



US00D881172S

(12) **United States Design Patent** (10) **Patent No.:** **US D881,172 S**  
**Ross, III et al.** (45) **Date of Patent:** **\*\* Apr. 14, 2020**

(54) **ANTENNA AND BASE STAND**

(71) Applicant: **Antennas Direct, Inc.**, Ellisville, MO  
(US)

(72) Inventors: **John Edwin Ross, III**, Moab, UT  
(US); **Joanne Nosiglia**, Eureka, MO  
(US)

(73) Assignee: **Antennas Direct, Inc.**, Ellisville, MO  
(US)

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

(21) Appl. No.: **29/713,646**

(22) Filed: **Nov. 18, 2019**

**Related U.S. Application Data**

(63) Continuation-in-part of application No. 16/405,835, filed on May 7, 2019, and a continuation-in-part of application No. 29/672,540, filed on Dec. 6, 2018, now Pat. No. Des. 868,045, which is a continuation-in-part of application No. 29/627,951, filed on Nov. 30, 2017, now Pat. No. Des. 868,720, and a continuation-in-part of application No. 15/685,749, filed on Aug. 24, 2017, and a continuation-in-part of application No. 29/627,951, and a continuation-in-part of application No. 29/671,595, filed on Nov. 28, 2018, now Pat. No.

(Continued)

(51) **LOC (12) Cl.** ..... **14-03**

(52) **U.S. Cl.**  
USPC ..... **D14/230**

(58) **Field of Classification Search**  
USPC ..... D14/138, 230–238, 299, 358; D12/42, D12/43  
CPC ..... H01Q 7/00; H01Q 13/10; H01Q 9/285; H01Q 19/30; H01Q 19/12; H01Q 1/38; H01Q 1/36; H04B 1/0475; H04B 1/034; H05K 11/00

See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

2,060,098 A 11/1936 Norman  
2,220,008 A 10/1940 Woodward et al.

(Continued)

**FOREIGN PATENT DOCUMENTS**

CN 201243084 Y 5/2009  
CN ZL2008200072832 5/2009

(Continued)

**OTHER PUBLICATIONS**

“Analog High-Definition Television System”, Wikipedia: the Free Encyclopedia. Wikimedia Foundation, Inc. Oct. 12, 2016. Web. Mar. 16, 2017, 5 pages.

(Continued)

*Primary Examiner* — John Windmuller

(74) *Attorney, Agent, or Firm* — Harness, Dickey & Pierce, P.L.C.; Anthony G. Fussner

(57)

**CLAIM**

The ornamental designs for antennas and base stand, as shown and described.

**DESCRIPTION**

FIG. 1 is a perspective view of an antenna according to a first embodiment;

FIG. 2 is a back perspective view of the antenna shown in FIG. 1;

FIG. 3 is a front view of the antenna shown in FIG. 1;

FIG. 4 is a back view of the antenna shown in FIG. 1;

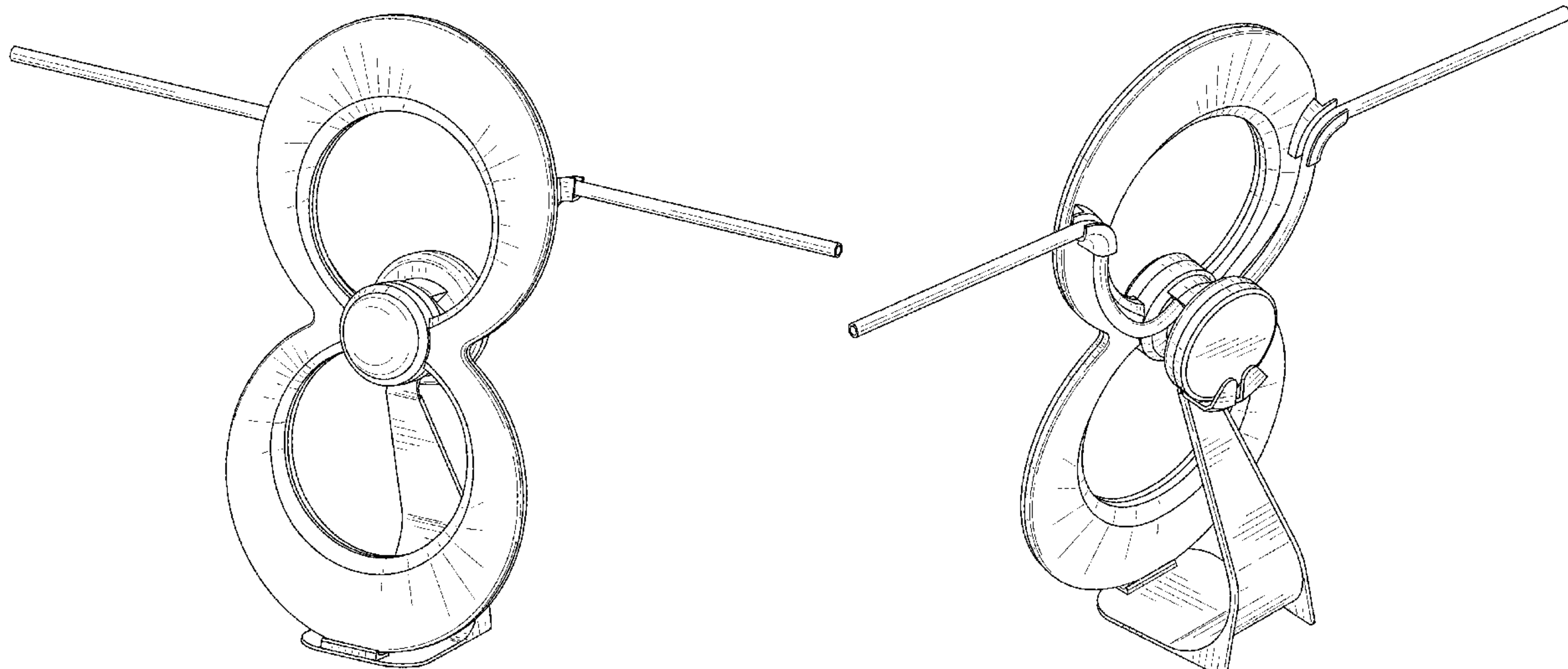
FIG. 5 is a right side view of the antenna shown in FIG. 1;

