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

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(45) **Date of Patent:** **\*\* Jun. 1, 2010**

(54) **AC-DC CONVERTER**

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(73) Assignee: **Hosiden Corporation**, Osaka (JP)

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

(21) Appl. No.: **29/352,420**

(22) Filed: **Dec. 21, 2009**

**Related U.S. Application Data**

(62) Division of application No. 29/340,618, filed on Jul. 22, 2009, now Pat. No. Des. 609,639, which is a division of application No. 29/332,682, filed on Feb. 23, 2009, now Pat. No. Des. 601,501.

(51) **LOC (9) Cl.** ..... **13-02**

(52) **U.S. Cl.** ..... **D13/110**

(58) **Field of Classification Search** ..... D13/110,  
D13/101, 107, 123, 133, 138.1, 199; 307/150,  
307/151; 320/111, 114; 361/601, 625; 363/15,  
363/34, 146; 439/5, 131, 172, 173, 668,  
439/669

See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

- 4,625,259 A \* 11/1986 Krechmer et al. .... 361/610
- D308,962 S 7/1990 Duk
- D350,113 S 8/1994 Nagele
- D367,257 S \* 2/1996 Buelow et al. .... D13/110
- 5,744,934 A 4/1998 Wu
- D407,066 S 3/1999 Renk

- D408,786 S \* 4/1999 Goto ..... D13/138.1
- D409,138 S 5/1999 Gammenthaler
- 6,042,400 A 3/2000 Queffelec et al.
- 6,086,395 A 7/2000 Lloyd et al.
- D454,537 S 3/2002 O'Connor et al.
- D478,546 S 8/2003 Andre et al.
- D483,721 S 12/2003 Kim et al.
- D491,142 S 6/2004 Stekelenburg
- 6,793,509 B2 9/2004 Chen
- D548,187 S 8/2007 Holland
- D567,174 S \* 4/2008 Jidaisho ..... D13/110

\* cited by examiner

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(57) **CLAIM**

The ornamental design for an AC-DC converter, as shown and described.

**DESCRIPTION**

FIG. 1 is a front, left side and top perspective view of an AC-DC converter showing our new design;

FIG. 2 is a front, left side and bottom perspective view thereof;

FIG. 3 is a front elevation view thereof, the rear elevation view being a mirror image;

FIG. 4 is a left side view thereof;

FIG. 5 is a right side view thereof;

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

FIG. 7 is a bottom plan view thereof.

