

US00D800674S

(12) **United States Design Patent** (10) **Patent No.:** **US D800,674 S**  
**Schaltz et al.** (45) **Date of Patent:** **\*\* Oct. 24, 2017**

(54) **COOLING PLATE ROW FOR IN-LINE MEMORY**  
(71) Applicant: **Asetek Danmark A/S**, Aalborg East (KE)  
(72) Inventors: **Torben Søgaard Schaltz**, Hobro (DK); **Jan Hunsbjerg**, Svenstrup (DK); **Kim Henriksen**, Tylstrup (DK)

7,286,355 B2 10/2007 Cheon  
7,312,987 B1 12/2007 Konshak  
D561,711 S \* 2/2008 Lin ..... D13/179  
D573,110 S \* 7/2008 Otsuki ..... D13/179  
7,855,888 B2 12/2010 Peterson  
7,907,398 B2 3/2011 Hrehor, Jr. et al.  
7,933,125 B2 4/2011 Wei et al.

(Continued)

(73) Assignee: **Asetek Danmark A/S**, Aalborg East (DK)

FOREIGN PATENT DOCUMENTS  
WO WO 2011/053307 A1 5/2011

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

OTHER PUBLICATIONS

(21) Appl. No.: **29/565,755**

PCT International Search Report & PCT Written Opinion of the International Searching Authority for PCT Application No. PCT/IB2013/002453, mailed Feb. 6, 2014, (11 pages).

(22) Filed: **May 24, 2016**

(51) **LOC (10) Cl.** ..... **13-03**

*Primary Examiner* — Jennifer Rivard

(52) **U.S. Cl.**  
USPC ..... **D13/179**

*Assistant Examiner* — April Rivas

(58) **Field of Classification Search**  
USPC ..... D13/179, 122, 182  
CPC .. H05K 7/20; H05K 7/20172; H05K 7/20127;  
H05K 7/20336; H05K 7/20154; H05K 7/20272; H01L 23/34; H01L 23/3672;  
H01L 23/40; H01L 23/4006; H01L 23/4093; H01L 23/427; H01L 23/46;  
F28D 15/0275; F28D 1/0426; F28D 15/0208; F28D 15/04; F28F 1/30; F28F 2215/00; G06F 1/20

(74) *Attorney, Agent, or Firm* — Finnegan, Henderson, Farabow, Garrett & Dunner LLP.

See application file for complete search history.

(57) **CLAIM**

The ornamental design for a cooling plate row for in-line memory, as shown and described.

