



US00D888024S

(12) **United States Design Patent**
Li

(10) **Patent No.:** **US D888,024 S**
(45) **Date of Patent:** **** Jun. 23, 2020**

(54) **CIRCULAR ARRAY MICROPHONE**

(71) Applicant: **Qi Li**, New Providence, NJ (US)

(72) Inventor: **Qi Li**, New Providence, NJ (US)

(**) Term: **15 Years**

(21) Appl. No.: **29/651,647**

(22) Filed: **Nov. 19, 2018**

(51) **LOC (12) Cl.** **14-01**

(52) **U.S. Cl.**
USPC **D14/228**

(58) **Field of Classification Search**

USPC D14/228, 225, 140, 150, 137, 240, 255,
D14/338, 142, 496, 215, 230, 400, 203.6,
D14/356, 151; D13/108, 10, 168, 184,
D13/154; 381/334, 355, 369; D21/324;
455/95, 100, 569.2, 550.1; 273/148 B
CPC . H04R 25/00; H04R 1/02; H04R 5/02; H04R
9/08; H04R 19/04; F16M 13/00; F16M
11/00

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D391,943 S *	3/1998	Han	.....	D14/356
D391,944 S *	3/1998	Han	.....	D14/356
D407,985 S *	4/1999	Pimentel	.....	D10/104.2
5,923,147 A *	7/1999	Martensson	.....	H01R 13/6675 320/111
D421,606 S *	3/2000	Montalbo	.....	D14/151
6,059,081 A *	5/2000	Patterson	.....	H02G 11/02 191/12.2 A
D433,994 S *	11/2000	Jobs	.....	D13/110
D435,835 S *	1/2001	Steck	.....	D13/168
D444,777 S *	7/2001	Bird	.....	D14/150
D457,150 S *	5/2002	Chen	.....	D14/150
D469,411 S *	1/2003	Decosse	.....	D13/171
D474,169 S *	5/2003	Fletcher	.....	D14/159

D481,370 S *	10/2003	Popowski	.....	D14/150
D494,633 S *	8/2004	Nussberger	.....	D21/324
D495,676 S *	9/2004	Slevin	.....	D14/150
D499,392 S *	12/2004	Bathurst	.....	D14/150
6,836,676 B2 *	12/2004	Lloyd	.....	H04M 1/6041 379/420.01
D521,982 S *	5/2006	Schafernak	.....	D14/216
7,159,789 B2 *	1/2007	Schwendinger	...	G05D 23/1904 236/1 C
D554,614 S *	11/2007	Lin	.....	D14/509
D581,927 S *	12/2008	Sumii	.....	D14/356
D590,391 S *	4/2009	Sumii	.....	D14/356
D596,622 S *	7/2009	Lee	.....	D14/218
D598,018 S *	8/2009	Sumii	.....	D14/301
D601,564 S *	10/2009	Maeno	.....	D14/400
D602,911 S *	10/2009	Wang	.....	D14/216

(Continued)

