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(12) **United States Design Patent** (10) **Patent No.:** **US D878,437 S**  
**Bono et al.** (45) **Date of Patent:** **\*\* Mar. 17, 2020**

(54) **HELICAL FLUTED FORWARD AND REVERSE ROTATION CUTTING TOOL**  
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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.

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  
2007/0298376 A1 \* 12/2007 Kmiec ..... A61C 8/0089  
433/165

(Continued)

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(57) **CLAIM**

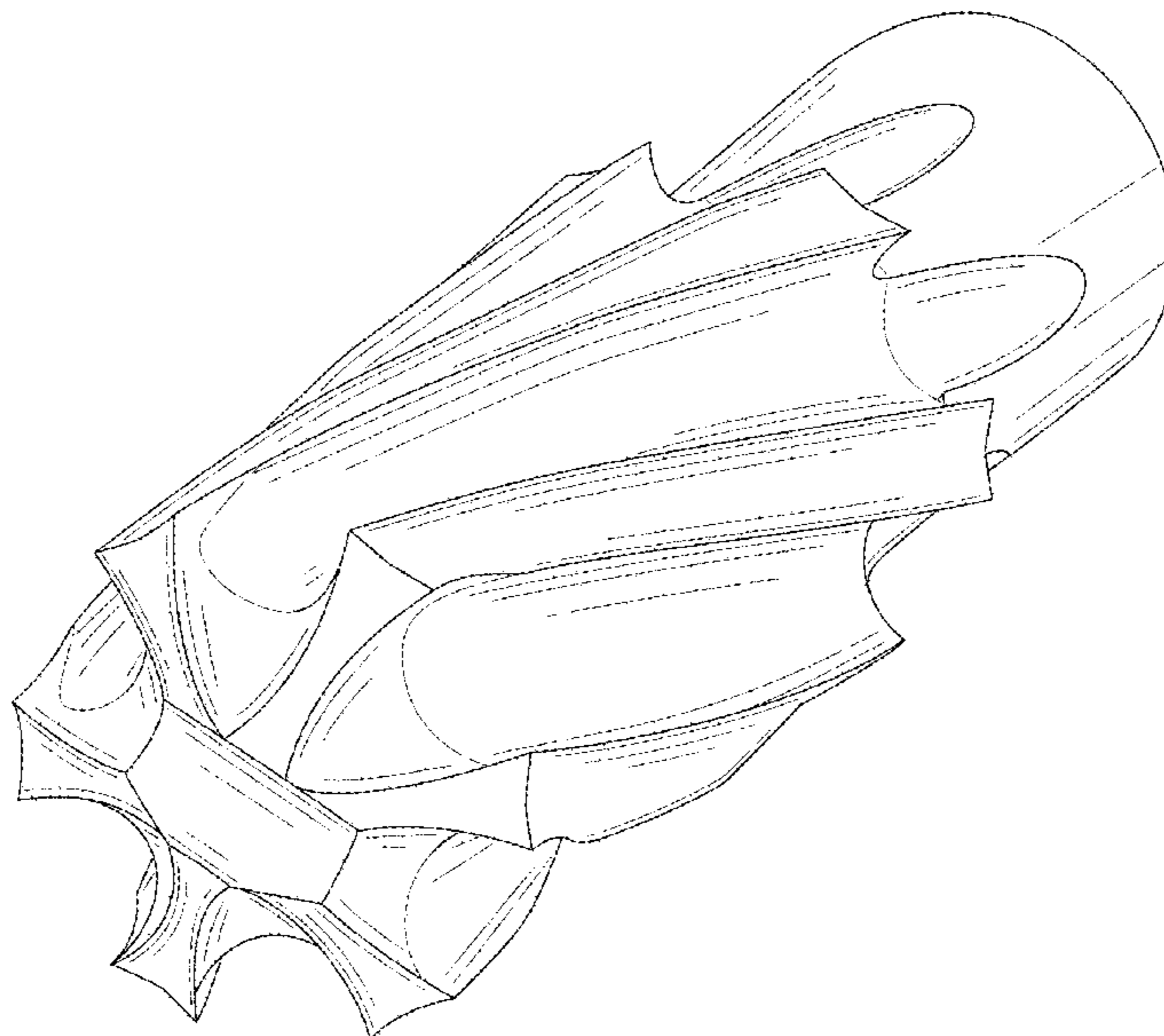
The ornamental design for a helical fluted forward and reverse rotation cutting tool, as shown and described.

