US00D856461S

(12) United States Design Patent

Wu

(10) Patent No.: US D856,461 S
(45) Date of Patent: ** Aug. 13, 2019

(54) **FIREWORKS DETONATOR**

(71) Applicant: **Titan International Technologies, Ltd.**, Hong Kong (CN)

(72) Inventor: **Kevin Wu**, Hong Kong (CN)

(73) Assignee: **Titan International Technologies, Ltd.**, Hong Kong (CN)

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

(21) Appl. No.: **29/615,565**

(22) Filed: **Aug. 30, 2017**

(51) **LOC (12) Cl.** **22-03**

(52) **U.S. Cl.**
USPC **D22/112**

(58) **Field of Classification Search**
USPC D22/112, 199; D14/203.1, 300
CPC .. F42B 3/121; F42B 3/10; F42B 3/122; F42B 3/125; F42D 1/055; F42D 1/05; F42D 1/045; F42D 1/042
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,627,338	A	5/1997	Poor et al.	
D540,318	S *	4/2007	Wang	D14/300
7,493,859	B2	2/2009	Russell	
D791,123	S *	7/2017	Wieser	D14/300
D797,099	S *	9/2017	Wieser	D14/300
2008/0048910	A1	2/2008	Schultz et al.	
2012/0210897	A1	8/2012	Johnson, Jr.	
2013/0192486	A1	8/2013	Ruggiero	
2015/0041554	A1	2/2015	Aguilera Sanchez	

FOREIGN PATENT DOCUMENTS

CN	203881228	U	10/2014
CN	204421763	U	6/2015
CN	105872251	A	8/2016

(Continued)

OTHER PUBLICATIONS

Short Paper: A Dangerous 'Pyrotechnic Composition': Fireworks, Embedded Wireless and Insecurity-by-Design, Costin et al., Jul. 2014, in Proceedings of the ACM Conference on Security and Privacy in Wireless and Mobile Networks, Oxford, UK.

(Continued)

Primary Examiner — Michael A. Pratt
(74) *Attorney, Agent, or Firm* — Womble Bond Dickinson (US) LLP

