



US00D699176S

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

(10) **Patent No.:** **US D699,176 S**  
(45) **Date of Patent:** **\*\* Feb. 11, 2014**

(54) **FASTENER FOR SOLAR MODULES**

FOREIGN PATENT DOCUMENTS

(75) Inventors: **Asher David Salomon**, Berkeley, CA  
(US); **Scott Paul Skinner**, San Leandro,  
CA (US)

AU 743826 2/2002  
AU 220348 6/2002

(Continued)

(73) Assignee: **Solaria Corporation**, Fremont, CA (US)

OTHER PUBLICATIONS

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

Aclar Fluoropolymer Film by SPI Supplies, <http://web.archive.org/web/20021022180352/http://www.2spi.com/catalog/photo/acalr-film.shtml>, 3 pages.

(21) Appl. No.: **29/393,340**

(Continued)

(22) Filed: **Jun. 2, 2011**

*Primary Examiner* — Derrick Holland

(51) **LOC (10) Cl.** ..... **13-02**

(74) *Attorney, Agent, or Firm* — Richard T. Ogawa; Ogawa P.C.

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

USPC ..... **D13/102**

(57) **CLAIM**

(58) **Field of Classification Search**

USPC ..... D13/102, 118, 184, 199; D8/349, 354,  
D8/355, 356; D25/119, 123, 124, 125;  
52/173.3, 460; 126/573, 580; 136/206,  
136/244–251, 256, 291, 292; 439/567

The ornamental design for fastener for solar modules, as shown and described.

See application file for complete search history.

**DESCRIPTION**

(56) **References Cited**

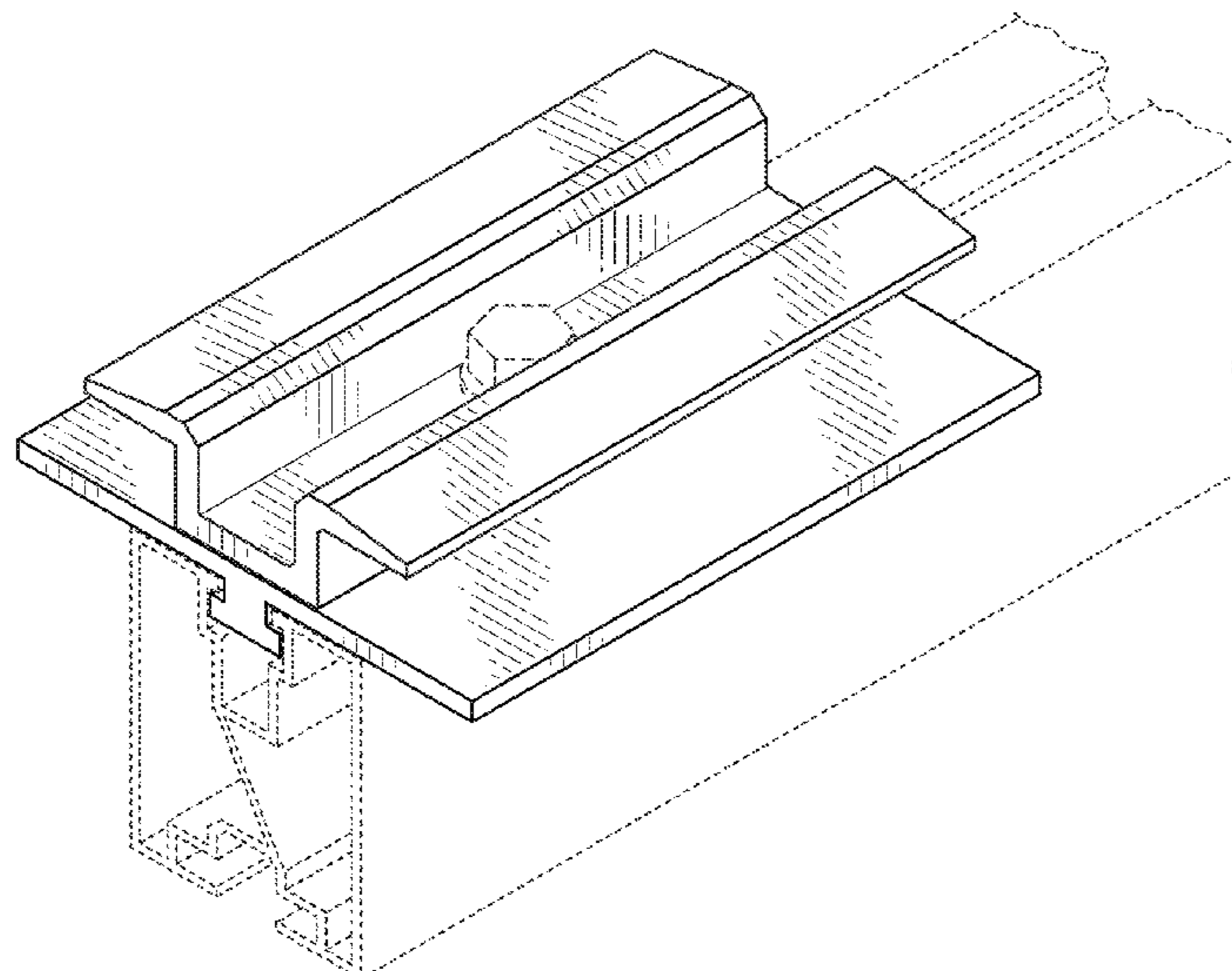
U.S. PATENT DOCUMENTS

2,470,618	A	5/1949	Holden	
3,330,700	A	7/1967	Sequeira et al.	
3,446,676	A	5/1969	Goldsmith et al.	
3,575,721	A	4/1971	Mann	
3,597,050	A	8/1971	Plumat	
3,641,354	A	2/1972	De Ment	
3,700,714	A	10/1972	Hamilton et al.	
3,819,417	A	6/1974	Haynos	
3,849,880	A	11/1974	Haynos	
3,874,931	A	4/1975	Haynos	
3,951,633	A	4/1976	Danihel	
3,993,505	A	11/1976	Pack	
D242,626	S *	12/1976	Scrivener	..... D25/123
3,999,283	A	12/1976	Dean et al.	

FIG. 1 is a first perspective view of a fastener for solar modules according to the present invention;  
FIG. 2 is a second perspective view thereof;  
FIG. 3 is an exploded perspective view thereof;  
FIG. 4 is a top plan view thereof;  
FIG. 5 is a bottom plan view thereof;  
FIG. 6 is a front elevation view thereof, the rear elevation view being a mirror image;  
FIG. 7 is a side elevation view thereof, the opposite side elevation being a mirror image;  
FIG. 8 is a front elevation view thereof, shown in environmental use;  
FIG. 9 is an exploded front elevation view thereof;  
FIG. 10 is a side elevation view thereof, shown in environmental use; and,  
FIG. 11 is an exploded side elevation view thereof.  
The broken lines shown represent unclaimed subject matter and form no part of the claimed design.

(Continued)

**1 Claim, 10 Drawing Sheets**



# US D699,176 S

(56)

