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(12) **United States Design Patent** (10) **Patent No.:** **US D971,978 S**
Kimura et al. (45) **Date of Patent:** **** *Dec. 6, 2022**

(54) **SPEED REDUCER**

(71) Applicant: **HARMONIC DRIVE SYSTEMS INC., Tokyo (JP)**

(72) Inventors: **Hiroaki Kimura, Azumino (JP); Yoshihide Kiyosawa, Azumino (JP); Jun Handa, Azumino (JP)**

(73) Assignee: **HARMONIC DRIVE SYSTEMS INC., Tokyo (JP)**

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

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

(21) Appl. No.: **35/511,524**

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(80) **Hague Agreement Data**

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(51) **LOC (13) Cl.** **15-99**

(52) **U.S. Cl.**
USPC **D15/149**

(58) **Field of Classification Search**
USPC **D15/148-149; D12/180, 400**
(Continued)

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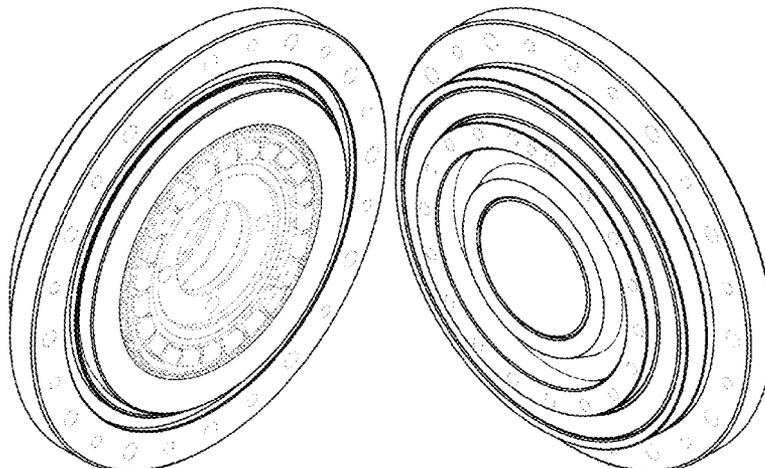
(57) **CLAIM**

The ornamental design for a speed reducer, as shown and described.

DESCRIPTION

- 1. Speed reducer
- 2. Speed reducer
- 3. Speed reducer
- 4. Speed reducer
- 1.1: Perspective
- 1.2: Perspective
- 1.3: Front
- 1.4: Back
- 1.5: Left
- 1.6: Top
- 2.1: Perspective
- 2.2: Perspective
- 2.3: Front
- 2.4: Back
- 2.5: Left
- 2.6: Top
- 3.1: Perspective
- 3.2: Perspective
- 3.3: Front
- 3.4: Back
- 3.5: Left
- 3.6: Top
- 4.1: Perspective
- 4.2: Perspective
- 4.3: Front
- 4.4: Back
- 4.5: Left
- 4.6: Right
- 4.7: Top
- 4.8: Bottom

1. The parts shown by means of broken lines in the reproductions are not part of the claimed design; The right side
(Continued)



view is omitted because it is a mirror image of the left side view; The bottom view is omitted because it is a mirror image of the top view;

2. The parts shown by means of broken lines in the reproductions are not part of the claimed design; The right side view is omitted because it is a mirror image of the left side view; The bottom view is omitted because it is a mirror image of the top view;

3. The parts shown by means of broken lines in the reproductions are not part of the claimed design; The right side view is omitted because it is a mirror image of the left side view; The bottom view is omitted because it is a mirror image of the top view;

4. The parts shown by means of broken lines in the reproductions are not part of the claimed design.

1 Claim, 26 Drawing Sheets

(58) **Field of Classification Search**

CPC F02N 15/043; F16C 2240/26; F01M 2013/0088; F03C 1/004; F04B 2203/0605; F04B 2203/1201; G05B 2219/50044; B60G 2400/37; F16D 2127/007; B60T 2260/06

See application file for complete search history.

