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(12) **United States Design Patent** (10) **Patent No.:** **US D858,594 S**  
**Sharivker et al.** (45) **Date of Patent:** **\*\* Sep. 3, 2019**

(54) **SOLID END MILL**

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(73) Assignee: **KENNAMETAL INC.**, Latrobe, PA (US)

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

(Continued)

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(21) Appl. No.: **29/608,362**

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(22) Filed: **Jun. 21, 2017**

(57) **CLAIM**

(30) **Foreign Application Priority Data**

We claim the ornamental design for a solid end mill, as shown and described.

Dec. 20, 2016 (IL) ..... 249676

**DESCRIPTION**

(51) **LOC (12) Cl.** ..... **15-03**

FIG. 1 is a perspective top view of a solid end mill showing the first embodiment of our new design;

(52) **U.S. Cl.**

FIG. 2 is a side view of the solid end mill of FIG. 1;

USPC ..... **D15/139**

FIG. 3 is a top view of the solid end mill of FIG. 1;

(58) **Field of Classification Search**

USPC ..... D15/21, 138, 139; D8/1, 3, 8, 98

FIG. 4 is a bottom view of the cutting insert and bolster of FIG. 1;

CPC ..... B23K 26/032; B23K 11/0026; B23K

FIG. 5 is a perspective top view of a solid end mill showing the second embodiment of our new design;

11/062; B23K 11/066; B23K 11/0873;

FIG. 6 is a side view of the solid end mill of FIG. 5;

B23K 11/0876; B23K 11/115; B23K

FIG. 7 is a top view of the solid end mill of FIG. 5;

11/24; B23K 11/248; B23K 11/252;

FIG. 8 is a bottom view of the cutting insert and bolster of FIG. 5;

B23K 11/257; B23K 11/3018; B23K

FIG. 9 is a perspective top view of a solid end mill showing the third embodiment our new design;

11/3054; B23K 11/36; B23K 15/0013;

FIG. 10 is a side view of the solid end mill of FIG. 9;

B23K 15/02; B23K 15/08; B23K 15/085;

FIG. 11 is a top view of the solid end mill of FIG. 9; and,

B23K 1/0014; B23K 1/0018; B23K

FIG. 12 is a bottom view of the cutting insert and bolster of FIG. 9.

1/0056; B23K 20/12;

(Continued)

The broken line showings of FIGS. 1-12 are included for the purposes of illustrating portions of the solid end mill and form no part of the claimed design.

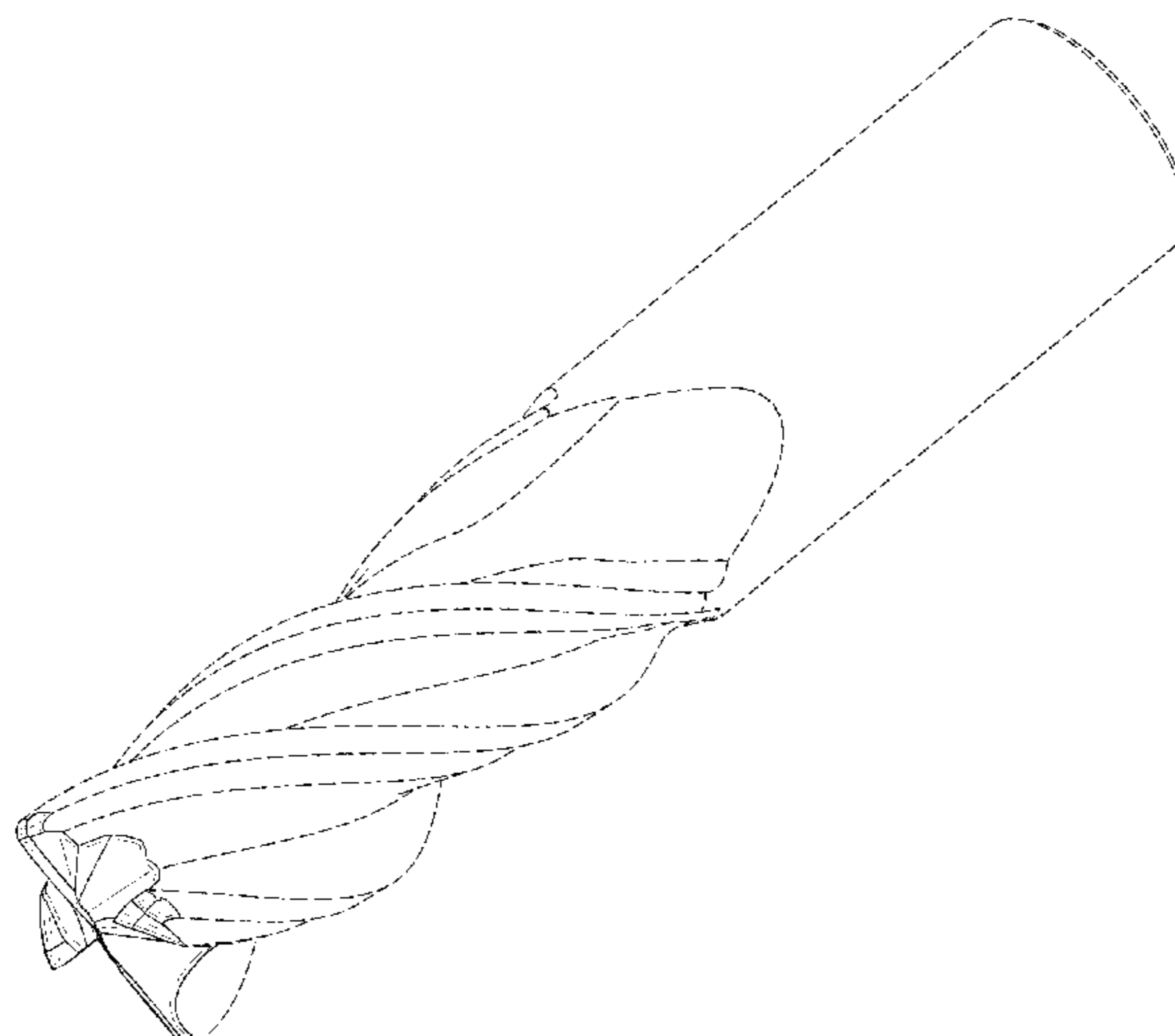
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**1 Claim, 9 Drawing Sheets**



