

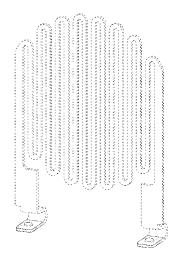
(12) United States Design Patent (10) Patent No.:

Hourmand et al.

US D1,089,126 S

(45) **Date of Patent:** ** Aug. 19, 2025

(54)	SET OF ELECTRICAL CONTACT PADS		4/184; H01R 4/02; H01R 4/2425; H01R				
(71)	Applicant:	Altria Client Services LLC, Richmond, VA (US)		4/2445; H01R 4/48; H01R 12/585; C25D 5/48; C25D 7/04; Y10T 29/49204; Y10T 29/49174; Y10T 29/49185; Y10T			
(72)	Inventors:	Yannick Hourmand, Haslingfield (GB); Gary Broadfield, Stratford-upon-Avon (GB)	29/49188; Y10S 439/93; G01R 1/073; G01R 1/067; G01R 1/07342; G01R 1/07314; G01R 1/06711; G01R 1/06738; G01R 1/06727; G01R 1/06716; G01R				
(73)	Assignee:	Altria Client Services LLC, Richmond, VA (US)	S	1/06733; G01R 3/00 See application file for complete search history.			
(**)	Term:	15 Years	(56)			Referen	ces Cited
(21)	Appl. No.	: 29/972,485		U.S. PATENT DOCUMENTS			
(22)	Filed:	Nov. 11, 2024	4,1 4,8	59,685 82,928 31,240	A A	1/1980 5/1989	
	Rel	ated U.S. Application Data	5,7	82,646	A *	7/1998	Broadfield H02J 7/0045 439/346
(62)		f application No. 29/859,076, filed on Nov. ow Pat. No. Des. 1,051,071.	6,9	81,874 74,935 56,691	B2	12/2005	Ireland et al. O'Grady Shiu D13/133
(51)	. ,	Cl. 13-03	D5	68,249 90,303	S *	5/2008	Wu D13/133 Reynolds et al.
(52)	U.S. Cl. USPC	D13/154	7,7	48,322 44,186	B1	7/2010	Reynolds et al. Qu
(58)	Field of C	Classification Search	D6	61,793	S	6/2012	Spasojevic et al.
	USPC	D13/118, 120, 123, 133, 146, 149, 184,		61,794 70,372		6/2012	Spasojevic et al. Inagawa et al.
		D13/199, 110, 119, 147, 151, 152, 154, D13/156, 158, 160, 162, 162.1, 173, 177,		48,310			Vazquez E05B 85/26 292/216
		D13/178, 182	D6	87,535	S	8/2013	Inagawa et al.
	CPC	H01R 13/432; H01R 13/193; H01R 4/18;	10,2	92,434	B2		Brinkley et al.
		H01R 13/4223; H01R 13/11; H01R		33,582			Bernauer et al.
		13/111; H01R 13/642; H01R 43/18;		79,047			Kato D13/154 Ruscio et al.
		H01R 13/03; H01R 43/16; H01R 13/187;		95,563 81,151			Gavrielov et al.
		H01R 4/723; H01R 4/021; H01R 13/33;		11,038		2/2021	
		H01R 12/00; H01R 13/20; H01R 43/20;		51,366		6/2021	Batista et al.
		H01R 4/183; H01R 4/185; H01R 4/10;		53,937			Batista et al.
		H01R 4/62; H01R 11/22; H01R 13/02;		84,954			Courbat et al.
		H01R 13/114; H01R 13/50; H01R 13/52;		53,001 50,665			Atkins et al. Hermiz et al.
		H01R 43/048; H01R 13/04; H01R		63,681			Gavrielov et al.
		13/6275; H01R 12/724; H01R 12/7088;		69,755			Hatton et al.
		H01R 24/00; H01R 24/60; H01R 24/62;		69,756			Hatton et al.
		H01R 24/86; H01R 13/428; H01R		69,757			Hatton et al.
		13/2435: H01R 13/2457: H01R 13/2492:		45,758		9/2022	Guo et al.



