



US00D762845S

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

(10) **Patent No.:** **US D762,845 S**  
(45) **Date of Patent:** **\*\* Aug. 2, 2016**

(54) **RESPIRATOR CARTRIDGE**  
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4,562,837 A 1/1986 Schlobohm  
D286,213 S 10/1986 Maryyanek  
4,921,512 A 5/1990 Maryyanek  
4,932,399 A 6/1990 Cappa  
5,062,421 A \* 11/1991 Burns ..... A62B 18/025  
128/205.27  
5,086,768 A 2/1992 Niemeyer  
5,148,803 A 9/1992 Schlobohm  
D339,658 S 9/1993 Lahteenmaki

(Continued)

**FOREIGN PATENT DOCUMENTS**

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AU 359122 12/2014  
AU 359123 12/2014

(Continued)

(\*\*) Term: **14 Years**

**OTHER PUBLICATIONS**

(21) Appl. No.: **29/518,785**

Koken Particulate Respirators webpage, <http://www.koken-ltd.co.jp/english/particulaterespirators.htm>, obtained from internet on Jun. 3, 2013.

(22) Filed: **Feb. 27, 2015**

(51) **LOC (10) Cl.** ..... **29-02**

(Continued)

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

USPC ..... **D24/110.1**

(58) **Field of Classification Search**

USPC ..... D24/110.1-110.4, 110.6, 127, 162;  
D29/105, 107, 108, 110; D23/332,  
D23/335, 355, 356, 366, 388, 412;  
D12/195, 203  
CPC ..... A62B 18/00; A62B 18/02; A62B 18/025;  
A62B 18/08; A62B 18/10; A62B 23/00;  
A62B 23/02; A62B 23/025; A62B 23/06;  
A41D 13/11; A61M 16/0622; A61M 16/0616;  
A61M 16/0816; A61M 16/08; A61M 16/0633;  
A61M 16/0666; A61M 2210/0618; A61M  
16/0683

See application file for complete search history.

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(57)

**CLAIM**

The ornamental design for a respirator cartridge, as shown and described.

**DESCRIPTION**

FIG. 1 is a perspective view showing the new design for a respirator cartridge;  
FIG. 2 is a top view thereof, the bottom being a mirror image thereof;  
FIG. 3 is a front view thereof;  
FIG. 4 is a right side view thereof  
FIG. 5 is a rear view thereof; and,  
FIG. 6 is a left side view thereof.