FOREIGN PATENT DOCUMENTS

CN	305255680	*	7/2019
JP	1630224	*	4/2019

Primary Examiner — Paula Allen Greene

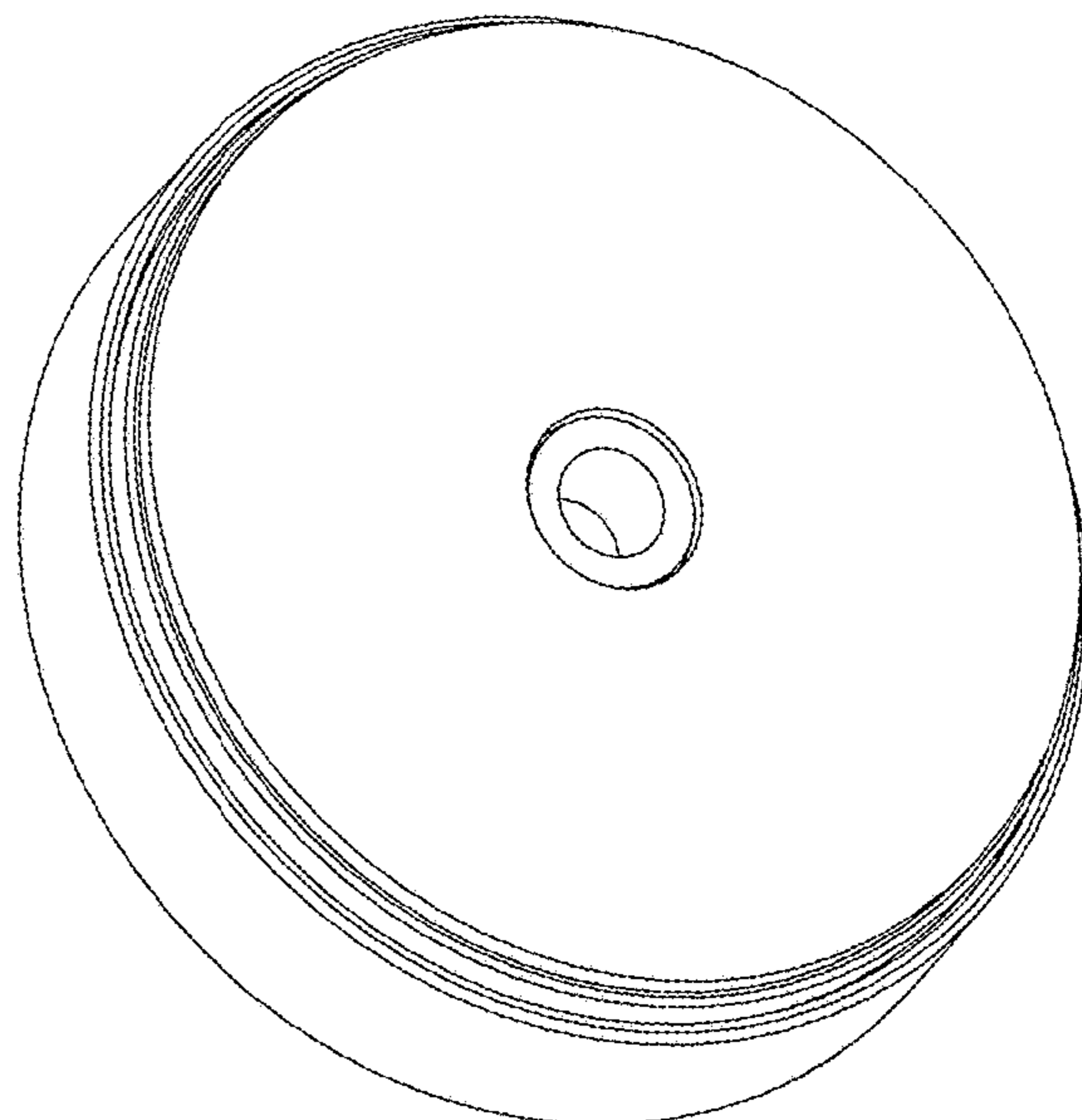
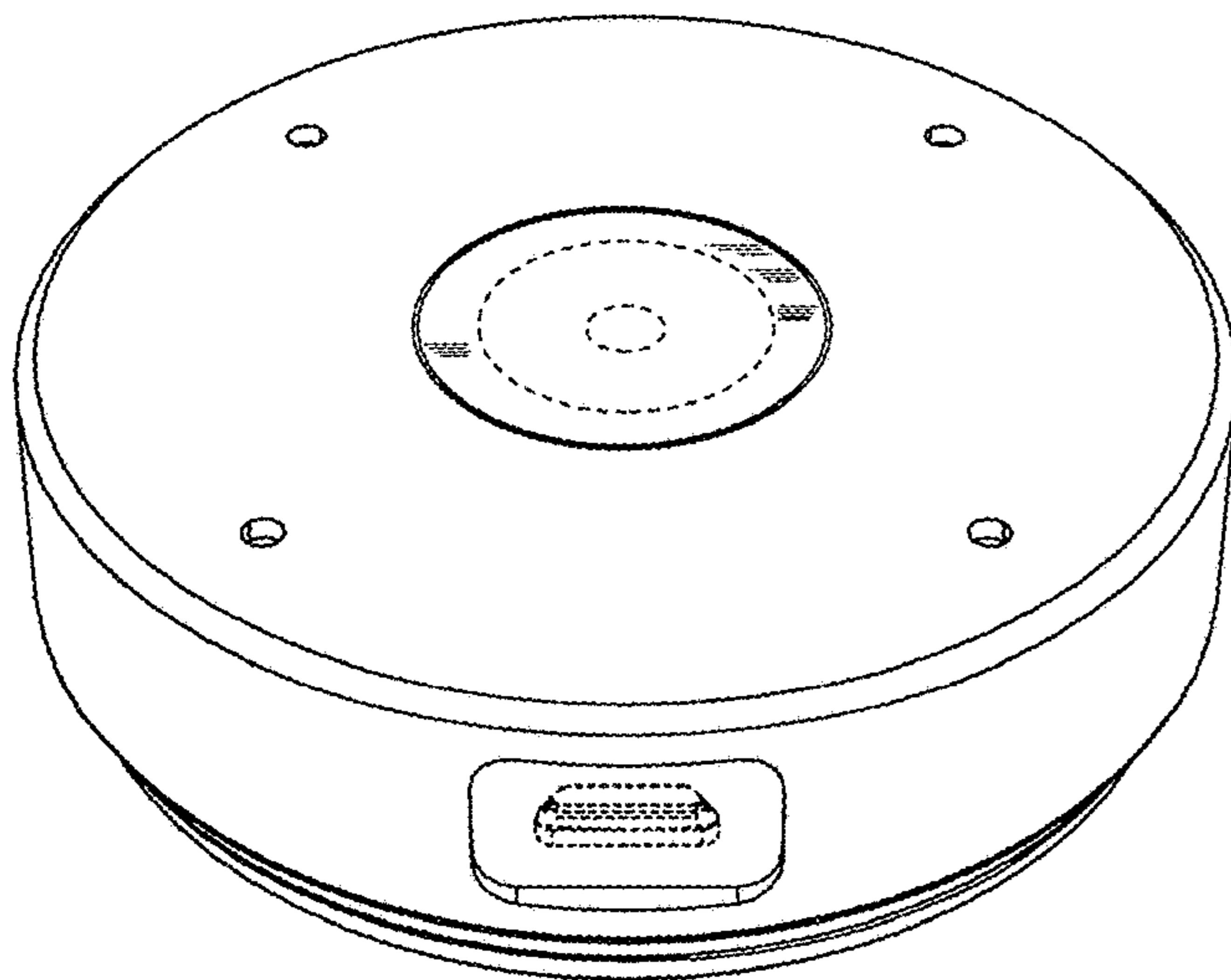
(57) **CLAIM**

