



US00D628536S

(12) **United States Design Patent**
Ngo

(10) **Patent No.:** **US D628,536 S**
(45) **Date of Patent:** **** Dec. 7, 2010**

(54) **VERTICAL ELECTRICAL CONNECTOR**

D540,264 S 4/2007 Zhang
D542,736 S 5/2007 Riku
D545,275 S 6/2007 Wei et al.
7,354,282 B2 4/2008 Margulis et al.

(75) Inventor: **Hung Viet Ngo**, Harrisburg, PA (US)

(73) Assignee: **FCI Americas Technology LLC**,
Carson City, NV (US)

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

(21) Appl. No.: **29/345,790**

(22) Filed: **Oct. 22, 2009**

Related U.S. Application Data

(63) Continuation of application No. 29/330,997, filed on
Jan. 16, 2009, now Pat. No. Des. 606,497.

(51) **LOC (9) Cl.** **13-03**

(52) **U.S. Cl.** **D13/147; D13/154**

(58) **Field of Classification Search** D13/133,
D13/146-147, 154, 184, 199; 439/64, 79,
439/159-160, 260, 325, 329, 395, 492, 495,
439/607-610, 630

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,531,793 A	7/1985	Hochgesang
4,734,041 A	3/1988	Bruchmann et al.
5,147,228 A	9/1992	Miller et al.
5,277,597 A	1/1994	Masami et al.
5,785,537 A	7/1998	Donahue et al.
6,065,951 A	5/2000	Lemke et al.
6,102,754 A	8/2000	Capper et al.
D443,861 S	6/2001	Ko et al.
6,280,216 B1	8/2001	Bernier et al.
6,645,012 B2	11/2003	Ito et al.
6,652,294 B1	11/2003	Zhang
6,652,322 B2	11/2003	Ito et al.
D497,598 S	10/2004	Kimura et al.
D499,379 S	12/2004	Zhu et al.
6,923,661 B1	8/2005	Bogiel et al.
D517,488 S	3/2006	Riku
D518,786 S	4/2006	Riku
D536,668 S	2/2007	Ye et al.

OTHER PUBLICATIONS

Introduction to High Current Card Edge Connectors, Tyco Electronics, Catalog 1773096, Revised Jul. 2007, 19 pages.

(Continued)

Primary Examiner—Daniel D Bui

(74) *Attorney, Agent, or Firm*—Woodcock Washburn LLP

(57) **CLAIM**

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

DESCRIPTION

FIG. 1 is a top, left, rear perspective view of a vertical electrical connector according to my design;

FIG. 2 is a top plan view thereof;

FIG. 3 is a bottom plan view thereof;

FIG. 4 is a rear elevation view thereof;

FIG. 5 is a front elevation view thereof;

