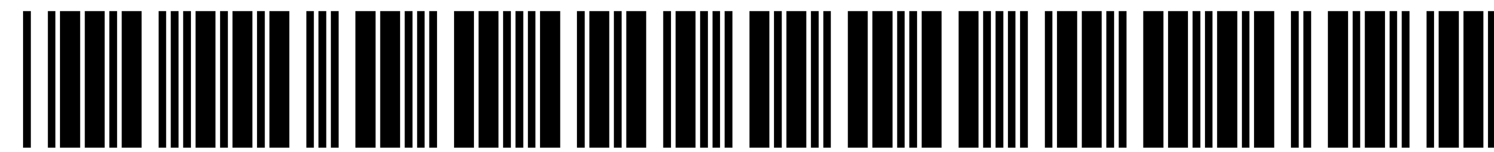

US00D940670S

(12) **United States Design Patent** (10) **Patent No.: US D940,670 S**
Kim (45) **Date of Patent: ** Jan. 11, 2022**

(54) **RETAINER RING FOR CHEMICAL MECHANICAL POLISHING DEVICE**

(71) Applicant: **WILLBE S&T CO., LTD.**, Hwaseong-si (KR)

(72) Inventor: **Jinwoo Kim**, Seongnam-si (KR)

(73) Assignee: **WILLBE S&T CO., LTD.**, Hwaseong-si (KR)

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

(21) Appl. No.: **29/728,917**

(22) Filed: **Mar. 23, 2020**

(30) **Foreign Application Priority Data**

Sep. 26, 2019 (KR) 30-2019-0046507

(51) **LOC (13) Cl.** **13-03**
(52) **U.S. Cl.**
USPC **D13/182**
(58) **Field of Classification Search**
USPC D8/70–72, 371–377, 380–381, 394–398; D13/182
CPC B24B 37/32; H01L 21/3212; H01L 21/67
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

8,517,803 B2 *	8/2013	Sather	B24B 37/32 451/286
D716,742 S *	11/2014	Jang	D13/182
D724,553 S *	3/2015	Choi	D13/182
9,227,297 B2 *	1/2016	Rahmathullah	B24B 37/32
D766,849 S *	9/2016	Fukushima	D13/182
D767,234 S *	9/2016	Kirkland	D34/29
D783,922 S *	4/2017	Kirkland	D34/29
D793,976 S *	8/2017	Fukushima	D13/182
D794,585 S *	8/2017	Nabeya	D13/182
D799,437 S *	10/2017	Nabeya	D13/182
D815,385 S *	4/2018	Kirkland	D34/29
D917,825 S *	4/2021	Kirkland	D34/29
2004/0065412 A1*	4/2004	Ensinger	B24B 37/32 156/345.14
2004/0077167 A1*	4/2004	Willis	B24B 37/32 438/689

(Continued)

OTHER PUBLICATIONS

"Kyodo International CMP Retaining Ring", Aug. 27, 2015, Kyodo-Inc.co.jp, site visited Nov. 1, 2021: https://web.archive.org/web/20150827052115/http://www.kyodo-inc.co.jp/english/electronics/parts/index.html (Year: 2015).*

(Continued)

Primary Examiner — Jack Reickel
Assistant Examiner — Michael A Kervin
(74) *Attorney, Agent, or Firm* — NSIP Law

