



US00D603726S

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

(10) **Patent No.:** **US D603,726 S**
(45) **Date of Patent:** **** Nov. 10, 2009**

(54) **CRYSTAL RESONATOR FOR BIO-SENSOR**

(75) Inventors: **Shigenori Watanabe**, Saitama (JP);
Shunichi Wakamatsu, Saitama (JP);
Tomoya Yorita, Saitama (JP); **Takeru Mutoh**, Saitama (JP)

(73) Assignee: **Nihon Dempa Kogyo Co., Ltd.**, Tokyo (JP)

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

(21) Appl. No.: **29/310,757**

(22) Filed: **Sep. 9, 2008**

(51) **LOC (9) Cl.** **10-04**

(52) **U.S. Cl.** **D10/46**

(58) **Field of Classification Search** D10/46;
73/24.06, 580, 778; 310/8.2, 8.9, 320, 344,
310/553, 361, 370; 324/715–719; 333/72

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,041,754 A * 8/1991 Smythe 310/366
5,323,083 A * 6/1994 Smythe et al. 310/351
D575,169 S 8/2008 Wakamatsu et al.

OTHER PUBLICATIONS

U.S. Appl. No. 29/294,262, filed Dec. 31, 2007, Shunichi Wakamatsu, et al.

* cited by examiner

Primary Examiner—Antoine D Davis

(74) *Attorney, Agent, or Firm*—Edwards Angell Palmer & Dodge LLP; Scott D. Wofsy

(57) **CLAIM**

The ornamental design for a crystal resonator for a bio-sensor, as shown and described.

DESCRIPTION

FIG. 1 is a front view of a crystal resonator for a bio-sensor of a new design;

FIG. 2 is a back view thereof;

FIG. 3 is a left side view thereof;

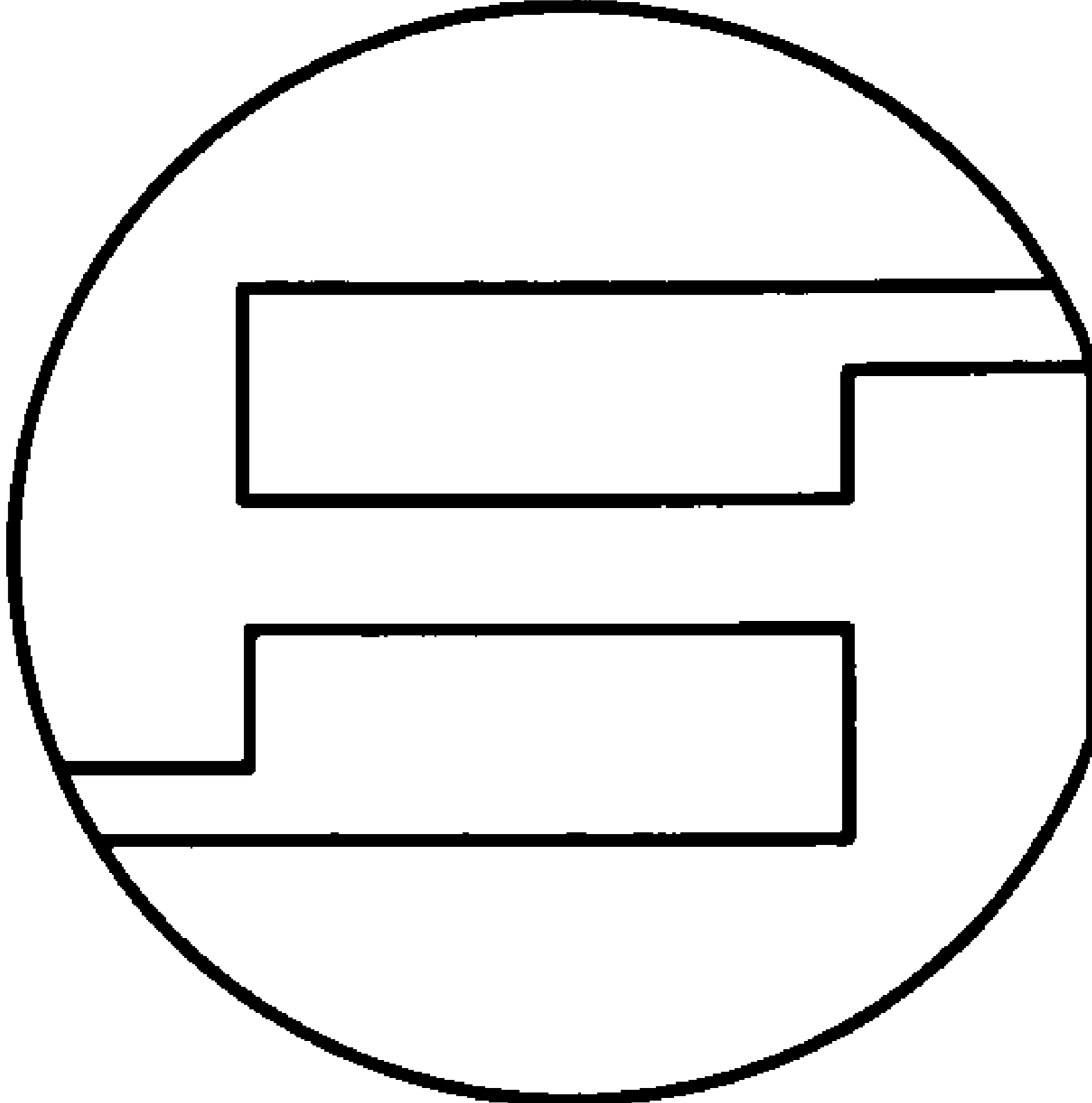
FIG. 4 is a right side view thereof;

