

US00D750211S

(12) **United States Design Patent**
Arai et al.

(10) **Patent No.:** **US D750,211 S**

(45) **Date of Patent:** **** Feb. 23, 2016**

(54) **PROPELLER FAN**

(56) **References Cited**

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U.S. PATENT DOCUMENTS

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5,226,804	A *	7/1993	Do	416/238
5,616,004	A *	4/1997	Alizadeh	416/238
D438,609	S *	3/2001	Colliver	D23/411
D492,986	S *	7/2004	Chiu et al.	D23/370
D506,823	S *	6/2005	Chiu et al.	D23/379
D507,640	S *	7/2005	Chiu et al.	D23/379

(Continued)

OTHER PUBLICATIONS

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Impellers. (Design -©Questel). orbit.com [online PDF] 8 pages. File date: Jan. 24, 2013 Print date: Dec. 9, 2013 [retrieved on Aug. 11, 2015]. Retrieved from Internet: <<http://sobjprd.questel.fr/export/QPTUJ214/pdf2/cf565c9f-28a1-4330-ad51-727421994980-180727.pdf>>.*

(Continued)

(**) Term: **14 Years**

Primary Examiner — Susan Bennett Hattan

(21) Appl. No.: **29/491,702**

Assistant Examiner — Marie Fast Horse

(22) Filed: **May 23, 2014**

(74) *Attorney, Agent, or Firm* — Studebaker & Brackett PC

(30) **Foreign Application Priority Data**

Feb. 27, 2014	(JP)	2014-004005
Feb. 27, 2014	(JP)	2014-004006
Feb. 27, 2014	(JP)	2014-004007
Feb. 27, 2014	(JP)	2014-004008

(57) **CLAIM**

(51) **LOC (10) Cl.** **23-04**

The ornamental design for a propeller fan, as shown and described.

