



US00D732667S

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

(10) **Patent No.:** **US D732,667 S**  
(45) **Date of Patent:** **\*\* Jun. 23, 2015**

(54) **CAGE SPINAL IMPLANT**

- (71) Applicant: **Providence Medical Technology, Inc.**,  
San Francisco, CA (US)
- (72) Inventors: **Bruce M. McCormack**, San Francisco,  
CA (US); **Edward Liou**, Mountain View,  
CA (US); **Jeffrey D. Smith**, Clayton, CA  
(US); **David Michael Schummers**, San  
Francisco, CA (US)
- (73) Assignee: **Providence Medical Technology, Inc.**,  
Lafayette, CA (US)

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

(21) Appl. No.: **29/435,385**

(22) Filed: **Oct. 23, 2012**

(51) **LOC (10) Cl.** ..... **24-02**

(52) **U.S. Cl.**  
USPC ..... **D24/155**

(58) **Field of Classification Search**  
USPC ..... D24/155, 133, 135; 623/17.15, 17.16,  
623/17.12; 604/500; 606/61  
CPC ..... A61F 2/4611; A61F 2/442; A61F 2/447;  
A61F 2220/0025; A61F 2310/00023; A61F  
2310/00017; A61F 2002/4475; A61F  
2002/30841; A61F 2002/2835; A61F  
2002/30904; A61F 2002/30785; A61F  
2002/443; A61F 2002/30578

See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

2,708,376 A 5/1955 Hodgson  
2,984,241 A 5/1961 Carlson

(Continued)

**FOREIGN PATENT DOCUMENTS**

DE G 93 04 368.6 5/2003  
FR 2 722 980 A1 2/1996

(Continued)

**OTHER PUBLICATIONS**

Advisory Action, U.S. Appl. No. 12/317,682, dated Apr. 6, 2012, 3 pages.

(Continued)

*Primary Examiner* — Ian Simmons

*Assistant Examiner* — Charles Hanson

(74) *Attorney, Agent, or Firm* — Dorsey & Whitney LLP

(57) **CLAIM**

The ornamental design for a cage spinal implant, as shown and described.

**DESCRIPTION**

FIG. 1 is a right front perspective view of a cage spinal implant embodying our new design.

FIG. 2 is a front view thereof.

FIG. 3 is a right side view thereof.

FIG. 4 is a left side view thereof.

FIG. 5 is a rear view thereof.

FIG. 6 is a top view thereof, the bottom view being identical thereto.

FIG. 7 is a right front perspective view of another embodiment of a cage spinal implant embodying our new design.

FIG. 8 is a front view of the embodiment shown in FIG. 7.

FIG. 9 is a right side view of the embodiment shown in FIG. 7.

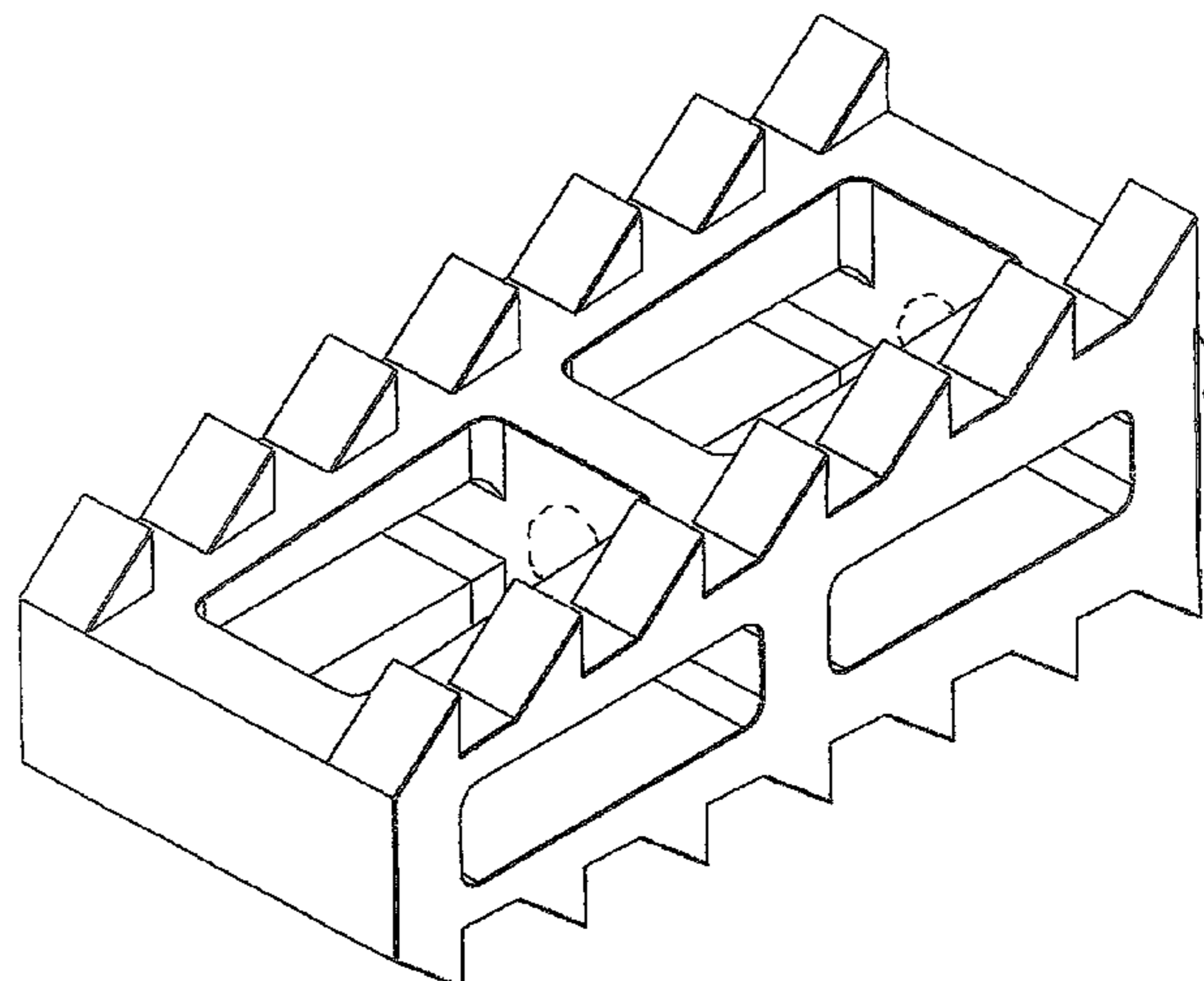
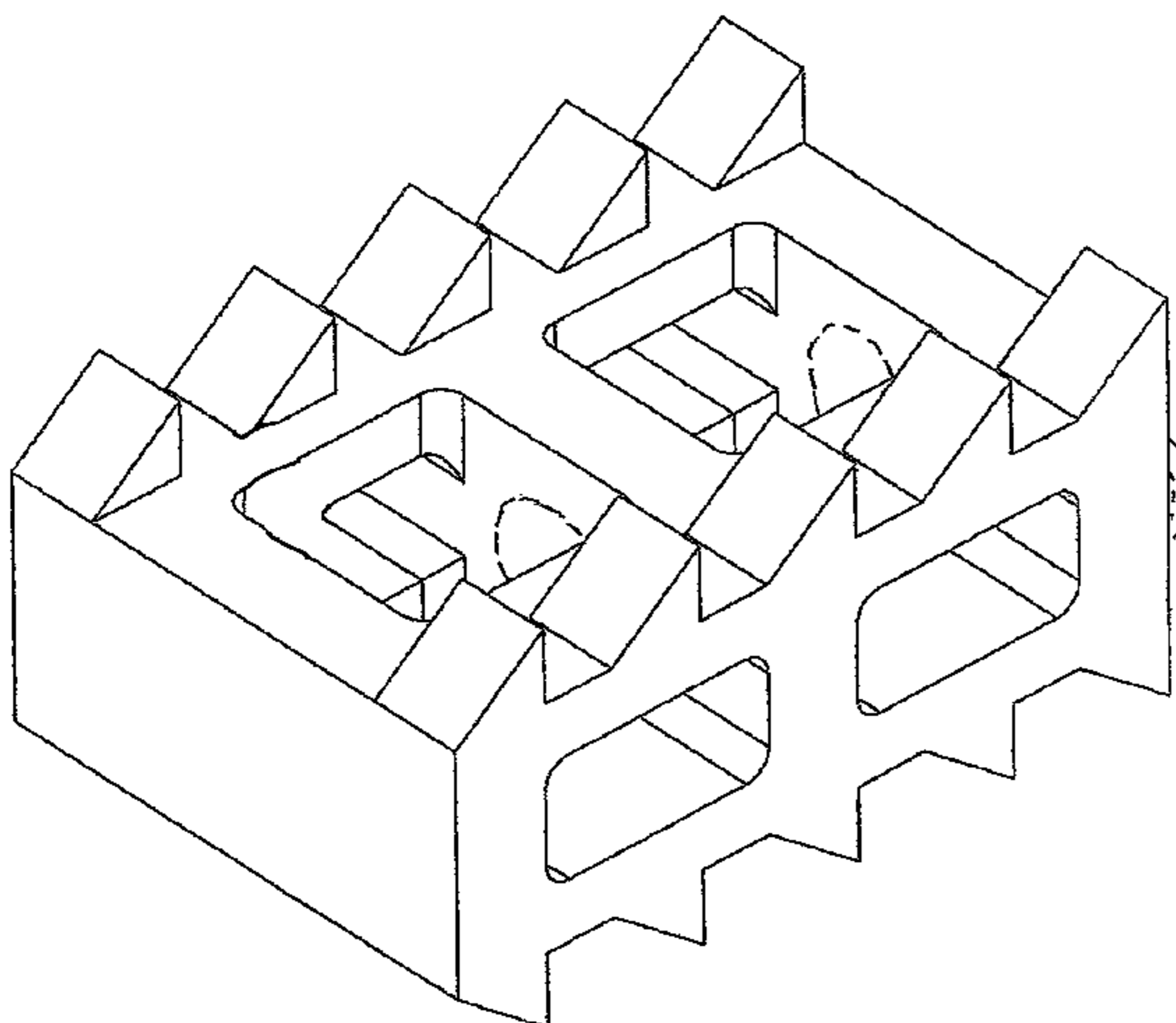
FIG. 10 is a left side view of the embodiment shown in FIG. 7.

FIG. 11 is a rear view of the embodiment shown in FIG. 7; and,

FIG. 12 is a top view of the embodiment shown in FIG. 7, the bottom view being identical thereto.

The portions shown in broken lines in the figures are for illustrative purposes only and form no part of the claimed design.

