



US00D938010S

(12) **United States Design Patent** (10) **Patent No.:** **US D938,010 S**  
**Robinson et al.** (45) **Date of Patent:** **\*\* Dec. 7, 2021**

(54) **FAN HUB**  
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5,326,225 A 7/1994 Gallivan et al.  
5,423,660 A 6/1995 Sortor  
5,466,120 A 11/1995 Takeuchi et al.  
(Continued)

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FOREIGN PATENT DOCUMENTS

CN 201606274 U 10/2010  
CN 202900765 U 4/2013  
(Continued)

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OTHER PUBLICATIONS

Partial European Search Report for Application EP20210474.1 dated Apr. 21, 2021; 12 pp.

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

(Continued)

(21) Appl. No.: **29/716,498**

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(22) Filed: **Dec. 10, 2019**

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(51) **LOC (13) Cl.** ..... **23-03**

(52) **U.S. Cl.**  
USPC ..... **D23/411**

(57) **CLAIM**

We claim the ornamental design for a fan hub, as shown and described.

(58) **Field of Classification Search**  
USPC ..... D23/328, 332, 333, 370–383, 385,  
D23/335–337, 341, 351, 352, 354,  
D23/411–414

**DESCRIPTION**

CPC .. F04D 25/084; F04D 25/086; F04D 25/0673;  
F04D 29/646; F04D 25/08; F04D 29/32;  
F04D 29/52; F04D 29/324; F04D 29/38  
See application file for complete search history.

FIG. 1 is a perspective view of a fan hub showing the new design.

FIG. 2 is a top view thereof.

FIG. 3 is a bottom view thereof.

FIG. 4 is an enlarged view of a portion of the bottom shown in FIG. 3;

FIG. 5 is a right side view thereof.

FIG. 6 is a left side view thereof.

FIG. 7 is a front view thereof.

FIG. 8 is a rear view thereof; and,

FIG. 9 is a cross-sectional view thereof taken along line “9-9” of FIG. 2.

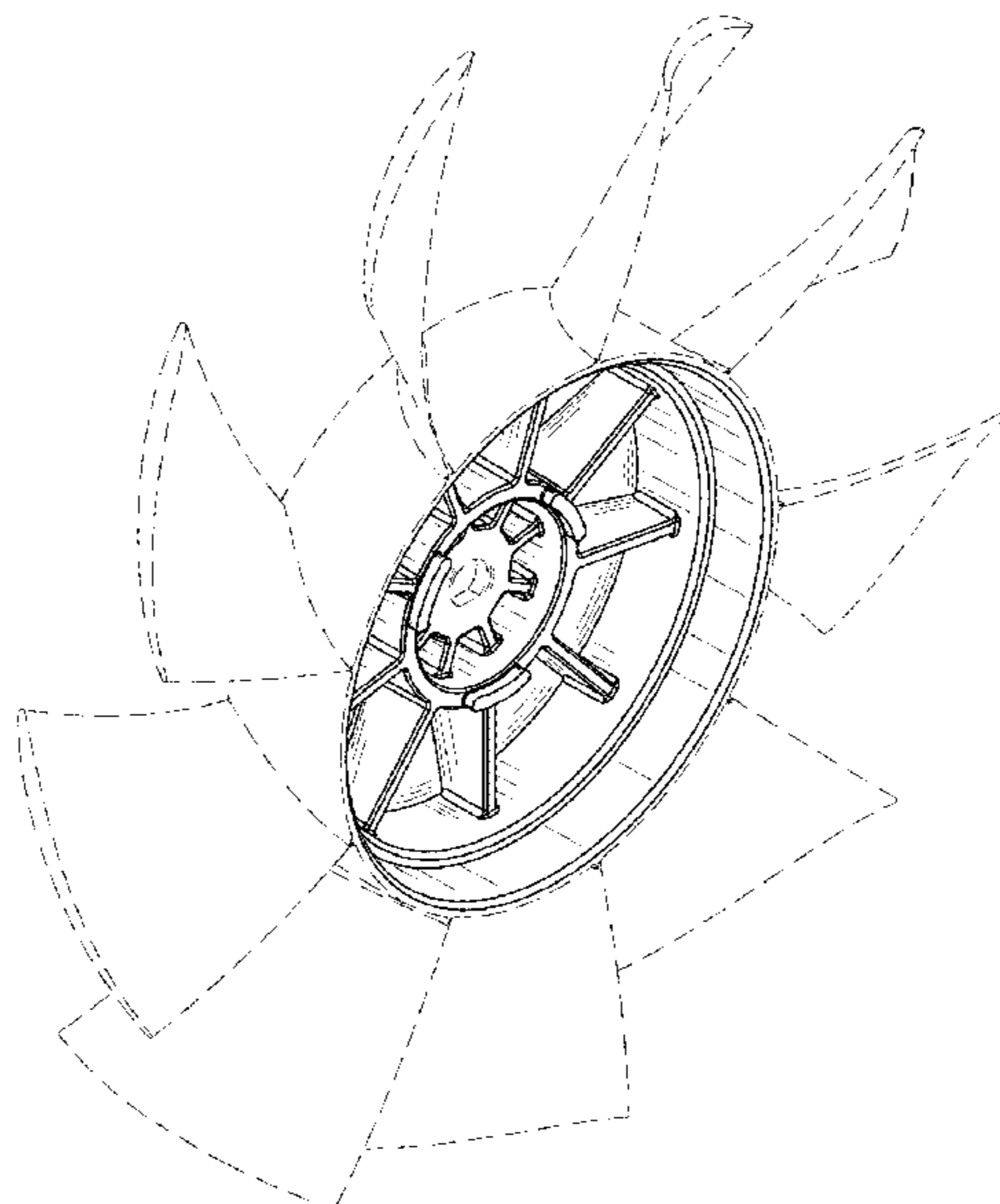
The broken lines illustrate portions of the fan hub and environmental structure. None of the broken lines form part of the claimed design.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D39,419 S 7/1908 Snyder  
2,115,527 A 4/1938 Hueglin  
D131,669 S 3/1942 Kislring  
D176,891 S 2/1956 Theisen  
D231,355 S 4/1974 Papst  
3,937,189 A 2/1976 Beck  
4,523,434 A 6/1985 Yoo  
D324,201 S \* 2/1992 Hannon ..... D12/214  
D324,364 S \* 3/1992 Hannon ..... D12/214

