



US00D971264S

(12) **United States Design Patent** (10) **Patent No.:** **US D971,264 S**
Li (45) **Date of Patent:** **** *Nov. 29, 2022**

(54) **CENTRIFUGAL PUMP** 5,127,800 A * 7/1992 Hyll F04D 29/4286
415/197
(71) Applicant: **Chinabridge (Shenzhen) Medical** D372,921 S * 8/1996 Ijiri D15/7
Technology Co., Ltd, Shenzhen (CN) D609,250 S * 2/2010 Liu D15/7
D669,585 S * 10/2012 Bourque D24/155
(72) Inventor: **Yijiang Li, Shenzhen (CN)** D671,646 S * 11/2012 Bourque D24/155
D767,637 S * 9/2016 Pappathopoulos D15/7
(*) Notice: This patent is subject to a terminal dis- D791,840 S * 7/2017 Gebert D15/7
claimer. D907,067 S * 1/2021 Rosamilia D15/7
2007/0014662 A1* 1/2007 Burgess F04D 7/04
415/197
(**) Term: **15 Years** 2011/0054239 A1* 3/2011 Sutton A61M 60/50
600/16

(21) Appl. No.: **29/756,227**

(22) Filed: **Oct. 27, 2020**

(30) **Foreign Application Priority Data**

May 4, 2020 (CN) 202030195007.X

(51) **LOC (13) Cl.** **15-02**

(52) **U.S. Cl.**
USPC **D15/7; D24/155**

(58) **Field of Classification Search**
USPC D15/7-9, 21; D23/207, 499; D24/155
CPC .. F04B 47/00; F04B 25/00-04; F04B 441/06;
F04B 414/03; F04D 1/00; F04D 1/04;
F04D 3/02; F04D 13/0646; F04D 17/18;
F04D 29/322; F04D 29/628; F04D 29/46;
F04D 29/4286; F02M 37/04; F02M
37/14; A61M 60/00; A61M 60/216;
A61M 60/221; A61M 60/242

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

1,337,916 A * 4/1920 Julinsen F04D 7/02
415/174.2
1,638,055 A * 8/1927 Nagle F04D 29/628
415/196
D263,839 S * 4/1982 Somme D15/7
4,383,800 A * 5/1983 Becker F04D 29/426
415/101

(Continued)

OTHER PUBLICATIONS

Vlad Frenk, "Medtronic's Heartware HVAD Heart Pump Approved for Rest of Life Use", (Sep. 29, 2017), Medgadget.com, URL:<<https://www.medgadget.com/2017/09/medtronics-heartware-hvad-heart-pump-approved-rest-life-use.html>> (Year: 2017).*

(Continued)

