

US00D520452S

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

(10) **Patent No.:** **US D520,452 S**
(45) **Date of Patent:** **** May 9, 2006**

(54) **ELECTRICAL CONNECTOR**

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- (**) Term: **14 Years**
- (21) Appl. No.: **29/205,629**
- (22) Filed: **May 17, 2004**

Related U.S. Application Data

- (62) Division of application No. 29/163,078, filed on Jun. 25, 2002, now Pat. No. Des. 491,892.

(30) **Foreign Application Priority Data**

Jan. 8, 2002	(JP)	.....	2002-119
Jan. 8, 2002	(JP)	.....	2002-120
Jan. 8, 2002	(JP)	.....	2002-121
Jan. 8, 2002	(JP)	.....	2002-118

- (51) **LOC (8) Cl.** **13-03**
- (52) **U.S. Cl.** **D13/147**
- (58) **Field of Classification Search** D13/146,
D13/147; 439/63, 78, 79, 108, 188, 540.1,
439/540.5, 553, 557, 607-610, 638, 620,
439/676, 717, 677-681
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,637,014	A *	6/1997	Sukegawa et al.	.....	439/607
5,961,350	A	10/1999	Shiu		
6,126,485	A *	10/2000	Shobara et al.	.....	439/607

(Continued)

FOREIGN PATENT DOCUMENTS

JP	1043101	7/1999
TW	308519	6/1997
TW	320544	11/1997
TW	407952	10/2000
TW	412393	11/2000
TW	467683	12/2001

OTHER PUBLICATIONS

Taiwanese Magazine "TEEMADATA 108", Published by Excel Cell Electronic Co.; Ltd. Taiwan on Dec. 1, 1999 (2 pages & copy of enlarged photo).
Conicon, Chu Yuen Enterprise Co., Ltd.; Taipei, Taiwan; 3 pages; Japanese Patent Office public known material No. HD12005786, received Dec. 3, 1999.
Magazine "MBC" Merchandising & Buying Cable & Connector Products, published Mar. 2000, (2 pages and copy of enlarged photo).
Compaq, Hewlett-Packard, Intel et al.; Universal Serial Bus Specification & Rev. 2.0; Apr. 27, 2000; Chapter 6, pp. 85-117.

(Continued)

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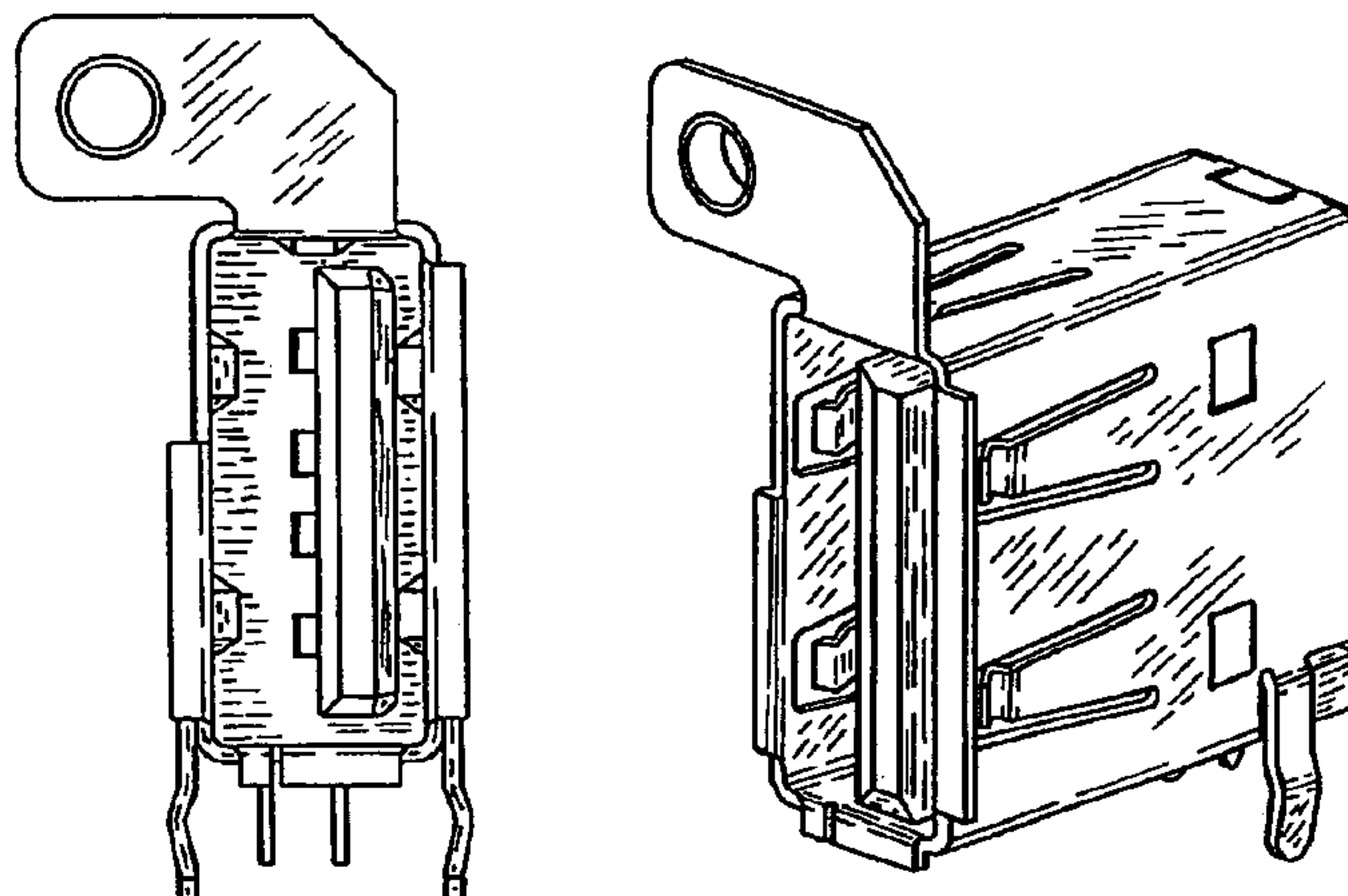
(57) **CLAIM**

