



US00D933229S

(12) **United States Design Patent** (10) **Patent No.:** **US D933,229 S**
Conklin et al. (45) **Date of Patent:** **** Oct. 12, 2021**

(54) **PROSTHETIC VALVE AND HOLDER**

FOREIGN PATENT DOCUMENTS

(71) Applicant: **Edwards Lifesciences Corporation**,
Irvine, CA (US)

EP 0338994 A1 10/1989
EP 1034753 A1 9/2000

(Continued)

(72) Inventors: **Brian S. Conklin**, Orange, CA (US);
Derrick Johnson, Orange, CA (US)

OTHER PUBLICATIONS

(73) Assignee: **Edwards Lifesciences Corporation**,
Irvine, CA (US)

“Minimally Invasive Mitral Valve Surgery,” Navia, Dept of Tho-
racic and CardioThoracic Surgery, The Cleveland Clinic Founda-
tion, Cleveland, OH.

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

(Continued)

(21) Appl. No.: **29/645,199**

Primary Examiner — Charles D Hanson

(22) Filed: **Apr. 24, 2018**

(74) *Attorney, Agent, or Firm* — Edwards Lifesciences;
Pui Tong Ho

Related U.S. Application Data

(57) **CLAIM**

(63) Continuation of application No. 15/796,147, filed on
Oct. 27, 2017, now Pat. No. 10,722,356.

The ornamental design for a prosthetic valve and holder, as
shown and described.

(51) **LOC (13) Cl.** **24-03**

DESCRIPTION

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

USPC **D24/155**

(58) **Field of Classification Search**

USPC D24/155, 133, 140, 142, 143
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

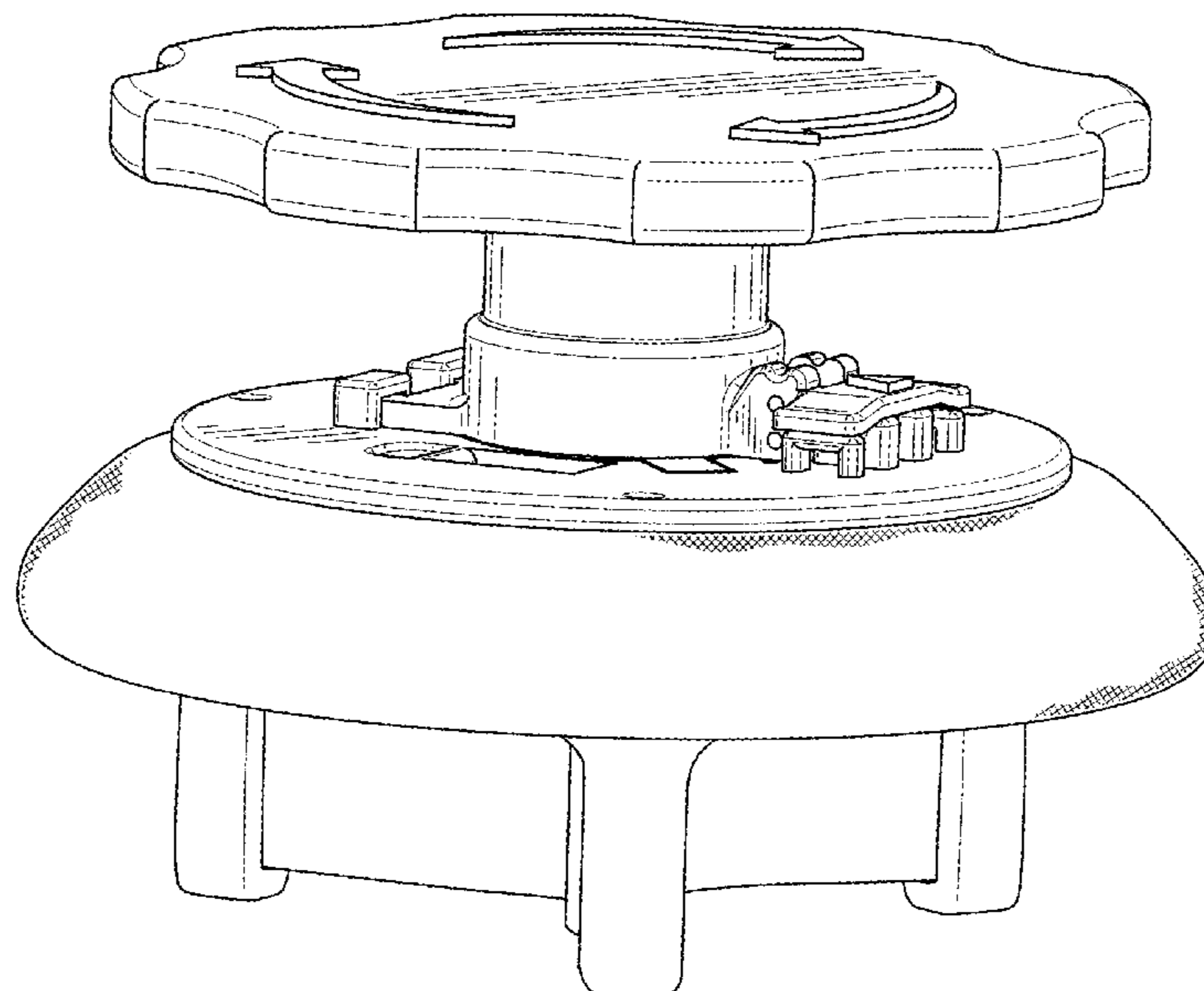
3,656,185 A	4/1972	Carpentier
4,164,046 A	8/1979	Cooley
4,217,665 A	8/1980	Bex et al.
4,602,911 A	7/1986	Ahmadi et al.
4,865,600 A	9/1989	Carpentier et al.
5,041,130 A	8/1991	Cosgrove et al.
5,061,277 A	10/1991	Carpentier et al.
5,064,431 A	11/1991	Gilbertson et al.
5,104,407 A	4/1992	Lam et al.
5,201,880 A	4/1993	Wright et al.

