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

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(54) **IMAGE SENSOR FOR SCANNER**

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

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(30) **Foreign Application Priority Data**

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(51) **LOC (12) Cl.** **14-02**

(52) **U.S. Cl.**
USPC **D14/453**; D14/420; D14/421

(58) **Field of Classification Search**
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D18/36-39, 41, 44, 45, 47, 48, 50-54,
D18/56; 235/462, 455, 470, 462.43, 482,
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235/446, 454, 461, 462.32, 462.35,
235/462.41, 462.42, 463; 358/474, 486,
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358/453, 1.13; 318/685, 696; 355/81,
355/75; 399/405, 367, 379, 380;

382/217; 715/209, 222, 226, 274;
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400/691-694; D26/1-3, 24, 56, 72,
(Continued)

(56) **References Cited**

U.S. PATENT DOCUMENTS

D147,467 S * 9/1947 Meyer D26/76
D163,832 S * 7/1951 Smith et al. D26/76
(Continued)

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PC

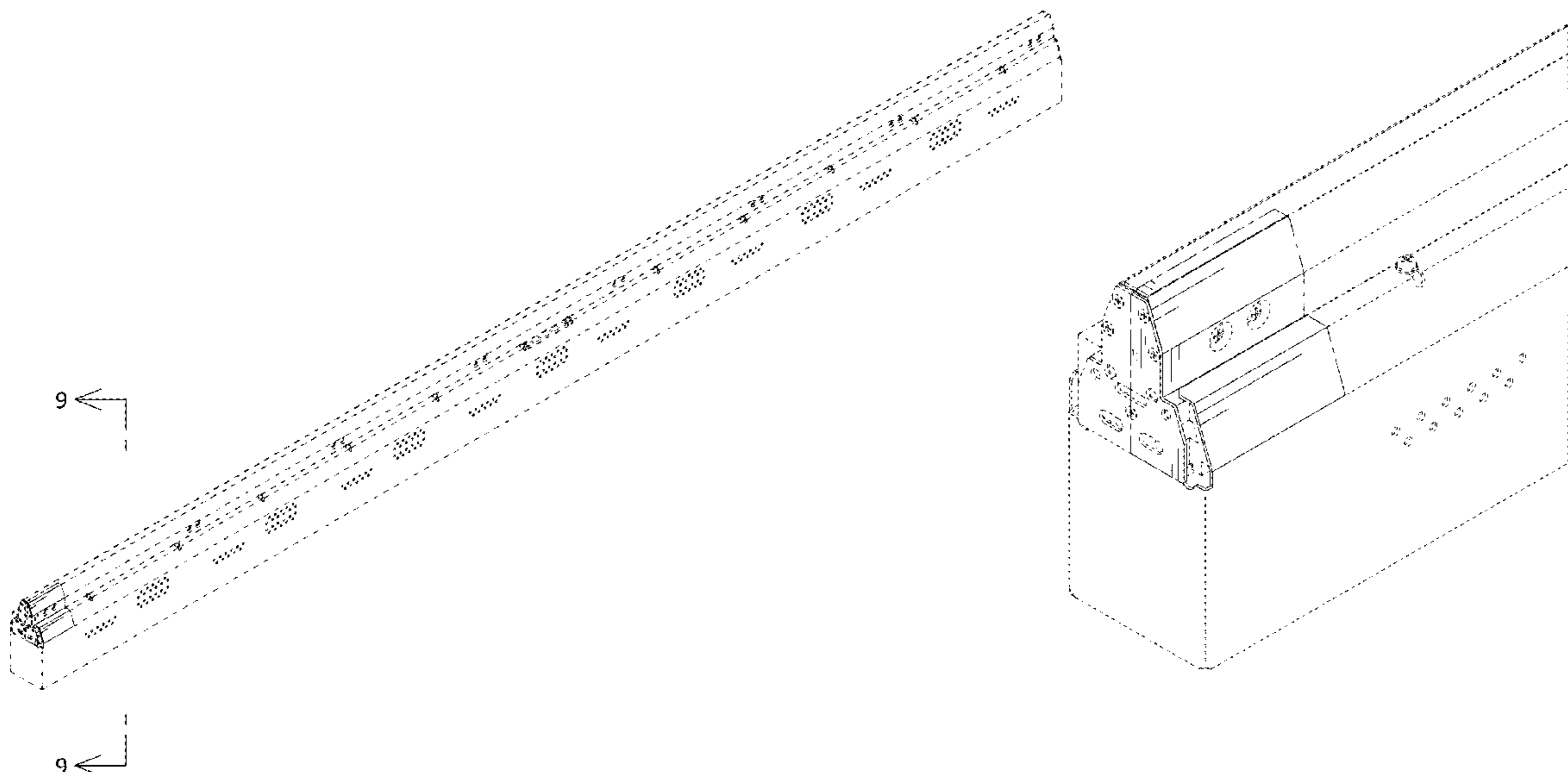
(57) **CLAIM**

The ornamental design for an image sensor for scanner, as shown and described.

DESCRIPTION

FIG. 1 is a front, top and left side perspective view of an image sensor for scanner showing our new design;
FIG. 2 is a rear, bottom and right side perspective view thereof;
FIG. 3 is a front view thereof;
FIG. 4 is a rear view thereof;
FIG. 5 is a left side view thereof;
FIG. 6 is a right side view thereof;
FIG. 7 is a top view thereof;
FIG. 8 is a bottom view thereof;
FIG. 9 is an enlarged view of a part of FIG. 1 thereof;
FIG. 10 is an enlarged view of a part of FIG. 3 thereof; and,
FIG. 11 is an enlarged left side view thereof.
The broken lines depict unclaimed features of the image sensor for scanner that form no part of the design claim but are shown for purposes of illustration.
The dot-dash lines depict the boundary between the claimed and unclaimed areas of the image sensor for scanner.