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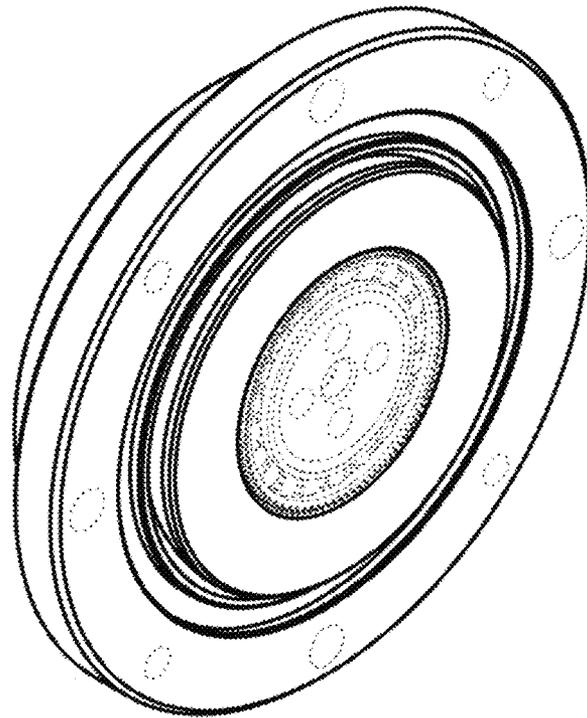
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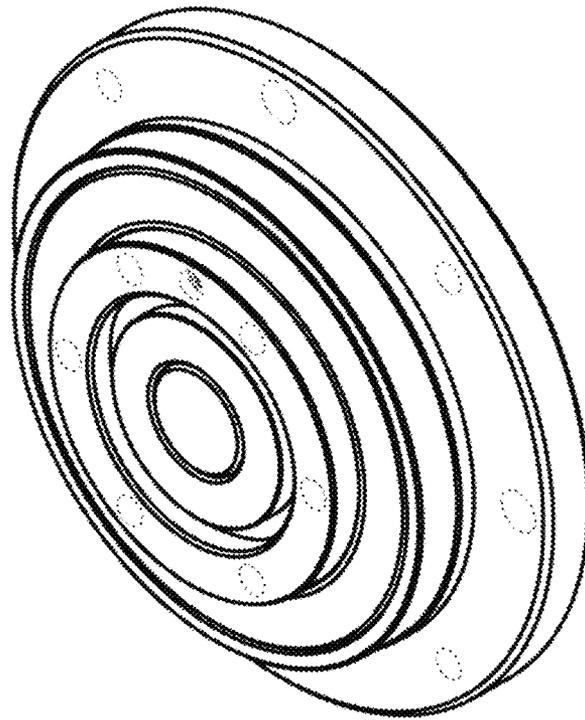
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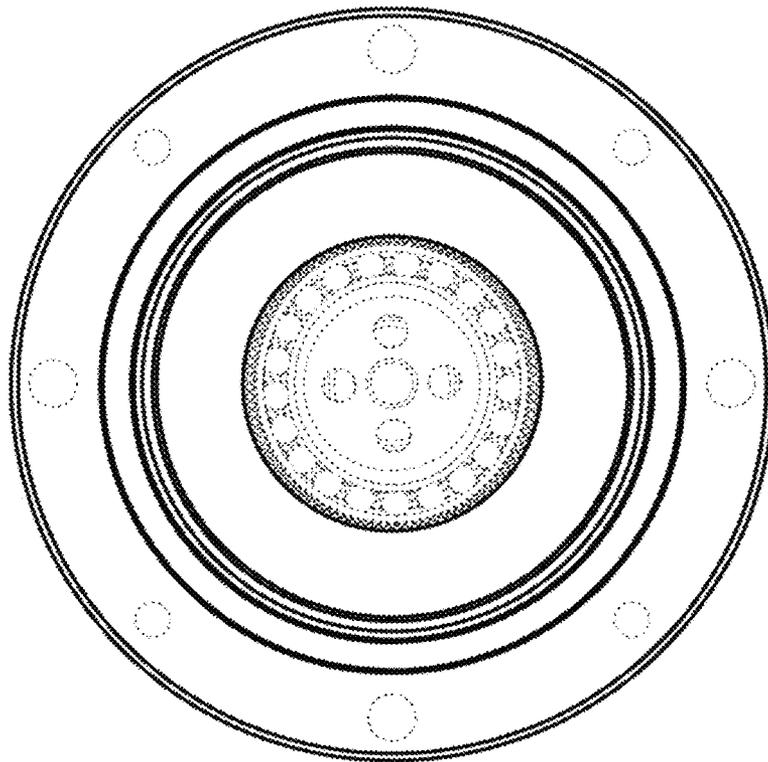
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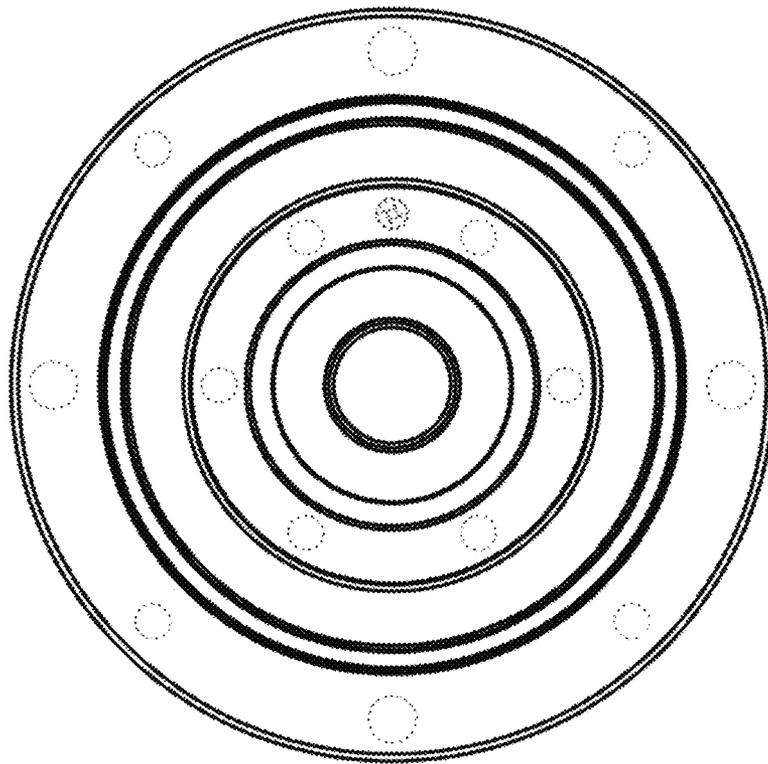
