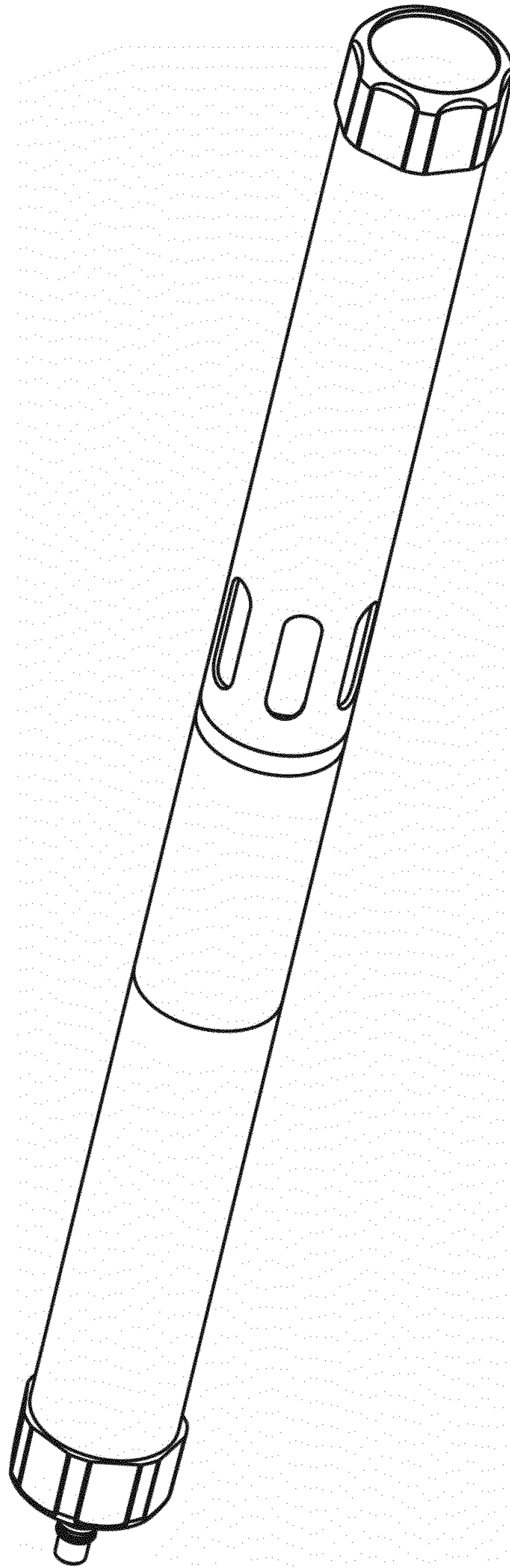


FIG. 6

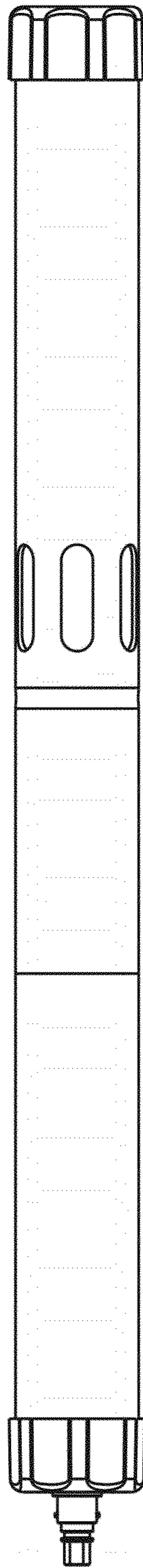


FIG. 7

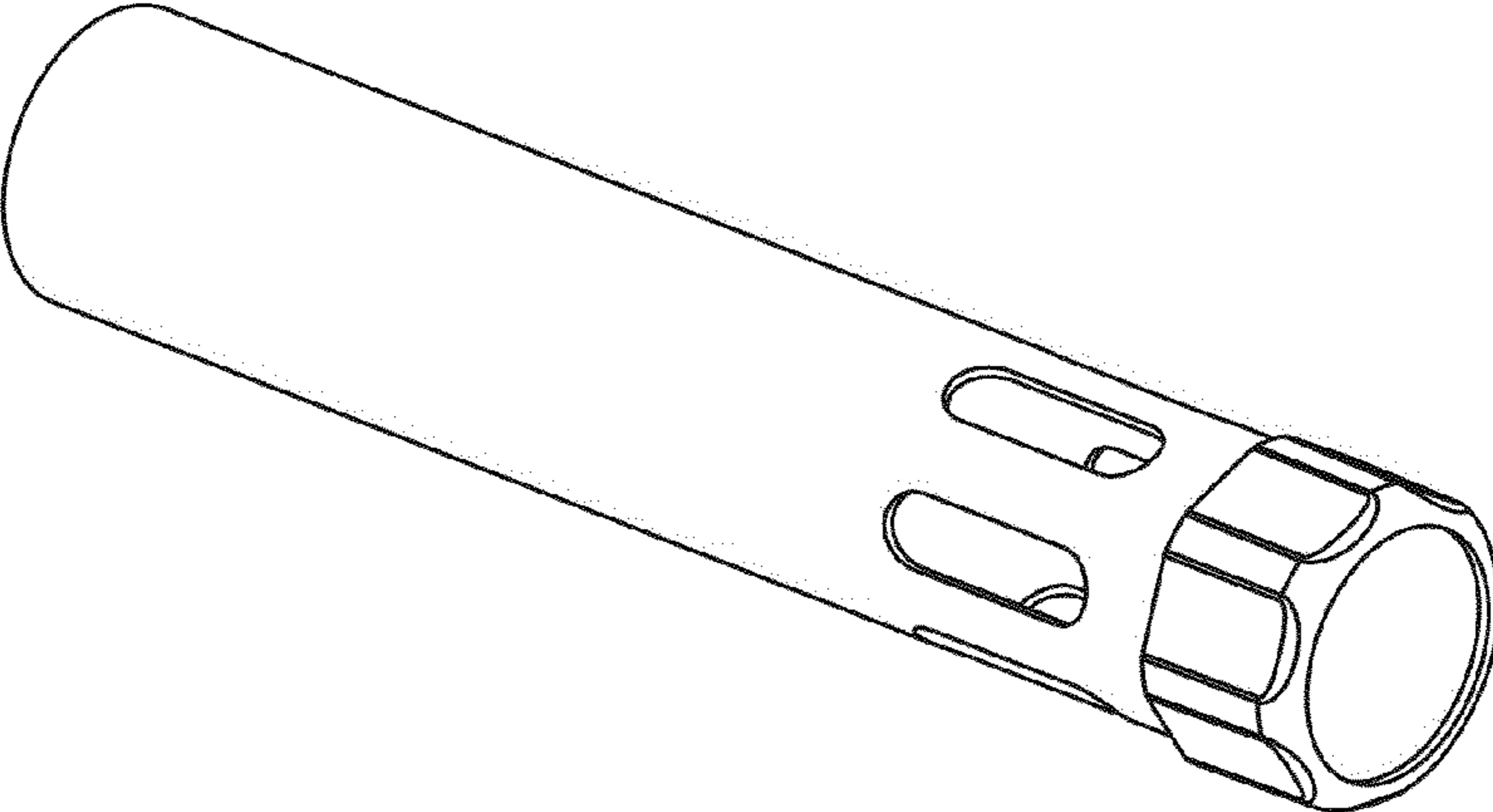


FIG. 8

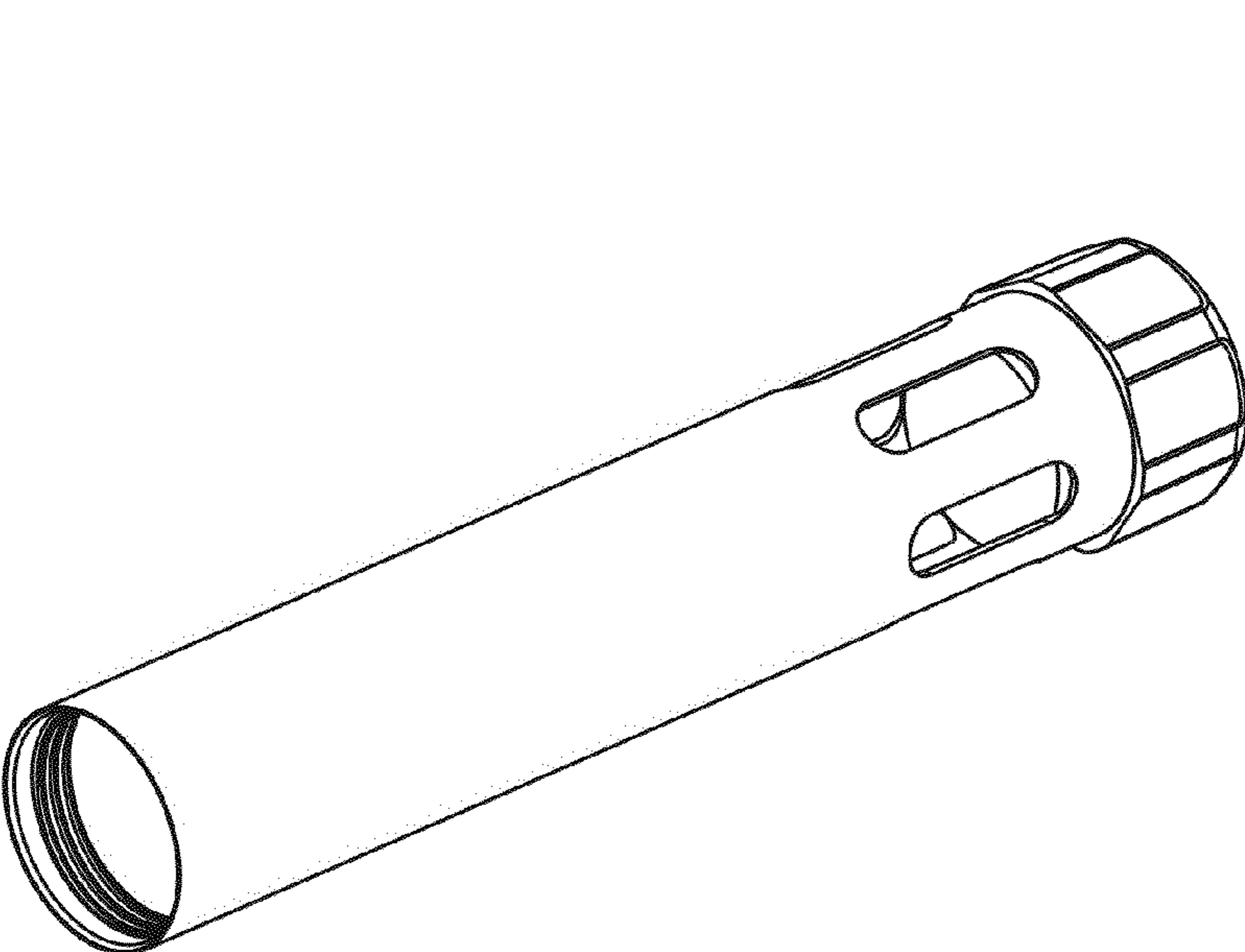


FIG. 9

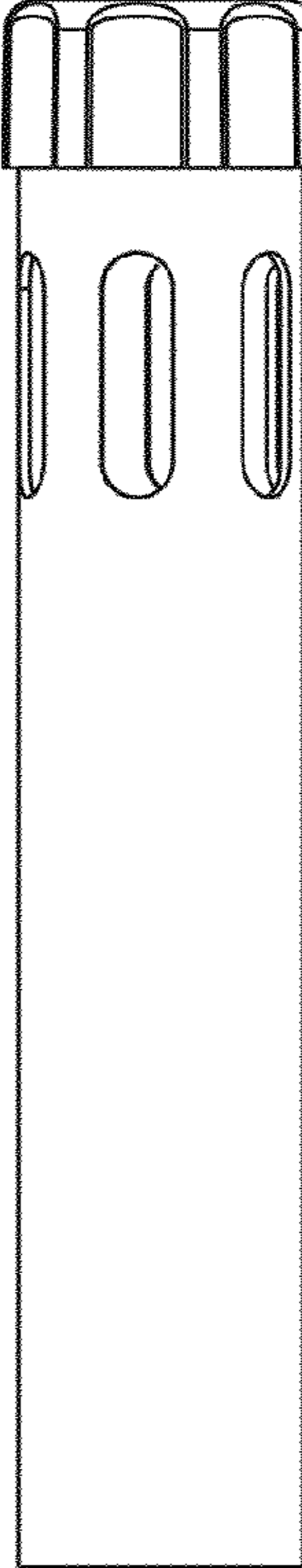


