



US00D746439S

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

(10) **Patent No.:** **US D746,439 S**

(45) **Date of Patent:** **** Dec. 29, 2015**

(54) **COMBINATION VALVE AND BUCKLE SET FOR DISPOSABLE RESPIRATORS**

FOREIGN PATENT DOCUMENTS

(71) Applicant: **Kimberly-Clark Worldwide, Inc.**,
Neenah, WI (US)

CA 0 108 341 S 2/2006
CN 2149929 Y 12/1993

(Continued)

(72) Inventors: **Eric C. Steindorf**, Roswell, GA (US);
Johnny Zhuang, Shanghai (CN); **Bryan Teng**,
Shanghai (CN); **Tian Cheng**, Hunan (CN);
Zhou De Kuan, Guangxi (CN); **Leo Wang**,
Chongqin (CN); **Bob Wen**, New Taipei (TW)

Primary Examiner — Deanna L Pratt

Assistant Examiner — Lilyana Bekic

(74) *Attorney, Agent, or Firm* — Andrew J. Thomson

(73) Assignee: **Kimberly-Clark Worldwide, Inc.**,
Neenah, WI (US)

(57) **CLAIM**

We claim the ornamental design for a combination valve and buckle set for disposable respirators, as shown and described.

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

DESCRIPTION

(21) Appl. No.: **29/477,952**

(22) Filed: **Dec. 30, 2013**

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

(52) **U.S. Cl.**
USPC **D24/110.6**

(58) **Field of Classification Search**
USPC D24/110.1–110.6; 128/206.12, 206.23,
128/206.24, 206.28, 205.27, 201.17, 201.22
CPC A61M 16/06; A61M 2202/0208;
A62B 18/02; A62B 18/025; A62B 18/00;
A62B 18/10; A62B 18/08; A62B 23/02;
A62B 18/082

See application file for complete search history.

FIG. 1 is a perspective view of a combination valve and buckle set for disposable respirators showing our new design; FIG. 2 is the same view of as FIG. 1 but now with the strap shown in broken lines removed; FIG. 3 is a front view of the combination valve and buckle set for disposable respirators; FIG. 4 is a back view of the combination valve and buckle set for disposable respirators; FIG. 5 is a top view of the combination valve and buckle set for disposable respirators; FIG. 6 is a bottom view of the combination valve and buckle set for disposable respirators; FIG. 7 is a left side view of the combination valve and buckle set for disposable respirators; and FIG. 8 is the same view as FIG. 7 but now with the strap shown in broken lines removed; FIG. 9 is a right side view of the combination valve and buckle set for disposable respirators; and, FIG. 10 is the same view as FIG. 9 but now with the strap shown in broken lines removed.

The broken line showing of the respirator and strap illustrates the environment of the claimed design and forms no part thereof. All other broken lines illustrate portions of the combination valve and buckle set for disposable respirators which form no part of the claimed design.

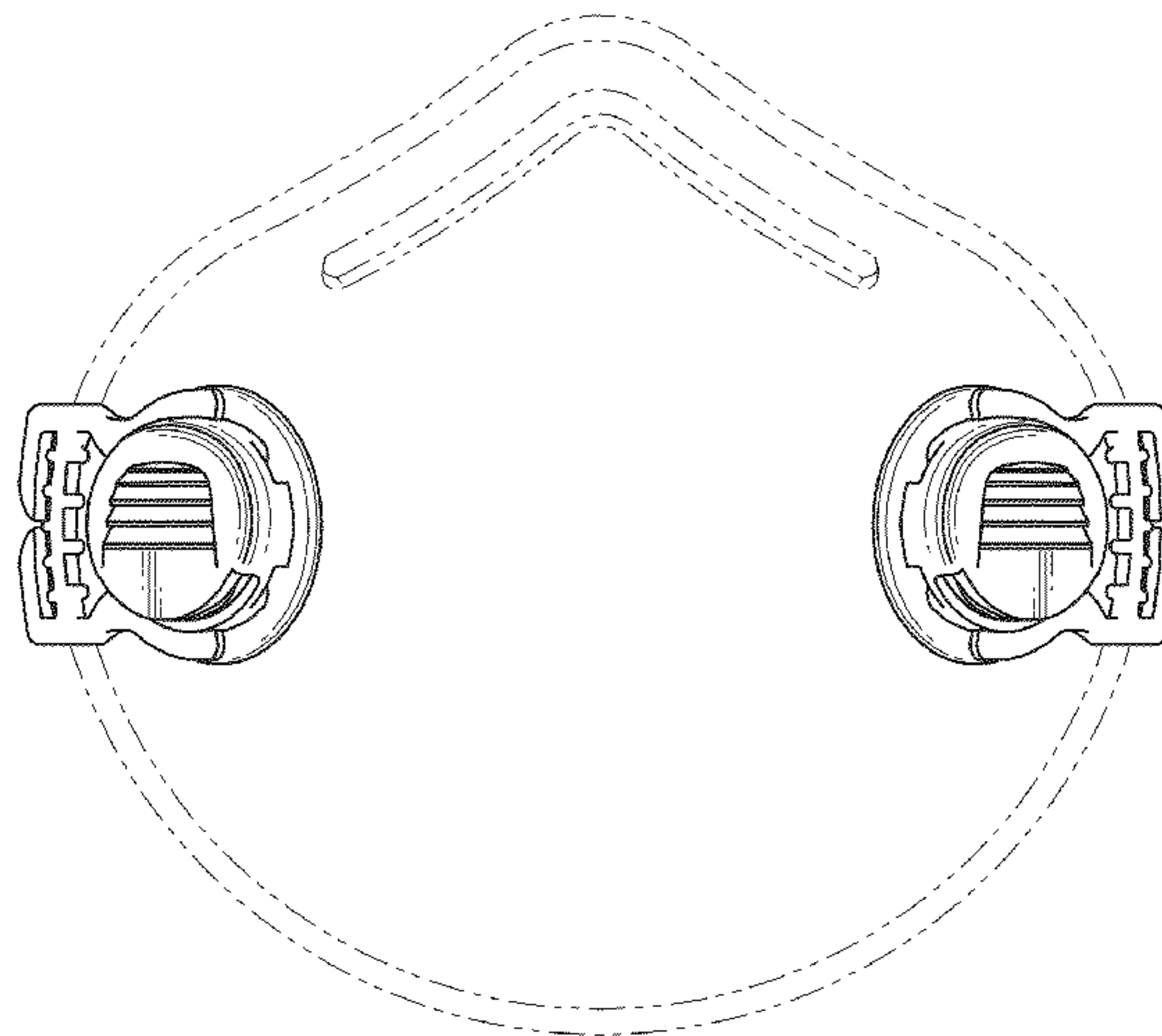
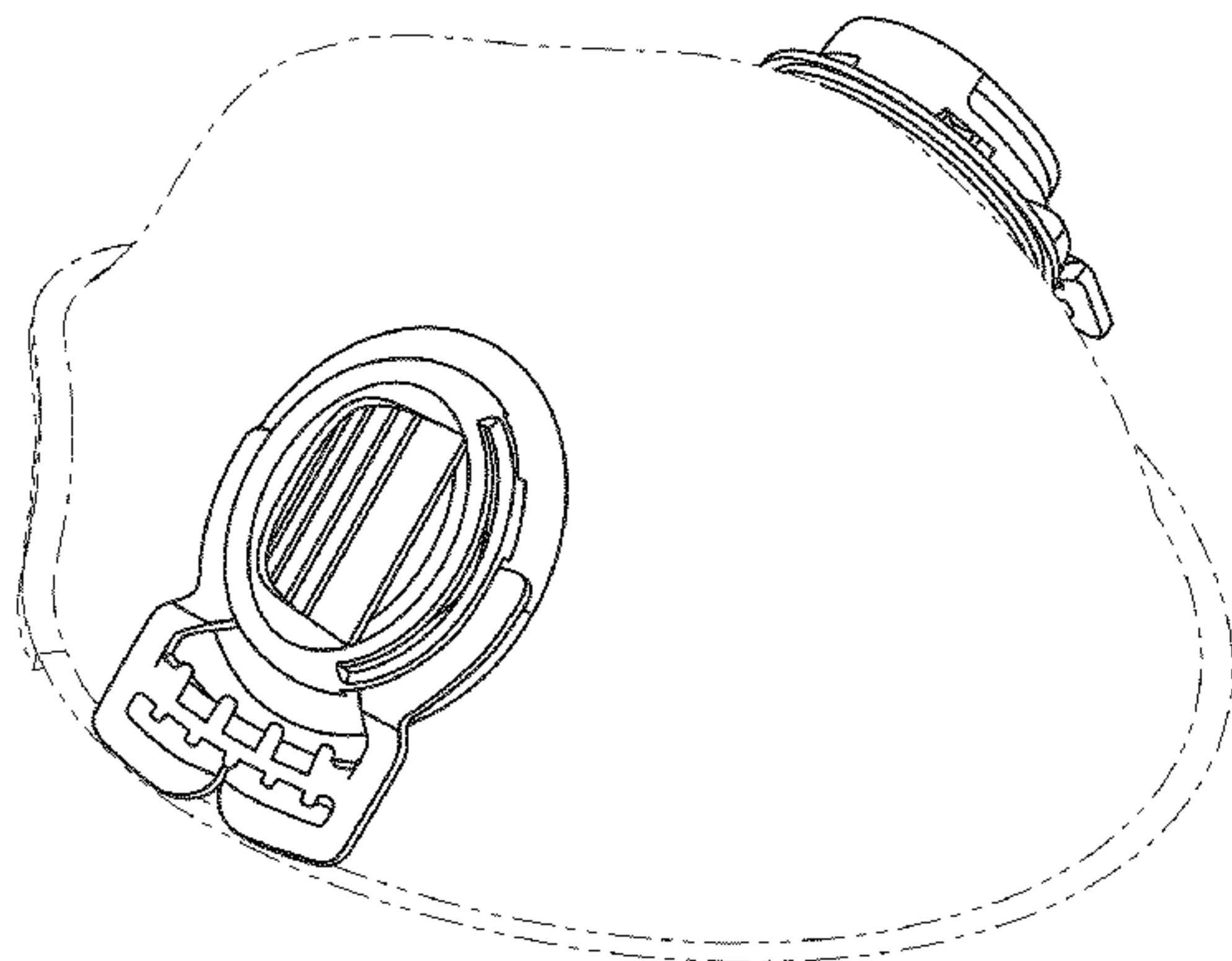
(56) **References Cited**