Primary Examiner — Calvin E Vansant
Assistant Examiner — Mark T. Philipps

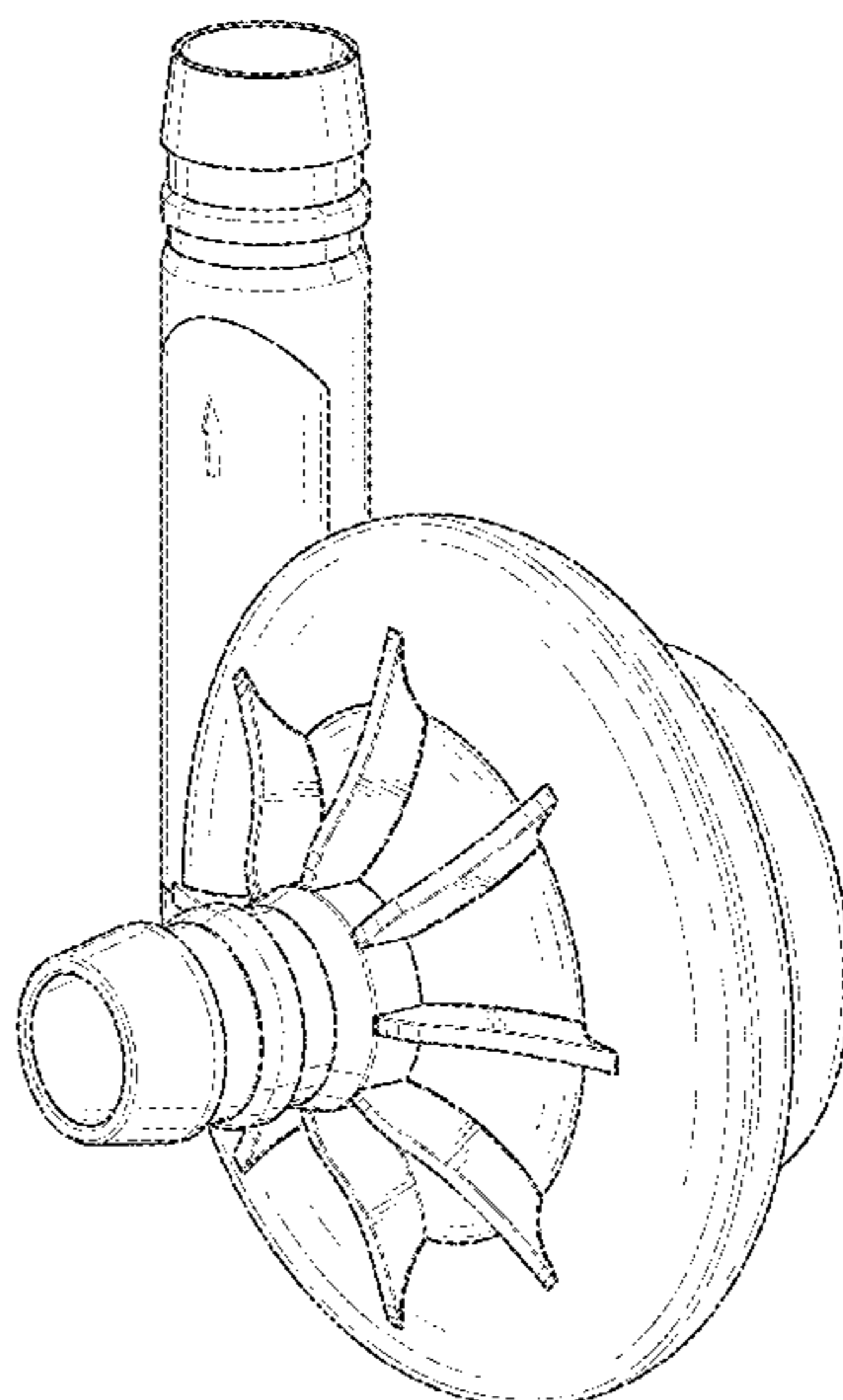
(57) **CLAIM**

The ornamental design for a centrifugal pump, as shown and described.

DESCRIPTION

FIG. 1 is a front, right, top perspective view of a centrifugal pump, showing our new design;
FIG. 2 is a front elevation view thereof;
FIG. 3 is a rear elevation view thereof;
FIG. 4 is a left side elevation view thereof;
FIG. 5 is a right side elevation view thereof;
FIG. 6 is a top planar view thereof; and,
FIG. 7 is a bottom planar view thereof.
The portions of the article shown in broken lines form no part of the claimed design.

1 Claim, 7 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

2014/0271162 A1* 9/2014 Karl F04D 29/4286
415/200
2015/0071773 A1* 3/2015 Takahashi F04D 9/02
415/204
2018/0050143 A1* 2/2018 Nguyen A61M 60/857
2020/0018318 A1* 1/2020 Chen F04D 29/048
2020/0080563 A1* 3/2020 Bustamante Sandoval
A01K 79/00
2021/0220635 A1* 7/2021 Li A61M 1/3666

OTHER PUBLICATIONS

GRI Pumps, Centrifugal Pumps Overview, (Aug. 11, 2021), GRIpumps,
p. 14, URL:<<https://www2.gripumps.com/Centrifugal>> (Year: 2021).*

