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

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(54) **CIRCULAR ARRAY MICROPHONE**

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

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

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

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

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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
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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

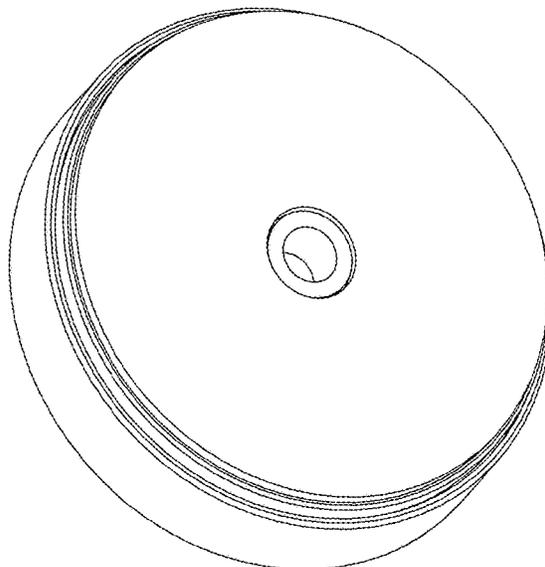
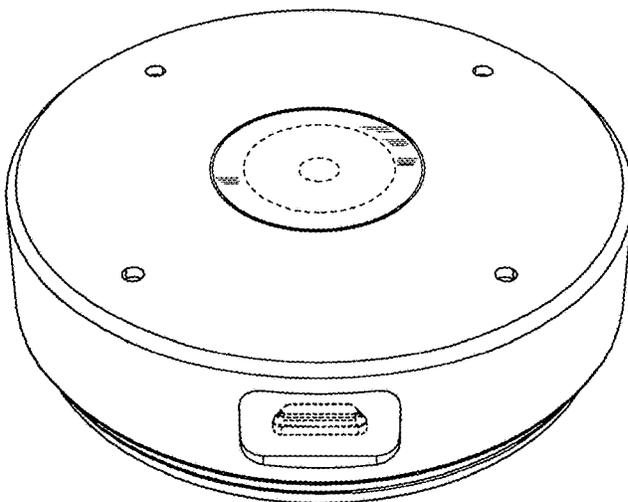
(57) **CLAIM**