FIG. 10

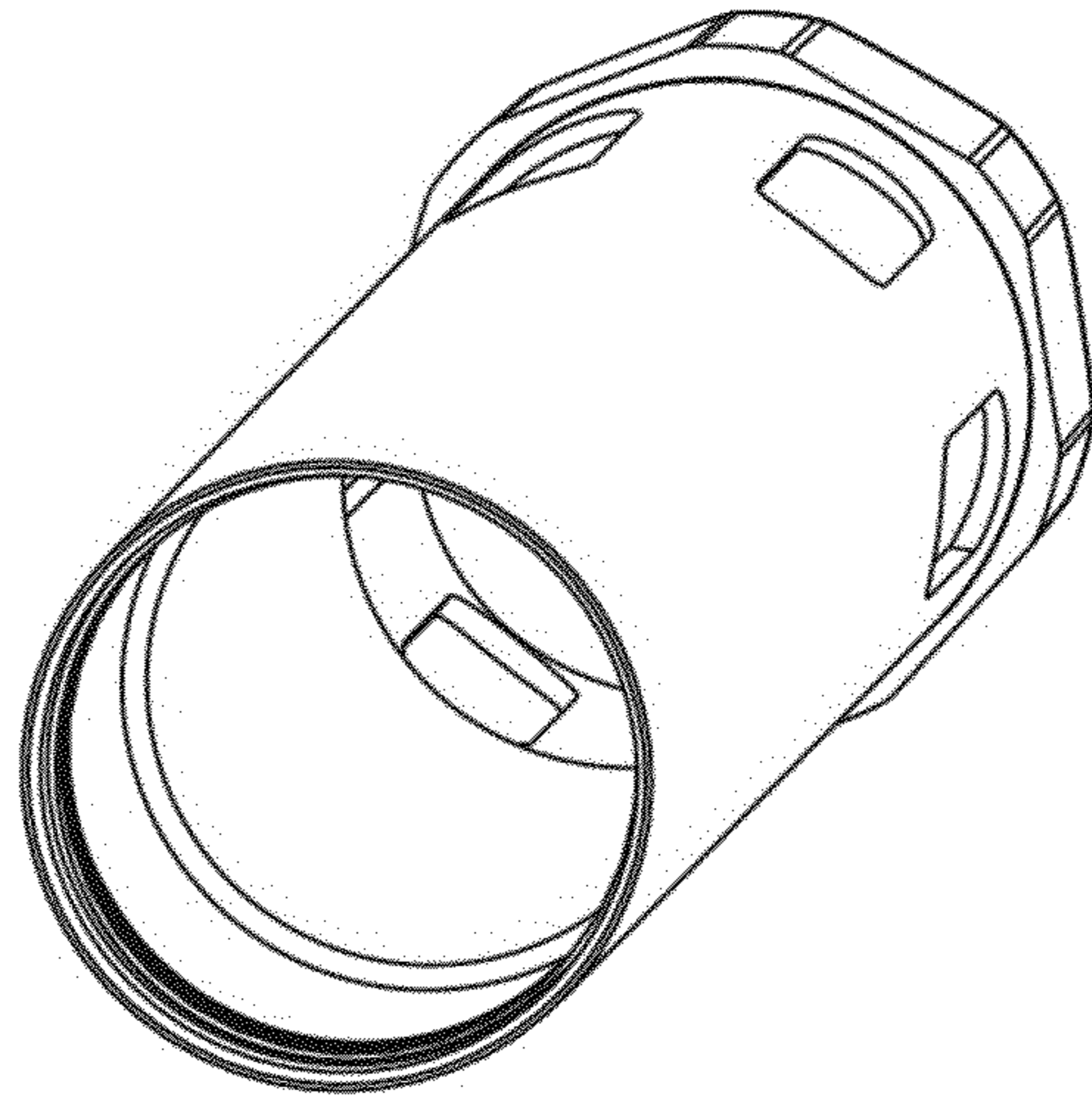


FIG. 11

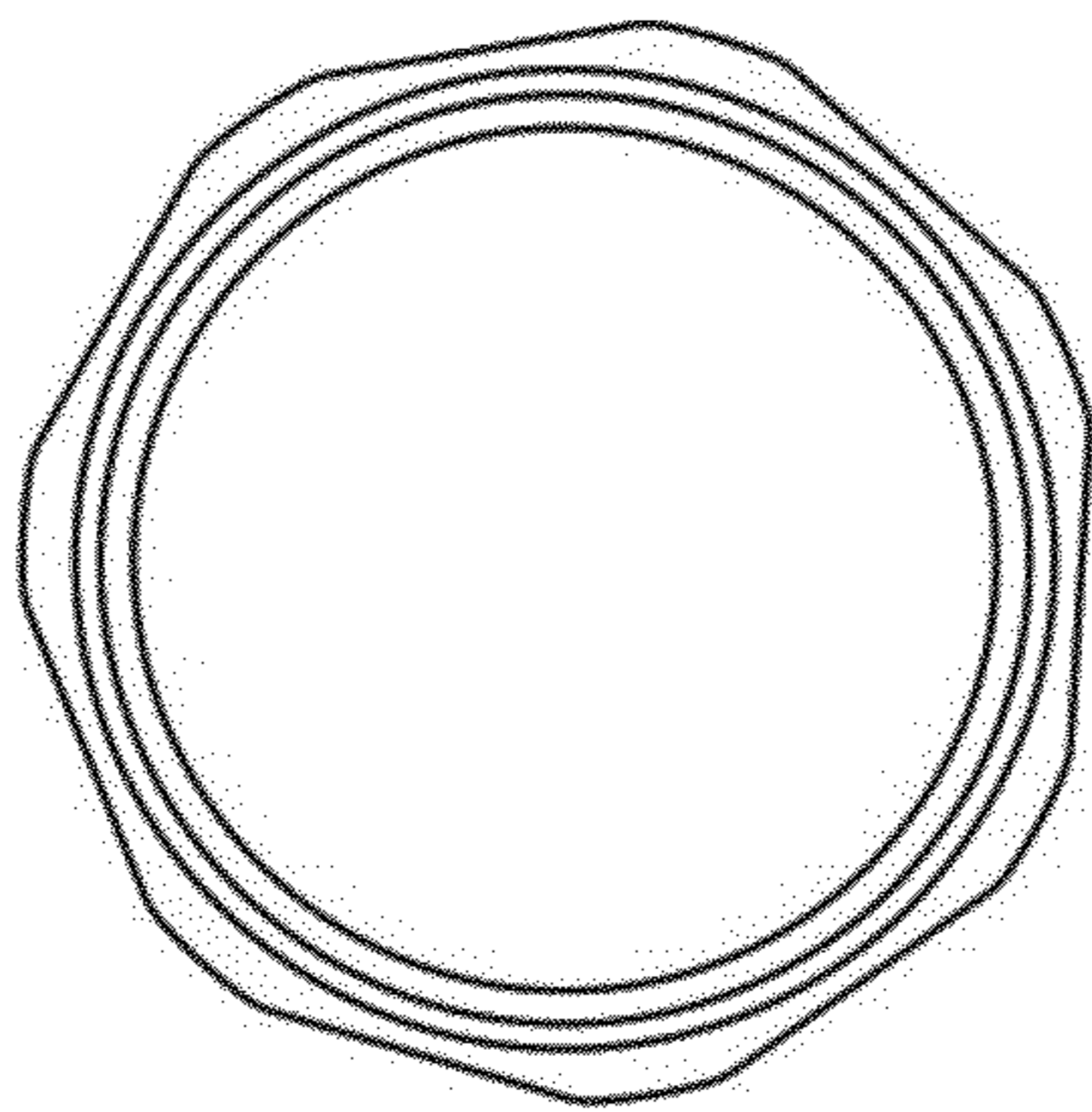


FIG. 12

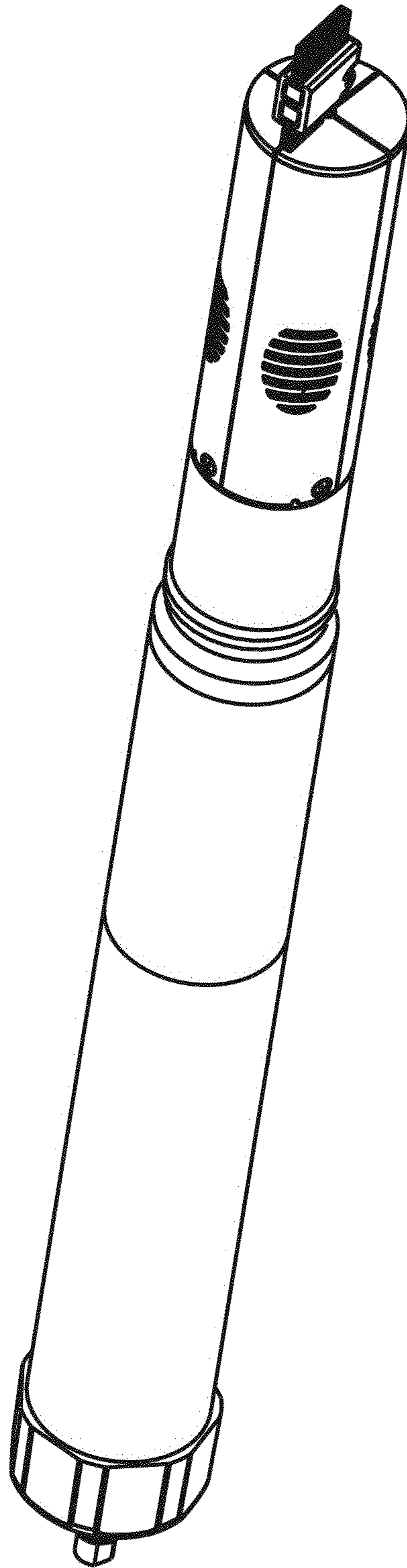


FIG. 13

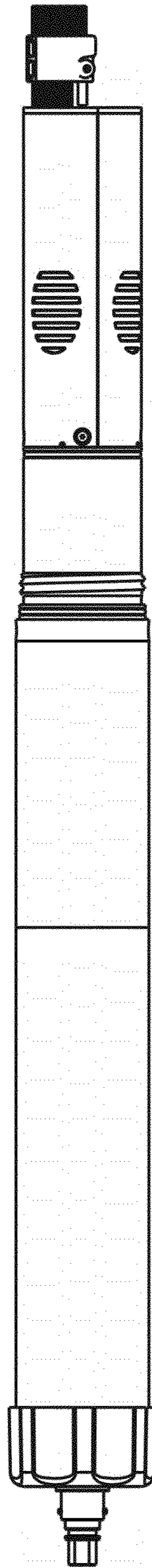


FIG. 14