**(58) Field of Classification Search**

CPC ..... B23K 20/1215; B23K 2201/001; B23K 2201/04; B23K 2201/125; B23K 2203/04; B23K 2203/10; B23K 2203/16; B23K 2203/26; B23K 2203/42; B23K 2203/52; B23K 26/03; B23K 26/034; B23K 26/044; B23K 26/0619; B23K 26/123; B23K 26/1429; B23K 26/20; B23K 26/28; B23K 26/362; B23K 26/38; B23K 26/382; B23K 31/02; B23K 31/12; B23K 35/0222; B23K 35/0244; B23K 35/025; B23K 35/0261; B23K 35/286; B23K 35/3006; B23K 35/3013; B23K 35/302; B23K 35/3033; B23K 35/3046; B23K 35/327; B23K 35/36; B23K 35/3603; B23K 35/3605; B23K 35/3613; B23K 35/365; B23K 37/04; B23K 9/02; B23K 9/073; B23K 9/091; B23K 9/092; B23K 9/095; B23K 9/0956; B23K 9/1006

See application file for complete search history.

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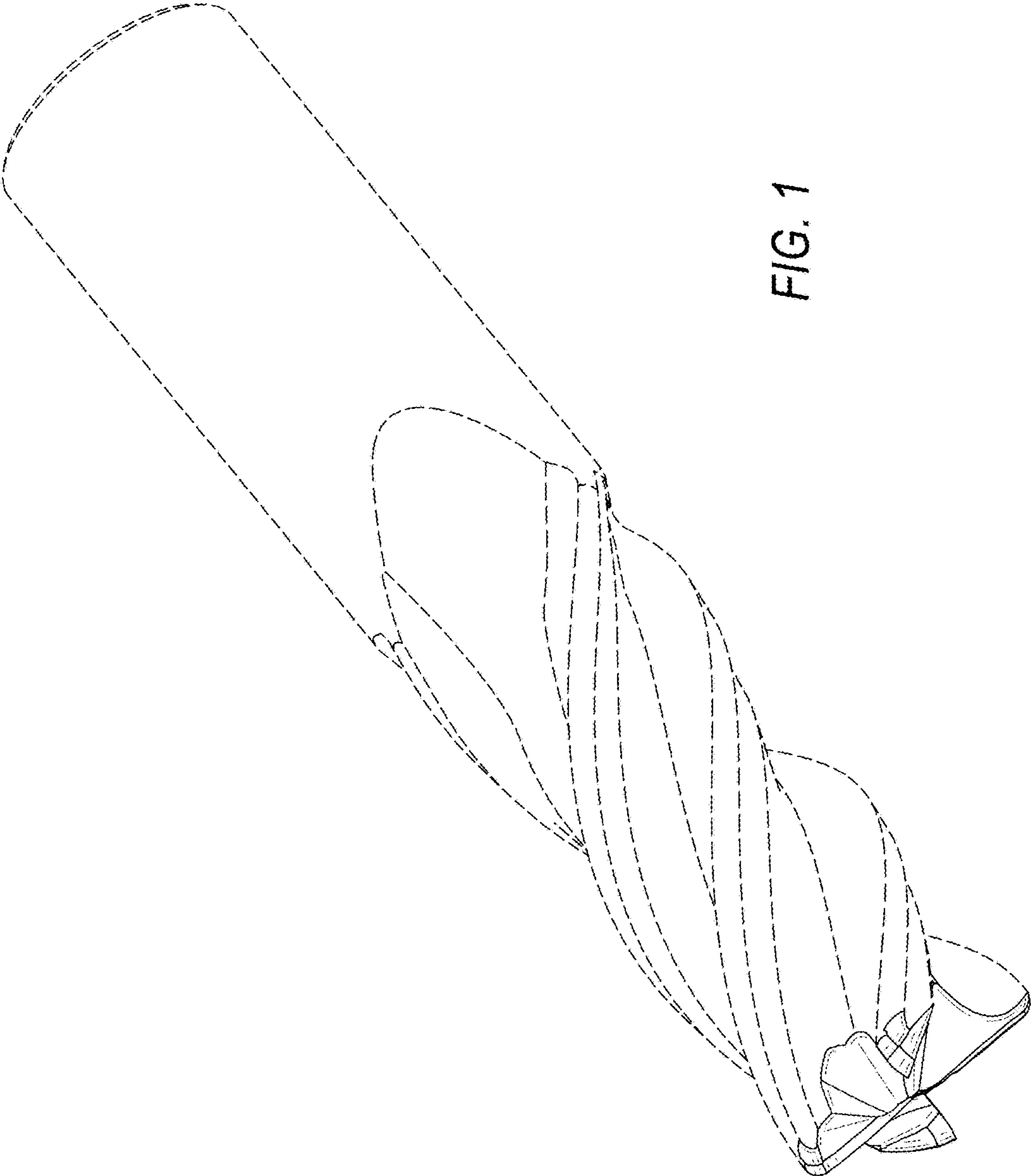