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

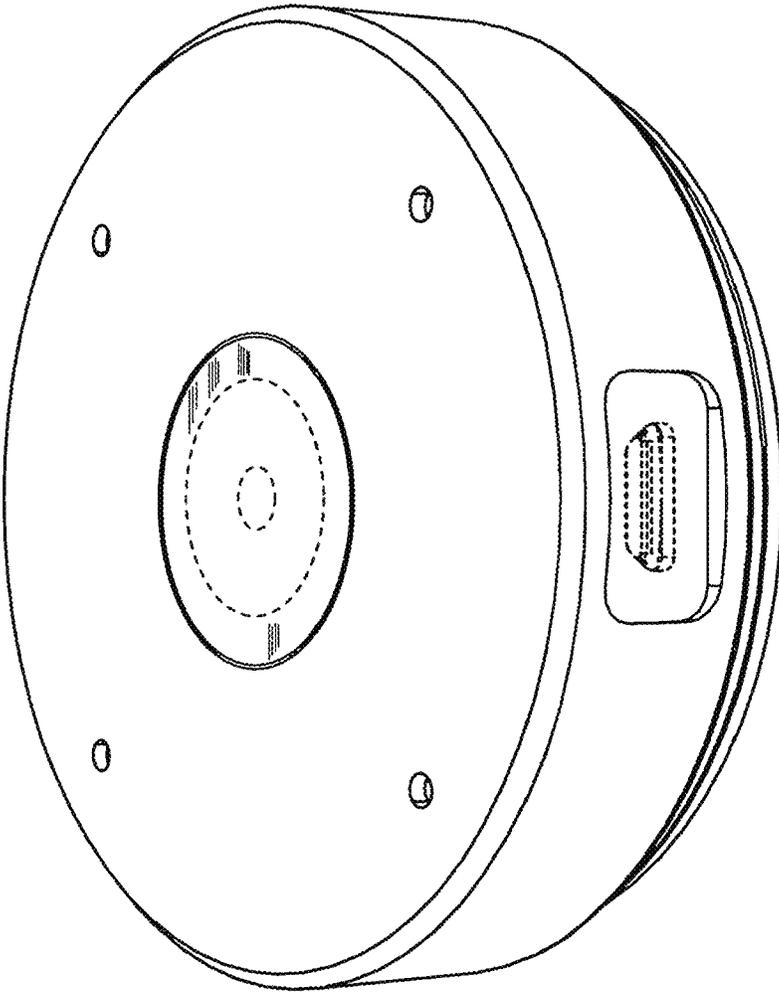