**DESCRIPTION**

FIG. 1 is a top front perspective view of the helical fluted forward and reverse rotation cutting tool of the present invention;  
FIG. 2 is a right side view thereof, the left side view being a mirror image thereof;  
FIG. 3 is a front view thereof;  
FIG. 4 is a front view thereof; and,  
FIG. 5 is a rear view thereof.

**1 Claim, 4 Drawing Sheets**

(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



(56)

**References Cited**

U.S. PATENT DOCUMENTS

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

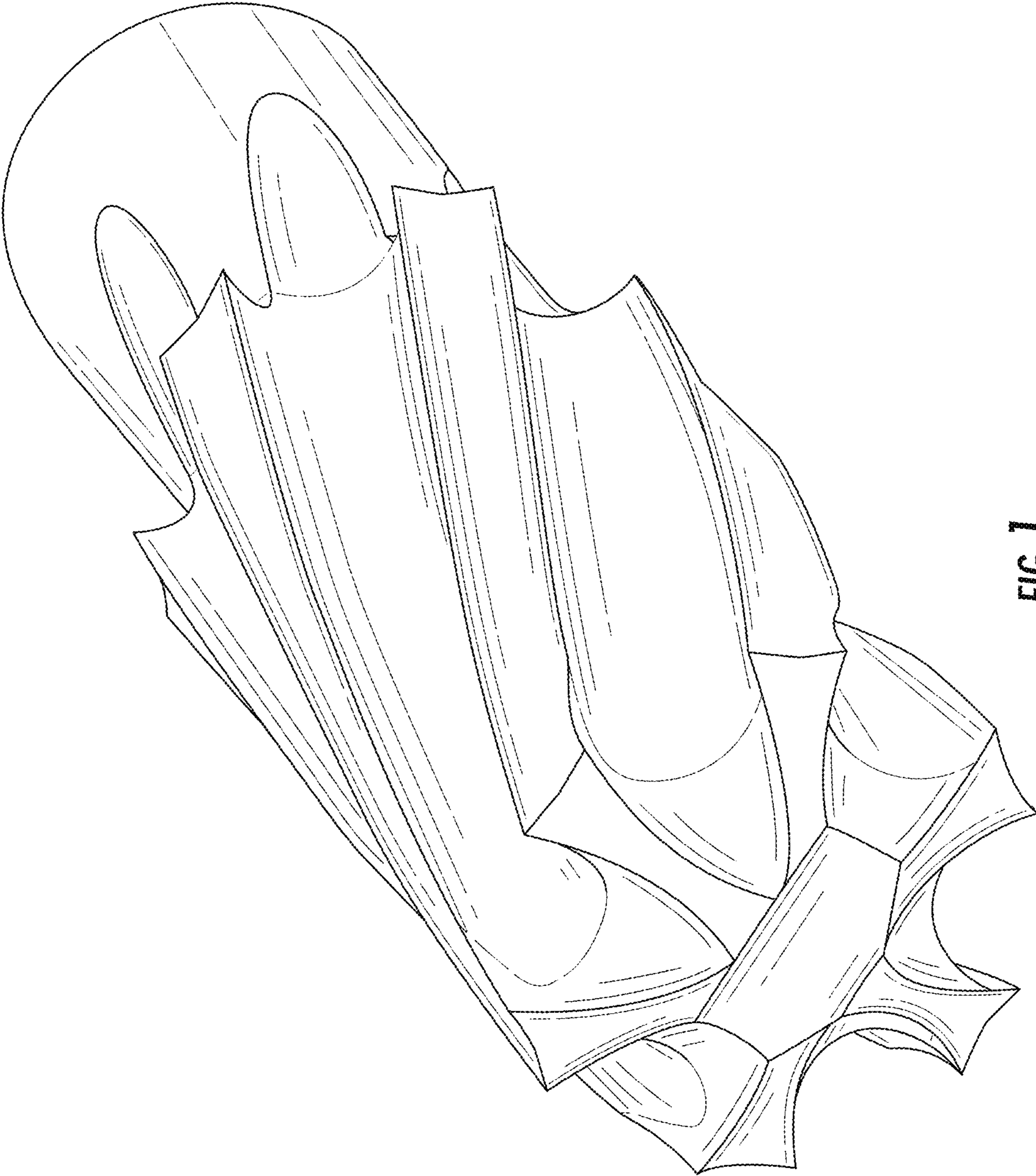


FIG. 1

