



US00D938772S

(12) **United States Design Patent** (10) **Patent No.:** **US D938,772 S**
Styrc et al. (45) **Date of Patent:** **** Dec. 21, 2021**

(54) **CONNECTOR**

FOREIGN PATENT DOCUMENTS

(71) Applicant: **2724889 ONTARIO INC.**, Oakville (CA)

CA 3007687 A1 * 12/2018 E04B 1/2403
CN 201542095 U 8/2010

(Continued)

(72) Inventors: **Jacek Styrc**, Oakville (CA); **Sebastian Lysiak**, Bielsko-Biala (PL)

OTHER PUBLICATIONS

(73) Assignee: **2724889 ONTARIO INC.**, Oakville (CA)

International Search Report of the International Searching Authority for PCT/CA2018/050169, Canadian Intellectual Property Office, Lily Truong, Canada, dated Jun. 21, 2018.

(Continued)

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

(21) Appl. No.: **29/723,130**

Primary Examiner — Holly E Thurman

(22) Filed: **Feb. 4, 2020**

Assistant Examiner — Ieisha N Price

(51) **LOC (13) Cl.** **06-06**

(74) *Attorney, Agent, or Firm* — Bhole IP Law; Anil Bhole; Marc Lampert

(52) **U.S. Cl.**

USPC **D6/718.12**; D8/382

(58) **Field of Classification Search**

USPC D25/133, 134, 68, 199, 124, 127, 135, D25/122, 119; D8/349, 354, 380, 381, D8/373, 374, 394, 382; D6/718.1, D6/718.11, 718.12, 347, 702, 718.29, D6/387, 388, 683, 684

CPC E04F 10/02; E04B 1/1912; E04B 1/2608; E04B 1/28; E04B 1/30; E04B 1/3483; E04B 1/34838; E04B 1/34846; E04B 1/34853; E04B 1/34861; E04B 1/40; E04B 1/34823; E04B 1/2612; E04B 2001/1963; E04B 2001/199; E04B 2001/1993; E04B 2001/266; E04B 2001/2676; E04B 2001/1984; E04B 2001/405; E04B

(Continued)

(57) **CLAIM**

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

DESCRIPTION

FIG. 1 is a front perspective view of a connector according to our new design.

FIG. 2 is a top view of the design of FIG. 1.

FIG. 3 is a bottom view of the design of FIG. 1.

FIG. 4 is a front view of the design of FIG. 1.

FIG. 5 is a rear view of the design of FIG. 1.

FIG. 6 is a left side view of the design of FIG. 1.

FIG. 7 is a right side view of the design of FIG. 1.

FIG. 8 is a rear, left side perspective view of the design of FIG. 1.

FIG. 9 is a left side, front perspective view of the design of FIG. 1.

FIG. 10 is a right side, rear perspective view of the design of FIG. 1; and,

FIG. 11 is a front, right side perspective view of the design of FIG. 1.

(56) **References Cited**

U.S. PATENT DOCUMENTS

451,596 A * 5/1891 Longenecker F16B 9/058

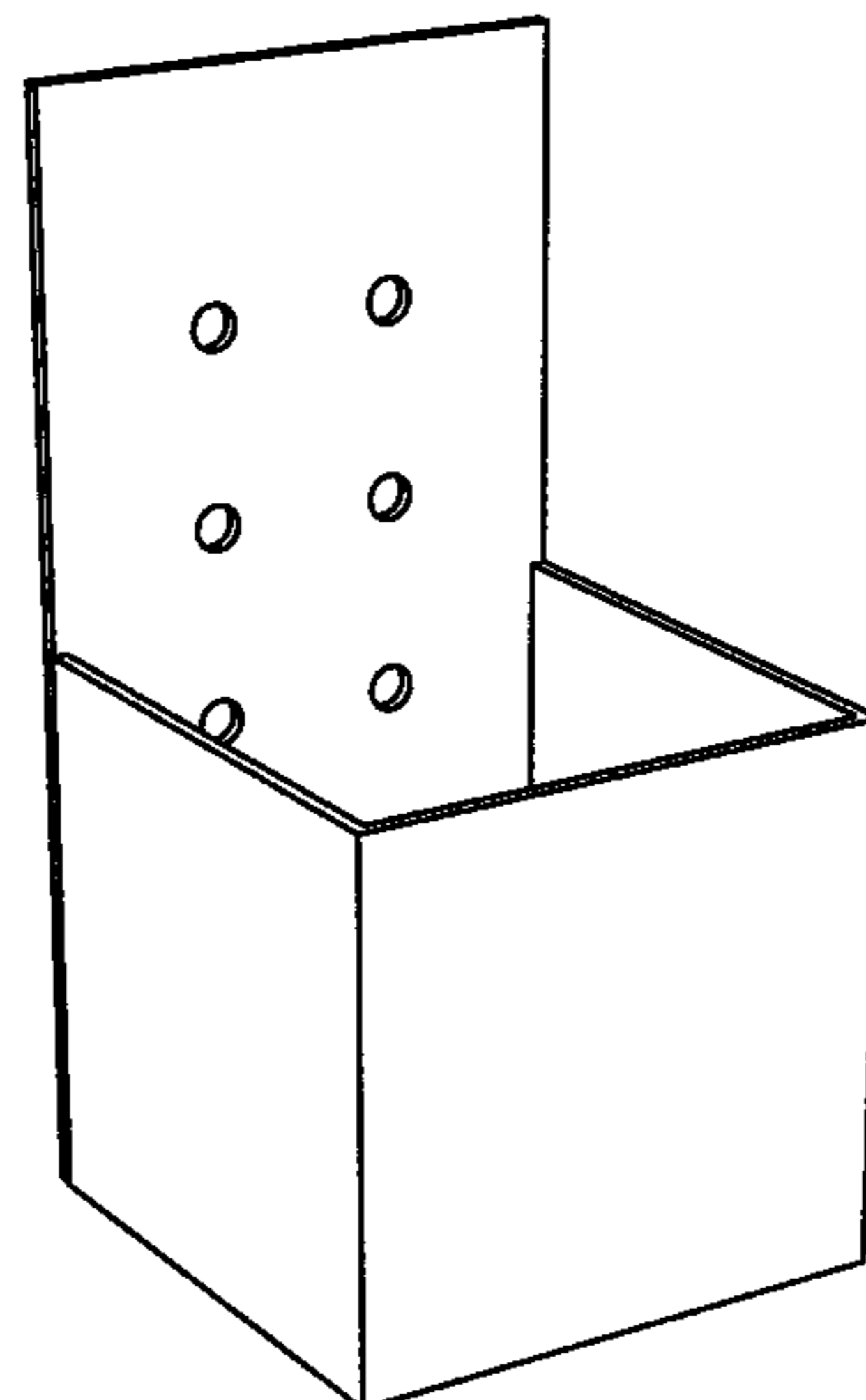
52/656.9

490,122 A * 1/1893 Magargal F41C 33/0209

224/231

(Continued)

1 Claim, 8 Drawing Sheets



(58) **Field of Classification Search**

CPC 2001/2415; E04B 2001/2439; E04B
 2001/2445; E04B 2001/2457; E04B
 2001/246; E04B 2001/2469; E04B
 2001/2644; E04B 2001/2684; E04B
 2001/2692; A47B 13/003; A47B
 2013/006; A47B 13/021; A47B 2013/022;
 A47B 13/04; A47B 13/06; A47B
 2220/0036; A47B 2220/0038; A47B
 2220/0041; A47B 2220/0044; F16B 7/04;
 F16B 7/0406; F16B 7/0426; F16B 7/044;
 F16B 7/0453; F16B 7/048; F16B 7/0486;
 F16B 9/052; F16B 9/056; F16B 9/058;
 A45F 3/22; A45F 3/24; A45F 3/26; F16M
 11/24

