



US00D556225S

(12) **United States Design Patent** (10) **Patent No.:** **US D556,225 S**
Sakata et al. (45) **Date of Patent:** **** Nov. 27, 2007**

(54) **END MILL**

(75) Inventors: **Naoki Sakata**, Hyogo (JP); **Kazufumi Yamanaka**, Hyogo (JP); **Keiji Kinoshita**, Hyogo (JP)

(73) Assignee: **Sumitomo Electric Hardmetal Corp.**, Hyogo (JP)

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

(21) Appl. No.: **29/274,703**

(22) Filed: **May 17, 2007**

Related U.S. Application Data

(62) Division of application No. 29/251,802, filed on Jan. 13, 2006.

(30) Foreign Application Priority Data

Aug. 10, 2005 (JP) 2005-023214
Aug. 10, 2005 (JP) 2005-023217
Aug. 10, 2005 (JP) 2005-023220
Aug. 10, 2005 (JP) 2005-023226
Aug. 10, 2005 (JP) 2005-023227

(51) **LOC (8) Cl.** **15-09**

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

(58) **Field of Classification Search** D15/131,
D15/132, 138, 139; 407/40, 42, 54, 187,
407/199, 223, 224, 227, 229, 233, 239 A,
407/239 R, 700, 713

See application file for complete search history.

(56) References Cited

U.S. PATENT DOCUMENTS

3,696,484 A * 10/1972 Spriggs 407/41
4,132,493 A * 1/1979 Hosoi 407/53

4,280,774 A * 7/1981 Hayama 407/36
D307,020 S * 4/1990 Lyng et al. D15/139
D309,317 S * 7/1990 Tsujimura et al. D15/139
5,376,092 A * 12/1994 Hein et al. 408/207
5,598,751 A * 2/1997 Ochayon et al. 408/226
6,652,201 B2 * 11/2003 Kunimori et al. 407/42
D492,331 S * 6/2004 Matti D15/139
2002/0037199 A1 * 3/2002 Satran et al. 407/54

* cited by examiner

Primary Examiner—Gary D. Watson

Assistant Examiner—Patricia Palasik

(74) *Attorney, Agent, or Firm*—McDermott Will & Emery LLP

(57) CLAIM

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

DESCRIPTION

FIG. 1 is a plan view of the end mill;
FIG. 2 is a front view thereof;
FIG. 3 is a bottom plan view thereof;
FIG. 4 is a rear view thereof;
FIG. 5 is a left-hand side view thereof;
FIG. 6 is a right-hand side view thereof;
FIG. 7 is a sectional view taken generally along line 7—7 of FIG. 2; and,
FIG. 8 is a sectional view taken generally along line 8—8 of FIG. 5.

The broken lines are included for the purpose of illustrating non-claimed subject matter and form no part of the claimed design.