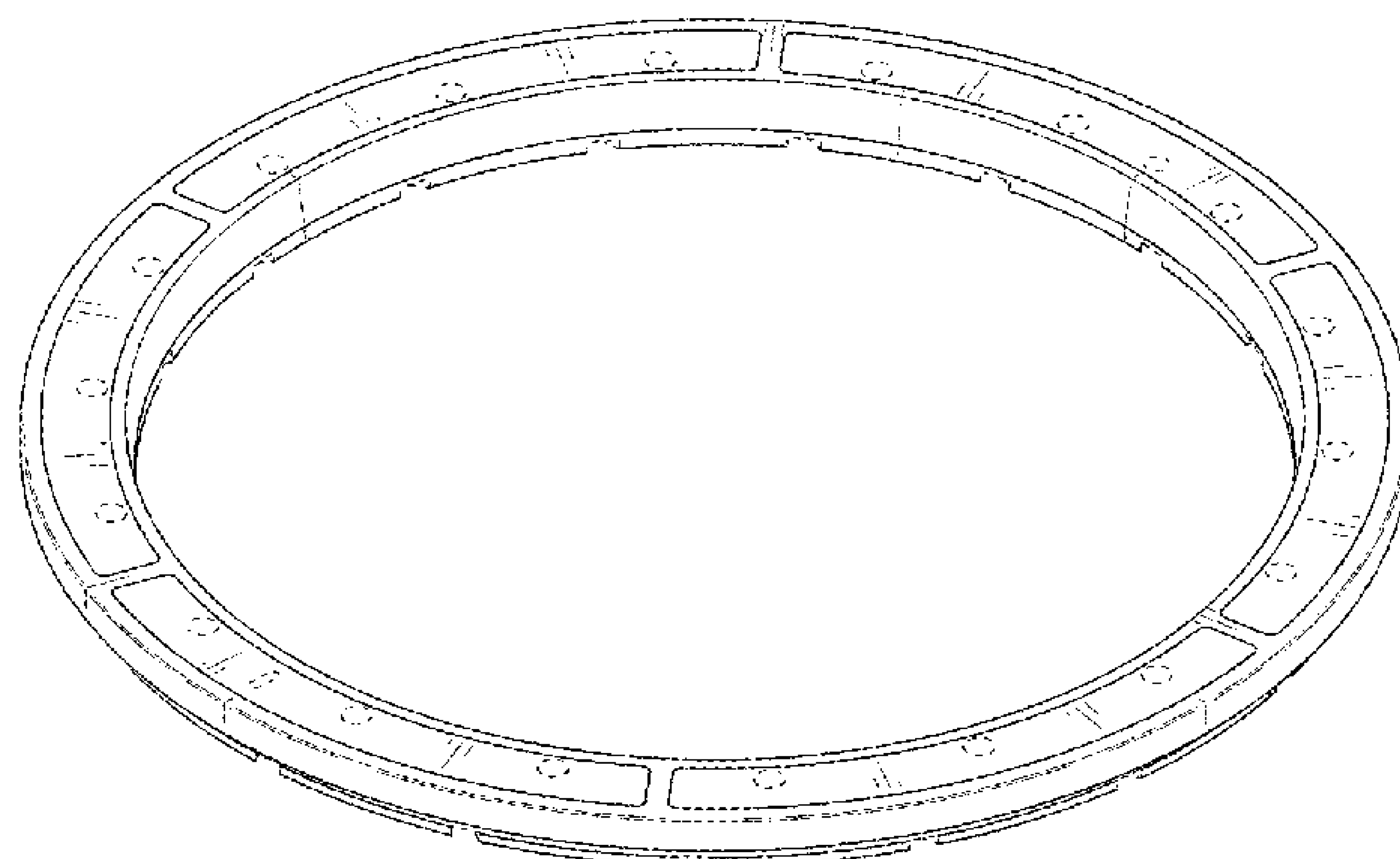
(57) **CLAIM**

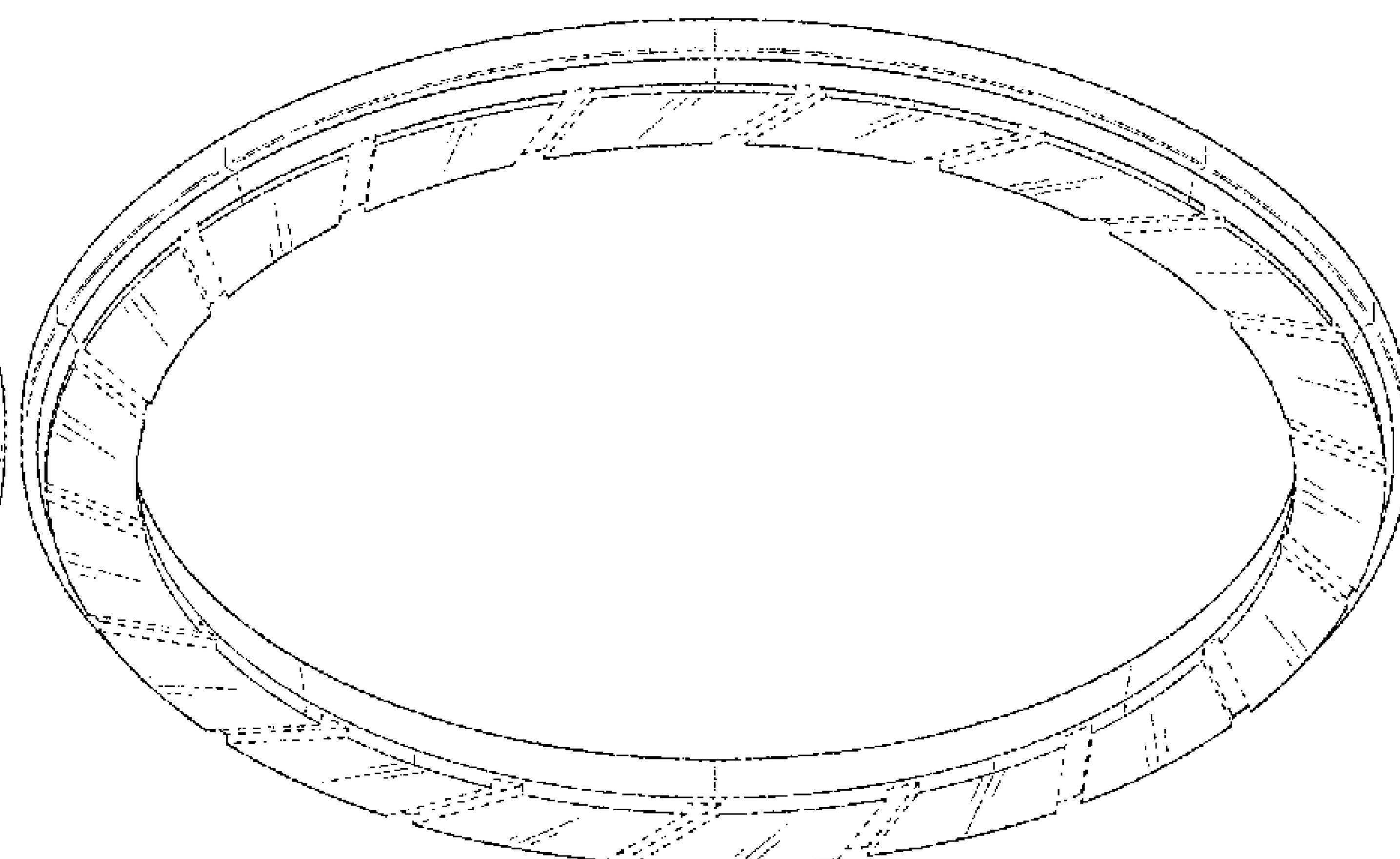
I claim the ornamental design for a retainer ring for chemical mechanical polishing device, as shown and described.

DESCRIPTION

FIG. **1** is a top perspective view of a retainer ring for chemical mechanical polishing device showing my new design;
FIG. **2** is a front view thereof;
FIG. **3** is a rear view thereof;
FIG. **4** is a left-side view thereof;
FIG. **5** is a right-side view thereof;
FIG. **6** is a top view thereof;
FIG. **7** is a bottom view thereof; and,
FIG. **8** is a bottom perspective view thereof.
The broken lines in the figures depict portions of the retainer ring for chemical mechanical polishing device which form no part of the claimed design.

1 Claim, 8 Drawing Sheets





(56) **References Cited**

U.S. PATENT DOCUMENTS

2008/0171500	A1*	7/2008	Kuwabara	B24B 37/32 451/398
2011/0065368	A1*	3/2011	Sather	B24B 37/32 451/385
2012/0309276	A1*	12/2012	Kim	B24B 37/32 451/364
2015/0050870	A1*	2/2015	Kim	B24B 37/32 451/385
2018/0264621	A1*	9/2018	Yoo	B24B 37/32

OTHER PUBLICATIONS

"Novellus Wafer Retaining Ring CMP Polishing", Apr. 17, 2017, Ebay.com, site visited Nov. 1, 2021: https://www.ebay.com/itm/301515679216 (Year: 2017).*

