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(12) **United States Design Patent**
Desberg

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(54) **TWO WHEELED BOARD**

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(73) Assignee: **RAZOR USA LLC**, Cerritos, CA (US)

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USPC **D12/1; D21/763**

(58) **Field of Classification Search**

USPC D12/1; D21/419, 763, 421, 423, 426,
D21/760, 765, 766, 769, 771, 776, 803
CPC A63C 17/01; A63C 17/12; A63C 2203/00;
A63C 2203/01; A63C 2203/012; A63C
2203/013; A63C 2203/40; A63C 2203/52;
A63C 17/0033; A63C 17/016; A63C
17/08; B62D 51/02; B62D 51/001; B62D
61/00; B62D 37/00; B62K 2202/00;
B62K 2207/00; B62K 2207/02; B62K
2207/04; B62K 3/007; B62K 17/00;
B62K 11/007; B60N 2/002; B60G 17/019
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,860,264 A 1/1975 Douglas et al.
4,065,146 A 12/1977 Denzer
4,076,270 A 2/1978 Winchell
4,151,892 A 5/1979 Francken
4,281,734 A 8/1981 Johnston
4,325,565 A 4/1982 Winchell
4,354,569 A 10/1982 Eichholz
4,484,648 A 11/1984 Jephcott
4,556,997 A 12/1985 Takamiya et al.

4,624,469 A 11/1986 Bourne, Jr.
4,712,806 A 12/1987 Patrin
4,874,055 A 10/1989 Beer

(Continued)

FOREIGN PATENT DOCUMENTS

CA 2903571 A1 12/2015
CN 101148184 A 3/2008

(Continued)

OTHER PUBLICATIONS

Alex Banks, Everything You Need to Know About the Hoverboard Craze, HIGHSNOBIETY.COM, Oct. 14, 2015, <http://www.highsnobiety.com/2015/10/14/hoverboard-history>.

(Continued)

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(57) **CLAIM**

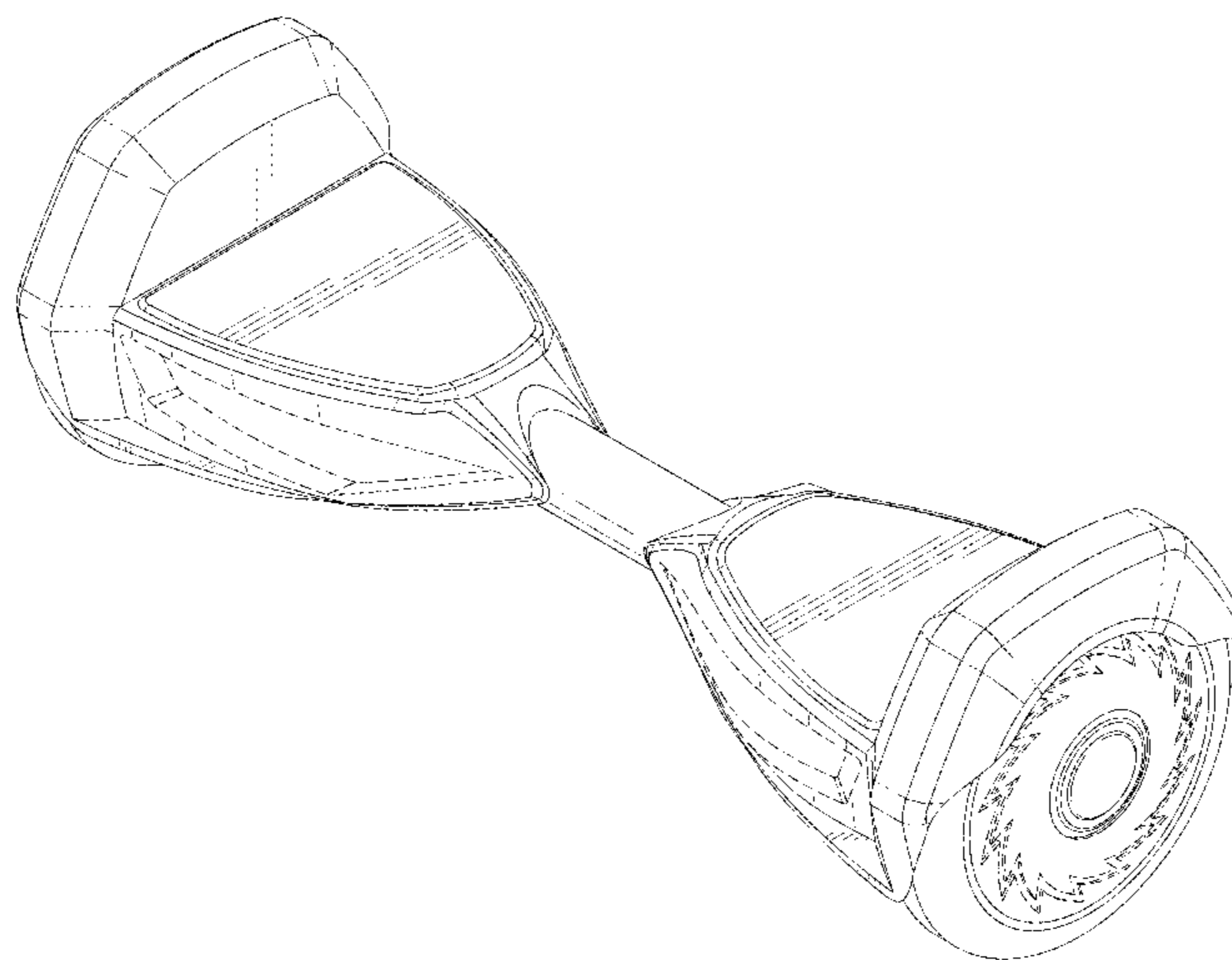
The ornamental design for a two wheeled board, as shown and described.

DESCRIPTION

FIG. 1 is a front, top, left-side perspective view of a two wheeled board showing my new design;
FIG. 2 is a front, bottom, left-side perspective view 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 view thereof; and,
FIG. 8 is a bottom view thereof.