* cited by examiner

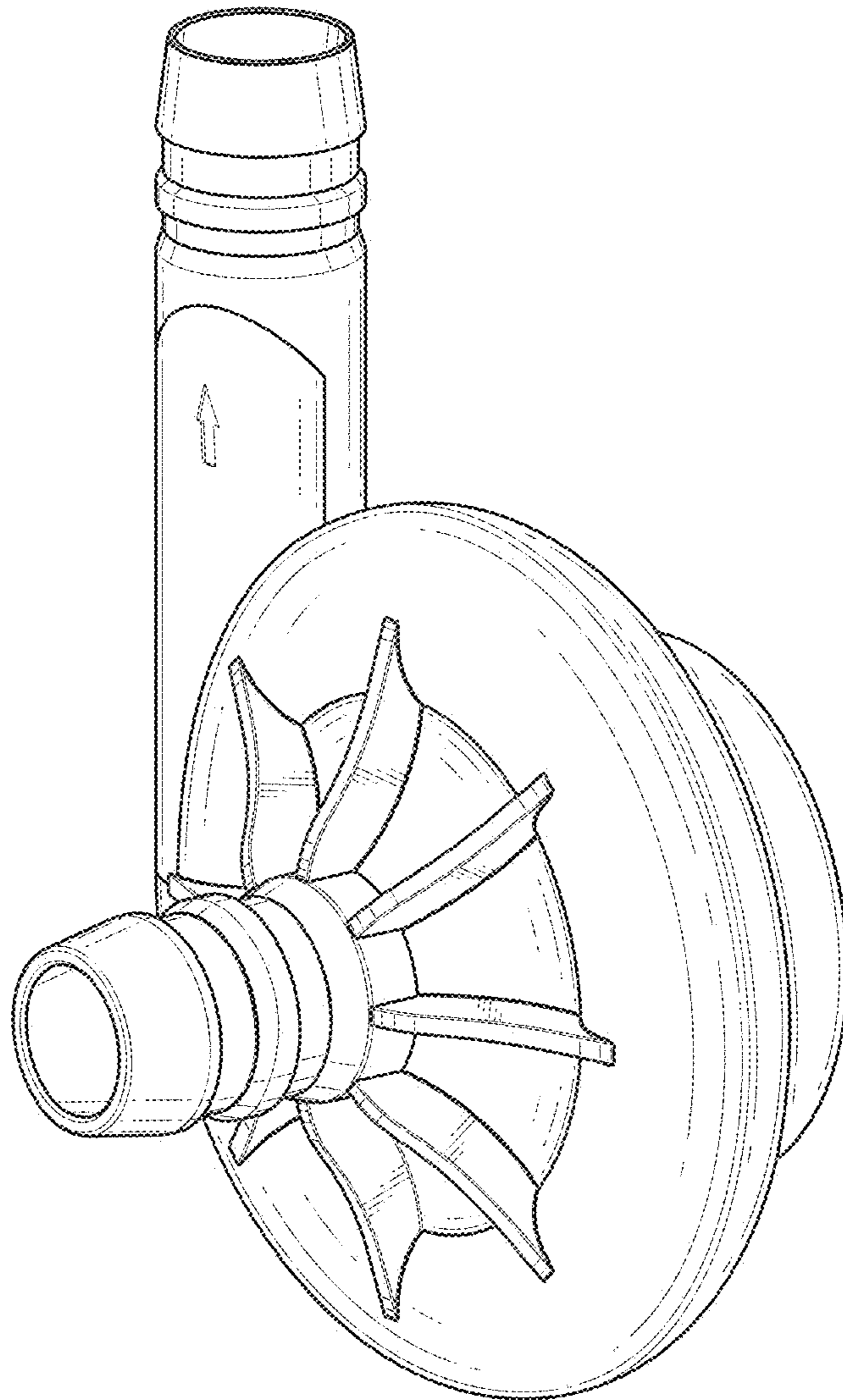