Fig. 1

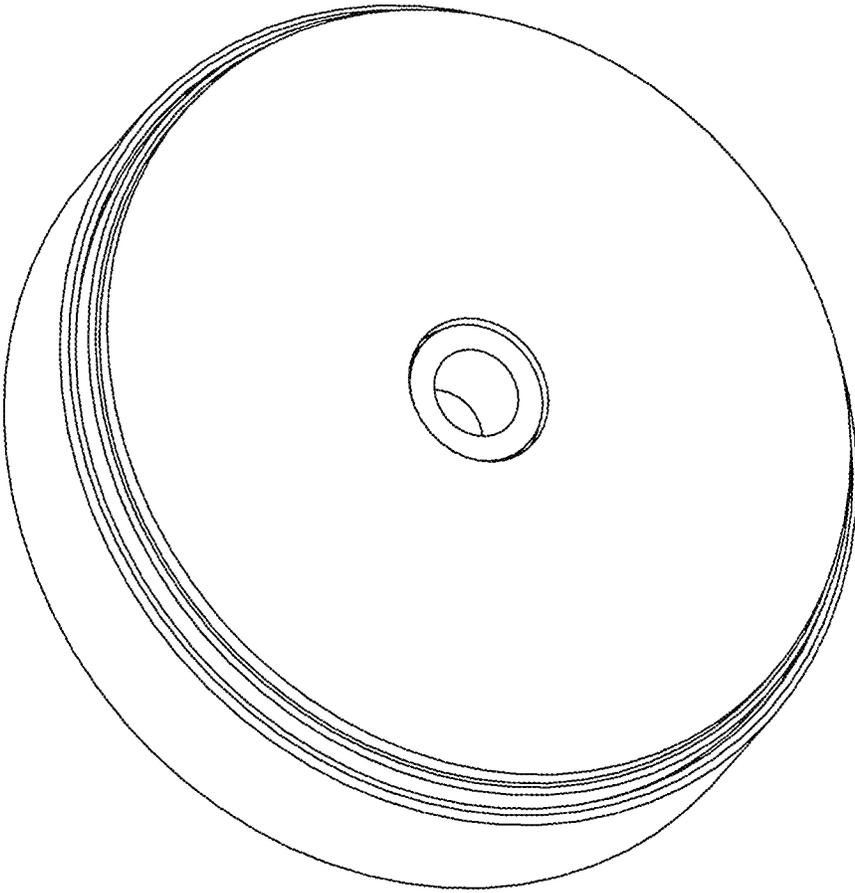


Fig. 2

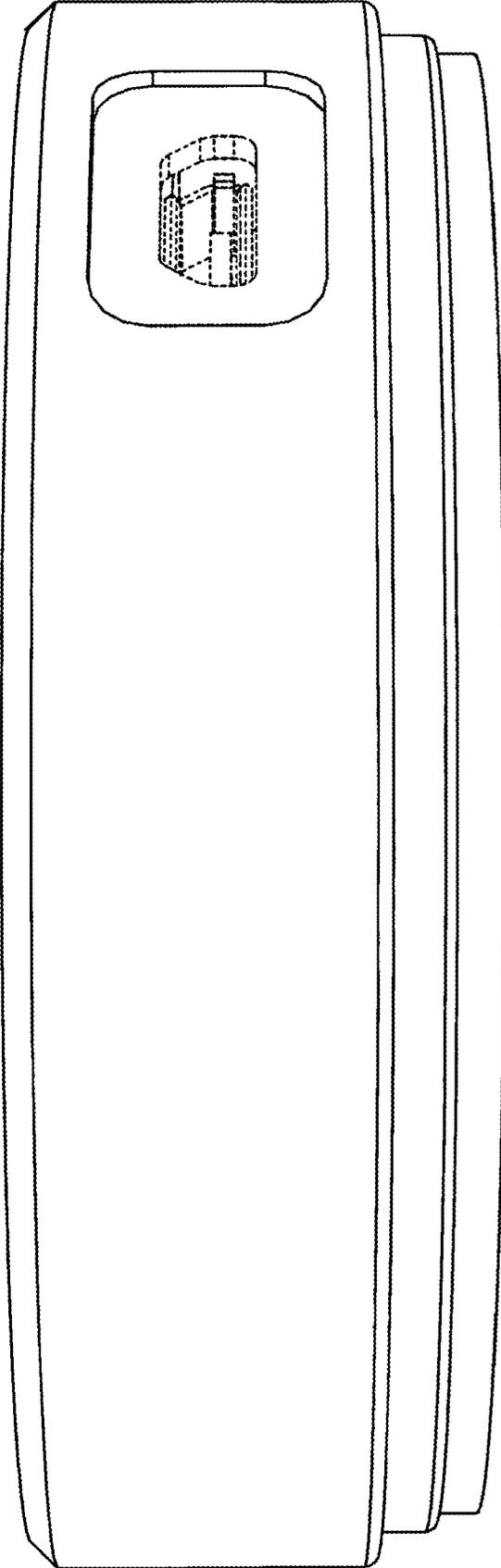