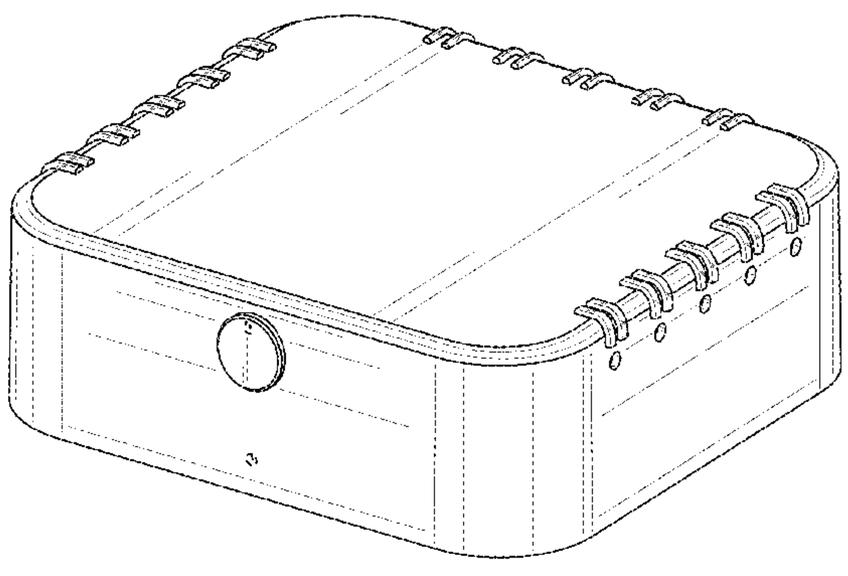
(57) **CLAIM**

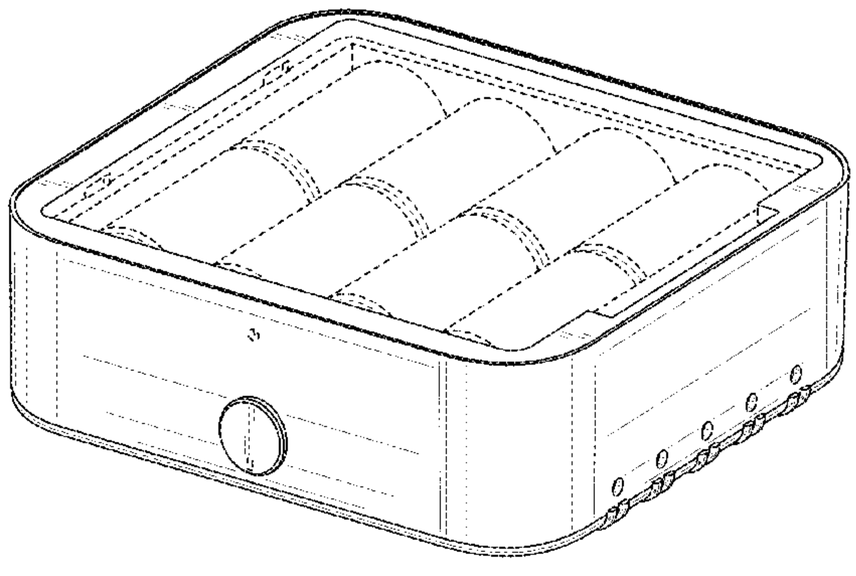
The ornamental design for a fireworks detonator, as shown and described.

DESCRIPTION

FIG. **1** is a perspective view of a fireworks detonator.
FIG. **2** is a front elevation view of the fireworks detonator of FIG. **1**.
FIG. **3** is a rear elevation view of the fireworks detonator of FIG. **1**.
FIG. **4** is a left elevation view of the fireworks detonator of FIG. **1**.
FIG. **5** is a right elevation view of the fireworks detonator of FIG. **1**.
FIG. **6** is a top plan view of the fireworks detonator of FIG. **1**.
FIG. **7** is a bottom plan view of the fireworks detonator of FIG. **1**; and,
FIG. **8** is a bottom perspective view of the fireworks detonator FIG. **1**.
The views of the fireworks detonator not shown form no part of the design of the design of this claim. The dashed lines in the figures show optional features and do not form part of the claimed design.

1 Claim, 6 Drawing Sheets





(56) **References Cited**

FOREIGN PATENT DOCUMENTS

EP	0429229	A2	5/1991
WO	WO 0122180	A1	3/2001

OTHER PUBLICATIONS

MK802 and IPhone: a fireworks remote control. Internet of Things and Tiny PC, Aug. 2, 2012, available at http://www.yoctopuce.com/EN/article/mk802-and-iphone-a-fireworks-remote-control.

Internet Control Firing System OmegaFire—RFRemotech Fireworks Firing System, Guangzhou Aifusheng Electronic Technology Co., Ltd, May 20, 2016, available at http://www.rfremotech.com/OmegaFire.html.

International Search Report and Written Opinion for related PCT application No. PCT/IB2017/001055, dated Dec. 25, 2017.

