US00D809515S

(12) United States Design Patent

Nada et al.

(10) Patent No.: US D809,515 S
(45) Date of Patent: ** Feb. 6, 2018

(54) **MOTION CONTROLLER**

(71) Applicants: **OMRON CORPORATION**, Kyoto-shi, Kyoto (JP); **DELTA TAU DATA SYSTEMS, INC.**, Chatsworth, CA (US)

(72) Inventors: **Heita Nada**, Ritto (JP); **Ramin Naghshineh**, Los Angeles, CA (US)

(73) Assignees: **OMRON CORPORATION**, Kyoto-shi (JP); **DELTA TAU DATA SYSTEMS, INC.**, Chatsworth, CA (US)

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

(21) Appl. No.: **29/570,203**

(22) Filed: **Jul. 6, 2016**

(51) **LOC (11) Cl.** **14-02**

(52) **U.S. Cl.**
USPC **D14/356**; D13/162; D13/162.1

(58) **Field of Classification Search**
USPC D14/356–358, 361, 362, 365, 367, 370, D14/388, 432, 454, 496, 140, 142, 155, D14/168, 217, 218, 240, 242, 243, 299, D14/188; D13/118, 123, 152, 158, 159, D13/162, 162.1, 173, 184, 199, 179, D13/112–116; D10/104.1, 106.1, 106.6, D10/116.1, 61, 64, 75, 80
CPC G05D 3/00; G05D 3/1409; G05D 3/1418; G05D 3/1427; G05D 1/00; G05B 2219/00; G05B 2219/43114; G05B 2219/43162; G05B 2219/43167; H04L 17/26; G06F 1/1694; G06F 1/324; G05G 5/02; G05G 21/00; G05G 7/12; G05G 19/00; B25J 9/16; B25J 9/1602; B25J 13/00
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D304,331 S * 10/1989 Pogue D13/123
D307,136 S * 4/1990 Boyer D13/123
D329,639 S * 9/1992 Arvanitakis D13/133
D329,843 S * 9/1992 Ishida D13/162
D337,114 S * 7/1993 Mantz D13/184
D343,395 S * 1/1994 Kakizaki D14/188
(Continued)

FOREIGN PATENT DOCUMENTS

JP 1298185 S 4/2007
JP 1375675 S 12/2009
(Continued)

OTHER PUBLICATIONS

Programmable Multi-Axis Controller CK3E. ia.omron.com. [online PDF] 1 pg. CK3E Catalog (R188-E1-01 [908KB]) uploaded: Aug. 1, 2016. [Retrieved on Sep. 19, 2017] https://www.ia.omron.com/data_pdf/cat/ck3e_r188-e1-01_csm1054475.pdf?id=3545.*
(Continued)

Primary Examiner — Susan Bennett Hattan
Assistant Examiner — Marie D. Fast Horse
(74) *Attorney, Agent, or Firm* — Oliff PLC