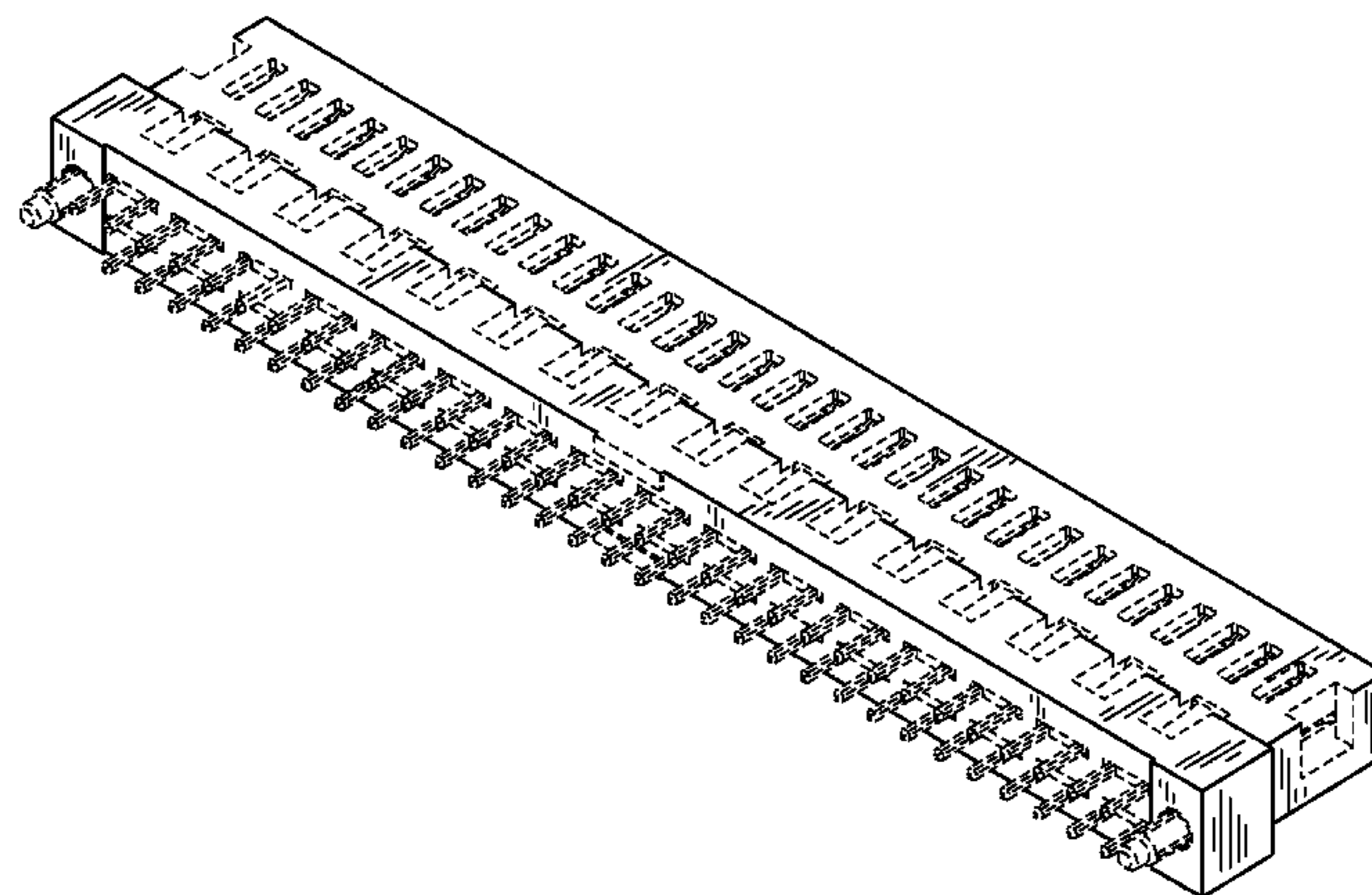
FIG. 6 is a left side elevation view thereof; and,

FIG. 7 is a right side elevation view thereof.

The broken line portion of the figure drawings is included to show unclaimed subject matter only and forms no part of the claimed design.

In a preferred embodiment, the nature of this product is a vertical electrical connector in the form of an electrical connector housing configured for retaining a plurality of electrical contacts.

1 Claim, 4 Drawing Sheets



OTHER PUBLICATIONS

Product Sketch: PCI Express Card Edge Assembly—Product No. 10018783, Aug. 2, 2008.

Tyco Electronics Releases New Card Edge Power Connector, Tyco Electronics Corp., Release dated Feb. 16, 2009, Harrisburg, Pennsylvania.

<http://www.molex.com/molex/products/family?channel=products&chanName=family&pageTitle=Introduction>
&key=extreme_poweredge_, EXTreme PowerEdge™: EXTreme

PowerEdge™ connectors with signal contacts for combined high-power and signal card edge or busy bar tab applications, printed Feb. 25, 2010, 1 page.