FIG. 6 is a left side view of the antenna shown in FIG. 1;

FIG. 7 is a top view of the antenna shown in FIG. 1; and,

FIG. 8 is a bottom view of the antenna shown in FIG. 1.

**1 Claim, 6 Drawing Sheets**



**Related U.S. Application Data**

Des. 867,347, and a continuation of application No. 29/580,049, filed on Oct. 5, 2016, now Pat. No. Des. 809,490, which is a continuation-in-part of application No. 14/308,422, filed on Jun. 18, 2014, now abandoned, and a continuation-in-part of application No. 29/430,632, filed on Aug. 28, 2012, now abandoned, which is a continuation-in-part of application No. 29/376,791, filed on Oct. 12, 2010, now Pat. No. Des. 666,178, and a continuation-in-part of application No. 13/759,750, filed on Feb. 5, 2013, now Pat. No. 8,994,600, which is a continuation-in-part of application No. 12/606,636, filed on Oct. 27, 2009, now Pat. No. 8,368,607, which is a continuation-in-part of application No. 12/050,133, filed on Mar. 17, 2008, now Pat. No. 7,609,222, which is a continuation-in-part of application No. 29/304,423, filed on Feb. 29, 2008, now Pat. No. Des. 598,433, and a continuation-in-part of application No. 12/040,464, filed on Feb. 29, 2008, now Pat. No. 7,839,347, and a continuation-in-part of application No. 29/305,294, filed on Mar. 17, 2008, now Pat. No. Des. 604,276, which is a continuation-in-part of application No. 12/040,464, and a continuation-in-part of application No. 12/050,133, and a continuation-in-part of application No. PCT/US2008/061908, filed on Apr. 29, 2008, and a continuation-in-part of application No. 12/050,133.

(56)

**References Cited****U.S. PATENT DOCUMENTS**

2,437,251 A 3/1948 Frische et al.  
 2,480,155 A 8/1949 Masters  
 2,589,578 A 3/1952 Sabins  
 D170,203 S 8/1953 Leonard  
 D171,560 S 2/1954 Ritter  
 D177,200 S 3/1956 Valiulis  
 D179,111 S 11/1956 Ballan  
 2,821,710 A 1/1958 Hale  
 3,015,101 A 12/1961 Turner et al.  
 3,123,826 A 3/1964 Durham  
 3,161,975 A 12/1964 McMillan  
 3,239,838 A 3/1966 Kelleher  
 3,261,019 A 7/1966 Lundy  
 3,273,158 A 9/1966 Fouts et al.  
 D209,402 S 11/1967 Burlingame  
 D211,025 S 5/1968 Callaghan  
 3,434,145 A 3/1969 Wells  
 3,521,284 A 7/1970 Strom et al.  
 3,560,983 A 2/1971 Willie et al.  
 3,587,105 A 6/1971 Neilson  
 3,721,990 A 3/1973 Gibson et al.  
 3,739,388 A 6/1973 Callaghan  
 3,828,867 A 8/1974 Elwood  
 3,971,031 A 7/1976 Burke  
 4,183,027 A 1/1980 Ehrenspeck  
 4,184,163 A 1/1980 Woodward  
 4,418,427 A 11/1983 Muterspaugh  
 D308,521 S 6/1990 Lonczak  
 D310,671 S 9/1990 Weiss  
 4,987,424 A 1/1991 Tamura et al.  
 D318,673 S 7/1991 Terk  
 D327,690 S 7/1992 Ogawa et al.  
 D332,262 S 1/1993 Borchardt  
 5,280,645 A 1/1994 Nguyen et al.  
 D344,731 S 3/1994 Witzky  
 D345,982 S 4/1994 Lucey  
 5,313,218 A 5/1994 Busking  
 5,943,025 A 8/1999 Benham et al.  
 D414,495 S 9/1999 Heiligenstein et al.