**1 Claim, 9 Drawing Sheets**



(56)

References Cited

U.S. PATENT DOCUMENTS

D368,772 S 4/1996 Liao  
 6,118,198 A 9/2000 Hollenbeck  
 6,139,265 A 10/2000 Alizadeh  
 6,287,078 B1 9/2001 Min et al.  
 D453,960 S 2/2002 Shelby et al.  
 D454,947 S 3/2002 Wagner  
 6,398,492 B1 6/2002 Cho et al.  
 6,435,817 B1 8/2002 Hollenbeck et al.  
 D486,905 S 2/2004 Wang  
 D507,343 S 7/2005 Chiu et al.  
 D507,641 S 7/2005 Chiu et al.  
 D509,583 S 9/2005 Graham  
 D509,584 S 9/2005 Li et al.  
 D513,799 S 1/2006 Li et al.  
 6,987,336 B2 1/2006 Streng et al.  
 D515,688 S 2/2006 Li  
 7,025,570 B2 4/2006 Jung et al.  
 7,156,615 B2 1/2007 Horski et al.  
 7,220,102 B2 5/2007 Cho et al.  
 D558,324 S 12/2007 Hong  
 D559,968 S \* 1/2008 Lee ..... D23/379  
 D560,789 S \* 1/2008 Lee ..... D23/379  
 D561,888 S 2/2008 Yang et al.  
 D564,653 S \* 3/2008 Iwase ..... D23/413  
 D566,829 S 4/2008 Parker et al.  
 D570,996 S 6/2008 Harman et al.  
 D570,999 S 6/2008 Harman et al.  
 D571,000 S 6/2008 Bei et al.  
 D585,130 S 1/2009 Harman et al.  
 D600,340 S 9/2009 Parker et al.  
 7,594,800 B2 9/2009 Teipen  
 D620,096 S 7/2010 Underwood  
 D626,643 S 11/2010 Situ et al.  
 D632,779 S 2/2011 Spaggiari  
 D645,134 S 9/2011 Lee et al.  
 D654,997 S 2/2012 Spaggiari  
 8,128,372 B2 3/2012 Best  
 8,167,564 B2 5/2012 Streng et al.  
 8,197,204 B2 6/2012 Aschermann et al.  
 D683,840 S \* 6/2013 Rasmussen ..... D23/379  
 D692,119 S 10/2013 Rasmussen  
 D704,323 S 5/2014 Rasmussen  
 D715,904 S 10/2014 Tate et al.  
 D725,257 S 3/2015 Huang et al.  
 D726,897 S 4/2015 Hatz  
 D727,490 S 4/2015 Hatz  
 D750,211 S \* 2/2016 Arai ..... D23/379  
 D755,363 S 5/2016 Rasmussen  
 D755,945 S \* 5/2016 Arai ..... D23/379  
 D755,946 S \* 5/2016 Arai ..... D23/379  
 D755,947 S \* 5/2016 Arai ..... D23/379  
 9,494,162 B2 11/2016 Haaf et al.  
 D773,632 S 12/2016 Panyasahabade  
 9,651,054 B2 5/2017 Chang et al.  
 9,803,649 B2 10/2017 Ragg et al.  
 D804,647 S 12/2017 Chang et al.  
 D805,176 S 12/2017 Avedon  
 D806,225 S 12/2017 Chang et al.  
 D812,732 S \* 3/2018 Murakami ..... D23/370  
 D829,878 S 10/2018 Sallander  
 10,260,508 B2 4/2019 Chang et al.  
 D854,143 S 7/2019 Yu  
 D858,737 S \* 9/2019 Tadokoro ..... D23/379  
 10,428,830 B2 10/2019 Lee et al.  
 D886,275 S \* 6/2020 Avedon ..... D23/379  
 D898,182 S 10/2020 Zhang  
 D910,834 S 2/2021 Wang et al.