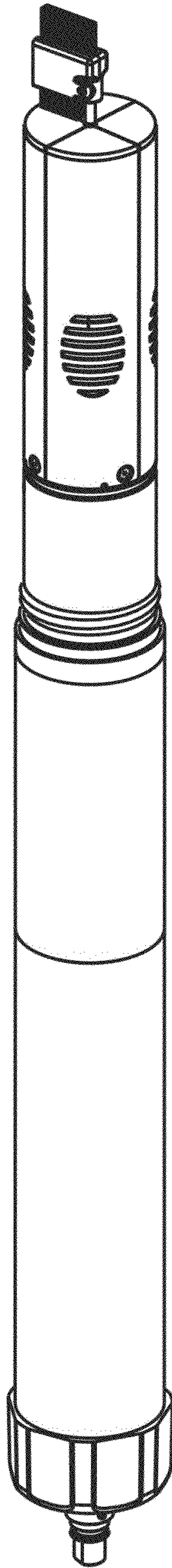


FIG. 15

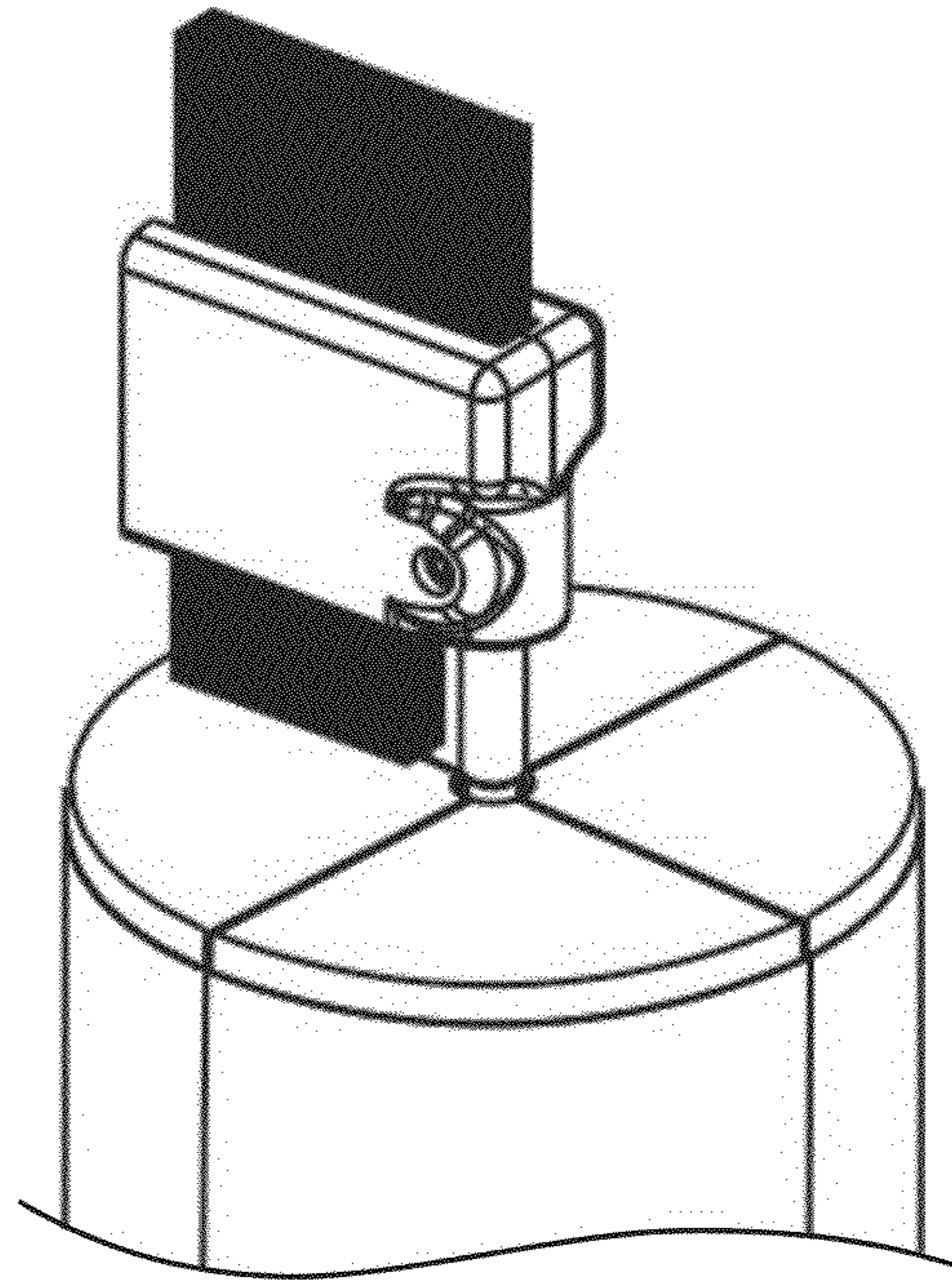


FIG. 16

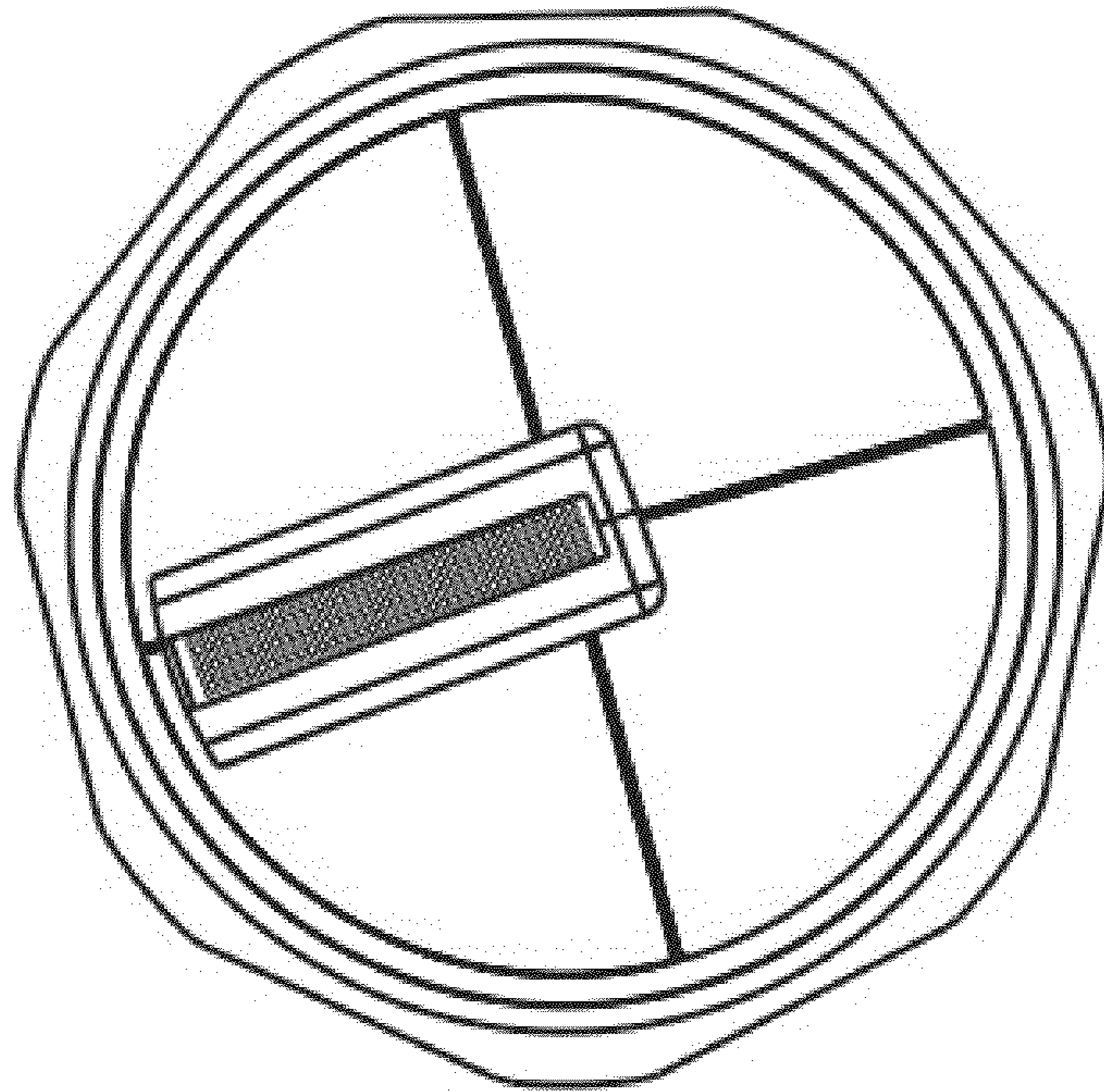


FIG. 17

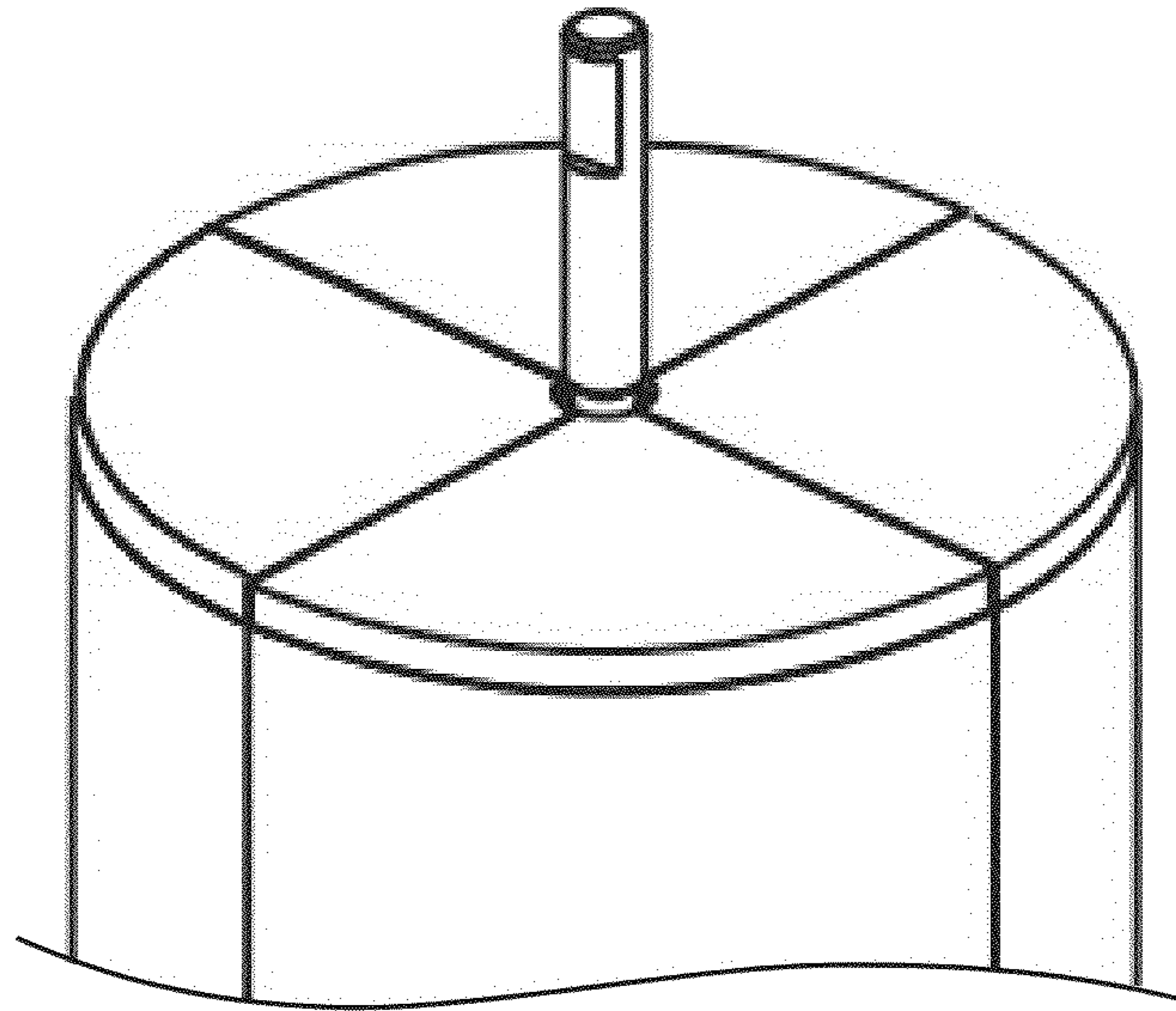


FIG. 18

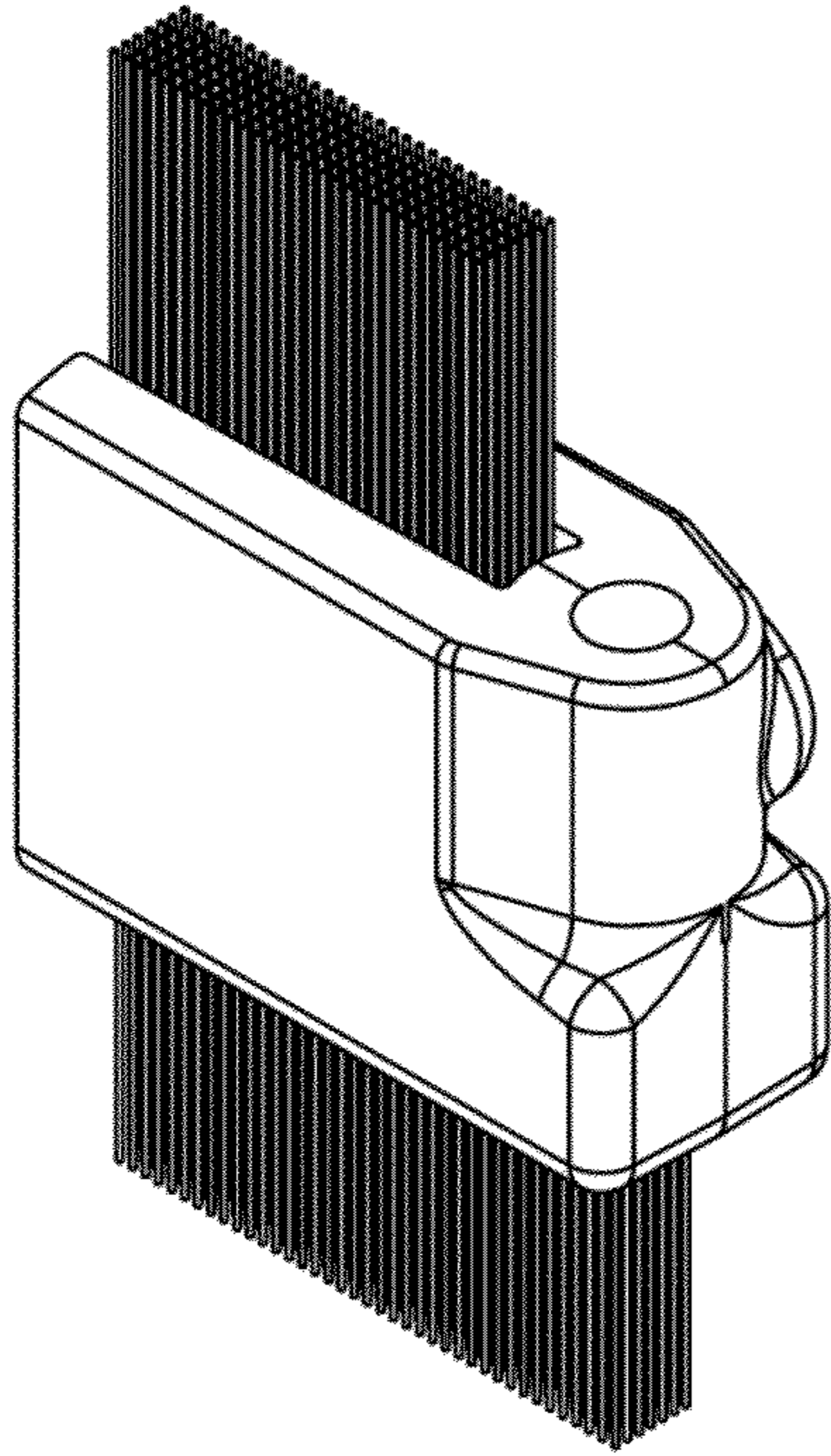