5,959,586 A 9/1999 Benham et al.  
 D421,610 S 3/2000 Ghalebi  
 6,054,963 A 4/2000 Muterspaugh  
 6,239,764 B1 5/2001 Timofeev et al.  
 D449,593 S 10/2001 Schultz  
 6,590,541 B1 7/2003 Schultze  
 6,593,886 B2 7/2003 Schantz  
 D480,714 S 10/2003 Wang  
 6,680,708 B2 1/2004 Yamaki  
 D501,468 S 2/2005 Wang  
 6,885,352 B2 4/2005 Lee et al.  
 6,917,793 B2 7/2005 Wang  
 6,922,179 B2 7/2005 McCollum  
 7,091,925 B1 8/2006 Wang  
 7,126,556 B1 10/2006 Wang  
 7,209,089 B2 4/2007 Schantz  
 D543,976 S \* 6/2007 Oliver ..... D14/230  
 D544,471 S 6/2007 Wang  
 7,239,290 B2 7/2007 Poilasne et al.  
 7,245,266 B1 7/2007 Szente et al.  
 D558,189 S 12/2007 Inoue  
 7,356,362 B2 4/2008 Chang et al.  
 D570,337 S \* 6/2008 Oliver ..... D14/230  
 7,436,973 B2 10/2008 Liao  
 D581,931 S 12/2008 Pine  
 D585,883 S 2/2009 Kaneko  
 D598,433 S 8/2009 Schneider et al.  
 D598,434 S 8/2009 Schneider et al.  
 D598,469 S 8/2009 Harris, Jr.  
 7,609,222 B2 10/2009 Schneider et al.  
 D604,276 S 11/2009 Schneider et al.  
 D611,460 S 3/2010 Chao  
 7,693,570 B2 4/2010 Green et al.  
 D624,531 S 9/2010 Fleck et al.  
 7,839,347 B2 11/2010 Schneider et al.  
 7,839,351 B2 11/2010 Schadler et al.  
 7,898,496 B2 3/2011 Olsen et al.  
 D638,031 S 5/2011 Lee et al.  
 7,936,311 B2 5/2011 Rowser et al.  
 7,990,335 B2 8/2011 Schneider et al.  
 D655,692 S 3/2012 Silverman et al.  
 8,144,069 B2 3/2012 Sadowski et al.  
 8,174,457 B1 5/2012 Lam  
 D664,564 S 7/2012 Gillett et al.  
 D666,178 S 8/2012 Schneider et al.  
 8,368,607 B2 2/2013 Schneider et al.  
 8,736,500 B1 5/2014 Lam  
 D721,737 S 1/2015 Ahn et al.  
 8,994,600 B2 3/2015 Schneider et al.  
 D809,490 S 2/2018 Feit  
 D815,073 S 4/2018 Feit  
 D824,884 S \* 8/2018 Ross, III ..... D14/230  
 D827,620 S \* 9/2018 Ross, III ..... D14/230  
 D831,010 S 10/2018 Yang  
 10,128,575 B2 11/2018 Ross, III et al.  
 D837,769 S 1/2019 Yang  
 D838,697 S 1/2019 Yang  
 D847,798 S 5/2019 Yang  
 D849,722 S 5/2019 Yang  
 D850,425 S \* 6/2019 Yang ..... D14/230  
 D852,172 S \* 6/2019 Wu ..... D14/230  
 D867,347 S 11/2019 Ross, III et al.  
 D868,045 S 11/2019 Ross, III et al.  
 D868,720 S 12/2019 Feit et al.  
 2002/0158798 A1 10/2002 Chiang et al.  
 2003/0071757 A1 4/2003 Yamaki  
 2004/0090379 A1 5/2004 Fourdeux et al.  
 2004/0090385 A1 5/2004 Green  
 2004/0113841 A1 6/2004 Louzir et al.  
 2004/0217912 A1 11/2004 Mohammadian  
 2005/0088342 A1 4/2005 Parsche  
 2005/0162332 A1 7/2005 Schantz  
 2005/0259023 A1 11/2005 Wang  
 2005/0280582 A1 12/2005 Powell et al.  
 2006/0033665 A1 2/2006 Yang  
 2006/0055618 A1 3/2006 Poilasne et al.  
 2006/0077115 A1 4/2006 Oh et al.  
 2006/0103577 A1 5/2006 Lee  
 2006/0164304 A1 7/2006 Huang et al.

(56)

**References Cited**

## U.S. PATENT DOCUMENTS

|              |    |         |                      |
|--------------|----|---------|----------------------|
| 2007/0069955 | A1 | 3/2007  | McCorkle             |
| 2007/0200769 | A1 | 8/2007  | Nakano et al.        |
| 2008/0040464 | A1 | 2/2008  | Chia                 |
| 2008/0094291 | A1 | 4/2008  | Bystrom et al.       |
| 2008/0211720 | A1 | 9/2008  | Hansen               |
| 2008/0258980 | A1 | 10/2008 | Chen et al.          |
| 2008/0291345 | A1 | 11/2008 | Schneider            |
| 2009/0058732 | A1 | 3/2009  | Nakano et al.        |
| 2009/0073067 | A1 | 3/2009  | Soler Castany et al. |
| 2009/0146899 | A1 | 6/2009  | Schneider et al.     |
| 2010/0085269 | A1 | 4/2010  | Sadowski et al.      |
| 2014/0292597 | A1 | 10/2014 | Schneider et al.     |

## FOREIGN PATENT DOCUMENTS

|    |                  |         |
|----|------------------|---------|
| CN | ZL2008301199963  | 5/2009  |
| CN | 101453057 A      | 6/2009  |
| CN | ZL2008301199978  | 7/2009  |
| CN | ZL2008300091398  | 9/2009  |
| CN | 203707328 U      | 7/2014  |
| EM | 000946587        | 5/2008  |
| EP | 1555717 A1       | 7/2005  |
| EP | 1653560 A1       | 5/2006  |
| EP | 1753080 A1       | 2/2007  |
| GB | 2263360 A        | 7/1993  |
| JP | D1213590         | 6/2004  |
| TW | M249233 U        | 11/2004 |
| TW | D112283          | 8/2006  |
| TW | D119092          | 9/2007  |
| TW | 200926506 A      | 6/2009  |
| TW | D129744          | 7/2009  |
| TW | D129745          | 7/2009  |
| TW | D129746          | 7/2009  |
| WO | WO-2009073249 A1 | 6/2009  |

## OTHER PUBLICATIONS

“Television Antenna”, Wikipedia: The Free encyclopedia. Wikimedia Foundation, Inc. Mar. 13, 2017. Web. Mar. 15, 2017, 6 pages.