The broken lines shown in the drawings are for the purpose of illustrating portions of the article that form no part of the claimed design.

1 Claim, 5 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

5,011,171	A	4/1991	Cook	D528,468	S	9/2006	Arling et al.
5,165,711	A	11/1992	Tsai	7,130,702	B2	10/2006	Morrell
D355,148	S	2/1995	Orsolini	7,131,706	B2	11/2006	Kamen et al.
5,522,568	A	6/1996	Kamen et al.	7,157,875	B2	1/2007	Kamen et al.
5,571,892	A	11/1996	Fuji et al.	7,174,976	B2	2/2007	Kamen et al.
5,695,021	A	12/1997	Schaffner et al.	7,178,614	B2	2/2007	Ishii
5,701,965	A	12/1997	Kamen et al.	7,182,166	B2	2/2007	Gray et al.
5,701,968	A	12/1997	Wright-Ott et al.	7,210,544	B2	5/2007	Kamen et al.
5,775,452	A	7/1998	Patmont	7,243,572	B1	7/2007	Arling et al.
5,791,425	A	8/1998	Kamen et al.	7,263,453	B1	8/2007	Gansler et al.
5,794,730	A	8/1998	Kamen	D551,592	S	9/2007	Chang et al.
5,848,660	A	12/1998	McGreen	D551,722	S	9/2007	Chang et al.
5,971,091	A	10/1999	Kamen et al.	7,273,116	B2	9/2007	Kamen et al.
5,975,225	A	11/1999	Kamen et al.	7,275,607	B2	10/2007	Kamen et al.
6,050,357	A	4/2000	Staelin et al.	7,303,032	B2	12/2007	Kahlert et al.
6,052,647	A	4/2000	Parkinson et al.	7,338,056	B2	3/2008	Chen et al.
6,062,600	A	5/2000	Kamen et al.	7,357,202	B2	4/2008	Kamen et al.
6,223,104	B1	4/2001	Kamen et al.	7,363,993	B2	4/2008	Ishii
D444,184	S	6/2001	Kettler	7,367,572	B2	5/2008	Jiang
6,273,212	B1	8/2001	Husted et al.	7,370,713	B1	5/2008	Kamen
6,288,505	B1	9/2001	Heinzmann et al.	7,407,175	B2	8/2008	Kamen et al.
6,302,230	B1	10/2001	Kamen et al.	7,437,202	B2	10/2008	Morrell
6,332,103	B1	12/2001	Steenon et al.	7,469,760	B2	12/2008	Kamen et al.
6,357,544	B1	3/2002	Kamen et al.	7,479,872	B2	1/2009	Kamen et al.
6,367,817	B1	4/2002	Kamen et al.	7,481,291	B2	1/2009	Nishikawa
6,386,576	B1	5/2002	Kamen et al.	7,546,889	B2	6/2009	Kamen et al.
6,405,816	B1	6/2002	Kamen et al.	7,592,900	B2	9/2009	Kamen et al.
6,408,240	B1	6/2002	Morrell et al.	D601,922	S	10/2009	Imai et al.
6,415,879	B2	7/2002	Kamen et al.	7,690,447	B2	4/2010	Kamen et al.
6,435,535	B1	8/2002	Field et al.	7,690,452	B2	4/2010	Kamen et al.
6,443,250	B1	9/2002	Kamen et al.	7,703,568	B2	4/2010	Ishii
6,538,411	B1	3/2003	Field et al.	7,708,094	B2	5/2010	Kamen et al.
6,543,564	B1	4/2003	Kamen et al.	7,740,099	B2	6/2010	Field et al.
6,547,026	B2	4/2003	Kamen et al.	7,757,794	B2	7/2010	Heinzmann
6,553,271	B1	4/2003	Morrell	7,779,939	B2	8/2010	Kamen et al.
6,561,294	B1	5/2003	Kamen et al.	7,783,392	B2	8/2010	Oikawa
6,575,539	B2	6/2003	Reich	7,789,174	B2	9/2010	Kamen et al.
6,581,714	B1	6/2003	Kamen et al.	7,812,715	B2	10/2010	Kamen et al.
6,598,941	B2	7/2003	Field et al.	7,857,088	B2	12/2010	Field et al.
6,651,763	B1	11/2003	Kamen et al.	7,900,725	B2	3/2011	Heinzmann et al.
6,651,766	B2	11/2003	Kamen et al.	7,938,207	B2	5/2011	Kamen et al.
D489,027	S	4/2004	Waters	7,950,123	B2	5/2011	Arling et al.
D489,029	S	4/2004	Waters	7,962,256	B2	6/2011	Sterns et al.
6,715,845	B2	4/2004	Kamen et al.	7,979,179	B2	7/2011	Gansler
D489,300	S	5/2004	Chang et al.	8,014,923	B2	9/2011	Ishii et al.
D493,127	S	7/2004	Waters et al.	8,028,777	B2	10/2011	Kakinuma et al.
D493,128	S	7/2004	Waters et al.	8,047,556	B2	11/2011	Jang et al.
D493,129	S	7/2004	Waters et al.	8,074,388	B2	12/2011	Trainer
D493,392	S	7/2004	Waters et al.	8,091,672	B2	1/2012	Gutsch et al.
D494,099	S	8/2004	Maurer et al.	8,146,696	B2	4/2012	Kaufman
6,779,621	B2	8/2004	Kamen et al.	8,162,089	B2	4/2012	Shaw
6,789,640	B1	9/2004	Arling et al.	8,170,780	B2	5/2012	Field et al.
6,796,396	B2	9/2004	Kamen et al.	8,186,462	B2	5/2012	Kamen et al.
6,799,649	B2	10/2004	Kamen et al.	8,225,891	B2	7/2012	Takenaka et al.
6,815,919	B2	11/2004	Field et al.	8,248,222	B2	8/2012	Kamen et al.
6,827,163	B2	12/2004	Amsbury et al.	8,322,477	B2	12/2012	Kamen et al.
6,837,327	B2	1/2005	Heinzmann	8,417,404	B2	4/2013	Yen et al.
6,866,107	B2	3/2005	Heinzmann et al.	8,453,340	B2	6/2013	Van der Merwe et al.
6,868,931	B2	3/2005	Morrell et al.	8,453,768	B2	6/2013	Kamen et al.
6,874,591	B2	4/2005	Morrell et al.	8,467,941	B2	6/2013	Field et al.
6,889,784	B2	5/2005	Troll	8,490,723	B2	7/2013	Heinzmann et al.
6,907,949	B1	6/2005	Wang	8,532,877	B2	9/2013	Oikawa
D507,206	S	7/2005	Wang	8,584,782	B2	11/2013	Chen
6,920,947	B2	7/2005	Kamen et al.	8,684,123	B2	4/2014	Chen
6,929,080	B2	8/2005	Kamen et al.	8,688,303	B2	4/2014	Stevens et al.
6,965,206	B2	11/2005	Kamen et al.	8,738,278	B2	5/2014	Chen
6,969,079	B2	11/2005	Kamen et al.	8,807,250	B2	8/2014	Chen
6,992,452	B1	1/2006	Sachs et al.	8,830,048	B2	9/2014	Kamen et al.
7,000,933	B2	2/2006	Arling et al.	8,860,362	B2	10/2014	Kamen et al.
7,004,271	B1	2/2006	Kamen et al.	8,978,791	B2	3/2015	Ha et al.
7,006,901	B2	2/2006	Wang	9,045,190	B2	6/2015	Chen
7,017,686	B2	3/2006	Kamen et al.	D737,723	S	9/2015	Ying et al.
7,023,330	B2	4/2006	Kamen et al.	D738,256	S	9/2015	Ying et al.
7,090,040	B2	8/2006	Kamen et al.	D739,906	S	9/2015	Chen
7,091,724	B2	8/2006	Heinzmann et al.	9,376,155	B2	6/2016	Ying et al.
				9,403,573	B1 *	8/2016	Mazzei B62D 51/02
				9,452,802	B2	9/2016	Ying et al.
				D778,782	S	2/2017	Chen et al.
				D779,375	S	2/2017	Zeng