FIG. 19

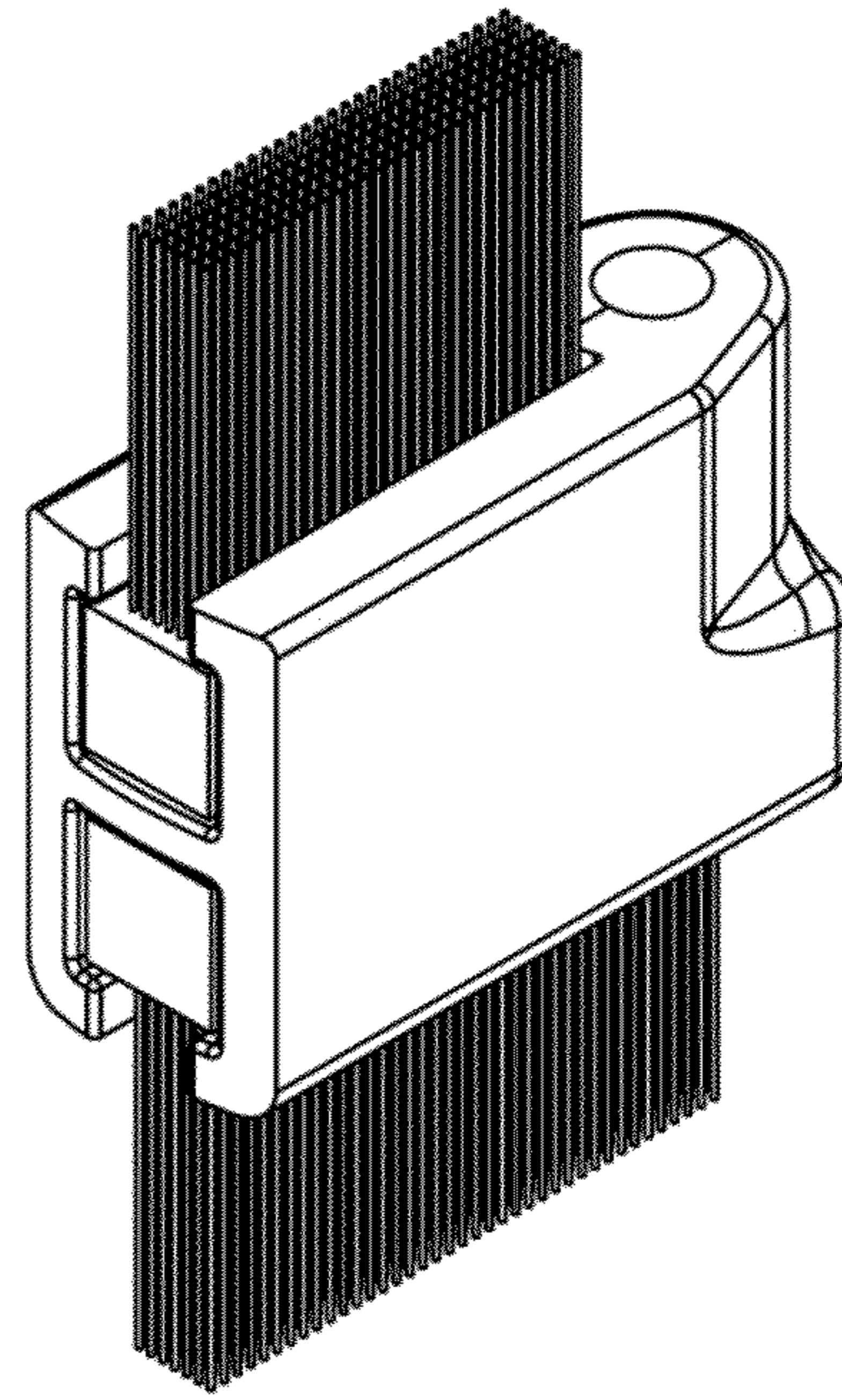


FIG. 20

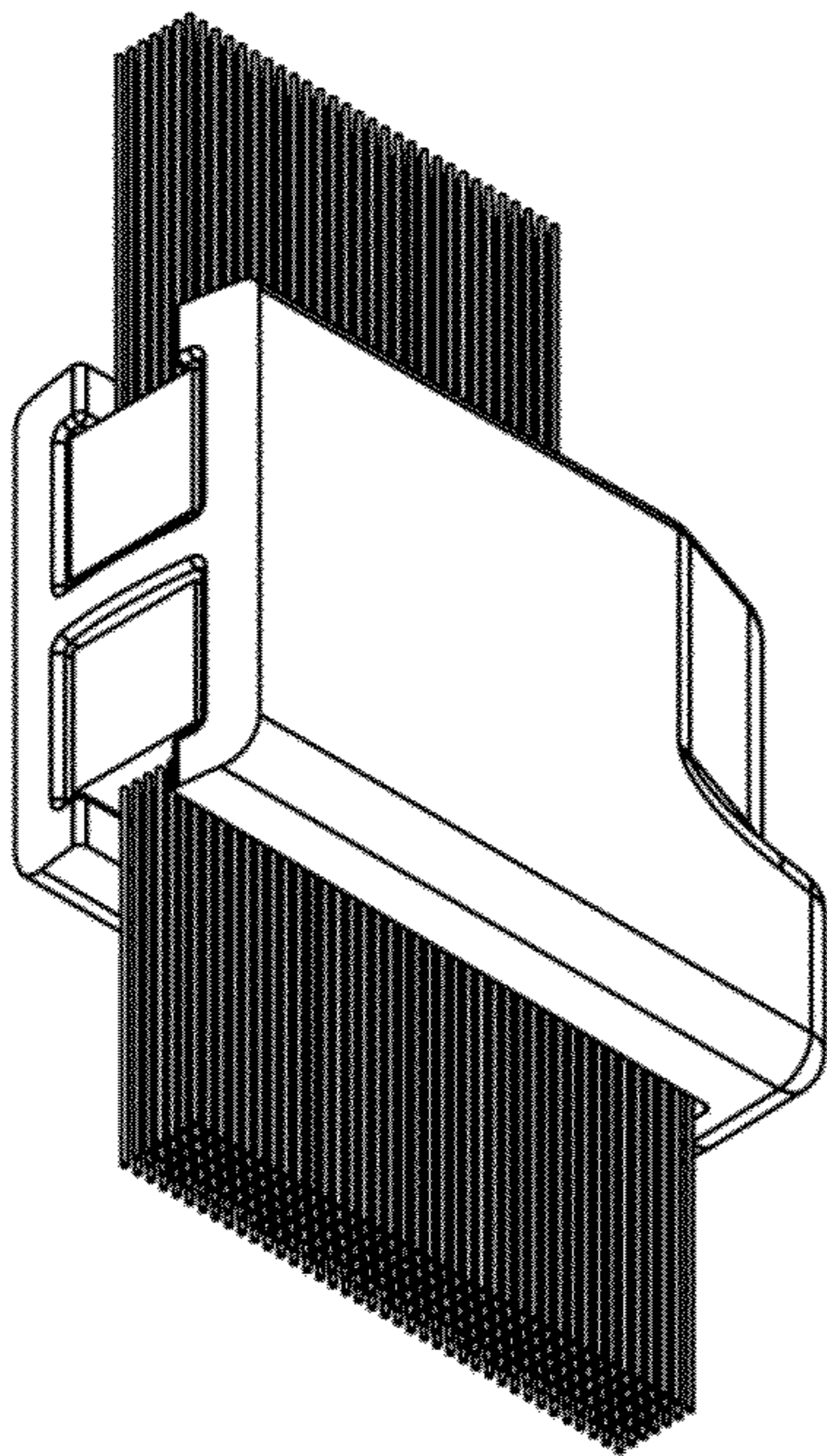


FIG. 21

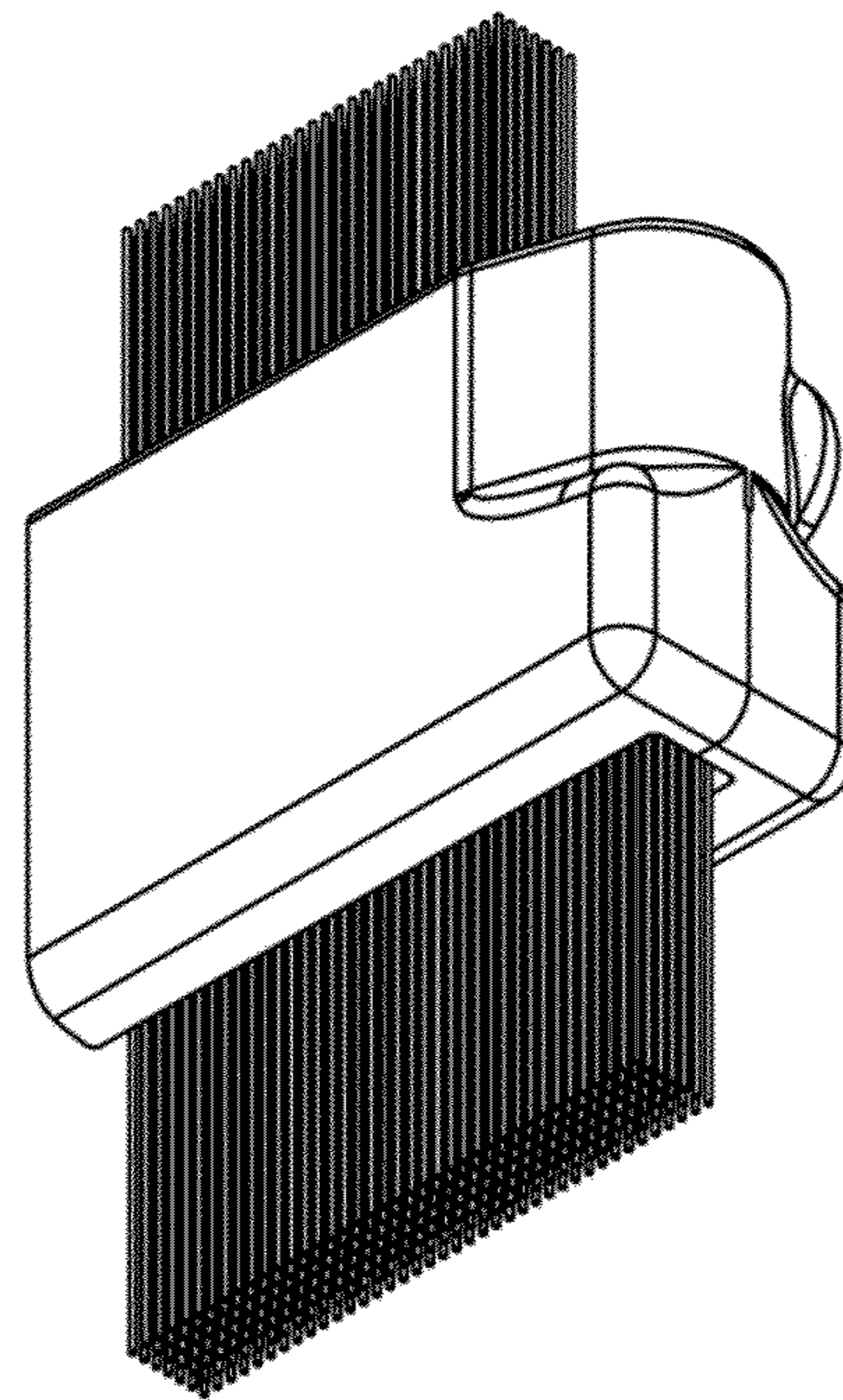


FIG. 22

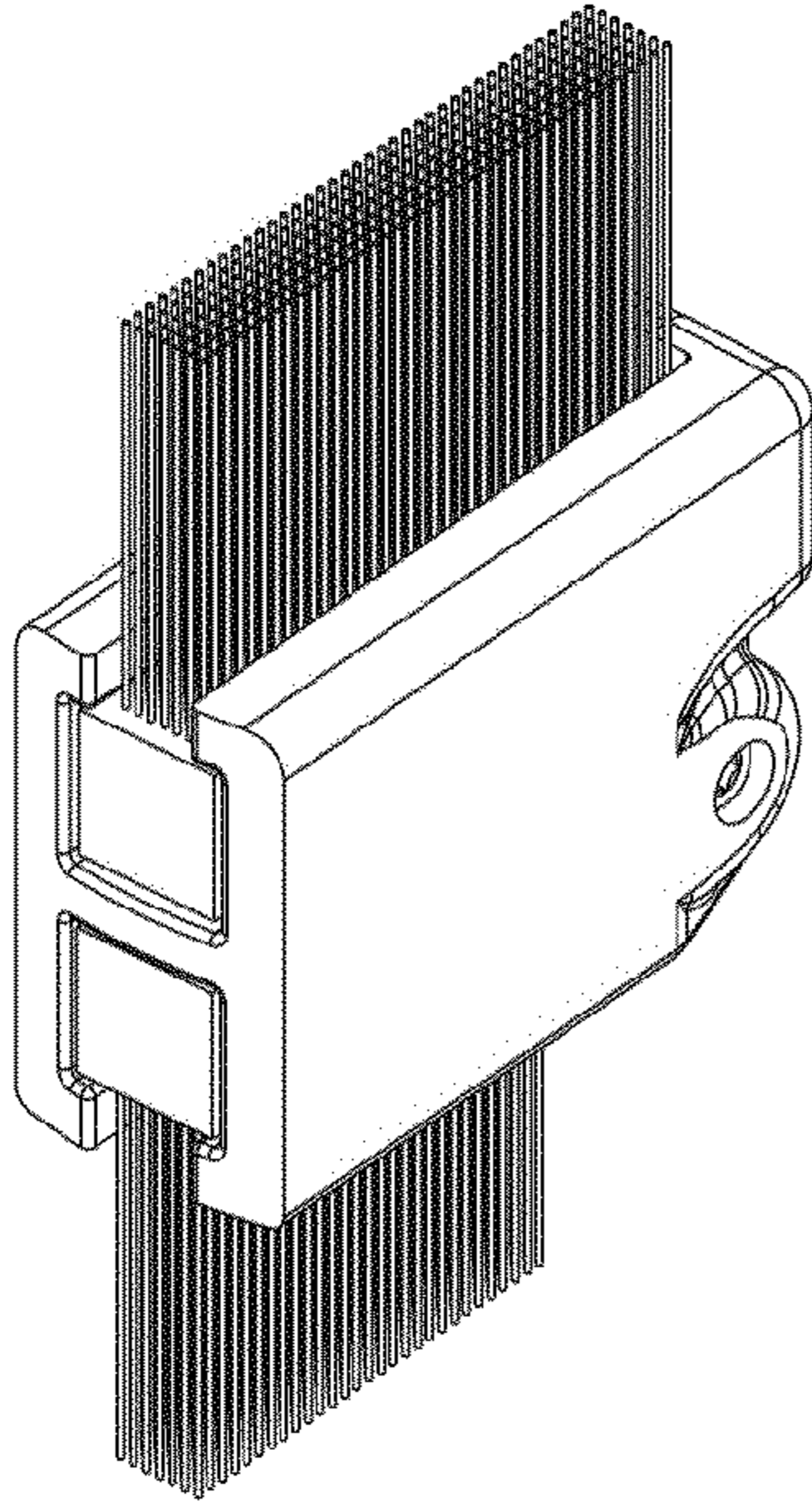


FIG. 23

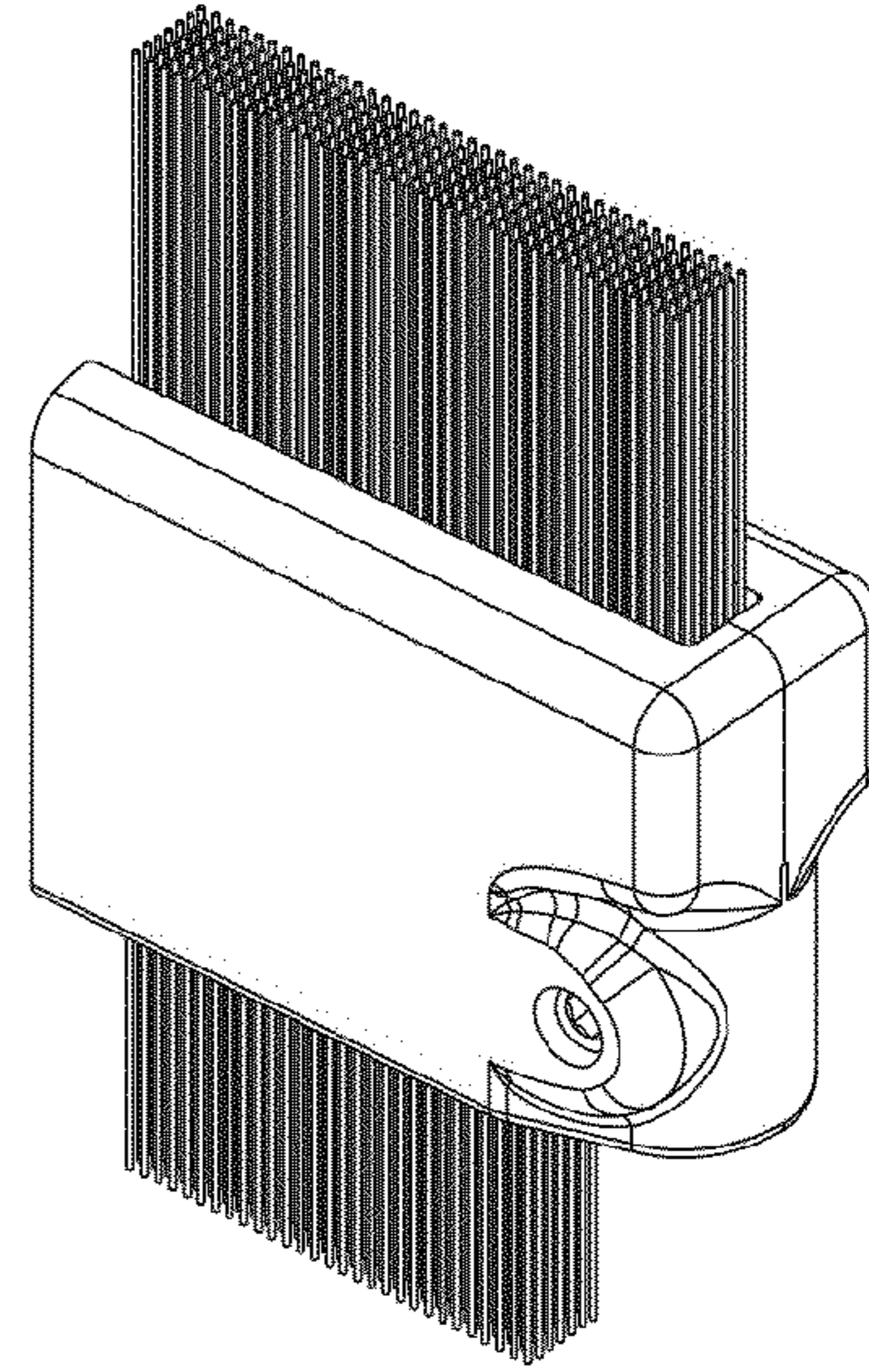


