

US00D799437S

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

(10) **Patent No.:** **US D799,437 S**
(45) **Date of Patent:** **** Oct. 10, 2017**

(54) **SUBSTRATE RETAINING RING**
(71) Applicant: **Ebara Corporation**, Tokyo (JP)
(72) Inventors: **Osamu Nabeya**, Tokyo (JP); **Hozumi Yasuda**, Tokyo (JP); **Makoto Fukushima**, Tokyo (JP); **Shingo Togashi**, Tokyo (JP); **Keisuke Namiki**, Tokyo (JP); **Satoru Yamaki**, Tokyo (JP)
(73) Assignee: **EBARA CORPORATION**, Tokyo (JP)
(**) Term: **15 Years**
(21) Appl. No.: **29/555,718**
(22) Filed: **Feb. 24, 2016**
(30) **Foreign Application Priority Data**

Aug. 25, 2015 (JP) 2015-018612
(51) **LOC (10) Cl.** **13-03**
(52) **U.S. Cl.**
USPC **D13/182**
(58) **Field of Classification Search**
USPC D13/118, 123, 154, 156, 173, 177, 182,
D13/184, 199; D8/70, 90, 396;
D15/126, 138, 139
CPC B24B 5/00; B24B 7/00; B24B 7/22; B24B
37/04; B24B 37/28; B24B 37/32; B24B
1/00; B24B 29/00; C30B 23/02; H01L
21/304; H01L 21/67; H01L 21/68; H01L
21/00; H01L 21/32; Y10S 41/139; C23C
16/00; C23C 16/45; C25D 17/00; H01R
3/00
See application file for complete search history.

(56) **References Cited**
U.S. PATENT DOCUMENTS
6,068,548 A * 5/2000 Vote B24B 37/32
451/287
6,186,880 B1 * 2/2001 Gonzalez B24B 37/32
451/285

D605,206 S * 12/2009 Yabe D15/28
D638,951 S * 5/2011 Bedingham D24/216
D667,561 S * 9/2012 Bedingham D24/216
8,491,267 B2 * 7/2013 Glasspoole F01D 5/025
416/221
D699,200 S * 2/2014 Nagakubo D13/182
D703,160 S * 4/2014 Tanimura D13/182
D709,536 S * 7/2014 Yoshimura D15/138
D766,849 S * 9/2016 Fukushima D13/182
D770,992 S * 11/2016 Tauchi D13/182

(Continued)

FOREIGN PATENT DOCUMENTS

CN 302820523 S 5/2014
Primary Examiner — Thomas Johannes
Assistant Examiner — Shawn T Gingrich
(74) *Attorney, Agent, or Firm* — Pearne & Gordon LLP