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

USPC **D23/379**; D23/413

DESCRIPTION

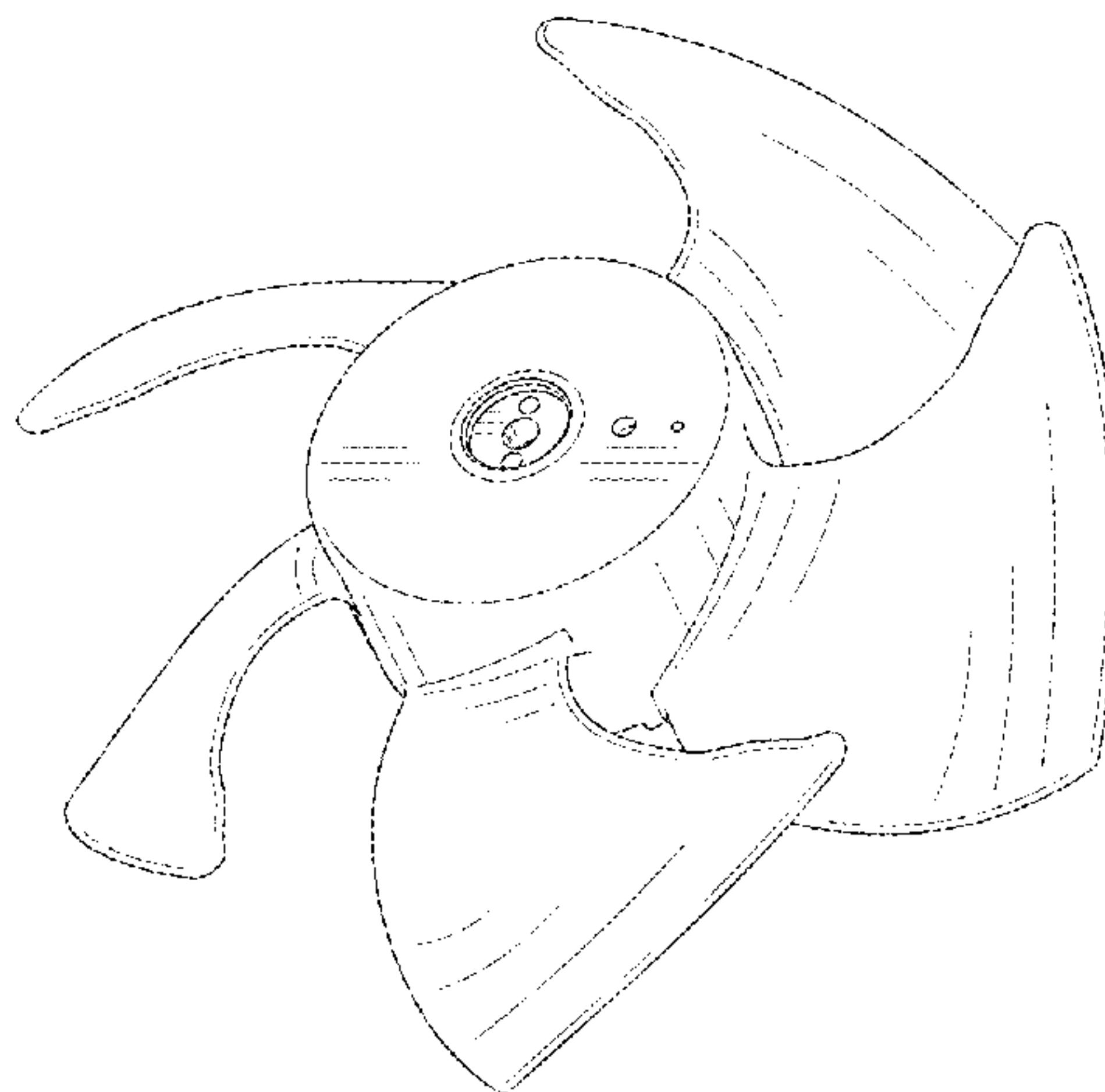
(58) **Field of Classification Search**

USPC D23/411-414, 380, 324, 330, 332, 335, D23/353-369, 370-379, 381-385, 499; D21/455, 458; 415/179, 182.1; 416/62, 416/93 R, 100, 182, 189, 238, 244 R, 246, 416/247 R, 223 R; 417/200, 423.1; D13/175, D13/179; D12/214, 211
CPC F04D 29/326; F04D 29/329; F04D 29/38; F04D 29/382; F04D 29/384; F04D 29/386; F04D 29/388; F04D 29/281; F04D 29/282; F04D 29/28; F04D 29/663; B63H 23/34; B63H 1/20

FIG. 1 is a perspective view of the front, right, and bottom side of a propeller fan showing our new design;
FIG. 2 is a front view thereof;
FIG. 3 is a rear view thereof;
FIG. 4 is a left side view thereof;
FIG. 5 is a right side view thereof;
FIG. 6 is a top plan view thereof;
FIG. 7 is a bottom view thereof; and,
FIG. 8 is a cross sectional view at a line 8-8 shown in FIG. 2.

See application file for complete search history.

1 Claim, 8 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

D508,560 S * 8/2005 Chiu et al. D23/379
 D517,674 S * 3/2006 Oosawa et al. D23/370
 D555,782 S * 11/2007 Parker et al. D23/411
 D559,967 S * 1/2008 Lee et al. D23/379
 D559,968 S * 1/2008 Lee et al. D23/379
 D561,888 S * 2/2008 Yang et al. D23/379
 D564,653 S * 3/2008 Iwase et al. D23/413
 D570,996 S * 6/2008 Harman et al. D23/413
 D585,130 S * 1/2009 Harman et al. D23/413
 D594,104 S * 6/2009 Sturm et al. D23/377
 D594,106 S * 6/2009 Sturm et al. D23/377
 D606,647 S * 12/2009 Sturm et al. D23/377
 D645,134 S * 9/2011 Lee et al. D23/411
 D688,783 S * 8/2013 DeFilippis D23/379
 D726,300 S * 4/2015 DeFilippis D23/414
 D732,655 S * 6/2015 Ueno et al. D23/370