FIG. 24

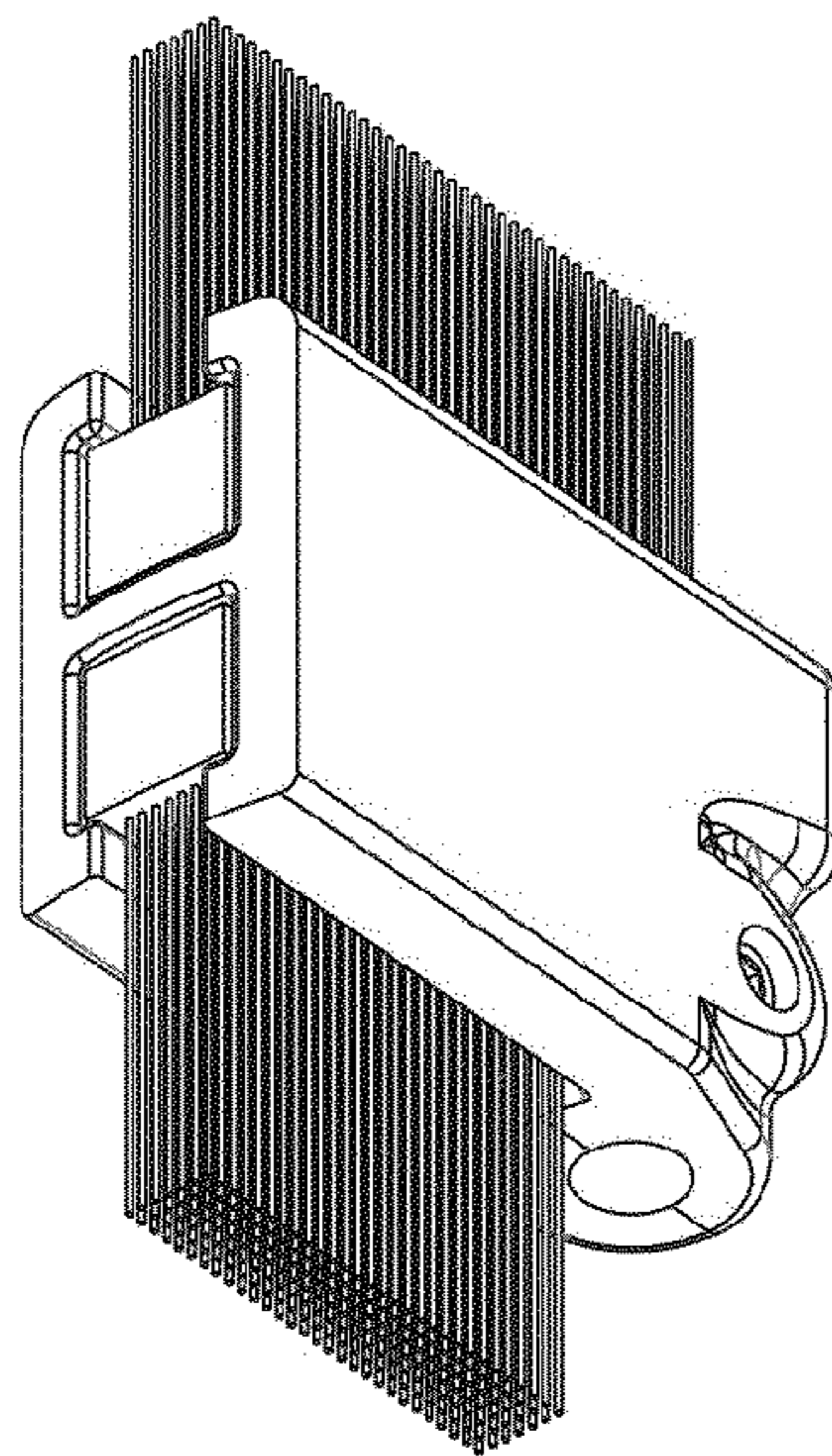


FIG. 25

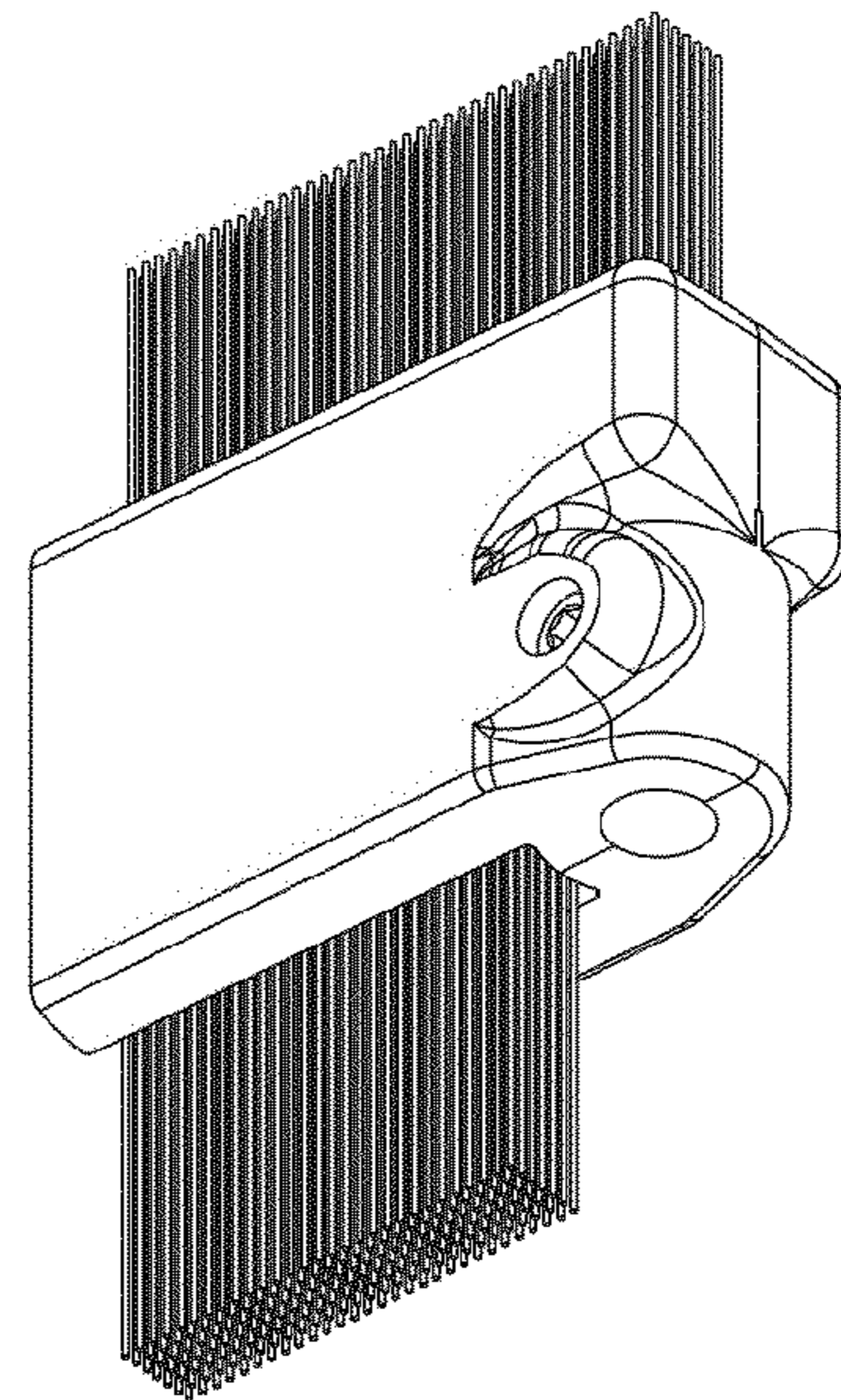


FIG. 26

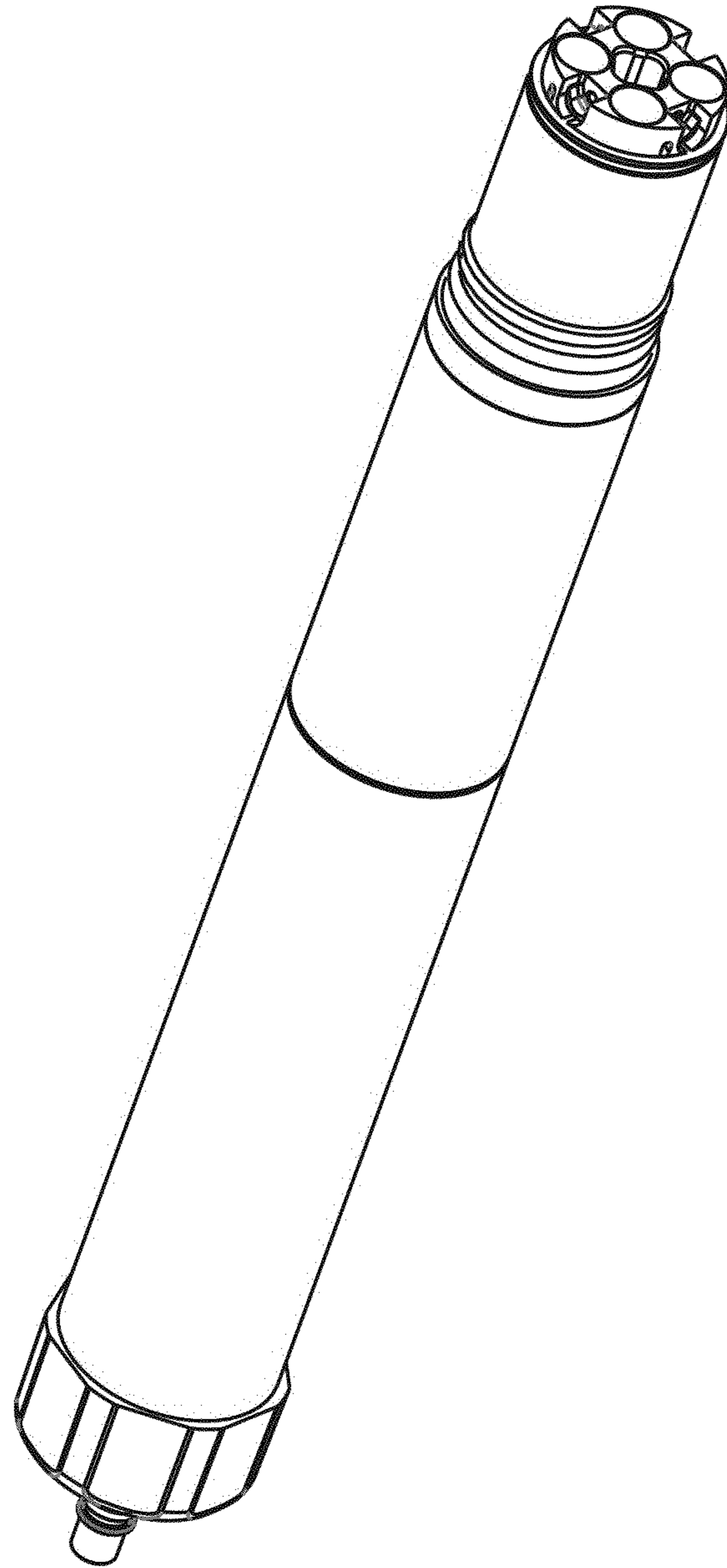


FIG. 27

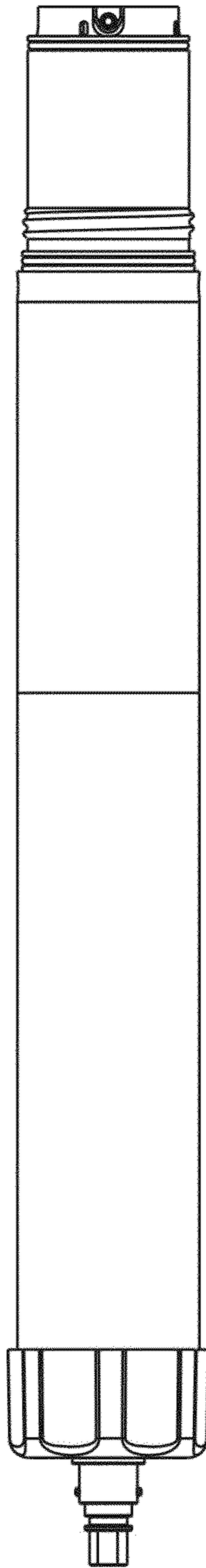


FIG. 28