1 Claim, 11 Drawing Sheets



(58) **Field of Classification Search**

USPC D26/74-86, 88-91, 25; D13/180, 182;
 362/150, 217.01-217.09, 217.1, 217.12,
 362/217.13, 260, 364, 365, 366, 404, 555,
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 CPC .. D07G 1/0036; D07G 1/0045; D07G 1/0063;
 D07G 1/0072; D07G 1/009; G08B
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 G08B 13/194; G08B 13/246; G08B
 13/2462; G08B 13/2465; A47F 9/04;
 A47F 9/046; A47F 9/047; A47F 9/048;
 A47F 10/02; A47F 2010/005; A47F
 2010/025; G06K 7/10693; G06K
 7/10712; G06K 7/10722; G06K 7/10792;
 G06K 7/10801; G06K 7/10811; G06K
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 7/14; G06K 7/1404; G06K 7/1408; G06K
 7/1413; G06K 7/1417; G06K 7/1421;
 G06K 7/1426; G06K 7/143; G06K
 7/1434; G06K 7/1439; G06K 7/1443;
 G06K 7/1447; G06K 7/1452; G06K
 7/1456; G06K 7/146; G06K 7/1465;
 G06K 7/1469; G06K 7/1473; G06K
 7/1478; G06K 7/1482; G06K 7/1486;
 G06K 2007/10485; G06K
 7/10544-10762; G06K 7/10821-10871;
 G06K 2004/14; G06K 2007/1404-1495;
 G06K 2207/00; G06K 2207/1011-1018;
 G01G 19/4144; G01G 21/22; G01G
 21/28; G01G 23/32; G01G 23/34; G01G
 23/35; G01G 23/375; G01G 23/38; G01G
 23/44; G07G 1/0063; G07G 1/0072;
 G07G 3/006; G02B 5/09; G02B 6/00;
 G06T 2211/00; H04N 1/0313-032; H04N
 1/02815-02895; H04N 1/0249; H04N
 1/02481; H04N 1/00; H04N 1/12; H04N
 1/00013; H04N 1/00015; H04N 1/00018;
 H04N 1/00026; H04N 1/00557; H04N
 1/00564; H04N 1/0567; H04N 1/0057;
 H04N 1/00572; H04N 1/00586; H04N
 1/00588; H04N 1/00594; H04N 1/00596;
 H04N 1/00604; H04N 1/00519; H04N
 1/00559; H04N 1/00551; H04N 1/00275;
 H04N 1/1013; H04N 1/10; H04N
 5/2251-2256; H04N 2201/02456; H04N
 2201/02458; H04N 2201/02462; H04N
 2201/03468; H04N 2201/02485; H04N
 2201/0249; H04N 2201/02481; H04N
 2201/0456; H04N 2201/0446; H04N
 2201/00; H04N 2201/0094; H01L
 27/14618-14643; H01L 27/14649; H01L
 27/14652; H01L 27/14658-1467; H01L
 31/0232-02327; H01L 27/1055; H01L
 27/14; G03G 15/0142; G03G 15/605;
 G03G 15/602; F21S 2/00; F21S 4/00;
 F21S 4/003; F21S 4/005; F21S 4/006;
 F21S 4/007; F21S 4/008; F21S 6/00;
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 8/063

See application file for complete search history.

(56)

References Cited

U.S. PATENT DOCUMENTS

5,235,348 A * 8/1993 Avonts B41J 2/45
 346/139 R
 5,291,039 A * 3/1994 Ogata B41J 2/451
 257/712
 5,321,429 A * 6/1994 Ono B41J 2/45
 174/520
 5,376,994 A * 12/1994 Mama G03G 15/011
 346/139 R
 5,506,612 A * 4/1996 Ogata B41J 2/451
 347/138
 5,751,327 A * 5/1998 De Cock B41J 2/45
 165/80.4
 5,945,664 A * 8/1999 Ogura H04N 1/031
 250/208.1
 6,295,141 B1 * 9/2001 Ogura H04N 1/02835
 358/475
 6,360,030 B1 * 3/2002 Kawai H04N 1/031
 358/484
 6,744,033 B2 * 6/2004 Ikeda H04N 1/02815
 250/208.1
 D519,237 S * 4/2006 Kopp D26/76
 D521,675 S * 5/2006 Chen D26/76
 D544,983 S * 6/2007 Hargreaves D26/76
 D547,897 S * 7/2007 Willmorth D26/75
 7,484,873 B2 * 2/2009 Dejima G02B 6/002
 362/606
 7,804,511 B2 * 9/2010 Honobe G03G 15/04054
 347/117
 D642,725 S * 8/2011 Kong D26/76
 8,576,460 B2 * 11/2013 Takeda H04N 1/0306
 358/474
 D695,942 S * 12/2013 Ng D26/75
 D701,990 S * 4/2014 Rodgers D26/76
 8,755,096 B2 * 6/2014 Yoshida H04N 1/0285
 358/475
 8,917,429 B2 * 12/2014 Kobayashi H04N 1/02835
 348/222.1
 9,036,220 B2 * 5/2015 Lu H04N 1/02855
 250/208.1
 D732,226 S * 6/2015 Hartman D26/76
 D735,392 S * 7/2015 Ng D26/76
 9,158,062 B2 * 10/2015 Yoshida G02B 6/0096
 9,360,839 B2 * 6/2016 Imai G03G 21/20
 9,462,150 B2 * 10/2016 Matsuzawa H04N 1/0281
 D784,167 S * 4/2017 Fujiuchi D10/102
 D784,337 S * 4/2017 Fujiuchi D14/420
 D784,994 S * 4/2017 Fujiuchi D14/420
 D785,626 S * 5/2017 Fujiuchi D14/420
 D785,627 S * 5/2017 Fujiuchi D14/420
 D785,628 S * 5/2017 Fujiuchi D14/420
 D785,629 S * 5/2017 Fujiuchi D14/420
 D785,630 S * 5/2017 Fujiuchi D14/420
 D785,631 S * 5/2017 Fujiuchi D14/420
 D807,361 S * 1/2018 Fujiuchi D14/420
 10,021,265 B2 * 7/2018 Fujiuchi H04N 1/0318
 10,284,742 B2 * 5/2019 Kida H04N 1/0306
 10,356,270 B2 * 7/2019 Yamamura G02B 3/0037
 10,374,002 B2 * 8/2019 Kondo H01S 5/18361
 10,389,904 B2 * 8/2019 Obayashi G03G 15/607
 10,438,990 B2 * 10/2019 Kondo H01L 21/02546
 10,603,926 B2 * 3/2020 Ohta H04N 1/00588
 D885,389 S * 5/2020 Sawabe D14/420
 10,649,359 B2 * 5/2020 Shiraishi H04N 1/00
 2004/0135875 A1 * 7/2004 Wakisaka B41J 2/451
 347/238
 2004/0135876 A1 * 7/2004 Ueda B41J 2/451
 347/238
 2005/0006562 A1 * 1/2005 Sugihara H01L 27/14625
 250/208.1
 2006/0245785 A1 * 11/2006 Kawamura G03G 21/181
 399/111
 2007/0110468 A1 * 5/2007 Shimazu G03G 21/0052
 399/92