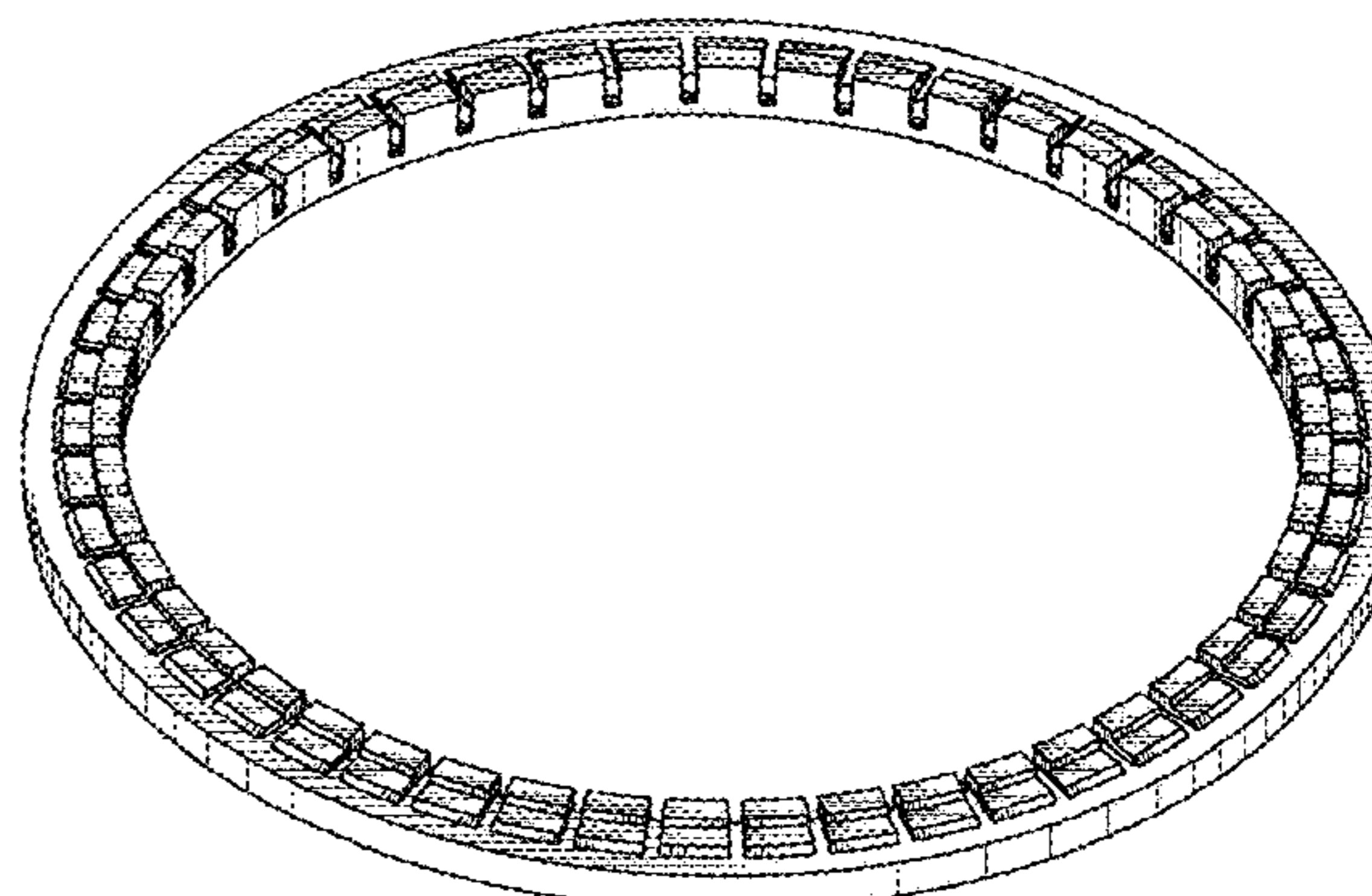
