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

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(54) **CONNECTOR**

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- (73) Assignee: **SAMTEC, INC.**, New Albany, IN (US)
- (**) Term: **15 Years**

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

(52) **U.S. Cl.**
USPC **D13/147**

(58) **Field of Classification Search**
 USPC D13/118, 120, 121, 123, 133, 146, 147,
 D13/149, 151, 153, 154, 173, 184, 199
 CPC H01R 12/00; H01R 12/50; H01R 12/58;
 H01R 12/70; H01R 12/71; H01R 13/00;
 H01R 13/62; H01R 13/646; H01R
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 H01R 24/00; H01R 24/60
 See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D240,934 S *	8/1976	Harkins	D13/147
4,647,130 A	3/1987	Blair et al.		
D371,541 S *	7/1996	Ezaki	D13/147
5,618,191 A	4/1997	Chikano et al.		
D407,690 S	4/1999	Lai et al.		
5,941,715 A	8/1999	Huang		

(Continued)

FOREIGN PATENT DOCUMENTS

CN	2508424 Y	8/2002
CN	1529924 A	9/2004

(Continued)

OTHER PUBLICATIONS

Musser et al., "Contact", U.S. Appl. No. 29/759,286, filed Nov. 20, 2020.

(Continued)

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(57) **CLAIM**

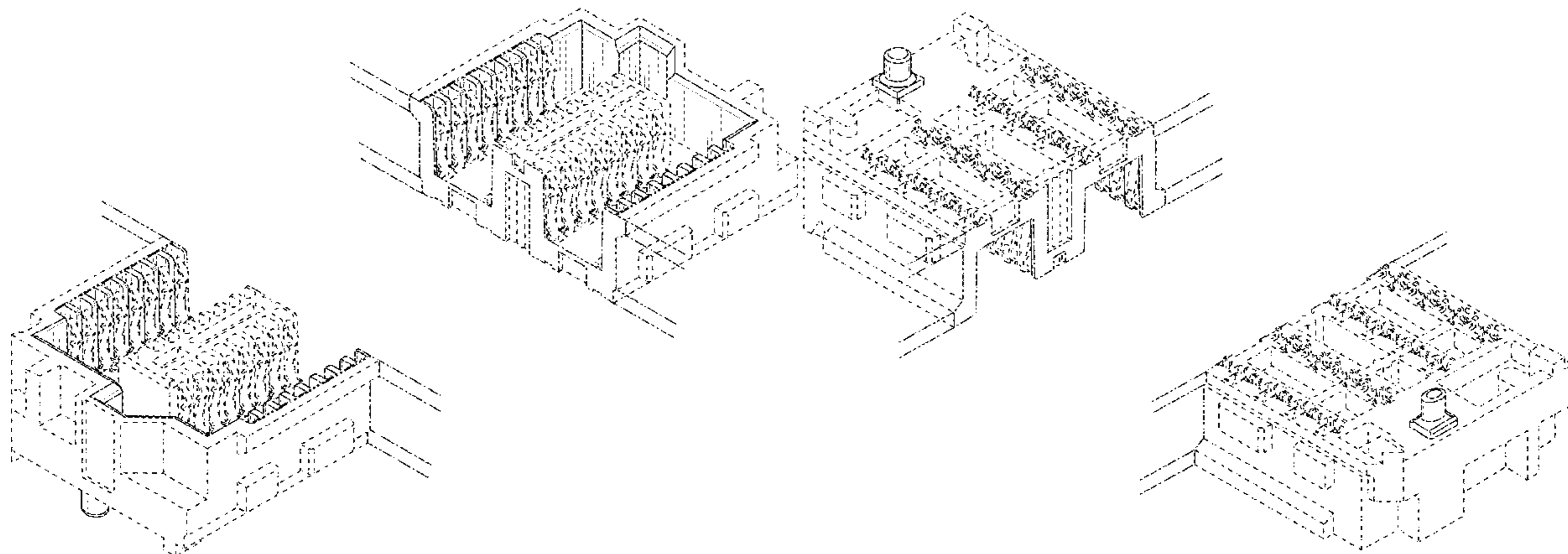
The ornamental design for a connector, as shown and described.

DESCRIPTION

FIG. 1 is a top, front, and left side perspective view of a connector showing our new design;
 FIG. 2 is a top, back, and right side perspective view thereof;
 FIG. 3 is a top, front, and left side perspective view thereof;
 FIG. 4 is a bottom, back, and right side perspective view thereof;
 FIG. 5 is a left side view thereof;
 FIG. 6 is a right side view thereof;
 FIG. 7 is a back view thereof;
 FIG. 8 is a front view thereof;
 FIG. 9 is a top view thereof; and,
 FIG. 10 is a bottom view thereof.

The dash-dash broken lines in the drawings are included to show unclaimed subject matter only and form no part of the claimed design. The dash-dot broken lines in the drawings are included to show a symbolic break in length of the connector. The appearance of any portion of the article between the break lines forms no part of the claimed design. The dash-dot-dot lines in the drawings are included to show the boundary between claimed and unclaimed subject matter and form no part of the claimed design.

1 Claim, 7 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

6,135,781 A 10/2000 Pope et al.
D451,884 S * 12/2001 Hisatomi D13/147
D451,885 S * 12/2001 Hisatomi D13/147
6,343,951 B1 2/2002 Ono et al.
D455,127 S 4/2002 Wu
D471,873 S * 3/2003 Kawase D13/147
6,565,390 B2 * 5/2003 Wu H01R 12/7005
439/378
6,634,894 B1 10/2003 Ko
6,699,048 B2 3/2004 Johnson et al.
6,702,590 B2 3/2004 Zaderej et al.
D489,039 S * 4/2004 Kawase D13/147
D489,687 S 5/2004 Kawase et al.
6,746,281 B1 6/2004 Zhang
D500,740 S * 1/2005 Fan D13/147
D502,921 S * 3/2005 Zhang D13/147
D505,920 S 6/2005 Moritake
6,918,776 B2 7/2005 Spink, Jr.
6,969,286 B1 * 11/2005 Mongold H01R 12/57
439/874
D512,379 S * 12/2005 Shimizu D13/147
D517,495 S * 3/2006 Fan D13/147
D561,696 S 2/2008 Chen et al.
7,341,482 B2 3/2008 Ngo
7,422,447 B2 9/2008 Daily et al.
D582,858 S * 12/2008 Hoshino D13/147
D582,859 S 12/2008 Sasaki
D582,860 S 12/2008 Sasaki
D583,331 S * 12/2008 Zhang D13/147
D598,861 S 8/2009 Hoshino et al.
7,955,138 B1 6/2011 Zhu
D659,646 S 5/2012 Kajiura et al.
8,333,617 B2 12/2012 Fjelstad
D678,843 S 3/2013 Faith
D704,663 S * 5/2014 Smith D13/147
D705,173 S * 5/2014 Smith D13/147
D708,580 S 7/2014 McCartin et al.
8,764,464 B2 7/2014 Buck et al.
8,784,116 B2 7/2014 Buck et al.
D712,841 S * 9/2014 Buck D13/154
D718,245 S 11/2014 Sato
9,077,115 B2 7/2015 Yang
9,300,103 B2 3/2016 Buck et al.
D877,084 S * 3/2020 Buck D13/147
D877,700 S * 3/2020 Buck D13/133
D896,183 S * 9/2020 Musser D13/147
2003/0013325 A1 1/2003 Zaderej et al.
2006/0178022 A1 8/2006 Liu
2009/0130912 A1 5/2009 Shuey et al.
2011/0201234 A1 8/2011 Long
2011/0256763 A1 10/2011 De Geest et al.
2012/0083155 A1 4/2012 Minich et al.
2012/0094544 A1 * 4/2012 Sato H01R 13/11
439/660
2012/0238145 A1 9/2012 Zhang et al.
2012/0252232 A1 10/2012 Buck et al.
2012/0322305 A1 12/2012 Uchiyama
2013/0316586 A1 11/2013 Nagamine
2014/0310957 A1 10/2014 Buck et al.
2016/0064837 A1 3/2016 Yu et al.
2016/0134057 A1 5/2016 Buck et al.
2017/0125946 A1 5/2017 Horchler et al.
2021/0126401 A1 * 4/2021 Musser H01R 13/6461