(56)

References Cited

U.S. PATENT DOCUMENTS

2008/0079025	A1 *	4/2008	Inoue	.....	G06K 15/1242	257/205
2009/0047041	A1 *	2/2009	Kubo	.....	G03G 21/1676	399/222
2009/0052938	A1 *	2/2009	Sameshima	.....	G03G 21/1671	399/110
2009/0052960	A1 *	2/2009	Tanaka	.....	G03G 21/0011	399/358
2009/0225150	A1 *	9/2009	Ebisawa	.....	B41J 2/45	347/233
2009/0310190	A1 *	12/2009	Ikeda	.....	H04N 1/0284	358/474
2010/0086331	A1 *	4/2010	Inoue	.....	G03G 15/326	399/220
2010/0092214	A1 *	4/2010	Itou	.....	G03G 15/326	399/220
2010/0195166	A1 *	8/2010	Sawada	.....	H01L 27/14685	358/475
2011/0242261	A1 *	10/2011	Komiya	.....	H04N 1/02815	347/224
2012/0154877	A1 *	6/2012	Kisara	.....	H04N 1/0318	358/474
2012/0320436	A1 *	12/2012	Tsumekawa	.....	H04N 1/024	358/475
2013/0038914	A1 *	2/2013	Yoshida	.....	H04N 1/02865	358/474
2014/0014819	A1 *	1/2014	Yoshida	.....	H01L 27/14601	250/208.1
2014/0168724	A1 *	6/2014	Kobayashi	.....	H04N 1/02835	358/475
2015/0022870	A1 *	1/2015	Kiyota	.....	H04N 1/032	358/482
2015/0070735	A1 *	3/2015	Lu	.....	H04N 1/10	358/482
2015/0271354	A1 *	9/2015	Imoto	.....	H04N 1/02815	362/308
2015/0319329	A1 *	11/2015	Matsuzawa	.....	H04N 1/028	358/475
2016/0006898	A1 *	1/2016	Tsumekawa	.....	H04N 1/02835	358/484
2016/0037011	A1 *	2/2016	Fujiuchi	.....	H04N 1/0315	358/471
2016/0133661	A1 *	5/2016	Fujiuchi	.....	H04N 1/19	257/432
2016/0261763	A1 *	9/2016	Fujiuchi	.....	H04N 1/0318	
2017/0184994	A1 *	6/2017	Imai	.....	G03G 15/04036	
2018/0091691	A1 *	3/2018	Kida	.....	H04N 1/0306	
2018/0131832	A1 *	5/2018	Tsumekawa	.....	G02B 6/001	
2019/0281180	A1 *	9/2019	Suto	.....	G02B 6/0031	