The ornamental design for a circular array microphone, as shown and described.

DESCRIPTION

FIG. 1 is a front perspective view of a circular array microphone, showing our new design;
FIG. 2 is a rear perspective view thereof;
FIG. 3 is a front view thereof;
FIG. 4 is a rear view thereof;
FIG. 5 is a right side view thereof;
FIG. 6 is a left side view thereof;
FIG. 7 is a top view thereof; and,
FIG. 8 is a bottom view thereof.
The broken lines in FIG. 1, FIG. 3, FIG. 5, and FIG. 7 depict environment that forms no part of the claimed design.

1 Claim, 8 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

D602,915 S * 10/2009 Song D14/218
 D640,199 S * 6/2011 Wilson D13/139.7
 D643,412 S * 8/2011 Brady D14/218
 D656,130 S * 3/2012 Bailey D14/227
 8,188,842 B2 * 5/2012 Otsuka G08C 17/02
 340/12.15
 D671,528 S * 11/2012 Fathollahi D14/211
 8,462,976 B2 * 6/2013 Tamaru H04M 1/02
 379/202.01
 D694,182 S * 11/2013 Lee D13/108
 D710,329 S * 8/2014 Holzer D14/216
 D711,345 S * 8/2014 Liu D14/140
 8,855,349 B2 * 10/2014 Yeh H04R 1/10
 381/334
 D718,236 S * 11/2014 Murray D13/108
 D720,289 S * 12/2014 Chiang D13/108
 D734,473 S * 7/2015 Brandis D24/174
 D743,954 S * 11/2015 Chuang D13/168
 D752,014 S * 3/2016 Bolmstrand D14/204
 D768,631 S * 10/2016 Epstein D14/388
 D771,142 S * 11/2016 Langhammer D14/203.6
 D773,437 S * 12/2016 Lee D14/223
 D773,947 S * 12/2016 Scarcella D10/104.1
 D777,100 S * 1/2017 Price D13/103
 D784,259 S * 4/2017 Huang D13/108

D784,963 S * 4/2017 Saule D14/228
 D790,514 S * 6/2017 Woodward D10/65
 D792,468 S * 7/2017 Langhammer D14/203.3
 D796,355 S * 9/2017 Cho D10/70
 D804,531 S * 12/2017 Beck D14/496
 D804,533 S * 12/2017 Mangum D14/496
 D809,951 S * 2/2018 Yang D10/104.1
 D810,045 S * 2/2018 Kim D14/204
 D810,137 S * 2/2018 Tsang D14/496
 D814,436 S * 4/2018 Wen D14/150
 D820,318 S * 6/2018 Mullins D14/496
 D822,717 S * 7/2018 Lim D14/496
 D825,549 S * 8/2018 Lebovitz D14/253
 D826,205 S * 8/2018 Langhammer D14/203.6
 D828,342 S * 9/2018 Chen D14/240
 D834,567 S * 11/2018 Snyder D14/228
 D835,062 S * 12/2018 Langhammer D14/203.6
 D849,704 S * 5/2019 Kim D14/137
 D859,415 S * 9/2019 Liao D14/434
 D861,602 S * 10/2019 Feng D13/108
 D876,400 S * 2/2020 Russo D14/228
 2004/0160928 A1 * 8/2004 Perlman H04L 63/0428
 370/338
 2013/0028457 A1 * 1/2013 Yeh H04R 1/10
 381/334
 2015/0334480 A1 * 11/2015 Yang H04R 9/06
 381/394