1 Claim, 3 Drawing Sheets

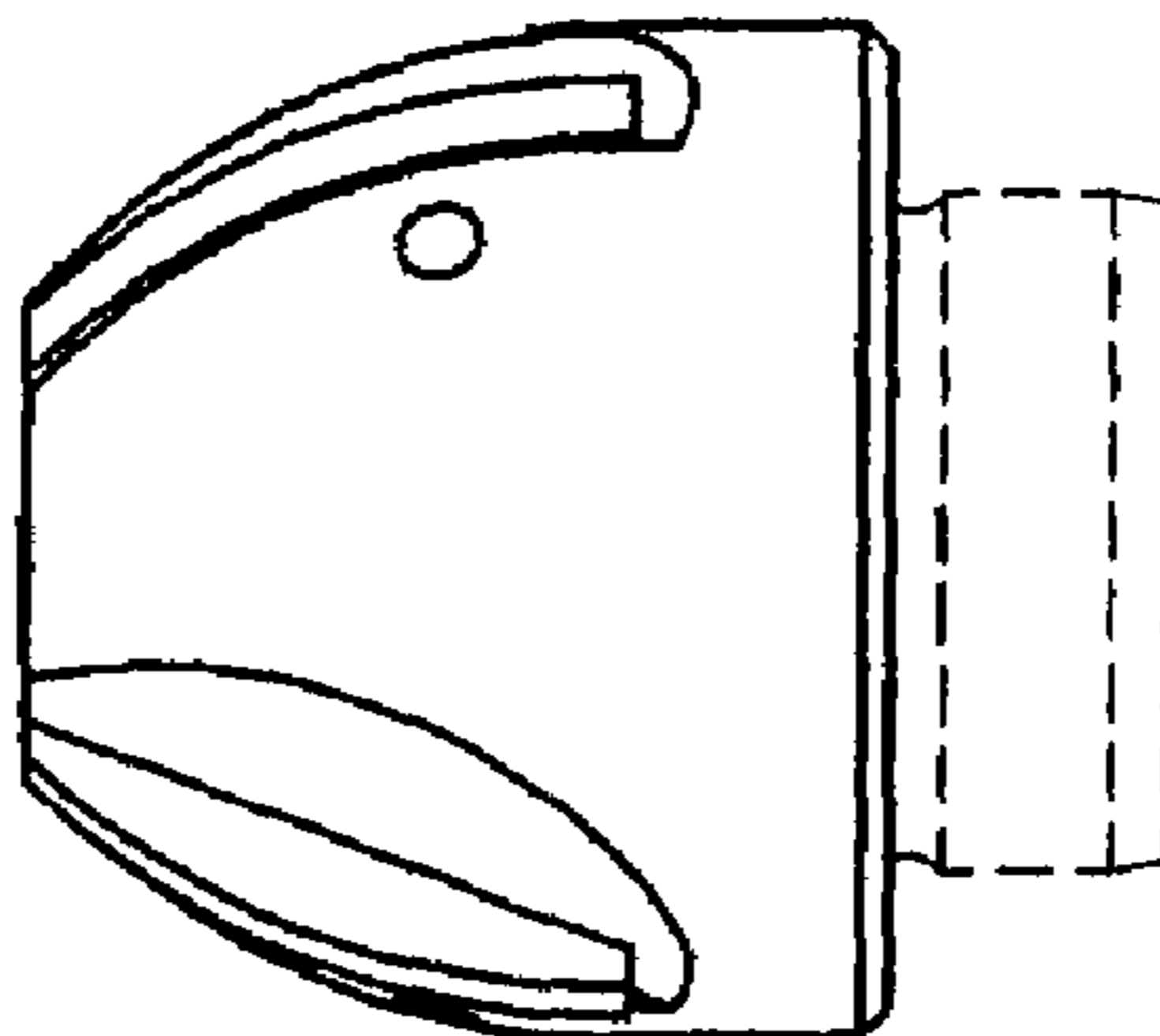