* cited by examiner

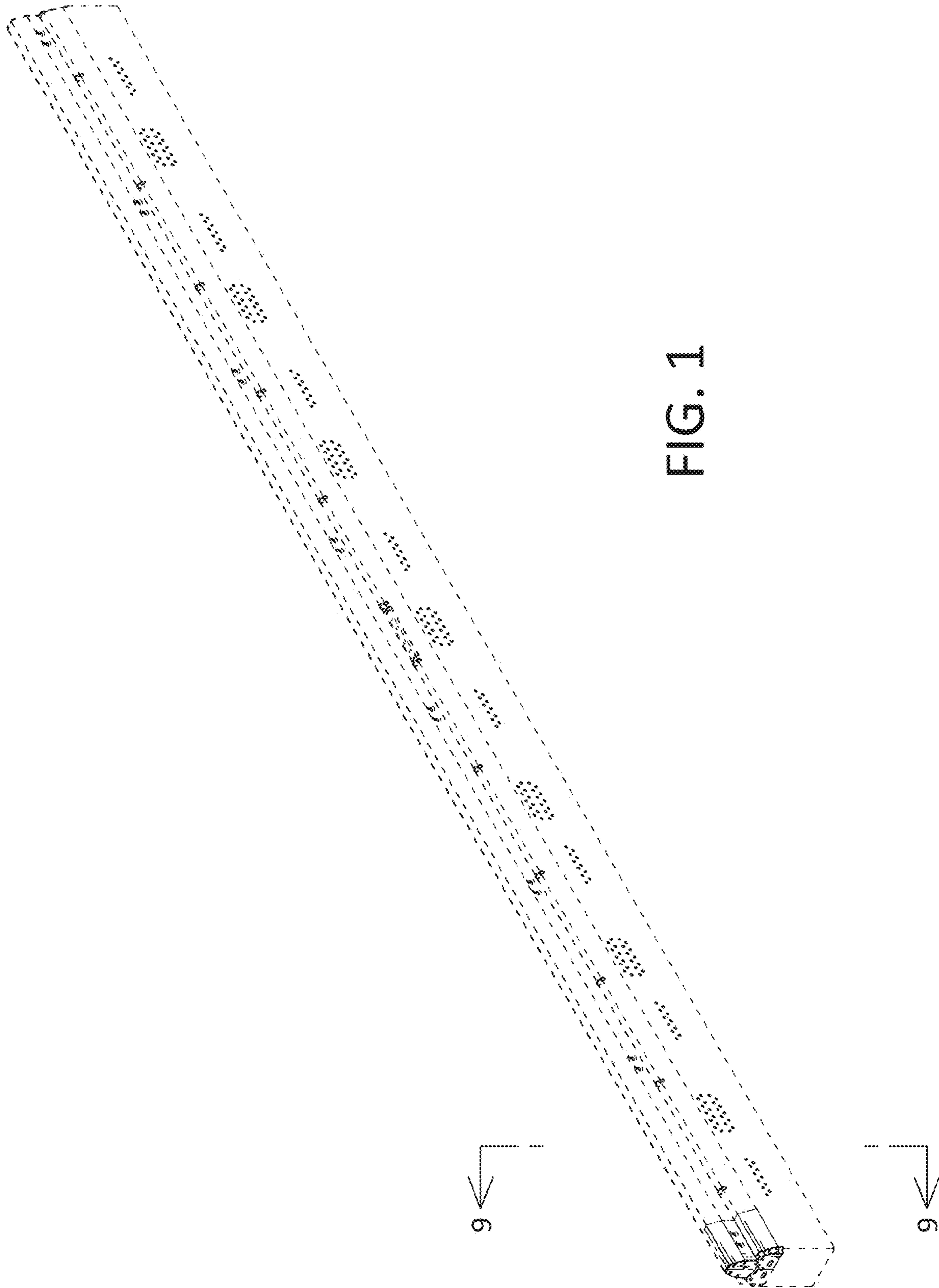


FIG. 1

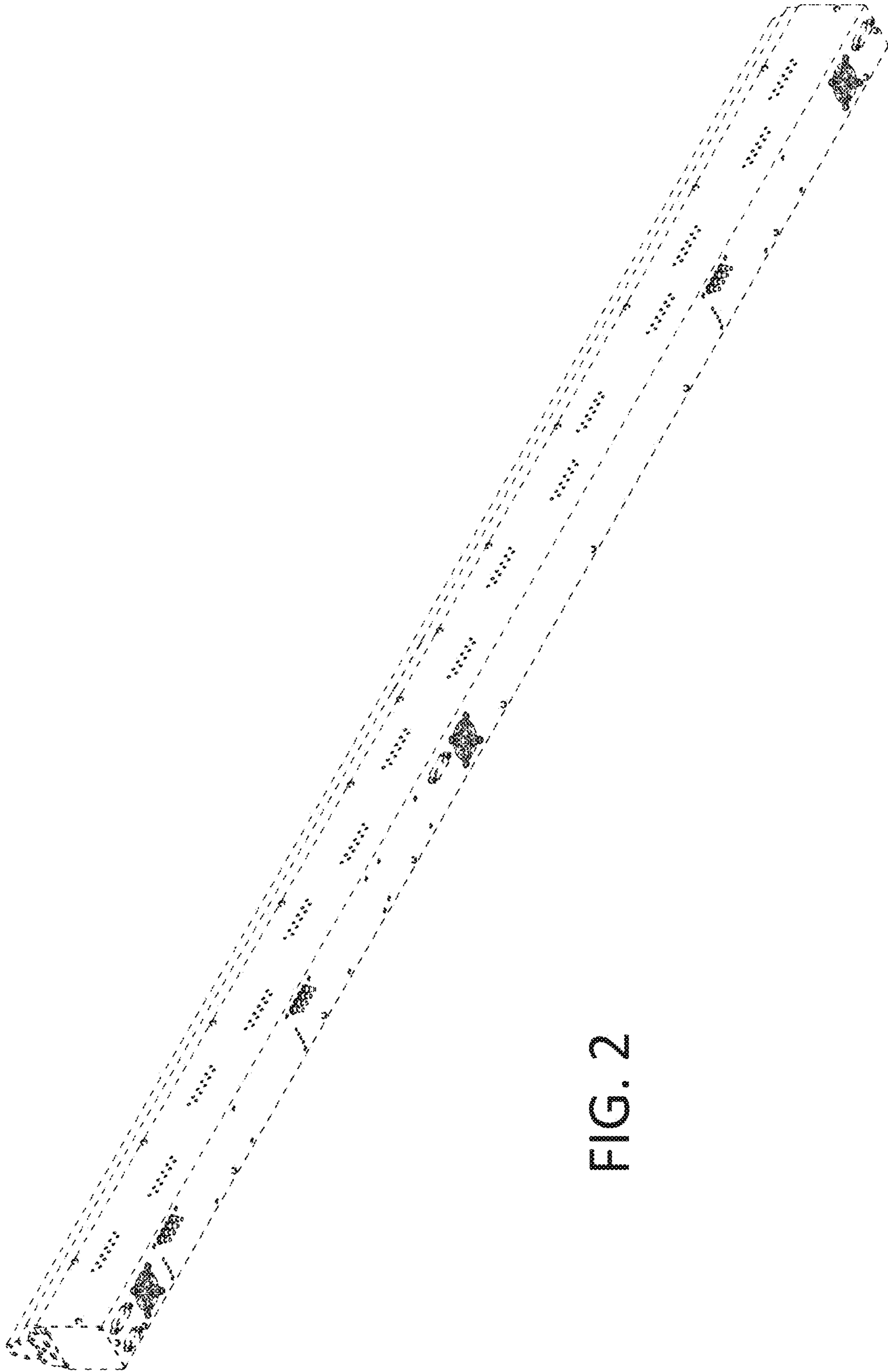


