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**Striebig et al.**

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(54) **DOSE DISK FOR DRY POWDER INHALERS**

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D391,369 S 2/1998 Anderson  
5,715,810 A 2/1998 Armstrong et al.  
5,727,607 A 3/1998 Ichikawa et al.  
D395,499 S \* 6/1998 Eisele et al. .... D24/110  
5,769,073 A 6/1998 Eason et al.  
5,823,182 A \* 10/1998 Van Oort ..... 128/203.12  
5,909,829 A 6/1999 Wegman et al.

(Continued)

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**FOREIGN PATENT DOCUMENTS**

DE 19500764 7/1996

(Continued)

(\*\*) Term: **14 Years**

(21) Appl. No.: **29/358,375**

**OTHER PUBLICATIONS**

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Hickey et al., A new millennium for inhaler technology, 21 Pharm.  
Tech., n. 6, pp. 116-125 (1997).

(51) **LOC (9) Cl.** ..... **24-01**

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(52) **U.S. Cl.** ..... **D24/110**

(58) **Field of Classification Search** ..... D24/108-110.5,  
D24/112-114, 181; 128/200.14-200.23,  
128/203.12-203.24; D29/108

See application file for complete search history.

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(56) **References Cited**

(57) **CLAIM**

The ornamental design for a dose disk for a dry powder  
inhaler, as shown and described.

**U.S. PATENT DOCUMENTS**

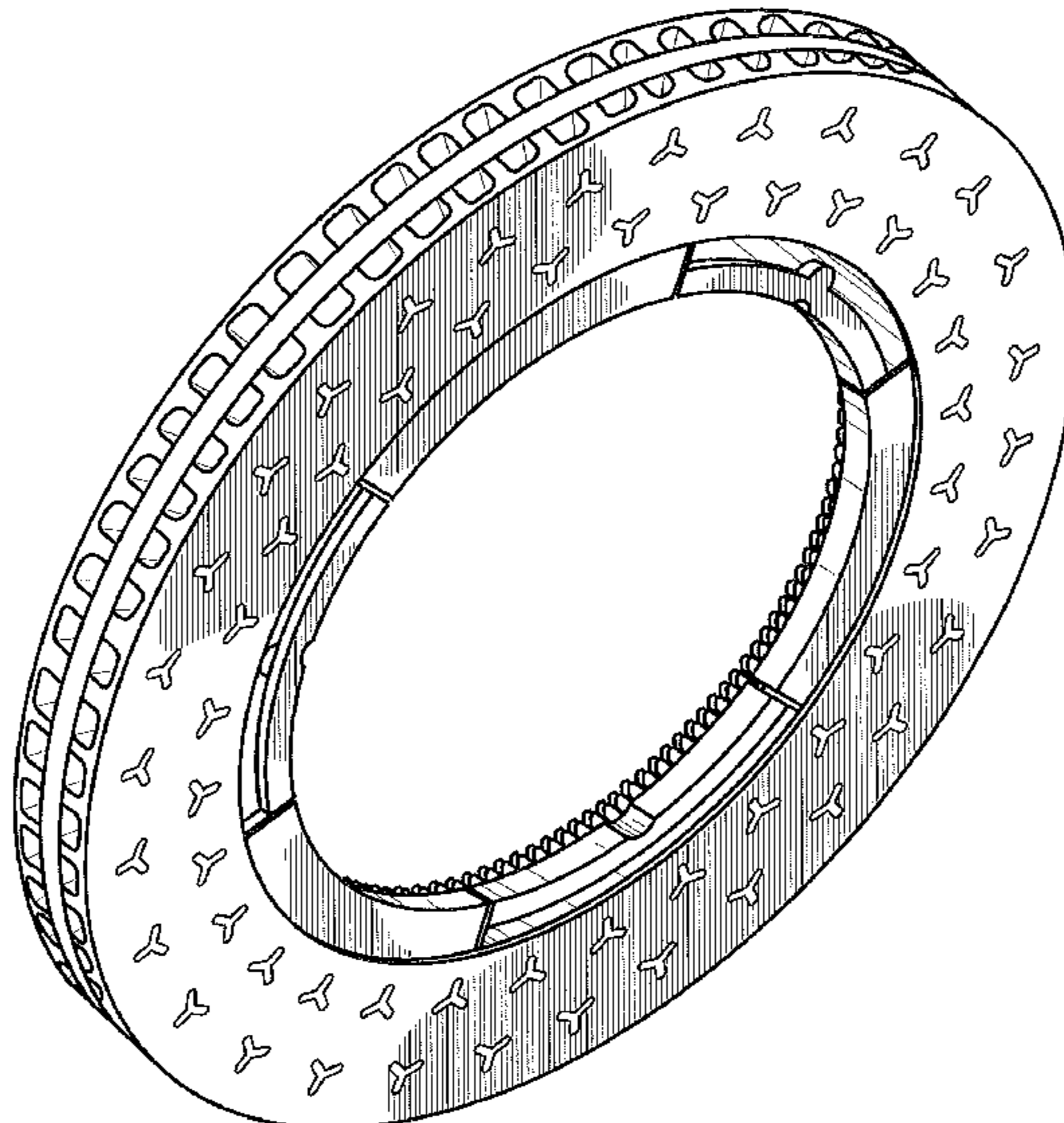
4,307,734 A \* 12/1981 Blankenship ..... 131/329  
4,627,432 A 12/1986 Newell et al.  
4,778,054 A 10/1988 Newell et al.  
4,811,731 A 3/1989 Newell et al.  
5,035,237 A 7/1991 Newell et al.  
5,138,138 A 8/1992 Theilacker et al.  
D342,994 S 1/1994 Rand et al.  
5,327,883 A 7/1994 Williams et al.  
5,337,740 A 8/1994 Armstrong et al.  
5,388,572 A 2/1995 Mulhauser et al.  
5,388,573 A \* 2/1995 Mulhauser et al. .... 128/203.15  
5,460,173 A \* 10/1995 Mulhauser et al. .... 128/203.15  
5,529,059 A 6/1996 Armstrong et al.  
5,533,502 A 7/1996 Piper  
D377,215 S 1/1997 Rand  
5,622,166 A 4/1997 Eisele et al.  
D379,506 S 5/1997 Maher  
D384,283 S \* 9/1997 Davies et al. .... D9/731

