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(12) **United States Design Patent** (10) **Patent No.:** **US D905,126 S**  
**Neel et al.** (45) **Date of Patent:** **\*\* Dec. 15, 2020**

(54) **CENTRALIZER**

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

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(58) **Field of Classification Search**  
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CPC . E21B 17/028; E21B 17/1078; E21B 17/1064  
See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

2,009,496	A *	7/1935	Johnson	.....	B23D 79/00 76/104.1
2,392,145	A *	1/1946	Hall	.....	E21B 33/136 166/202
2,727,576	A *	12/1955	Hall	.....	E21B 17/1028 166/241.6
2,812,200	A *	11/1957	Yeargan	.....	E21B 37/02 403/12
3,072,195	A *	1/1963	Kluck	.....	E21B 37/00 166/241.6

(Continued)

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(57) **CLAIM**

The ornamental design for a centralizer, as shown and described.

**DESCRIPTION**

FIG. 1 is a side view of a centralizer, according to a first embodiment. The centralizer is positioned on a tubular and stop collars are disposed on the tubular on either axial end of the centralizer.

FIG. 2 is an end view of the centralizer, according to the first embodiment, positioned on the tubular.

FIG. 3 is a side view of a centralizer, according to a second embodiment. The centralizer is positioned on a tubular and stop collars are disposed on the tubular on either axial end of the centralizer.

FIG. 4 is an end view of the centralizer, according to the second embodiment, positioned on the tubular.

FIG. 5 is a side view of a centralizer, according to a third embodiment. The centralizer is positioned on a tubular and stop collars are disposed on the tubular in windows through either end collar of the centralizer.

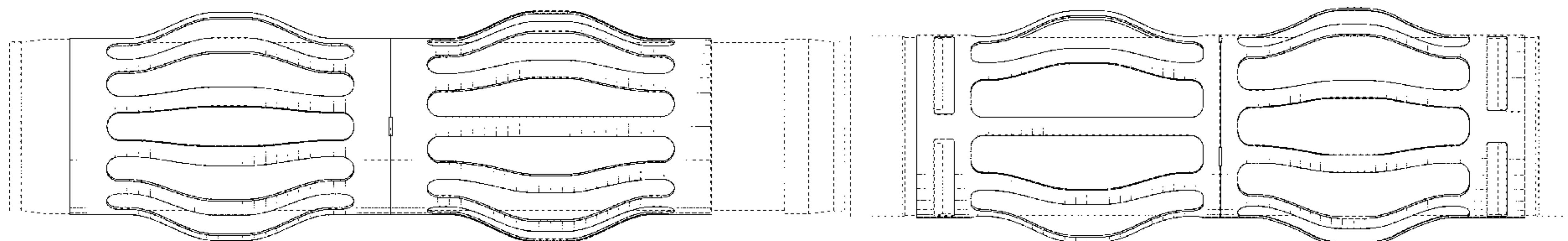
FIG. 6 is an end view of the centralizer, according to the third embodiment, positioned on the tubular.

FIG. 7 is a side view of a centralizer, according to a fourth embodiment. The centralizer is positioned on a tubular and stop collars are disposed on the tubular in windows through either end collar of the centralizer; and,

FIG. 8 is an end view of the centralizer, according to the fourth embodiment, positioned on the tubular.

The broken lines in the drawings depict unclaimed portion of the centralizer only and form no part of the claimed design.

**1 Claim, 4 Drawing Sheets**



(56)