(56) **References Cited**

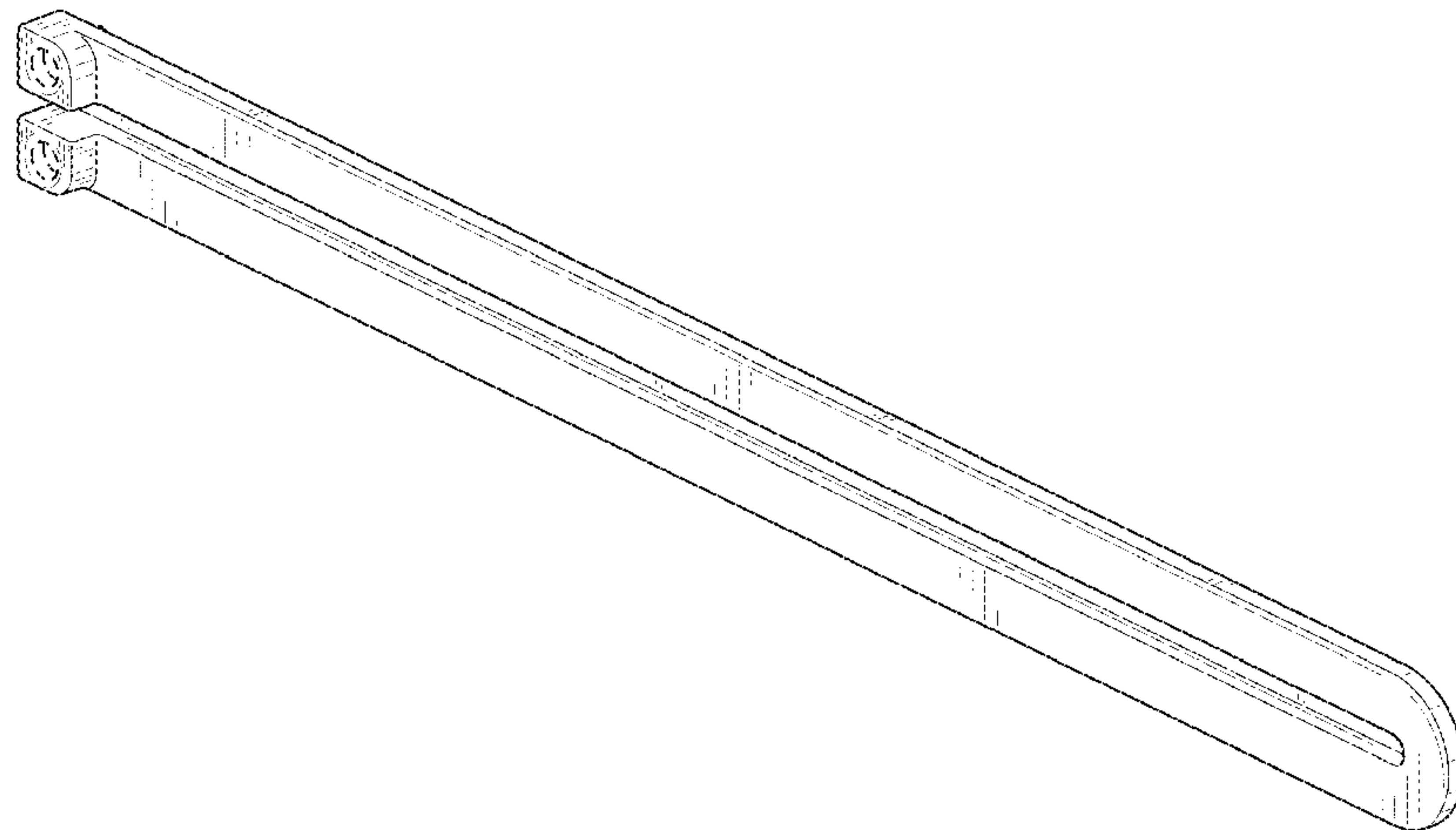
**DESCRIPTION**

U.S. PATENT DOCUMENTS

3,524,497 A 8/1970 Chu et al.  
6,421,240 B1 7/2002 Patel  
6,496,375 B2 12/2002 Patel et al.  
6,655,449 B1 12/2003 Hsien  
6,667,882 B2 12/2003 Pauser  
6,853,554 B2 2/2005 Bash et al.  
7,151,668 B1 12/2006 Stathakis  
D553,170 S \* 10/2007 Remsburg ..... D15/199

FIG. 1 is a top front right perspective view of a cooling plate row for in-line memory showing our new design; FIG. 2 is a top rear left perspective view thereof; FIG. 3 is a front elevation view thereof; FIG. 4 is a rear elevation view thereof; FIG. 5 is a top plan view thereof; FIG. 6 is a bottom plan view thereof; FIG. 7 is a right side elevation view thereof; and, FIG. 8 is a left side elevation view thereof. The dash-dash broken lines shown in the drawings illustrate portions of the cooling plate row that form no part of the claimed design.

