



US0D1089807S

(12) **United States Design Patent** (10) **Patent No.:** **US D1,089,807 S**  
**Sakurai et al.** (45) **Date of Patent:** **\*\* Aug. 19, 2025**

(54) **LIGHT-EMITTING ELEMENT MODULE**

FOREIGN PATENT DOCUMENTS

(71) Applicant: **HAMAMATSU PHOTONICS K.K.**,  
Hamamatsu (JP)

JP 1389544 S 6/2010

(72) Inventors: **Naoto Sakurai**, Hamamatsu (JP);  
**Akihiro Oguri**, Hamamatsu (JP); **Yuya Iwazaki**, Hamamatsu (JP)

OTHER PUBLICATIONS

“Lumistrips The new Chip Scale Packaged Flip Chip LED technology”, Lumistrips LED Professional [https://www.lumistrips.com/lumistrips-blog/chip\\_scale\\_leds\\_explained](https://www.lumistrips.com/lumistrips-blog/chip_scale_leds_explained), Mar. 12, 2020.

(Continued)

(73) Assignee: **HAMAMATSU PHOTONICS K.K.**,  
Hamamatsu (JP)

*Primary Examiner* — Clint A Samuel

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

(74) *Attorney, Agent, or Firm* — Faegre Drinker Biddle & Reath LLP

(21) Appl. No.: **29/798,677**

(57) **CLAIM**

The ornamental design for a light-emitting element module as shown and described.

(22) Filed: **Jul. 9, 2021**

(30) **Foreign Application Priority Data**

DESCRIPTION

Jan. 20, 2021 (JP) ..... 2021-001100 D

(51) **LOC (15) Cl.** ..... **26-05**

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

USPC ..... **D26/120**

(58) **Field of Classification Search**

USPC ..... D26/1, 2, 35, 120; D13/180, 181

CPC ..... H01L 33/00; H01L 33/04; H01L 33/08;

H01L 33/10; H01L 33/20; H01L 33/38;

H01L 33/42; H01L 25/167; H01L

25/0753; H01L 27/0248; H01L 27/15;

H01L 27/156; F21S 43/00; H10H 20/80;

H10H 20/811; H10H 20/813; H10H

20/814; H10H 20/819;

(Continued)

FIG. 1 is a front view of a light-emitting element module of the present invention;

FIG. 2 is a rear view thereof;

FIG. 3 is a top plan view thereof;

FIG. 4 is a bottom plan view thereof;

FIG. 5 is a right side view thereof;

FIG. 6 is a left side view thereof;

FIG. 7 is a front, top and right side perspective view thereof;

FIG. 8 is a rear, bottom and left side perspective view thereof;

FIG. 9 is a sectional view thereof with inner mechanism is omitted taken along the line 9-9 in FIG. 3;

FIG. 10 is an enlarged view thereof defined by the line 10-10 in FIG. 7; and,

FIG. 11 is an enlarged sectional view thereof with inner mechanism is omitted defined by the line 11-11 in FIG. 9.

The broken lines show portions of a light-emitting element module that form no part of the claimed design.

The alternate long and short dash lines are merely the boundary lines between the claimed parts and the non-claimed parts.

(56) **References Cited**

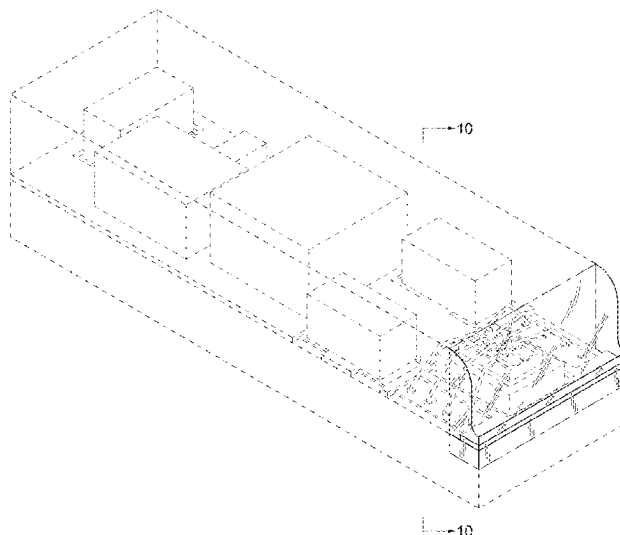
U.S. PATENT DOCUMENTS

6,777,719 B1 8/2004 Fujii

D576,571 S \* 9/2008 Itai ..... D13/180

(Continued)