* cited by examiner

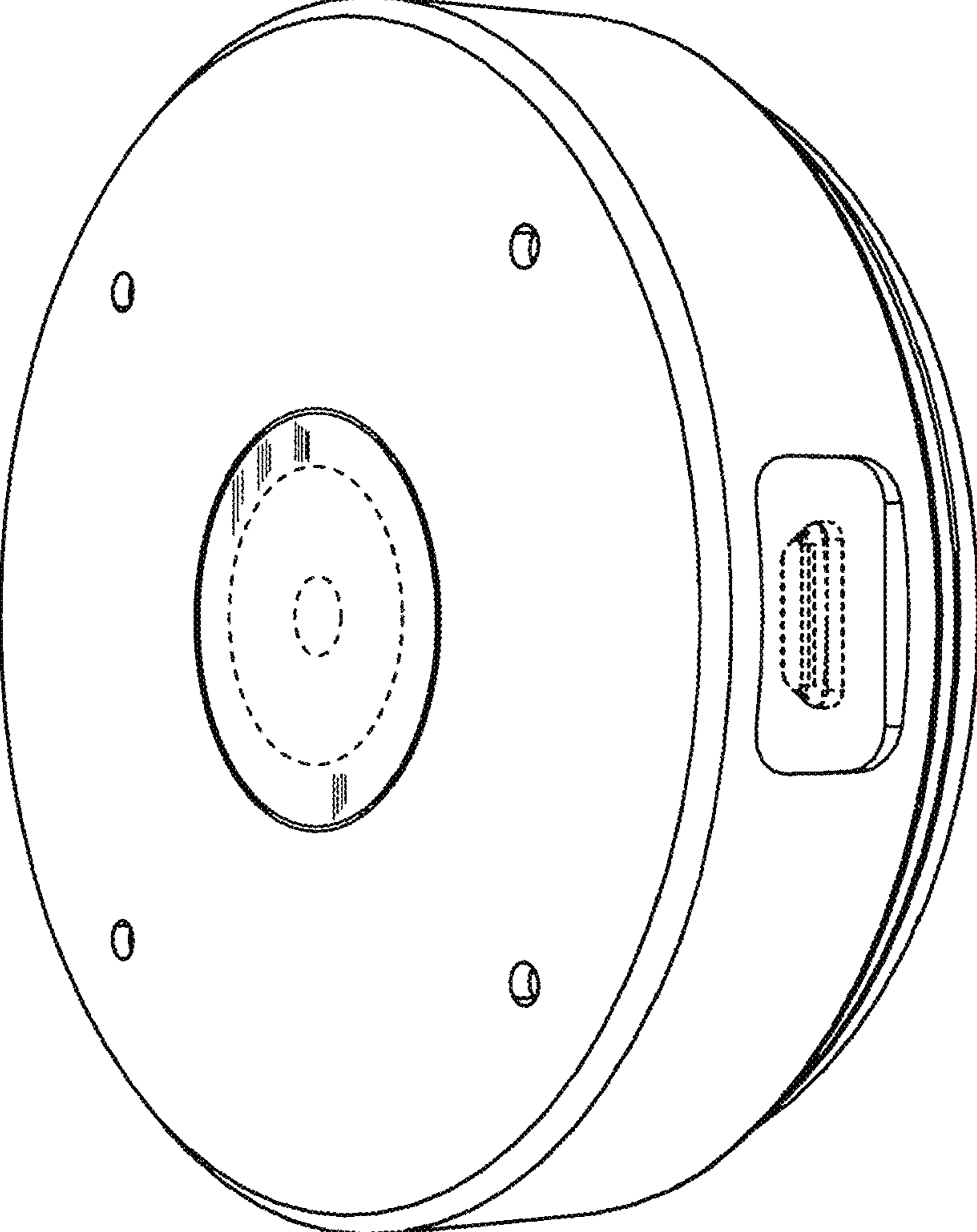


Fig. 1