A Broadband Eccentric Annular Slot Antenna, Young Hoon Suh and Ikmo Park, Department of Electrical Engineering, Ajou University, pp. 94-97, IEEE copyright notice 2001.

A Printed Crescent Patch Antenna for Ultrawideband Applications, Ntsanderh C. Azenui and H.Y.D. Yang, IEEE Antennas and Wireless Propagation Letters, vol. 6, 2007, pp. 113-116.

Antenna Engineering Handbook, 3rd Edition, Edited by Richard C. Johnson, McGraw Hill, 1993, pp. 5-13 to 5-16.

Antenna Theory: a. Review, Balanis, Proc. IEEE vol. 80 No. 1 Jan. 1992, 17 pages.

Antennas Direct. PF7 Picture Frame Antenna, Oct. 1, 2005, Antennas Direct, <http://web.archive.org/web/2005100102653/http://antennasdirect.com/PF7.su-b--antenna.html>. 1 page.

C. M. Shah, S. Siriam, M. Bhaskaran and A. Mitchell, “Large area metal-silicone flexible electronic structures,” 2010 Conference on Optoelectronic and Microelectronic Materials and Devices, Canberra, ACT, 2010, pp. 187-188.

Chinese office action dated Nov. 4, 2015 for Chinese application No. 2014101113505 filed Feb. 7, 2014, published as CN103972657 on Aug. 6, 2014, which names the same inventors, Richard E. Schneider and John Edwin Ross III, as the instant application but is not related through a priority claim; 7 pages.

Clearstream.TM. 2V; <http://www.antennasdirect.com/cmss.sub--files/attachementlibrary/pdf/C2--V-.sub--QS.sub--FINAL.sub--20120702.pdf>; Jul. 2, 2012; 2 pgs.

Design of Compact Components for Ultra Wideband Communication Front Ends. Marek Bialkowski, Amin Abbosh, and Hing Kan, School of Information Technology and Electrical Engineering. The University of Queensland, four pages.

European Search Report dated Apr. 24, 2014 for EP application No. 14153878.5 which claims priority to the instant application; 9 pages.

European Search Report dated Jan. 17, 2011, issued by the European Patent Office for European Patent Application No. EP 10193159.0 which is related to the instant application through a priority claim; (5 pages).

European Supplementary Search Report and Opinion dated Oct. 7, 2010, issued by the European Patent Office for European Patent Application No. EP 08747115 (6 pages).

Frequency-and Time-Domain Modeling of Tapered Loop Antennas in Ultra-Wideband Radio Systems, Shiou-Li Chen and Shau-Gang Mao, Graduate Institute of Computer and Communication Engineer, pp. 179-182, IEEE copyright notice 2006.

IEEE Spectrum: Antennas for the New Airwaves, <http://www.spectrum.ieee.org/print/7328>, Published Feb. 2009, 9 pages, Authors Richard Schneider and John Ross.

Mao S-G et al., “Time-domain characteristics of ultra-wideband tapered loop antennas”, Electronics Letters, IEE Stevenage, GB, vol. 42, No. 22, Oct. 26, 2006; 1262-1264; 2 pages.

One-Element Loop Antenna with Finite Reflector, B. Rojaryanont and T. Sekiguchi, Electronics & Communications in Japan, vol. 59-B, No. 5, May 1976, p. 68.

Planar Miniature Tapered-Slot-Fed Annular Slot Antennas for Ultrawide-Band Radios, Tzyh-Ghuang Ma, Student Member, and Shyh-Kang, Jeng, Senior Member, IEEE, IEEE Transactions on Antennas and Propagation, vol. 53, No. 3, Mar. 2005, pp. 1194-1202.

Self-Mutual Admittances of Two Identical Circular Loop Antennas in a Conducting Medium and in Air, K. Iizuka. Senior Member, IEEE, R. W. P. King, Fellow, IEEE, and C. W. Harrison, Jr., Senior Member, IEEE, IEEE Transactions on Antennas and Propagation, vol. AP014, No. 4, Jul. 1966, pp. 440-450.

Tofel, Kevin C., HD Picture frame antenna, Aug. 11, 2005, <http://hd.engadget.com/2005/08/11/hd-picture-frame-antenna>, 1 page.