References Cited

U.S. PATENT DOCUMENTS

3,235,295 A \* 2/1966 Solum ..... E21B 17/1028  
403/19  
3,312,285 A \* 4/1967 Solum ..... E21B 17/1028  
166/241.6  
3,343,608 A \* 9/1967 Solum ..... E21B 17/1028  
166/241.7  
3,369,607 A \* 2/1968 Turbyfill ..... E21B 33/136  
166/202  
3,566,965 A \* 3/1971 Solum ..... E21B 17/1028  
166/241.7  
3,575,239 A \* 4/1971 Solum ..... E21B 17/1028  
166/241.7  
3,614,139 A \* 10/1971 Harrison ..... E21B 17/1028  
403/344  
4,077,470 A \* 3/1978 Dane ..... E21B 17/1028  
166/241.7  
4,219,081 A \* 8/1980 Howe ..... E21B 17/1028  
166/241.7  
4,255,847 A \* 3/1981 Howe ..... E21B 17/1028  
29/445  
4,261,556 A \* 4/1981 Howe ..... E21B 17/1028  
269/37  
4,520,869 A \* 6/1985 Svenson ..... E21B 17/1028  
166/241.7  
4,531,582 A \* 7/1985 Muse ..... E21B 17/1028  
166/172  
4,641,776 A \* 2/1987 Vlasek ..... E21B 17/1028  
228/155  
4,651,823 A \* 3/1987 Spikes ..... E21B 17/1028  
166/241.7  
4,688,636 A \* 8/1987 Hennessey ..... E21B 17/1028  
166/241.7  
4,909,322 A \* 3/1990 Patterson ..... E21B 17/1028  
166/241.7  
5,238,062 A \* 8/1993 Reinholdt ..... E21B 17/1028  
166/241.7  
6,102,118 A \* 8/2000 Moore ..... E21B 17/1028  
166/241.7  
6,367,556 B1 \* 4/2002 Moore ..... E02D 5/805  
166/241.1  
6,484,803 B1 \* 11/2002 Gremillion ..... E21B 17/1028  
166/241.1  
7,690,437 B2 \* 4/2010 Guillot ..... E21B 33/1208  
166/177.2  
7,845,061 B2 \* 12/2010 Buytaert ..... E21B 17/1028  
166/241.6  
7,878,241 B2 \* 2/2011 Buytaert ..... E21B 17/1028  
166/241.6

8,196,654 B2 \* 6/2012 Buytaert ..... E21B 17/10  
166/241.6  
D662,952 S \* 7/2012 Kirk ..... D15/21  
D671,960 S \* 12/2012 Kirk ..... D15/21  
8,662,166 B2 \* 3/2014 Buytaert ..... E21B 17/1028  
166/241.6  
8,701,783 B2 \* 4/2014 Buytaert ..... E21B 43/103  
166/213  
8,770,280 B2 \* 7/2014 Buytaert ..... E21B 17/10  
166/241.6  
8,844,624 B2 \* 9/2014 Buytaert ..... E21B 17/1078  
166/241.1  
8,851,168 B2 \* 10/2014 Buytaert ..... E21B 17/1028  
166/241.6  
D717,836 S \* 11/2014 Buytaert ..... D15/21  
D717,837 S \* 11/2014 Buytaert ..... D15/21  
D718,342 S \* 11/2014 Buytaert ..... D15/21  
9,127,519 B2 \* 9/2015 Jordan ..... E21B 19/24  
D743,447 S \* 11/2015 Neel ..... D15/21  
9,341,032 B2 \* 5/2016 Jewett ..... E21B 17/1078  
9,470,047 B2 \* 10/2016 Kirk ..... E21B 17/1028  
9,556,687 B2 \* 1/2017 Buytaert ..... E21B 17/1028  
9,664,001 B2 \* 5/2017 Jenner ..... E21B 17/1078  
9,745,803 B2 \* 8/2017 Buytaert ..... E21B 17/1028  
9,982,496 B2 \* 5/2018 Buytaert ..... E21B 19/24  
10,156,103 B2 \* 12/2018 Kirk ..... E21B 17/10  
10,208,544 B2 \* 2/2019 Roger ..... E21B 17/1028  
10,214,973 B2 \* 2/2019 Andrigo ..... E21B 17/1078  
D851,131 S \* 6/2019 Jenner ..... D15/21  
D873,867 S \* 1/2020 Neel ..... D15/21  
2001/0037882 A1 \* 11/2001 Linaker ..... E21B 17/1028  
166/241.1  
2003/0230411 A1 \* 12/2003 Richard ..... E21B 43/103  
166/384  
2004/0112592 A1 \* 6/2004 Gremillion ..... E21B 17/1028  
166/241.6  
2008/0283237 A1 \* 11/2008 Buytaert ..... E21B 17/1028  
166/196  
2009/0025929 A1 \* 1/2009 Buytaert ..... E21B 17/1028  
166/244.1  
2011/0290474 A1 \* 12/2011 Nutley ..... E21B 17/1028  
166/241.1  
2012/0186828 A1 \* 7/2012 Lively ..... E21B 17/1028  
166/381  
2013/0248207 A1 \* 9/2013 Kirk ..... E21B 17/1028  
166/381  
2013/0319689 A1 \* 12/2013 Levie ..... E21B 17/1028  
166/382  
2015/0122508 A1 \* 5/2015 Boddeda ..... E21B 17/00  
166/379  
2015/0376960 A1 \* 12/2015 Rodrigue ..... E21B 33/14  
166/285