**1 Claim, 5 Drawing Sheets**



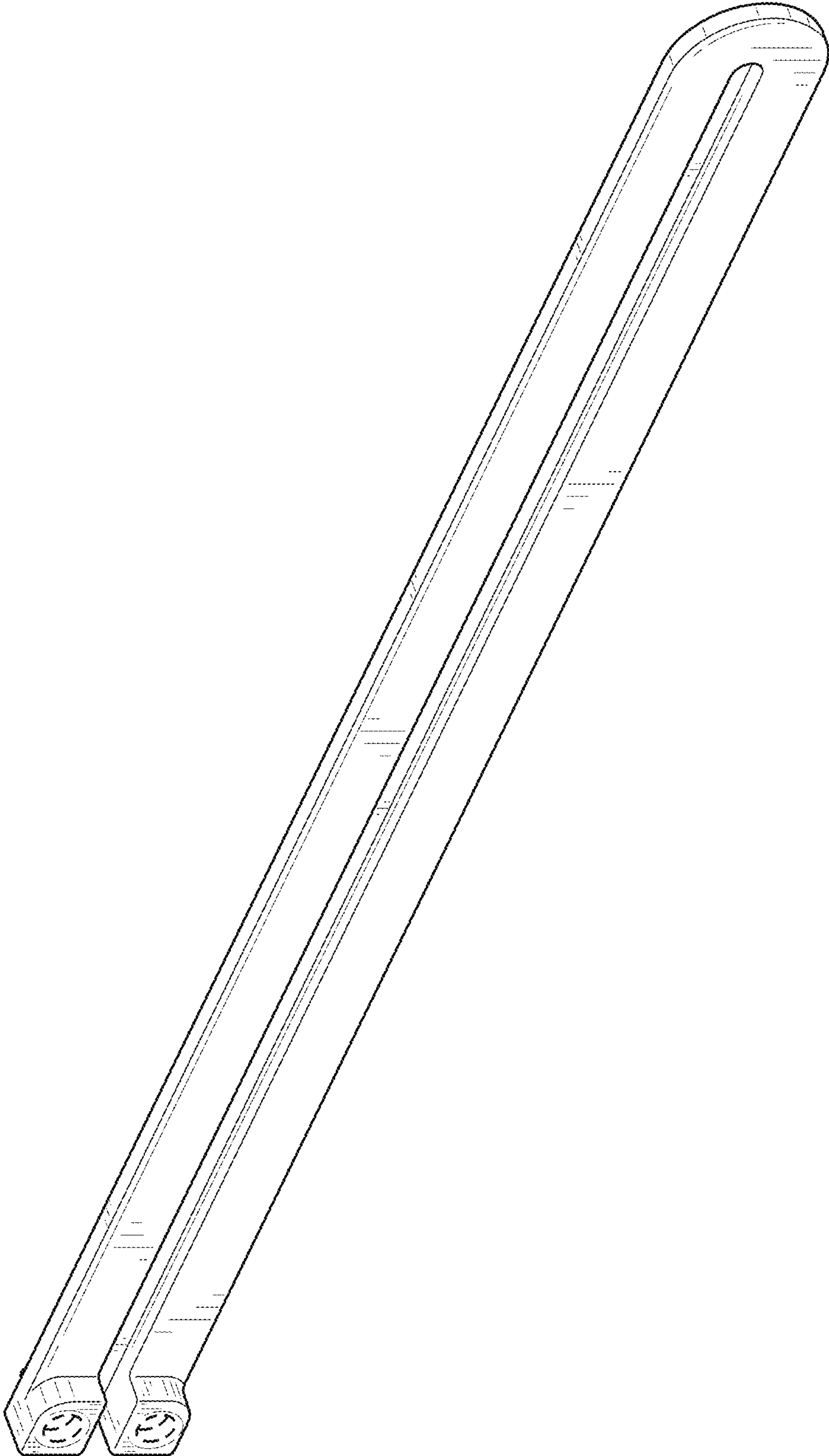
(56)