U.S. PATENT DOCUMENTS

1,319,273 A 10/1919 Dobey
D80,155 S 12/1929 Wightman
1,946,334 A 2/1934 Schwartz
2,378,971 A 6/1945 Biederman
D144,965 S 6/1946 Drell
2,556,589 A 6/1951 Le Duc

(Continued)

1 Claim, 7 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

2,640,481 A	6/1953	Conley	5,062,421 A	11/1991	Burns et al.
2,751,904 A	6/1956	Lewis	5,069,970 A	12/1991	Largman et al.
2,858,828 A	11/1958	Matheson	5,080,094 A	1/1992	Tayebi
2,998,818 A	9/1961	Tabor et al.	5,093,422 A	3/1992	Himes
3,032,847 A	5/1962	Konrad	5,094,236 A	3/1992	Tayebi
3,154,073 A	10/1964	Klinger	D326,434 S	5/1992	Levy
3,220,409 A	11/1965	Liloia et al.	D326,540 S	5/1992	Scholey
3,249,108 A	5/1966	Terman	5,114,781 A	5/1992	Morman
3,308,816 A	3/1967	Franklin et al.	5,162,074 A	11/1992	Hills
3,330,273 A *	7/1967	Bennett, V 128/206.26	5,169,706 A	12/1992	Collier, IV et al.
3,333,585 A	8/1967	Barghini et al.	5,181,280 A	1/1993	Zachry, Jr.
3,338,992 A	8/1967	Kinney	5,181,507 A	1/1993	Michel et al.
3,341,394 A	9/1967	Kinney	5,213,881 A	5/1993	Timmons et al.
3,491,755 A	1/1970	Barghini et al.	5,218,071 A	6/1993	Tsutsui et al.
3,494,821 A	2/1970	Evans	5,226,992 A	7/1993	Morman
3,502,763 A	3/1970	Hartmann	5,244,482 A	9/1993	Hassenboehler et al.
3,542,615 A	11/1970	Dobo et al.	5,272,236 A	12/1993	Lai et al.
3,550,588 A	12/1970	Stahl	5,277,976 A	1/1994	Hogle et al.
3,692,618 A	9/1972	Dorschner et al.	5,278,272 A	1/1994	Lai et al.
3,779,244 A	12/1973	Weeks et al.	5,284,703 A	2/1994	Everhart et al.
3,802,817 A	4/1974	Matsuki et al.	5,304,599 A	4/1994	Himes
3,849,241 A	11/1974	Butin et al.	D347,298 S	5/1994	Byram et al.
3,861,381 A	1/1975	Witman et al.	D347,299 S	5/1994	Bryam et al.
4,041,203 A	8/1977	Brock et al.	5,322,061 A	6/1994	Brunson
4,100,324 A	7/1978	Anderson et al.	5,322,728 A	6/1994	Davey et al.
4,144,370 A	3/1979	Boulton	5,325,892 A	7/1994	Japuntich et al.
4,155,358 A	5/1979	Anders et al.	5,331,957 A	7/1994	Liu
4,209,563 A	6/1980	Sisson	5,332,613 A	7/1994	Taylor et al.
4,296,746 A	10/1981	Mason, Jr. et al.	5,336,545 A	8/1994	Morman
4,323,534 A	4/1982	DesMarais	5,350,624 A	9/1994	Georger et al.
4,340,563 A	7/1982	Appel et al.	5,353,789 A	10/1994	Schlobohm
4,374,888 A	2/1983	Bornslaeger et al.	5,374,458 A	12/1994	Burgio
4,384,577 A	5/1983	Huber et al.	5,401,466 A	3/1995	Foltz et al.
D271,246 S	11/1983	Matheson et al.	5,419,318 A	5/1995	Tayebi
4,414,973 A	11/1983	Matheson et al.	5,431,158 A	7/1995	Tirotta
4,443,513 A	4/1984	Meitner et al.	5,464,010 A	11/1995	Byram
4,536,440 A	8/1985	Berg	5,464,688 A	11/1995	Timmons et al.
4,549,543 A	10/1985	Moon	5,466,410 A	11/1995	Hills
4,592,350 A	6/1986	Maryyanek et al.	5,471,797 A	12/1995	Murphy
4,600,002 A	7/1986	Maryyanek et al.	5,472,775 A	12/1995	Obijeski et al.
4,606,341 A	8/1986	Hubbard et al.	5,509,436 A *	4/1996	Japuntich et al. 137/15.18
4,631,933 A	12/1986	Carey, Jr.	5,539,056 A	7/1996	Yang et al.
4,641,645 A	2/1987	Tayebi	5,571,619 A	11/1996	McAlpin et al.
4,652,487 A	3/1987	Morman	5,592,937 A	1/1997	Freund
4,655,760 A	4/1987	Morman et al.	5,596,052 A	1/1997	Resconi et al.
4,657,010 A	4/1987	Wright	5,647,357 A	7/1997	Barnett et al.
4,657,802 A	4/1987	Morman	5,660,174 A	8/1997	Jacobelli
D289,865 S	5/1987	Rosenwein et al.	5,699,791 A	12/1997	Sukiennik et al.
4,663,220 A	5/1987	Wisneski et al.	5,701,893 A	12/1997	Kern et al.
4,720,415 A	1/1988	Vander et al.	D389,239 S	1/1998	Scholey
4,723,542 A	2/1988	Giffard	5,711,036 A	1/1998	Kita et al.
4,741,949 A	5/1988	Morman et al.	5,720,281 A	2/1998	Allen et al.
4,766,029 A	8/1988	Brock et al.	5,727,544 A	3/1998	Miura
4,781,966 A	11/1988	Taylor	5,732,695 A	3/1998	Metzger
4,787,699 A	11/1988	Moulin	D400,123 S	10/1998	Ricci
4,789,699 A	12/1988	Kieffer et al.	5,848,589 A	12/1998	Welnetz
4,803,117 A	2/1989	Daponte	5,863,312 A	1/1999	Wolfe
4,807,619 A	2/1989	Dyrud et al.	5,906,033 A	5/1999	Mukaiyama
4,827,924 A	5/1989	Japuntich	D413,166 S	8/1999	Brunell et al.
4,834,738 A	5/1989	Kielpikowski et al.	5,932,497 A	8/1999	Morman et al.
4,850,347 A	7/1989	Skov	5,996,581 A	12/1999	Duch
4,856,508 A	8/1989	Tayebi	5,997,981 A	12/1999	McCormack et al.
4,856,509 A	8/1989	Lemelson	6,015,764 A	1/2000	McCormack et al.
4,873,972 A	10/1989	Magidson et al.	6,016,804 A	1/2000	Gleason et al.
4,883,547 A	11/1989	Japuntich	6,041,782 A	3/2000	Angadjivand et al.
4,891,957 A	1/1990	Strack et al.	6,047,698 A	4/2000	Magidson et al.
4,907,584 A	3/1990	McGinnis	6,055,982 A	5/2000	Brunson et al.
4,937,299 A	6/1990	Ewen et al.	6,062,222 A	5/2000	Lewis et al.
4,951,664 A	8/1990	Niemeyer	6,070,579 A	6/2000	Bryant et al.
4,965,122 A	10/1990	Morman	6,090,325 A	7/2000	Wheat et al.
4,974,586 A	12/1990	Wandel et al.	6,102,039 A *	8/2000	Springett et al. 128/206.12
4,981,134 A	1/1991	Courtney	6,111,163 A	8/2000	McCormack et al.
4,981,747 A	1/1991	Morman	D431,647 S	10/2000	Dyrud et al.
5,042,473 A	8/1991	Lewis	6,125,849 A	10/2000	Williams et al.
5,057,368 A	10/1991	Largman et al.	D434,493 S	11/2000	Hall et al.
			6,148,817 A	11/2000	Bryant et al.
			6,185,740 B1	2/2001	Zegarelli et al.
			6,315,864 B2	11/2001	Anderson et al.
			6,332,465 B1	12/2001	Xue et al.