**DESCRIPTION**

FIG. 1 is a top perspective view of a dose disk for a dry powder  
inhaler showing our design;  
FIG. 2 is a top view thereof;  
FIG. 3 is a side view thereof;  
FIG. 4 is an opposing side view thereof;  
FIG. 5 is a bottom view thereof; and,  
FIG. 6 is an end view thereof, the opposite view being the  
same.

The broken lines shown herein are for illustrative purposes  
only and form no part of the claimed design.

**1 Claim, 3 Drawing Sheets**



# US D635,246 S

Page 2

## U.S. PATENT DOCUMENTS

5,921,237 A 7/1999 Eisele et al.  
D412,978 S \* 8/1999 Cameron ..... D24/110  
5,947,169 A 9/1999 Wegman et al.  
6,029,663 A 2/2000 Eisele et al.  
6,065,472 A \* 5/2000 Anderson et al. .... 128/203.21  
6,082,356 A 7/2000 Stradella  
6,116,238 A 9/2000 Jackson et al.  
D433,126 S 10/2000 McCurry  
D433,634 S \* 11/2000 Nicolas ..... D9/520  
D434,847 S \* 12/2000 Baribeau et al. .... D24/110  
D437,931 S 2/2001 Anderson  
6,245,339 B1 \* 6/2001 Van Oort et al. .... 424/400  
D445,496 S 7/2001 Anderson  
D450,117 S \* 11/2001 Braithwaite et al. .... D24/110  
6,328,033 B1 12/2001 Avrahami  
6,328,034 B1 \* 12/2001 Eisele et al. .... 128/203.15  
6,367,473 B1 4/2002 Käfer  
6,445,941 B1 9/2002 Hampton et al.  
6,543,448 B1 4/2003 Smith et al.  
6,550,477 B1 4/2003 Casper et al.  
6,591,832 B1 7/2003 DeJonge  
6,655,381 B2 12/2003 Keane et al.  
6,668,827 B2 12/2003 Schuler et al.  
6,679,254 B1 1/2004 Rand et al.  
6,715,486 B2 \* 4/2004 Gieschen et al. .... 128/203.15  
6,752,148 B1 \* 6/2004 McGinn et al. .... 128/203.15  
D494,674 S 8/2004 King et al.  
6,792,945 B2 9/2004 Davies et al.  
D497,988 S 11/2004 King et al.  
6,810,872 B1 11/2004 Ohki et al.  
6,871,647 B2 3/2005 Allan et al.  
6,880,555 B1 4/2005 Brunnberg et al.  
D505,865 S \* 6/2005 Seizer et al. .... D9/688  
6,923,178 B2 8/2005 Snow  
6,948,494 B1 9/2005 Snow  
6,971,383 B2 \* 12/2005 Hickey et al. .... 128/203.15  
D514,222 S 1/2006 Anderson et al.  
D518,171 S 3/2006 Anderson et al.  
7,089,935 B1 8/2006 Rand  
7,219,665 B1 5/2007 Braithwaite  
7,275,538 B2 10/2007 Nakamura  
7,318,436 B2 1/2008 Snow  
7,377,277 B2 \* 5/2008 Hickey et al. .... 128/203.21  
7,503,324 B2 3/2009 Barney et al.  
D590,495 S \* 4/2009 Lulla et al. .... D24/110  
7,571,723 B2 8/2009 Braithwaite  
7,571,724 B2 8/2009 Braithwaite  
D604,834 S \* 11/2009 Ungar ..... D24/110.1

D613,848 S 4/2010 Harvey et al.  
D619,700 S \* 7/2010 Kenyon et al. .... D24/110  
7,766,188 B2 \* 8/2010 Pocock et al. .... 222/36  
2001/0007853 A1 7/2001 Dimarchi et al.  
2001/0053761 A1 12/2001 Dimarchi et al.  
2002/0040713 A1 4/2002 Eisele et al.  
2004/0123864 A1 \* 7/2004 Hickey et al. .... 128/203.12  
2005/0161041 A1 7/2005 Schuler et al.  
2005/0172963 A1 8/2005 Allan et al.  
2006/0102511 A1 5/2006 Pasbrig et al.  
2006/0157053 A1 7/2006 Barney et al.  
2007/0137643 A1 6/2007 Bonney et al.  
2007/0137645 A1 6/2007 Eason et al.  
2007/0181124 A1 8/2007 Casper et al.  
2007/0221218 A1 9/2007 Warden et al.  
2007/0235029 A1 10/2007 Zhu et al.  
2009/0114220 A1 5/2009 Wachtel et al.

## FOREIGN PATENT DOCUMENTS

EP	1106196	3/2001
EP	1844805	10/2007
GB	873410	7/1961
GB	2340758	3/2000
WO	WO 94/20164	9/1994
WO	WO 98/41265	9/1998
WO	WO 99/36116	7/1999
WO	WO 00/45879	8/2000
WO	WO 01/28616	4/2001
WO	WO 01/34234	5/2001
WO	WO 02/053215	7/2002
WO	WO 02/053216	7/2002
WO	WO 03/011708	2/2003
WO	WO 2004/045487	6/2004
WO	WO 2005/002654	1/2005
WO	WO 2005/037353	4/2005
WO	WO 2005/044173	5/2005
WO	WO 2005/110519	11/2005
WO	WO 2006/031775	3/2006
WO	WO 2006/108877	10/2006
WO	WO 2007/007110	1/2007
WO	WO 2007/012871	2/2007

## OTHER PUBLICATIONS

Prime et al., Review of Dry Powder Inhalers, 26 Adv. Drug Delivery Rev., pp. 51-58 (1997).  
Wolff et al., Generation of Aerosolized Drugs, J. Aerosol. Med., pp. 88-106 (1994).