\* cited by examiner

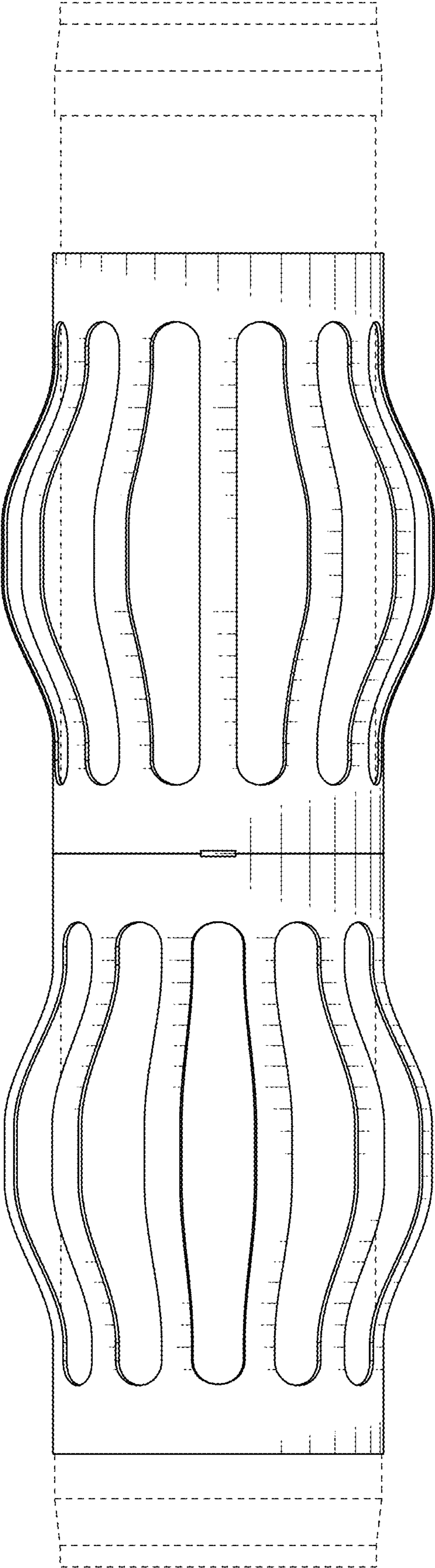


FIG. 1