## References Cited

U.S. PATENT DOCUMENTS		
4,029,519	A	6/1977 Schertz et al.
4,056,405	A	11/1977 Varandi
4,091,798	A	5/1978 Fletcher et al.
4,097,308	A	6/1978 Klein et al.
4,106,952	A	8/1978 Kravitz
4,118,249	A	10/1978 Graven et al.
4,122,833	A	10/1978 Lovelace et al.
4,143,234	A	3/1979 Johnson et al.
4,166,917	A	9/1979 Dorfeld et al.
4,170,507	A	10/1979 Keeling et al.
4,174,978	A	11/1979 Lidorenko et al.
4,193,820	A	3/1980 Thomas
4,203,646	A	5/1980 Desso
4,239,555	A	12/1980 Scharlack et al.
4,257,821	A	3/1981 Kelly et al.
4,291,191	A	9/1981 Dahlberg
4,293,192	A	10/1981 Bronstein
4,295,463	A	10/1981 Citron
4,333,447	A	6/1982 Lemrow et al.
4,355,478	A	10/1982 Armstrong
4,361,136	A	11/1982 Huang
4,362,903	A	12/1982 Eichelberger et al.
4,404,422	A	9/1983 Green
4,429,178	A *	1/1984 Prideaux et al. .... 136/246
4,440,153	A	4/1984 Melchior
4,449,514	A	5/1984 Selcuk
4,454,371	A	6/1984 Folino
4,457,297	A	7/1984 Sobczak et al.
4,463,749	A	8/1984 Sobczak et al.
4,495,360	A	1/1985 Anthony
4,511,618	A	4/1985 Duchene et al.
4,562,637	A	1/1986 Kushima et al.
4,571,812	A	2/1986 Gee
4,589,191	A	5/1986 Green
4,638,110	A	1/1987 Erbert
4,663,562	A	5/1987 Miller et al.
4,668,314	A	5/1987 Endoh et al.
4,680,074	A	7/1987 Schmitz et al.
4,683,154	A	7/1987 Benson et al.
4,691,994	A	9/1987 Tveryanovich
4,692,557	A	9/1987 Samuelson et al.
4,697,042	A	9/1987 Schilling
4,711,972	A	12/1987 O'Neill
4,830,038	A	5/1989 Anderson et al.
4,848,319	A	7/1989 Appeldorn
4,863,224	A	9/1989 Tveryanovich
4,953,577	A	9/1990 Marshall
4,964,713	A	10/1990 Goetzberger
4,999,059	A	3/1991 Bagno
5,006,179	A	4/1991 Gaddy et al.
5,011,544	A	4/1991 Gaddy et al.
5,043,198	A	8/1991 Maruyama et al.
5,080,725	A	1/1992 Green et al.
5,118,361	A	6/1992 Fraas et al.
5,153,780	A	10/1992 Jorgensen et al.
5,158,618	A	10/1992 Rubin et al.
5,167,724	A	12/1992 Chiang
5,174,275	A	12/1992 Holland
5,180,442	A	1/1993 Elias
5,180,888	A	1/1993 Sugiyama et al.
5,224,978	A	7/1993 Hermant et al.
5,240,510	A	8/1993 Goldade et al.
5,245,985	A	9/1993 Holland
5,261,970	A	11/1993 Landis et al.
D344,598	S *	2/1994 Ehmke et al. .... D25/124
5,344,496	A	9/1994 Stern et al.
5,356,488	A	10/1994 Hezel
5,365,920	A	11/1994 Lechner
5,395,070	A	3/1995 Wilk
5,409,549	A	4/1995 Mori
5,436,725	A	7/1995 Ledger
5,449,626	A	9/1995 Hezel
5,460,659	A	10/1995 Krut
5,466,301	A	11/1995 Hammerbacher et al.
5,468,304	A	11/1995 Hammerbacher
5,478,402	A	12/1995 Hanoka
5,498,297	A	3/1996 O'Neill et al.
5,508,205	A	4/1996 Dominguez et al.
5,517,339	A	5/1996 Riccobono et al.
5,529,054	A	6/1996 Shoen
5,542,409	A	8/1996 Sampayo
5,564,411	A	10/1996 Gerics
5,616,186	A	4/1997 Fraas et al.
5,660,644	A	8/1997 Clemens
5,665,607	A	9/1997 Kawama et al.
5,707,459	A	1/1998 Itoyama et al.
5,709,833	A	1/1998 Simone
5,735,966	A	4/1998 Luch
5,782,993	A	7/1998 Ponewash
5,787,878	A	8/1998 Ratliff
5,840,147	A	11/1998 Grimm
5,846,444	A	12/1998 Edwards et al.
5,851,309	A	12/1998 Kousa
5,865,905	A	2/1999 Clemens
5,877,874	A	3/1999 Rosenberg
5,882,434	A	3/1999 Horne
5,915,170	A	6/1999 Raab et al.
5,919,316	A	7/1999 Bogorad et al.
5,936,777	A	8/1999 Dempewolf
5,959,787	A	9/1999 Fairbanks
5,964,216	A	10/1999 Hoffschmidt et al.
6,008,449	A	12/1999 Cole
6,020,553	A	2/2000 Yogev
6,034,322	A	3/2000 Pollard
6,049,035	A	4/2000 Tsuru et al.
6,057,505	A	5/2000 Ortabasi
6,074,614	A	6/2000 Hafeman et al.
6,084,175	A	7/2000 Perry et al.
6,091,017	A	7/2000 Stern
6,091,020	A	7/2000 Fairbanks et al.
6,092,392	A	7/2000 Verlinden et al.
6,093,757	A	7/2000 Pern
6,107,564	A	8/2000 Aguilera et al.
6,118,067	A	9/2000 Lashley et al.
6,134,784	A	10/2000 Carrie et al.
6,150,602	A	11/2000 Campbell
6,167,724	B1	1/2001 Pozivil
6,242,685	B1	6/2001 Mizukami et al.
6,252,155	B1	6/2001 Ortabasi
6,264,510	B1	7/2001 Onizuka
6,274,402	B1	8/2001 Verlinden et al.
6,274,860	B1	8/2001 Rosenberg
6,293,803	B1	9/2001 Rust et al.
6,294,723	B2	9/2001 Uematsu et al.
6,309,901	B1	10/2001 Tahon et al.
6,313,395	B1	11/2001 Crane et al.
6,315,575	B1	11/2001 Kajimoto
6,320,116	B1	11/2001 Hanoka
6,323,415	B1	11/2001 Uematsu et al.
6,333,457	B1	12/2001 Mulligan et al.
6,333,458	B1	12/2001 Forrest et al.
6,337,283	B1	1/2002 Verlinden et al.
6,359,209	B1	3/2002 Glenn et al.
6,365,823	B1	4/2002 Kondo
6,387,726	B1	5/2002 Verlinden et al.
6,395,972	B1	5/2002 Tran et al.
6,423,568	B1	7/2002 Verlinden et al.
6,429,037	B1	8/2002 Wenham et al.
6,433,913	B1	8/2002 Bauer et al.
6,437,236	B2	8/2002 Watanabe et al.
6,440,769	B2	8/2002 Peumans et al.
6,441,297	B1	8/2002 Keller
6,479,744	B1	11/2002 Tsuzuki et al.
6,528,716	B2	3/2003 Collette et al.
6,528,718	B2	3/2003 Yoda et al.
6,609,836	B1	8/2003 Antonelli et al.
6,612,705	B1	9/2003 Davidson et al.
6,617,505	B2	9/2003 Shimada
6,619,282	B1	9/2003 Murtha
6,620,995	B2	9/2003 Vasylyev et al.
6,639,733	B2	10/2003 Minano et al.
6,641,868	B2	11/2003 Abe et al.
6,666,207	B1	12/2003 Arkas et al.
6,676,263	B2	1/2004 Winston

(56)

References Cited

U.S. PATENT DOCUMENTS

6,700,054 B2 3/2004 Cherney et al.  
 6,700,055 B2 3/2004 Barone  
 6,758,609 B2 7/2004 Fathi et al.  
 6,761,598 B2 7/2004 Onizuka et al.  
 6,804,062 B2 10/2004 Atwater et al.  
 6,809,250 B2 10/2004 Gerson  
 6,815,050 B2 11/2004 Rainer  
 6,815,070 B1 11/2004 Burkle et al.  
 6,822,157 B2 11/2004 Fujioka  
 6,825,052 B2 11/2004 Eldridge et al.  
 6,829,908 B2 12/2004 Bowden et al.  
 6,843,573 B2 1/2005 Rabinowitz et al.  
 6,849,797 B2 2/2005 Koyanagi et al.  
 6,903,261 B2 6/2005 Habraken et al.  
 6,958,868 B1 10/2005 Pender  
 7,019,207 B2 3/2006 Harneit et al.  
 7,055,519 B2 6/2006 Litwin  
 7,071,134 B2 7/2006 Koyama et al.  
 7,144,598 B2 12/2006 Moravec et al.  
 7,156,666 B2 1/2007 Mann  
 7,190,110 B2 3/2007 Tokai et al.  
 D547,262 S \* 7/2007 Ullman ..... D13/102  
 7,250,209 B2 7/2007 Shibahara et al.  
 D550,861 S \* 9/2007 Brabeck et al. .... D25/123  
 7,282,240 B1 10/2007 Jackman et al.  
 7,309,831 B2 12/2007 Yamada  
 D564,958 S \* 3/2008 Almy et al. .... D13/102  
 7,423,083 B2 9/2008 Kawaguchi et al.  
 7,595,543 B2 9/2009 Weber et al.  
 8,247,685 B2 \* 8/2012 Hunter et al. .... 136/259  
 2002/0007845 A1 1/2002 Collette et al.  
 2002/0018308 A1 2/2002 Winston  
 2002/0075579 A1 6/2002 Vasylyev et al.  
 2002/0139414 A1 10/2002 Vasylyev et al.  
 2003/0015233 A1 1/2003 Barone  
 2003/0016539 A1 1/2003 Minano et al.  
 2003/0021897 A1 1/2003 Abe et al.  
 2003/0037569 A1 2/2003 Arbab et al.  
 2003/0037814 A1 2/2003 Cohen et al.  
 2003/0074976 A1 4/2003 Ahmad  
 2003/0081333 A1 5/2003 Winston  
 2003/0095340 A1 5/2003 Atwater et al.  
 2003/0121542 A1 7/2003 Harneit et al.  
 2003/0156337 A1 8/2003 Davidson et al.  
 2003/0201007 A1 10/2003 Fraas et al.  
 2003/0228114 A1 12/2003 Fathi et al.  
 2003/0228417 A1 12/2003 Nishikawa et al.  
 2004/0004216 A1 1/2004 Eldridge et al.  
 2004/0016454 A1 1/2004 Murphy et al.  
 2004/0021964 A1 2/2004 Rabinowitz et al.  
 2004/0084077 A1 5/2004 Aylaiian  
 2004/0092668 A1 5/2004 Kawaguichi et al.  
 2004/0097012 A1 5/2004 Weber et al.  
 2004/0108813 A1 6/2004 Tokai et al.  
 2004/0123895 A1 7/2004 Kardauskas et al.  
 2004/0134531 A1 7/2004 Habraken et al.  
 2004/0194820 A1 10/2004 Barone  
 2004/0229394 A1 11/2004 Yamada  
 2004/0243364 A1 12/2004 Wendelin et al.  
 2004/0246605 A1 12/2004 Stiles et al.  
 2005/0070059 A1 3/2005 Blakers et al.  
 2005/0081908 A1 4/2005 Stewart  
 2005/0081909 A1 4/2005 Paull  
 2005/0087294 A1 4/2005 Rabinowitz  
 2005/0133082 A1 6/2005 Konold et al.  
 2006/0054211 A1 3/2006 Meyers et al.  
 2006/0099833 A1 5/2006 Mann  
 2006/0105897 A1 5/2006 Kasuga et al.  
 2006/0207646 A1 9/2006 Terreau et al.  
 2006/0235717 A1 10/2006 Sharma et al.  
 2006/0266406 A1 11/2006 Faust et al.  
 2006/0272698 A1 12/2006 Durvasula  
 2006/0283495 A1 12/2006 Gibson  
 2007/0056626 A1 3/2007 Funcell  
 2007/0095386 A1 5/2007 Gibson