(57) **CLAIM**

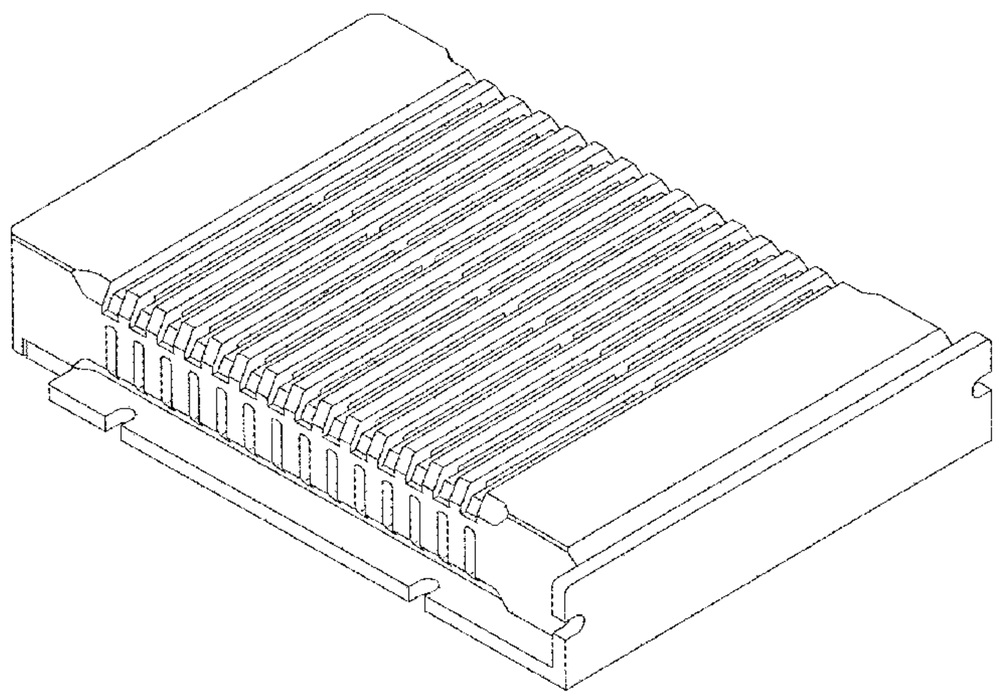
The ornamental design for a motion controller, as shown and described.

DESCRIPTION

FIG. **1** is a perspective view of a motion controller;
FIG. **2** is a front elevational view thereof;
FIG. **3** is a rear elevational view thereof;
FIG. **4** is a left side view thereof;
FIG. **5** is a right side view thereof;
FIG. **6** is a top plan view thereof; and,
FIG. **7** is a bottom plan view thereof.

The broken lines in the figures show portions of the motion controller that form no part of the claimed design.

1 Claim, 5 Drawing Sheets



(56) **References Cited**

U.S. PATENT DOCUMENTS

5,285,500	A	*	2/1994	Mantz	H04B 1/20 381/120
D359,268	S	*	6/1995	Spoldi	D13/110
D366,244	S	*	1/1996	Kurokawa	D13/162
D366,867	S	*	2/1996	Kurokawa	D13/162
D368,253	S	*	3/1996	Graves	D13/179
D386,761	S	*	11/1997	Pleitz	D14/188
D390,201	S	*	2/1998	Murphy	D14/388
D416,558	S	*	11/1999	Harrington	D14/188
D416,904	S	*	11/1999	Rabbani	D14/188
D418,115	S	*	12/1999	Shimizu	D13/162.1
D418,822	S	*	1/2000	Worley	D13/162
D428,006	S	*	7/2000	Sagues	D14/356
D429,716	S	*	8/2000	Horikoshi	D14/188
D464,327	S	*	10/2002	Frank, Jr.	D13/162
D480,368	S	*	10/2003	Droulin	D13/162.1
D482,005	S	*	11/2003	Droulin	D13/162.1
D499,074	S	*	11/2004	Cook	D13/179
D513,247	S	*	12/2005	Matsuoka	D14/188
D520,985	S	*	5/2006	Ishinabe	D14/188
D524,760	S	*	7/2006	Ohlwine	D13/162.1
D546,352	S	*	7/2007	Tsou	D15/143
D549,663	S	*	8/2007	Tsou	D13/147
D553,579	S	*	10/2007	Takahashi	D13/162.1
D554,153	S	*	10/2007	Hansen	D13/123
D554,154	S	*	10/2007	Hansen	D15/9
D556,218	S	*	11/2007	Hansen	D13/123
D563,381	S	*	3/2008	Carrier	D14/188
D565,021	S	*	3/2008	Wilson	D14/188
D594,456	S	*	6/2009	Huang	D14/358
D598,867	S	*	8/2009	Nada	D13/162.1
D674,343	S	*	1/2013	Chen	D13/112
D694,735	S	*	12/2013	Wilson	D14/188
D703,181	S	*	4/2014	Wilson	D14/188
D707,197	S	*	6/2014	Jaenecke	D14/157
D724,051	S	*	3/2015	Nakahira	D13/110
D724,052	S	*	3/2015	Nakahira	D14/188
D726,141	S	*	4/2015	Wilson	D14/188
D733,069	S	*	6/2015	Engblom	D13/158
D733,070	S	*	6/2015	Engblom	D13/158
D733,071	S	*	6/2015	Engblom	D13/158
D737,242	S	*	8/2015	Nakahira	D13/110
D755,740	S	*	5/2016	Chen	D13/179
D755,762	S	*	5/2016	Moon	D14/242
D756,923	S	*	5/2016	Goos	D13/112
D765,613	S	*	9/2016	Wolf	D13/184
D784,328	S	*	4/2017	Zhou	D14/240
D785,064	S	*	4/2017	Gong	D15/148
D794,628	S	*	8/2017	Van Dijke	D14/300

