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

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(54) **LOWER SHIELD FOR A SUBSTRATE PROCESSING CHAMBER**

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(73) Assignee: **APPLIED MATERIALS, INC.**, Santa Clara, CA (US)

(*) Notice: This patent is subject to a terminal disclaimer.

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

(21) Appl. No.: **29/703,658**

(22) Filed: **Aug. 28, 2019**

(51) **LOC (13) Cl.** **13-03**
(52) **U.S. Cl.**
USPC **D13/182**
(58) **Field of Classification Search**
USPC D13/118, 133, 162, 182, 184, 199; D15/144.1, 144.2, 150, 199; D23/213; D24/232
CPC H01L 21/0226; H01L 21/02263; H01L 21/02266; H01L 21/02269; H01L 21/02271; H01L 21/67742; H01L 2221/68363; H01L 2224/75186; H01L 2224/76186; H01J 37/32633; H01J 37/32477; H01J 37/32623; H01J 37/32642
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D557,425 S	*	12/2007	Nakamura	D24/232
D642,605 S	*	8/2011	Ishikawa	D15/144.1
D703,160 S	*	4/2014	Tanimura	D13/182

(Continued)

FOREIGN PATENT DOCUMENTS

JP	2006060073 A	3/2006
JP	1328350 S	4/2008

(Continued)

OTHER PUBLICATIONS

Search Report for Taiwan Design Application No. 109300802, dated Aug. 5, 2020.

(Continued)

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(74) *Attorney, Agent, or Firm* — Moser Taboada

(57) **CLAIM**

The ornamental design for a lower shield for a substrate processing chamber, as shown and described.

DESCRIPTION

FIG. **1** is a top isometric view of a lower shield for a substrate processing chamber, according to the novel design.
FIG. **2** is a top plan view thereof.
FIG. **3** is a bottom plan view thereof.
FIG. **4** is a front elevation view thereof.
FIG. **5** is a back elevation view thereof.
FIG. **6** is a right side elevation view thereof.
FIG. **7** is a left side elevation view thereof; and,
FIG. **8** is a cross-section view taken along line **8-8** in FIG. **2**.

