



US00D878438S

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

(10) **Patent No.:** **US D878,438 S**
(45) **Date of Patent:** **** Mar. 17, 2020**

- (54) **HELICAL FLUTED FORWARD AND REVERSE ROTATION CUTTING TOOL**
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- (**) Term: **15 Years**
- (21) Appl. No.: **29/659,086**
- (22) Filed: **Aug. 6, 2018**
- (51) **LOC (12) Cl.** **15-09**
- (52) **U.S. Cl.**
USPC **D15/139; D24/146**
- (58) **Field of Classification Search**
USPC D8/20, 70; D15/126, 131, 138, 139, 140; D24/146, 156
CPC . A61B 17/1615; B23B 51/02; B23B 2222/84; B23B 2251/14; B23B 2251/18; B23B 2251/245
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,830,000	A *	5/1989	Shutt	.....	A61B 17/1615	408/207
D332,492	S *	1/1993	Rosenberg	.....	D15/139	
D378,780	S *	4/1997	Shuler	.....	D24/146	
5,622,462	A *	4/1997	Gakhar	.....	B23B 51/02	408/230
5,931,615	A *	8/1999	Wiker	.....	B23B 51/02	408/229
D419,575	S *	1/2000	Kouvelis	.....	D15/139	

6,036,410	A *	3/2000	Shun'ko	.....	B23B 51/02	408/227
D430,584	S *	9/2000	Kouvelis	.....	D15/139	
D582,552	S *	12/2008	Berberich	.....	D24/133	
D741,924	S *	10/2015	Lee	.....	D15/139	
10,259,050	B2 *	4/2019	Ogawa	.....	B23B 51/02	
2002/0046885	A1 *	4/2002	Eichhorn	.....	B23B 51/02	175/426
2003/0103820	A1 *	6/2003	Frejd	.....	B23B 51/02	408/59
2004/0057804	A1 *	3/2004	Jager	.....	B23B 51/108	408/224
2004/0101379	A1 *	5/2004	Mabuchi	.....	B23B 51/02	408/230
2005/0274551	A1 *	12/2005	Batliner	.....	B23B 51/02	175/414
2006/0078393	A1 *	4/2006	Lin	B23B 51/02	408/230
2006/0085005	A1 *	4/2006	Kenealy, III	A61B 17/1615	606/80

(Continued)

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(57) **CLAIM**

The ornamental design for a helical fluted forward and reverse rotation cutting tool, as shown and described.

DESCRIPTION

FIG. 1 is a front end perspective view of the helical fluted forward and reverse rotation cutting tool of the present invention;

FIG. 2 is a left side view thereof;

FIG. 3 is a right side view thereof;