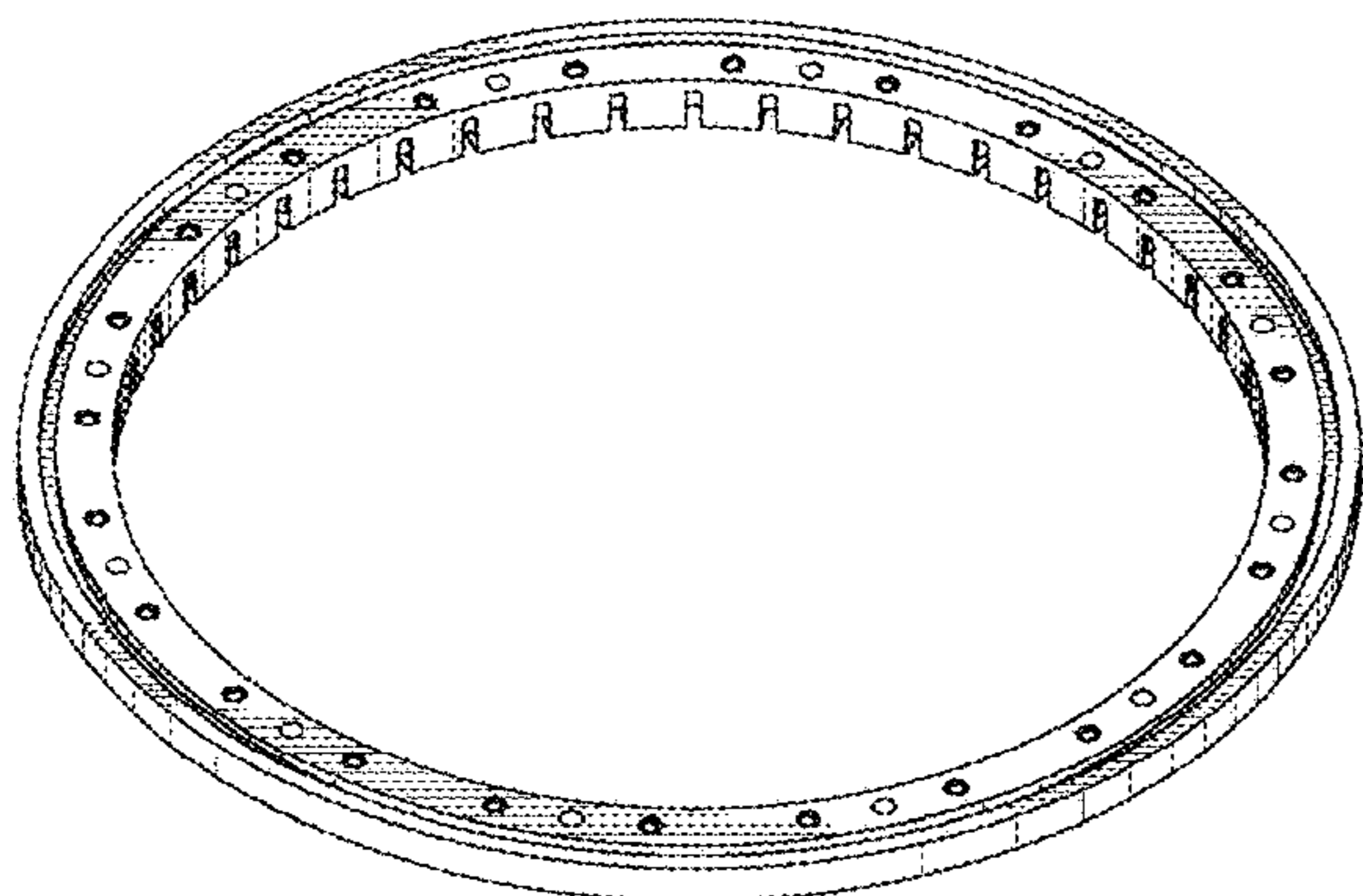
(57) **CLAIM**