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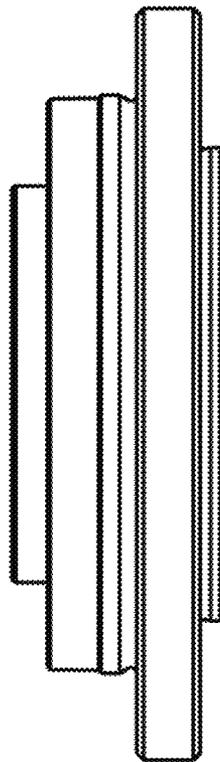
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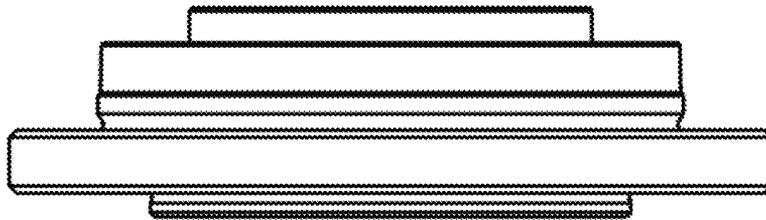
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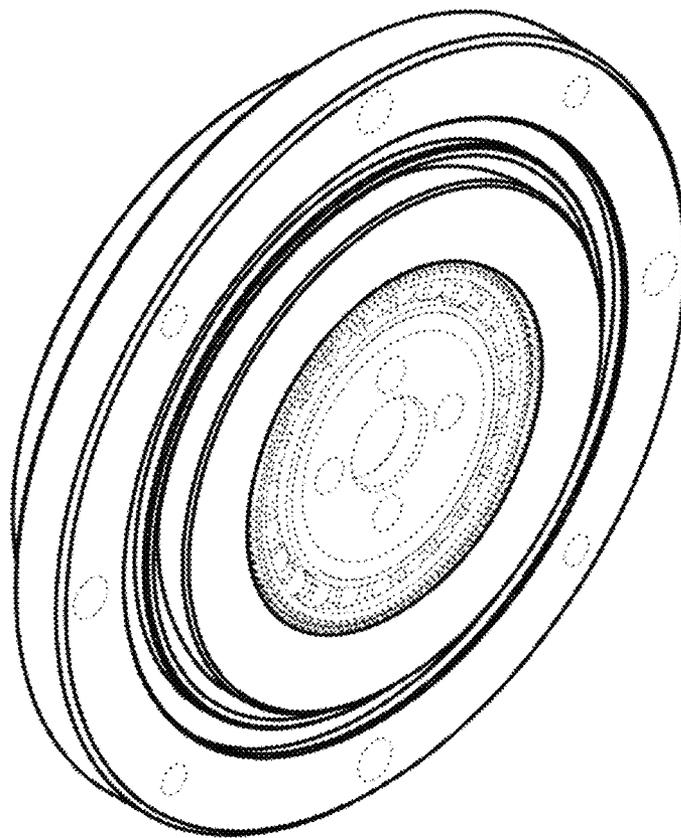
