



US00D848432S

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

(10) **Patent No.:** **US D848,432 S**  
(45) **Date of Patent:** **\*\* May 14, 2019**

(54) **SSD STORAGE DEVICE**

(71) Applicant: **SAMSUNG ELECTRONICS CO., LTD.**, Suwon-si (KR)

(72) Inventors: **G. M Lim**, Seoul (KR); **Eun-jin Yun**, Seoul (KR); **Hyuk-jun Yoo**, Hwaseong-si (KR)

(73) Assignee: **SAMSUNG ELECTRONICS CO., LTD.**, Suwon-si (KR)

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

(21) Appl. No.: **29/614,243**

(22) Filed: **Aug. 17, 2017**

(30) **Foreign Application Priority Data**

Feb. 17, 2017 (KR) ..... 30-2017-0007652

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

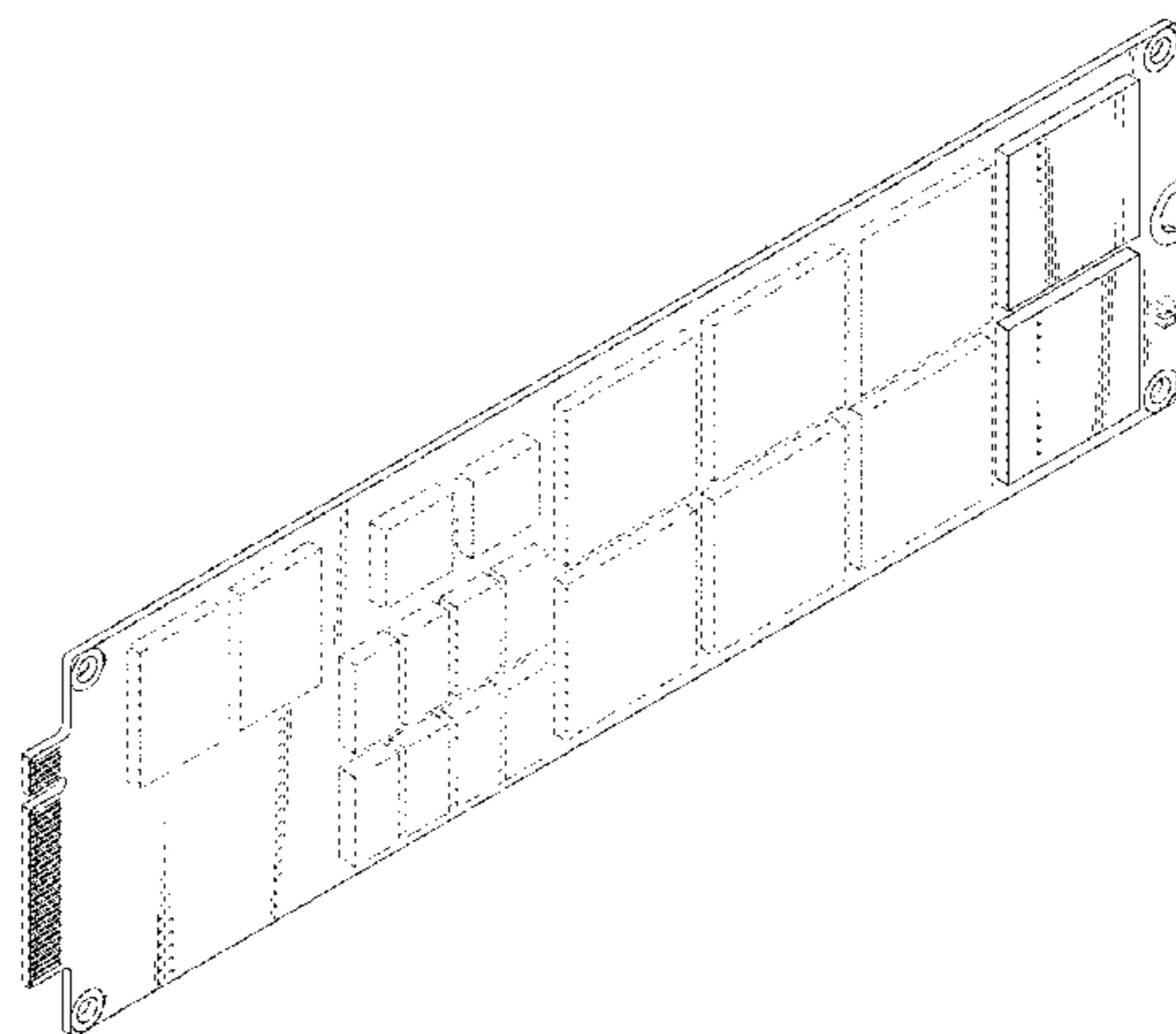
(52) **U.S. Cl.**

USPC ..... **D14/436**; D14/435

(58) **Field of Classification Search**

USPC ..... 439/946, 948, 159, 77; 174/250, 260, 174/52.1, 52.2, 16.1, 16.3; 710/300–303; 438/121; 376/191; 165/185, 80.2; 711/104, 164; 365/191, 51, 200, 201, 365/230.1, 230.03, 233.11, 212.63; 714/733, 744, 763, 718, 723, 766, 6.13, 714/773; 360/69, 97.02, 53; 361/679.33–679.45, 732, 737, 752, 736, 361/728, 796, 797, 729, 730, 725–727, 361/749, 760, 784, 789, 771, 792, 764, 361/765, 704, 715, 710, 711, 719, 767, 361/785, 803; 400/412, 713–715; 428/137–138, 140, 304.4, 457; 442/9; 257/678, 679, 693, E23.064, 734, 713, 257/718, 719, E25.023, E21.705, 257/E23.098, E23.177; 235/441, 443, 235/487, 492, 493, 495, 380; D18/1, 7,

D18/9, 11; D13/103, 119, 162, 184, 199, D13/182; D14/110, 114, 125, 240, 242, D14/299–302, 314, 348–370, 435–438, D14/496, 478–480  