**1 Claim, 3 Drawing Sheets**

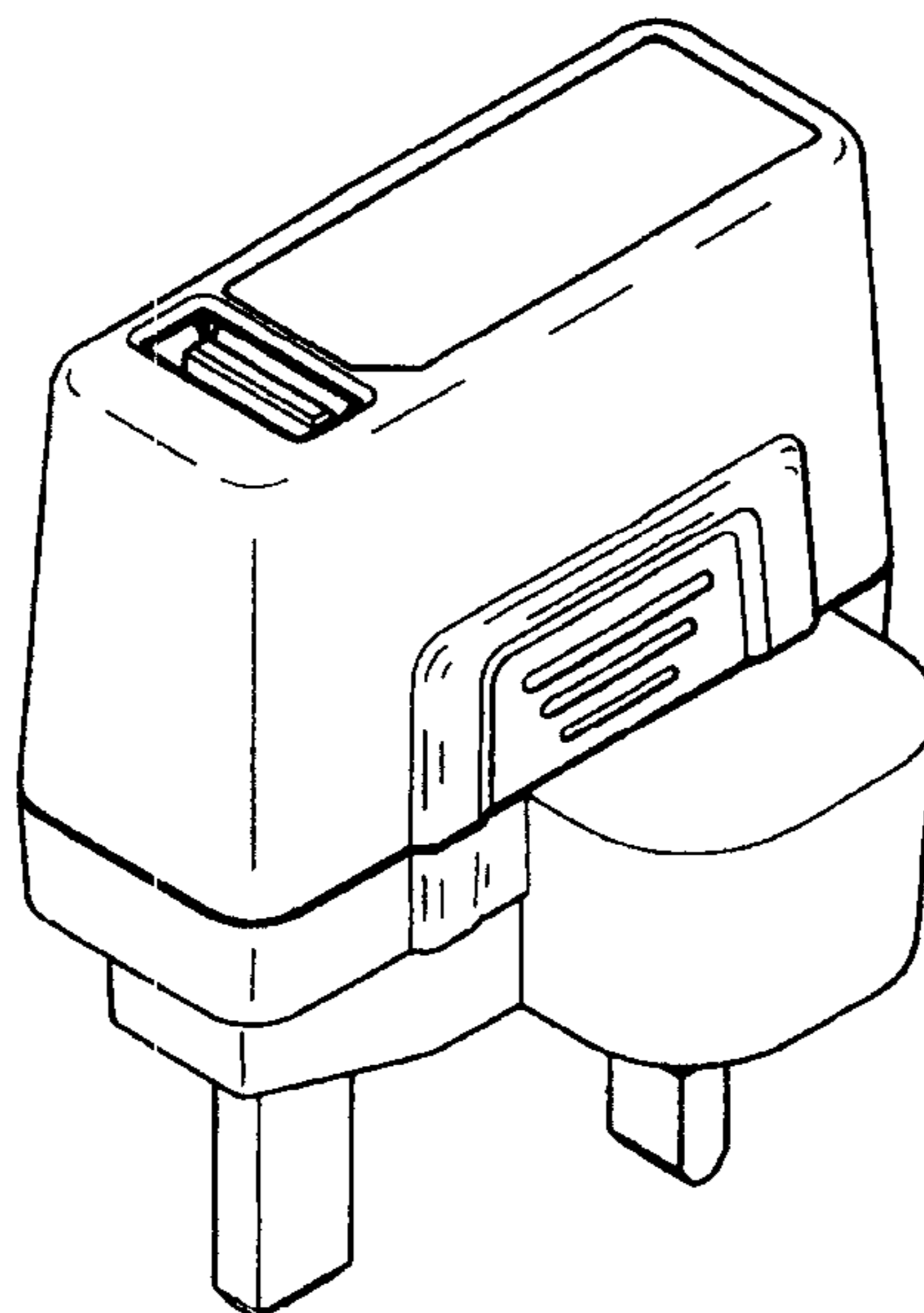