**1 Claim, 12 Drawing Sheets**



(56)

References Cited

U.S. PATENT DOCUMENTS

4,479,491	A	10/1984	Martin	6,451,023	B1	9/2002	Salazar et al.	
4,530,355	A	7/1985	Griggs	6,454,807	B1	9/2002	Jackson	
4,772,287	A	9/1988	Ray et al.	6,478,796	B2	11/2002	Zucherman et al.	
4,877,020	A	10/1989	Vich	6,500,206	B1	12/2002	Bryan	
4,878,915	A	11/1989	Brantigan	6,514,256	B2	2/2003	Zucherman et al.	
5,015,247	A	5/1991	Michelson	6,558,390	B2	5/2003	Cragg	
5,026,373	A	6/1991	Ray et al.	6,565,574	B2	5/2003	Michelson	
5,100,405	A	3/1992	McLaren	6,569,186	B1	5/2003	Winters et al.	
5,135,528	A	8/1992	Winston	6,575,919	B1	6/2003	Reiley et al.	
5,236,460	A	8/1993	Barber	6,579,319	B2	6/2003	Goble et al.	
5,484,437	A	1/1996	Michelson	6,582,432	B1	6/2003	Michelson	
5,489,307	A	2/1996	Kuslich et al.	6,607,530	B1	8/2003	Carl et al.	
5,505,732	A	4/1996	Michelson	6,610,091	B1	8/2003	Reiley	
5,527,312	A	6/1996	Ray	6,626,905	B1	9/2003	Schmiel et al.	
5,549,679	A	8/1996	Kuslich	6,632,235	B2	10/2003	Weikel et al.	
5,554,191	A	9/1996	Lahille et al.	6,635,060	B2	10/2003	Hanson et al.	
5,571,191	A	11/1996	Fitz	6,641,582	B1	11/2003	Hanson et al.	
5,593,409	A	1/1997	Michelson	6,648,893	B2	11/2003	Dudasik	
5,632,747	A	5/1997	Scarborough et al.	6,652,584	B2	11/2003	Michelson	
5,653,763	A	8/1997	Errico et al.	6,663,647	B2	12/2003	Reiley et al.	
5,665,122	A	9/1997	Kambin	6,666,866	B2	12/2003	Martz et al.	
5,674,295	A	10/1997	Ray et al.	6,679,886	B2	1/2004	Weikel et al.	
5,720,748	A	2/1998	Kuslich et al.	6,682,535	B2	1/2004	Hoogland	
5,741,253	A	4/1998	Michelson	6,685,742	B1	2/2004	Jackson	
5,772,661	A	6/1998	Michelson	6,709,458	B2	3/2004	Michelson	
5,792,044	A	8/1998	Foley et al.	6,712,853	B2	3/2004	Kuslich	
5,797,909	A	8/1998	Michelson	6,719,773	B1	4/2004	Boucher et al.	
5,836,948	A	11/1998	Zuckerman et al.	6,723,095	B2	4/2004	Hammerslag	
5,879,353	A	3/1999	Terry	6,733,534	B2	5/2004	Sherman	
5,885,299	A	3/1999	Winslow et al.	6,740,093	B2	5/2004	Hochschuler et al.	
5,891,147	A	4/1999	Moskovitz et al.	6,751,875	B2	6/2004	Jones	
5,895,426	A	4/1999	Scarborough et al.	6,770,074	B2	8/2004	Michelson	
5,899,908	A	5/1999	Kuslich et al.	6,793,679	B2	9/2004	Michelson	
5,928,238	A	7/1999	Scarborough et al.	6,805,715	B2	10/2004	Reuter et al.	
5,953,820	A	9/1999	Vasudeva	6,808,537	B2	10/2004	Michelson	
5,961,522	A	10/1999	Mehdizadeh	6,823,871	B2 *	11/2004	Schmieding ..... 128/898	
5,976,146	A	11/1999	Ogawa et al.	6,840,941	B2	1/2005	Rogers et al.	
6,008,433	A *	12/1999	Stone ..... 623/20.14	6,875,213	B2	4/2005	Michelson	
6,033,405	A	3/2000	Winslow et al.	6,899,719	B2	5/2005	Reiley et al.	
6,045,580	A	4/2000	Scarborough et al.	6,921,403	B2	7/2005	Cragg et al.	
6,063,088	A	5/2000	Winslow	6,923,813	B2	8/2005	Phillips et al.	
RE36,758	E	6/2000	Fitz	6,958,077	B2	10/2005	Suddaby	
6,080,155	A	6/2000	Michelson	6,962,606	B2	11/2005	Michelson	
6,090,143	A	7/2000	Meriwether et al.	6,966,930	B2	11/2005	Arnin et al.	
6,096,038	A	8/2000	Michelson	6,972,035	B2	12/2005	Michelson	
6,099,531	A	8/2000	Bonutti	6,979,333	B2	12/2005	Hammerslag	
6,102,950	A	8/2000	Vaccaro	7,001,385	B2	2/2006	Bonutti	
6,149,650	A	11/2000	Michelson	7,008,453	B1	3/2006	Michelson	
RE37,005	E	12/2000	Michelson et al.	7,033,362	B2	4/2006	McGahan et al.	
6,159,245	A	12/2000	Meriwether et al.	7,033,392	B2	4/2006	Schmiel et al.	
6,176,882	B1	1/2001	Biedermann et al.	7,033,394	B2	4/2006	Michelson	
6,190,388	B1	2/2001	Michelson et al.	7,066,961	B2	6/2006	Michelson	
6,190,414	B1	2/2001	Young et al.	D524,443	S *	7/2006	Blain ..... D24/155	
6,193,757	B1	2/2001	Foley et al.	7,083,623	B2	8/2006	Michelson	
6,210,412	B1	4/2001	Michelson	7,096,972	B2	8/2006	Orozco	
RE37,161	E	5/2001	Michelson et al.	7,101,398	B2	9/2006	Dooris et al.	
6,224,595	B1	5/2001	Michelson	7,115,128	B2	10/2006	Michelson	
6,224,607	B1	5/2001	Michelson	7,118,598	B2	10/2006	Michelson	
6,224,630	B1	5/2001	Bao et al.	7,128,760	B2	10/2006	Michelson	
6,248,110	B1	6/2001	Reiley et al.	7,156,877	B2	1/2007	Lotz et al.	
D444,878	S *	7/2001	Walter ..... D24/155	7,166,110	B2	1/2007	Yundt	
D445,188	S *	7/2001	Walter ..... D24/155	7,175,023	B2	2/2007	Martin	
6,264,656	B1	7/2001	Michelson	7,179,263	B2	2/2007	Zdeblick et al.	
6,267,763	B1	7/2001	Castro	7,207,991	B2	4/2007	Michelson	
6,270,498	B1	8/2001	Michelson	D541,940	S *	5/2007	Blain ..... D24/155	
6,283,966	B1	9/2001	Houfburg	7,264,622	B2	9/2007	Michelson	
6,315,795	B1	11/2001	Scarborough et al.	7,273,498	B2	9/2007	Bianchi et al.	
6,371,984	B1	4/2002	Van Dyke et al.	7,288,093	B2	10/2007	Michelson	
6,402,784	B1	6/2002	Wardlaw	7,291,149	B1	11/2007	Michelson	
6,423,063	B1	7/2002	Bonutti	7,300,440	B2	11/2007	Zdeblick et al.	
6,423,083	B2	7/2002	Reiley et al.	7,326,211	B2	2/2008	Padget et al.	
6,425,919	B1	7/2002	Lambrecht	7,326,214	B2	2/2008	Michelson	
6,436,098	B1	8/2002	Michelson	7,371,238	B2	5/2008	Soboleski et al.	
6,436,142	B1	8/2002	Paes et al.	7,399,303	B2	7/2008	Michelson	
6,443,988	B2	9/2002	Felt et al.	7,410,501	B2	8/2008	Michelson	
				7,431,722	B1	10/2008	Michelson	
				7,445,636	B2	11/2008	Michelson	
				7,452,359	B1	11/2008	Michelson	
				7,452,369	B2	11/2008	Barry	

(56)

References Cited

U.S. PATENT DOCUMENTS

7,465,304 B1	12/2008	Haufe et al.	8,348,979 B2	1/2013	McCormack et al.
7,476,226 B2	1/2009	Weikel et al.	8,361,152 B2	1/2013	McCormack et al.
7,476,251 B2	1/2009	Zucherman et al.	D677,791 S *	3/2013	Danacioglu et al. .... D24/155
7,479,160 B2	1/2009	Branch et al.	8,394,129 B2	3/2013	Morgenstern Lopez et al.
7,491,205 B1	2/2009	Michelson	D681,205 S *	4/2013	Farris et al. .... D24/155
7,500,992 B2	3/2009	Li	8,425,558 B2	4/2013	McCormack et al.
7,517,358 B2	4/2009	Petersen	8,512,347 B2	8/2013	McCormack et al.
7,524,333 B2	4/2009	Lambrecht et al.	8,523,908 B2	9/2013	Malone
7,569,054 B2	8/2009	Michelson	8,623,054 B2	1/2014	McCormack et al.
7,569,057 B2	8/2009	Liu et al.	2002/0026195 A1	2/2002	Layne et al.
7,580,743 B2	8/2009	Bourlion et al.	2002/0107519 A1	8/2002	Dixon
7,591,851 B2	9/2009	Winslow et al.	2002/0143343 A1	10/2002	Castro
7,601,170 B2	10/2009	Winslow et al.	2002/0147496 A1	10/2002	Belef et al.
7,608,077 B2	10/2009	Cragg et al.	2002/0147497 A1	10/2002	Belef et al.
7,608,107 B2	10/2009	Michelson	2002/0165612 A1	11/2002	Gerber et al.
7,641,664 B2	1/2010	Pagano	2002/0169471 A1	11/2002	Ferdinand
7,648,523 B2	1/2010	Mirkovic et al.	2003/0028251 A1	2/2003	Mathews
7,655,027 B2	2/2010	Michelson	2003/0105526 A1 *	6/2003	Bryant et al. .... 623/16.11
7,662,173 B2	2/2010	Cragg et al.	2003/0139816 A1	7/2003	Michelson
D611,147 S *	3/2010	Hanson et al. .... D24/155	2003/0225416 A1	12/2003	Bonvallet et al.
7,682,378 B2	3/2010	Truckai et al.	2004/0059337 A1	3/2004	Hanson et al.
7,686,805 B2	3/2010	Michelson	2004/0073217 A1	4/2004	Michelson
7,686,807 B2	3/2010	Padget et al.	2004/0087948 A1	5/2004	Suddaby
7,699,878 B2	4/2010	Pavlov et al.	2004/0087956 A1	5/2004	Weikel et al.
D615,653 S *	5/2010	Horton ..... D24/155	2004/0106999 A1	6/2004	Mathews
7,708,761 B2	5/2010	Petersen	2004/0133277 A1	7/2004	Michelson
7,722,619 B2	5/2010	Michelson	2004/0133280 A1	7/2004	Trieu
7,763,024 B2	7/2010	Bertagnoli et al.	2004/0162562 A1	8/2004	Martz
7,763,050 B2	7/2010	Winslow et al.	2004/0215344 A1	10/2004	Hochschuler et al.
7,776,090 B2	8/2010	Winslow et al.	2005/0015149 A1	1/2005	Michelson
D623,748 S *	9/2010	Horton et al. .... D24/155	2005/0049705 A1	3/2005	Hale et al.
D623,749 S *	9/2010	Horton et al. .... D24/155	2005/0055096 A1	3/2005	Serhan et al.
7,789,898 B2	9/2010	Peterman	2005/0065518 A1	3/2005	Michelson
D627,468 S *	11/2010	Richter et al. .... D24/155	2005/0065519 A1	3/2005	Michelson
7,824,431 B2	11/2010	McCormack	2005/0065609 A1	3/2005	Wardlaw
7,837,713 B2	11/2010	Petersen	2005/0080422 A1	4/2005	Otte et al.
7,846,183 B2	12/2010	Blain	2005/0090829 A1	4/2005	Martz et al.
7,846,184 B2	12/2010	Sasso et al.	2005/0090901 A1	4/2005	Studer
7,850,733 B2	12/2010	Baynham et al.	2005/0119680 A1	6/2005	Dykes
7,862,589 B2	1/2011	Thramann	2005/0124993 A1	6/2005	Chappuis
D631,967 S *	2/2011	Horton ..... D24/155	2005/0159650 A1	7/2005	Raymond et al.
7,879,098 B1	2/2011	Simmons	2005/0159746 A1	7/2005	Grob et al.
7,887,565 B2	2/2011	Michelson	2005/0216018 A1	9/2005	Sennett
7,892,261 B2 *	2/2011	Bonutti ..... 606/279	2005/0240188 A1	10/2005	Chow et al.
7,892,286 B2	2/2011	Michelson	2005/0251146 A1	11/2005	Martz et al.
7,896,903 B2	3/2011	Link	2005/0251257 A1	11/2005	Mitchell et al.
7,901,439 B2	3/2011	Horton	2005/0267480 A1	12/2005	Suddaby
7,914,530 B2	3/2011	Michelson	2006/0015184 A1 *	1/2006	Winterbottom et al. ... 623/18.11
7,922,729 B2	4/2011	Michelson	2006/0036247 A1	2/2006	Michelson
7,922,766 B2	4/2011	Grob et al.	2006/0036323 A1	2/2006	Carl et al.
7,935,136 B2	5/2011	Alamin et al.	2006/0041311 A1	2/2006	McLeer
7,988,712 B2	8/2011	Hale et al.	2006/0058793 A1	3/2006	Michelson
7,988,714 B2	8/2011	Puekert et al.	2006/0058878 A1	3/2006	Michelson
7,998,174 B2	8/2011	Malandain et al.	2006/0079905 A1	4/2006	Beyar et al.
8,007,534 B2	8/2011	Michelson	2006/0085074 A1	4/2006	Raiszadeh
8,029,540 B2	10/2011	Winslow et al.	2006/0095028 A1	5/2006	Bleich
8,043,334 B2	10/2011	Fisher et al.	2006/0095036 A1	5/2006	Hammerslag
8,052,728 B2	11/2011	Hestad	2006/0111779 A1	5/2006	Peterson
8,062,303 B2	11/2011	Berry et al.	2006/0111780 A1	5/2006	Petersen
8,066,705 B2	11/2011	Michelson	2006/0149289 A1	7/2006	Winslow et al.
D650,481 S *	12/2011	Gottlieb et al. .... D24/155	2006/0184172 A1	8/2006	Michelson
8,097,034 B2	1/2012	Michelson	2006/0190081 A1	8/2006	Kraus et al.
8,100,944 B2	1/2012	Laurysen et al.	2006/0195109 A1	8/2006	McGahan et al.
D653,757 S *	2/2012	Binder ..... D24/155	2006/0200137 A1	9/2006	Soboleski et al.
8,118,838 B2	2/2012	Winslow et al.	2006/0200138 A1	9/2006	Michelson
8,128,660 B2	3/2012	Mitchell et al.	2006/0206118 A1	9/2006	Kim et al.
8,133,261 B2	3/2012	Fisher et al.	2006/0235391 A1	10/2006	Sutterlin, III
8,142,503 B2	3/2012	Malone	2006/0241626 A1	10/2006	McCahan et al.
8,147,553 B2	4/2012	Vresilovic et al.	2006/0241758 A1	10/2006	Peterman et al.
8,162,981 B2	4/2012	Vestgaarden	2006/0247633 A1	11/2006	Winslow et al.
8,172,877 B2	5/2012	Winslow et al.	2006/0247650 A1	11/2006	Yerby et al.
8,197,513 B2	6/2012	Fisher et al.	2006/0259142 A1	11/2006	Dooris et al.
8,206,418 B2	6/2012	Triplett et al.	2006/0276790 A1	12/2006	Dawson et al.
8,267,966 B2	9/2012	McCormack et al.	2006/0276801 A1	12/2006	Yerby et al.
D674,900 S *	1/2013	Janice et al. .... D24/155	2006/0276897 A1	12/2006	Winslow et al.
			2007/0016196 A1	1/2007	Winslow et al.
			2007/0016218 A1	1/2007	Winslow et al.
			2007/0032871 A1	2/2007	Michelson
			2007/0055245 A1	3/2007	Sasso et al.