The ornamental design for an electrical connector, as shown and described.

DESCRIPTION

FIG. 1 is a front elevation view of an electrical connector showing our new design;
FIG. 2 is a rear elevation view of the electrical connector;
FIG. 3 is a top plan view of the electrical connector;
FIG. 4 is a bottom plan view of the electrical connector;
FIG. 5 is a left side elevation view of the electrical connector;
FIG. 6 is a right side elevation view of the electrical connector;
FIG. 7 is a perspective view of the front, top and right side of the electrical connector; and,
FIG. 8 is a reduced top plan view of the electrical connector in a connecting condition. A printed circuit board and a counterpart electrical connector are drawn in broken lines for illustrative purposes only and form no part of the claimed design.

1 Claim, 4 Drawing Sheets



U.S. PATENT DOCUMENTS

6,135,790 A * 10/2000 Huang et al. 439/79
6,186,830 B1 * 2/2001 Lin et al. 439/607
6,203,373 B1 3/2001 Lin
6,238,241 B1 * 5/2001 Zhu et al. 439/541.5
D446,772 S * 8/2001 Chen et al. D13/147
D447,466 S * 9/2001 Chen et al. D13/147
D452,679 S * 1/2002 Shimojyo D13/147
D465,765 S 11/2002 Zhang et al.
D465,769 S 11/2002 Zhang et al.
D466,084 S 11/2002 Zhang et al.
6,475,033 B1 11/2002 Zhu et al.
D473,193 S 4/2003 Yang et al.
6,554,648 B1 * 4/2003 Shi et al. 439/607

D478,050 S 8/2003 Nishio et al.
D491,892 S * 6/2004 Moriwake et al. D13/147

OTHER PUBLICATIONS

Design of USB Connector, AMPNEWS No. 154; 1997-11;
Denpa Shinbun 9.12.20P5; Jun. 10, 1998; p. 5, Japanese
Patent Office, Design Department, Public Known Material
No. HN10011416.

Fujitsu Takamisawa Component, Standard Interface Con-
nector Series; Nikkan Industrial Newspaper 8.4.22P13; Oct.
31, 1996; p. 50; Japanese Patent Office, Design Department,
Public Known Material No. HN09002518.