2004/0212262 A1 10/2004 Chiu et al.  
 2005/0074336 A1 4/2005 Li et al.  
 2005/0186070 A1 8/2005 Zeng et al.  
 2005/0232765 A1 10/2005 Watanabe et al.  
 2005/0271529 A1 12/2005 Stommel et al.  
 2006/0073018 A1 4/2006 Girod et al.  
 2007/0020103 A1 1/2007 Spaggiari  
 2007/0048138 A1 3/2007 Horski et al.  
 2007/0274821 A1 11/2007 Yoshida  
 2009/0155080 A1\* 6/2009 Yu ..... F04D 29/646  
 416/212 R  
 2009/0191055 A1 7/2009 Li et al.  
 2011/0091315 A1 4/2011 Chang et al.  
 2012/0057966 A1 3/2012 Chen et al.  
 2012/0114498 A1 5/2012 Hsieh et al.  
 2014/0064973 A1\* 3/2014 Ren ..... F04D 19/002  
 416/204 R  
 2017/0051758 A1 2/2017 Sun  
 2017/0067486 A1\* 3/2017 Cho ..... F04D 29/023  
 2017/0211589 A1 7/2017 Murakami et al.  
 2018/0112675 A1 4/2018 Neff et al.  
 2018/0142708 A1 5/2018 Horng et al.  
 2018/0245602 A1 8/2018 Stevens  
 2018/0372113 A1 12/2018 Tyner et al.  
 2019/0093669 A1\* 3/2019 Inouchi ..... F04D 29/545  
 2019/0145429 A1 5/2019 Ishida  
 2019/0162201 A1 5/2019 Huang et al.  
 2019/0195232 A1\* 6/2019 Sakurada ..... F04D 29/522  
 2019/0264708 A1 8/2019 Chang et al.  
 2019/0389345 A1 12/2019 Kim  
 2020/0116159 A1 4/2020 Yang et al.  
 2020/0158129 A1 5/2020 Iwata et al.

FOREIGN PATENT DOCUMENTS

CN 205047519 U 2/2016  
 CN 208073869 U 11/2018  
 CN 209083612 U 7/2019  
 DE 4215504 A1 11/1993  
 EP 1732375 B1 8/2009  
 EP 2211444 A2 7/2010  
 EP 1897209 B1 8/2011  
 EP 2691654 A1 2/2014  
 EP 2696480 A2 2/2014  
 EP 2771581 A1 9/2014  
 EP 2691655 B1 5/2016  
 EP 3172447 A1 5/2017  
 EP 3274589 A1 1/2018  
 EP 3029336 B1 2/2018  
 EP 3498506 A1 6/2019  
 JP H03141900 A 6/1991  
 JP H09317686 A 12/1997  
 JP 2015108316 A 6/2015  
 WO 2011038884 A1 4/2011  
 WO 2013110516 A1 8/2013  
 WO 2015000676 A1 1/2015  
 WO 2015075103 A1 5/2015  
 WO 2015124487 A2 8/2015

OTHER PUBLICATIONS

Extended European Search Report for Patent Application EP 20212427.7 dated Apr. 30, 2021; 8 pp.  
 EPO Extended European Search Report for EP Patent Application 20212429.3 dated May 4, 2021; 8 pp.  
 EPO Extended European Search Report for EP Patent Application 20210474.1 dated Jun. 29, 2021; 11 pp.