**1 Claim, 11 Drawing Sheets**



(58) **Field of Classification Search**

CPC .. H10H 20/831; H10H 20/833; H10H 29/14;  
H10H 29/142; H10D 84/60

See application file for complete search history.

(56) **References Cited**

## U.S. PATENT DOCUMENTS

7,491,977 B2 \* 2/2009 Fukasawa ..... H10H 20/856  
257/E33.068  
D590,355 S 4/2009 Tsuchiya et al.  
D590,357 S \* 4/2009 Miyashita ..... D13/180  
D597,502 S \* 8/2009 Ogata ..... D26/1  
D599,303 S 9/2009 Seo et al.  
7,589,354 B2 9/2009 Lin et al.  
D602,884 S 10/2009 Wada et al.  
7,675,087 B1 3/2010 Cheng et al.  
D624,883 S \* 10/2010 Lin ..... D13/180  
D624,886 S 10/2010 Ni et al.  
D626,097 S \* 10/2010 Takeuchi ..... D13/180  
D627,310 S \* 11/2010 Lin ..... D13/180  
D633,449 S \* 3/2011 Lin ..... D13/180  
D640,644 S 6/2011 Tsou  
D640,994 S \* 7/2011 Lin ..... D13/180  
D644,190 S \* 8/2011 Shimizu ..... D13/180  
D649,942 S 12/2011 Shimizu et al.  
D653,222 S \* 1/2012 Fukui ..... D13/180  
D653,628 S 2/2012 Miyashita  
D653,629 S 2/2012 Miyashita  
D656,110 S 3/2012 Shimizu et al.  
D663,703 S 7/2012 Kobayakawa et al.  
D664,104 S \* 7/2012 Hsu ..... D13/180  
D668,623 S \* 10/2012 Hsu ..... D13/180  
D674,965 S \* 1/2013 Lueken ..... D26/120  
D708,154 S \* 7/2014 Hayashi ..... D13/180  
D724,549 S 3/2015 Song  
D731,989 S 6/2015 Huang et al.  
D737,784 S 9/2015 Song  
D741,821 S 10/2015 Song  
D744,965 S 12/2015 Chen et al.  
D763,805 S 8/2016 Huang et al.  
D774,475 S 12/2016 Song  
D774,476 S 12/2016 Song  
D778,846 S 2/2017 Song  
D778,847 S 2/2017 Song  
D783,547 S 4/2017 Bergmann et al.  
D792,639 S \* 7/2017 Deyaf ..... D26/120  
D793,002 S \* 7/2017 Kim ..... D26/120  
D797,359 S \* 9/2017 Deyaf ..... D26/120  
D797,360 S \* 9/2017 Deyaf ..... D26/120  
D797,361 S \* 9/2017 Deyaf ..... D26/120  
D797,362 S \* 9/2017 Deyaf ..... D26/120  
D797,363 S \* 9/2017 Deyaf ..... D26/120