FIG. 1

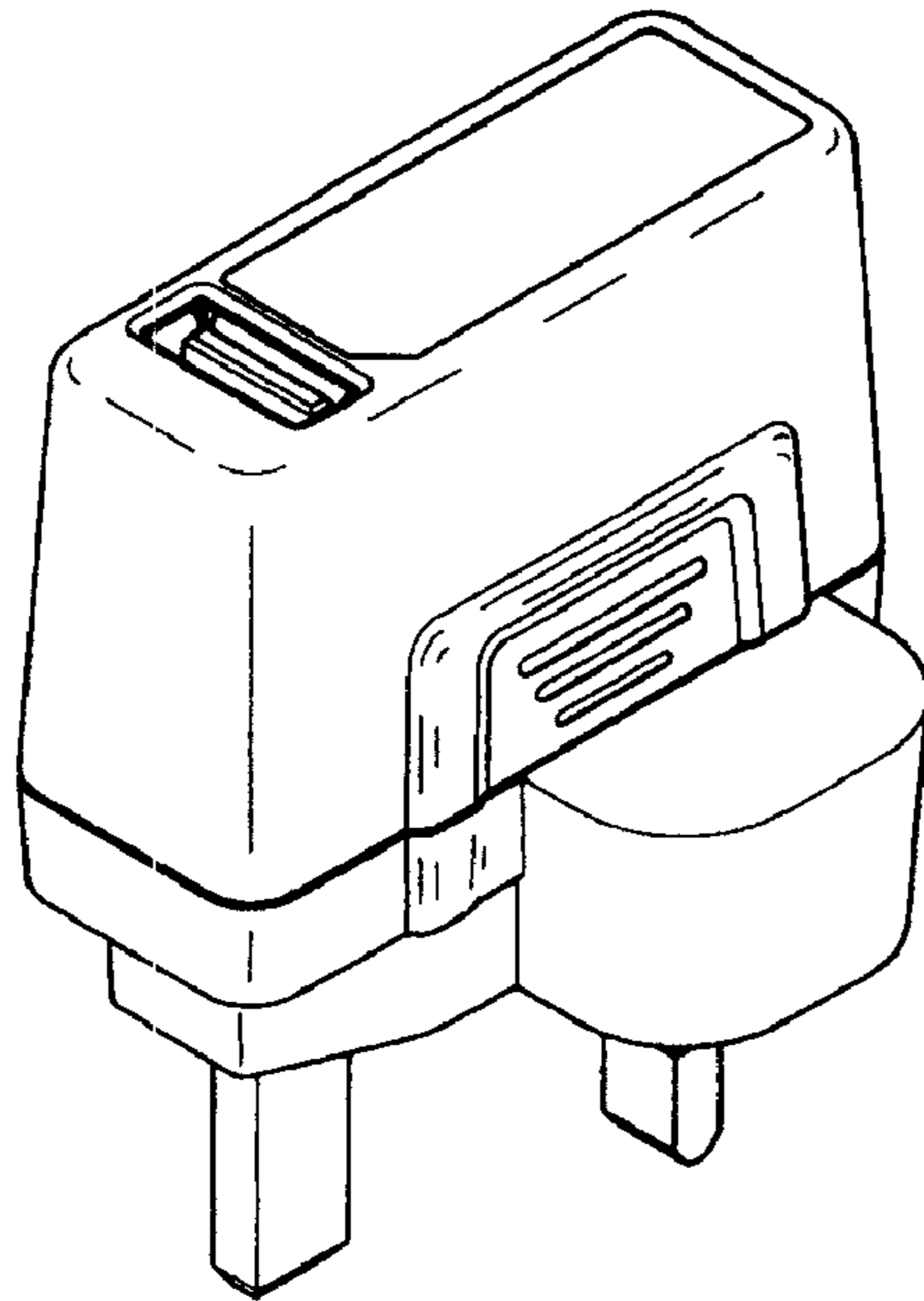


FIG. 2