\* cited by examiner



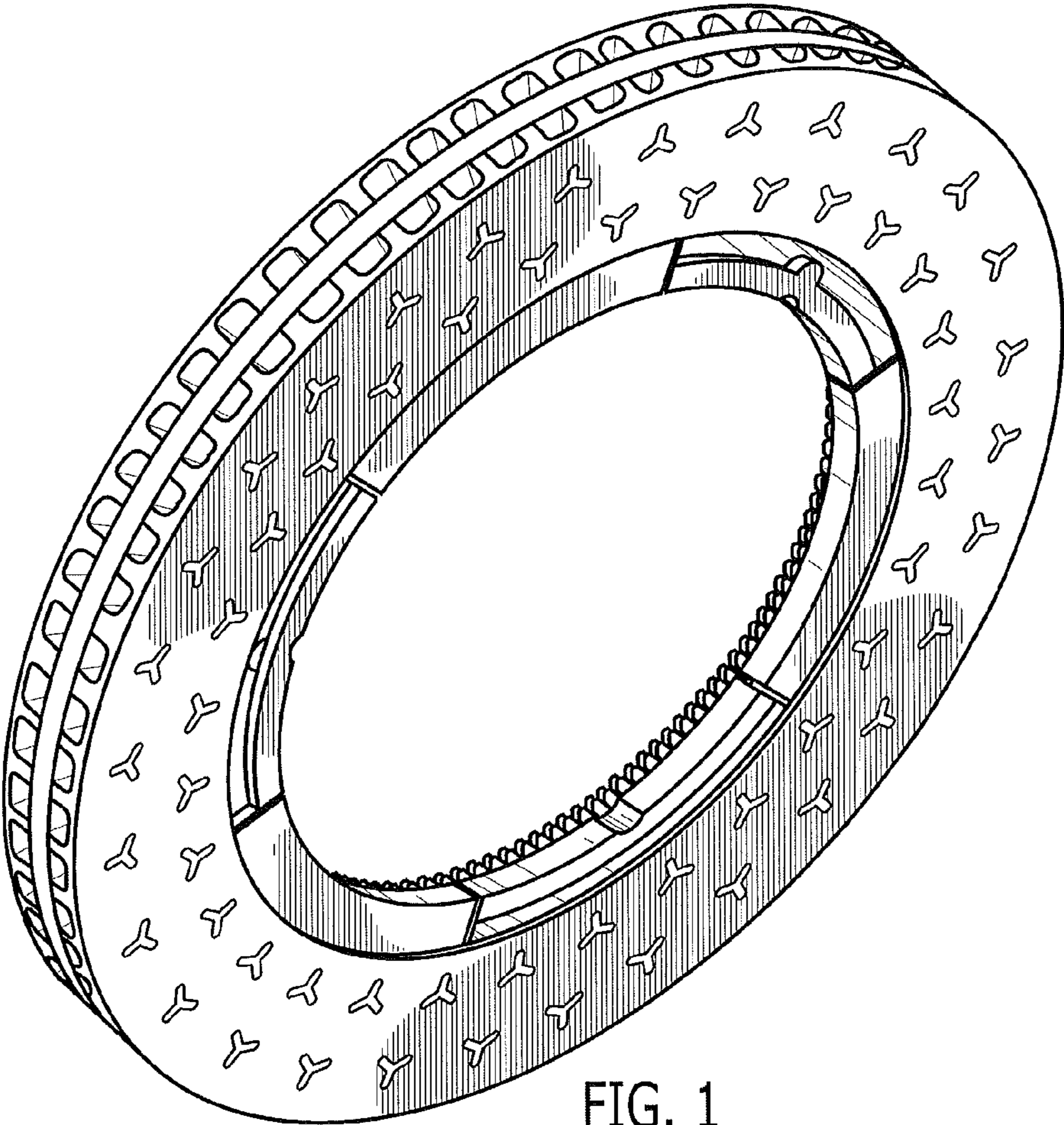


FIG. 1