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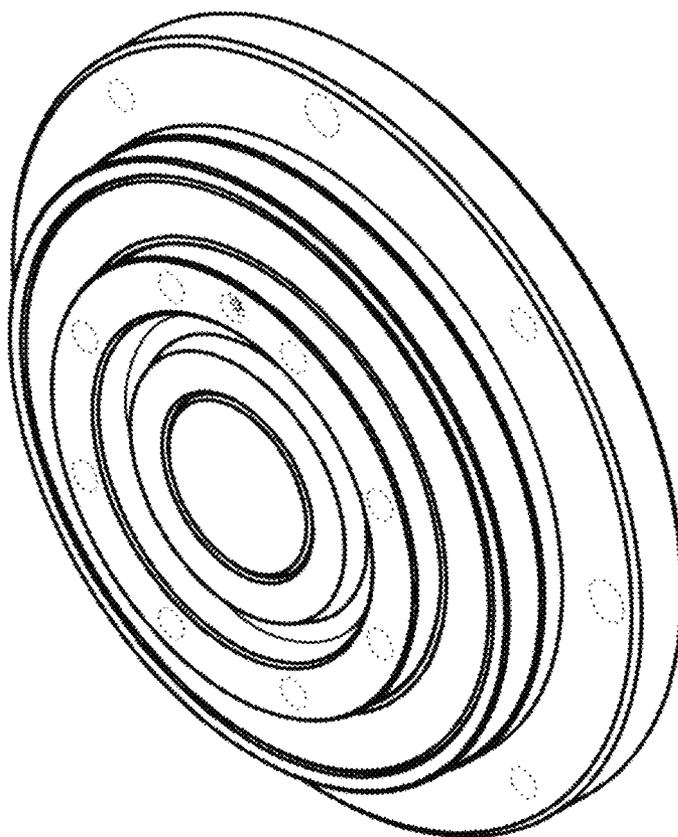
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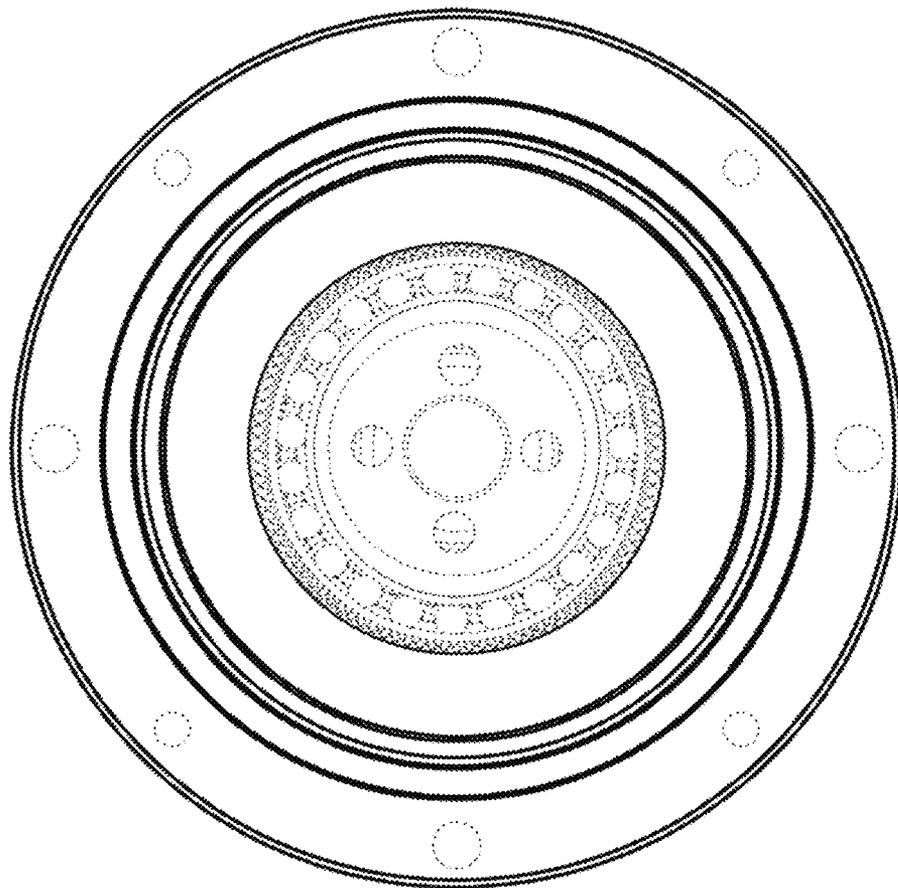
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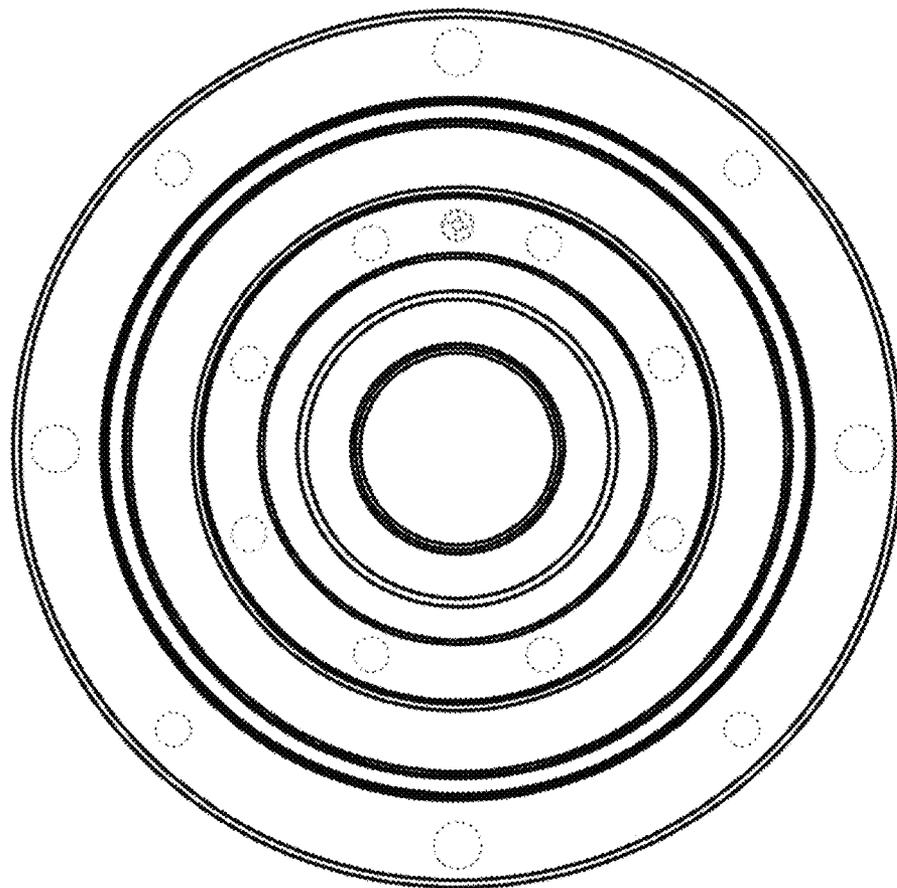
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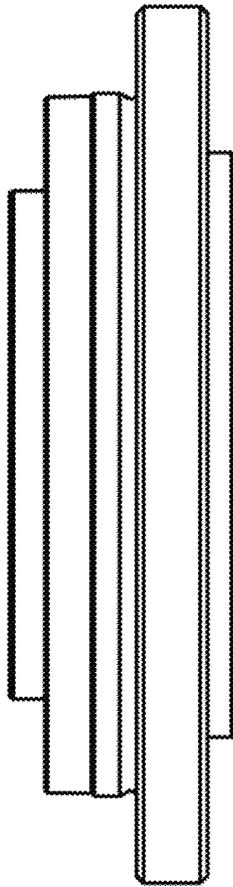