Fig. 3

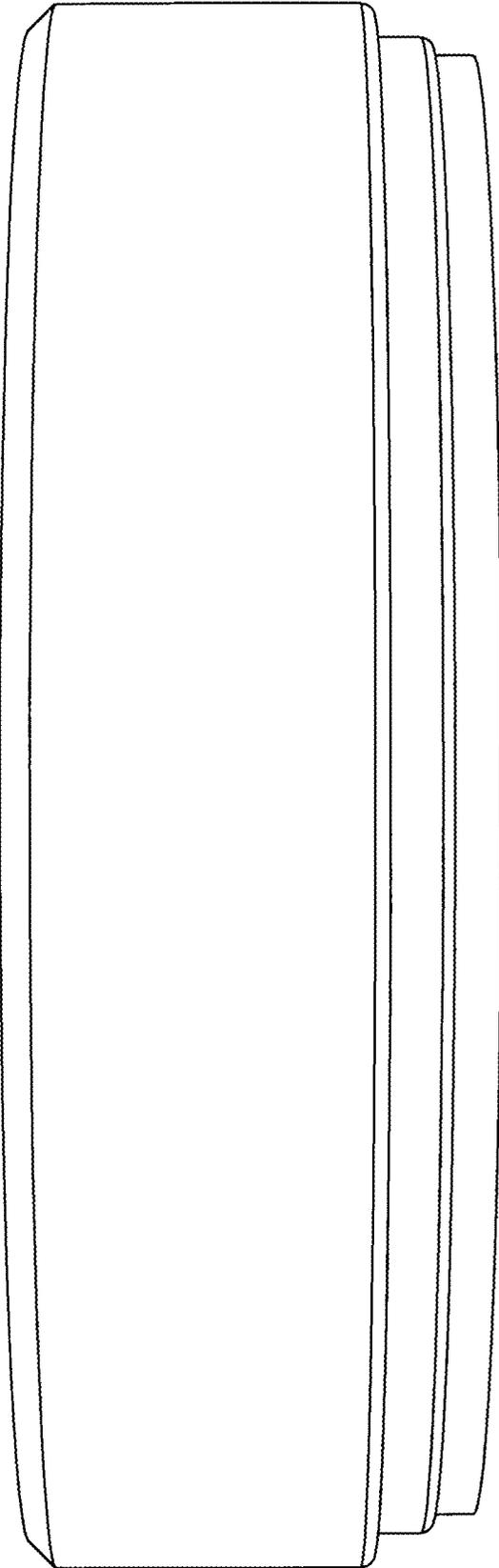


Fig. 4