References Cited

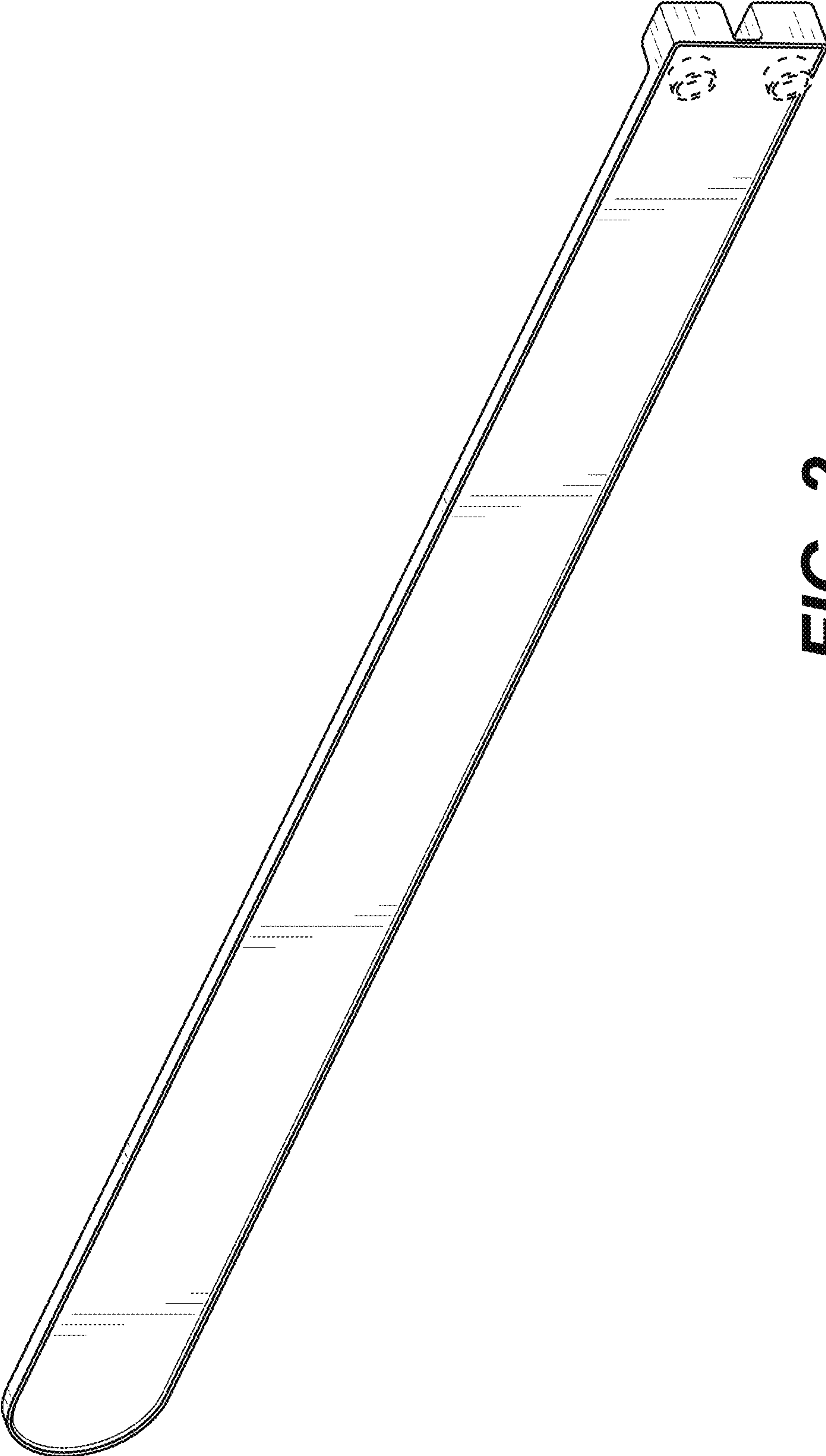
U.S. PATENT DOCUMENTS

7,957,134 B2	6/2011	Farnsworth et al.	2009/0002951 A1	1/2009	Legen et al.	
7,965,509 B2	6/2011	Campbell et al.	2009/0044929 A1*	2/2009	Yeh .....	F28D 1/05391 165/104.19
7,969,736 B1	6/2011	Iyengar et al.	2009/0080151 A1	3/2009	Kalms et al.	
8,004,841 B2	8/2011	Cipolla et al.	2009/0190303 A1	7/2009	Chu et al.	
8,027,162 B2	9/2011	Campbell et al.	2009/0268409 A1*	10/2009	Zhou .....	H01L 23/34 361/710
8,066,057 B2	11/2011	Olesen	2009/0277616 A1	11/2009	Cipolla et al.	
8,081,473 B2	12/2011	Cipolla et al.	2009/0284924 A1	11/2009	Konshak et al.	
8,125,780 B2	2/2012	Goth et al.	2009/0323286 A1	12/2009	Han	
8,238,101 B2	8/2012	Kalms et al.	2010/0025010 A1	2/2010	Cipolla et al.	
8,385,067 B2	2/2013	Arvelo et al.	2010/0085712 A1	4/2010	Hrehor, Jr. et al.	
8,385,069 B2	2/2013	Iyengar et al.	2010/0091447 A1	4/2010	Jaggers et al.	
8,493,738 B2	7/2013	Chainer et al.	2010/0175852 A1	7/2010	Peterson	
8,570,744 B2	10/2013	Rau et al.	2010/0252234 A1	10/2010	Cambell et al.	
8,587,943 B2	11/2013	Barina et al.	2011/0069454 A1	3/2011	Campbell et al.	
8,599,557 B2	12/2013	Peterson et al.	2011/0304979 A1*	12/2011	Peterson .....	G06F 1/20 361/679.47
8,638,559 B2	1/2014	Barina et al.	2012/0020004 A1	1/2012	Rau et al.	
8,649,177 B2	2/2014	Chainer et al.	2012/0020022 A1	1/2012	Peterson et al.	
8,659,897 B2	2/2014	Meijer et al.	2012/0152500 A1	6/2012	Kao et al.	
D715,747 S *	10/2014	Imoto .....	2012/0261095 A1*	10/2012	Wu .....	F28F 21/06 165/104.26
D715,750 S *	10/2014	Mira .....	2013/0027870 A1	1/2013	Goldrian et al.	
8,913,384 B2	12/2014	David et al.	2013/0120926 A1	5/2013	Barina et al.	
9,158,348 B2	10/2015	Berk et al.	2013/0135812 A1	5/2013	Barina et al.	
D755,741 S *	5/2016	Prajuckamol .....	2013/0194745 A1	8/2013	Meijer et al.	
D772,823 S *	11/2016	Lindeman .....	2013/0342987 A1	12/2013	Yang et al.	
D773,408 S *	12/2016	Lindeman .....	2014/0069614 A1*	3/2014	Chiu .....	F28D 15/00 165/104.13
D774,473 S *	12/2016	Lindeman .....	2015/0212555 A1	7/2015	Cox et al.	
2004/0182544 A1	9/2004	Lee et al.	2016/0026223 A1	1/2016	Berk et al.	
2005/0117298 A1	6/2005	Koga et al.	2016/0118317 A1*	4/2016	Shedd et al. ....	F25B 23/006 257/712
2006/0007720 A1	1/2006	Pfeifer et al.	2016/0234968 A1*	8/2016	Huang .....	H01L 23/427
2006/0098409 A1	5/2006	Cheon	2016/0327996 A1*	11/2016	Sasabe et al. ....	H05K 7/20
2006/0250772 A1	11/2006	Salmonson et al.	2016/0363967 A1*	12/2016	Tsai .....	H05K 7/20254
2006/0291165 A1*	12/2006	Flesch .....	2016/0366788 A1*	12/2016	Liao et al. ....	B67D 7/36
2008/0007915 A1*	1/2008	Chen .....				
2008/0084664 A1	4/2008	Campbell et al.				
2008/0264613 A1	10/2008	Chu				