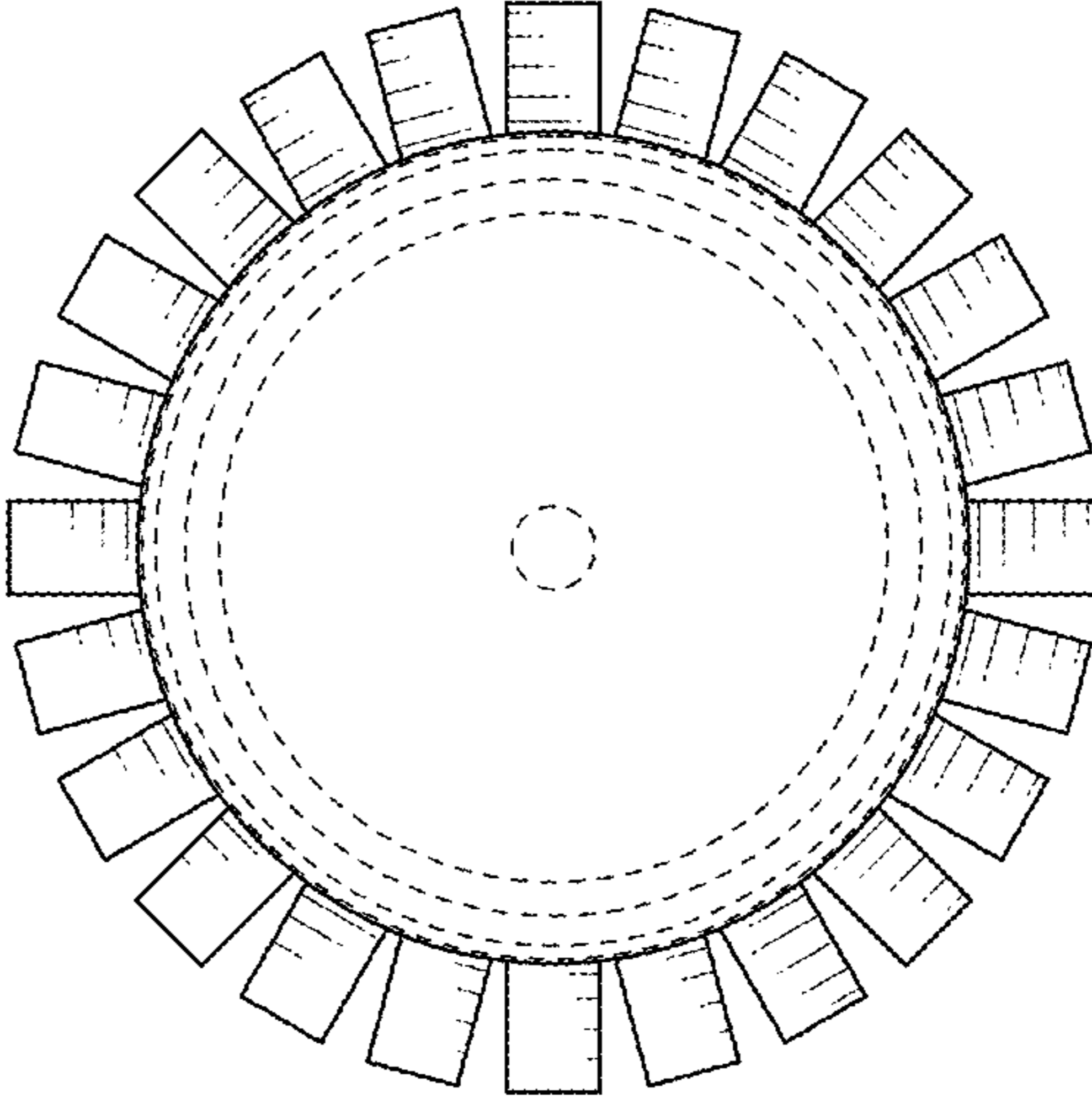


FIG. 2



