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

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(54) **ELECTRICAL CONNECTOR**

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(73) Assignee: **JAPAN AVIATION ELECTRONICS INDUSTRY, LIMITED**, Tokyo (JP)

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

(21) Appl. No.: **29/516,843**

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(51) **LOC (10) Cl.** ..... **13-03**

(52) **U.S. Cl.**  
USPC ..... **D13/133**

(58) **Field of Classification Search**  
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D13/154-156, 161, 173, 184, 199  
CPC ..... H01R 4/00; H01R 4/60; H01R 4/66;  
H01R 13/00; H01R 13/40; H01R 13/44;  
H01R 13/52; H01R 13/58; H01R 13/62;  
H01R 13/64; H01R 13/66; H01R 24/38;  
H01R 43/00; H01R 43/18; H01R 43/22;  
G02B 6/38

See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

D320,383 S \* 10/1991 Oka ..... D13/154  
D372,223 S \* 7/1996 Hanazaki ..... D13/161  
6,050,861 A \* 4/2000 Genta ..... H01R 13/4362  
439/752  
D474,748 S \* 5/2003 Naganawa ..... D13/147

D577,338 S \* 9/2008 Yamagami ..... D13/147  
7,588,459 B2 \* 9/2009 Sugii ..... H01R 13/743  
343/715  
D654,026 S \* 2/2012 Shioda ..... D13/133  
(Continued)

**OTHER PUBLICATIONS**

Space saving SMT card edge connector, dated May 8, 2014, [online], [site visited Sep. 21, 2016]. Available from Internet, <URL: <http://www.texim-europe.com/news/835>>.\*

(Continued)

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(57) **CLAIM**

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

**DESCRIPTION**

FIG. 1 is a front view of an electrical connector showing our new design;

FIG. 2 is a rear view thereof;

FIG. 3 is a right side view thereof;

FIG. 4 is a left side view thereof;

FIG. 5 is a plan view thereof;

FIG. 6 is a bottom view thereof;

FIG. 7 is a perspective view showing a front, top and right side thereof;

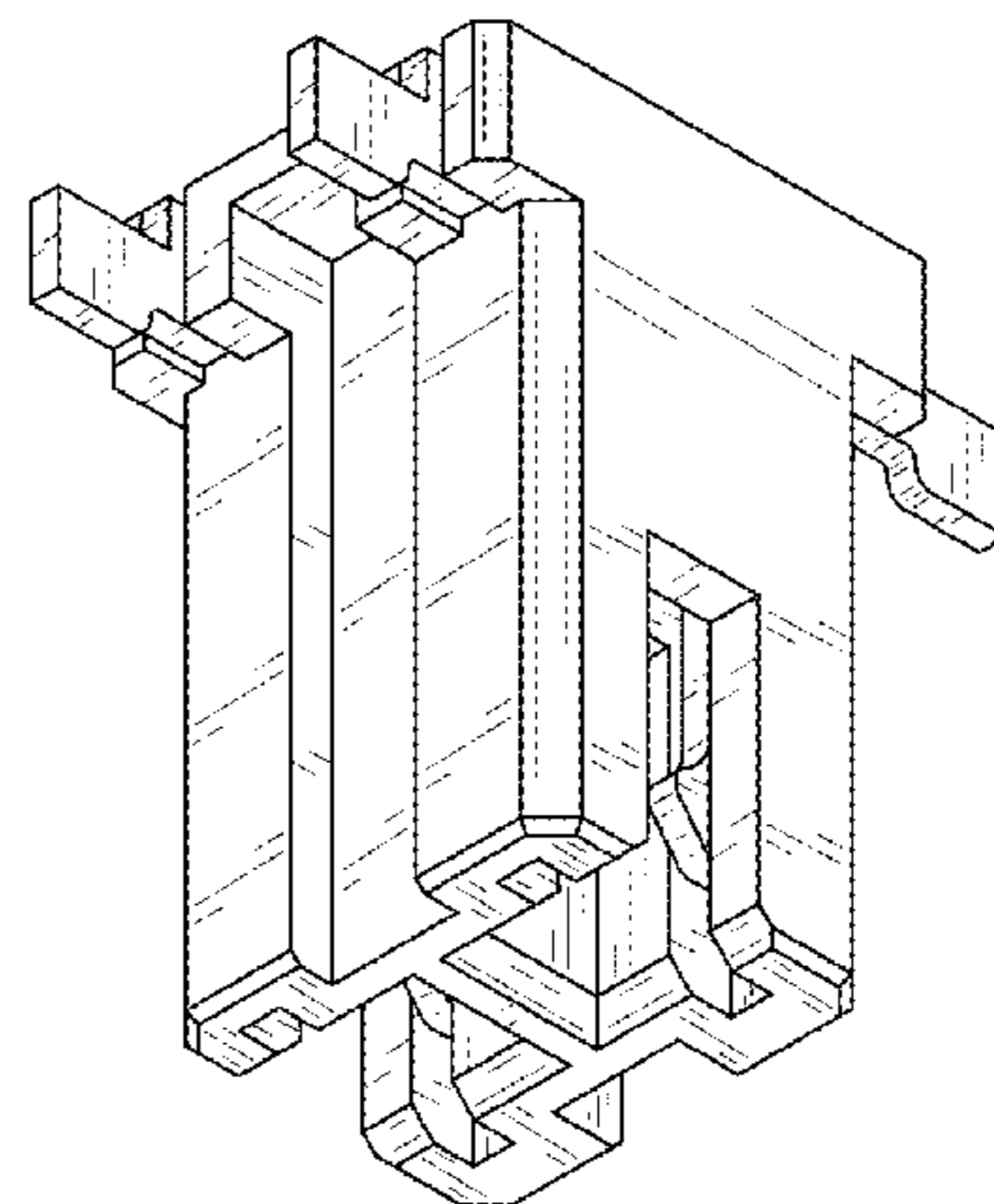
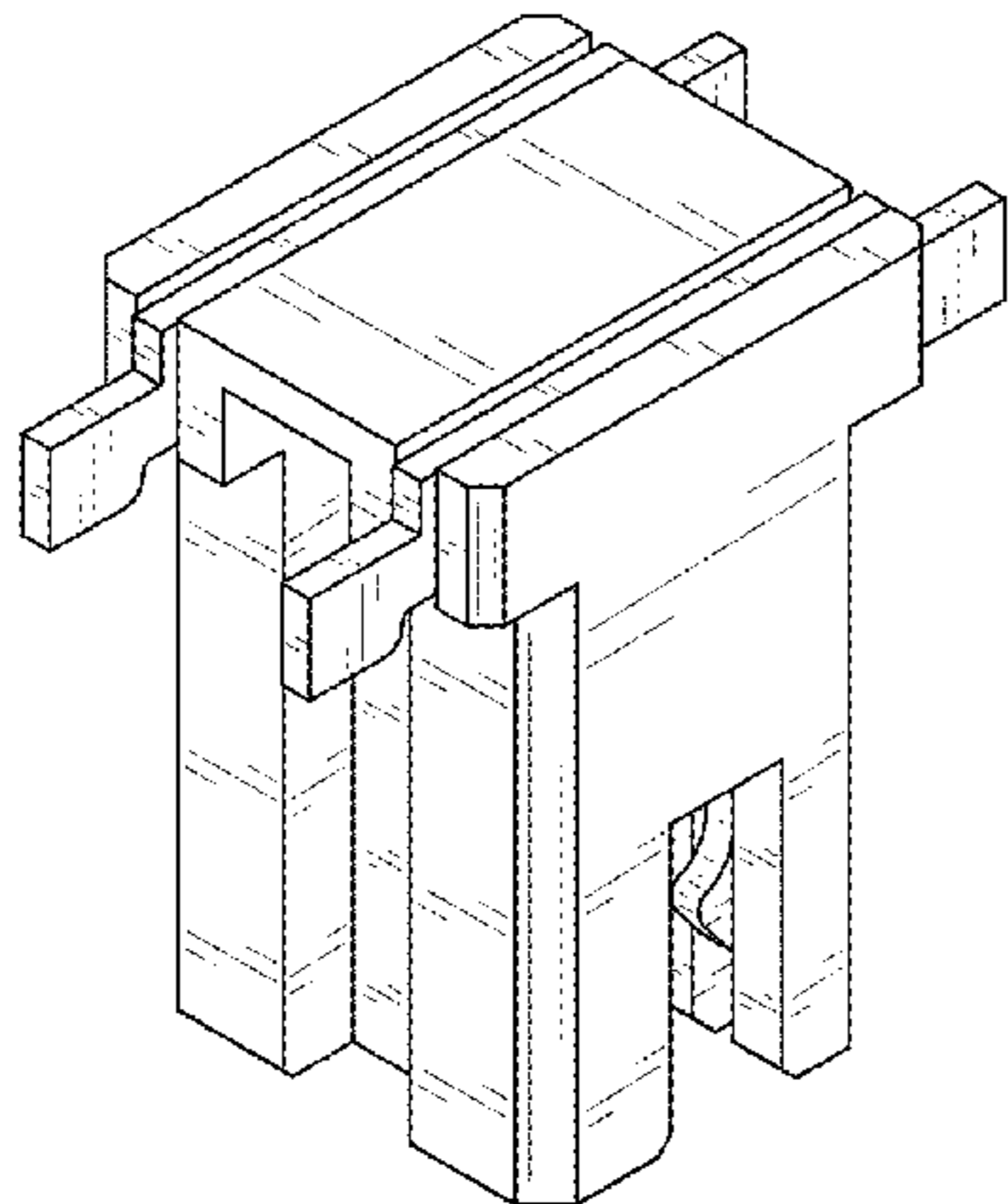
FIG. 8 is a perspective view showing a rear, bottom and left side thereof;