FOREIGN PATENT DOCUMENTS

CN 2772061 Y 4/2006
CN 201639018 U 11/2010
CN 102832492 A 12/2012
CN 103427204 A 12/2013
CN 105449427 A 3/2016
EP 1 544 949 A1 6/2005
JP 2002-083637 A 3/2002
JP 2009-059671 A 3/2009

JP 2014-165029 A 9/2014
TW D149636 S1 10/2012
TW D151642 S1 2/2013
TW D157156 S 11/2013
TW D163688 S 10/2014
TW D167749 S 5/2015
TW I558026 B 11/2016
TW D197460 S 5/2019
TW D197461 S 5/2019
TW D198415 S 7/2019
TW D198416 S 7/2019
TW D199668 S 9/2019
TW M589915 U 1/2020
WO 2012/138519 A2 10/2012
WO 2018/039351 A1 3/2018

OTHER PUBLICATIONS

Official Communication issued in Taiwanese Patent Application No. 108123806, dated May 5, 2020.
Official Communication issued in corresponding Taiwanese Patent Application No. 109305929, dated Feb. 2, 2021.
Official Communication issued in corresponding Taiwanese Patent Application No. 109305930, dated Feb. 2, 2021.
Official Communication issued in corresponding Taiwanese Patent Application No. 109305931, dated Feb. 3, 2021.
Official Communication issued in corresponding Taiwanese Patent Application No. 109300858, dated Feb. 5, 2021.
Official Communication issued in corresponding Taiwanese Patent Application No. 109305927, dated Feb. 2, 2021.
Official Communication issued in corresponding Taiwanese Patent Application No. 109305928, dated Feb. 2, 2021.
Official Communication issued in International Patent Application No. PCT/US2020/062389, dated Mar. 22, 2021.
Samtec, “0.8MM Edge Rate Socket Assembly”, DWG. No. ERF8-XXX-XX.X-XXX-DV-XXXX-XX, Sep. 26, 2005, 7 pages.
Samtec, “0.8MM Edge Rate Terminal Assembly”, DWG. No. ERM8-XXX-XX.X-XXX-DV-XXXX-XX, Sep. 27, 2005, 7 pages.
Musser et al., “Connector”, U.S. Appl. No. 29/773,719, filed Mar. 11, 2021.
Musser et al., “Contact”, U.S. Appl. No. 29/773,721, filed Mar. 11, 2021.
Musser et al., “Contact”, U.S. Appl. No. 29/773,722, filed Mar. 11, 2021.
Musser et al., “Connector”, U.S. Appl. No. 29/773,723, filed Mar. 11, 2021.
Musser et al., “Connector”, U.S. Appl. No. 29/773,724, filed Mar. 11, 2021.
Musser et al., “Connector”, U.S. Appl. No. 29/773,725, filed Mar. 11, 2021.
Samtec, .050 Pitch Terminal Array Assembly, SEAM-XX-XX.X-XX-XX-X-A-XX-K-TR; By: Bratcher, Aug. 9, 2010, 7 sheets.
Samtec, .050 Pitch Socket Array Assembly, SEAF-XX-XXX-XX-XX-X-A-XX-K-TR; By: Bratcher, May 27, 2004, 5 sheets.
Samtec, “Accelerate HD Micro Interfaces”; ADM6* Series, Nov. 21, 2018, 1 page.
Samtec, “Accelerate HD Micro Interfaces”; ADF6* Series, Nov. 21, 2018, 1 page.
Faith, et al.; U.S. Appl. No. 29/579,623, filed Sep. 30, 2016.
Musser, et al., “Contact”; U.S. Appl. No. 29/655,784, filed Jul. 6, 2018.
Musser, et al., “Contact”; U.S. Appl. No. 29/655,786, filed Jul. 6, 2018.
Musser, et al., “Connector and Contact”; U.S. Appl. No. 29/652,012, filed Nov. 5, 2018.
Musser, et al., “Connector”; U.S. Appl. No. 29/652,015, filed Dec. 17, 2018.
Official Communication issued in corresponding Taiwanese Patent Application No. 108123806, dated Nov. 20, 2020.
Musser et al., “Connector With Top—and Bottom-Stitched Contacts”, U.S. Appl. No. 17/056,486, filed Nov. 18, 2020.
Musser, et al., “Connector”; U.S. Appl. No. 29/709,518, filed Oct. 15, 2019.

(56)

References Cited

OTHER PUBLICATIONS

Musser, et al., "Connector"; U.S. Appl. No. 29/716,201, filed Dec. 6, 2019.

Musser, et al., "Connector"; U.S. Appl. No. 29/716,202, filed Dec. 6, 2019.

Official Communication issued in corresponding Chinese Patent Application No. 201910602689.8, dated Aug. 23, 2021.

Official Communication issued in corresponding Taiwanese Patent Application No. 109142234, dated Sep. 16, 2021.

