

US00D992762S

(12)

United States Design Patent

Kagaya

(10) Patent No.:

US D992,762 S

(45) Date of Patent:

** Jul. 18, 2023

(54) **PROTECTOR FOR MAINTENANCE ON SEMICONDUCTOR MANUFACTURING EQUIPMENTS**

(71) Applicant: **KOKUSAI ELECTRIC CORPORATION**, Tokyo (JP)

(72) Inventor: **Toru Kagaya**, Toyama (JP)

(73) Assignee: **KOKUSAI ELECTRIC CORPORATION**, Tokyo (JP)

(**) Term: **15 Years**

(21) Appl. No.: **29/806,967**

(22) Filed: **Sep. 8, 2021**

(30) **Foreign Application Priority Data**

Mar. 9, 2021 (JP) 2021-004865 D

(51) **LOC (14) Cl.** **25-04**

(52) **U.S. Cl.**
USPC **D25/66; D25/62**

(58) **Field of Classification Search**
USPC D25/62, 66, 68; 182/153, 128, 187, 188, 182/178, 179, 152, 186.3, 182.4
CPC E04G 1/15; E04G 1/04; E04G 1/06; E04G 1/20; E04G 1/34; E04G 3/28; E04G 5/046; E04G 5/00; B63C 2005/025; B63C 5/02

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

1,423,375 A * 7/1922 Watt E04G 1/12 52/645

2,195,906 A * 4/1940 Uecker E04G 1/14 52/651.1

2,928,405 A * 3/1960 Lawson E04H 15/44 D25/56

4,031,981 A * 6/1977 Spencer E04G 1/34 182/182.4

4,064,999 A * 12/1977 Young E04F 21/1811 52/749.1

4,940,150 A * 7/1990 Spengler A47B 87/0223 211/188

5,086,875 A * 2/1992 Shreve, III E04G 1/34 182/119

D329,903 S * 9/1992 Craig D6/675

5,454,771 A * 10/1995 Wilson-Hyde ... A63B 21/00047 248/240.4

D421,866 S * 3/2000 Long D6/552

(Continued)

FOREIGN PATENT DOCUMENTS

CN 307046408 * 8/2021

JP 1336936 S 8/2008

JP 1515128 S 1/2015

Primary Examiner — T Chase Nelson
Assistant Examiner — Sydney Margaret Parsley
(74) *Attorney, Agent, or Firm* — Fitch, Even, Tabin & Flannery, LLP