<http://www.molex.com/molex/products/family?channel=products&chanName=family&pageTitle=Introduction>
&key=extreme_lphpower, EXTreme LPHPower™ Low-Profile Hybrid Power Connector: High-current, low-profile EXTreme LPHPower™ connector extends mounting flexibility to backplane or midplane mating applications, printed Feb. 25, 2010, 1 page.

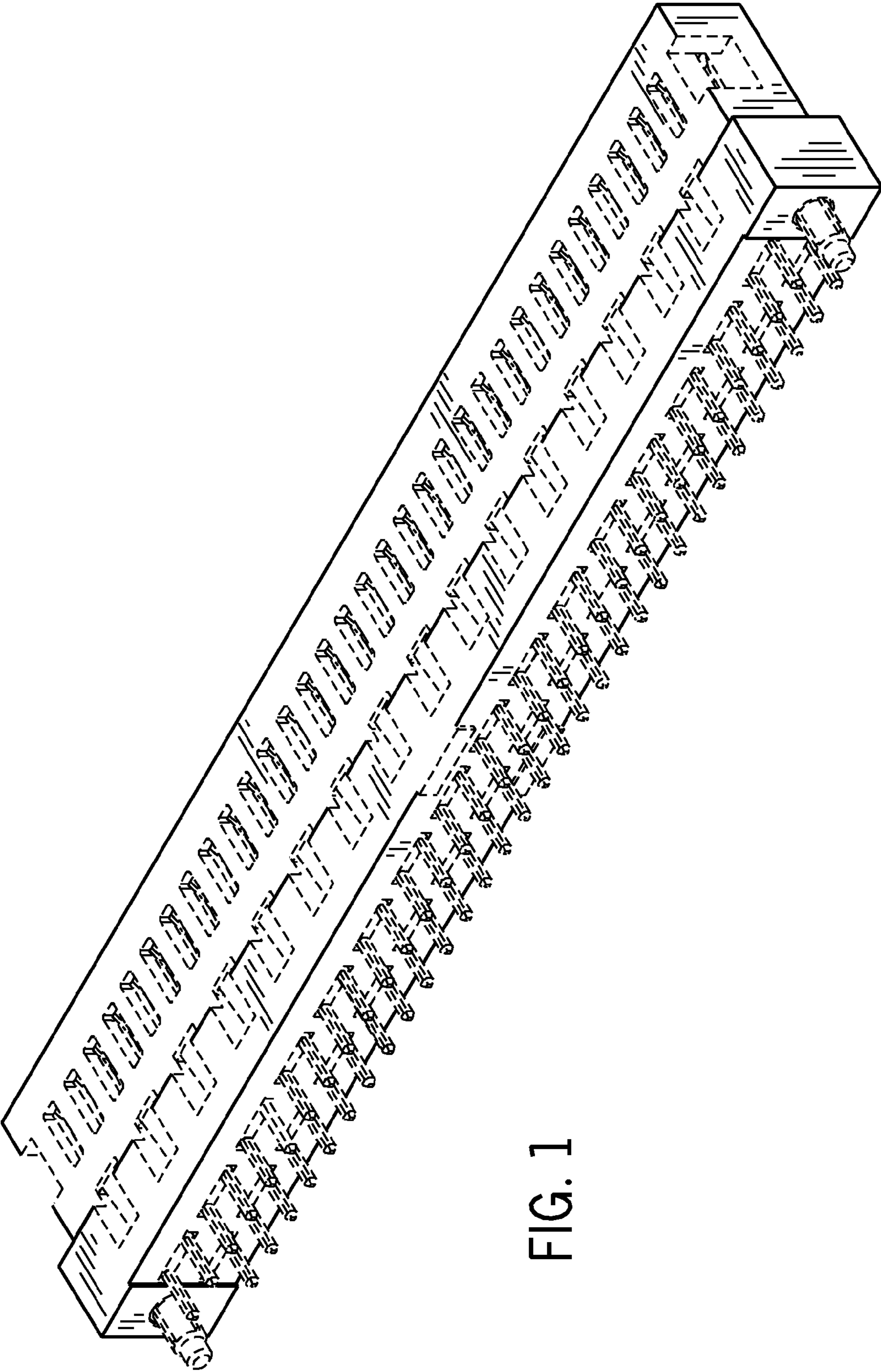


FIG. 1

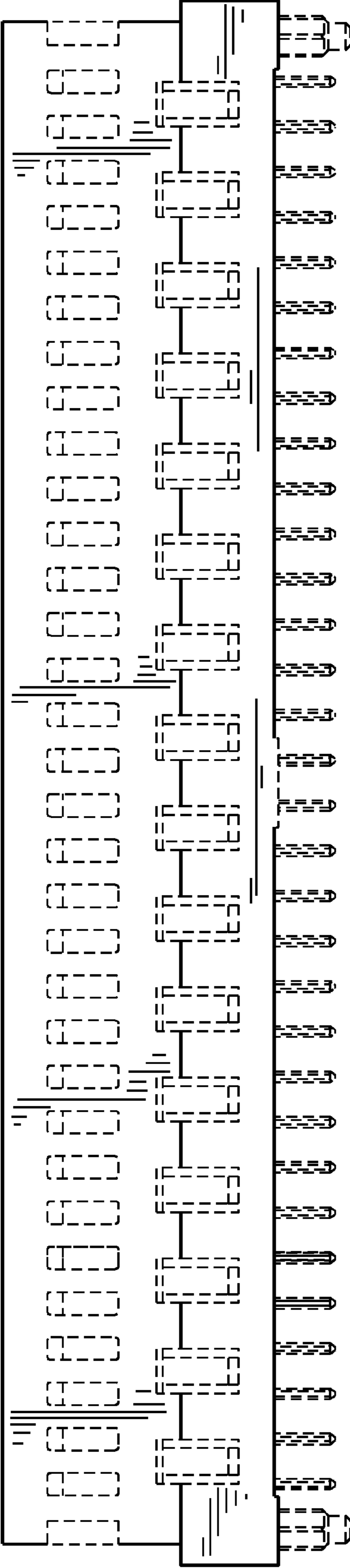


FIG. 2

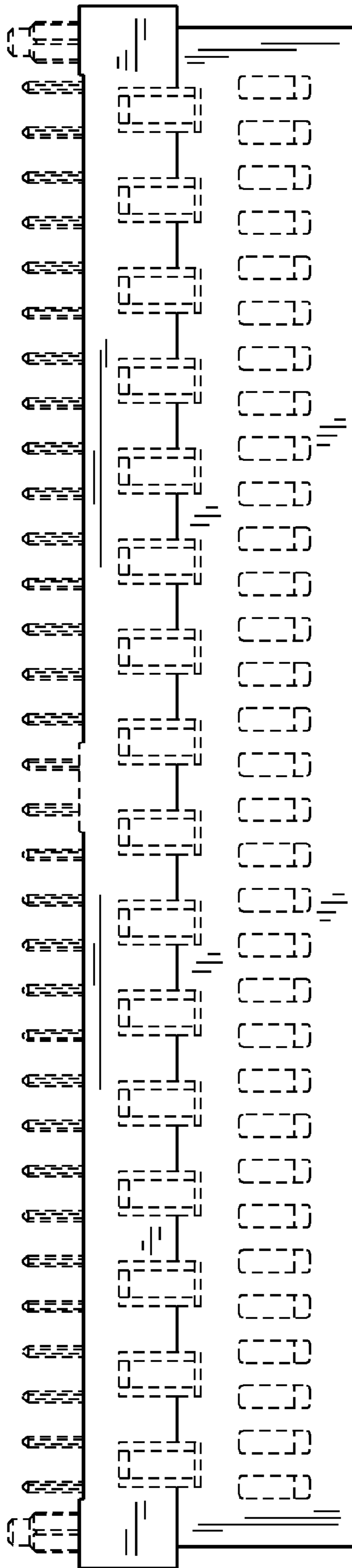


FIG. 3

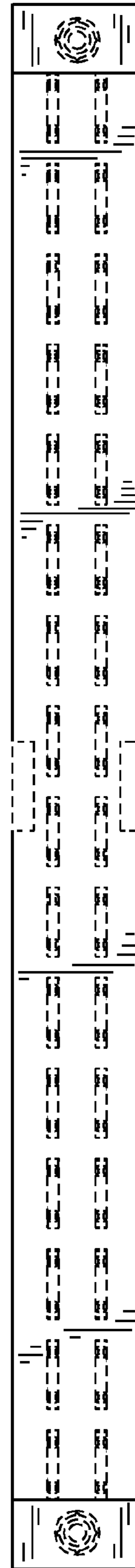