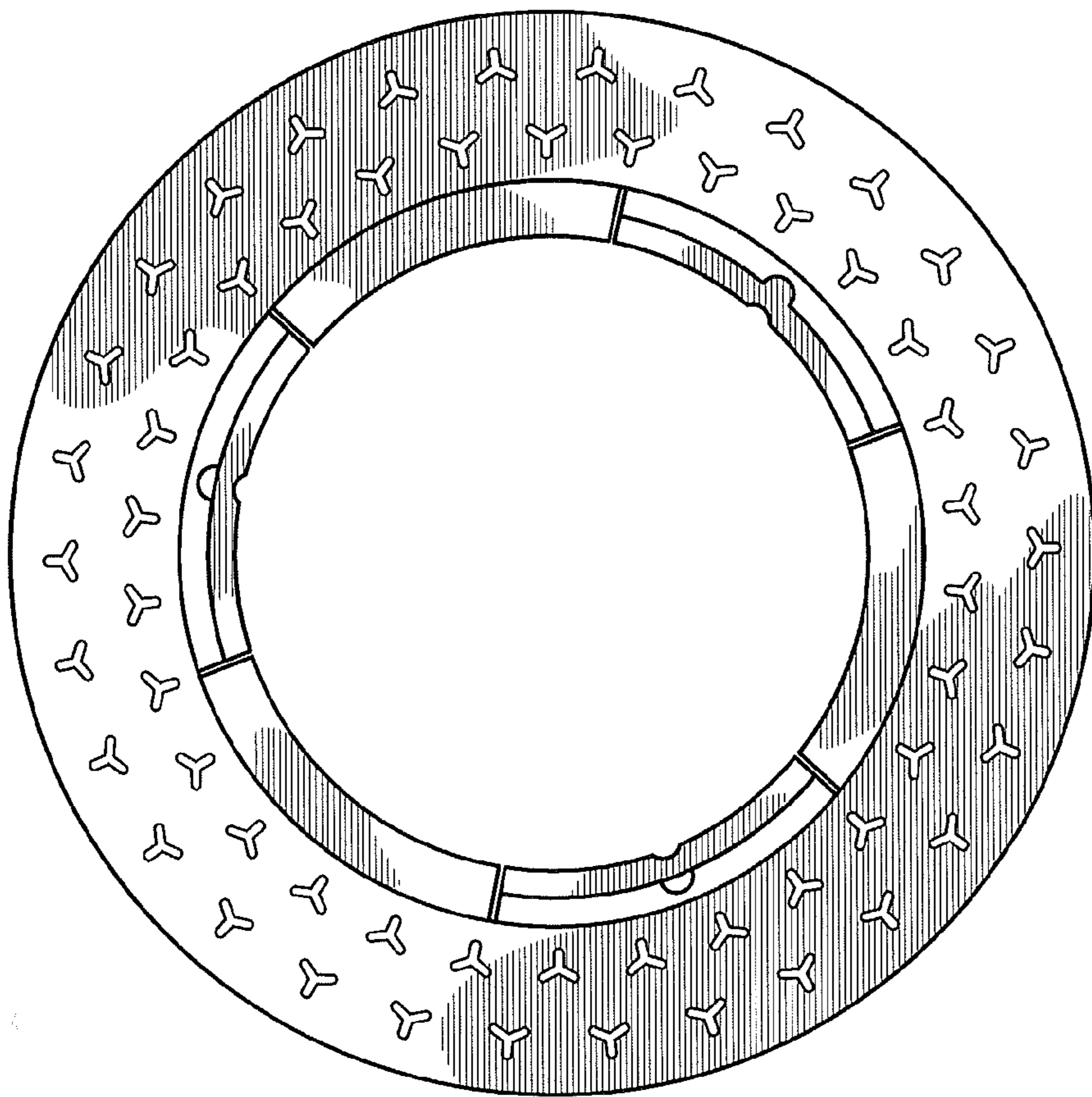


FIG. 2

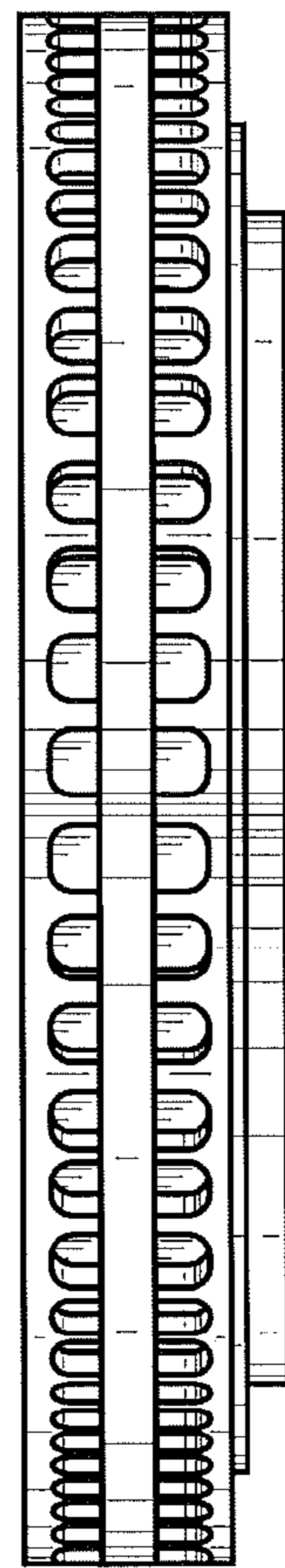