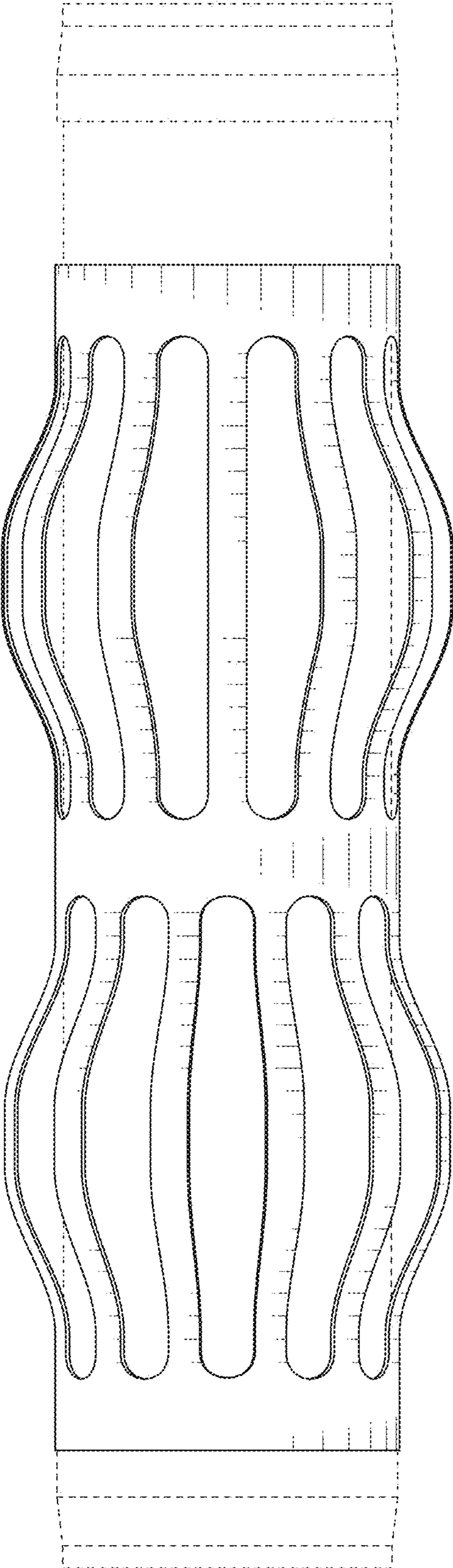


FIG. 3

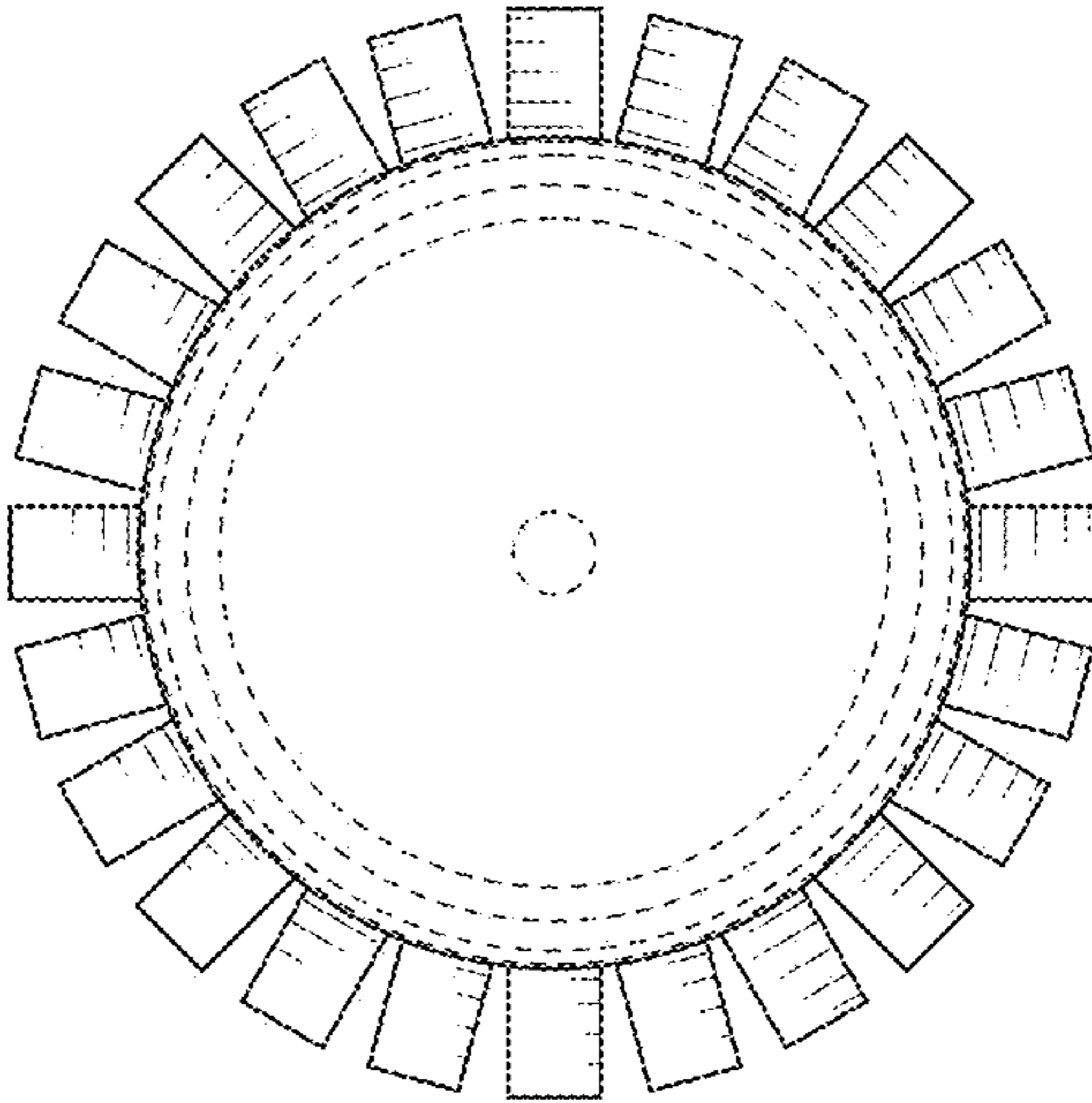


