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

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(45) **Date of Patent:** **** Sep. 3, 2019**

(54) **PROPELLER FAN**

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

(21) Appl. No.: **29/617,509**

(22) Filed: **Sep. 14, 2017**

(30) **Foreign Application Priority Data**

Mar. 16, 2017 (JP) 2017-005380
 Mar. 16, 2017 (JP) 2017-005381

(51) **LOC (12) Cl.** **23-04**

(52) **U.S. Cl.**
USPC **D23/379**; D23/413

(58) **Field of Classification Search**
USPC D23/314, 317, 324, 328, 332-342, 351, D23/352, 354, 355, 356, 359, 362, 364,
(Continued)

(56) **References Cited**

U.S. PATENT DOCUMENTS

D324,364 S * 3/1992 Hannon D12/214
 5,513,951 A * 5/1996 Komoda F04D 29/386
 415/119

(Continued)

FOREIGN PATENT DOCUMENTS

JP H09-287595 A 11/1997
 JP 1459752 S 1/2013

OTHER PUBLICATIONS

An Office Action; "Rejection Decision," dated by the Japanese Patent Office Nov. 14, 2017, which corresponds to Japanese Design Application No. 2017-005380 and is related to U.S. Appl. No. 29/617,509; with English language Concise Explanation.

(Continued)

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(57) **CLAIM**

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

DESCRIPTION

FIG. 1 is a perspective view of the front, right, and top sides of a propeller fan showing a first embodiment of our new design;

FIG. 2 is a perspective view of the rear, right, and top sides thereof;

FIG. 3 is a front view thereof;

FIG. 4 is a rear view thereof;

FIG. 5 is a left side view thereof;

FIG. 6 is a right side view thereof;

FIG. 7 is a top plan view thereof;

FIG. 8 is a bottom view thereof;

FIG. 9 is a perspective view of the front, right, and top sides of a propeller fan showing a second embodiment of our new design;

FIG. 10 is a perspective view of the rear, right, and top sides thereof;

FIG. 11 is a front view thereof;

FIG. 12 is a rear view thereof;

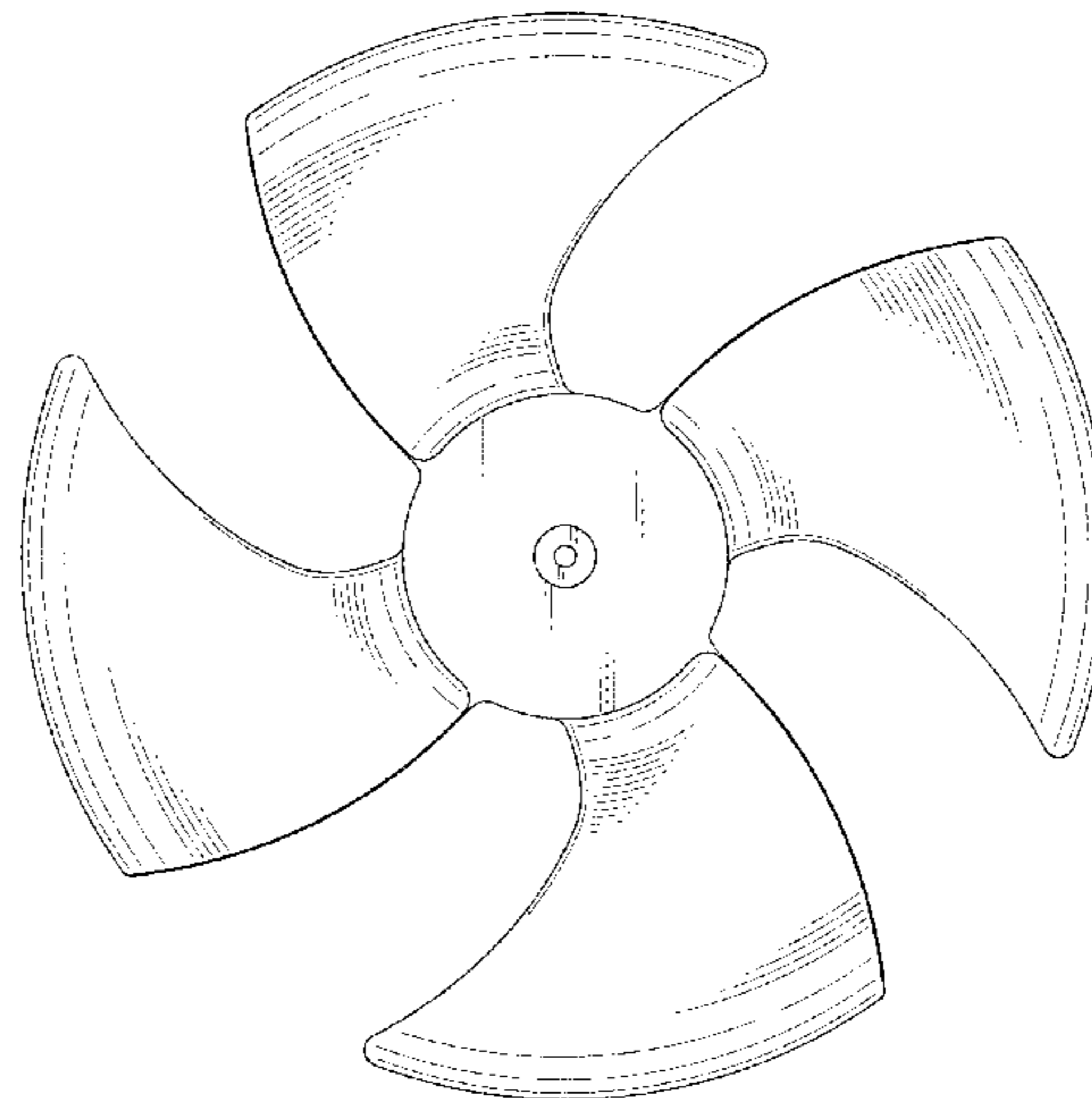
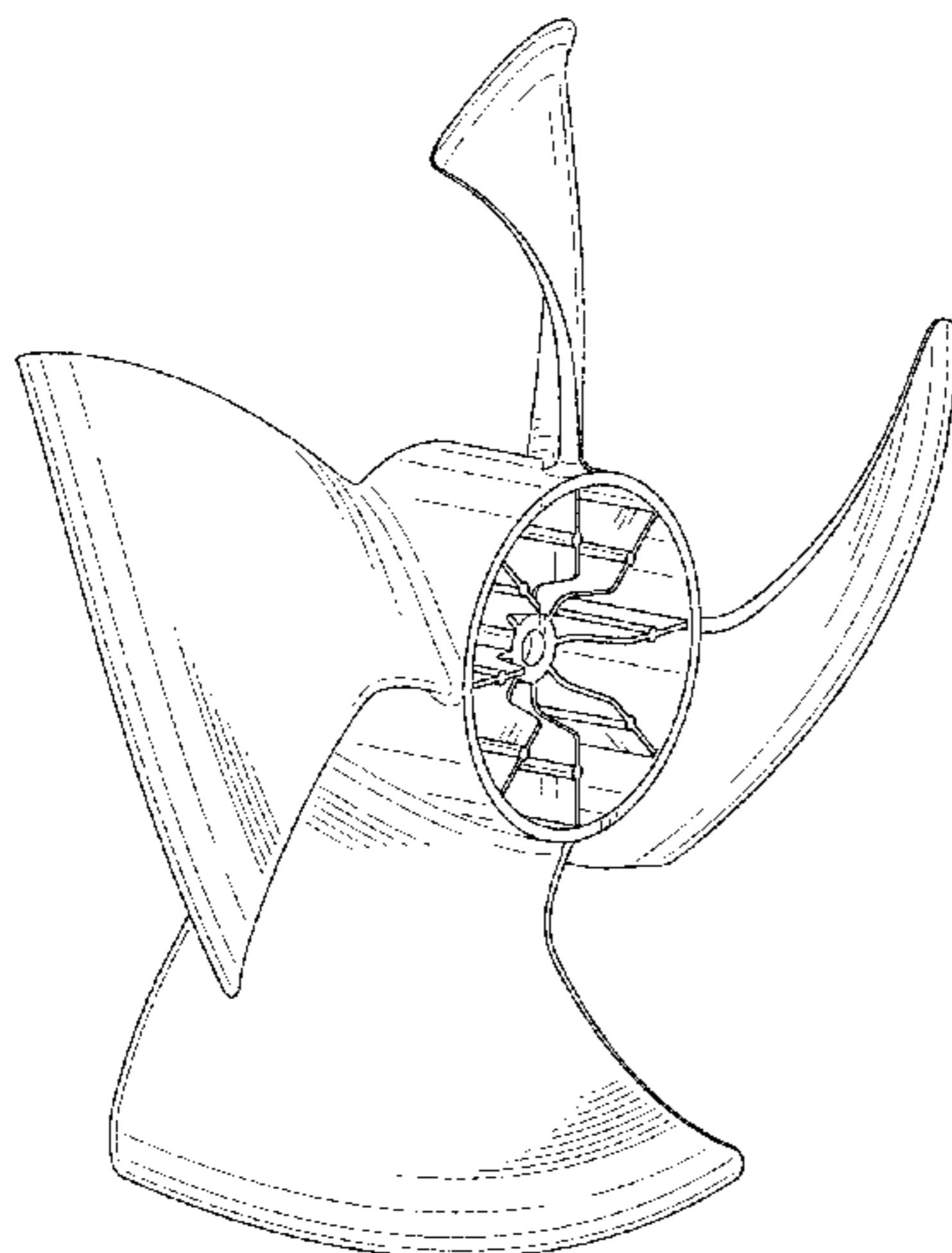
FIG. 13 is a left side view thereof;