2007/0153354 A1 7/2007 Duston et al.  
 2007/0212935 A1 \* 9/2007 Lenox ..... 439/567  
 2007/0251568 A1 11/2007 Maeda  
 2008/0060696 A1 3/2008 Ho et al.  
 2008/0197376 A1 8/2008 Bert et al.  
 2008/0236655 A1 10/2008 Baldwin et al.  
 2008/0236664 A1 10/2008 Gibson et al.  
 2008/0236670 A1 10/2008 Hyoung  
 2008/0241479 A1 10/2008 Nghiem et al.  
 2008/0314438 A1 12/2008 Tran et al.

FOREIGN PATENT DOCUMENTS

AU 3902270 5/2003  
 AU 2349175 6/2003  
 CA 2432300 6/2002  
 CA 2467112 6/2003  
 DE 29823351 6/1999  
 EP 029721 6/1981  
 EP 461124 5/1995  
 EP 784870 4/1996  
 EP 657948 6/1997  
 EP 1030376 8/2000  
 EP 1174342 1/2002  
 EP 1261039 11/2002  
 EP 1131586 3/2003  
 EP 1342259 9/2003  
 EP 1112597 3/2004  
 EP 1427025 6/2004  
 EP 1461834 9/2004  
 EP 1630875 3/2006  
 EP 1732141 12/2006  
 GB 1187969 4/1970  
 JP 61044741 3/1986  
 JP 09018031 1/1997  
 JP 10104547 4/1998  
 WO WO 9118420 11/1991  
 WO WO 9406046 3/1994  
 WO WO 9506330 3/1995  
 WO WO 9533220 12/1995  
 WO WO 9623115 8/1996  
 WO WO 9624954 8/1996  
 WO WO 9803823 1/1998  
 WO WO 9832164 7/1998  
 WO WO 9905462 2/1999  
 WO WO 0074147 12/2000  
 WO WO 0079593 12/2000  
 WO WO 0151962 7/2001  
 WO WO 01/55650 8/2001  
 WO WO 0155650 A3 8/2001  
 WO WO 0190661 11/2001  
 WO WO 0208058 1/2002  
 WO WO 0245143 6/2002  
 WO WO 0275225 9/2002  
 WO WO 0295838 11/2002  
 WO WO 03019083 3/2003  
 WO WO 03022578 3/2003  
 WO WO 03047004 6/2003  
 WO WO 03049201 6/2003  
 WO WO 03107078 12/2003  
 WO WO 2004100252 11/2004  
 WO WO 2006/015430 2/2006  
 WO WO 2006/089540 8/2006  
 WO WO 2006/123194 11/2006  
 WO WO 2006/128417 12/2006  
 WO WO 2006/133126 12/2006  
 WO WO 2007/036199 4/2007

OTHER PUBLICATIONS

Andreev et al., "Concentrator PV Modules of "All-Glass" Design With Modified Structure;" Paper 3P-C3-72 presented at WCPEC-3, Osaka Japan; May 11-18, 2003; 4 pages.  
 Breeze, A.J., et al., "Improving power efficiencies in polymer -polymer blend photovoltaics", Solar Energy Materials & Solar Cells, 83, 2004, pp. 263-271.  
 3M Glass Bubbles, Product Catalogue for 3M Energy and Advance Materials, Feb. 18, 2009, pp. 1-3.

(56)

**References Cited**

## OTHER PUBLICATIONS

“Emissivity Values for Common Materials”, <http://www.infrared-thermography.com/materials-1.htm>, retrieved on Apr. 2, 2010, 4 pages.

King et al. “Photovoltaic Module Performance and Durability Following Long-Term Field Exposure”, *Prog. Photovol: Res. and Appl.*, vol. 8, No. 2, p. 241-256 (May 23, 2000).

Dominique Leguillon et al., “Crack onset at a v-notch. Influence of the notch tip radius”, Aug. 2003, *International Journal of Fracture*, 122, pp. 1-21.

Marayuma, T., et al. “Wedge-shaped light concentrator using total internal reflection”, *Solar Energy Materials & Solar Cells*, 57, (1999), pp. 75-83.

Nitto Denko, Web page: <http://www.nitto.com/product/datasheet/I037/index.html> as updated on Apr. 18, 2005 from Internet Archive, 2 pages.

Pern et al., “Photothermal Stability of an E-Beam Pre-Crosslinked EVA Encapsulant and Its Performance Degradation on a-Si Submodules”, NRELICP-520-31 026, Oct. 2001, Lakewood, Colorado, 4 pages.

Petrie, “Additives in Radiation (EB/UV) Cured Adhesive Formulations” [www.specialchem4adhesives.com](http://www.specialchem4adhesives.com), Oct. 14, 2002, 6 pages.

Photovoltaic/Solar Panel Laminations; MADICO, <http://www.madico.com/specialLPv.asp>; Jun. 11, 2007; pp. 1-2.

Wells, G.M., et al. “Effects of mirror surface roughness on exposure field uniformity in synchrotron x-ray lithography”, *American Vacuum Society, J. Vac. Sci. Technol.*, 1991, pp. 3227-3231.

Solar Electricity Beginner Notes. [http://www.sunwindsolar.com/a/lessons/solar\\_beginner\\_notes.html](http://www.sunwindsolar.com/a/lessons/solar_beginner_notes.html); Jan. 8, 2004; pp. 1-2.

International Search Report and Written Opinion for PCT Application No. PCT/US2010/024943, mailed Apr. 22, 2010, 9 pages.

International Search Report and Written Opinion for PCT Application No. PCT/US08/71127, mailed Oct. 22, 2008, 9 pages.

International Search Report and Written Opinion for PCT Application No. PCT/US2008/059170 mailed Aug. 6, 2008, 8 pages.

International Search Report and Written Opinion for PCT Application No. PCT/US2008/075134 mailed Dec. 5, 2008, 9 pages.

International Search Report and Written Opinion for PCT Application No. PCT/US2008/064132 mailed Aug. 15, 2008, 8 pages.

International Search Report and Written Opinion for PCT Application No. PCT/US08/59167, mailed Dec. 8, 2008, 11 pages.

International Search Report and Written Opinion for PCT Application No. PCT/US06/35793, mailed May 10, 2007, 8 pages.

International Search Report and Written Opinion for PCT Application No. PCT/US06/29164, mailed Jun. 5, 2008, 16 pages total.

International Search Report and Written Opinion for PCT Application No. PCT/US06/21803, dated Aug. 30, 2007, 21 pages total.

Office Action for U.S. Appl. No. 11/445,933 dated Oct. 14, 2009, 8 pages.

Office Action for U.S. Appl. No. 11/445,933 dated Apr. 14, 2010, 7 pages.

Office Action for U.S. Appl. No. 11/445,948 dated May 22, 2009, 18 pages.

Office Action for U.S. Appl. No. 11/445,948 dated Apr. 15, 2010, 27 pages.