(56)

References Cited

U.S. PATENT DOCUMENTS

2007/0055263 A1 3/2007 Way et al.  
 2007/0073402 A1 3/2007 Vresilovic et al.  
 2007/0123888 A1 5/2007 Bleich et al.  
 2007/0135814 A1 6/2007 Farris  
 2007/0135921 A1 6/2007 Park  
 2007/0150061 A1 6/2007 Trieu  
 2007/0161991 A1 7/2007 Altarac et al.  
 2007/0179617 A1 8/2007 Brown et al.  
 2007/0225721 A1 9/2007 Thelen et al.  
 2007/0276491 A1 11/2007 Ahrens  
 2007/0288014 A1 12/2007 Shaddock et al.  
 2007/0299451 A1 12/2007 Tulkis  
 2008/0021457 A1 1/2008 Anderson et al.  
 2008/0045970 A1 2/2008 Saidha et al.  
 2008/0058954 A1 3/2008 Trieu  
 2008/0108996 A1 5/2008 Padget et al.  
 2008/0140207 A1 6/2008 Olmos et al.  
 2008/0161810 A1 7/2008 Melkent  
 2008/0161929 A1 7/2008 McCormack et al.  
 2008/0167657 A1 7/2008 Greenhalgh  
 2008/0177311 A1 7/2008 Winslow et al.  
 2008/0216846 A1 9/2008 Levin  
 2008/0255564 A1 10/2008 Michelson  
 2008/0255622 A1 10/2008 Mickiewicz et al.  
 2008/0287955 A1 11/2008 Michelson  
 2009/0131986 A1 5/2009 Lee et al.  
 2009/0138053 A1 5/2009 Assell et al.  
 2009/0177205 A1 7/2009 McCormack et al.  
 2009/0263461 A1 10/2009 McKay  
 2010/0069912 A1 3/2010 McCormack et al.  
 2010/0086185 A1 4/2010 Weiss  
 2010/0093829 A1 4/2010 Gorman  
 2010/0111829 A1 5/2010 Drapeau et al.  
 2010/0114105 A1 5/2010 Butters et al.  
 2010/0145391 A1 6/2010 Kleiner  
 2011/0022089 A1 1/2011 Assell et al.  
 2011/0082548 A1 4/2011 Assell et al.  
 2011/0295327 A1 12/2011 Moskowitz et al.  
 2011/0307061 A1 12/2011 Assell et al.  
 2012/0010662 A1 1/2012 O'Neil et al.  
 2012/0010669 A1 1/2012 O'Neil et al.  
 2012/0143334 A1\* 6/2012 Boyce et al. .... 623/16.11  
 2012/0226358 A1 9/2012 Kleiner  
 2012/0265250 A1 10/2012 Ali  
 2012/0283776 A1 11/2012 Mishra  
 2013/0006364 A1 1/2013 McCormack et al.  
 2013/0012994 A1 1/2013 McCormack et al.  
 2013/0013070 A1 1/2013 McCormack et al.  
 2013/0018474 A1 1/2013 McCormack et al.  
 2013/0023995 A1 1/2013 McCormack et al.  
 2013/0023996 A1 1/2013 McCormack et al.  
 2013/0030440 A1 1/2013 McCormack et al.  
 2013/0030532 A1 1/2013 McCormack et al.  
 2013/0110168 A1 5/2013 McCormack et al.  
 2013/0123922 A1 5/2013 McCormack et al.  
 2013/0144389 A1\* 6/2013 Bonutti ..... 623/17.16  
 2013/0226239 A1 8/2013 Altarac et al.  
 2013/0253649 A1 9/2013 Davis  
 2013/0274763 A1 10/2013 Drapeau et al.  
 2013/0310839 A1 11/2013 McCormack et al.  
 2013/0310878 A1 11/2013 McCormack et al.  
 2013/0310943 A1 11/2013 McCormack et al.  
 2013/0317548 A1 11/2013 Malone  
 2013/0338720 A1 12/2013 Kleiner  
 2014/0025113 A1 1/2014 McCormack et al.  
 2014/0100657 A1 4/2014 McCormack et al.

FOREIGN PATENT DOCUMENTS

WO WO 99/49818 A1 10/1999  
 WO WO 00/35388 A1 6/2000  
 WO WO 00/53126 A1 9/2000  
 WO WO 01/01895 A1 1/2001  
 WO WO 02/34120 A2 5/2002

WO WO 02/38062 A2 5/2002  
 WO WO 02/076335 A2 10/2002  
 WO WO 2006/058221 A2 6/2006  
 WO WO 2006/096803 A2 9/2006  
 WO WO 2006/130791 A2 12/2006  
 WO WO 2006/135792 A1 12/2006  
 WO WO 2007/120903 A1 10/2007

OTHER PUBLICATIONS

Advisory Action, U.S. Appl. No. 12/455,814, dated Aug. 16, 2012, 3 pages.  
 Amendment and Response to Office Action, U.S. Appl. No. 12/110,548, filed May 5, 2009, 11 pages.  
 Amendment, U.S. Appl. No. 11/618,619, filed May 5, 2008, 10 pages.  
 Corrected Response to Restriction Requirement, U.S. Appl. No. 12/317,682, filed Sep. 2, 2011, 15 pages.  
 Final Office Action, U.S. Appl. No. 11/618,619, mailed Aug. 8, 2008, 10 pages.  
 Final Office Action, U.S. Appl. No. 12/110,548, mailed Feb. 26, 2010, 4 pages.  
 Final Office Action, U.S. Appl. No. 12/317,682, mailed Feb. 10, 2012, 8 pages.  
 Final Office Action, U.S. Appl. No. 12/350,609, mailed Apr. 25, 2012, 10 pages.  
 Final Office Action, U.S. Appl. No. 12/455,814, mailed Jun. 6, 2012, 12 pages.  
 Final Office Action, U.S. Appl. No. 12/559,193, mailed Feb. 13, 2013, 10 pages.  
 Final Office Action, U.S. Appl. No. 12/653,283, mailed Mar. 21, 2012, 8 pages.  
 Final Office Action, U.S. Appl. No. 12/653,283, mailed Nov. 19, 2012, 8 pages.  
 Goel, Atul et al., Facetal Distraction as Treatment for Single- and Multilevel Cervical spondylotic Radiculopathy and Myelopathy: A Preliminary Report. J Neurosurg Spine 14:689-696, Jun. 2011; published online Mar. 18, 2011; DOI: 10.3171/2011.2.SPINE10601.  
 International Search Report and WO, International patent application No. PCT/US2009/056841, dated Apr. 9, 2010.  
 International Search Report and WO, PCT/US2009/006478, dated Jun. 29, 2010.  
 International Search Report and Written Opinion, International patent application No. PCT/US07/89146, dated Nov. 3, 2008.  
 International Search Report and Written Opinion, International patent application No. PCT/US2009/030461, dated Aug. 17, 2009.  
 International Search Report and Written Opinion, International patent application No. PCT/US2009/003423, dated Dec. 14, 2009.  
 Interview Summary, U.S. Appl. No. 11/618,619, mailed Mar. 18, 2008, 3 pages.  
 Medtronic, Cervical FacetLift ID/S Indirect Decompression and Stabilization technique using Cornerstone Facet MicroGrafts, Surgical Technique. Copyright 2012 Medtronic Sofamor Danek USA, Inc.  
 Non-Final Office Action, U.S. Appl. No. 11/618,619, mailed Jan. 3, 2008, 12 pages.  
 Non-Final Office Action, U.S. Appl. No. 12/110,548, mailed Feb. 17, 2009, 11 pages.  
 Nonfinal Office Action, U.S. Appl. No. 12/317,682, dated sep. 15, 2011, 25 pages.  
 Non-final Office Action, U.S. Appl. No. 12/350,609, dated Oct. 18, 2011, 27 pages.  
 Non-Final Office Action, U.S. Appl. No. 12/455,814, dated Jan. 24, 2012, 30 pages.  
 Non-Final Office Action, U.S. Appl. No. 12/559,193, mailed Sep. 18, 2012, 26 pages.  
 Non-Final Office Action, U.S. Appl. No. 12/653,283, mailed Feb. 10, 2012, 7 pages.  
 Non-Final Office Action, U.S. Appl. No. 12/653,283, mailed Jul. 18, 2012, 5 pages.  
 Nonfinal Office Action, U.S. Appl. No. 12/653,283, dated Aug. 9, 2011, 20 pages.  
 Non-Final Office Action, U.S. Appl. No. 12/889,122, dated Mar. 29, 2012, 20 pages.