(56)

References Cited

U.S. PATENT DOCUMENTS

D780,626 S 3/2017 Li et al.
 D783,452 S 4/2017 Ying
 D783,751 S 4/2017 Yao
 D784,195 S 4/2017 Ying
 D784,196 S 4/2017 Ying
 D784,197 S 4/2017 Ying
 D784,198 S 4/2017 Zhu
 D785,112 S 4/2017 Ying
 D785,113 S 4/2017 Ying
 D785,114 S 4/2017 Ying
 D785,115 S 4/2017 Ying
 D785,736 S 5/2017 Ying
 D786,130 S 5/2017 Huang
 D786,994 S * 5/2017 Chen D21/760
 D803,722 S * 11/2017 Ying D12/1
 D803,963 S 11/2017 Desberg
 D805,429 S * 12/2017 Cao D12/1
 9,840,302 B2 * 12/2017 Zeng B62K 11/007
 D807,457 S 1/2018 Desberg
 D808,300 S 1/2018 Cao
 D808,855 S 1/2018 Zhang et al.
 D808,856 S 1/2018 Zhang et al.
 D808,857 S * 1/2018 Zhang D12/1
 D810,618 S 2/2018 Li
 D812,521 S * 3/2018 Yao D12/1
 2002/0063006 A1 5/2002 Kamen et al.
 2002/0149172 A1 10/2002 Field et al.
 2004/0005958 A1 1/2004 Kamen et al.
 2004/0007399 A1 1/2004 Heinzmann et al.
 2004/0007644 A1 1/2004 Phelps, III et al.
 2004/0055796 A1 1/2004 Heinzmann et al.
 2004/0050611 A1 3/2004 Kamen et al.
 2004/0262871 A1 12/2004 Schreuder et al.
 2005/0126832 A1 6/2005 Amsbury et al.
 2006/0202439 A1 9/2006 Kahlert et al.
 2006/0260857 A1 11/2006 Kakinuma et al.
 2007/0051543 A1 3/2007 Kamen et al.
 2008/0105471 A1 1/2008 Nakashima et al.
 2008/0029985 A1 2/2008 Chen
 2008/0147281 A1 6/2008 Ishii et al.
 2008/0284130 A1 11/2008 Kamen et al.
 2009/0032323 A1 2/2009 Kakinuma et al.
 2009/0055033 A1 2/2009 Gansler et al.
 2009/0078485 A1 3/2009 Gutsch et al.
 2009/0105908 A1 4/2009 Casey et al.
 2010/0025139 A1 2/2010 Kosaka et al.
 2010/0033315 A1 2/2010 Kamen et al.
 2010/0114468 A1 5/2010 Field et al.
 2010/0121538 A1 5/2010 Ishii et al.
 2010/0207564 A1 8/2010 Robinson
 2010/0217497 A1 8/2010 Kamen et al.
 2010/0222994 A1 9/2010 Field et al.
 2010/0237645 A1 9/2010 Trainer
 2011/0209929 A1 9/2011 Heinzmann et al.
 2011/0220427 A1 9/2011 Heinzmann et al.
 2011/0221160 A1 9/2011 Shaw et al.
 2011/0238247 A1 9/2011 Yen et al.
 2012/0205176 A1 8/2012 Ha et al.
 2012/0239284 A1 9/2012 Field et al.
 2012/0290162 A1 11/2012 Stevens et al.
 2012/0310464 A1 12/2012 Kamen et al.
 2013/0010825 A1 1/2013 Kamen et al.
 2013/0032422 A1 2/2013 Chen
 2013/0032423 A1 2/2013 Chen
 2013/0092461 A1 4/2013 Kamen et al.
 2013/0099565 A1 4/2013 Sachs et al.
 2013/0105239 A1 5/2013 Fung
 2013/0228385 A1 9/2013 Chen
 2013/0238231 A1 9/2013 Chen
 2013/0268145 A1 10/2013 Kamen et al.
 2014/0091622 A1 4/2014 Lucas et al.
 2014/0163855 A1 6/2014 Field et al.
 2014/0188316 A1 7/2014 Heinzmann et al.
 2014/0222267 A1 8/2014 Stevens et al.
 2014/0339003 A1 11/2014 Kamen et al.