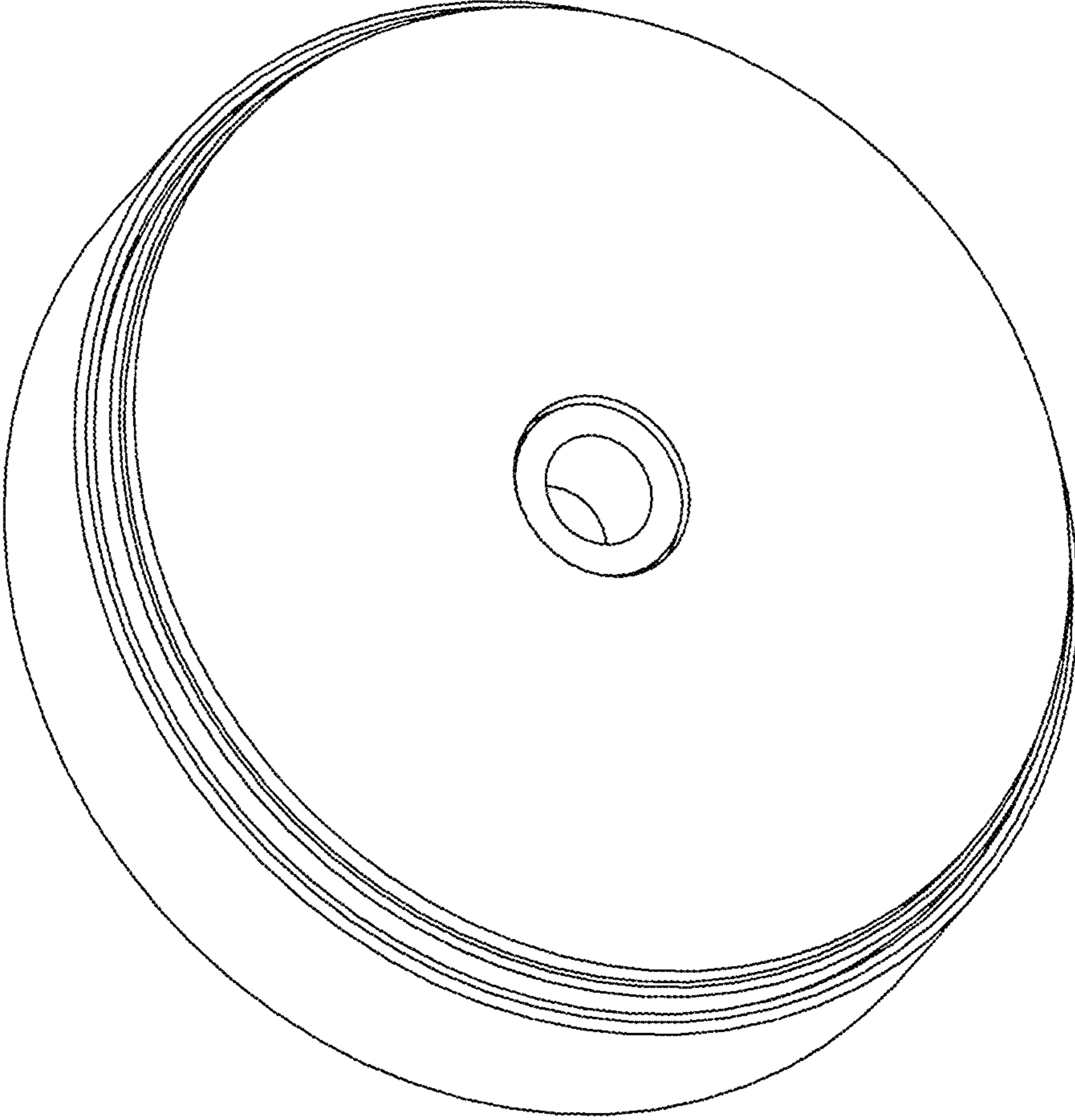


Fig. 2

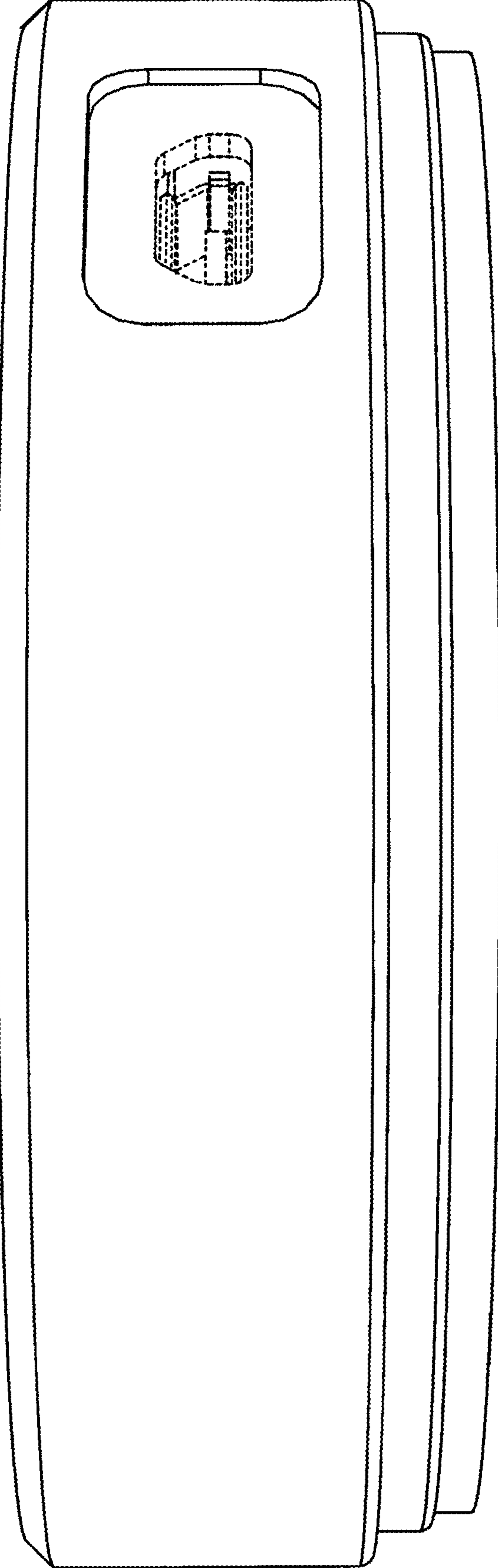


Fig. 3