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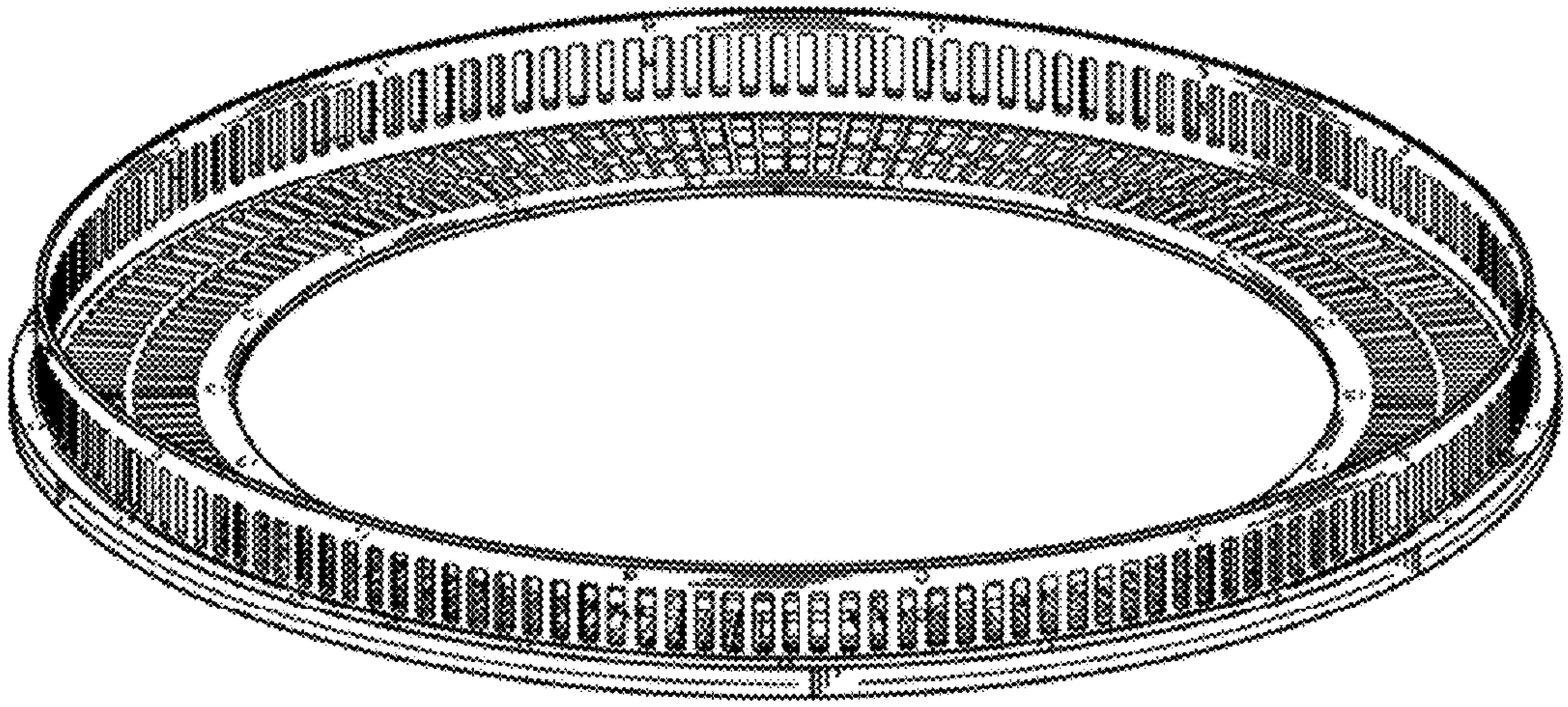

The dashed lines in FIGS. **1-8** are for the purpose of showing environmental structure, and form no part of the claimed design.

1 Claim, 5 Drawing Sheets

(56) References Cited

U.S. PATENT DOCUMENTS

D716,239	S	*	10/2014	Lau	D13/182
D802,790	S	*	11/2017	Tauchi	D24/232
D804,436	S	*	12/2017	Tauchi	D13/182
9,865,437	B2		1/2018	Chia et al.	
D812,578	S	*	3/2018	Uemura	D13/182
D827,592	S	*	9/2018	Ichino	D13/182
D830,981	S	*	10/2018	Jeong	D13/182
D840,364	S	*	2/2019	Ichino	D13/182
D840,365	S	*	2/2019	Ichino	D13/182
D855,027	S	*	7/2019	Okajima	D13/182
D872,037	S	*	1/2020	Okajima	D13/182
D891,382	S	*	7/2020	Koppa	D13/182
D893,441	S	*	8/2020	Rao	D13/199
2002/0170881	A1		11/2002	Benzing et al.	
2004/0149216	A1		8/2004	Osada et al.	
2007/0113783	A1	*	5/2007	Lee	C23C 16/4412 118/715
2010/0291319	A1		11/2010	Yamashita et al.	
2011/0108524	A1		5/2011	Dhindsa et al.	
2018/0061618	A1		3/2018	Nichols et al.	

FOREIGN PATENT DOCUMENTS

TW	D132339	12/2009
TW	D167109	4/2015
TW	D179672	11/2016
WO	WO 2014/014566 A1	1/2014

OTHER PUBLICATIONS

International Search Report and Written Opinion for PCT/US2020/048303 dated Dec. 4, 2020.

