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

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(45) **Date of Patent:** **\*\* Jul. 23, 2013**

(54) **END MILL**

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

(21) Appl. No.: **29/441,271**

(22) Filed: **Jan. 3, 2013**

(30) **Foreign Application Priority Data**

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(51) **LOC (9) Cl.** ..... **15-09**

(52) **U.S. Cl.**  
USPC ..... **D15/139**

(58) **Field of Classification Search**  
USPC ..... D8/70; D15/131, 132, 138, 139, D15/140; 76/102, 115; 83/845; 403/331, 403/381; 407/9, 33, 34, 42, 54, 63, 110, 113-115; 408/214, 215, 222, 223, 226-230; 433/72, 165; 470/198; 606/80

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

|              |      |         |                  |       |         |
|--------------|------|---------|------------------|-------|---------|
| 1,875,362    | A *  | 9/1932  | Wells            | ..... | 72/340  |
| D328,557     | S *  | 8/1992  | Nishimura        | ..... | D8/70   |
| D668,697     | S *  | 10/2012 | Hsu              | ..... | D15/139 |
| 2002/0067964 | A1 * | 6/2002  | Sekiguchi et al. | ..... | 407/63  |
| 2007/0154272 | A1 * | 7/2007  | Wells et al.     | ..... | 407/54  |
| 2008/0089749 | A1 * | 4/2008  | Wells et al.     | ..... | 407/54  |
| 2009/0232610 | A1 * | 9/2009  | Takagi et al.    | ..... | 407/54  |
| 2012/0020749 | A1 * | 1/2012  | Maeda et al.     | ..... | 407/42  |

\* cited by examiner

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(57) **CLAIM**

The ornamental design for an end mill, as shown and described.

**DESCRIPTION**

FIG. 1 is a front view of an end mill showing our new design;  
FIG. 2 is a rear view thereof;  
FIG. 3 is a top plan view thereof;  
FIG. 4 is a bottom plan view thereof;  
FIG. 5 is a right side view thereof; and,  
FIG. 6 is a left side view thereof.

