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

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(54) **SCREW SHAFT ELEMENT**

- (71) Applicant: **Buss AG**, Pratteln (CH)
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- (73) Assignee: **Buss AG**, Pratteln (CH)
- (**) Term: **15 Years**
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Related U.S. Application Data

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(30) **Foreign Application Priority Data**

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- (51) **LOC (13) Cl.** **31-00**
- (52) **U.S. Cl.**
USPC **D7/376**

- (58) **Field of Classification Search**
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D8/387; D24/220
CPC B01F 7/00416; B01F 7/086; B01F
2215/0049; B01F 2215/0422; B29C
48/03; B29C 48/395; B29C 48/04; B29C
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48/687; B29B 7/421; B29B 7/423; B29B
7/429; B29B 7/44

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

- D23,336 S * 6/1894 Quimby D8/387
- 1,283,947 A 11/1918 Steinle
- 1,468,581 A 9/1923 Steenberg
- 1,521,044 A 12/1924 Parker

(Continued)

FOREIGN PATENT DOCUMENTS

- DE 1091841 B * 10/1960 B29C 48/56
- EP 2952275 A1 * 12/2015 B29C 48/402
- EP 2965889 A1 * 1/2016 B29B 7/482

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(57) **CLAIM**

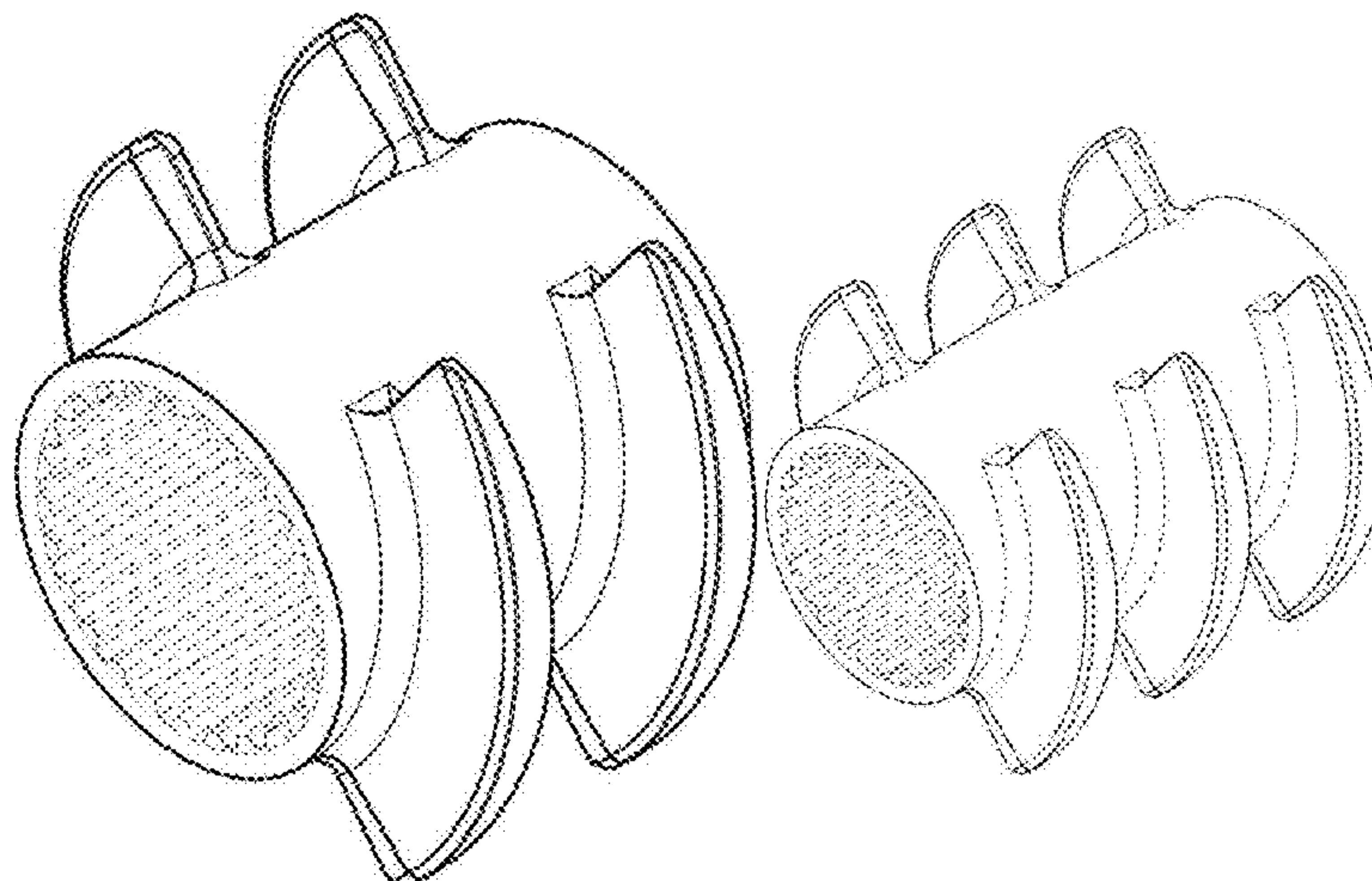
The ornamental design for a screw shaft element, as shown and described.

DESCRIPTION

FIG. 1 is a perspective view of the first embodiment of the screw shaft element showing of our new design;
 FIG. 2 is a front view thereof;
 FIG. 3 is a back view thereof;
 FIG. 4 is a left view thereof;
 FIG. 5 is a right view thereof;
 FIG. 6 is a top view thereof;
 FIG. 7 is a bottom view thereof;
 FIG. 8 is a perspective view second embodiment of the screw shaft element showing our new design;
 FIG. 9 is a front view thereof;
 FIG. 10 is a back view thereof;
 FIG. 11 is a left view thereof;
 FIG. 12 is a right view thereof;
 FIG. 13 is a top view thereof; and,
 FIG. 14 is a bottom view thereof.

The broken lines in the drawings illustrate portions of the screw shaft element and form no part of the claimed design.

1 Claim, 14 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

D121,299 S	7/1940	Krebs					
2,626,132 A	1/1953	Reed					
2,896,925 A *	7/1959	Place	B01F 7/00475				
			416/201 R				
3,189,324 A *	6/1965	Gubler	B29C 48/605				
			366/90				
4,305,673 A	12/1981	Herbst					
D290,394 S	6/1987	Stevens et al.					
4,702,608 A	10/1987	Garbar et al.					
5,158,434 A *	10/1992	Weetman	B01F 7/00341				
			416/201 A				
D381,892 S	8/1997	Porter et al.					
D422,896 S	4/2000	Holzinger					
D435,789 S	1/2001	Holzinger					
D601,850 S	10/2009	Ikuta					
D648,193 S	11/2011	Wheat					
D649,030 S	11/2011	Austin, III					
D692,275 S	10/2013	Audette					
D696,070 S *	12/2013	Audette	D7/412				
D706,893 S	6/2014	Diederich					
D782,059 S *	3/2017	Osada	D24/220				
9,587,662 B2 *	3/2017	Glass	F16B 13/128				
D804,247 S	12/2017	Winn et al.					
10,428,830 B2	10/2019	Lee et al.					
				D891,634 S	7/2020	Skakoon	
				D910,834 S *	2/2021	Wang	F04D 29/384
							D23/413
				D929,799 S *	9/2021	Walter	D7/376
				2005/0249030 A1	11/2005	Williams	
				2006/0171251 A1	8/2006	Busick	
				2007/0183253 A1	8/2007	Siegenthaler	
				2009/0027994 A1	1/2009	Grutter et al.	
				2009/0134173 A1 *	5/2009	Liang	B01F 7/22
							220/563
				2009/0238911 A1	9/2009	Hayashi	
				2009/0245014 A1	10/2009	Suzuki	
				2010/0067320 A1	3/2010	Blach et al.	
				2010/0284236 A1	11/2010	Franz et al.	
				2011/0026360 A1 *	2/2011	Greller	B01F 7/00691
							366/308
				2014/0199424 A1	7/2014	Behling	
				2014/0306370 A1	10/2014	Dispenza et al.	
				2015/0240832 A1	8/2015	Xia et al.	
				2015/0352770 A1	12/2015	Busenbecker	
				2016/0223006 A1	8/2016	Hettich	
				2018/0135645 A1	5/2018	Chen et al.	
				2020/0116159 A1 *	4/2020	Yang	F04D 29/384
				2020/0238235 A1	7/2020	Schotzau et al.	
				2020/0282622 A1	9/2020	Ougier et al.	
				2020/0298189 A1	9/2020	Ko	