The ornamental design for substrate retaining ring, as shown and described.

DESCRIPTION

FIG. 1 is a perspective view, observed from top of a substrate retaining ring showing our new design;
FIG. 2 is a perspective view, observed from bottom thereof;
FIG. 3 is a top view thereof;
FIG. 4 is a bottom view thereof;
FIG. 5 is a front view, rear view, right side view and left side view thereof;
FIG. 6 is an enlarged cross-section view, taken along the line 6-6 of part 6 of FIG. 3 thereof;
FIG. 7 is an enlarged cross-section view, taken along the line 7-7 of part 7 of FIG. 3 thereof; and,
FIG. 8 is an enlarged cross-section view, taken along the line 8-8 of part 8 of FIG. 3 thereof.

1 Claim, 3 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

2003/0070757 A1* 4/2003 DeMeyer B24B 37/32
156/345.12
2003/0089697 A1* 5/2003 Li H01L 21/67115
219/390
2004/0065412 A1* 4/2004 Ensinger B24B 37/32
156/345.14
2004/0077167 A1* 4/2004 Willis B24B 37/32
438/689
2005/0191947 A1* 9/2005 Chen B24B 37/32
451/41
2005/0277375 A1* 12/2005 Young B24B 37/32
451/442
2007/0224864 A1* 9/2007 Burns B24B 37/32
439/164
2008/0096467 A1* 4/2008 Van Der Veen B24B 37/32
451/28
2011/0092142 A1* 4/2011 Frank, Jr. B24B 37/32
451/460
2014/0123469 A1* 5/2014 Han B29D 99/0082
29/525.02
2015/0133038 A1 5/2015 Yamaki
2016/0158910 A1* 6/2016 Lee B24B 37/32
451/398
2016/0256981 A1* 9/2016 Takenouchi B24D 7/06