* cited by examiner

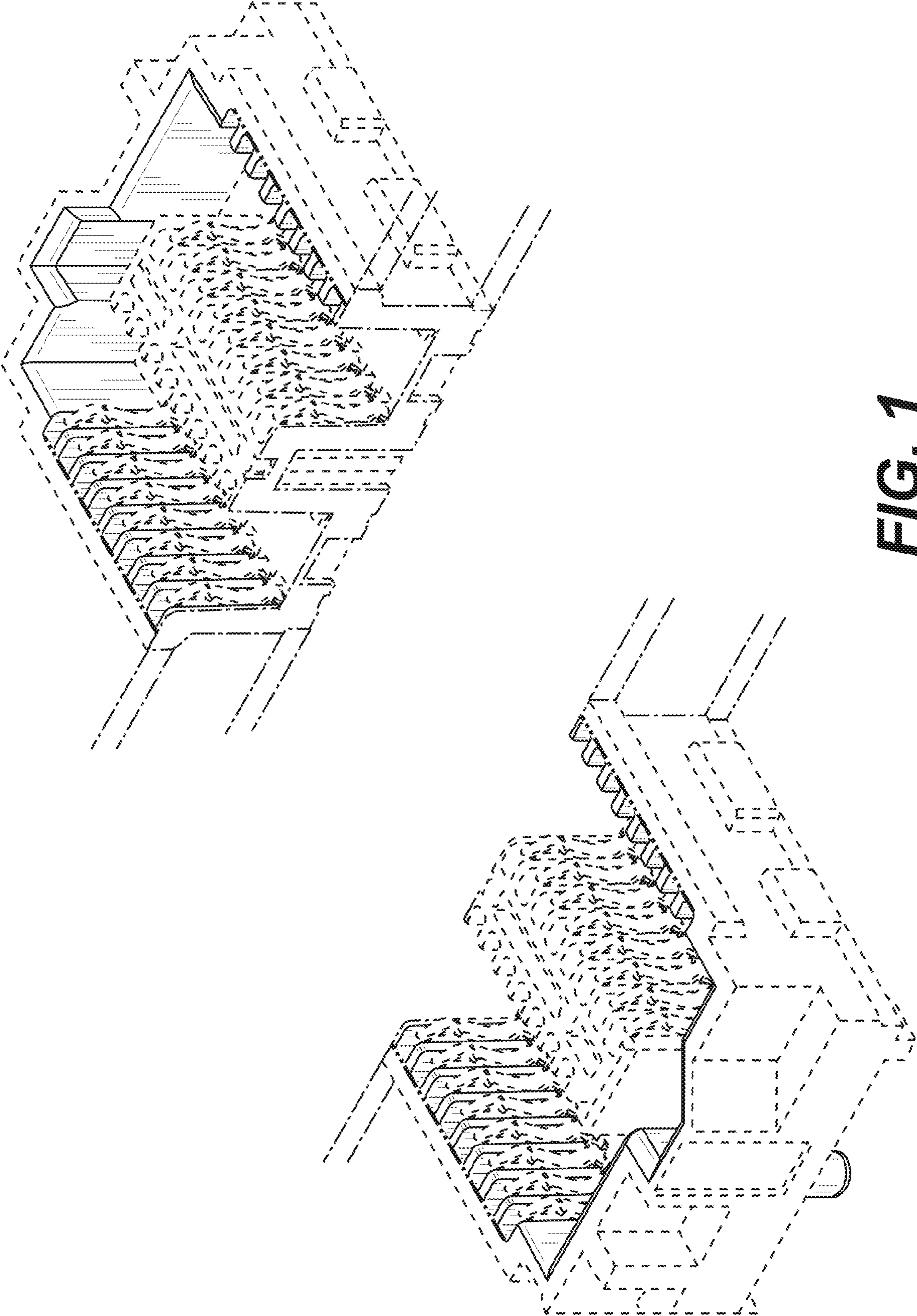


FIG. 1

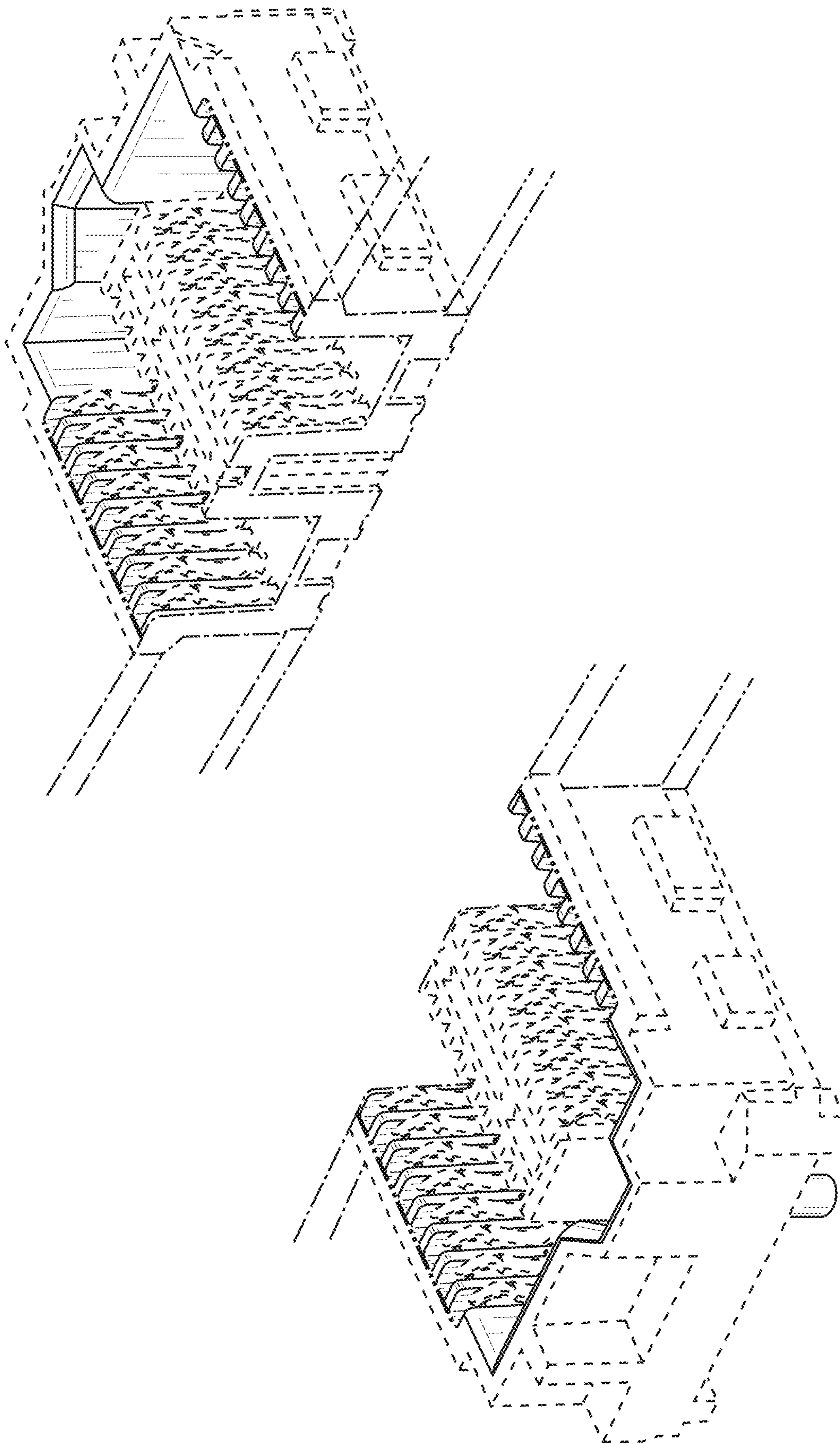


FIG. 2