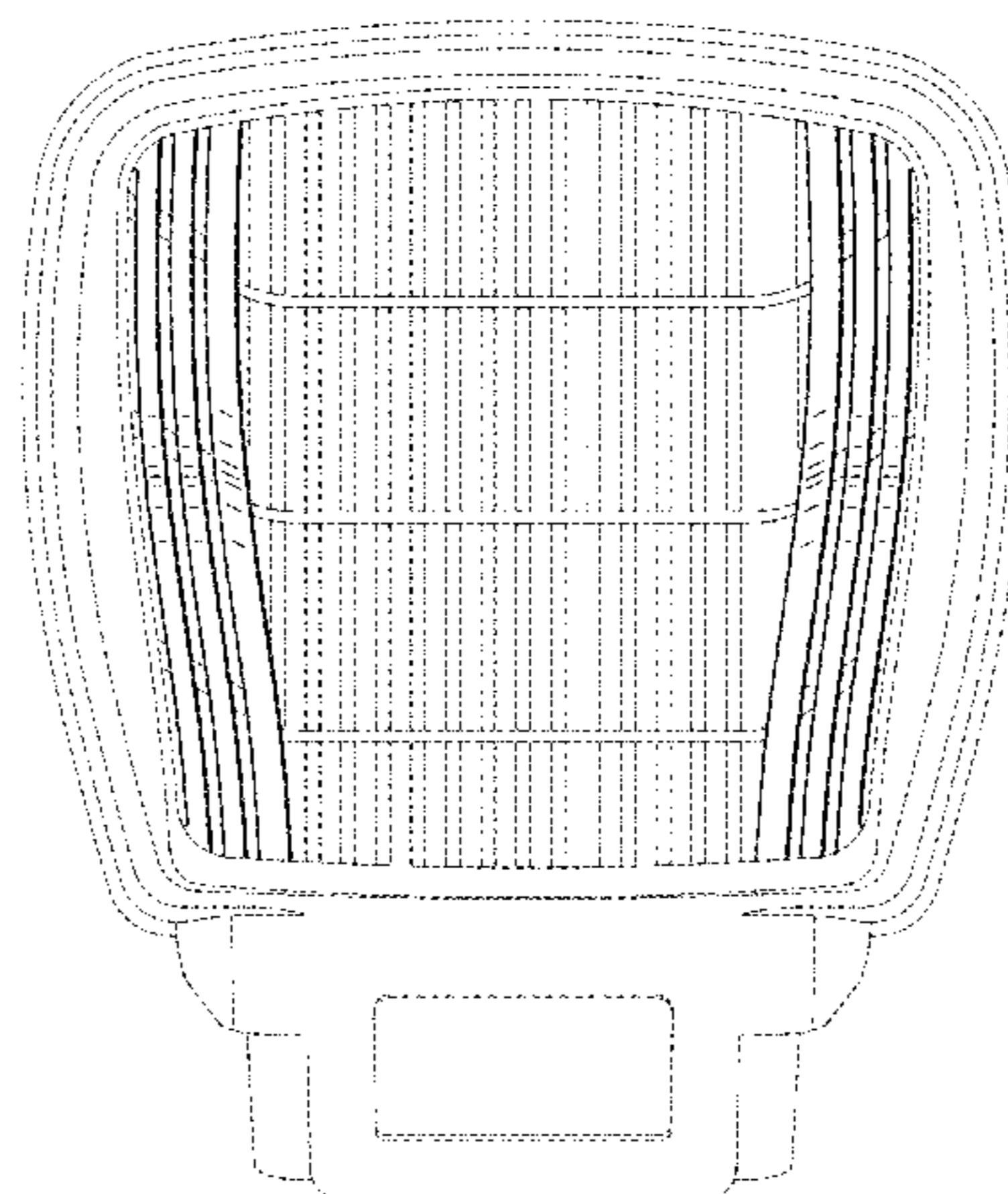
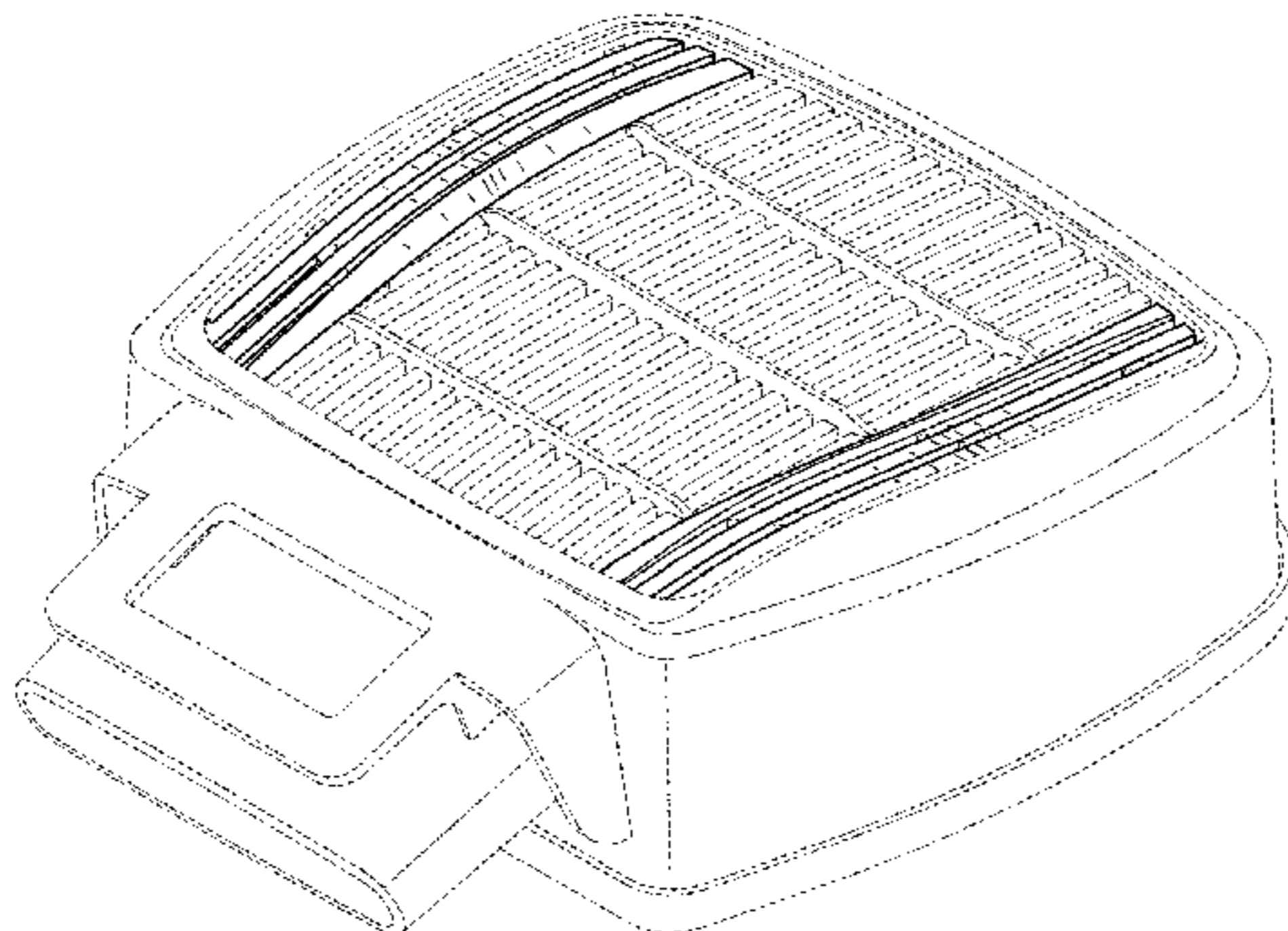
The broken lines in the drawings illustrate portions of the respirator cartridge that form no part of the claimed design.