* cited by examiner

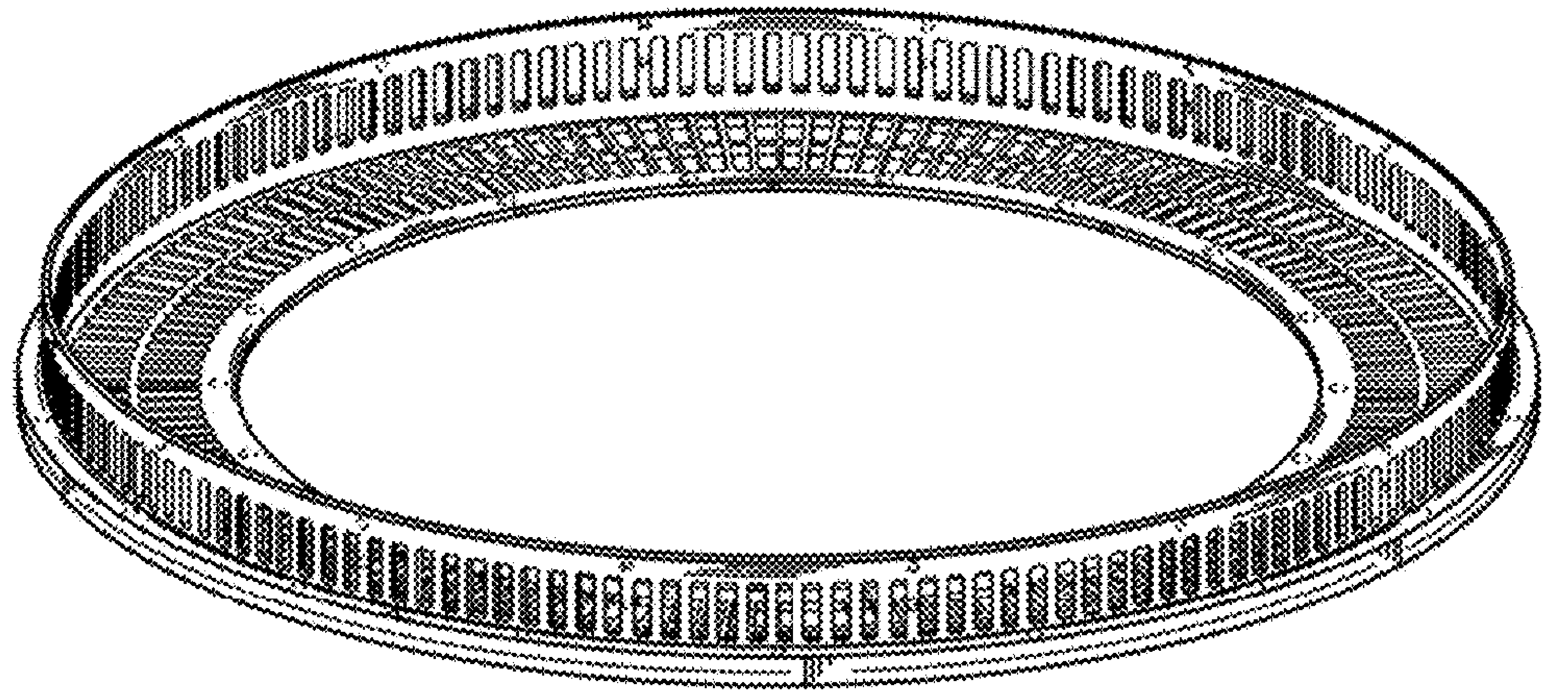

FIG. 1

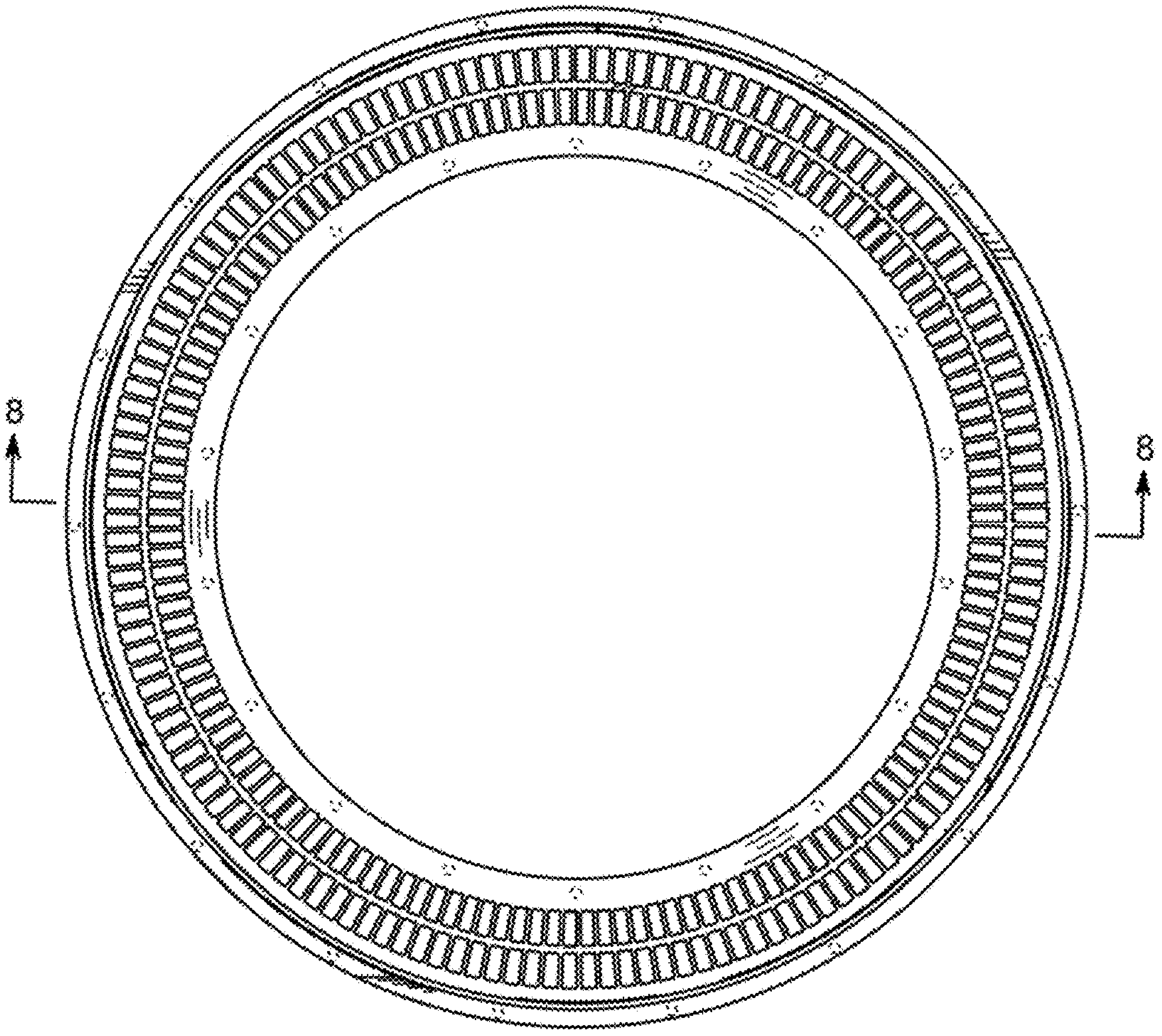