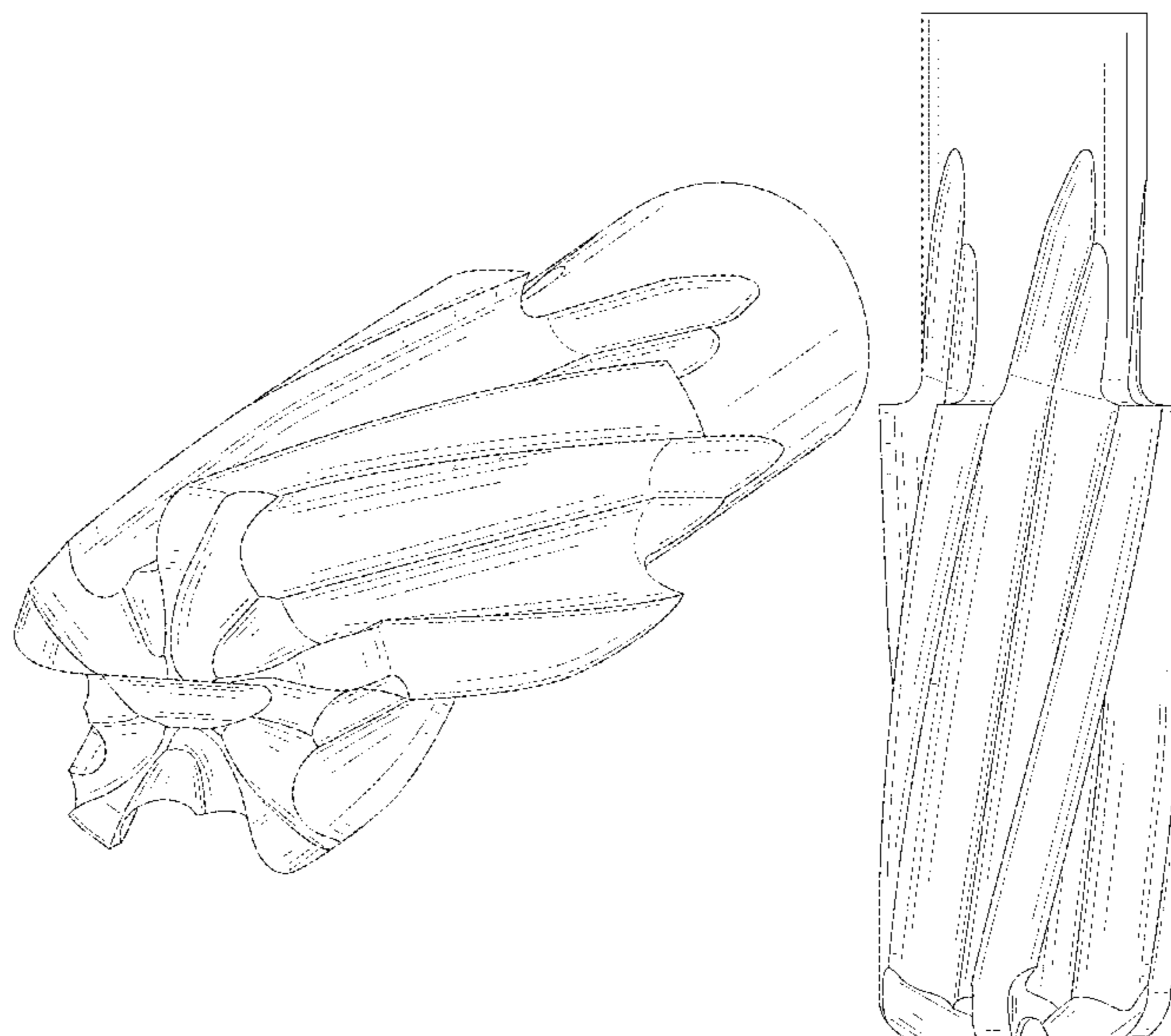
FIG. 4 is a rear view thereof;

FIG. 5 is a front view thereof;

FIG. 6 is an end view thereof; and,

FIG. 7 is a rear end view thereof.

1 Claim, 6 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

2007/0298376 A1* 12/2007 Kmiec A61C 8/0089
433/165
2008/0019787 A1* 1/2008 Sampath B23B 51/02
408/230
2010/0054884 A1* 3/2010 Masuda B23B 51/02
408/230
2010/0092259 A1* 4/2010 Borschert B23B 51/02
408/230
2011/0081215 A1* 4/2011 Nakamura B23B 51/02
408/230
2012/0034043 A1* 2/2012 Krieg B23B 51/02
408/230
2013/0006248 A1* 1/2013 Ellis A61B 17/1615
606/80
2013/0253521 A1* 9/2013 Ellis A61B 17/1655
606/80
2014/0294527 A1* 10/2014 Hirt B23B 51/02
408/1 R
2014/0348605 A1* 11/2014 Park B23B 51/009
408/224

2015/0321267 A1* 11/2015 Takai B23B 51/06
408/59
2016/0031016 A1* 2/2016 Takai B23B 51/06
408/57
2016/0151842 A1* 6/2016 Bjork B23B 51/06
408/59
2016/0167139 A1* 6/2016 Ogawa C23C 30/005
408/1 R
2016/0228130 A1* 8/2016 Koljaka A61B 17/1615
2017/0021434 A1* 1/2017 Kauper B23C 5/16
2017/0056981 A1* 3/2017 Higashiwaki B23B 35/00
2017/0165797 A1* 6/2017 Nii B23P 15/28
2017/0182566 A1* 6/2017 Dyer B23K 26/402
2017/0274460 A1* 9/2017 Jindai B23B 51/02
2017/0326653 A1* 11/2017 Guter B23B 51/02
2018/0065190 A1* 3/2018 Roth B23B 51/02
2018/0250755 A1* 9/2018 George B23B 51/02
2018/0257151 A1* 9/2018 Park B23B 51/02
2019/0151958 A1* 5/2019 Hammond, Jr. B23B 51/06
2019/0209184 A1* 7/2019 Sun A61B 17/16
2019/0234150 A1* 8/2019 Miebach B23B 51/02