**1 Claim, 2 Drawing Sheets**

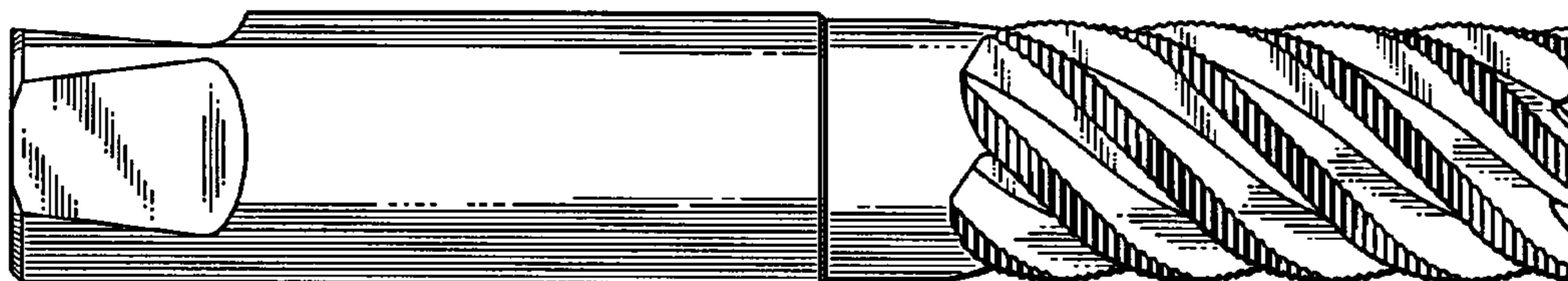


FIG.1

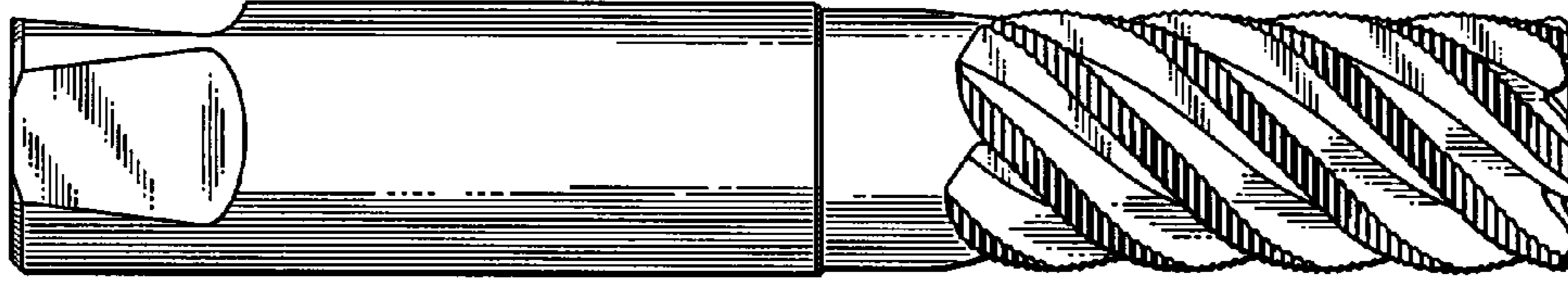


FIG.2

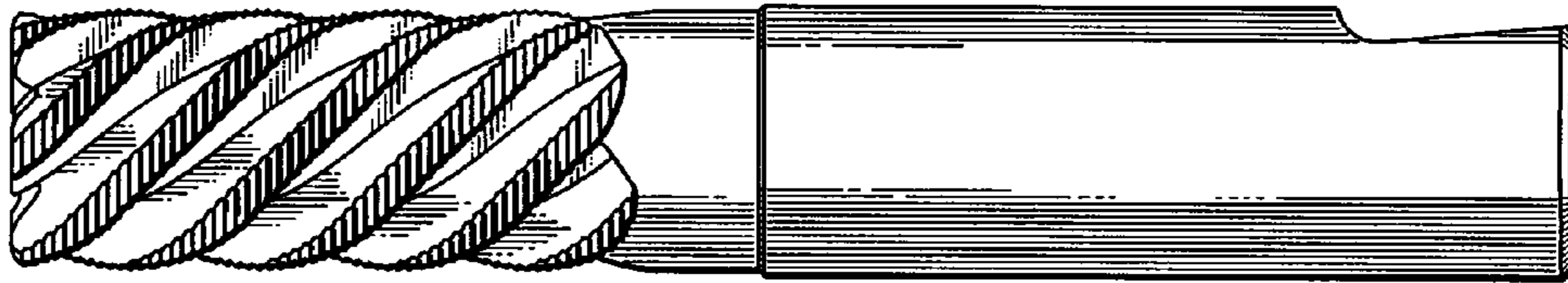