FIG. 1

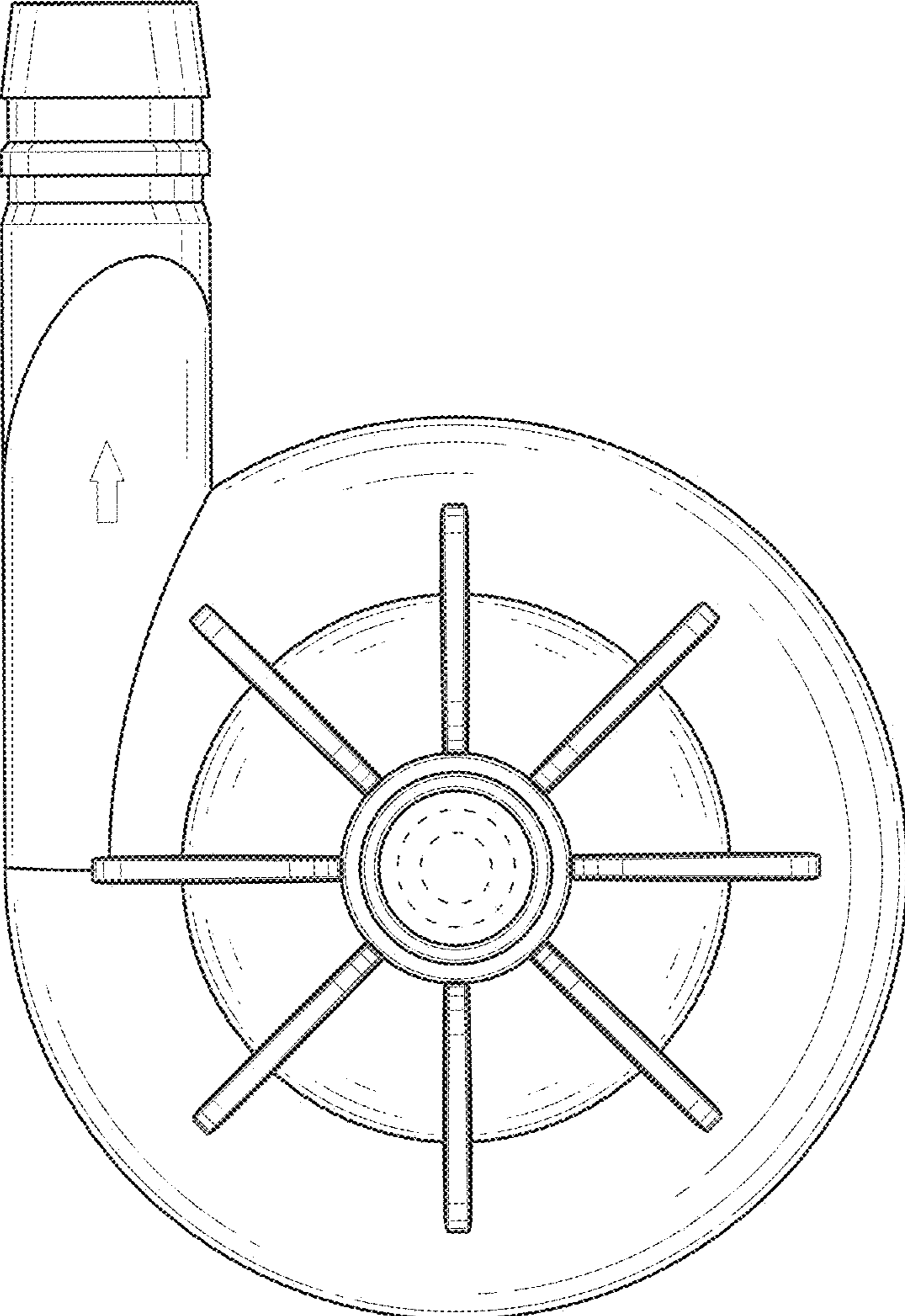


FIG. 2