FIG. 1

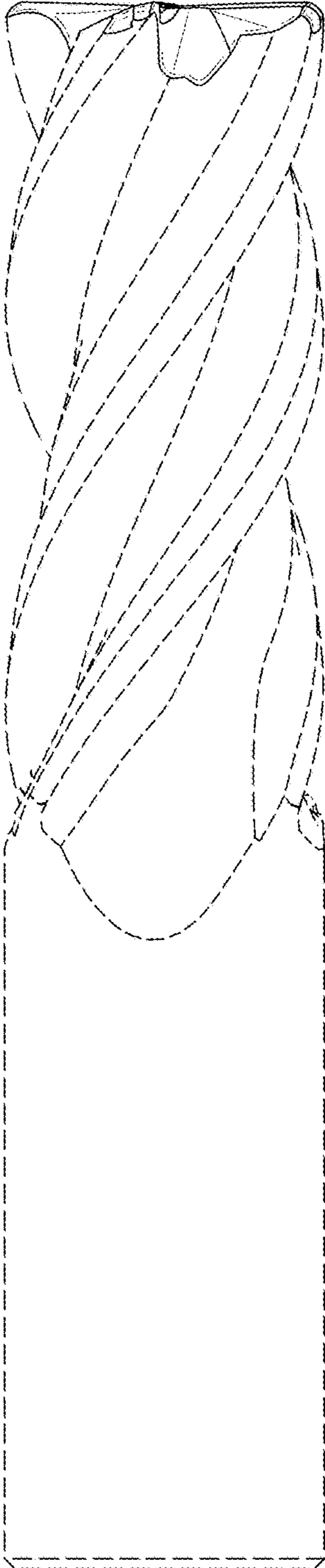


FIG. 2

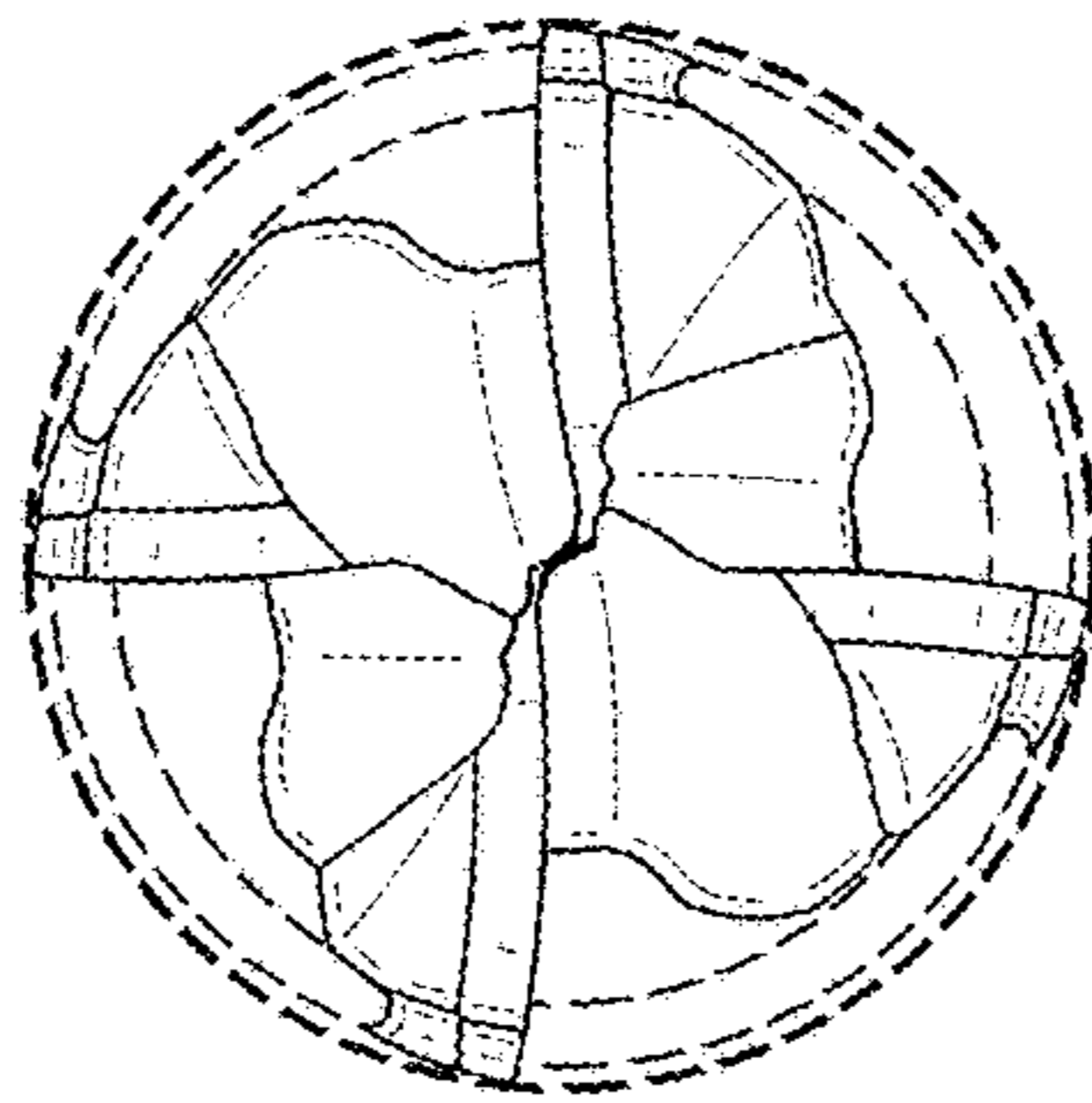