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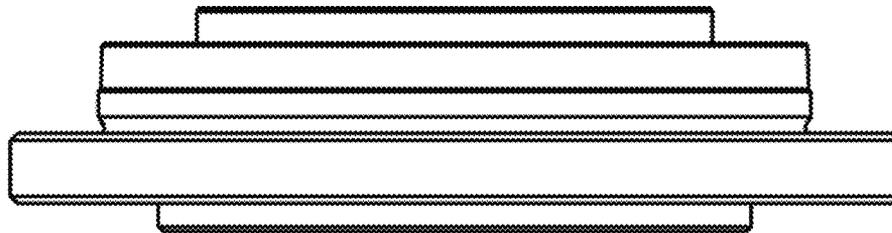
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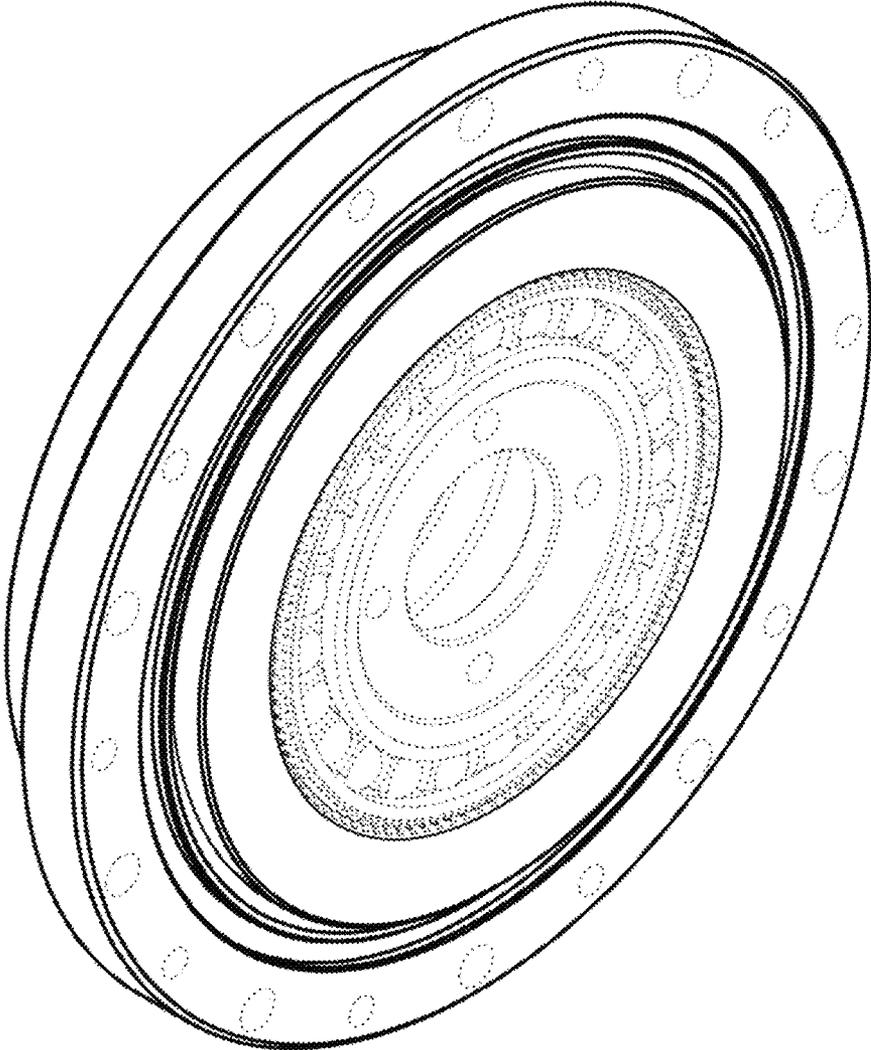
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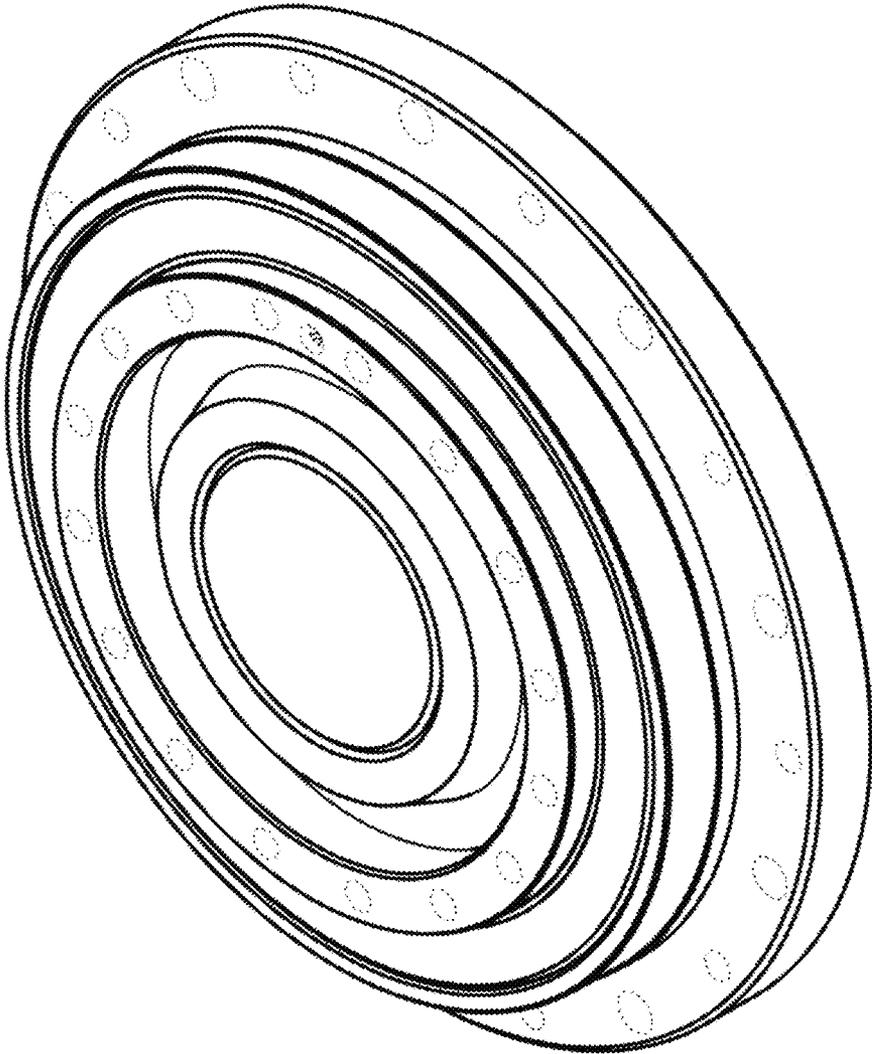
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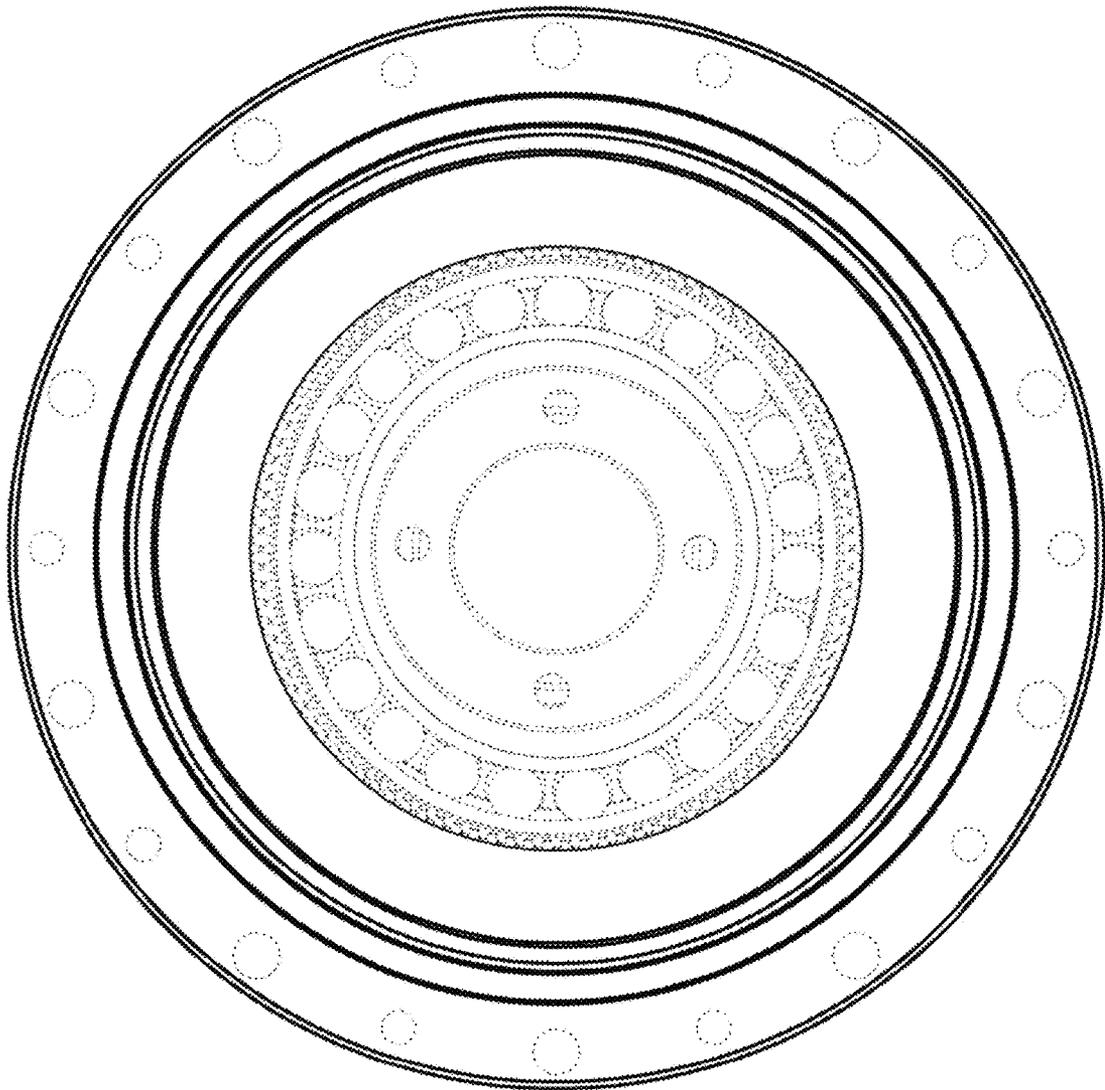