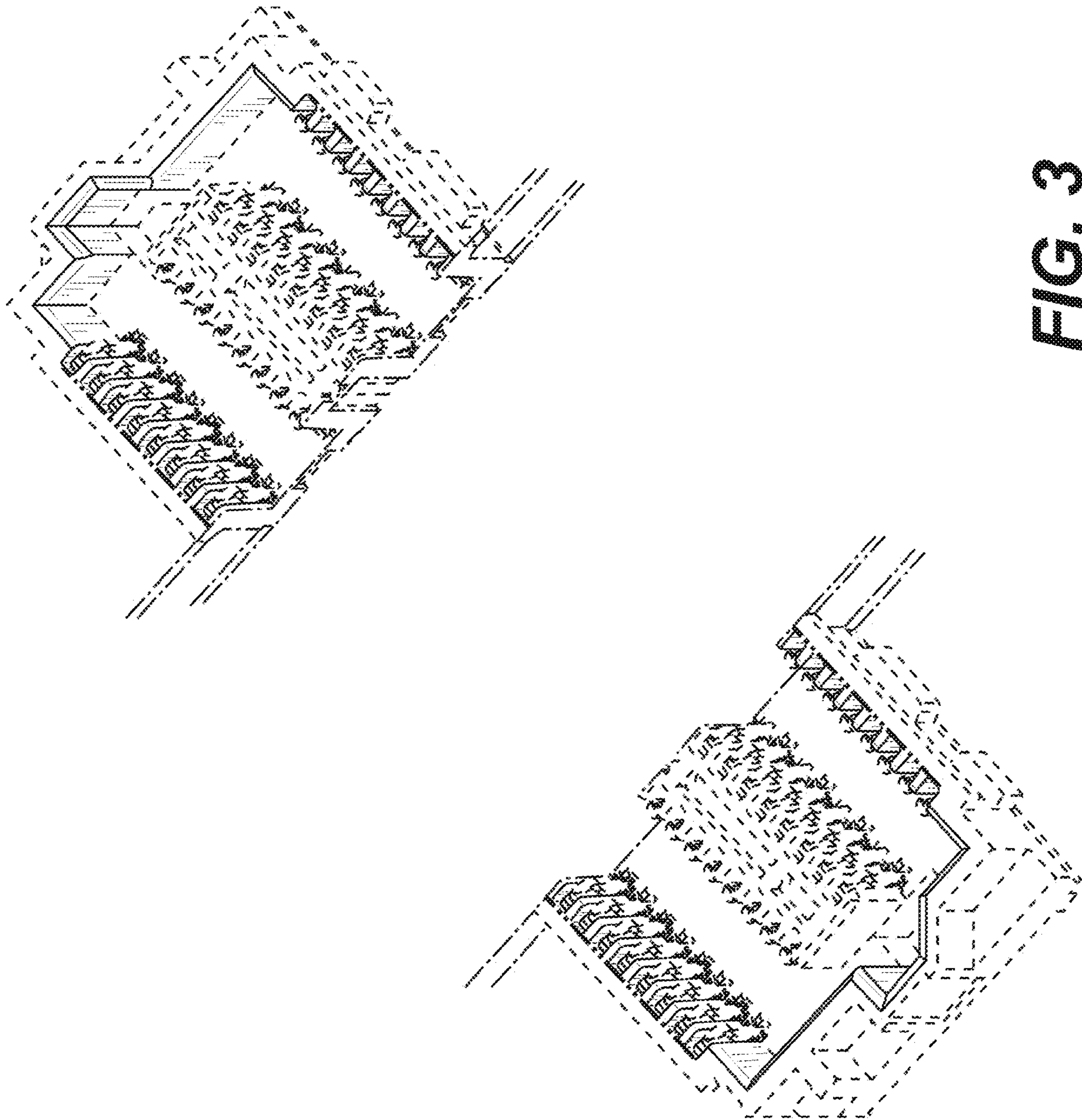


FIG. 3

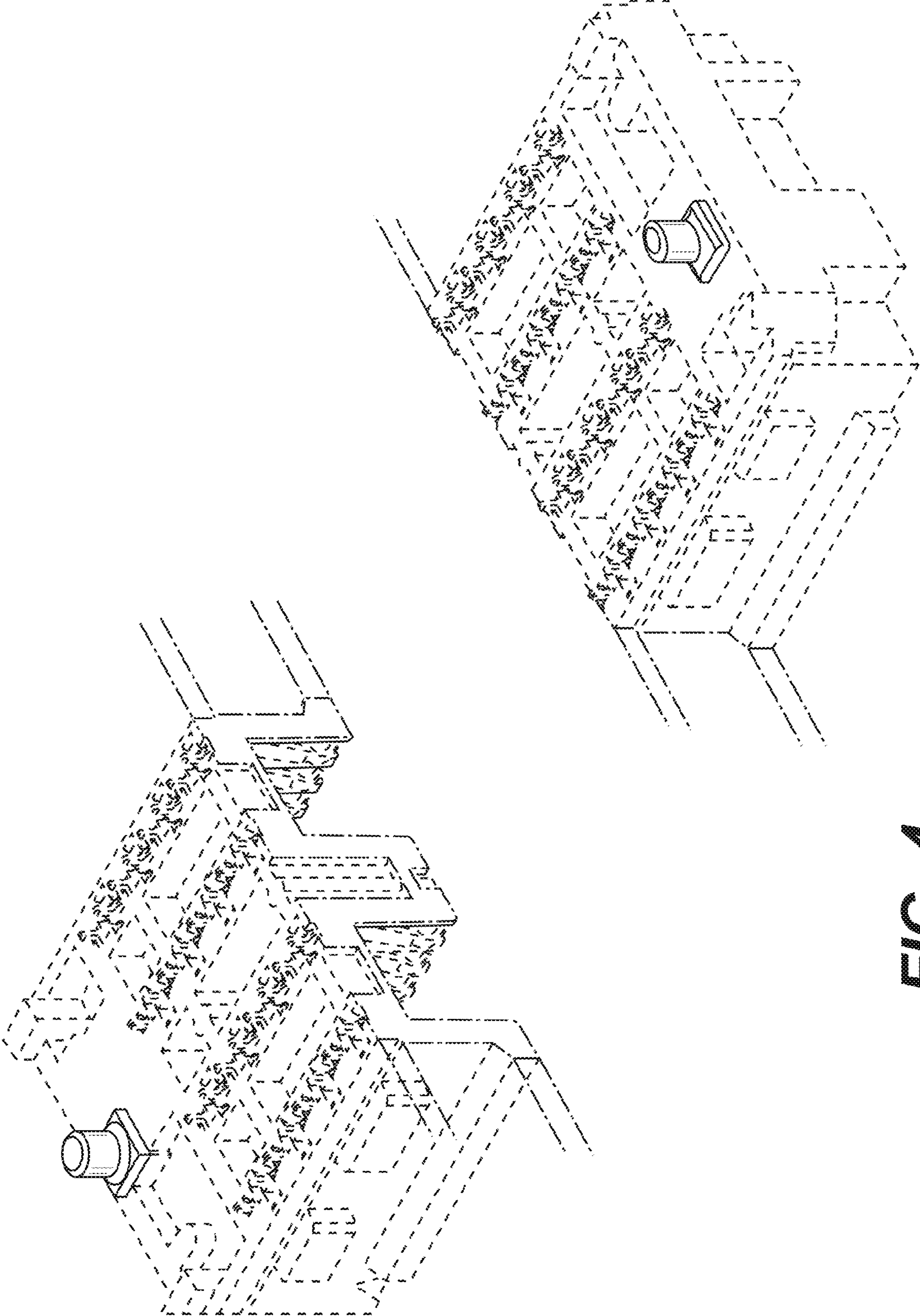


FIG. 4

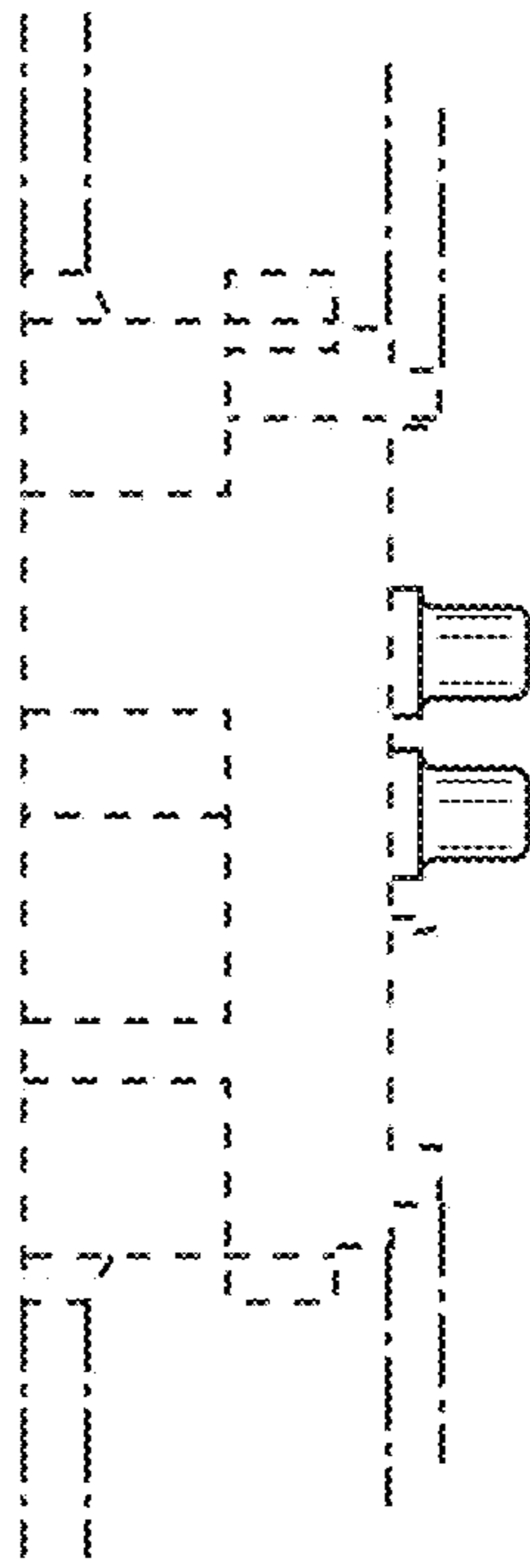