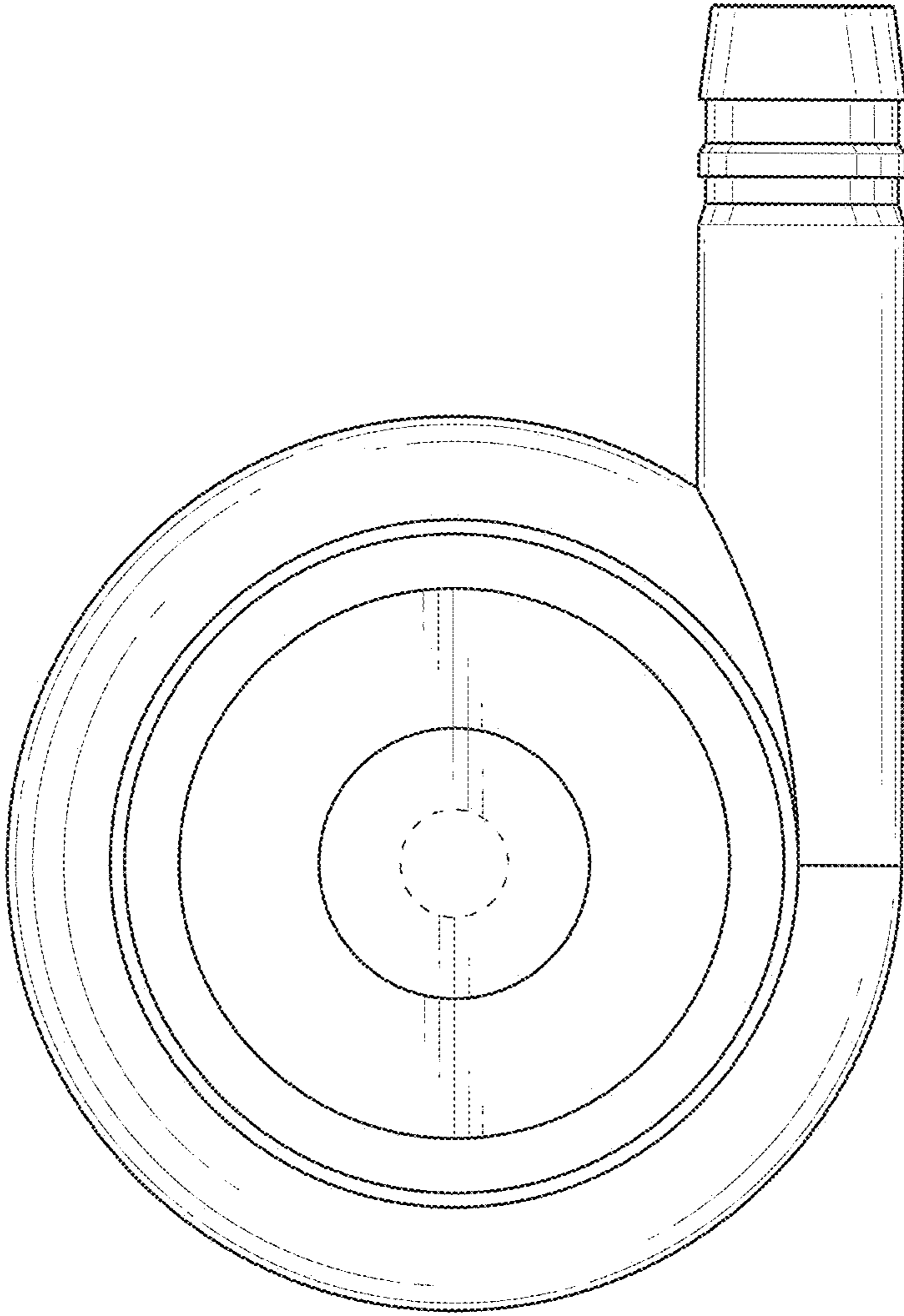


FIG. 3

