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Sing et al.

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(54) **END PIECE OF A PNEUMATIC PATIENT CIRCUIT**

4,188,081 A 2/1980 Holden et al.
D260,175 S 8/1981 Hein et al.
D274,462 S 6/1984 Rakocy et al.

(Continued)

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FOREIGN PATENT DOCUMENTS

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EP 2316514 A1 5/2011
WO WO2009042187 A1 4/2009

(Continued)

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Volara System OLE, posted at hillrom.com, earliest date available unknown, [online], acquired on Aug. 26, 2022, Available on internet. url:https://www.hillrom.com/en/products/volara-acute-care/volara-system-ole-campaign/*

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

OTHER PUBLICATIONS

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Primary Examiner — Aula Soroush

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(51) **LOC (14) Cl.** **24-02**

(52) **U.S. Cl.**
USPC **D24/110.1**

(58) **Field of Classification Search**
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CPC A61M 16/0616; A61M 16/0633; A61M 16/06;
A61M 16/0666; A61M 16/0683; A61M 16/0605;
A61M 16/0622; A61M 16/0644; A61M 16/0875; A61M 16/0816;
A61M 16/08; B63C 11/205; B63C 11/16; B63C 11/186;
B63C 11/12
See application file for complete search history.

(57) **CLAIM**

The ornamental design of an end piece of a pneumatic patient circuit, as shown and described.

DESCRIPTION

FIG. 1 is a front perspective view of an end piece of a pneumatic patient circuit;
FIG. 2 is a right side elevation view thereof;
FIG. 3 is a left side elevation view thereof;
FIG. 4 is a front elevation view thereof;
FIG. 5 is a rear elevation view thereof;
FIG. 6 is a top plan view thereof;
FIG. 7 is a bottom plan view thereof; and,
FIG. 8 is another perspective view thereof shown in an environment of use.

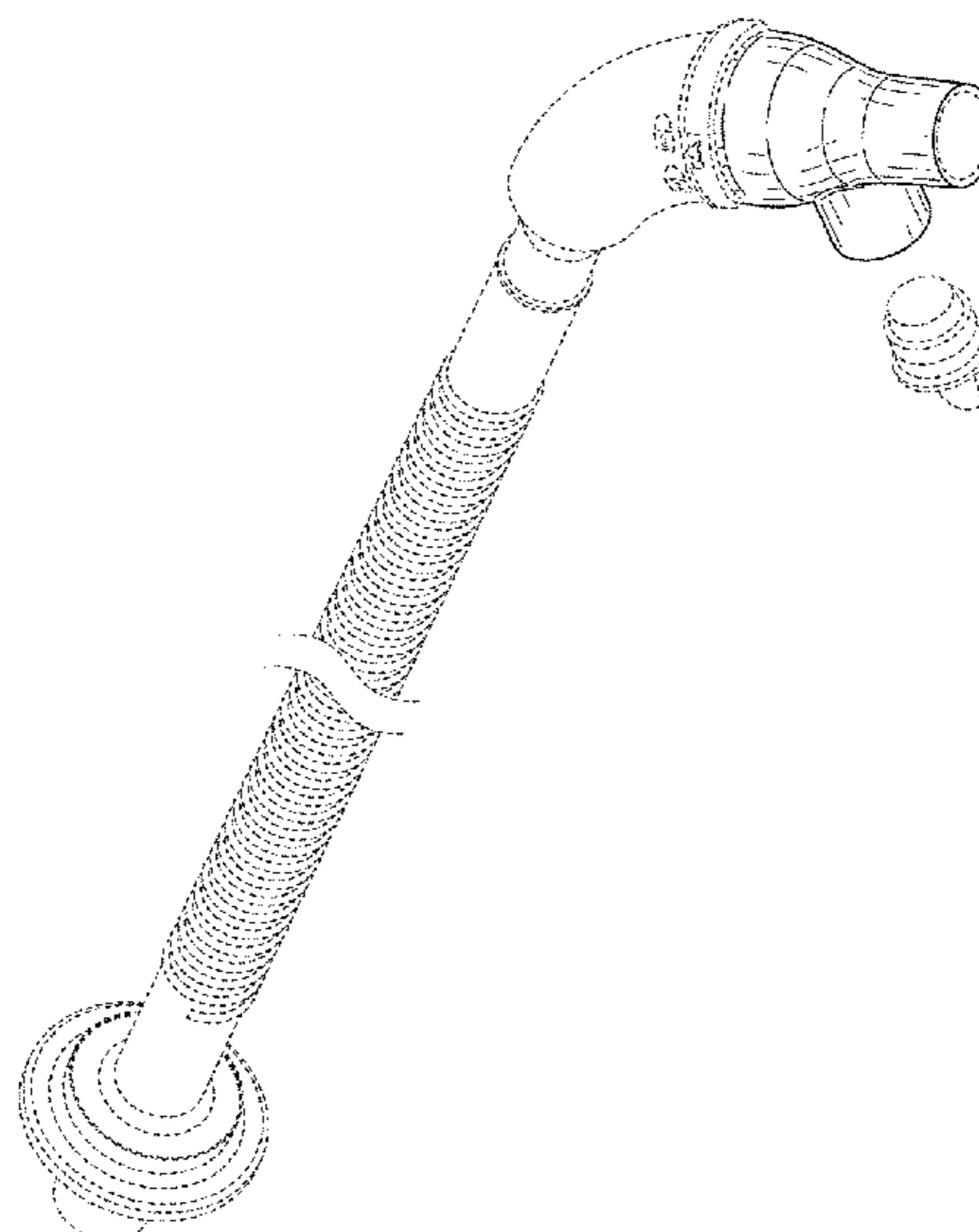
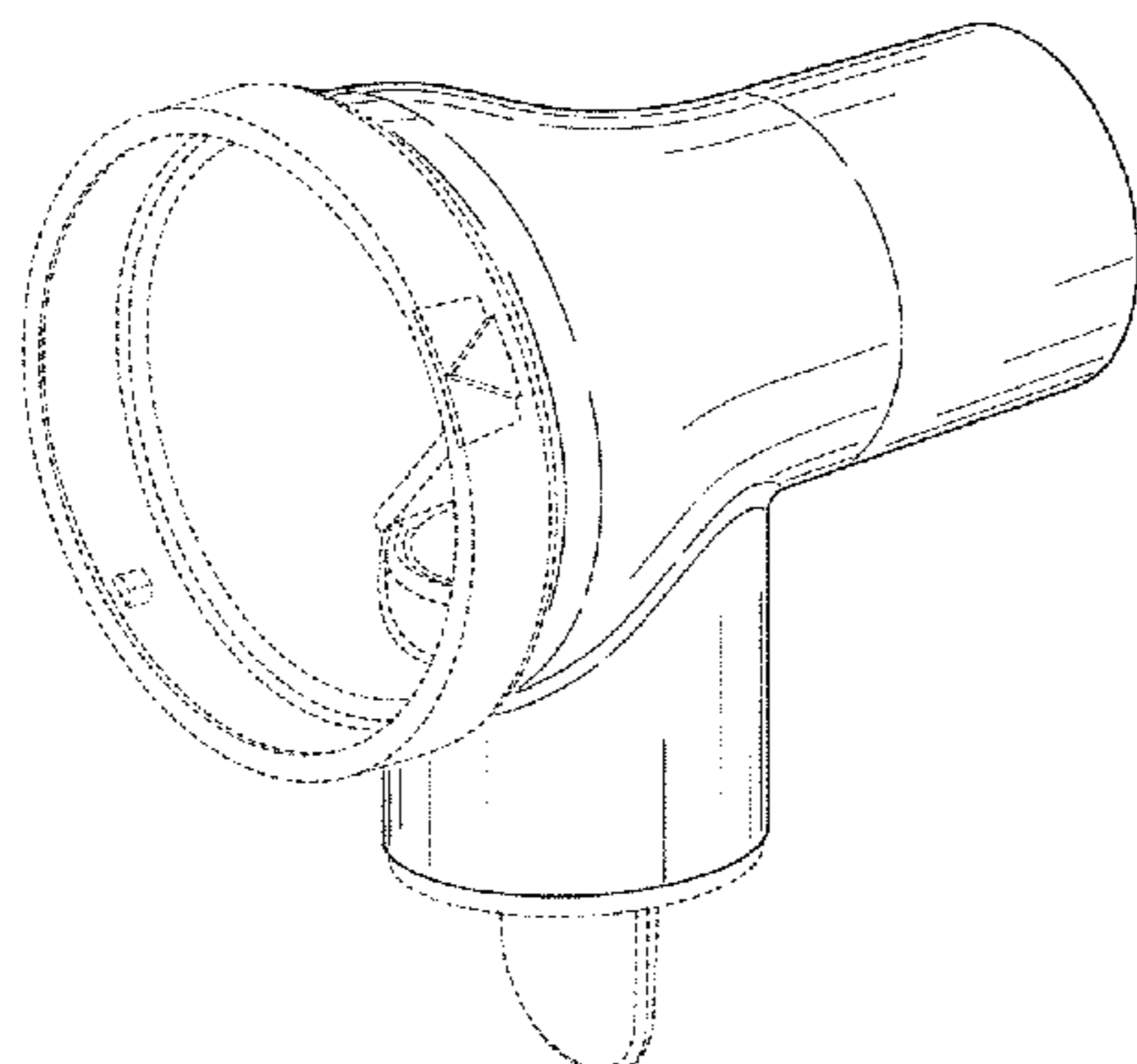
The broken lines in the drawings illustrate portions of the end piece of an pneumatic patient circuit that form no part of the claimed design. All other broken lines shown in FIG. 8 are included for the purpose of illustrating environmental subject matter and form no part of the claimed design.