D797,364 S \* 9/2017 Deyaf ..... D26/120  
D797,365 S \* 9/2017 Deyaf ..... D26/120  
D797,366 S \* 9/2017 Deyaf ..... D26/120  
D799,103 S \* 10/2017 Gloor ..... D26/120  
D831,593 S 10/2018 Nishio et al.  
D832,802 S 11/2018 Nishio et al.  
D846,511 S 4/2019 Nishio et al.  
D847,102 S 4/2019 Chen et al.  
D856,946 S 8/2019 Song  
D906,270 S 12/2020 Song  
11,935,910 B2 3/2024 Yang et al.  
D1,022,307 S \* 4/2024 Tomney ..... D26/35  
11,949,050 B2 4/2024 Chen et al.  
12,113,159 B2 10/2024 Park et al.  
12,132,154 B2 10/2024 Lee et al.  
D1,057,674 S \* 1/2025 Bailey ..... D13/180  
D1,060,278 S \* 2/2025 Trinkle ..... D13/180  
D1,060,754 S \* 2/2025 Na ..... D26/1  
D1,062,026 S \* 2/2025 Kao ..... D26/113  
D1,067,205 S \* 3/2025 Hashimoto ..... D13/180  
2006/0214273 A1 9/2006 Wang et al.  
2007/0034855 A1 2/2007 Hwang et al.  
2007/0063213 A1 3/2007 Hsieh et al.  
2007/0096114 A1 5/2007 Aoki et al.  
2008/0303018 A1 12/2008 Kim et al.  
2009/0045428 A1 2/2009 Lin  
2010/0006888 A1 1/2010 Watanabe et al.  
2010/0123145 A1 5/2010 Lee  
2011/0180782 A1 7/2011 Fattal et al.  
2013/0068936 A1 3/2013 Nagai  
2015/0211935 A1 7/2015 Ojima et al.  
2020/0013759 A1 \* 1/2020 Yoo ..... H01L 25/0753  
2021/0005590 A1 1/2021 Ishii et al.  
2021/0183825 A1 6/2021 Wu et al.  
2021/0348739 A1 11/2021 Lee et al.  
2021/0358998 A1 11/2021 Kishimoto  
2021/0398479 A1 \* 12/2021 Kim ..... H01L 25/162  
2022/0052229 A1 2/2022 Min et al.  
2022/0181532 A1 6/2022 Hasunuma  
2022/0279638 A1 9/2022 Iwazaki et al.  
2023/0126339 A1 4/2023 Do  
2023/0411563 A1 12/2023 Do  
2024/0204150 A1 \* 6/2024 Kawano ..... A61K 40/405  
2024/0222565 A1 7/2024 Do

## OTHER PUBLICATIONS

“New LED packaging technology improves performance”, phys.org  
<https://phys.org/news/2012-09-packaging-technology.html>, Sep. 25,  
2012.  
Notice of Allowance issued Jan. 21, 2025 for non-counterpart  
Design U.S. Appl. No. 29/798,678.