* cited by examiner

FIG. 1

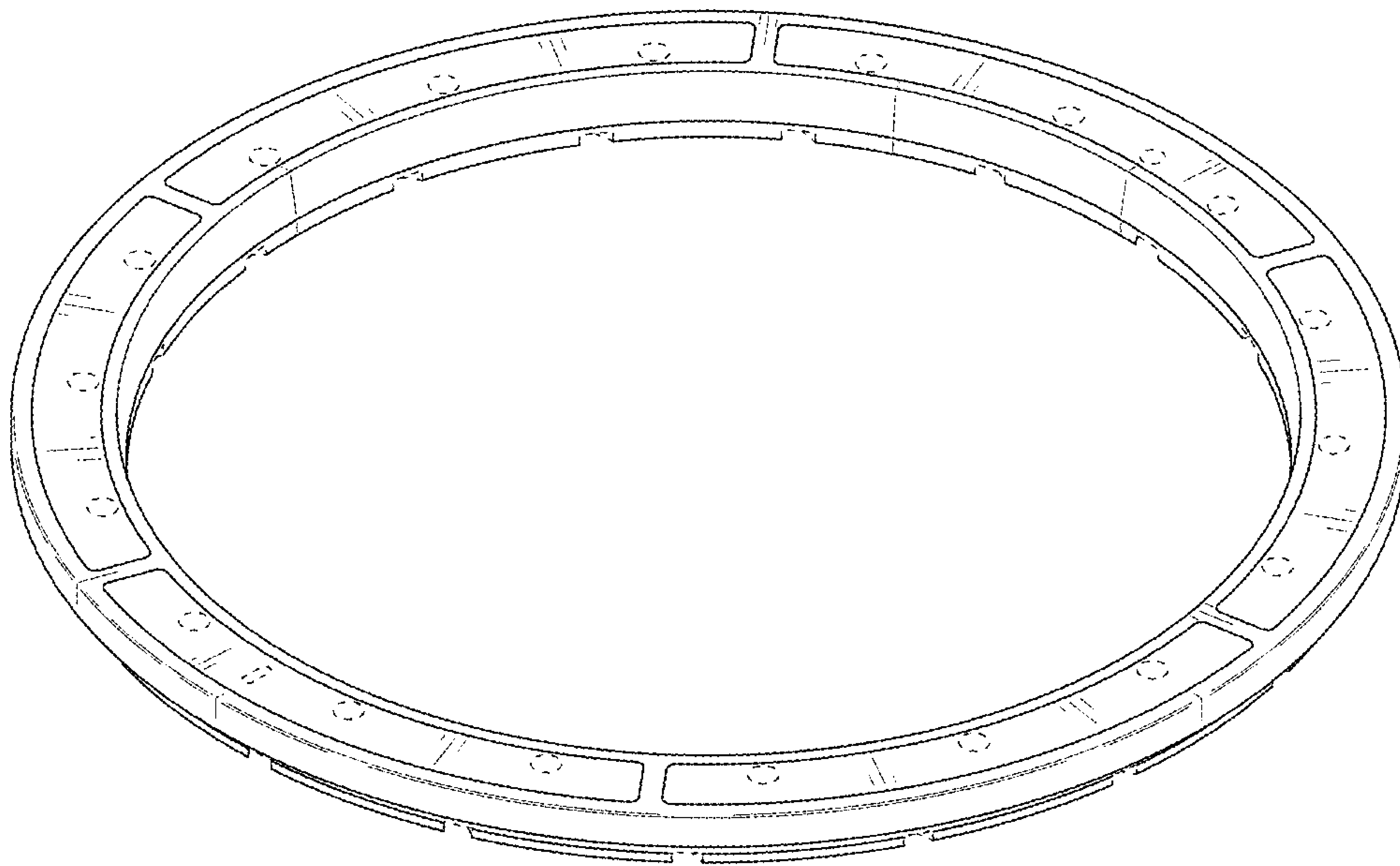


FIG. 2

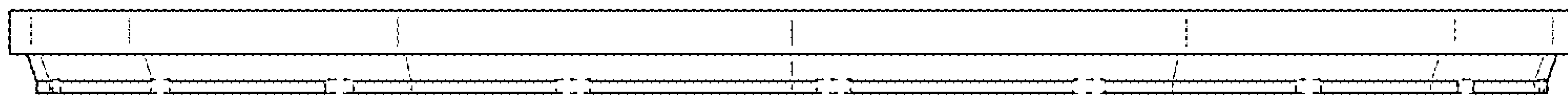


FIG. 3