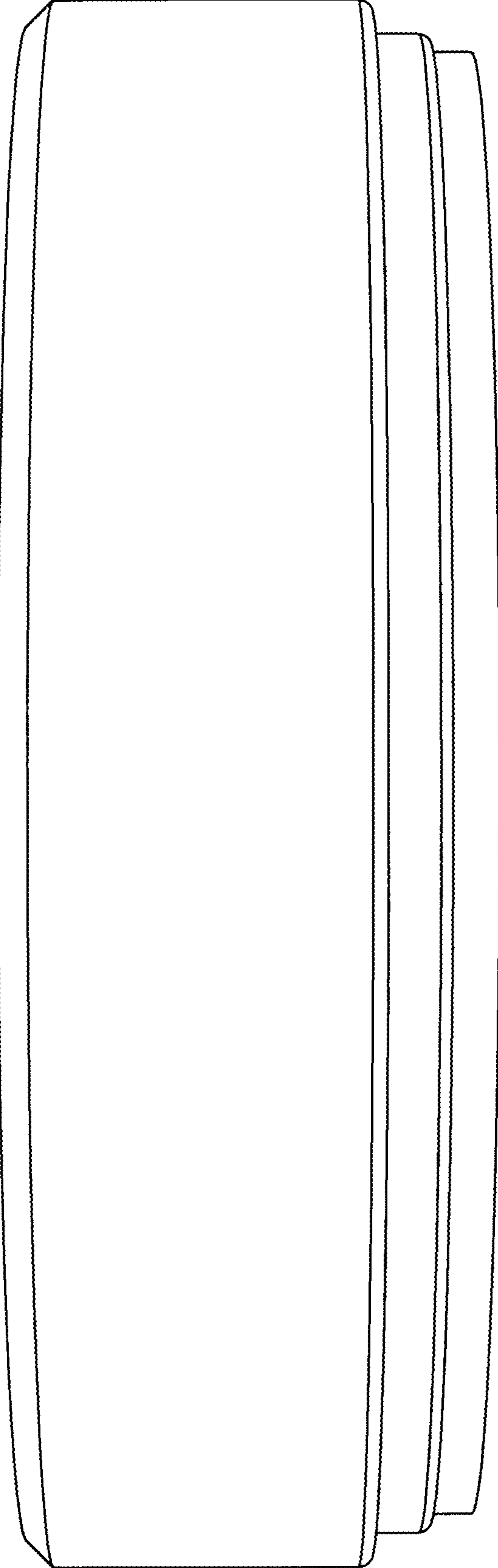


Fig. 4

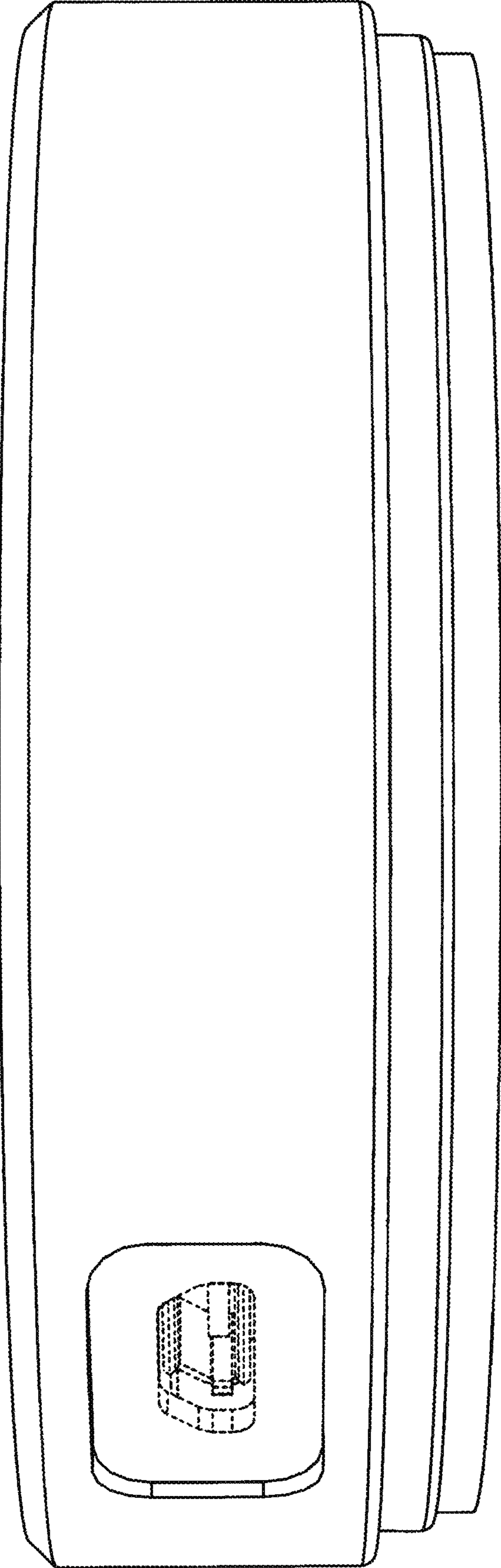


