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(12) **United States Design Patent** (10) **Patent No.:** **US D937,407 S**  
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(54) **NASAL CANNULA**

(56) **References Cited**

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U.S. PATENT DOCUMENTS

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2,807,262 A 12/1952 Lew  
3,288,136 A 11/1966 Lund  
(Continued)

FOREIGN PATENT DOCUMENTS

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CN 1905917 1/2007  
CN 101396576 A 4/2009  
(Continued)

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

OTHER PUBLICATIONS

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Australian Government Patent Examination Report; dated Jul. 2,  
2015; 4 pages.

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**Related U.S. Application Data**

*Primary Examiner* — Lilyana Bekic

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17, 2019, now Pat. No. Des. 893,015, which is a  
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(51) **LOC (13) Cl.** ..... **24-02**

(57) **CLAIM**

The ornamental design for a nasal cannula, as shown and  
described.

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

USPC ..... **D24/110.4; D24/110.5**

**DESCRIPTION**

(58) **Field of Classification Search**

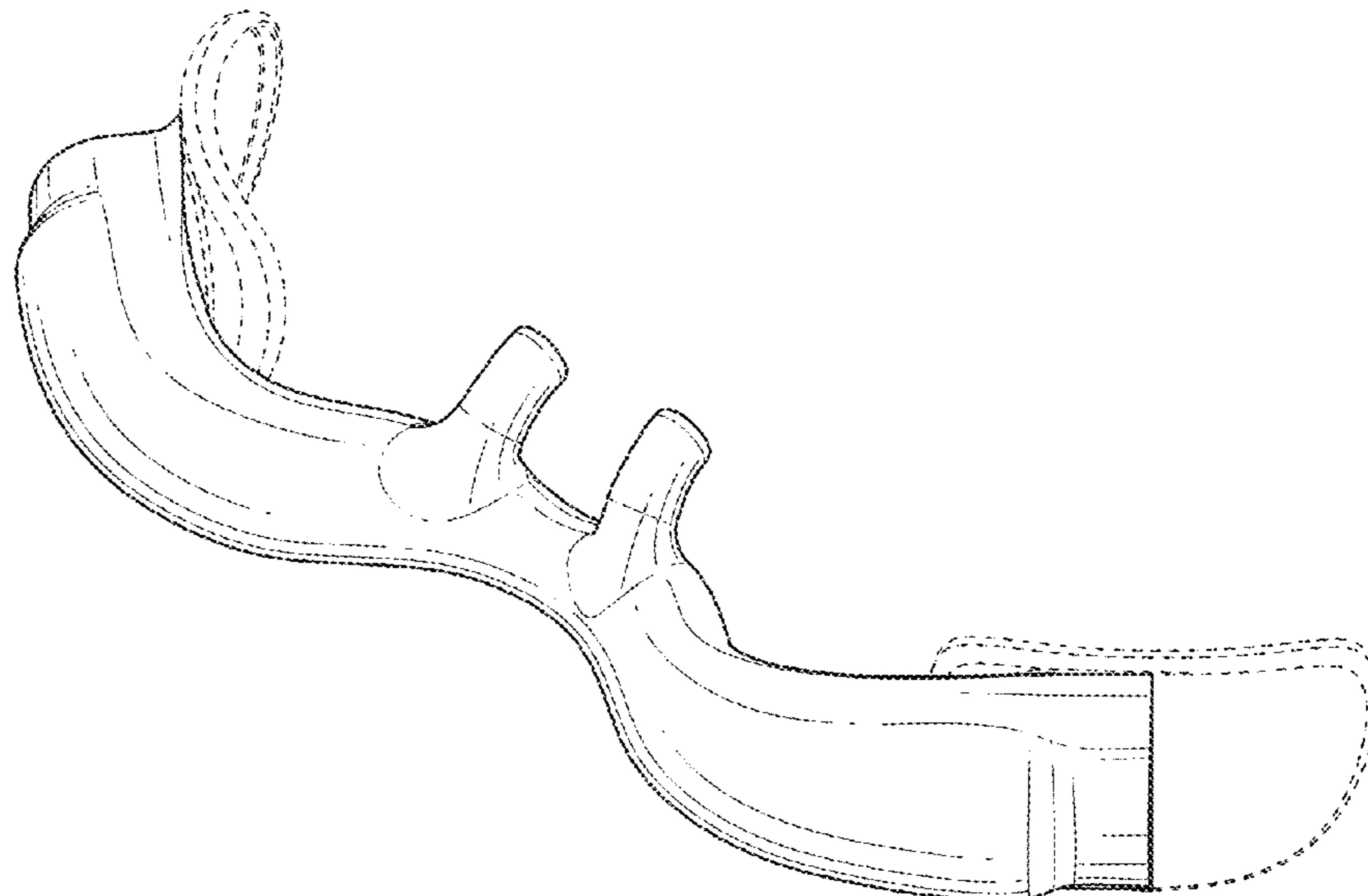
USPC .... D24/110.1–110.4, 110, 110.5–110.6, 112,  
D24/127–128, 164; D21/660

CPC ..... A61M 16/06; A61M 16/0683; A61M  
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16/0672; A61M 2202/0208; A62B 18/02;  
A62B 18/10

FIG. 1 is a top, front and right side perspective view of a  
nasal cannula embodying our new design.  
FIG. 2 is a top, rear and right side perspective view thereof.  
FIG. 3 is a top view thereof.  
FIG. 4 is a bottom view thereof.  
FIG. 5 is a right side view thereof.  
FIG. 6 is a left side view thereof.  
FIG. 7 is a front view thereof; and,  
FIG. 8 is a rear view thereof.  
Dash-dash broken lines are used to illustrate portions of the  
nasal cannula which form no part of the claimed design.