Office Action for U.S. Appl. No. 11/493,380 dated May 30, 2008, 25 pages.

Office Action for U.S. Appl. No. 11/493,380 dated Feb. 17, 2009, 24 pages.

Office Action for U.S. Appl. No. 11/493,380 dated Jul. 22, 2009, 22 pages.

Office Action for U.S. Appl. No. 12/136,572 dated Feb. 4, 2010, 15 pages.

Office Action for U.S. Appl. No. 12/136,574 dated Dec. 29, 2008, 9 pages.

Office Action for U.S. Appl. No. 12/136,574 dated Jun. 8, 2009, 10 pages.

Office Action for U.S. Appl. No. 12/136,574 dated Jan. 12, 2010, 15 pages.

Office Action for U.S. Appl. No. 12/136,577 dated Jun. 8, 2009, 12 pages.

Office Action for U.S. Appl. No. 12/136,581 dated Feb. 4, 2010, 13 pages.

Office Action for U.S. Appl. No. 11/402,490 dated Mar. 3, 2009, 18 pages.

Office Action for U.S. Appl. No. 11/402,490 dated Oct. 30, 2009, 12 pages.

Office Action for U.S. Appl. No. 12/167,198 dated Dec. 19, 2008, 15 pages.

Office Action for U.S. Appl. No. 11/254,114 dated Feb. 2, 2010, 10 pages.

Office Action for U.S. Appl. No. 11/253,182 dated Jan. 8, 2009, 14 pages.

Office Action for U.S. Appl. No. 11/253,182 dated Feb. 5, 2010, 6 pages.

Office Action for U.S. Appl. No. 11/252,425 dated Jul. 9, 2008, 6 pages.

Office Action for U.S. Appl. No. 11/252,425 dated Mar. 19, 2009, 6 pages.

Office Action for U.S. Appl. No. 11/252,425 dated Oct. 16, 2009, 6 pages.

Office Action for U.S. Appl. No. 11/253,418 dated Sep. 11, 2009, 20 pages.

Office Action for U.S. Appl. No. 11/253,202 dated Feb. 19, 2009, 22 pages.

Office Action for U.S. Appl. No. 11/253,202 dated Aug. 31, 2009, 19 pages.

Office Action for U.S. Appl. No. 11/252,399 dated Aug. 20, 2008, 16 pages.

Office Action for U.S. Appl. No. 11/252,399 dated Jun. 2, 2009, 17 pages.

Office Action for U.S. Appl. No. 11/252,399 dated Dec. 4, 2009, 22 pages.

Office Action for U.S. Appl. No. 11/254,041 dated Jan. 26, 2010, 8 pages.

Office Action for U.S. Appl. No. 11/290,313 dated Sep. 21, 2009, 7 pages.

Office Action for U.S. Appl. No. 11/290,313 dated Apr. 15, 2010, 10 pages.

Office Action for U.S. Appl. No. 11/753,546 dated Mar. 31, 2010, 10 pages.

Office Action for U.S. Appl. No. 12/060,801 dated Apr. 13, 2010, 24 pages.

Office Action for U.S. Appl. No. 12/332,340 dated Apr. 26, 2010, 17 pages.

Office Action for U.S. Appl. No. 11/841,899 of Mar. 11, 2008, 18 pages.