(56) **References Cited**

U.S. PATENT DOCUMENTS

2,073,335 A 3/1937 Connell
2,516,864 A 8/1950 Gilmore et al.
2,524,522 A 10/1950 Gilmore et al.
2,954,802 A 10/1960 Duff
3,163,707 A 12/1964 Darling
D217,550 S 5/1970 Campbell

1 Claim, 7 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

D285,606 S 9/1986 Christopherson
 D302,040 S 7/1989 Lambert
 D306,340 S 2/1990 Whiting
 D320,273 S 9/1991 Heiden
 D320,445 S 10/1991 Jones et al.
 5,243,971 A * 9/1993 Sullivan A61M 16/06
 128/204.18
 D357,686 S 4/1995 Sanford
 D358,213 S 5/1995 Sutton et al.
 D367,532 S 2/1996 Sirianne et al.
 5,640,951 A 6/1997 Huddart et al.
 D405,522 S 2/1999 Hoenig et al.
 6,119,694 A * 9/2000 Correa A61M 16/0666
 128/207.13
 D439,326 S * 3/2001 Hecker D24/110.1
 D441,449 S 5/2001 Gaskell
 D473,941 S 4/2003 Cise et al.
 6,550,476 B1 4/2003 Ryder
 D476,731 S 7/2003 Cise et al.
 D486,909 S 2/2004 Cise et al.
 6,708,688 B1 3/2004 Rubin et al.
 6,718,969 B1 4/2004 Rubin et al.
 D493,884 S 8/2004 Virr et al.
 6,792,946 B1 9/2004 Waldo, Jr. et al.
 D506,551 S 6/2005 Booth et al.
 7,007,692 B2 3/2006 Aylsworth et al.
 7,114,497 B2 10/2006 Aylsworth et al.
 D535,750 S 1/2007 Clawson
 7,191,780 B2 3/2007 Faram
 7,305,988 B2 12/2007 Acker et al.
 D586,907 S * 2/2009 Judson D24/110.1
 D623,288 S * 9/2010 Lubke D24/110.1
 D629,892 S 10/2010 Hill et al.
 D628,288 S 11/2010 Row et al.
 D629,891 S 12/2010 Virr et al.
 7,909,003 B2 3/2011 Willinger
 D638,536 S 5/2011 Row et al.
 D638,537 S 5/2011 Row et al.
 D638,933 S 5/2011 Hill et al.
 8,051,854 B2 11/2011 Faram
 D650,479 S 12/2011 Row et al.
 D652,510 S 1/2012 Lombardi, III et al.
 D652,916 S 1/2012 Row et al.
 D652,917 S 1/2012 Row et al.
 D656,231 S * 3/2012 Henry D24/110.1
 D659,237 S * 5/2012 Lubke D24/110.1
 D663,022 S 7/2012 Lombardi, III et al.
 D664,250 S * 7/2012 Scheiner D24/110.1
 8,226,583 B2 7/2012 Ikeler et al.
 D671,209 S 11/2012 Row et al.
 8,365,727 B2 2/2013 Dunsmore et al.
 D677,789 S 3/2013 Row et al.
 8,485,179 B1 7/2013 Meyer et al.
 8,539,952 B2 9/2013 Carbone et al.
 D691,712 S * 10/2013 Judson D24/110.1
 D692,554 S * 10/2013 Siew D24/110.1
 D692,556 S 10/2013 Winter
 D693,001 S 11/2013 Winter
 8,573,203 B2 11/2013 Addington et al.
 D704,329 S * 5/2014 Collazo D24/110.1