H01R 13/2442; H01R 13/41; H01R

13/2435; H01R 13/2457; H01R 13/2492;

2005/0020142 4.1	1/2005	Daga
2005/0020143 A1		Ross
2007/0275572 A1		Williams et al.
2010/0167123 A1		
2015/0136156 A1	5/2015	Liu
2020/0046031 A1	2/2020	Bernauer et al.
2020/0107585 A1	4/2020	Atkins et al.
2020/0152951 A1	5/2020	O'Neil
2020/0229510 A1	7/2020	Griscik et al.
2021/0227638 A1	7/2021	DePiano et al.
2021/0337868 A1	11/2021	Mazur et al.
2021/0378060 A1	12/2021	Batista et al.
2021/0392951 A1	12/2021	Blackmon et al.
2021/0400771 A1	12/2021	Courbat et al.
2022/0175036 A1	6/2022	Hazani et al.
2022/0202084 A1	6/2022	Blackmon
2022/0211106 A1	7/2022	Blackmon
2022/0225671 A1	7/2022	Blackmon
2022/0229453 A1	7/2022	Blackmon et al.
2022/0256923 A1	8/2022	Aggarwal
2022/0279856 A1	9/2022	
2022/0287361 A1	9/2022	Kim et al.
2022/0322751 A1	10/2022	Chan et al.
2022/0330616 A1	10/2022	Guo
2022/0339373 A1	10/2022	De Geyter et al.
2022/0410669 A1	12/2022	Ramesh et al.
2023/0249360 A1*	8/2023	Dailey B25J 11/0095
		294/213
		277/213

FOREIGN PATENT DOCUMENTS

CN	114847532 A	8/2022
EP	1517408 A1	3/2005
EP	1127356 B1	8/2011
EP	3119218 B1	11/2019
EP	3622839 A1	3/2020
EP	3273810 B1	4/2021
EP	2967148 B1	9/2021
EP	3915412 A1	12/2021
EP	3997992 A1	5/2022
EP	4018859 A1	6/2022
EP	4035541 A1	8/2022
EP	4046505 A1	8/2022
EP	4074197 A1	10/2022
EP	4079174 A1	10/2022
JP	1713507 S	4/2022
WO	2015/117701 A1	8/2015
WO	2019068489 A1	4/2019
WO	2020038780 A1	2/2020
WO	2020/075139 A1	4/2020
WO	2020154079 A1	7/2020
WO	2020245127 A1	12/2020
WO	2021123017 A1	6/2021
WO	2021228157 A1	11/2021
WO	2021240385 A1	12/2021
WO	2022101454 A1	5/2022
WO	2022110731 A1	6/2022
WO	2022/154862 A1	7/2022
WO	2022146581 A1	7/2022
WO	2022146584 A1	7/2022
WO	2022157084 A1	7/2022
WO	2022161254 A1	8/2022
WO	2022206052 A1	10/2022

OTHER PUBLICATIONS

Elon electric metal contact, posted Oct. 9, 2024 [online], [retrieved Mar. 28, 2025]. Retrieved from internet, https://elonelec.com/the-advantages-of-silver-electrical-contacts/ (Year: 2024).*

Heyiarbeit battery springs contact plate, posted Mar. 12, 2021 [online], [retrieved Mar. 28, 2025]. Retrieved from internet, https://www.amazon.com/Heyiarbeit-Nickeling-Positive-Batteries-Replacement/dp/B08YRTFJRJ?th=1 (Year: 2021).*

Keystone battery contact, posted Nov. 9, 2021 [online], [retrieved Mar. 28, 2025]. Retrieved from internet, https://www.digikey.com/en/products/detail/keystone-electronics/1011-1/18876496?gclsrc=aw.ds&&utm_adgroup=&utm_source=google&utm_medium=cpc

&utm_campaign=PMax%20Shopping_Product_Low%20ROAS% 20Categories&utm_ (Year: 2021).**

RS contact assembly, posted Oct. 20, 2021 [online], [retrieved Mar. 28, 2025]. Retrieved from internet, https://rselectro.in/product-description/contact-assembly/5 (Year: 2021).*

International Preliminary Report on Patentability dated Mar. 1, 2025 issued in international patent application No. PCT/US2023/074559. International Preliminary Report on Patentability dated Mar. 1, 2025 issued in international patent application No. PCT/US2023/074561. International Preliminary Report on Patentability dated Mar. 1, 2025 issued in international patent application No. PCT/US2023/074563. Office Action dated Apr. 7, 2025 issued in U.S. Appl. No. 17/982,138. Notice of Reasons for Rejection dated Oct. 3, 2023 issued in related Japanese Design Application No. 2023-009217.

Notice of Reasons for Rejection dated Oct. 3, 2023 issued in related Japanese Design Application No. 2023-009216.

Notice of Reasons for Rejection dated Oct. 3, 2023 issued in related Japanese Design Application No. 2023-009218.