* cited by examiner

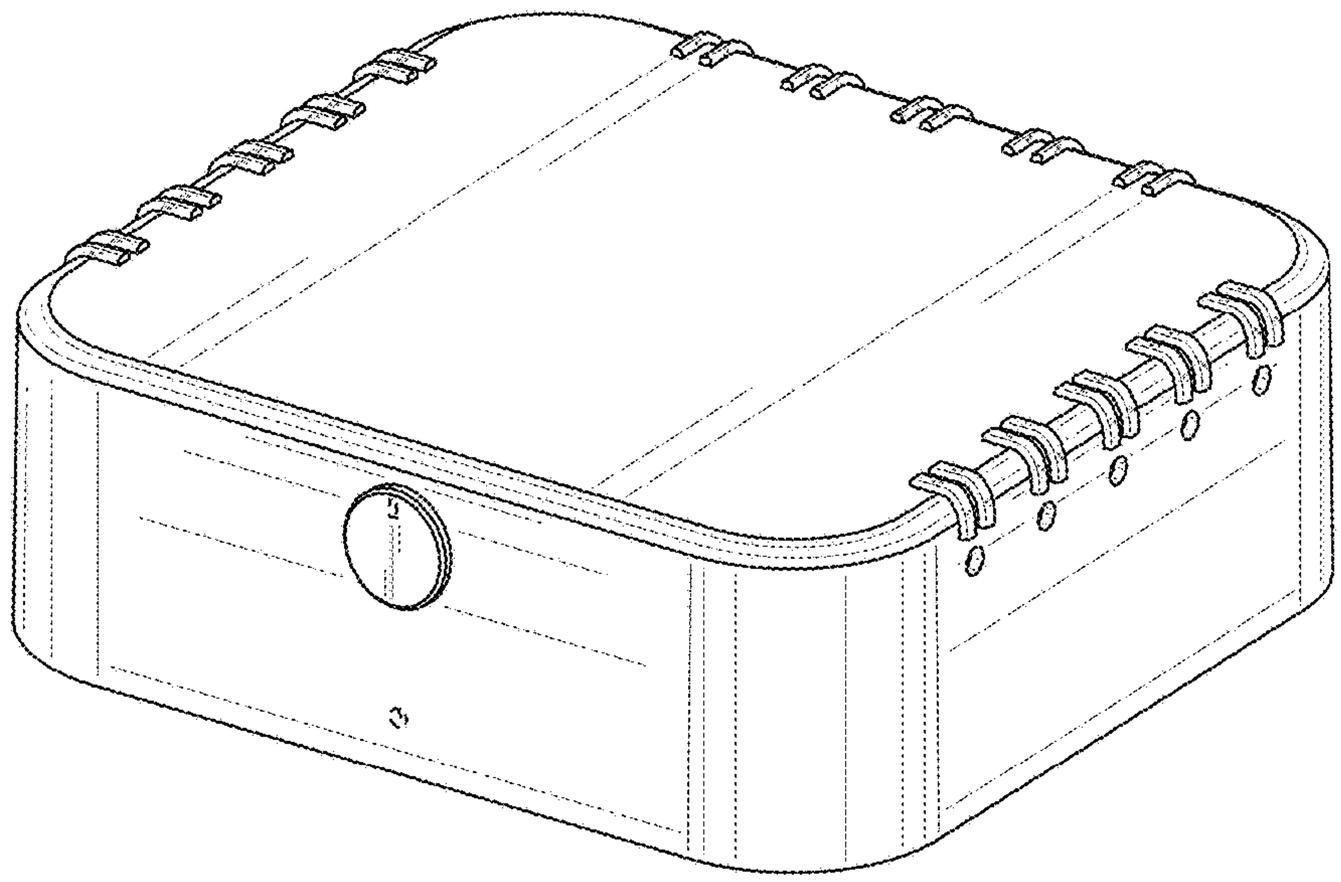


FIG. 1