FOREIGN PATENT DOCUMENTS

JP	1410458	S	3/2011
JP	1504043	S	8/2014

OTHER PUBLICATIONS

CK3E Programmable Multi-Axis Controller_Features_OMRON Industrial Automation. ia.omron.com. [online] 1 pg. last update: Aug. 1, 2016. [Retrieved on Sep. 19, 2017] https://www.ia.omron.com/products/family/3545/feature.html.*

PMX-4EX-SA Manual Rev 3_11. arcus-technology.com. [online PDF] 100 pgs. Added/uploaded May 6, 2015. [Retrieved on Sep. 20, 2017] https://www.arcus-technology.com/support/downloads/download-info/pmx-4ex-sa-manual/ : PMX-4EX-SA Manual Rev 3.11.pdf.*

ACE-SDE by Arcus. smmc.com.tw. [online] 2 pgs. 2008. [Retrieved on Sep. 20, 2017]. http://www.smmc.com.tw/Arcus/ACE/ACE-SDE/ACE-SDE.html.*

SMC3-Manual—SMC3—Stepper Motor Controller with Sercos® and EtherCAT® Interface. cannon-automata.com. [online PDF] 57 pgs. Last Modified Feb. 23, 2016. [Retrieved on Sep. 20, 2017] http://www.cannon-automata.com/index.php?Stepper_Motor_Controller_SMC3 : SMC3-Manual.*

Controllers. (Design—© Questel). orbit.com.[online PDF] 30 pgs. Print Dates range May 26, 2010 through Jun. 9, 2017 [Retrieved on Sep. 20, 2017] https://sobjprd.guestel.fr/export/QPTUJ214/pdf2/f01539cd-25d3-4253-ae44-2b44d4f6972f-203733.pdf.*