CPC ..... G06K 19/06196; G06K 19/072; G06K 19/0721; G06K 19/0722; G06K 19/0723; G06K 19/0724; G06K 19/0726; G06K 19/0727; G06K 19/0728; G06K 19/073; G06K 19/07309; G06K 19/077; G06K 19/07701; G06K 19/07715; G06K 19/0772; G06K 19/07724; G06K 19/07726; G06K 19/07728; G06F 21/86; G06F 21/87; G06F 21/77–21/80; G06F 21/85–21/88; G06F 21/00; G06F 3/0604; G06F 3/0688; G06F 3/0653; G06F 3/0659; G06F 11/1076; G06F 11/1008; G06F 11/1044; G06F 12/1416; G06F 12/1425; G06F 12/1433; G06F 13/00; G06Q 20/3229; G06Q 20/34; G06Q 20/341; G06Q 20/346; G06Q 20/349; G06Q 20/3563; G06Q 20/3567; G06Q 20/357; G06Q 20/3576; H05K 5/026; H05K 5/0256; H05K 5/0265; H05K 5/0269; H05K 5/0273; H05K 5/0278; H05K 5/0282; H05K 5/0286; H05K 5/0291; H05K 5/0295; H05K 5/03; H05K 5/04; H05K 5/06; H05K 5/061; H05K 5/062; H05K 5/063; H05K 5/064; H05K 5/065; H05K 5/066; H05K 5/067; H05K 5/068; H05K 5/069; H05K 7/00; H05K 7/005; H05K 7/02; H05K 7/023; H05K 7/026; H05K 7/04; H05K 7/10; H05K 7/1418; H05K 7/142; H05K 7/1424; H05K 7/1427–7/1439; H05K 7/1461; H05K 7/1464–7/1474; H05K 2201/09772; H05K 2201/098; H05K 2201/09818; H05K 2201/10; H05K 2201/10007; H05K 1/189; H05K 1/0203; H05K 1/118; H05K 1/181; H05K 3/00; H05K 3/0061; H05K 999/00; H05K 2201/056; H05K 2201/1056; H05K 2201/10734; H05K 2201/2018; H05K 2203/1572; H04N 2201/216; G11C 16/0483; G11C 16/225; G11C 16/10; G11C 7/04; G11C 7/22;



**US D848,432 S**

G11C 5/04; G11C 5/00; G11C 5/143;  
 G11C 29/12; G11C 29/26; G11C 29/16;  
 G11C 2029/0401; H01L 23/3672; H01L  
 23/4093; H01L 2924/0002; H01L  
 2924/00; H01L 25/0652; H01L 25/105  
 See application file for complete search history.