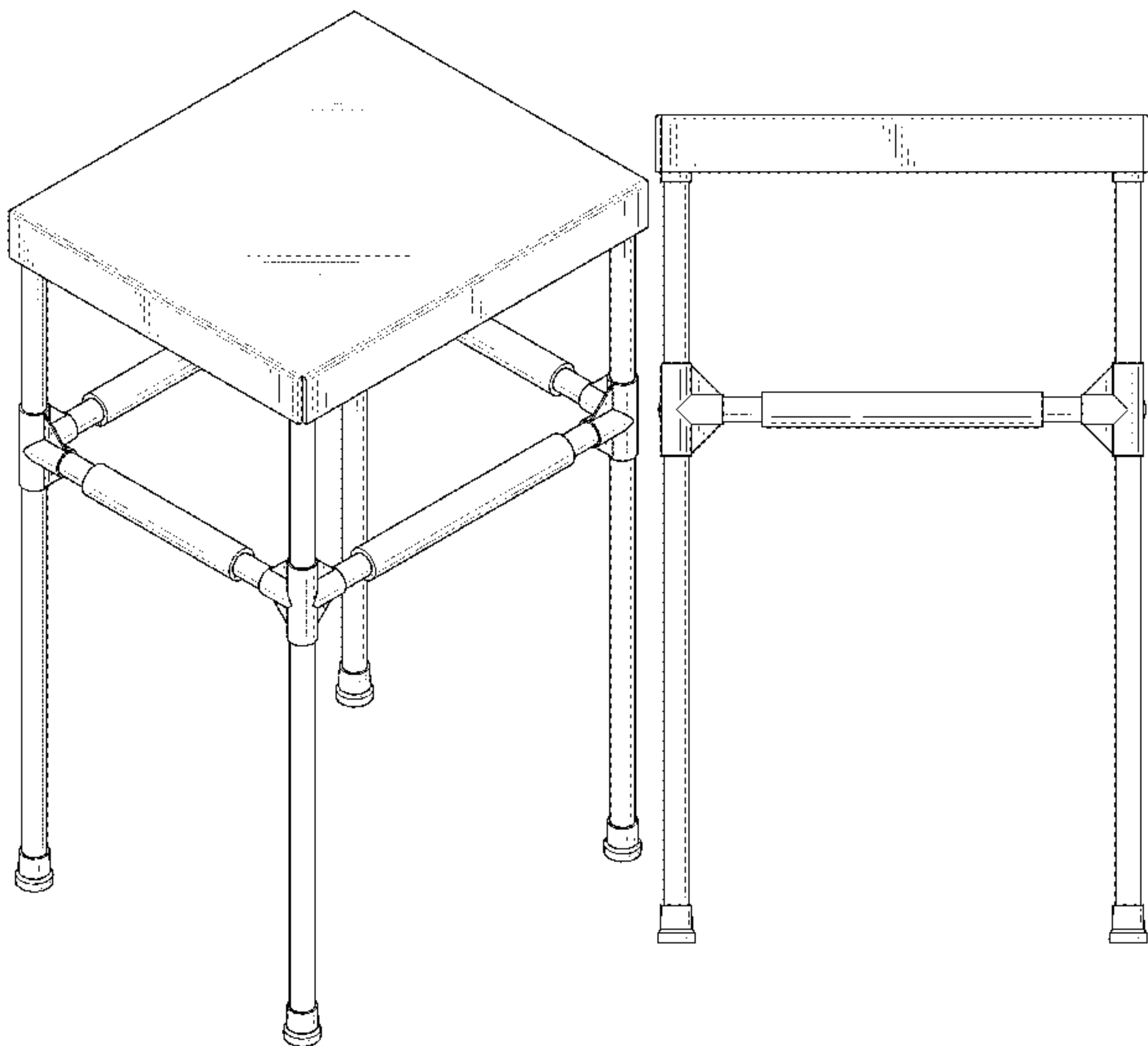
(57) **CLAIM**

The ornamental design for a protector for maintenance on semiconductor manufacturing equipments, as shown and described.

DESCRIPTION

FIG. 1 is a front, top and right side perspective view of a protector for maintenance on semiconductor manufacturing equipments showing our new design;
FIG. 2 is a front elevational view thereof;
FIG. 3 is a rear elevational view thereof;
FIG. 4 is a right side elevational view thereof;
FIG. 5 is a left side elevational view thereof;
FIG. 6 is a top plan view thereof;
FIG. 7 is a bottom plan view thereof; and,
FIG. 8 is a cross sectional view taken along line 8-8 in FIG. 2.

1 Claim, 7 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

6,098,749 A *

8/2000

Enochs

.....

E04G 5/003

248/238

6,148,580 A *

11/2000

Weir

.....

A62B 35/0062

182/36

D522,666 S *

6/2006

Clayton, Jr.

.....

D25/62

D531,429 S *

11/2006

Henschel

.....

D6/349

D536,799 S *

2/2007

Freitas

.....

D25/66

D540,950 S *

4/2007

Johnson

.....

D24/183

7,290,552 B1 *

11/2007

Eisbrenner

.....

E04H 15/04

135/117

D589,281 S *

3/2009

Chung

.....

D6/678.1

7,549,381 B1 *

6/2009

Nail, Jr.

.....

A47B 21/06

108/26

D608,459 S *

1/2010

Wyse

.....

D25/62

D635,623 S *

4/2011

Wright

.....

D21/686

D660,361 S *

5/2012

Carver, Jr.

.....

D20/19

D661,454 S *

6/2012

Coir

.....

D34/38

D662,606 S *

6/2012

Doig

.....

D25/32

8,210,312 B1 *

7/2012

Tetreault, Jr.

.....

E04G 1/34

182/119

D675,344 S *

1/2013

Davis

.....

E04H 3/28

D25/62

D686,287 S *

7/2013

Boatwright

.....

D21/691

D686,755 S *

7/2013

Ahlander

.....

D25/66

D704,858 S *

5/2014

Green

.....

A62B 35/0062

D25/62

D714,010 S *

9/2014

Hurst

.....

E04G 5/003

D34/17

D765,267 S *

8/2016

Uetabira

.....

A63B 21/00047

D25/16

D776,826 S *

1/2017

Foley

.....

E04G 1/34

D25/66

D834,853 S *

12/2018

Lin

.....

E04G 1/34

D6/513

D853,515 S *

7/2019

Chen

.....

A47B 87/0223

D21/811

D895,844 S *

9/2020

Woodward

.....

E04F 21/1811

D25/66

D895,845 S *

9/2020

Woodward

.....

E04G 1/34

D25/66

D932,815 S *

10/2021

Polidoros

.....

E04H 15/44

D6/675.1

D958,410 S *

7/2022

Barnard

.....

E04G 1/14

D25/66

D972,171 S *

12/2022

Barnard

.....

E04G 1/12

D25/66

2011/0188984 A1 *

8/2011

Hofer

.....

E04G 7/34

403/292

2015/0308096 A1 *

10/2015

Merhi

.....