2015/0096820 A1 4/2015 Strack
 2016/0129963 A1 5/2016 Ying et al.
 2016/0207584 A1 7/2016 Ying et al.
 2016/0325803 A1 * 11/2016 Waxman B62M 7/12
 2017/0144718 A1 * 5/2017 Tinaphong B62K 11/007
 2017/0158275 A1 * 6/2017 Yang B62K 3/007
 2017/0166278 A1 * 6/2017 Lu B62K 3/007
 2017/0183053 A1 * 6/2017 Zeng B62K 11/007
 2017/0217529 A1 * 8/2017 Chen B62K 11/007
 2017/0297653 A1 * 10/2017 Zheng B62K 3/007
 2018/0037290 A1 * 2/2018 Ying B62K 11/007
 2018/0037293 A1 * 2/2018 Chen B62K 23/08

FOREIGN PATENT DOCUMENTS

CN 101157376 A 4/2008
 CN 101920728 12/2010
 CN 101565073 B 1/2011
 CN 201824899 U 5/2011
 CN 102602481 A 7/2012
 CN 203158157 U 8/2013
 CN 203381739 U 1/2014
 CN 104014123 A 9/2014
 CN 104029769 A 9/2014
 CN 203844875 U 9/2014
 CN 203996649 U 12/2014
 CN 204050913 U 12/2014
 CN 102514662 B 4/2015
 CN 102514663 B 5/2015
 CN 104859773 A 8/2015
 CN 104922891 A 9/2015
 CN 104922893 A 9/2015
 CN 104954476 A 9/2015
 CN 105151181 A 12/2015
 CN 204864865 U 12/2015
 CN 204952213 U 1/2016
 CN 205005082 U 1/2016
 CN 105329387 A 2/2016
 CN 105329388 A 2/2016
 CN 105346606 A 2/2016
 CN 105346607 A 2/2016
 CN 105346643 A 2/2016
 CN 105346649 A 2/2016
 CN 105346650 A 2/2016
 CN 105346651 A 2/2016
 CN 105416464 A 3/2016
 CN 105416484 A 3/2016
 CN 105416485 A 3/2016
 CN 105416486 A 3/2016
 CN 205150007 U 4/2016
 CN 205150114 U 4/2016
 CN 205160428 U 4/2016
 CN 205186320 U 4/2016
 CN 205186321 U 4/2016
 CN 205186322 U 4/2016
 CN 105539664 A 5/2016
 CN 105539665 A 5/2016
 CN 105539666 A 5/2016
 CN 105539695 A 5/2016
 DE 3411489 10/1984
 DE 44 04 594 8/1995
 DE 10209093 9/2003
 DE 202014010564 U1 1/2016
 EP 2987712 A1 2/2016
 GB 2529565 A 2/2016
 JP 52-044933 4/1977
 JP 57-87766 6/1982
 JP 57-110569 7/1982
 JP 59-73372 4/1984
 JP 61-31685 2/1986
 JP 62-12810 1/1987
 JP 63-305082 6/1987
 JP 2-190277 7/1990
 JP 4-201793 7/1992
 JP 5-213240 8/1993
 JP 6-105415 4/1994
 JP 6-171562 6/1994
 JP 10-023613 1/1998
 JP H03-070015 5/2000

(56)

References Cited

FOREIGN PATENT DOCUMENTS

JP	2006-001384	A	1/2006
JP	2010-254216	A	11/2010
TW	M516550	U	2/2016
WO	WO 86/05752		10/1986
WO	WO 89/06117		7/1989
WO	WO 96/23478		8/1996
WO	WO 98/46474		10/1998
WO	WO 00/75001		12/2000
WO	WO 2003/68342		2/2003
WO	WO 2004/07264		1/2004
WO	WO 2015/188599	A1	12/2015

OTHER PUBLICATIONS

Alex Kantrowitz, Everything You Need to Know About the Hoverboard Craze, Buzzfeed.Com Aug. 27, 2015, https://www.buzzfeed.com/alexkantrowitz/a-crash-course-inhoverboards?utm_term=.qw5Z9x47Z#.oc1W1v56W.

Ben Detrick, Celebrities on Scooters (Catch Them If You Can), the New York Times Aug. 15, 2015, http://www.nytimes.com/2015/08/16/fashion/cara-delevingne-justinbieber-meek-mill-stephen-curry-on-scooters.html?_r=%200.

Blankespoor et al., Experimental Verification of the Dynamic Model for a Quarter Size Self-Balancing Wheelchair, Proceeding of the 2004 American Control Conference, Boston, MA, vol. 1, pp. 488-492.

Georgia Wells, What It's Like to Have Wheels for Feet: Test Driving the Latest 'Hoverboards', the Wall Street Journal (Oct. 28, 2015), <http://www.wsj.com/articles/what-its-like-to-have-wheels-forfeet-test-driving-the-latest-hoverboards-1446055640>.

Hu et al., Self-balancing Control and Manipulation of a Glove Puppet Robot on a Two-Wheel Mobile Platform, 2009 IEEE/RSJ International Conference on Intelligent Robots and Systems, St. Louis, MO, 2009, pp. 424-425.

"Inventist Inc, Solo Wheel, Orbit wheel @ Toy Fair 2013" <https://www.youtube.com/watch?v=w8rHKCjLAWI>, Feb. 10, 2013.

IO Hawk—Intelligent Personal Mobility Device, <https://web.archive.org/web/20150718144409/http://iohawk.com>, Jul. 18, 2015, in 9 pages.

John D. Bash, How Do Self Balancing Scooters Work?, BESTELECTRICOVERBOARD.COM (Nov. 12, 2015), <https://bestelectrichoverboard.com/hoverboard-faq/how-do-selfbalancing-scooters-work/>.

Kim et al., Development of a Two-Wheeled Mobile Tilting & Balancing (MTB) Robot, 2011 11th International Conference on Control, Automation and Systems (ICCAS), Gyeonggi-do, 2011, pp. 1-6.