FIG. 2

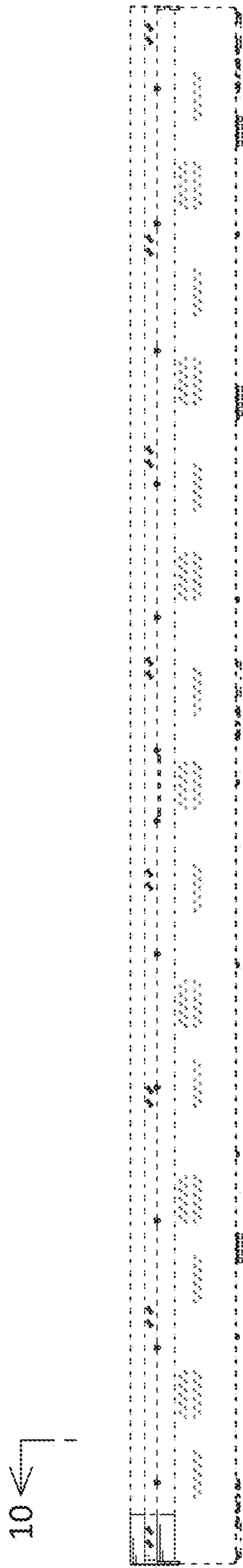


FIG. 3

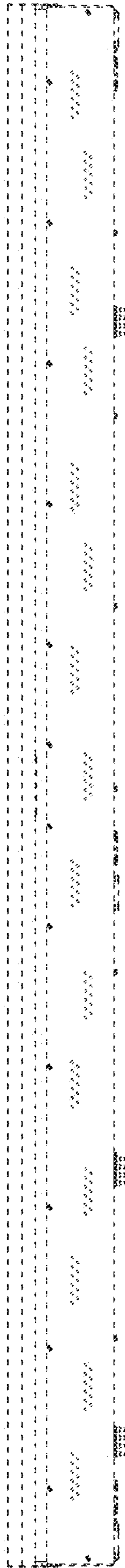


FIG. 4