E04G 21/14

52/745.1

* cited by examiner

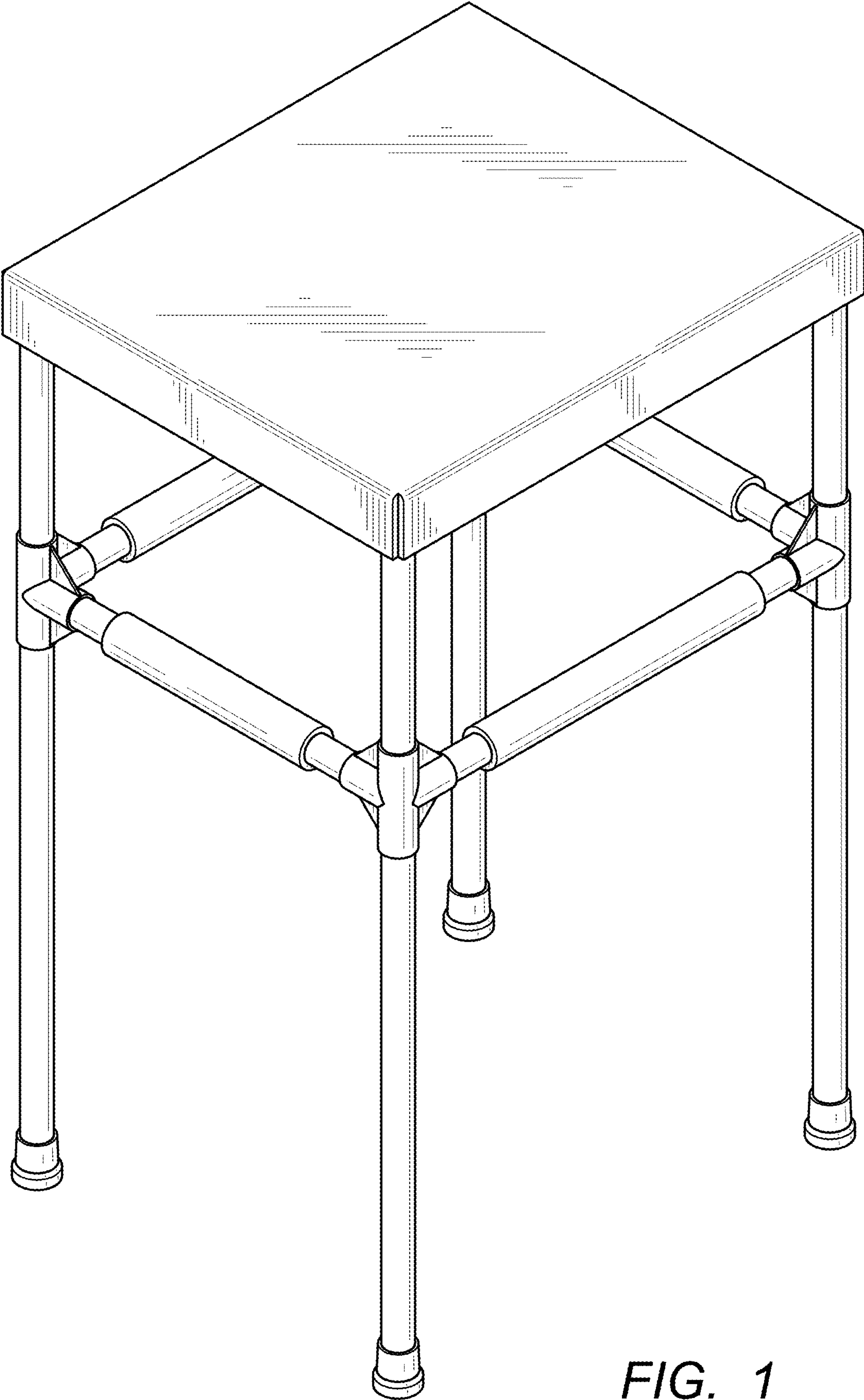