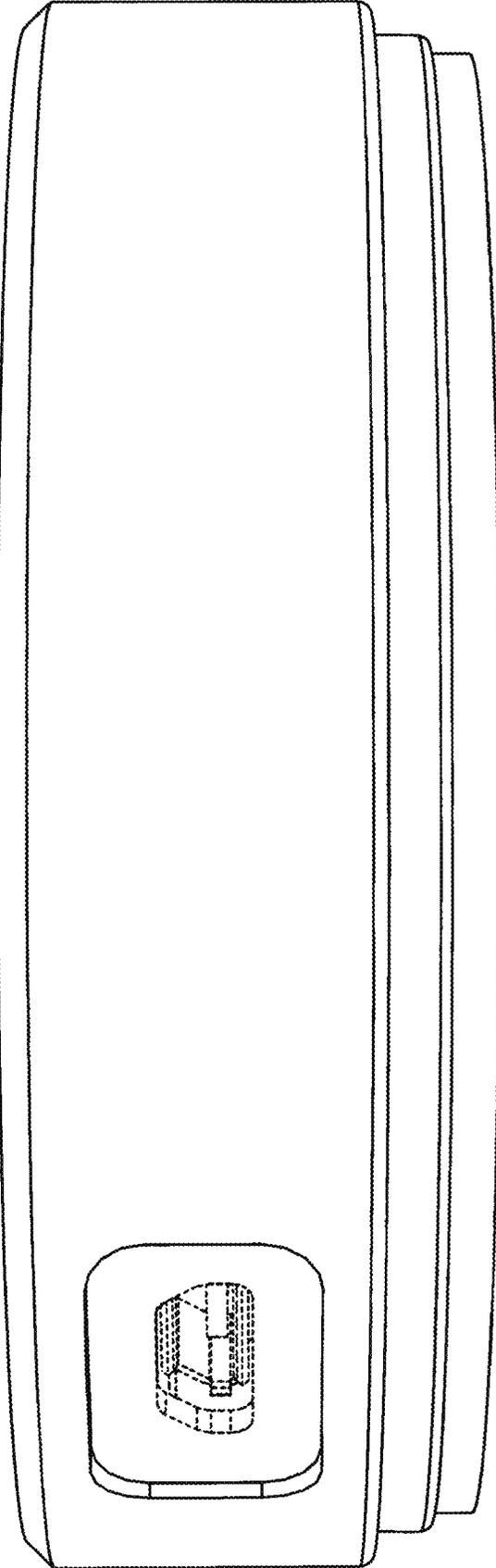


Fig. 5

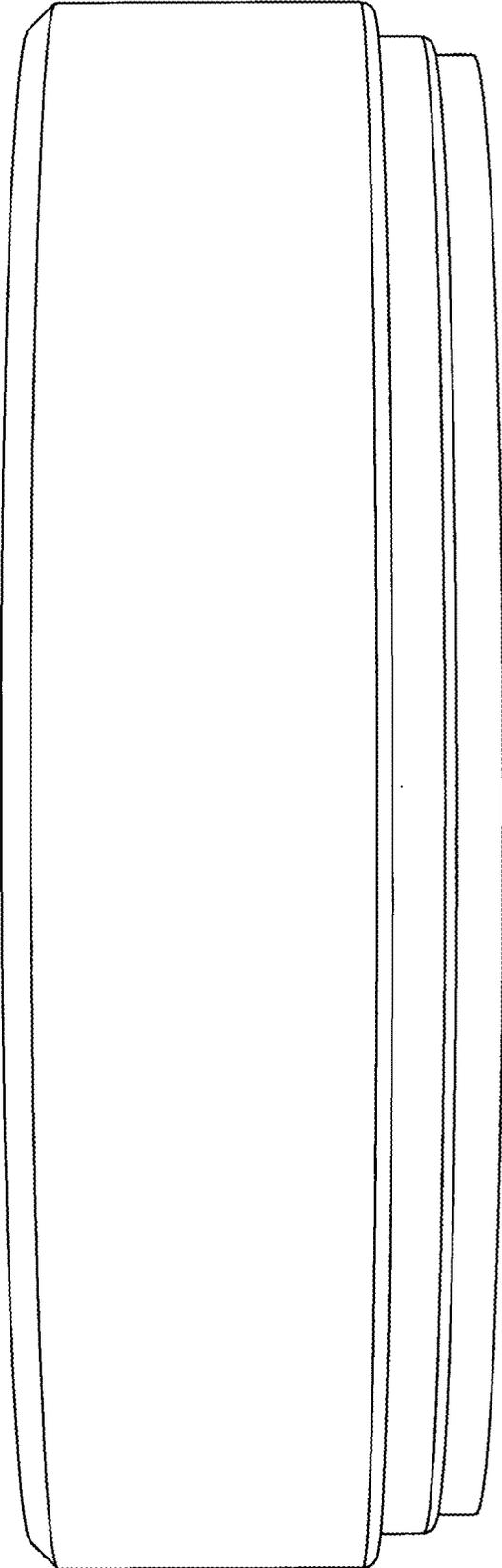


Fig. 6