Li et al., A coaxial couple wheeled equilibrium robot with T-S fuzzy equilibrium control, *Industrial Robot: An International Journal*, vol. 38, Issue 3, pp. 292-300, 2011.

Mandy Robinson, Hoverboard Black Friday Sales: Best Places to Get One Before Christmas, *Inquisitr.com*, Nov. 24, 2015, <http://www.inquisitr.com/2589773/hoverboard-black-friday-sales-best-10107994-iv-places-to-get-one-before-christmas/>.

Mike Murphy, Everything You've Ever Wanted to Know About the Hoverboard Craze, *Quartz* Nov. 11, 2015, <http://qz.com/495935/everything-youve-ever-wanted-to-know-aboutthe-hoverboard-craze/>.

Sasaki et al., Forward and Backward Motion Control of Personal Riding-type Wheeled Mobile Platform, Proceedings of the 2004 IEEE International Conference on Robotics and Automation, vol. 4, pp. 3331-3336.

Schoonwinkel, A, Design and Test of a Computer-Stabilized Unicycle, Stanford University (1988), UMI Dissertation Services.

'They're Completely Different Products': IO Hawk President John Soibatian Not Concerned About Infringing Hovertrax Patent, *Hoverguru.com* (2015), <http://hoverguru.com/posts/theyrecompletely-different-products-io-hawk-president-john-soibatian-not-concerned-about-infringing-on-hovertrax-patent/> (last visited Dec. 27, 2016).

Tsai et al., Development of a Self-Balancing Human Transportation Vehicle for the Teaching of Feedback Control, *IEEE Transactions on Education*, vol. 52, No. 1, Feb. 2009.

Vos, D., Dynamics and Nonlinear Adaptive Control of an Autonomous Unicycle, Massachusetts Institute of Technology, 1989.

Vos, D., Nonlinear Control of an Autonomous Unicycle Robot: Practical Issues, Massachusetts Institute of Technology, 1992.

Yu et al., Development of a Omni-directional Self-Balancing Robot Wheelchair, *Journal of Korea Robotics Society*, vol. 8, Iss. 4, pp. 229-237 (2013).

CNET, Screenshots of "First look at the Razor Hovertrax 2.0 with Jake Krol" video, posted on Jul. 13, 2016, in 28 pages.

Kickstarter, Comments on Hovertrax by Inventist, <https://www.kickstarter.com/projects/687658339/hovertrax/comments>, apparently available Oct. 2014, in 16 pages.

Kickstarter, "Hovertrax by Inventist," <https://web.archive.org/web/20130504083823/http://kickstarter.com/projects/687658339/hovertrax?>, May 4, 2013, in 11 pages.

Inventist, Inc. "Hovertrax Guide and Manual," 2014, in 15 pages.

Sasaki, Makiko et al., "Steering Control of the Personal Riding-type Wheeled Mobile Platform (Pmp)," vol. 4 of 4, IEEE, RSJ International Conference on Intelligent Robots and Systems, Aug. 2-6, 2005, in 60 pages.

Sino US Times, Interview of Mr. Ying, <http://www.chic-robot.com/index.php/news/info/54>, Jan. 26, 2016, in 15 pages.

Kawaji, S., Stabilization of Unicycle Using Spinning Motion, *Denki Gakkai Ronbunshi, D*, vol. 107, Issue 1, Japan (1987), pp. 21-28.