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

922,215 A * 5/1909 Tuteur F16B 7/0446
 403/190
 949,394 A 2/1910 Daly
 1,097,934 A * 5/1914 Price F16B 9/058
 403/190
 1,201,159 A * 10/1916 Dettmer F41C 33/0209
 224/231
 1,214,738 A * 2/1917 Wolf F16B 12/56
 5/290
 1,441,559 A * 1/1923 Reinhart E06B 3/984
 403/205
 1,816,049 A * 7/1931 Larner A24F 19/0064
 206/496
 1,818,418 A 8/1931 Millard
 1,848,085 A * 3/1932 Eisenschmidt E04G 7/02
 403/187
 2,016,702 A * 10/1935 Bauer F16B 7/048
 403/237
 2,153,547 A 4/1939 Charlop
 D141,423 S * 5/1945 Lewis D6/573
 2,477,163 A * 7/1949 Barnett F16B 9/052
 403/205
 D178,316 S * 7/1956 Vegors D22/147
 2,931,129 A 4/1960 Boniface
 3,188,696 A * 6/1965 Earhart E04B 1/2612
 52/241
 3,278,149 A * 10/1966 Brucker F16B 9/056
 248/239
 3,294,298 A * 12/1966 Danielson A45F 5/00
 224/666
 3,310,324 A 3/1967 Boden
 3,352,491 A 11/1967 Nelson
 3,369,333 A * 2/1968 Wheeler F16B 7/00
 52/210
 3,462,021 A 8/1969 Hawke
 3,537,221 A * 11/1970 Helfman F16B 9/058
 52/289
 3,545,796 A 12/1970 Nicholls
 3,615,110 A * 10/1971 Fugate E04G 5/14
 403/230
 3,645,569 A 2/1972 Reilly
 3,740,084 A 6/1973 Tellberg
 D232,201 S * 7/1974 Hoffman D6/573
 3,829,999 A 8/1974 Bernstein
 3,907,445 A * 9/1975 Wendt E04B 1/2612
 403/191
 3,945,741 A * 3/1976 Wendt F16B 7/22
 403/191
 3,989,398 A * 11/1976 Wendt F16B 9/058
 403/230
 D245,649 S * 9/1977 Hughes D3/226
 4,046,186 A 9/1977 Nordstrom
 4,046,295 A * 9/1977 Eichler A45F 5/02
 224/242

4,076,431 A 2/1978 Burvall
 D250,240 S * 11/1978 Braginetz D6/515
 D250,241 S * 11/1978 Braginetz D19/90
 4,125,973 A 11/1978 Lendrihas
 4,125,984 A 11/1978 Jonas
 D251,018 S * 2/1979 Lockwood D25/68
 D258,194 S 2/1981 Stanley
 4,313,688 A * 2/1982 Daniels E04B 1/2608
 403/189
 D264,481 S * 5/1982 Russo D19/75
 4,381,629 A 5/1983 Ahn
 4,422,792 A * 12/1983 Gilb E04B 1/2612
 403/232.1
 4,429,730 A 2/1984 Elston
 D275,264 S * 8/1984 Wegener, II 248/300
 D277,819 S * 3/1985 Crosslen D6/555
 D280,466 S * 9/1985 Seltzer D12/422
 4,572,695 A 2/1986 Gilb
 4,594,017 A * 6/1986 Hills F16B 9/058
 403/6
 4,616,950 A * 10/1986 Morris F16B 7/18
 403/231
 4,630,550 A 12/1986 Weitzman
 D289,605 S * 5/1987 Lytle D8/381
 4,665,672 A * 5/1987 Commins E04B 1/2608
 52/295
 4,717,279 A * 1/1988 Commins E04B 1/2608
 403/187
 D294,805 S * 3/1988 Boyer D9/415
 4,801,121 A * 1/1989 Zunker E05B 67/383
 248/218.4
 4,856,252 A * 8/1989 Cornell E04B 1/2612
 52/702
 4,885,883 A 12/1989 Wright
 4,910,939 A 3/1990 Cavanagh
 4,919,394 A * 4/1990 Otte E04F 11/1817
 256/59
 4,925,141 A * 5/1990 Classen E04B 1/2612
 248/217.2
 D310,760 S * 9/1990 Murphy D6/515
 D318,569 S * 7/1991 Schaefer D3/218
 5,033,901 A 7/1991 Dias
 5,072,465 A 12/1991 Lyons
 5,104,252 A * 4/1992 Colonias F16B 9/058
 403/232.1
 5,150,982 A * 9/1992 Gilb E04F 11/1812
 403/232.1
 5,186,571 A * 2/1993 Hentzschel F16B 9/058
 403/231
 5,192,056 A * 3/1993 Espinueva E04H 17/1447
 256/65.06
 5,238,321 A 8/1993 Jarjoura
 D342,328 S 12/1993 Granstrom
 D342,662 S 12/1993 Lavin, Sr.
 5,284,311 A * 2/1994 Baer A47B 57/402
 248/243
 5,375,384 A 12/1994 Wolfson
 D355,349 S * 2/1995 Taparuskas, Jr. D8/349
 D356,646 S * 3/1995 Cole D25/124
 RE34,892 E 4/1995 Dunwoodie
 D361,462 S * 8/1995 Newham D6/567
 D365,714 S * 1/1996 Masello D6/526
 5,490,523 A 2/1996 Mallookis
 D370,681 S * 6/1996 Diamond D14/252
 5,555,681 A 9/1996 Cawthorn
 5,556,218 A 9/1996 Homer
 D374,937 S * 10/1996 Salas D25/68
 5,590,974 A 1/1997 Yang
 D398,219 S * 9/1998 Campman D8/363
 5,941,183 A 8/1999 Ming-Shun
 5,941,527 A 8/1999 Selton
 D426,041 S * 5/2000 Boghossian D34/6
 D427,810 S * 7/2000 Ali D6/683
 6,092,342 A 7/2000 Sharapata
 6,109,461 A * 8/2000 Kluge A47B 57/30
 211/103
 D430,789 S * 9/2000 Opperman D8/363
 D434,880 S * 12/2000 McNary D30/101

(56)