**1 Claim, 3 Drawing Sheets**

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

2,055,853 A 9/1936 Schwartz  
2,062,834 A 12/1936 Schwartz  
2,235,624 A 3/1941 Schwartz  
2,787,333 A 4/1957 Boone



(56)

References Cited

U.S. PATENT DOCUMENTS

RE35,062 E 10/1995 Brostrom  
 5,463,693 A \* 10/1995 Birli ..... H04R 27/00  
 381/367  
 5,515,846 A 5/1996 Drews  
 5,579,761 A 12/1996 Yuschak  
 5,592,935 A \* 1/1997 Elstran ..... A62B 7/02  
 128/205.25  
 5,611,925 A 3/1997 Yasue  
 5,647,356 A 7/1997 Osendorf  
 5,659,296 A \* 8/1997 Debe ..... A62B 18/088  
 128/202.22  
 5,666,949 A \* 9/1997 Debe ..... A62B 18/088  
 116/206  
 5,669,375 A 9/1997 Dahrendorf  
 5,689,833 A \* 11/1997 Allen ..... A62B 18/084  
 128/201.15  
 D421,646 S \* 3/2000 Palma ..... D23/335  
 6,216,693 B1 4/2001 Rekow  
 6,298,849 B1 10/2001 Scholey  
 6,550,479 B1 4/2003 Duxbury  
 6,575,165 B1 6/2003 Cook  
 6,761,169 B2 7/2004 Eswarappa  
 6,793,702 B2 9/2004 Eswarappa  
 D518,571 S 4/2006 Martin  
 7,419,526 B2 9/2008 Greer  
 D609,321 S \* 2/2010 Tomasulo ..... D23/366  
 8,089,367 B2 \* 1/2012 Locke ..... G01N 29/036  
 340/540  
 D677,780 S 3/2013 Choi  
 D677,781 S \* 3/2013 Choi ..... D24/110.1  
 D678,508 S 3/2013 Choi  
 D683,446 S 5/2013 Eves  
 8,459,200 B2 \* 6/2013 Battiato ..... A62B 18/088  
 116/206  
 D696,396 S 12/2013 Eves  
 D721,169 S \* 1/2015 Moon ..... D24/110.1  
 9,034,489 B2 \* 5/2015 Jing ..... B82Y 30/00  
 106/287.1  
 2001/0013347 A1 8/2001 Rekow  
 2002/0195109 A1 12/2002 Mittelstadt  
 2003/0217752 A1 11/2003 Muller  
 2004/0003810 A1 1/2004 Templeton  
 2005/0109343 A1 \* 5/2005 Flannigan ..... B29C 45/1676  
 128/206.17  
 2005/0126572 A1 6/2005 Gosweiler  
 2006/0254427 A1 \* 11/2006 Trend ..... D04H 1/565  
 96/154  
 2007/0235031 A1 \* 10/2007 Betz ..... A62B 18/02  
 128/206.21  
 2007/0235032 A1 \* 10/2007 Betz ..... A62B 18/02  
 128/206.24  
 2008/0063575 A1 \* 3/2008 Rakow ..... G01N 21/783  
 422/119  
 2009/0215618 A1 \* 8/2009 Fansler ..... C08K 5/17  
 502/402  
 2010/0206311 A1 \* 8/2010 Flannigan ..... A62B 18/025  
 128/207.12  
 2010/0218761 A1 \* 9/2010 Flannigan ..... A62B 18/025  
 128/201.19  
 2010/0294272 A1 \* 11/2010 Holmquist-Brown A62B 18/088  
 128/202.22  
 2010/0294273 A1 \* 11/2010 Rakow ..... A62B 18/088  
 128/202.22  
 2010/0294274 A1 \* 11/2010 Poirier ..... A62B 18/088  
 128/202.22  
 2011/0094514 A1 \* 4/2011 Rakow ..... A62B 18/088  
 128/206.12  
 2012/0000465 A1 1/2012 Cavaliere  
 2012/0024289 A1 2/2012 Johnstone  
 2012/0052289 A1 \* 3/2012 Jing ..... B82Y 30/00  
 428/331  
 2012/0174922 A1 7/2012 Virr

2012/0260920 A1 \* 10/2012 Choi ..... A62B 18/025  
 128/206.12  
 2015/0136142 A1 \* 5/2015 Blomberg ..... A62B 7/10  
 128/206.17  
 2015/0336718 A1 \* 11/2015 Dwyer ..... A62B 18/006  
 128/205.12