* cited by examiner

FIG. 1

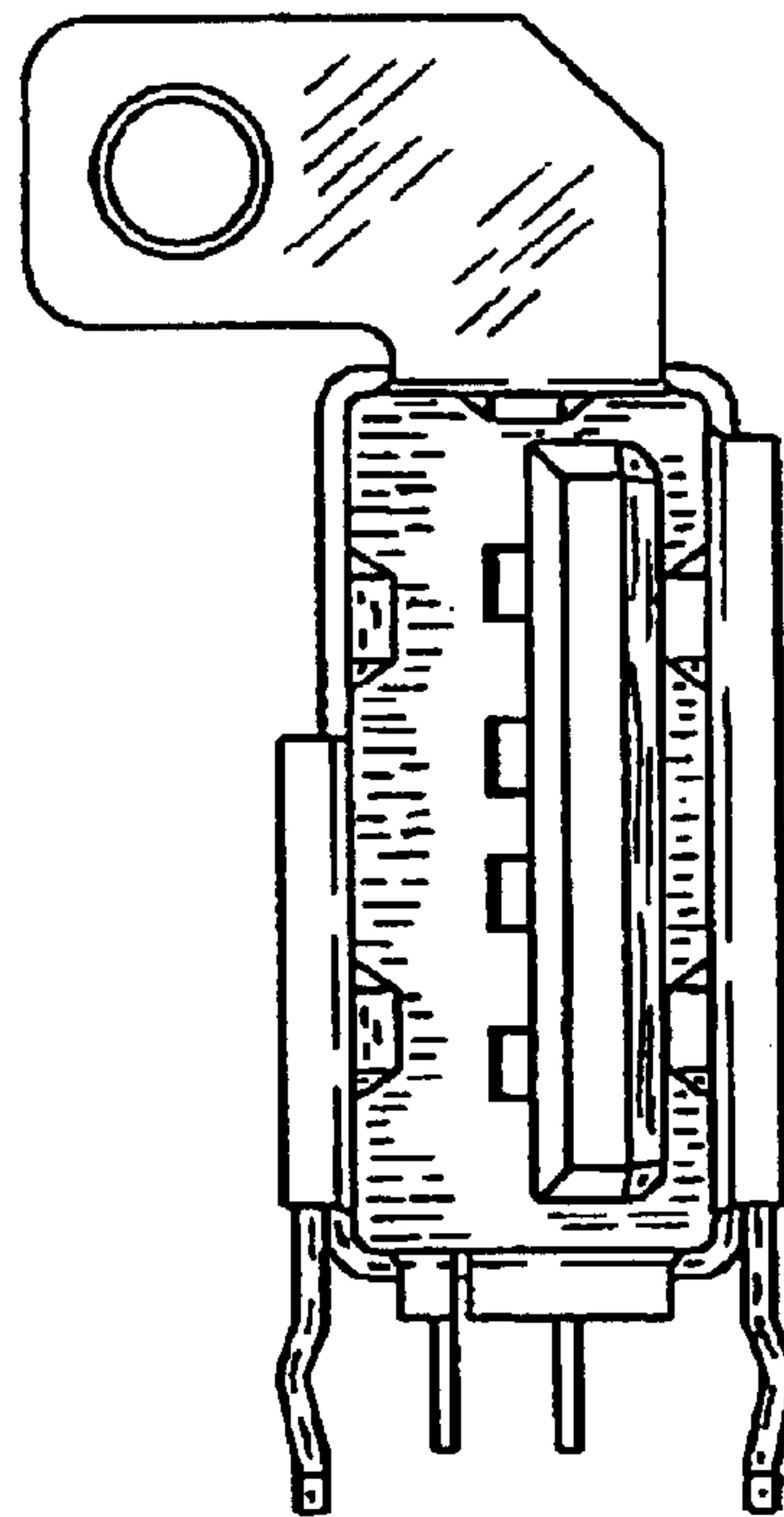