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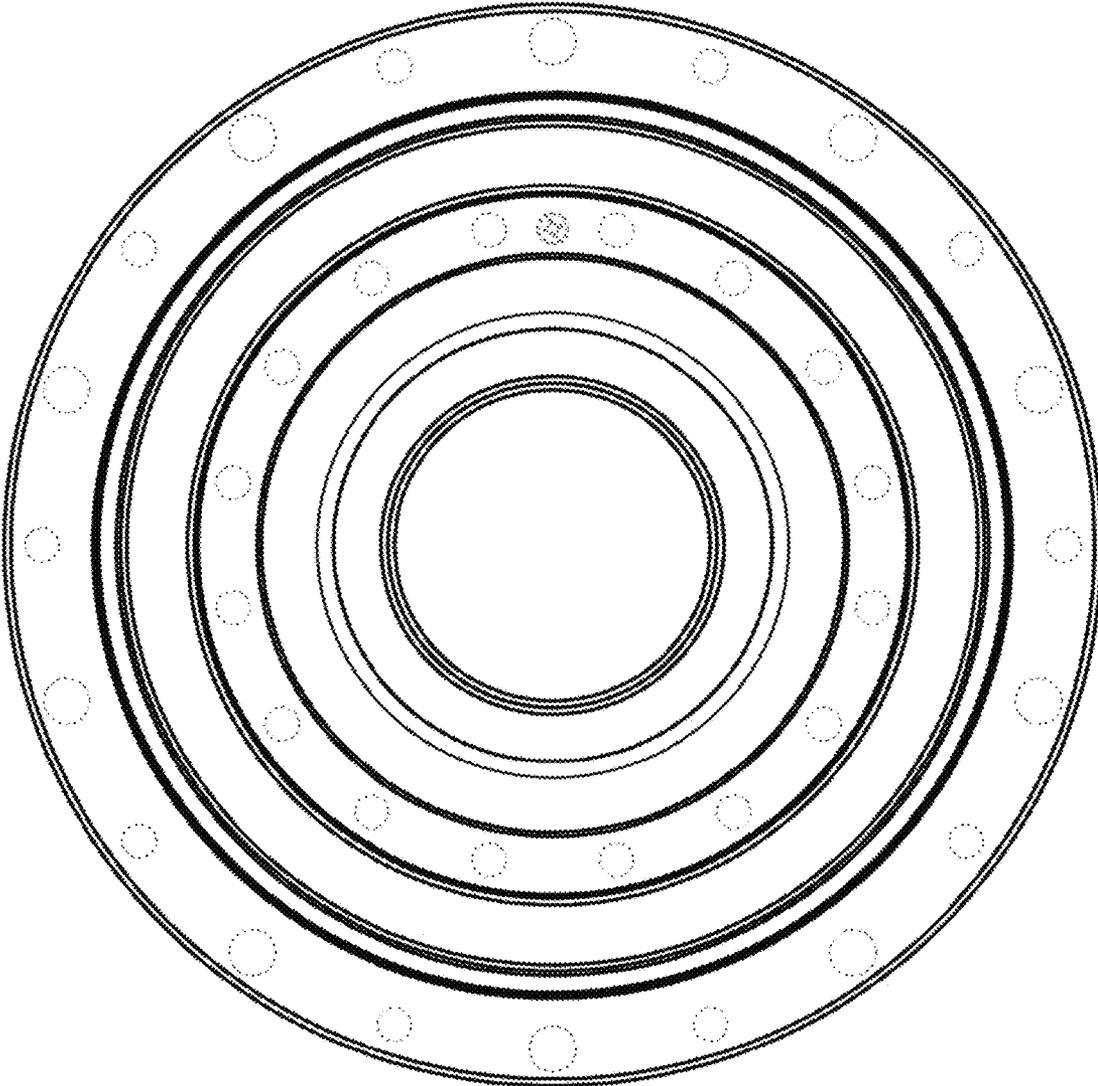
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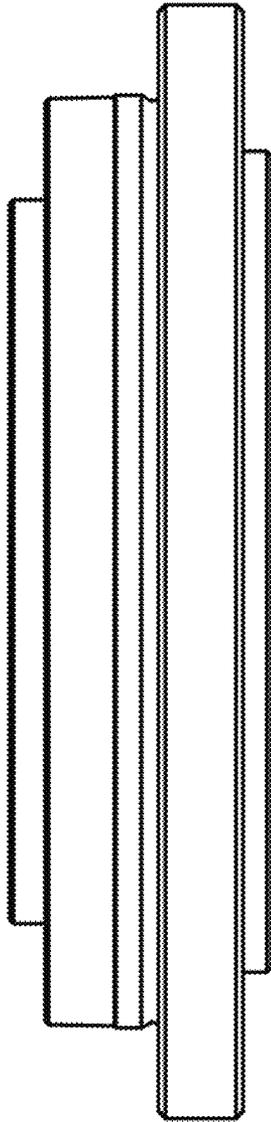
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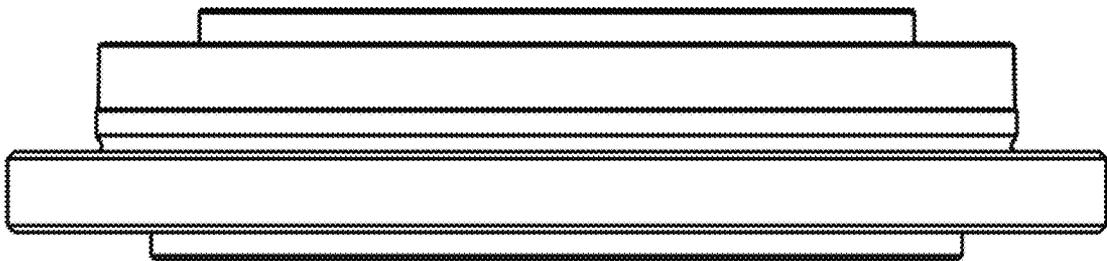