FIG. 2

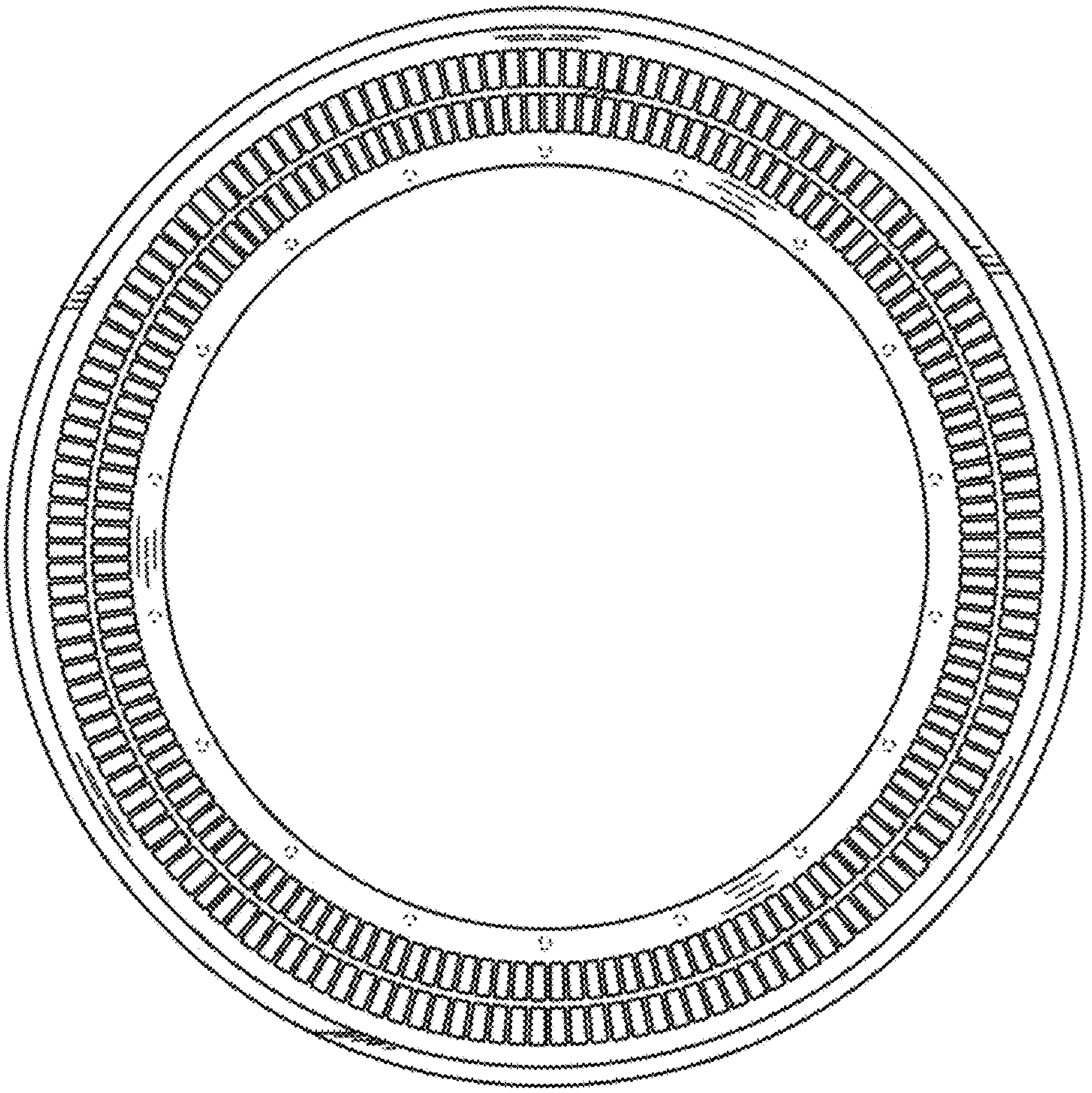

FIG. 3

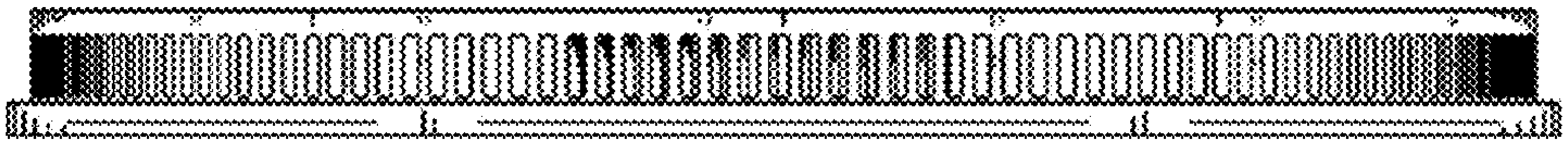

