



US00D817371S

(12) **United States Design Patent** (10) **Patent No.:** **US D817,371 S**
Karol et al. (45) **Date of Patent:** **** May 8, 2018**

(54) **SPROCKET**
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D402,995 S * 12/1998 Hakamata D15/148
D402,996 S * 12/1998 Watanabe D15/148
D434,351 S 11/2000 Takamori
D435,001 S 12/2000 Takamori
D436,561 S 1/2001 Louden
D442,200 S 5/2001 Koch
(Continued)

FOREIGN PATENT DOCUMENTS

EP 1669254 A1 6/2006
JP 2002021981 A * 1/2002 F16H 7/06
(Continued)

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

OTHER PUBLICATIONS

(21) Appl. No.: **29/572,421**
(22) Filed: **Jul. 27, 2016**
(51) **LOC (11) Cl.** **15-99**
(52) **U.S. Cl.**
USPC **D15/148**
(58) **Field of Classification Search**
USPC D12/123, 124, 126, 501, 507; D15/122,
D15/138, 143, 148, 149
CPC F16H 7/06; F16H 7/12
See application file for complete search history.

Camshaft Sprocket Chain Drive, posted on dlbensinger.com, no posted date given, no production date given, [online], [site visited May 11, 2017], Available from Internet, <URL: https://www.dlbensinger.com/product_info.php?manufacturers_id=10&products_id=796>.*
(Continued)

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(74) *Attorney, Agent, or Firm* — Kathleen Chapman

(56) **References Cited**

(57) **CLAIM**

U.S. PATENT DOCUMENTS

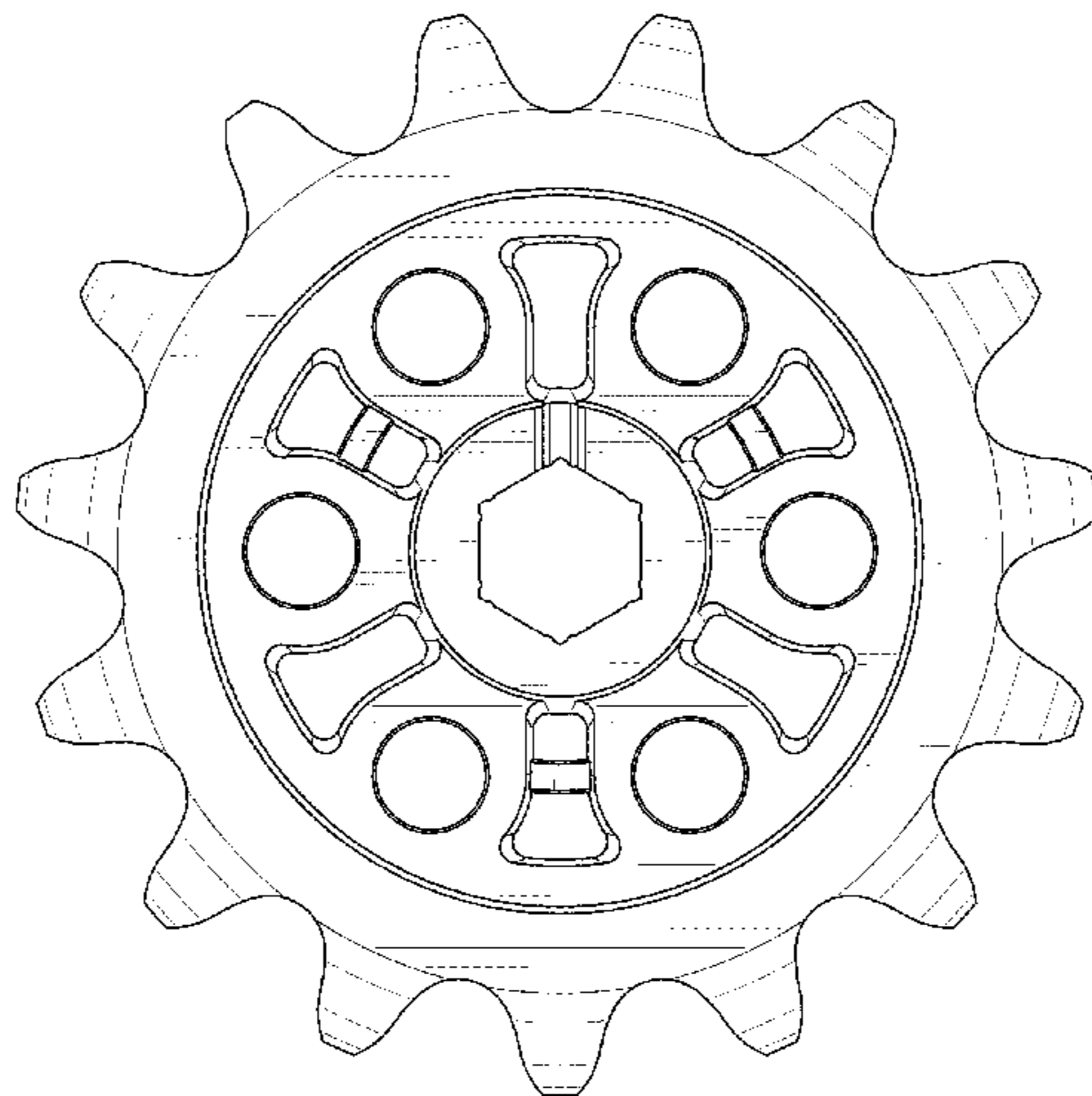
The ornamental design of a sprocket, as shown and described.