FIG. 3

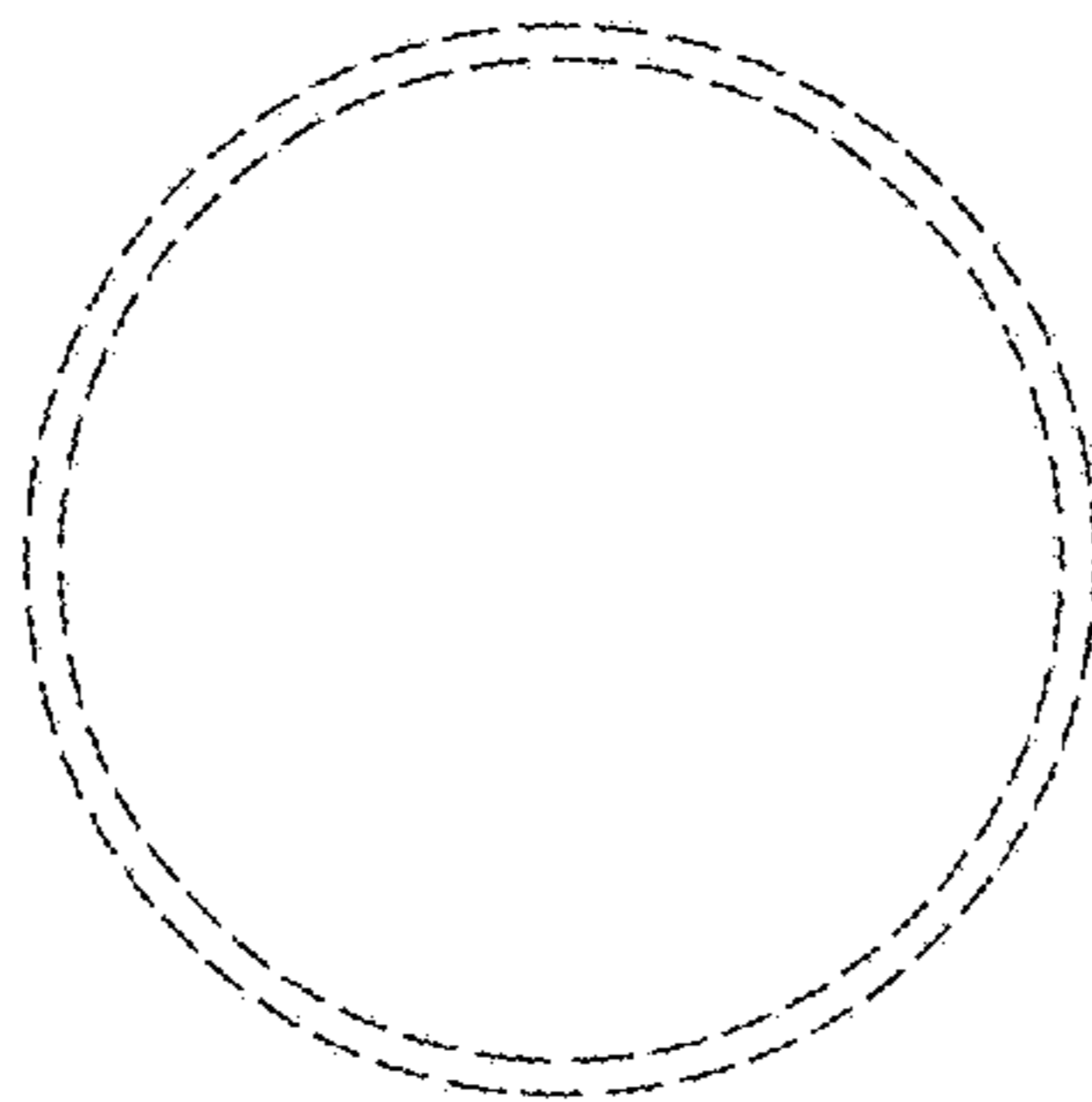


FIG. 4

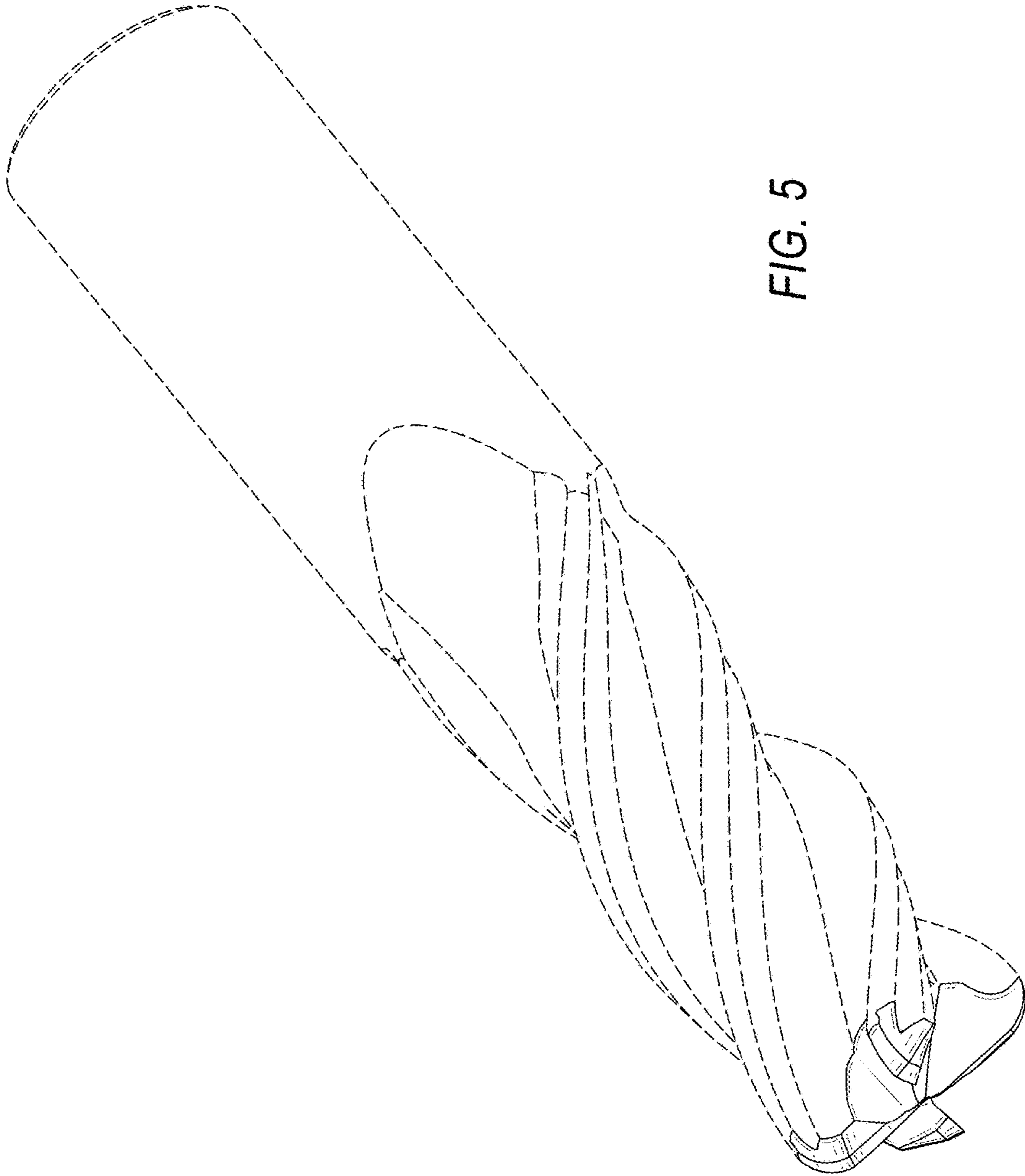