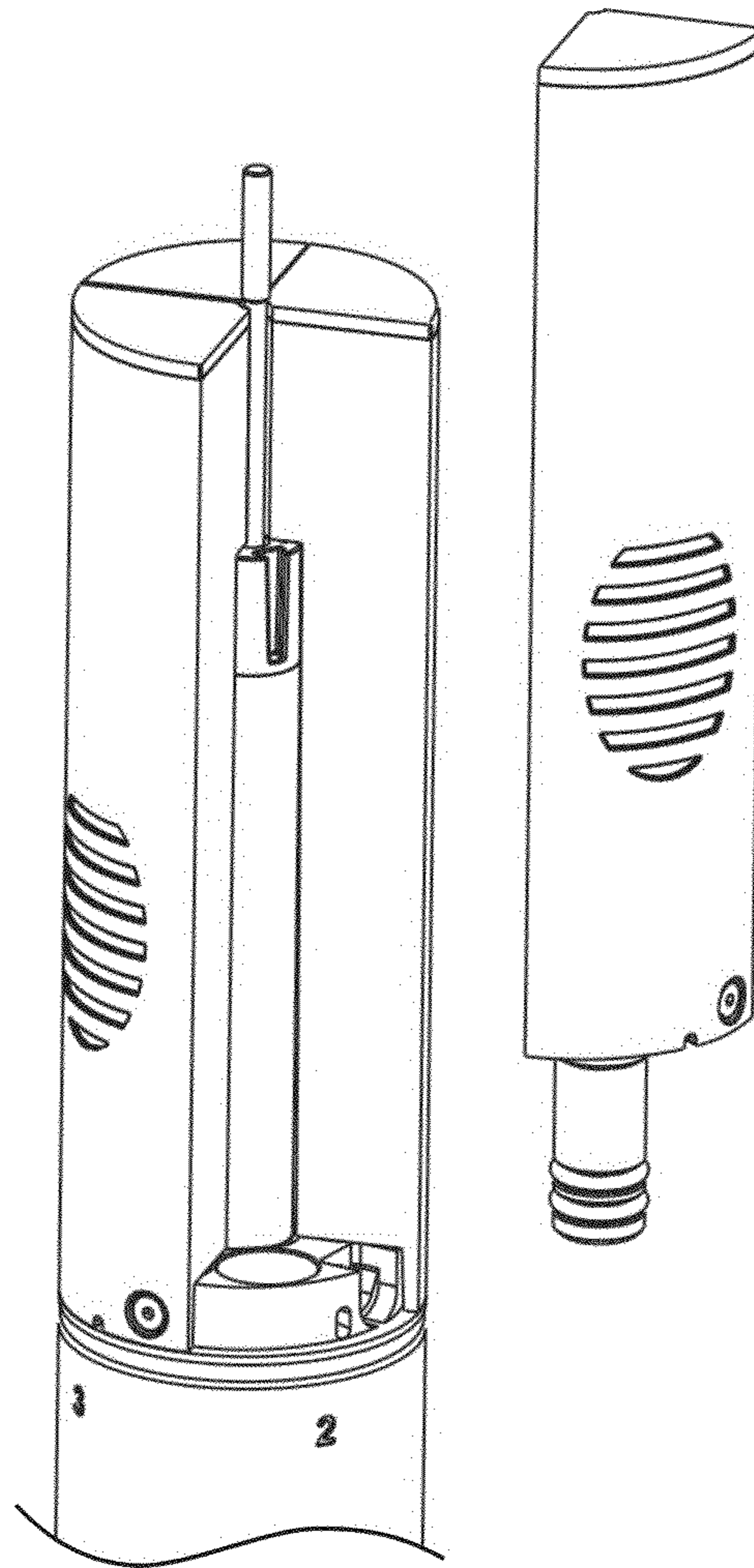


FIG. 29

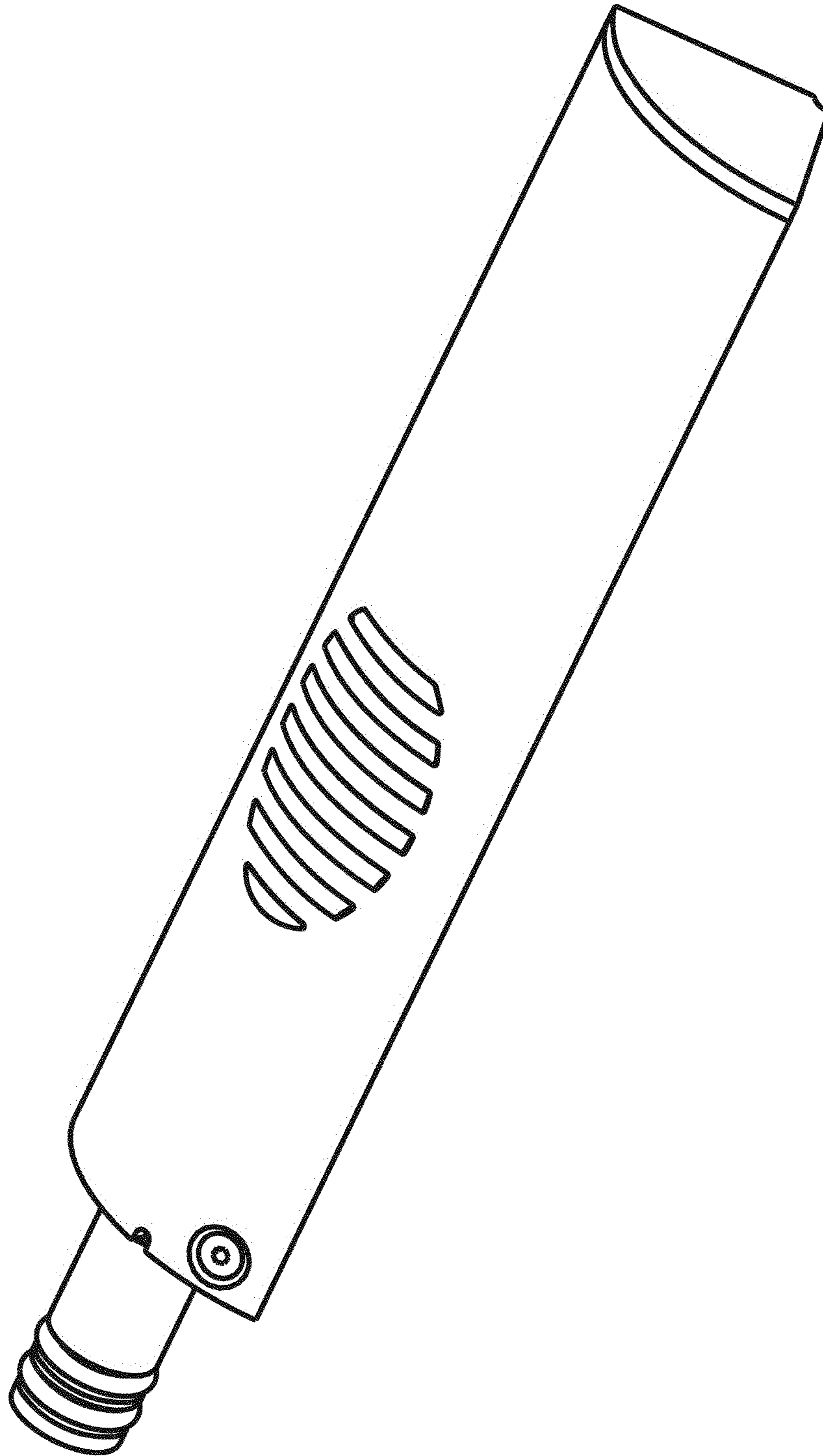


FIG. 30

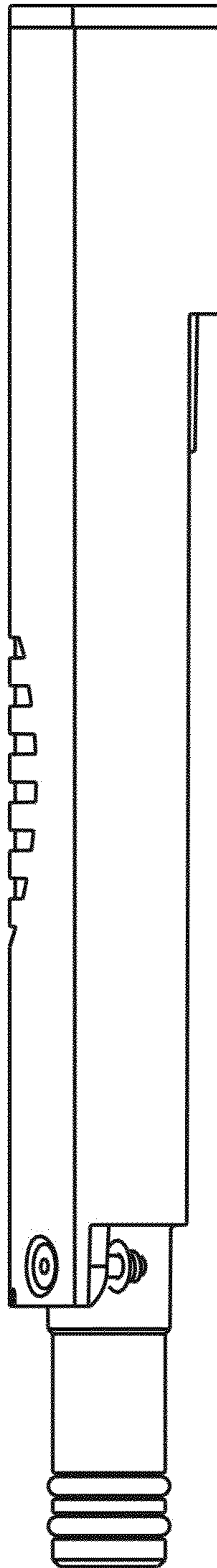


FIG. 31

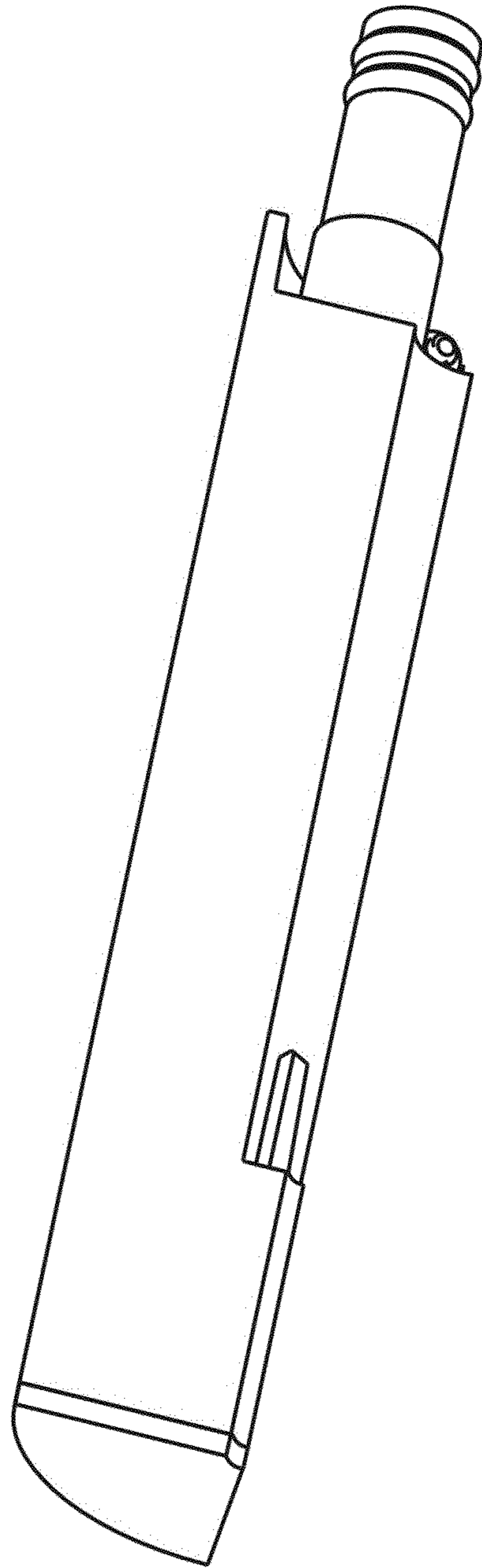


FIG. 32

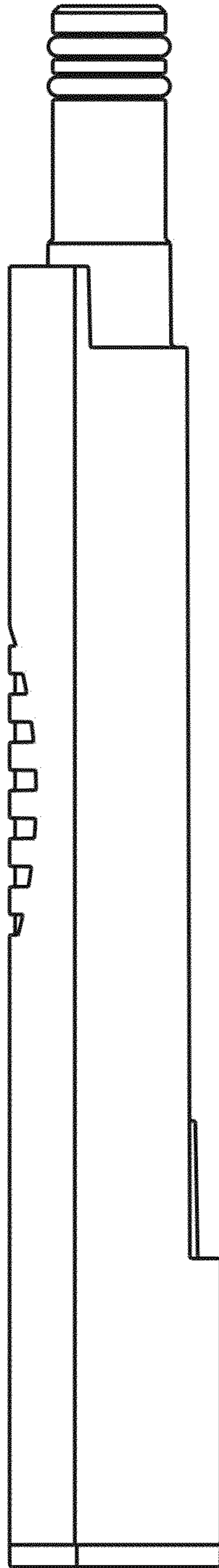