FIG. 9 is a perspective view showing a front, right side and bottom thereof; and,

FIG. 10 is a perspective view showing a rear, left side and top thereof.

The broken lines are shown for environmental purposes only and depict portions of the electrical connector that form no part of claimed design.

**1 Claim, 5 Drawing Sheets**



(56)

**References Cited**

U.S. PATENT DOCUMENTS

8,870,588 B2 \* 10/2014 Kudo ..... 439/375  
D745,461 S \* 12/2015 Cho ..... D13/146  
2009/0317990 A1 \* 12/2009 Mostoller ..... H01R 12/57  
439/83  
2012/0264326 A1 \* 10/2012 Kudo ..... H01R 12/57  
439/375  
2013/0012068 A1 \* 1/2013 Naito ..... H01R 12/714  
439/625  
2015/0249303 A1 \* 9/2015 Yin ..... H01R 13/64  
439/357

OTHER PUBLICATIONS

Inverted thru-board connector, dated Jan. 13, 2014, [online], [site visited Sep. 21, 2016]. Available from Internet, <URL: <https://www.powersystemsdesign.com/inverted-thru-board-connectors-offer-low-profile-space-savings-for-led-lighting-apps/6>>.\*

\* cited by examiner

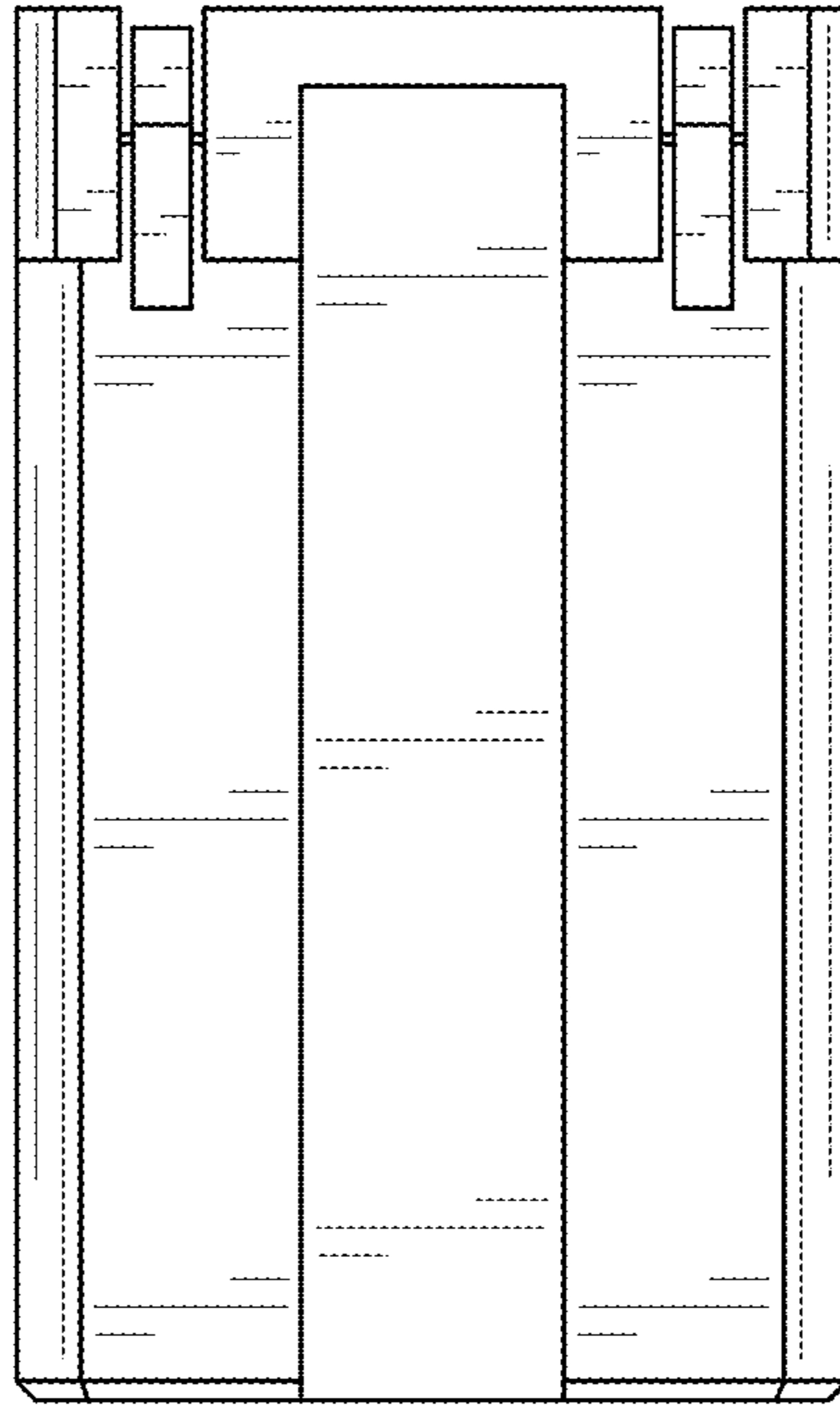


FIG. 1

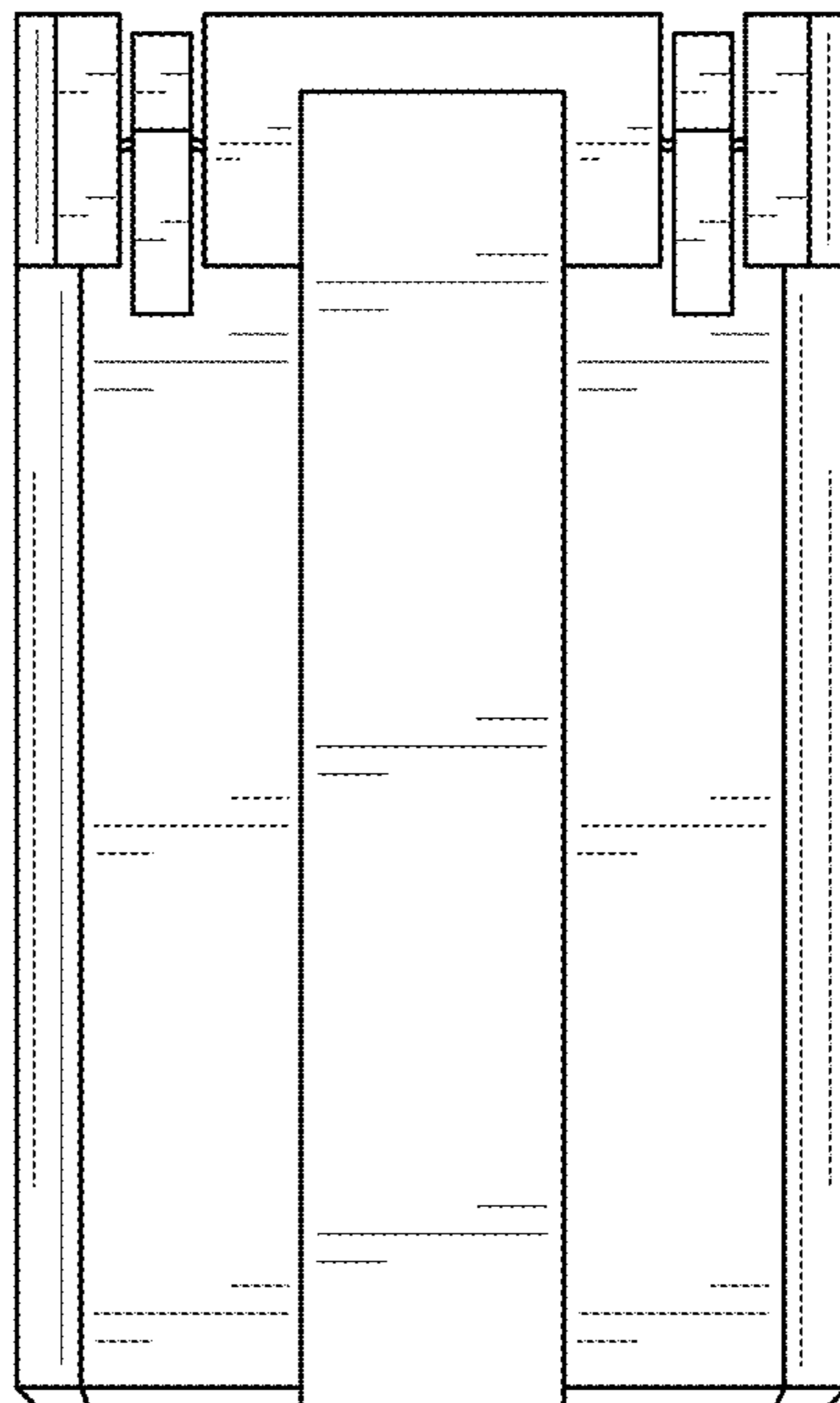


FIG. 2

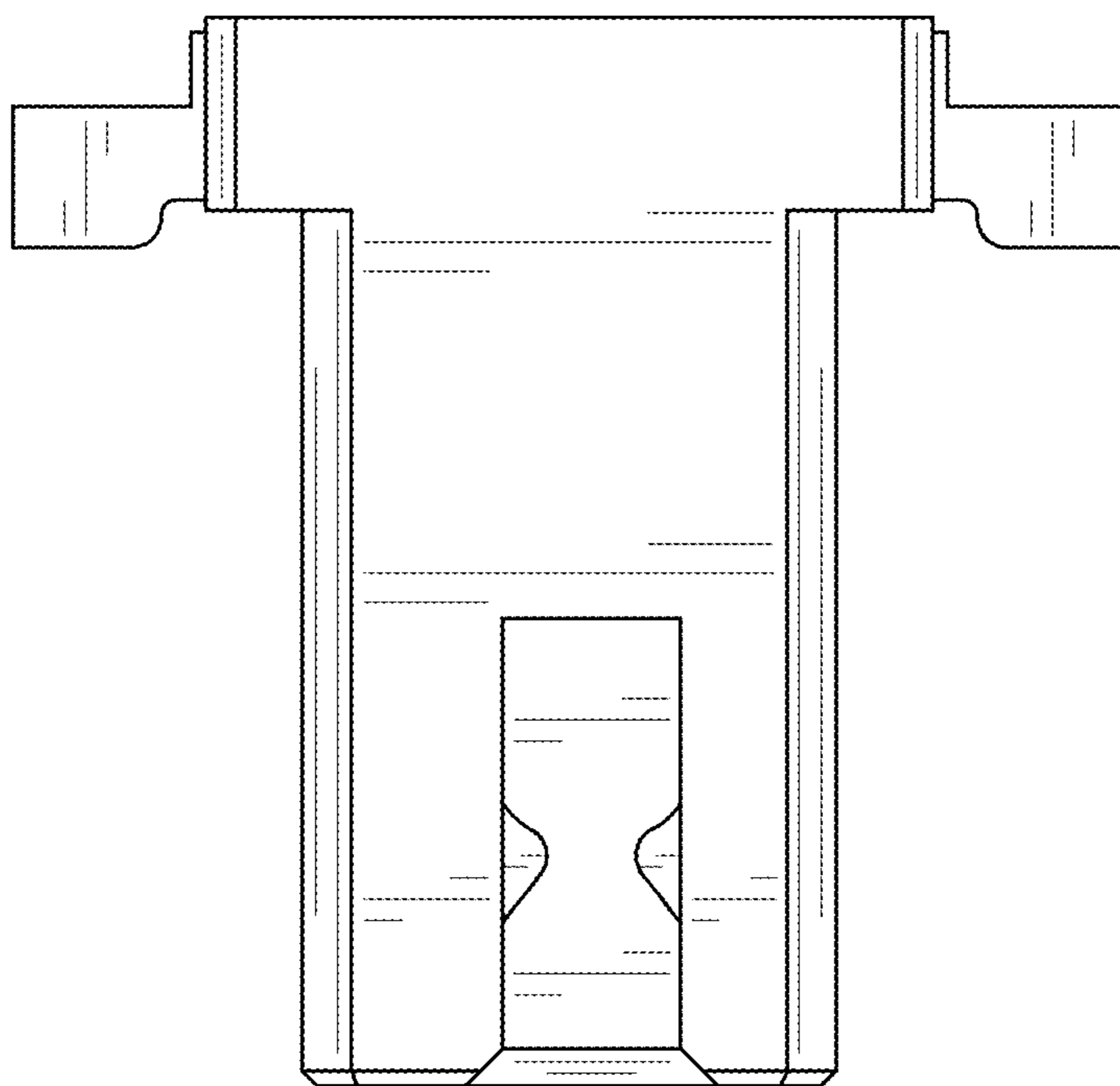


FIG. 3

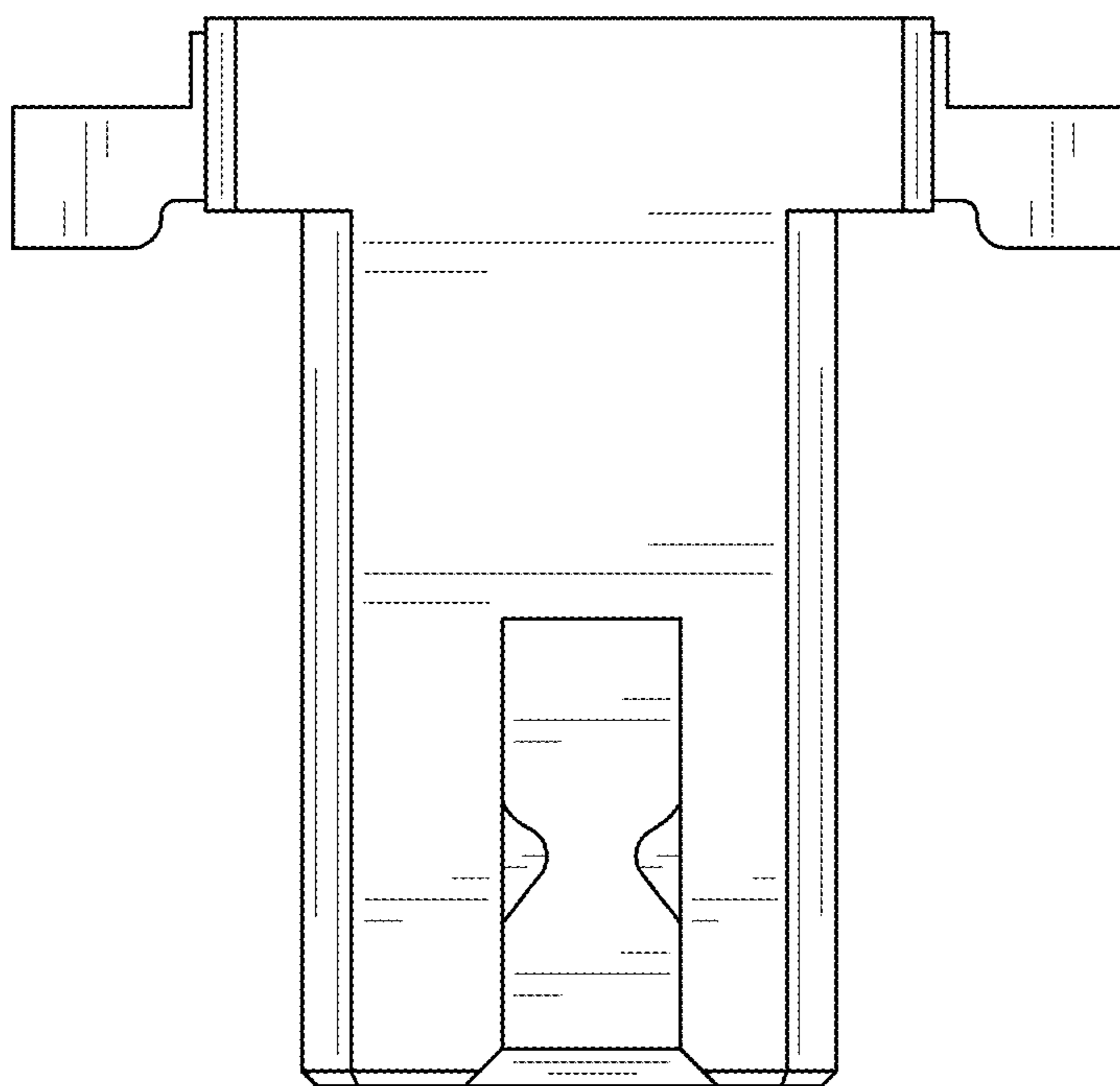


FIG. 4

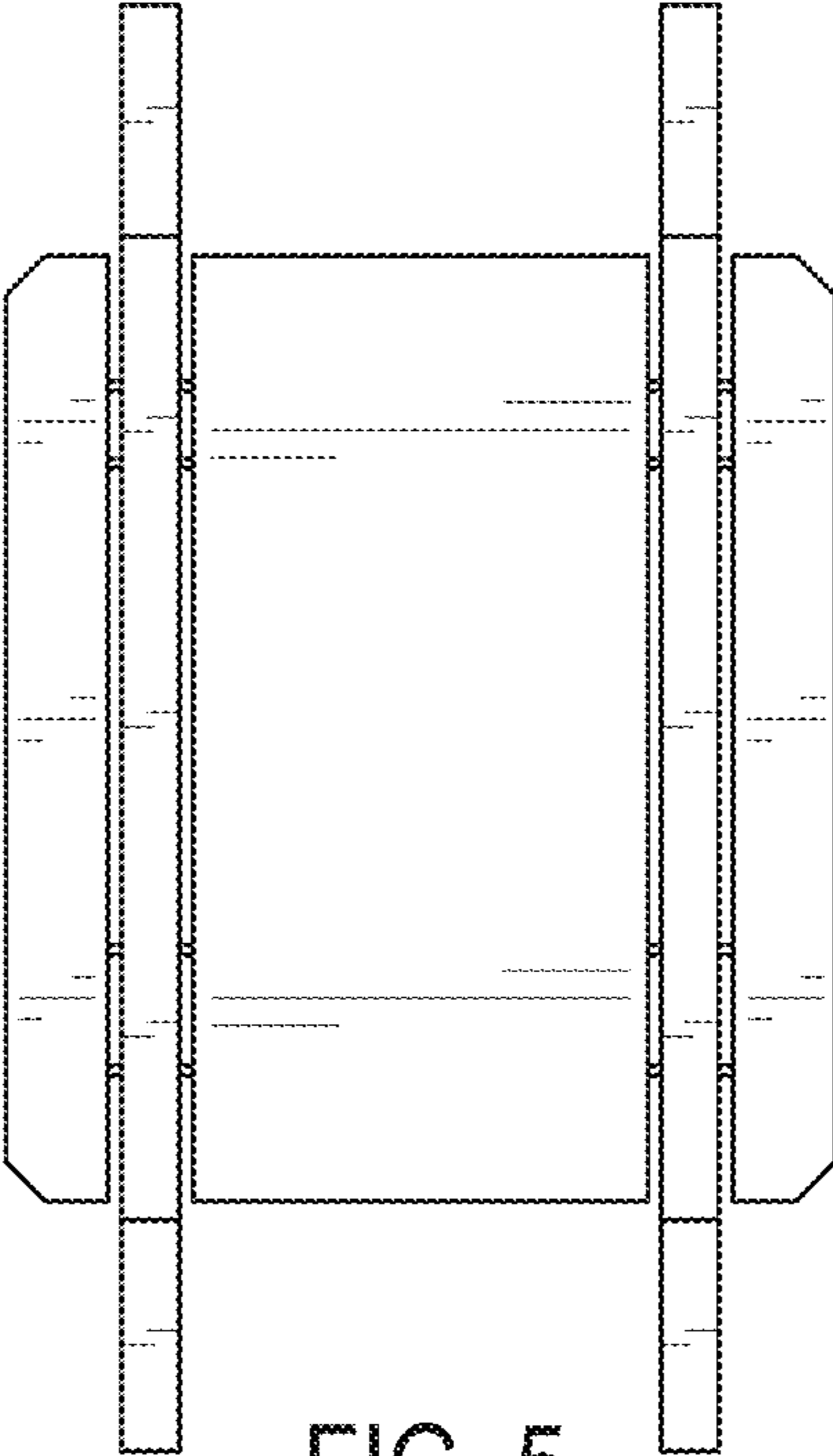


FIG. 5