FIG. 14 is a right side view thereof;

FIG. 15 is a top plan view thereof; and,

FIG. 16 is a bottom view thereof.

1 Claim, 12 Drawing Sheets



(58) **Field of Classification Search**

USPC D23/370–385, 386–389, 393, 397,
 D23/411–414; D12/214, 317, 339, 344,
 D12/345
 CPC F04D 25/08; F04D 29/38; F04D 29/384;
 F04D 29/386; F04D 29/325; F04D 25/02;
 F04D 29/682; F04D 29/684
 See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

| | | | | |
|--------------|---------|---------|-------|---------|
| D571,000 S * | 6/2008 | Bei | ..... | D23/413 |
| D677,611 S * | 3/2013 | Janecke | ..... | D12/214 |
| D725,252 S * | 3/2015 | Hamada | ..... | D12/214 |
| D750,211 S * | 2/2016 | Arai | ..... | D23/379 |
| D755,945 S * | 5/2016 | Arai | ..... | D23/379 |
| D755,946 S * | 5/2016 | Arai | ..... | D23/379 |
| D755,947 S * | 5/2016 | Arai | ..... | D23/379 |
| D806,223 S * | 12/2017 | Allard | ..... | D23/370 |
| D806,225 S * | 12/2017 | Chang | ..... | D23/379 |
| D808,003 S * | 1/2018 | Gebert | ..... | D23/379 |

| | | | | |
|-------------------|---------|-----------|-------|--------------------------|
| D812,732 S * | 3/2018 | Murakami | ..... | D23/370 |
| D813,369 S * | 3/2018 | Chiu | ..... | D23/370 |
| 2003/0103846 A1 * | 6/2003 | Ohsuka | ..... | F04D 29/384 416/223 R |
| 2007/0020103 A1 * | 1/2007 | Spaggiari | ..... | F04D 29/386 416/223 R |
| 2014/0341748 A1 * | 11/2014 | Kojima | ..... | F04D 29/023 416/234 |
| 2015/0044058 A1 * | 2/2015 | Hamada | ..... | F04D 29/384 416/242 |
| 2016/0025101 A1 * | 1/2016 | Tadokoro | ..... | F04D 29/329 415/177 |
| 2018/0156475 A1 * | 6/2018 | Tadokoro | ..... | F24F 1/14 |
| 2019/0048890 A1 * | 2/2019 | Honma | ..... | F04D 29/38 |

OTHER PUBLICATIONS

An Office Action; “Rejection Decision,” dated by the Japanese Patent Office on Nov. 14, 2017, which corresponds to Japanese Design Application No. 2017-005381 and is related to U.S. Appl. No. 29/617,509; with English language Concise Explanation.