(56)

**References Cited**

## OTHER PUBLICATIONS

Notice of Allowance, U.S. Appl. No. 12/110,548, mailed Mar. 29, 2010, 5 pages.

Notice of Allowance, U.S. Appl. No. 12/110,548, mailed Jul. 14, 2010, 10 pages.

Notice of Allowance, U.S. Appl. No. 12/317,682, mailed May 11, 2012, 10 pages.

Notice of Allowance, U.S. Appl. No. 12/455,814, mailed Oct. 2, 2012, 6 pages.

Notice of Allowance, U.S. Appl. No. 12/653,283, mailed Feb. 28, 2013, 10 pages.

Notice of Allowance, U.S. Appl. No. 12/889,122, mailed Sep. 25, 2012, 7 pages.

Notice of Non-Responsive Amendment, U.S. Appl. No. 12/317,682, dated Aug. 8, 2011, 2 pages.

Office Action (Quayle), U.S. Appl. No. 12/653,283, dated Dec. 22, 2011, 8 pages.

Office Action (Restriction), U.S. Appl. No. 12/317,682, dated Apr. 22, 2011, 14 pages.

Office Action (Restriction), U.S. Appl. No. 12/350,609, dated Jun. 14, 2011, 6 pages.

Office Action (Restriction), U.S. Appl. No. 12/455,814, dated Apr. 20, 2011, 14 pages.

Office Action (Restriction), U.S. Appl. No. 12/653,283, dated Jun. 24, 2011, 9 pages.

Partial International Search Report, International patent application No. PCT/US2009/030461, dated May 13, 2009.

Partial International Search Report, International patent application No. PCT/US2009/003423, dated Sep. 14, 2009.

Partial International Search Report, International patent application No. PCT/US2009/056841, dated Dec. 10, 2009.

Partial International Search Report, International patent application No. PCT/US2009/006478, dated Apr. 7, 2010.

Press Release , Interventional Spine, Inc., FDA Grants Conditional Approval to Interventional Spine's PercuDyn System IDE Application (Jul. 1, 2008).

Press Release , Interventional Spine, Inc., Interventional Spine, Inc. Introduces the PERPOS Fusion Facet Prep Kit (Oct. 14, 2008).

Press Release, minSURG Corp., Orthopedic Development Corporation's TruFUSE Procedure Tops 1,750 Patients in First Year (Sep. 24, 2007).

RCE/Amendment, U.S. Appl. No. 12/350,609, filed Jul. 24, 2012, 19 pages.

Response to Advisory Action, U.S. Appl. No. 12/317,682, filed Apr. 24, 2012, 4 pages.

Response to Advisory Action, U.S. Appl. No. 12/455,814, filed Sep. 5, 2012, 6 pages.

Response to Final Office Action, U.S. Appl. No. 12/317,682, filed Mar. 22, 2012, 17 pages.

Response to Final Office Action, U.S. Appl. No. 12/455,814, filed Aug. 6, 2012, 13 pages.

Response to Final Office Action, U.S. Appl. No. 12/559,193, filed Apr. 12, 2013, 8 pages.

Response to Final Office Action, U.S. Appl. No. 12/653,283, filed Jun. 15, 2012, 7 pages.

Response to Final Office Action, U.S. Appl. No. 12/653,283, filed Feb. 19, 2013, 5 pages.

Response to Non-Final Office Action and Terminal Disclaimer, U.S. Appl. No. 12/889,122, filed Jun. 27, 2012, 8 pages.

Response to Non-Final Office Action, U.S. Appl. No. 12/317,682, filed Dec. 13, 2011, 19 pages.

Response to Non-Final Office Action, U.S. Appl. No. 12/350,609, filed Feb. 17, 2012, 16 pages.

Response to Non-Final Office Action, U.S. Appl. No. 12/455,814, filed Apr. 24, 2012, 15 pages.

Response to Non-Final Office Action, U.S. Appl. No. 12/653,283, filed Dec. 6, 2011, 14 pages.

Response to Non-Final Office Action, U.S. Appl. No. 12/653,283, filed Mar. 8, 2012, 9 pages.

Response to Non-Final Office Action, U.S. Appl. No. 12/653,283, filed Oct. 18, 2012, 6 pages.

Response to Non-Final Office Action, U.S. Appl. No. 12/599,193, filed Dec. 13, 2012, 7 pages.

Response to Quayle Action, U.S. Appl. No. 12/653,283, filed Feb. 1, 2012, 3 pages.

Response to Restriction Requirement, U.S. Appl. No. 12/350,609, filed Aug. 15, 2011, 14 pages.

Response to Restriction, U.S. Appl. No. 12/317,682, filed May 16, 2011, 15 pages.

Response to Restriction, U.S. Appl. No. 12/455,814, filed May 16, 2011, 10 pages.

Response to Restriction, U.S. Appl. No. 12/559,193, filed Jul. 17, 2012, 6 pages.

Response to Restriction, U.S. Appl. No. 12/653,283, filed Jul. 22, 2011, 8 pages.

Restriction Requirement, U.S. Appl. No. 12/559,193, dated Apr. 18, 2012, 10 pages.

Advisory Action, U.S. Appl. No. 13/614,372, dated Feb. 26, 2014, 6 pages.

Final Office Action, U.S. Appl. No. 12/350,609, dated Feb. 10, 2014, 16 pages.

Final Office Action, U.S. Appl. No. 13/614,372, dated Oct. 25, 2013, 9 pages.

Final Office Action, U.S. Appl. No. 13/614,508, dated Dec. 23, 2013, 12 pages.

Final Office Action, U.S. Appl. No. 13/627,825, dated Dec. 4, 2013, 8 pgs.

Final Office Action, U.S. Appl. No. 13/627,850, dated Dec. 30, 2013, 12 pages.

Final Office Action, U.S. Appl. No. 13/627,865, dated Dec. 4, 2013, 10 pages.

International Search Report and Written Opinion, PCT/US2013/073744, dated Mar. 31, 2014, 11 pages.

Miscellaneous Office Action, U.S. Appl. No. 13/614,577, dated Apr. 23, 2014, 2 pages.

Non-Final Office Action, U.S. Appl. No. 29/435,381, dated Oct. 7, 2013, 20 pages.

Non-Final Office Action, U.S. Appl. No. 12/350,609, dated Oct. 10, 2013, 17 pages.

Non-Final Office Action, U.S. Appl. No. 13/614,372, mailed Jun. 26, 2013, 22 pages.

Non-Final Office Action, U.S. Appl. No. 13/614,508, mailed Jul. 17, 2013, 25 pages.

Non-Final Office Action, U.S. Appl. No. 13/614,577, mailed Jul. 19, 2013, 22 pages.

Non-Final Office Action, U.S. Appl. No. 13/614,577, dated Dec. 5, 2013, 10 pages.

Non-Final Office Action, U.S. Appl. No. 13/627,825, mailed Jul. 19, 2013, 22 pages.

Non-Final Office Action, U.S. Appl. No. 13/627,850, mailed Jul. 25, 2013, 23 pages.

Non-Final Office Action, U.S. Appl. No. 13/627,865, mailed Jul. 26, 2013, 25 pages.

Non-Final Office Action, U.S. Appl. No. 13/722,802, mailed Sep. 26, 2013, 8 pages.

Non-Final Office Action, U.S. Appl. No. 29/448,467, dated Oct. 2, 2013, 8 pages.

Non-Final Office Action, U.S. Appl. No. 29/448,474, dated Oct. 2, 2013, 8 pages.

Notice of Allowance, U.S. Appl. No. 12/559,193, mailed Apr. 22, 2013, 8 pages.

Notice of Allowance, U.S. Appl. No. 13/614,372, dated Apr. 16, 2014, 18 pages.

Notice of Allowance, U.S. Appl. No. 13/627,812, mailed Aug. 30, 2013, 25 pages.

Notice of Allowance, U.S. Appl. No. 13/627,825, dated Feb. 27, 2014, 12 pages.

Notice of Allowance, U.S. Appl. No. 13/627,865, dated Feb. 20, 2014, 9 pages.

Response to Final Office Action, U.S. Appl. No. 13/614,372, dated Dec. 20, 2013, 11 pages.

(56)

**References Cited**

OTHER PUBLICATIONS

Response to Final Office Action, U.S. Appl. No. 13/627,825, dated Jan. 28, 2014, 9 pages.  
Response to Final Office Action, U.S. Appl. No. 13/627,850, dated Mar. 31, 2014, 9 pages.  
Response to Final Office Action, U.S. Appl. No. 13/627,865, dated Feb. 4, 2014, 9 pages.  
Response to Non-Final Office Action and Terminal Disclaimer, U.S. Appl. No. 13/627,850, filed Oct. 25, 2013, 11 pages.  
Response to Non-Final Office Action, U.S. Appl. No. 29/435,381, dated Mar. 4, 2014, 6 pages.  
Response to Non-Final Office Action, U.S. Appl. No. 12/350,609, dated Jan. 10, 2014, 22 pages.  
Response to Non-Final Office Action, U.S. Appl. No. 13/614,372, filed Sep. 26, 2013, 13 pages.  
Response to Non-Final Office Action, U.S. Appl. No. 13/614,508, filed Oct. 17, 2013, 12 pages.  
Response to Non-final Office Action, U.S. Appl. No. 13/614,577, filed Oct. 21, 2013, 10 pages.  
Response to Non-Final Office Action, U.S. Appl. No. 13/614,577, dated Apr. 3, 2014, 13 pages.  
Response to Non-Final Office Action, U.S. Appl. No. 13/627,825, filed Oct. 21, 2013, 11 pages.  
Response to Non-Final Office Action, U.S. Appl. No. 13/627,865, dated Oct. 28, 2013, 17 pages.  
Response to Non-Final Office Action, U.S. Appl. No. 13/722,802, filed Mar. 26, 2014, 10 pages.  
Response to Non-Final Office Action, U.S. Appl. No. 29/448,474, dated Mar. 4, 2014, 6 pages.  
Response to Non-Final Office Action, U.S. Appl. No. 29/448,467, dated Mar. 4, 2014, 6 pages.