FIG. 3

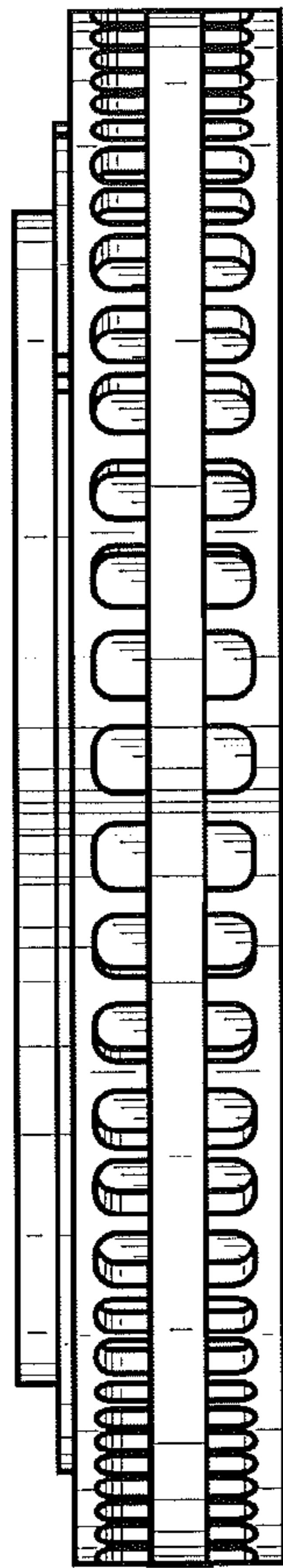


FIG. 4