* cited by examiner

Fig. 1

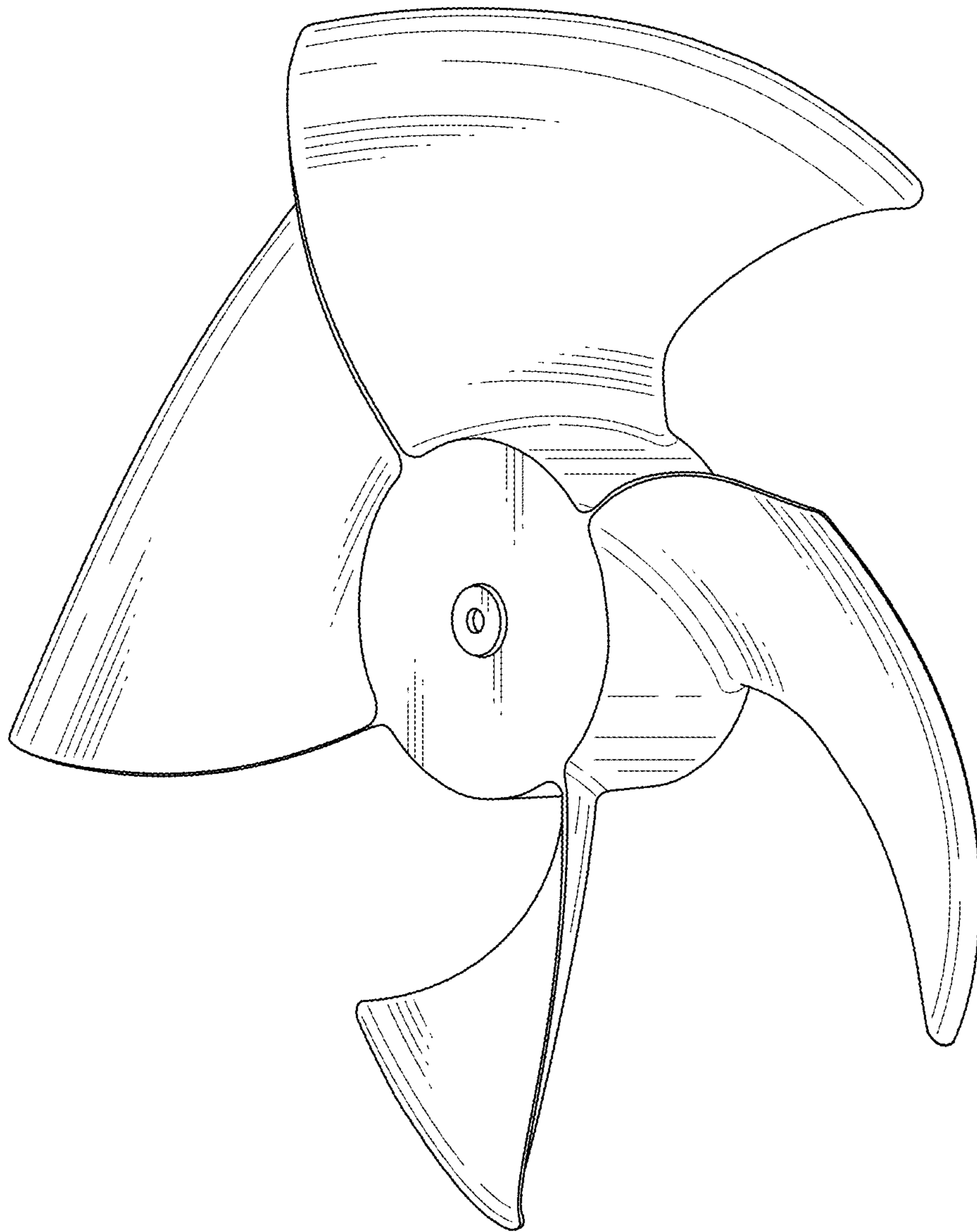


Fig. 2

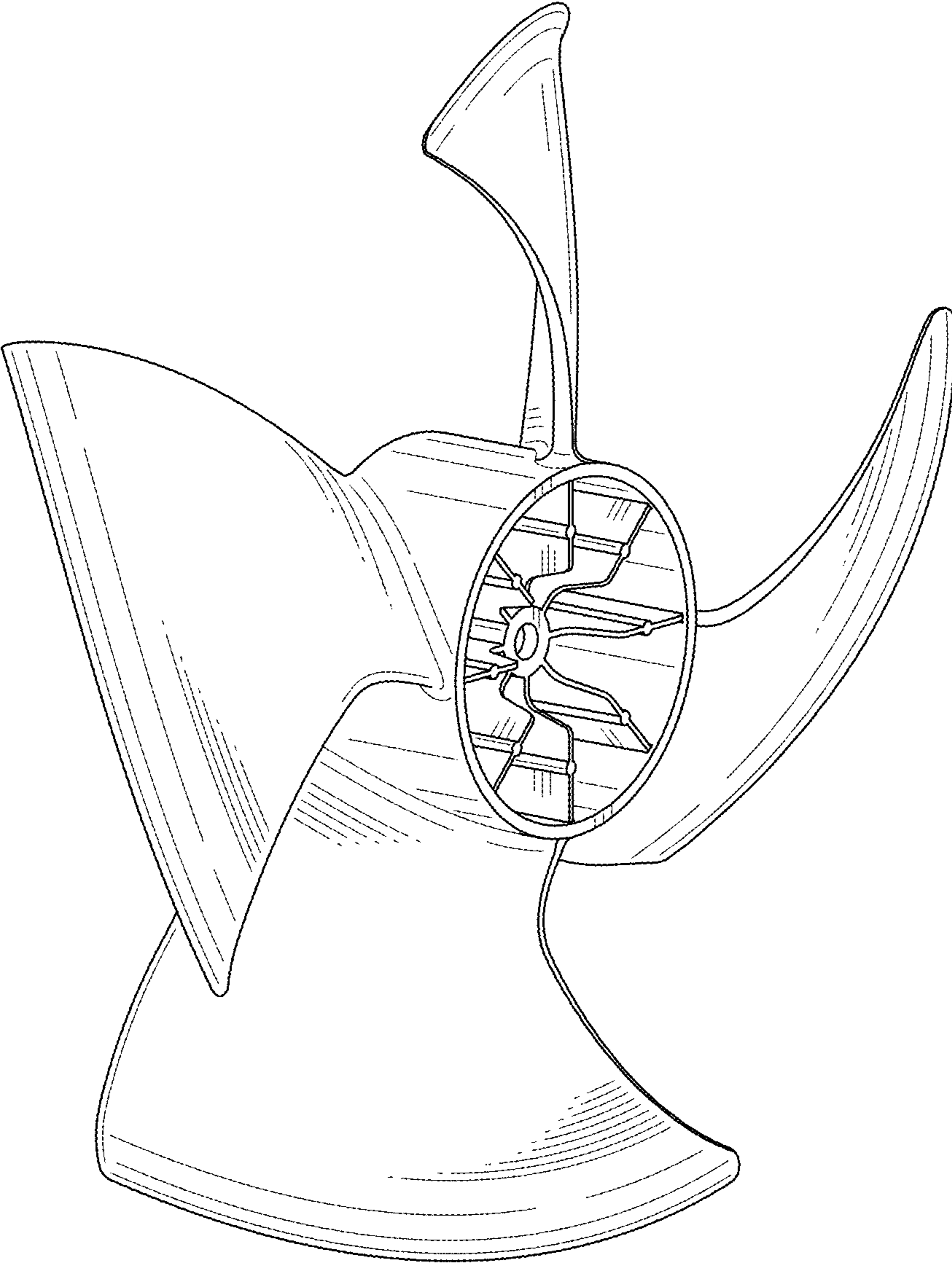


Fig. 3