(Continued)

FIG. 1 is perspective view of a fifth embodiment of a
prosthetic valve and holder;
FIG. 2 is a front view of the prosthetic valve and holder of
FIG. 1;
FIG. 3 is a back view of the prosthetic valve and holder of
FIG. 1;
FIG. 4 is a left side view of the prosthetic valve and holder
of FIG. 1;
FIG. 5 is a right side view of the prosthetic valve and holder
of FIG. 1;
FIG. 6 is a top view of the prosthetic valve and holder of
FIG. 1; and,
FIG. 7 is a bottom view of the prosthetic valve and holder
of FIG. 1.

The broken lines in the drawings are for illustrative purposes
only and form no part of the claimed design.

1 Claim, 7 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

5,258,021 A 11/1993 Duran
 5,306,296 A 4/1994 Wright et al.
 5,496,336 A 3/1996 Cosgrove et al.
 D372,781 S * 8/1996 Reif D24/133
 5,593,435 A 1/1997 Carpentier et al.
 5,607,471 A 3/1997 Seguin et al.
 5,674,279 A 10/1997 Wright et al.
 5,776,187 A 7/1998 Krueger et al.
 5,776,189 A 7/1998 Khalid
 5,824,066 A 10/1998 Gross
 5,888,240 A 3/1999 Carpentier et al.
 5,972,030 A 10/1999 Garrison et al.
 6,102,945 A 8/2000 Campbell
 6,143,024 A 11/2000 Campbell et al.
 6,159,240 A 12/2000 Sparer et al.
 6,183,512 B1 2/2001 Howanec, Jr. et al.
 6,187,040 B1 2/2001 Wright
 6,217,610 B1 4/2001 Carpentier et al.
 6,231,602 B1 5/2001 Carpentier et al.
 6,250,308 B1 6/2001 Cox
 6,258,122 B1 7/2001 Tweden et al.
 6,319,280 B1 11/2001 Schoon
 6,332,893 B1 12/2001 Mortier et al.
 6,391,054 B2 5/2002 Carpentier et al.
 6,406,493 B1 6/2002 Tu et al.
 6,419,698 B1 7/2002 Finger
 6,602,268 B2 6/2003 Cosgrove et al.
 6,602,289 B1 8/2003 Colvin et al.
 6,619,291 B2 9/2003 Hlavka et al.
 6,709,456 B2 3/2004 Langberg et al.
 6,718,985 B2 4/2004 Hlavka et al.
 6,719,786 B2 4/2004 Ryan et al.
 6,726,717 B2 4/2004 Alfieri et al.
 6,764,510 B2 7/2004 Vidlund et al.
 6,797,002 B2 9/2004 Spence et al.
 6,800,090 B2 10/2004 Alferness et al.
 6,802,860 B2 10/2004 Cosgrove et al.
 6,805,710 B2 10/2004 Boiling et al.
 6,805,711 B2 10/2004 Quijano et al.
 6,858,039 B2 2/2005 McCarthy
 6,918,917 B1 7/2005 Nguyen et al.
 6,921,407 B2 7/2005 Nguyen et al.
 6,942,694 B2 9/2005 Liddicoat et al.
 6,955,689 B2 10/2005 Ryan et al.
 6,966,924 B2 11/2005 Holmberg
 6,986,775 B2 1/2006 Morales et al.
 7,101,395 B2 9/2006 Tremulis et al.
 7,118,595 B2 10/2006 Ryan et al.
 7,125,421 B2 10/2006 Tremulis et al.
 7,166,126 B2 1/2007 Spence et al.
 7,166,127 B2 1/2007 Spence et al.
 7,294,148 B2 11/2007 McCarthy
 7,503,929 B2 3/2009 Johnson et al.
 7,691,143 B2 4/2010 Wright et al.
 8,152,844 B2 4/2012 Rao et al.
 8,460,173 B2 6/2013 Schweich, Jr. et al.
 D827,134 S * 8/2018 Matsumura D24/140
 D846,122 S * 4/2019 Pintor D24/140
 2001/0010018 A1 7/2001 Cosgrove et al.
 2003/0033009 A1 2/2003 Gabbay
 2003/0040793 A1 2/2003 Marquez
 2004/0249452 A1 12/2004 Adams et al.
 2004/0249453 A1 12/2004 Cartledge et al.
 2005/0131533 A1 6/2005 Alfieri et al.
 2005/0182487 A1 8/2005 McCarthy et al.
 2005/0256567 A1 11/2005 Lim et al.
 2005/0256568 A1 11/2005 Lim et al.
 2005/0267572 A1 12/2005 Schoon et al.
 2005/0278022 A1 12/2005 Lim
 2006/0015178 A1 1/2006 Moaddeb et al.
 2006/0015179 A1 1/2006 Bulman-Fleming et al.
 2006/0020336 A1 1/2006 Liddicoat
 2006/0025858 A1 2/2006 Alameddine
 2006/0030885 A1 2/2006 Hyde