Notice of Reasons for Rejection dated Jan. 16, 2024 issued in related Japanese Design patent application No. 2023-009303.

Notice of Reasons for Rejection dated Jan. 16, 2024 issued in related Japanese Design patent application No. 2023-009304.

Notice of Reasons for Rejection dated Jan. 16, 2024 issued in related Japanese Design patent application No. 2023-009305. International Search Report and Written Opinion dated Jan. 16,

International Search Report and Written Opinion dated Jan. 16, 2024 issued in related international patent application No. PCT/US2023/074559.

076 Alibaba NPL, posted Jun. 11, 2024 [online], [retrieved Jun. 11, 2024], Retrieved from internet, https://www.alibaba.com/product-detail/electrical-brass-socket-switch-stamping-contact_1600477147105. html (Year: 2024).

076 Digikey NPL, posted Jun. 11, 2024 [online], [retrieved Jun. 11, 2024], Retrieved from internet, https://www.digikey.com/en/products/detail/V keystone-electronics/1016-1/5118842?utm_adgroup=&utm_source=google&utm_medium=cpc&utm_camp%E2%80%A6 (Year: 2024).

076 Grainger NPL, posted Jun. 11, 2024 [online], [retrieved Jun. 11, 2024], Retrieved from internet, https://www.grainger.com/product/1H572? w gucid=N:N:PS:Paid:GGL:CSM-2293:99F1R6:20501231 &gad_source=1&gclid=CjwKCAjw65-zBhBkEiwAjrqRMENAnsvtUkUQLaCL4pOG02iWF5ug1S661SQG3PgxhjQHaTzikYYuJxoCY_cQAvD_BwE&gclsrc=aw.ds (Year: 2024).

076 Checon NPL, posted Dec. 8, 2023 [online], [retrieved Jun. 11, 2024], Retrieved from internet, https://www.checon.com/electrical-contacts (Year: 2023).

Office Action dated Aug. 14, 2024 issued in Canadian patent application No. 221222.

Office Action dated Apr. 18, 2025 issued in U.S. Appl. No. 18/053,149.

* cited by examiner

Primary Examiner — George D. Kirschbaum

Assistant Examiner — Denis Houyoux

(74) Attorney, Agent, or Firm — Harness, Dickey & Pierce, P.L.C.

(57) CLAIM

The ornamental design for set of electrical contact pads as shown and described.

DESCRIPTION

FIG. 1 is a top right, front perspective view of a set of electrical contact pads according to our new design.

FIG. 2 is a top left, rear perspective view of the set of electrical contact pads of FIG. 1.

FIG. 3 is a bottom right, front perspective view of the set of electrical contact pads of FIG. 1.

FIG. 4 is a bottom left, rear perspective view of the set of electrical contact pads of FIG. 1.

FIG. 5 is a front view of the set of electrical contact pads of FIG. 1.

FIG. 6 is a rear view of the set of electrical contact pads of FIG. 1

FIG. 7 is a first side view of the set of electrical contact pads of FIG. 1

FIG. 8 is a second side view of the set of electrical contact pads of FIG. 1.

FIG. 9 is a top view of the set of electrical contact pads of FIG. 1.

FIG. 10 is a bottom view of the set of electrical contact pads of FIG. 1.

FIG. 11 is a top right, front perspective view of an set of electrical contact pads according to another new design. The set of electrical contact pads of FIG. 11 is symmetrical such that the top left, front perspective view will be a mirror image of the top right, front perspective view.

FIG. 12 is a top left, rear perspective view of the set of electrical contact pads of FIG. 11. The set of electrical contact pads of FIG. 11 is symmetrical such that the top right, rear perspective view will be a mirror image of the top left, rear perspective view.

FIG. 13 is a bottom right, front perspective view of the set of electrical contact pads of FIG. 11. The set of electrical contact pads of FIG. 11 is symmetrical such that the bottom left, front perspective view will be a mirror image of the bottom right, front perspective view.

FIG. 14 is a bottom left, rear perspective view of the set of electrical contact pads of FIG. 11. The set of electrical contact pads of FIG. 11 is symmetrical such that the bottom right, rear perspective view will be a mirror image of the bottom left, rear perspective view.

FIG. 15 is a front view of the set of electrical contact pads of FIG. 11.

FIG. 16 is a rear view of the set of electrical contact pads of FIG. 11.