FIG. 4

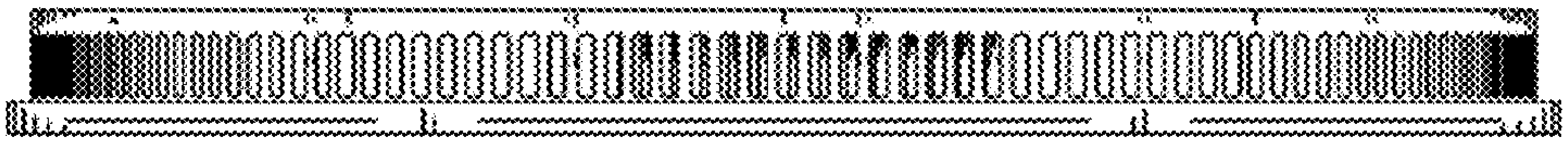

FIG. 5

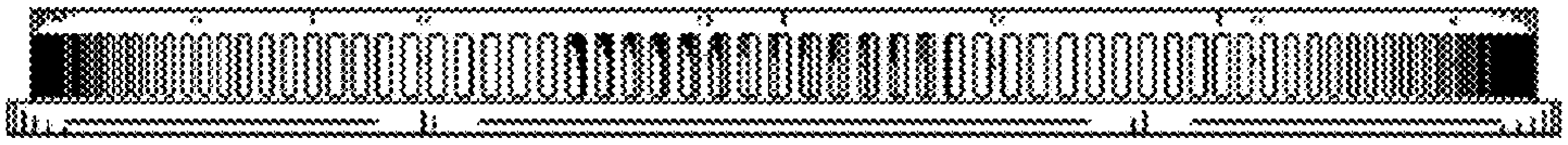