* cited by examiner

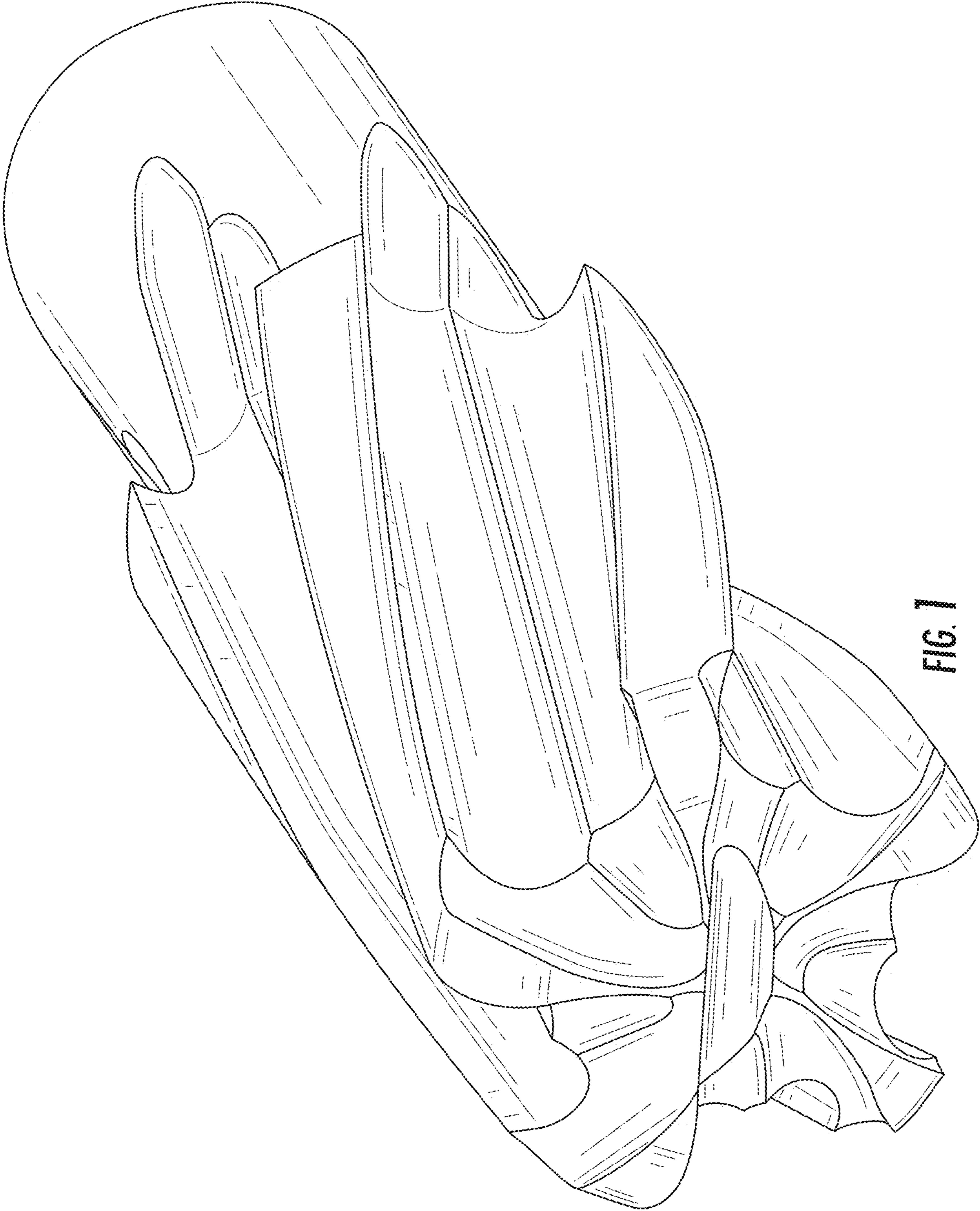


FIG. 1