\* cited by examiner

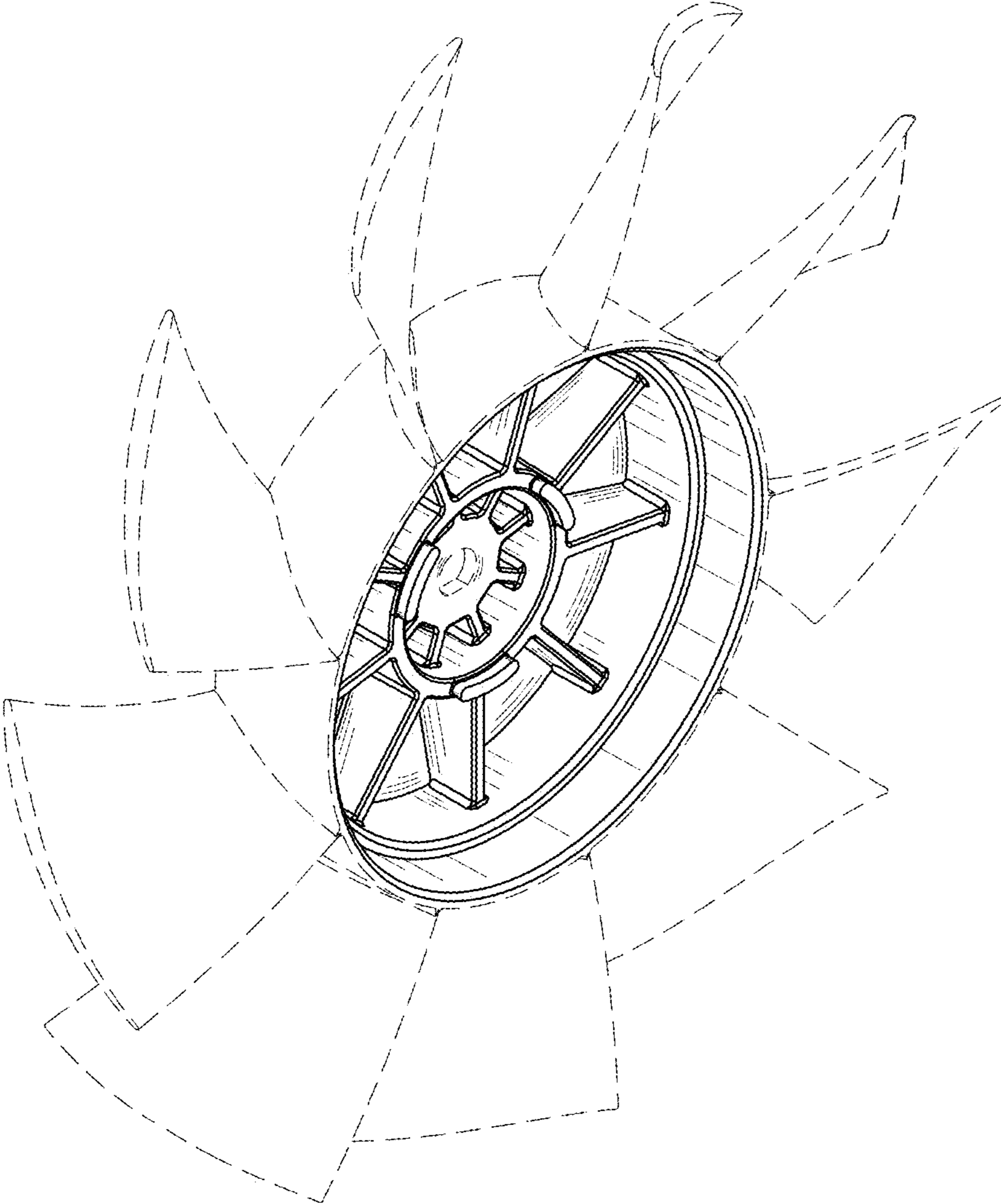


FIG. 1

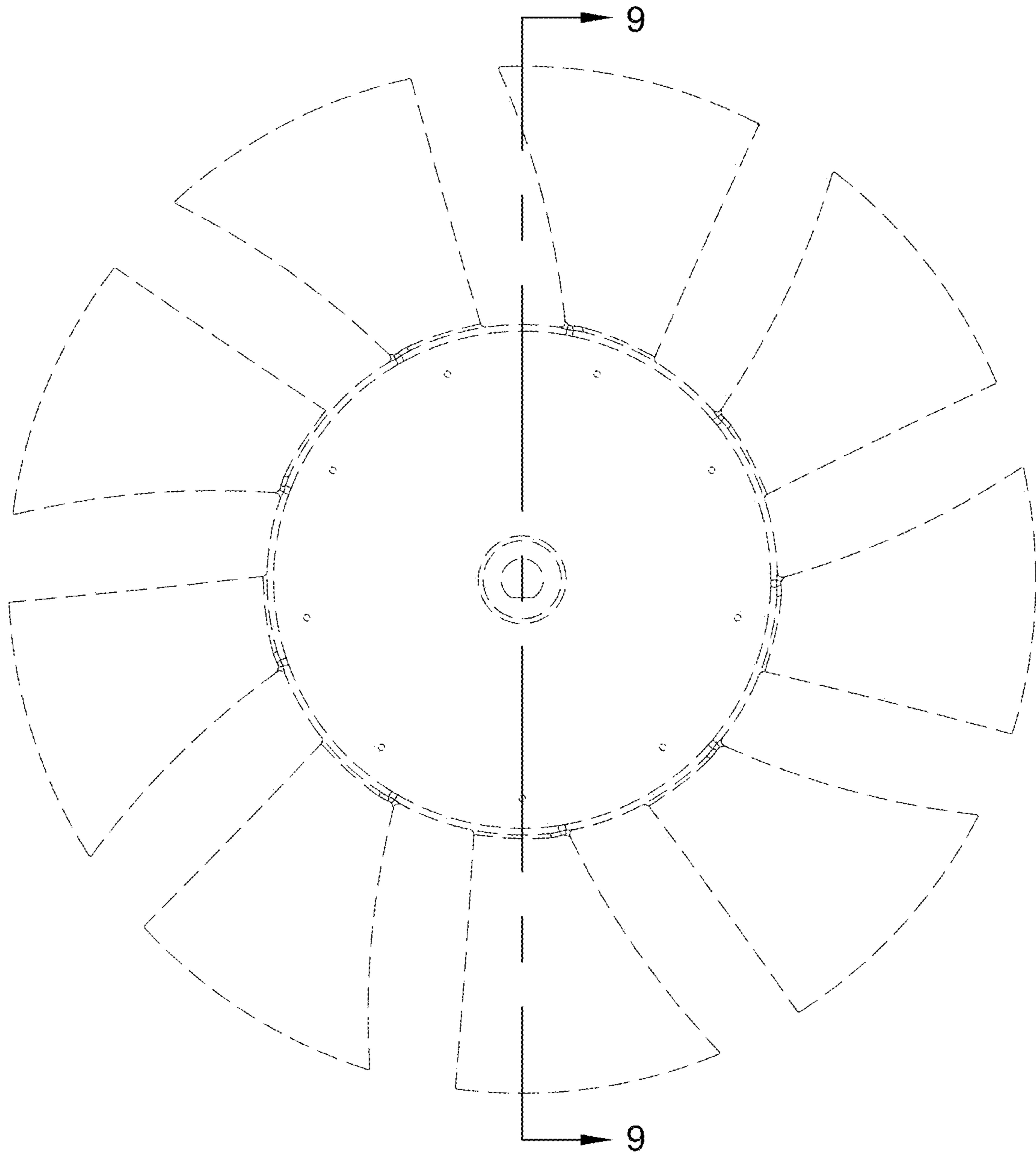