Response to Restriction, U.S. Appl. No. 13/614,372, filed May 16, 2013, 6 pages.  
Response to Restriction, U.S. Appl. No. 13/614,508, filed Jun. 1, 2013, 6 pages.  
Response to Restriction, U.S. Appl. No. 13/614,577, filed Jun. 1, 2013, 6 pages.  
Response to Restriction, U.S. Appl. No. 13/627,812, filed Aug. 7, 2013, 6 pages.  
Response to Restriction, U.S. Appl. No. 13/627,825, filed Jun. 1, 2013, 6 pages.  
Response to Restriction, U.S. Appl. No. 13/627,850, filed Jun. 1, 2013, 5 pages.  
Response to Restriction, U.S. Appl. No. 13/627,865, filed Jun. 1, 2013, 6 pages.  
Restriction Requirement, U.S. Appl. No. 13/614,372, mailed Apr. 17, 2013, 6 pages.  
Restriction Requirement, U.S. Appl. No. 13/614,508, mailed May 3, 2013, 6 pages.  
Restriction Requirement, U.S. Appl. No. 13/614,577, mailed May 2, 2013, 6 pages.  
Restriction Requirement, U.S. Appl. No. 13/627,812, mailed Jul. 16, 2013, 7 pages.  
Restriction Requirement, U.S. Appl. No. 13/627,825, mailed May 2, 2013, 7 pages.  
Restriction Requirement, U.S. Appl. No. 13/627,850, mailed May 2, 2013, 7 pages.  
Restriction Requirement, U.S. Appl. No. 13/627,865, mailed May 6, 2013, 5 pages.  
Supplemental Amendment After Final Office Action, U.S. Appl. No. 13/614,372, dated Mar. 21, 2014, 7 pages.  
US 7,063,700, 06/2006, Michelson (withdrawn)