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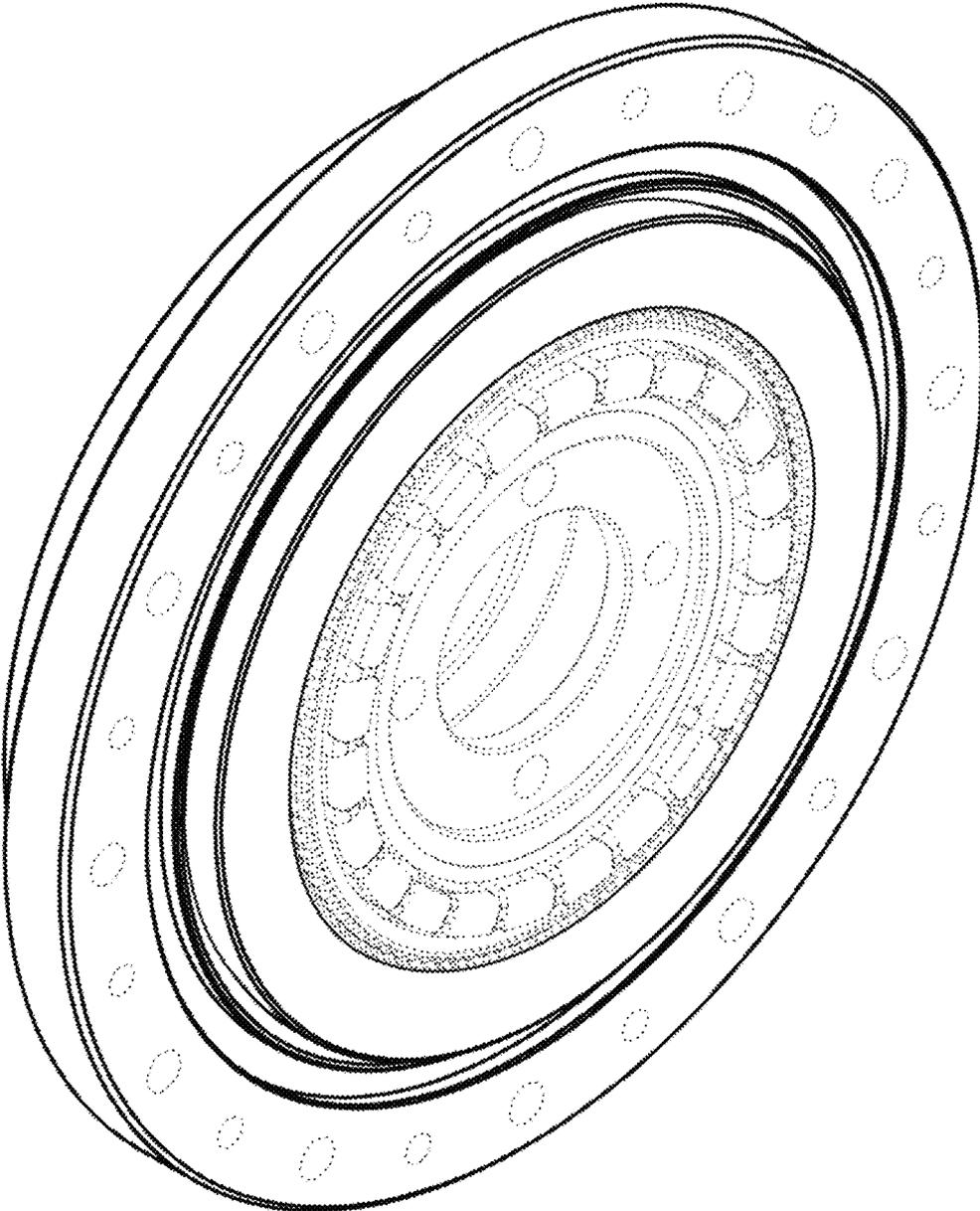
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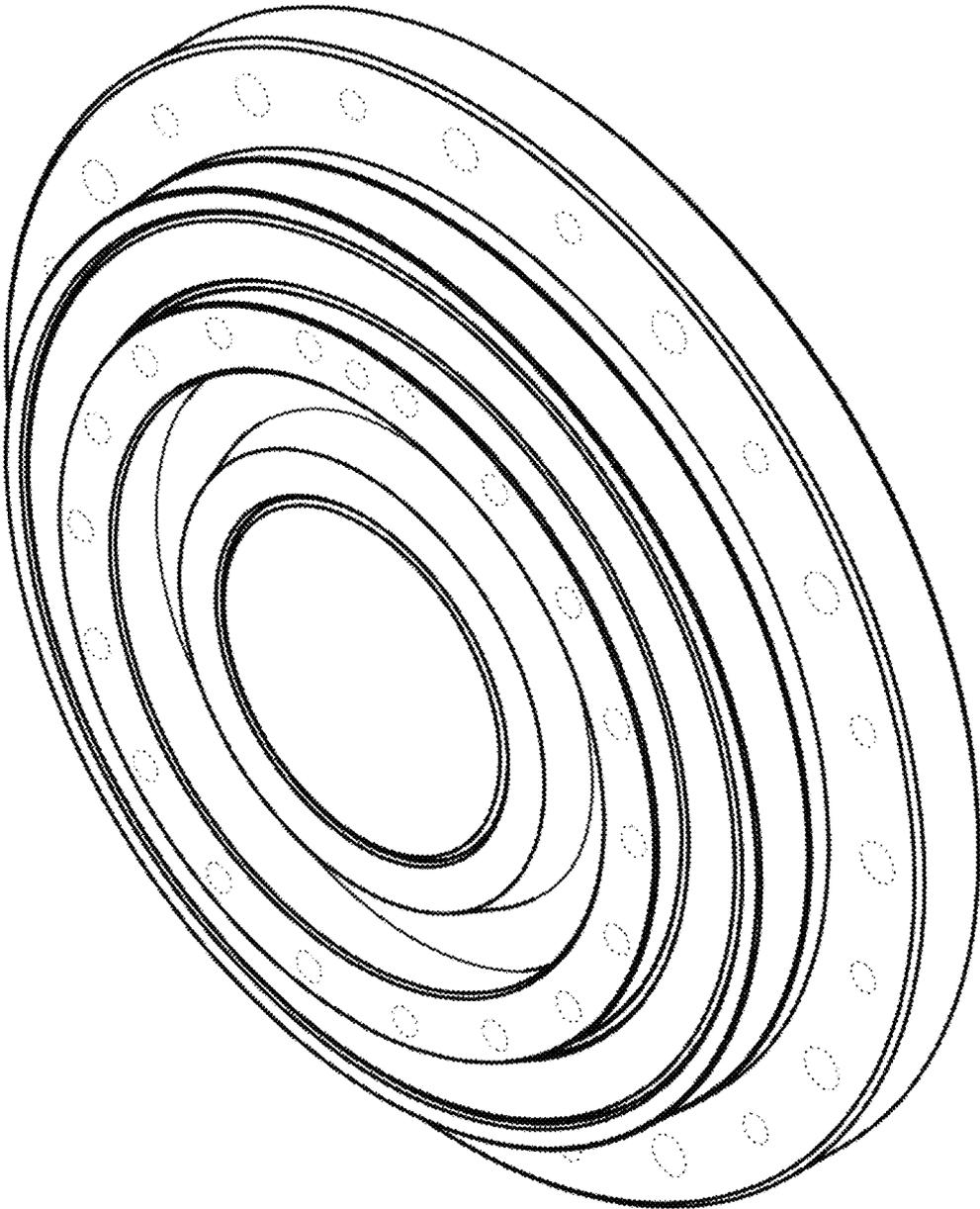
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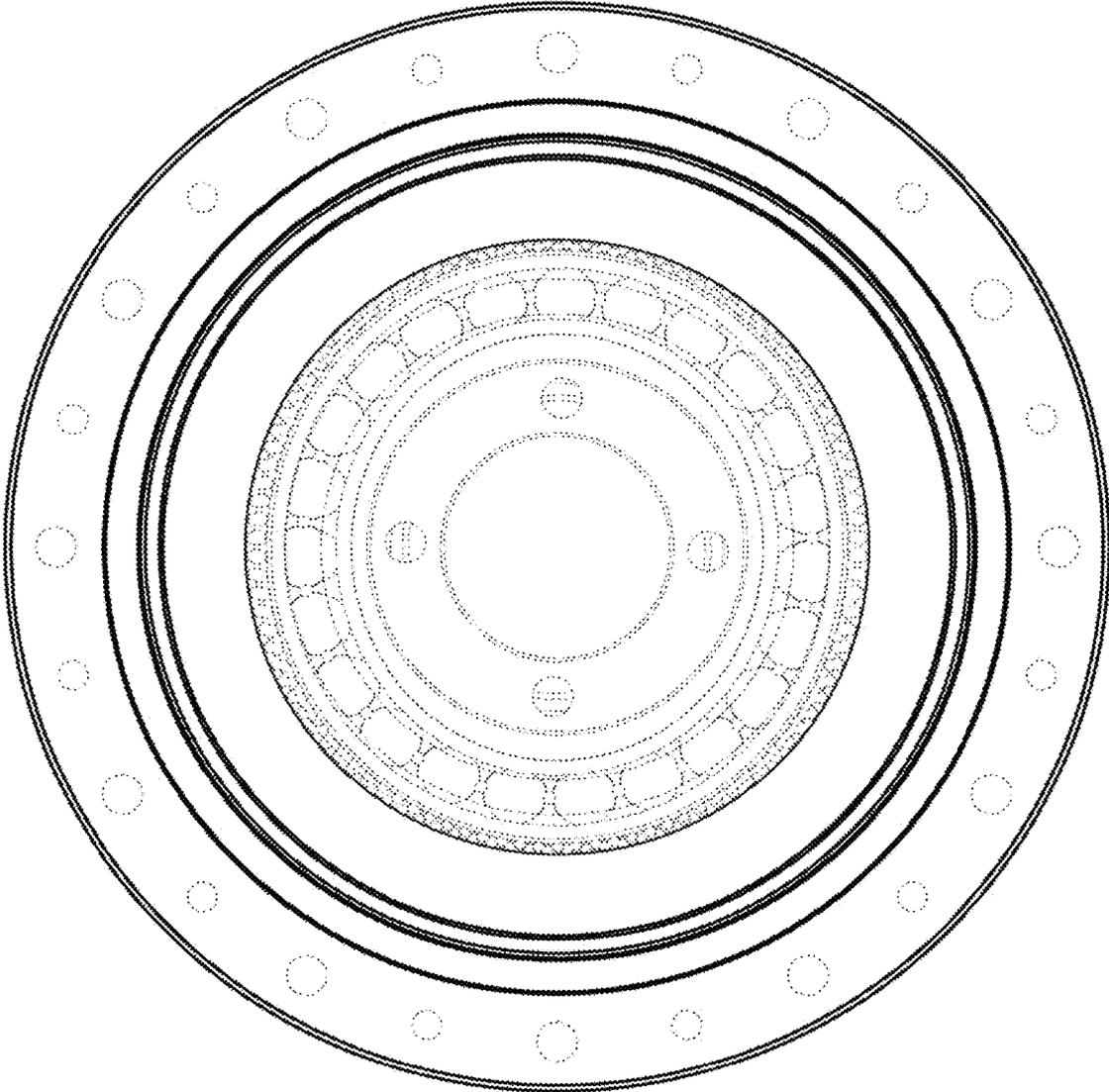
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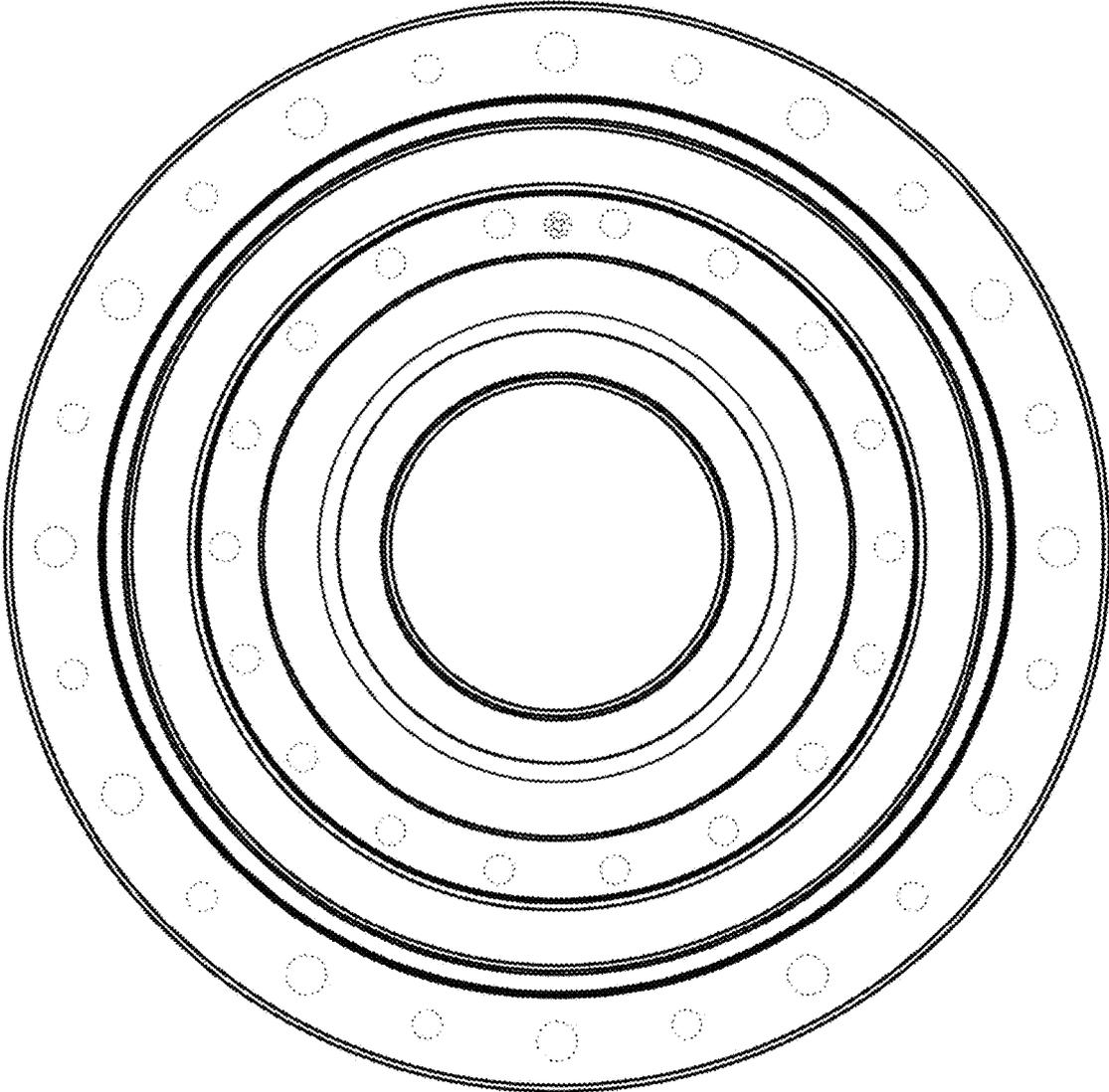