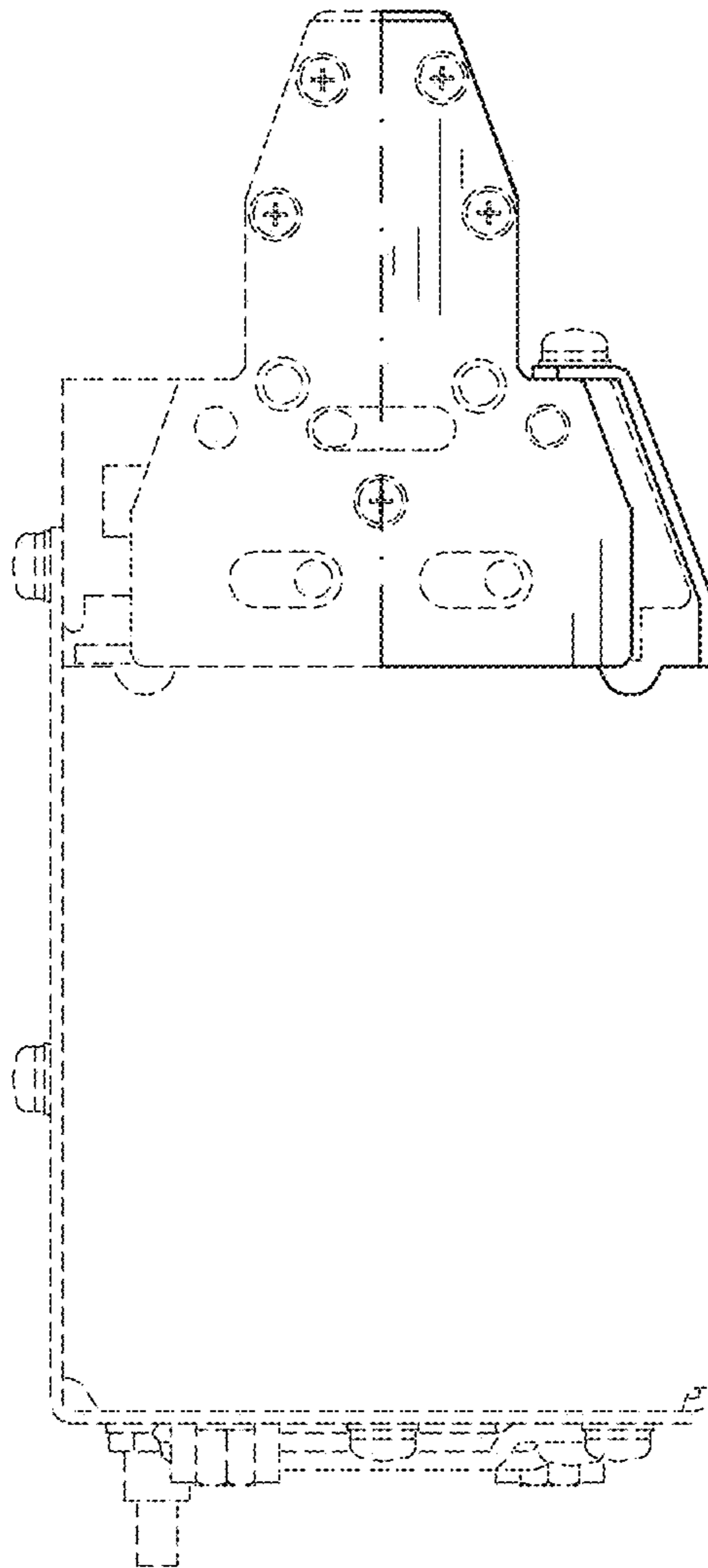


FIG. 5

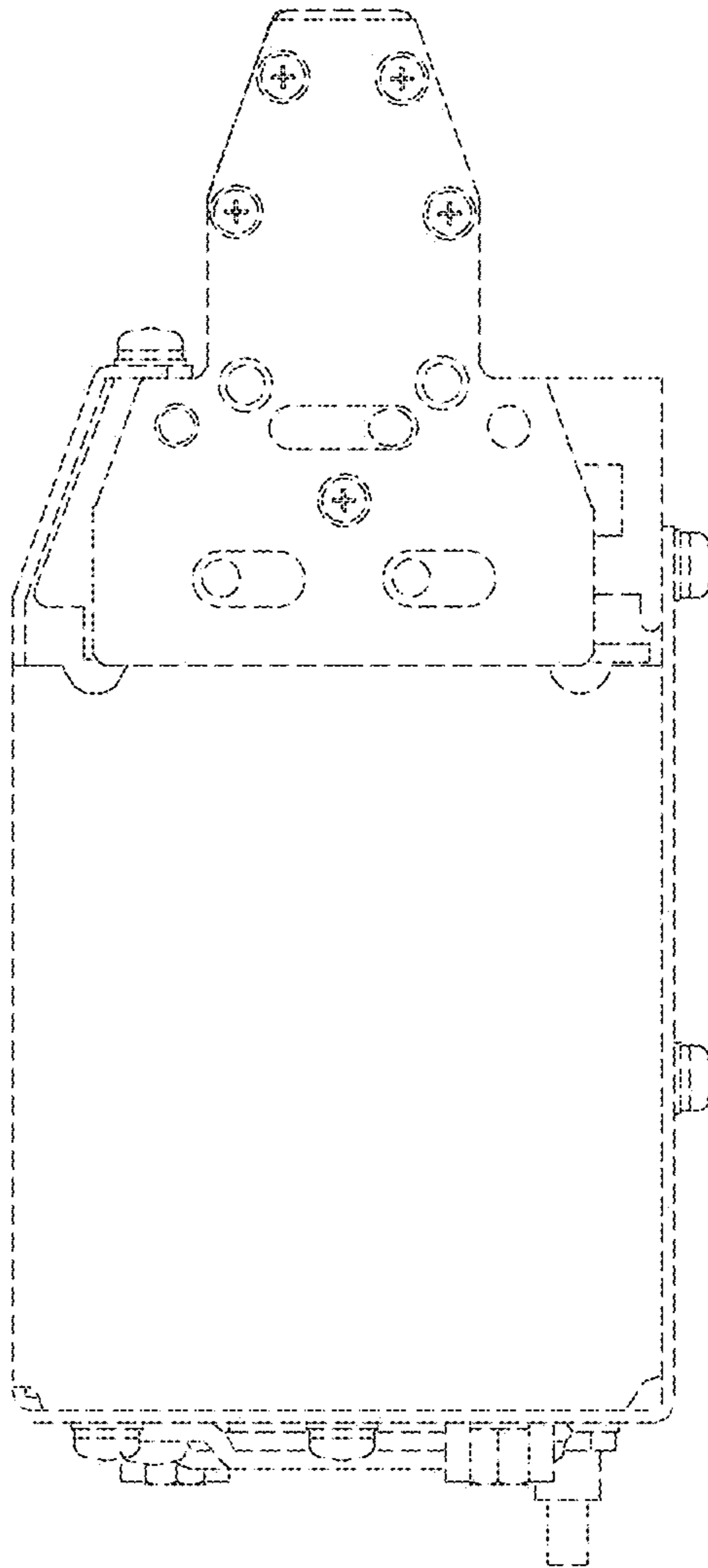


FIG. 6

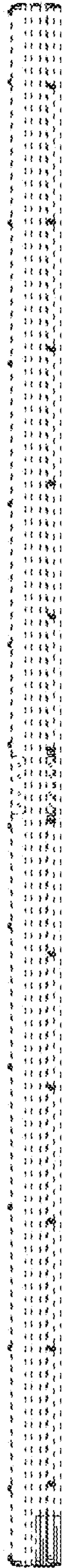