References Cited

U.S. PATENT DOCUMENTS

- D439,246 S * 3/2001 Hansen, Jr. D14/253
D442,236 S 5/2001 Chang
6,230,466 B1 * 5/2001 Pryor E04B 1/2612
52/702
6,247,869 B1 6/2001 Lichvar
D444,816 S * 7/2001 Stravitz D19/86
6,336,620 B1 1/2002 Belli
6,354,451 B1 3/2002 Holst
D455,643 S * 4/2002 Aubin D6/553
6,463,711 B1 * 10/2002 Callies E04B 1/2612
52/702
D465,646 S * 11/2002 Hendrickson D3/218
6,536,179 B2 * 3/2003 Little E04B 1/2608
52/702
6,636,620 B1 10/2003 Hoshino
D492,040 S * 6/2004 Kozak D25/199
6,745,521 B1 6/2004 Klemming
6,751,921 B1 6/2004 Iwakawa
D493,091 S * 7/2004 Griggy D8/356
D508,572 S * 8/2005 Suggate D25/134
6,969,211 B2 11/2005 Altman
7,014,383 B2 * 3/2006 Schmid E04H 9/14
403/231
7,231,954 B2 6/2007 Green
D547,863 S * 7/2007 Heinsch D24/128
D548,064 S * 8/2007 Norton D8/380
7,264,416 B2 9/2007 Kahl
D558,041 S * 12/2007 Skinner D8/354
7,431,389 B2 10/2008 Reeb et al.
7,464,513 B2 12/2008 Rioux
D598,734 S * 8/2009 Miranda D8/363
7,600,348 B1 10/2009 Kostka
D610,717 S * 2/2010 Lin E04H 12/2261
D25/133
D619,879 S * 7/2010 McCarthy D8/354
7,762,042 B2 7/2010 Packard
D622,864 S 8/2010 Bajrami
D650,987 S * 12/2011 Rothbauer D3/215
D658,491 S * 5/2012 Raber D8/499
D665,656 S * 8/2012 Anzelmo D8/380
8,234,826 B1 * 8/2012 Proffitt, Jr. E02D 27/00
52/293.3
D673,306 S 12/2012 Min-Ju
8,429,857 B2 4/2013 Melose
D689,045 S * 9/2013 Mardas D14/253
D689,207 S * 9/2013 Benet D25/133
8,572,905 B1 11/2013 Driggers
D701,108 S * 3/2014 Rodgers D8/354
8,689,494 B2 4/2014 Leavitt
8,720,129 B2 * 5/2014 Sias B66C 1/62
52/125.2
8,739,476 B1 6/2014 Royer
8,769,887 B2 * 7/2014 Proffitt, Jr. E04B 2/58
52/167.3
8,870,163 B2 * 10/2014 Regan E04F 11/1817
256/65.02
8,925,893 B2 * 1/2015 Biedenweg B60P 7/0807
248/680
D726,342 S 4/2015 Rodriguez
D727,143 S * 4/2015 Gomez D9/432
9,091,037 B2 7/2015 Fairbairn
9,102,092 B2 8/2015 Mukith et al.
D737,670 S * 9/2015 Beyerle D8/373
9,144,291 B2 * 9/2015 Huang A45F 5/021
D744,319 S * 12/2015 White D8/354
9,228,338 B2 * 1/2016 Lin E04B 1/2612
D749,597 S * 2/2016 Wengreen D14/447
9,388,540 B2 * 7/2016 Koering B66B 23/24
D768,466 S * 10/2016 Simmons D8/354
D769,470 S * 10/2016 Criscione D25/134
D775,512 S * 1/2017 White D8/354
D776,965 S * 1/2017 Anderson D6/705
D783,390 S 4/2017 Nelson
9,631,770 B2 * 4/2017 Holestine F16M 11/046
D805,218 S * 12/2017 Malone D25/68
9,856,640 B2 1/2018 Shuhaibar
D820,359 S 6/2018 Deemer
D822,454 S * 7/2018 Kanter D8/354
D824,399 S * 7/2018 Wengreen D14/447
10,024,046 B2 * 7/2018 Higginbotham E04B 5/12
10,030,408 B2 * 7/2018 Crandall E04H 17/1413
D825,967 S * 8/2018 Tolokan D6/701
D826,695 S * 8/2018 Bolster D8/354
D827,414 S 9/2018 MacDonald et al.
D832,858 S * 11/2018 Wengreen D14/447
D834,396 S 11/2018 MacDonald
D835,973 S 12/2018 Bertato
10,202,766 B1 * 2/2019 Fox E04B 7/045
D842,684 S * 3/2019 House D8/354
D843,823 S 3/2019 Bouchard
D843,932 S 3/2019 Sinai et al.
D845,113 S 4/2019 Salter
D845,116 S 4/2019 Wokutch
D845,310 S * 4/2019 Wengreen D14/447
D845,959 S * 4/2019 Wengreen D14/447
D846,369 S * 4/2019 Ni D8/354
D846,370 S * 4/2019 Ni D8/354
D852,788 S * 7/2019 Kanter D14/238
D854,191 S * 7/2019 Sorensen D25/68
D854,710 S 7/2019 Hendry
D856,282 S 8/2019 Pillsbury
D856,781 S 8/2019 Hendry et al.
D859,958 S * 9/2019 Ni D8/354
10,422,140 B2 * 9/2019 Mitchell E04F 11/181
D866,465 S * 11/2019 Harrison D13/119
10,480,177 B2 * 11/2019 Siddhartha E04B 1/2612
D870,544 S * 12/2019 Lai D8/382
10,518,596 B2 * 12/2019 Aitoh B21D 5/16
10,597,899 B2 * 3/2020 Crandall E04H 17/143
D887,025 S * 6/2020 Styrc D25/133
10,697,198 B2 * 6/2020 Crandall E04H 17/1417
10,760,298 B2 * 9/2020 Crandall E04H 17/20
D900,199 S 10/2020 Rogers
D901,929 S * 11/2020 McCune D6/540
D905,067 S * 12/2020 Wengreen D14/447
D905,068 S * 12/2020 Wengreen D14/447
D905,069 S * 12/2020 Wengreen D14/447
D912,496 S * 3/2021 Fox D8/354
D915,186 S 4/2021 Barker
10,975,584 B2 * 4/2021 Brownmiller E04G 5/14
D918,010 S * 5/2021 Lynn D8/331
D920,728 S 6/2021 Scott
D929,611 S 8/2021 Styrc et al.
11,098,476 B2 8/2021 Jin et al.
2003/0101677 A1 6/2003 Hewett
2004/0170471 A1 9/2004 Wadsworth et al.
2004/0182430 A1 9/2004 Seo
2005/0098772 A1 5/2005 Fuoco
2006/0029462 A1 2/2006 Patberg
2006/0130887 A1 6/2006 Mallookis et al.
2006/0185706 A1 8/2006 Slade
2006/0193687 A1 8/2006 Ghosh
2006/0260259 A1 * 11/2006 Morse E04B 1/2608
52/698
2007/0209312 A1 * 9/2007 Keys F16B 9/052
52/696
2007/0209314 A1 9/2007 Vaughn
2007/0261356 A1 11/2007 Vaughn
2007/0266647 A1 * 11/2007 Pedersen A47B 9/00
52/36.6
2008/0110583 A1 5/2008 Lallemand
2008/0178551 A1 7/2008 Porter
2008/0229678 A1 9/2008 Goddard
2011/0179741 A1 7/2011 Yen
2011/0258941 A1 10/2011 Dalo
2011/0308063 A1 12/2011 Feeleus
2013/0036702 A1 2/2013 Paceti et al.
2013/0108394 A1 5/2013 Zhu
2013/0232758 A1 8/2013 Pond
2013/0247499 A1 9/2013 Zimmerman et al.
2013/0276382 A1 10/2013 Workman
2013/0306808 A1 11/2013 Huang

(56)

References Cited

U.S. PATENT DOCUMENTS

2014/0082921 A1* 3/2014 Adams, Jr. F16B 7/04
29/525.02
2015/0020857 A1 1/2015 Dominick
2015/0152630 A1* 6/2015 Winter E04F 15/02044
52/633
2015/0328977 A1 11/2015 Lueschen et al.
2016/0168840 A1* 6/2016 Monty F16B 7/0493
52/262
2017/0089059 A1 3/2017 Farre Berga
2017/0233996 A1 8/2017 Abernathy et al.
2017/0314254 A1 11/2017 Houghton et al.
2018/0070709 A1 3/2018 Ketcher
2018/0135295 A1 5/2018 Bowron
2018/0135296 A1* 5/2018 Brekke E04B 1/2612
2018/0230664 A1 8/2018 Dominguez
2018/0238041 A1 8/2018 Styr
2019/0271146 A1* 9/2019 Fox E04B 1/2604
2019/0277022 A1* 9/2019 Francis E04B 1/003
2020/0375366 A1* 12/2020 Chen A47C 3/0255

FOREIGN PATENT DOCUMENTS

EP 2492408 A1 8/2012
EP 3456990 A1* 3/2019 F16B 37/045
FR 2300863 A1* 9/1976 E04B 1/2612
FR 2991304 A1* 12/2013 E04B 1/3483
GB 422765 A* 1/1935 E04B 5/14
GB 910183 A 11/1962
JP S48-032321 4/1973
JP S48-32322 4/1973
JP S58-061816 4/1983
JP 1997268655 10/1997
RU 73909 U1 6/2008
WO 201656696 A1 4/2016