See application file for complete search history.

**1 Claim, 4 Drawing Sheets**



(56)

References Cited

U.S. PATENT DOCUMENTS

3,513,844 A 5/1970 Smith  
 D228,692 S 10/1973 King  
 4,106,505 A 8/1978 Slater et al.  
 4,122,857 A 10/1978 Haerr  
 4,446,869 A 5/1984 Knodle  
 4,584,997 A 4/1986 Delong  
 4,589,684 A 5/1986 Nowacki et al.  
 4,601,495 A 7/1986 Webb  
 4,686,354 A 8/1987 Makin  
 4,808,160 A 2/1989 Timmons et al.  
 D300,271 S 3/1989 Rudolph et al.  
 D300,272 S 3/1989 Rudolph et al.  
 4,818,320 A 4/1989 Weichselbaum  
 5,040,527 A 8/1991 Larson et al.  
 5,163,914 A 11/1992 Abel  
 5,292,312 A 3/1994 Delk et al.  
 5,292,313 A 3/1994 Delk et al.  
 5,300,037 A 4/1994 Delk et al.  
 5,308,339 A 5/1994 Kalt et al.  
 5,335,656 A 8/1994 Bowe et al.  
 D363,541 S 10/1995 Cottone, Sr. et al.  
 5,672,159 A 9/1997 Warrick  
 5,682,881 A 11/1997 Winthrop et al.  
 5,752,511 A 5/1998 Simmons et al.  
 D431,634 S 10/2000 Mantz  
 6,206,134 B1 3/2001 Stark  
 6,328,038 B1 12/2001 Kessler et al.  
 6,439,234 B1 8/2002 Curti et al.  
 6,447,486 B1 9/2002 Tollini  
 D468,015 S 12/2002 Horppu  
 D472,316 S 3/2003 Douglas et al.  
 6,536,428 B1 3/2003 Smith et al.  
 D472,630 S 4/2003 Douglas et al.  
 6,893,055 B2 5/2005 Thomas et al.  
 6,915,705 B1 7/2005 Truitt  
 D535,742 S 1/2007 VonDohlen et al.  
 7,178,521 B2 2/2007 Burrow et al.  
 D551,340 S 9/2007 Wood et al.  
 7,331,348 B1 2/2008 Beevers  
 7,353,826 B2 4/2008 Sleeper et al.  
 7,370,652 B2 5/2008 Matula, Jr. et al.  
 7,406,966 B2 8/2008 Wondka  
 7,469,719 B2 12/2008 Gray  
 D627,059 S 11/2010 Wood et al.  
 D645,547 S 9/2011 Lombardi et al.  
 D654,573 S 2/2012 Lombardi et al.  
 D661,785 S 6/2012 Johnson  
 8,317,203 B2 11/2012 Hermle et al.  
 D672,037 S 12/2012 Miller  
 8,485,193 B2 7/2013 Worley  
 8,534,278 B2 9/2013 Colman et al.  
 D691,717 S 10/2013 McLean et al.  
 D692,555 S 10/2013 Maksym et al.  
 D695,890 S 12/2013 Bowden et al.  
 D697,200 S 1/2014 Mahaffy  
 D724,720 S 3/2015 O'Connor et al.  
 D735,326 S 7/2015 Gulliver  
 D736,914 S 8/2015 Schultz  
 D747,471 S 1/2016 Gulliver  
 D747,792 S 1/2016 Babbage et al.  
 D768,285 S 10/2016 Reed  
 D794,184 S 8/2017 Smith  
 9,808,612 B2 11/2017 Gulliver et al.  
 D825,053 S 8/2018 Ronayne et al.  
 D849,242 S 5/2019 Wilson et al.  
 D849,243 S 5/2019 Wilson et al.  
 D862,686 S 10/2019 Mohamed  
 10,449,122 B2 10/2019 Gulliver et al.  
 D865,943 S 11/2019 Wilson et al.  
 10,463,826 B2 11/2019 Gulliver et al.  
 D870,269 S 12/2019 Klenner et al.  
 D870,878 S 12/2019 Wilson et al.  
 10,569,043 B2 2/2020 Tatkov  
 10,716,908 B2\* 7/2020 Spence ..... A61M 16/0006  
 D893,015 S\* 8/2020 Wilson ..... D24/110.4