FIG. 2

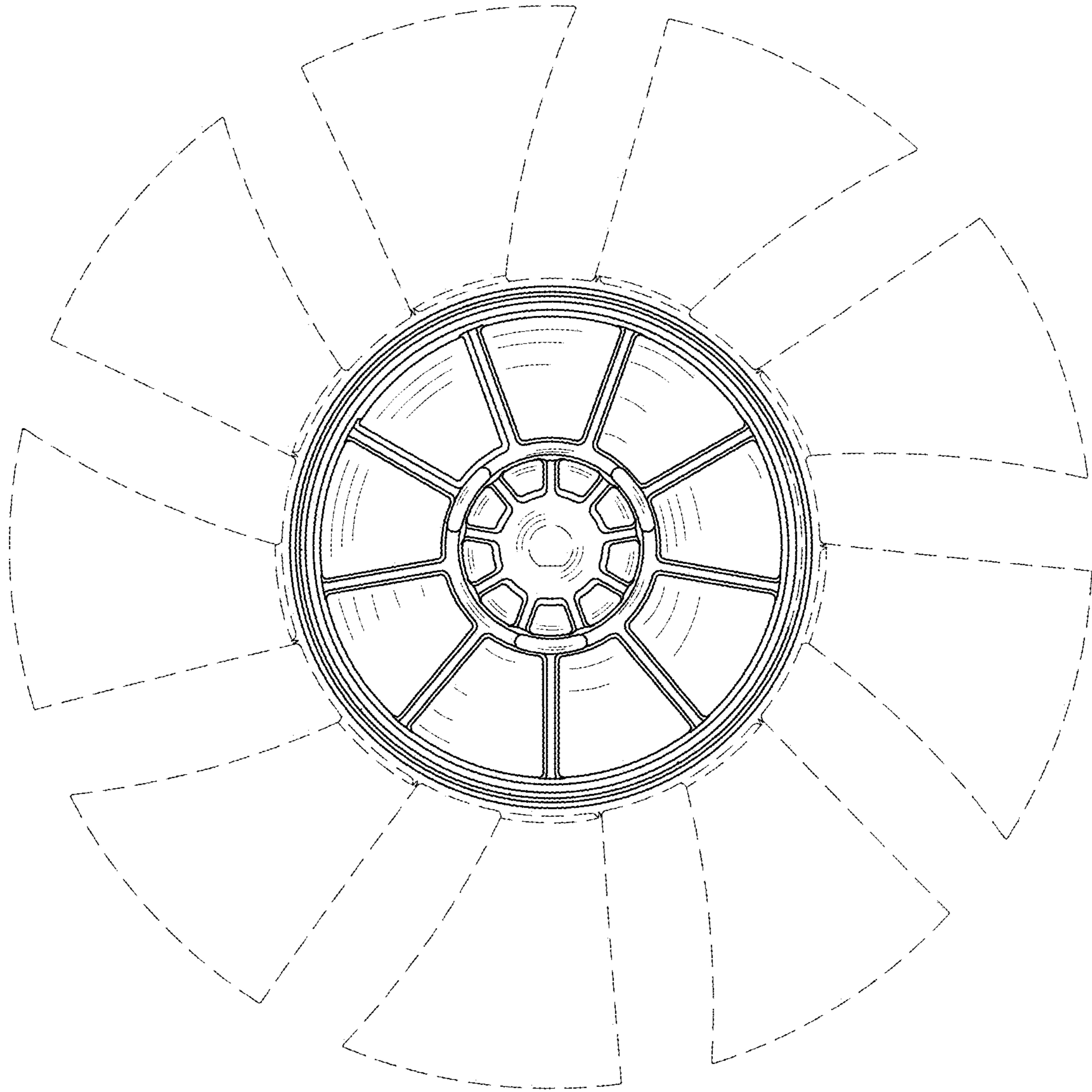


FIG. 3