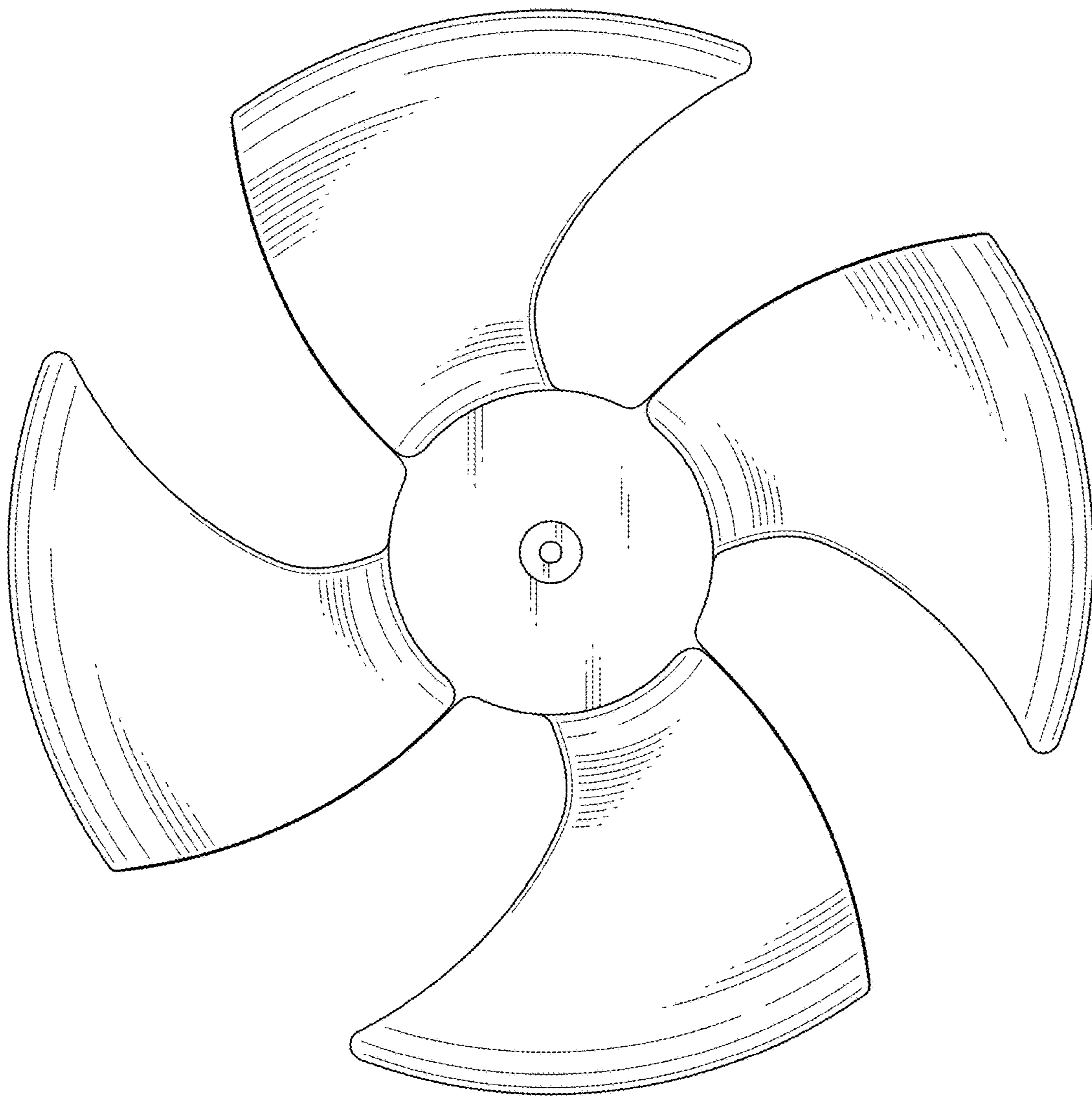


Fig. 4

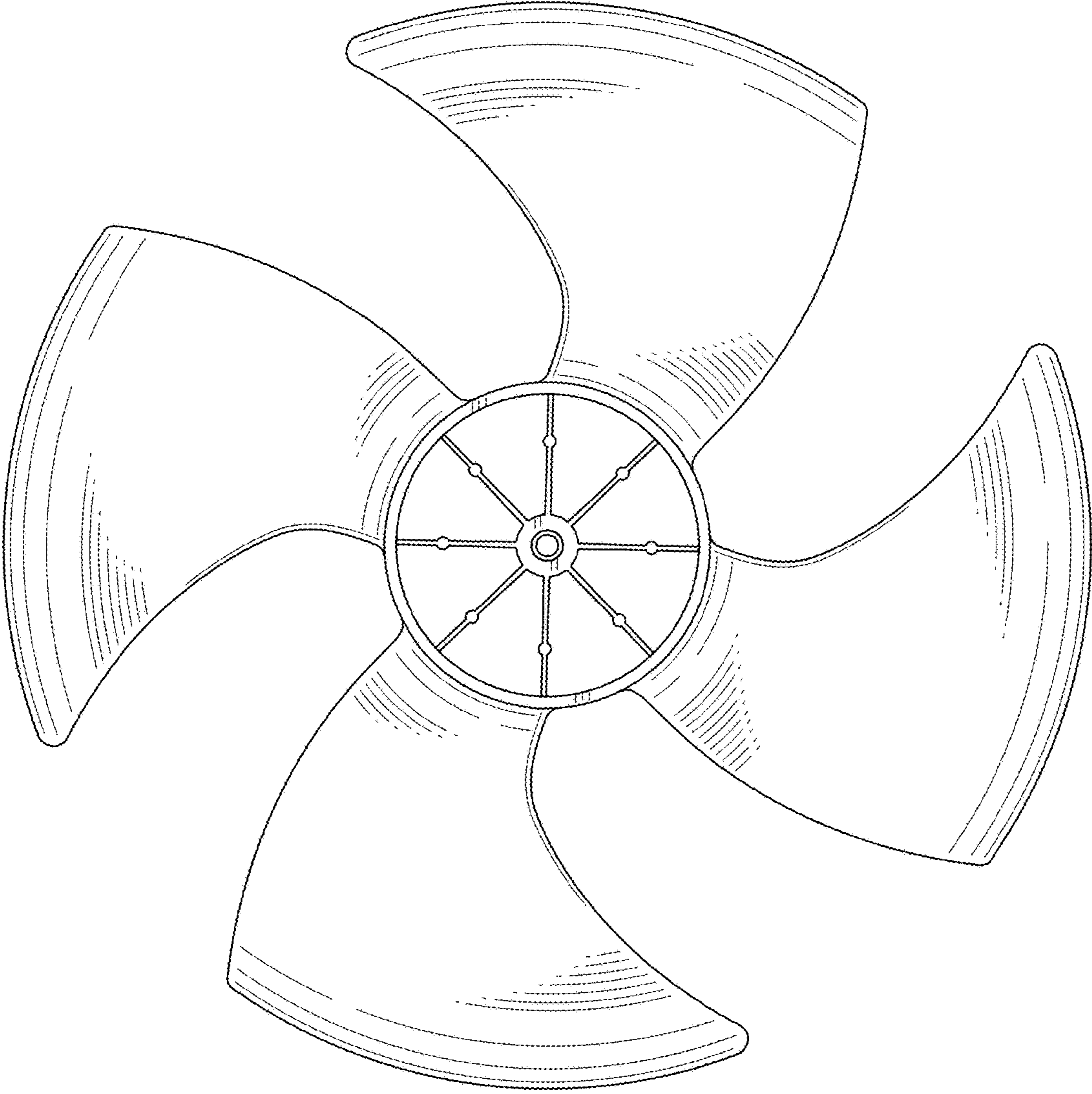


Fig. 5

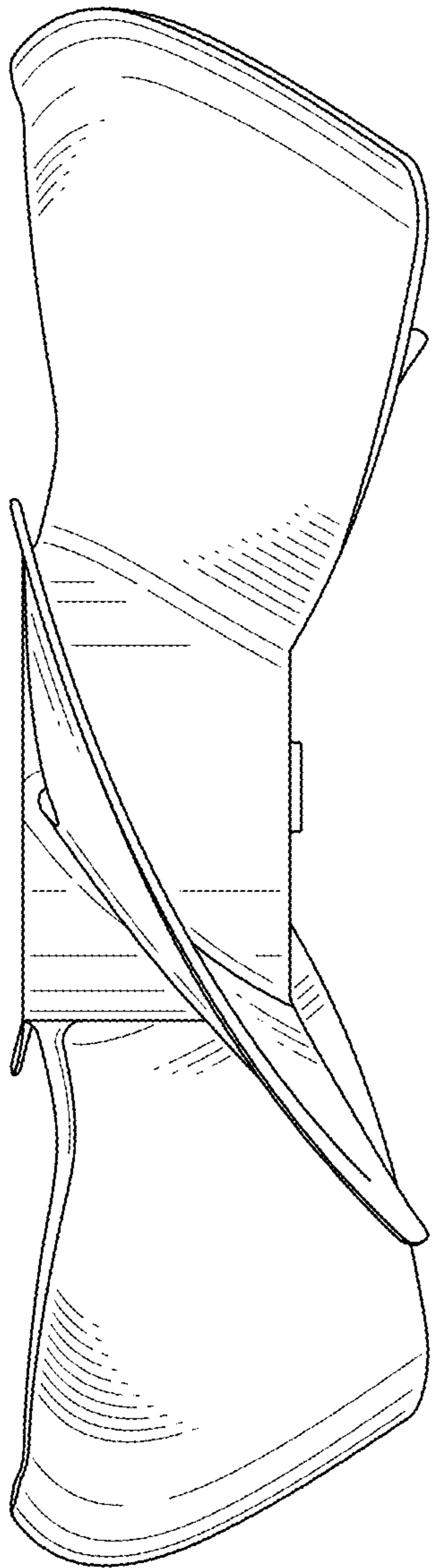