(56)

References Cited

U.S. PATENT DOCUMENTS

D452,911 S 1/2002 Danielsson
 6,371,110 B1 4/2002 Peterson et al.
 6,394,090 B1 5/2002 Chen et al.
 6,418,929 B1 7/2002 Norfleet
 6,435,881 B1 8/2002 Zein et al.
 6,460,539 B1* 10/2002 Japuntich et al. 128/205.27
 6,461,457 B1 10/2002 Taylor et al.
 6,474,336 B1 11/2002 Wolfe
 6,484,722 B2 11/2002 Bostock et al.
 6,500,563 B1 12/2002 Datta et al.
 D471,627 S 3/2003 Mittelstadt et al.
 6,536,434 B1 3/2003 Bostock et al.
 6,536,853 B2 3/2003 Egle et al.
 D473,299 S 4/2003 Fecteau et al.
 6,550,070 B2 4/2003 Wiegand
 6,571,797 B1 6/2003 Magidson et al.
 6,584,975 B1 7/2003 Taylor
 D479,151 S 9/2003 Hamilton
 D479,486 S 9/2003 Uehara et al.
 D484,437 S 12/2003 Doyon
 6,715,489 B2 4/2004 Bostock et al.
 6,745,404 B2 6/2004 Chen-Lieh
 6,776,161 B2 8/2004 Horn
 D497,667 S 10/2004 Odell et al.
 6,805,124 B2 10/2004 Japuntich et al.
 6,817,362 B2 11/2004 Gelinas et al.
 6,874,499 B2 4/2005 Viner et al.
 6,883,518 B2 4/2005 Mittelstadt et al.
 D504,947 S 5/2005 McAuley et al.
 6,886,563 B2 5/2005 Bostock et al.
 6,916,750 B2 7/2005 Thomas et al.
 6,923,182 B2 8/2005 Angadjivand et al.
 6,928,657 B2 8/2005 Bell et al.
 6,936,019 B2 8/2005 Mason
 6,959,709 B2 11/2005 Curran et al.
 7,036,507 B2 5/2006 Jensen
 7,066,179 B2 6/2006 Eaton et al.
 7,082,622 B1 8/2006 Olander
 D528,653 S 9/2006 Matthew et al.
 7,185,653 B2 3/2007 Lee
 D542,407 S 5/2007 Stallard et al.
 7,219,669 B1 5/2007 Lovell et al.
 D546,942 S* 7/2007 Taylor D24/110.6
 7,290,545 B2 11/2007 Kleman et al.
 D563,546 S 3/2008 Lulla et al.
 D568,784 S 5/2008 Yang et al.
 D568,787 S 5/2008 Yang et al.
 D568,788 S 5/2008 Yang et al.
 D575,390 S* 8/2008 Scott et al. D24/110.6
 D577,816 S 9/2008 Ungar
 D583,929 S 12/2008 Reusch
 D599,007 S 8/2009 Stallard
 D604,834 S 11/2009 Ungar
 D609,803 S 2/2010 Ungar
 D612,765 S 3/2010 Fildan et al.
 7,762,254 B2 7/2010 Ho
 D630,315 S 1/2011 Masters
 D645,956 S 9/2011 Grimsley
 8,113,201 B2* 2/2012 Steindorf et al. 128/206.15
 D657,052 S* 4/2012 Amin D24/110.1
 D657,053 S* 4/2012 Amin D24/110.1
 D665,903 S 8/2012 Sullivan, Jr.
 D668,580 S 10/2012 Kax
 D673,669 S 1/2013 Scheiner et al.
 8,342,180 B2* 1/2013 Martin et al. 128/206.17
 D676,527 S* 2/2013 Xue et al. D23/248
 D677,781 S 3/2013 Choi et al.
 D680,215 S 4/2013 Campbell
 2002/0023651 A1* 2/2002 Japuntich et al. 128/206.15
 2002/0195109 A1 12/2002 Mittelstadt et al.
 2003/0024533 A1 2/2003 Sniadach
 2003/0029454 A1* 2/2003 Gelinas et al. 128/205.27
 2003/0154984 A1 8/2003 Fernandes
 2003/0205231 A1 11/2003 Shigematsu et al.