\* cited by examiner

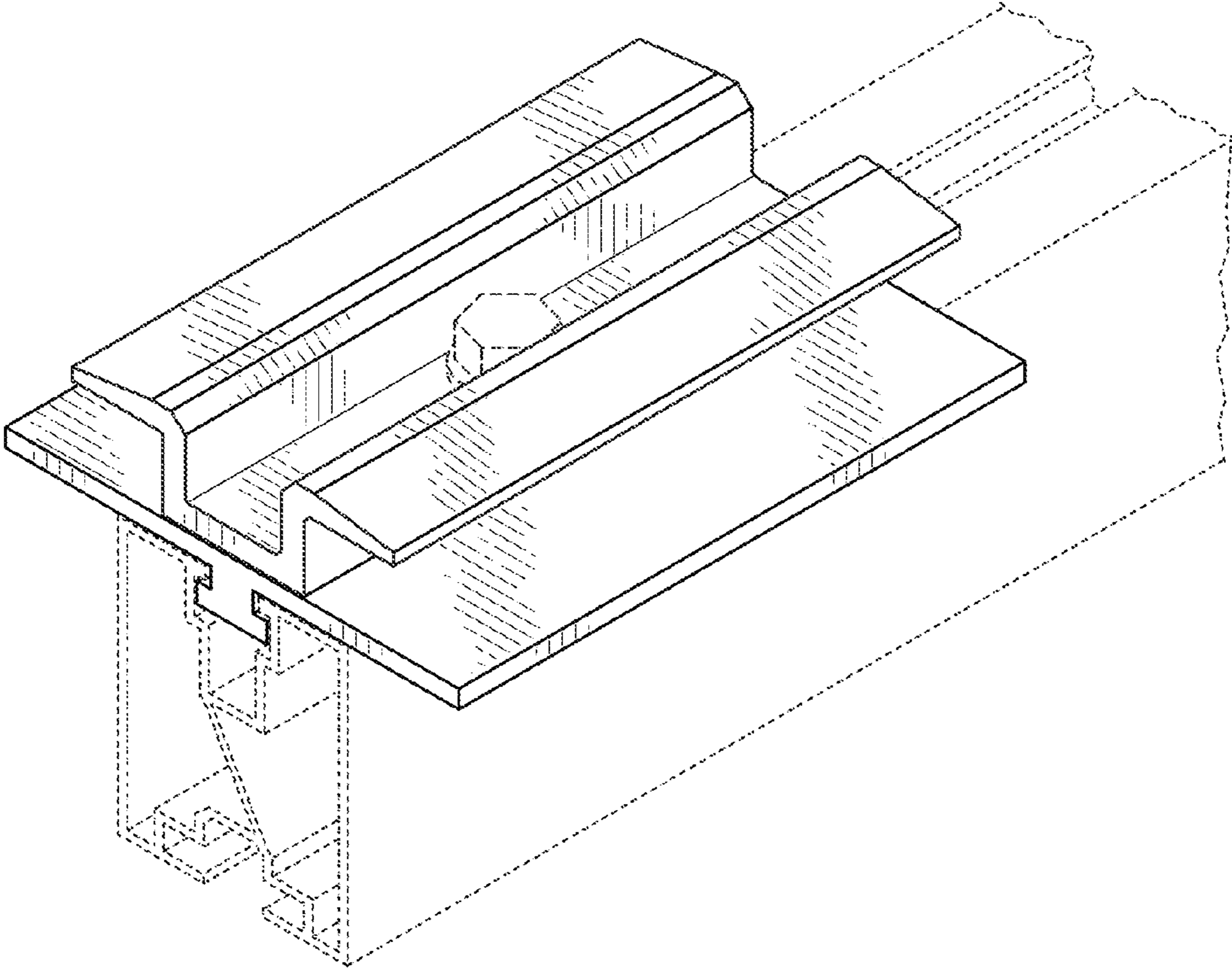


FIG. 1

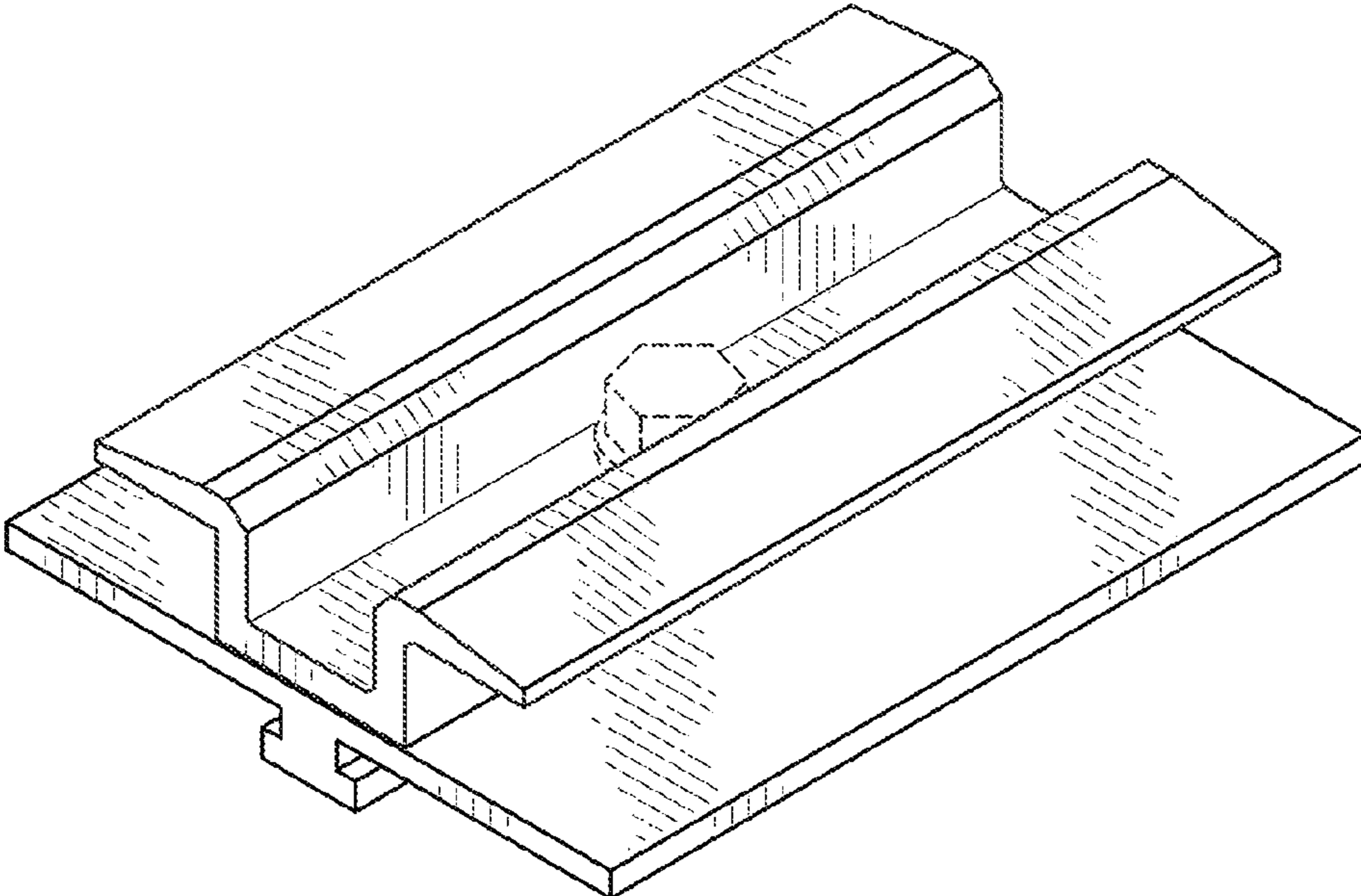
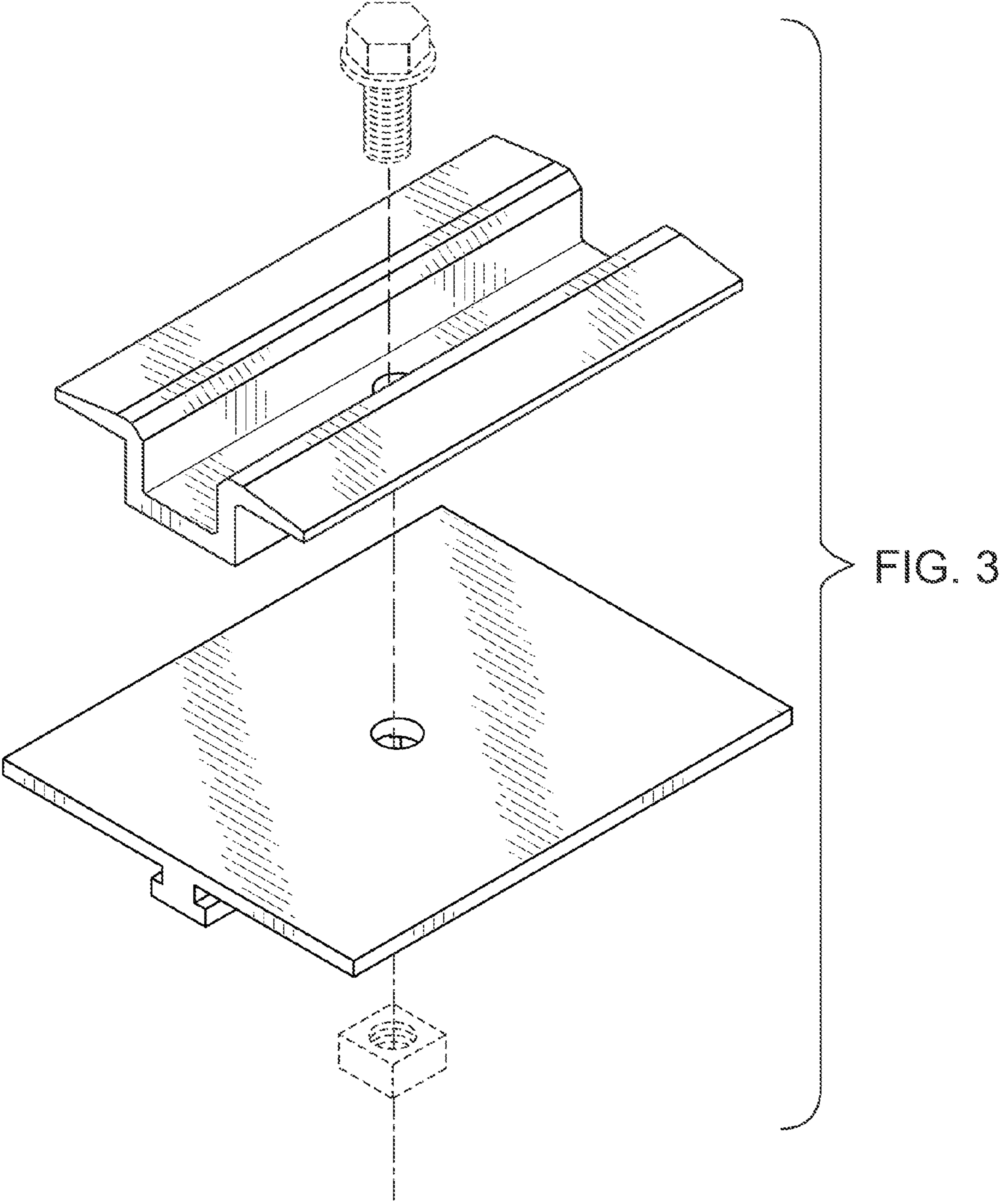