1,385,144 A 7/1921 Myers
2,791,911 A * 5/1957 Wasko B22C 9/06
474/154
2,811,819 A 11/1957 Heth
2,859,634 A 11/1958 Walter
3,176,597 A 4/1965 Seaman
3,490,360 A 1/1970 Reynolds
D253,641 S * 12/1979 Tritchka D12/123
4,545,230 A 10/1985 Jungesjo
4,630,498 A 12/1986 Santi
5,137,500 A 8/1992 Lhotak
5,251,711 A 10/1993 Meyer et al.
D396,436 S * 7/1998 Liska D12/123
D399,222 S 10/1998 Chang

DESCRIPTION

FIG. 1 is a front, top, right side perspective view of the sprocket, showing our new design;
FIG. 2 is a front side elevational view thereof;
FIG. 3 is a rear side elevational view thereof;
FIG. 4 is a left side elevational view thereof;
FIG. 5 is a right side elevational view thereof;
FIG. 6 is a top plan view thereof; and,
FIG. 7 is a bottom plan view thereof.

1 Claim, 6 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

D443,880	S	6/2001	Iida	
6,283,076	B1	9/2001	Simpson	
D451,526	S	12/2001	Lee	
D470,861	S	2/2003	Kohno	
D470,862	S	2/2003	Kohno	
D472,843	S	4/2003	Marquez-Pickering	
D473,902	S	4/2003	Panno	
6,722,221	B2 *	4/2004	Maxwell	F01L 1/02 474/902
6,910,980	B2	6/2005	Hamilton	
D527,245	S	8/2006	Kelleghan	
D561,793	S *	2/2008	Kanemitsu	D15/148
7,344,463	B2	3/2008	Reiter	
D585,345	S	1/2009	Maier	
D604,346	S	11/2009	Chiang	
D611,391	S *	3/2010	Bourgeois	D12/127
7,914,408	B2	3/2011	Young	
D641,611	S *	7/2011	Minayoshi	D8/354
D647,118	S	10/2011	Parker	
D668,527	S *	10/2012	Noumi	D8/356
D670,304	S *	11/2012	Shimozaki	D14/483
D670,305	S *	11/2012	Shimozaki	D14/483
D675,130	S	1/2013	Senn	
D683,099	S *	5/2013	Wright	D34/10
D728,432	S	5/2015	Lin	
9,033,835	B2	5/2015	Blank	
D750,676	S	3/2016	Brown	
D765,551	S *	9/2016	Baker, Jr.	D12/123
D774,987	S	12/2016	Miles	
D776,896	S *	1/2017	Paitchell	D34/10
D781,345	S	3/2017	Pratley	
2008/0176688	A1	7/2008	Sakura	

FOREIGN PATENT DOCUMENTS

JP	2007309488	A *	11/2007	F16G 13/16
WO	WO 2007041291	A1	4/2007	

OTHER PUBLICATIONS

Gearbox Front Sprocket, posted on ebay.co.uk, posted Nov. 29, 2016, no production date given, [online], [site visited May 11, 2017], Available from Internet, <URL: <http://www.ebay.co.uk/itm/NEW-Tag-Metals-MX-Honda-CR250R-88-07-CR500R-CRF450-Gearbox-Front-Sprocket-13T-252592369100>>.*

Camshaft Sprocket Chain Drive, posted on dlbersinger.com, no posted date given, no production date given, [online], [site visited May 11, 2017], Available from Internet, <URL: https://www.dlbersinger.com/product_info.php?manufacturers_id=10&products_id=796>.*

Sprocket Hub Gear Guard Kit, posted on ebay.com, no posted date given, no production date given, [online], [site visited May 11, 2017], Available from Internet, <URL: <http://www.ebay.com/itm/191673594110?rmvSB=true>>.*

Suzuki TS1000 1987 Gearbox Front Sprocket, no posted date given, no production date given, [online], [site visited Sep. 22, 2017], Available from Internet, <URL: <http://www.ebay.co.uk/itm/Suzuki-TS1000-1987-Gearbox-Front-Sprocket-126314-122307584706?epid=750887205>

&hash=item1c7a19a2c2:g:bGIAAOSwopRYdg8Z>.*

United 22mm Spline Drive Metro Sprocket, posted on acebmx.com, posted Sep. 17, 2013, no production date given, [online], [site visited May 11, 2017], Available from Internet, <URL: <http://www.acebmx.com/sprockets-bmx-c-60/united-22mm-spline-drive-metro-sprocket-p-3633.html>>.*

#25 Sprockets—VEX Robotics, <http://www.vexrobotics.com/25-sprockets.html>, Innovation First International, Inc. © 2002-2016.

#35 Sprockets—VEX Robotics, <http://www.vexrobotics.com/35-sprockets.html>, Innovation First International, Inc. © 2002-2016.

1.125" Bearing Bore Gears—VEX Robotics, <http://www.vexrobotics.com/bearing-bore-gears.html>, Innovation First International, Inc. © 2002-2016.

Andy Mark, Gears Search—Andy Mark Inc. (<http://www.andymark.com>) <http://www.andymark.com/Gears-s/85.htm> © 2017 AndyMark, Inc.

AndyMark Sprocket Search—AndyMark Inc. (<http://www.andymark.com>) <http://www.andymark.com/Search-s/545.htm?Search=sprocket&Submit=> © 2017 AndyMark, Inc.

AndyMark Wheel Search—Andy Mark Inc. (<http://www.andymark.com>) <http://www.andymark.com/wheel-s/229.htm> © 2017 AndyMark, Inc.