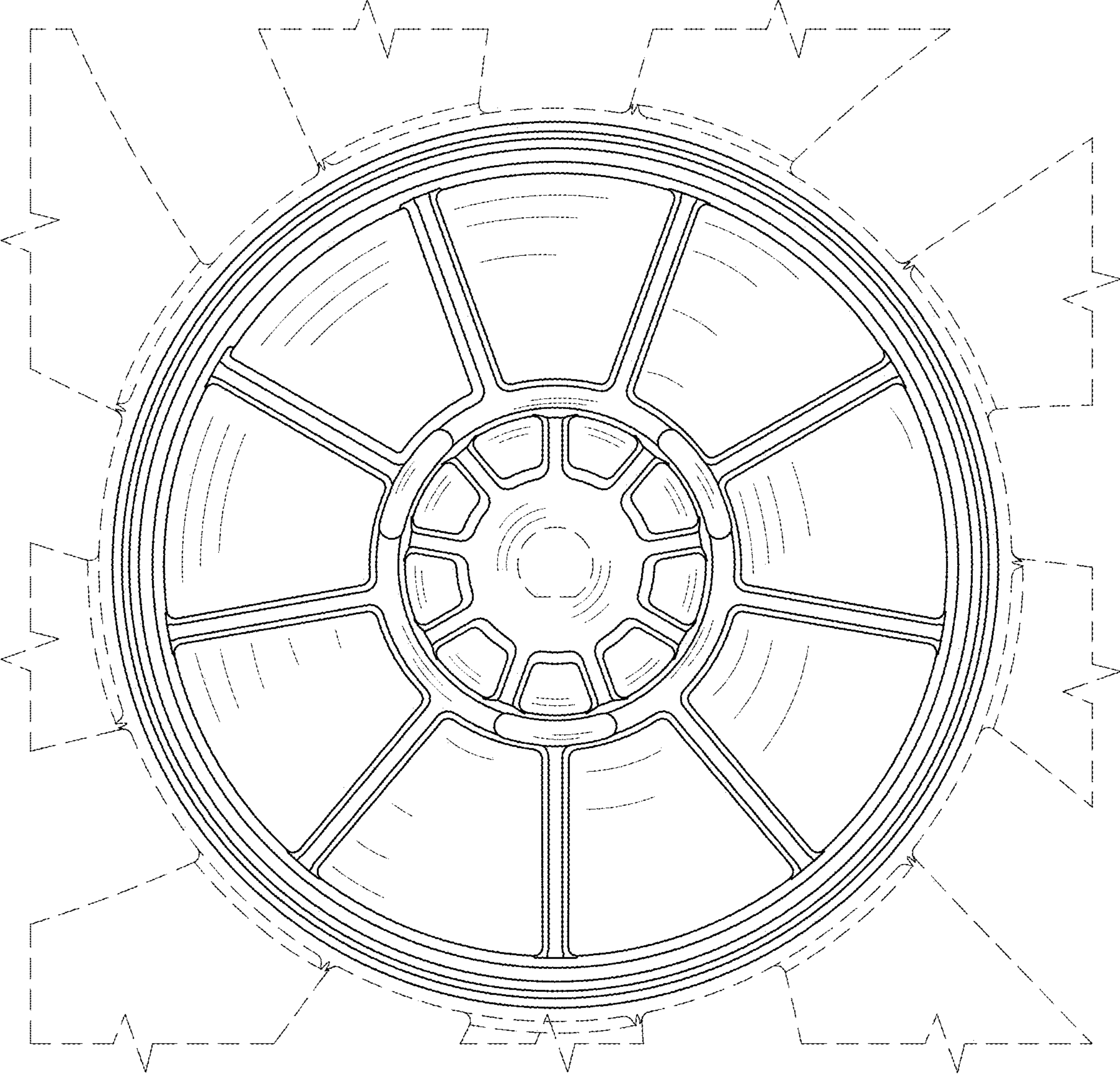


FIG. 4

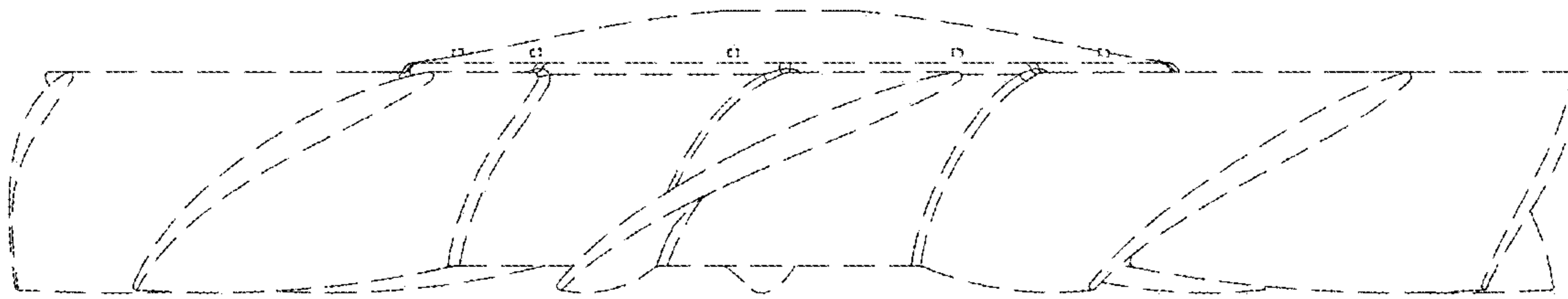


FIG. 5