FIG. 5

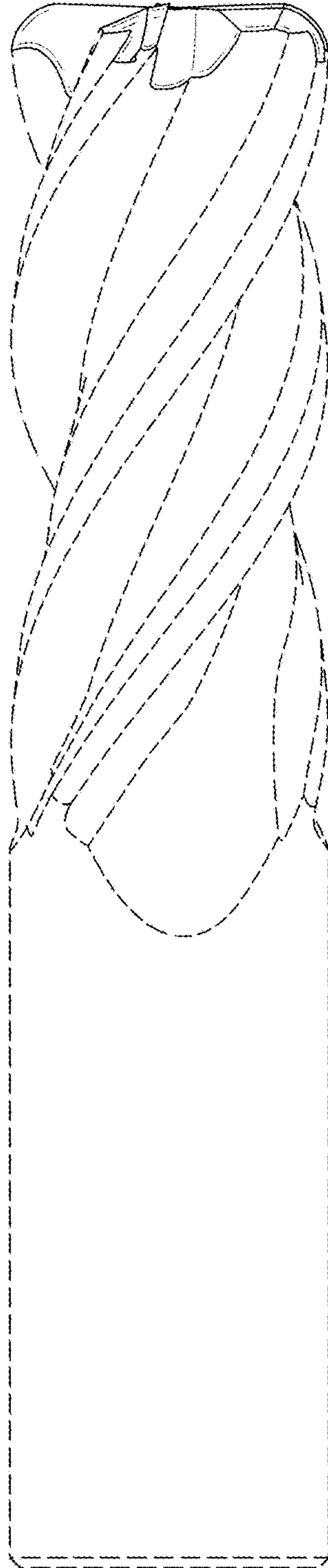


FIG. 6

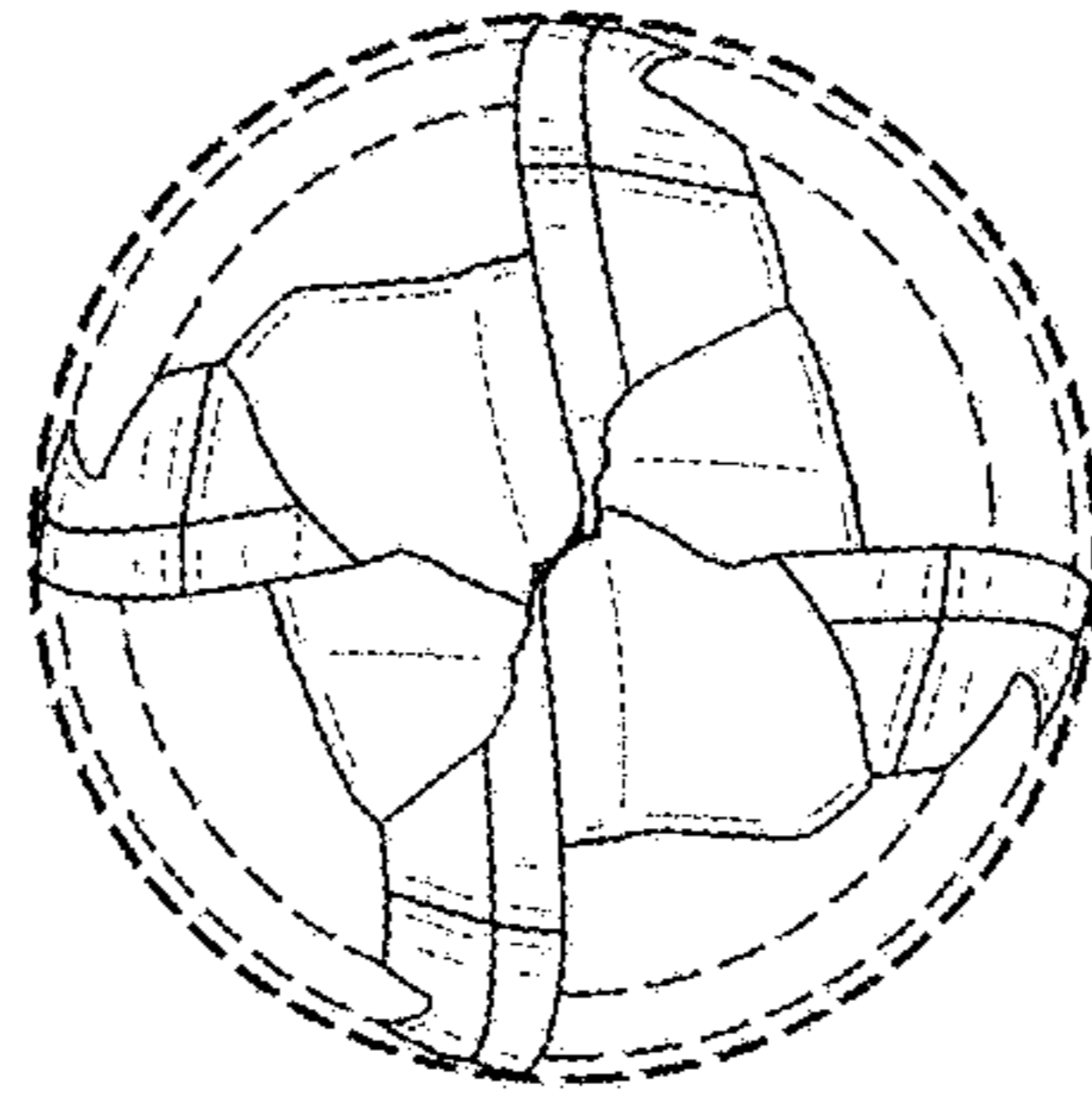