D897,523 S\* 9/2020 Babbage ..... D24/110  
 D908,209 S\* 1/2021 Ronayne ..... D24/112  
 D911,515 S\* 2/2021 Koschany ..... D24/110.5  
 D923,170 S\* 6/2021 Walker ..... D24/110.4  
 2004/0090066 A1 5/2004 Hoffmann  
 2004/0103686 A1 6/2004 Fehr et al.  
 2004/0261797 A1 12/2004 White et al.  
 2005/0028822 A1 2/2005 Sleeper et al.  
 2005/0033247 A1 2/2005 Thompson  
 2005/0178383 A1 8/2005 Mackie et al.  
 2005/0199242 A1 9/2005 Matula, Jr. et al.  
 2006/0107958 A1 5/2006 Sleeper  
 2006/0107960 A1 5/2006 Smart  
 2007/0043334 A1 2/2007 Guala  
 2007/0088327 A1 4/2007 Guala  
 2007/0175473 A1 8/2007 Lewis et al.  
 2008/0093846 A1 4/2008 Sparks et al.  
 2008/0142019 A1 6/2008 Lewis et al.  
 2008/0185007 A1 8/2008 Sleeper et al.  
 2008/0190436 A1 8/2008 Jaffe et al.  
 2008/0245369 A1 10/2008 Matula et al.  
 2009/0078259 A1 3/2009 Kooij et al.  
 2009/0101147 A1 4/2009 Landis et al.  
 2009/0133699 A1 5/2009 Nalagatla et al.  
 2009/0183739 A1 7/2009 Wondka  
 2009/0223523 A1 9/2009 Chang  
 2009/0299158 A1 12/2009 Boatner et al.  
 2009/0320851 A1 12/2009 Selvarajan et al.  
 2010/0000534 A1 1/2010 Kooij et al.  
 2010/0018534 A1 1/2010 Veliss et al.  
 2010/0057034 A1 3/2010 Dennis et al.  
 2010/0100022 A1 4/2010 Greener et al.  
 2010/0163051 A1 7/2010 Brewer et al.  
 2010/0168600 A1 7/2010 Adriance et al.  
 2010/0192957 A1 8/2010 Hobson et al.  
 2010/0206310 A1 8/2010 Matsubara et al.  
 2010/0224196 A1 9/2010 Jablons  
 2010/0229872 A1 9/2010 Ho  
 2011/0067704 A1 3/2011 Kooji et al.  
 2012/0132209 A1 5/2012 Rummery et al.  
 2012/0167894 A1 7/2012 O'Leary  
 2013/0037030 A1 2/2013 Matula  
 2013/0104888 A1 5/2013 Landis et al.  
 2013/0298912 A1 11/2013 Gulliver et al.  
 2014/0000626 A1 1/2014 O'Connor et al.  
 2014/0014108 A1 1/2014 Dillard  
 2014/0053846 A1 2/2014 Wood  
 2014/0200475 A1 7/2014 Rubin  
 2014/0338669 A1 11/2014 Zhao et al.  
 2015/0021909 A1 1/2015 Gulliver et al.  
 2015/0090255 A1 4/2015 Gulliver et al.  
 2015/0320962 A1 11/2015 Bafle et al.  
 2016/0030696 A1 2/2016 Klenner et al.  
 2016/0051787 A1 2/2016 Matsubara et al.  
 2016/0131292 A1 5/2016 Decker  
 2016/0158476 A1 6/2016 Tatkov  
 2016/0175548 A1 6/2016 Spence et al.  
 2016/0235937 A1 8/2016 Ronayne et al.  
 2017/0065789 A1 3/2017 Reed  
 2017/0348500 A1 12/2017 Johnson et al.  
 2018/0043124 A1 2/2018 Ronayne et al.  
 2018/0078727 A1 3/2018 Johnson et al.  
 2019/0321264 A1 10/2019 Gulliver et al.  
 2019/0344036 A1 11/2019 O'Donnell et al.  
 2020/0061324 A1 2/2020 Lei  
 2020/0282168 A1\* 9/2020 Tatkov ..... A61M 16/0672  
 2020/0384231 A1\* 12/2020 McNally ..... A61M 16/0875  
 2020/0405986 A1\* 12/2020 Brambilla ..... A61M 16/0816  
 2021/0023322 A1\* 1/2021 Urie ..... A61M 16/0672  
 2021/0178100 A1\* 6/2021 Chou ..... A61M 16/0672

FOREIGN PATENT DOCUMENTS

CN 101653632 2/2010  
 CN 101977656 2/2011  
 DE 37 09 122 A1 9/1988  
 DE 10 2007 063 556 A1 7/2009  
 EP 806217 A2 11/1997  
 EP 1 314 446 8/2002

(56)

References Cited

FOREIGN PATENT DOCUMENTS

EP	1481702		12/2004
FR	2363423	A1	3/1978
GB	813700	A	5/1959
GB	836407	A	6/1960
GB	933172	A	8/1963
GB	2368800		5/2002
GB	2436525		10/2007
JP	H09-510635		10/1997
JP	2000-500359		1/2000
JP	2003-502116		1/2003
JP	2005-40589		2/2005
JP	2009-72596		4/2009
JP	2009-291615		12/2009
WO	WO 1992/20392		11/1992
WO	WO 1998/044973		10/1998
WO	WO 2003/082406		10/2003
WO	WO 2004/108218		12/2004
WO	WO 2005/079670		9/2005
WO	WO 2008/019294		2/2008
WO	WO 2008/100860		8/2008
WO	WO 2012/091967		7/2012
WO	WO 2013/014581		1/2013
WO	WO 2013/022356		2/2013
WO	WO 2013/157960		10/2013

OTHER PUBLICATIONS

Australian Examination Report; dated Jan. 19, 2017; 4 pages.  
 Chinese Exam Report, CN 201480069093.1; dated Jun. 28, 2017; 10 pages.  
 Chinese Office Action; dated Nov. 4, 2015; 8 pages.  
 Extended European Search Report, EP 1485791.2; dated May 15, 2017; 7 pages.  
 GB Examination Report; dated Jun. 2, 2016; 2 pages.