* cited by examiner

FIG. 1

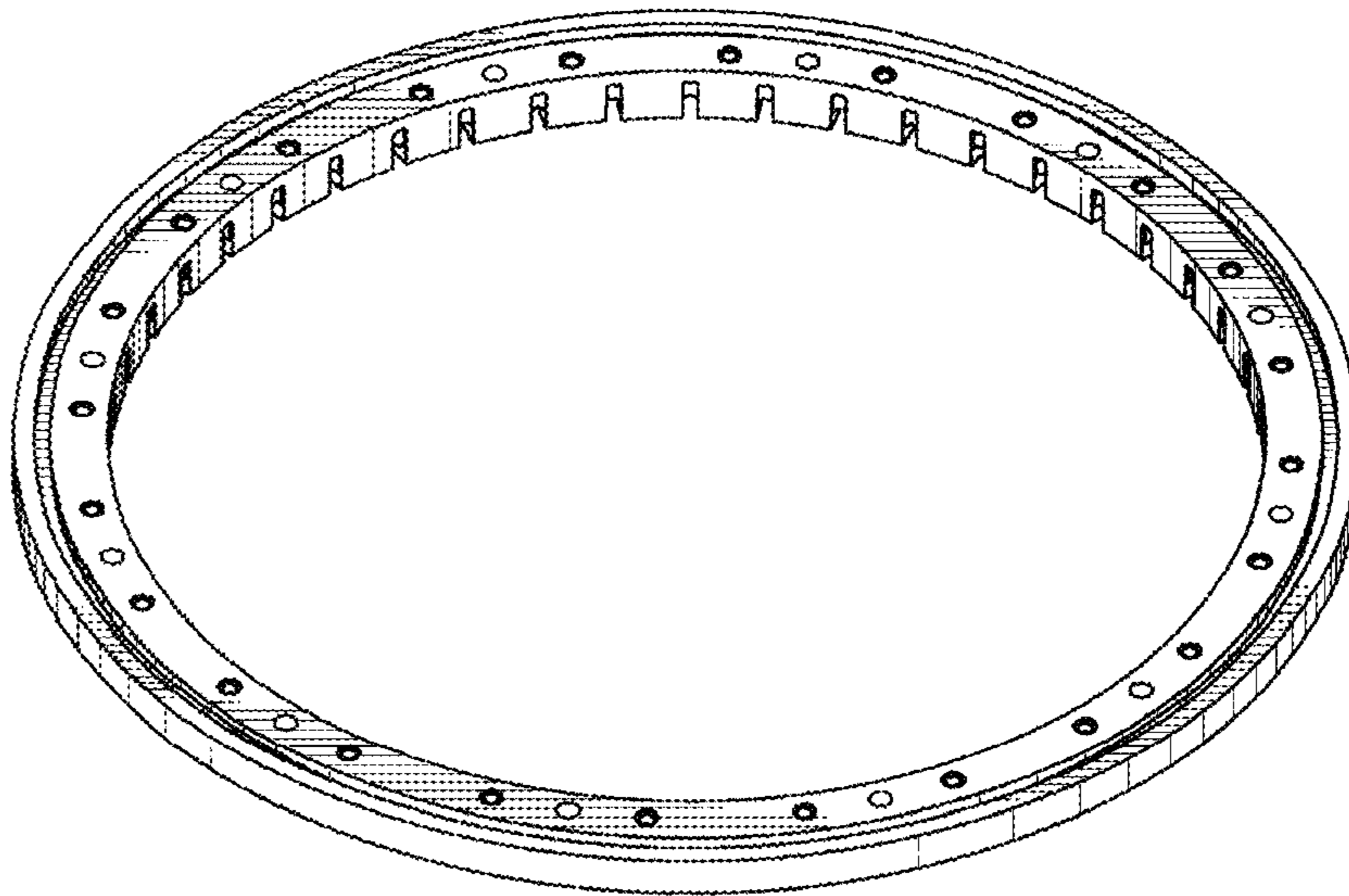


FIG. 2