2006/0241743 A1* 10/2006 Bergin A61F 2/2427
 623/2.11
 2007/0162111 A1 7/2007 Fukamachi et al.
 2007/0179602 A1* 8/2007 Wright A61M 29/00
 623/2.11
 2009/0076599 A1 3/2009 Bergin
 2009/0192602 A1 7/2009 Kuehn
 2009/0192603 A1 7/2009 Ryan
 2009/0192604 A1 7/2009 Gloss
 2009/0192606 A1 7/2009 Gloss et al.
 2009/0259305 A1* 10/2009 Lane A61F 2/2427
 623/2.11
 2010/0030329 A1 2/2010 Frater
 2010/0191326 A1* 7/2010 Alkhatib A61F 2/2439
 623/2.11
 2011/0276128 A1* 11/2011 Cao A61F 2/2412
 623/2.11
 2012/0136434 A1 5/2012 Carpentier et al.
 2012/0158128 A1* 6/2012 Gautam B65B 55/18
 623/2.11
 2016/0242903 A1 8/2016 Edquist et al.
 2020/0237510 A1* 7/2020 Carlino A61F 2/2427

FOREIGN PATENT DOCUMENTS

WO 9302640 A1 2/1993
 WO 9814138 A1 4/1998
 WO 9949816 A1 10/1999
 WO 0108608 A1 2/2001
 WO 03020178 A1 3/2003

OTHER PUBLICATIONS

Adams, David, et al., "Large Annuloplasty Rings Facilitate Mitral Valve Repair in Barlow's Disease," Society of Thoracic Surgeons 42.sup.nd Annual Meeting, Jan. 30-Feb. 1, 2006.
 Alonso-Lei, M.D., et al., Adjustable Annuloplasty for Tricuspid Insufficiency, The annals of Thoracic Surgery, vol. 46, No. 3, pp. 368-369, Sep. 1988.
 Bolling, et al., Surgical Alternatives for Heart Failure, The Journal of Heart and Lung Transplantation, vol. 20, No. 7, pp. 729-733, 2001.
 Bolling, Mitral Valve Reconstruction in the Patient With Heart Failure, Heart Failure Reviews, 6, pp. 177-185, 2001.
 Brochure of "Cosgrove-Edwards Annuloplasty System," 2000.
 Carpentier, et al. "The 'Physio-Ring': An Advanced Concept in Mitral Valve Annuloplasty," Society of Thoracic Surgeons 31.sup.st Annual meeting, Jan. 30-Feb. 2, 1995.
 Carpentier-Edwards Classic Annuloplasty Ring With Duraflo Treatment Models 4425 and 4525 for Mitral and Tricuspid Valvuloplasty, Baxter Healthcare Corporation, 1998.
 Carpentier-Edwards Pyschio Annuloplasty Ring, Edwards Lifesciences Corporation, 2003.
 D.C. Miller, IMR Redux—To Repair or Replace?, Journal of Thoracic & Cardiovascular Surgery, pp. 1-8, 2001.
 Flachskampf, Frank A., et al. "Analysis of Shape and Motion of the Mitral Annulus in Subjects With and Without Cardiomyopathy by Echocardiographic 3-Dimensional Reconstruction," American Society of Echocardiography 0894-7317/2000.
 Gatti, et al., Preliminary Experience in Mitral Valve Repair Using the Cosgrove-Edwards Annuloplasty Ring, Interactive Cardiovascular and Thoracic Surgery, vol. 2(3), pp. 256-261, 2003.
 International Search Report from corresponding PCT Application No. PCT/US2009/043359 dated Aug. 4, 2009.
 Melo, et al., Atrioventricular Valve Repair Using Externally Adjustable Flexible Rings: The Journal of Thoracic Cardiovascular Surgery, vol. 110, No. 5, 1995.
 MGH Study Shows Mitral Valve Prolapse not a Stroke Risk Factor, Massachusetts General Hospital, pp. 1-3, Jun. 1999.
 Salgo et al., Effect of Annular Shape on Leaflet Curvature in Reducing Mitral Leaflet, American Heart Association, Circulation 200; pp. 106-711.

(56)

References Cited

OTHER PUBLICATIONS

Seguin, et al., Advance in Mitral Valve Repair Using a Device Flexible in Three Dimensions, The St. Jude Medical-Seguin Annuloplasty Ring, ASAIO Journal, vol. 42, No. 6, pp. 368-371, 1996.

Smolens, et al., Mitral Valve Repair in Heart Failure, The European Journal of Heart Failure 2, pp. 365-371, 2000.

Watanabe, Nozomi, et al. "Mitral Annulus Flattens in Ischemic Mitral Regurgitation: Geometric Differences Between Inferior and Anterior Myocardial Infarction: A Real-Time 3-Dimensional Echocardiographic Study," American Heart Association Copyrgt. 2005; ISSN: 1524-4539.