* cited by examiner

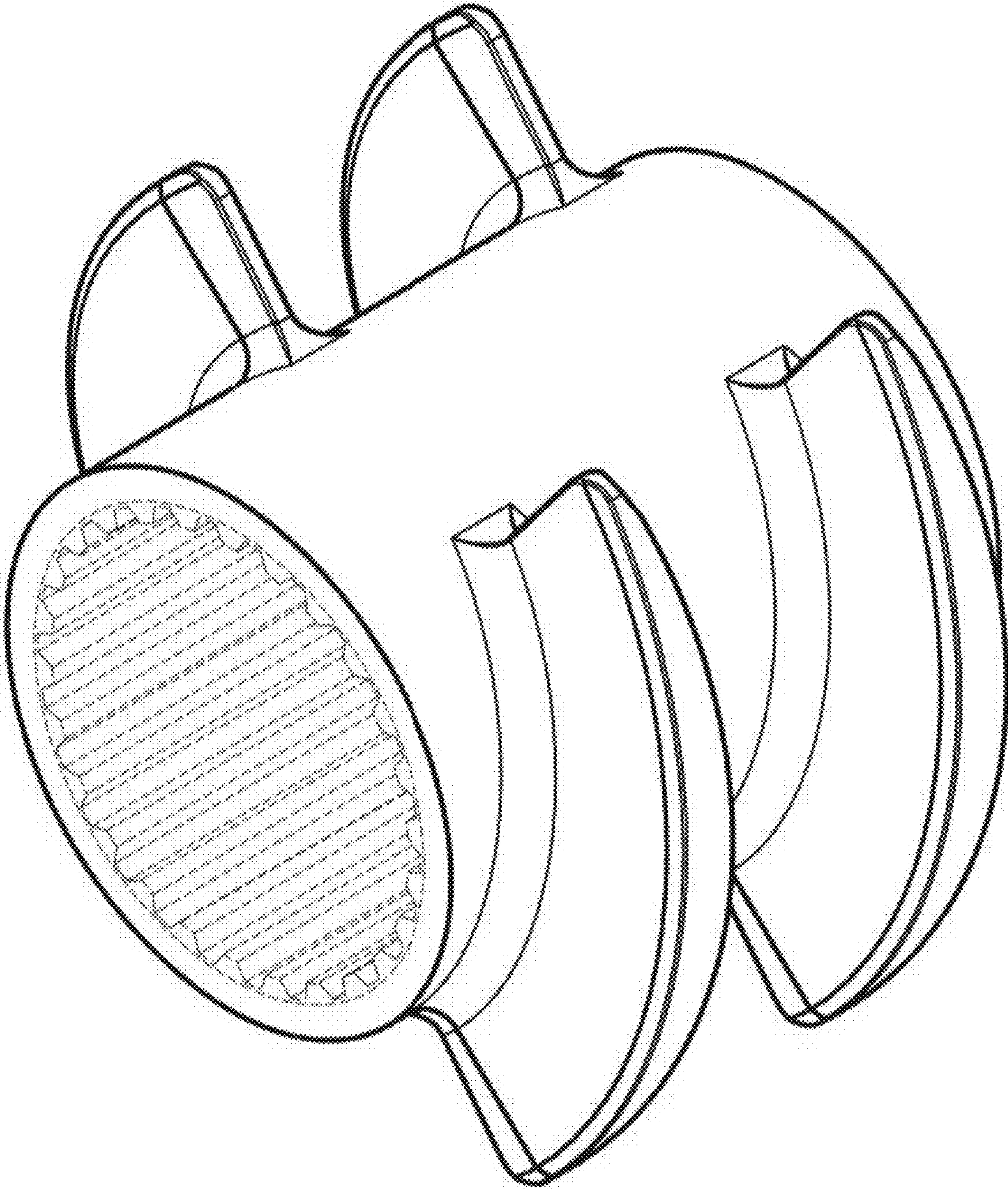


Fig. 1

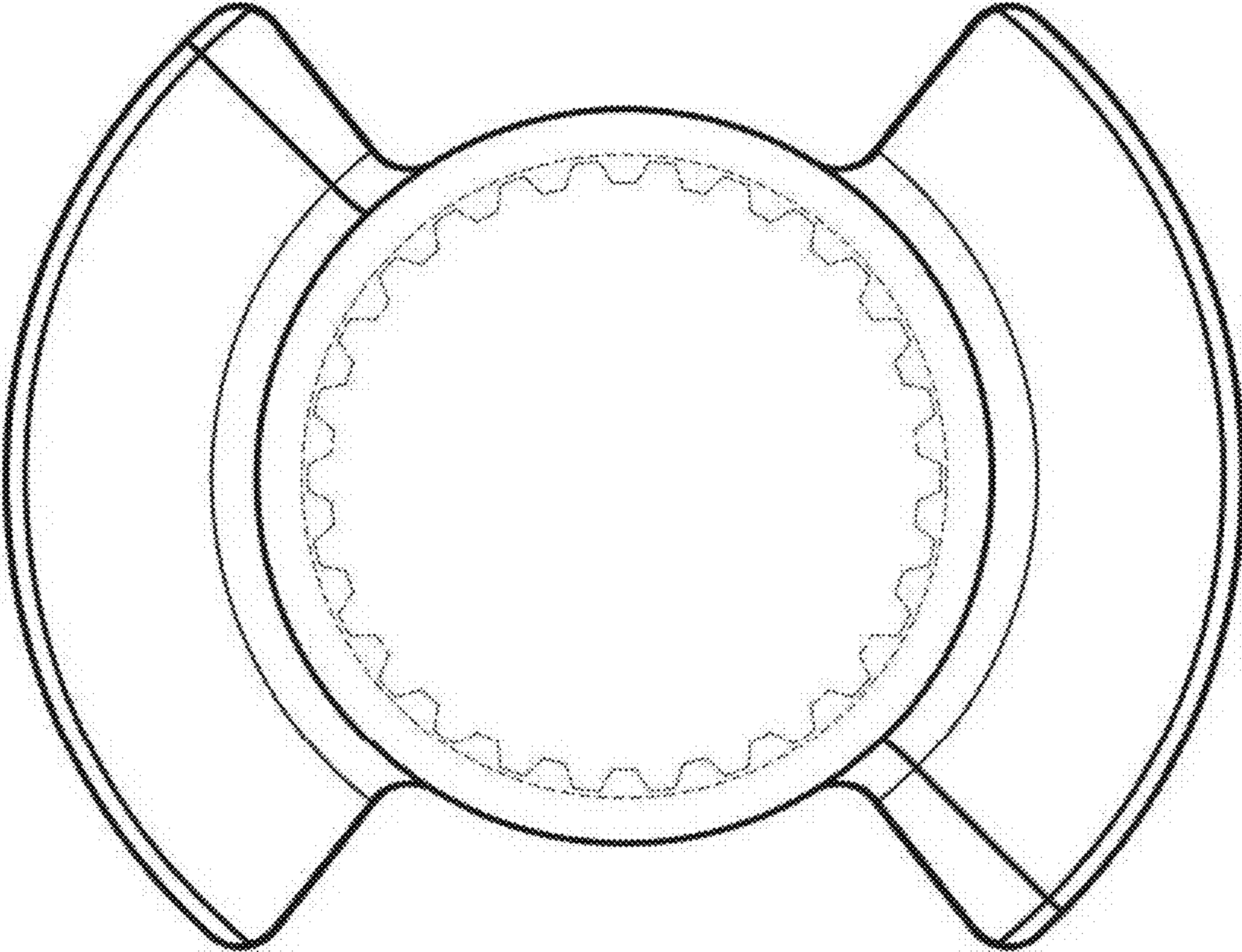