FIG. 7

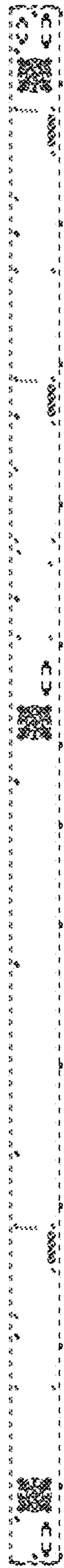


FIG. 8

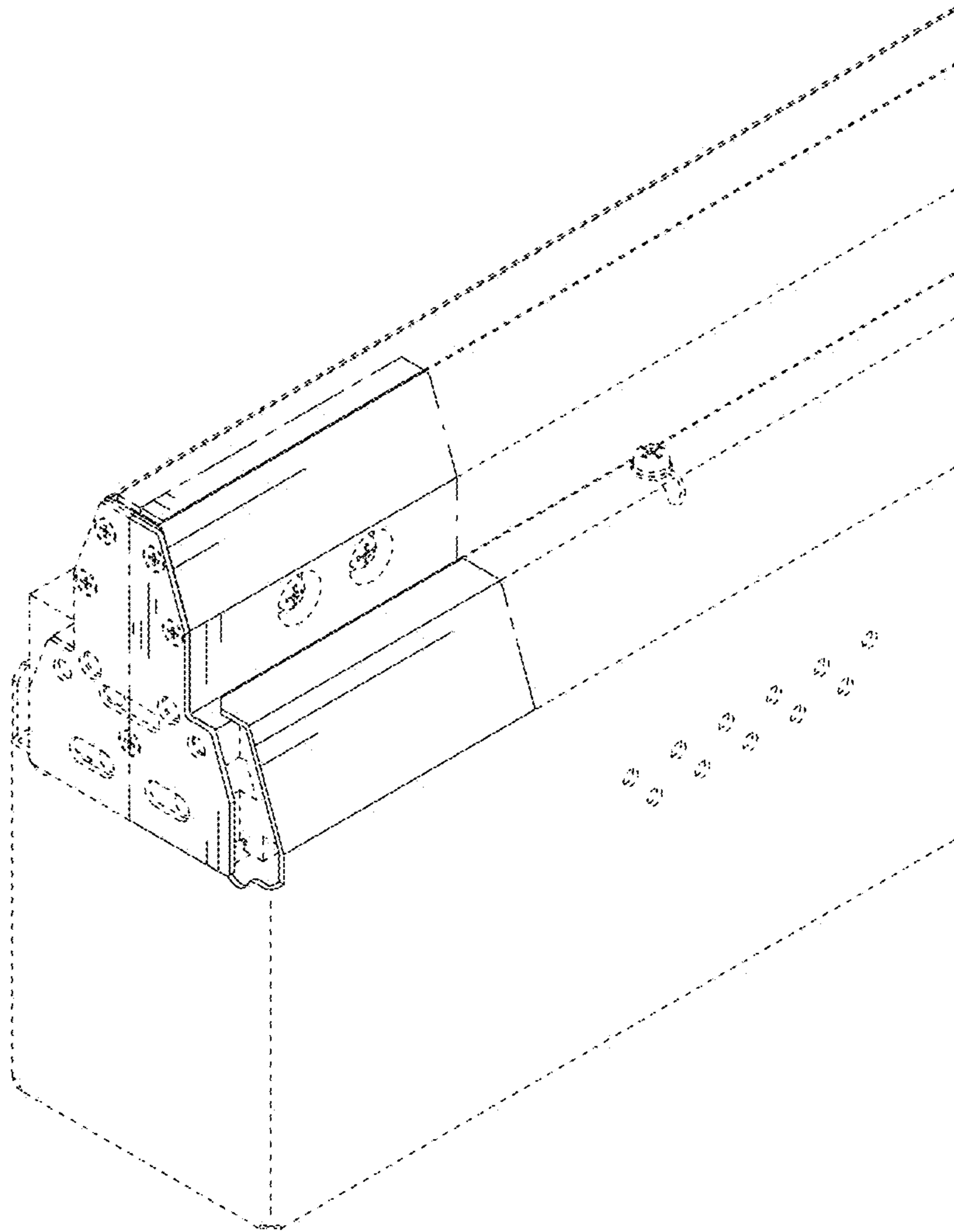