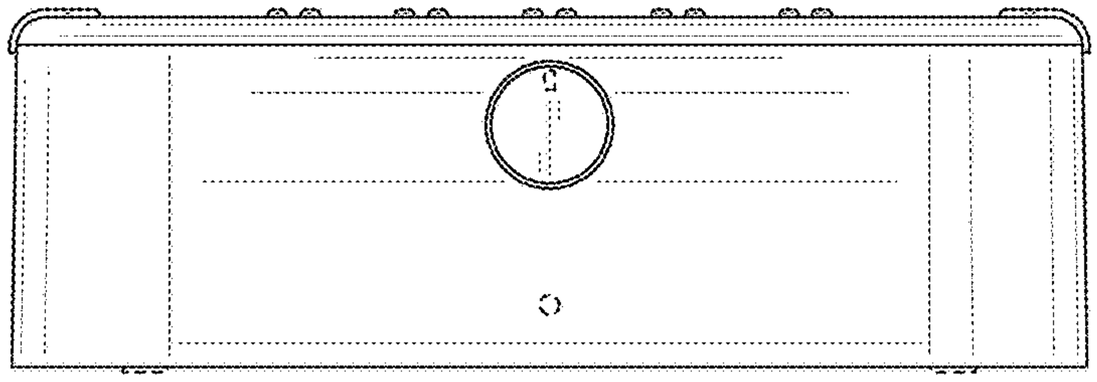


FIG. 2

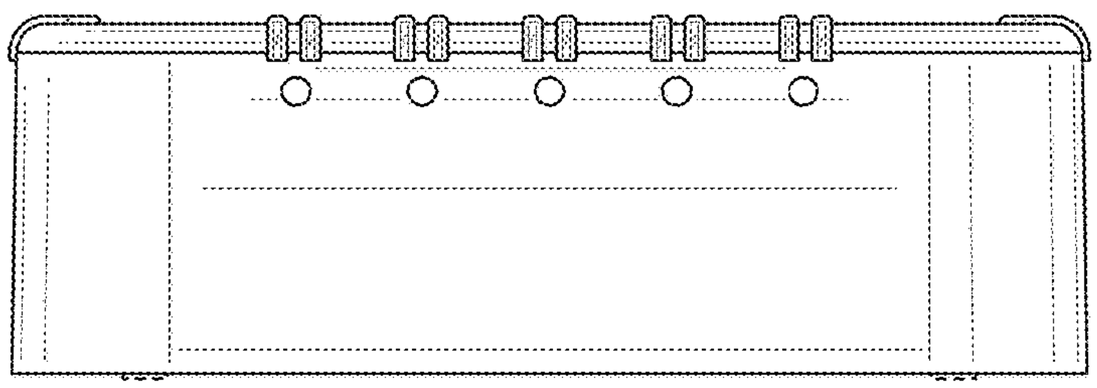


FIG. 3