FIG. 2

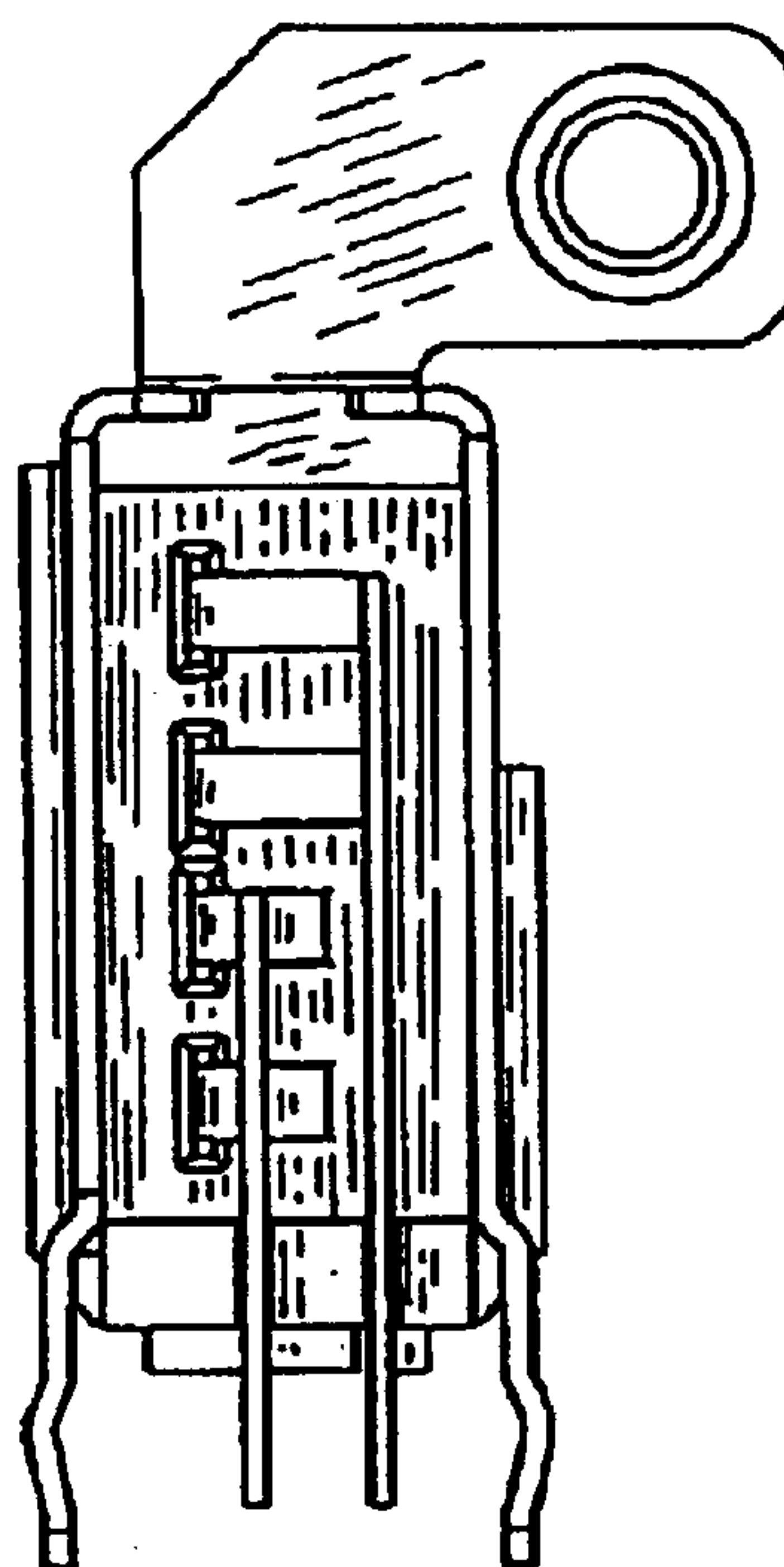


FIG. 3