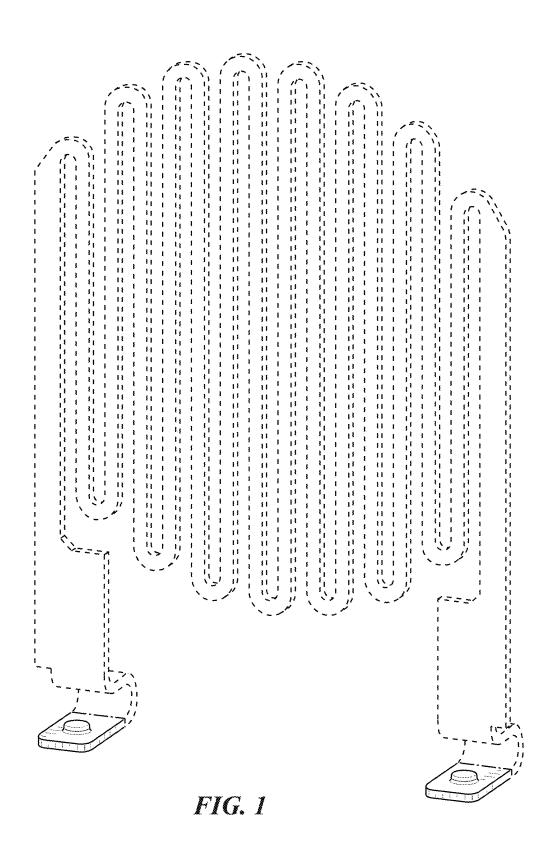
FIG. 17 is a first side view of the set of electrical contact pads of FIG. 11.

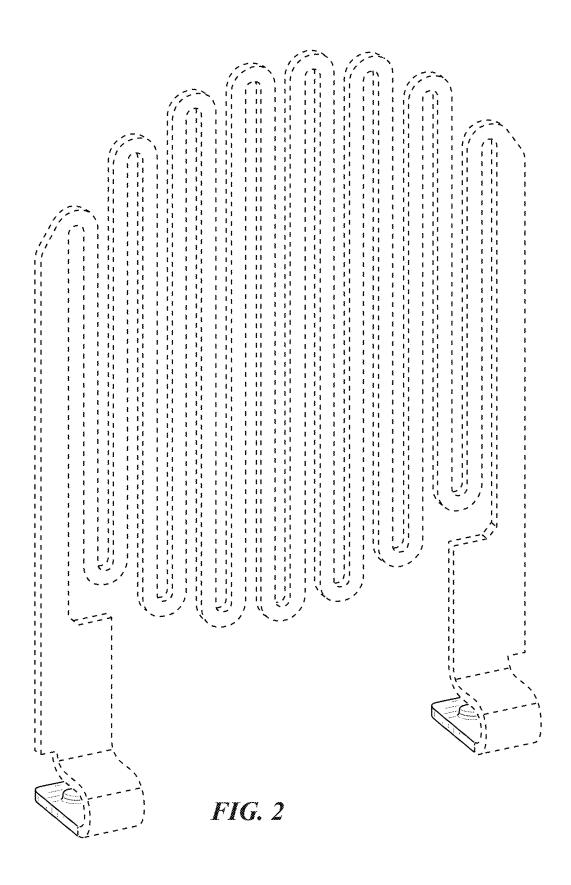
FIG. 18 is a second side view of the set of electrical contact pads of FIG. 11.

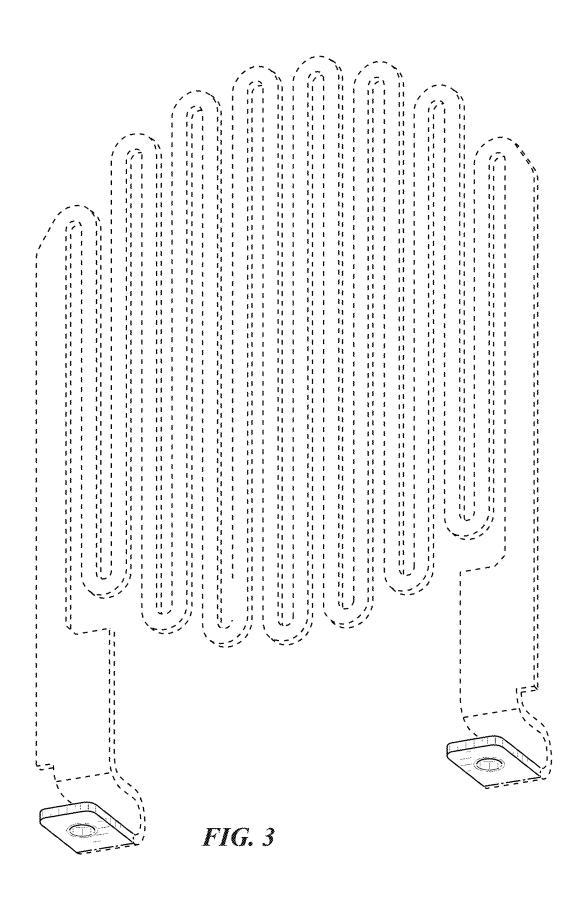
FIG. 19 is a top view of the set of electrical contact pads of FIG. 11; and,