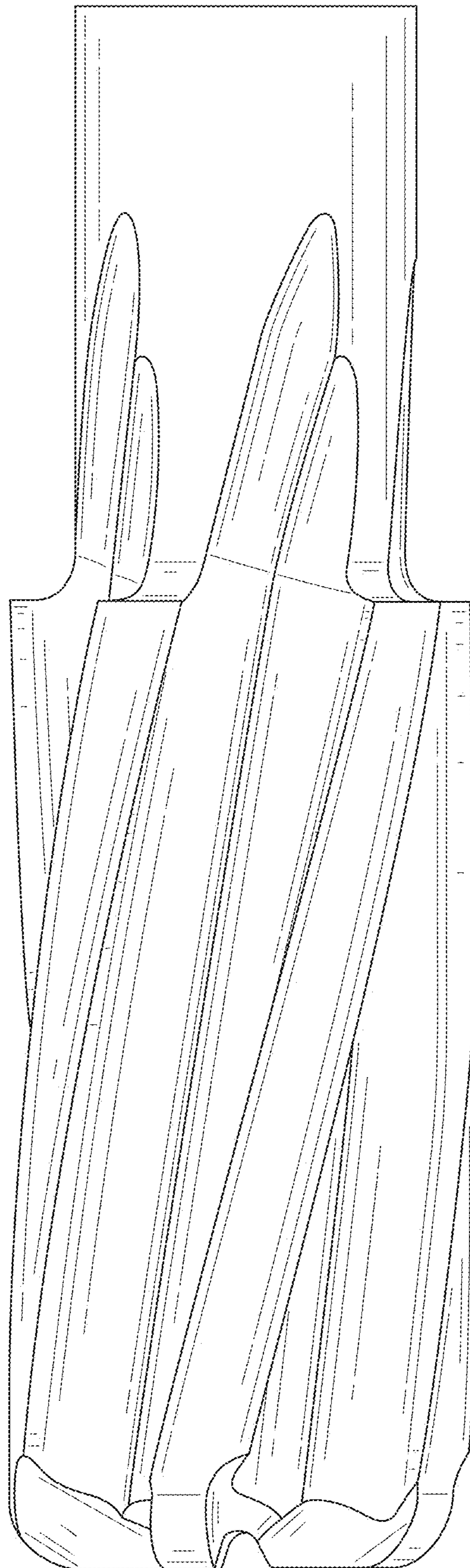


FIG. 2

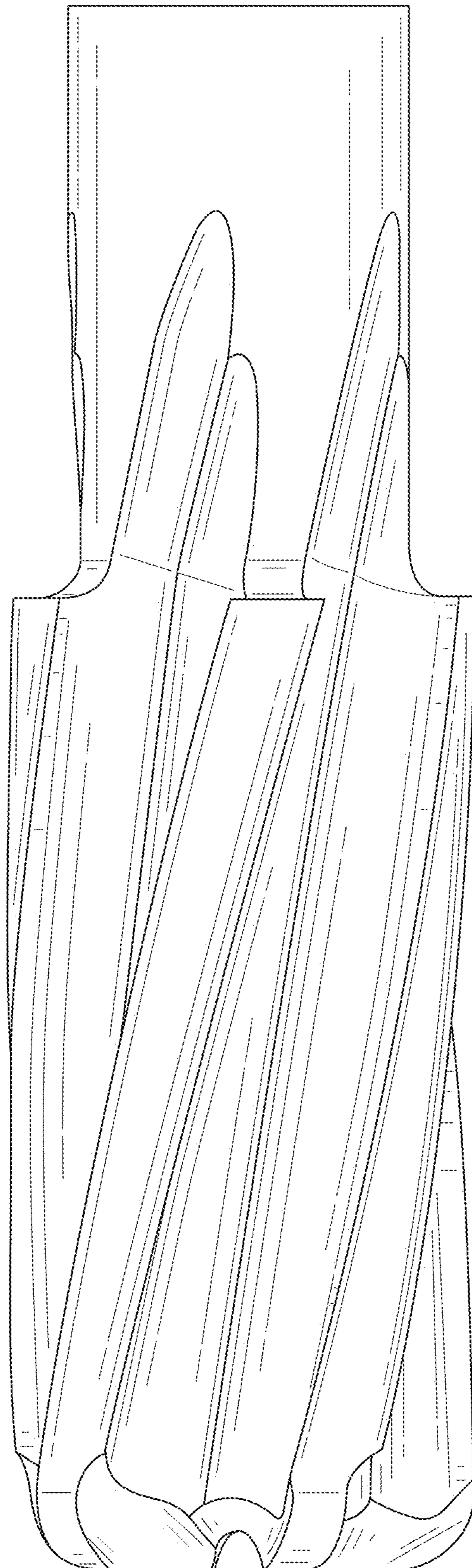