WO 2016178637 A1 11/2016
WO WO-2019048362 A1* 3/2019 F16B 7/0473
WO WO-2021094982 A1* 5/2021 E04B 1/19

OTHER PUBLICATIONS

Office action for U.S. Appl. No. 15/815,973, United States Patent & Trademark Office, dated Aug. 15, 2018.
Office action for U.S. Appl. No. 15/815,973, United States Patent & Trademark Office, dated Mar. 19, 2019.
Office action for U.S. Appl. No. 16/485,272, United States Patent & Trademark Office, dated Dec. 19, 2019.
Office action for U.S. Appl. No. 29/635,278, United States Patent & Trademark Office, dated Sep. 17, 2019.
Written Opinion of the International Searching Authority for PCT/CA2018/050169, Canadian Intellectual Property Office, Lily Truong, Canada, dated Jun. 21, 2018.
Office action for U.S. Appl. No. 29/635,278, United States Patent & Trademark Office, dated Feb. 14, 2020.
Pergola CUBIC 3-way corner bracket for 7x7 cm post-beam <https://www.vinuovo.com/en/ pergola-cubic-way-corner-bracket-for-7x7-94058077.html#reviews> Aug. 1, 2019 (Year: 2019).
Toja Grid TRIO 2 Pack for 6x6 Wood G0210360-2 <https://www.patioproducts.com/toja-grid-trio-2-pack-for-6x6-wood-g0210360-2.html> Date Unknown.
“Office Action for JP 2021-002873”.
“Office Action for JP 2021-002874”.
“Office Action for JP 2021-002875”.
“Office Action for JP 2021-002876”.
“Office Action for JP 2021-002877”.
“Office Action for JP 2021-002878”.
“Russian Patent Office, Office Action dated Jul. 6, 2021 for application No. 2019128908”.