\* cited by examiner

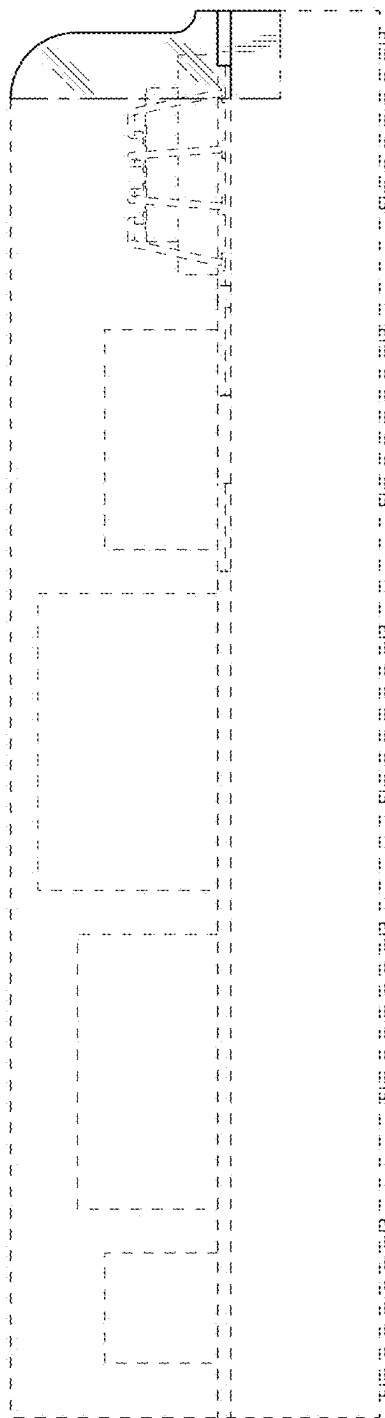


FIG. 1

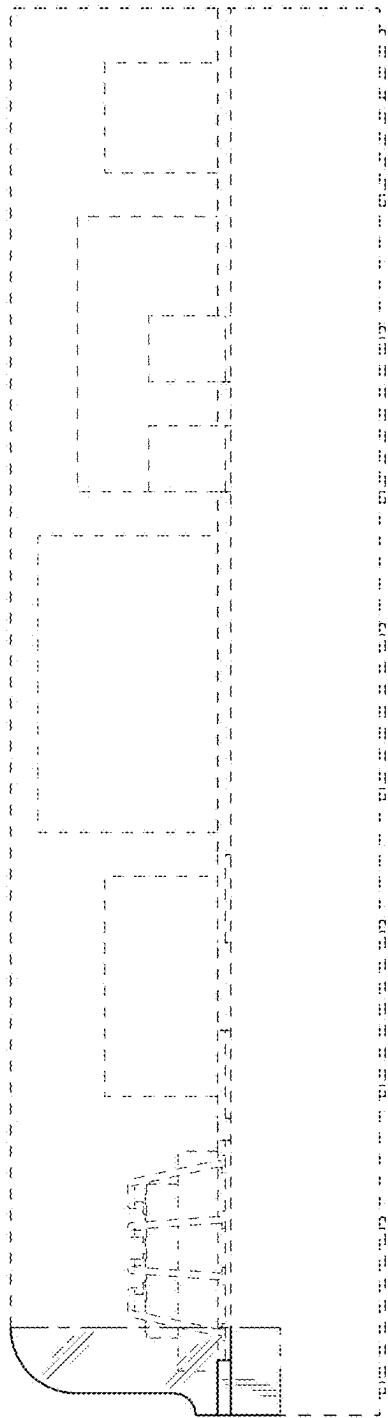