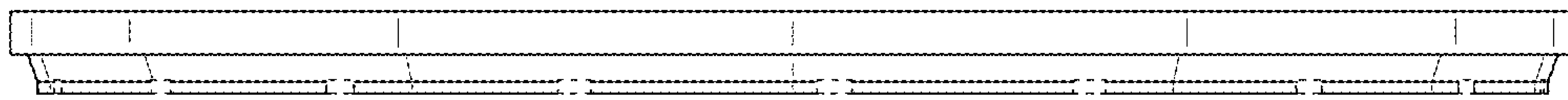


FIG. 4

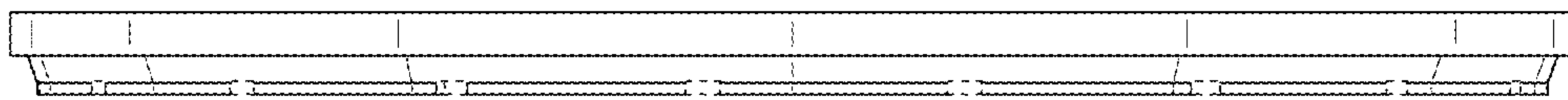


FIG. 5

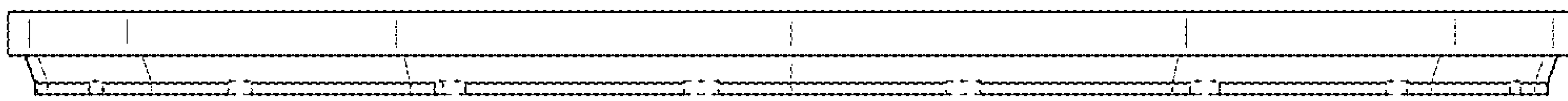