FIG. 1

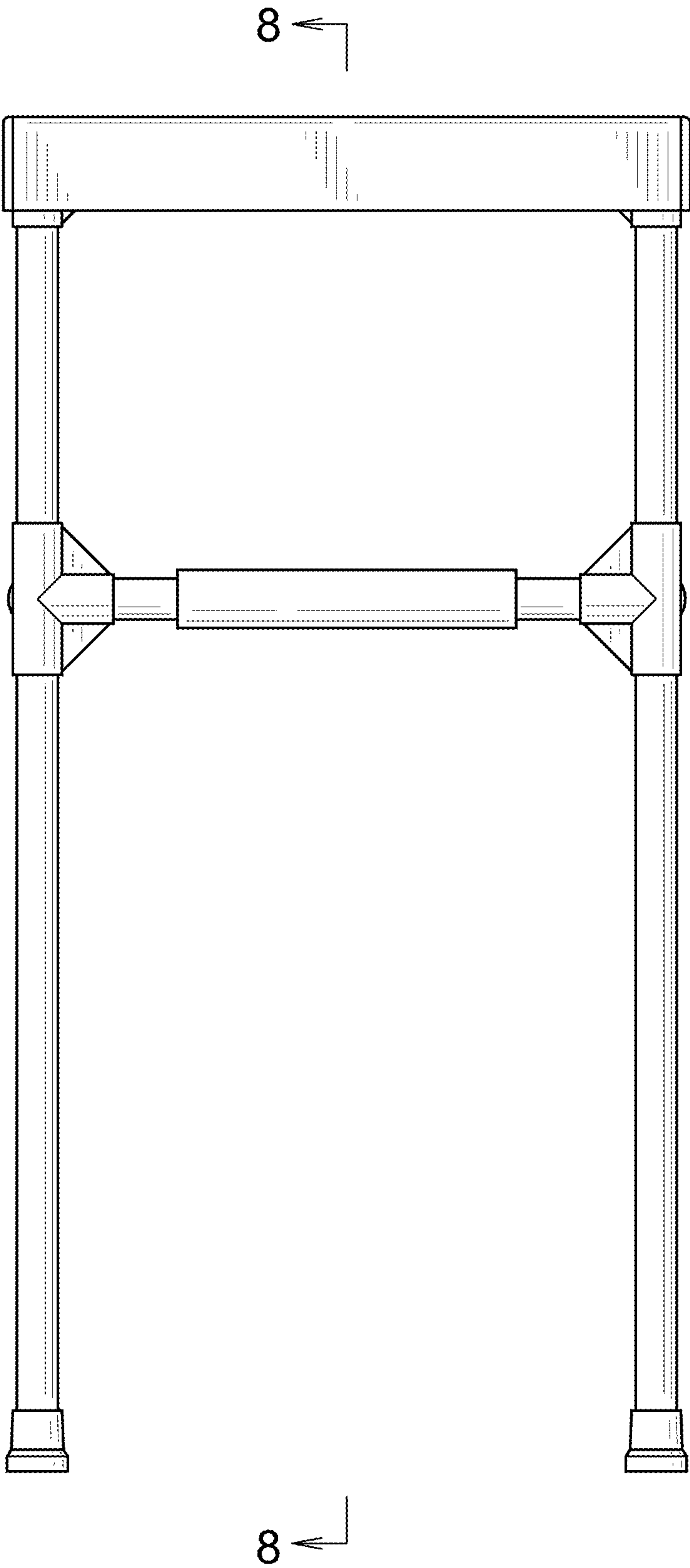


FIG. 2