FIG. 2

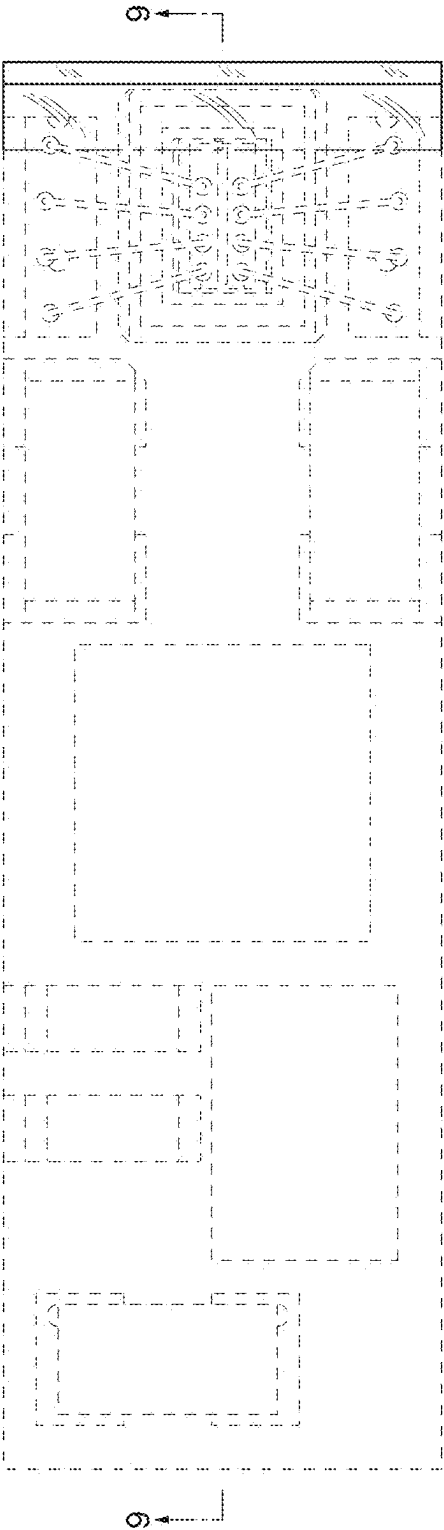


FIG. 3

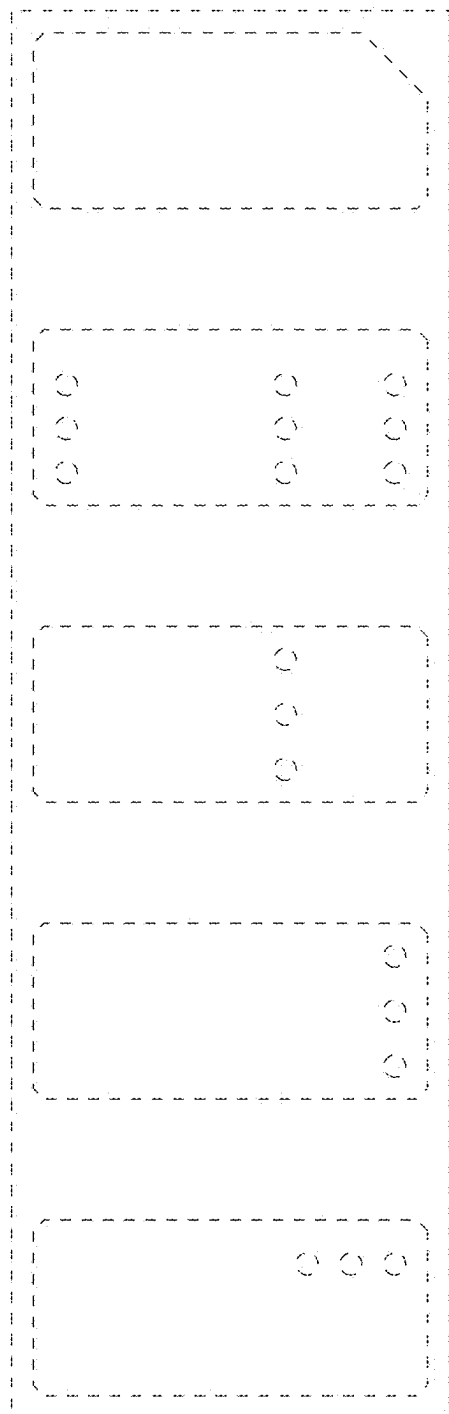


FIG. 4