FIG. 5

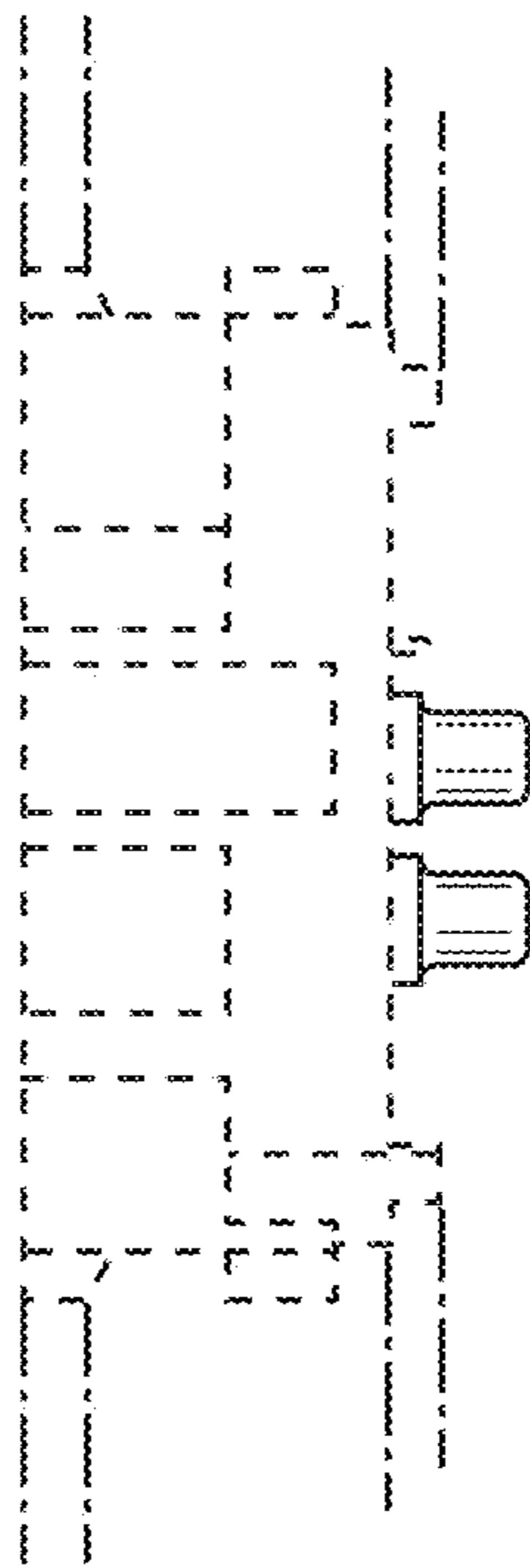


FIG. 6

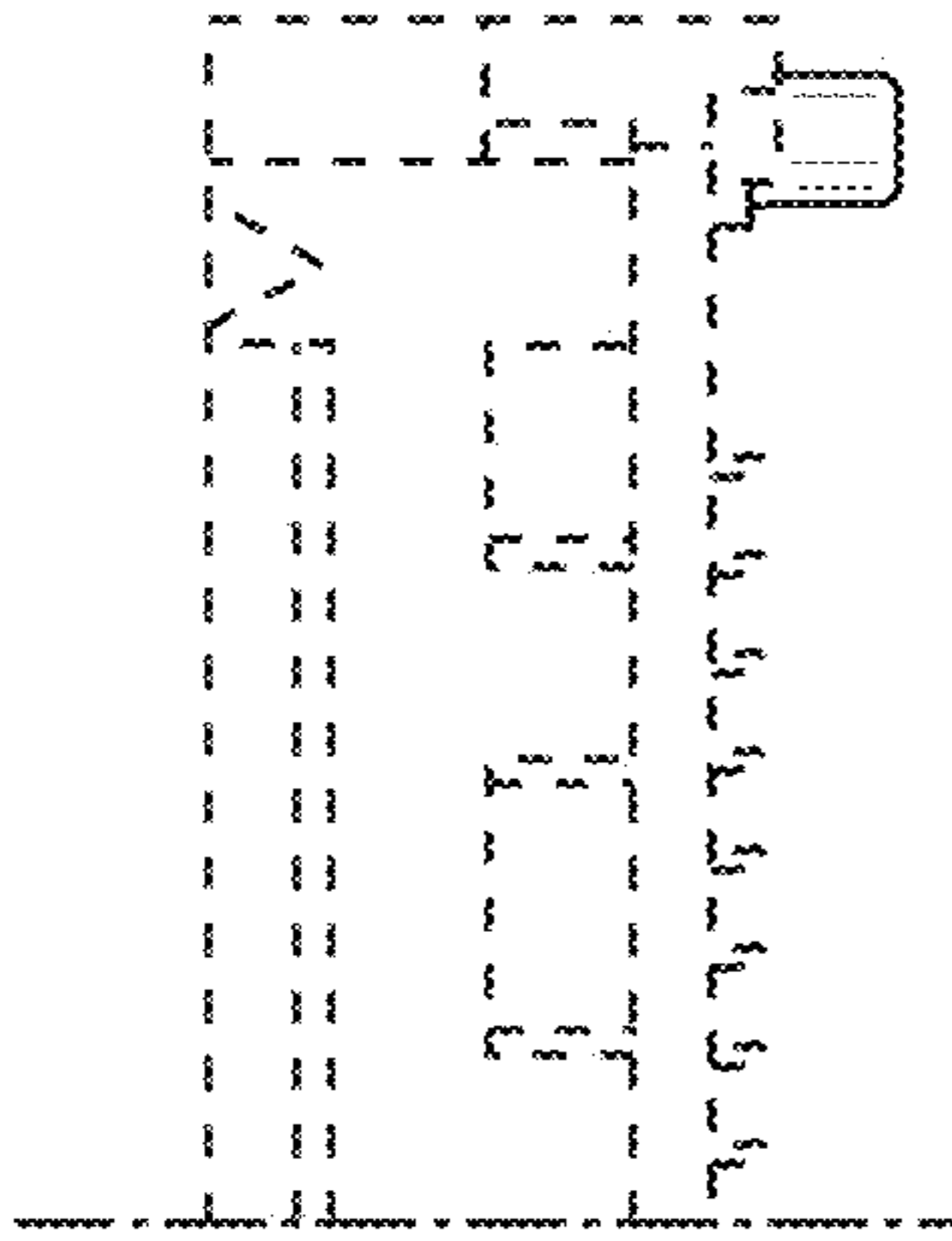


FIG. 7