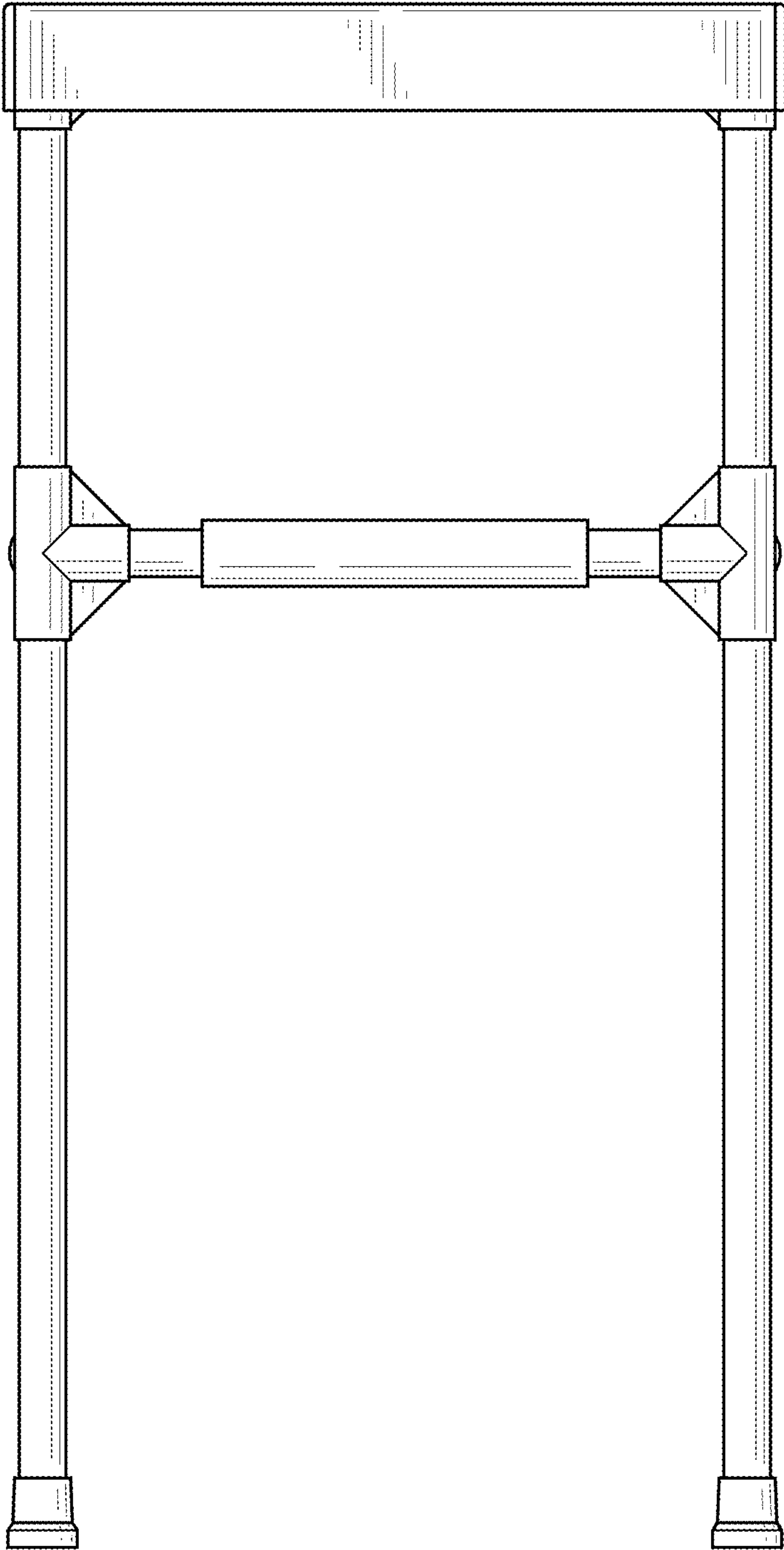


FIG. 3

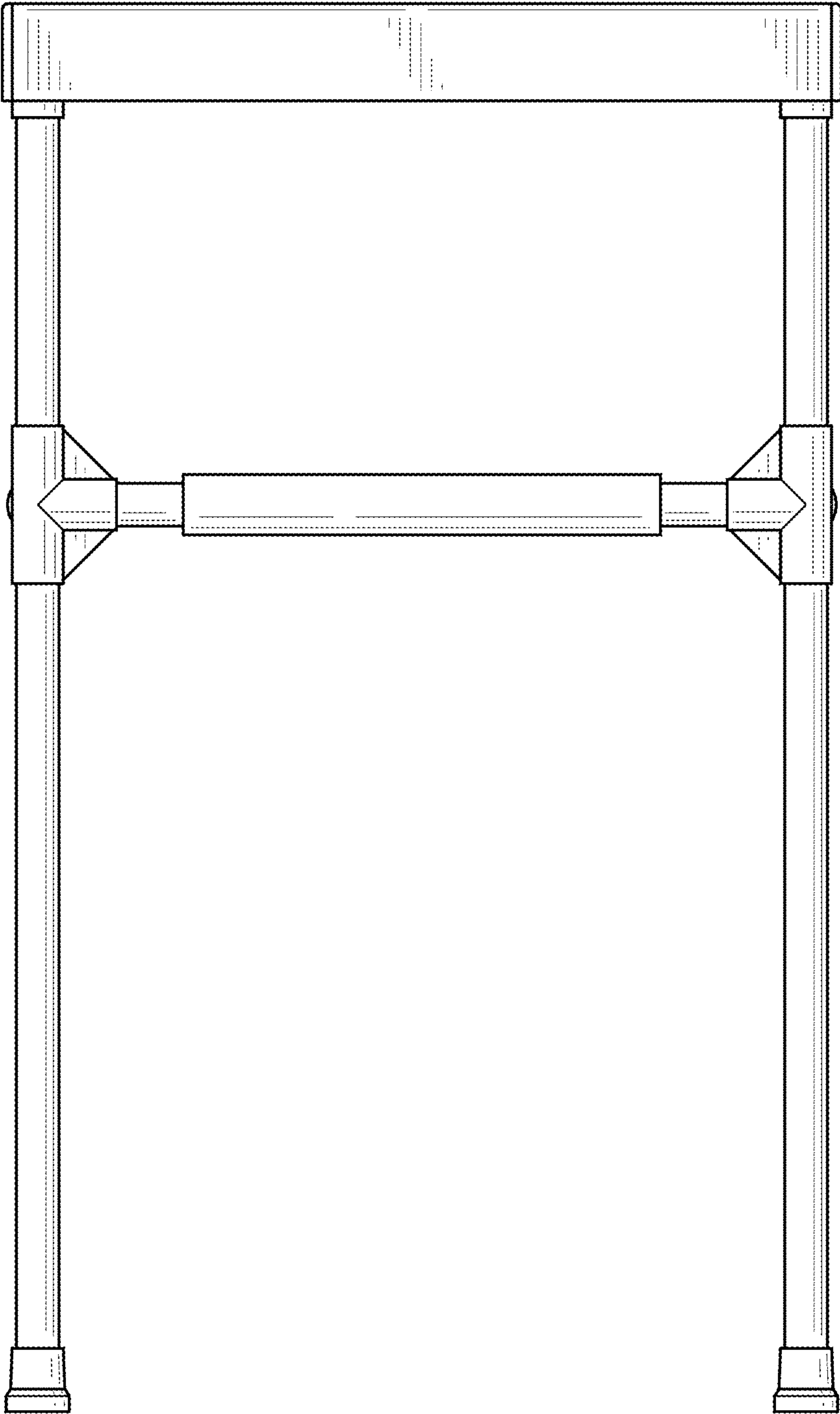