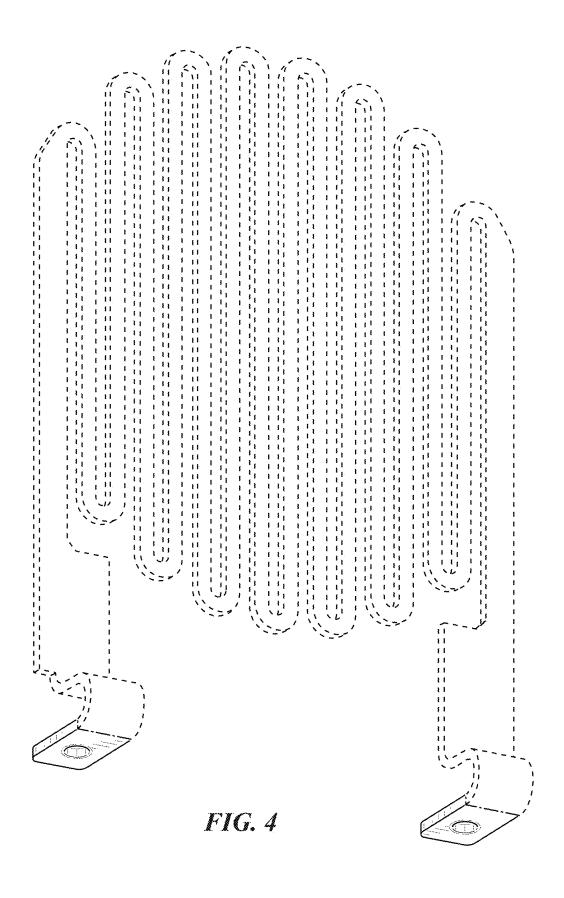
FIG. 20 is a bottom view of the set of electrical contact pads of FIG. 11.