9,097,261 B2 * 8/2015 Haaf
 2005/0074336 A1 * 4/2005 Li et al. 416/244 R
 2005/0287005 A1 * 12/2005 Gruber et al. 416/244 R
 2009/0155081 A1 * 6/2009 Yu 416/219 R
 2010/0028154 A1 * 2/2010 Kim et al. 416/204 R
 2010/0068081 A1 * 3/2010 Spaggiari 417/352
 2010/0215505 A1 * 8/2010 Takeshita 416/223 R
 2011/0094460 A1 * 4/2011 Hoskins 123/41.49
 2012/0201705 A1 * 8/2012 Spaggiari et al. 417/423.14
 2014/0003933 A1 * 1/2014 Inada et al. 415/220
 2014/0286786 A1 * 9/2014 Ragg et al. 416/236 R

OTHER PUBLICATIONS

Exhaust Ventilator. ebay.com [online] 1 page Upload as early as Aug. 8, 2013 [retrieved on Aug. 11, 2015] Retrieved from Internet: <<http://www.ebay.com/itm/Exhaust-Ventilator-Motor-8mm-Shaft-Hole-12-Plastic-Fan-Blade-/310733357441>>.*

* cited by examiner

Fig. 1

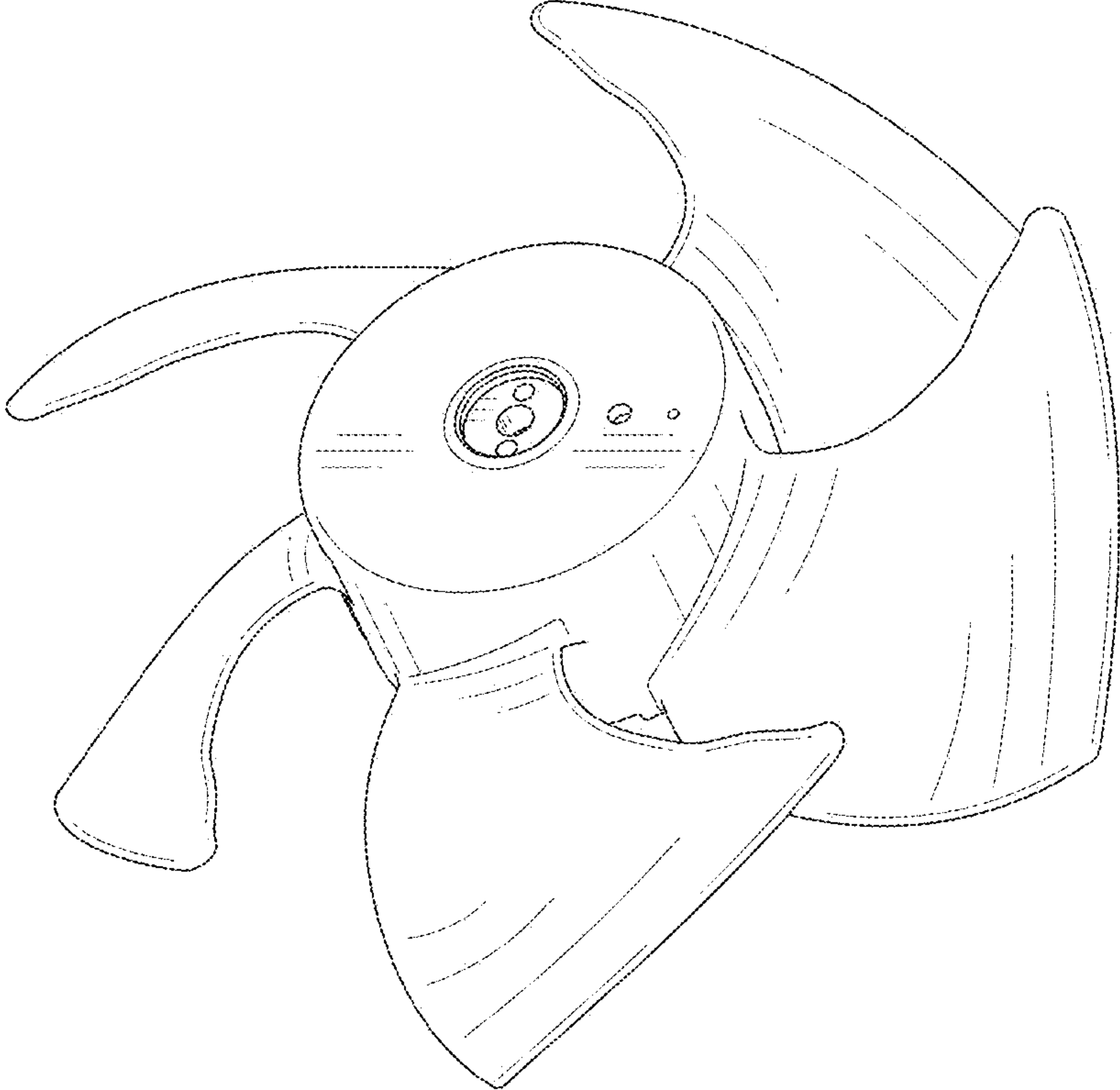


Fig.2

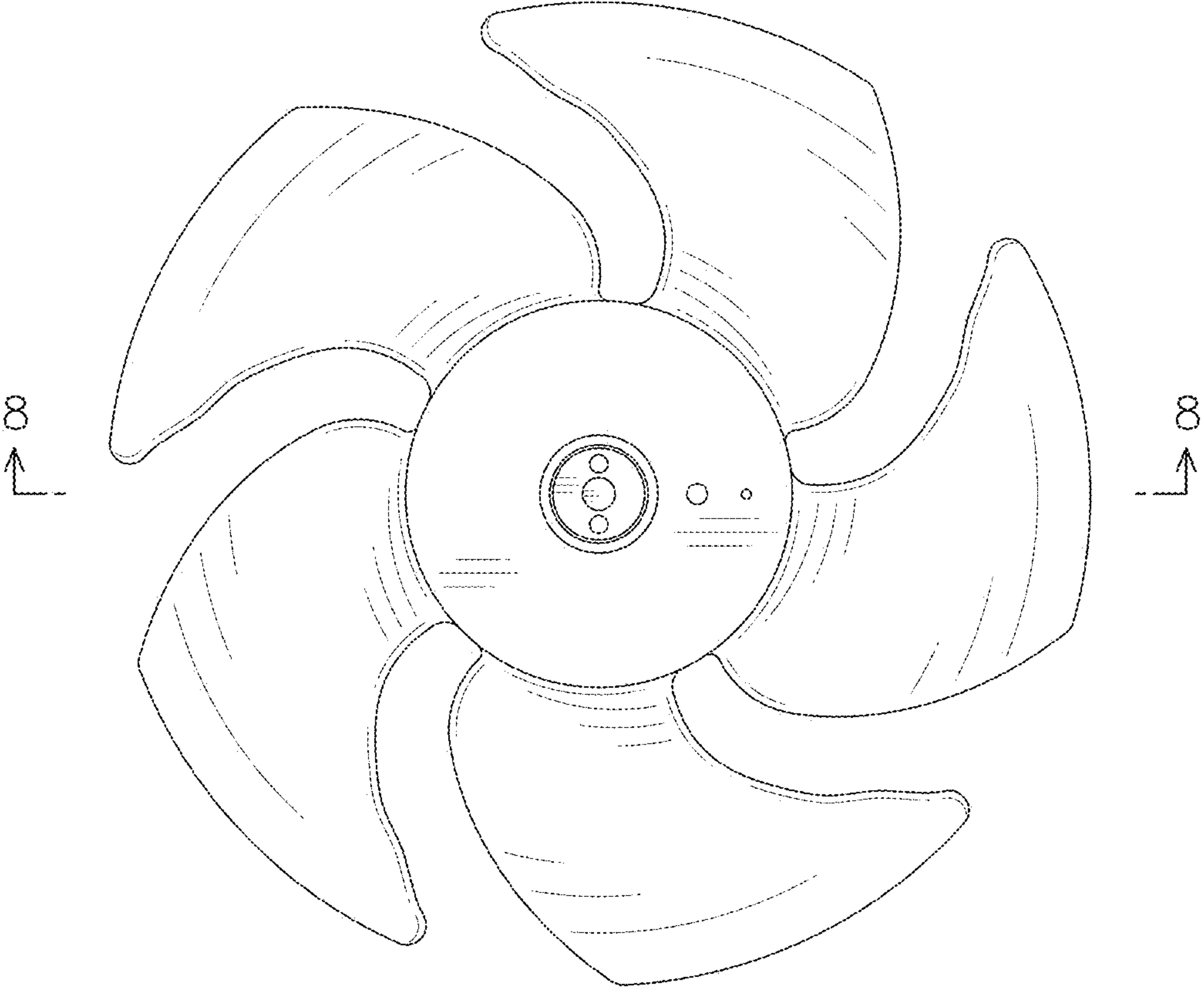


Fig.3

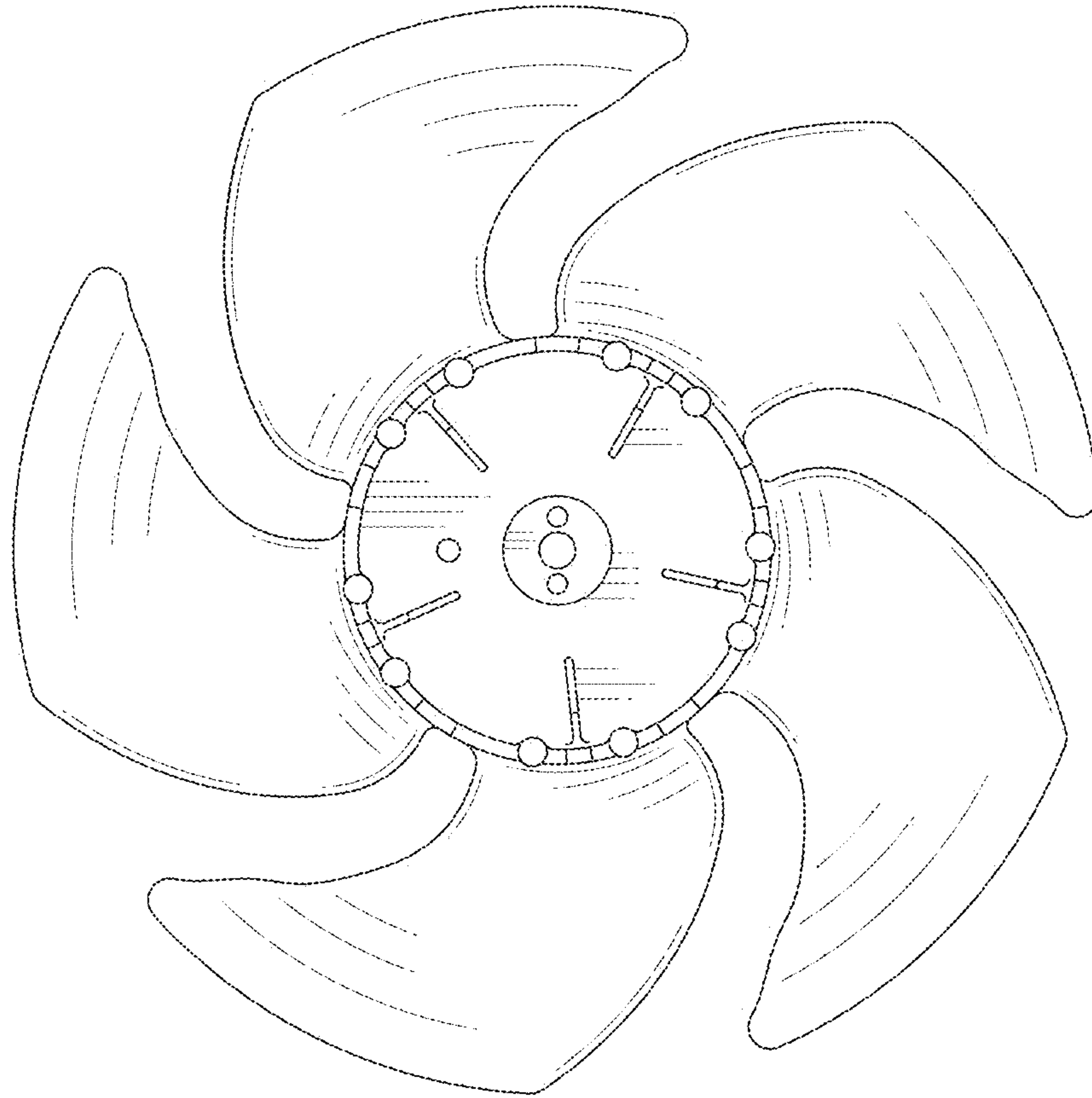


Fig.4