AP Table Chain Gear Assembly, posted on brunswickbowling.com, no posted date given, no production date given, [online], [site visited May 11, 2017], Available from Internet, <URL: <http://www.brunswickbowling.com/products/parts/gs-pinsetter/detail/table-chain-gear-assembly/>>.

Ball Shifter & Dog Gears—VEX Robotics, <http://www.vexrobotics.com/shifter-gears.html>, Innovation First International, Inc. © 2002-2016.

Gear Base Pack—VEX Robotics, <http://www.vexrobotics.com/liq-gear-g.html>, Innovation First International, Inc. © 2002-2016.

Kawada Machine Cut Spur Gear, posted on ebay.com, no posted date given, no production date given, [online], [site visited May 18, 2017], Available from Internet, <URL: http://www.ebay.com/itm/Kawada-Machine-Cut-Spur-Gear-64P-78T-1-10-RC-Cars-Touring-Drift-On-Road-SM6478-/142068863379?_trksid=p2385738.m2548.14275>.

MakeBlock, Wheel Search—MakeBlock Co., Ltd (<http://www.makeblock.com>) <http://www.makeblock.com/index.php?route=product/search&search=wheel> © 2013-2017 Makeblock Co., Ltd.

Makeblock, Gears Search—Makeblock Co., Ltd. (<http://www.makeblock.com>) http://www.makeblock.com/index.php?route=product/category&path=69_99 ©2013-2017 Makeblock Co., Ltd.

Makeblock, Sprocket Search—Makeblock Co., Ltd. (<http://www.makeblock.com>) <http://learn.makeblock.com/en/mechanical-parts/#Sprockets> © 2013-2017 Makeblock Co., Ltd. (1pg.).

Martin Roller Chain Sprocket, posted on amazon.com, earliest review posted Nov. 18, 2012, no production date given, [online], [site visited May 11, 2017], Available from Internet, <URL: <https://www.amazon.com/Martin-Roller-Sprocket-Bored-Single/product-reviews/B004JXWH8C/>

ref=cm_cr_getr_d_paging_btm_3?ie=UTF8

&reviewerType=avp_only_reviews&sortBy=r.

Modern Robotics Wheel Search—Modern Robotics Inc. (<https://www.modernrobotics.com>) <http://www.modernrobotics.com/search?q=wheel> © 2017 Modern Robotics Inc.

Modern Robotics, Gears Search—Modern Robotics, Inc. (<http://www.modernroboticsinc.com>) <http://www.modernroboticsinc.com/search?q=gear> © 2017 Modern Robotics, Inc.

Pitsco Tetrax, Gears Search—Tetrax Robotics (<http://www.tetraxrobotics.com>) <http://www.tetraxrobotics.com/Search/gears?st=0> © 2017 Pitsco, Inc.

Robinson Racing Spur Gear, 72T; NRU, TMX RRP8572, posted on amazon.com, earliest reviewed Jan. 19, 2015, no production date given, [online], [site visited May 18, 2017], Available from Internet, <URL: https://www.amazon.com/Robinson-Racing-Steel-Spur-Gear/dp/B0006N6N7K/ref=sr_1_9?ie=UTF8&qid=1495154175&sr=8-9&keywords=spur+gear>.

Roller chain sprockets and platewheels, posted fbchain.com, no posted date given, no production date given, [online], [site visited May 11, 2017], Available from Internet, <URL: <http://www.fbchain.com/sprockets>>.

Servocity Robotics, Wheel Search—Servocity Robotics (<https://www.servocity.com>) <https://www.servocity.com/catalogsearch/result?q=wheel> © 1999-2016 Robotzone, LLC, ServoCity® is a registered trademark of Robotzone, LLC.

Servocity Robotics, Gears Search—Servocity Robotics (<https://www.servocity.com>) <https://www.servocity.com/catalogsearch/result?q=Gears> © 1999-2016 Robotzone, LLC—ServoCity® is a registered trademark of Robotzone, LLC.

Servocity Robotics, Sprocket Search—Servocity Robotics (<https://www.servocity.com>) <https://www.servocity.com/catalogsearch/re>

(56)

References Cited

OTHER PUBLICATIONS

sult/?q=Sprocket © 1999-2016 Robotzone, LLC—ServoCity® is a registered trademark of Robotzone, LLC.

SparkFun Electronics, Sprocket Search—SparkFun Electronics (<https://www.sparkfun.com>) <https://www.sparkfun.com/search/results?term=sprocket> (Publication date unknown but assumed to be prior to the filing date).

SparkFun Electronics, Gears Search—SparkFun Electronics (<https://www.sparkfun.com>) <https://www.sparkfun.com/search/results?term=gears> (Publication date unknown but assumed to be prior to filing date.).

SparkFun Electronics, Wheel Search—SparkFun Electronics (<https://www.sparkfun.com>) <https://www.sparkfun.com/search/results?term=wheel> (Publication date unknown but assumed to be prior to the filing date.).

Sprockets & Chain—VEX Robotics, <http://vexrobotics.com/sprockets-and-chain.html>, Innovation First International, Inc. © 2002-2016.

Sprockets & Chain Kit—VEX Wiki, https://www.vexrobotics.com/wild/Sprocket_and_Chain_Kit, Innovation First International, Inc. © 2002-2016.

Tetrix Pitsco Wheel Search—Pitsco Inc. (<http://www.servocity.com>) <http://www.tetrixrobotics.com/Search/wheel?st=0> © 2017 Pitsco, Inc.