FOREIGN PATENT DOCUMENTS

AU 359124 12/2014  
 AU 359128 12/2014  
 AU 359129 12/2014  
 AU 360264 2/2015  
 CA 82141 10/1997  
 CA 106801 12/2005  
 CN 3342471 12/2003  
 CN 3457902 6/2005  
 CN 3674586 7/2007  
 CN 300757753 3/2008  
 CN 300801845 7/2008  
 CN 301345091 9/2010  
 CN 301787238 1/2012  
 CN 301841897 2/2012  
 CN 301863214 3/2012  
 CN 302193139 11/2012  
 CN 302193145 11/2012  
 CN 302386273 4/2013  
 CN 302571626 9/2013  
 CN 302675143 12/2013  
 CN 302754689 3/2014  
 CN 201430464122.7 3/2015  
 DE M9107635-0001 6/1992  
 EM 00096961-0001 2/2004  
 EM 001233373-0002 10/2010  
 EM 001233373-0003 10/2010  
 EM 001871401-0001 8/2011  
 EM 001871401-0003 8/2011  
 EM 001871401-0004 8/2011  
 EM 001871401-0005 8/2011  
 EM 001352645-0001 12/2012  
 EM 001352645-0002 12/2012  
 EM 001355259-0001 1/2013  
 EM 001355259-0002 1/2013  
 EM 001378673-0001 8/2013  
 EM 002332650-0002 11/2013  
 EM 001401335-0001 1/2014  
 EM 001401335-0002 1/2014  
 EM 001401335-0003 1/2014  
 EM 001401335-0004 1/2014  
 EM 001401335-0005 1/2014  
 EM 001401335-0006 1/2014  
 EM 001405609-0001 3/2014  
 EM 001405609-0002 3/2014  
 EM 001405609-0003 3/2014  
 EM 001405609-0004 3/2014  
 EM 001411052-0001 8/2014  
 EM 001411052-0002 8/2014  
 EM 001411052-0003 8/2014  
 EM 001411052-0004 8/2014  
 EM 001411052-0005 8/2014  
 EM 001411052-0006 8/2014  
 EM 001411052-0007 8/2014  
 EM 001411052-0008 8/2014  
 EM 001411052-0009 8/2014  
 EM 001411052-0010 8/2014  
 EM 001411052-0011 8/2014  
 EM 001411052-0012 8/2014  
 FR 916655-001 12/1991  
 FR 972590-001 9/1997  
 GB 2078022 2/1999  
 JP D1253605 10/2005  
 JP D1334600 6/2008  
 JP D1423131 9/2011  
 JP D1424448 10/2011  
 JP D1433068 2/2012  
 JP D1489843 2/2014  
 KR 300365183 10/2004  
 KR 300387985 7/2005  
 KR 300402015 12/2005

(56)