Fig. 2

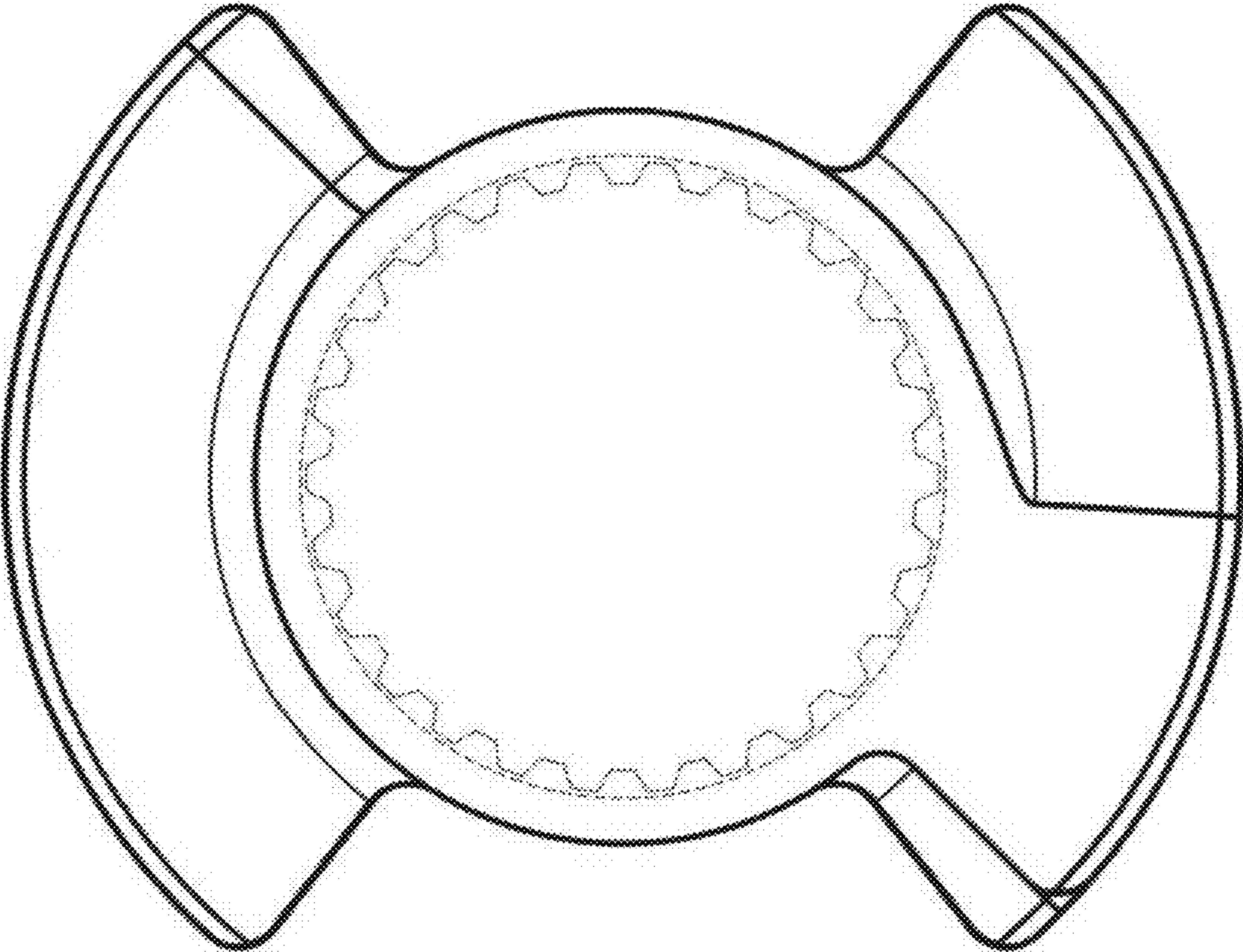


Fig. 3

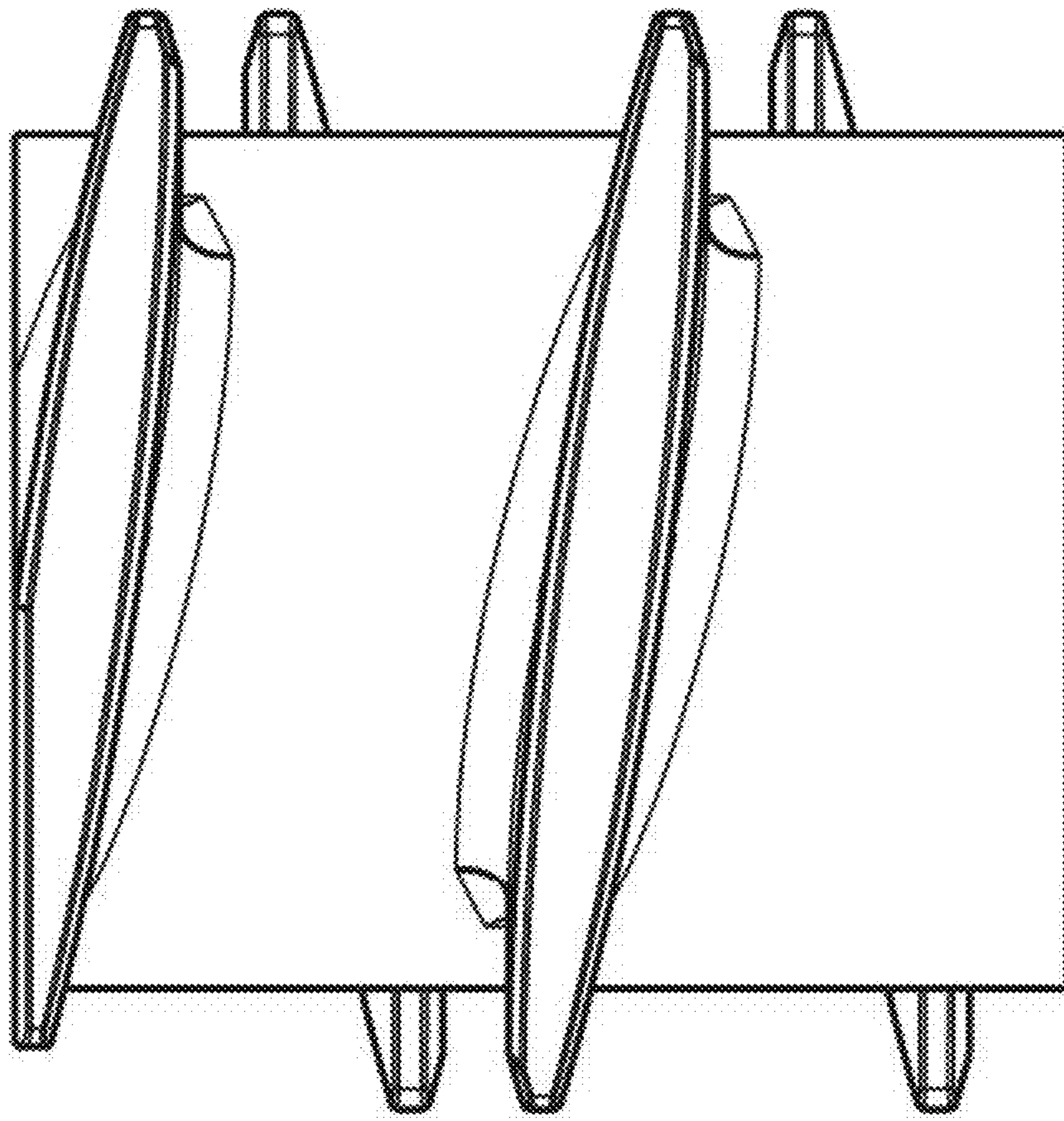