GB Examination Report; dated May 18, 2016; 2 pages.  
 GB Examination Report; dated May 19, 2016; 1 page.  
 International Search Report and Written Opinion, PCT/NZ2011/000218; dated Feb. 27, 2012; 17 pages.  
 International Search Report and Written Opinion, PCT/NZ2012/000142; dated Jan. 22, 2013; 14 pages.  
 International Preliminary Report on Patentability, PCT/NZ2014/000217; dated Jan. 12, 2015; 21 pages.  
 International Preliminary Report on Patentability, PCT/NZ2012/000142; dated Feb. 20, 2014; 6 pages.  
 Japanese Examination Report and English translation; dated Aug. 19, 2015; 4 pages.  
 Japanese Examination Report, JP 2014524961A; dated Nov. 8, 2017; 2 pages.  
 TW Search Report; English Translation; dated May 18, 2016; 1 page.  
 UK Examination Report; GB15162878; dated Oct. 8, 2015; 8 pages.  
 UK Examination Report; GB15162852; dated Oct. 8, 2015; 7 pages.  
 UK Examination Report; GB15225840; dated Feb. 4, 2016; 8 pages.  
 UK Examination Report; GB15162878; dated Feb. 4, 2016; 5 pages.  
 UK Examination Report; GB15162852; dated Feb. 4, 2016; 5 pages.  
 UK Examination Report; GB15225832; dated Feb. 4, 2016; 5 pages.  
 UK Examination Report; GB13066352; dated Feb. 4, 2016; 3 pages.  
 UK Examination Report; GB16031130; dated Mar. 4, 2016; 7 pages.  
 UK Examination Report; GB16032922; dated Mar. 11, 2016; 6 pages.  
 AU Examination Report; 2011318681; dated Apr. 12, 2016; 3 pages.  
 Optiflow Junior: Easy Care, Effective Flow. Fisher & Paykel. Brochure. Date Published: 2012. (Year 2012).  
 Optiflow Junior 2. Fisher & Paykel Healthcare. Web archive date: Jun. 26, 2018. Retrieved from Internet: <<https://web.archive.org/1001/https://www.fphcare.com/us/hospital/infant-respiratory/nasal-high-flow-therapy/understand/optiflow-junior-2/>> (Year: 2018).