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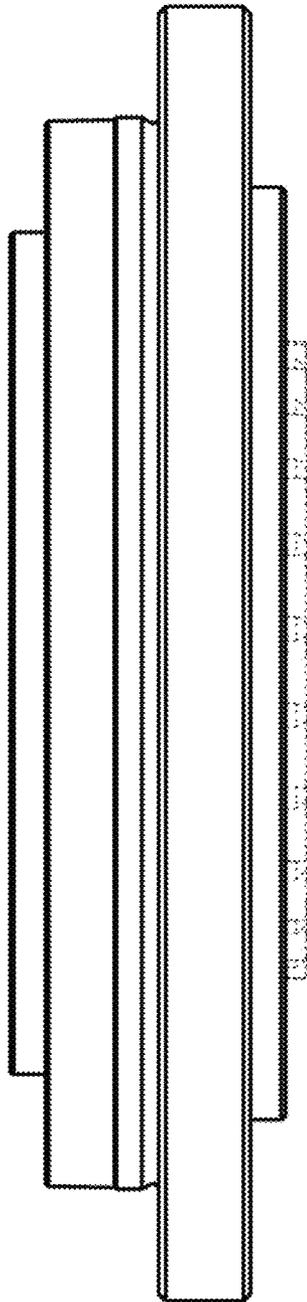
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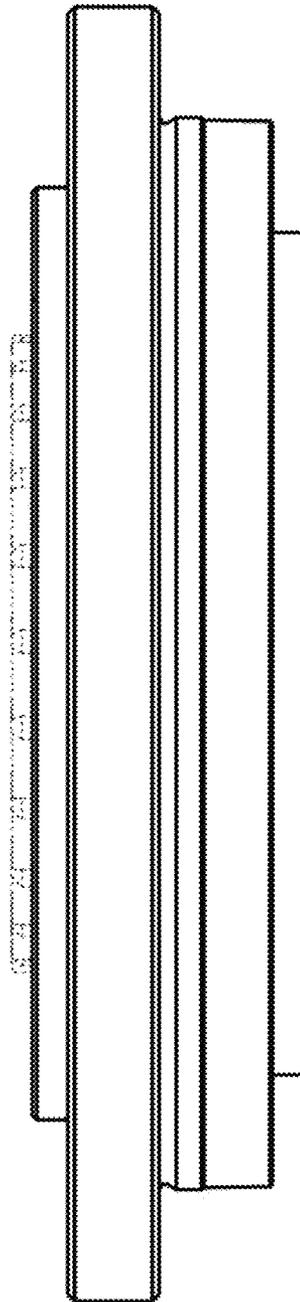
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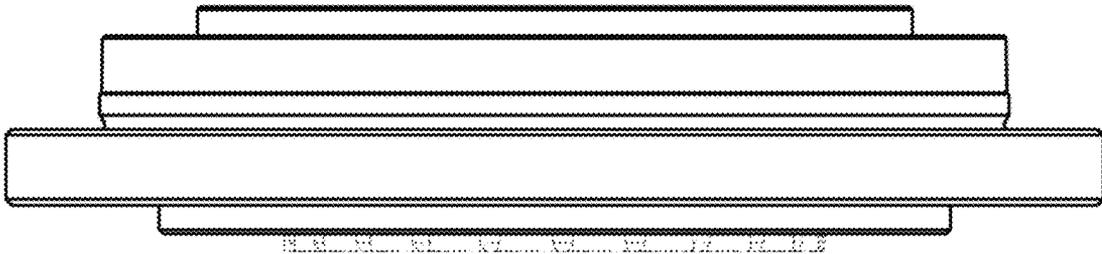
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4.6



4.7



4.8