Fig. 1

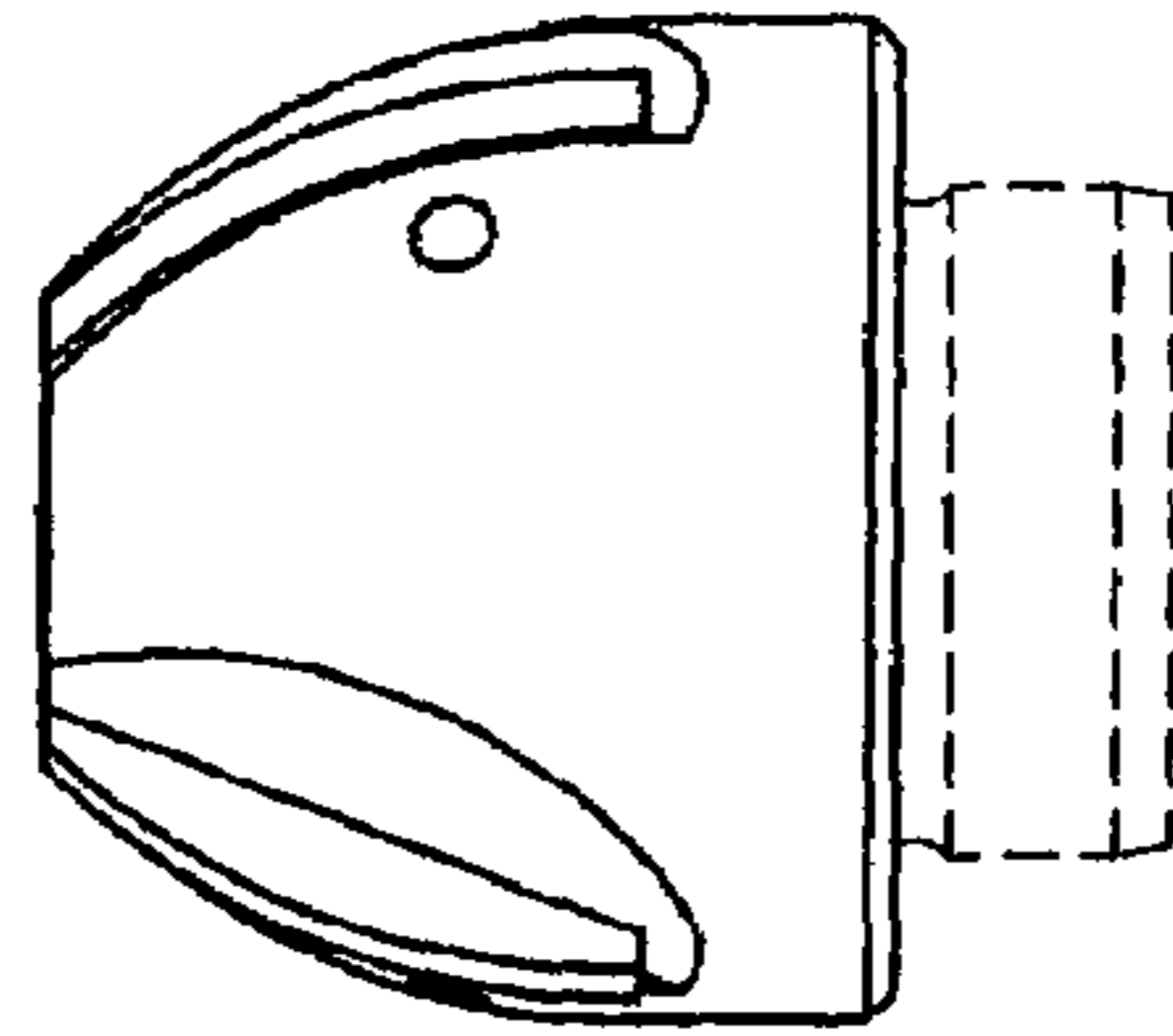