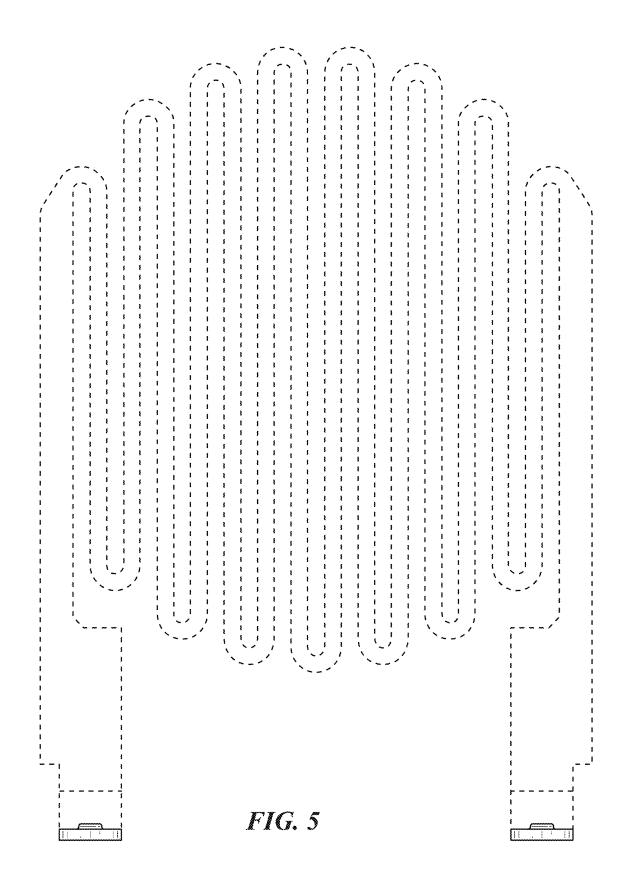
1 Claim, 20 Drawing Sheets

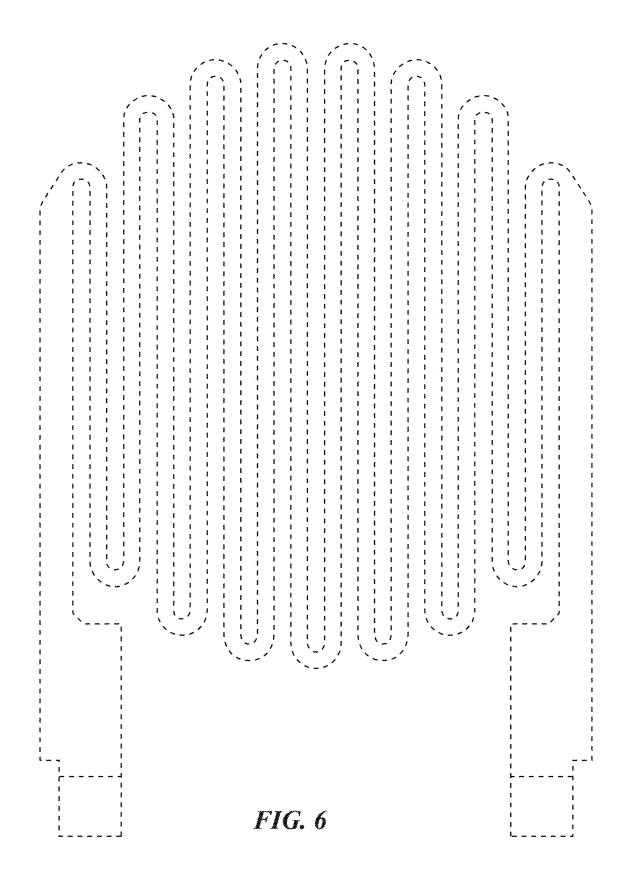












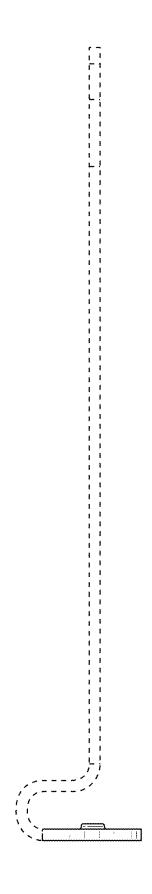


FIG. 7

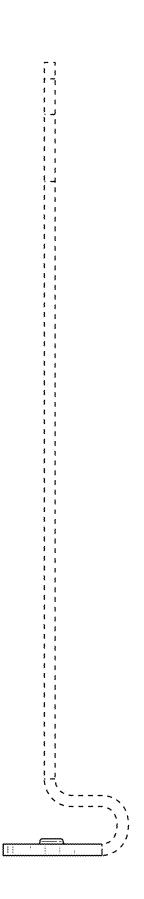


FIG. 8

US D1,089,126 S