Fig. 6

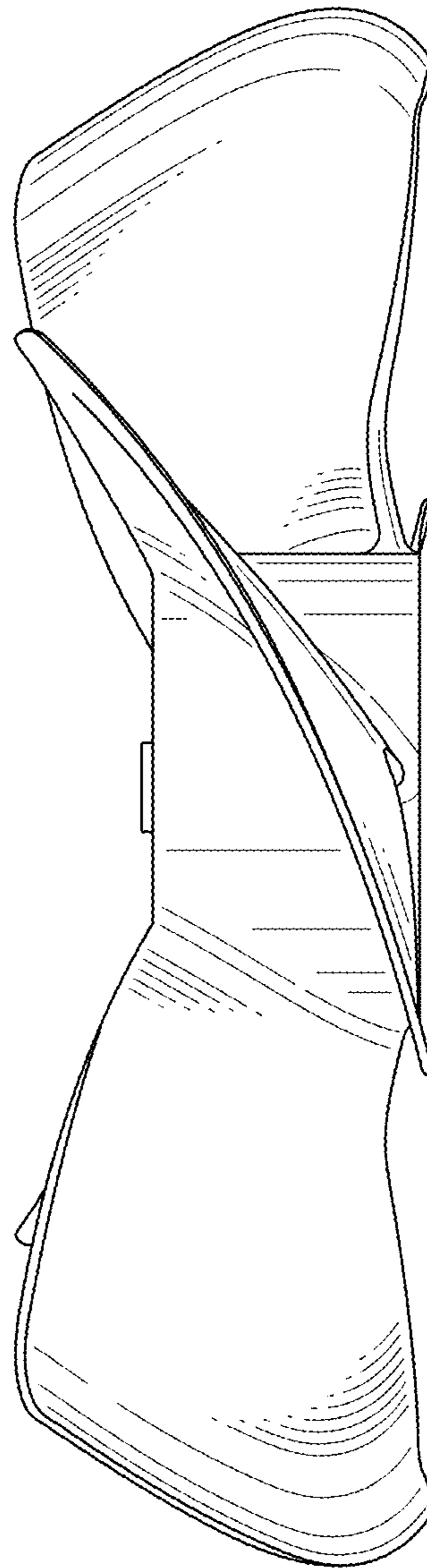


Fig. 7

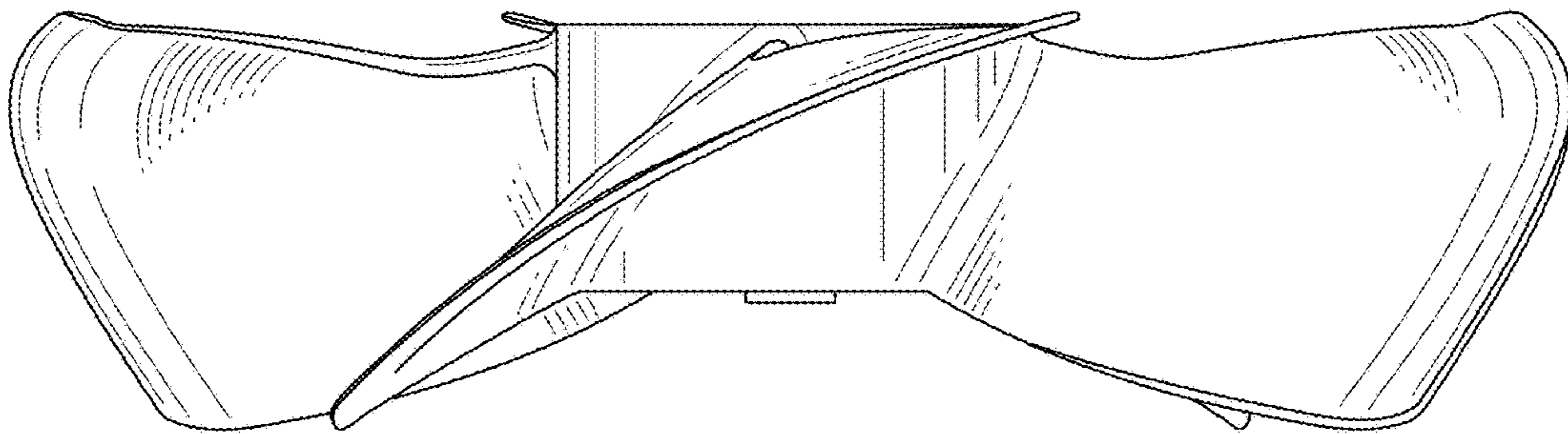


Fig. 8

