



US00D960372S

(12) **United States Design Patent** (10) **Patent No.:** **US D960,372 S**  
**Conklin et al.** (45) **Date of Patent:** **\*\* Aug. 9, 2022**

(54) **PROSTHETIC VALVE AND HOLDER**

FOREIGN PATENT DOCUMENTS

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

CN 104523353 A 4/2015  
EP 0338994 A1 10/1989

(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 Thoracic and CardioThoracic Surgery, The Cleveland Clinic Foundation, Cleveland, OH.

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

(Continued)

(21) Appl. No.: **29/810,899**

*Primary Examiner* — Charles D Hanson

(22) Filed: **Oct. 8, 2021**

(74) *Attorney, Agent, or Firm* — Edwards Lifesciences

**Related U.S. Application Data**

(60) Division of application No. 29/645,199, filed on Apr. 24, 2018, now Pat. No. Des. 933,229, which is a continuation of application No. 15/796,147, filed on Oct. 27, 2017, now Pat. No. 10,722,356.

(57) **CLAIM**

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  
CPC ..... A61F 2/2427; A61F 2/243  
See application file for complete search history.

FIG. 1 is perspective view of a first 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.

(56) **References Cited**

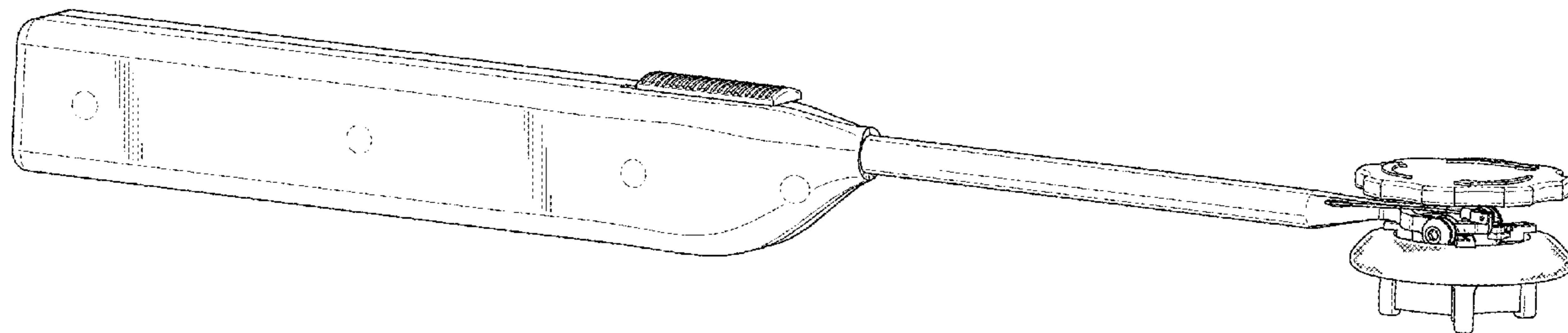
U.S. PATENT DOCUMENTS

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)

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

**1 Claim, 6 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  
 6,602,288 B1 8/2003 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 Bolling 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.  
 9,333,076 B1 5/2016 Edquist 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 Kuehn  
 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

EP 1034753 A1 9/2000  
 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.  
 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.  
 Saigo, et al., Effect of Annular Shape on Leaflet Curvature in Reducing Mitral Leaflet, American Heart Association, Circulation 200; pp. 106-711.  
 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.

(56)

**References Cited**

OTHER PUBLICATIONS

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.

Carpentier-Edwards Pyshio Annuloplasty Ring, Edwards Lifesciences Corporation, 2003.

D.C. Miller, IMR Redux—To Repair or Replace?, Journal of Thoracic & Cardiovascular Surgery, pp. 1-8, 2001.