FIG. 4

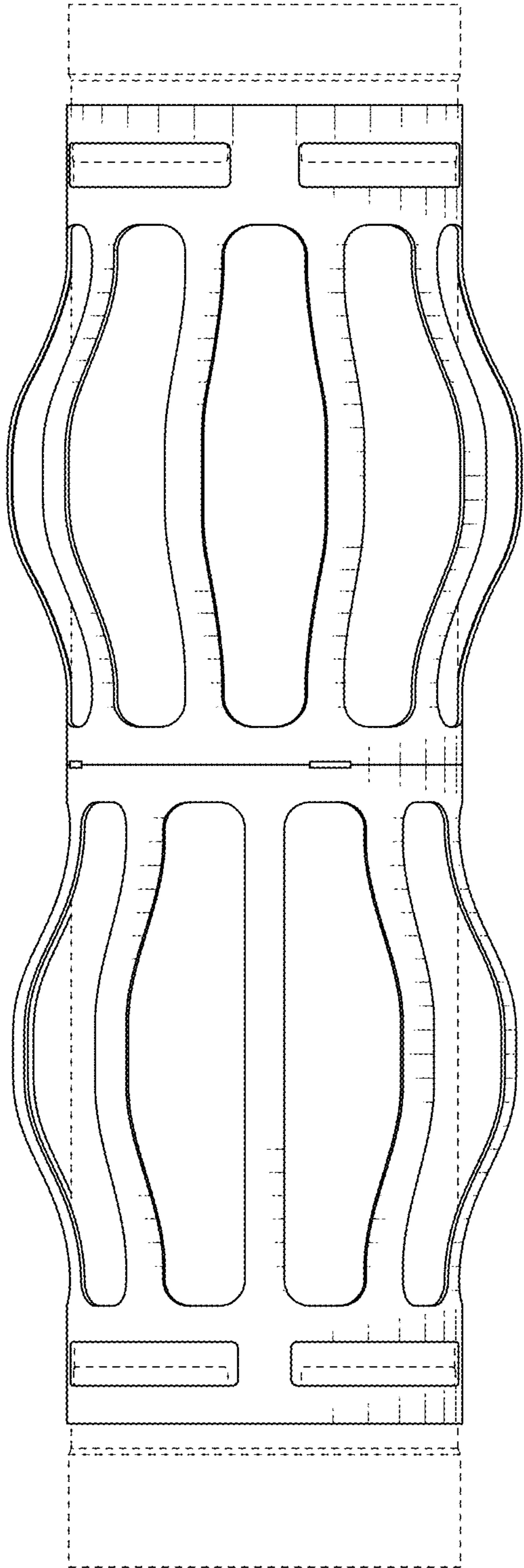


FIG. 5