* cited by examiner

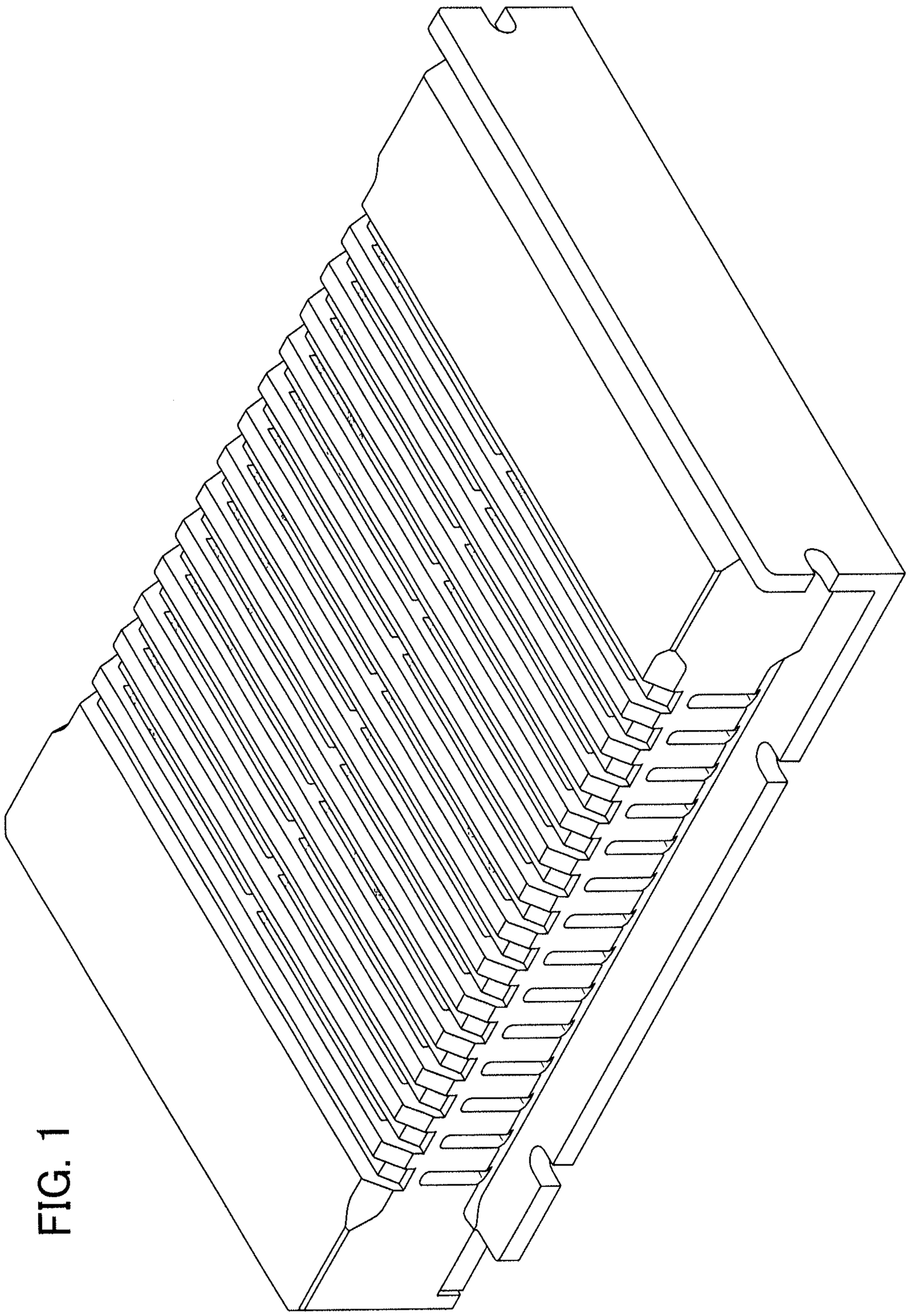


FIG. 1