Tsubaki Sprockets, posted on frasers.com, no posted date given, no production date given [online], [site visited May 11, 2017], Available from Internet, <URL: <http://www.frasers.com/supplier/tsubaki-of-canada-ltd-16573675102/product-category/chain-sprockets-10647377260>>.

Vex Pro Gears—VEX ROBOTICS (<https://www.vexrobotics.com>) <https://www.vexrobotics.com/vexpro/motion/vexpro-gears> © 2002-2017, VEX Robotics, Inc. is a subsidiary of Innovation First International, Inc.

Vex Robotics Gears Search—Vex Robotics (<https://www.vexrobotics.com>) <https://www.vexrobotics.com/catalogsearch/result/?q=gears> © 2002-2017. VEX Robotics, Inc. is a subsidiary of Innovation First International, Inc.

Vex Robotics Sprocket Search—Vex Robotics, Inc. (<https://www.vexrobotics.com>) <https://www.vexrobotics.com/catalogsearch/result/?q=sprocket>.

Vex Robotics Wheel Search—Vex Robotics (<https://www.vexrobotics.com>) <https://www.vexrobotics.com/catalogsearch/result/?q=wheel> © 2002-2017. Robotics, Inc. is a subsidiary of Innovation First International, Inc.

* cited by examiner

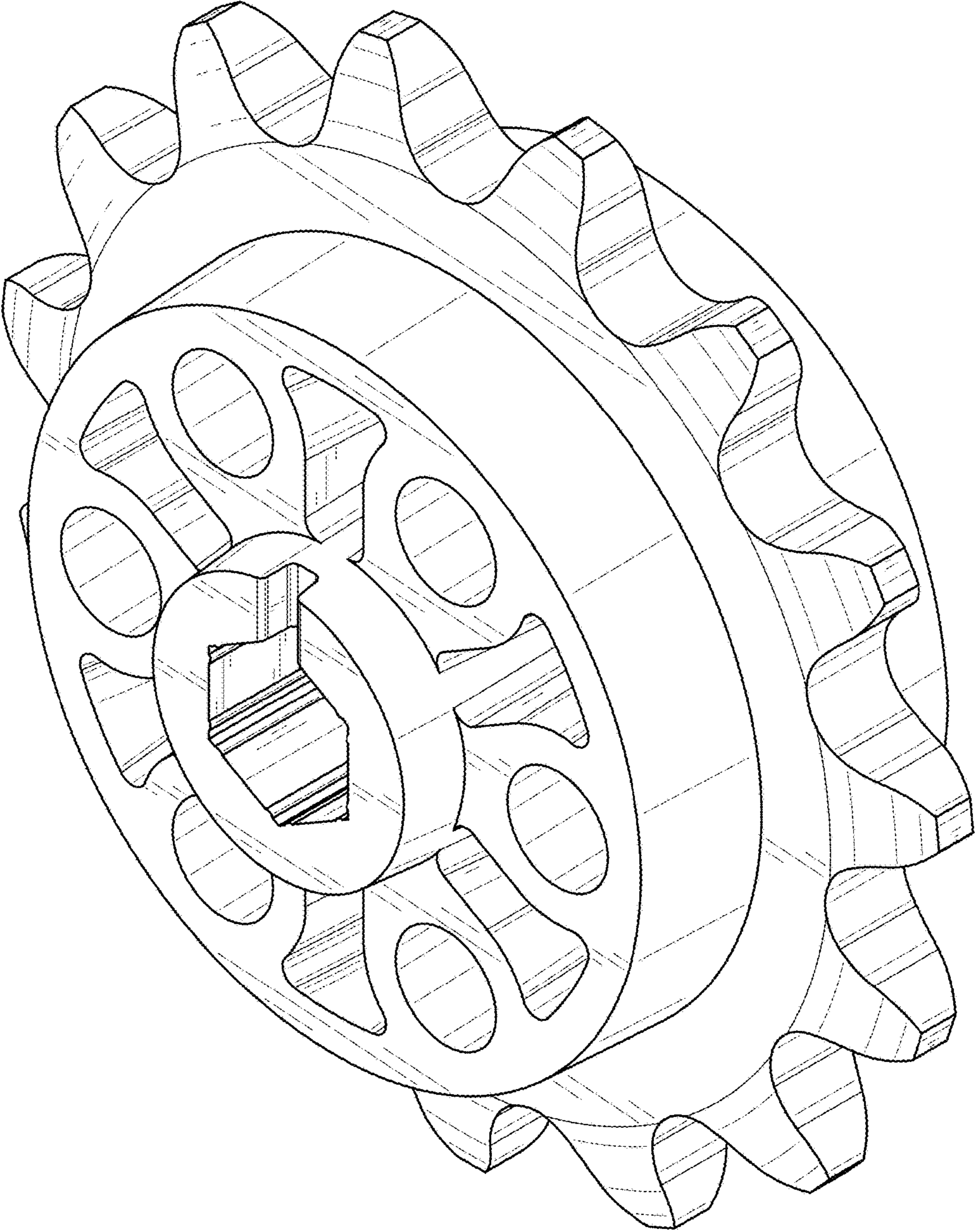


FIG. 1