Fig. 4

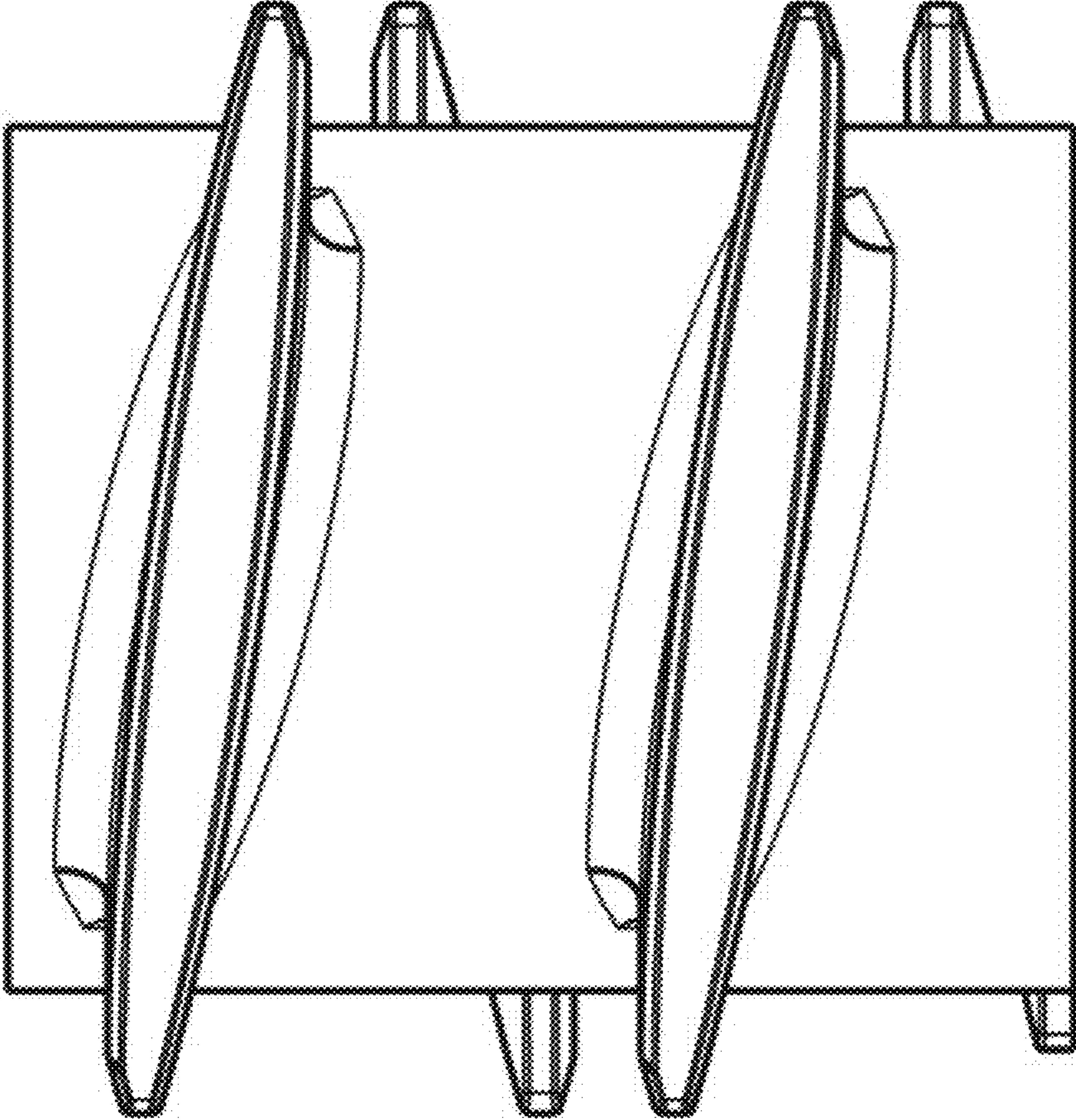


Fig. 5

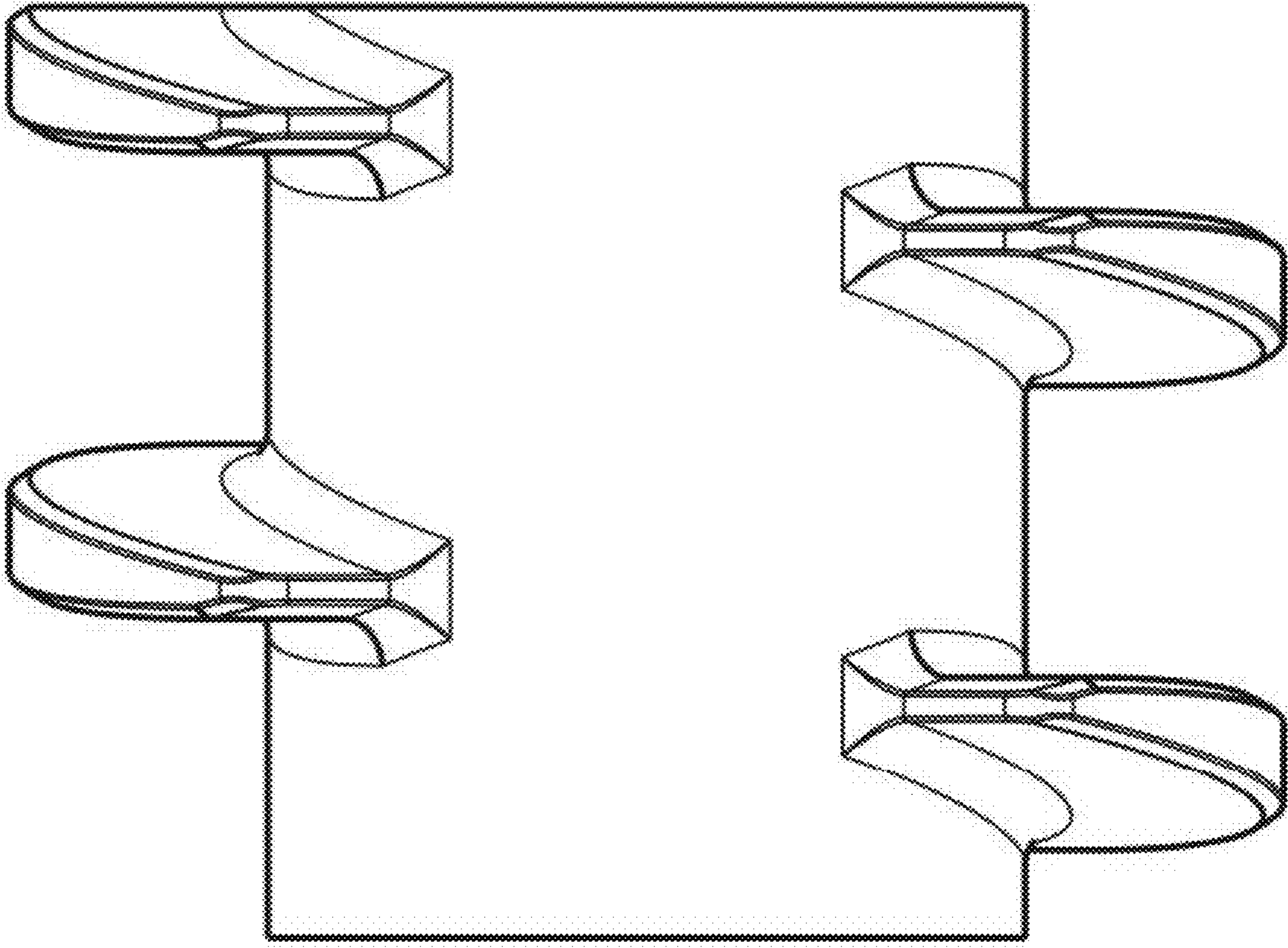