* cited by examiner

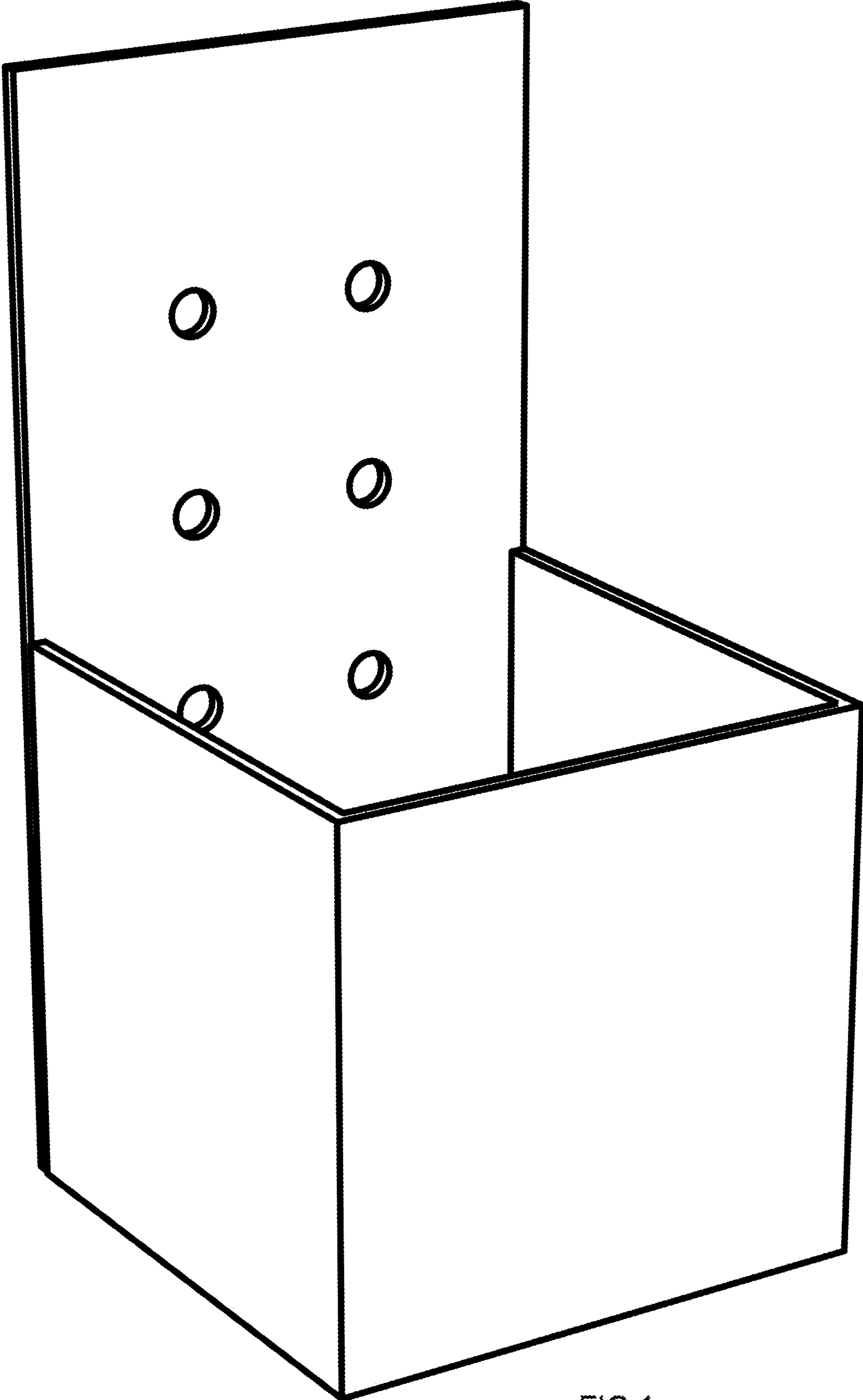


FIG.1

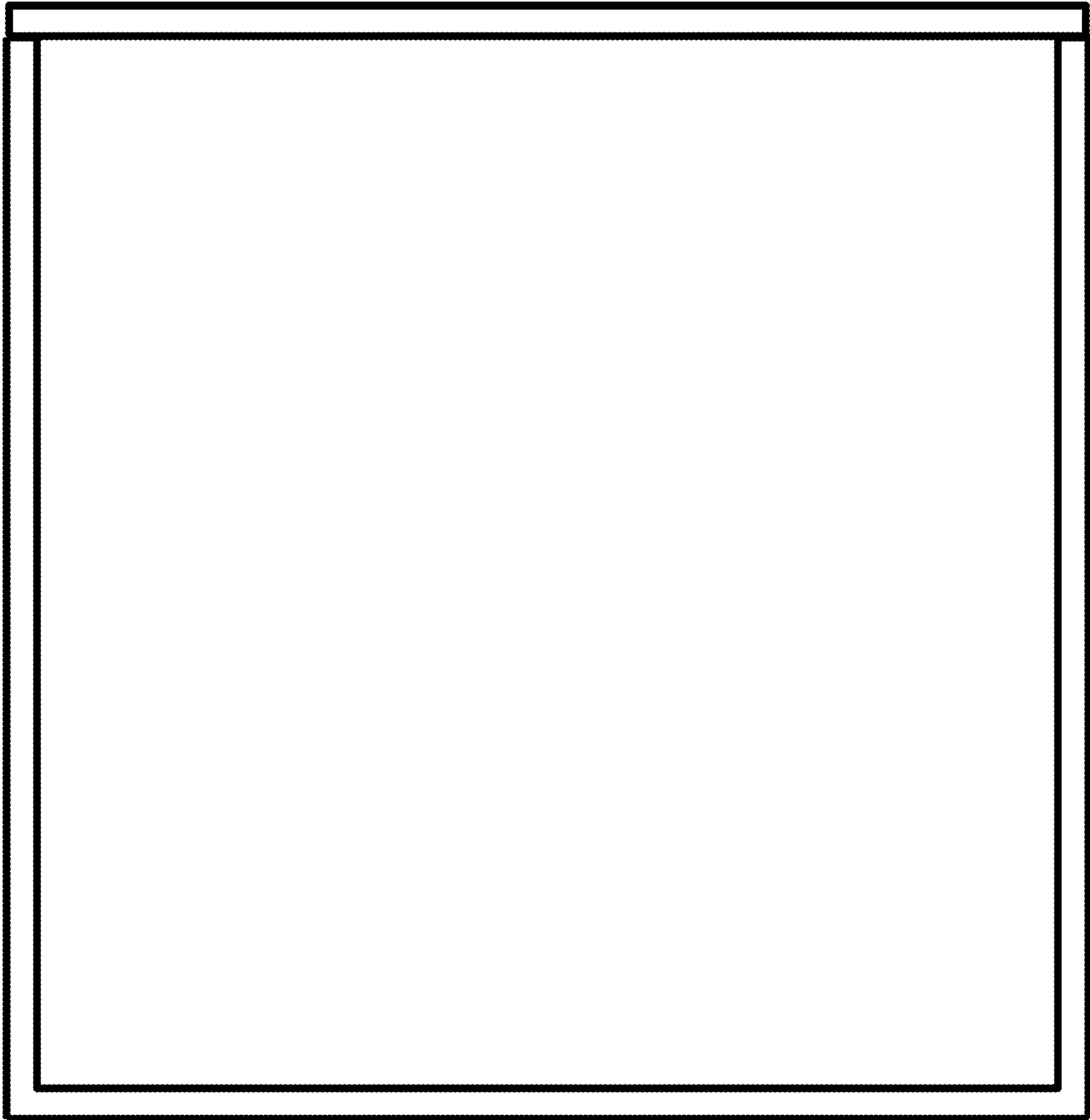


FIG.2