* cited by examiner

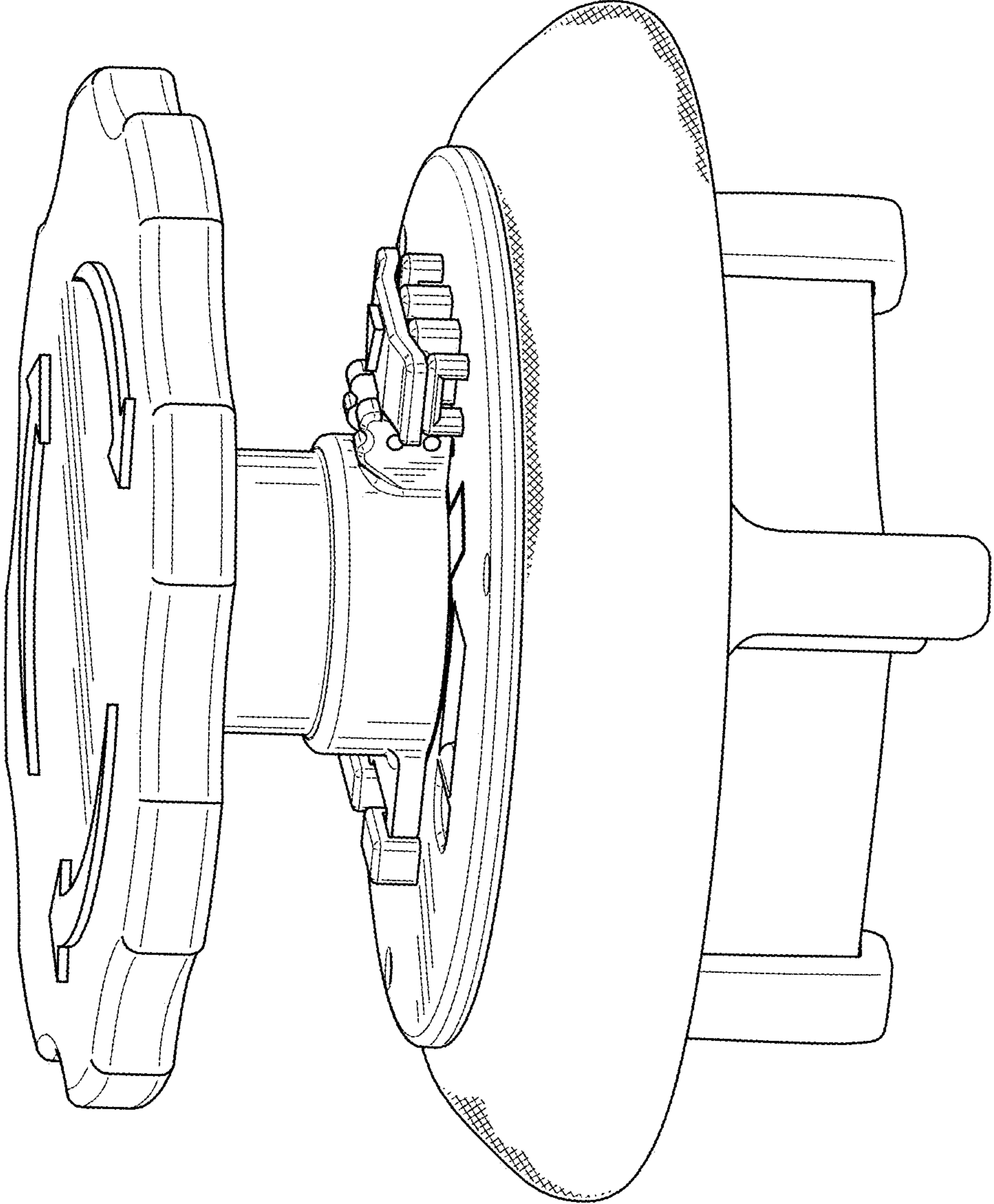


FIG. 1