FIG. 2



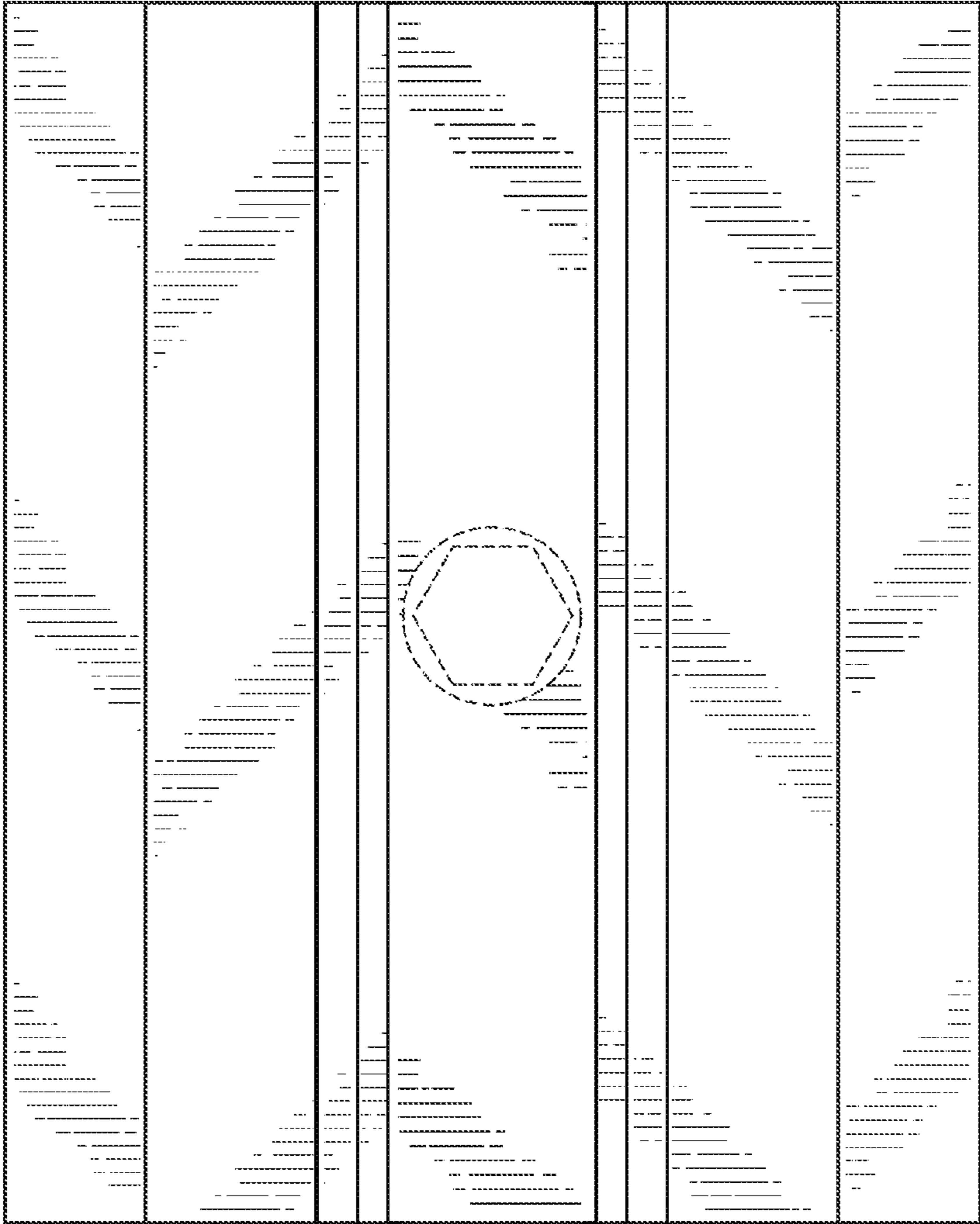


FIG. 4



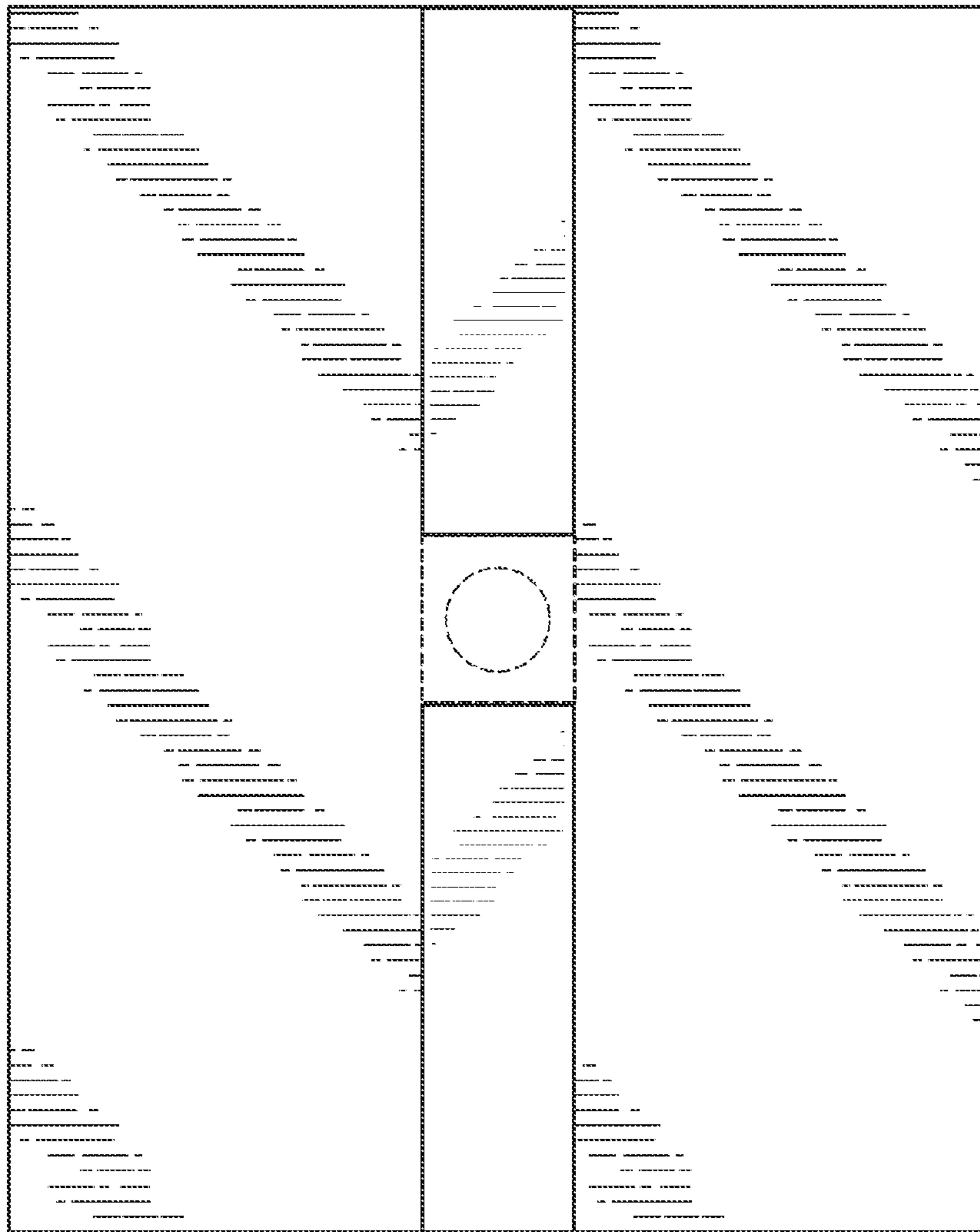


FIG. 5

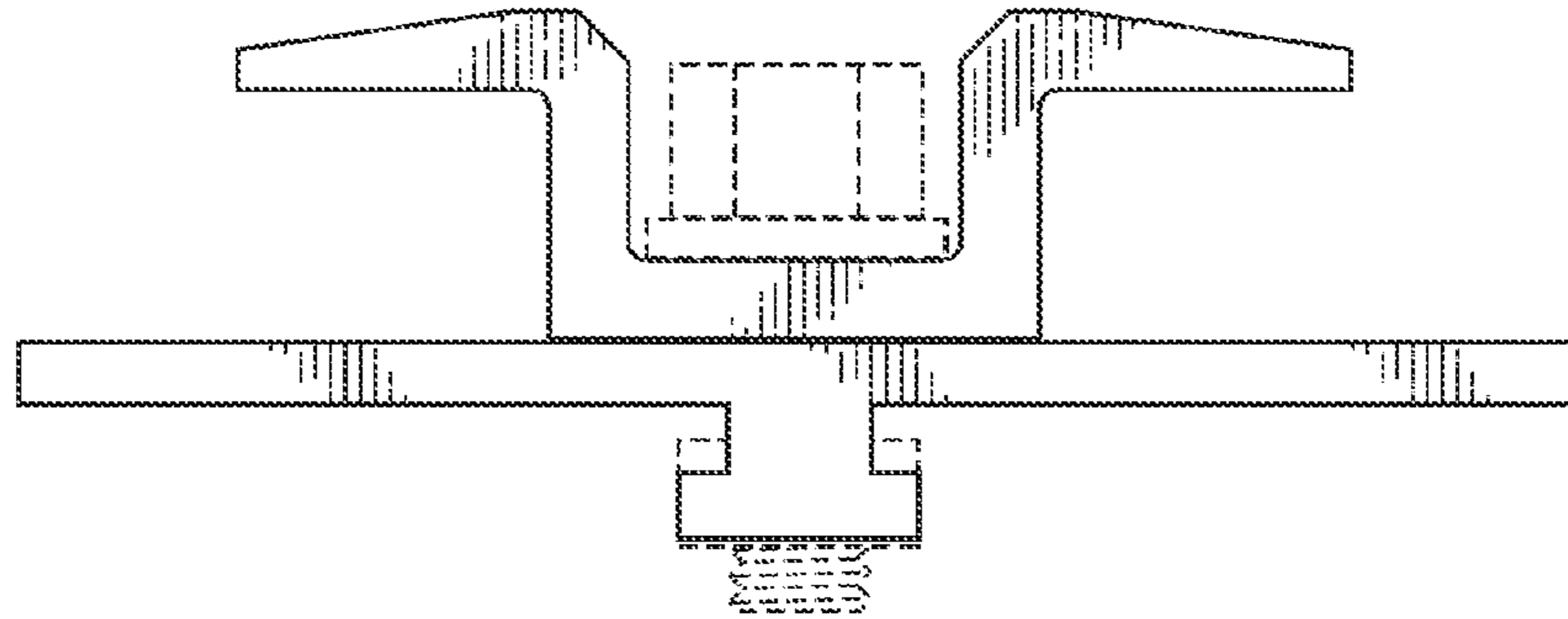