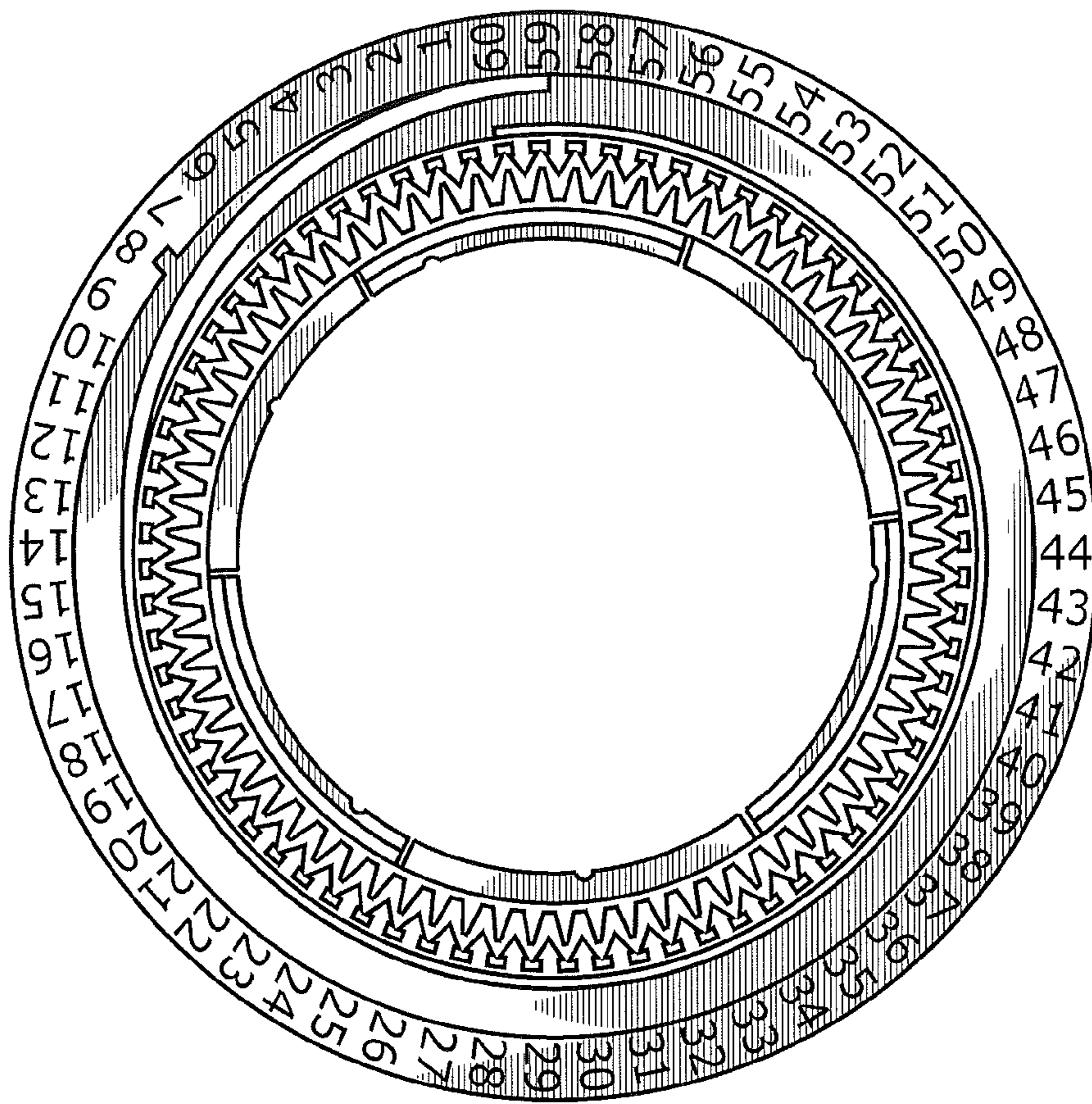


FIG. 5

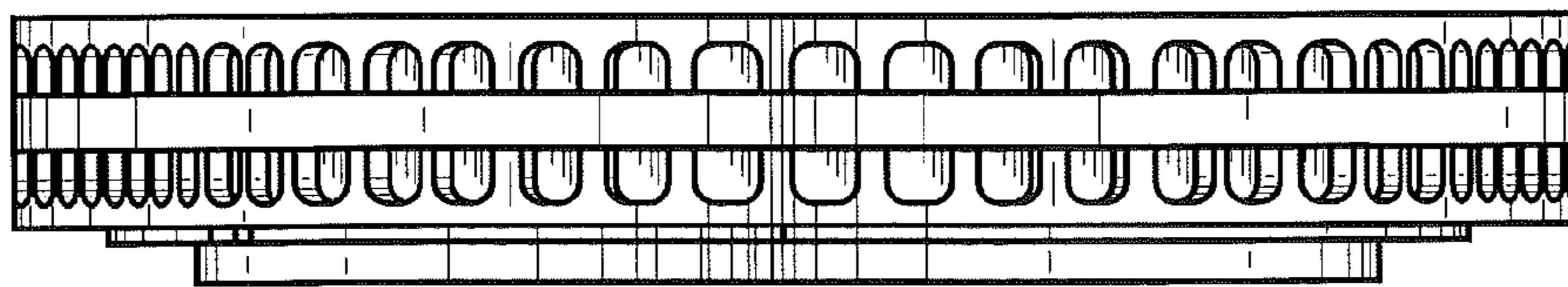


FIG. 6