Fig. 6

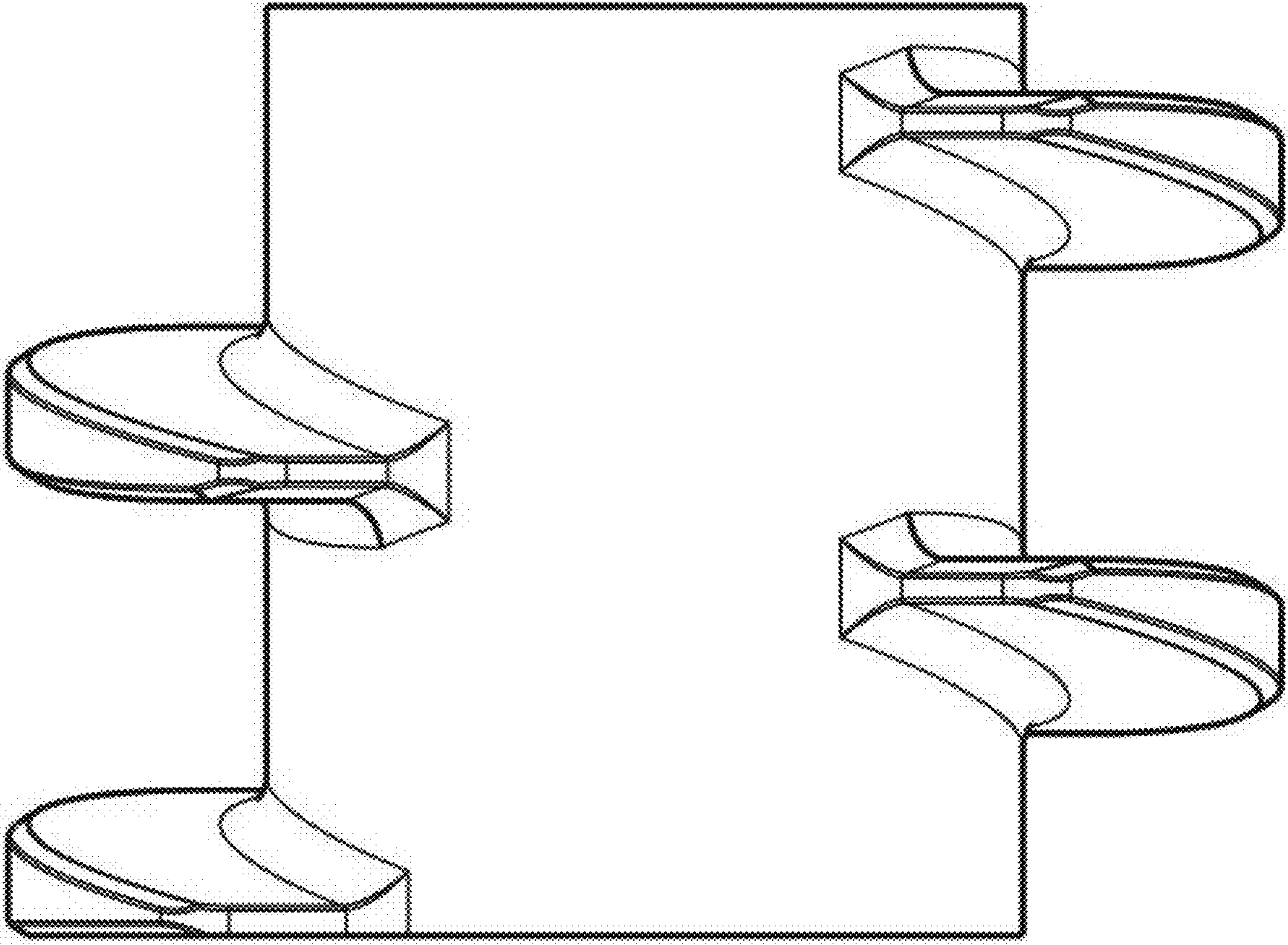


Fig. 7

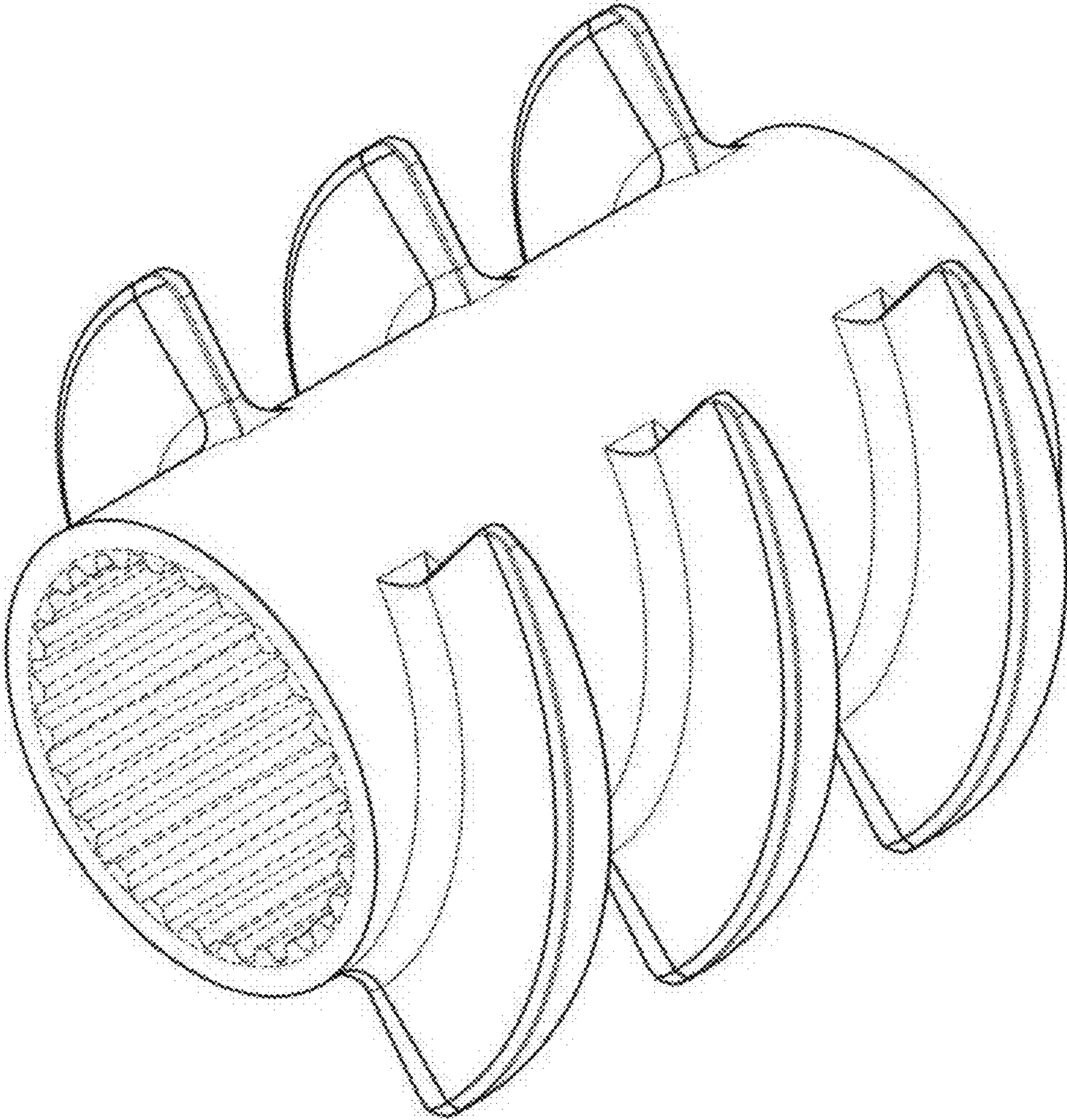