* cited by examiner

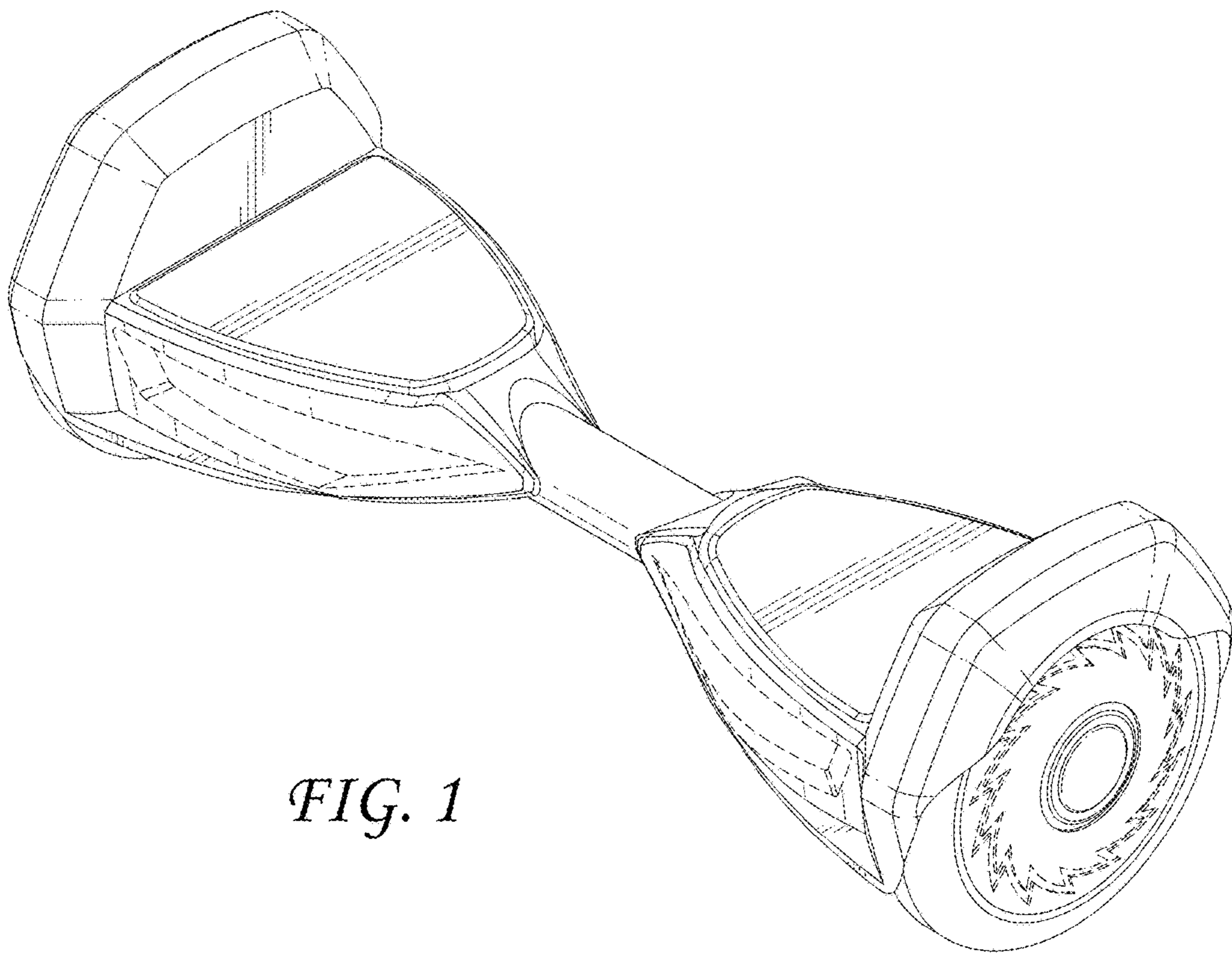


FIG. 1

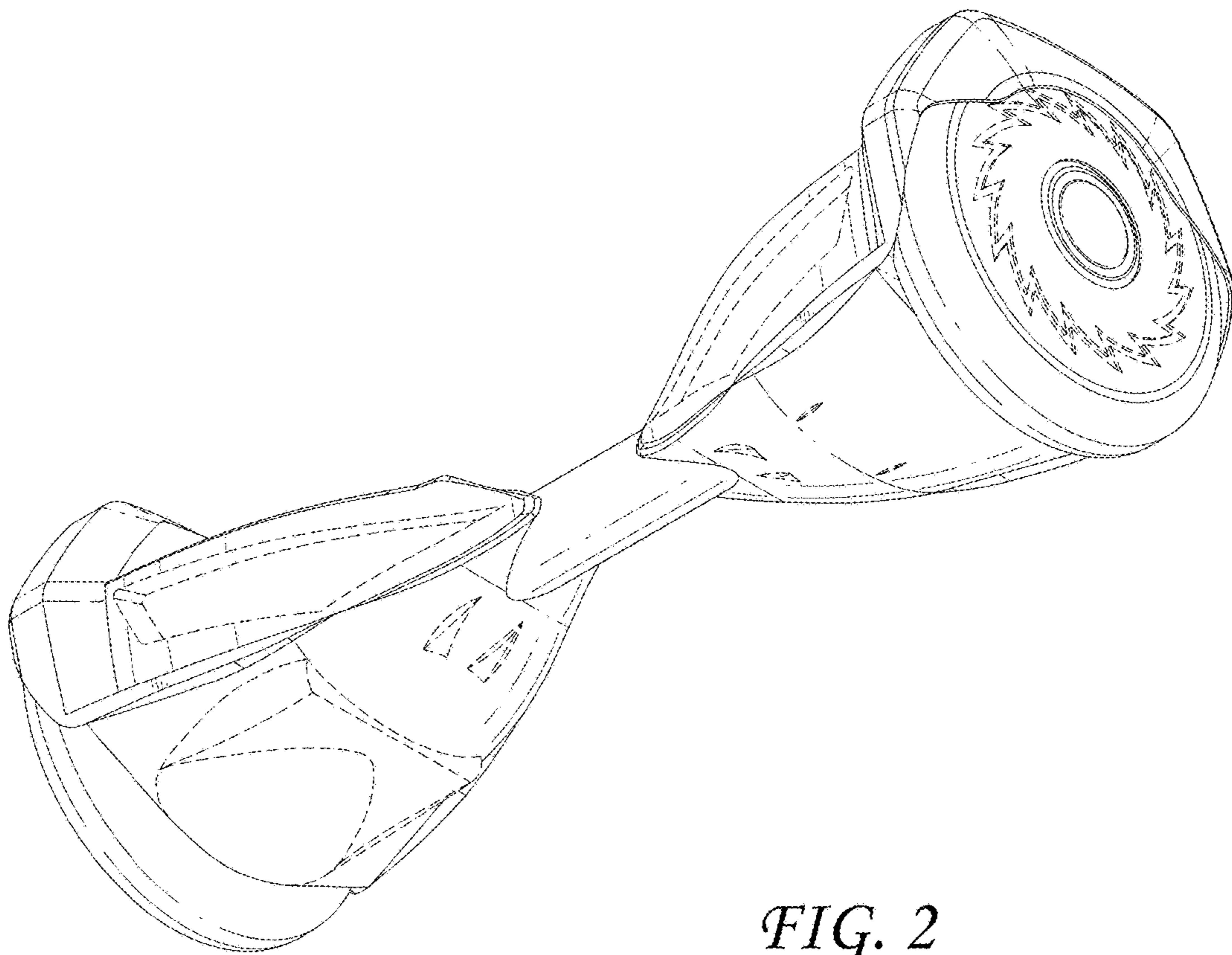