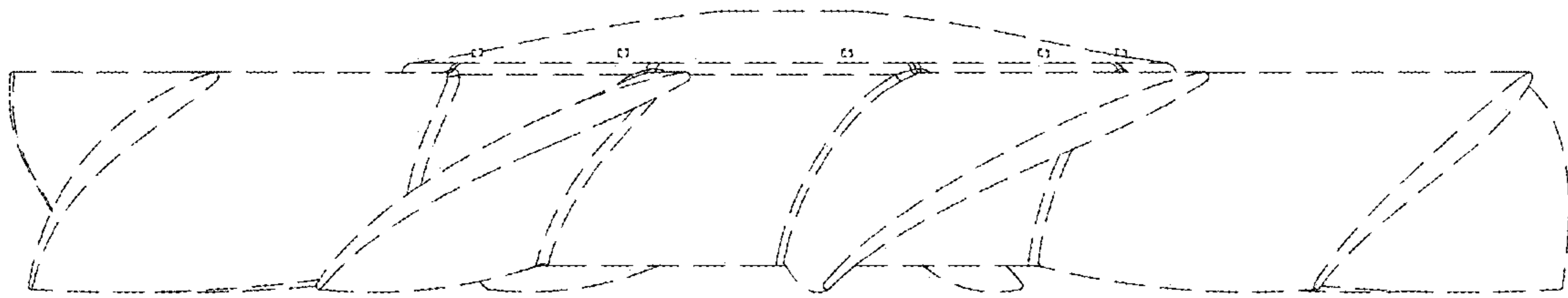


FIG. 6



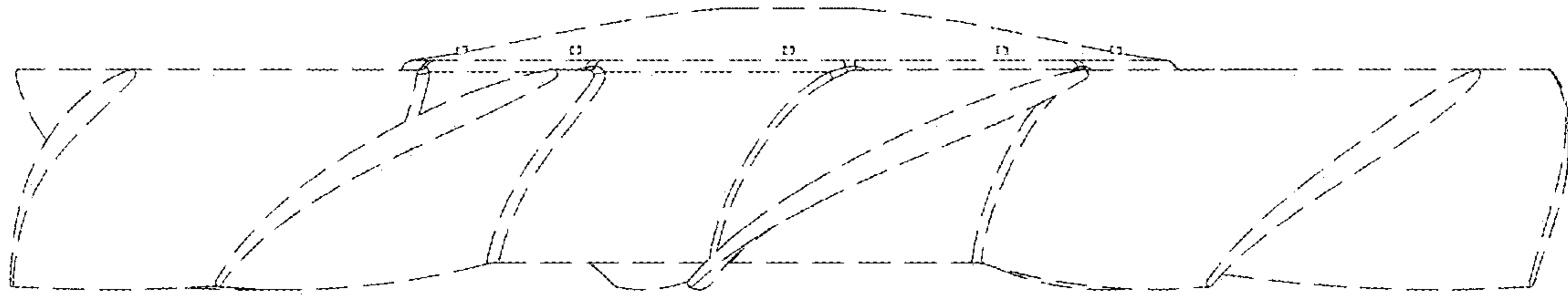


FIG. 7