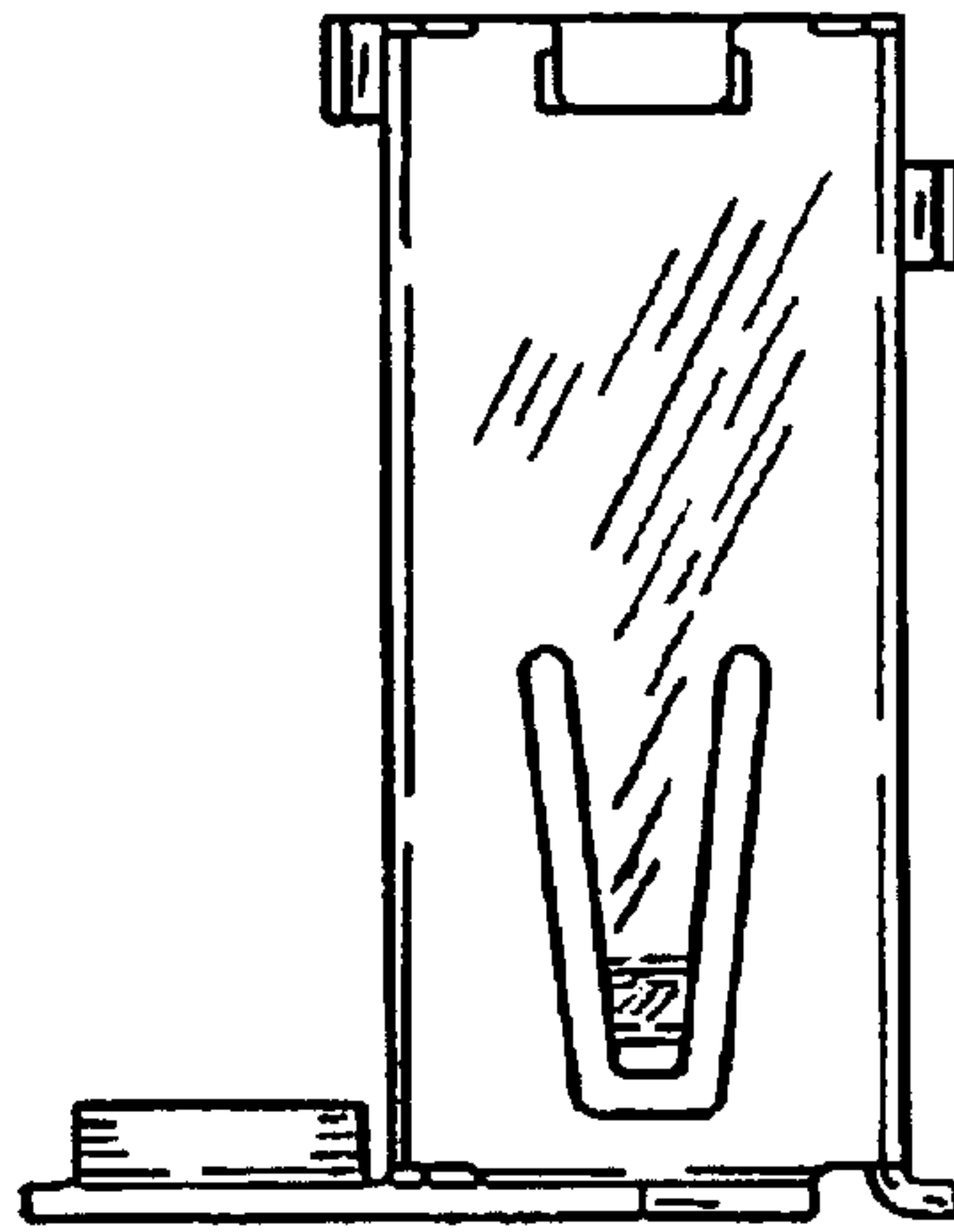


FIG. 4