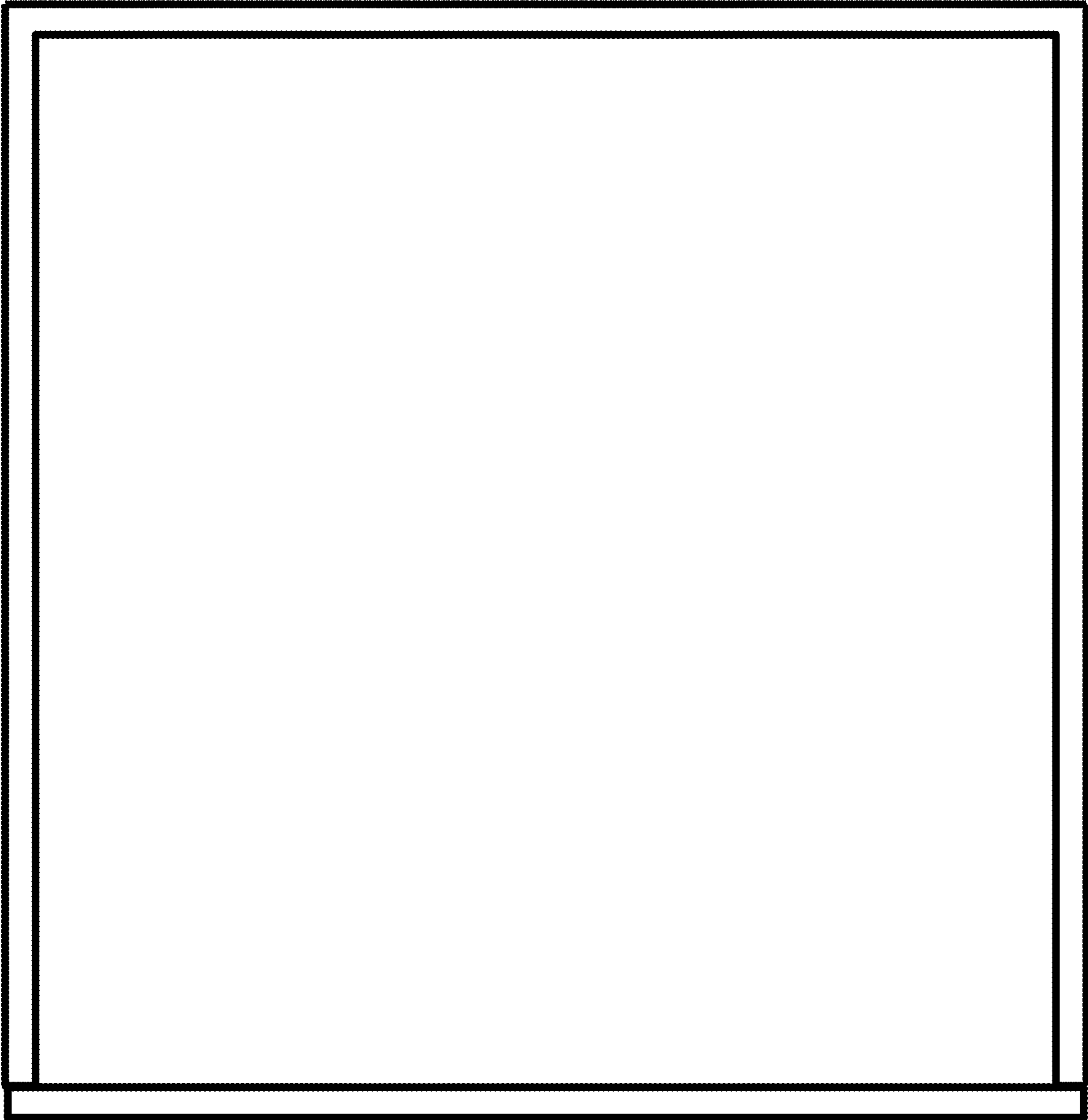


FIG.3

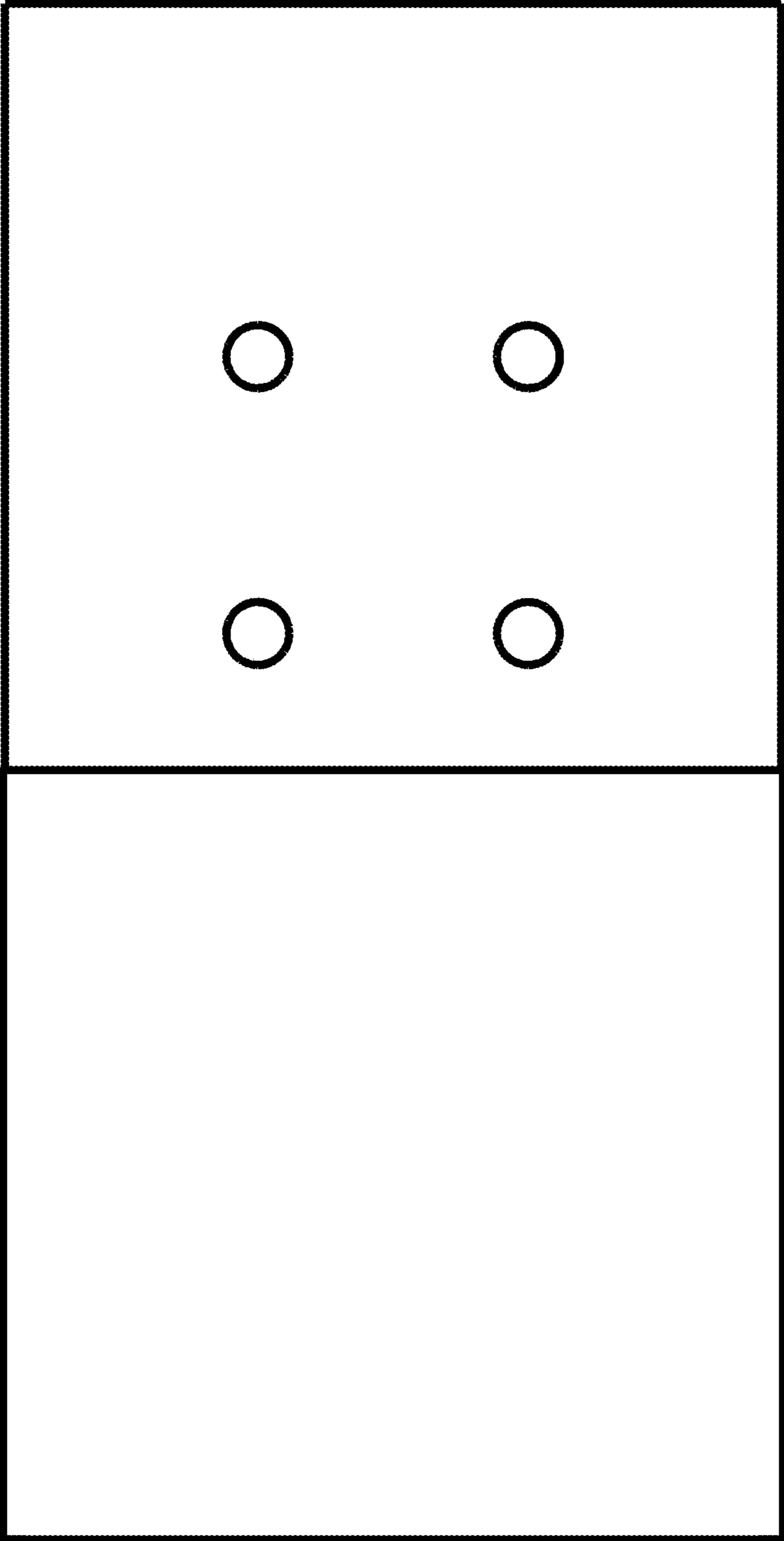


FIG.4

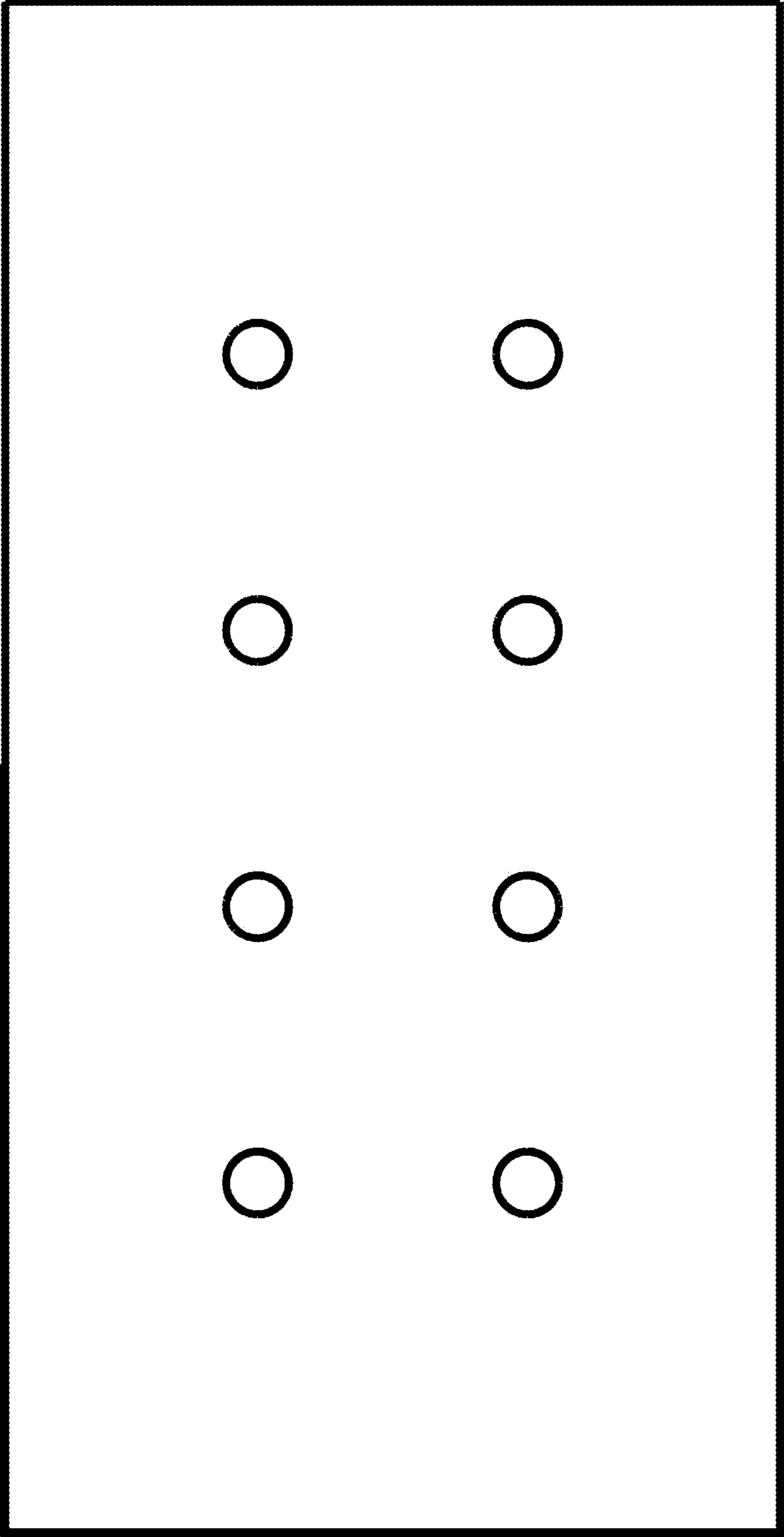