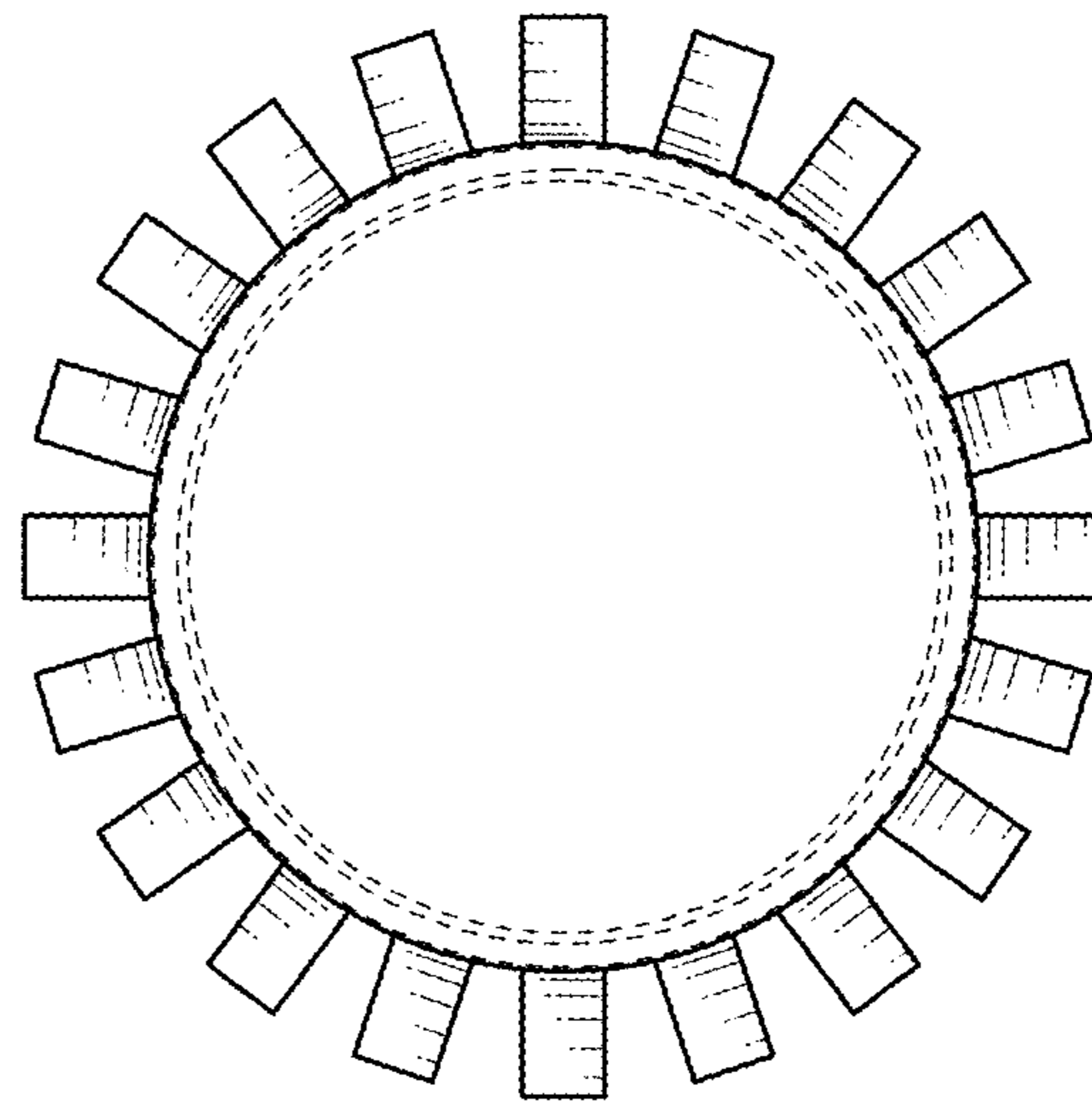


FIG. 6

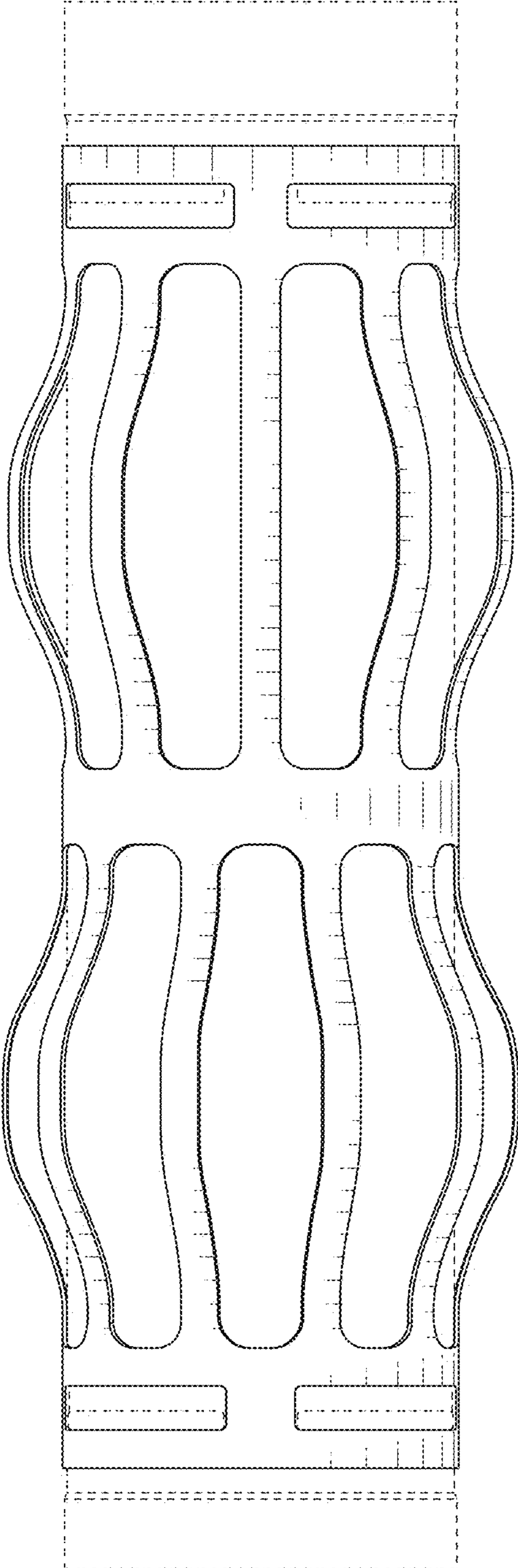