FIG. 4

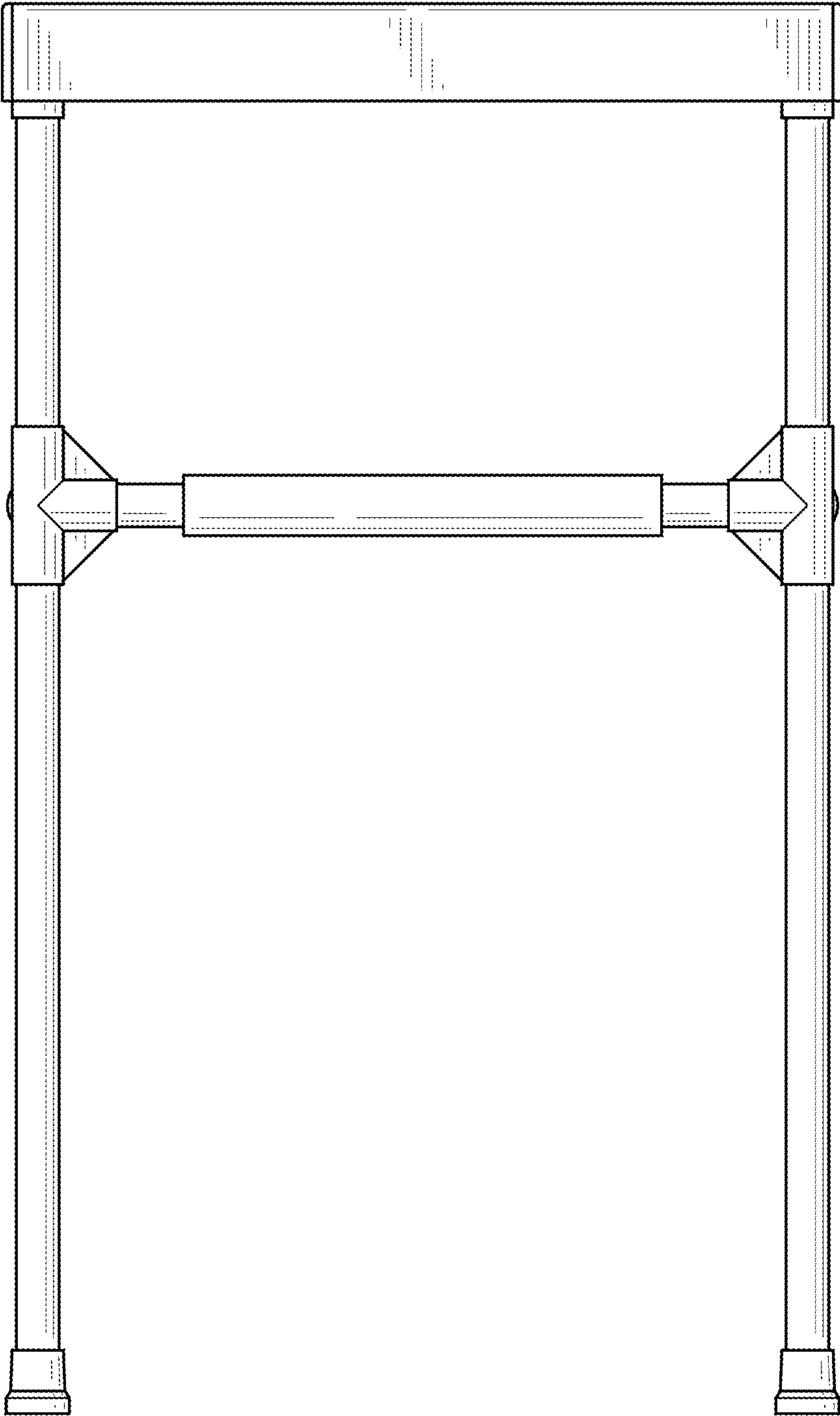


FIG. 5