References Cited

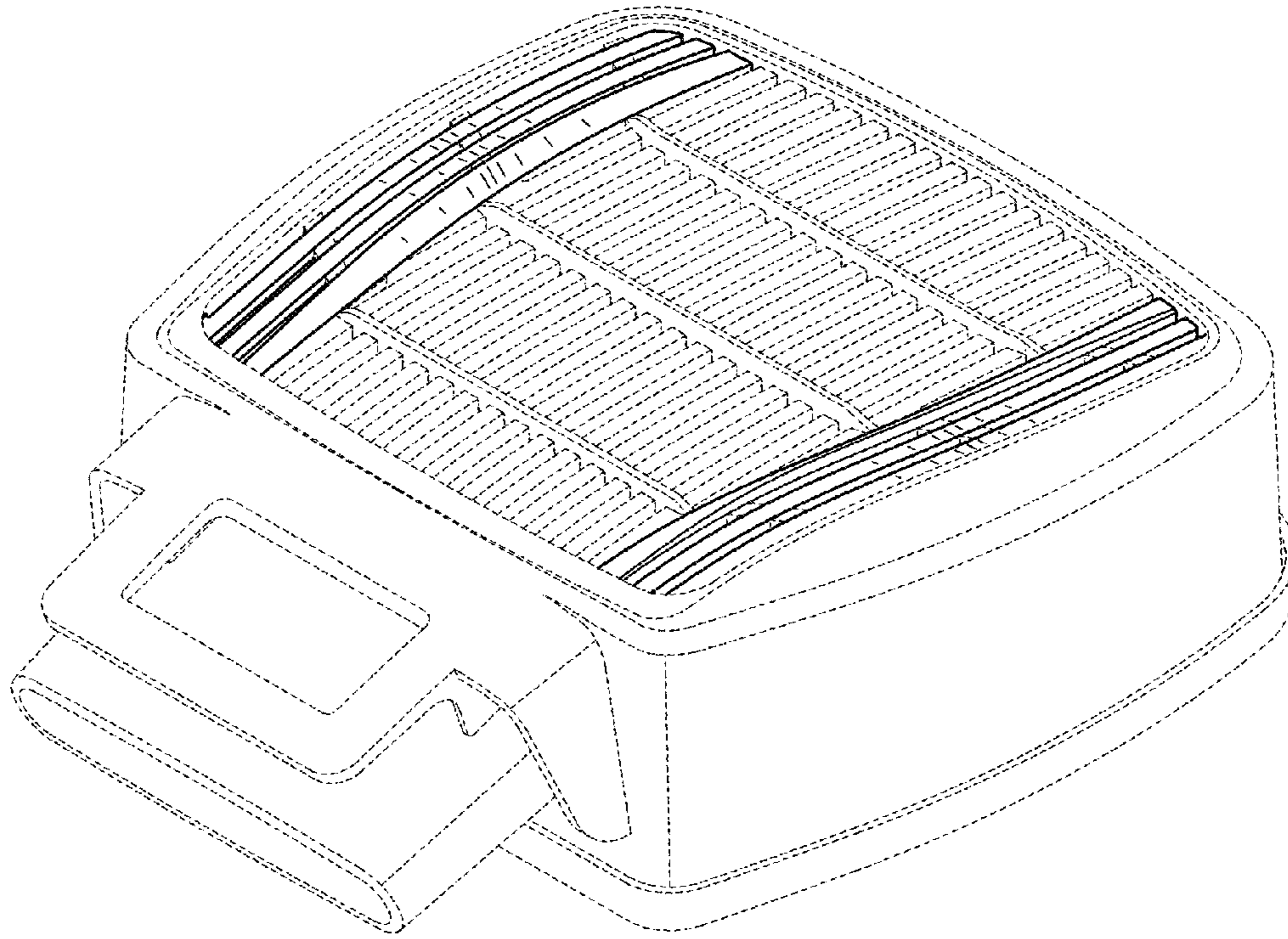
FOREIGN PATENT DOCUMENTS

KR	10-0773460	11/2007
KR	300484303	3/2008
KR	300497704	7/2008
KR	300505691	9/2008
KR	300514863	12/2008
KR	300516185	1/2009
KR	300526158	4/2009
KR	300542031	10/2009
KR	300563142	6/2010
KR	300649412	6/2012
KR	300649413	6/2012
KR	300662871	10/2012
KR	300683043	3/2013
KR	300683052	3/2013
KR	300683069	3/2013
KR	300684091	3/2013
KR	300726258	1/2014
KR	300726303	1/2014
RU	63184	6/2007
WO	WO 03/090873	11/2003
WO	WO 2008/082415	7/2008