D708,736 S * 7/2014 Judson D24/110.5
 8,931,478 B2 1/2015 Dunsmore et al.
 D731,619 S 6/2015 Mills et al.
 D731,621 S 6/2015 Mills et al.
 9,050,434 B2 6/2015 Faram et al.
 D734,854 S 7/2015 Conner
 D737,953 S * 9/2015 Wells D24/110
 D740,935 S * 10/2015 Cullen D24/110.1
 D742,508 S 11/2015 Row et al.
 D743,535 S * 11/2015 Wells D24/110
 D751,687 S * 3/2016 Daly D24/110
 D751,688 S 3/2016 Daly et al.
 9,272,115 B2 3/2016 Bobey et al.
 D757,252 S * 5/2016 Von Moger D24/110.5
 D761,422 S 7/2016 Row et al.
 D762,843 S 8/2016 Formica et al.
 D764,026 S 8/2016 Mills et al.
 D764,049 S * 8/2016 Cullen D24/110.4
 D770,036 S * 10/2016 Walls D24/110.4
 D771,238 S * 11/2016 Scheiner D24/110.1
 D771,832 S 11/2016 Yeager et al.
 D787,661 S * 5/2017 Edwards D24/110.4
 D787,662 S * 5/2017 Guney D24/110.4
 D789,518 S 6/2017 Bhide et al.
 D790,684 S 6/2017 Bhide et al.
 9,675,775 B2 6/2017 Bobey
 D794,772 S * 8/2017 Cullen D24/110.4
 D797,921 S * 9/2017 Huang D24/110.4
 9,757,528 B2 9/2017 Rubin
 D799,418 S 10/2017 Desjardins et al.
 D805,630 S * 12/2017 Formica D24/110
 D806,859 S 1/2018 Formica et al.
 D807,815 S 1/2018 Desjardins et al.
 D807,995 S 1/2018 Maeckelberghe et al.
 D808,516 S * 1/2018 Edwards D24/110.4
 D815,728 S * 4/2018 Walls D24/110.4
 D820,455 S 6/2018 Milligan et al.
 D820,780 S 6/2018 Desjardins et al.
 10,006,573 B2 6/2018 Frame et al.
 D822,818 S 7/2018 Maeckelberghe et al.
 D834,196 S 11/2018 Mallikarjunagoud et al.
 D861,854 S 10/2019 Ormrod et al.
 2005/0257794 A1 11/2005 Aylsworth et al.
 2006/0169281 A1 8/2006 Aylsworth et al.
 2009/0188500 A1 7/2009 Faram
 2010/0269828 A1 10/2010 Orr et al.
 2011/0100360 A1 5/2011 Faram
 2011/0146670 A1 6/2011 Gallem et al.
 2012/0090622 A1 * 4/2012 Chang A61M 16/0666
 128/207.18
 2014/0000614 A1 * 1/2014 Chang A61M 16/0666
 128/205.25
 2014/0144446 A1 5/2014 Bobey et al.
 2017/0000964 A1 * 1/2017 Shafer A61M 16/06
 2017/0007797 A1 1/2017 Islava
 2017/0368285 A1 * 12/2017 Wood A61M 16/0666
 2018/0001044 A1 * 1/2018 Stephens A61M 16/0605