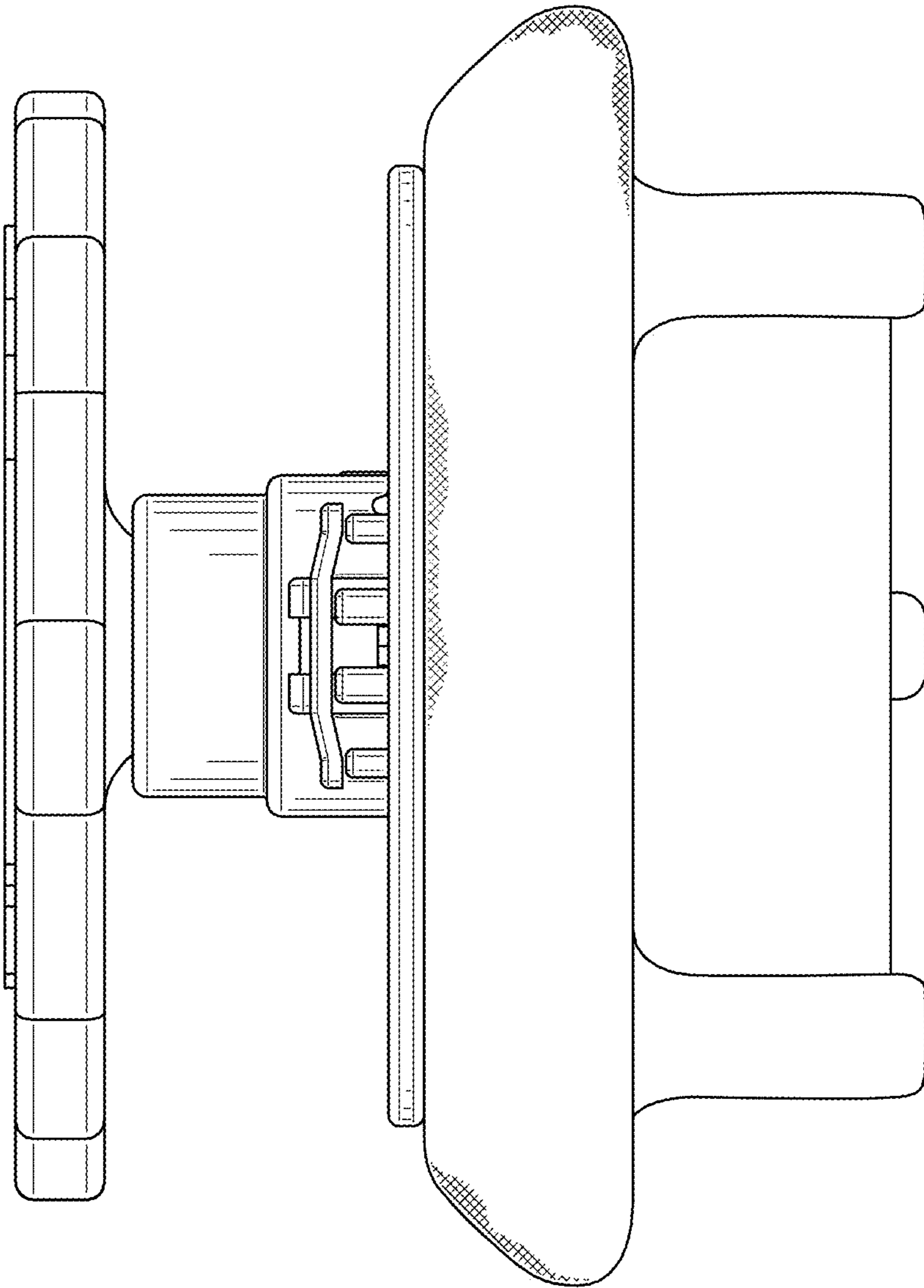


FIG. 2

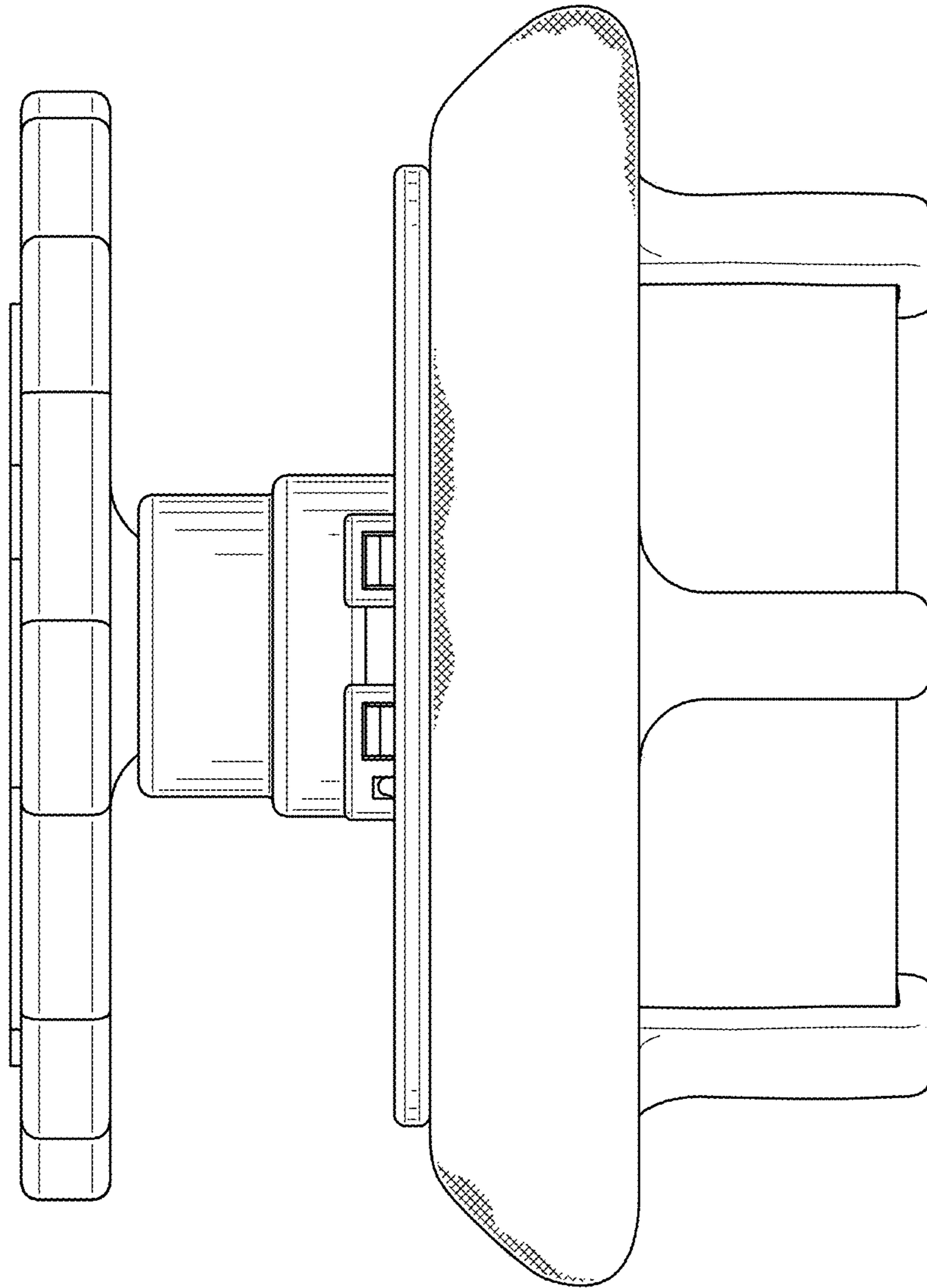