\* cited by examiner

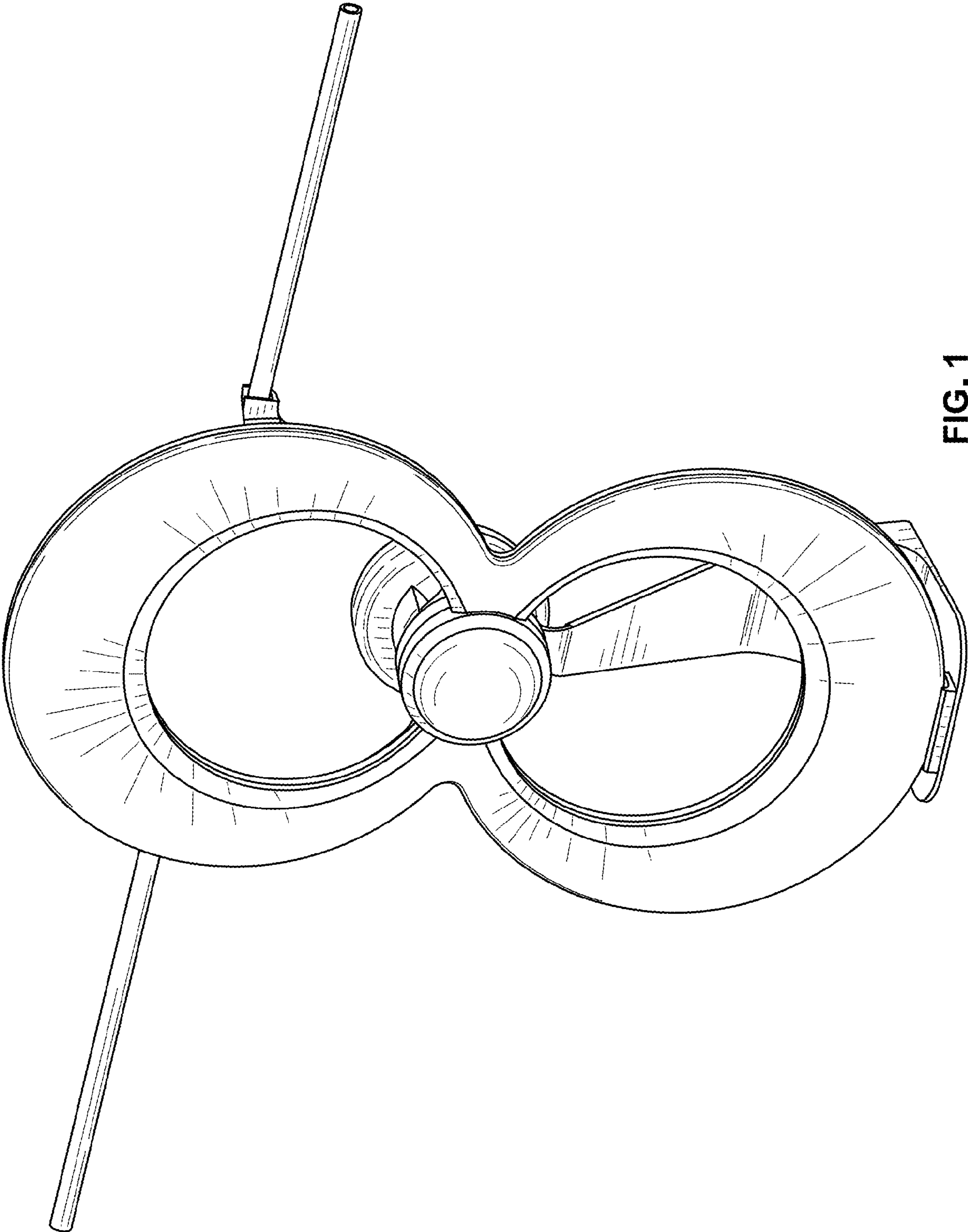


FIG. 1

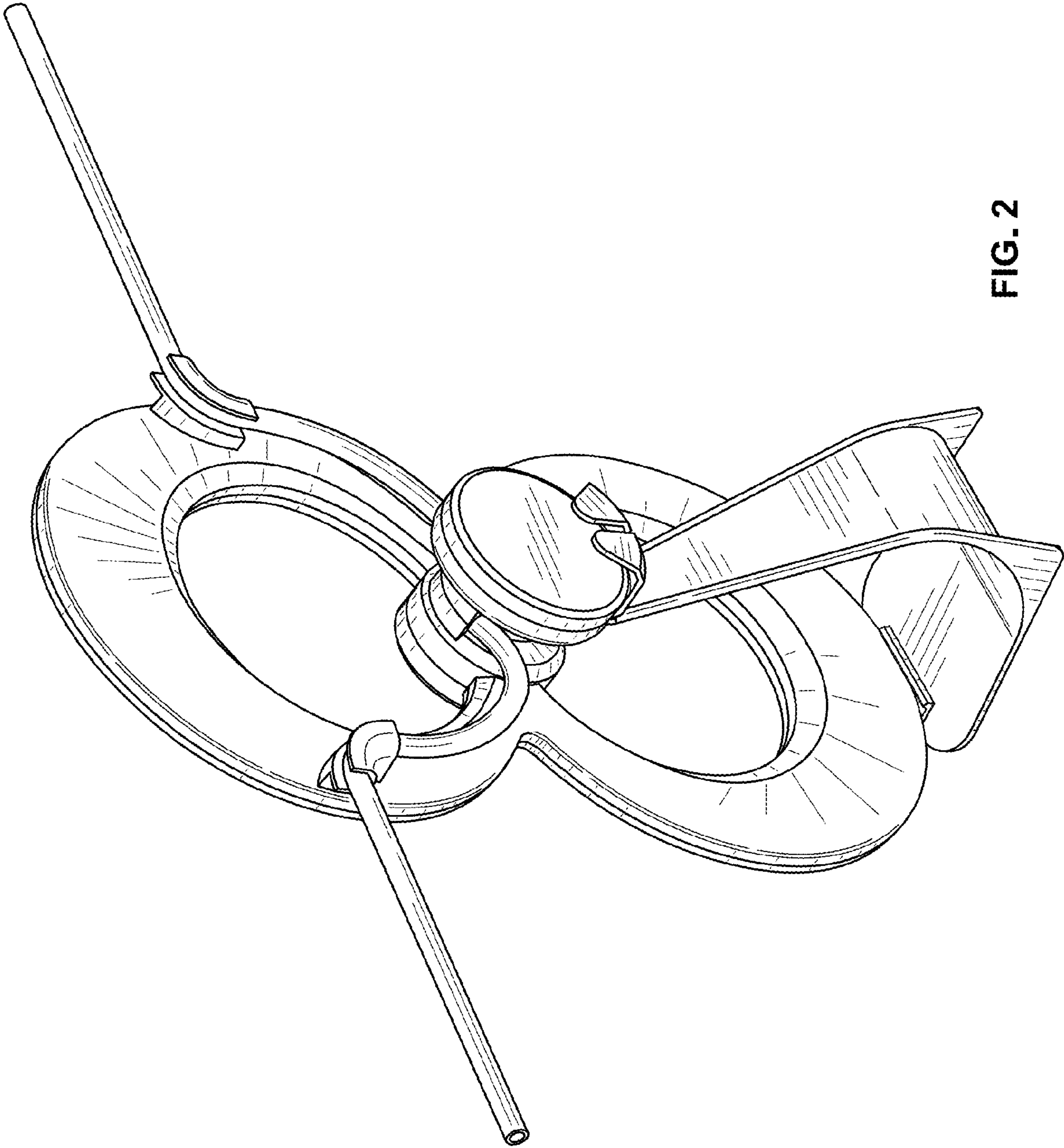