2004/0069302 A1* 4/2004 Wilson et al. 128/201.24
 2004/0084048 A1 5/2004 Stenzler et al.
 2004/0121687 A1 6/2004 Morman et al.
 2004/0182398 A1* 9/2004 Sprinkle et al. 128/207.13
 2004/0237962 A1 12/2004 Russell
 2004/0244798 A1 12/2004 Lin
 2005/0056286 A1 3/2005 Duckworth et al.
 2005/0061327 A1 3/2005 Martin et al.
 2005/0098183 A1 5/2005 Nash et al.
 2005/0114986 A1 6/2005 Hobart
 2005/0121029 A1 6/2005 Reisman
 2005/0133036 A1 6/2005 Steindorf
 2005/0139216 A1 6/2005 Mittelstadt et al.
 2005/0211251 A1 9/2005 Henderson et al.
 2006/0130214 A1 6/2006 Steindorf
 2006/0130841 A1 6/2006 Spence et al.
 2006/0174892 A1 8/2006 Leksutin et al.
 2006/0225740 A1 10/2006 Eaton et al.
 2006/0249159 A1 11/2006 Ho et al.
 2007/0039620 A1 2/2007 Sustello
 2007/0044802 A1 3/2007 Horne et al.
 2007/0044803 A1 3/2007 Xue et al.
 2007/0144524 A1* 6/2007 Martin 128/206.12
 2007/0251522 A1 11/2007 Welchel et al.
 2007/0252946 A1 11/2007 Welchel et al.
 2008/0026173 A1 1/2008 Angadjivand et al.
 2008/0110465 A1 5/2008 Welchel et al.
 2009/0000624 A1 1/2009 Lee et al.
 2009/0044809 A1 2/2009 Welchel et al.
 2009/0044811 A1 2/2009 Welchel et al.
 2009/0078261 A1 3/2009 Martin et al.
 2009/0078262 A1 3/2009 Gebrewold et al.
 2009/0078264 A1 3/2009 Martin et al.
 2009/0078265 A1 3/2009 Gebrewold et al.
 2009/0078266 A1 3/2009 Stepan et al.
 2009/0090364 A1 4/2009 Daugaard et al.
 2009/0133700 A1* 5/2009 Martin et al. 128/207.12
 2009/0320848 A1 12/2009 Steindorf et al.
 2010/0224199 A1 9/2010 Smith et al.
 2012/0125341 A1* 5/2012 Gebrewold et al. 128/206.12
 2012/0125342 A1* 5/2012 Gebrewold et al. 128/206.12
 2012/0167890 A1* 7/2012 Insley et al. 128/206.15

FOREIGN PATENT DOCUMENTS

DE 1 077 067 B 3/1960
 DE 1 245 744 B 7/1967
 DE 199 62 515 A1 7/2001
 EM 000225610-0001 9/2004
 EM 000380753-0002 7/2005
 EM 000588314-0001 8/2006
 EM 000588314-0003 8/2006
 EP 0 234 746 A1 9/1987
 EP 0 196 953 B1 10/1989
 FR 848526 A 10/1939
 GB 2 059 782 A 4/1981
 GB 2 076 966 A 12/1981
 GB 2 092 009 A 8/1982
 GB 2 103 491 A 2/1983
 JP 33-011700 Y 8/1958
 JP 53-153700 U 12/1978
 JP 59-048654 U 3/1984
 JP 06-048697 U 7/1994
 JP 07-025968 Y2 6/1995
 JP 08-004033 Y2 2/1996
 JP 08-155046 A 6/1996
 JP 11-253566 A 9/1999
 JP 11-290473 A 10/1999
 JP 2003-093528 A 4/2003
 TW M317273 Y 8/2007
 WO WO 86/01734 A1 3/1986
 WO WO 91/05584 A1 5/1991
 WO WO 97/32494 A1 9/1997
 WO WO 99/06116 A1 2/1999
 WO WO 03/013657 A1 2/2003