FIG. 7

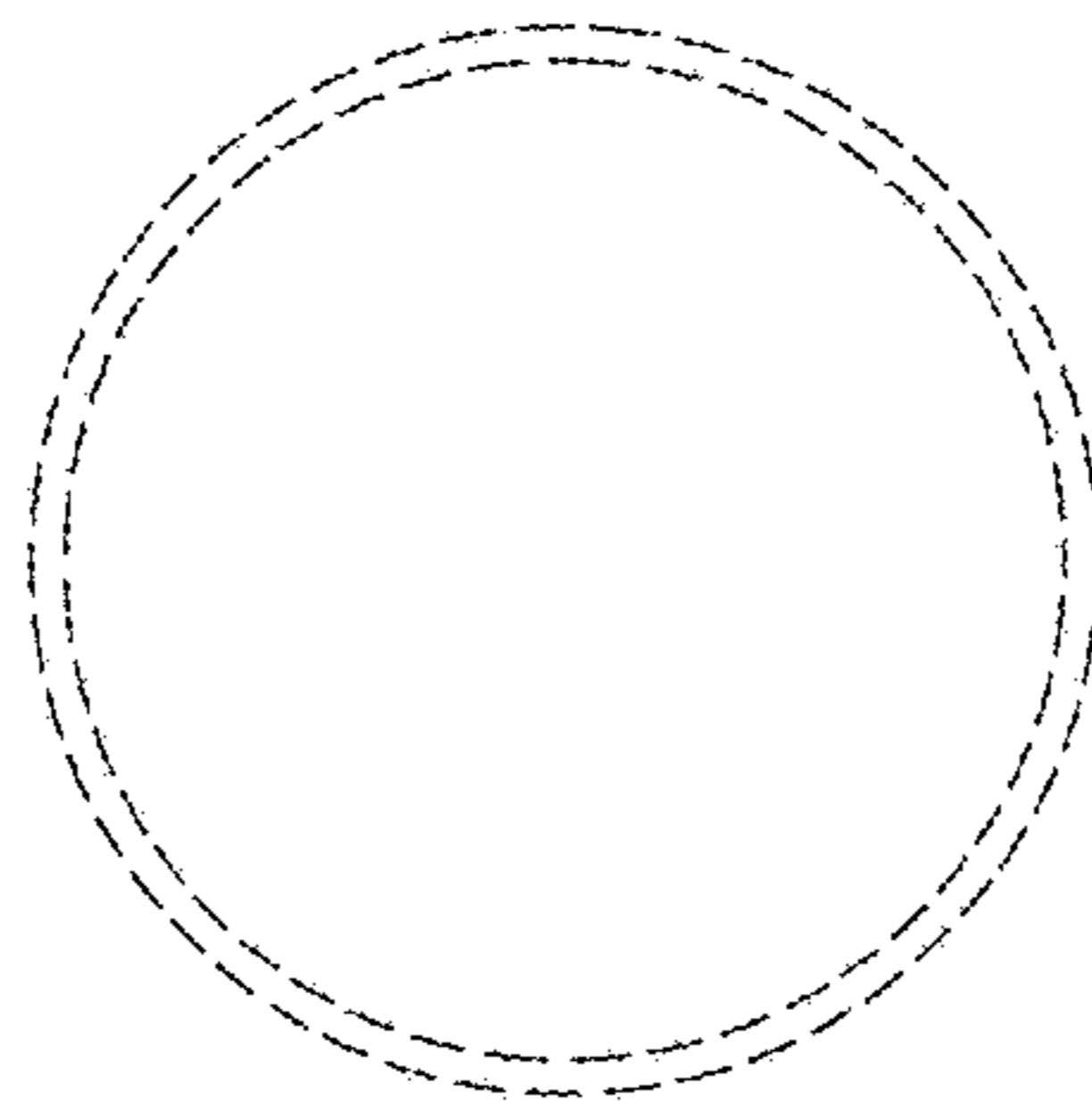


FIG. 8