(56)

**References Cited**

U.S. PATENT DOCUMENTS

4,936,785 A \* 6/1990 Krug ..... G06F 13/409  
 439/75  
 5,224,023 A \* 6/1993 Smith ..... G06F 1/184  
 174/254  
 5,303,121 A \* 4/1994 Thornberg ..... H05K 1/141  
 174/255  
 5,347,428 A \* 9/1994 Carson ..... H01L 25/0657  
 174/260  
 D370,464 S \* 6/1996 Tepper ..... D13/147  
 6,008,994 A \* 12/1999 Bates ..... H05K 5/0269  
 361/728  
 6,021,048 A \* 2/2000 Smith ..... H05K 1/144  
 361/736  
 6,025,992 A \* 2/2000 Dodge ..... H01L 23/3733  
 165/80.3  
 6,036,098 A \* 3/2000 Goldman ..... G06F 1/163  
 235/486  
 6,088,829 A \* 7/2000 Umemura ..... G06F 13/4243  
 713/400  
 D432,096 S \* 10/2000 Jeon ..... D13/182  
 6,381,140 B1 \* 4/2002 Liao ..... G11C 5/04  
 361/679.32  
 6,535,387 B2 \* 3/2003 Summers ..... H01L 23/4093  
 165/185  
 6,590,282 B1 \* 7/2003 Wang ..... H01L 25/0657  
 257/685  
 6,614,664 B2 \* 9/2003 Lee ..... G11C 15/00  
 361/748  
 6,628,538 B2 \* 9/2003 Funaba ..... G11C 5/04  
 257/E25.01  
 6,757,751 B1 \* 6/2004 Gene ..... H05K 1/144  
 439/101  
 6,762,942 B1 \* 7/2004 Smith ..... H05K 1/189  
 174/258  
 6,765,278 B2 \* 7/2004 Parsons ..... G01K 7/16  
 257/470  
 6,812,555 B2 \* 11/2004 Chen ..... H01L 23/52  
 257/207  
 6,956,284 B2 \* 10/2005 Cady ..... H01L 23/3114  
 257/685  
 7,269,025 B2 \* 9/2007 David ..... G11C 5/04  
 257/E23.079  
 7,299,313 B2 \* 11/2007 Gower ..... G06F 13/1684  
 710/105  
 7,516,281 B2 \* 4/2009 LaBerge ..... G06F 13/4086  
 711/105  
 7,590,899 B2 \* 9/2009 Swietek ..... G06F 12/1416  
 711/104  
 7,619,893 B1 \* 11/2009 Yu ..... H01L 23/3672  
 165/185  
 7,636,274 B2 \* 12/2009 Solomon ..... G06F 12/0207  
 365/233.13  
 7,688,592 B2 \* 3/2010 Gruendler ..... H01L 23/4093  
 165/185  
 7,811,097 B1 \* 10/2010 Bhakta ..... H05K 1/147  
 439/71  
 7,839,712 B2 \* 11/2010 Djordjevic ..... G11C 5/04  
 365/212  
 7,861,029 B2 \* 12/2010 Djordjevic ..... G11C 5/025  
 365/63  
 D637,192 S \* 5/2011 Andre ..... D14/436  
 D637,193 S \* 5/2011 Andre ..... D14/436  
 8,018,723 B1 \* 9/2011 Yu ..... H01L 23/367  
 257/707