FIG. 3

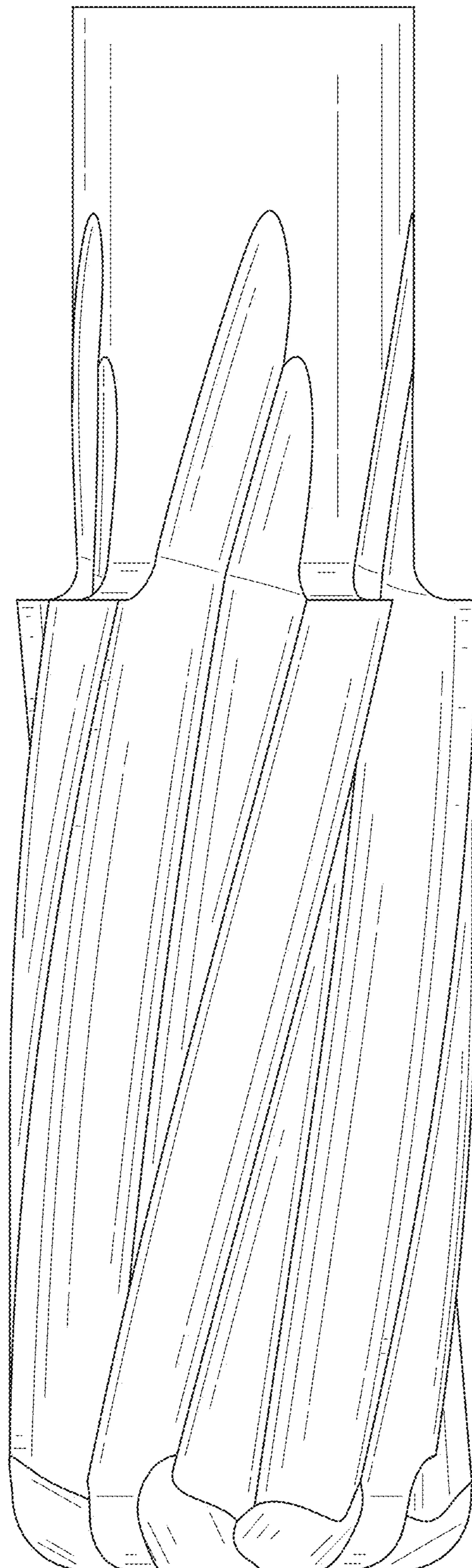


FIG. 4