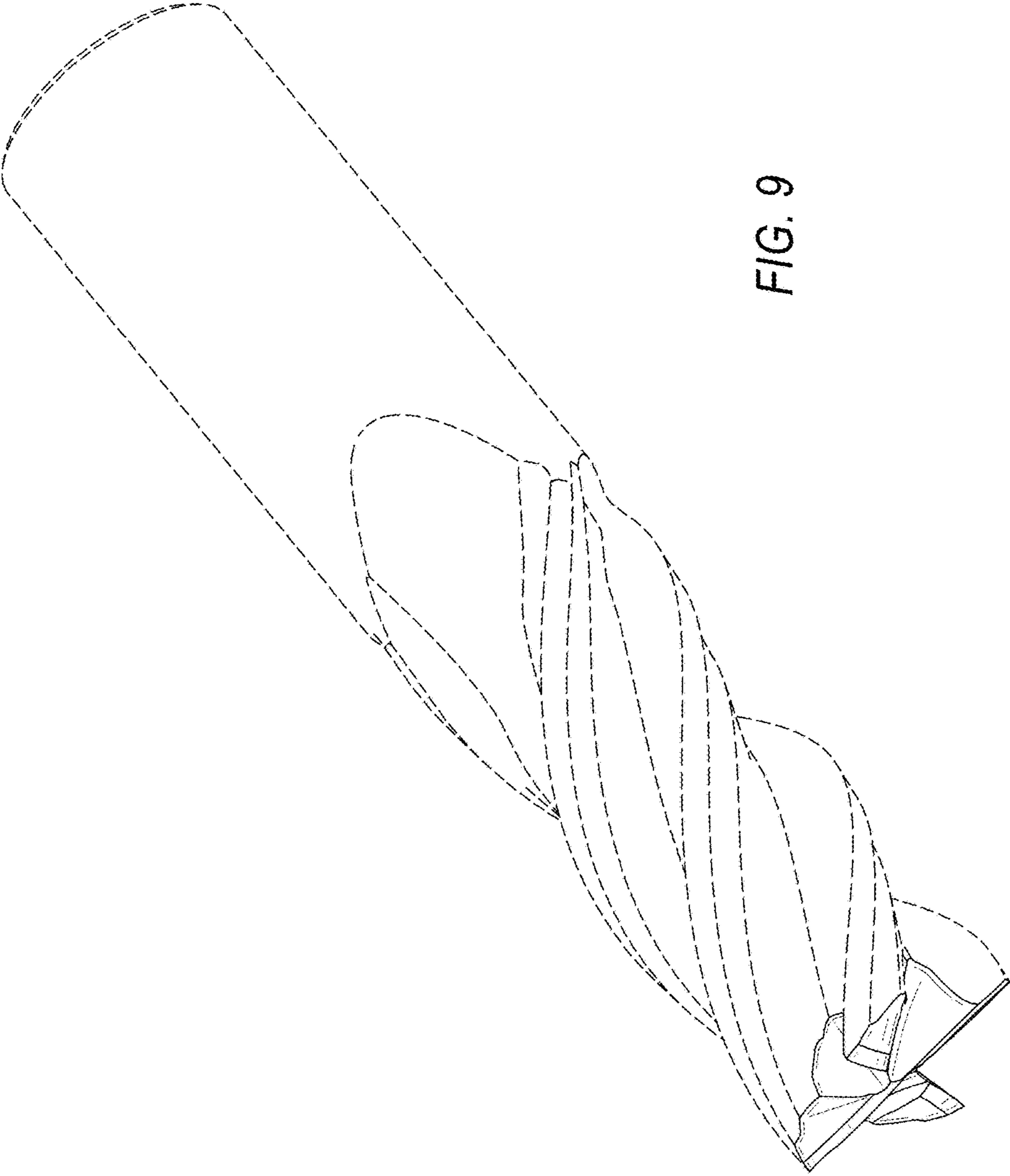


FIG. 9

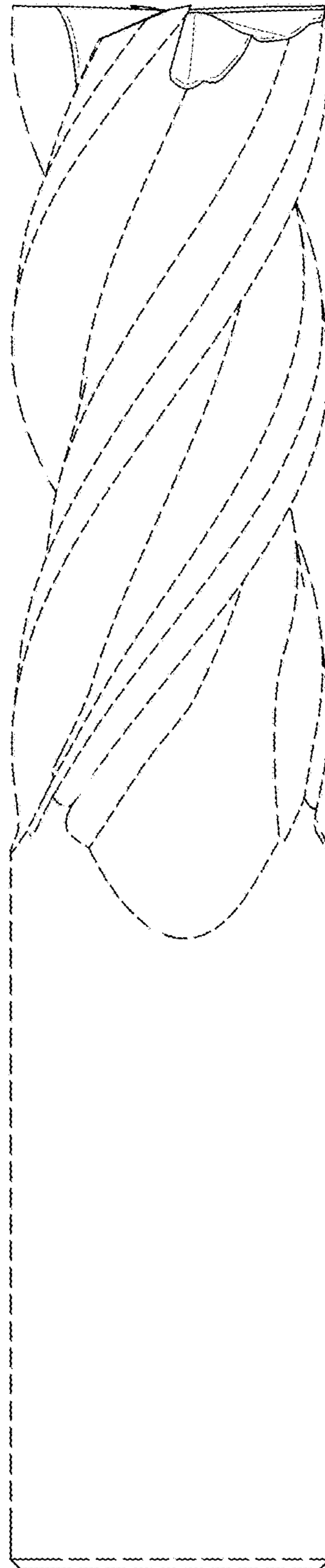


FIG. 10