\* cited by examiner

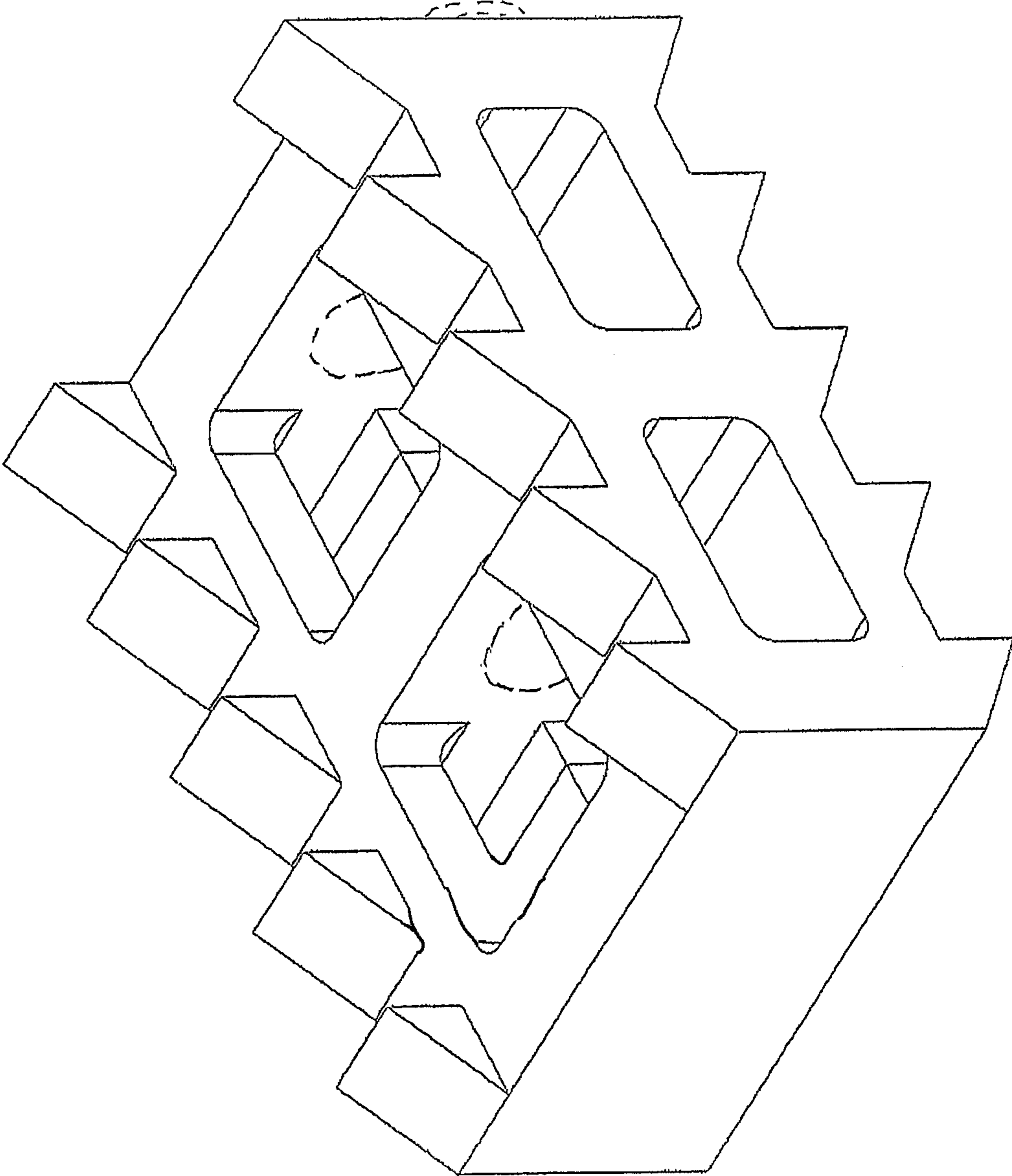


FIG. 1

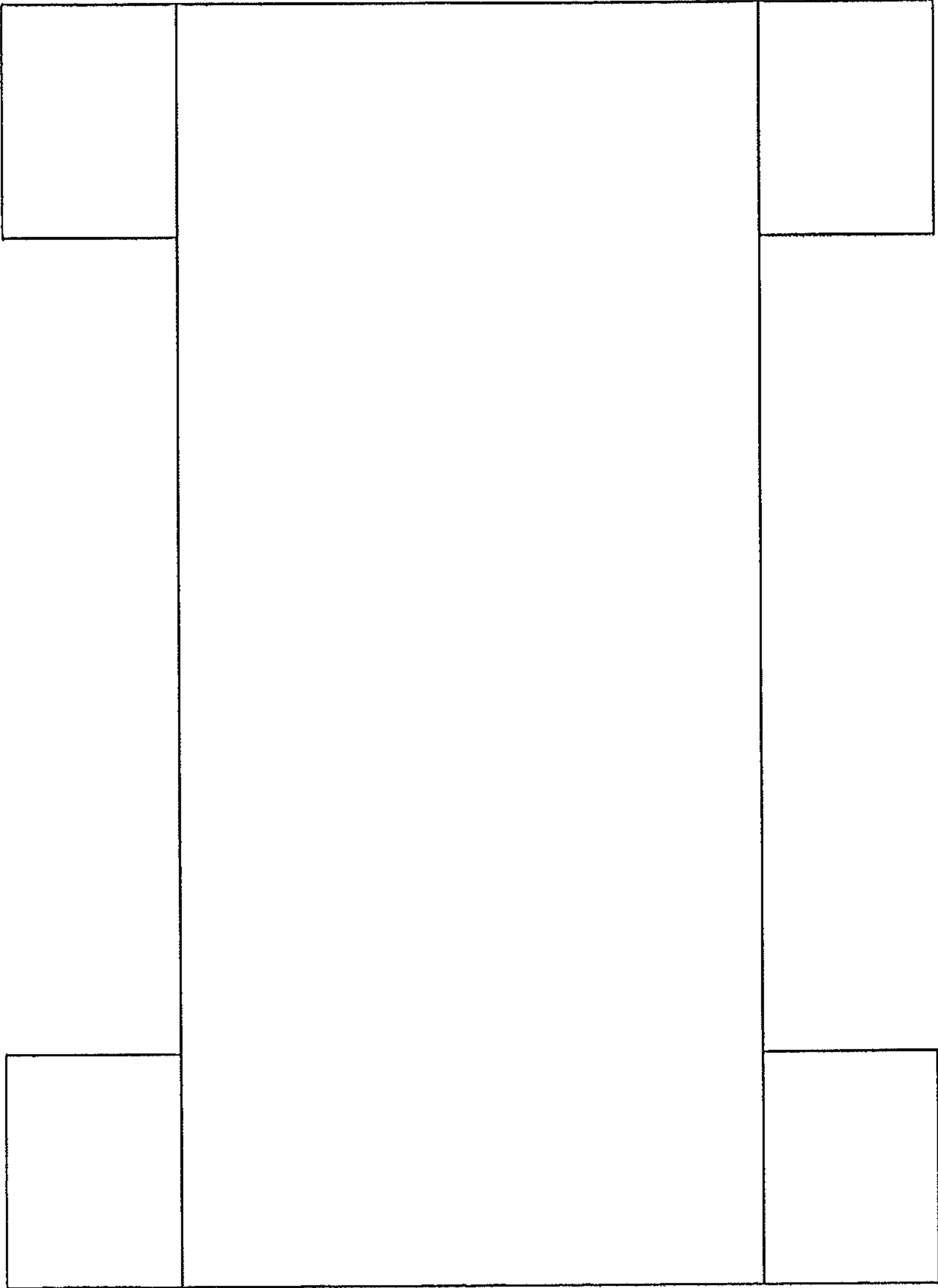


FIG. 2



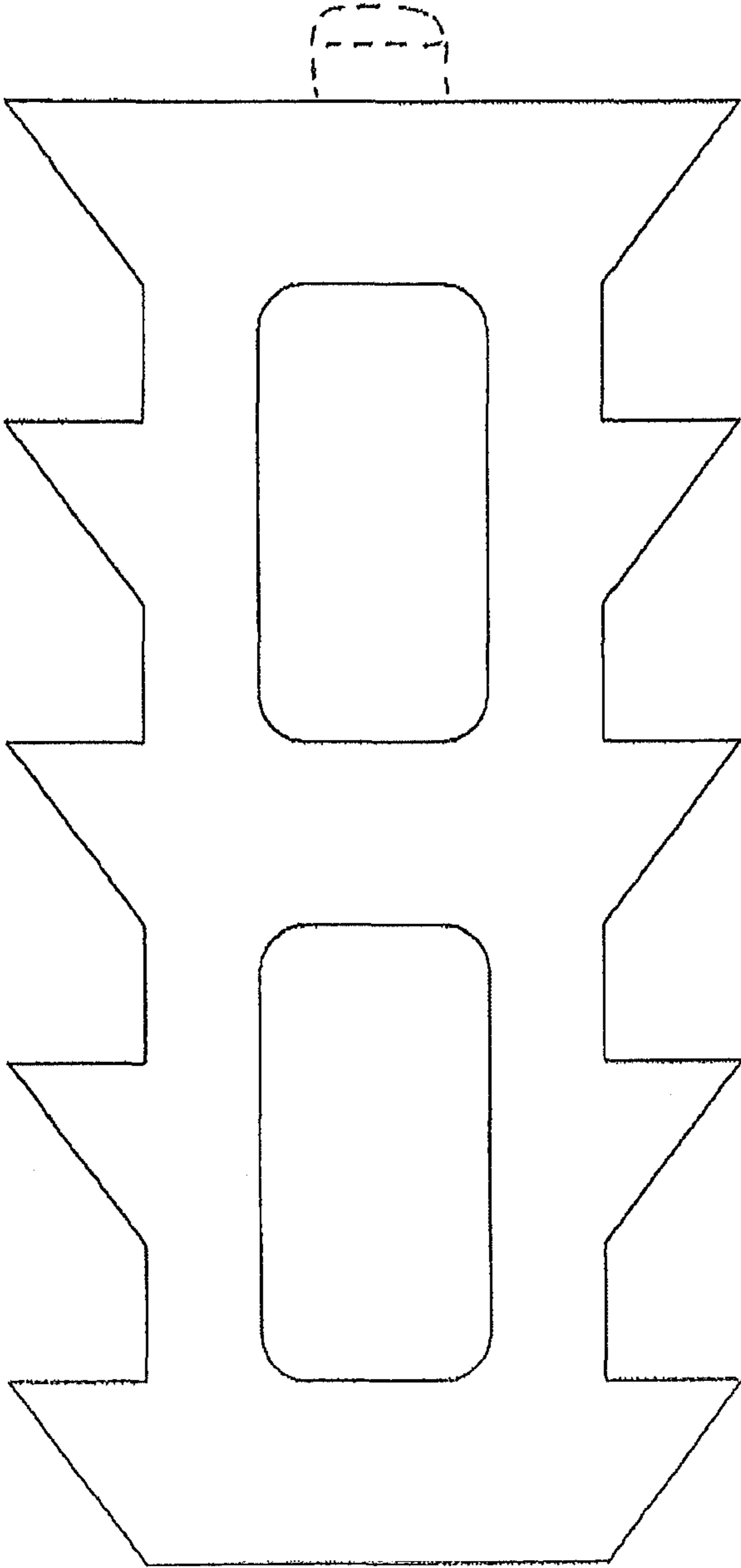


FIG. 3

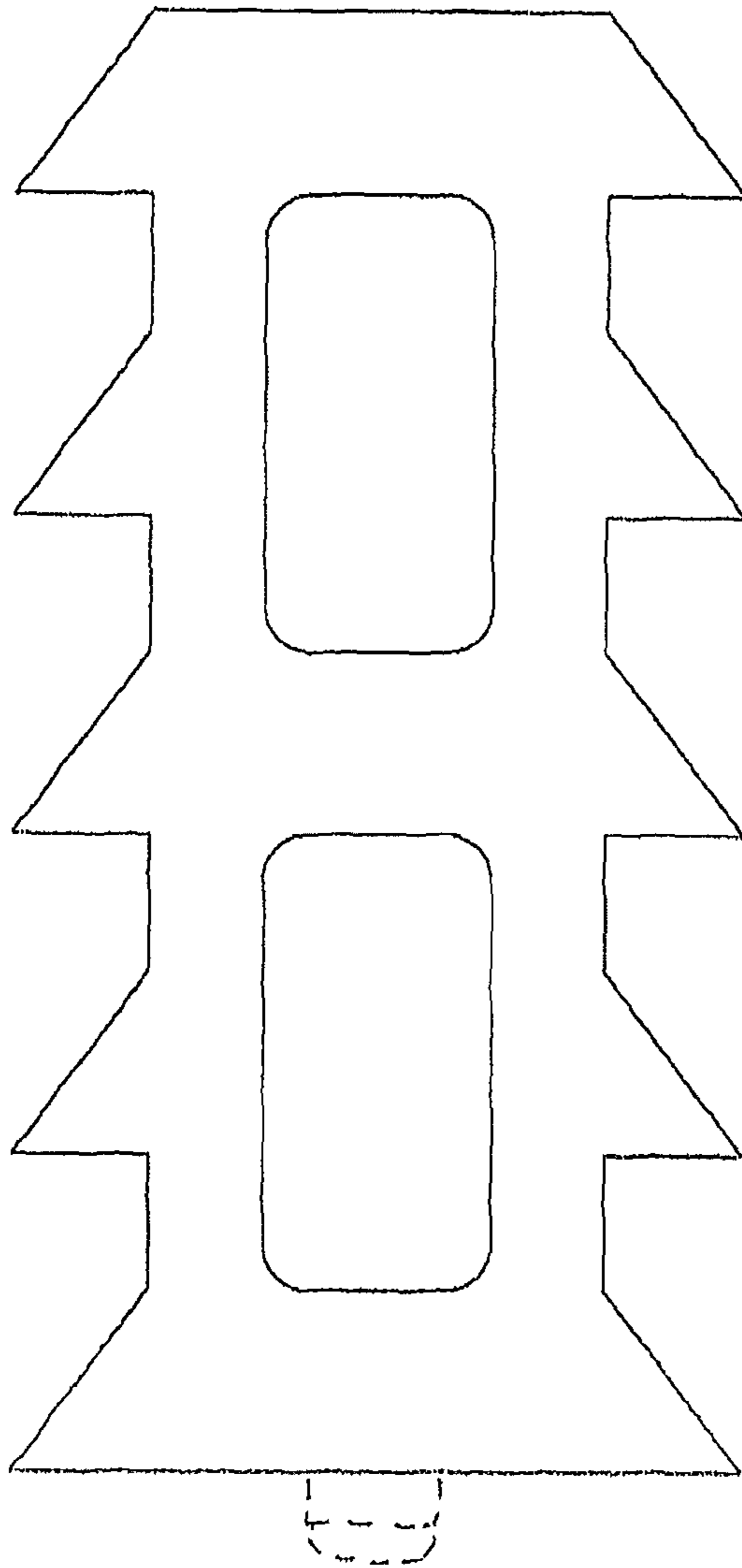