FIG. 2

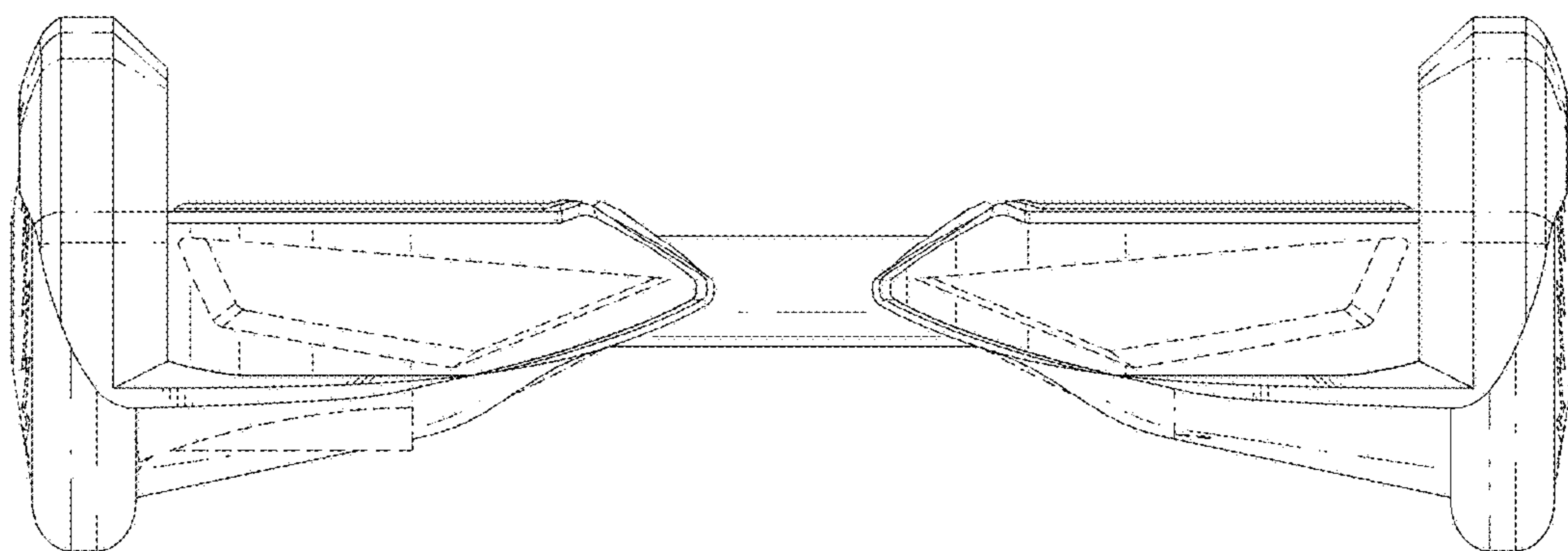


FIG. 3

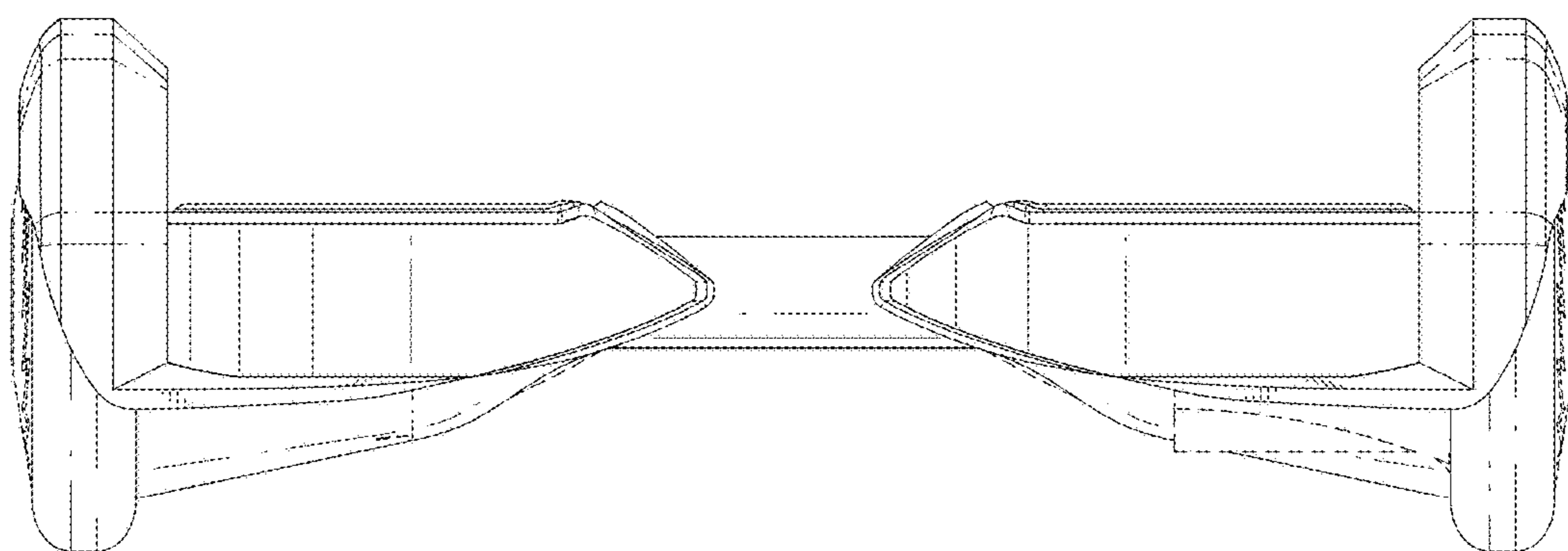