Fig. 8

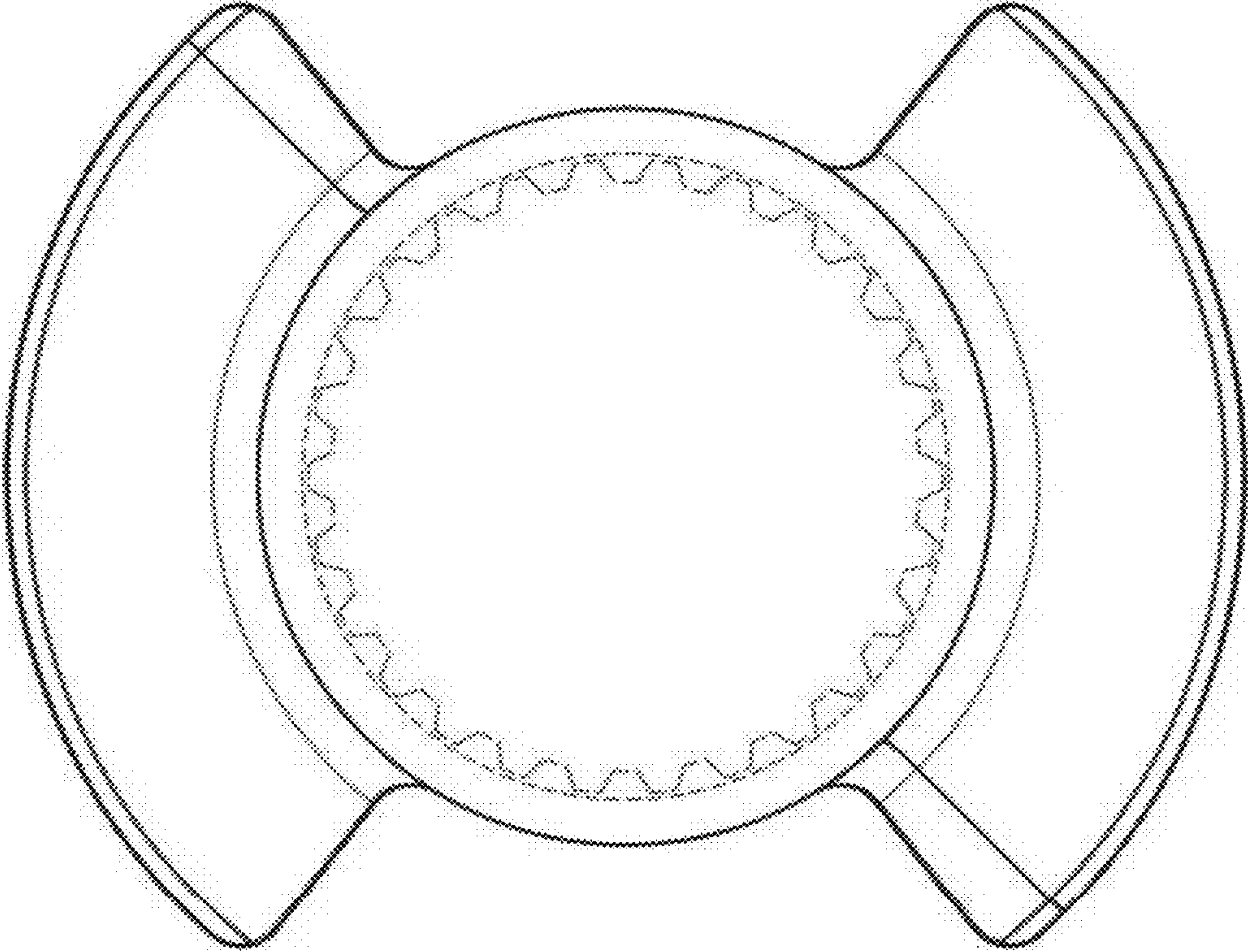


Fig. 9

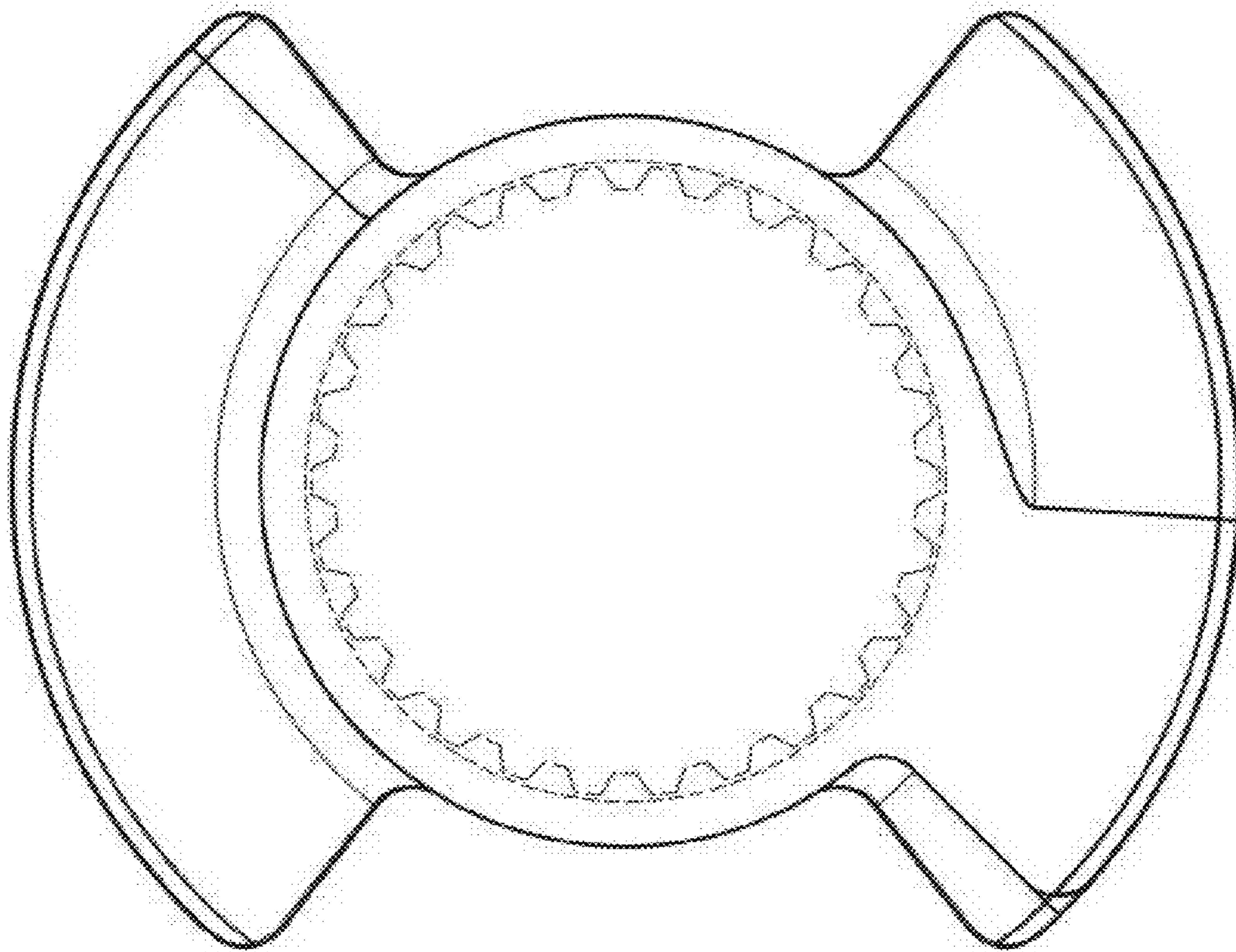