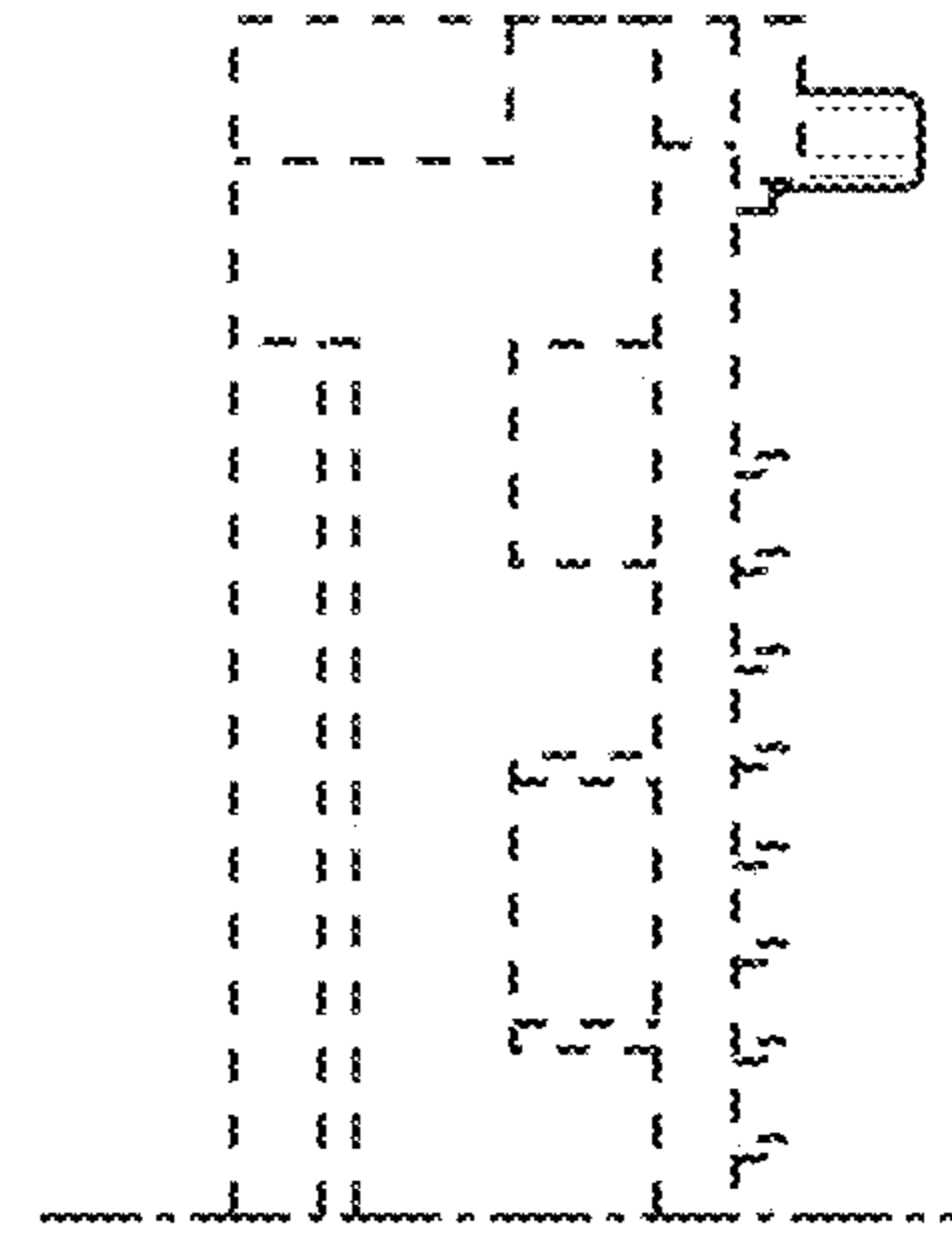
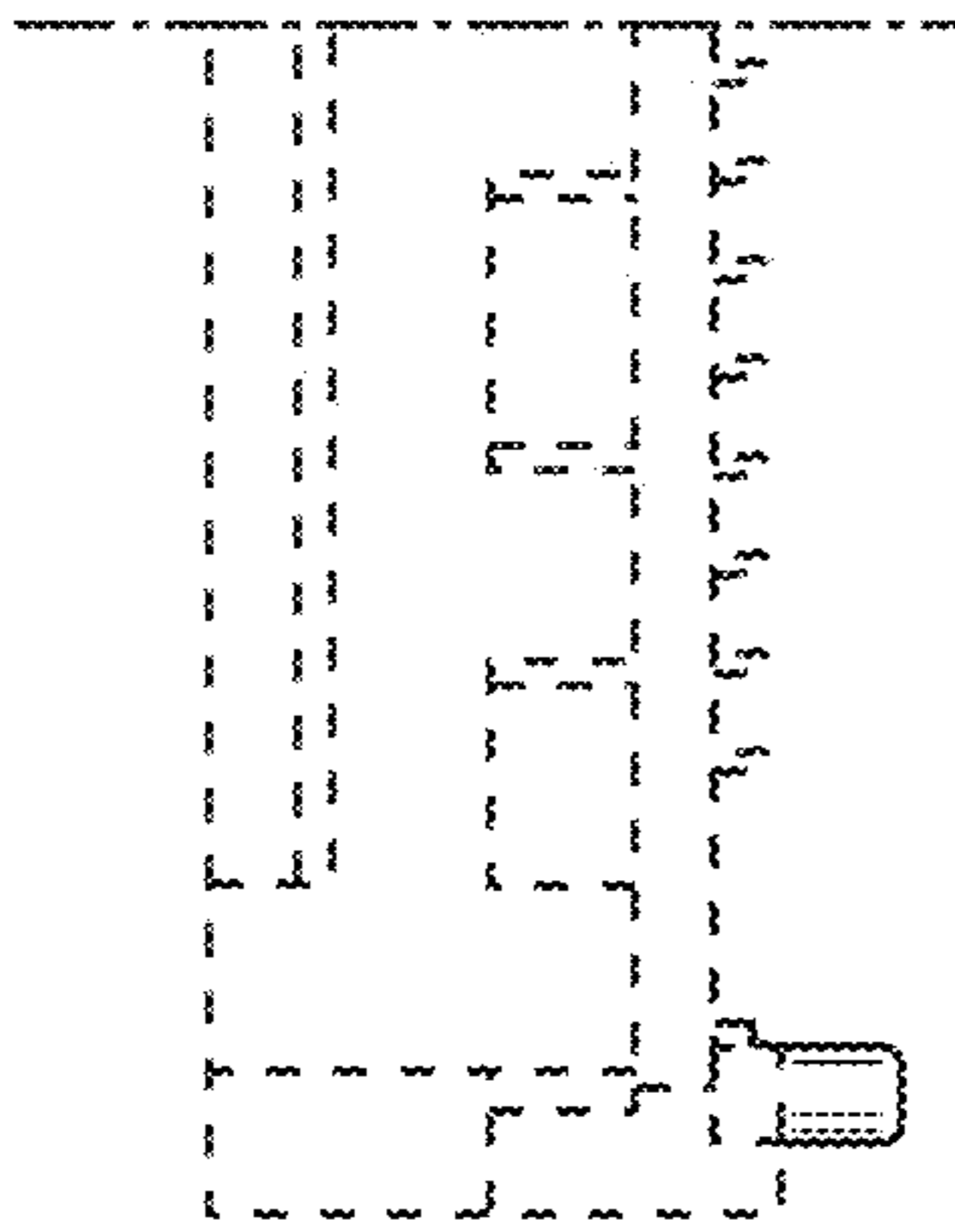
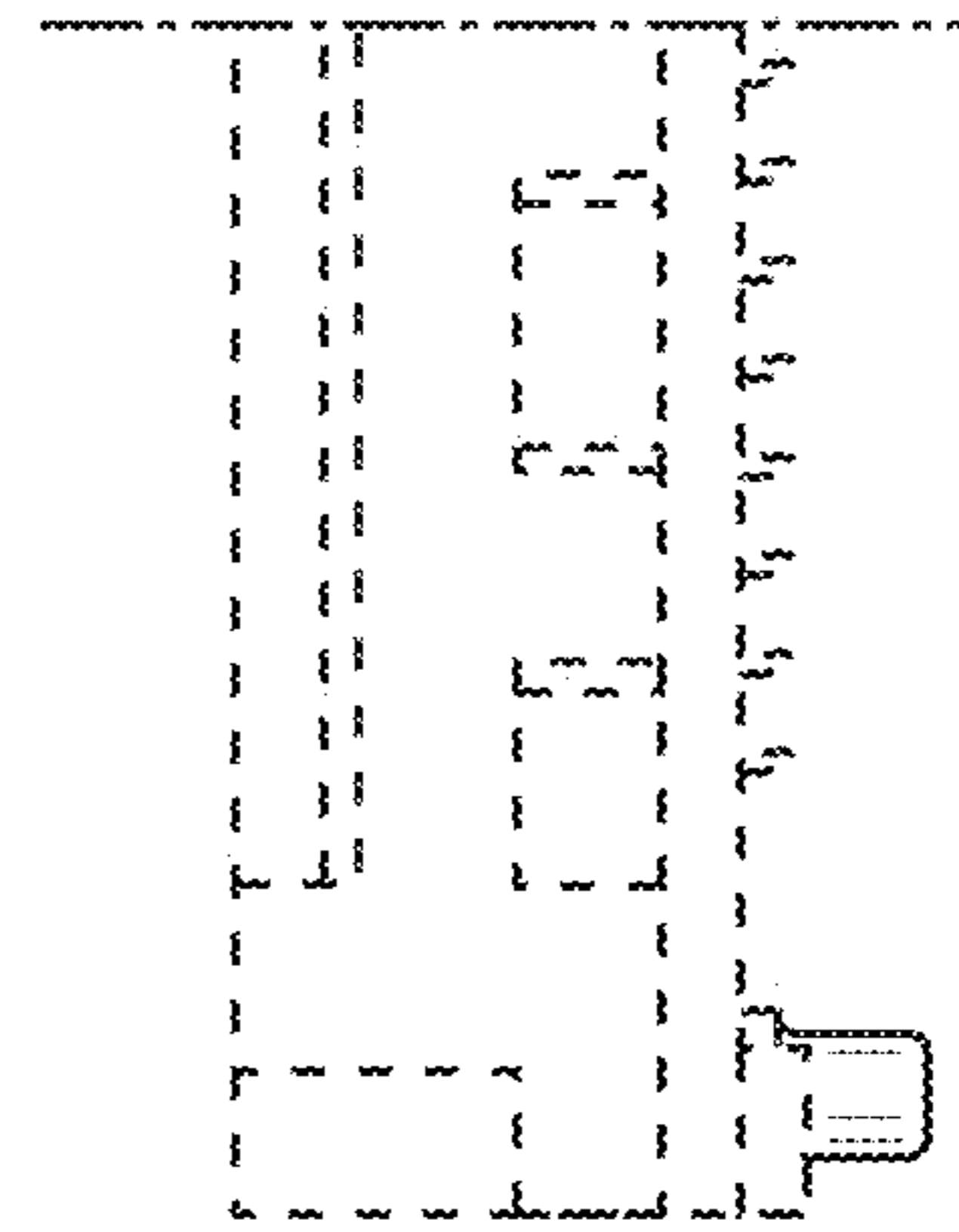