FIG. 4

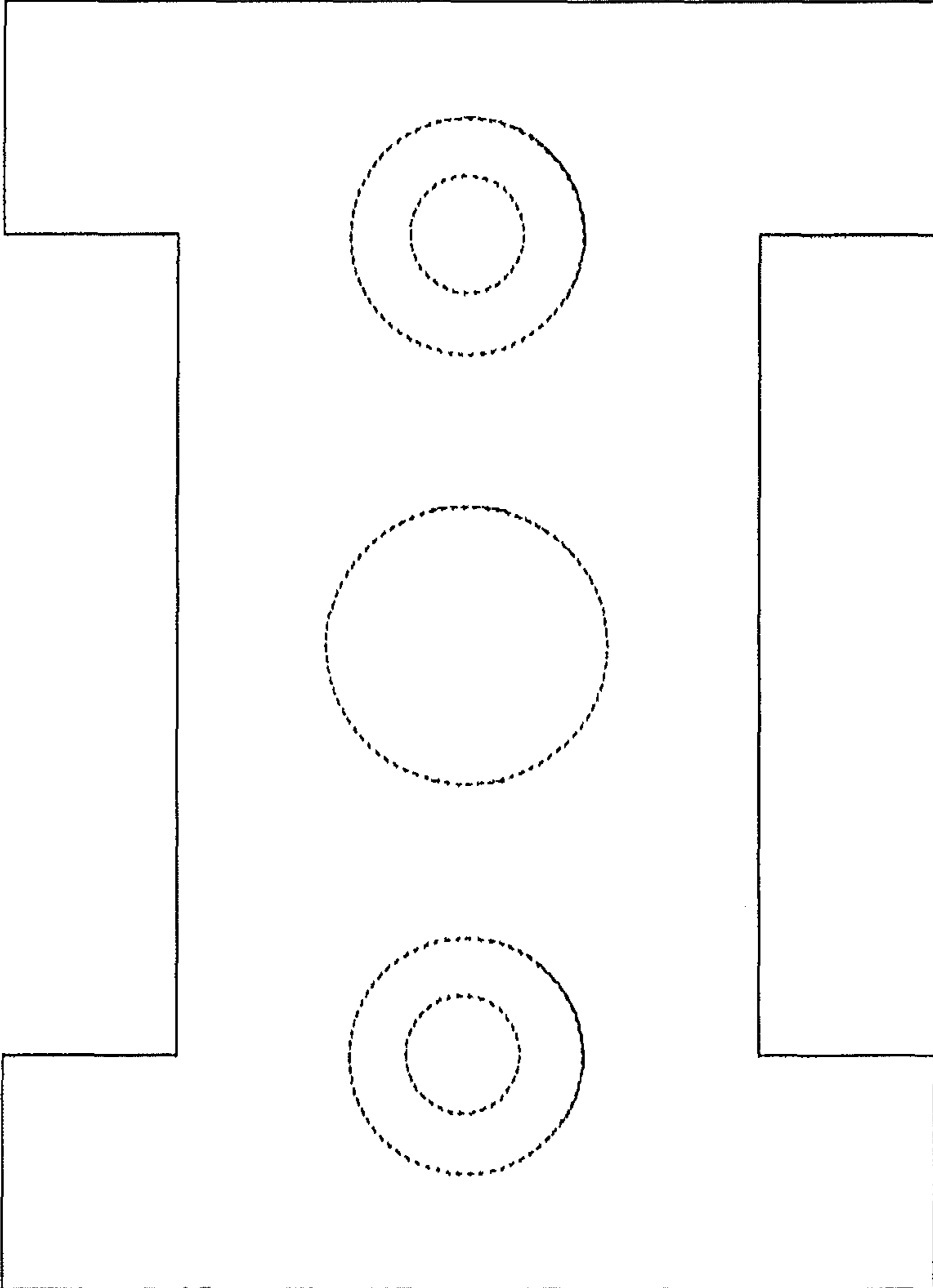


FIG. 5

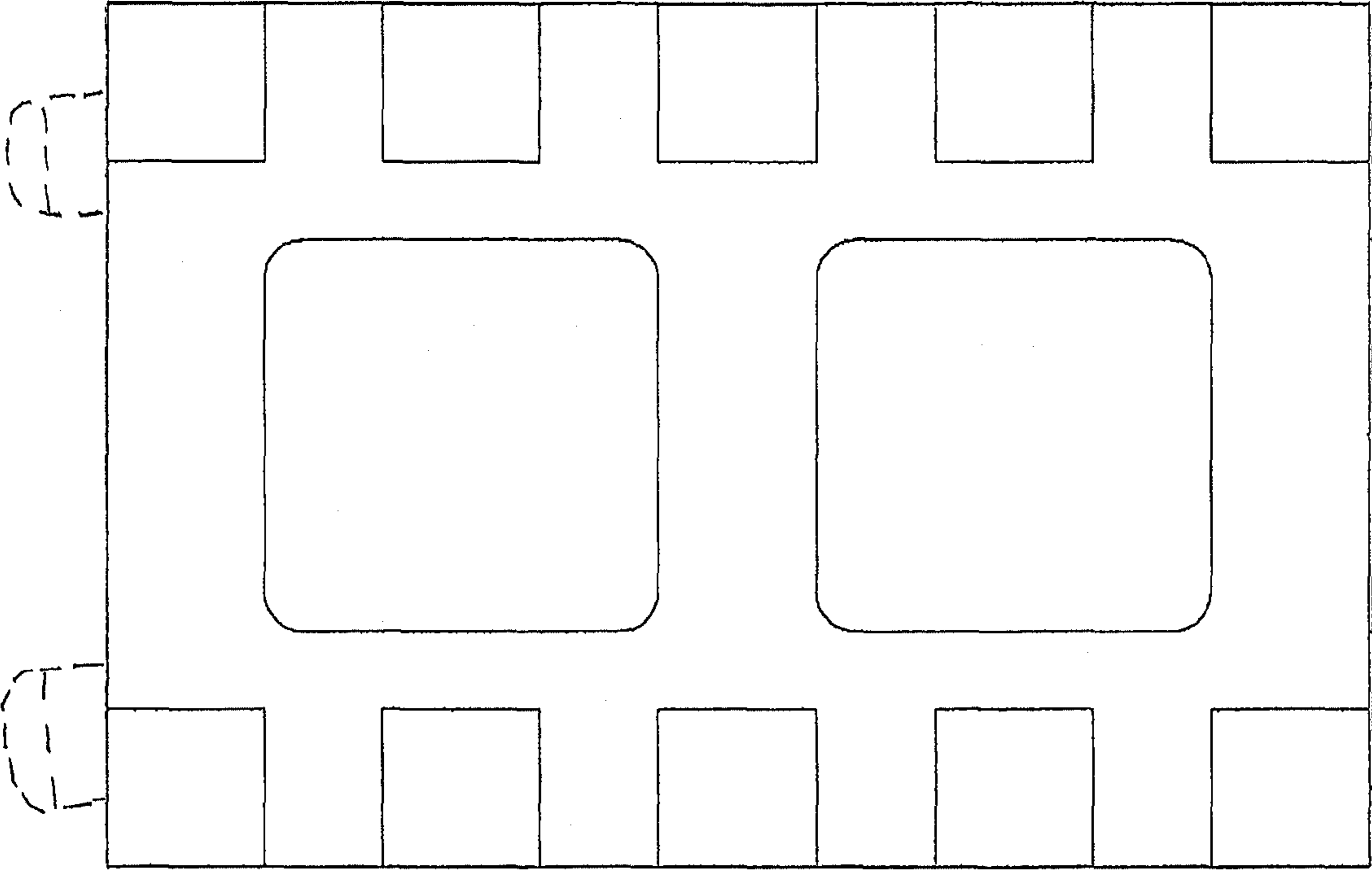


FIG. 6

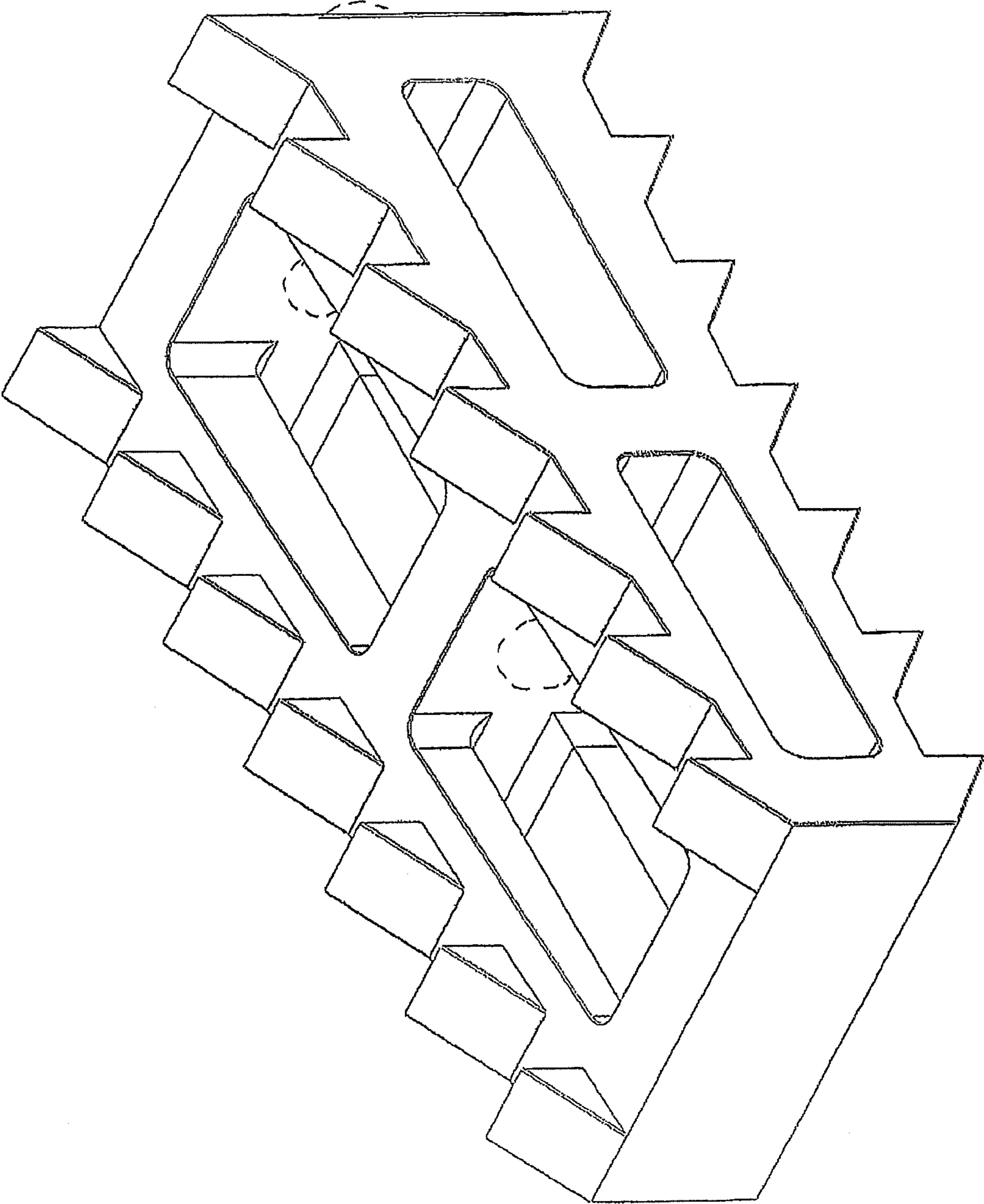


FIG. 7

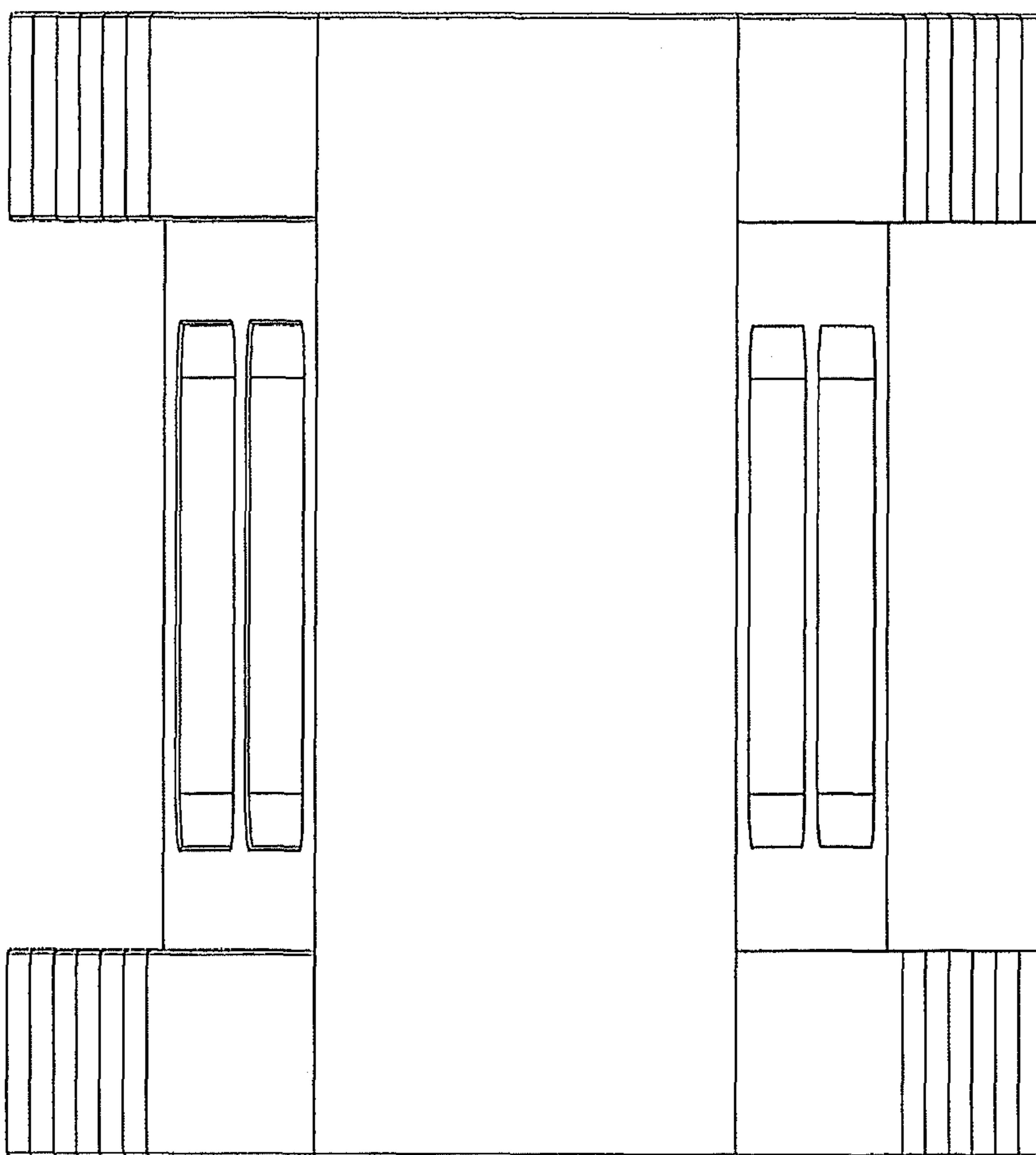