\* cited by examiner

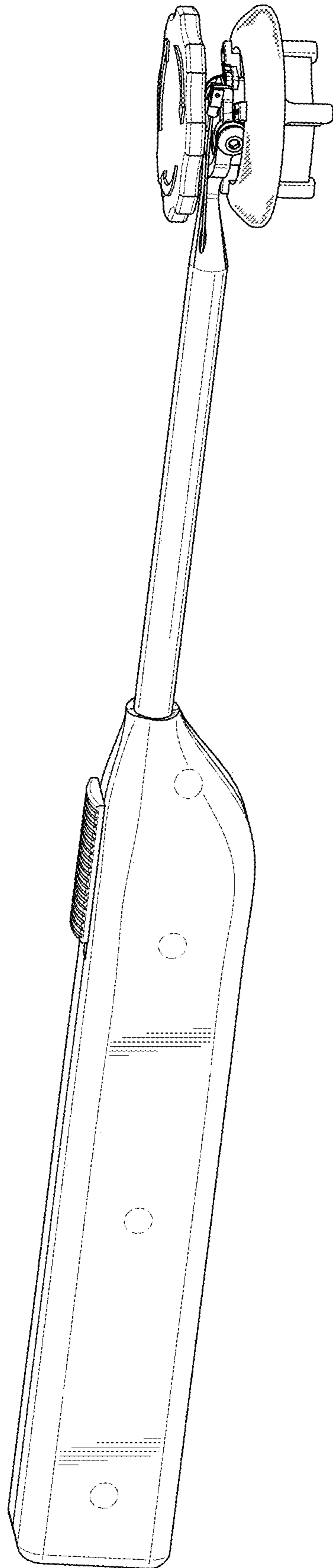


FIG. 1

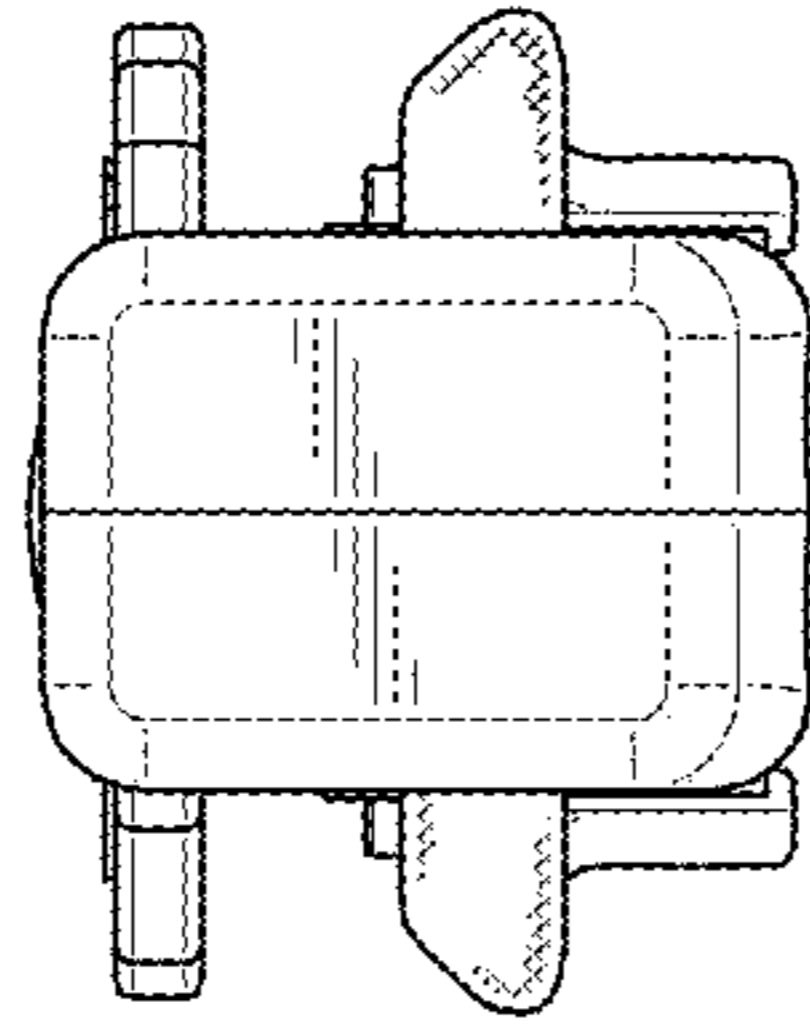


FIG. 3

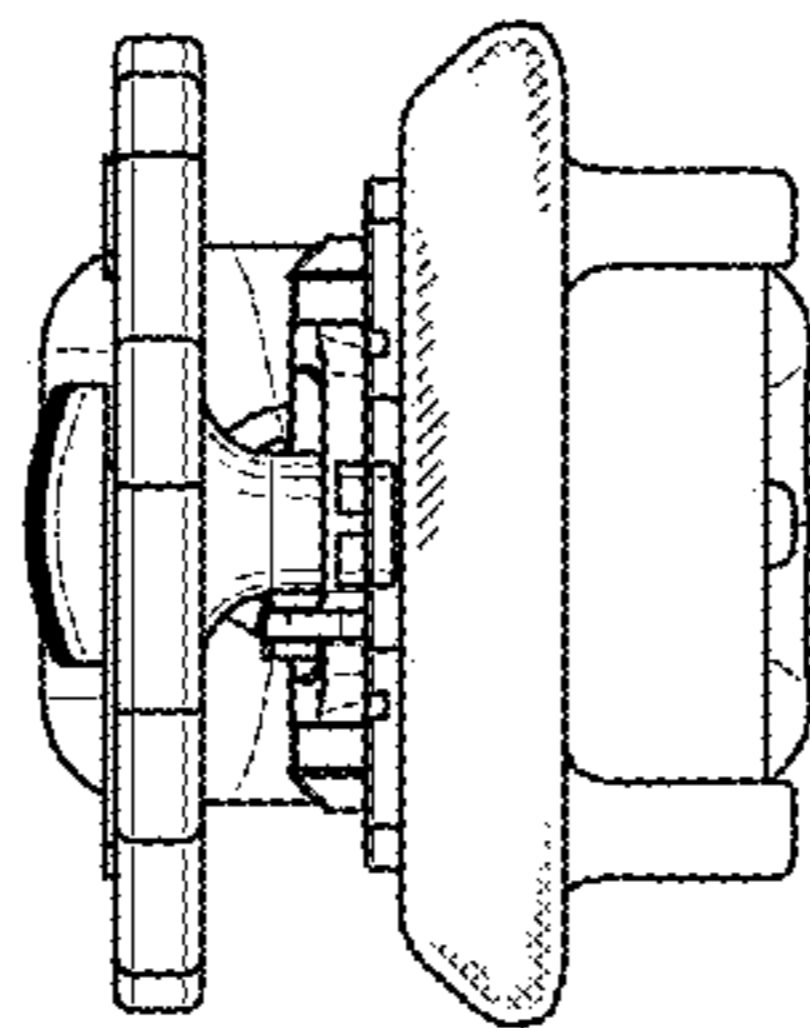


FIG. 2