Fig. 10

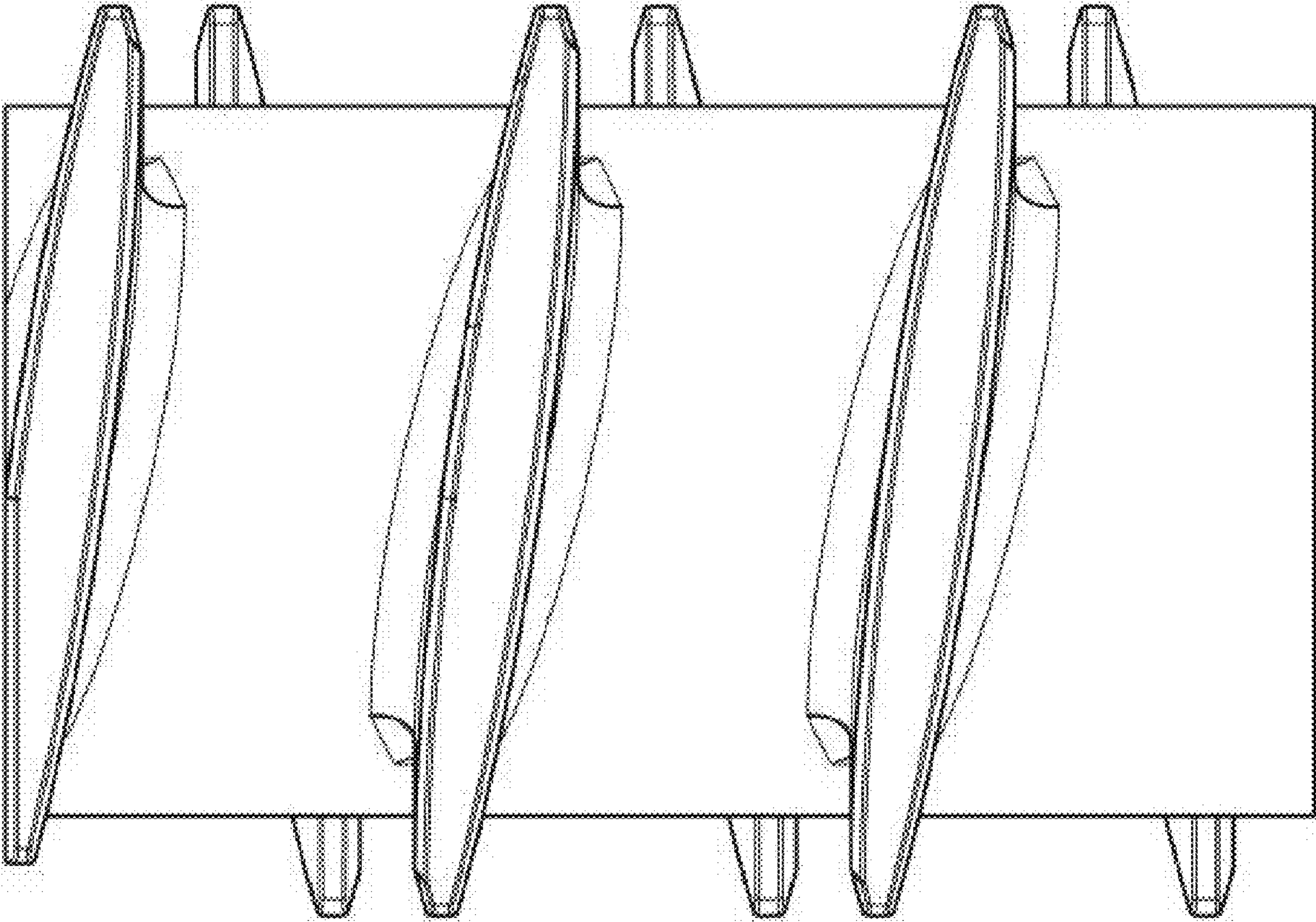


Fig. 11

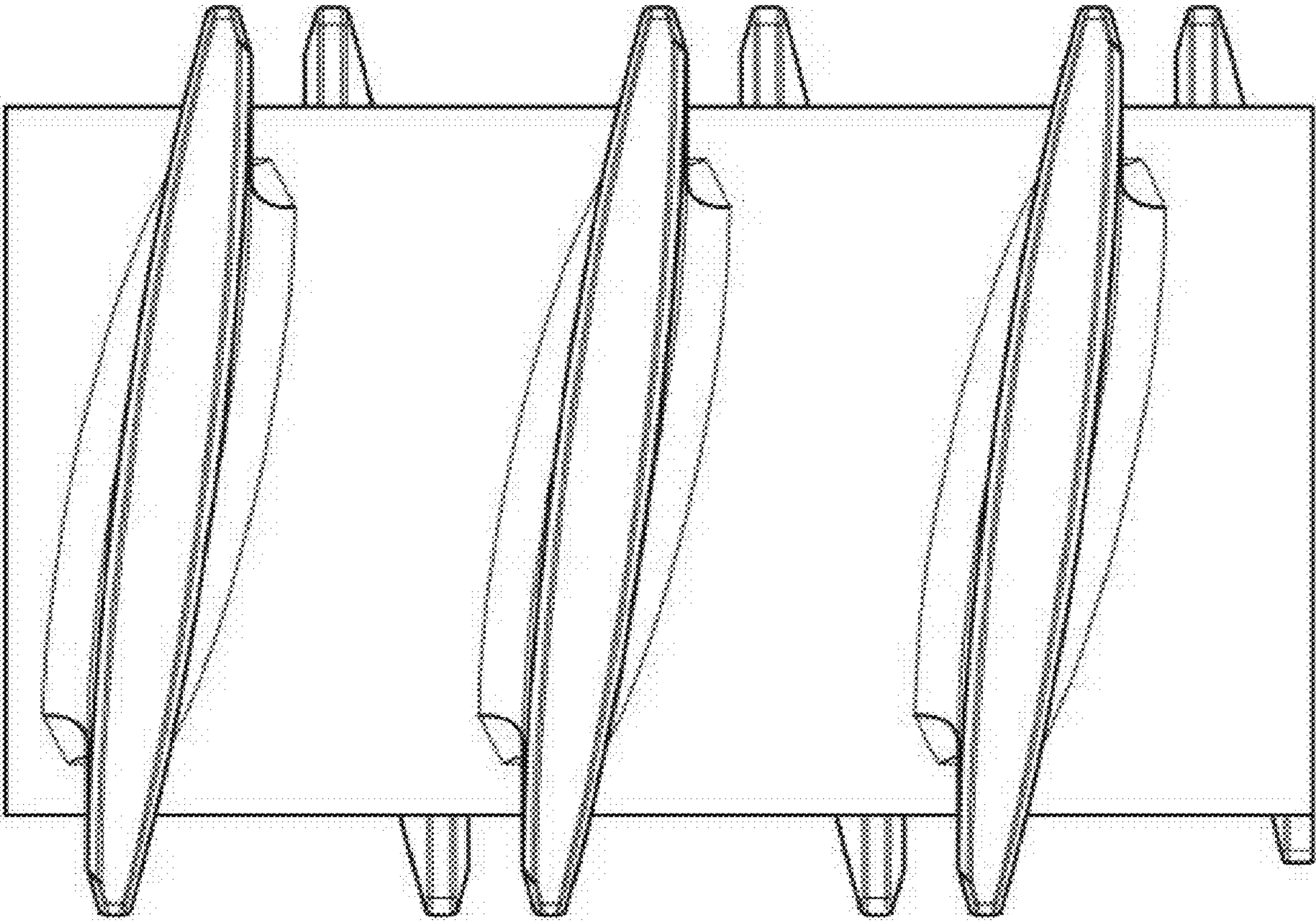


Fig. 12