\* cited by examiner

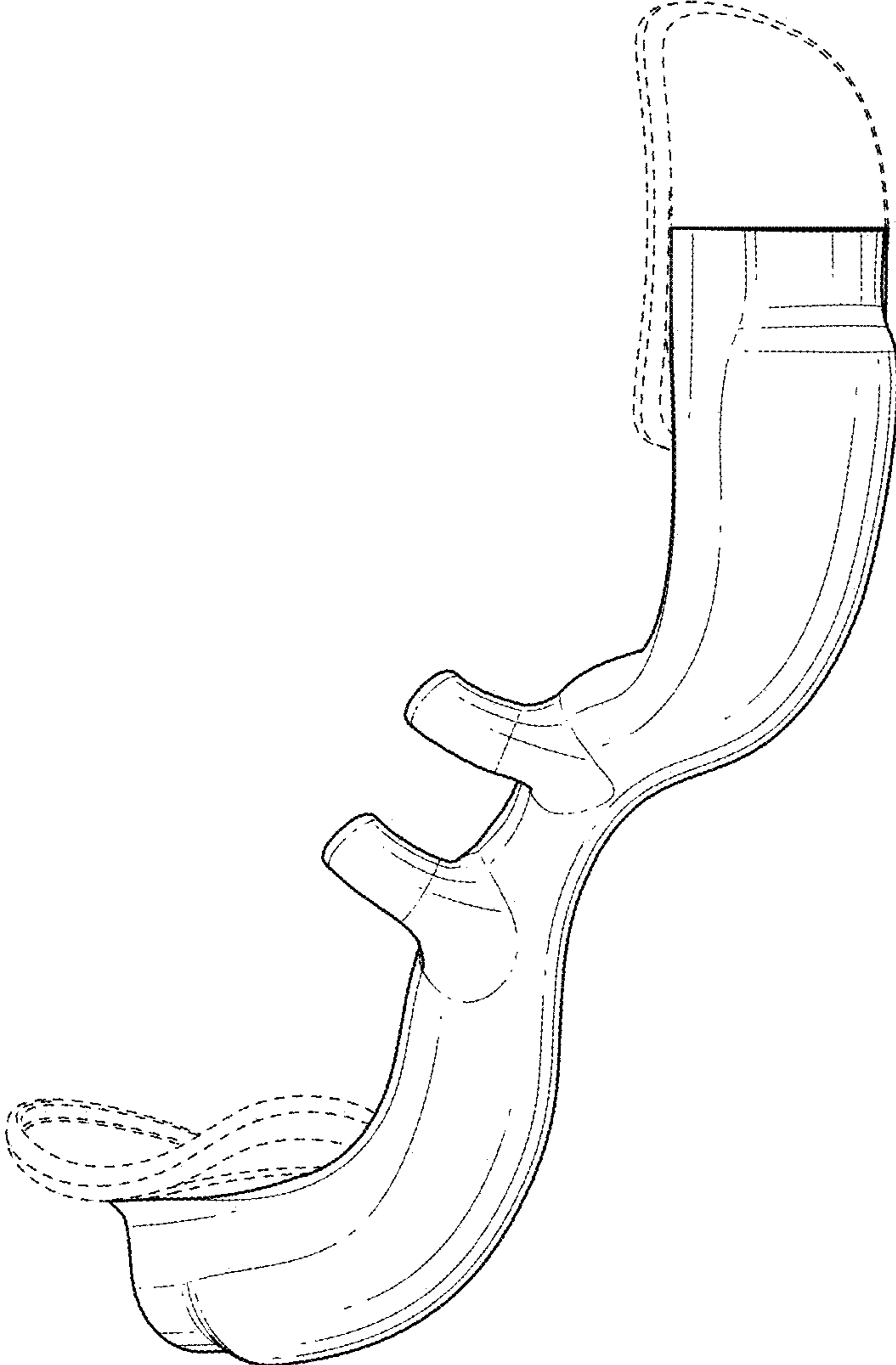


FIG. 1

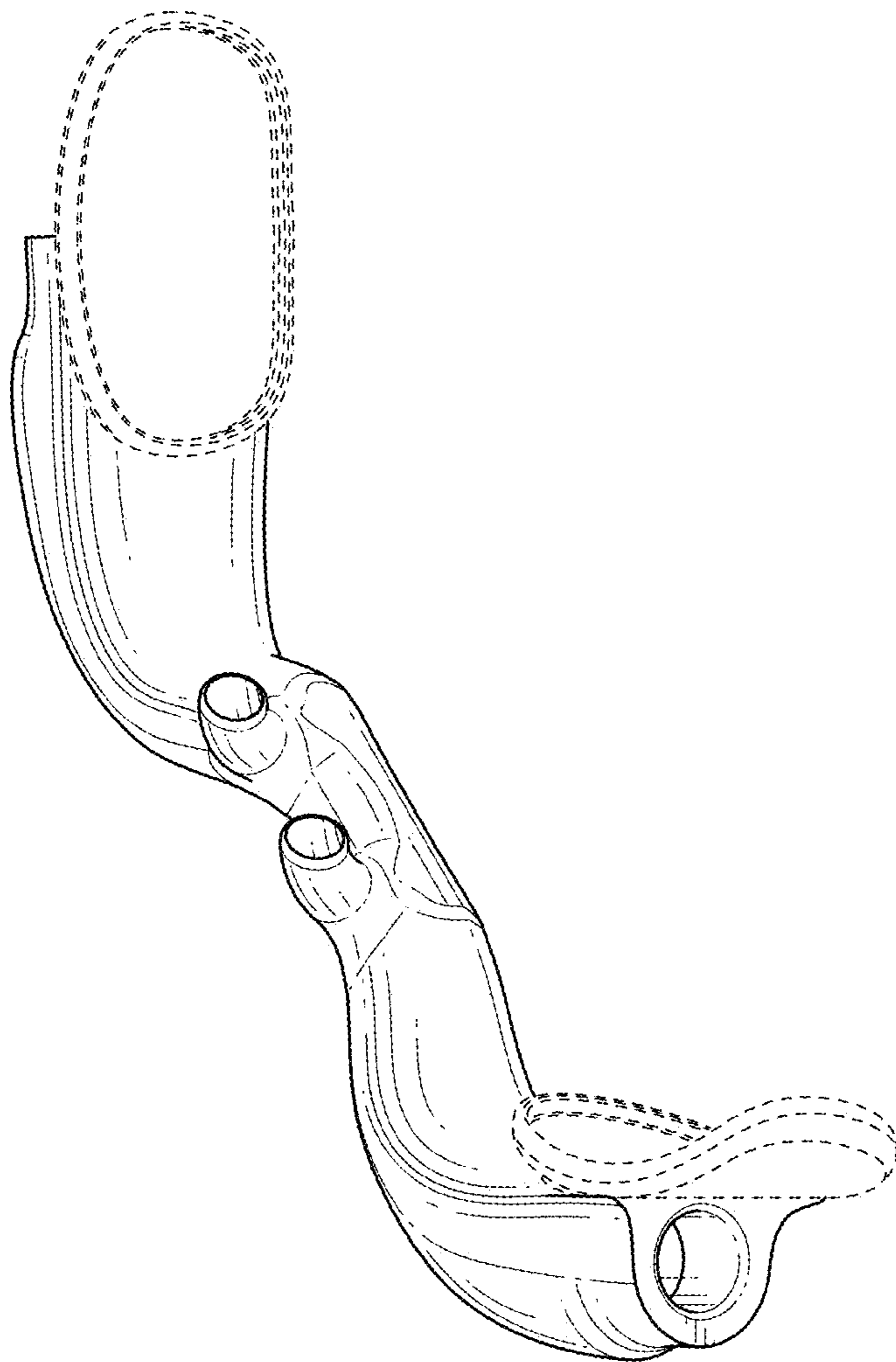