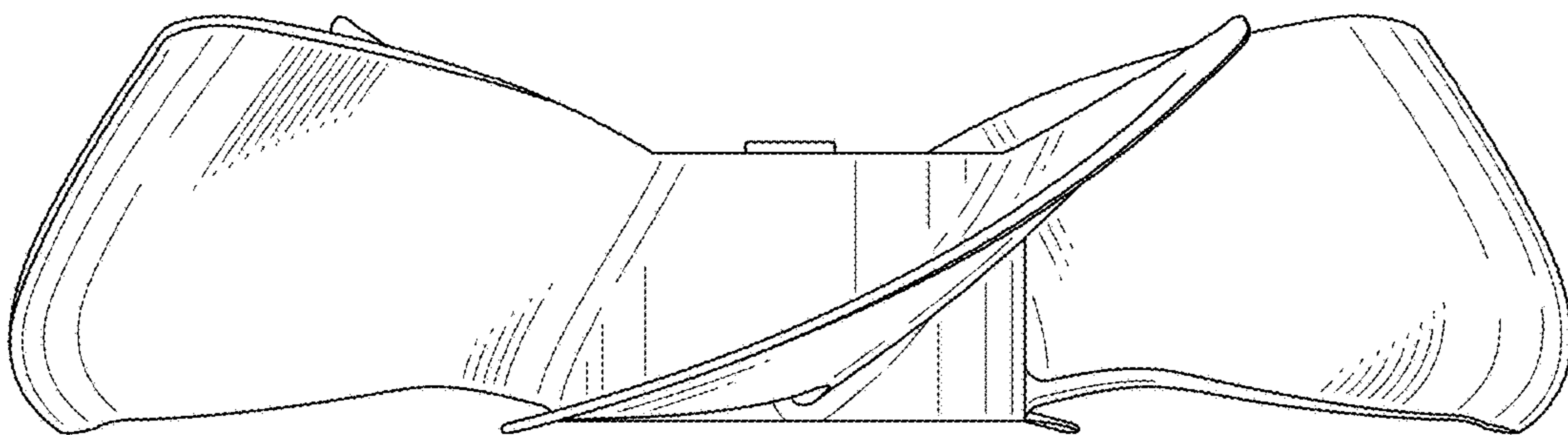


Fig. 9

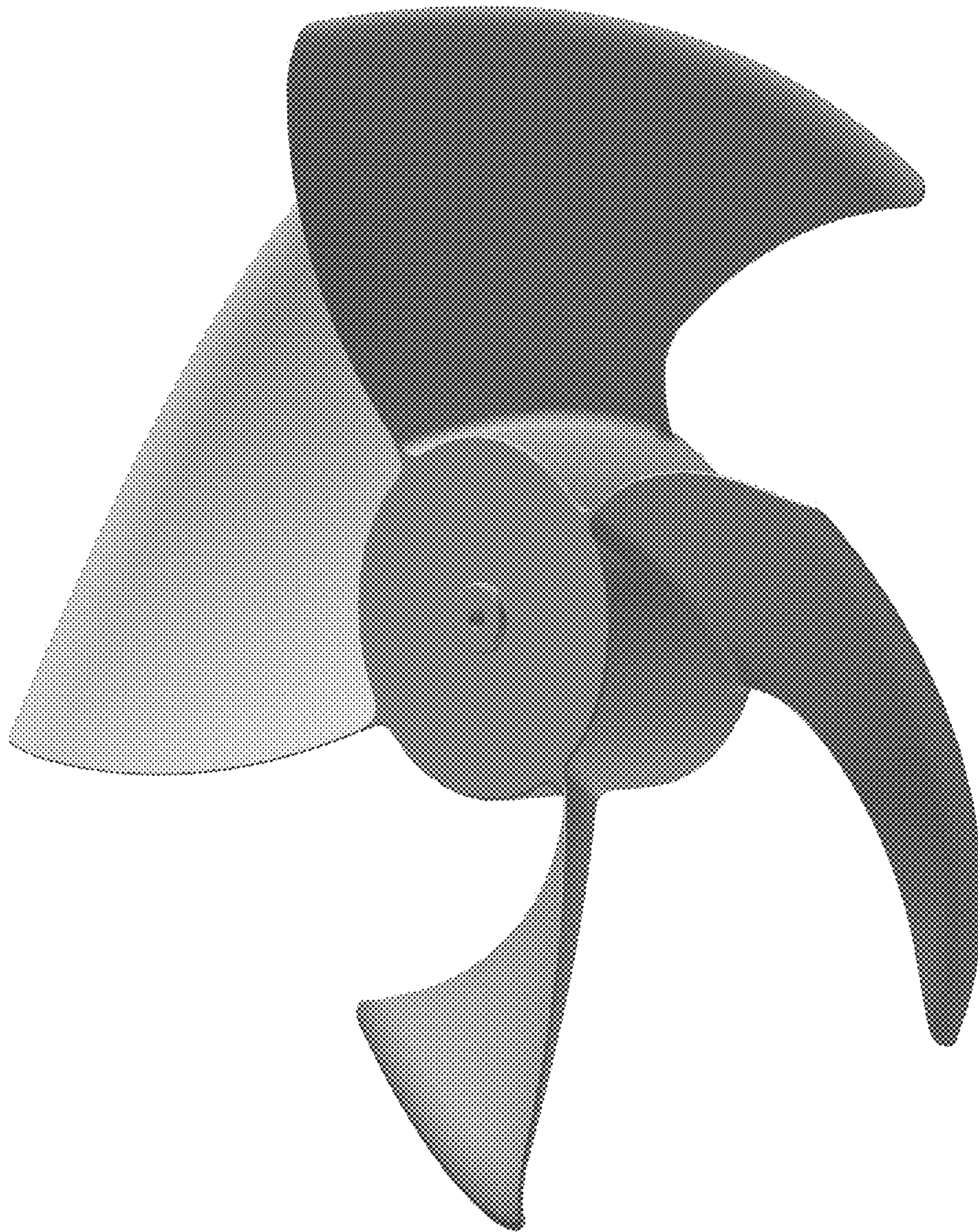


Fig. 10

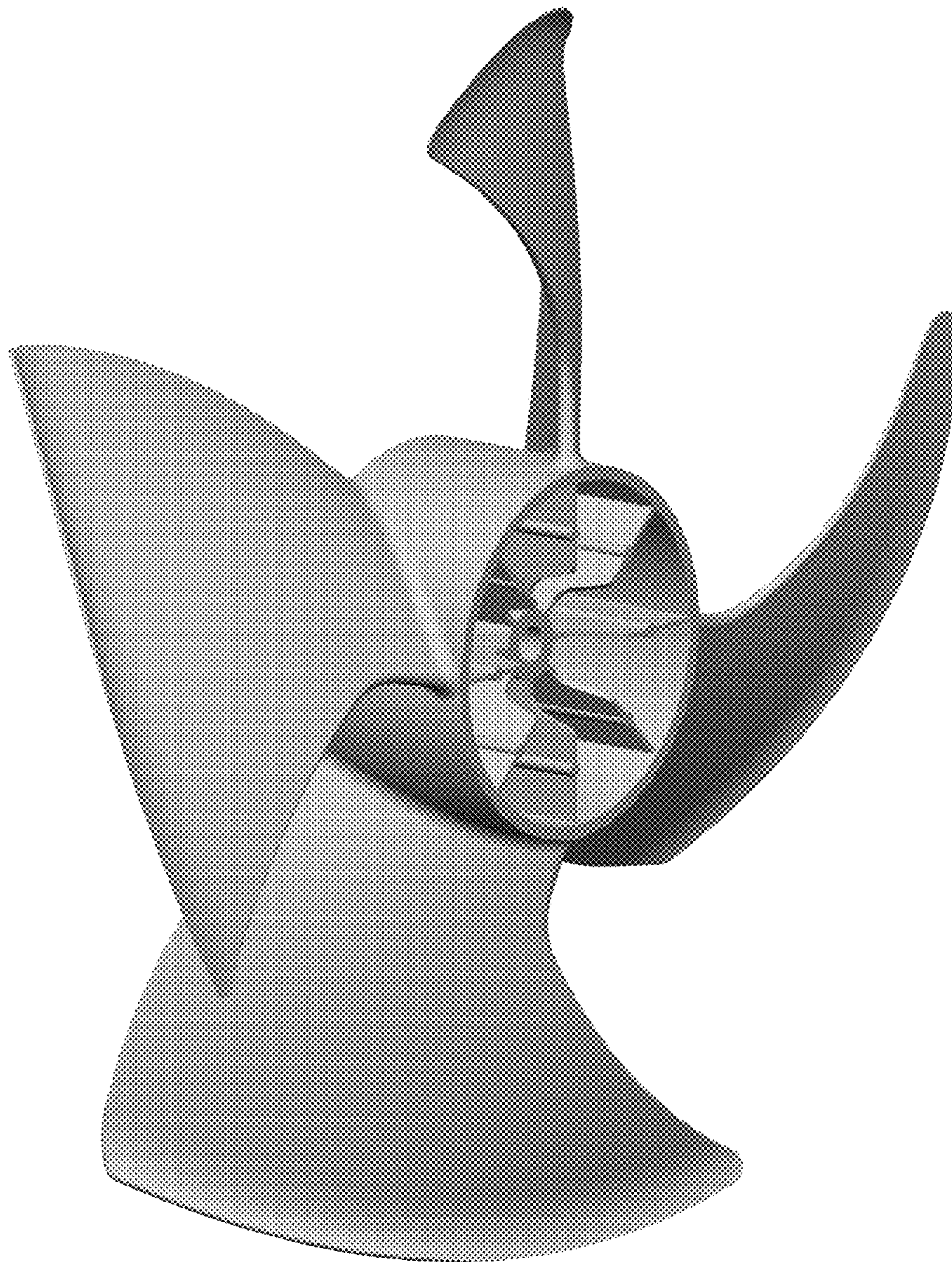