Fig. 2

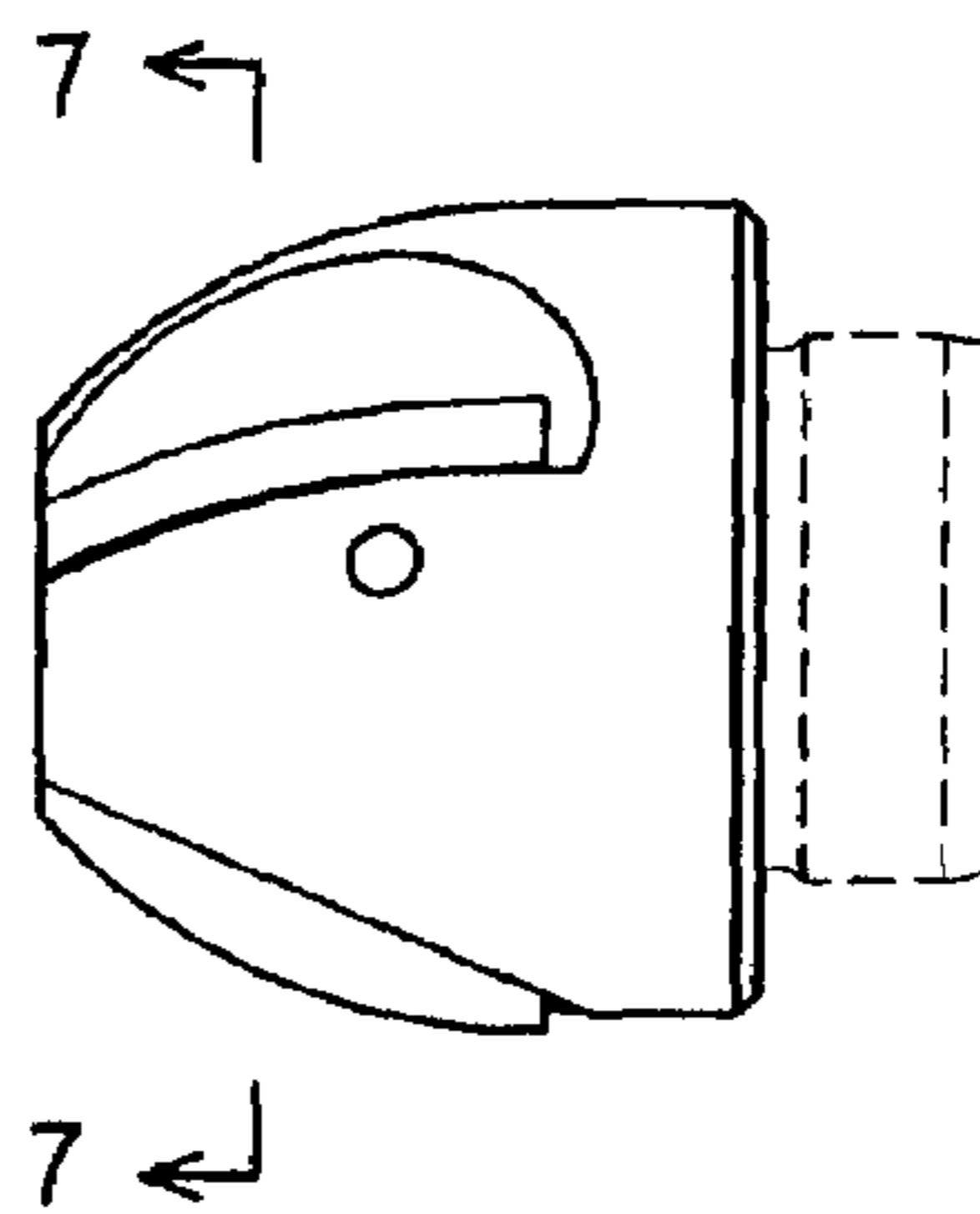


Fig. 3