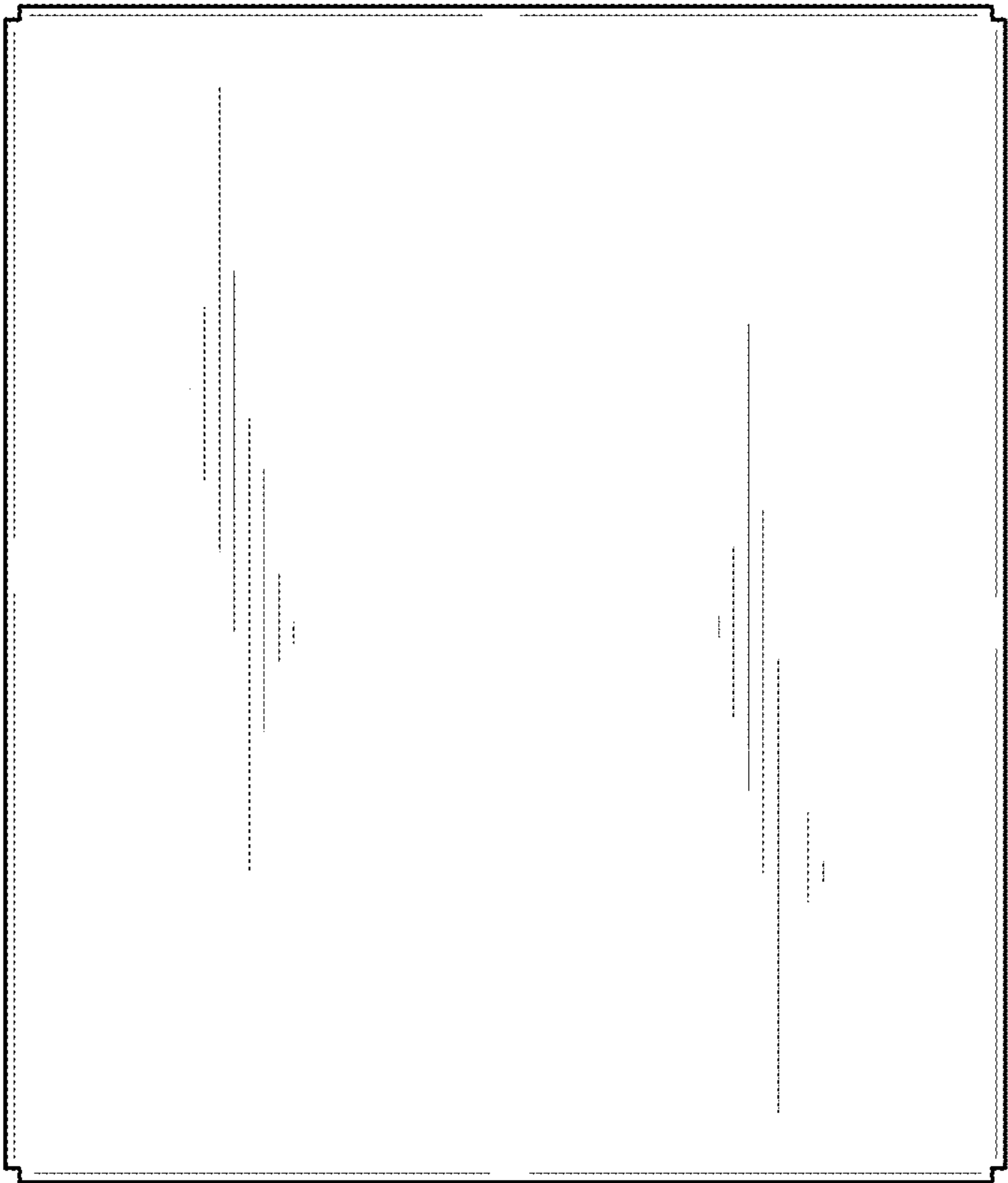


FIG. 6

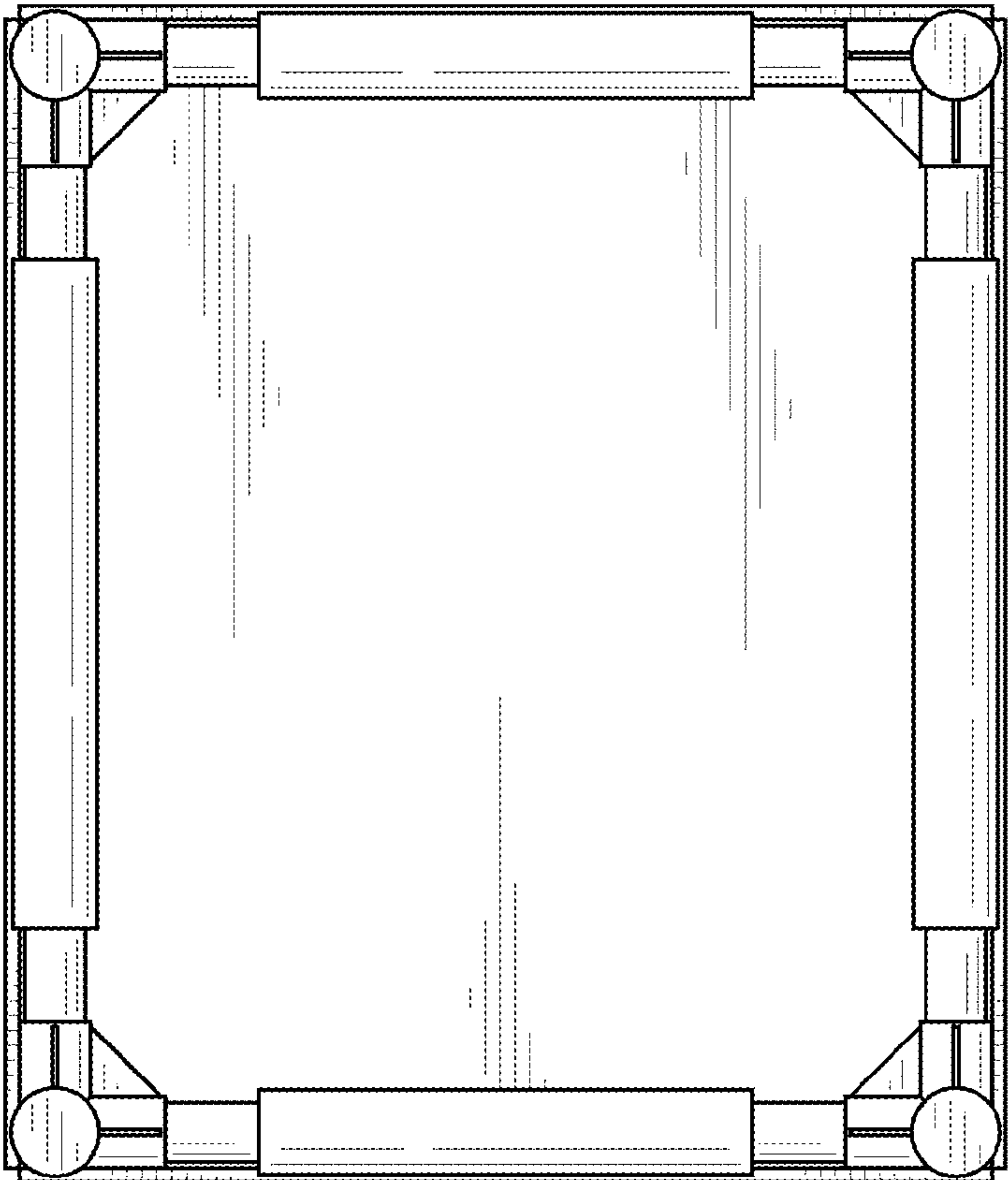