* cited by examiner

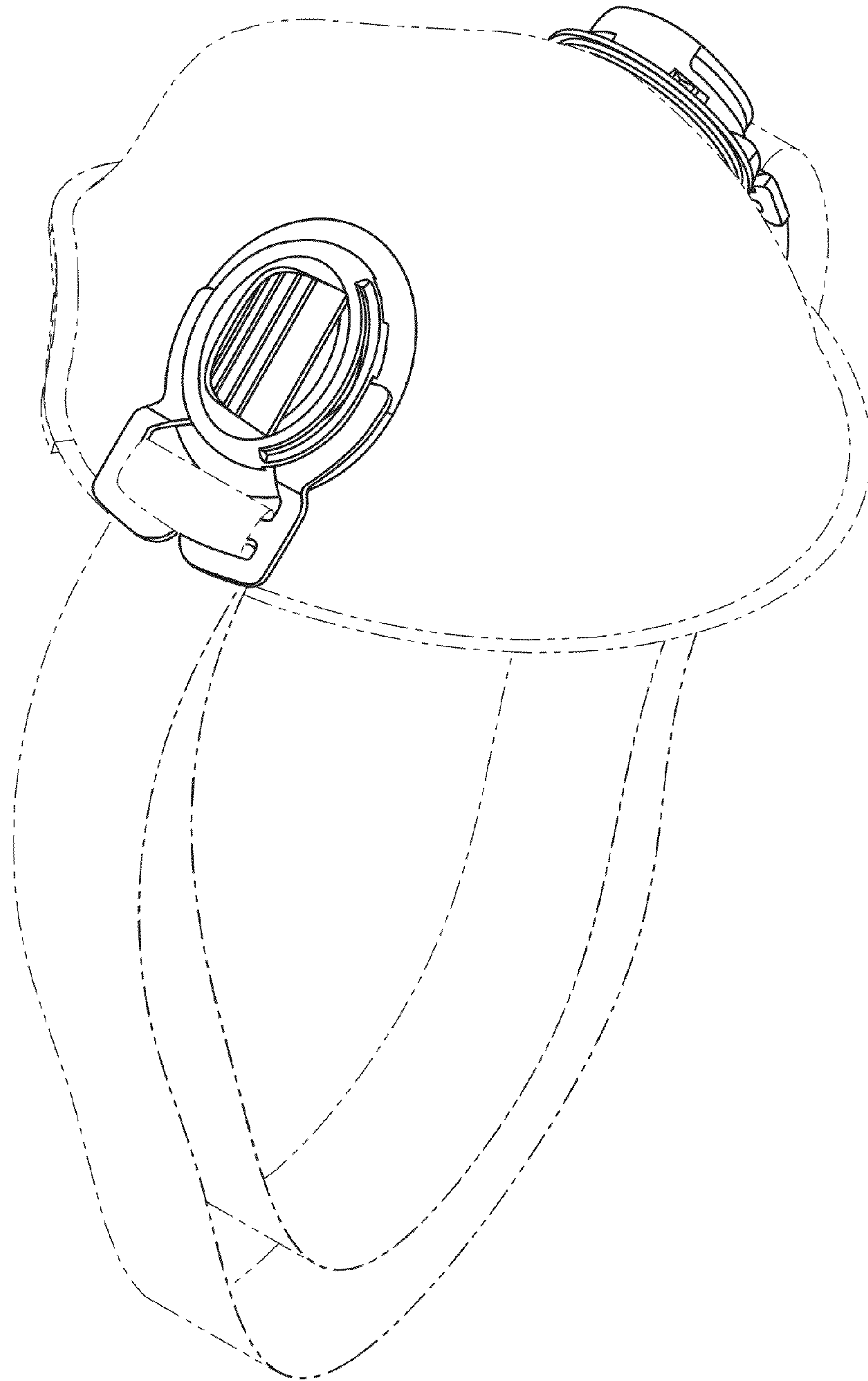


FIG. 1

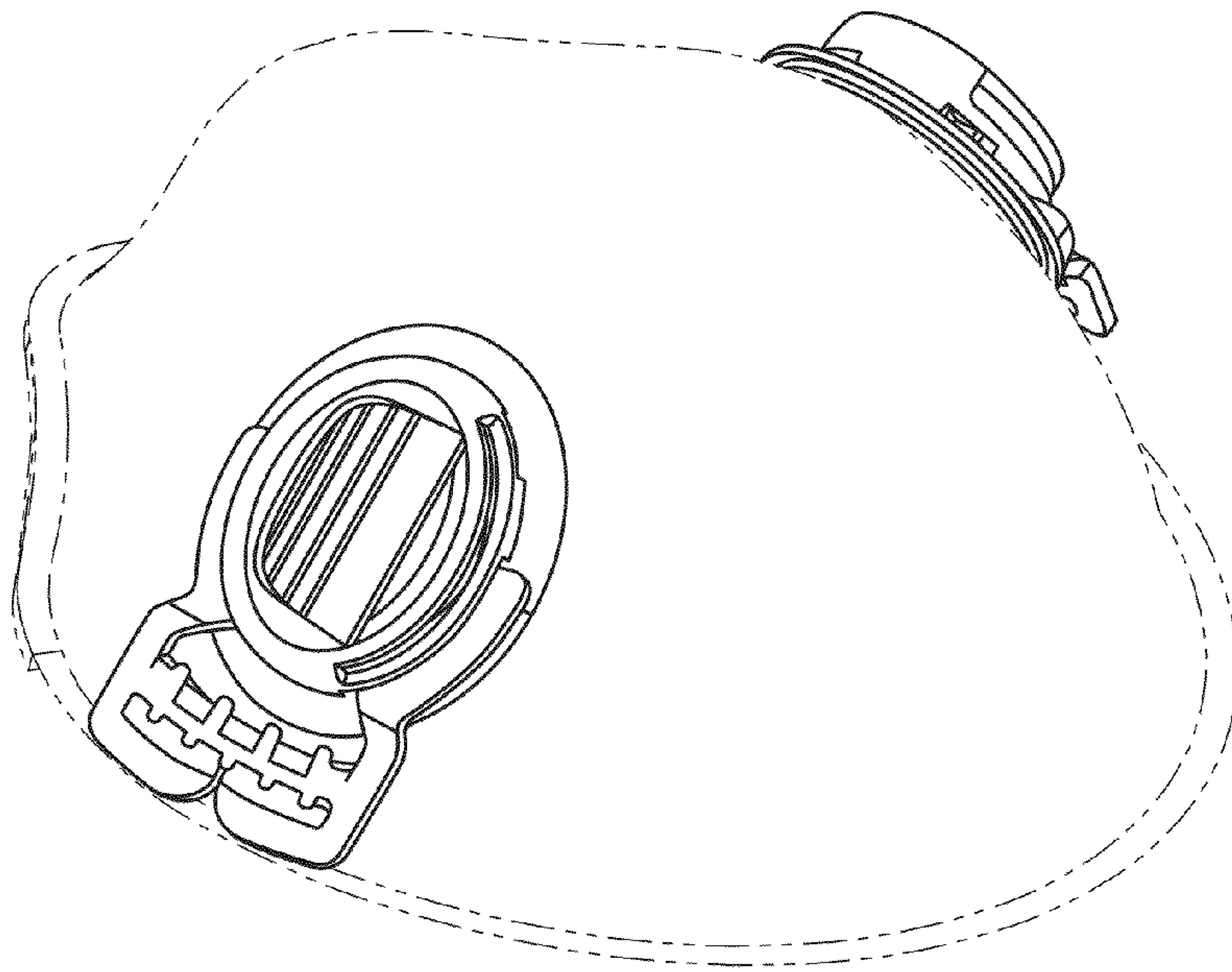


FIG. 2