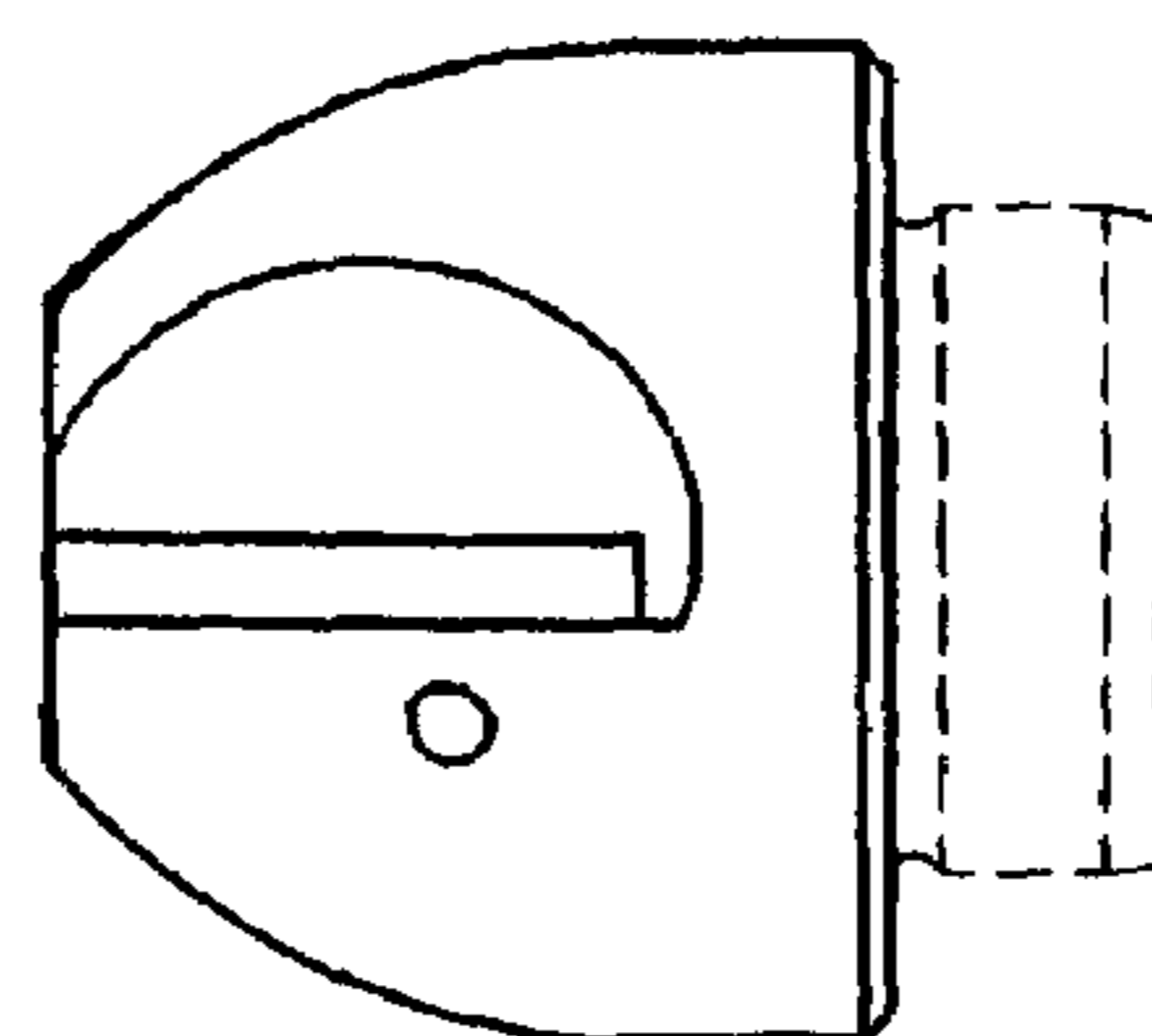


Fig. 4