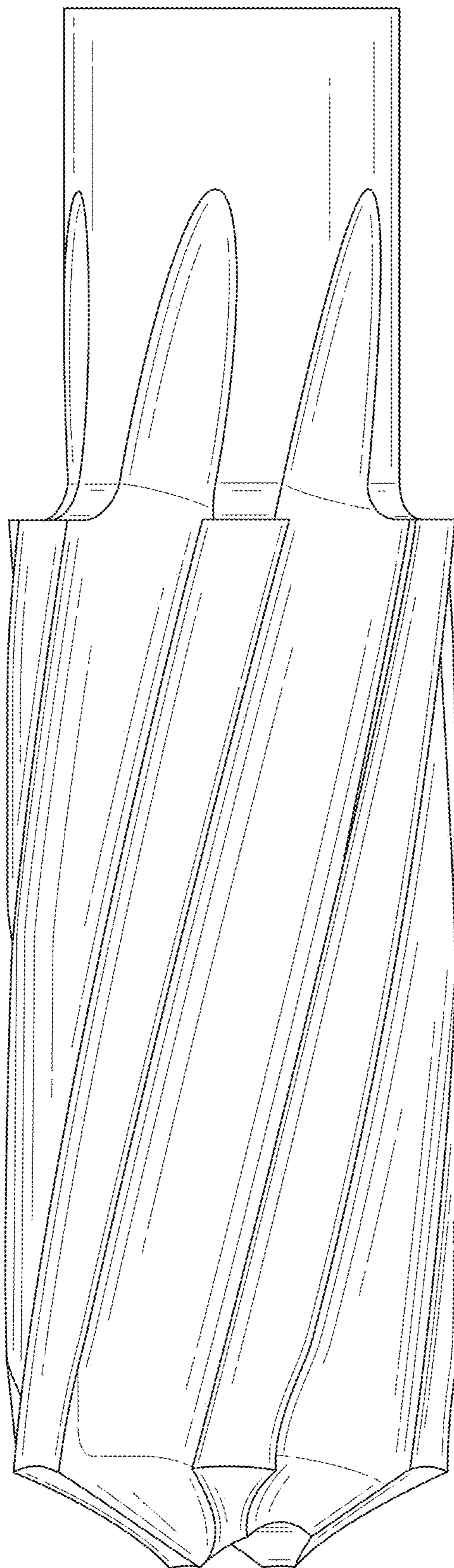


FIG. 2

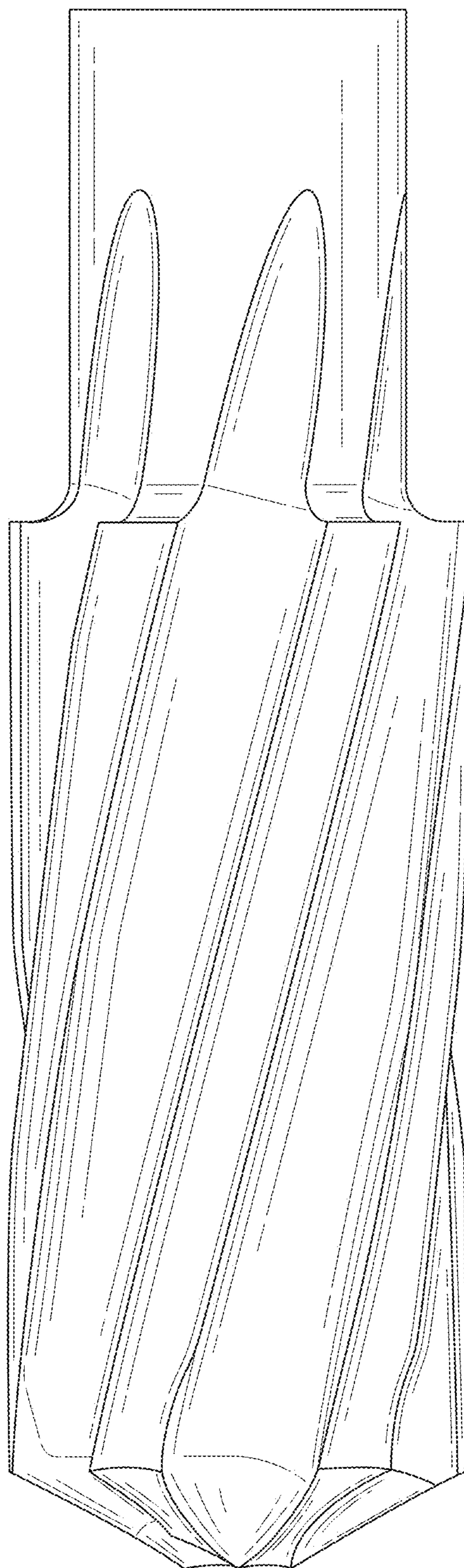


FIG. 3

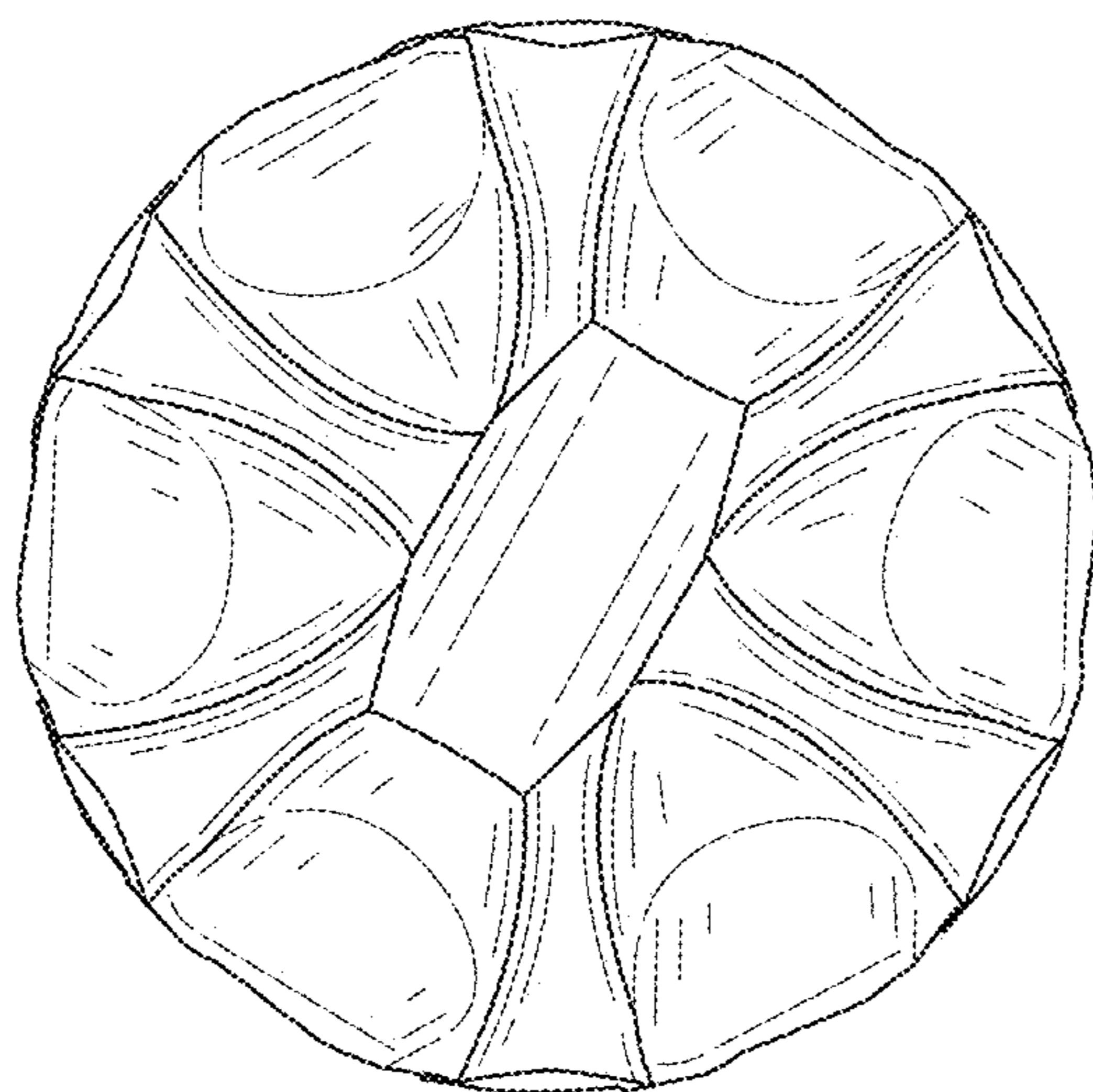


FIG. 4

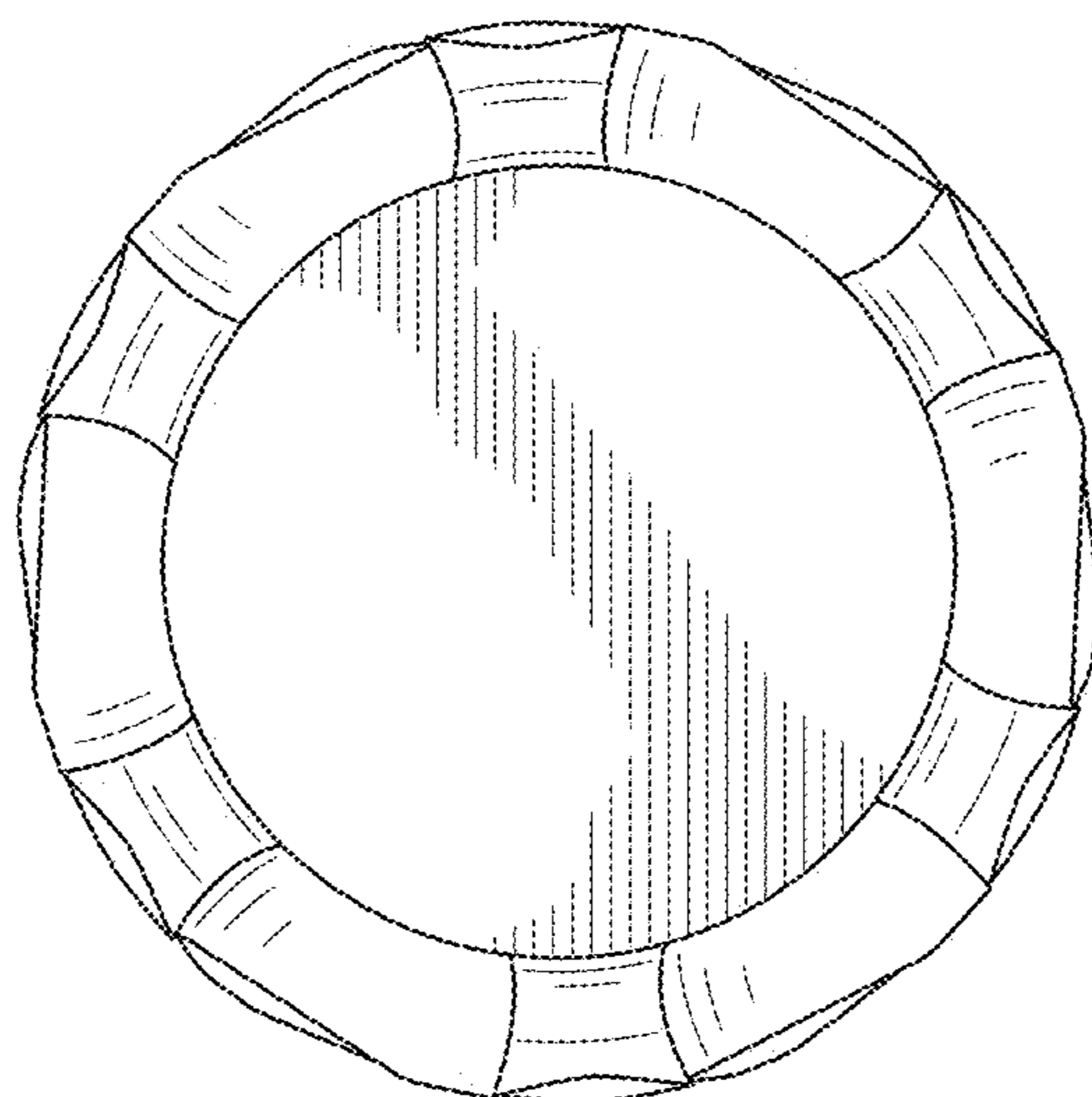


FIG. 5