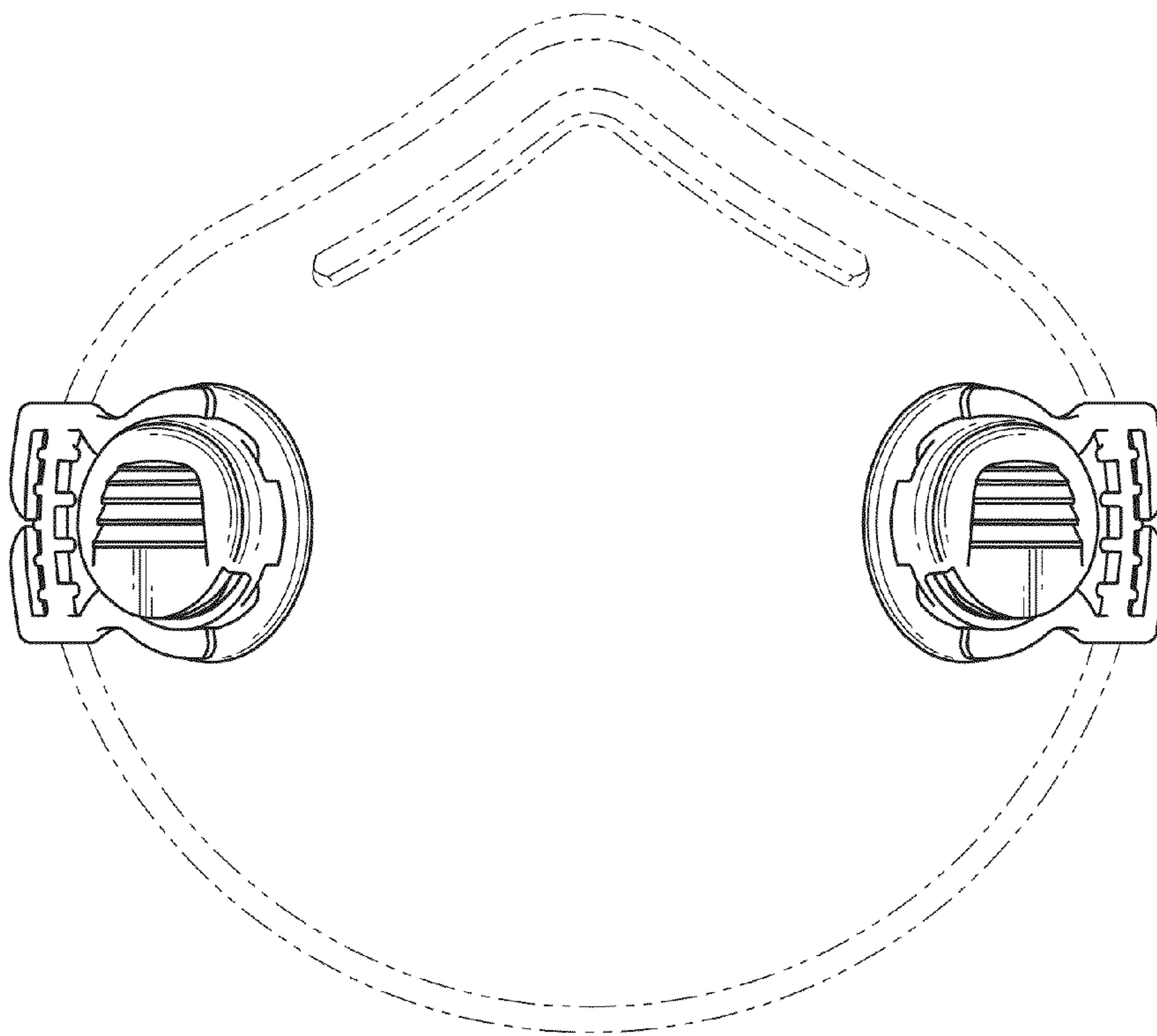


FIG. 3

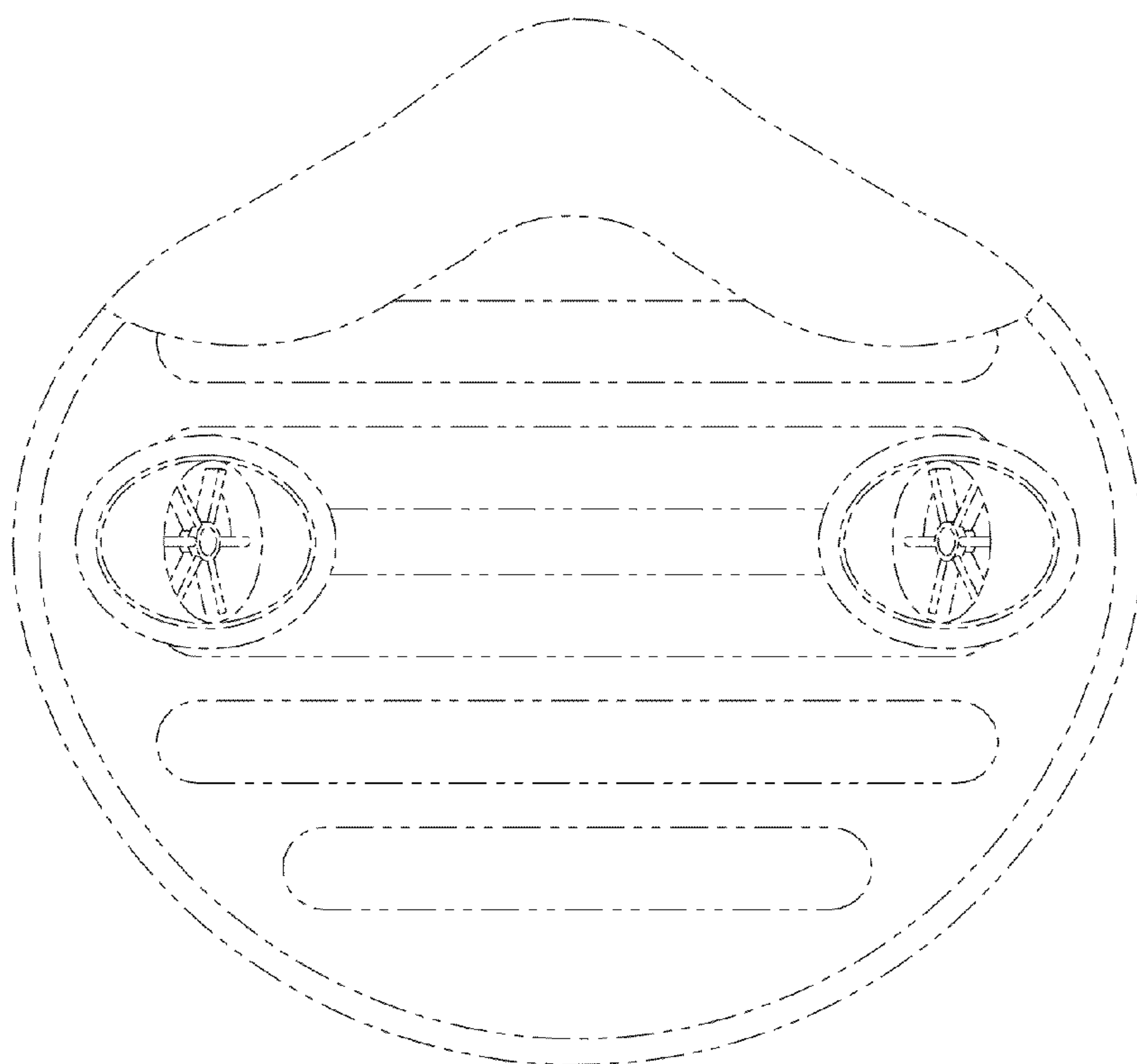


FIG. 4

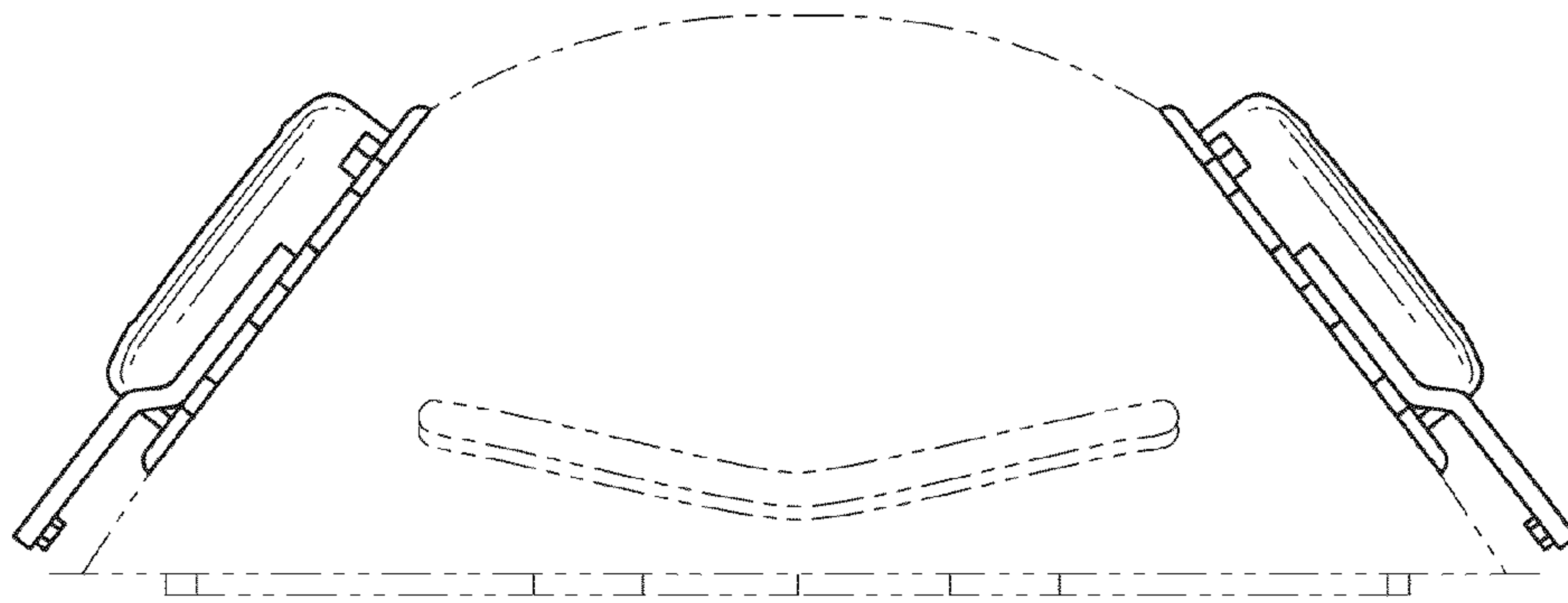