FIG. 4

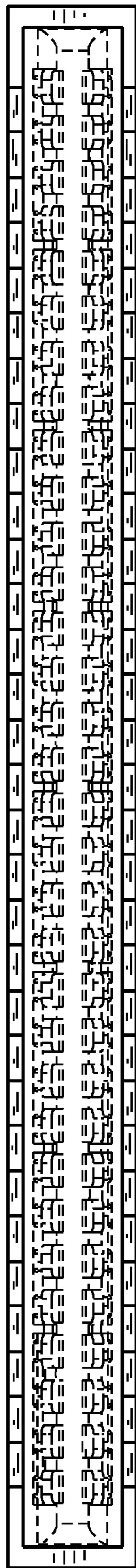


FIG. 5

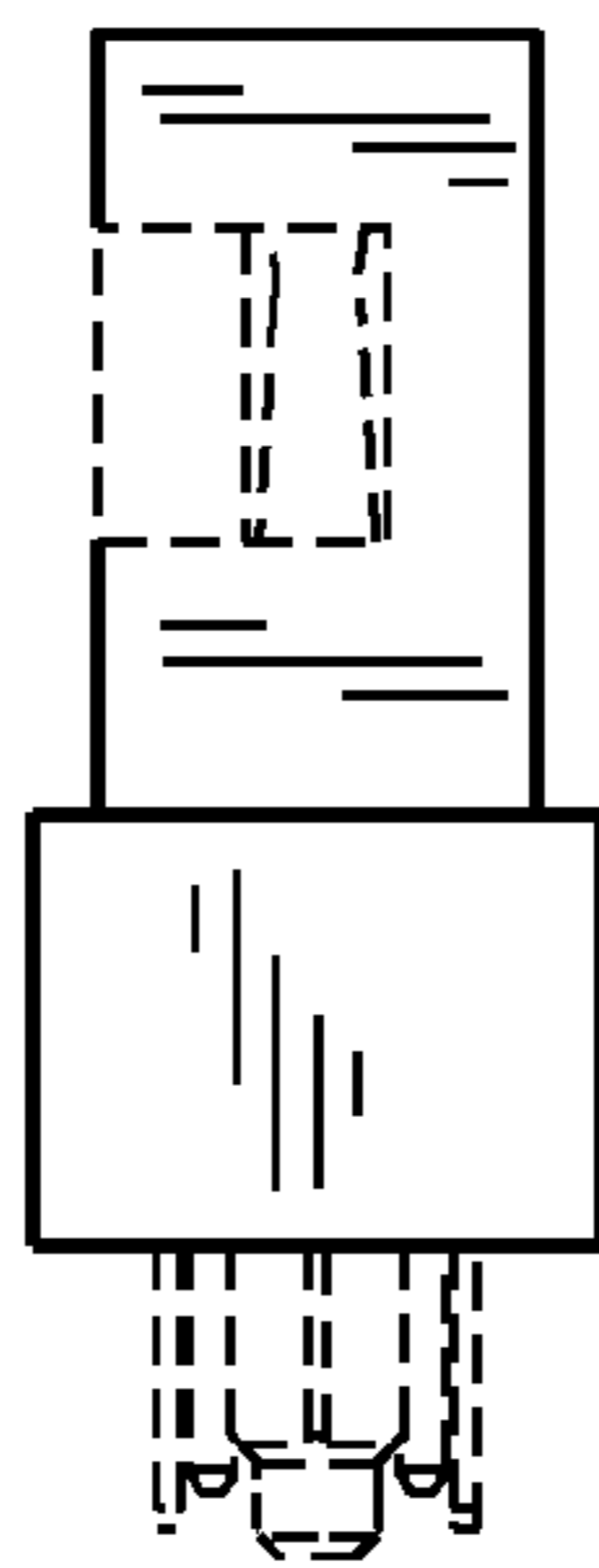


FIG. 6

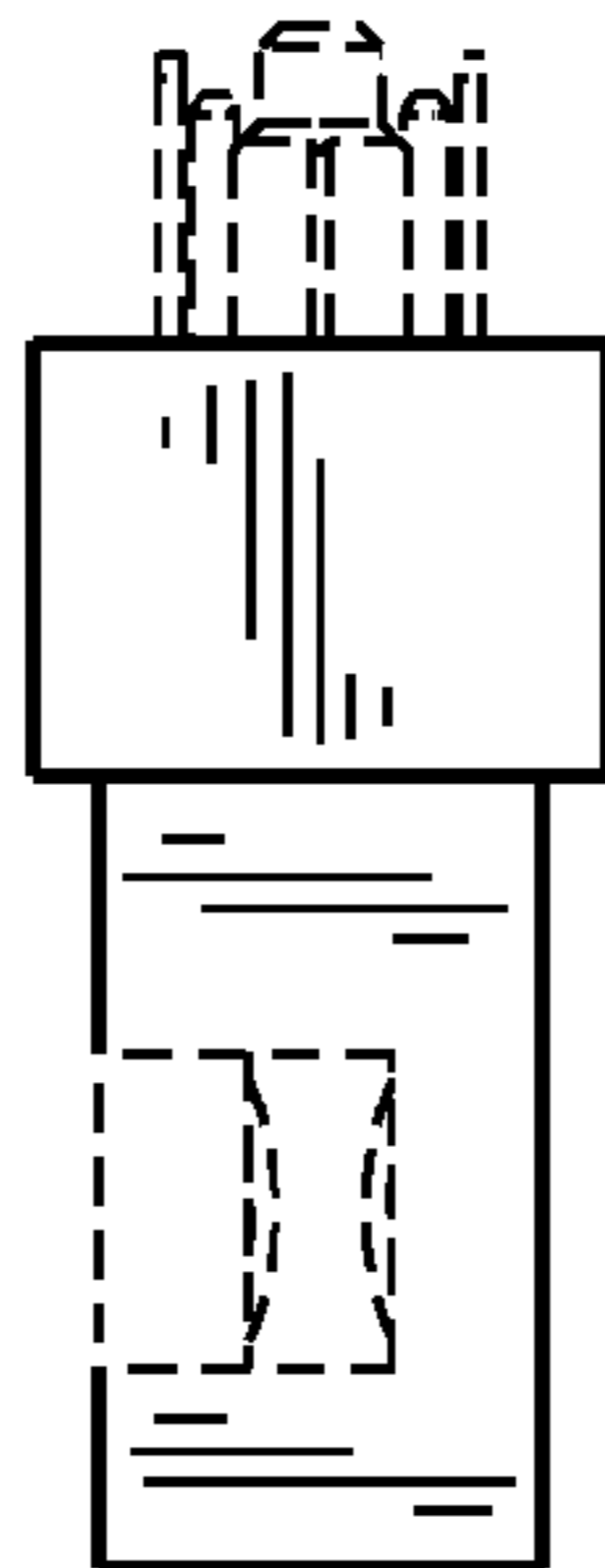


FIG. 7