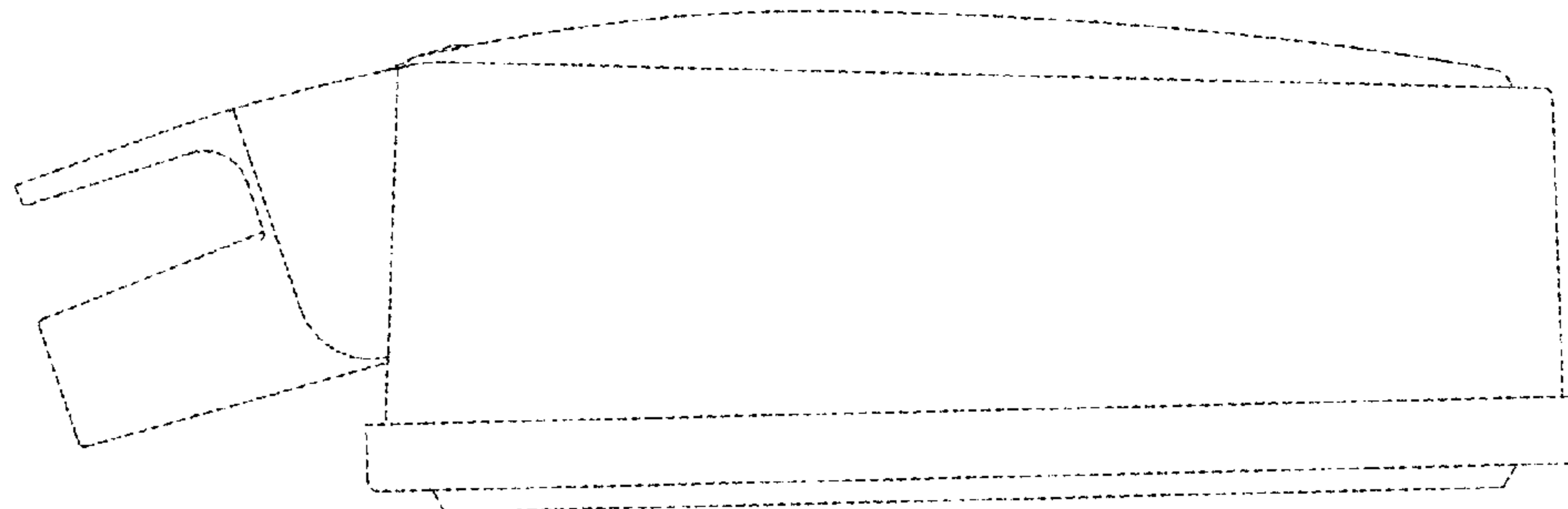
OTHER PUBLICATIONS

U.S. Appl. No. 29/491,529, filed May 22, 2014, entitled *Respirator Cartridge Having a Slot*.  
 U.S. Appl. No. 29/491,530, filed May 22, 2014, entitled *Respirator Cartridge Having a Hole Pattern*.  
 U.S. Appl. No. 29/491,531, filed May 22, 2014, entitled *Respirator Cartridge Body*.  
 U.S. Appl. No. 29/491,532, filed May 22, 2014, entitled *Respirator Cartridge*.  
 U.S. Appl. No. 29/491,533, filed May 22, 2014, entitled *Respirator Cartridge Having an Engagement Latch*.  
 U.S. Appl. No. 29/491,563, filed May 22, 2014, entitled *Respirator Filter Retainer Having Openings*.  
 U.S. Appl. No. 29/491,566, filed May 22, 2014, entitled *Respirator Filter Retainer*.  
 U.S. Appl. No. 29/491,568, filed May 22, 2014, entitled *Respirator Filter Retainer Having a Slot*.  
 U.S. Appl. No. 29/491,575, filed May 22, 2014, entitled *Respirator Filter Cover*.