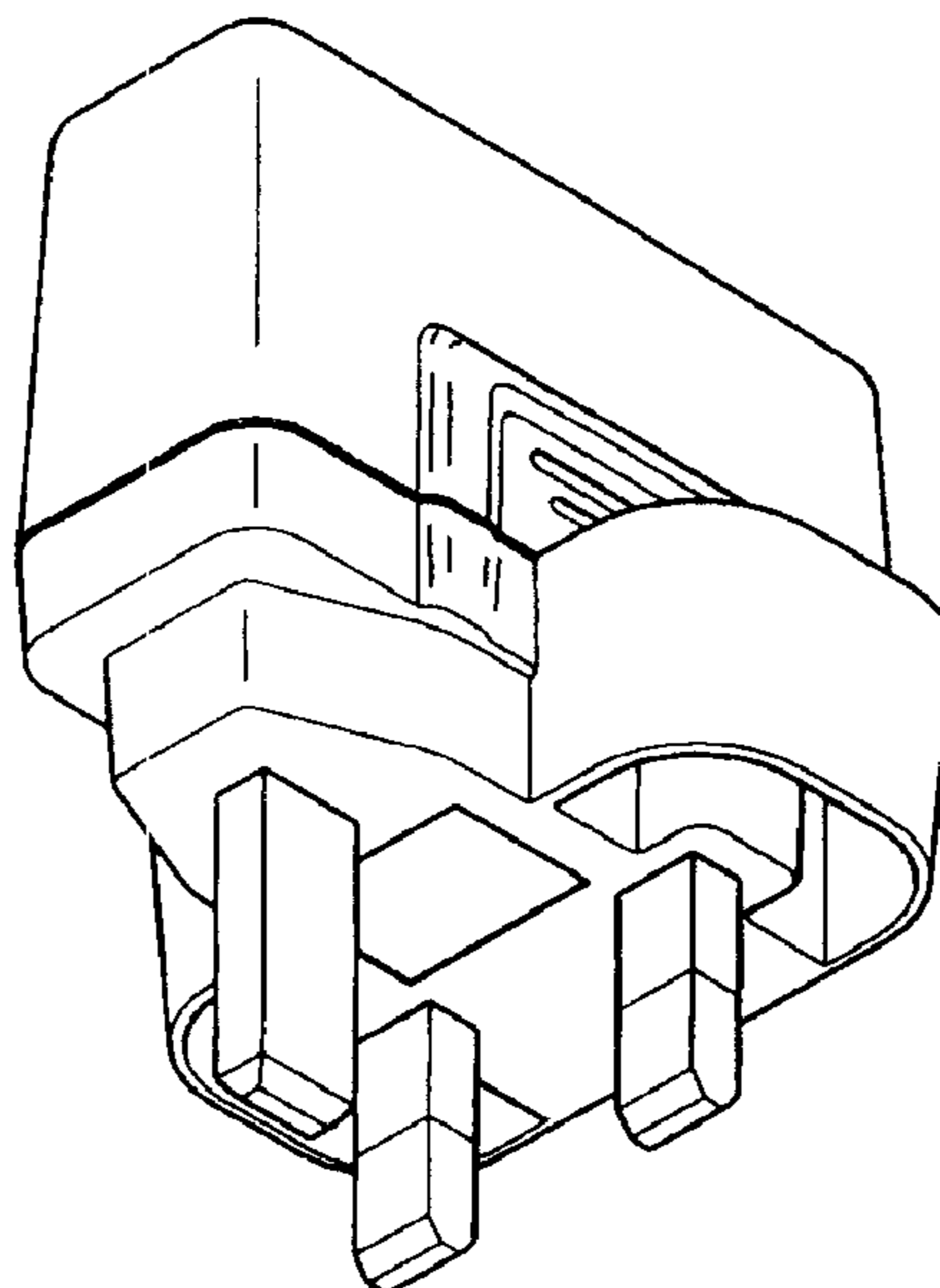


FIG. 3