FIG. 3

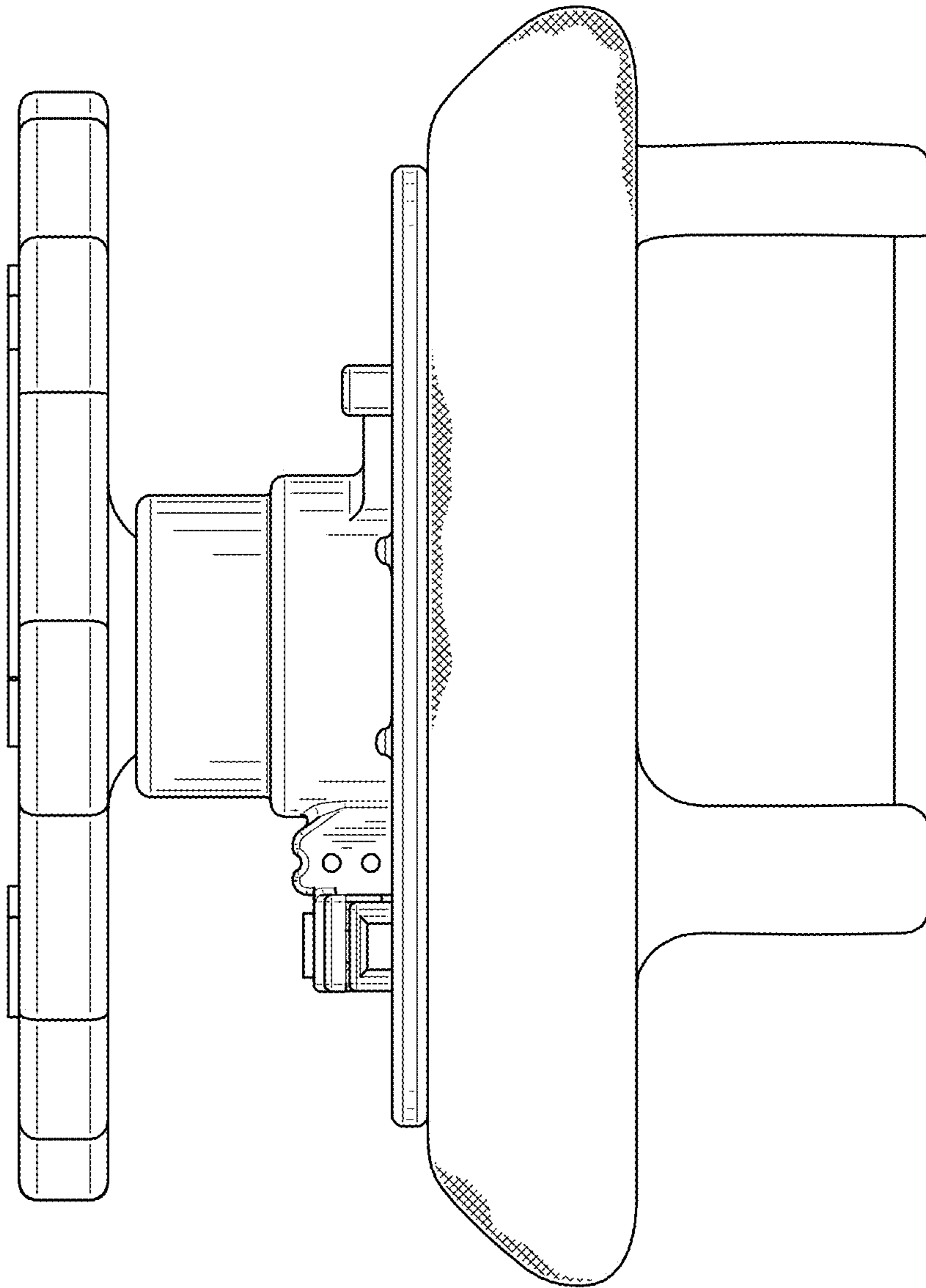


FIG. 4