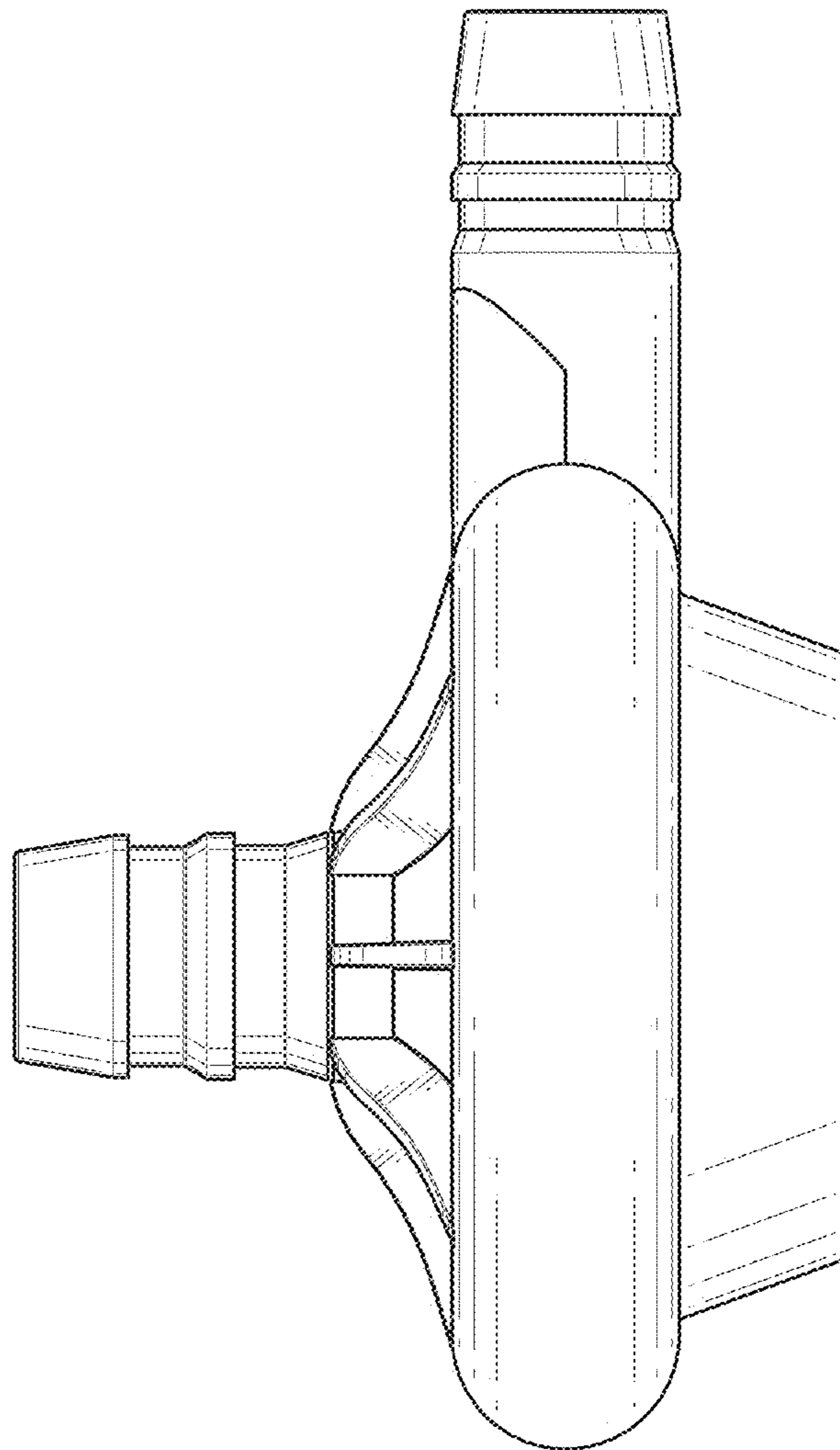


FIG. 4

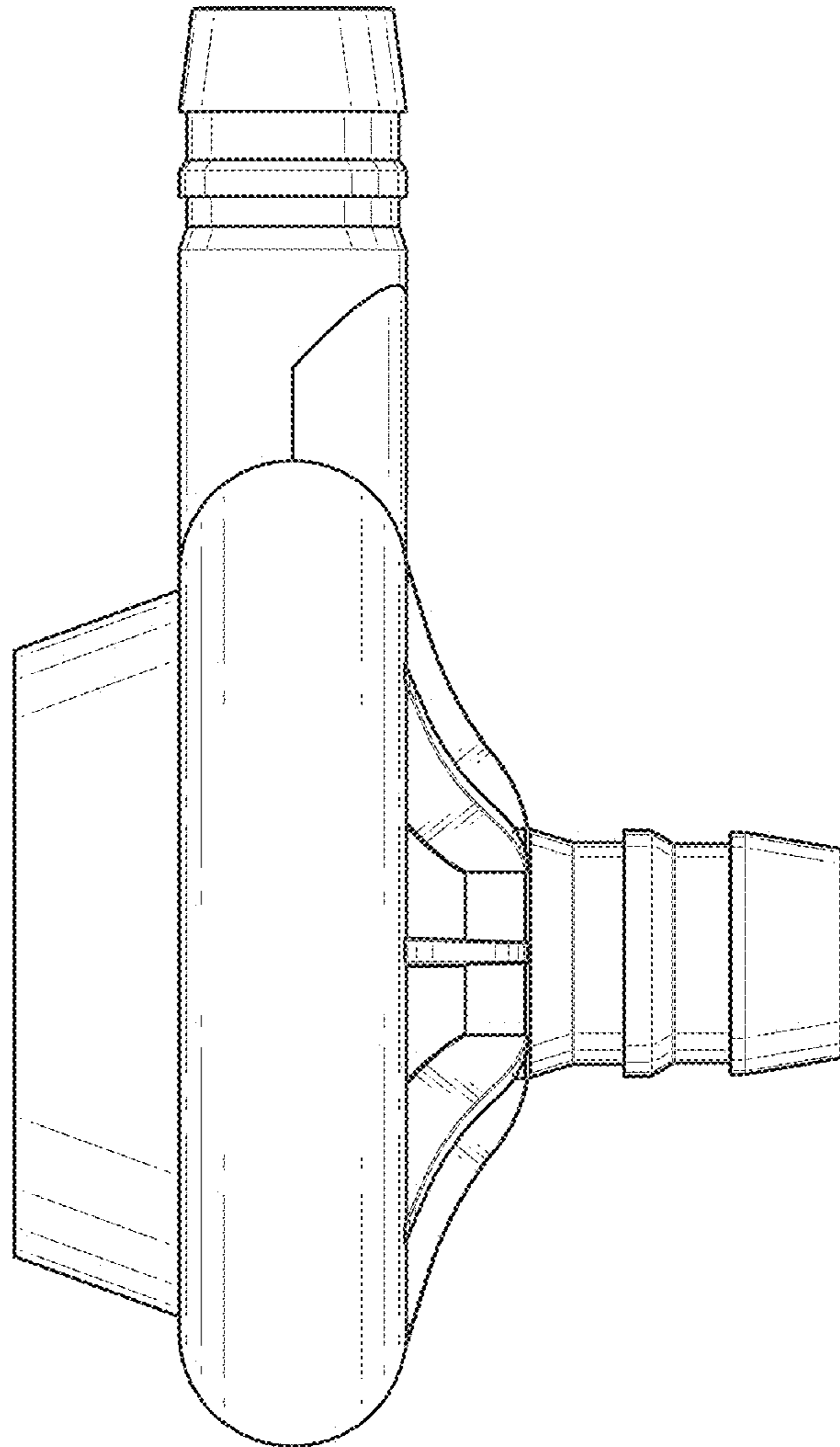