FIG. 2

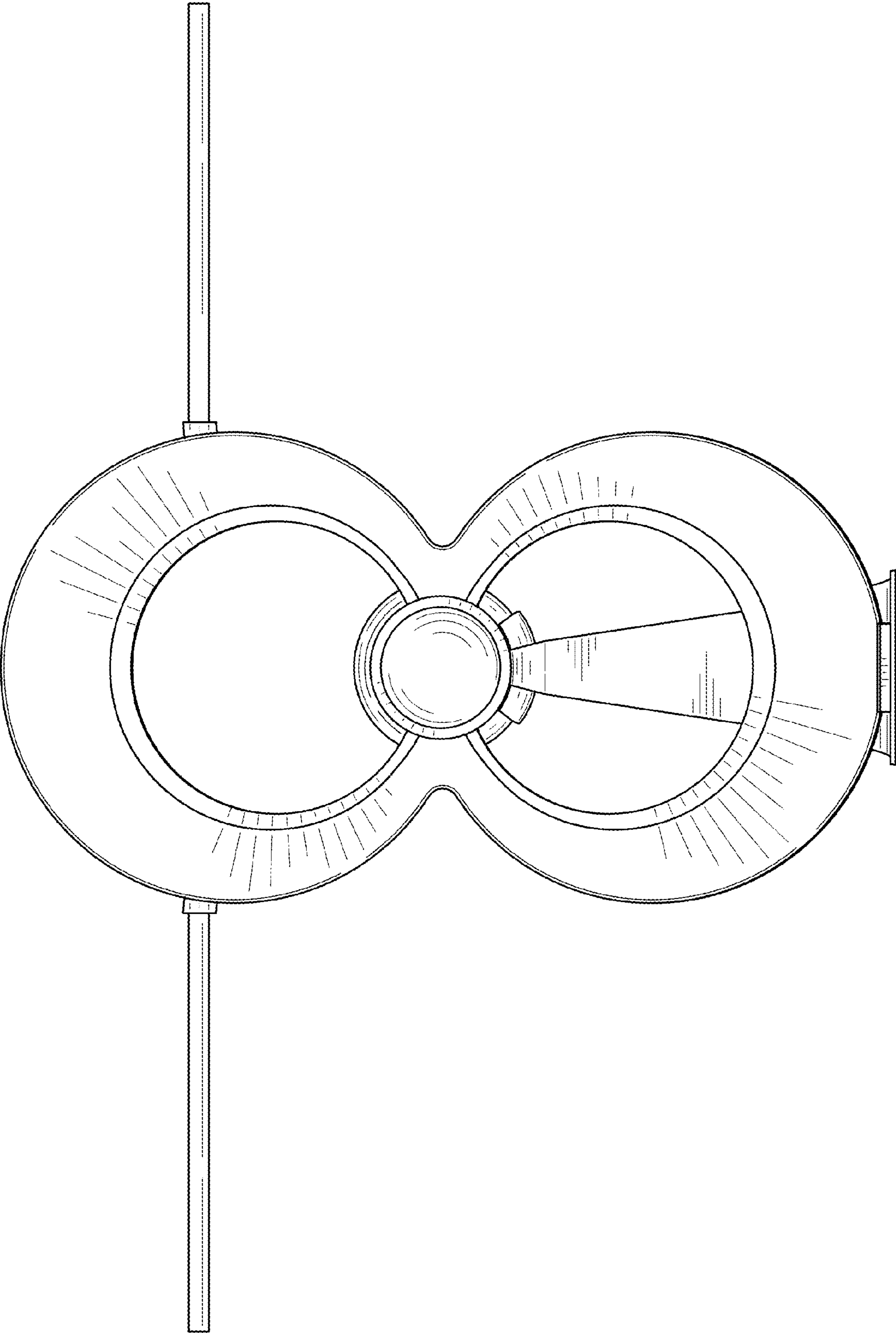


FIG. 3

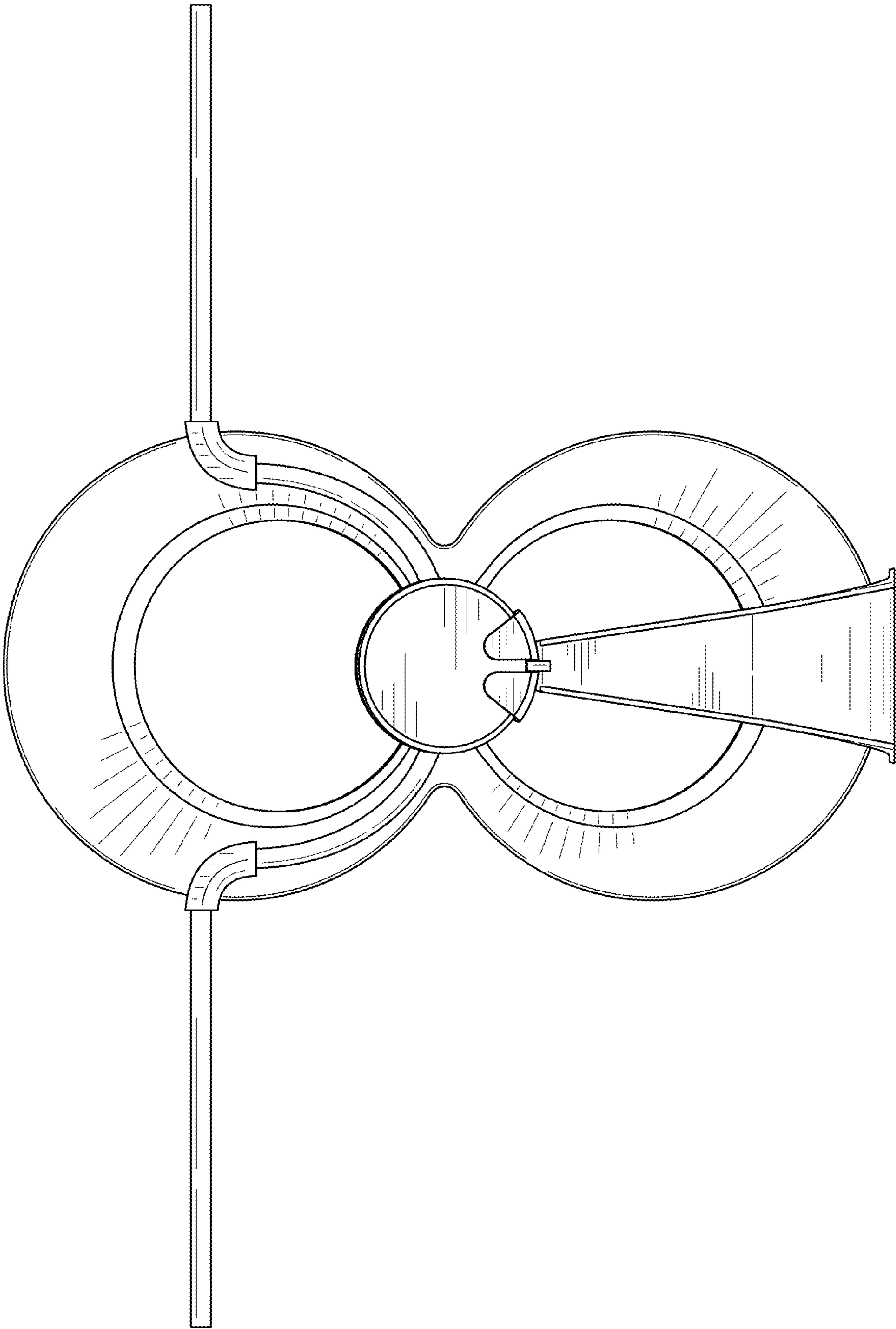