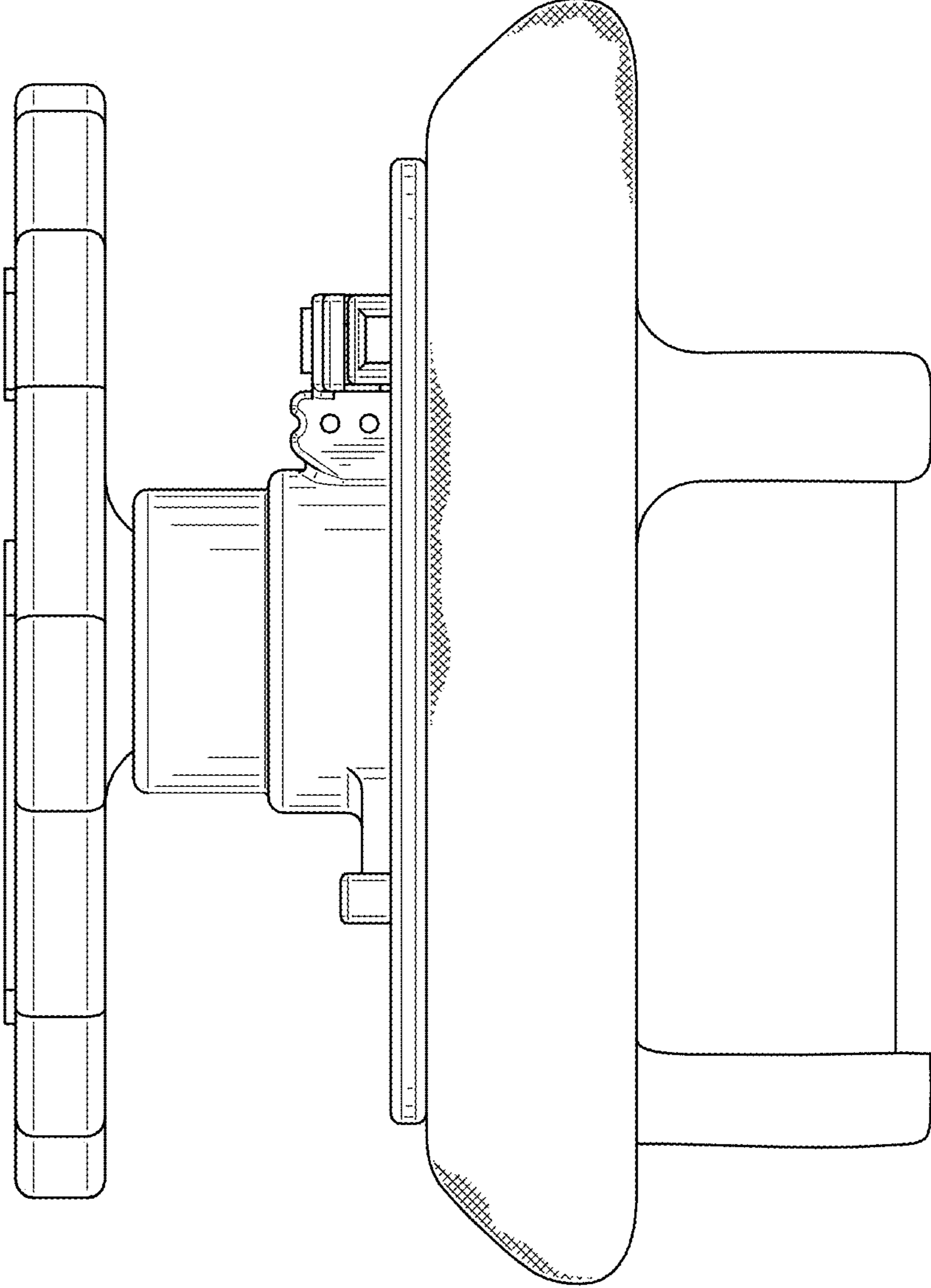


FIG. 5

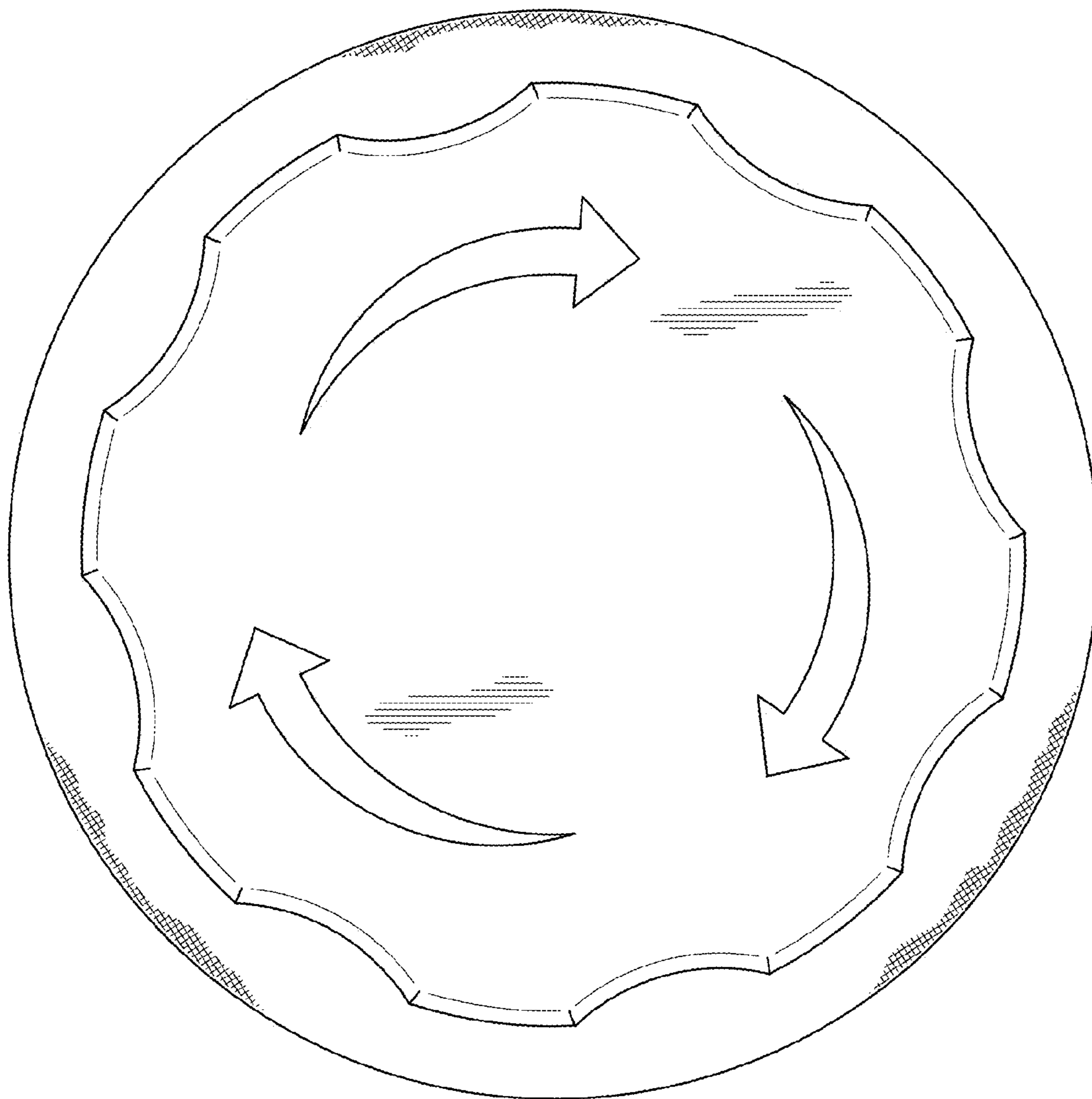