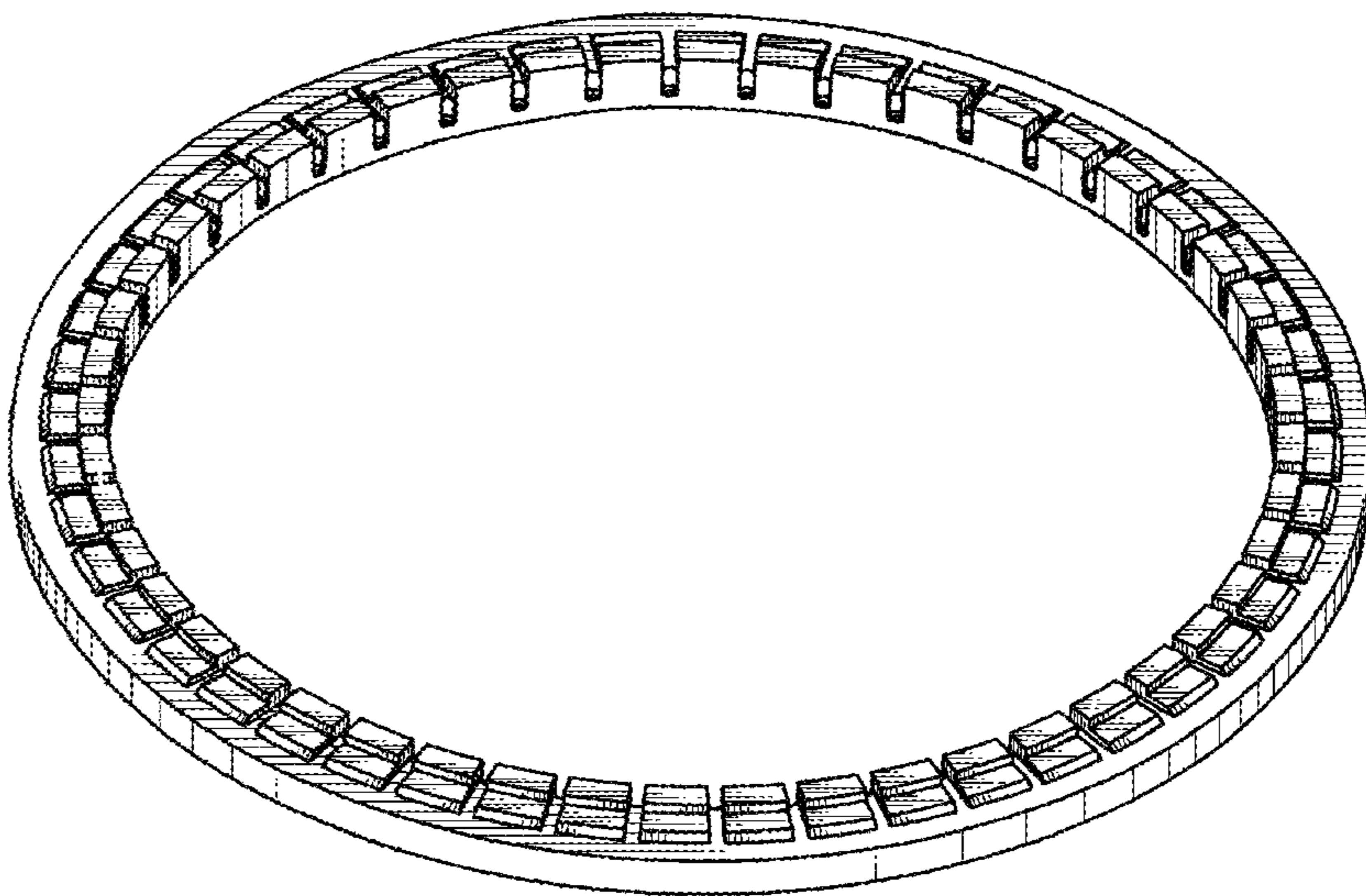


FIG. 3

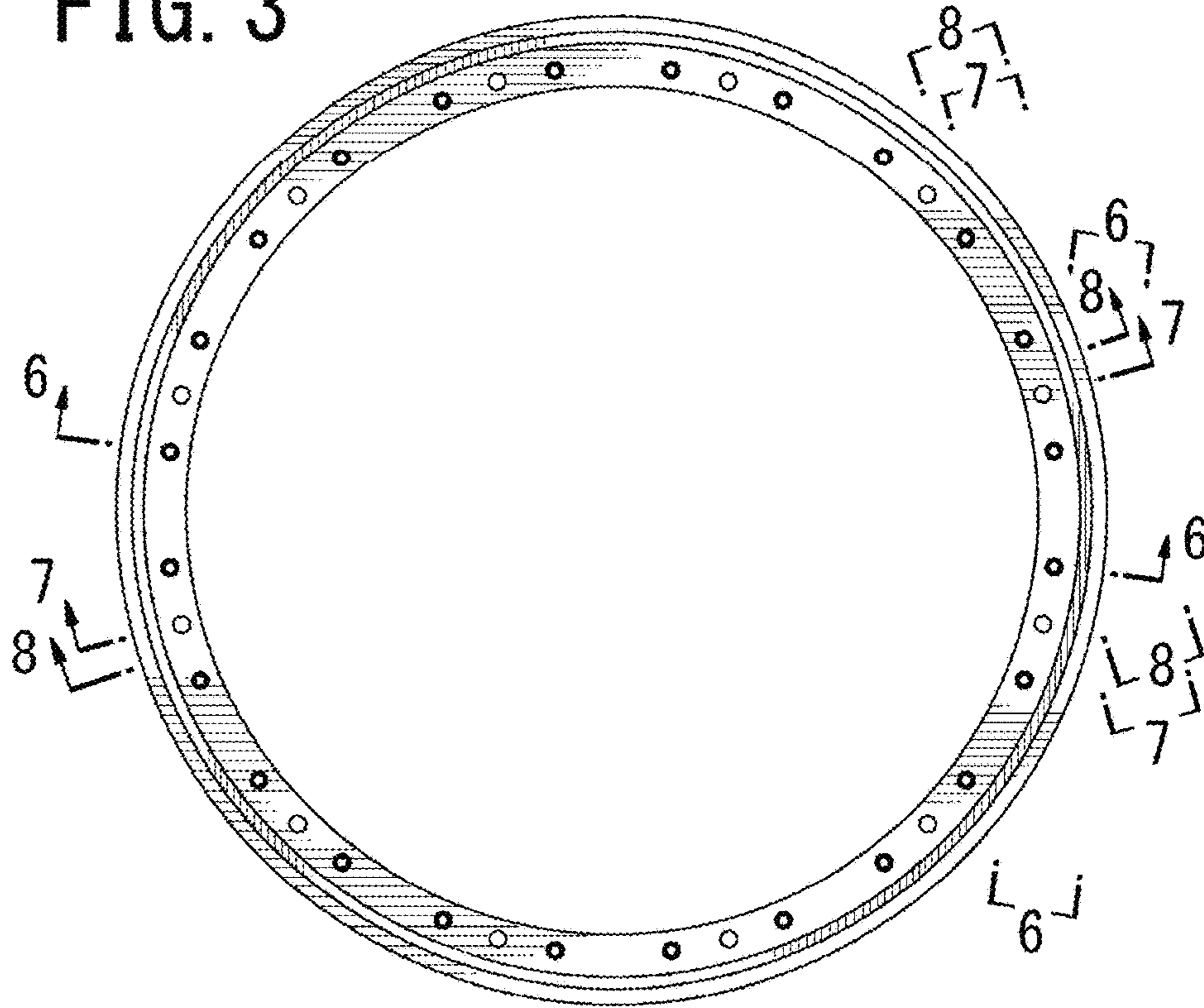


FIG. 4