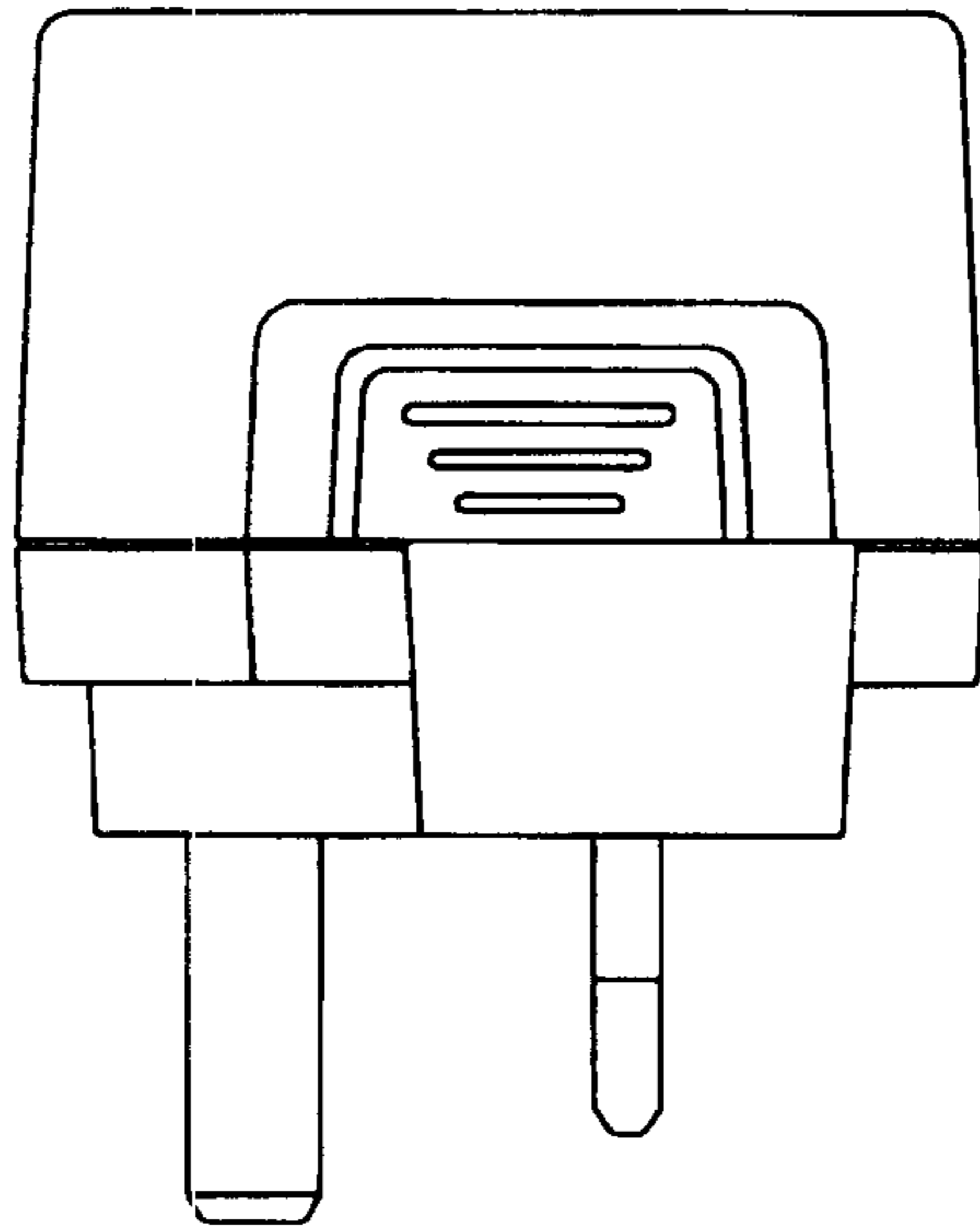


FIG. 4

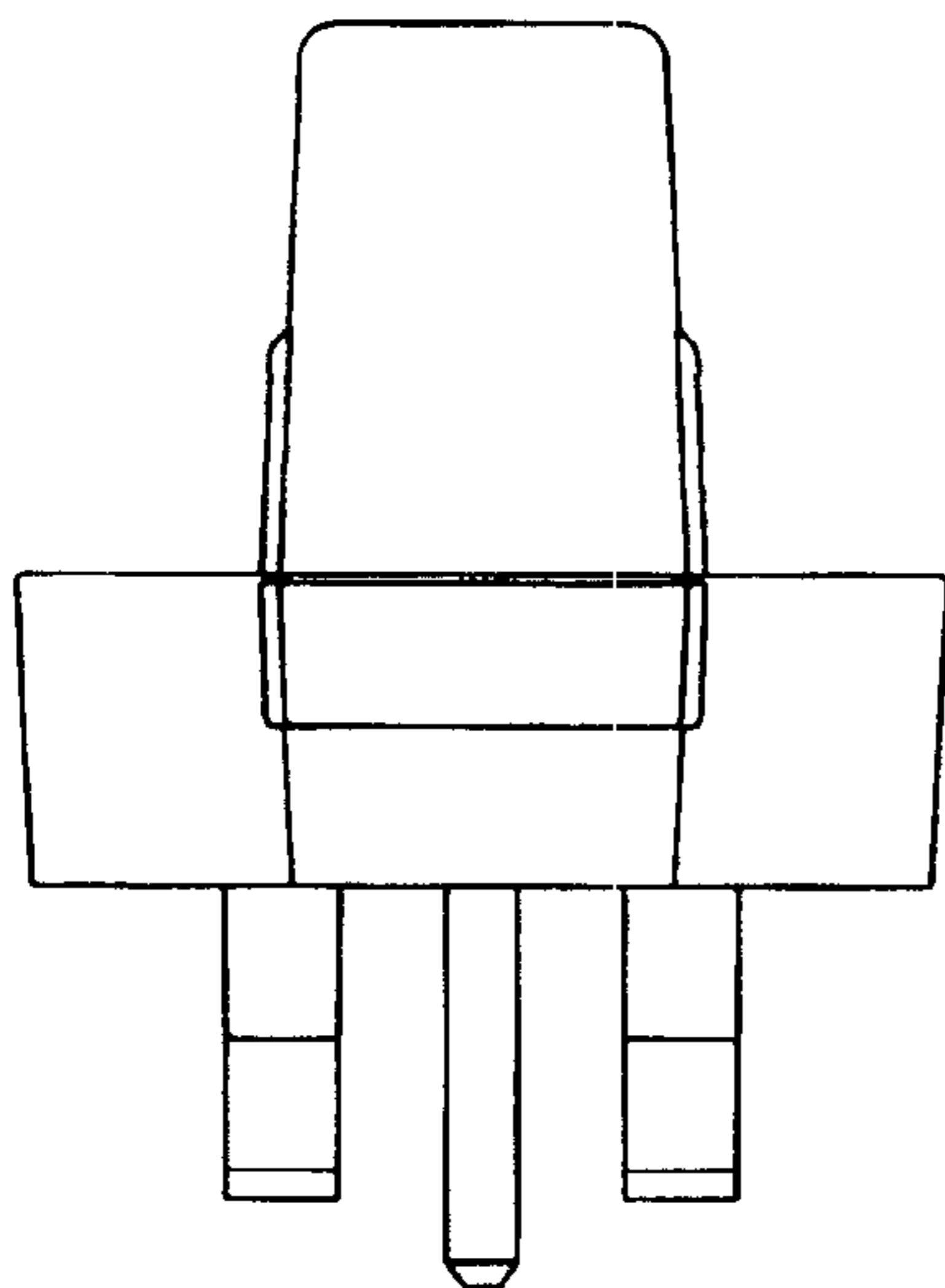