FIG. 6

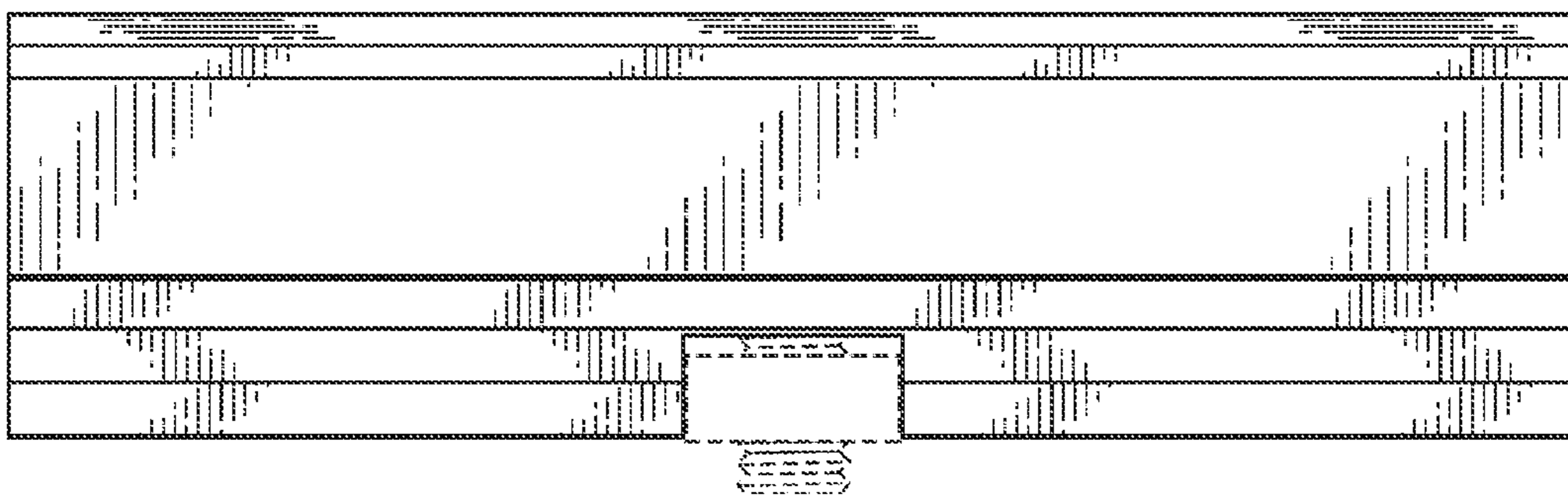


FIG. 7

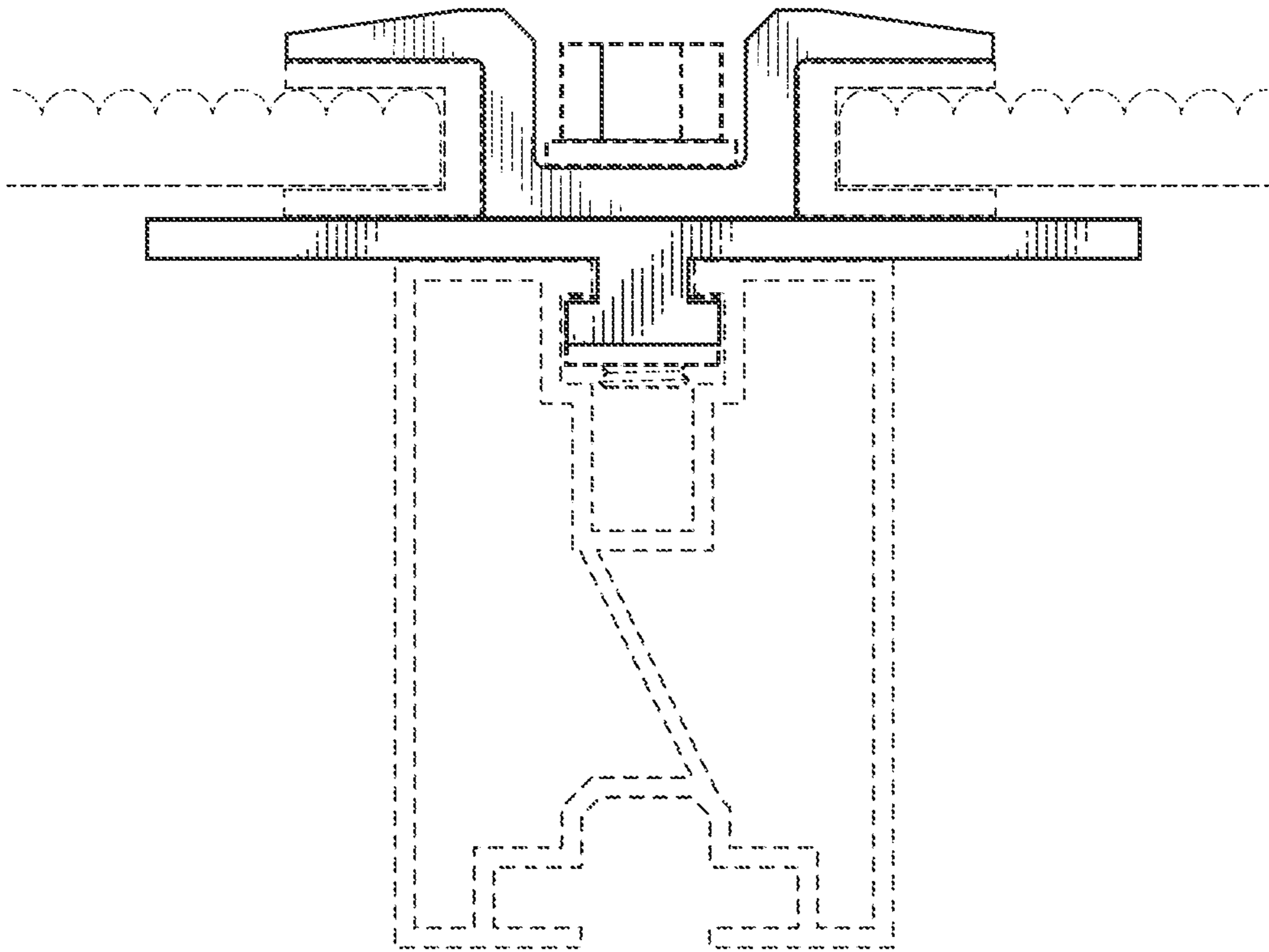


FIG. 8