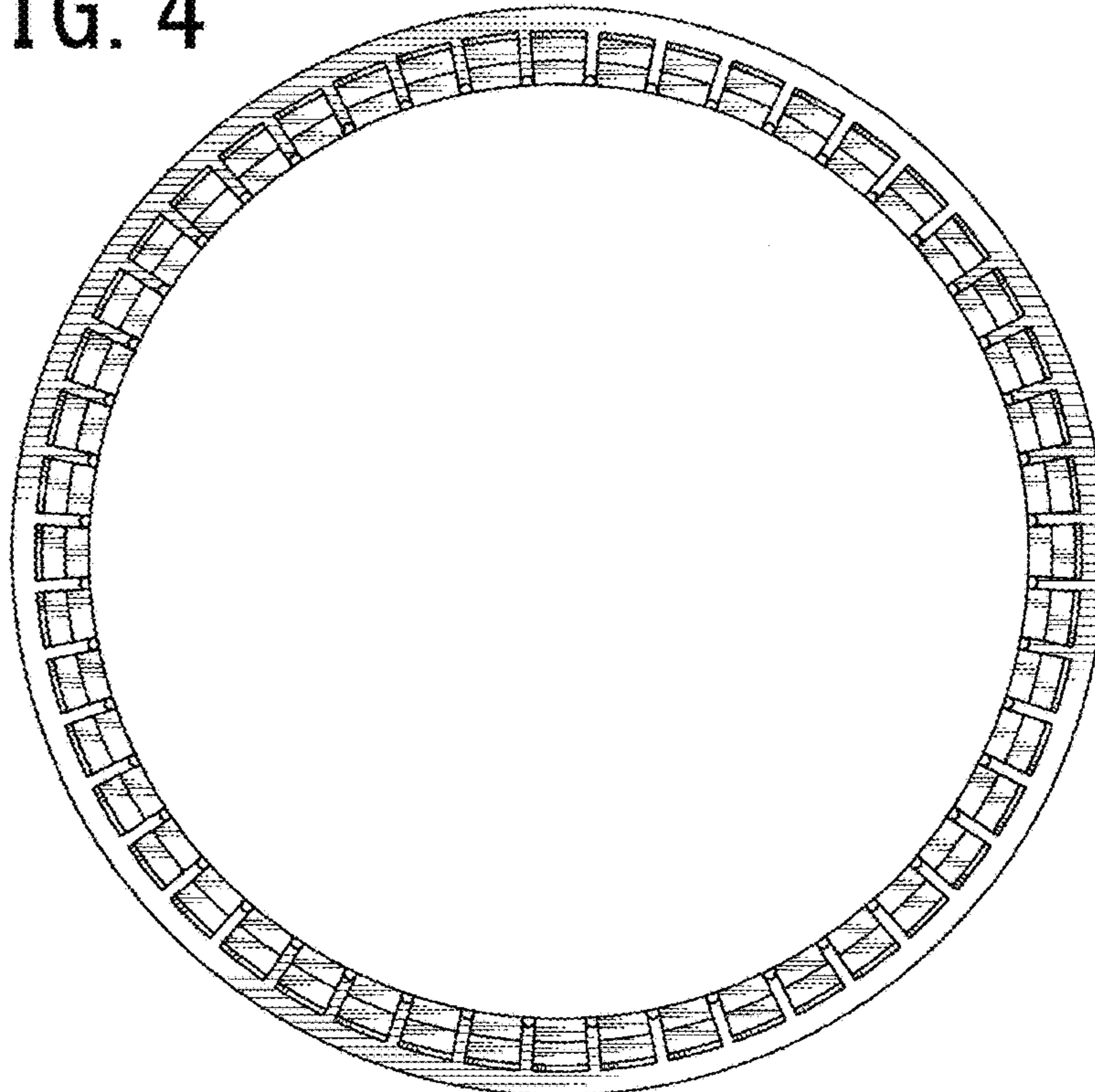


FIG. 5

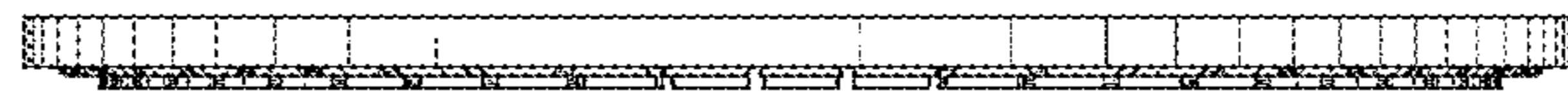


FIG. 6