FIG.5



FIG.6

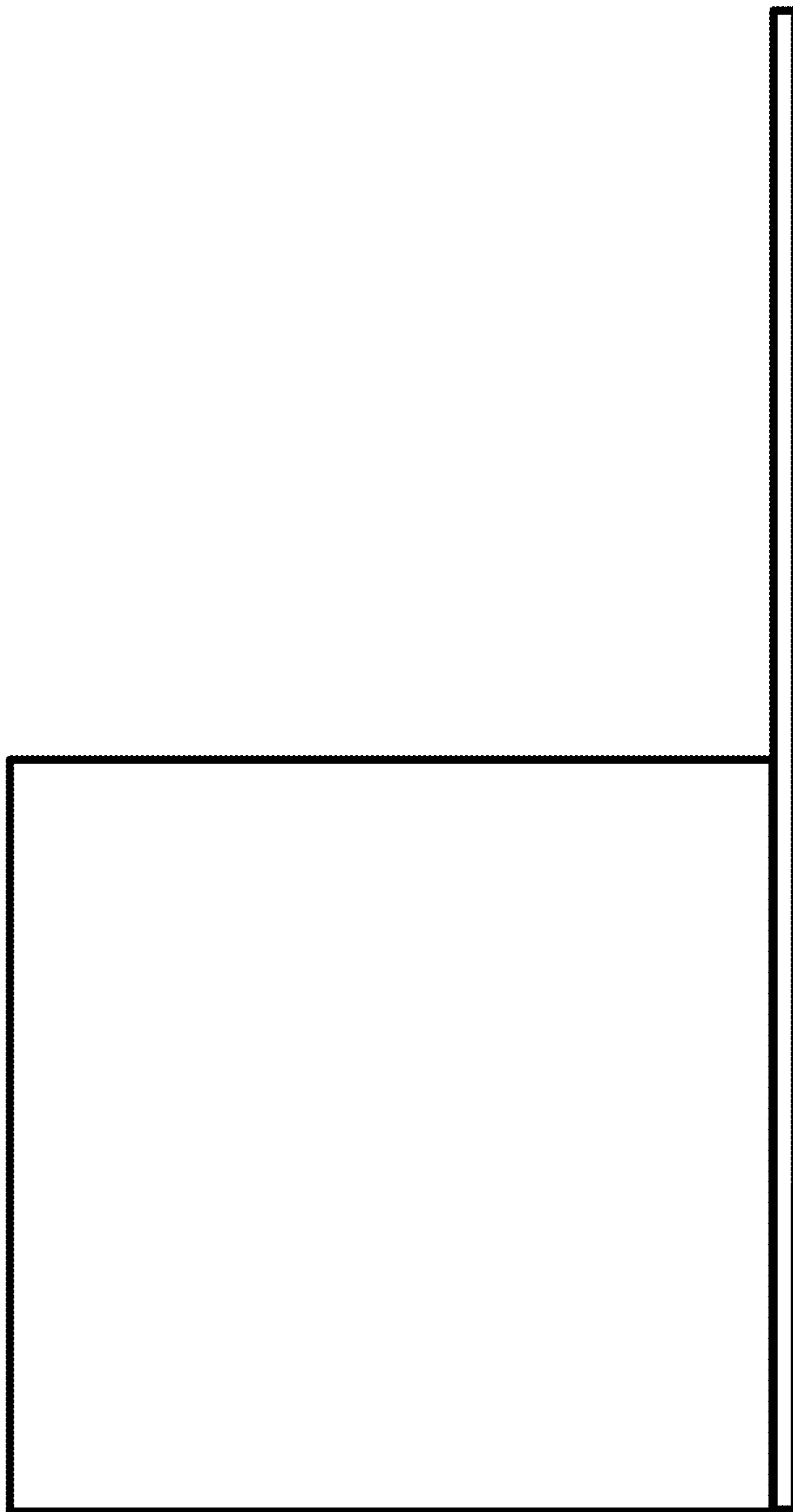


FIG.7

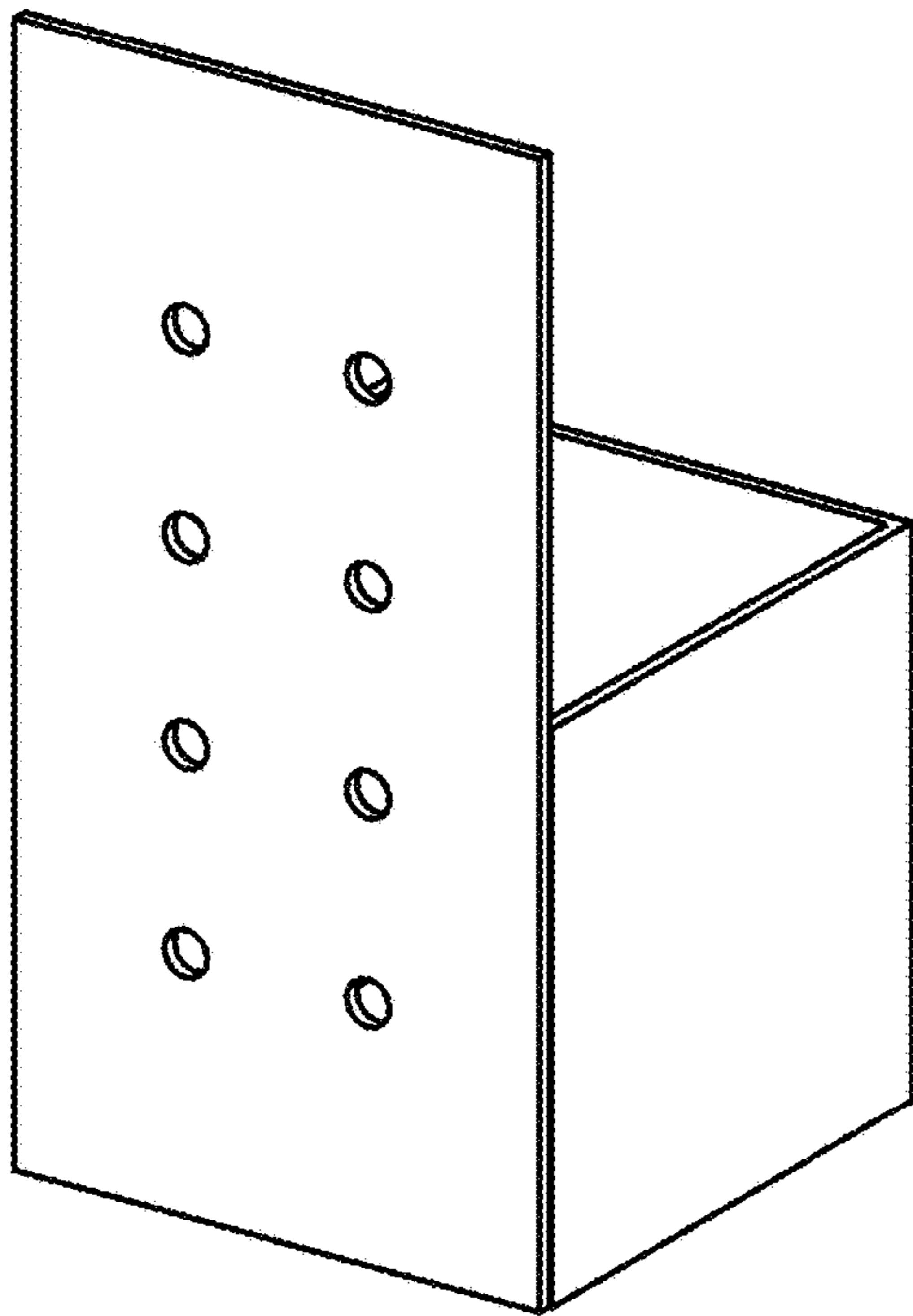


FIG. 8