FIG. 8



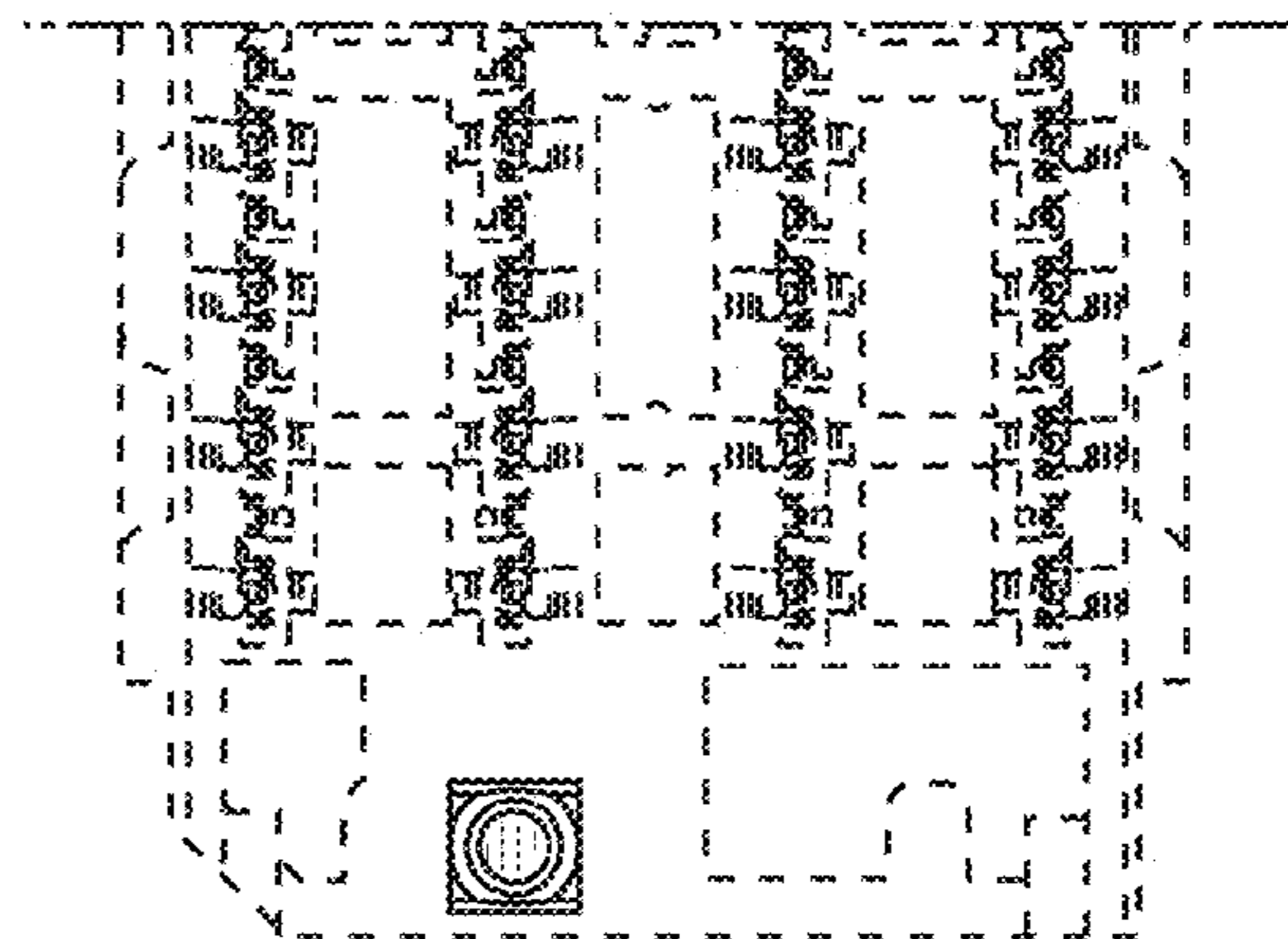
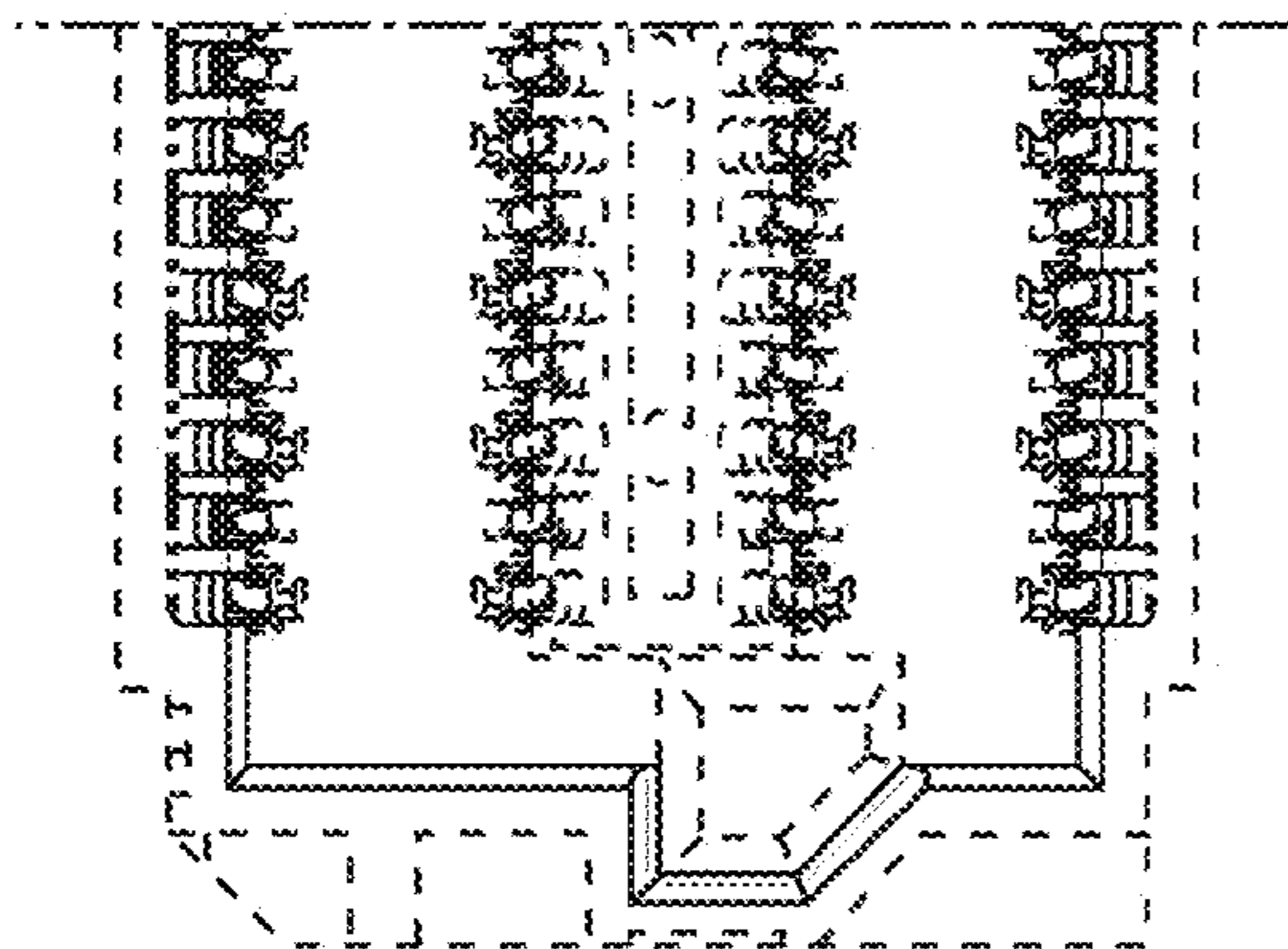