\* cited by examiner

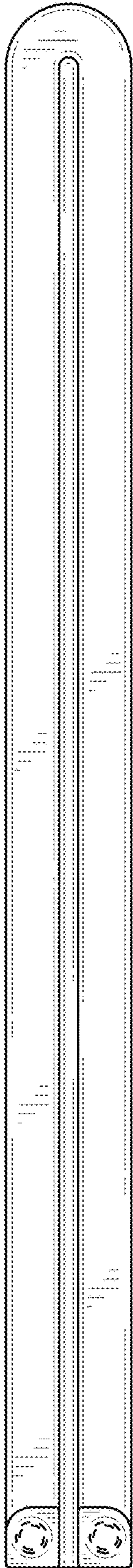


**FIG. 1**

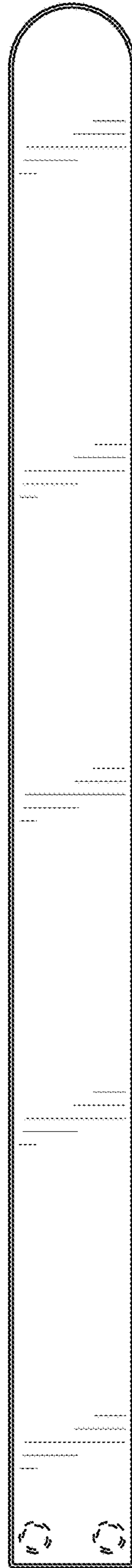


**FIG. 2**

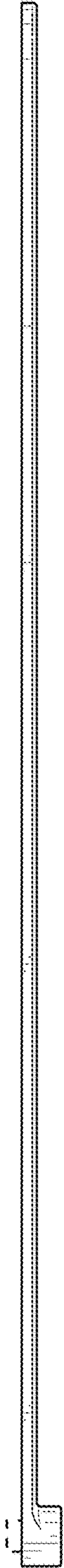




**FIG. 3**



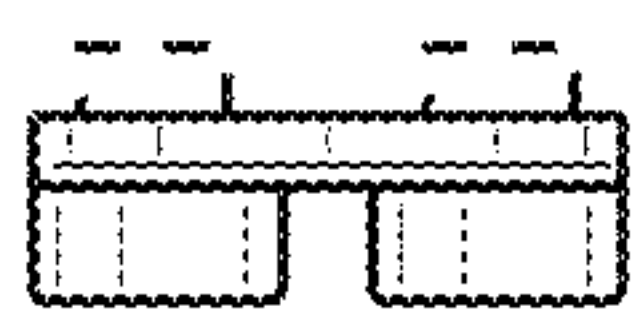
**FIG. 4**



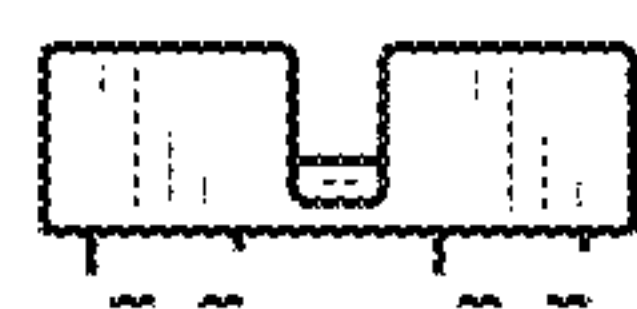
**FIG. 5**



**FIG. 6**



**FIG. 7**



**FIG. 8**