FIG. 2

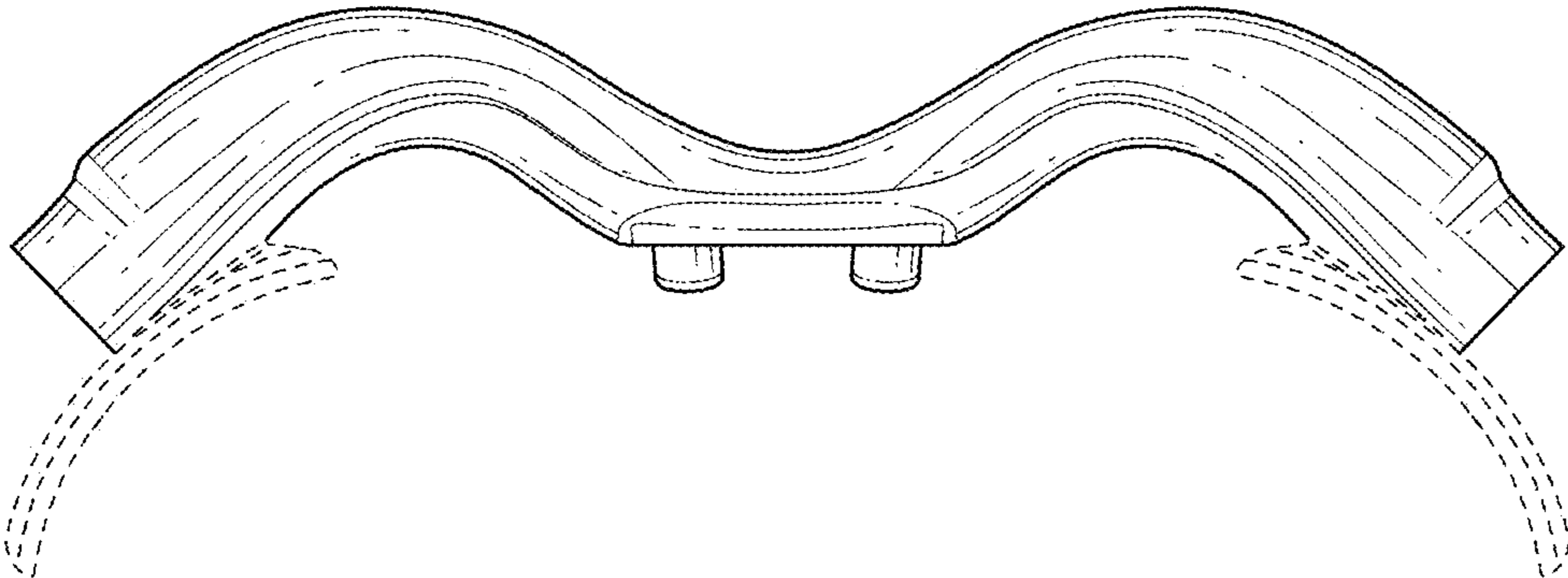


FIG. 4

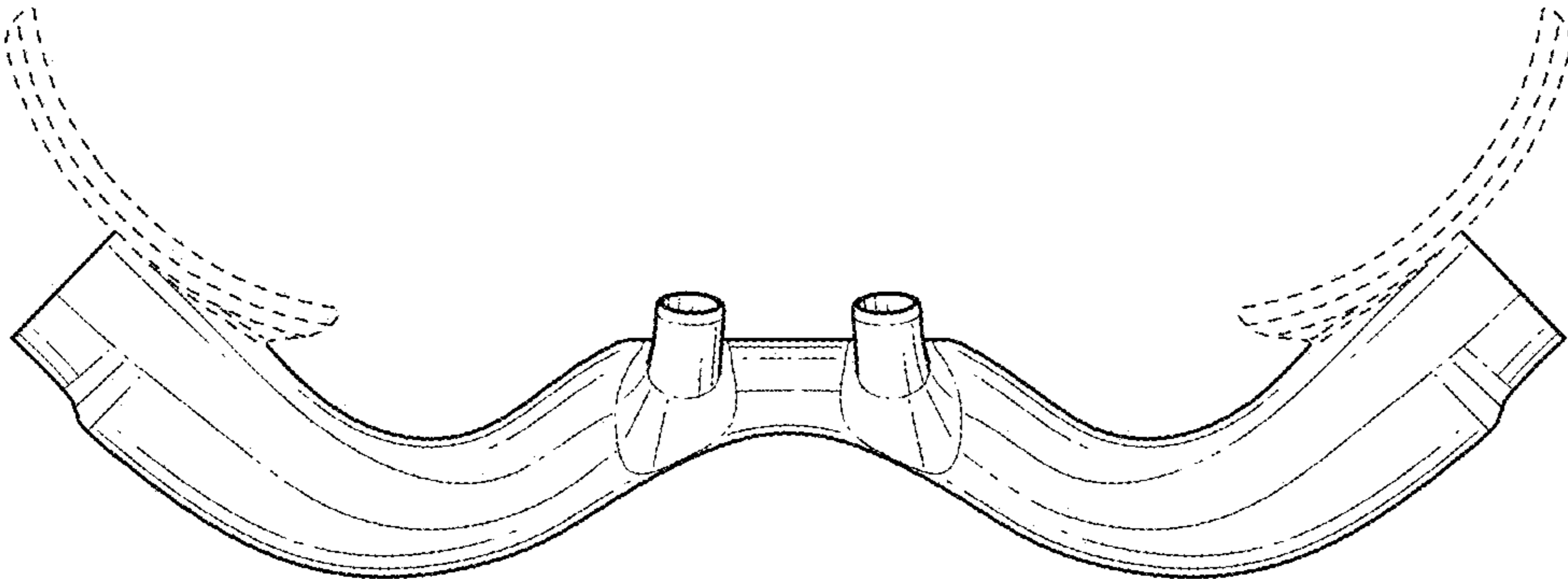