FIG. 6

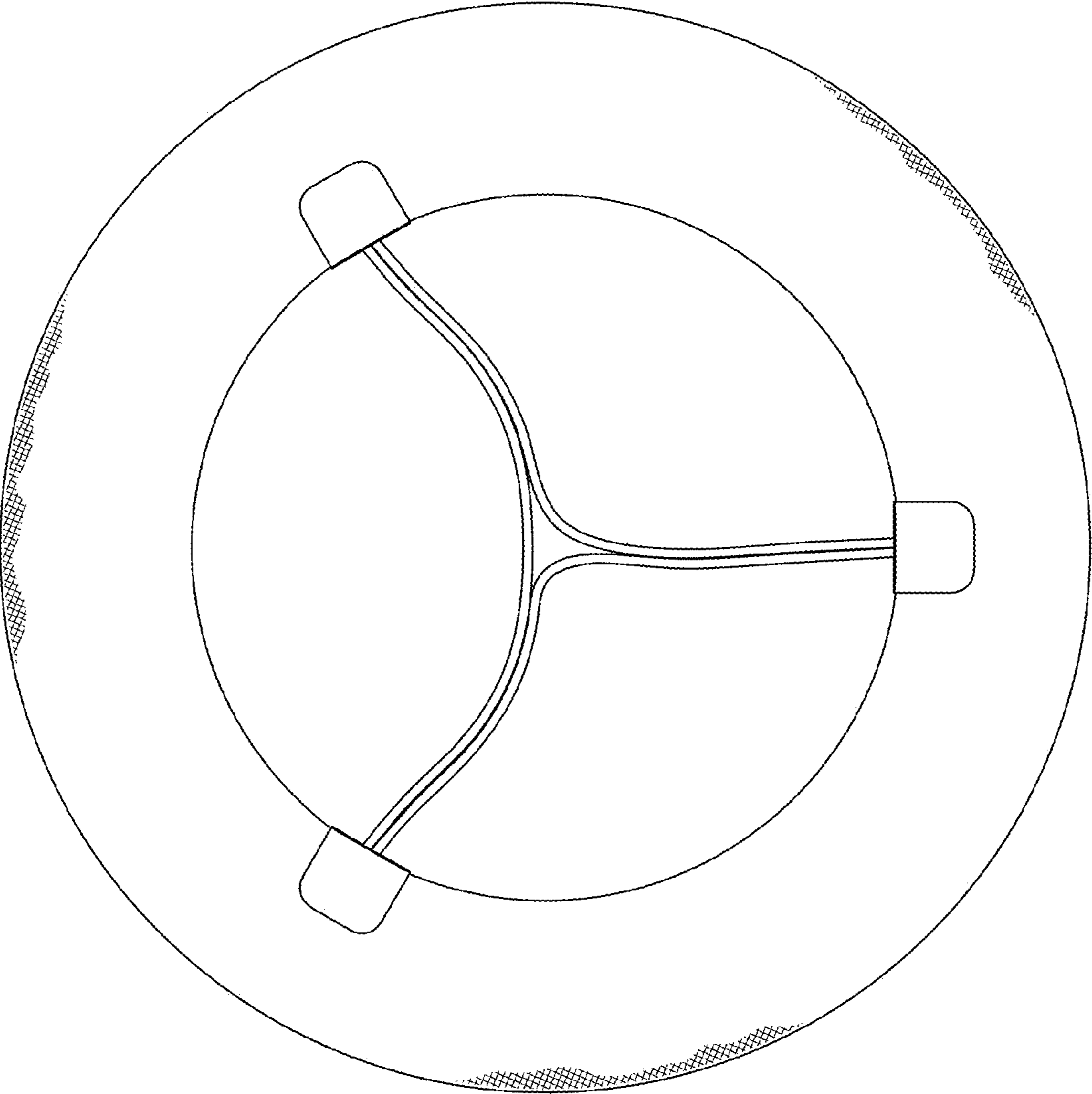


FIG. 7