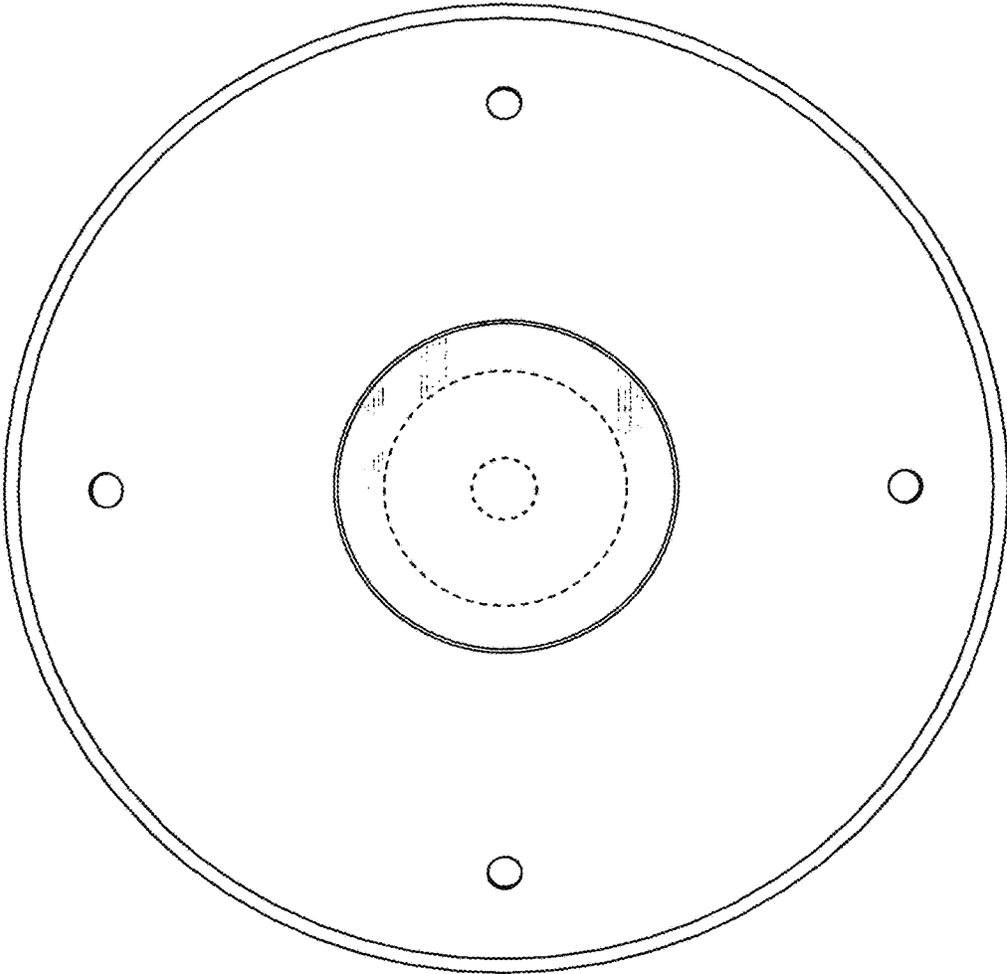


Fig. 7

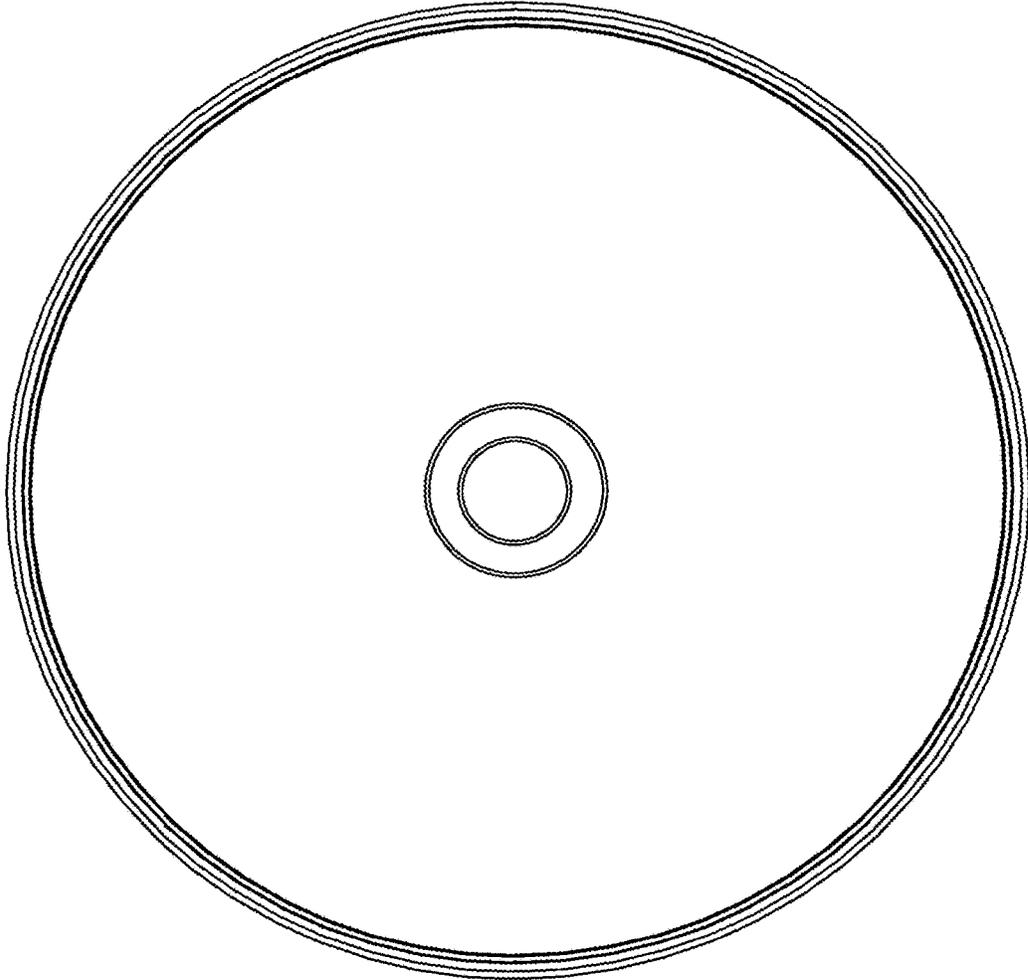


Fig. 8