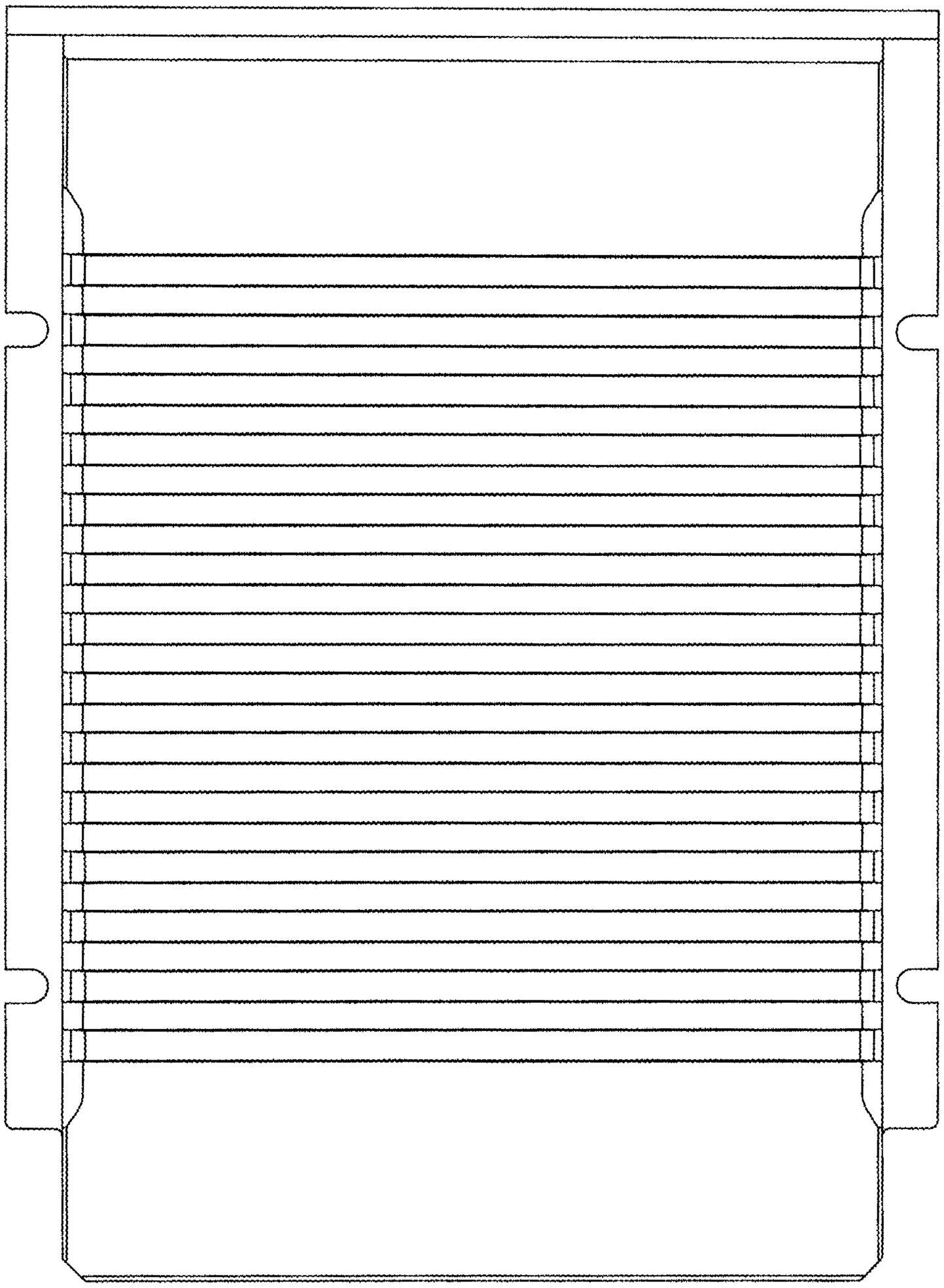


FIG. 2

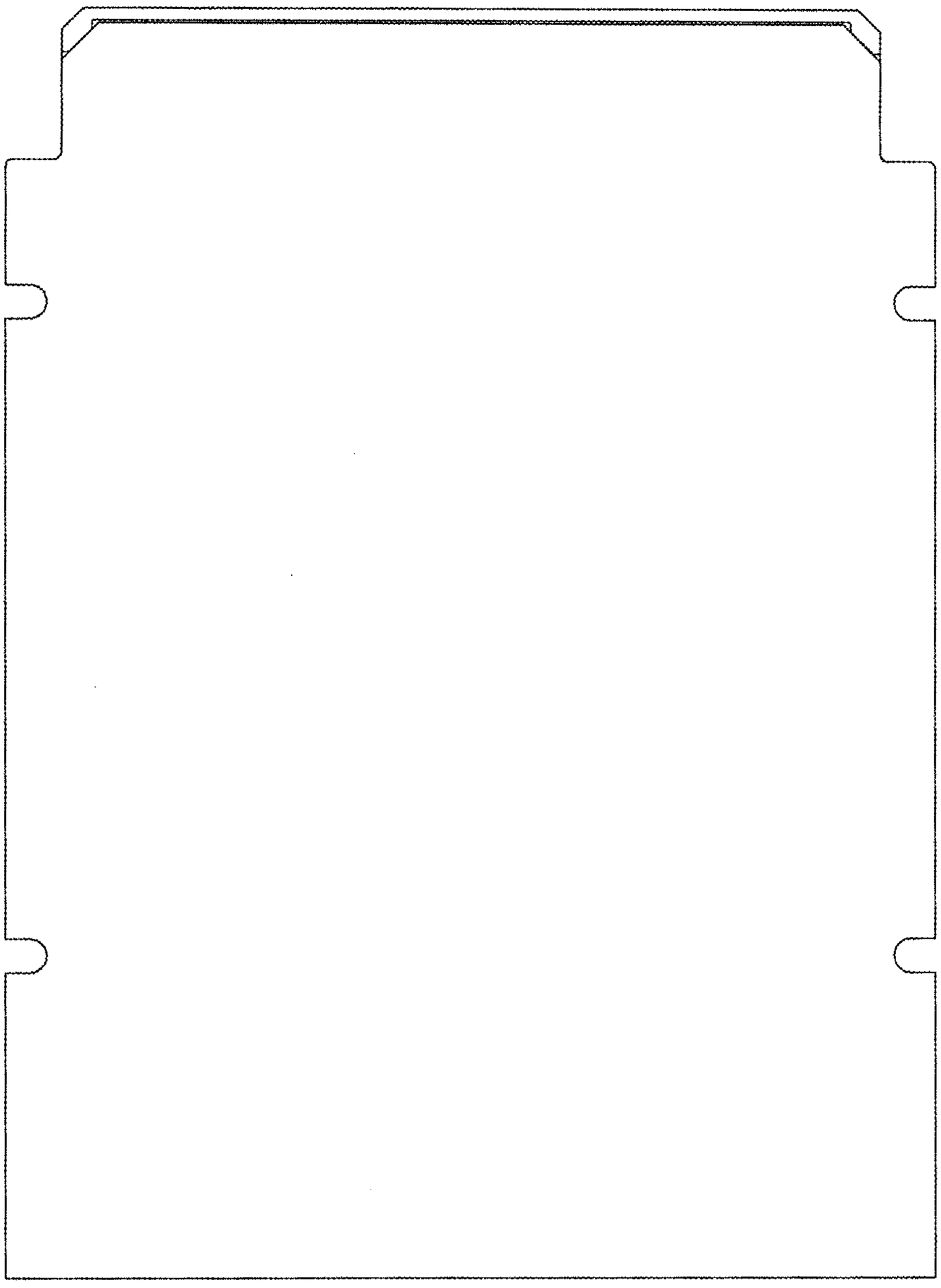