FOREIGN PATENT DOCUMENTS

WO WO2006102345 A2 9/2009
 WO WO2016159889 A1 10/2016

* cited by examiner

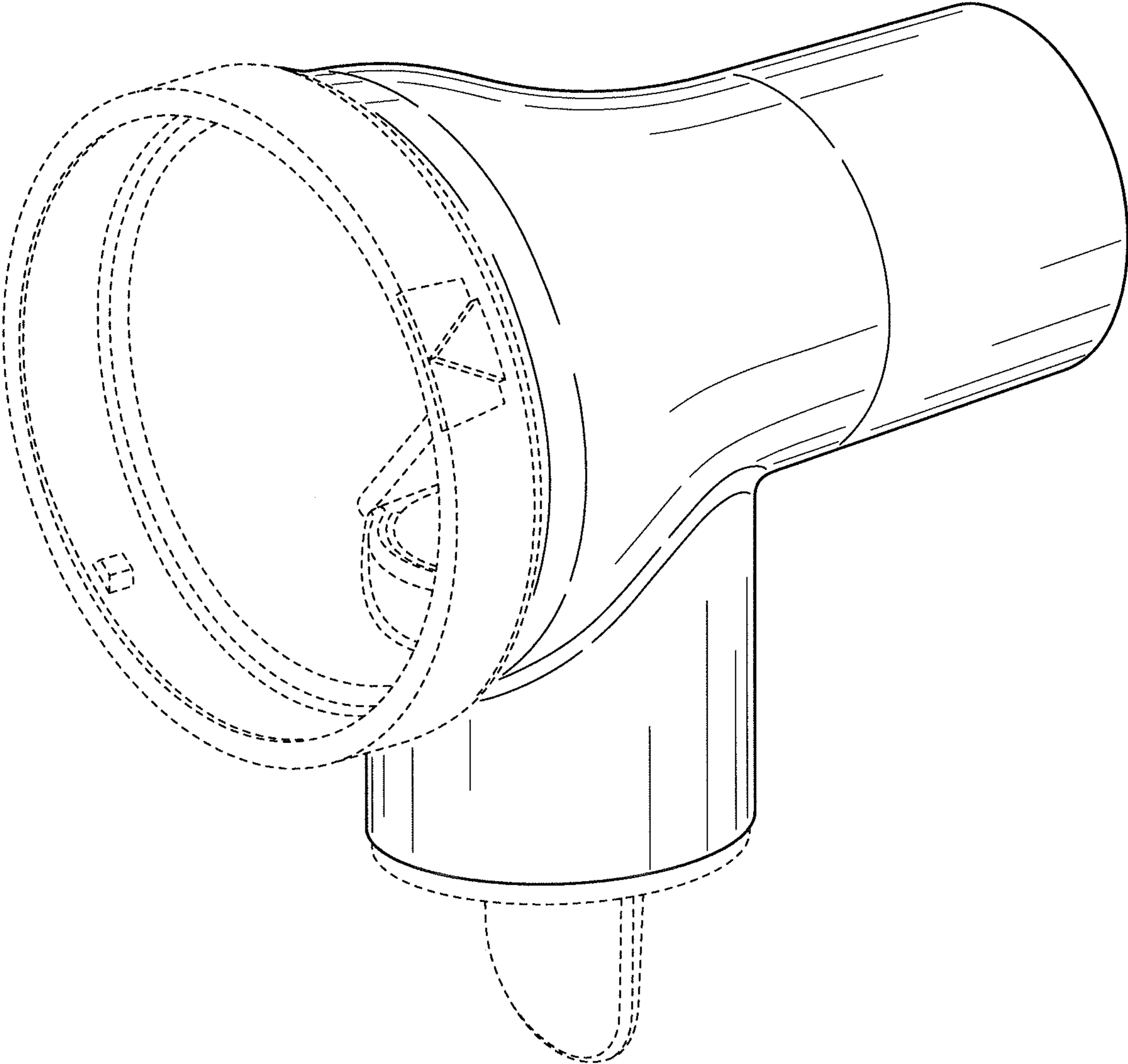


FIG. 1

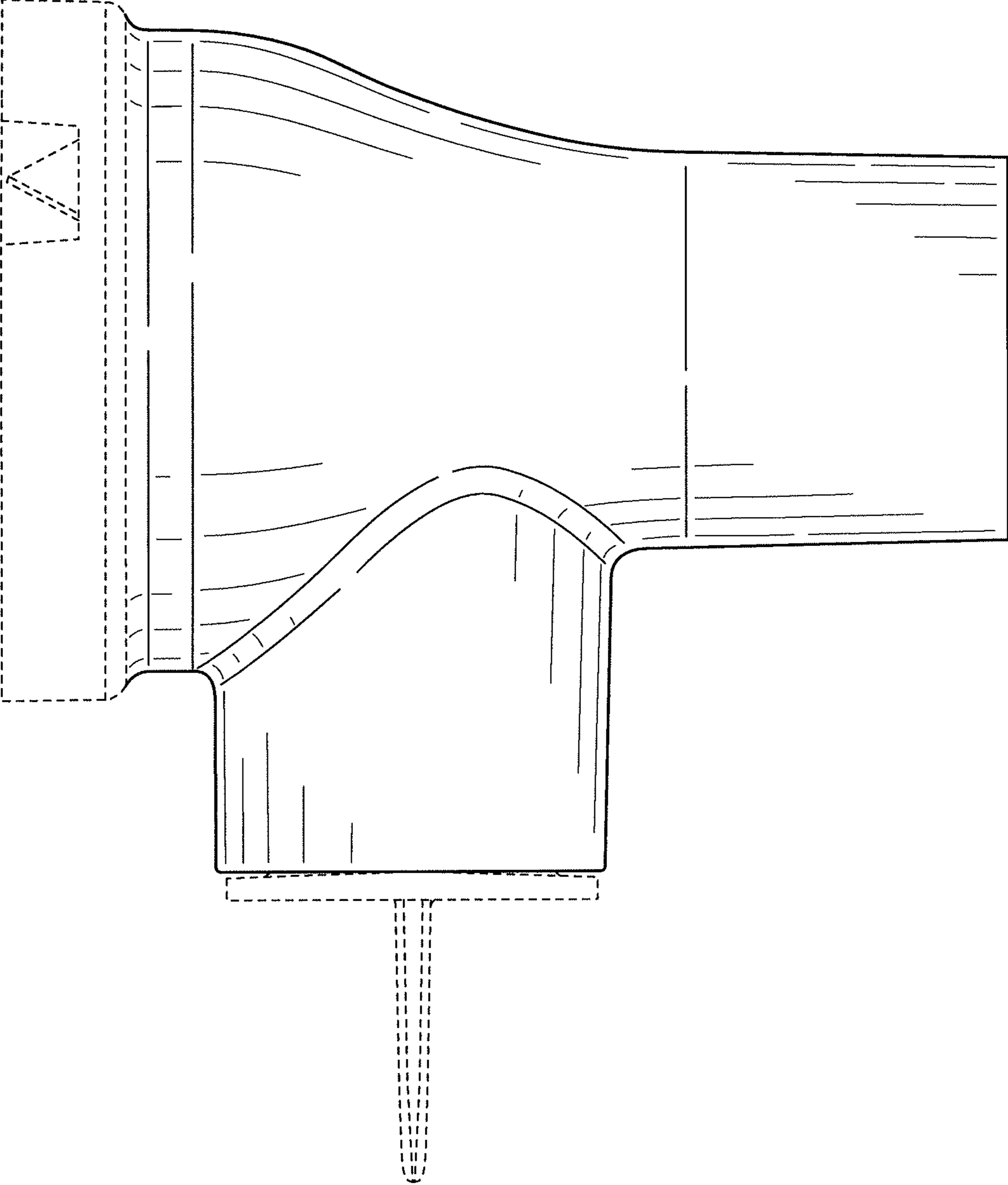


FIG. 2