Fig. 5

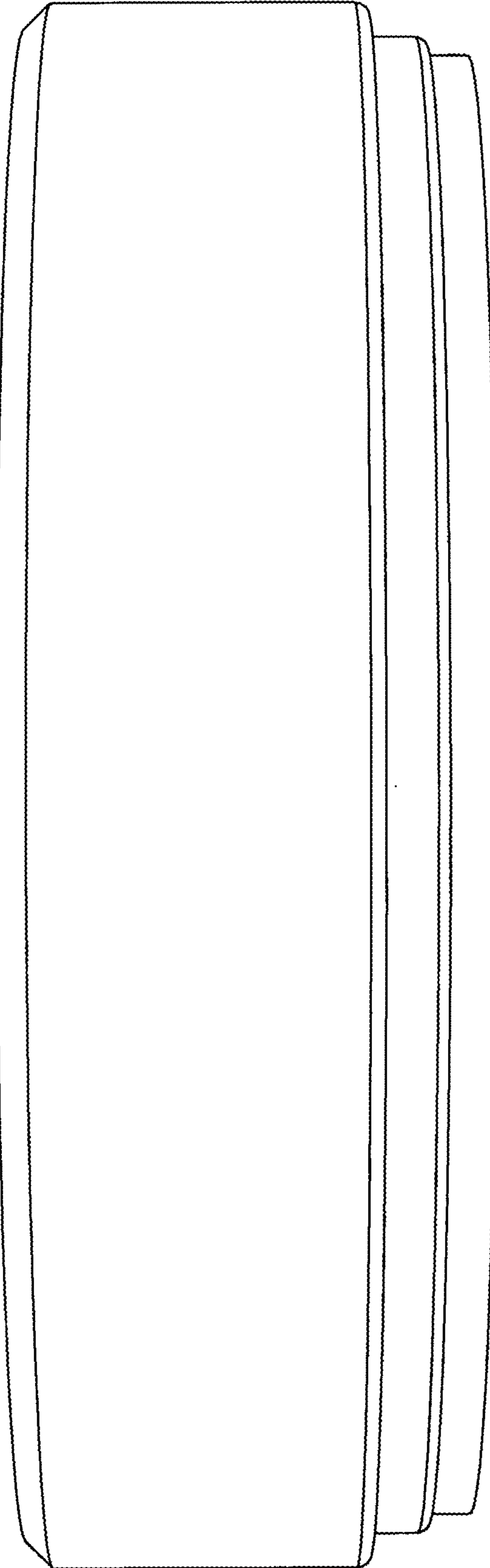


Fig. 6