FIG. 6

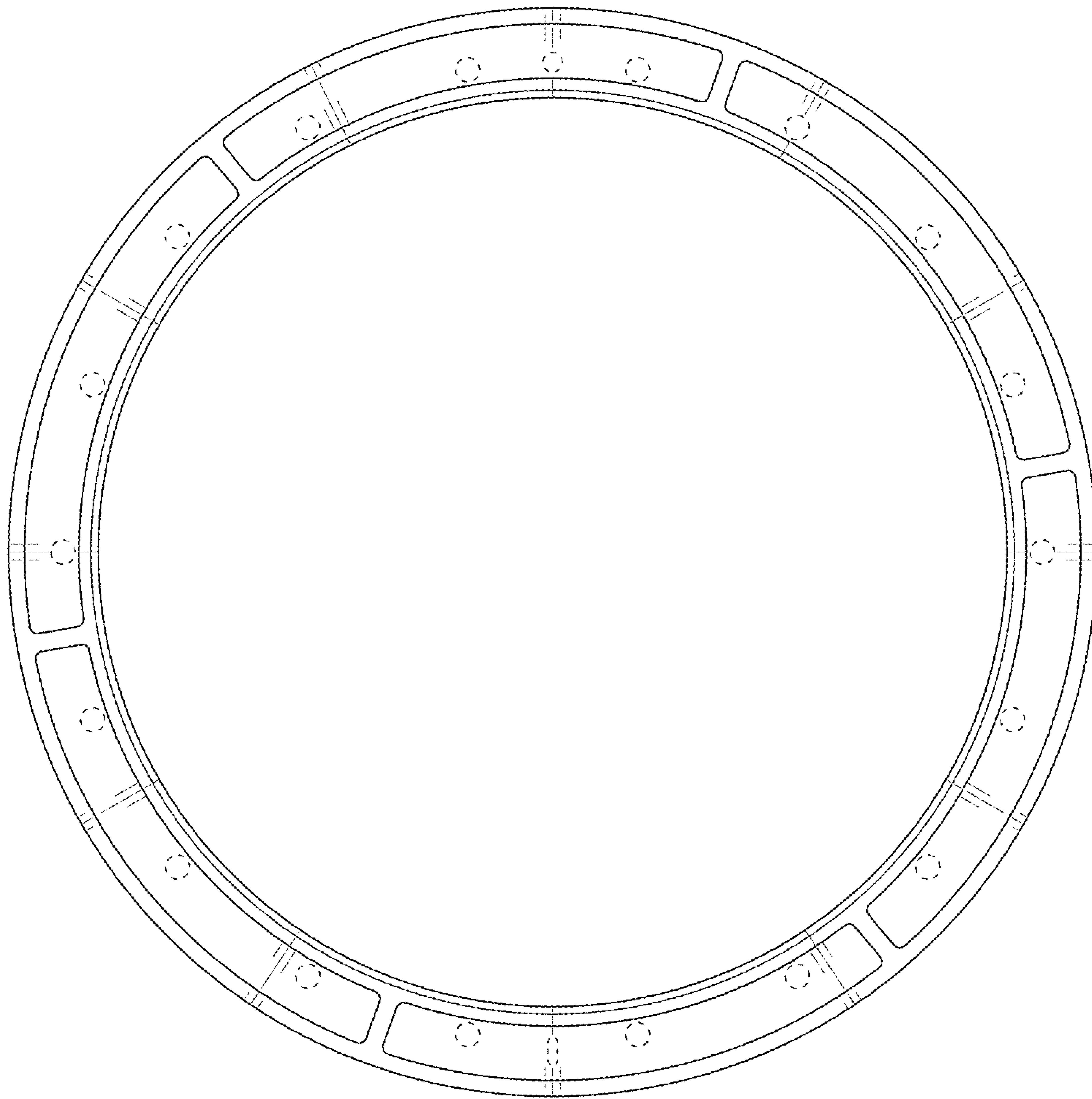


FIG. 7

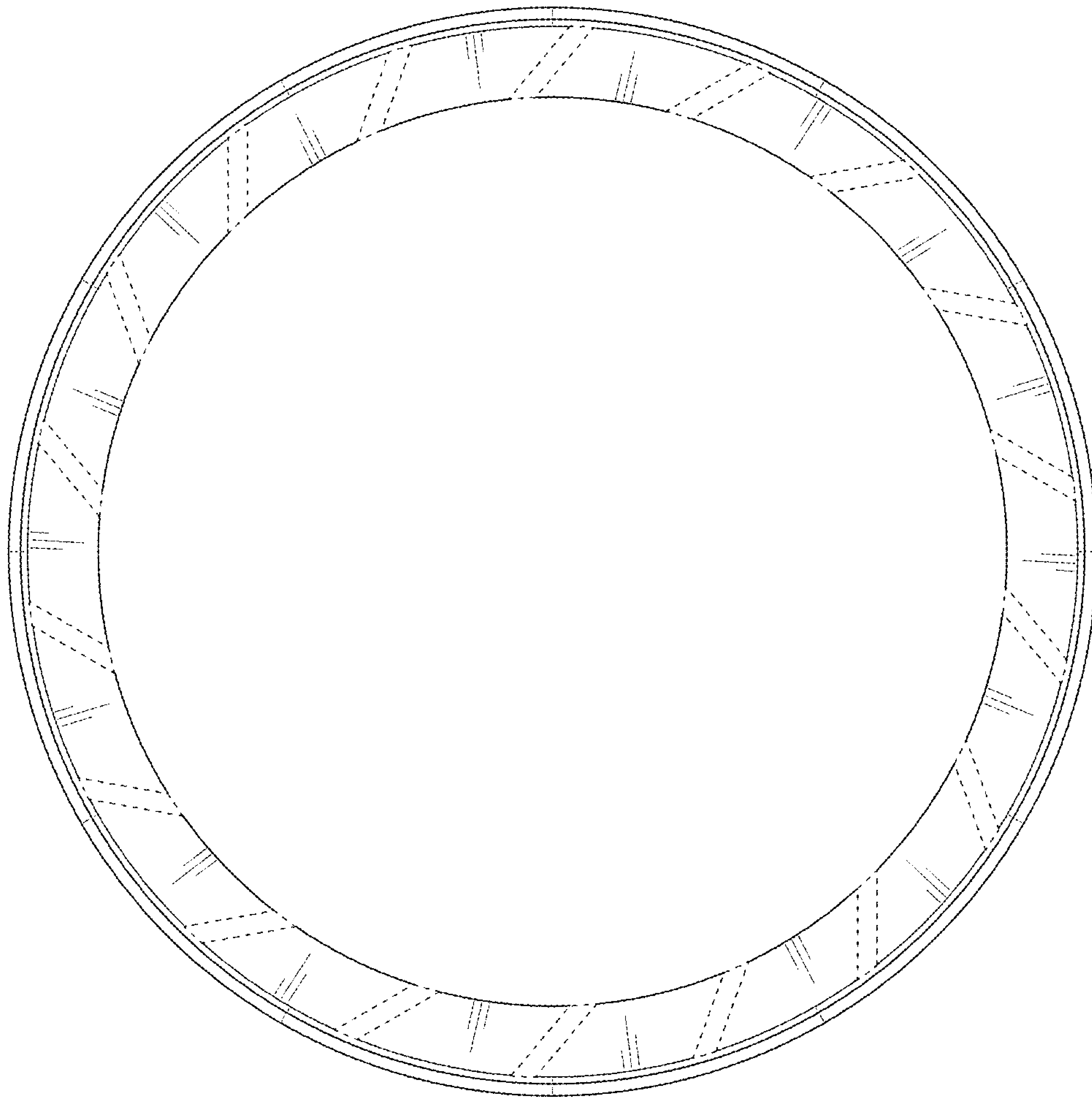


FIG. 8