FIG. 3

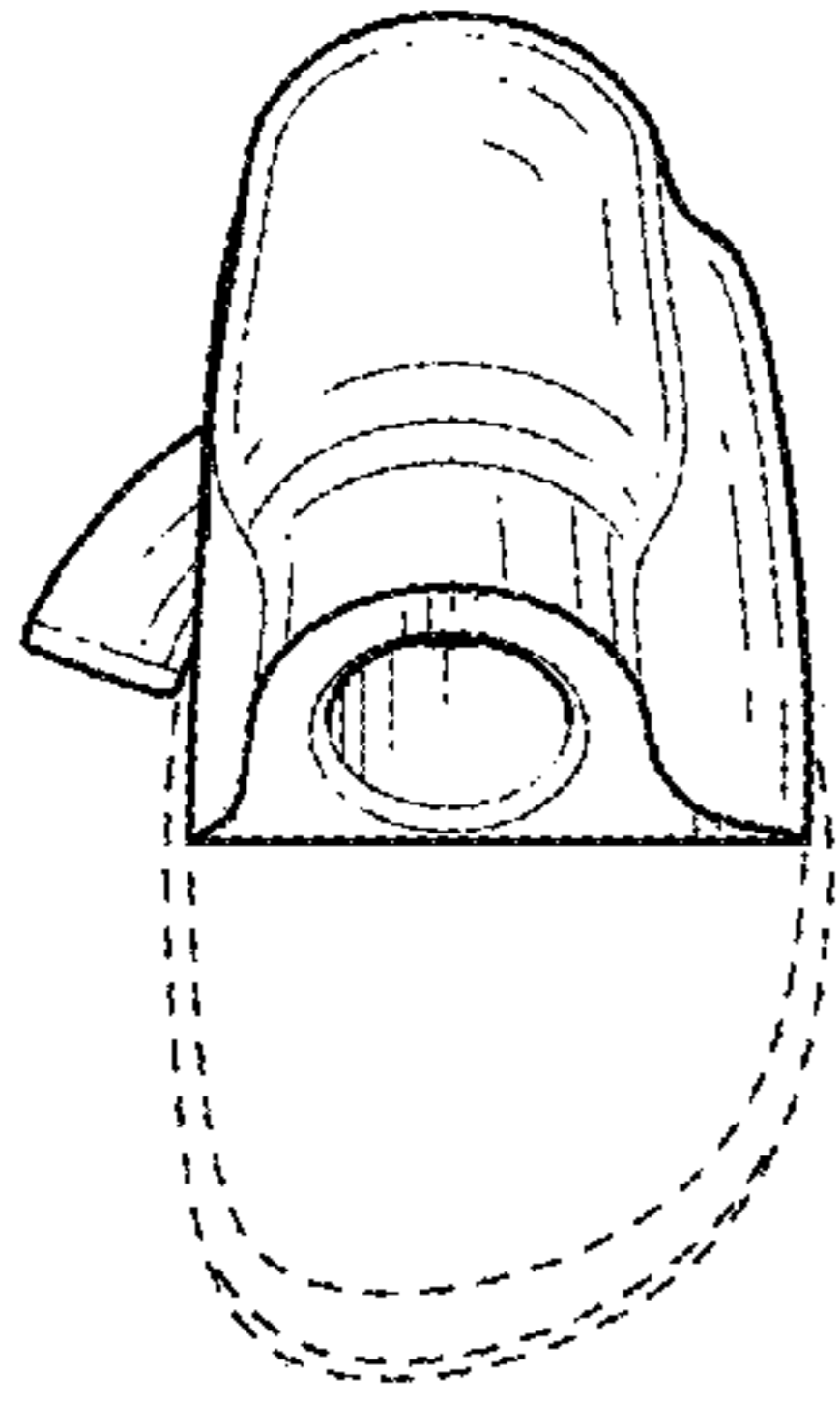


FIG. 5

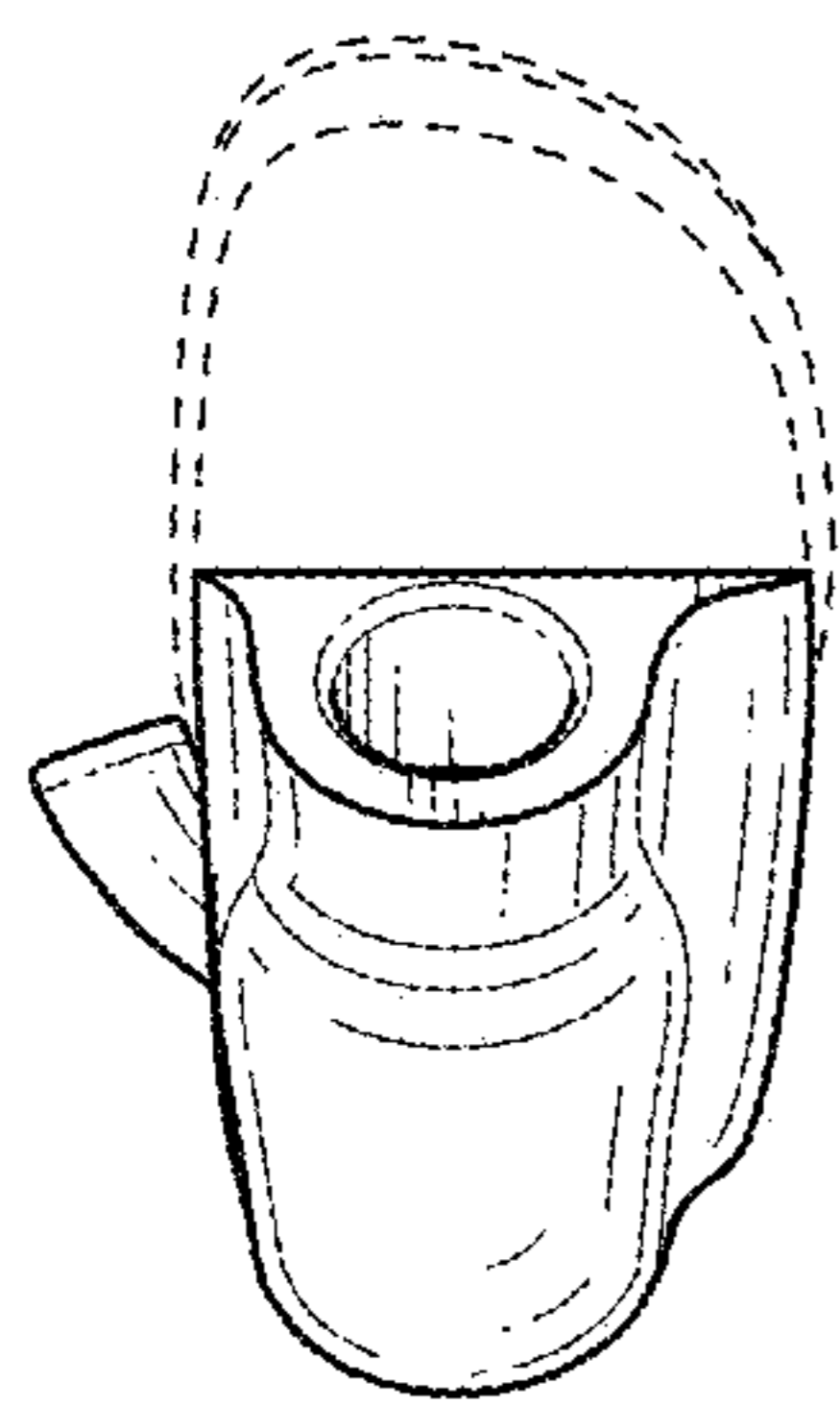