FIG. 33

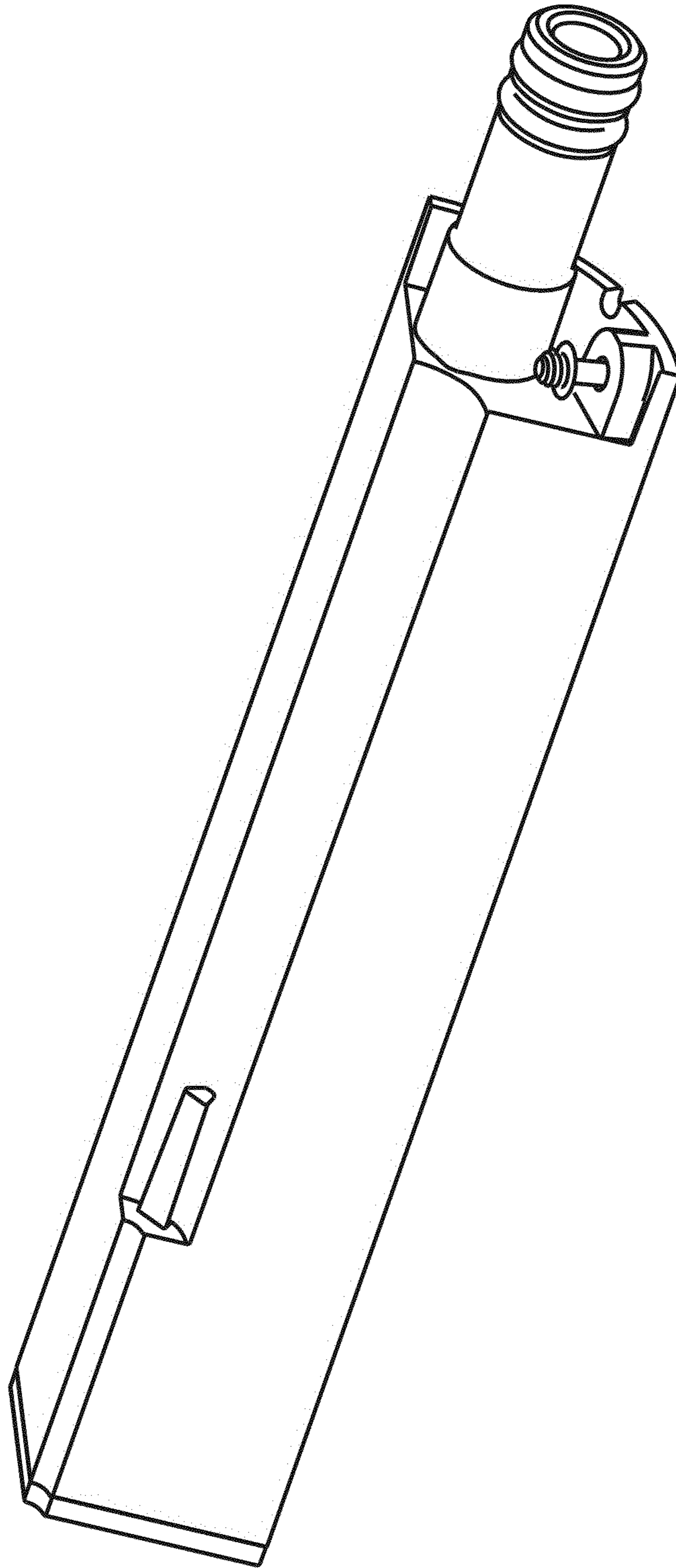


FIG. 34

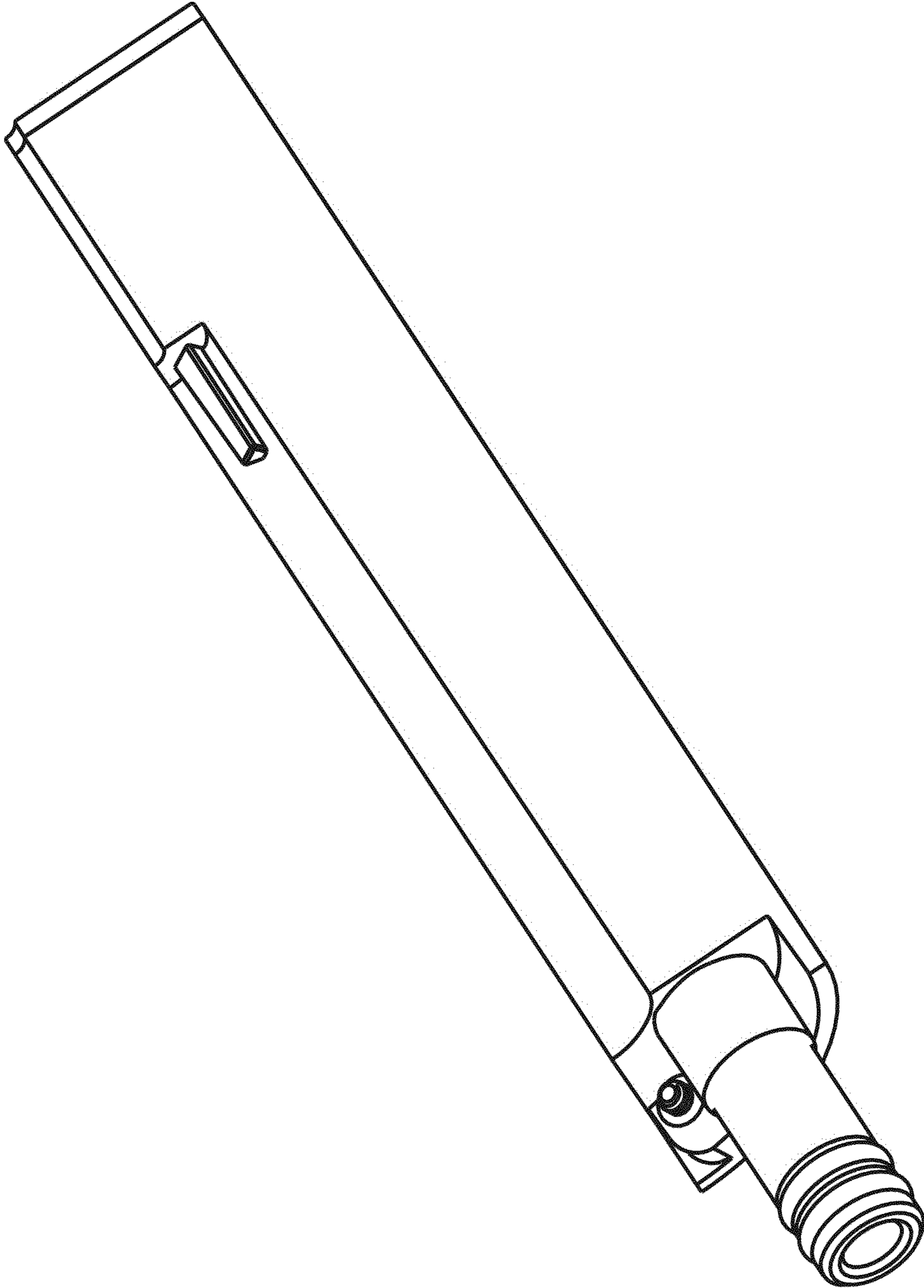


FIG. 35

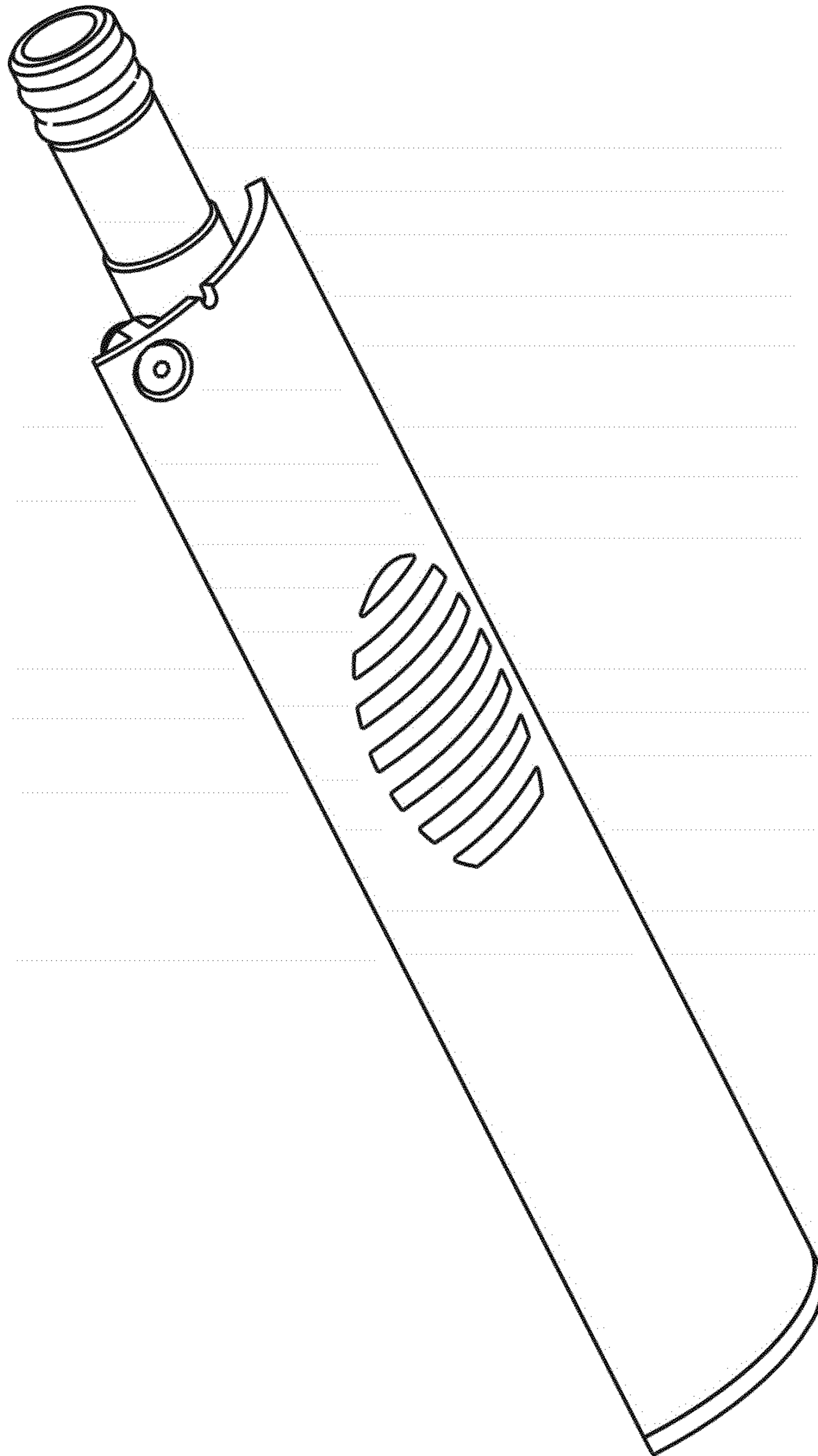


FIG. 36

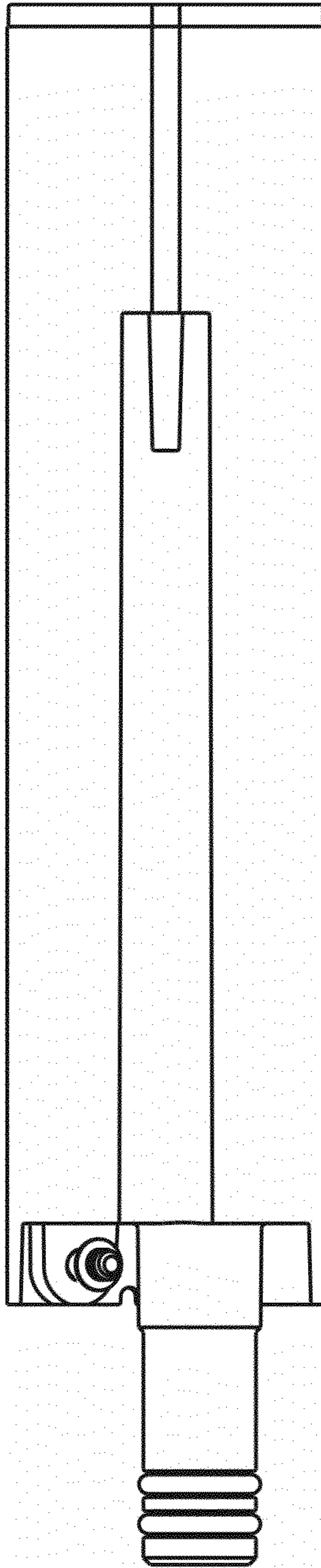


FIG. 37