D652,041 S \* 1/2012 Andre ..... D14/436  
 D655,296 S \* 3/2012 Andre ..... D14/436  
 D673,921 S \* 1/2013 Ozawa ..... D13/182  
 D673,922 S \* 1/2013 Moriai ..... D13/182  
 8,347,057 B2 \* 1/2013 Nishio ..... G06F 13/1673  
 711/167  
 8,422,263 B2 \* 4/2013 Saito ..... G11C 5/04  
 365/189.03  
 D686,215 S \* 7/2013 Andre ..... D14/436  
 8,510,629 B2 \* 8/2013 Tsukada ..... G06F 11/1044  
 714/763  
 8,675,355 B2 \* 3/2014 Wallace ..... E05B 5/003  
 361/679.33  
 8,705,240 B1 \* 4/2014 Zohni ..... H01L 23/367  
 361/704  
 D709,894 S \* 7/2014 Fetterman ..... D14/436  
 8,796,830 B1 \* 8/2014 Fjelstad ..... H01L 23/4952  
 257/676  
 D716,310 S \* 10/2014 Andre ..... D14/436  
 D716,743 S \* 11/2014 Hu ..... D13/182  
 8,885,422 B2 \* 11/2014 Ribeiro ..... G11C 5/02  
 365/189.17  
 D753,073 S \* 4/2016 Sponring ..... D13/182  
 D768,134 S \* 10/2016 Andre ..... D14/436  
 D787,456 S \* 5/2017 Matsumoto ..... D13/182  
 D787,457 S \* 5/2017 Matsumoto ..... D13/182  
 D793,973 S \* 8/2017 Matsumoto ..... D13/182  
 D794,035 S \* 8/2017 Hung ..... D14/435  
 D795,823 S \* 8/2017 Aoyagi ..... D13/182  
 D798,251 S \* 9/2017 Li ..... D13/182  
 D824,910 S \* 8/2018 Lim et al. .... D14/436  
 D826,944 S \* 8/2018 Lim et al. .... D14/436  
 D826,945 S \* 8/2018 Lim et al. .... D14/436  
 D826,946 S \* 8/2018 Lim et al. .... D14/436  
 D828,357 S \* 9/2018 Lim et al. .... D14/436  
 D828,358 S \* 9/2018 Lim et al. .... D14/436  
 D834,025 S \* 11/2018 Lim et al. .... D14/436  
 2002/0056018 A1 \* 5/2002 Schumacher ..... G06F 13/4086  
 710/300  
 2003/0097506 A1 \* 5/2003 Chuang ..... G09G 5/363  
 710/301  
 2004/0196682 A1 \* 10/2004 Funaba ..... H01L 23/552  
 365/149  
 2005/0078454 A1 \* 4/2005 Hyodo ..... H05K 5/0217  
 361/712  
 2005/0082663 A1 \* 4/2005 Wakiyama ..... H01L 23/5387  
 257/717  
 2005/0088828 A1 \* 4/2005 Zhu ..... B41J 29/54  
 361/732  
 2005/0161781 A1 \* 7/2005 Kanakubo ..... H01L 21/486  
 257/678  
 2005/0161782 A1 \* 7/2005 Kanakubo ..... H01L 21/565  
 257/678  
 2006/0049500 A1 \* 3/2006 Goodwin ..... G11C 5/04  
 257/686  
 2006/0049502 A1 \* 3/2006 Goodwin ..... G06F 1/184  
 257/686  
 2006/0049513 A1 \* 3/2006 Goodwin ..... G11C 5/00  
 257/712  
 2006/0050488 A1 \* 3/2006 Goodwin ..... G11C 5/04  
 361/749  
 2006/0050489 A1 \* 3/2006 Wehrly, Jr. .... H01L 25/0652  
 361/749  
 2006/0050492 A1 \* 3/2006 Goodwin ..... G11C 5/04  
 361/767  
 2006/0050498 A1 \* 3/2006 Cady ..... G11C 5/04  
 361/803  
 2006/0050592 A1 \* 3/2006 Cady ..... H05K 1/189  
 365/230.03  
 2006/0067054 A1 \* 3/2006 Wang ..... H01L 23/3672  
 361/704  
 2006/0129888 A1 \* 6/2006 Szeverenko ..... G06F 1/20  
 714/30  
 2006/0171247 A1 \* 8/2006 Hoppe ..... G11C 5/04  
 365/189.07  
 2006/0261449 A1 \* 11/2006 Rapport ..... G11C 5/04  
 257/666