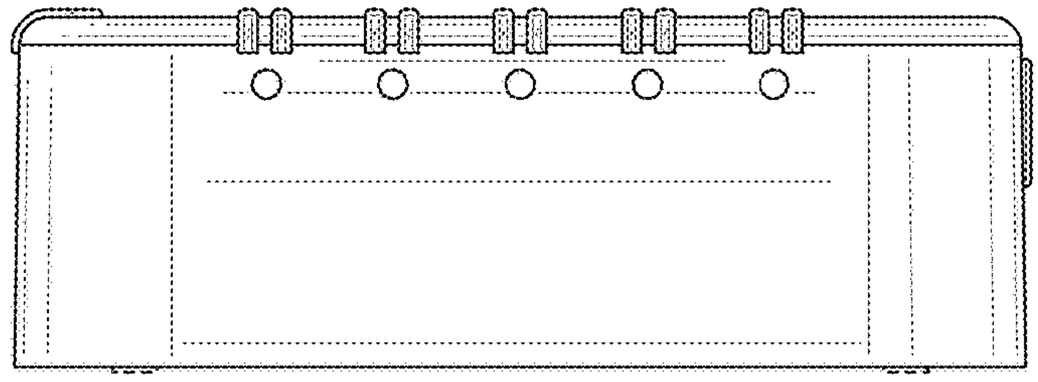


FIG. 4

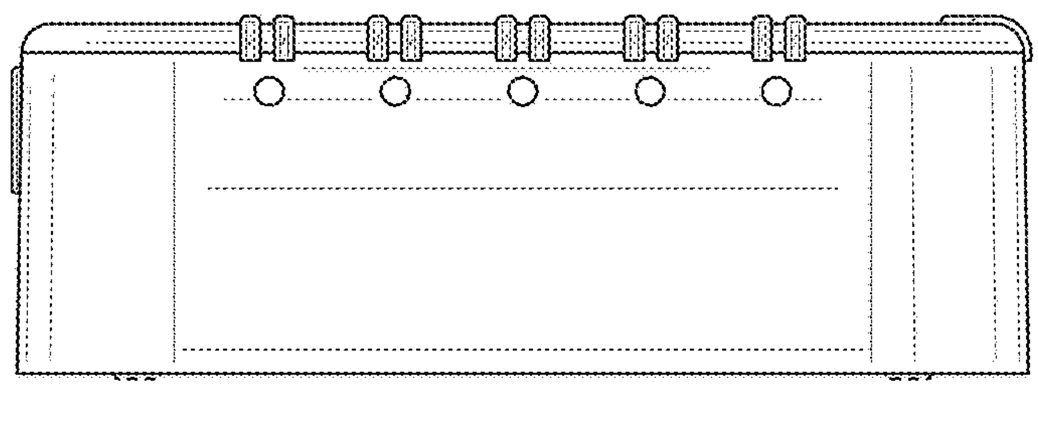