FIG. 9

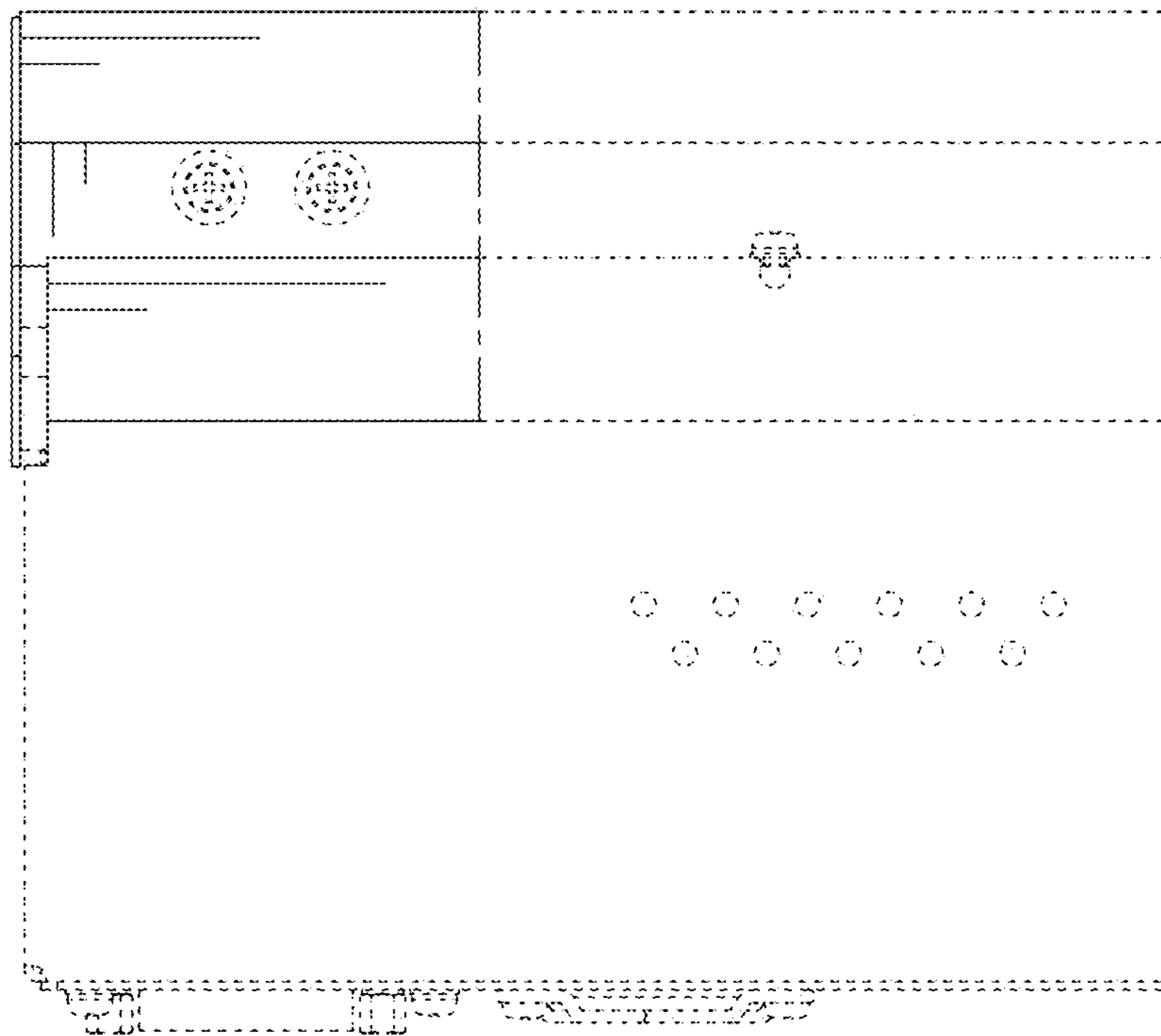


FIG. 10

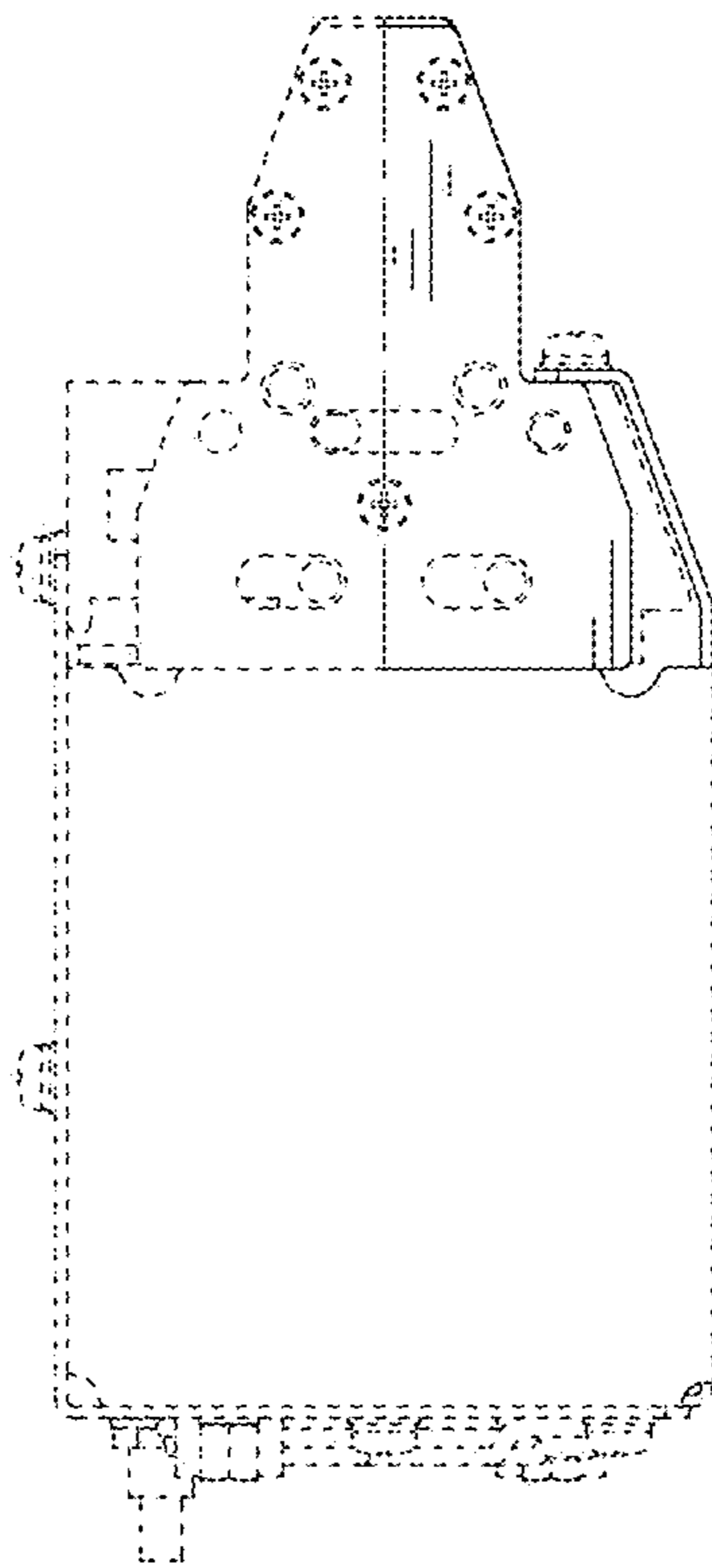


FIG. 11