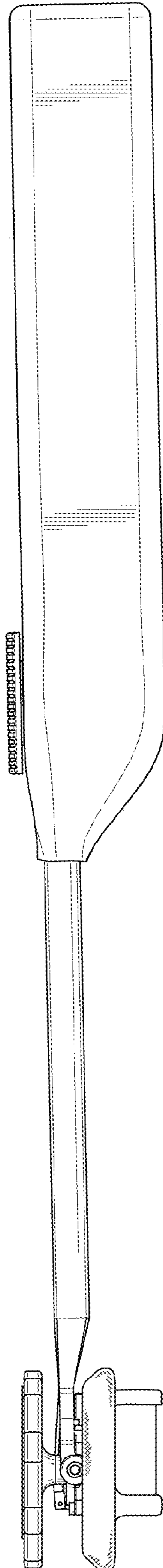


FIG. 4

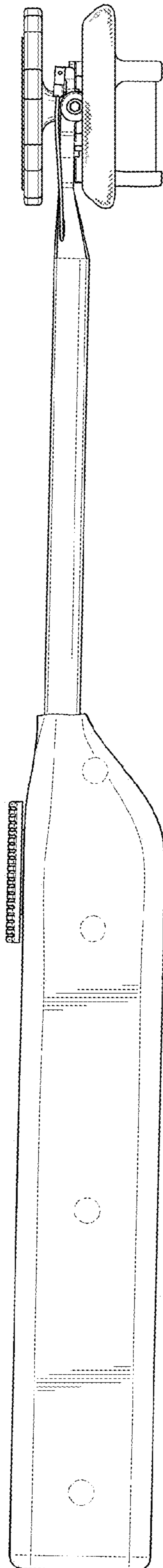


FIG. 5

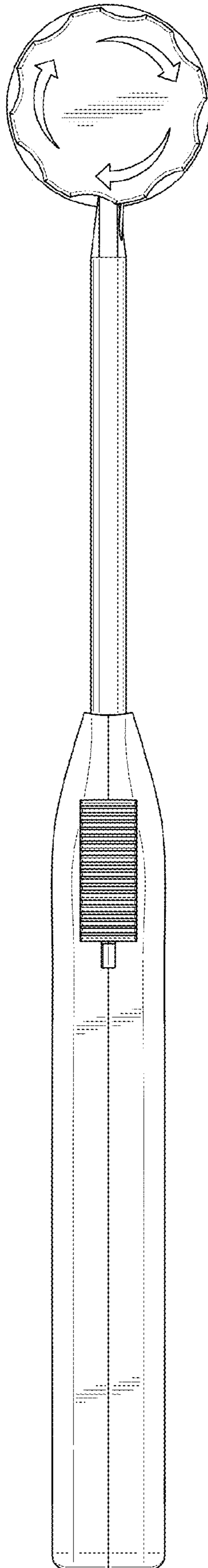


FIG. 6



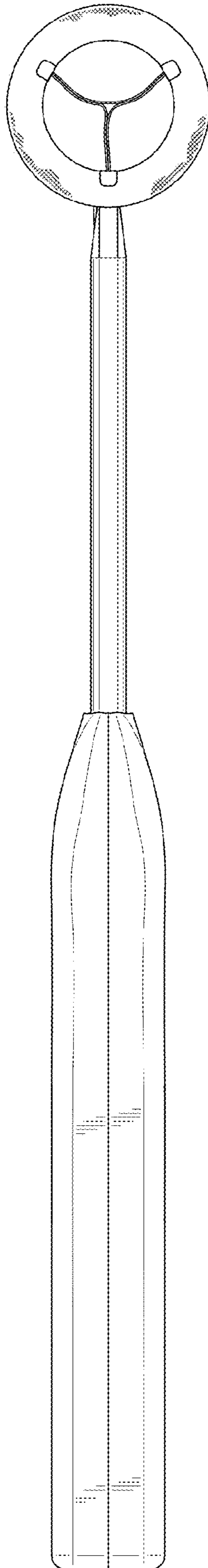


FIG. 7