FIG. 5

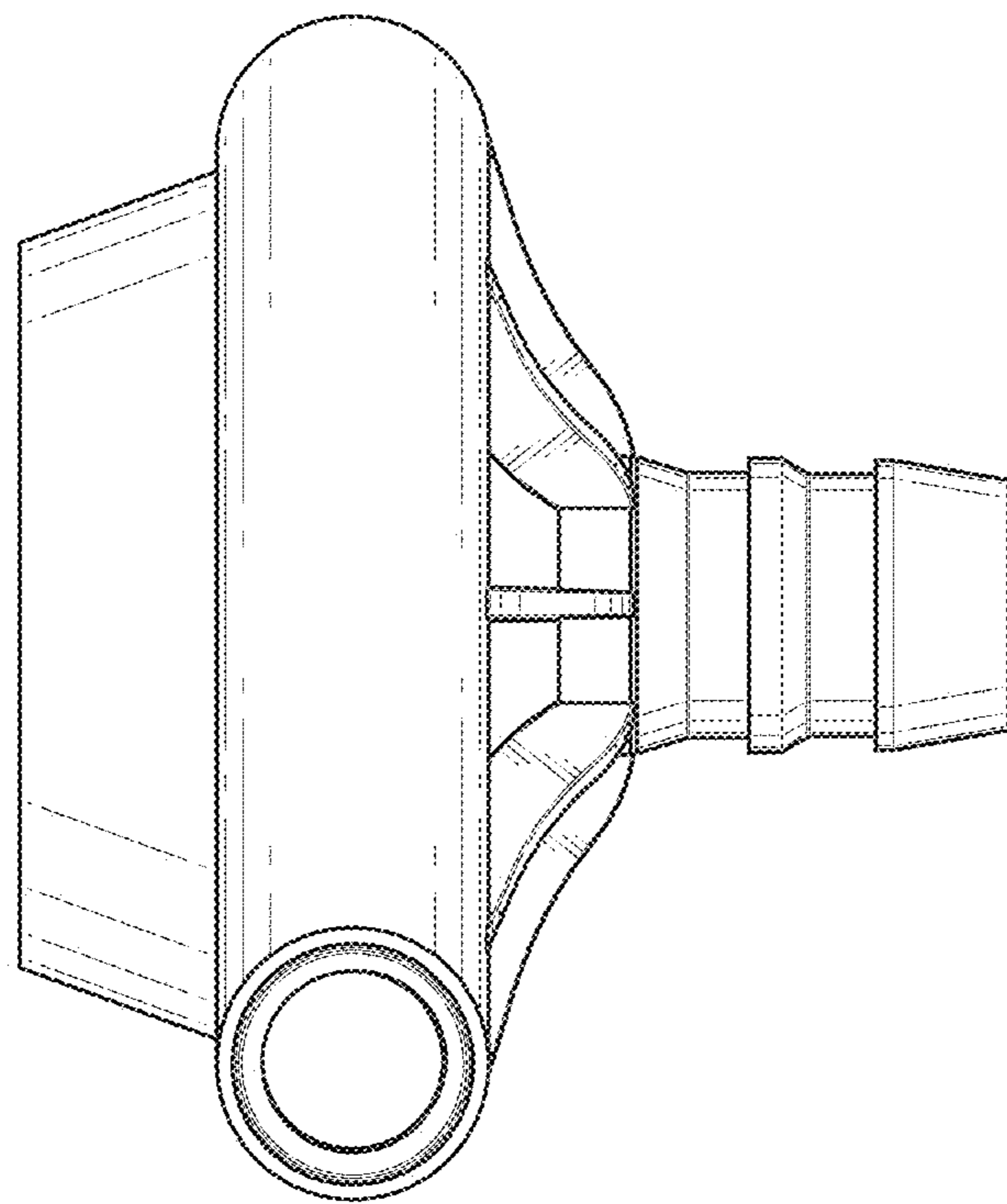