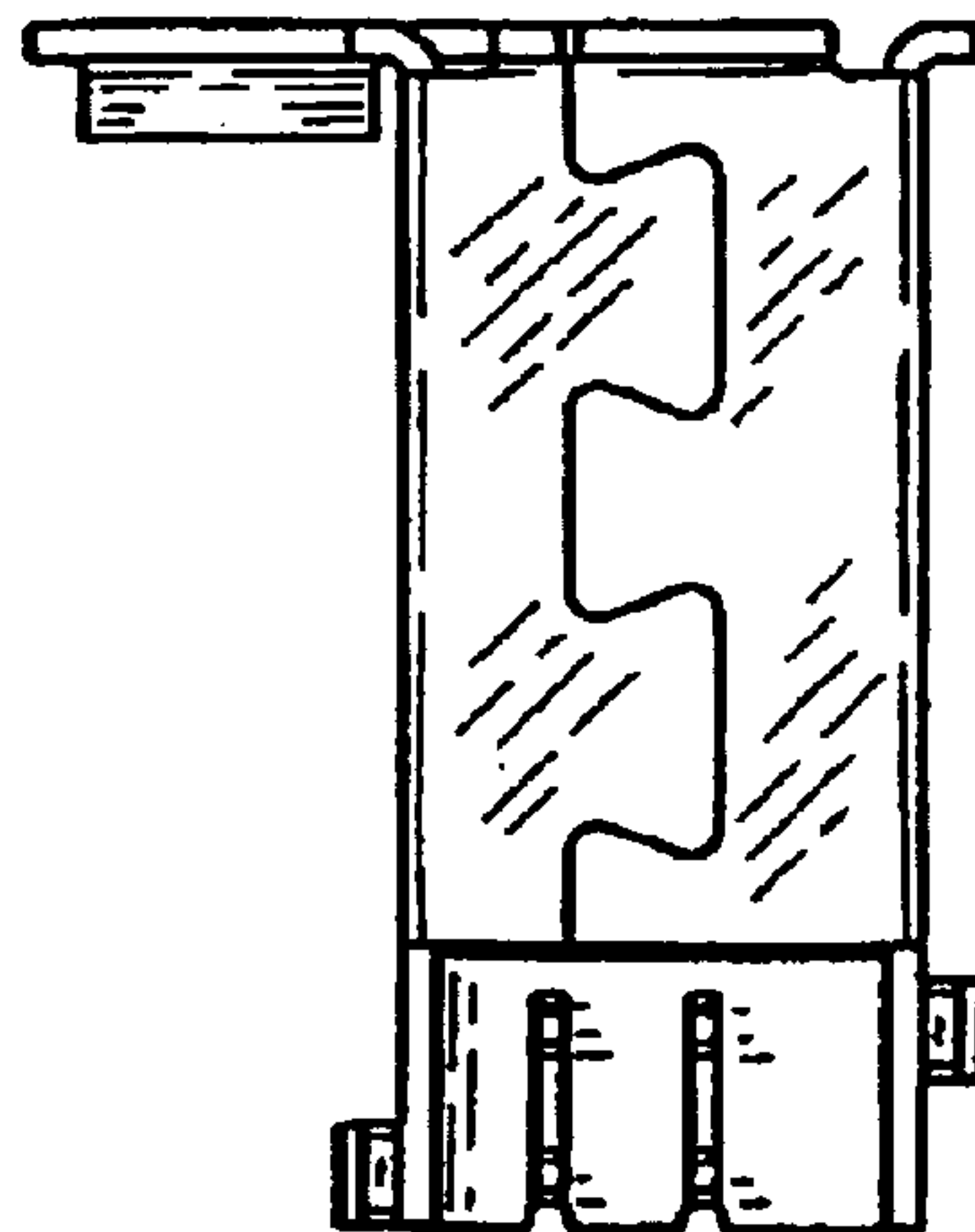


FIG. 5

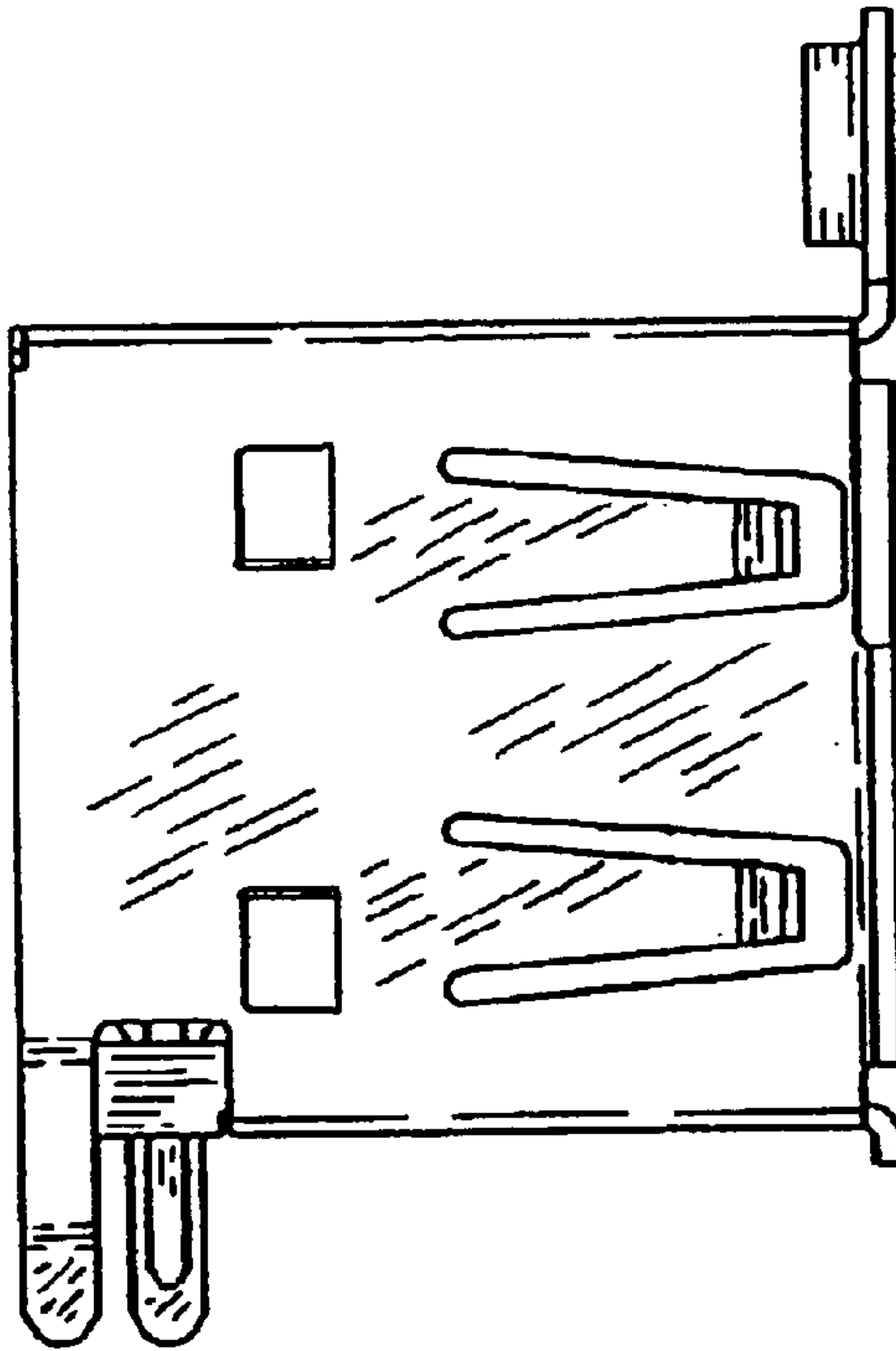