2007/0011574 A1\* 1/2007 Weiss ..... G06F 11/1008  
714/763  
2007/0033490 A1\* 2/2007 Moosrainer ..... G06F 11/1044  
714/763  
2007/0139897 A1\* 6/2007 RaghuRam ..... H01L 23/3672  
361/720  
2007/0176286 A1\* 8/2007 Wehrly, Jr. .... H01L 25/0655  
257/723  
2007/0212902 A1\* 9/2007 Clayton ..... G06F 1/183  
439/66  
2007/0212906 A1\* 9/2007 Clayton ..... H01L 23/5387  
439/77  
2007/0212919 A1\* 9/2007 Clayton ..... H01L 23/473  
439/326  
2007/0212920 A1\* 9/2007 Clayton ..... H01R 12/721  
439/326  
2007/0223198 A1\* 9/2007 Lai ..... H01L 23/3672  
361/720  
2007/0281500 A1\* 12/2007 Wang ..... H01R 12/721  
439/62  
2007/0294889 A1\* 12/2007 Schmitt ..... H01L 25/50  
29/831  
2008/0038961 A1\* 2/2008 Park ..... H01R 13/631  
439/630  
2008/0094811 A1\* 4/2008 Hazelzet ..... G11C 5/04  
361/760  
2008/0116571 A1\* 5/2008 Dang ..... H01L 23/3672  
257/721  
2008/0123300 A1\* 5/2008 Tian ..... G11C 5/04  
361/721  
2008/0123303 A1\* 5/2008 Sugano ..... G11C 5/00  
361/728  
2008/0137278 A1\* 6/2008 Chih ..... G11C 5/06  
361/679.31  
2008/0155158 A1\* 6/2008 Yu ..... G01R 31/2818  
710/301  
2008/0266816 A1\* 10/2008 Ni ..... H05K 5/0269  
361/737  
2009/0086448 A1\* 4/2009 Hiew ..... H05K 5/026  
361/753  
2009/0129026 A1\* 5/2009 Baek ..... H01L 23/3672  
361/710  
2009/0153163 A1\* 6/2009 Han ..... H01L 23/538  
324/763.01  
2009/0268390 A1\* 10/2009 King ..... G06F 13/409  
361/679.33  
2010/0049914 A1\* 2/2010 Goodwin ..... G06F 3/0626  
711/114  
2010/0062624 A1\* 3/2010 Tsai ..... H05K 7/16  
439/74  
2010/0073860 A1\* 3/2010 Moriai ..... G06F 3/0626  
361/679.32  
2011/0019370 A1\* 1/2011 Koh ..... H01L 21/561  
361/749  
2011/0043994 A1\* 2/2011 Cheng ..... G06F 1/187  
361/679.33  
2011/0283043 A1\* 11/2011 Schuette ..... G06F 3/0626  
711/5  
2013/0094138 A1\* 4/2013 Meza ..... G06F 1/184  
211/26  
2013/0219235 A1\* 8/2013 Ohba ..... G11C 29/12  
714/718  
2014/0111933 A1\* 4/2014 Knopf ..... G06F 1/20  
361/679.34  
2014/0146462 A1\* 5/2014 Coglitore ..... G06F 1/187  
361/679.33

2016/0172016 A1\* 6/2016 Matsumoto ..... G06F 11/1076  
365/191  
2016/0334992 A1\* 11/2016 Yashiro ..... G06F 3/0614  
2017/0010639 A1\* 1/2017 Matsumoto ..... G06F 1/183

FOREIGN PATENT DOCUMENTS

CN	303719066 S	6/2016
JP	1426165 S	10/2011
JP	1426166 S	10/2011
JP	1426167 S	10/2011
JP	1426168 S	10/2011
JP	1426169 S	10/2011
JP	1436225 S	3/2012
JP	1479370 S	9/2013
JP	1520122 S	3/2015
JP	1528484 S	7/2015
JP	1600323 S	3/2018
JP	1608117 S	7/2018
JP	1608281 S	7/2018
JP	1608282 S	7/2018
KR	30-0645777 S	6/2012
KR	30-0680966 S	2/2013
KR	30-0680971 S	2/2013

OTHER PUBLICATIONS

Non-Patent Prior Art list, total 2 pages.  
Communication dated Jun. 26, 2018, issued by the Japanese Patent Office in counterpart Japanese Application No. 2017-017642. Memory Module ; Product No. THNSNC 256 GMDJ; Toshiba Corporation, Japan; H1-460HJ22057882, Dec. 6, 2010. Solid state drive, 64G Mini PCIe 64 GB SATA Solid State Drive, H6-553, CompUSA, Inc., US; HJ21030272, Oct. 5, 2009. Communication dated Mar. 16, 2018, issued by the Taiwanese Patent Office in counterpart Taiwanese application No. 106304668.