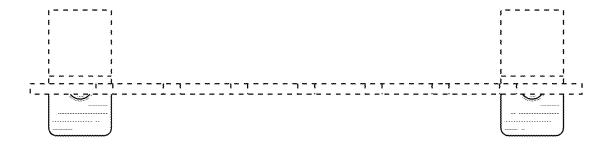


FIG. 9

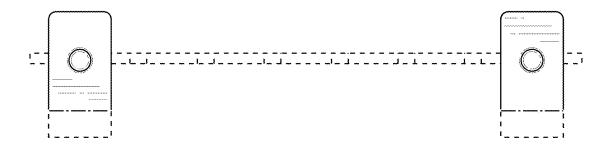


FIG. 10

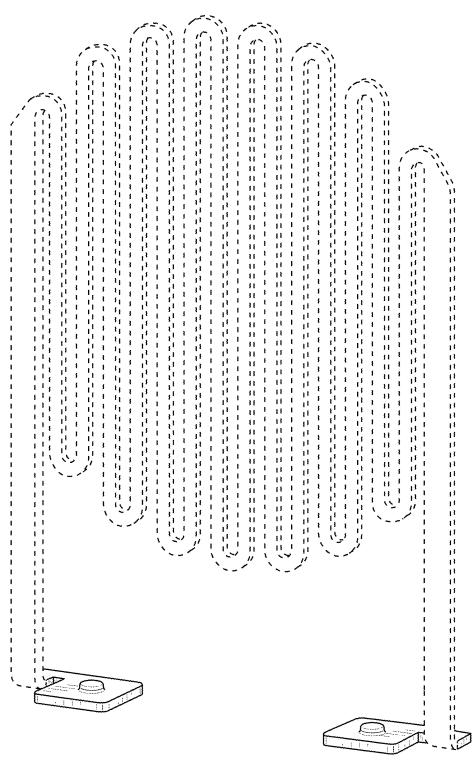


FIG. 11

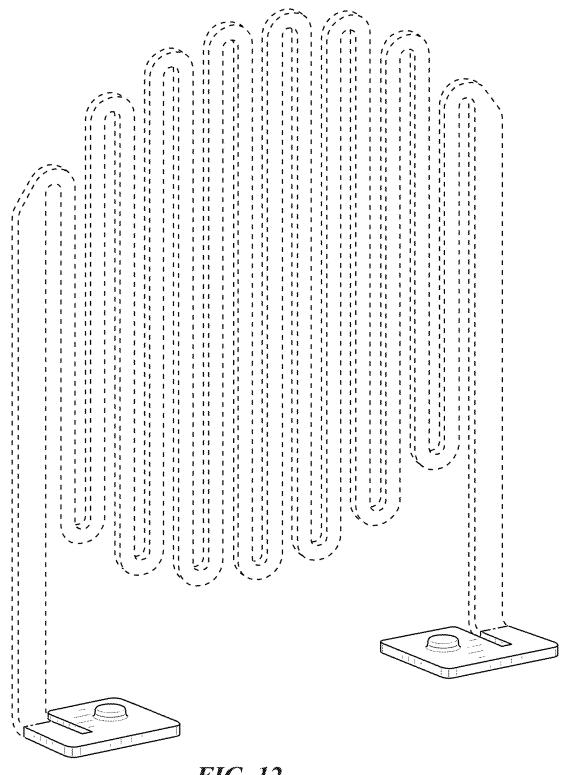


FIG. 12

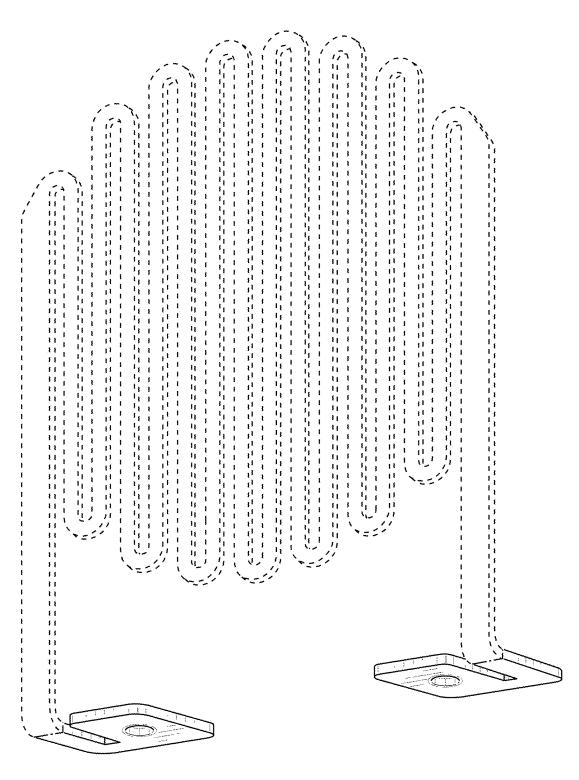


FIG. 13