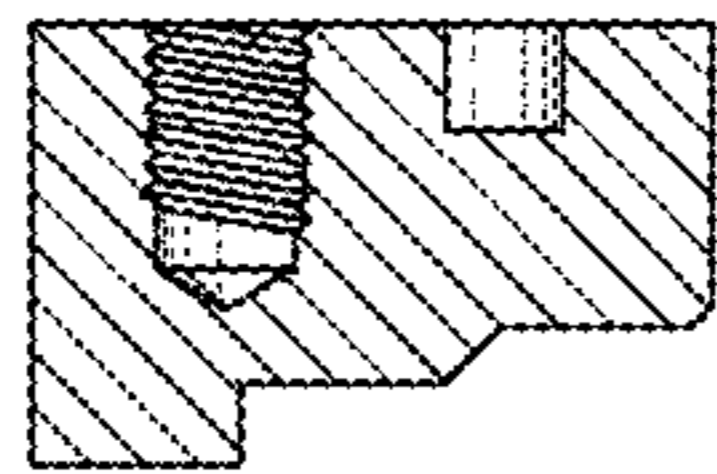


FIG. 7

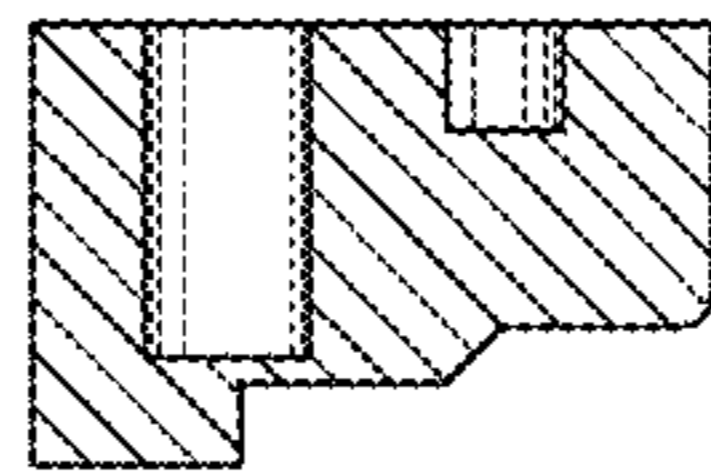


FIG. 8