FIG. 5

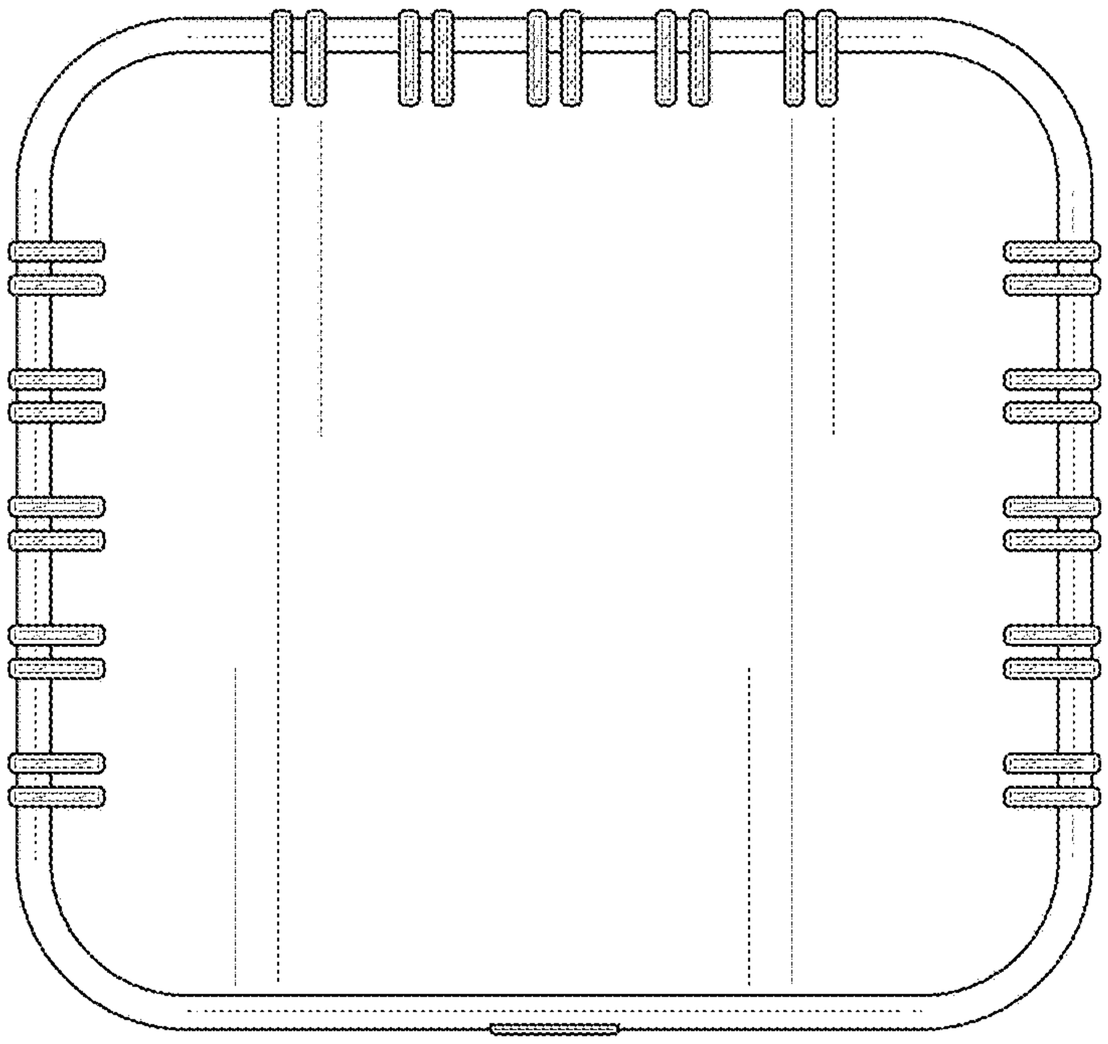


FIG. 6