FIG. 6

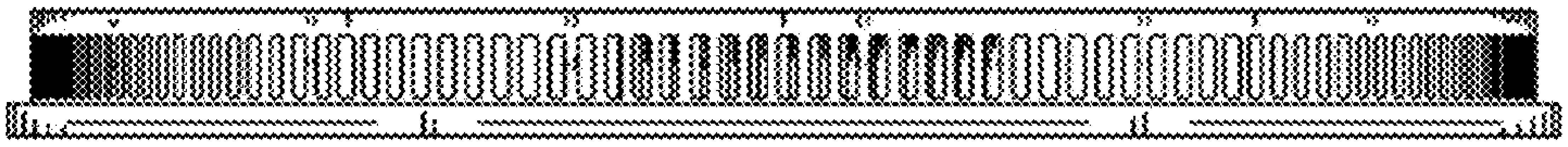

FIG. 7

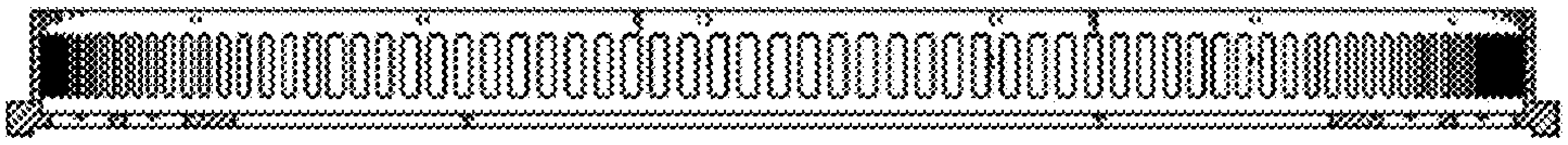

FIG. 8