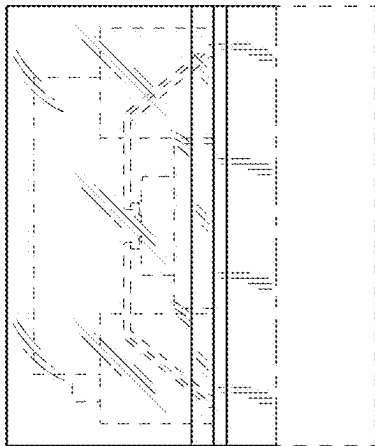


FIG. 5

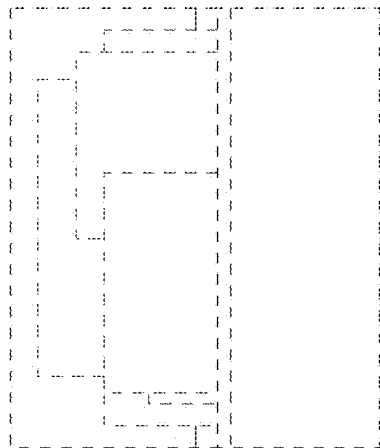


FIG. 6



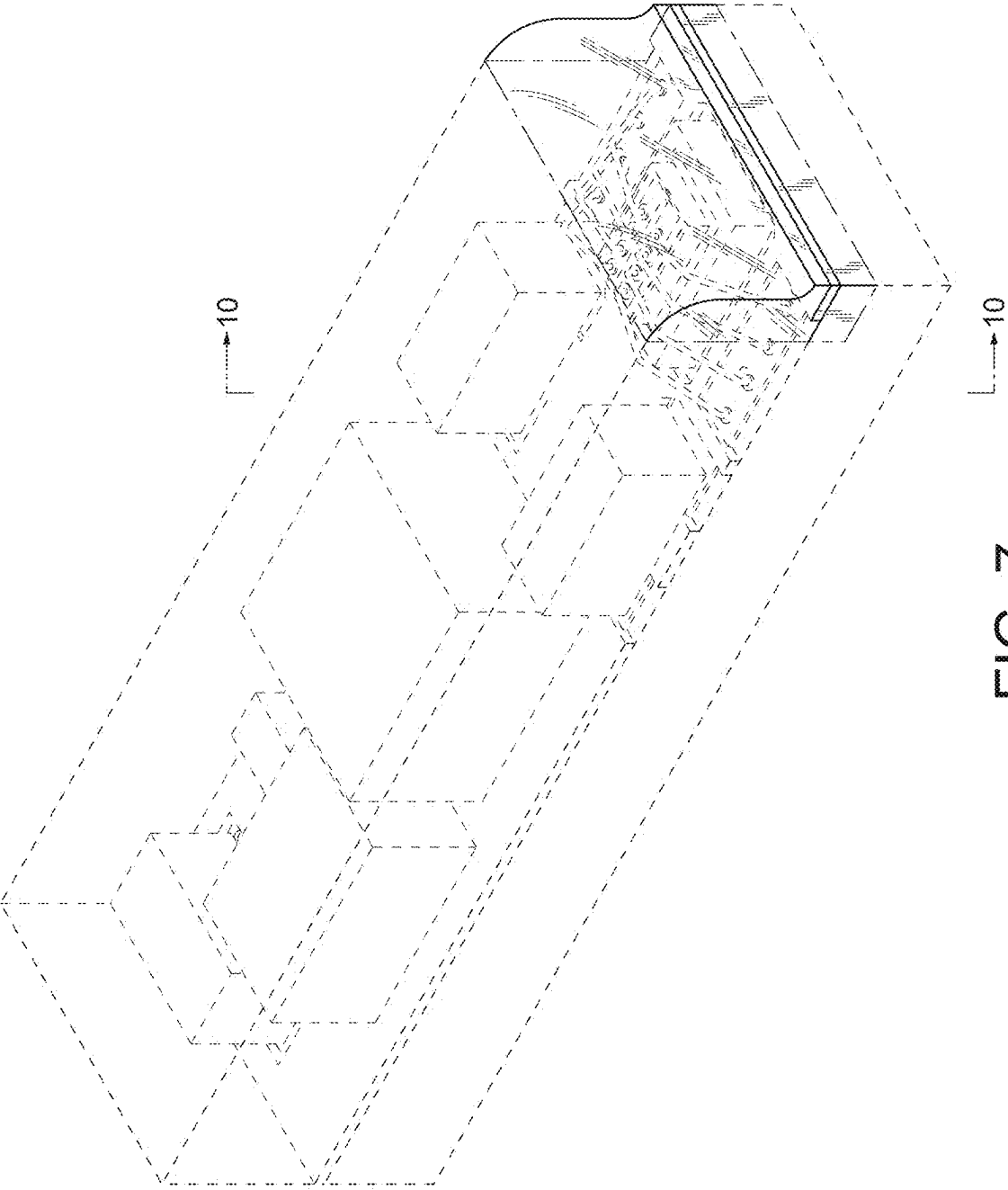