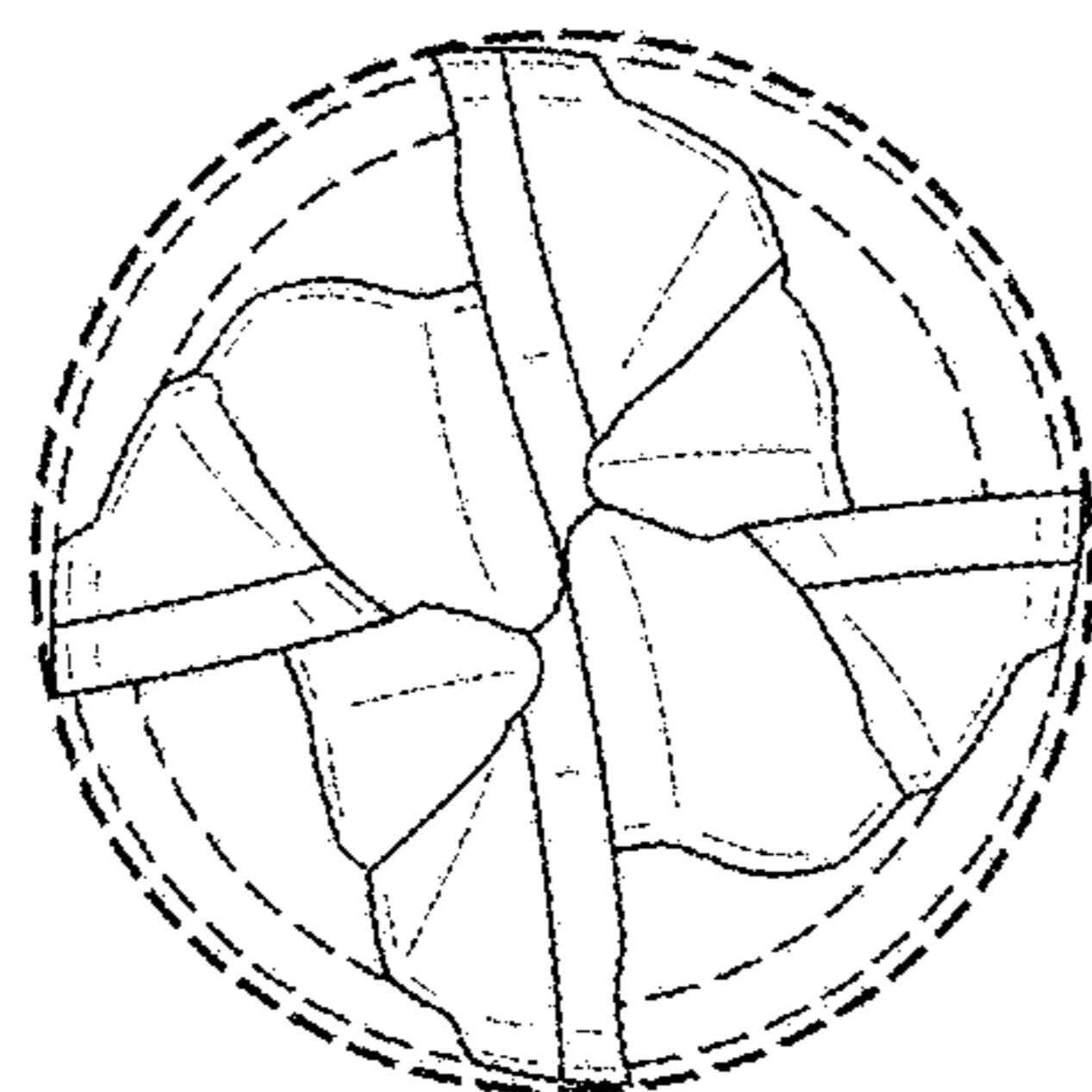


FIG. 11

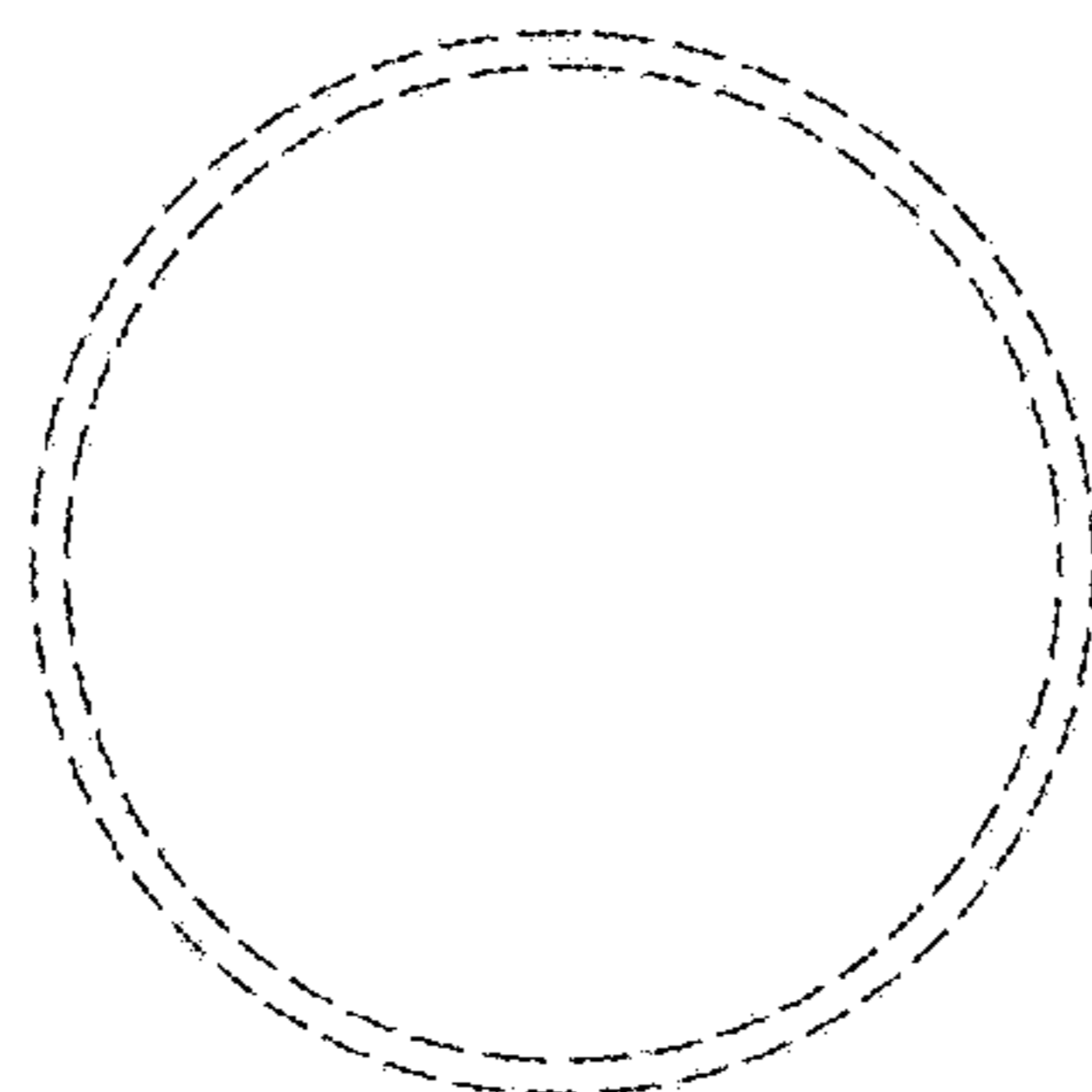


FIG. 12