FIG. 7

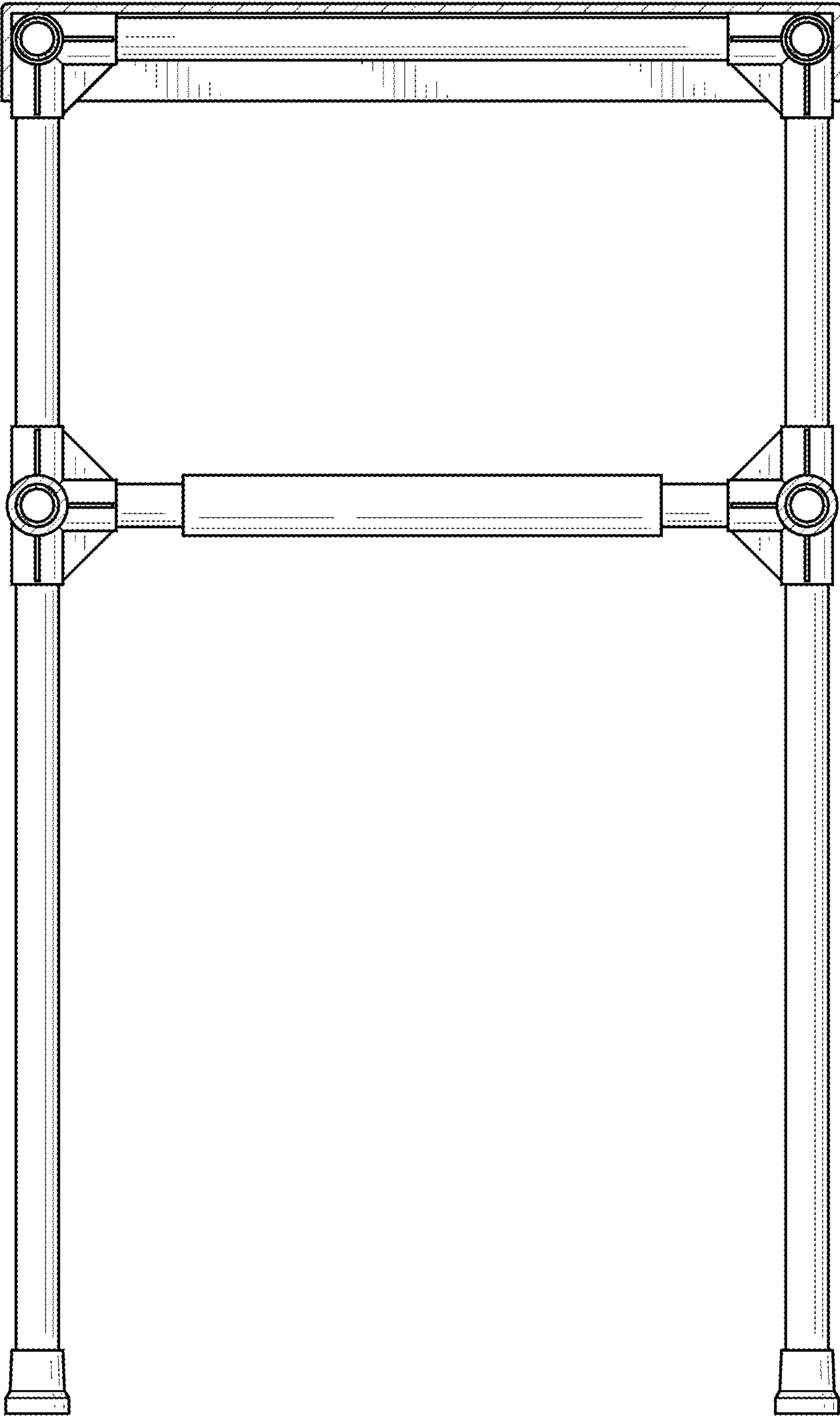


FIG. 8