FIG. 5 is a plan view thereof;

FIG. 6 is a bottom plan view thereof; and,

FIG. 7 is a referential perspective drawing showing transparent portions of the bio-sensor.

1 Claim, 3 Drawing Sheets



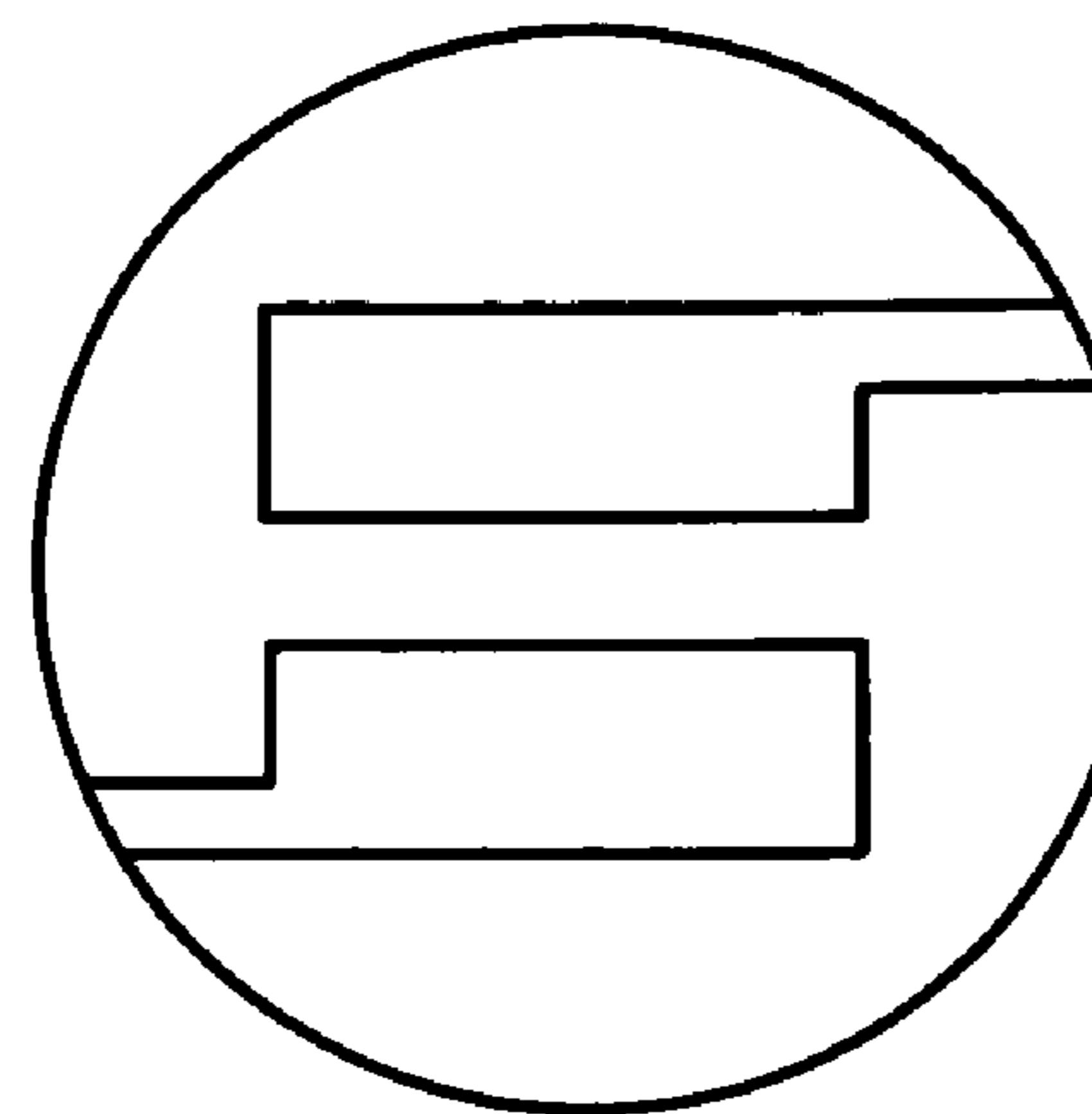


Fig. 1

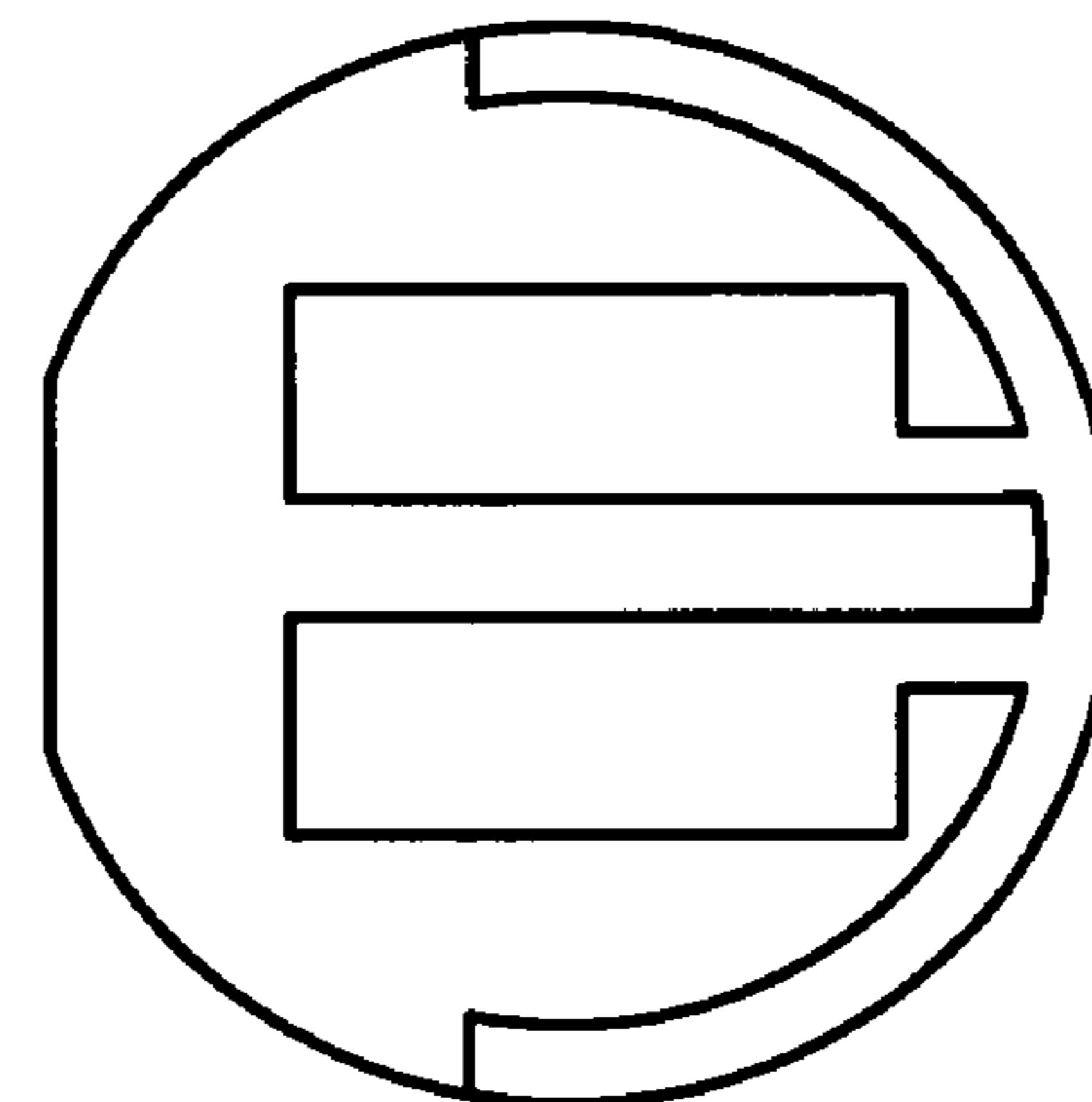


Fig. 2



Fig. 3



Fig. 4



Fig. 5



Fig. 6

FIG. 7