Fig. 11

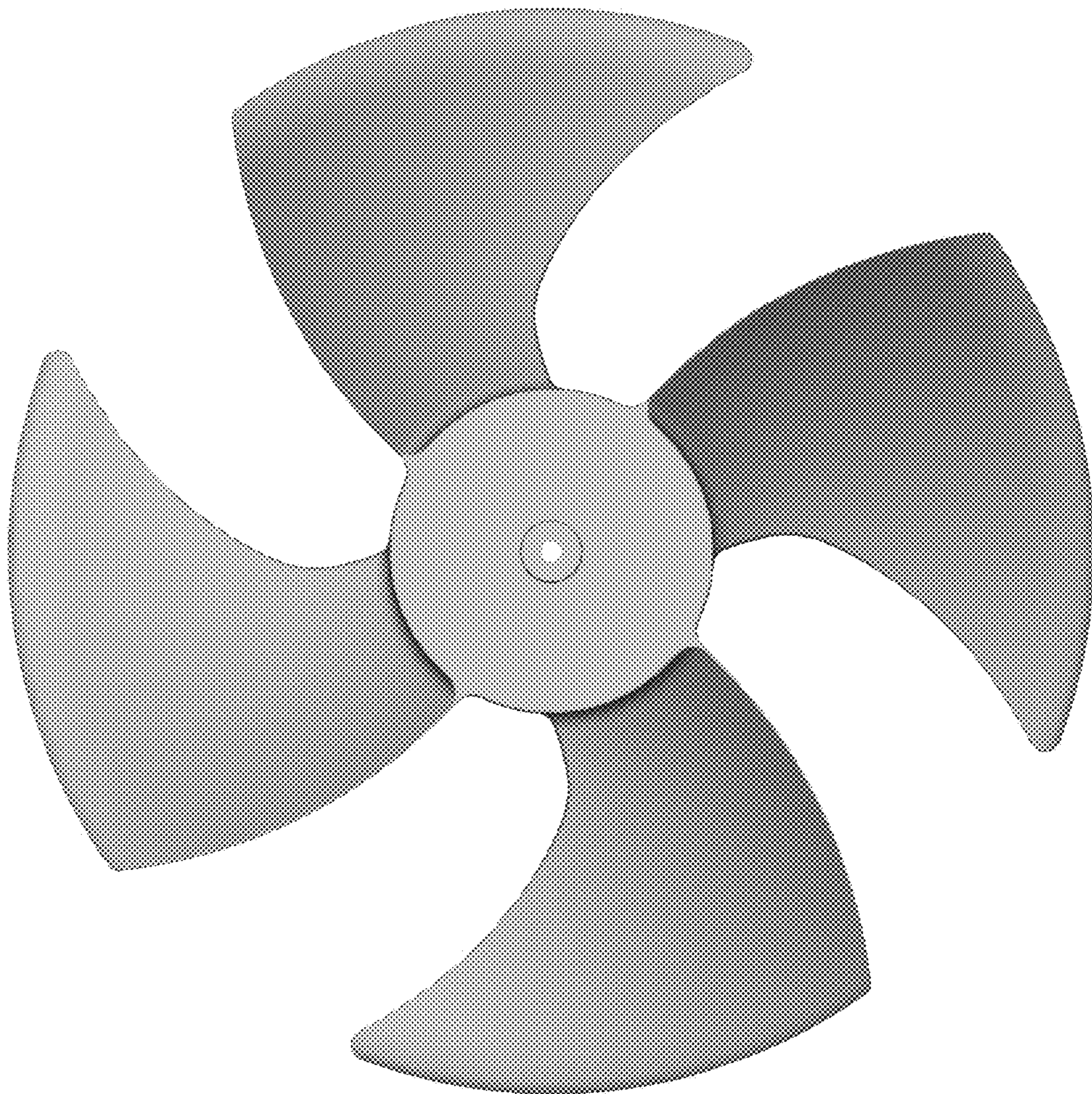


Fig. 12

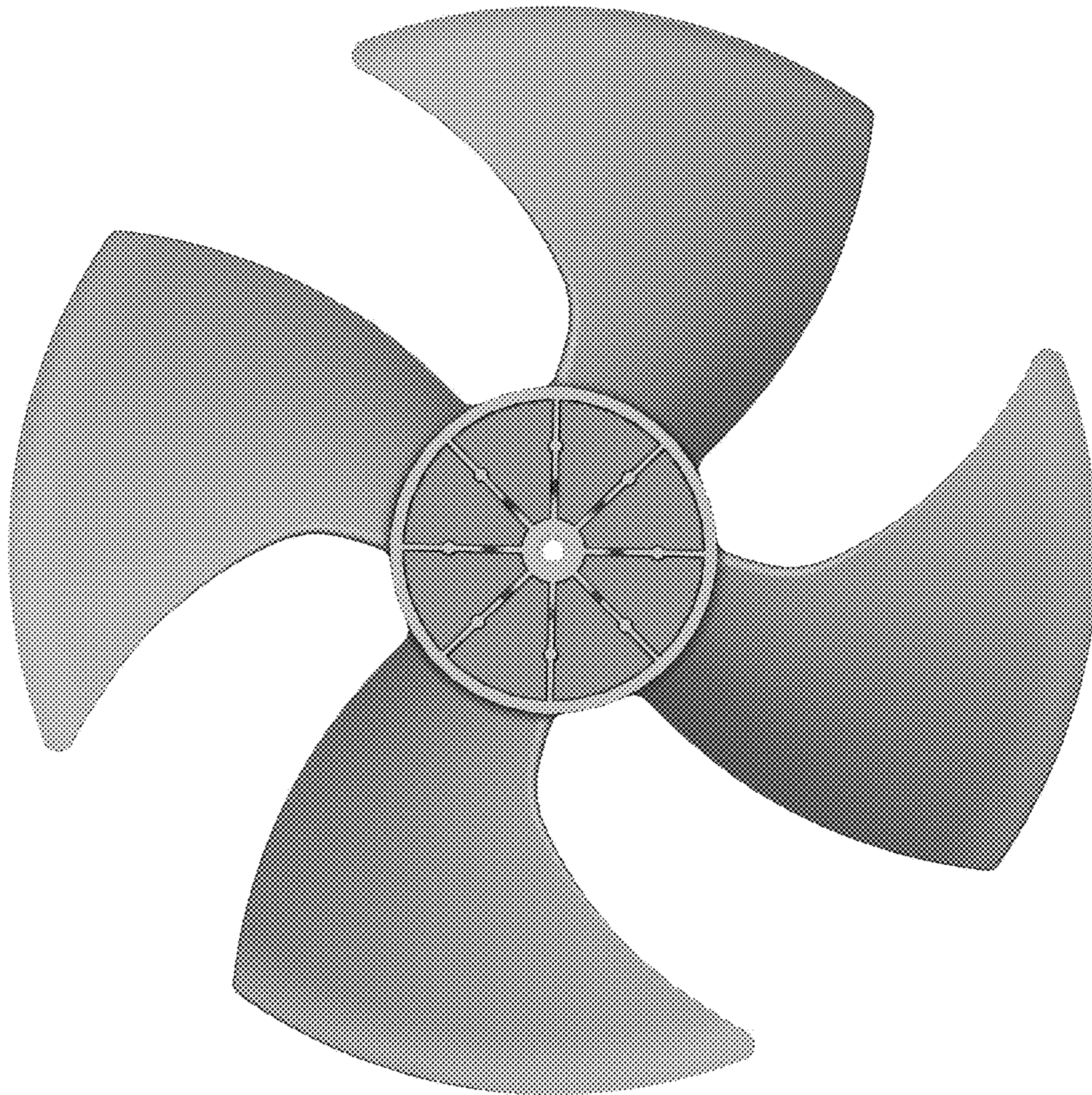


Fig. 13

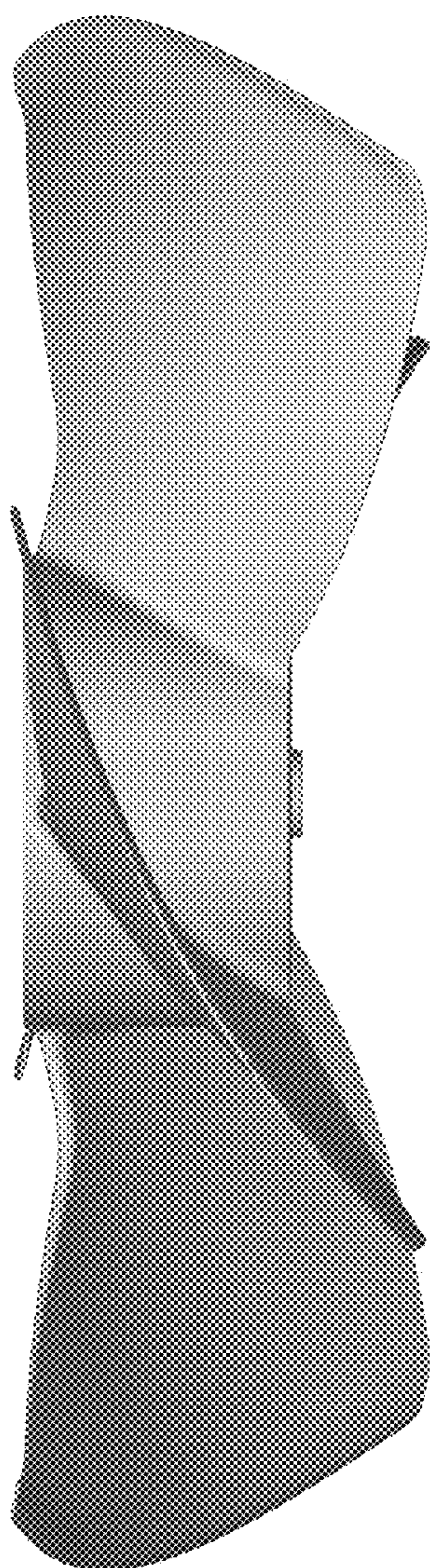