FIG. 7

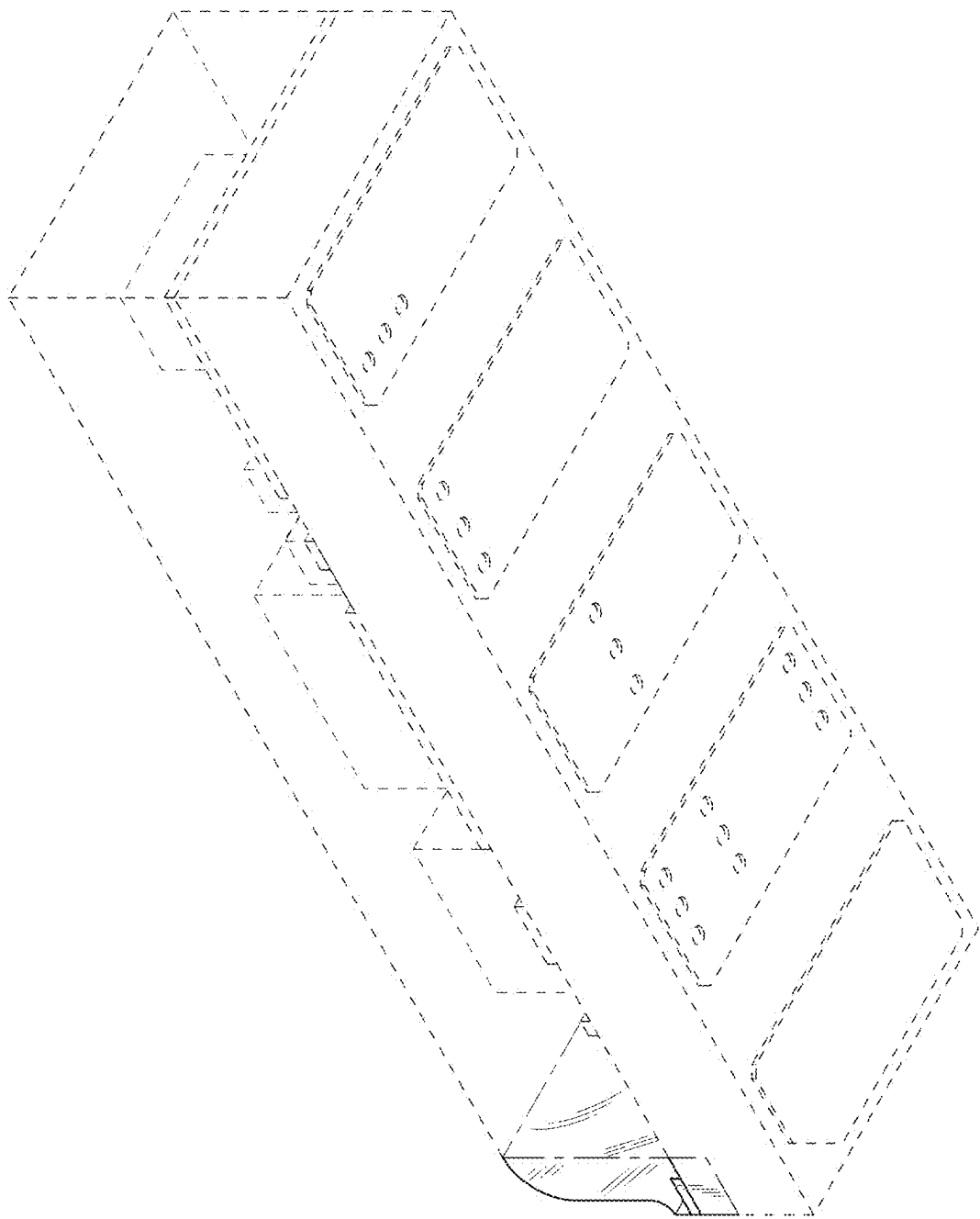


FIG. 8

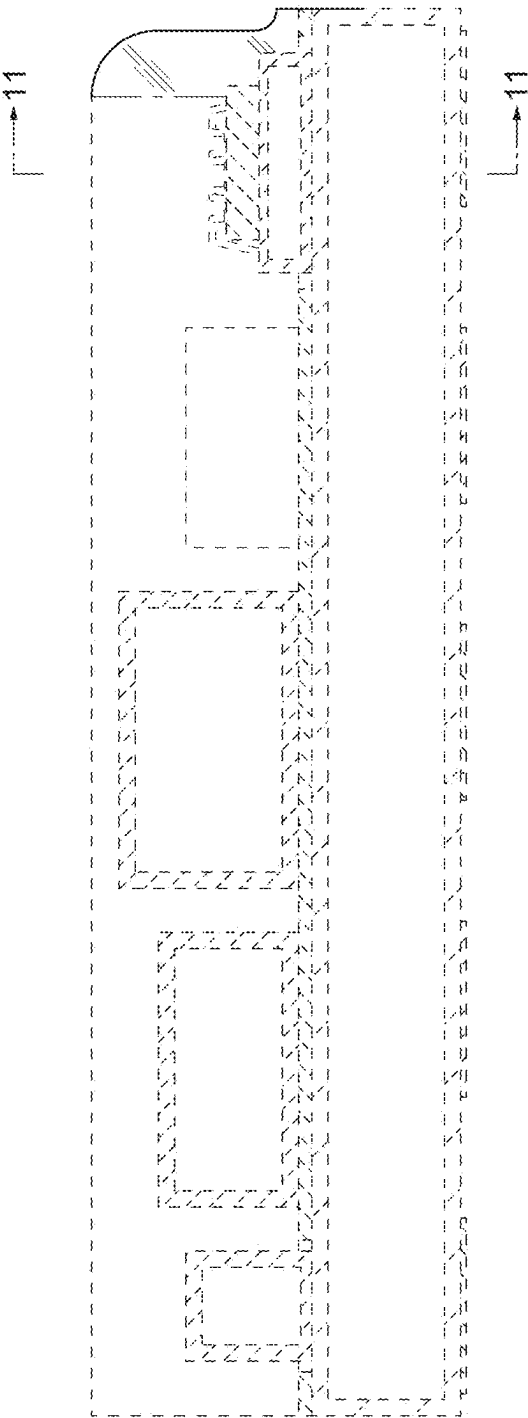