FIG. 6

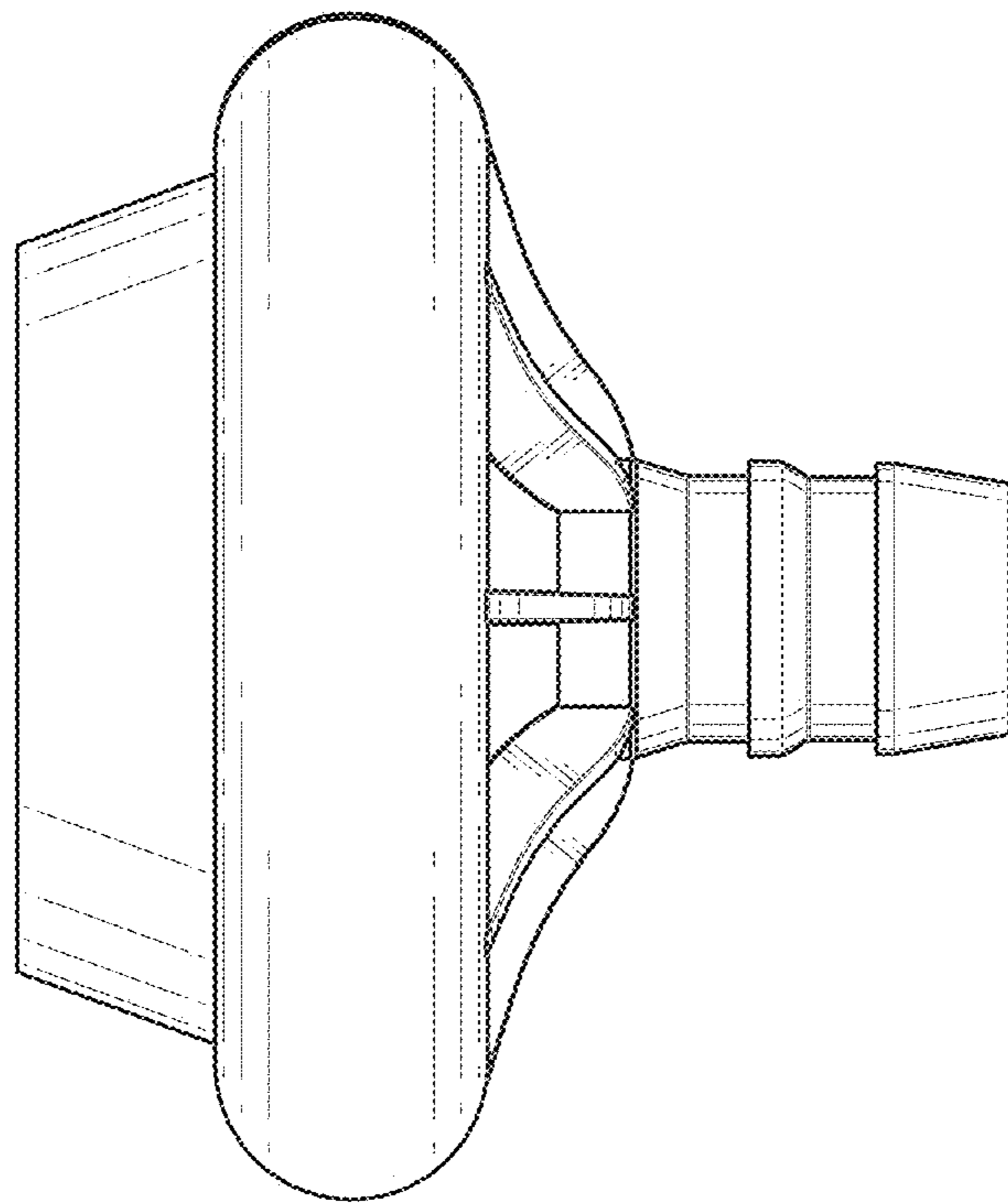


FIG. 7