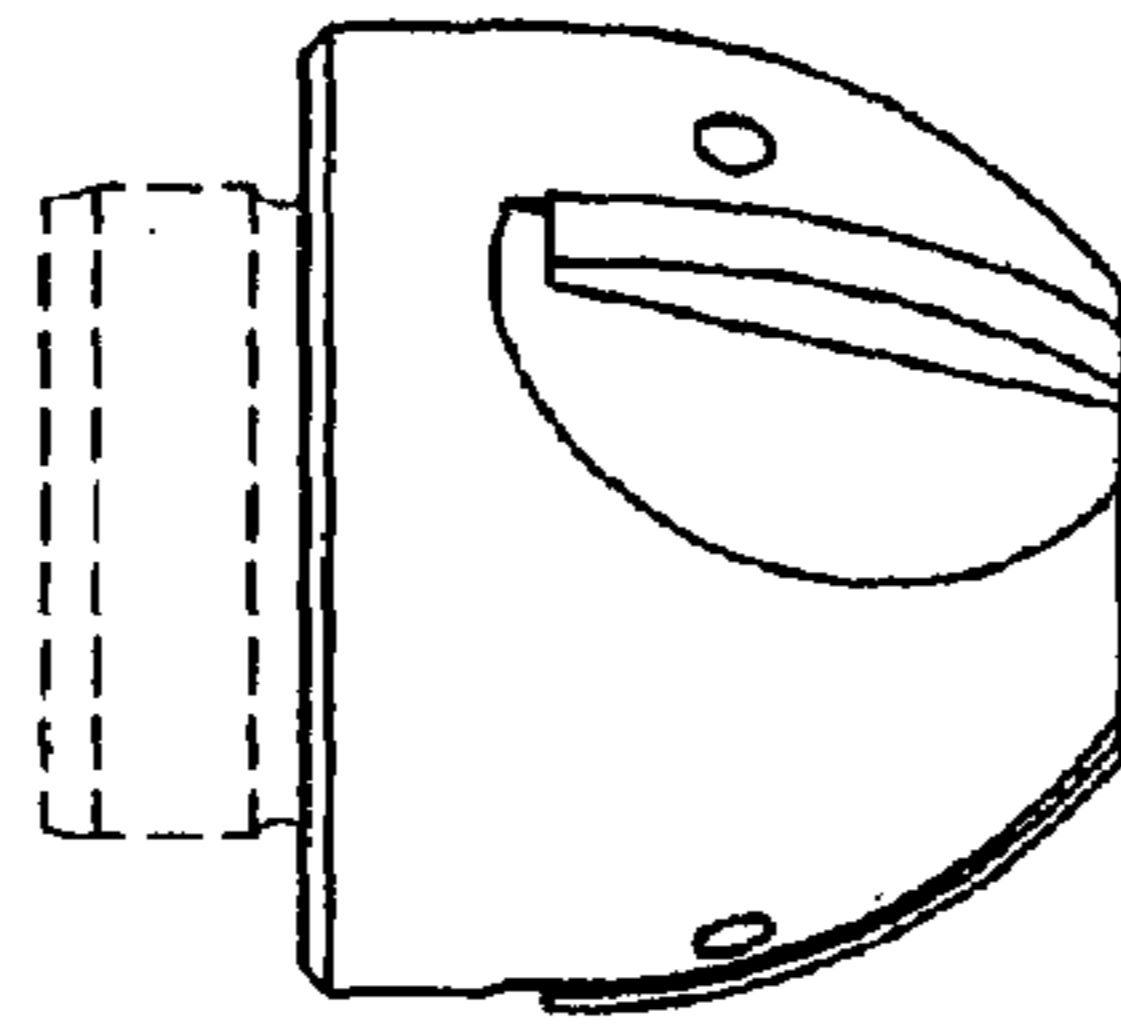


Fig. 5

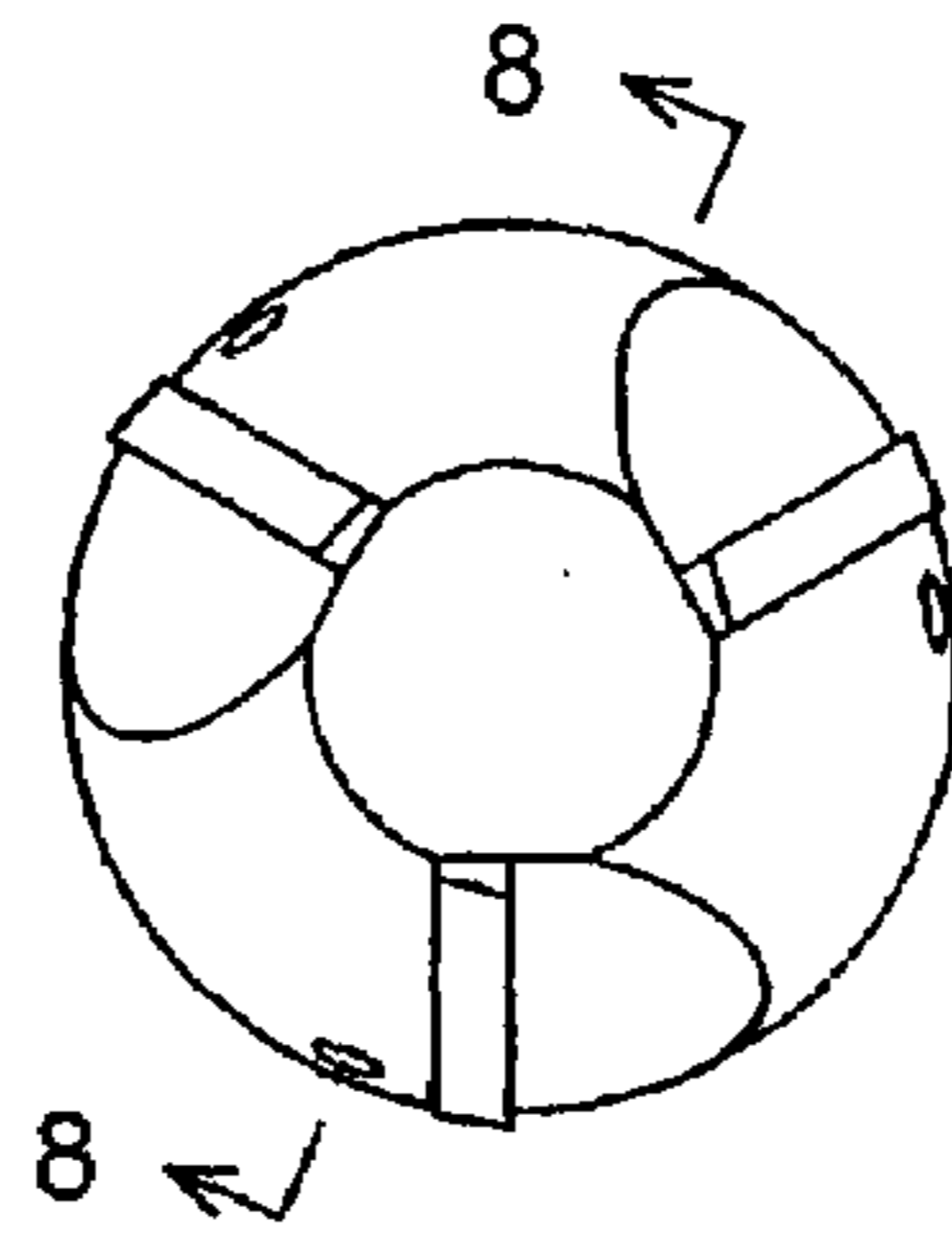