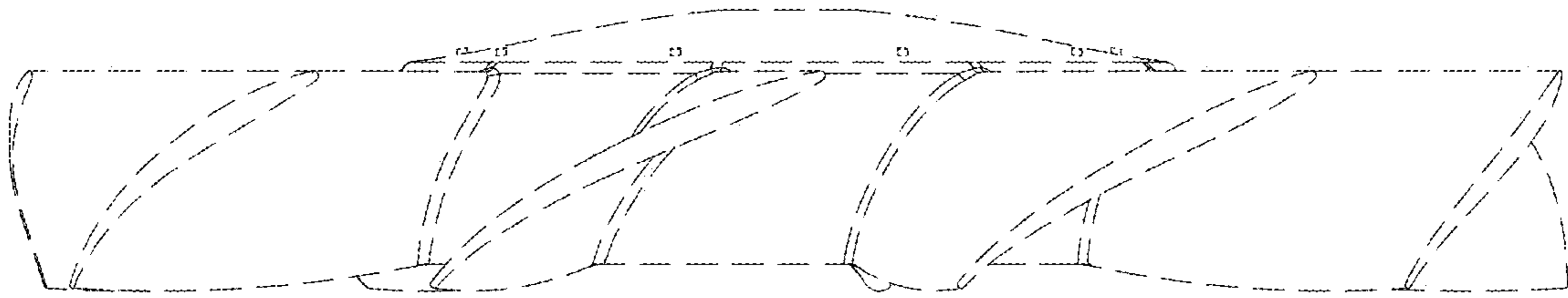


FIG. 8

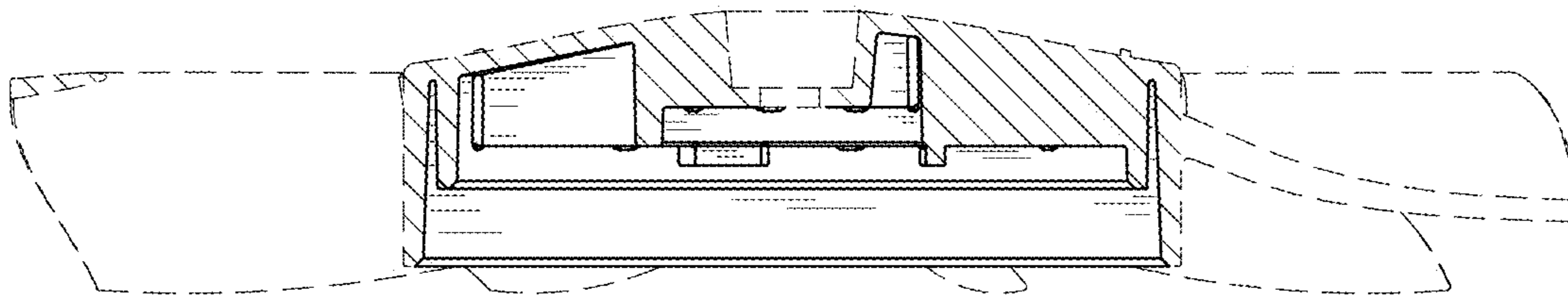


FIG. 9