FIG. 5

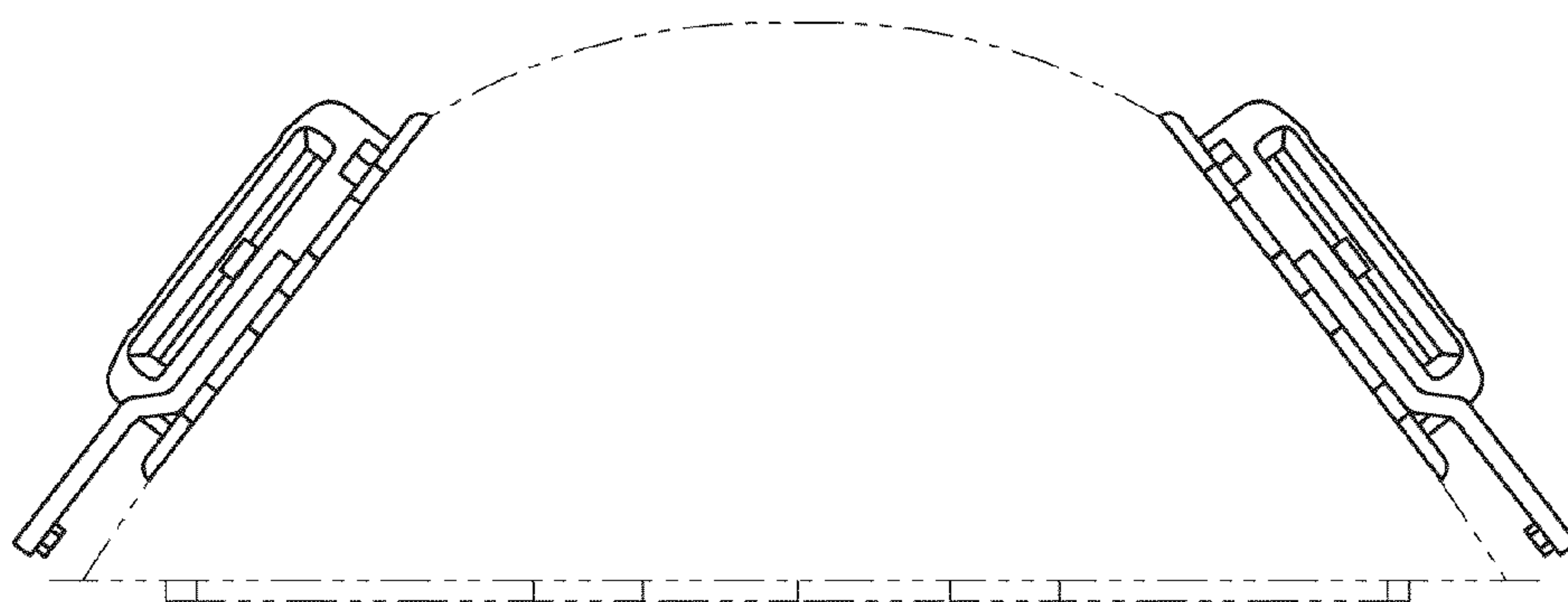


FIG. 6

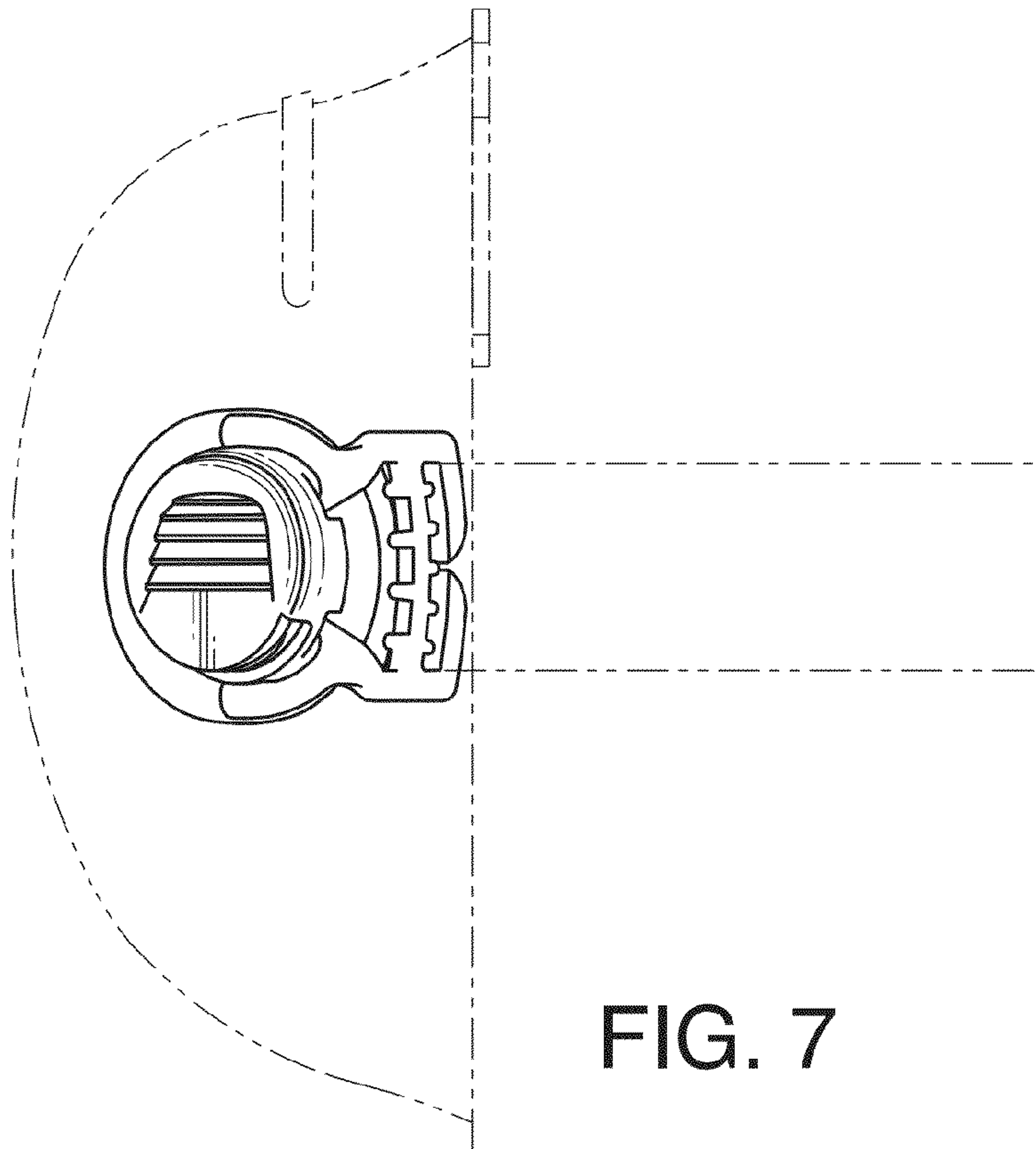


FIG. 7