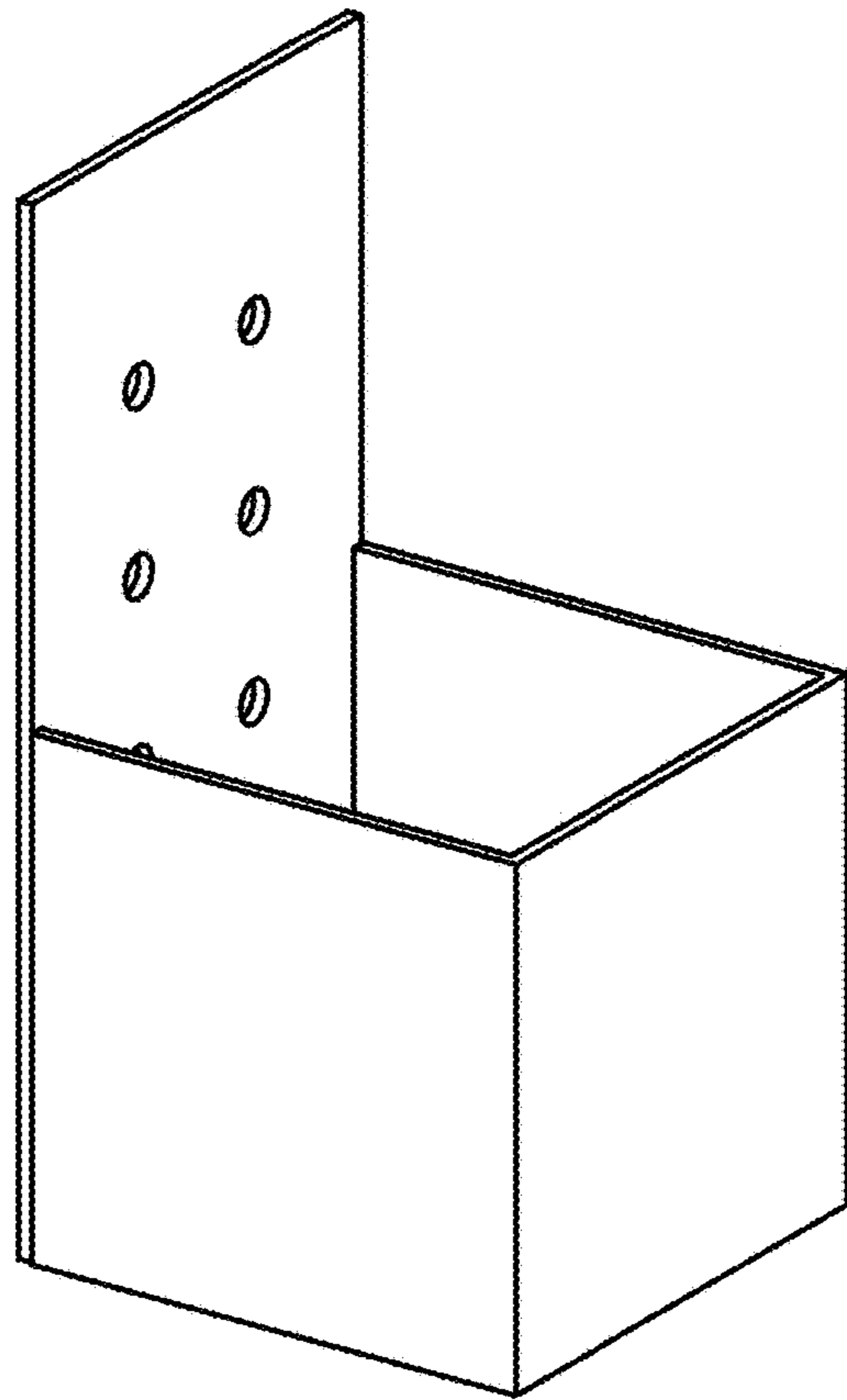


FIG. 9

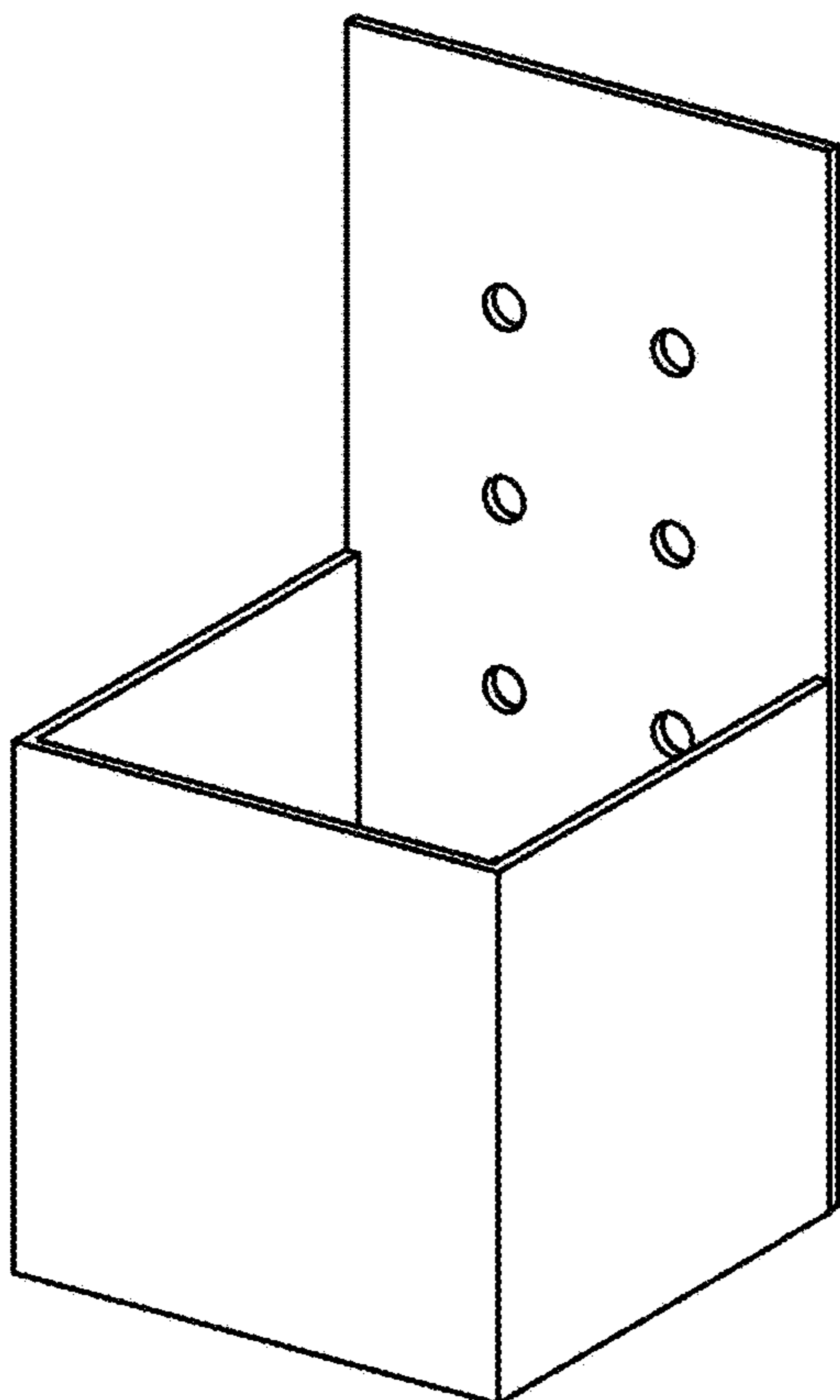


FIG. 11

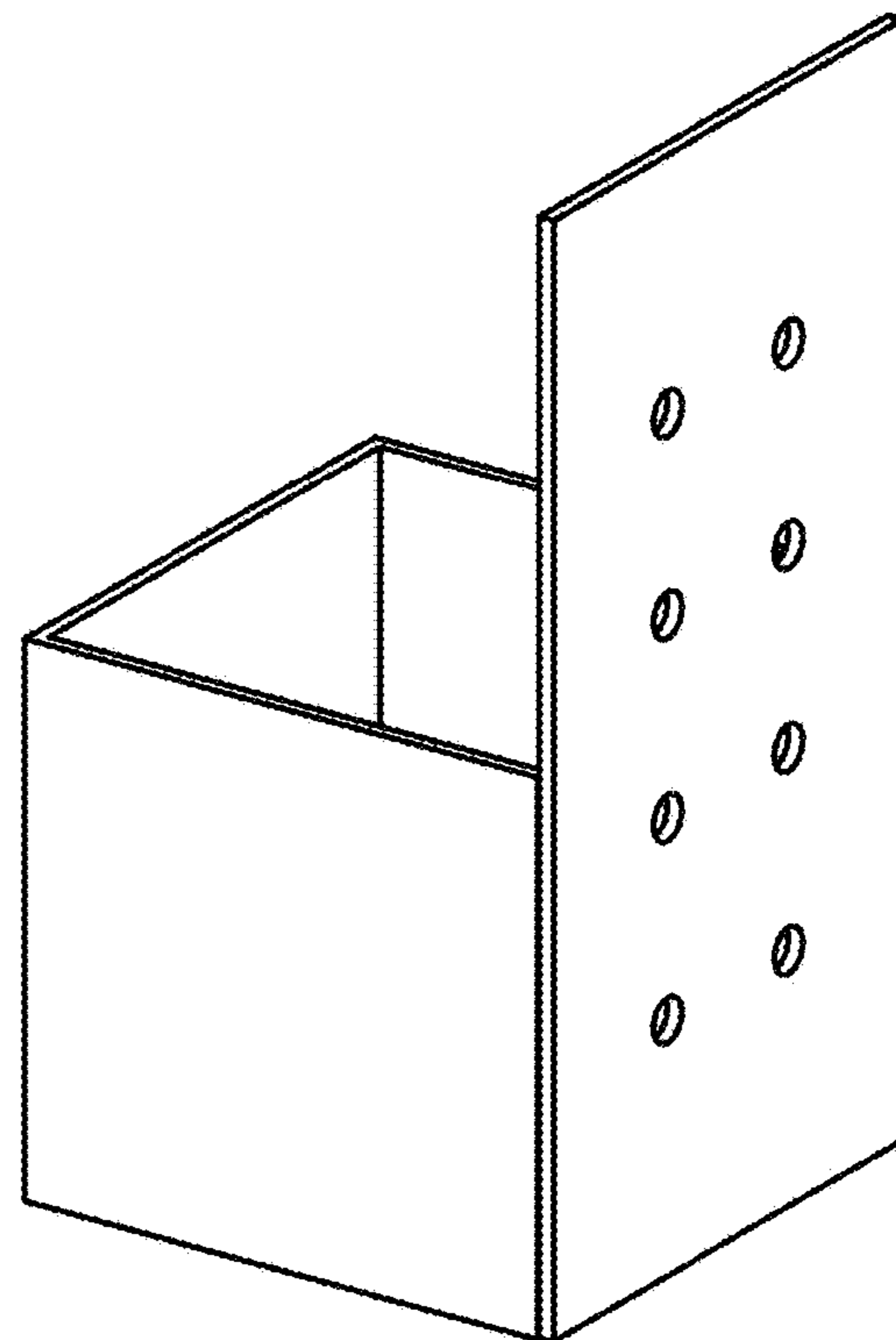


FIG. 10