FIG. 8

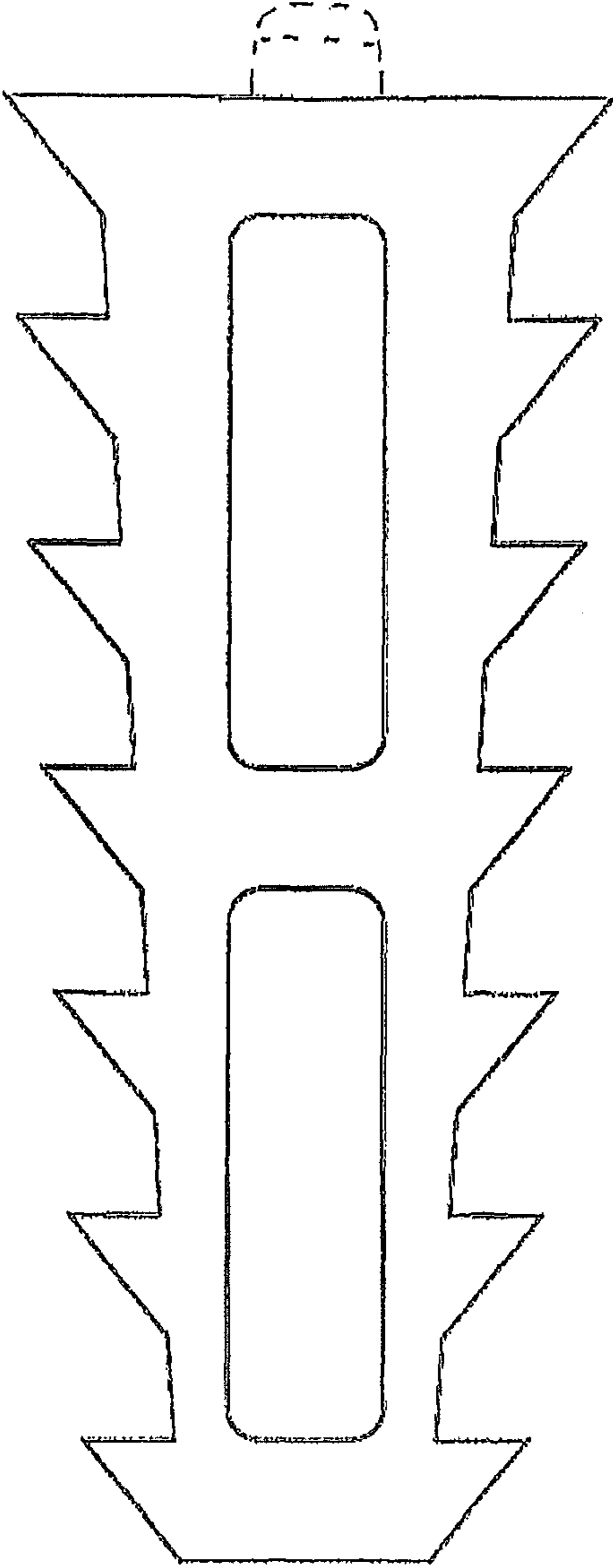


FIG. 9

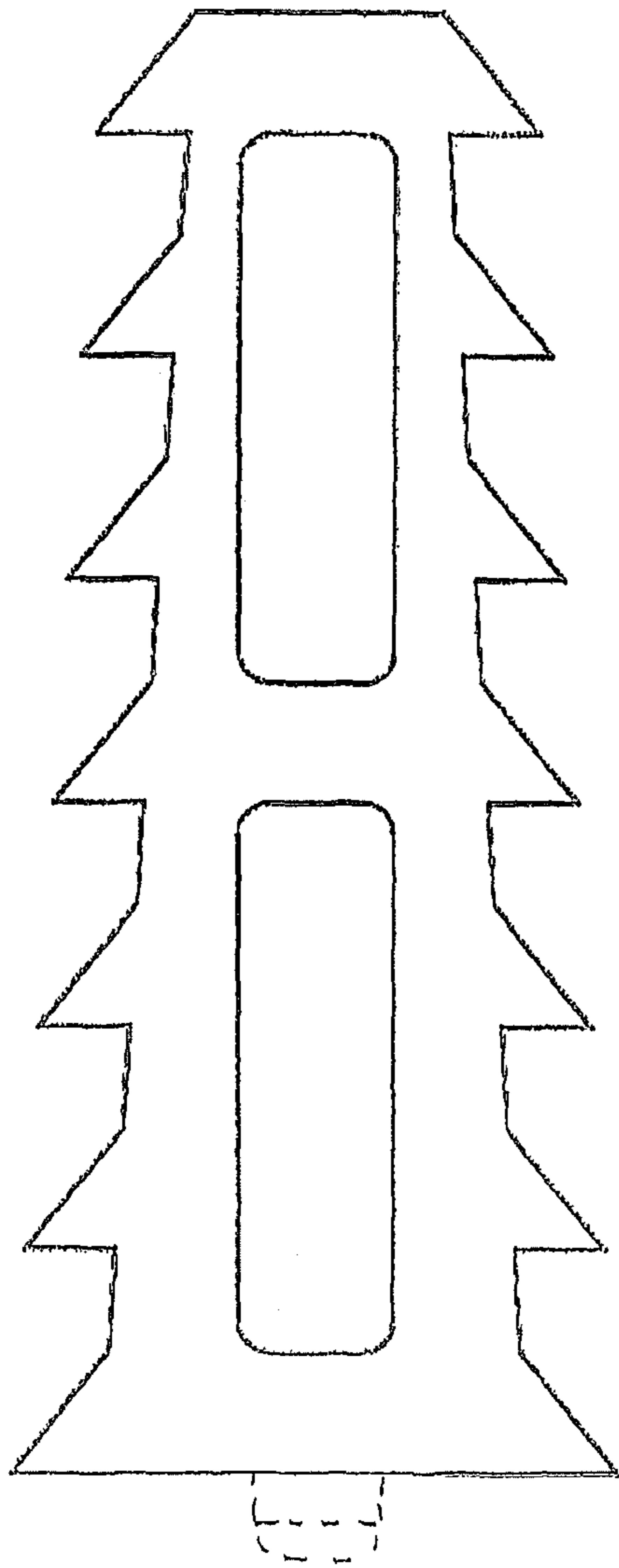


FIG. 10



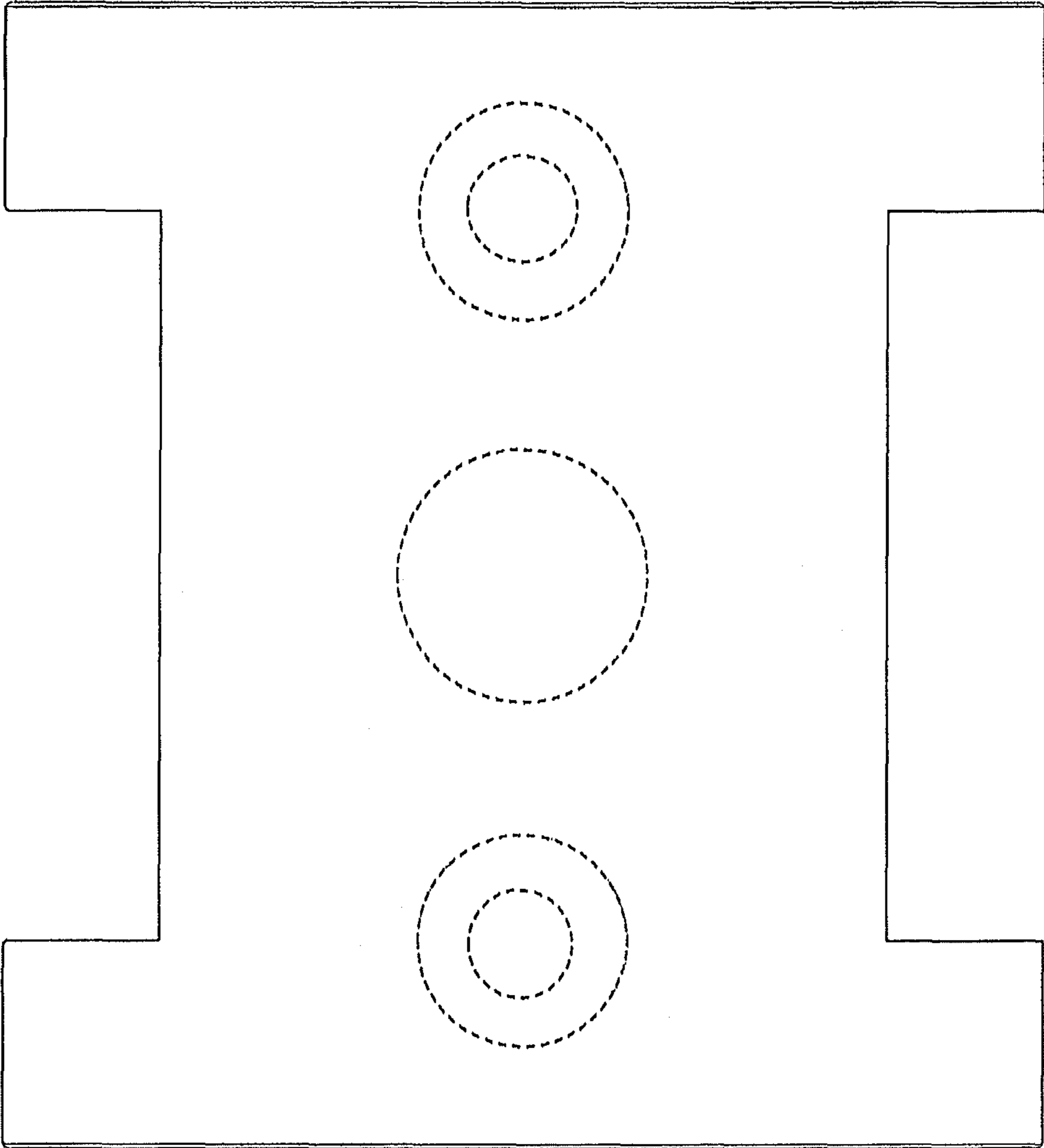


FIG. 11

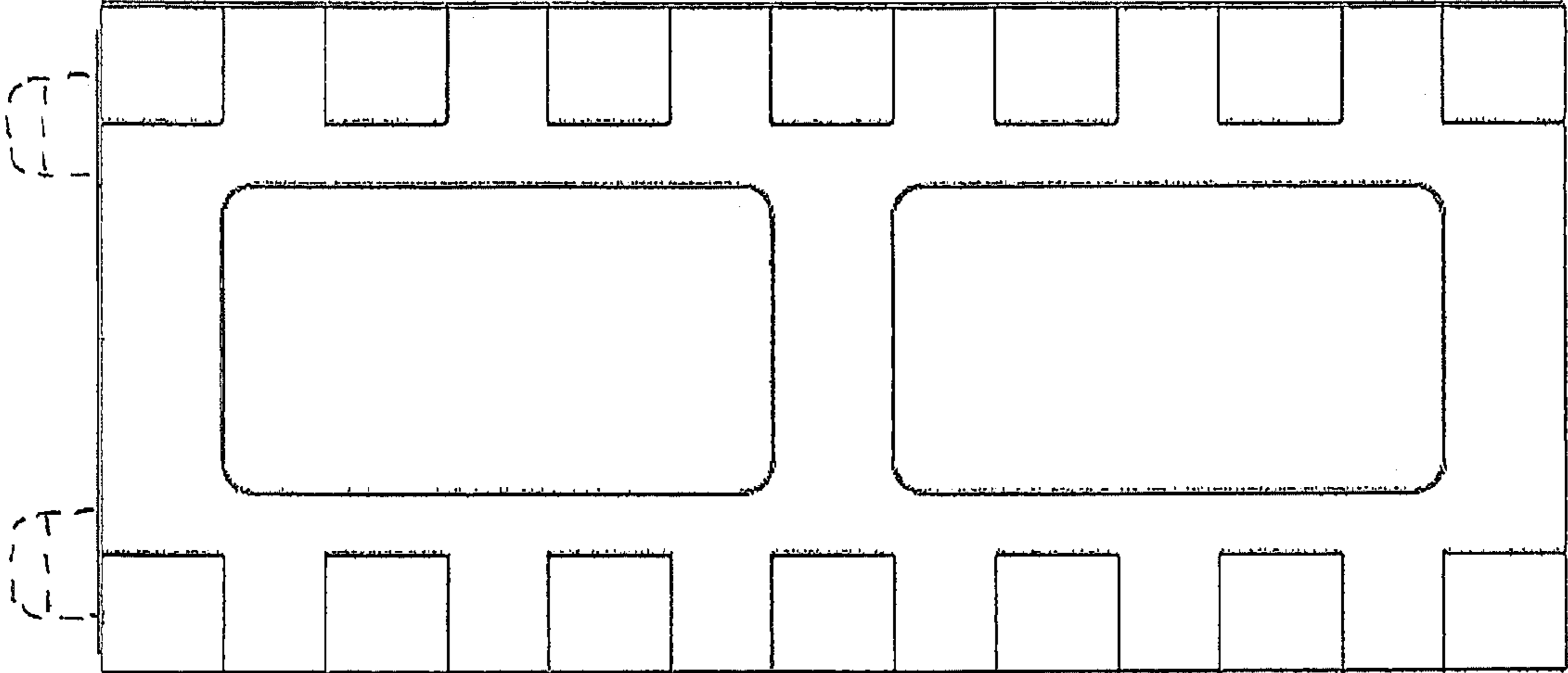


FIG. 12