FIG. 7

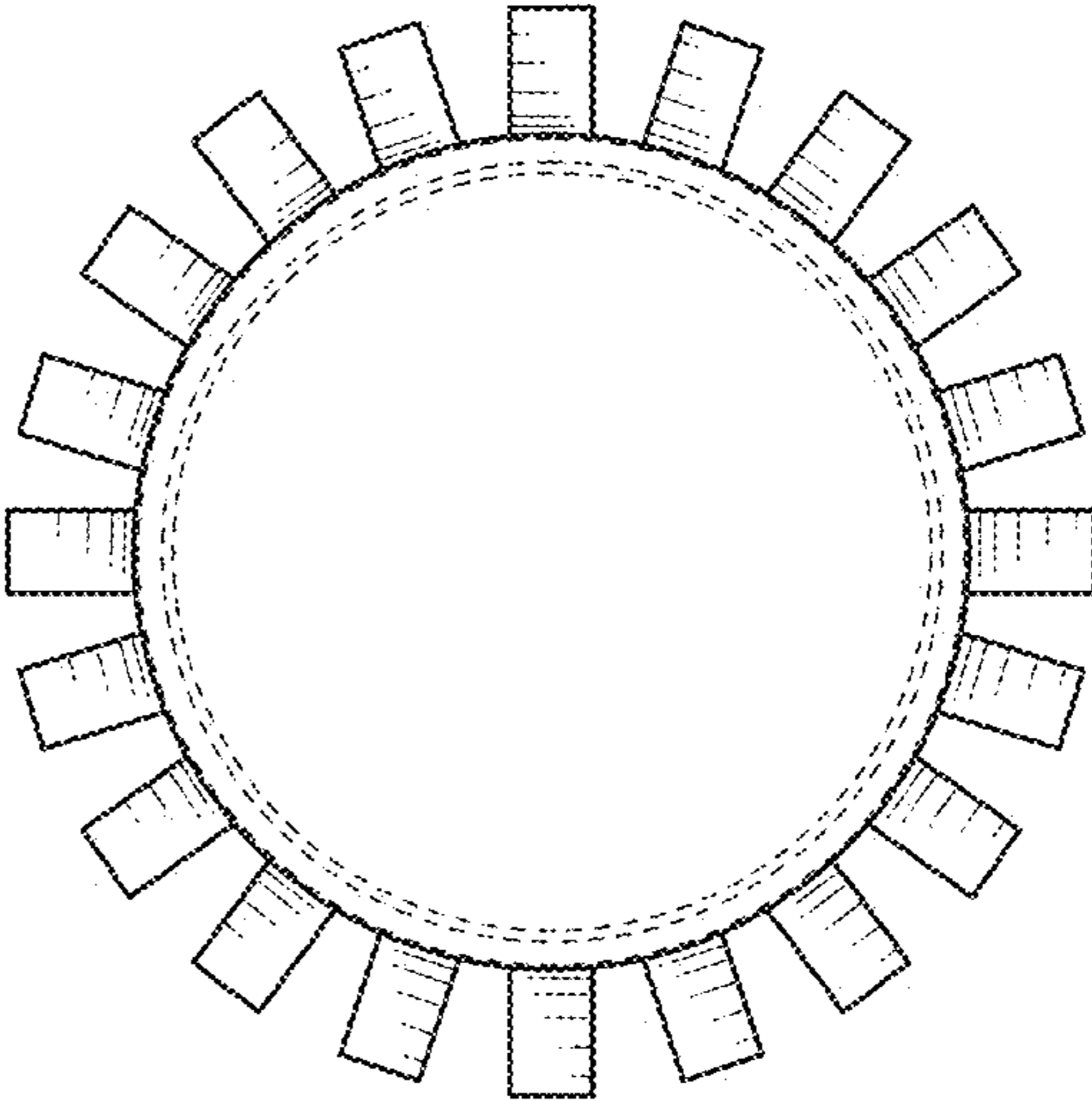


FIG. 8