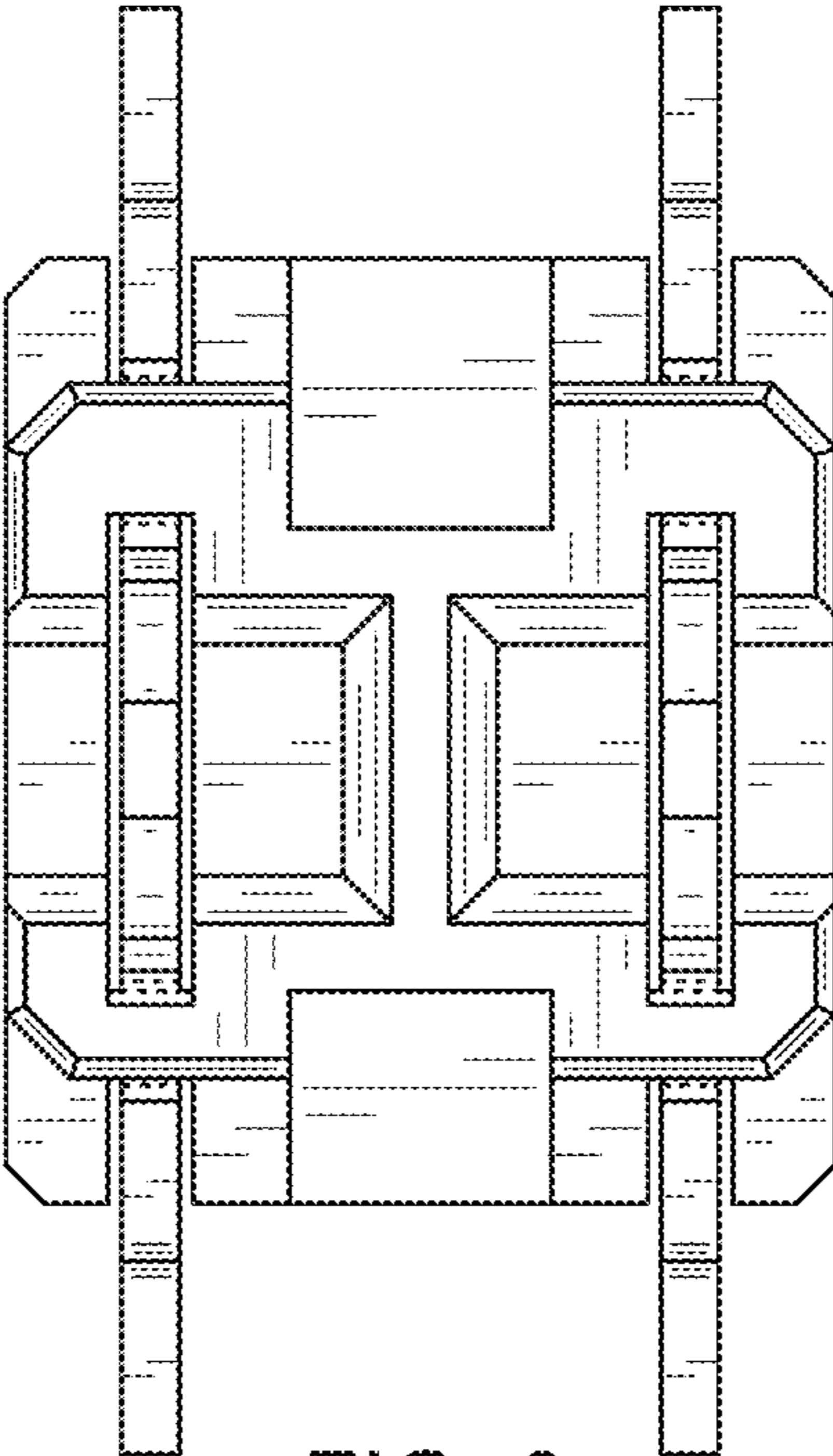


FIG. 6

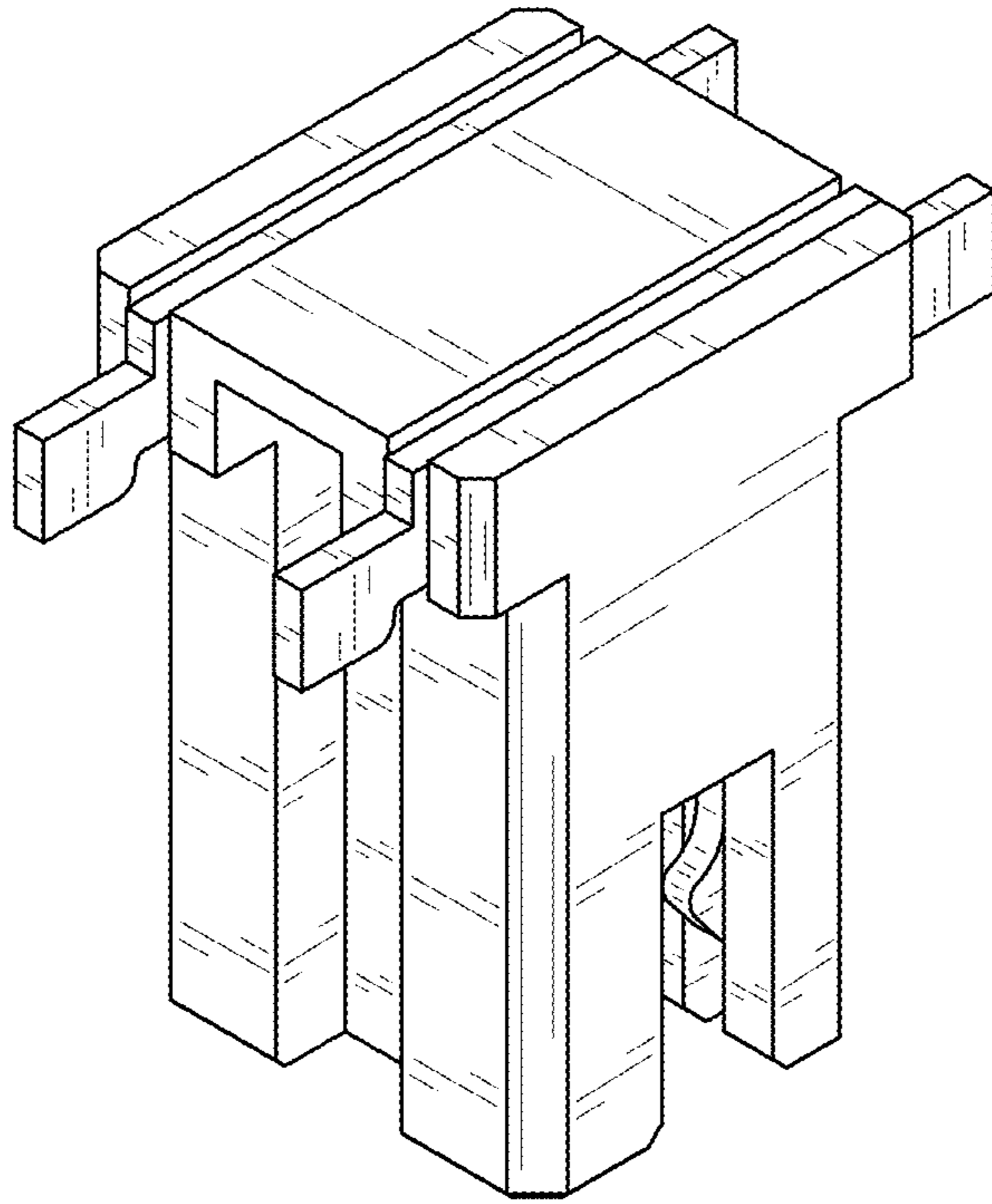


FIG. 7

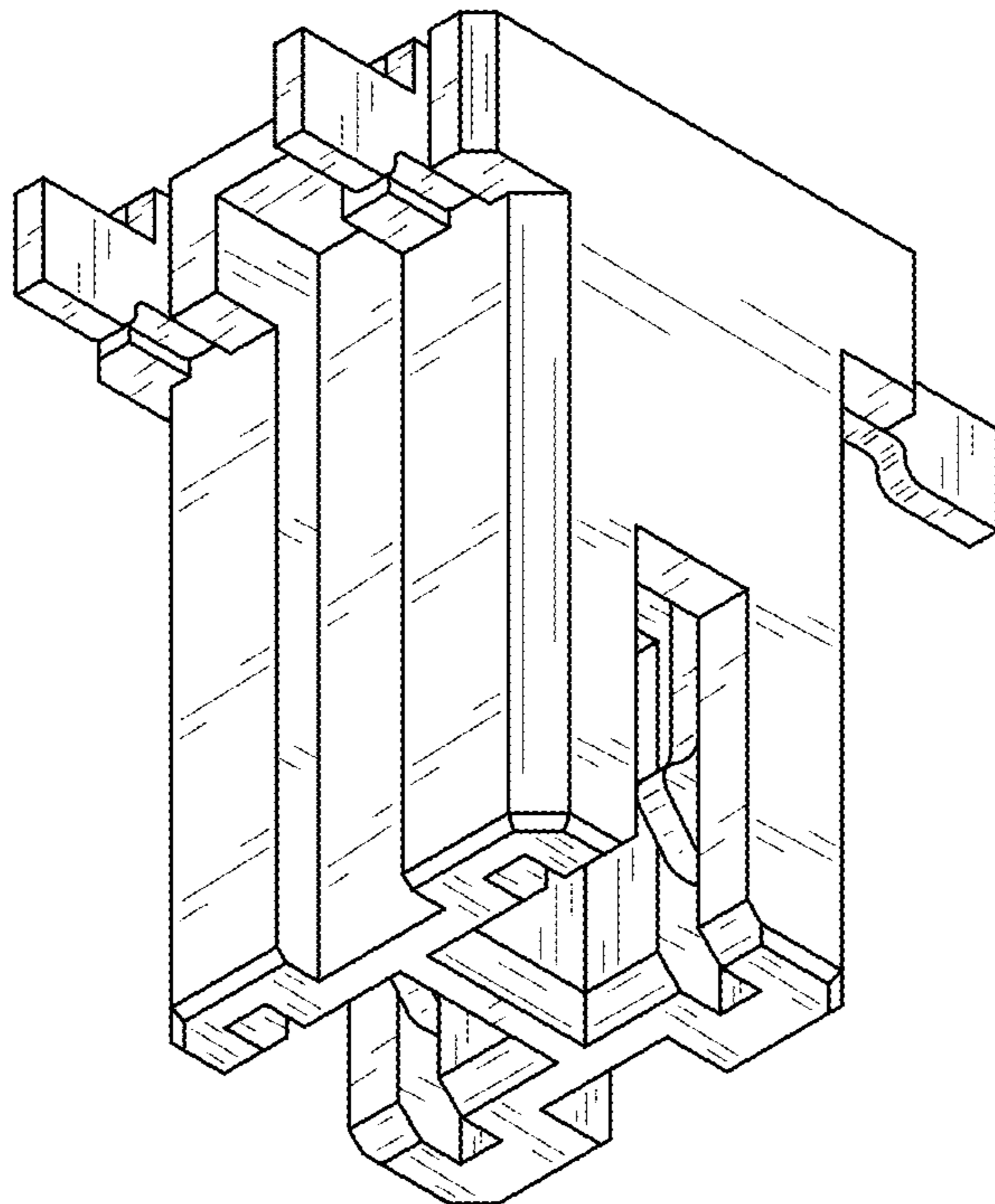


FIG. 8

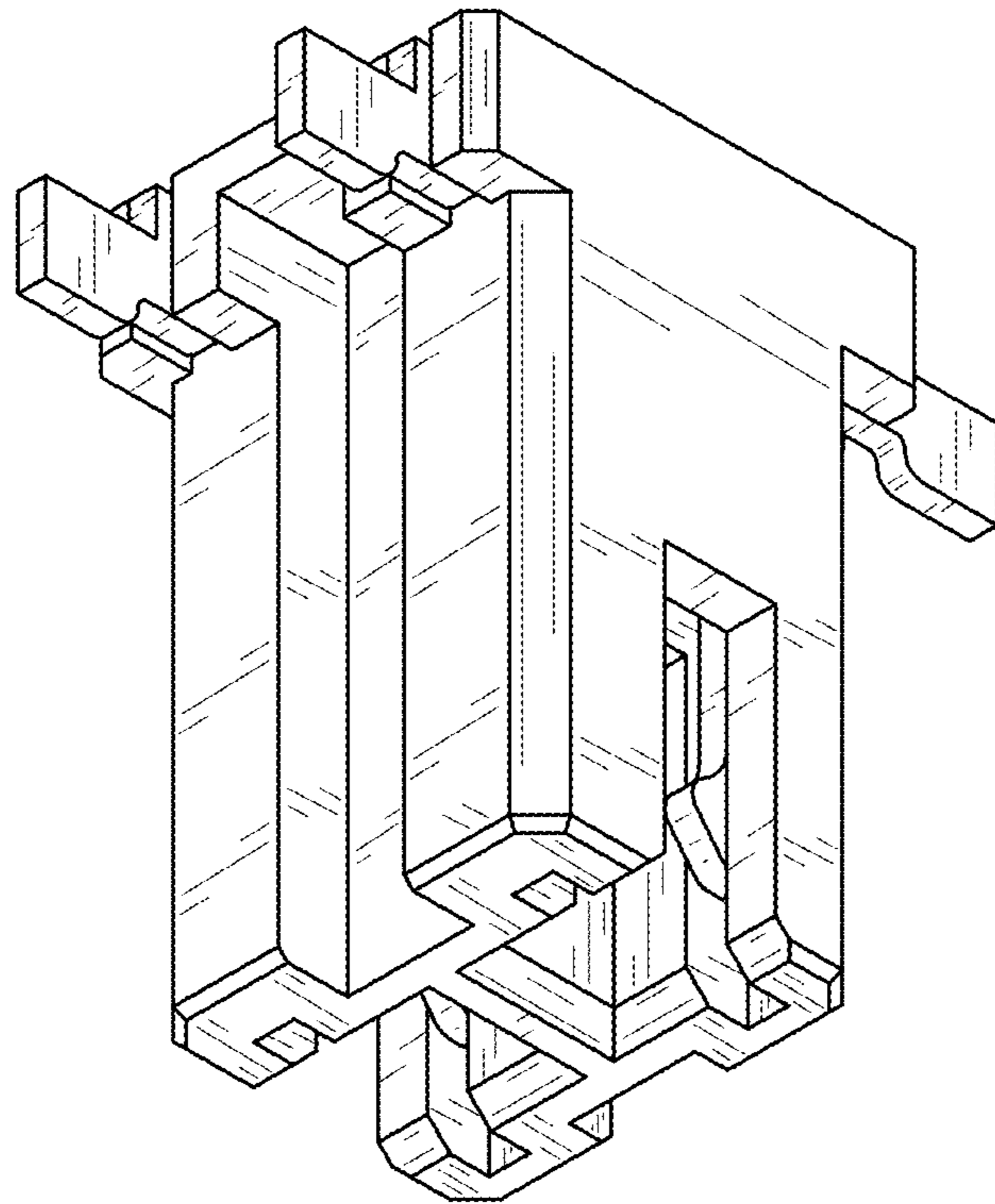


FIG. 9

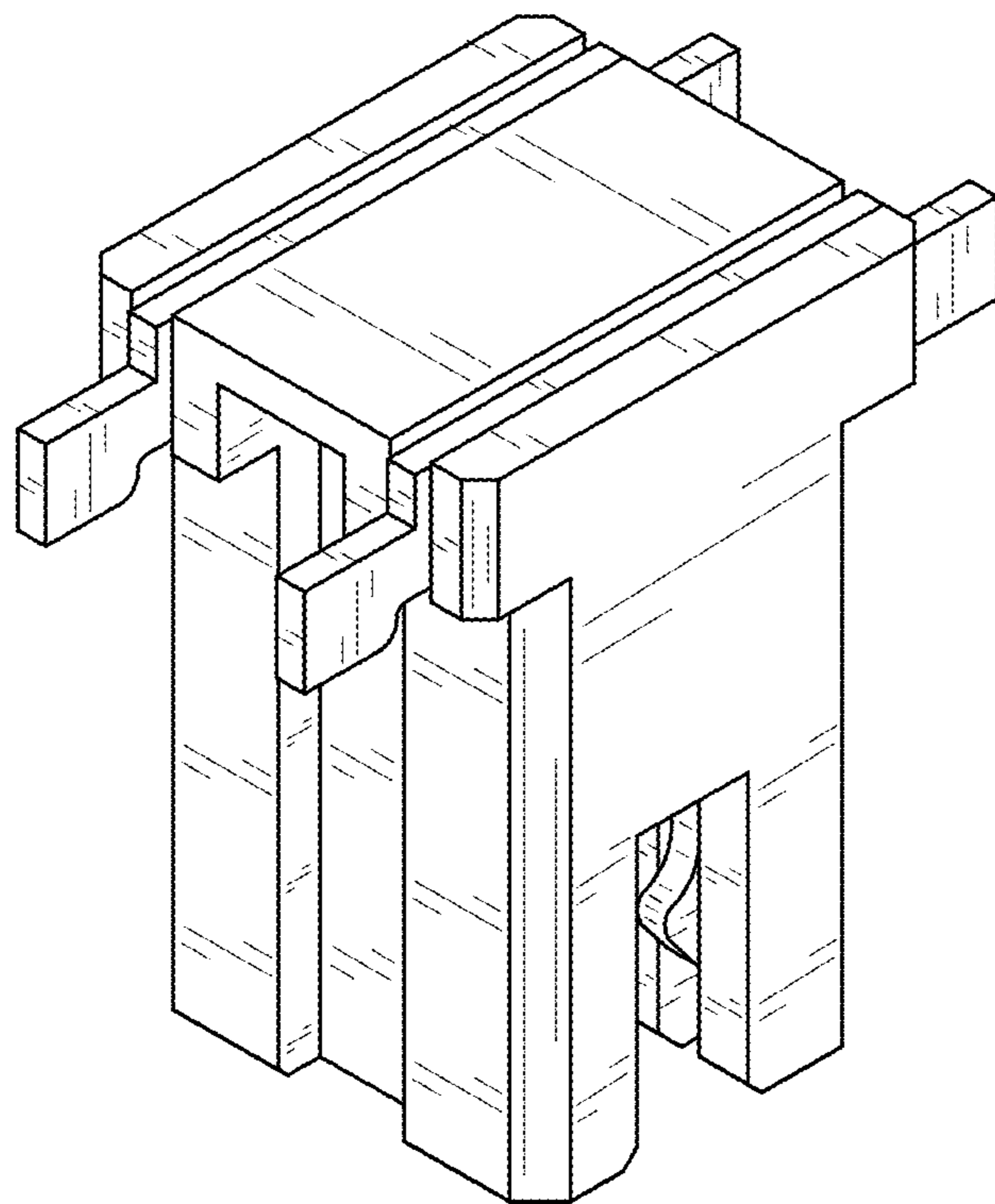


FIG. 10