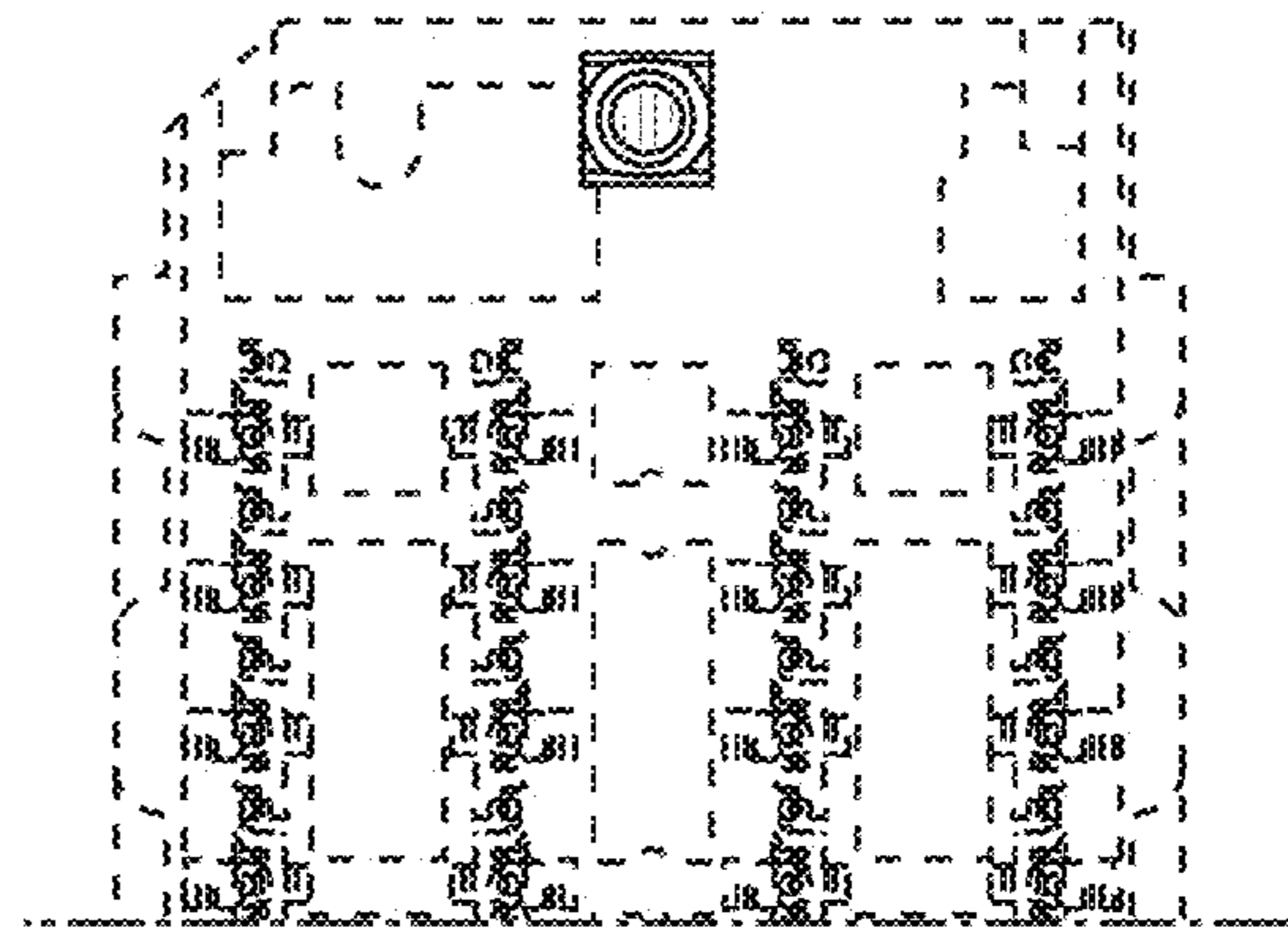
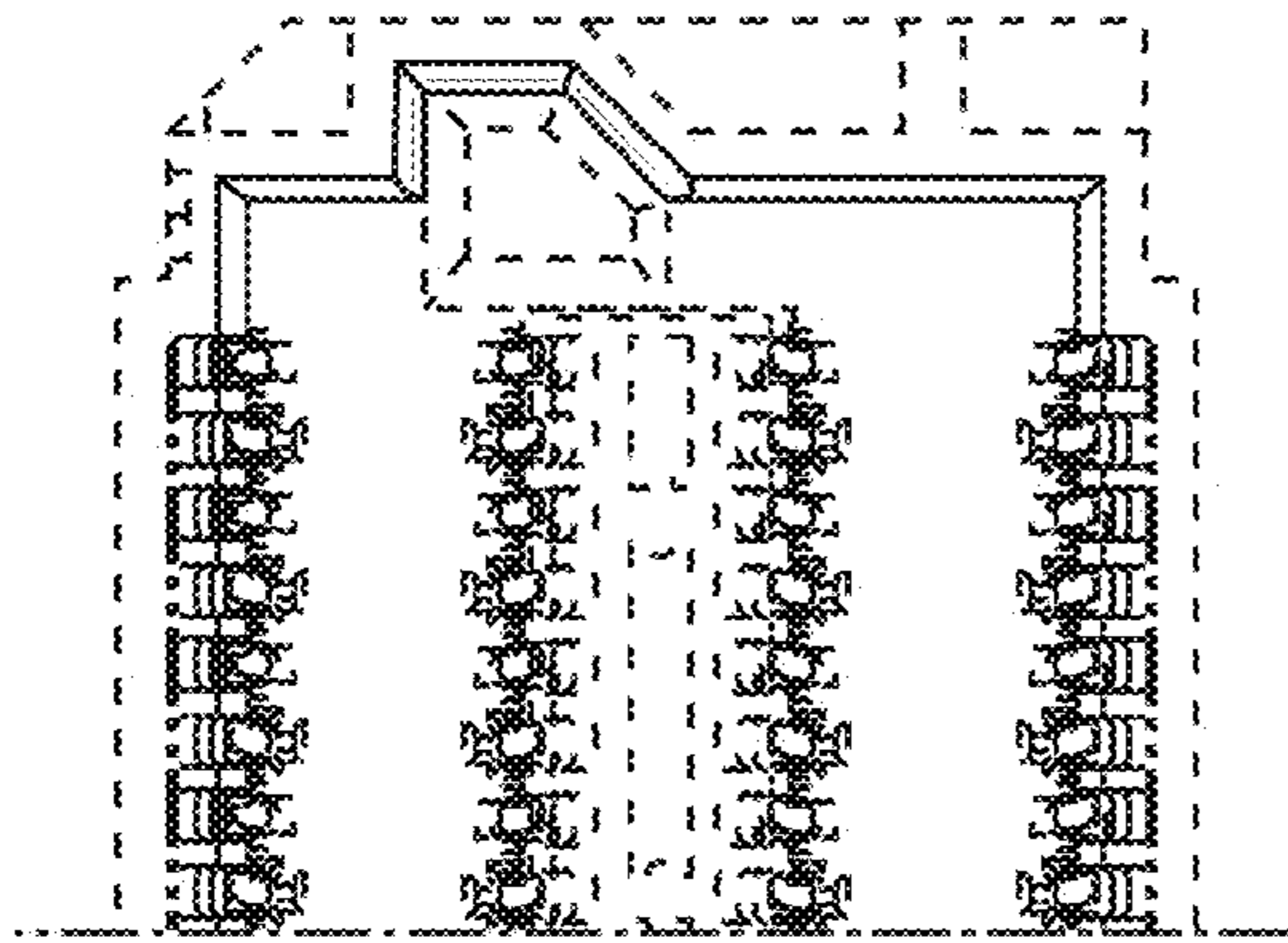


FIG. 9

FIG. 10