FIG. 6

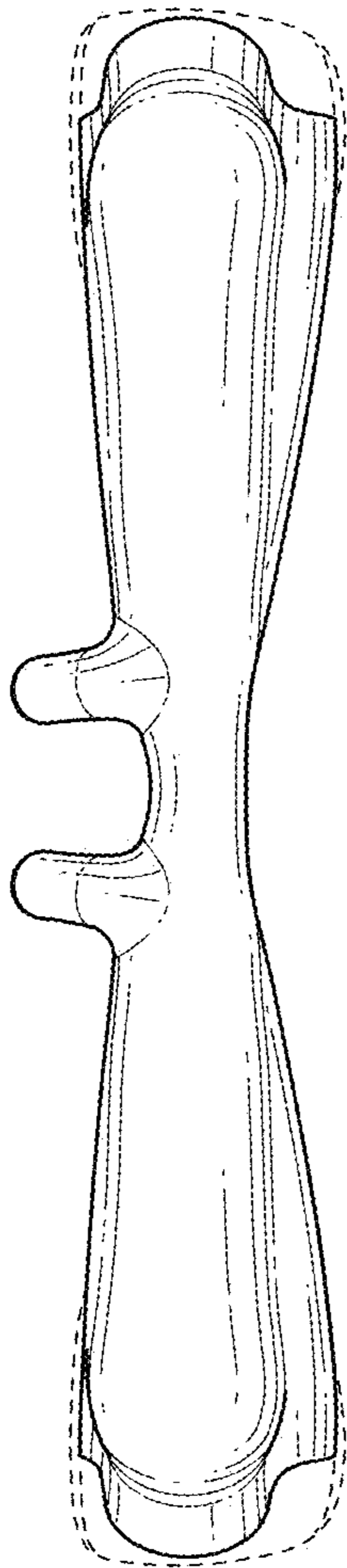


FIG. 7

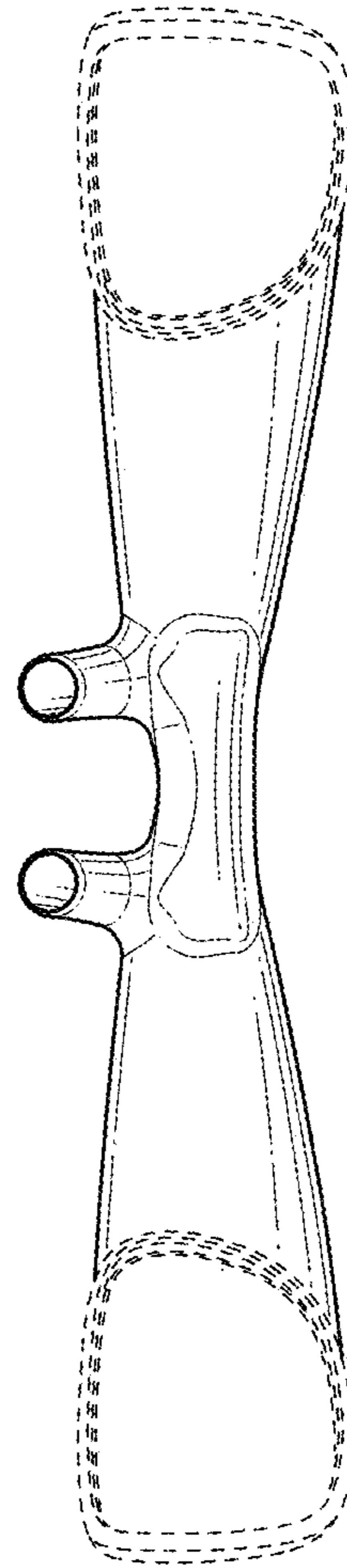


FIG. 8