FIG. 3

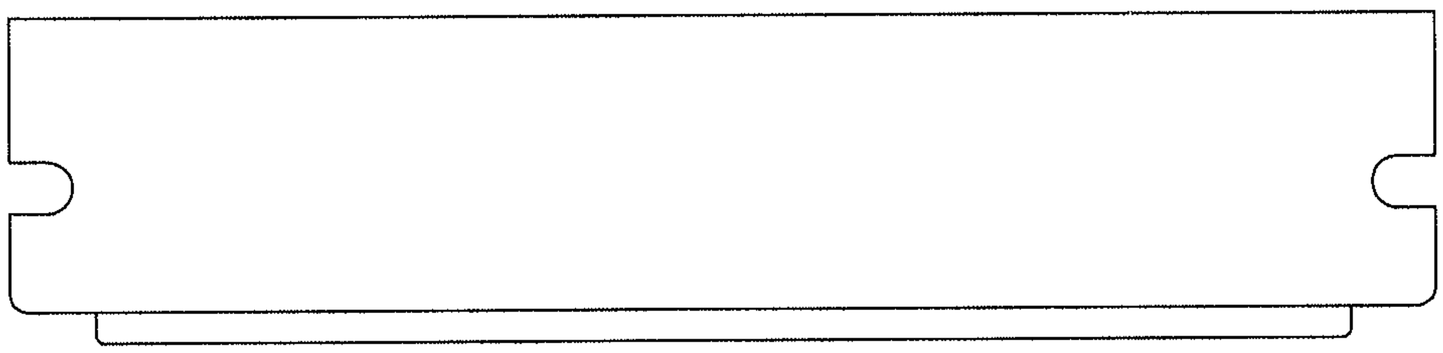


FIG. 5

FIG. 4