FIG. 4

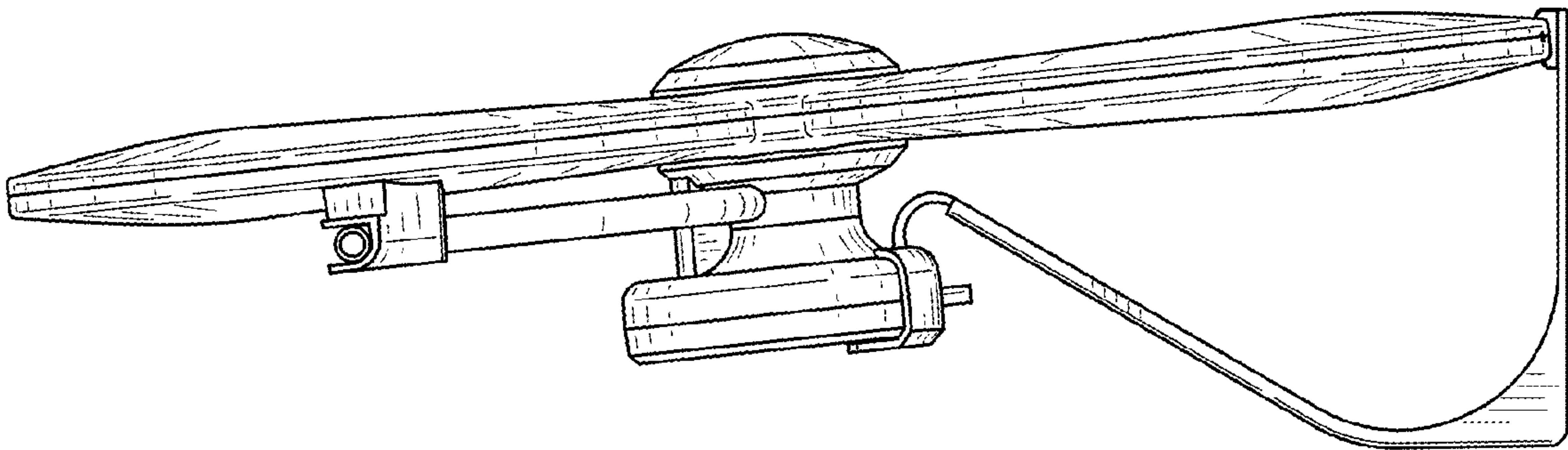


FIG. 6

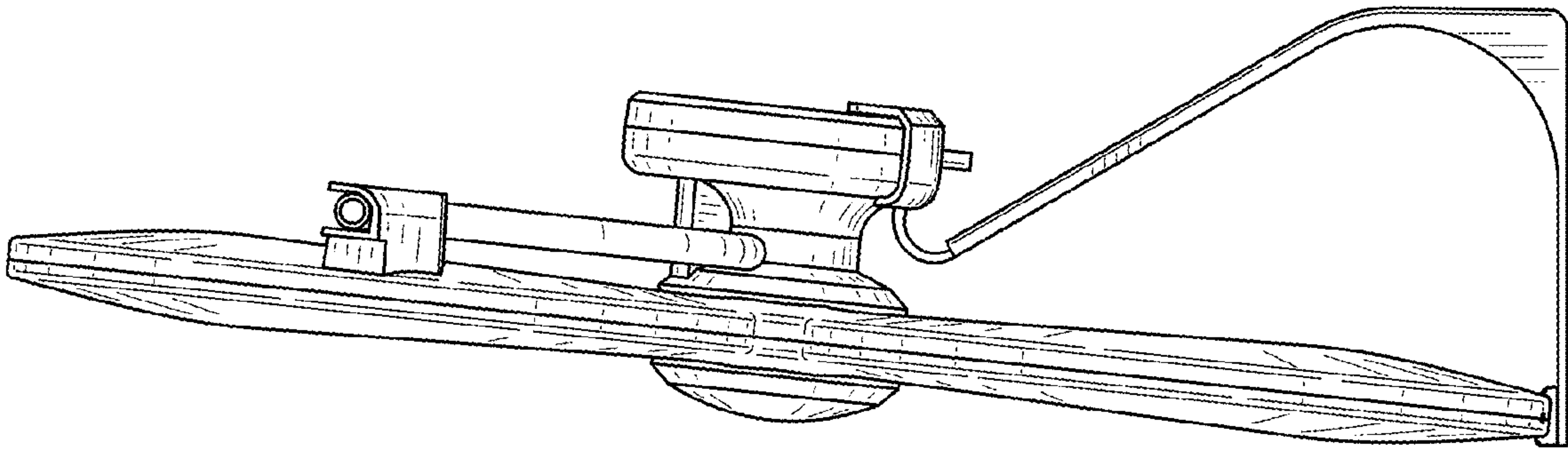