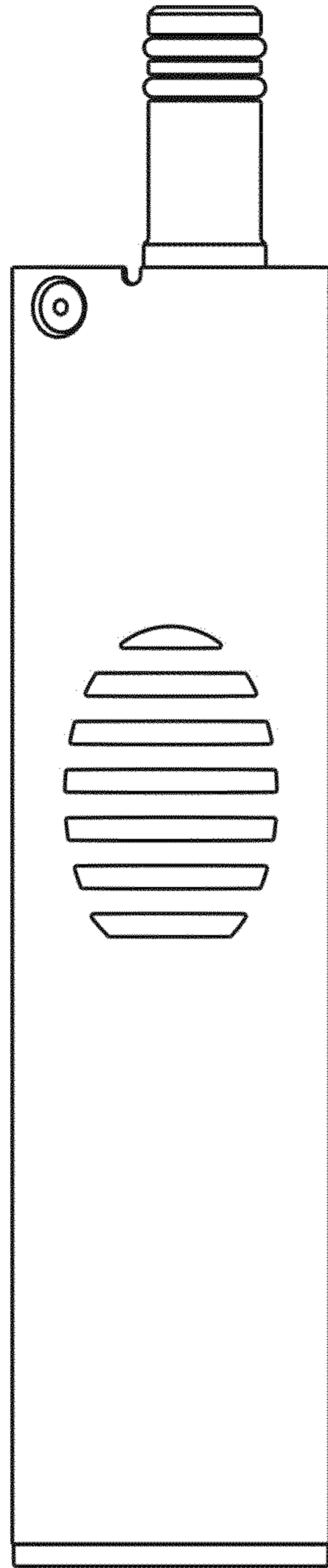


FIG. 38

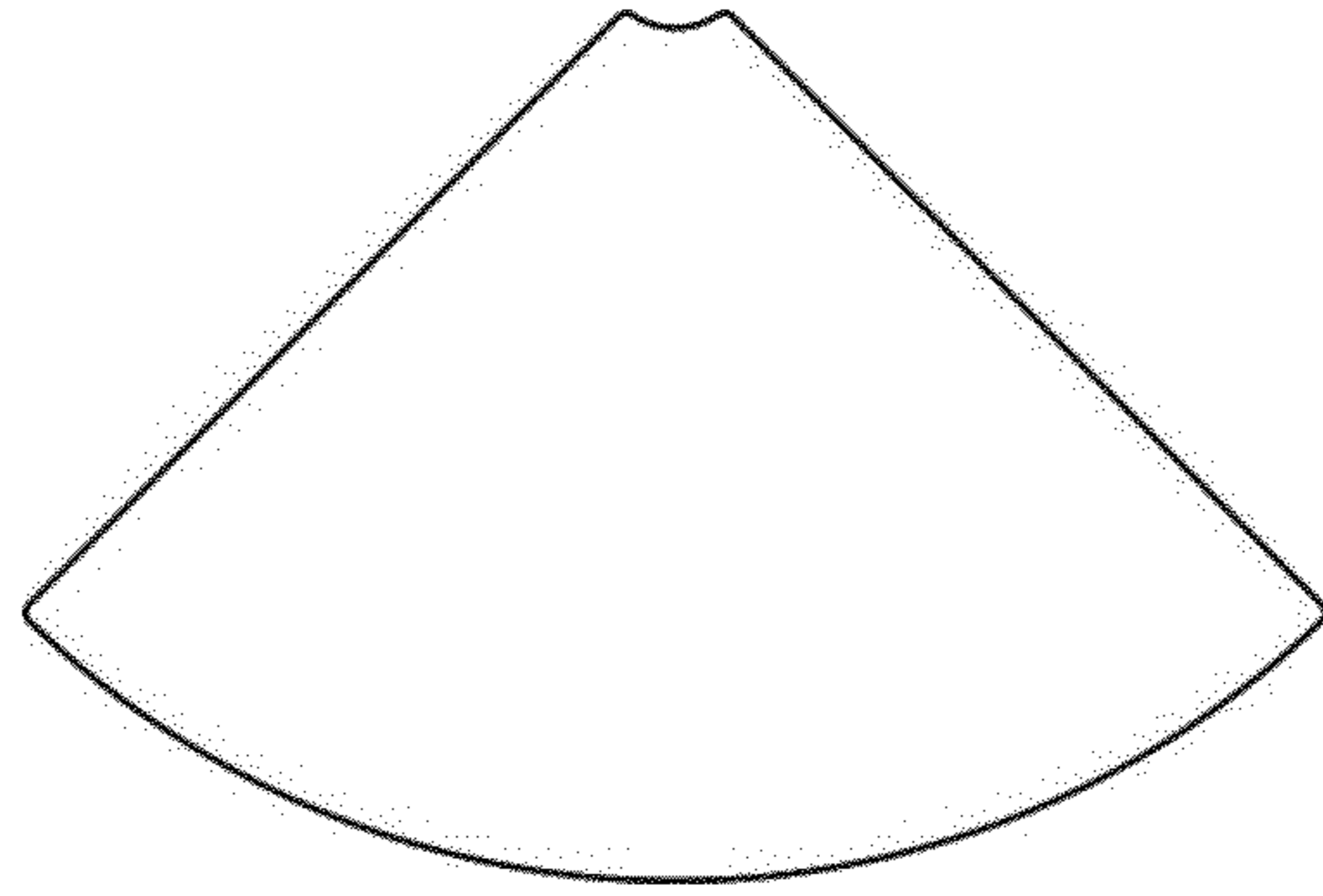


FIG. 39

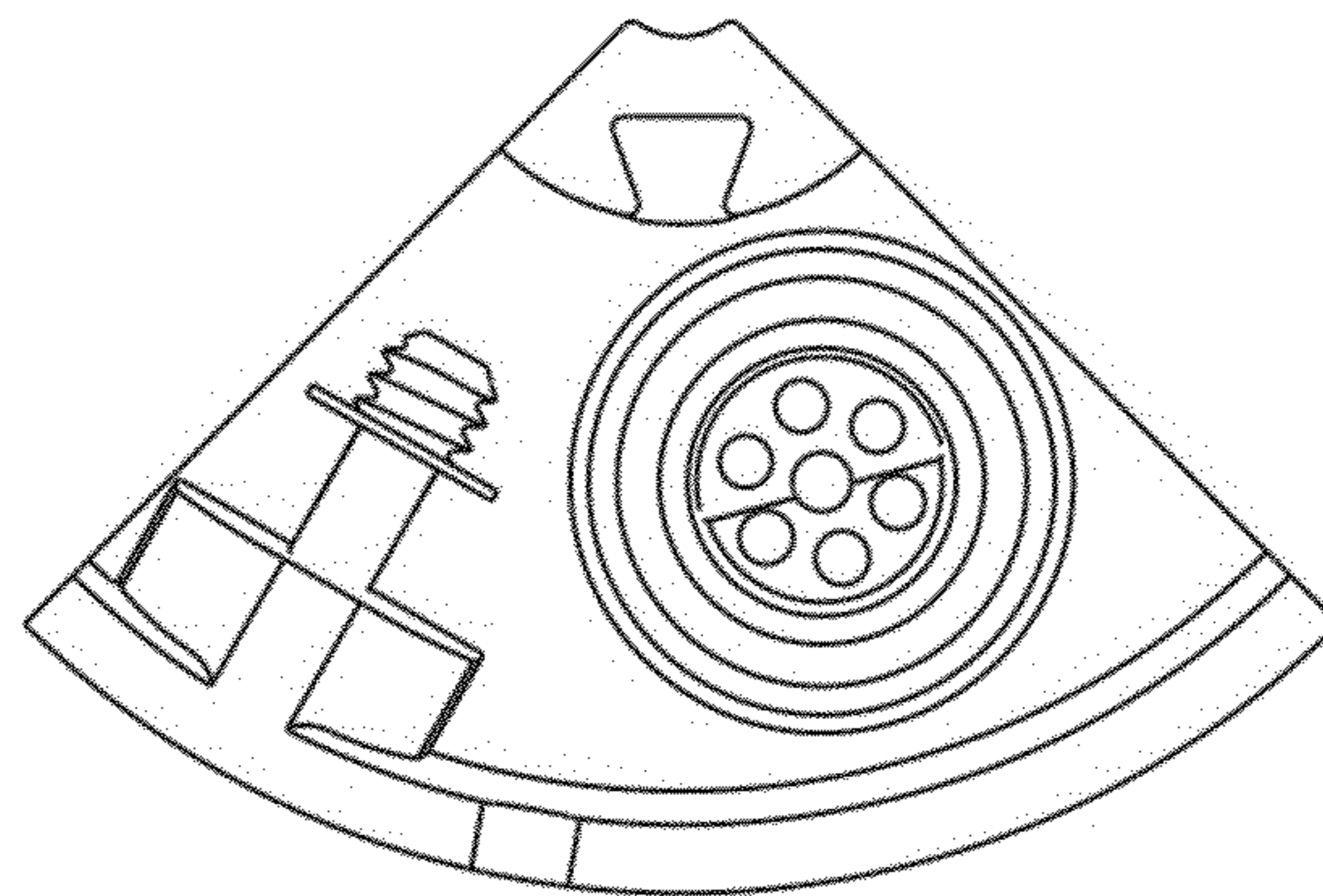


FIG. 40

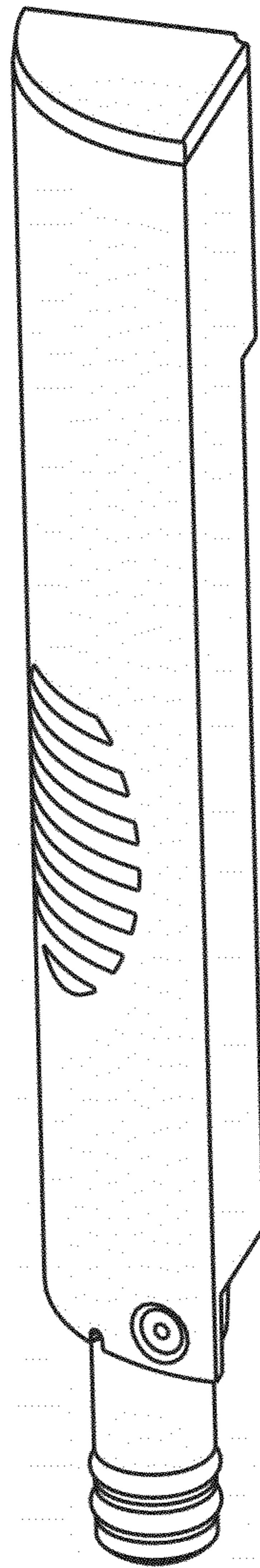


FIG. 41

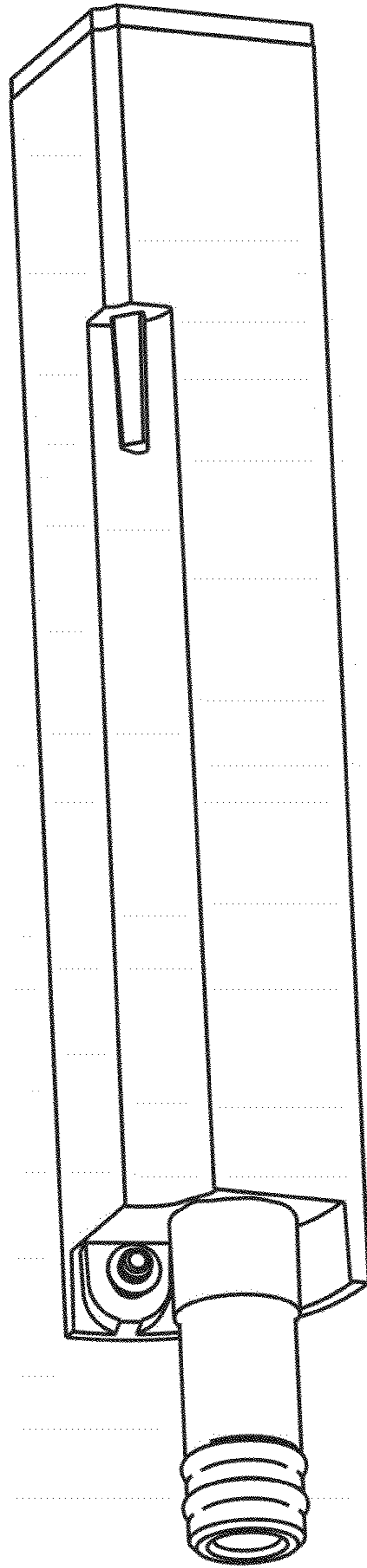


FIG. 42