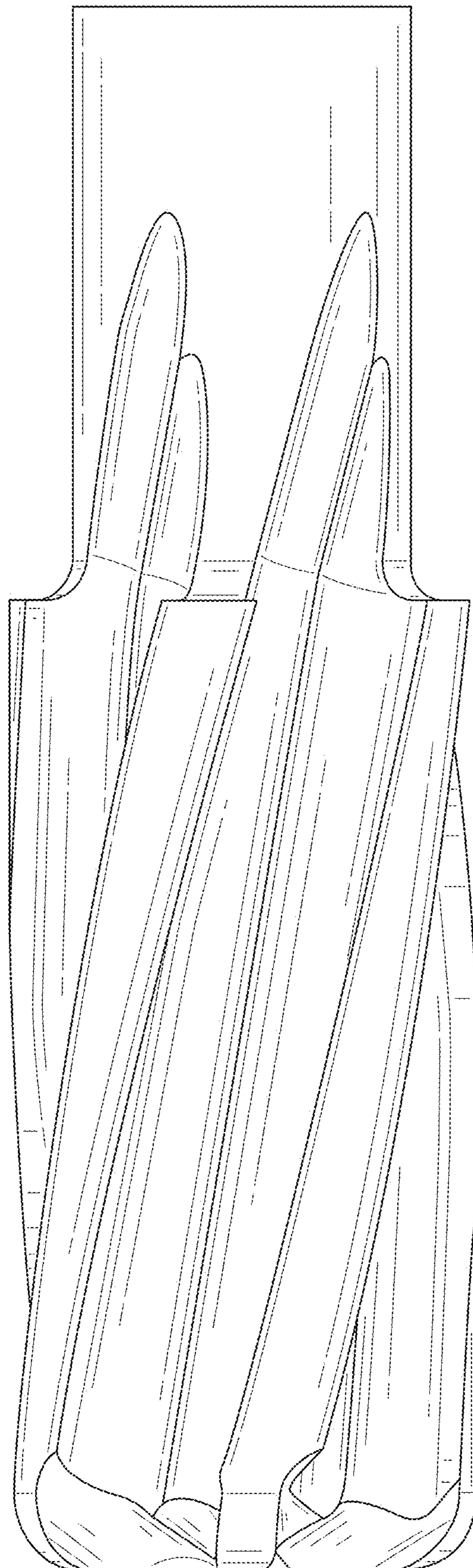


FIG. 5

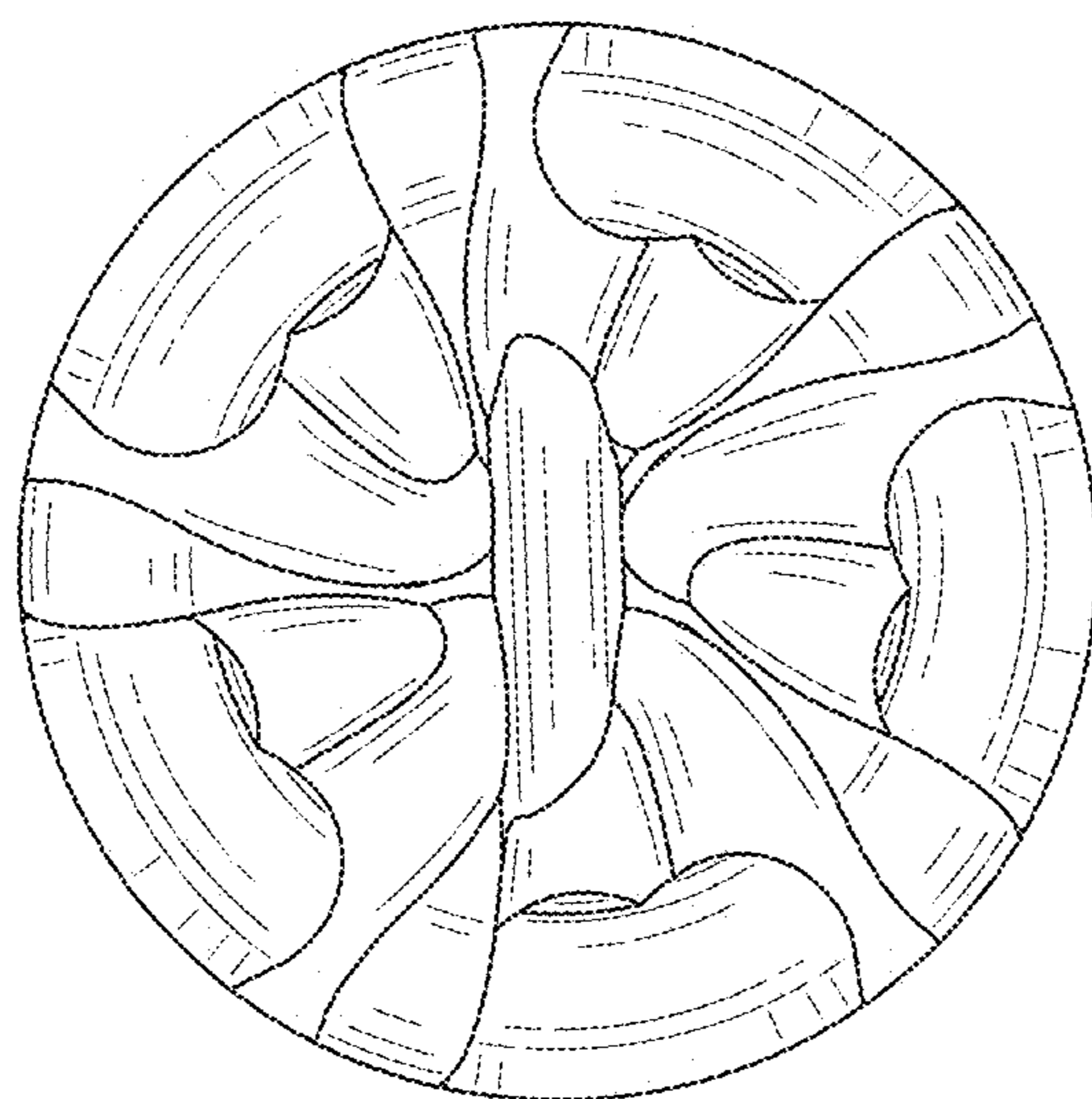