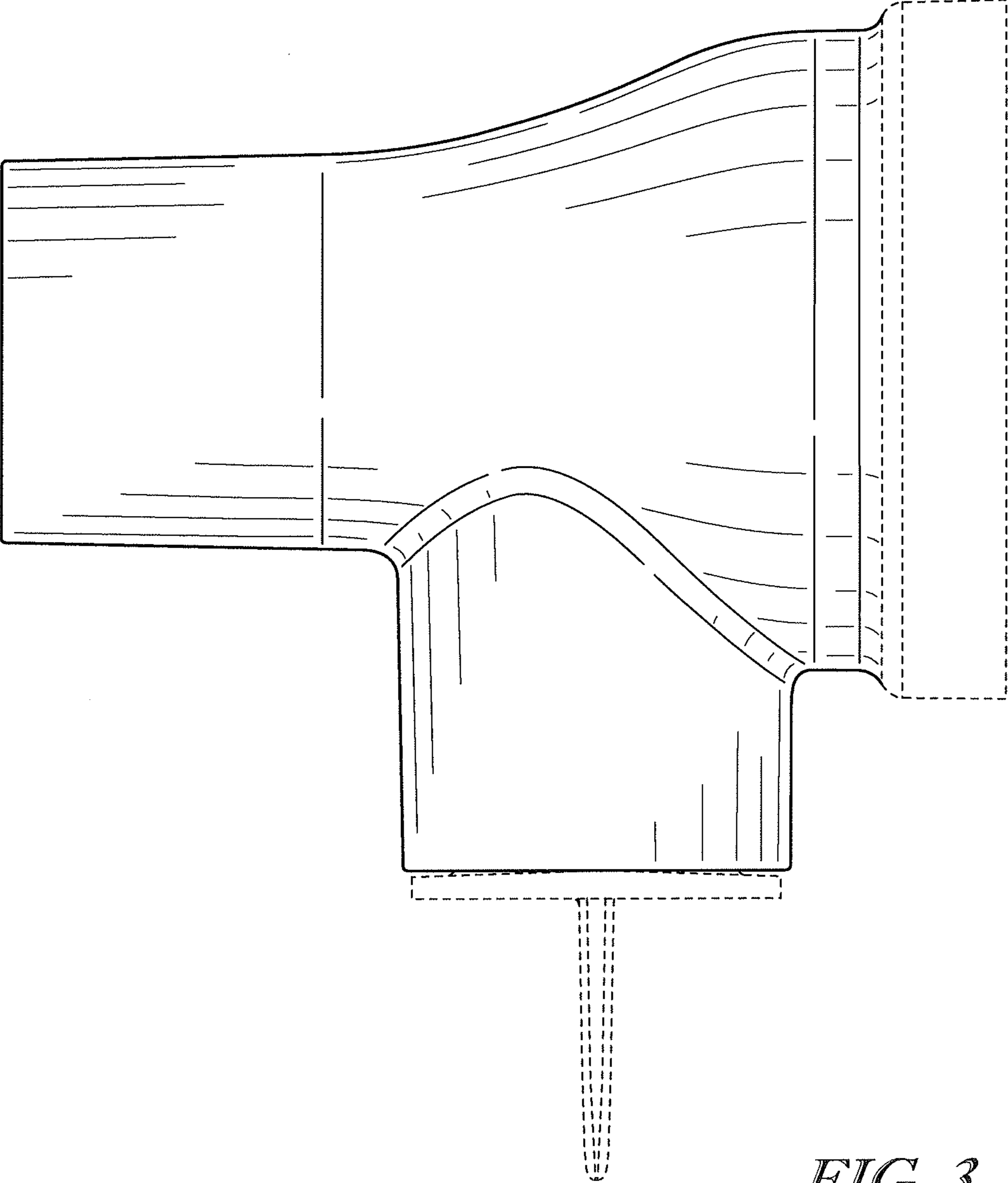


FIG. 3

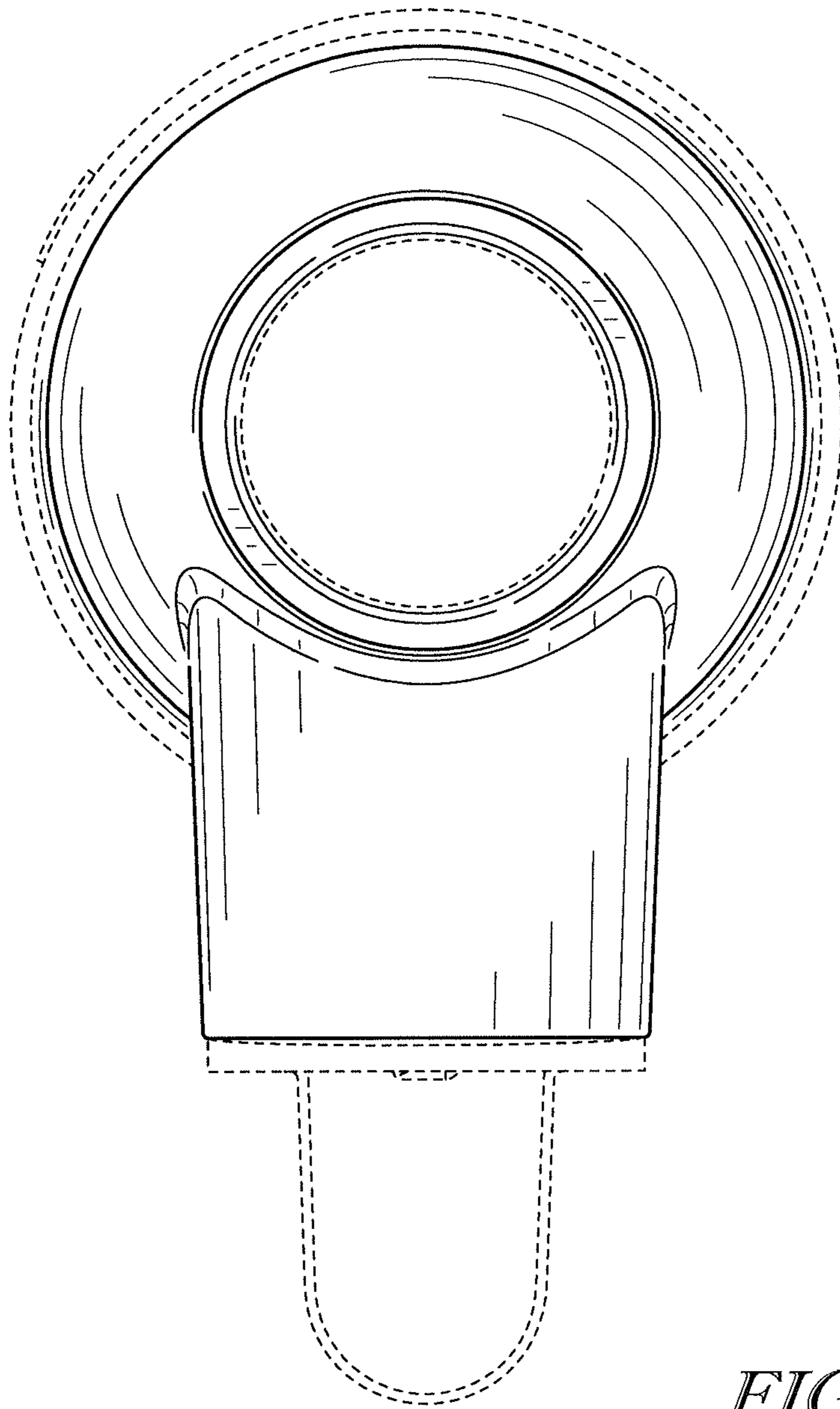


FIG. 4