Fig. 6

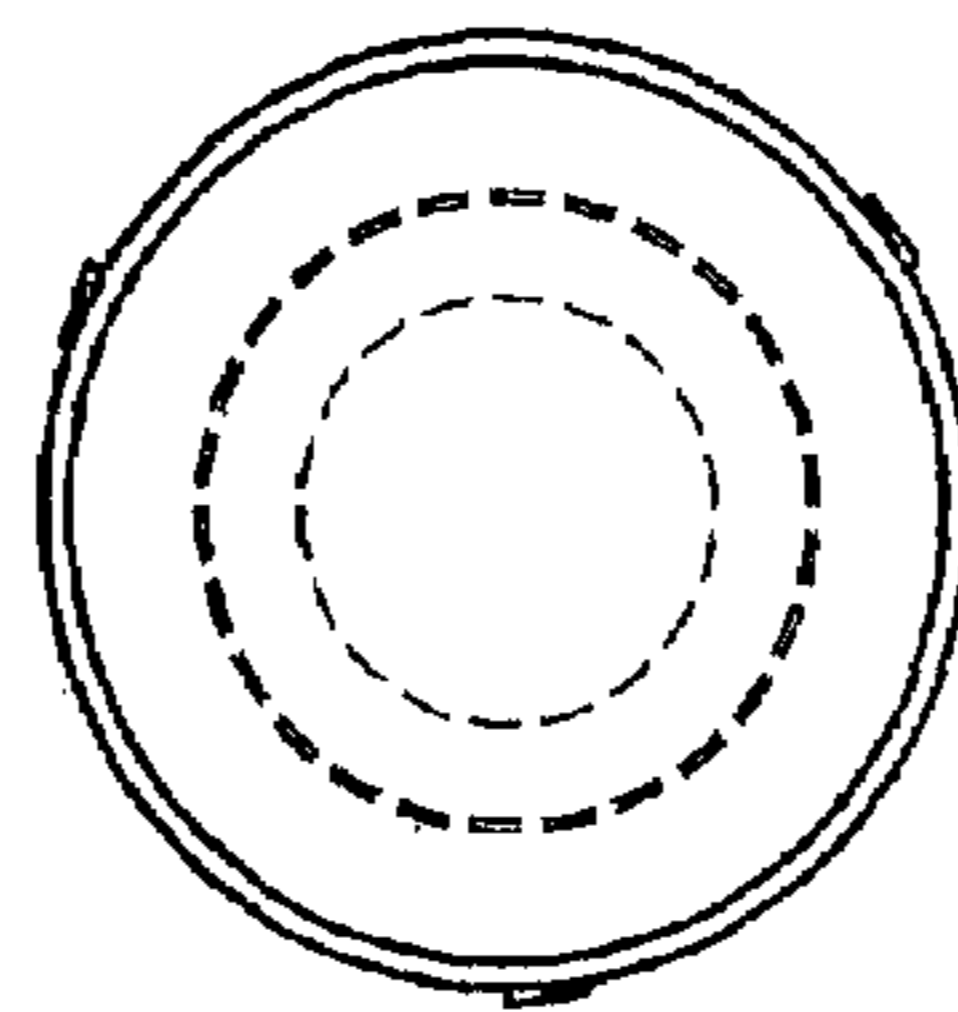