FIG. 6

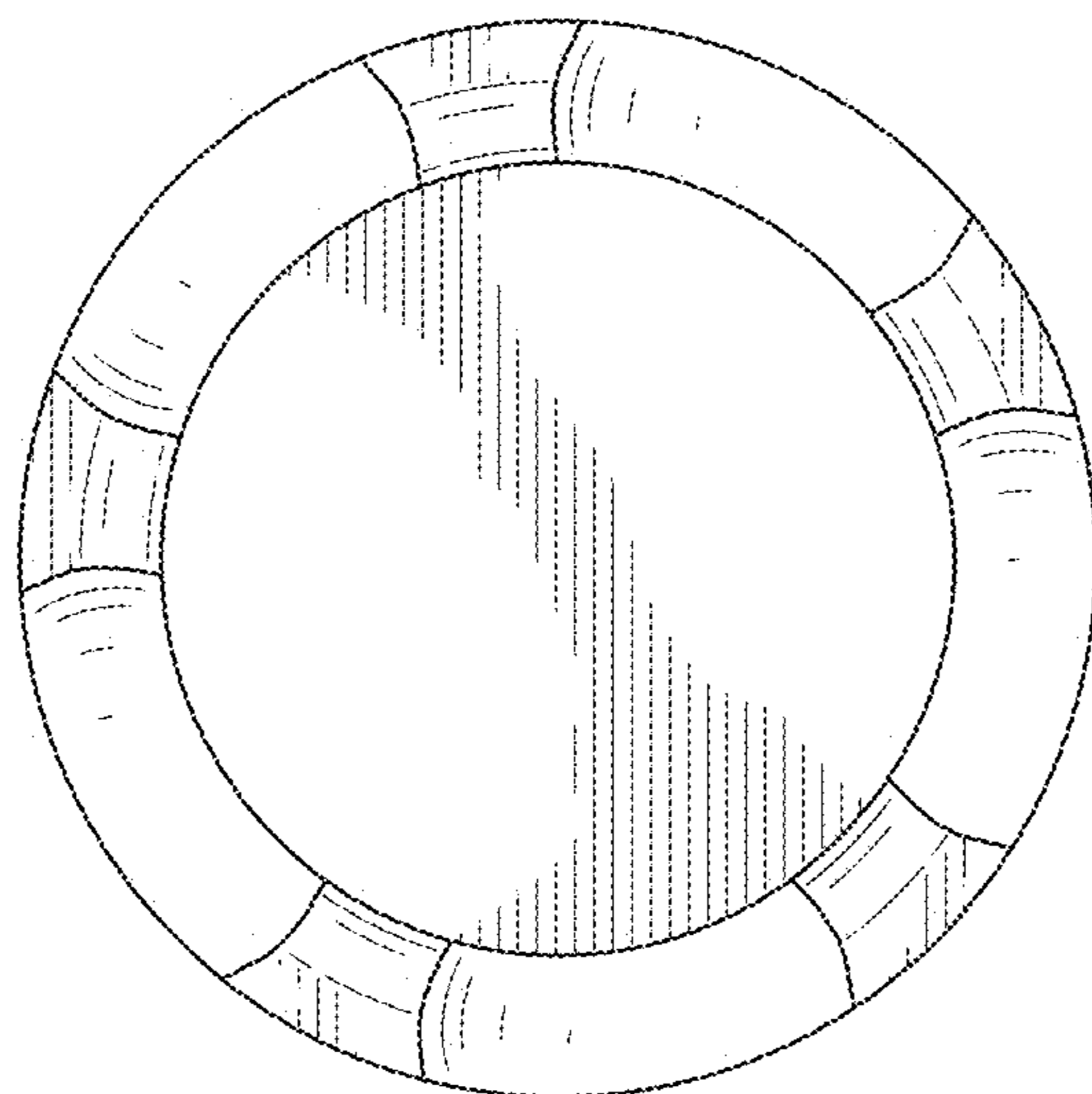


FIG. 7