FIG. 5

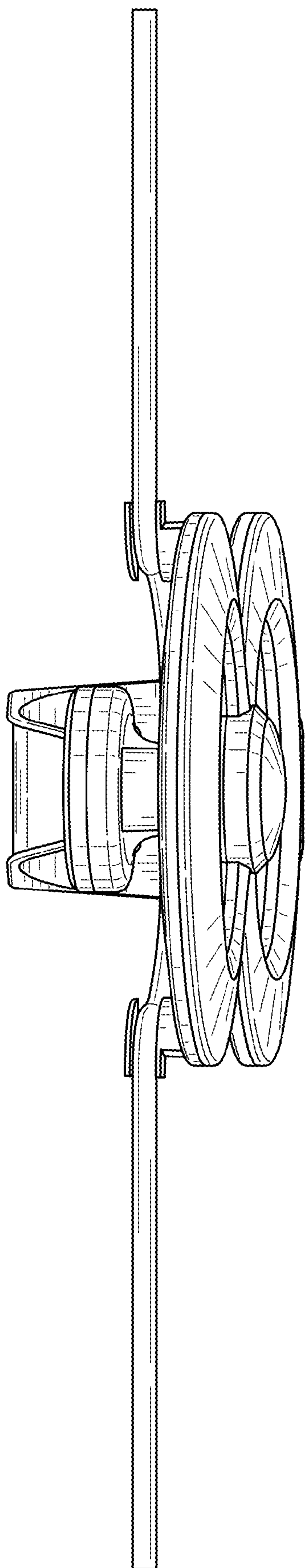


FIG. 7

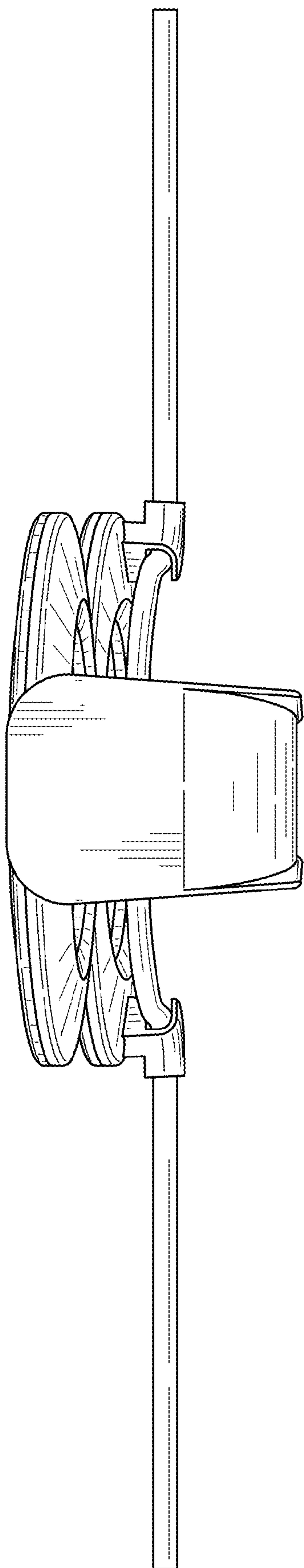


FIG. 8