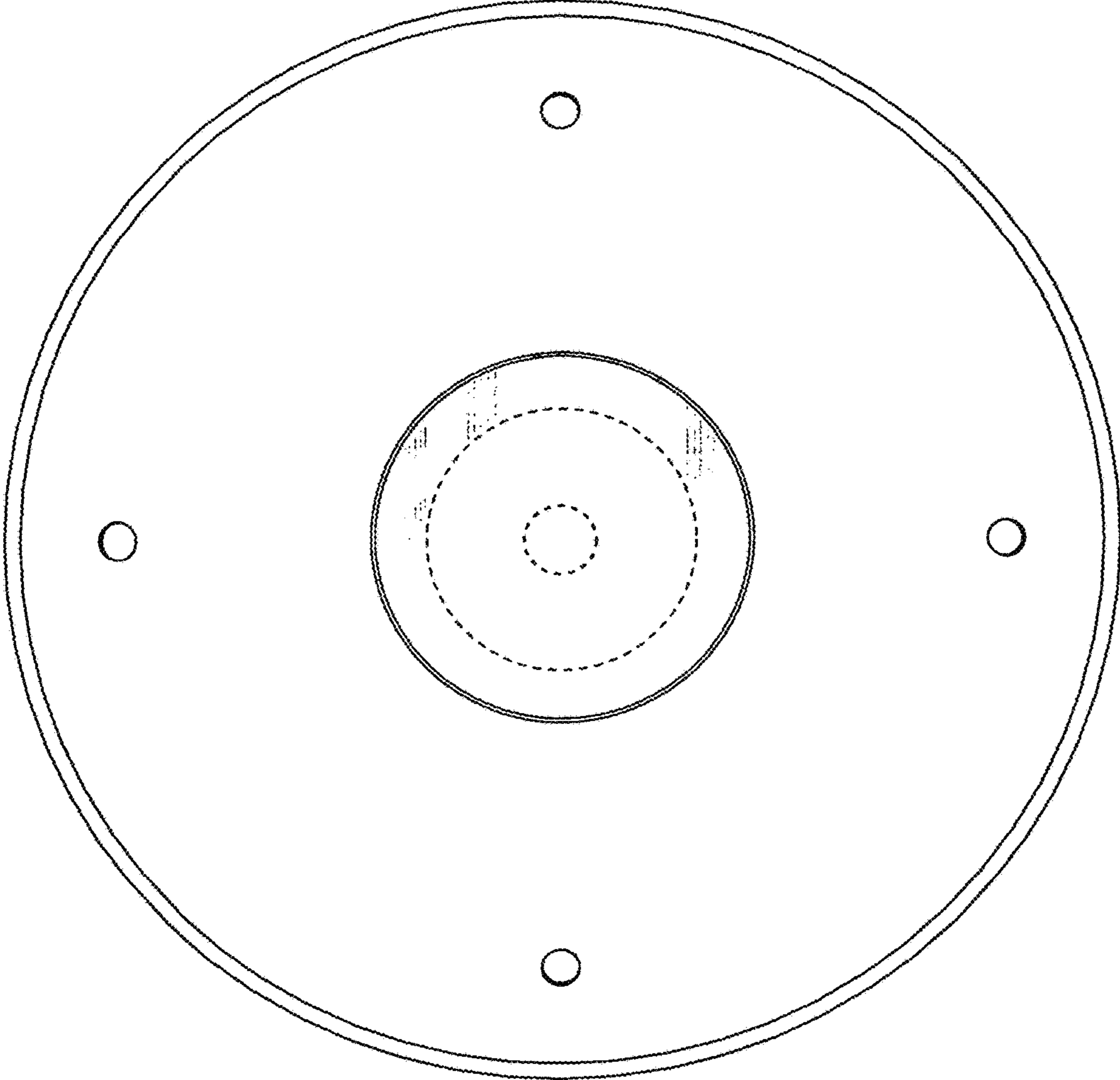


Fig. 7

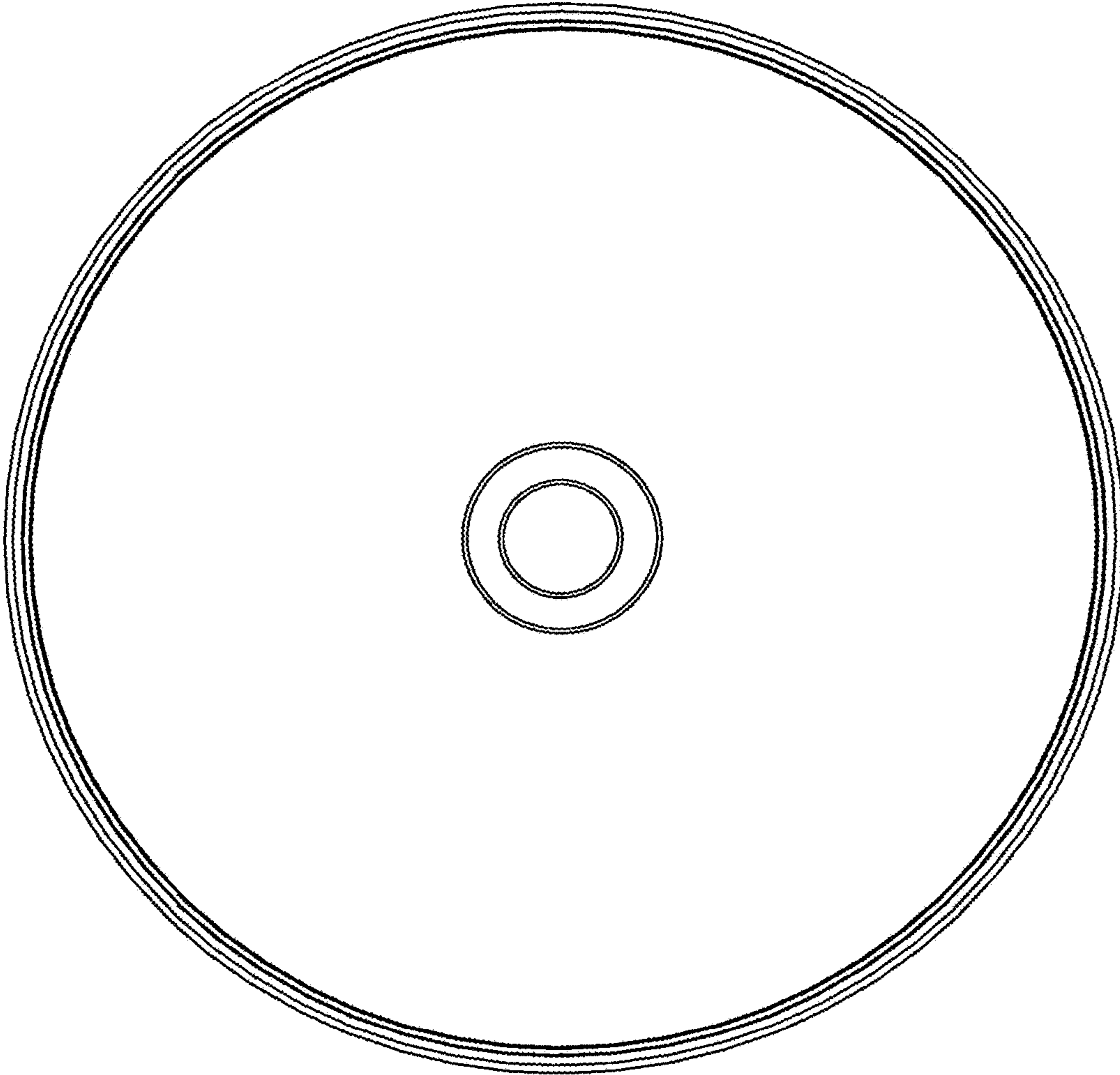


Fig. 8