Fig. 7

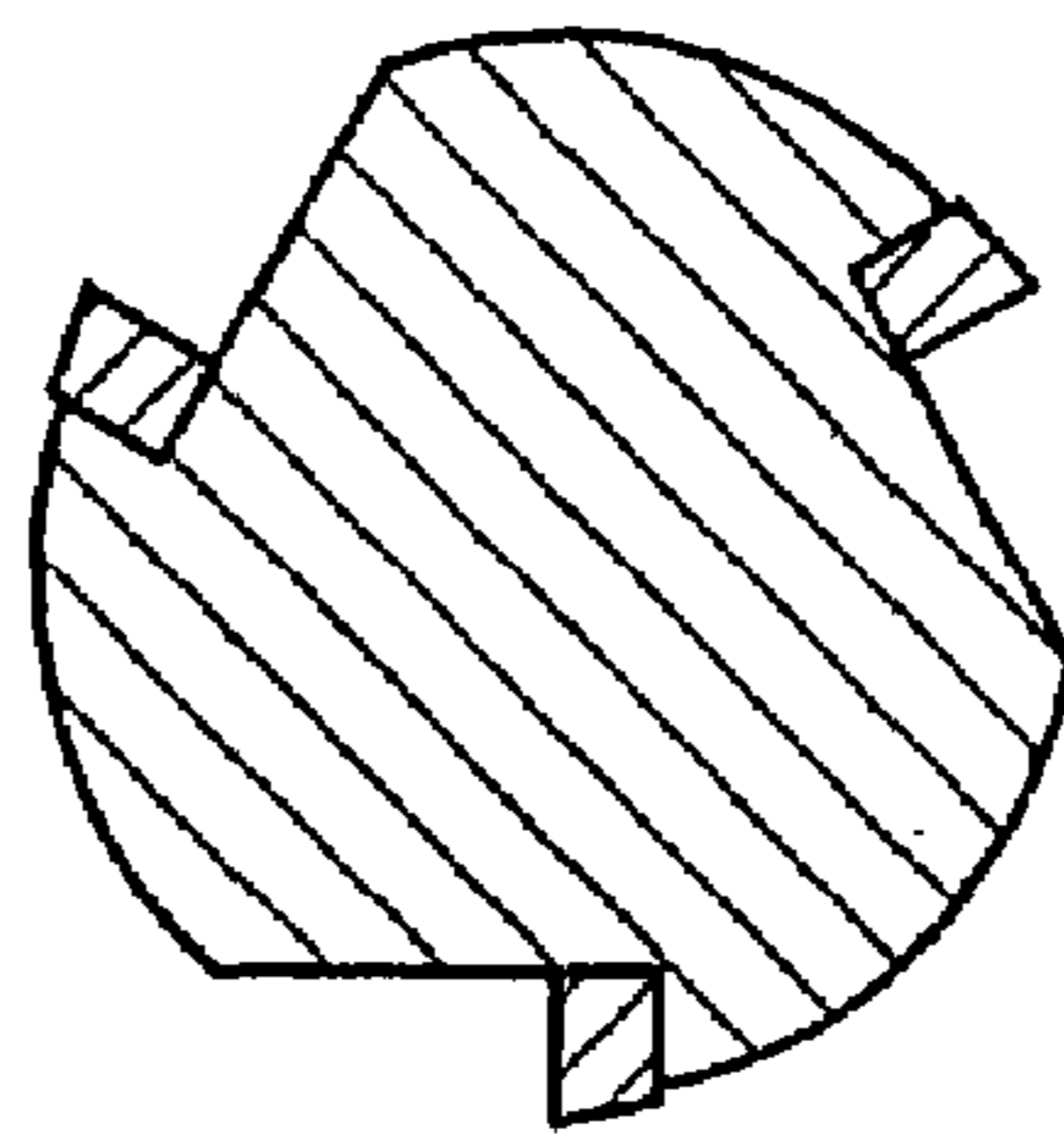


Fig. 8