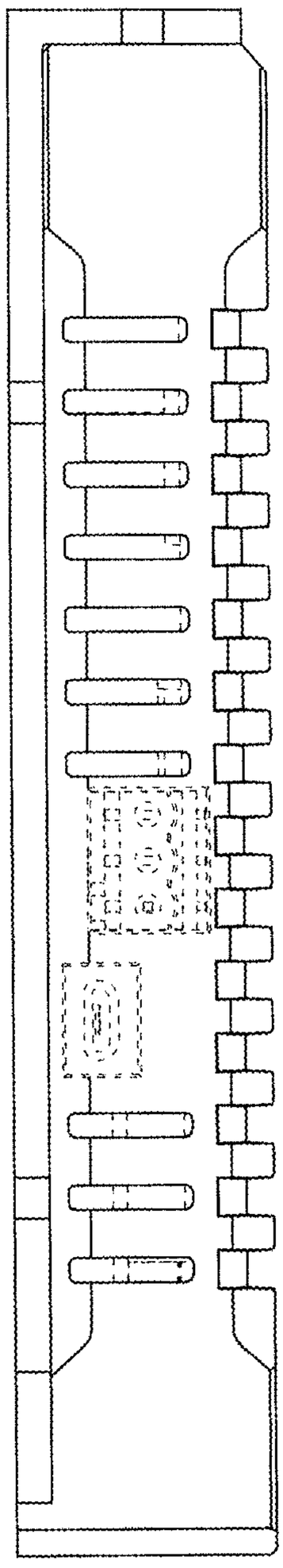


FIG. 6

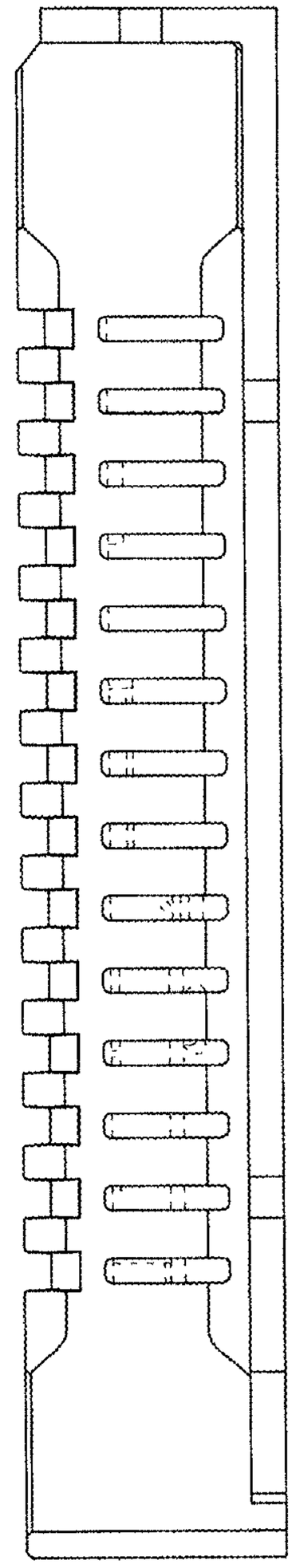


FIG. 7