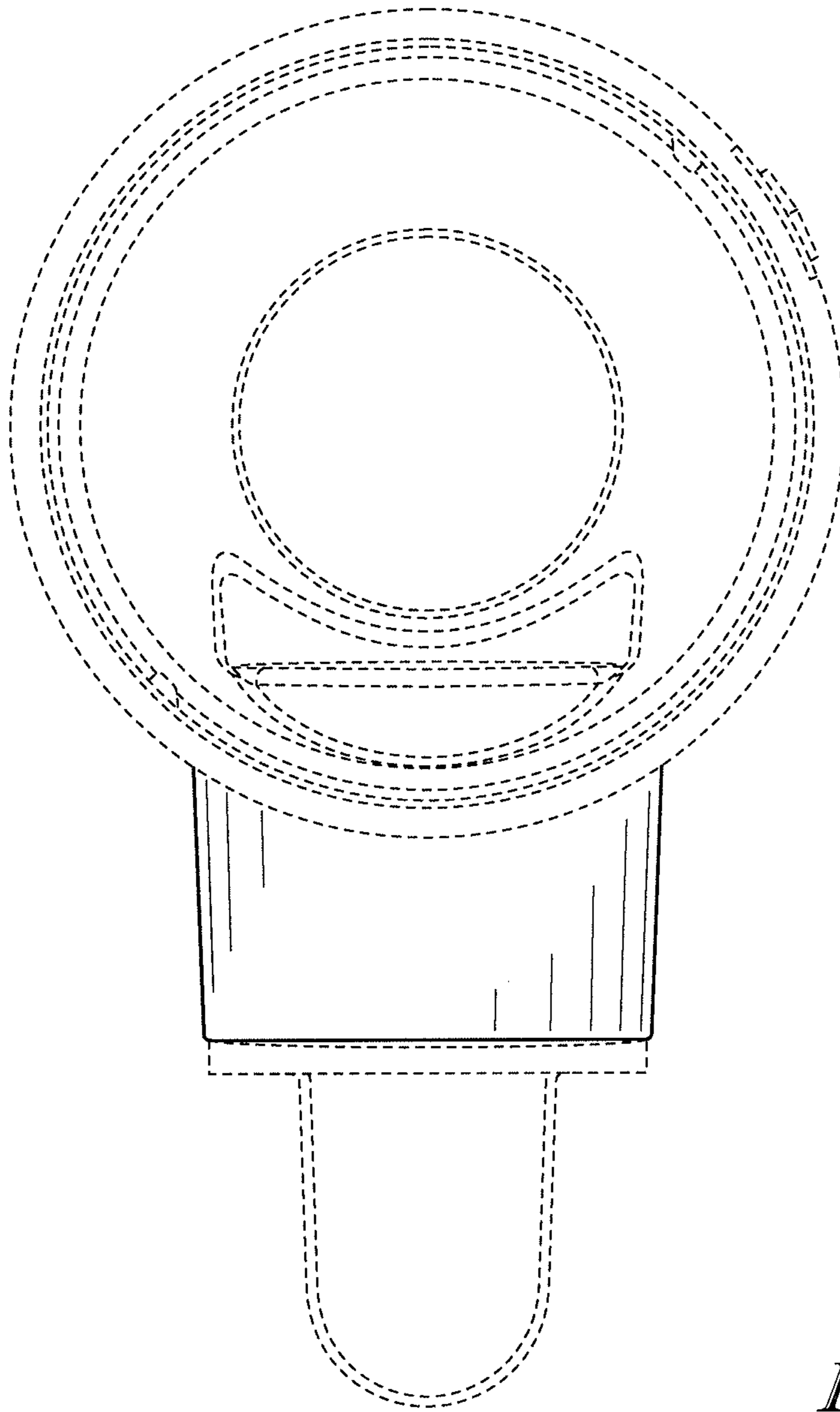


FIG. 5

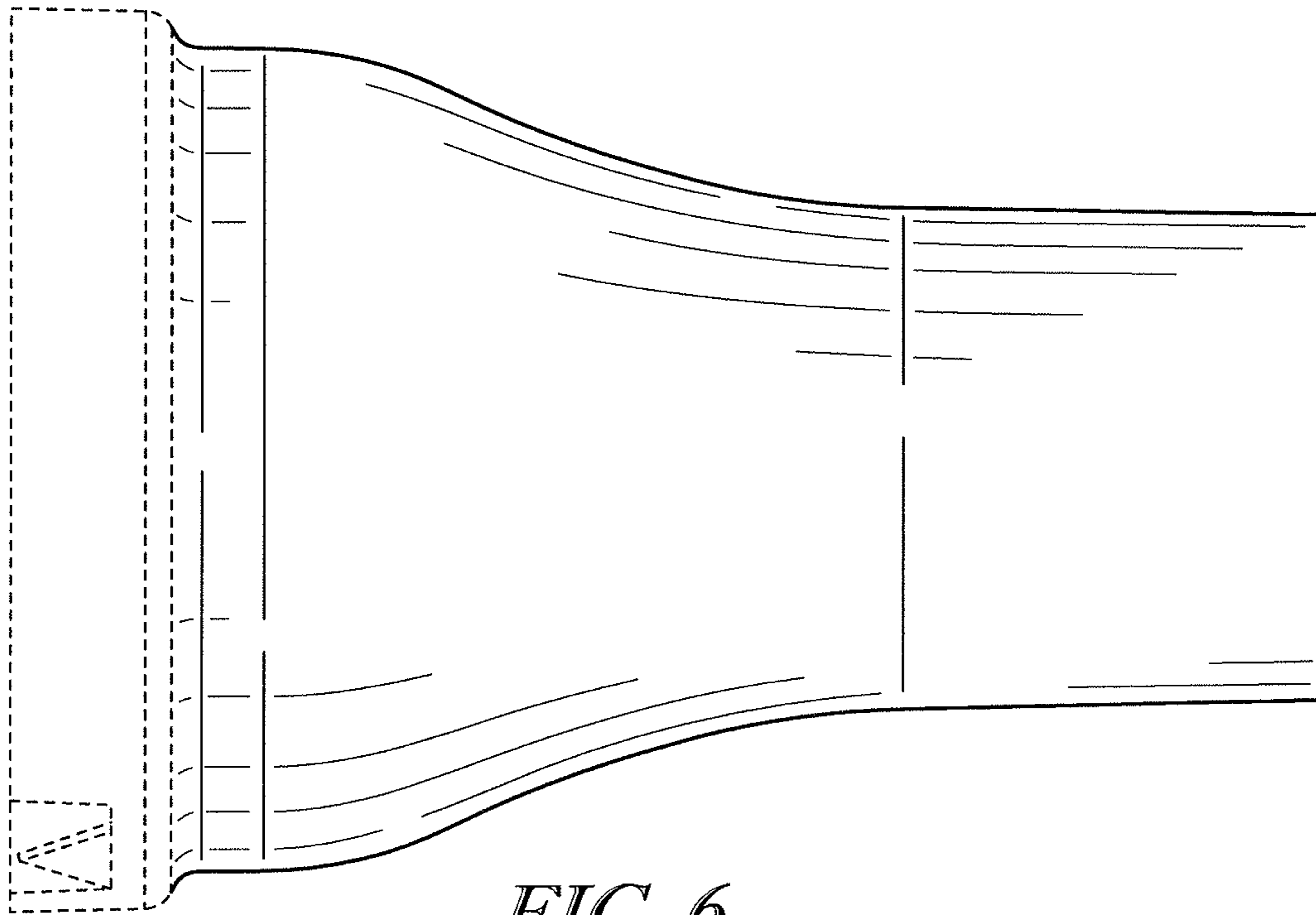


FIG. 6