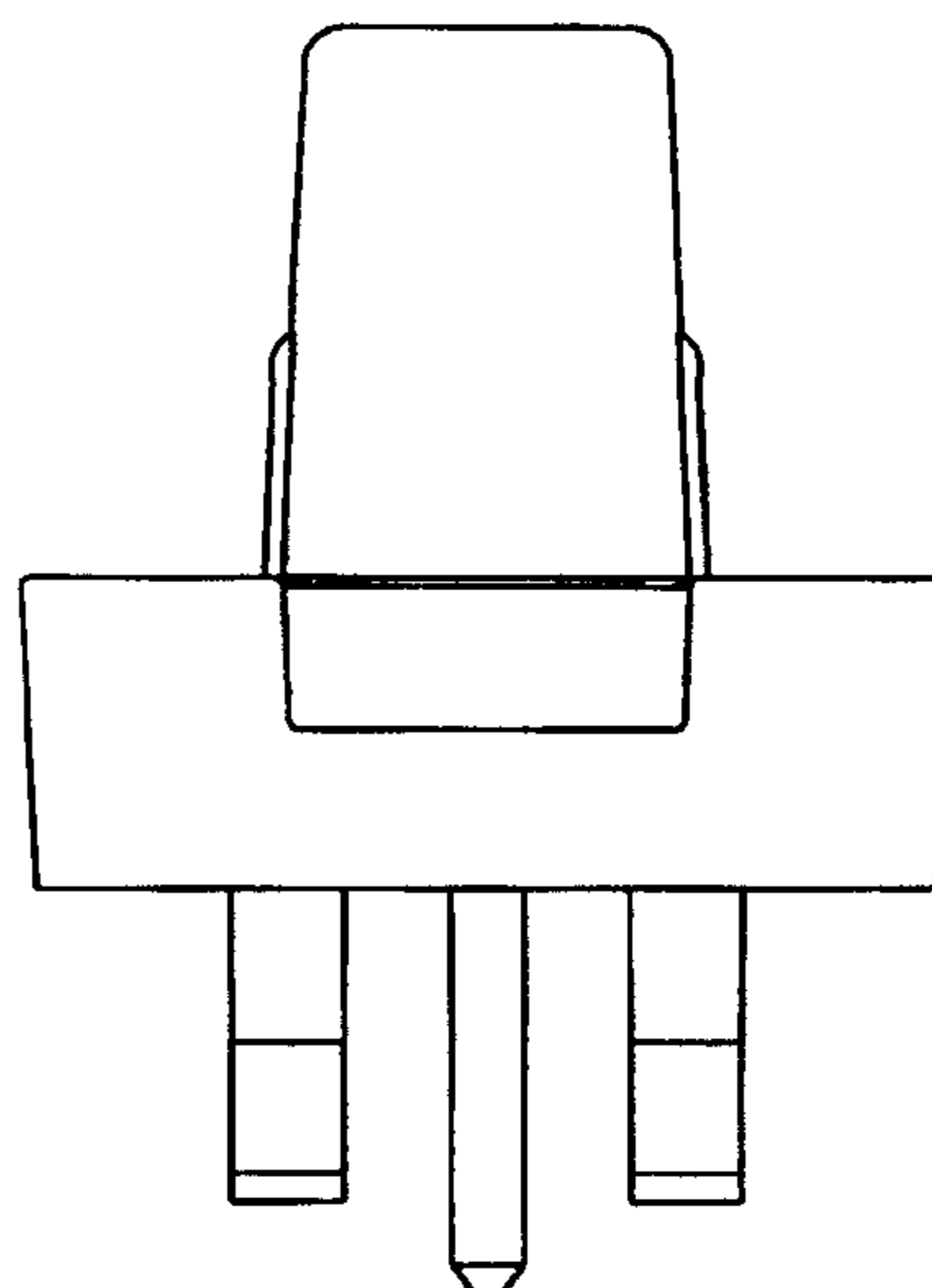