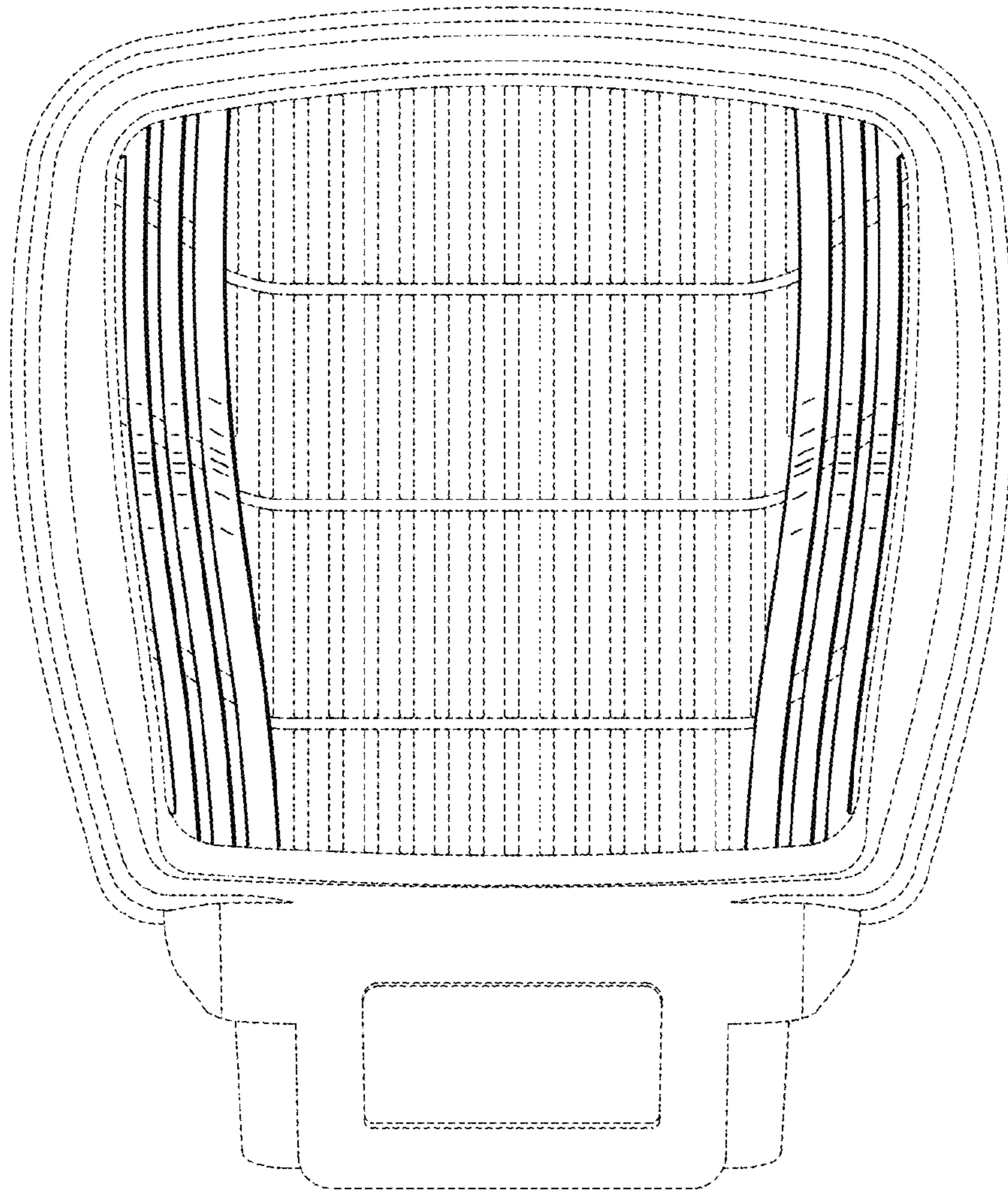
\* cited by examiner



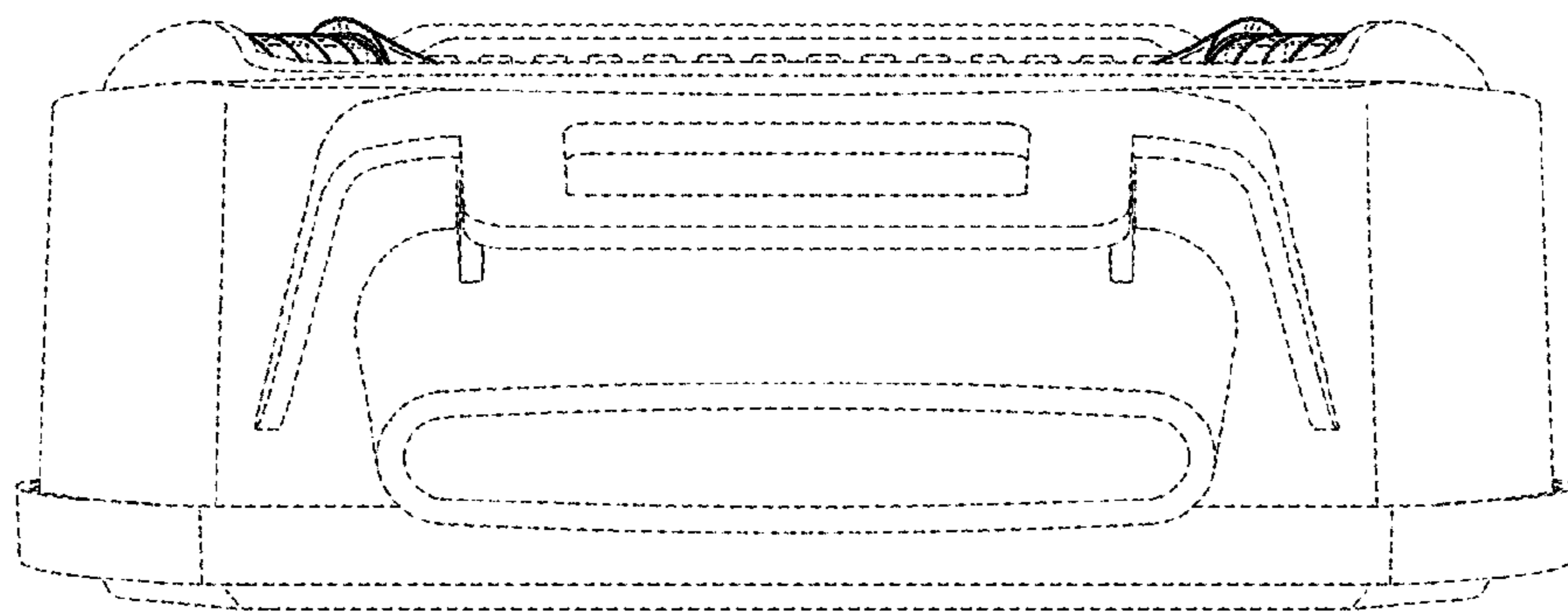
*FIG. 1*