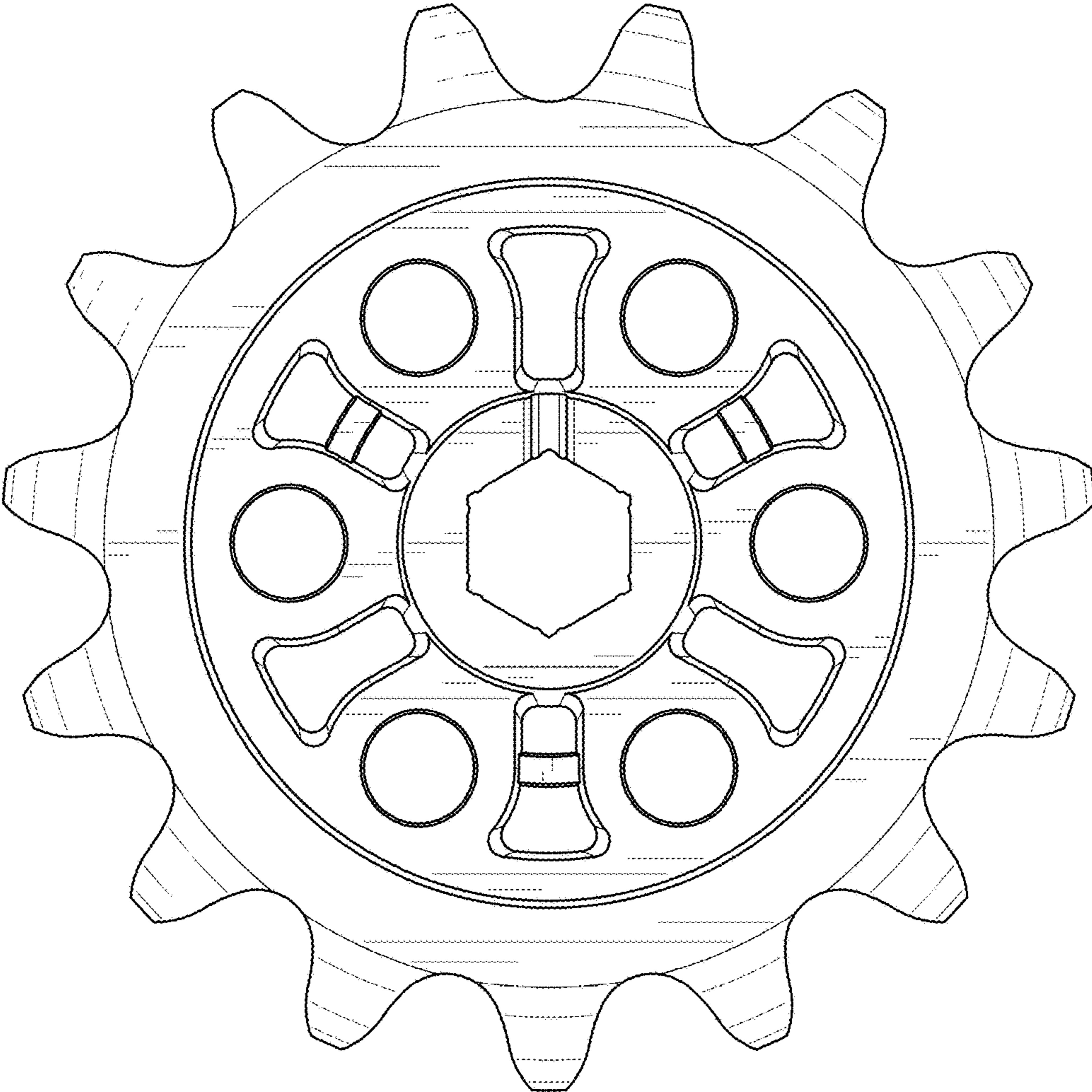


FIG. 2

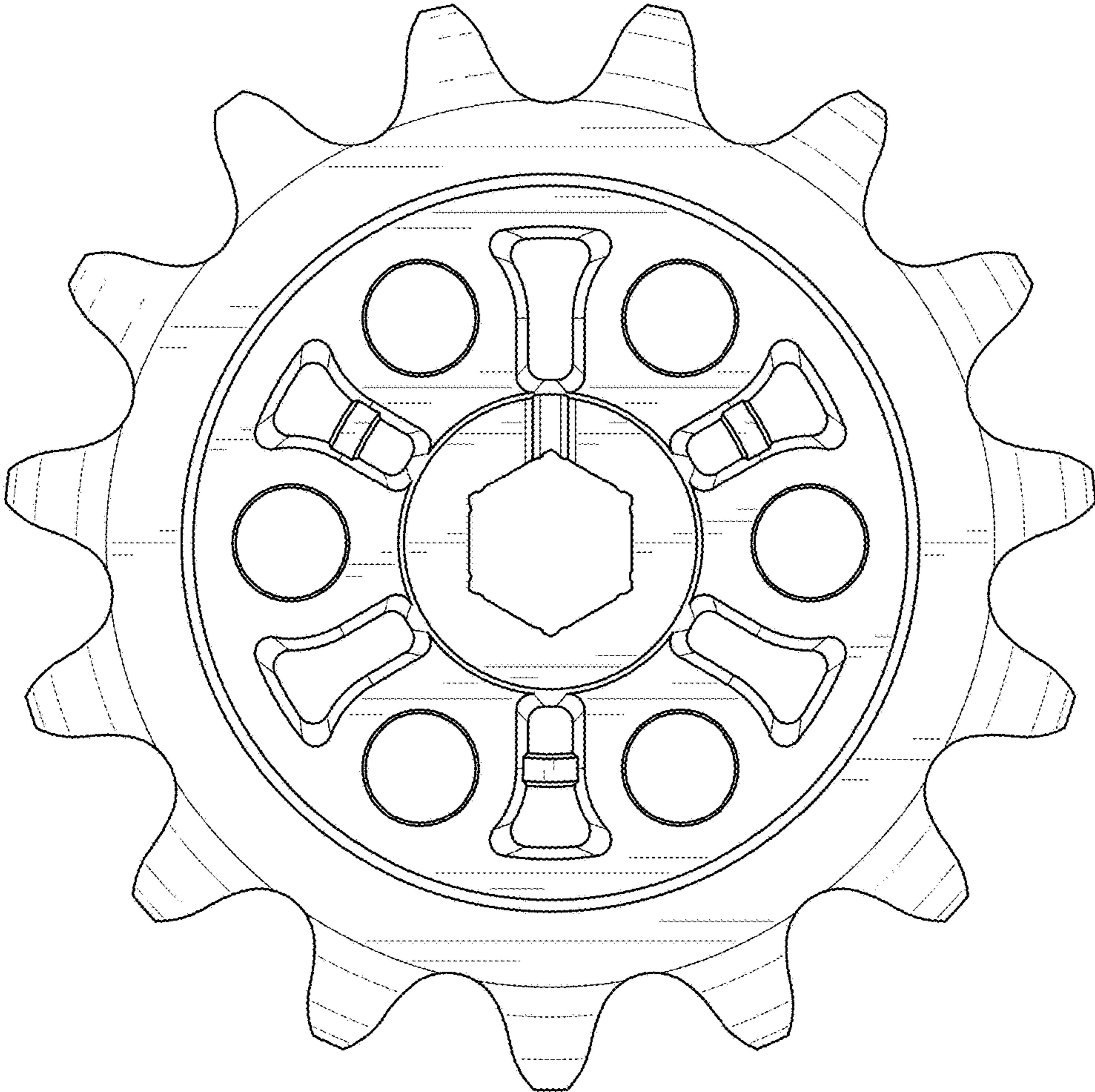


FIG. 3

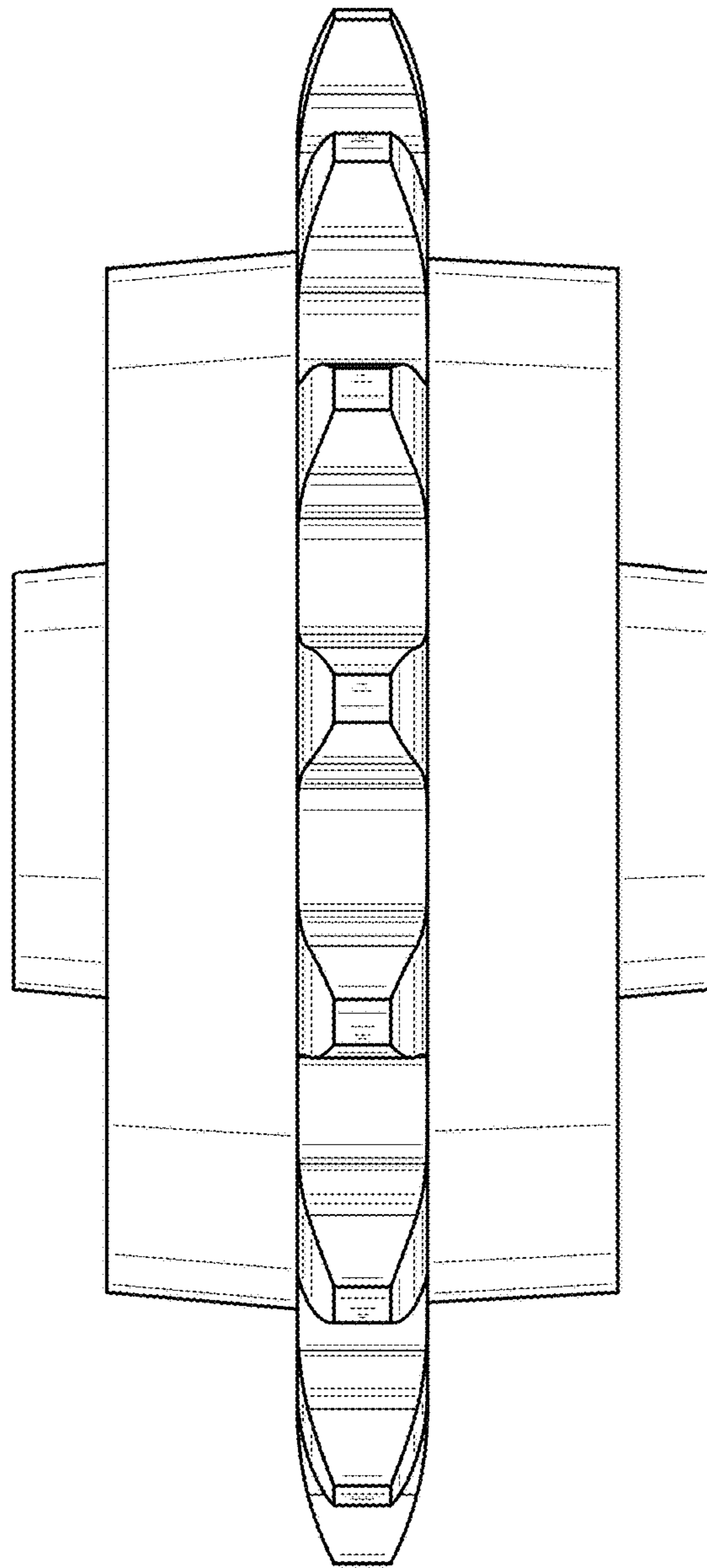


FIG. 4

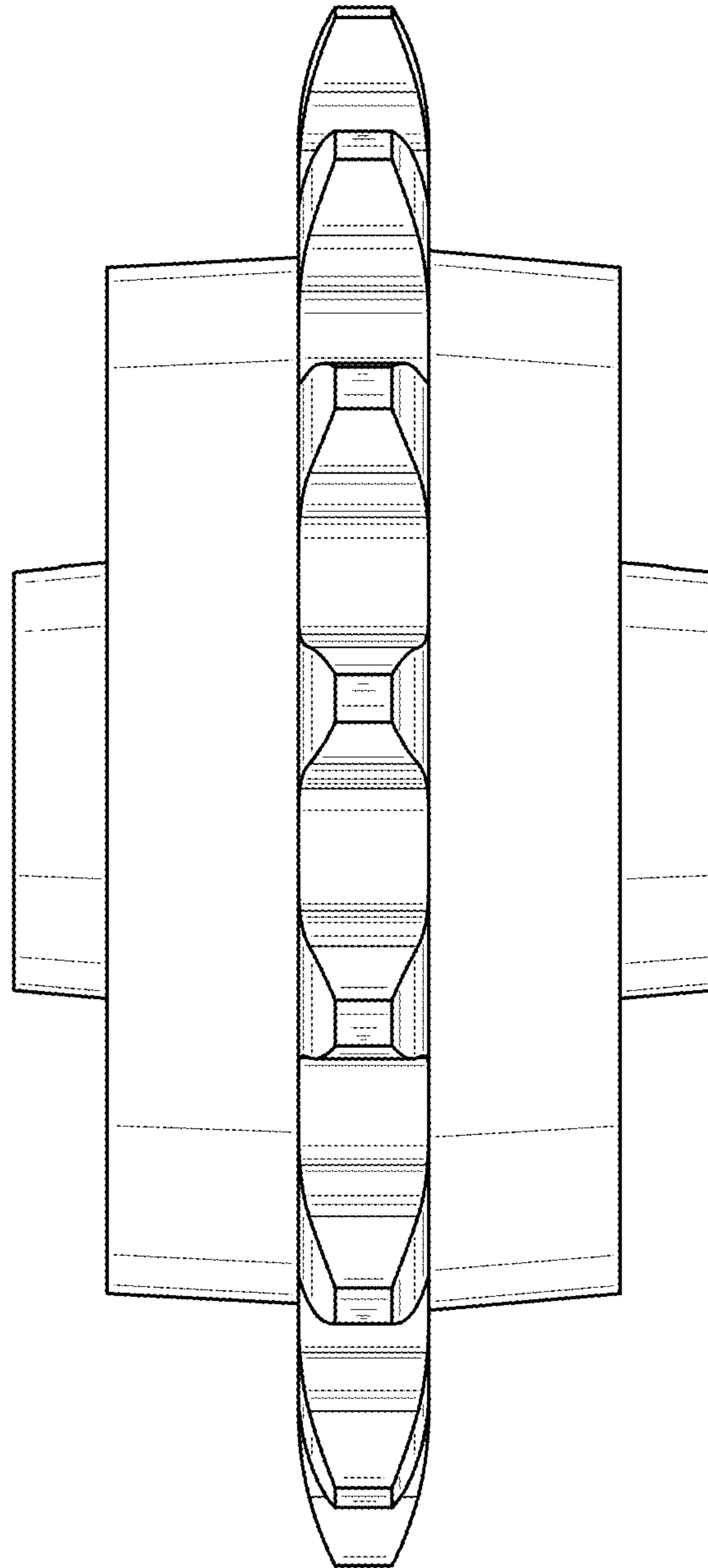


FIG. 5

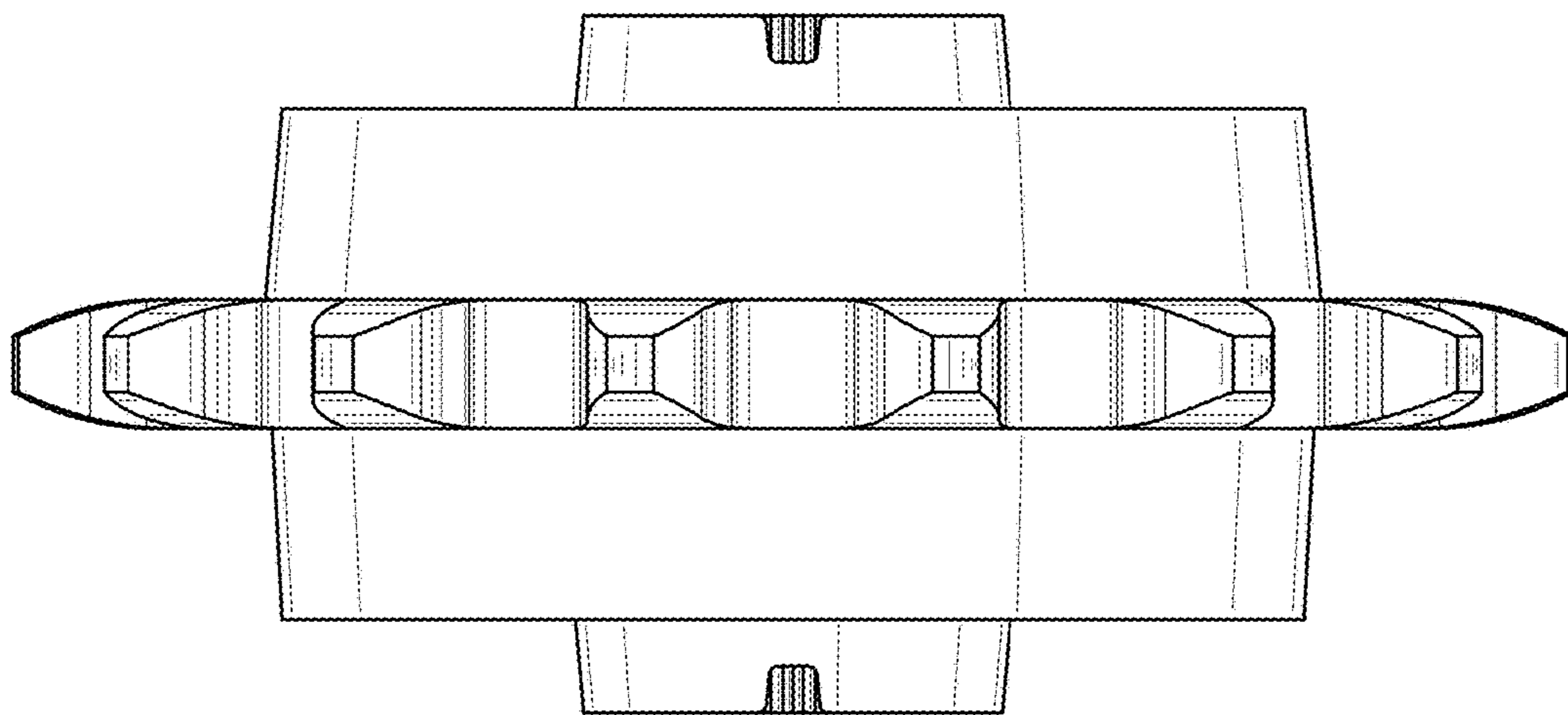


FIG. 6

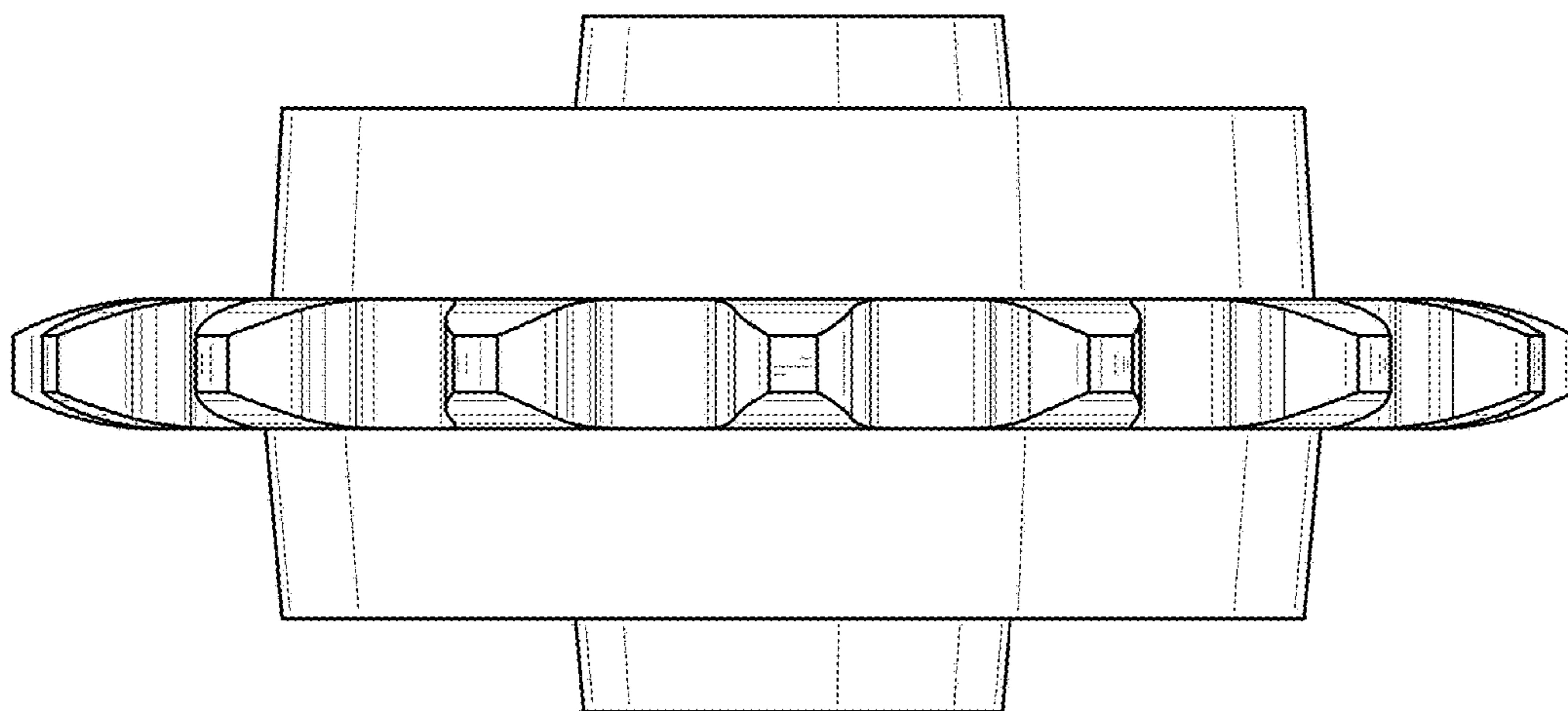


FIG. 7