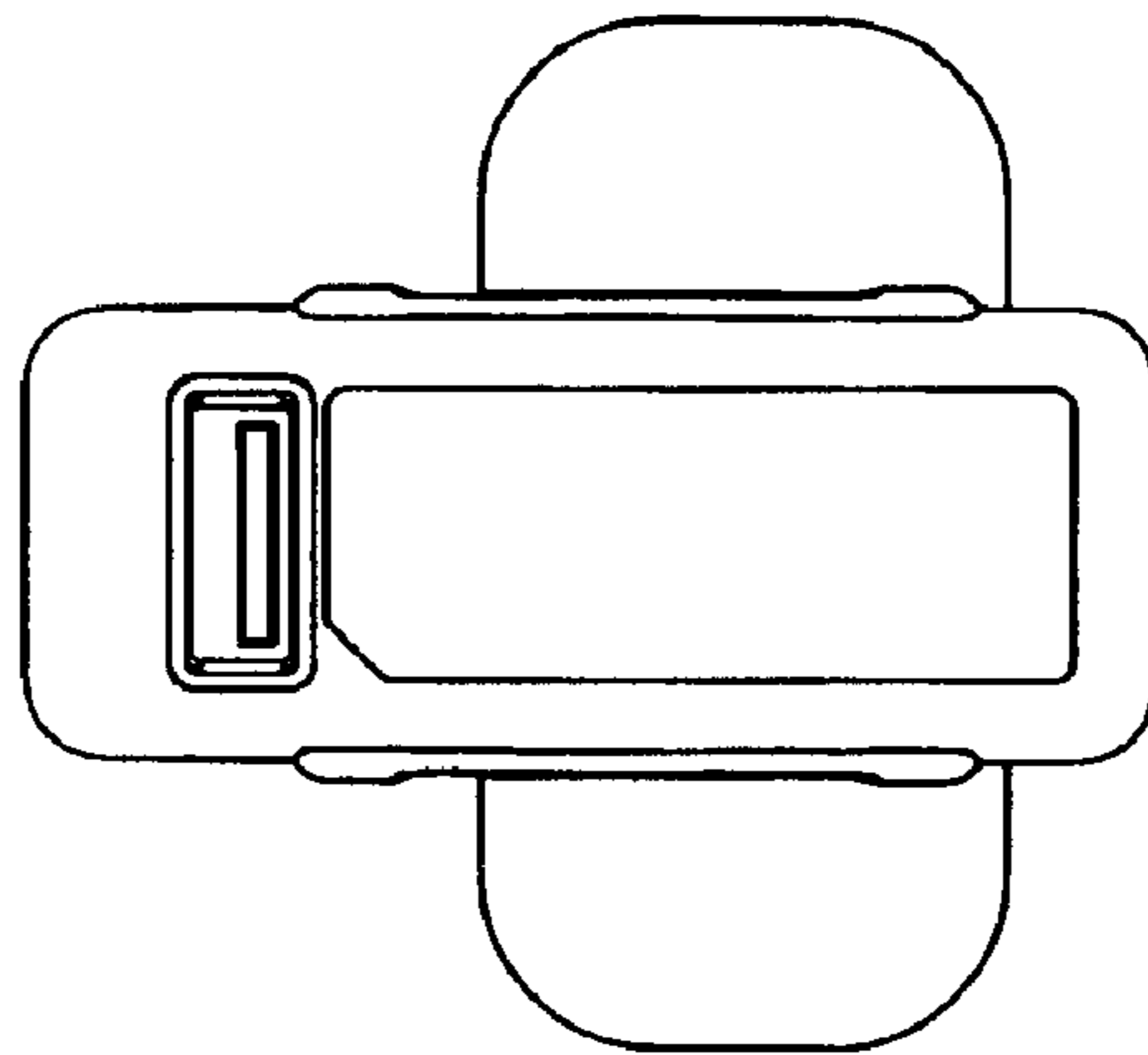


FIG. 5



**FIG. 6**



**FIG. 7**