FIG. 6

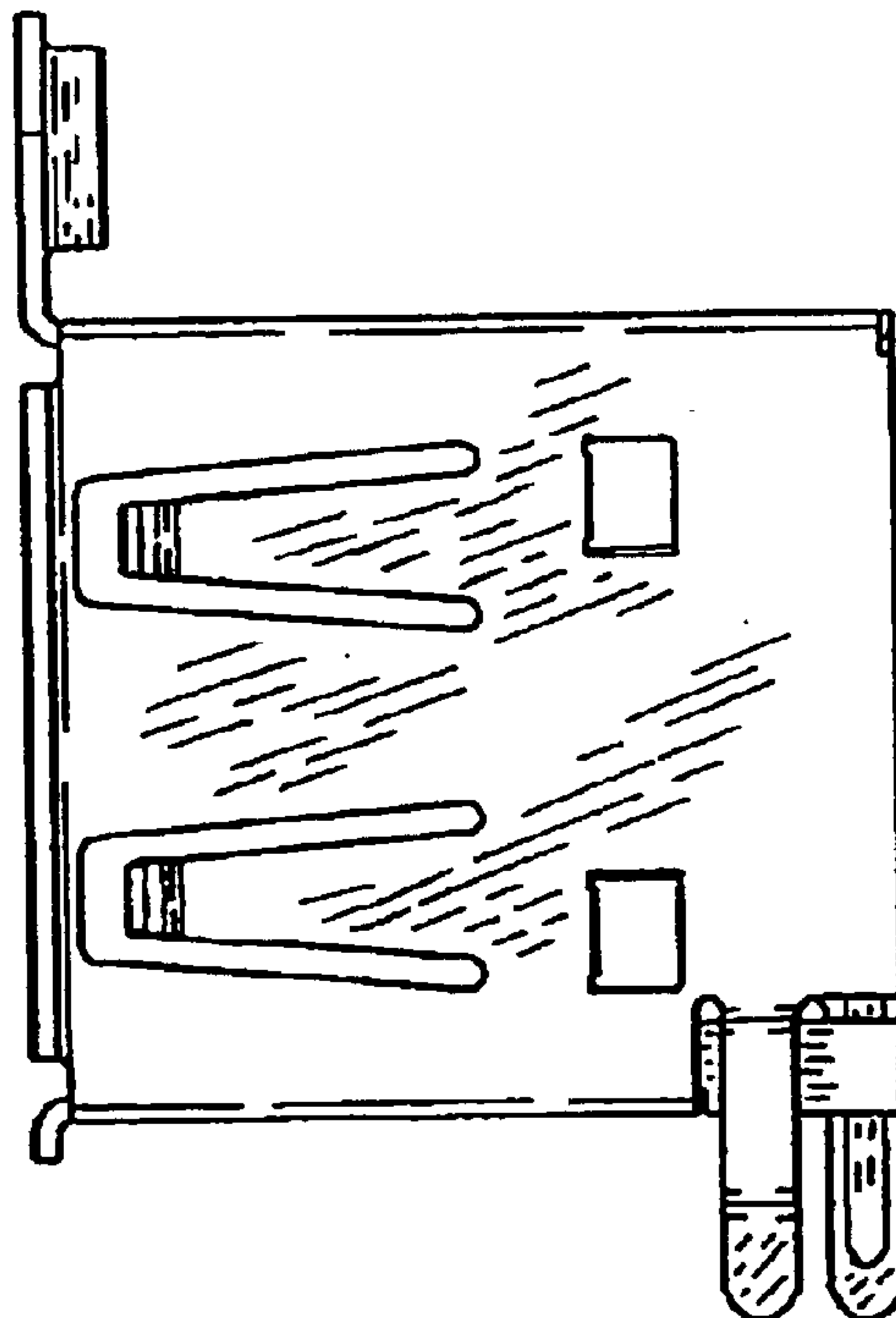