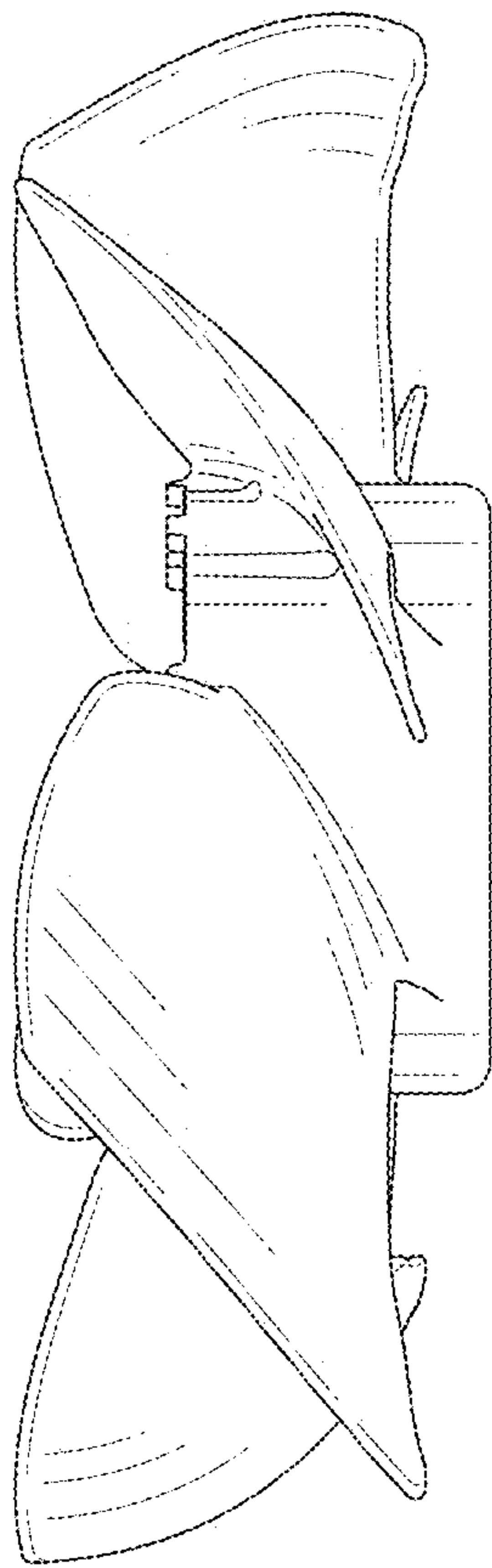


Fig.5

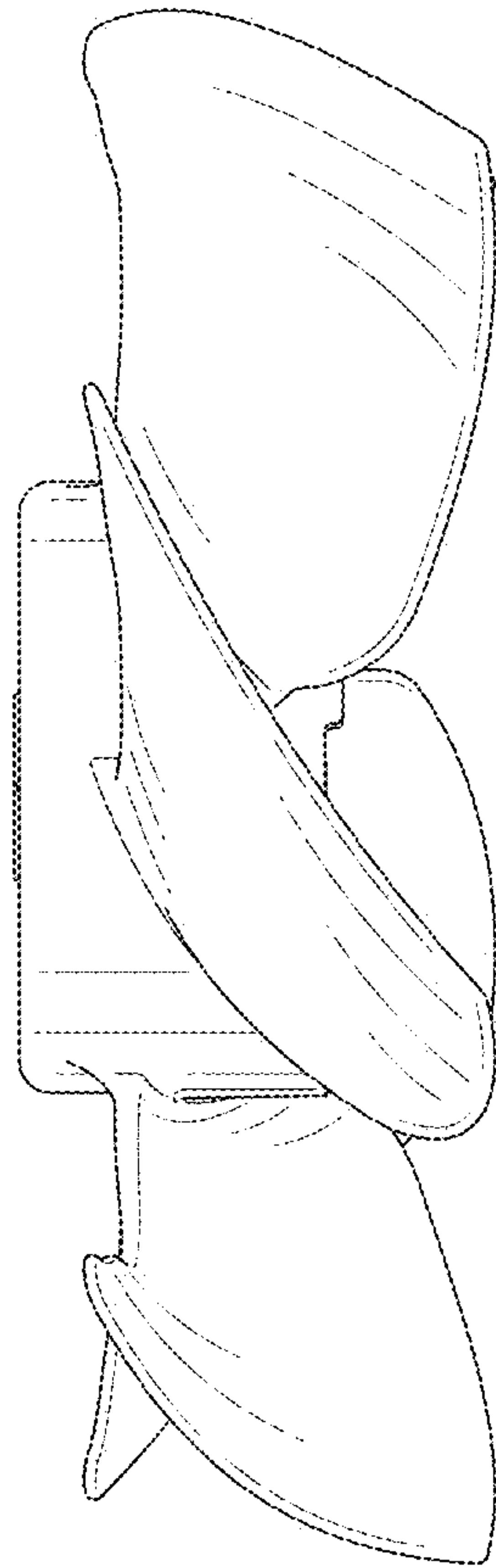


Fig.6

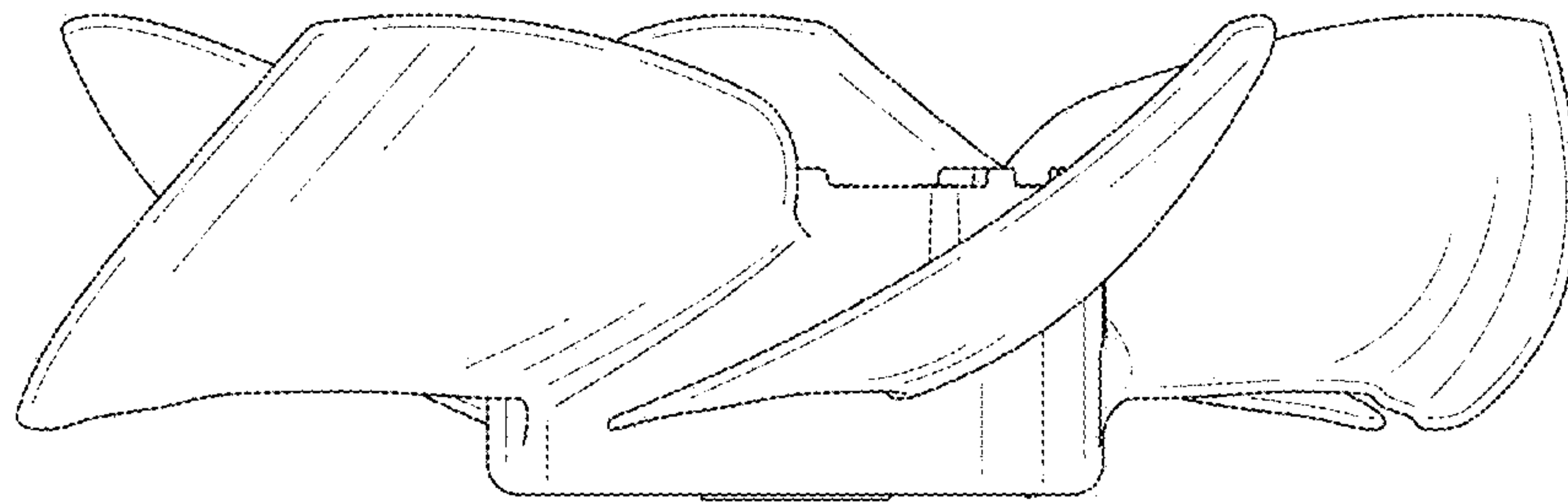


Fig. 7

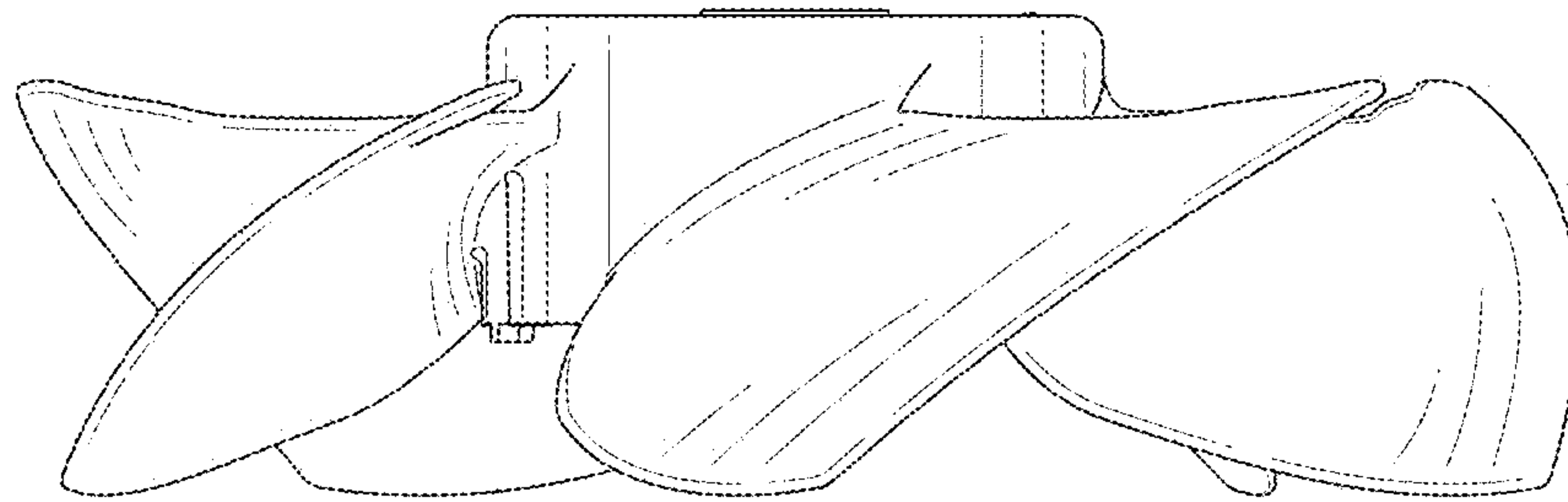


Fig.8