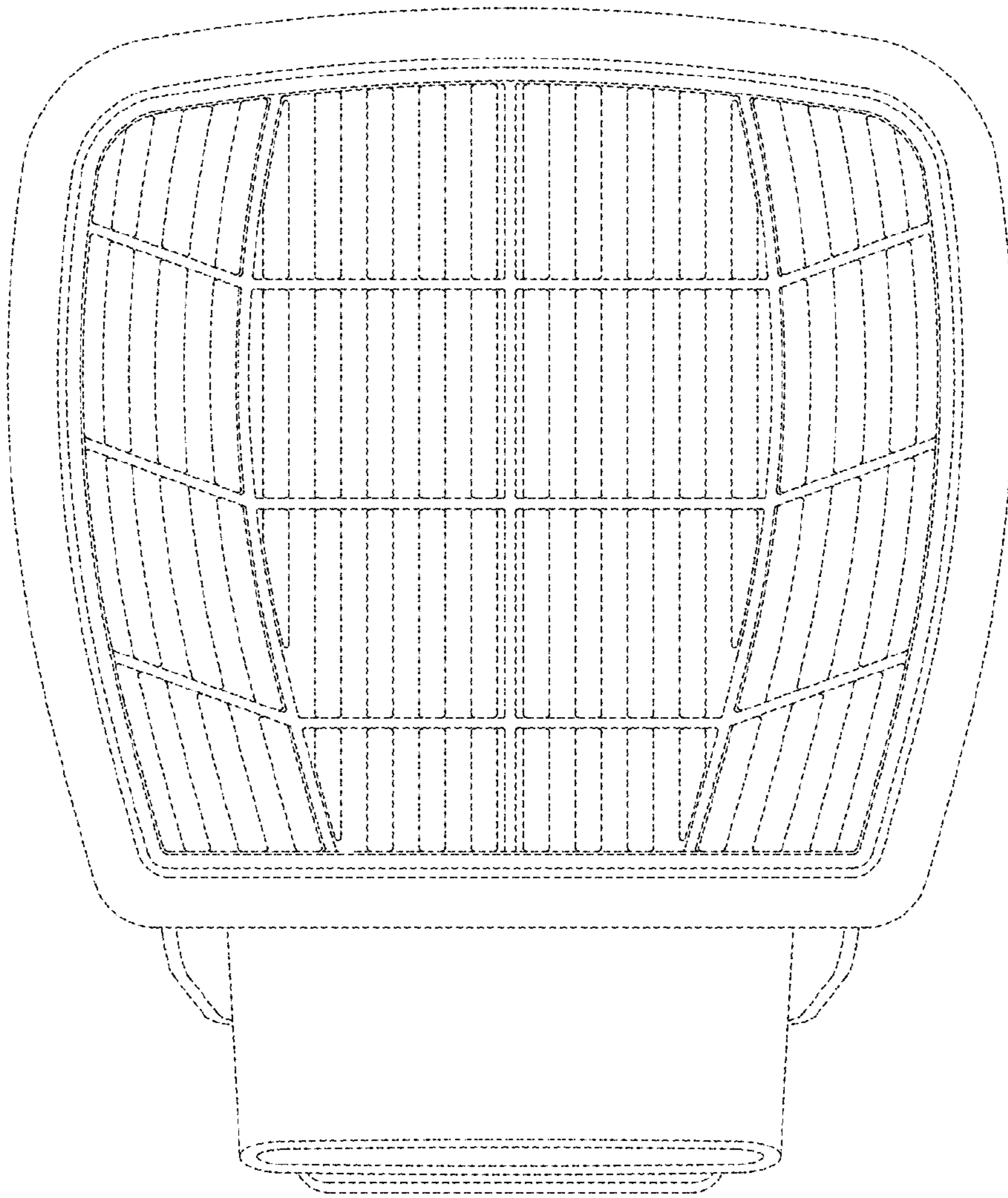
*FIG. 2*



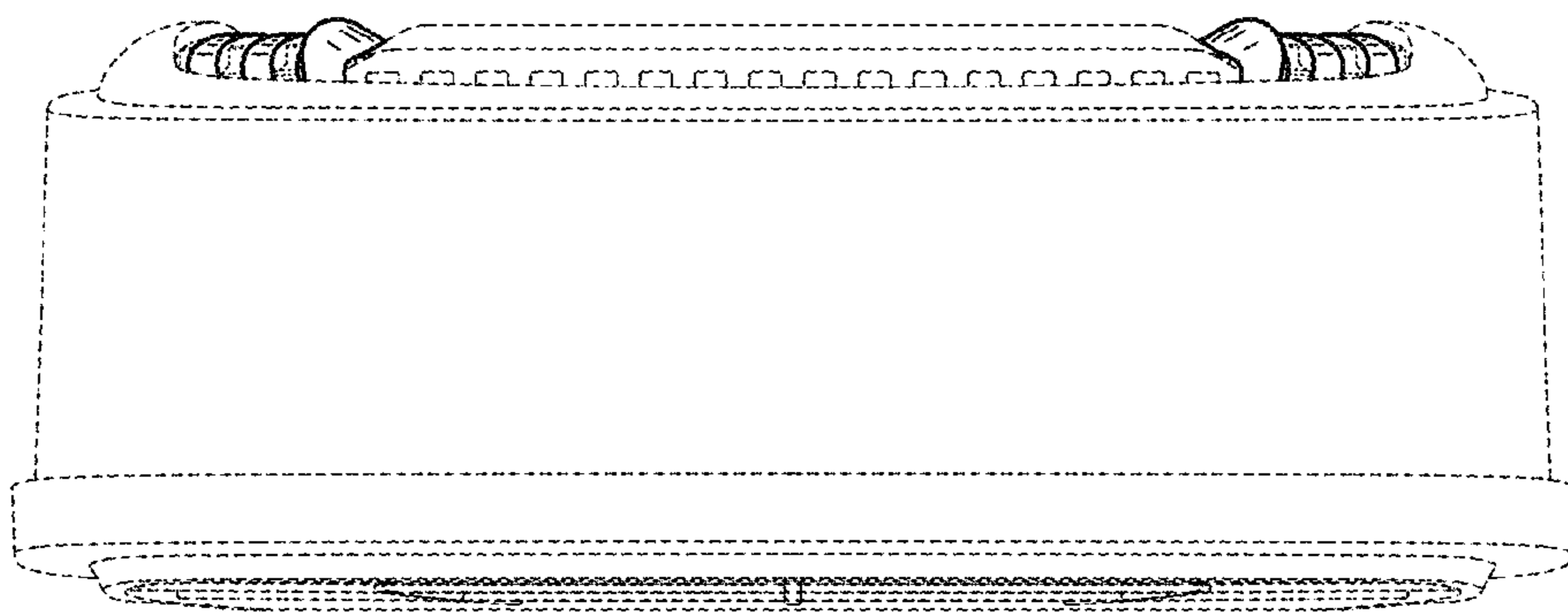
*FIG. 3*



*FIG. 4*



*FIG. 5*



*FIG. 6*