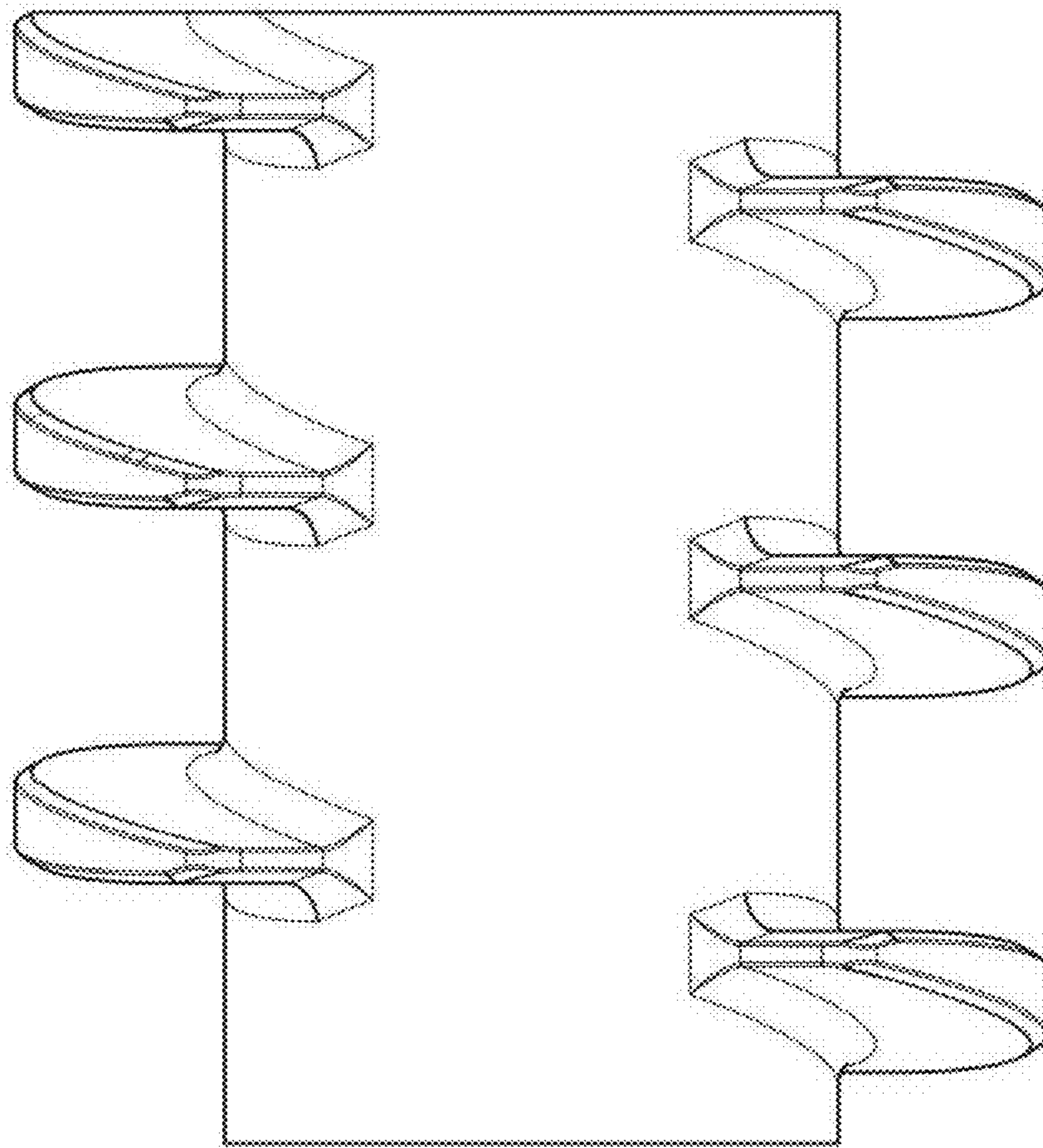


Fig. 13

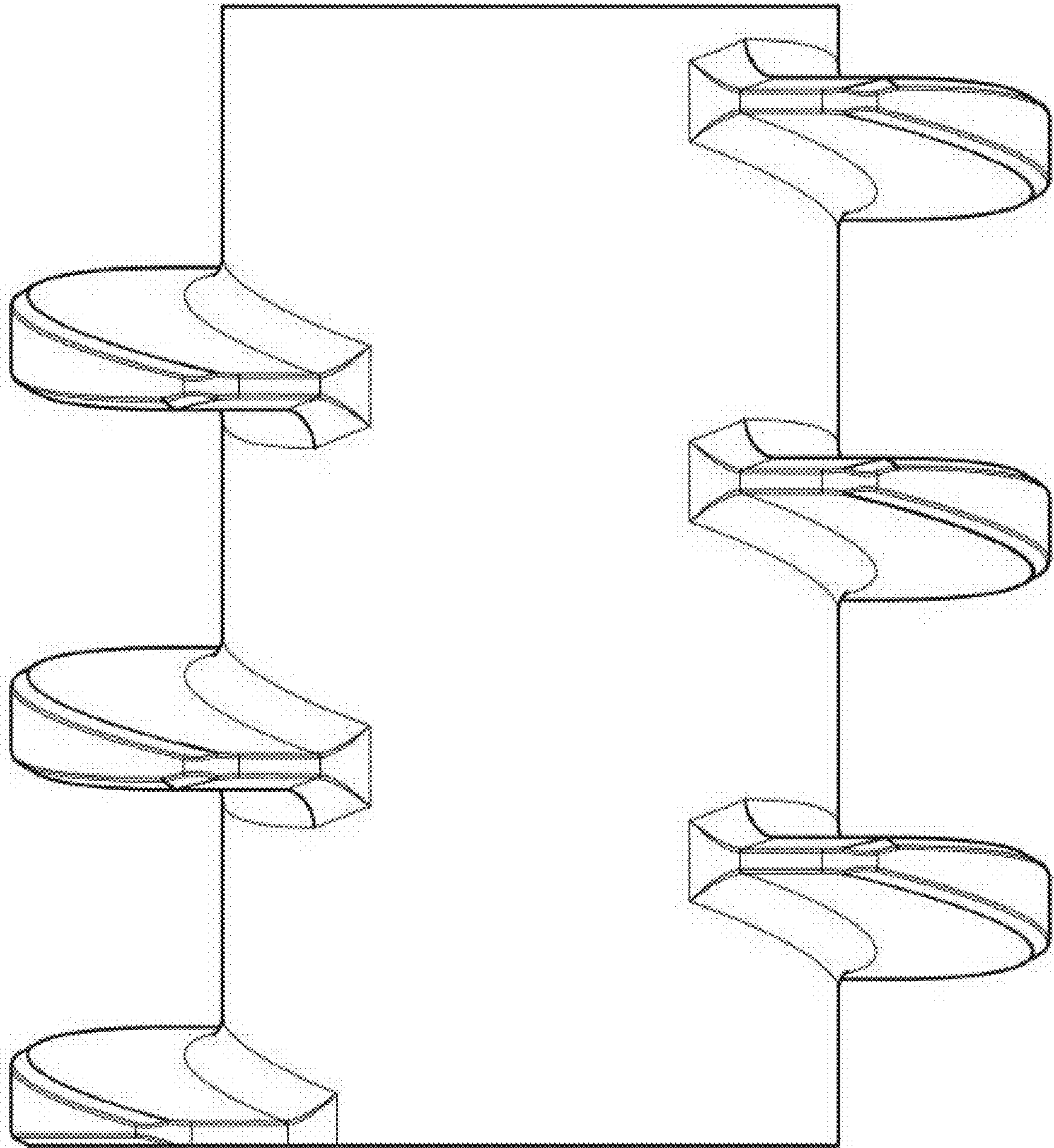


Fig. 14