FIG. 9

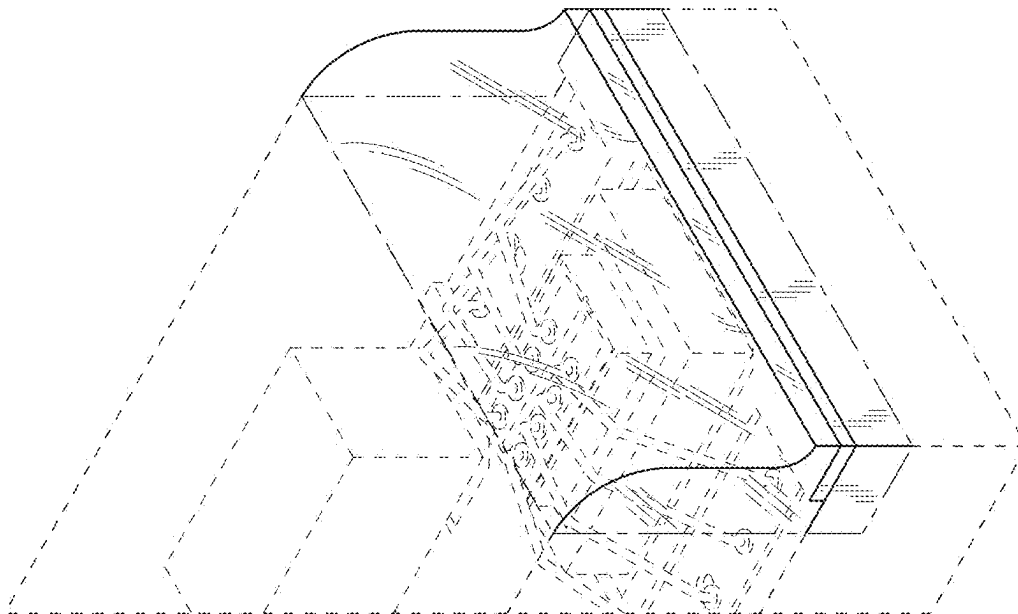


FIG. 10

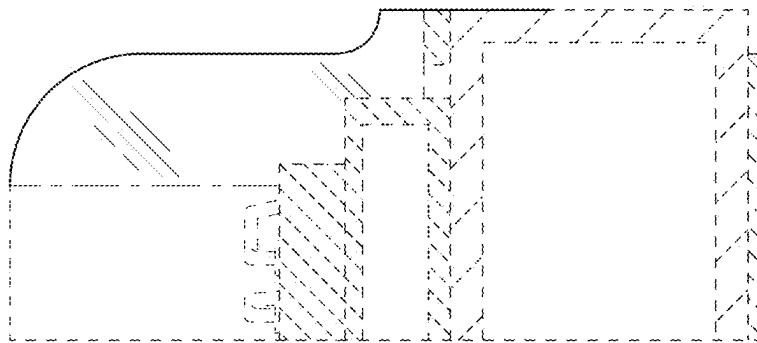


FIG. 11