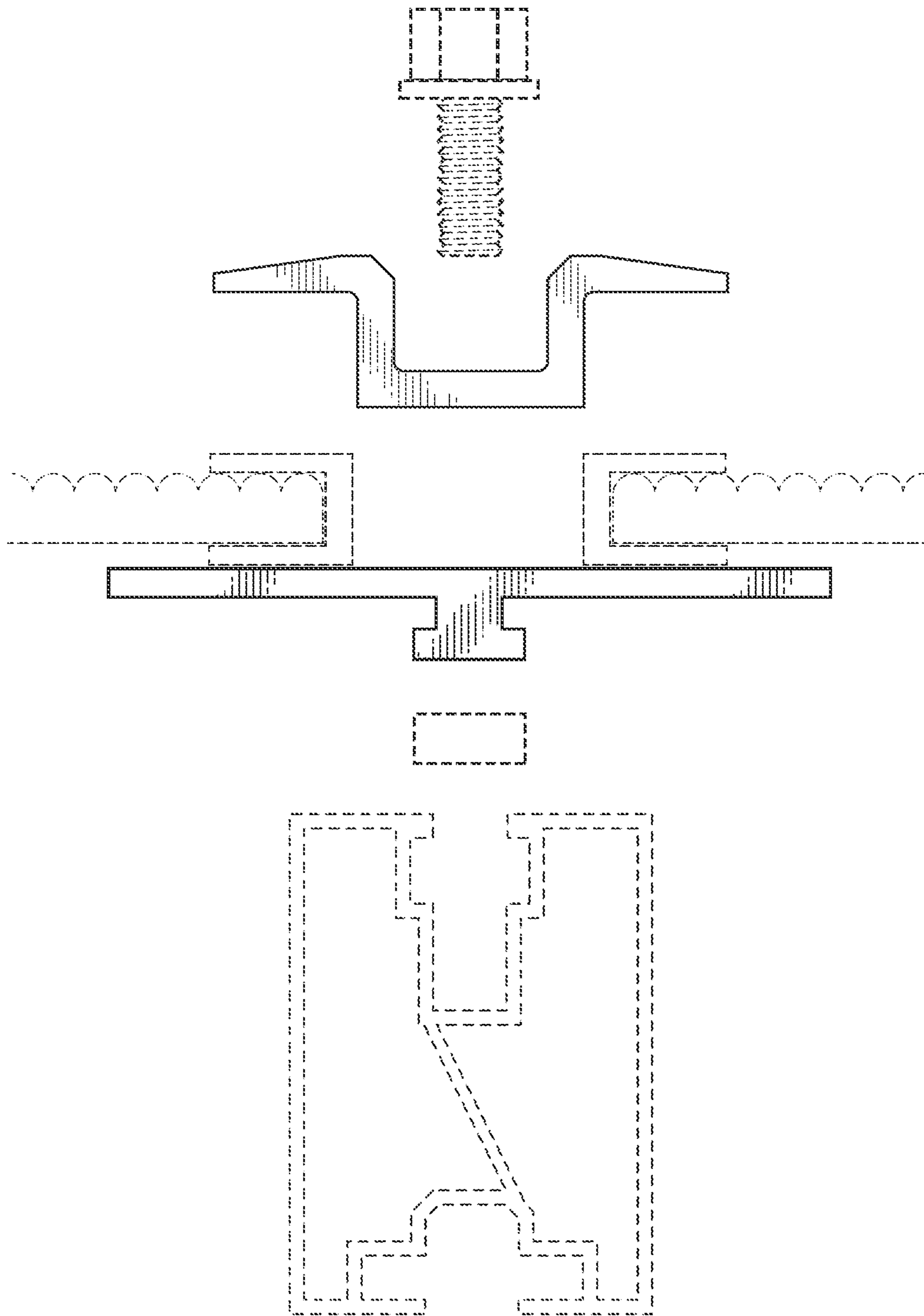


FIG. 9

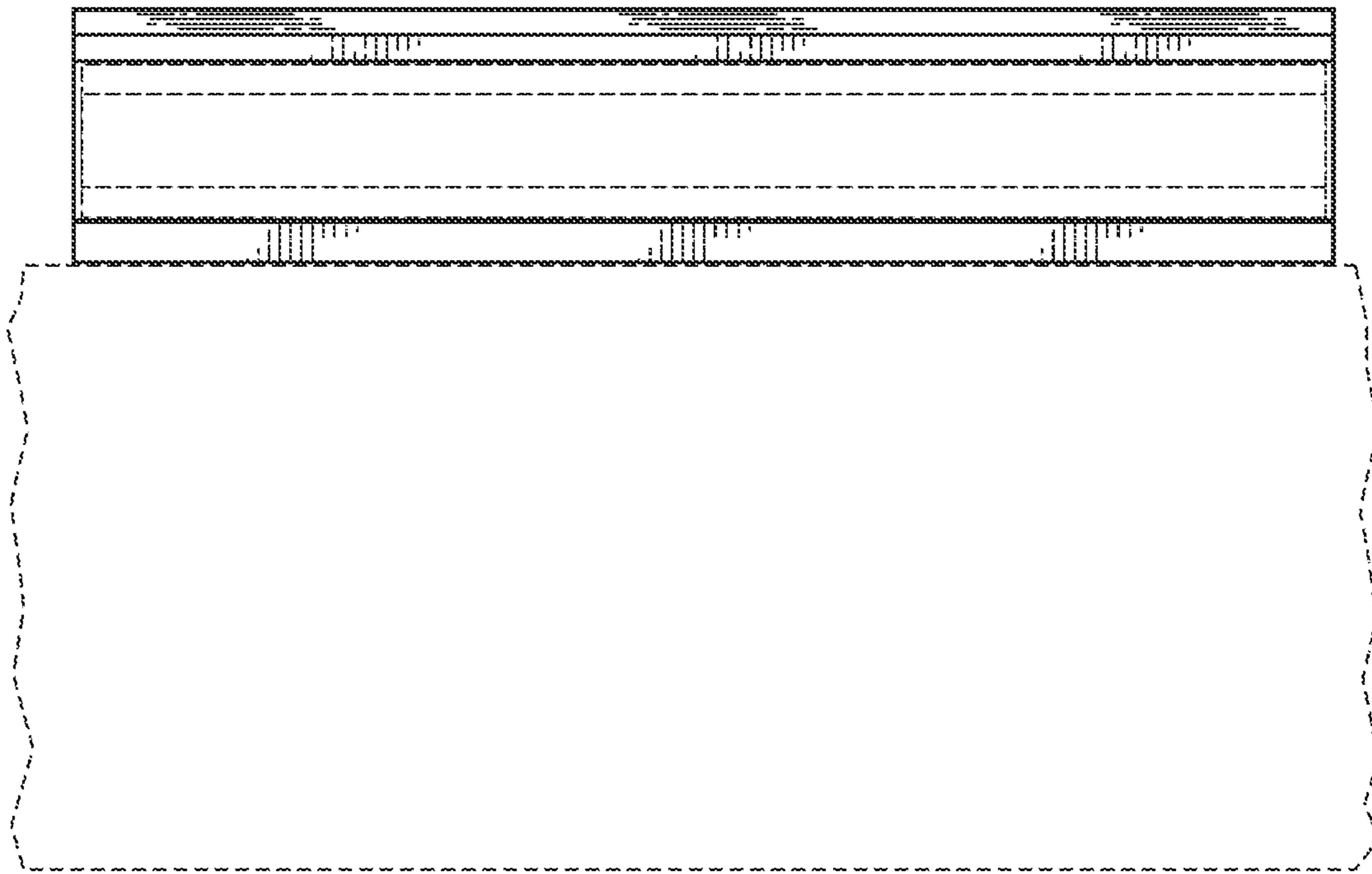


FIG. 10

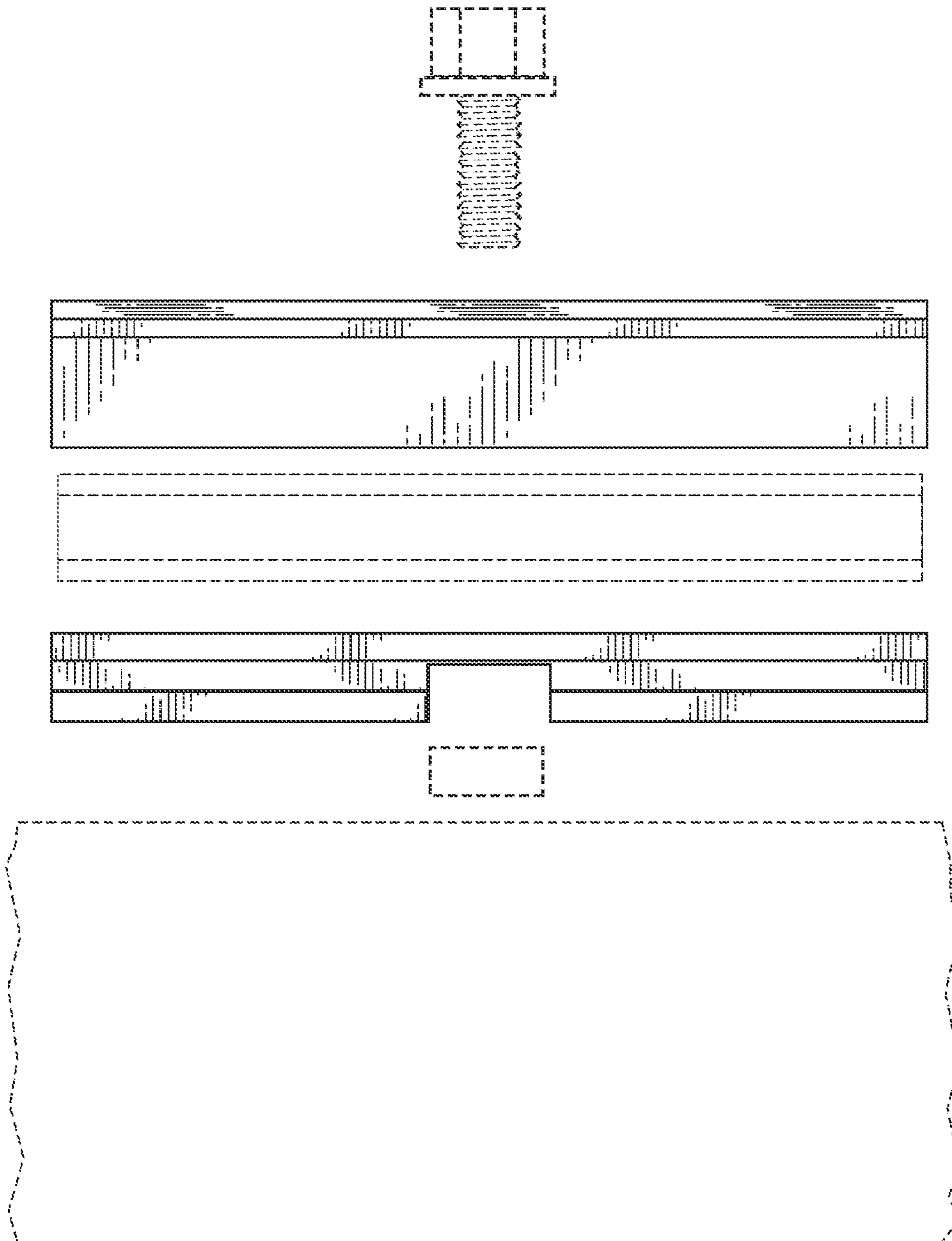


FIG. 11