Fig. 14

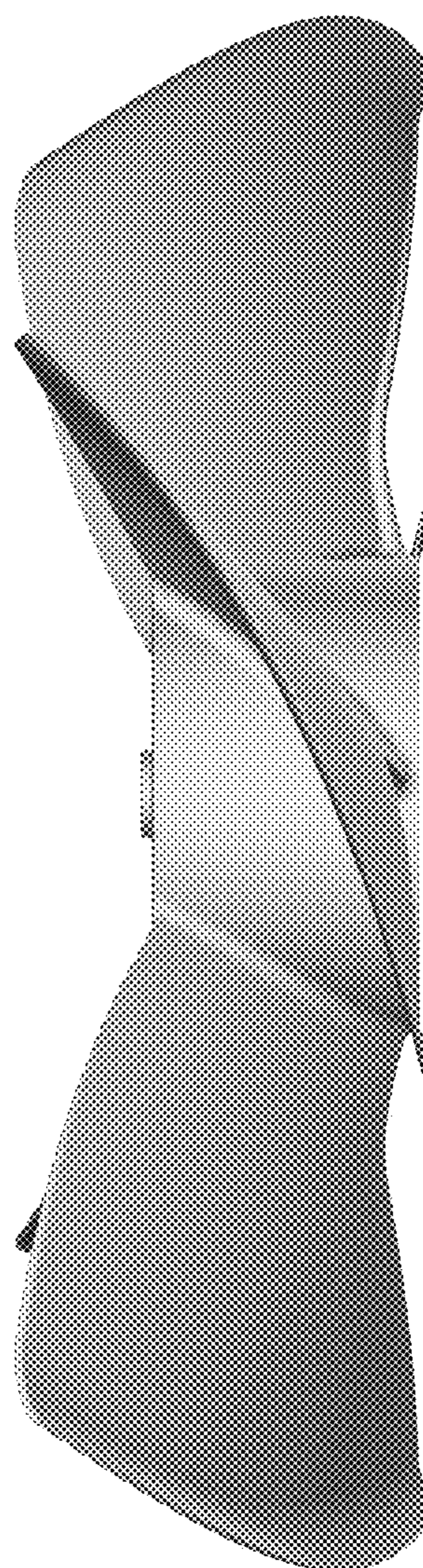


Fig. 15

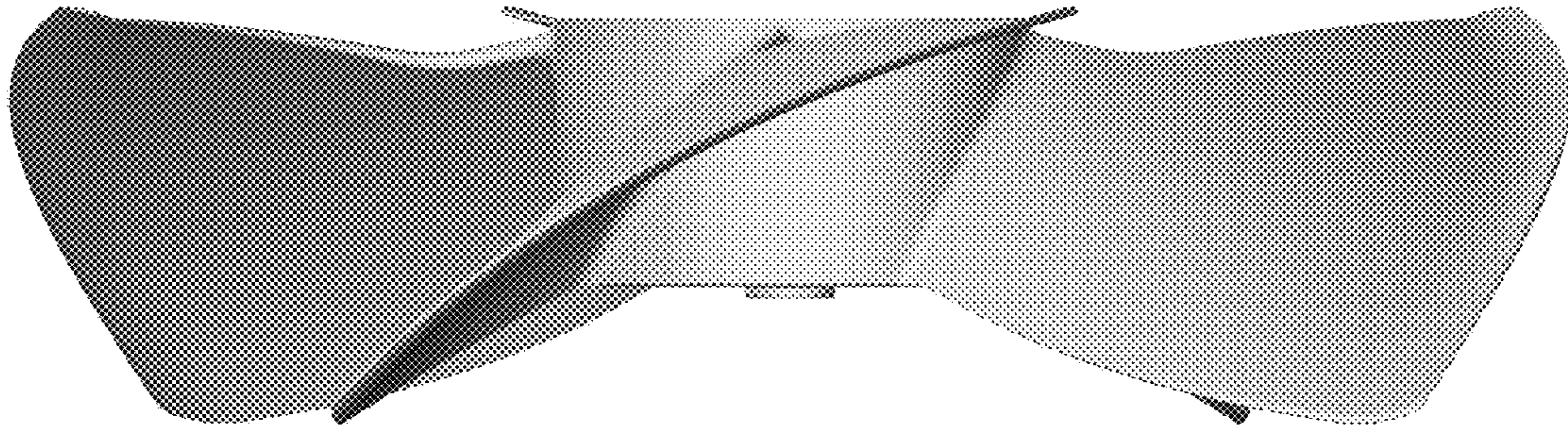


Fig. 16