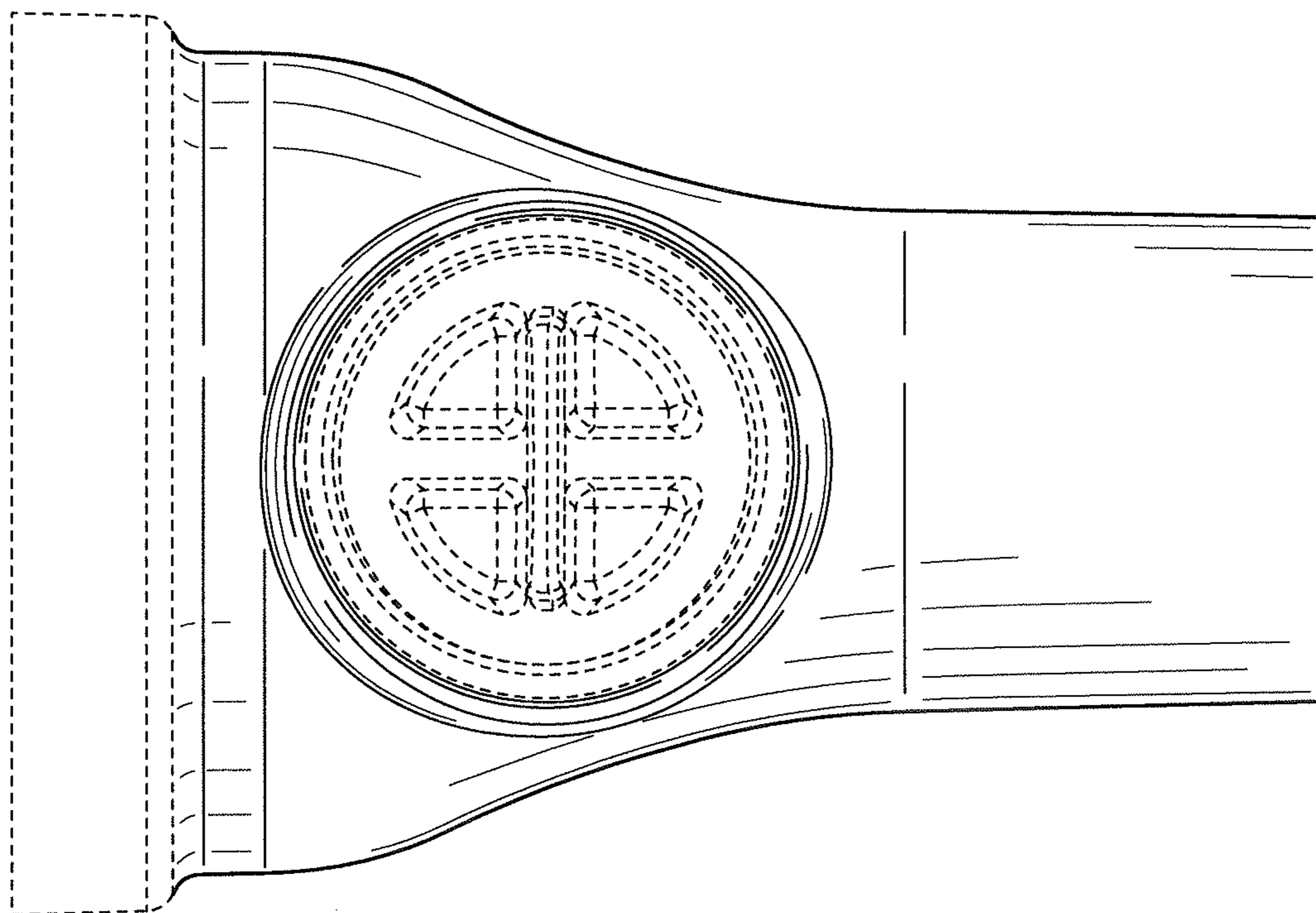


FIG. 7

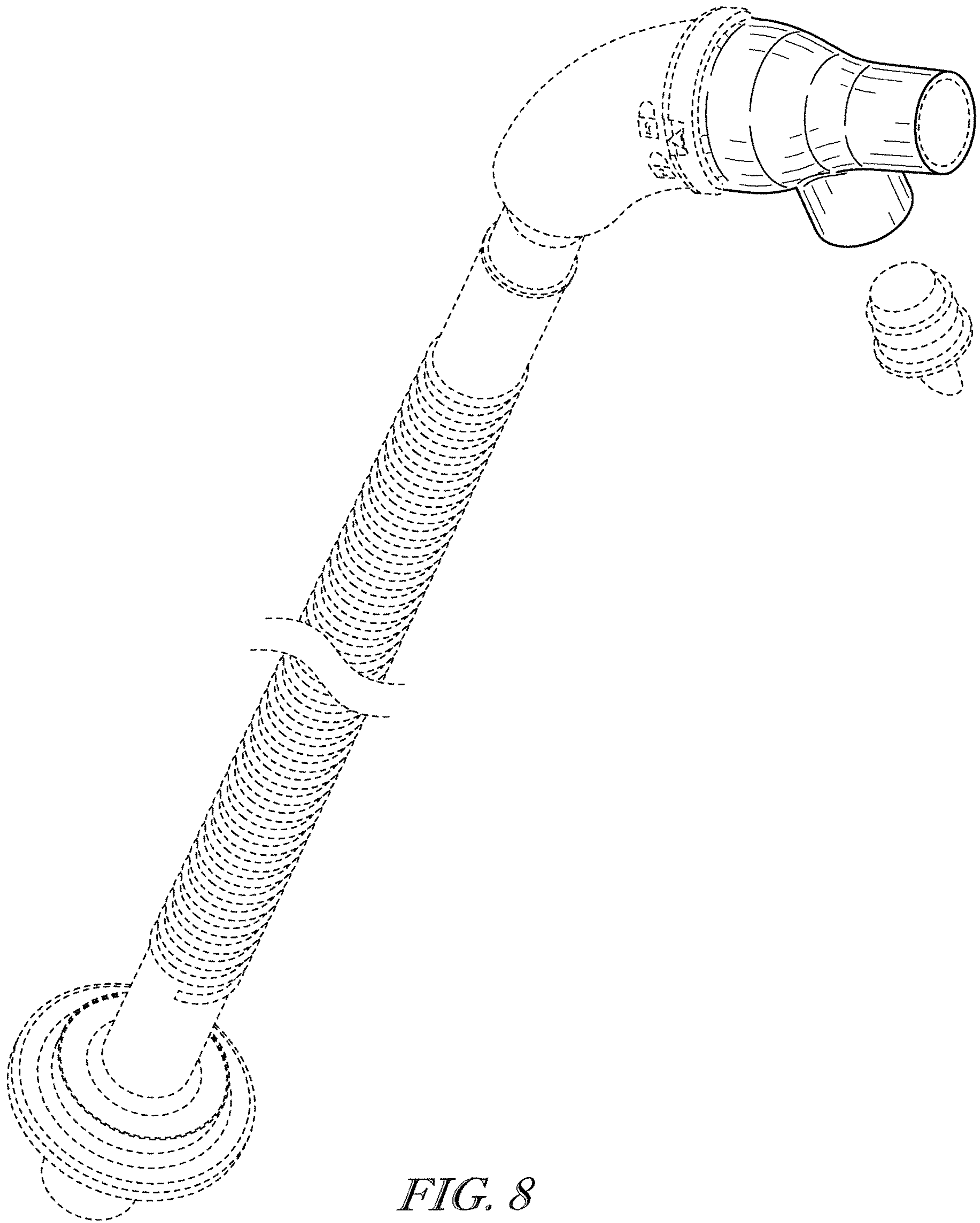


FIG. 8