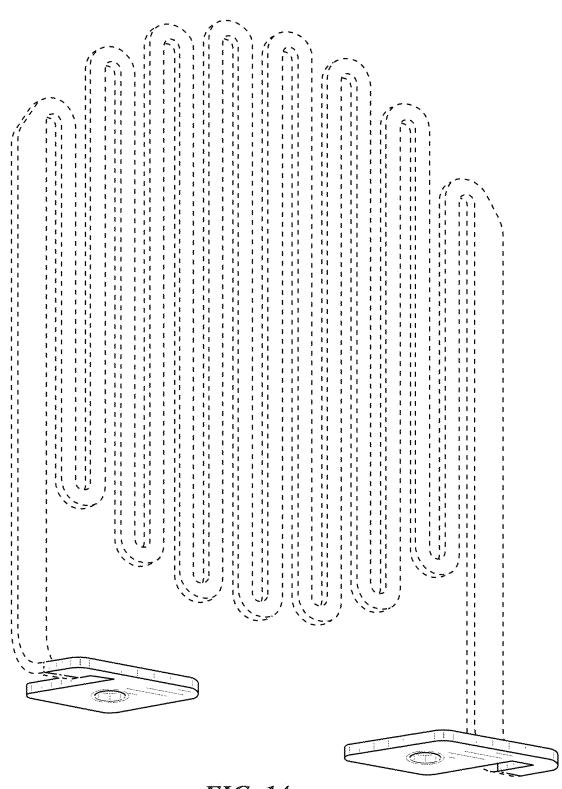
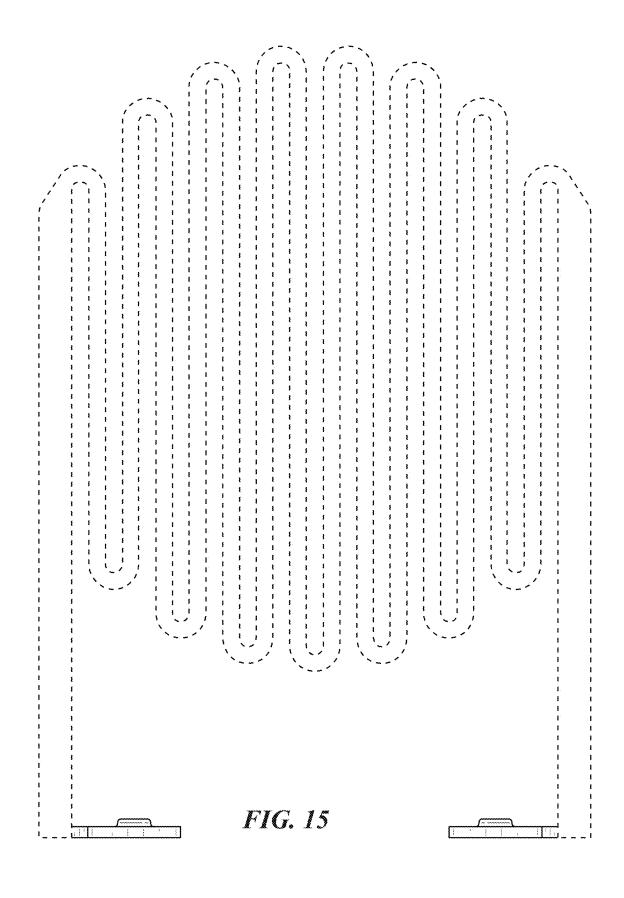


FIG. 14



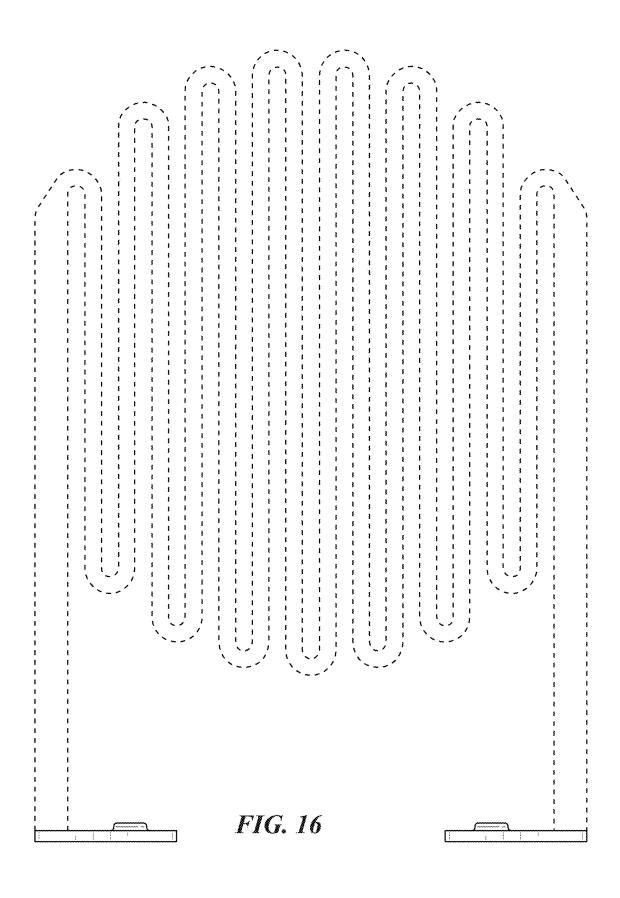




FIG. 17



FIG. 18

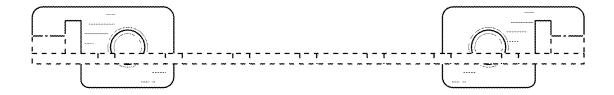


FIG. 19

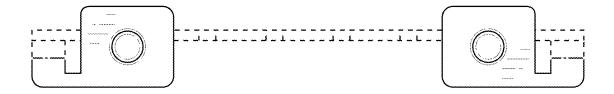


FIG. 20