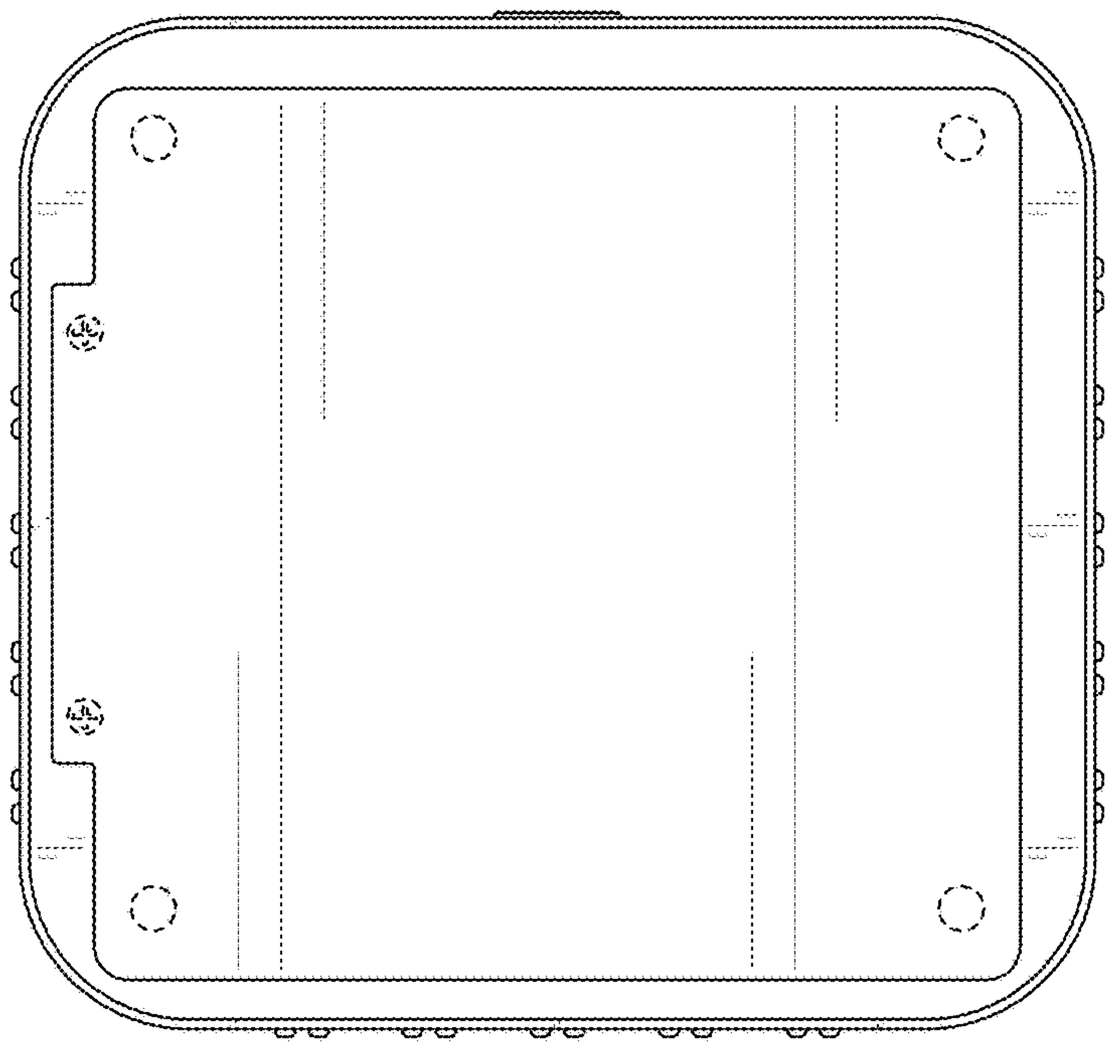


FIG. 7

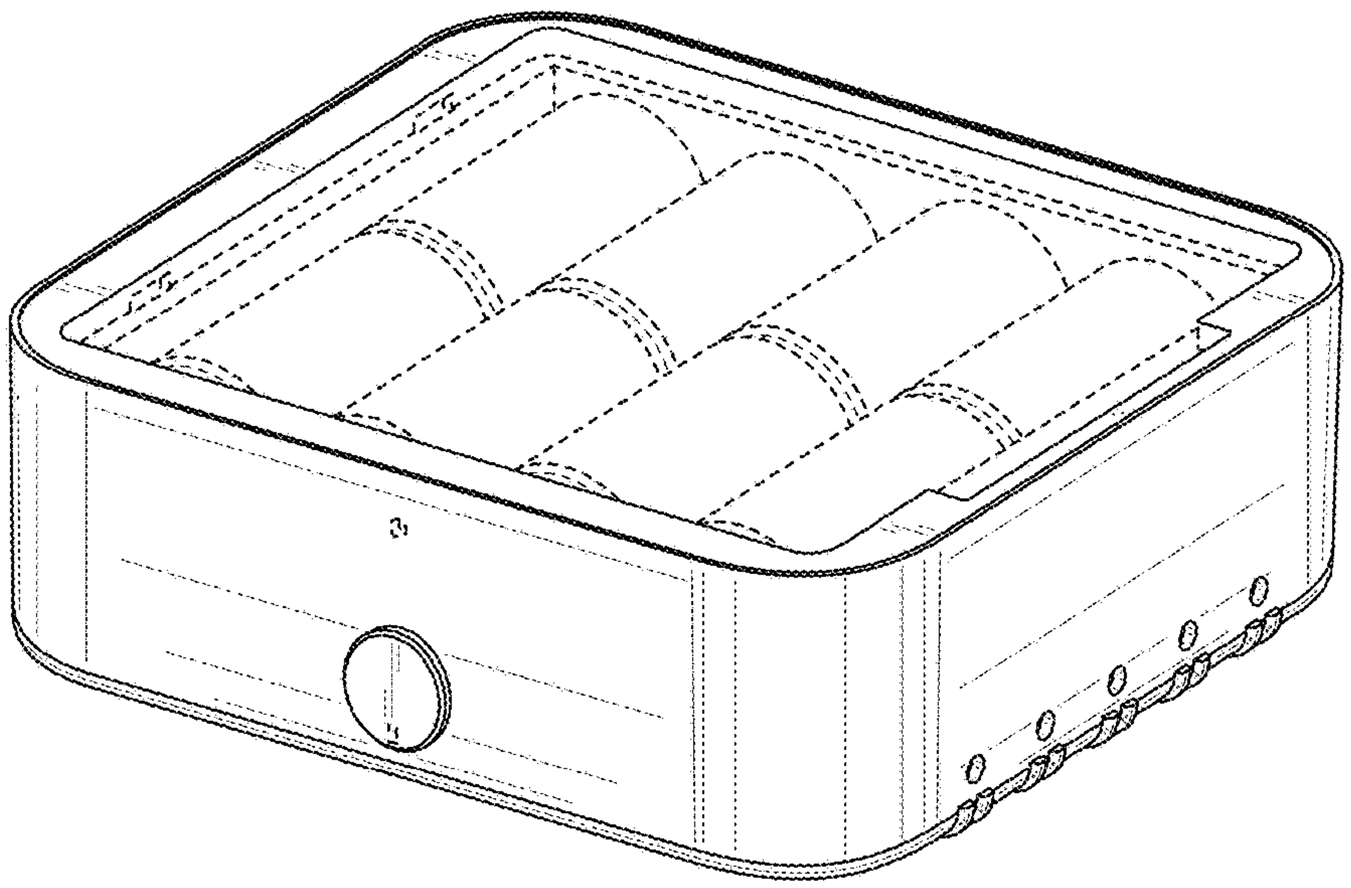


FIG. 8