\* cited by examiner

Primary Examiner — Susan Moon Lee  
(74) Attorney, Agent, or Firm — Sughrue Mion, PLLC

(57) CLAIM

The ornamental design for an SSD storage device, as shown and described.

DESCRIPTION

FIG. 1 is a perspective view of SSD storage device showing our new design.  
FIG. 2 is a front elevation view thereof.  
FIG. 3 is a rear elevation view thereof.  
FIG. 4 is a left side elevation view thereof.  
FIG. 5 is a right side elevation view thereof.  
FIG. 6 is a top plan view thereof.  
FIG. 7 is a bottom plan view thereof; and,  
FIG. 8 is an enlarged view thereof, showing the edge connector.  
The broken lines are for environmental purposes only and form no part of the claimed design.

1 Claim, 8 Drawing Sheets

FIG. 1

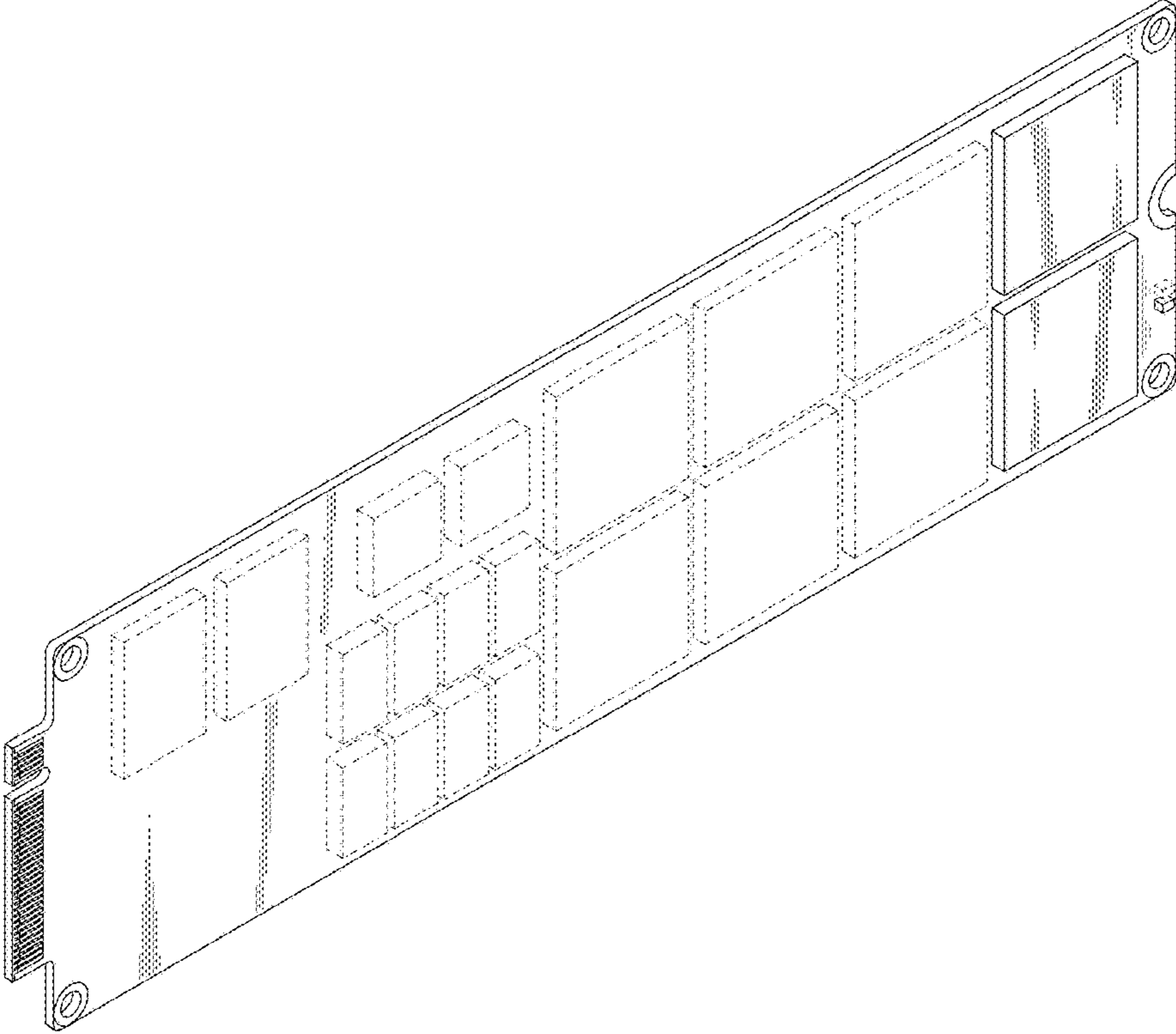


FIG. 2

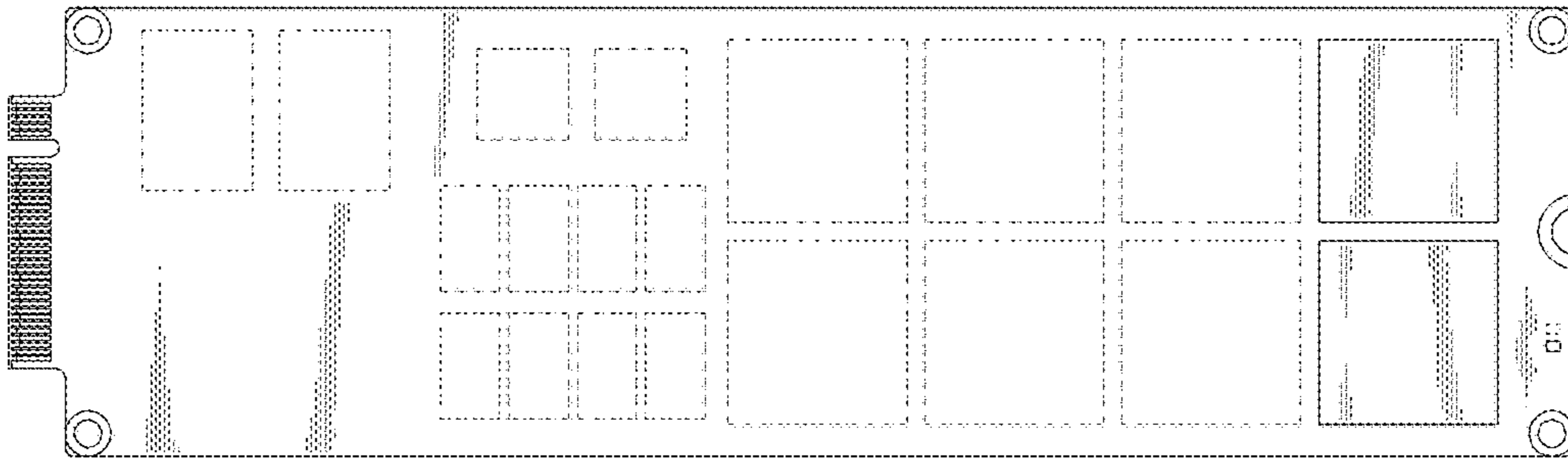


FIG. 3

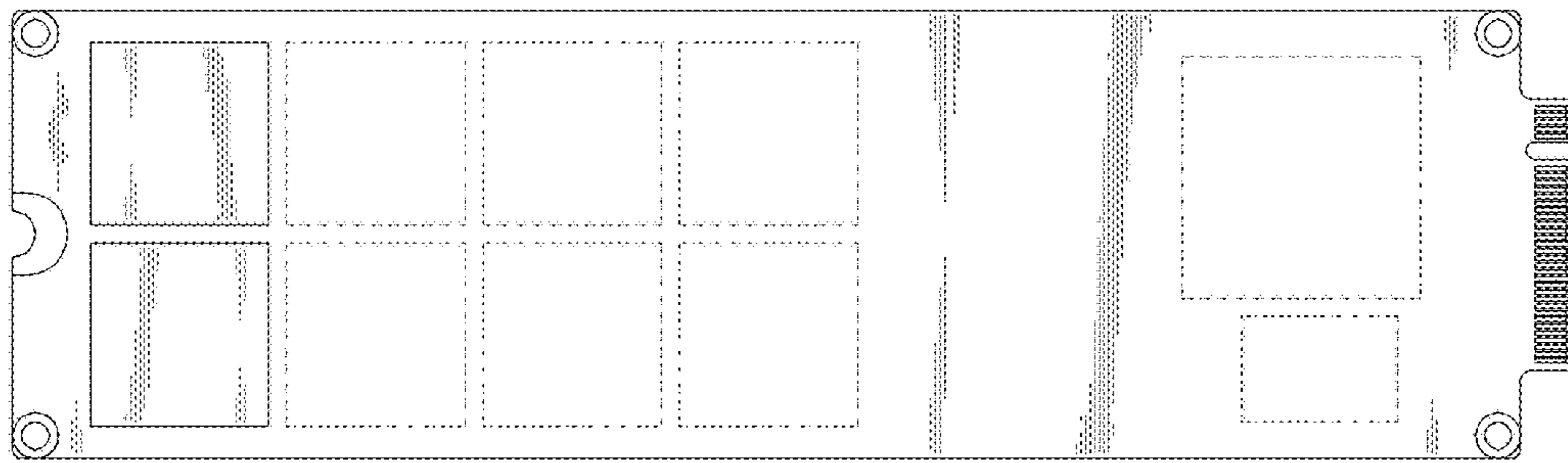


FIG. 4

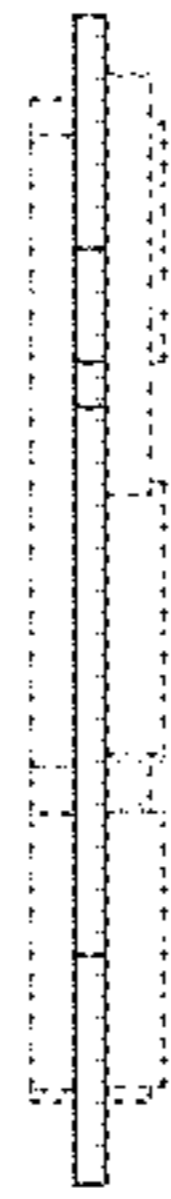


FIG. 5

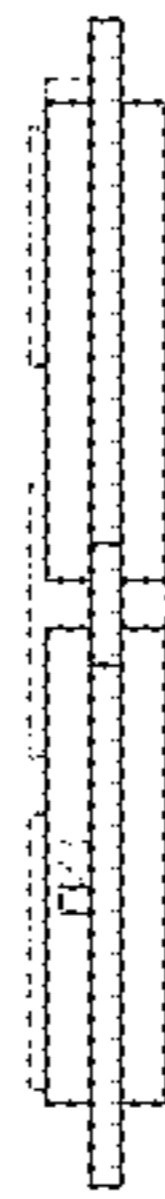




FIG. 6

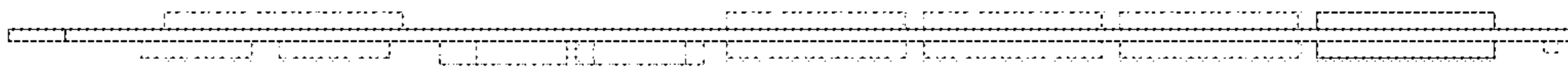


FIG. 7

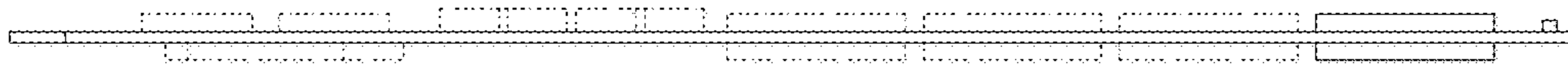


FIG. 8