FIG.3

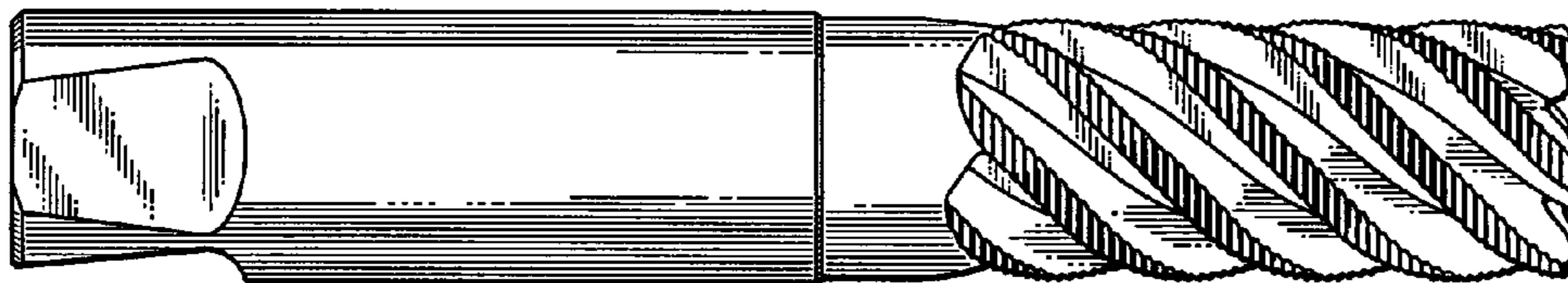


FIG.4

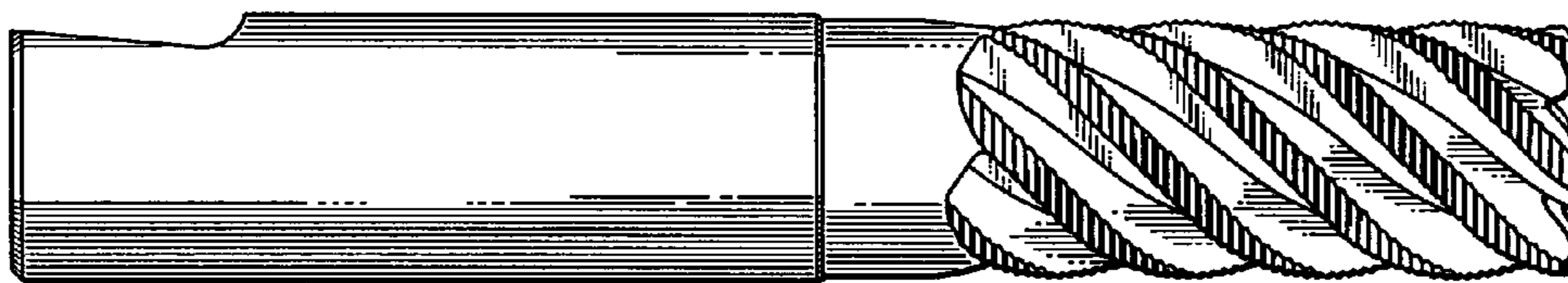


FIG.5

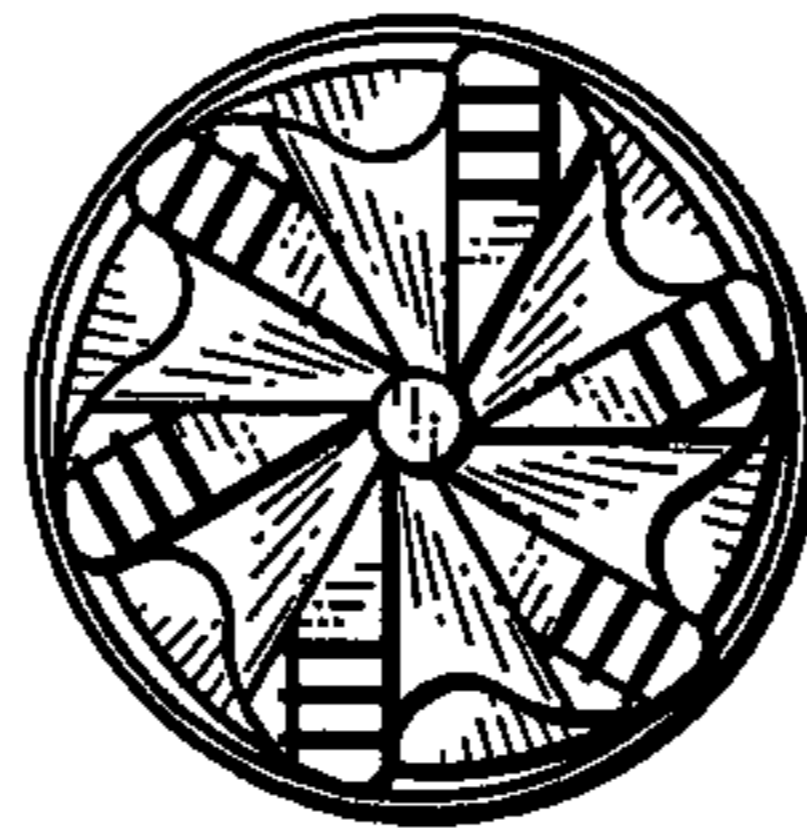


FIG.6