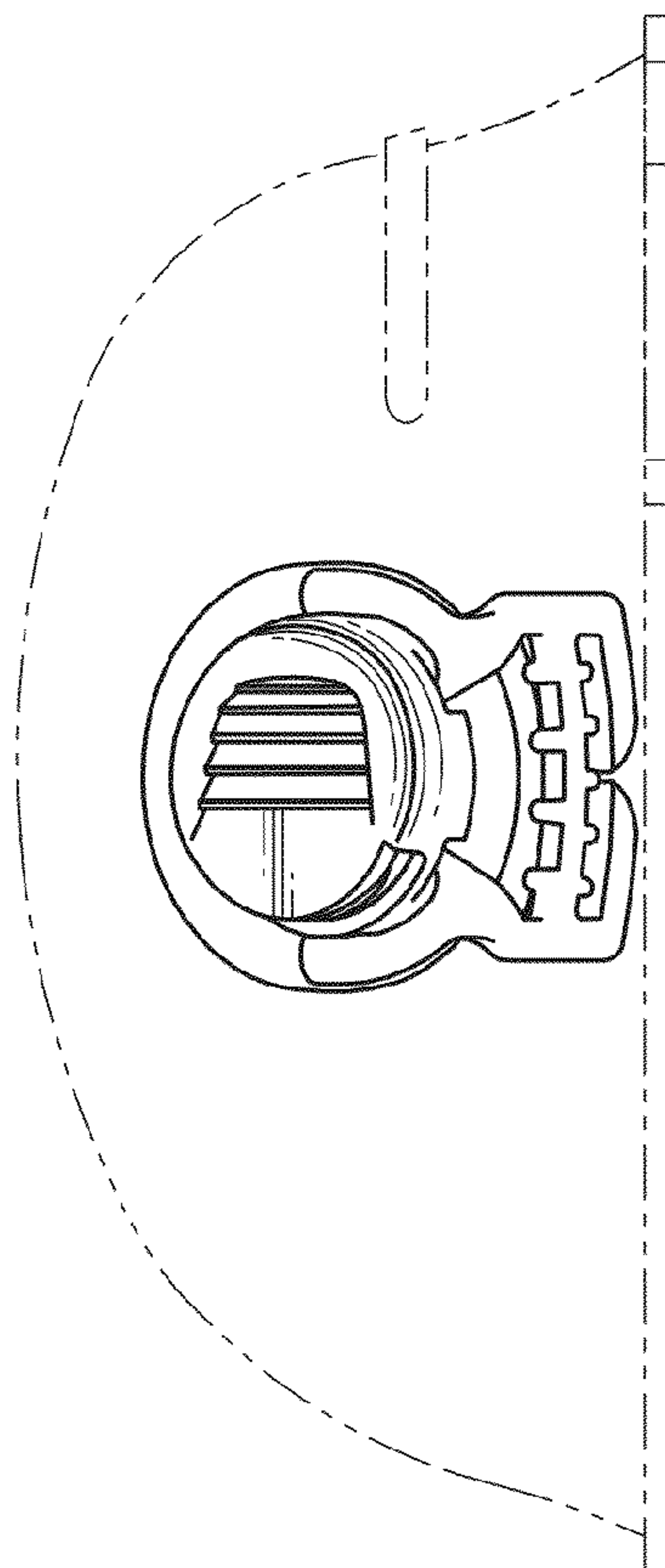


FIG. 8

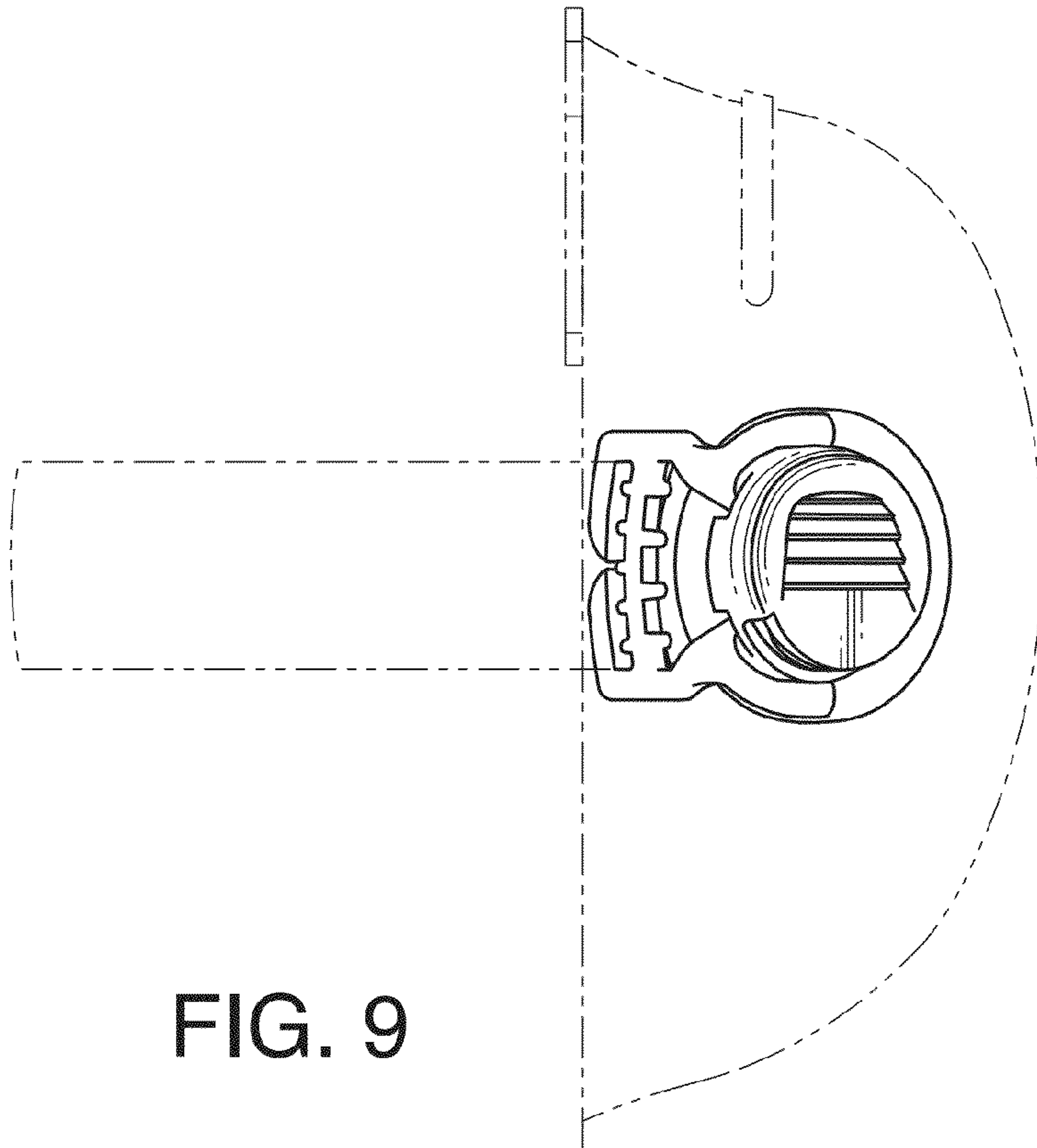


FIG. 9

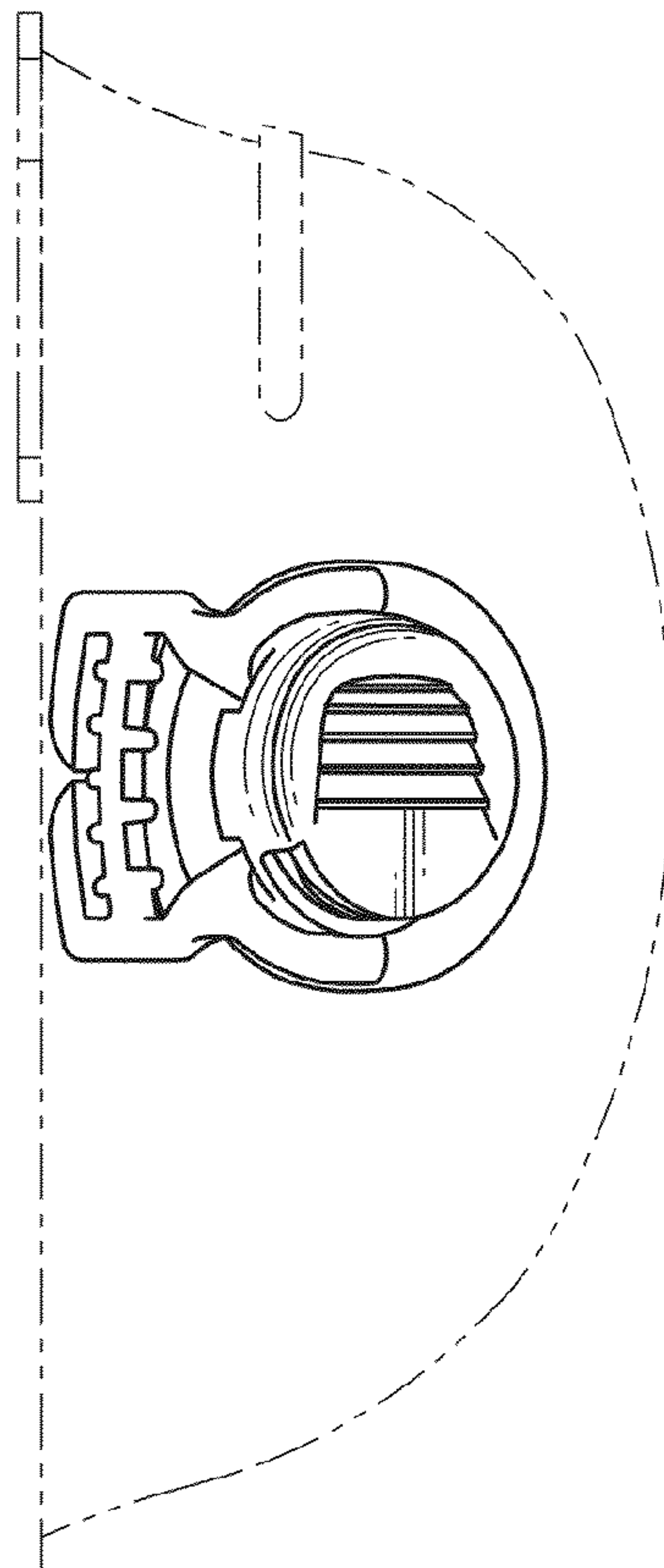


FIG. 10