FIG. 7

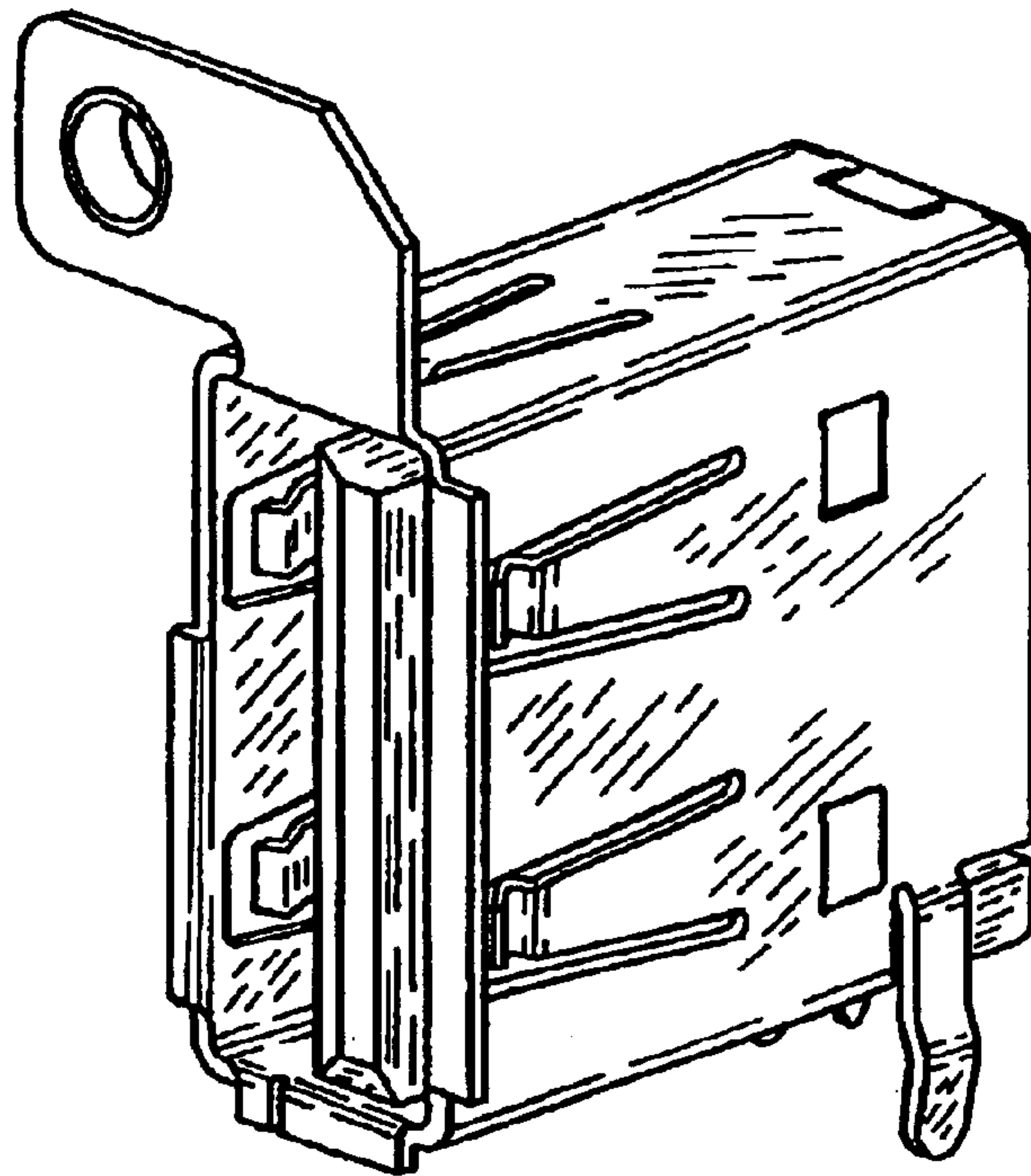


FIG. 8