FIG. 4

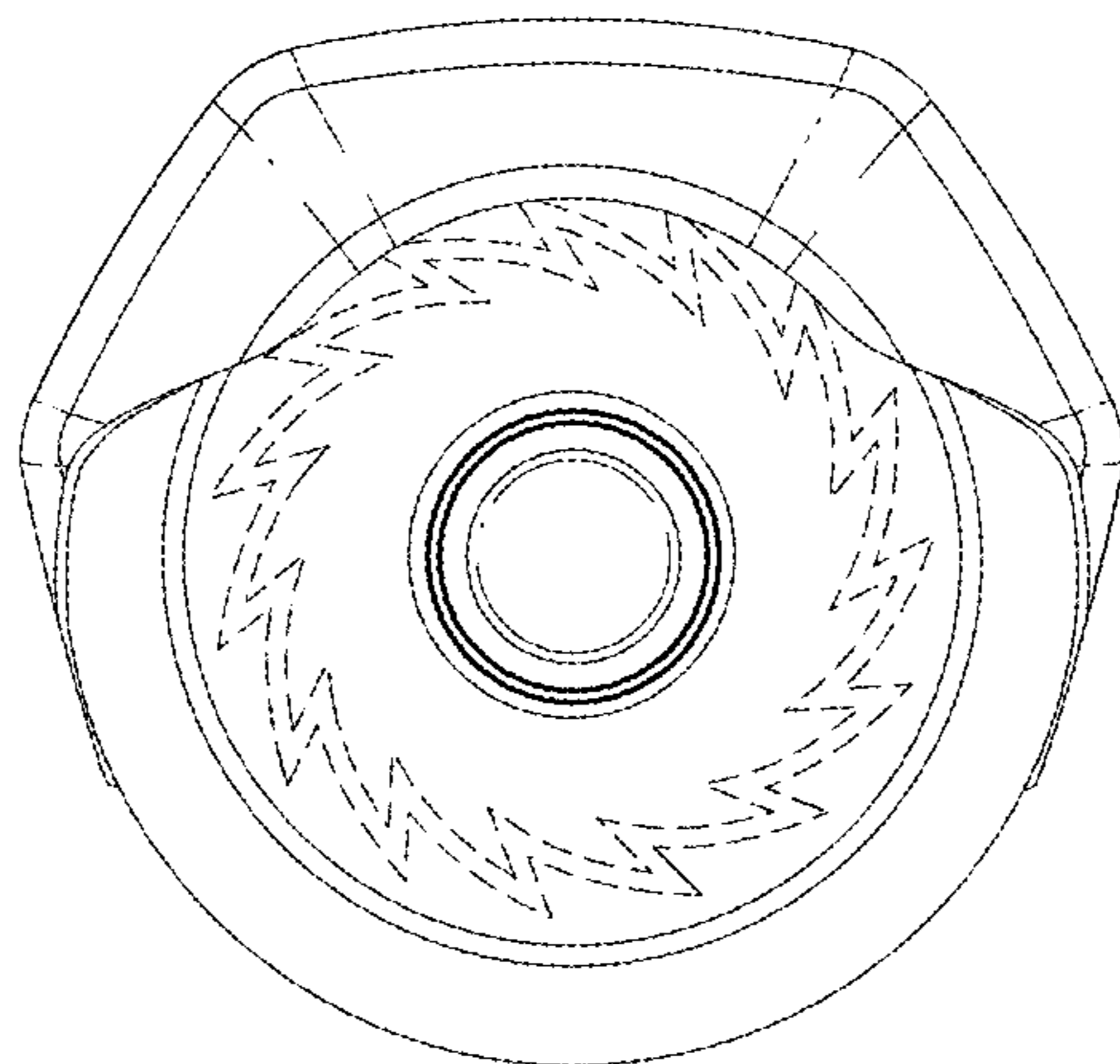


FIG. 5

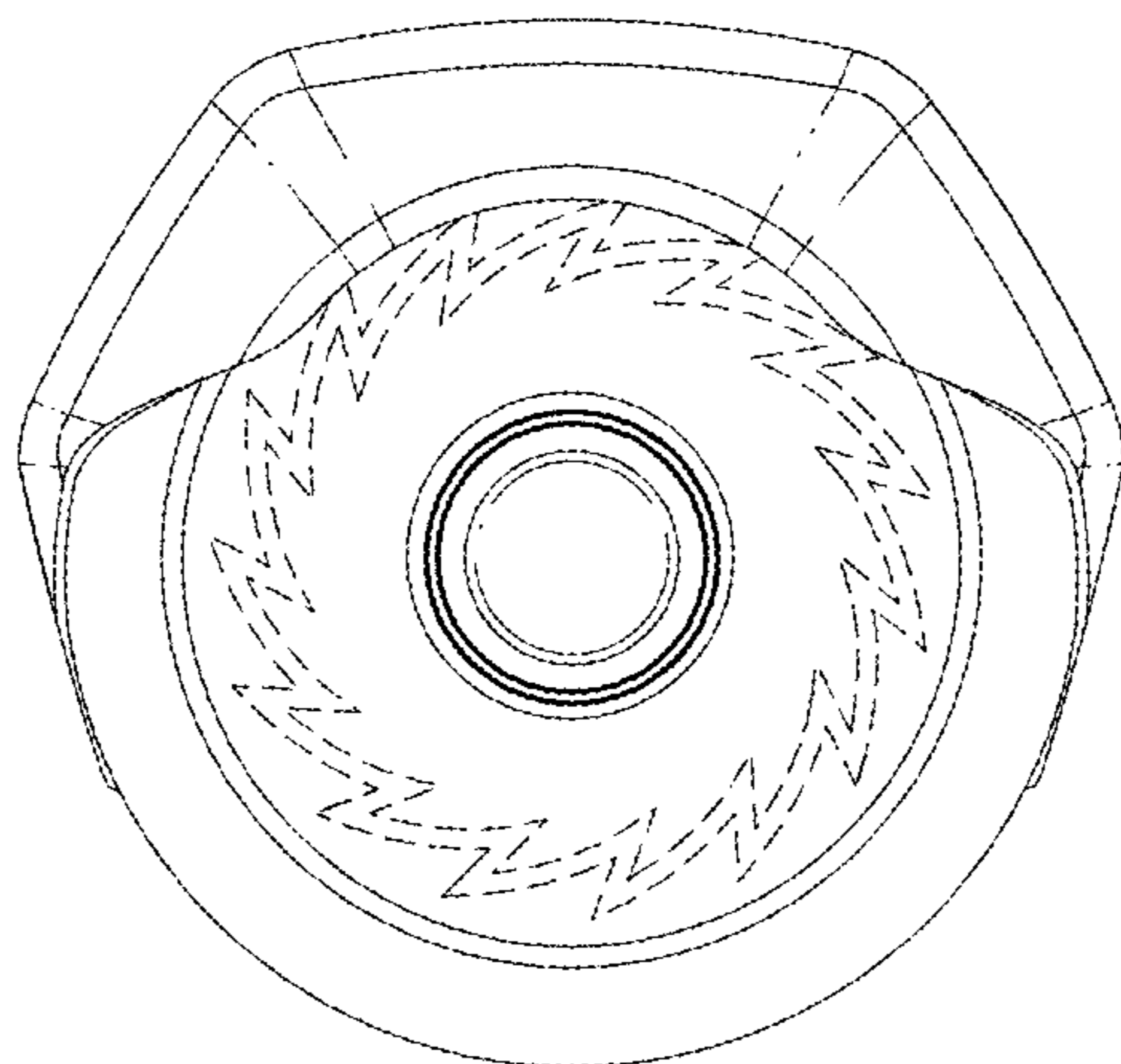


FIG. 6

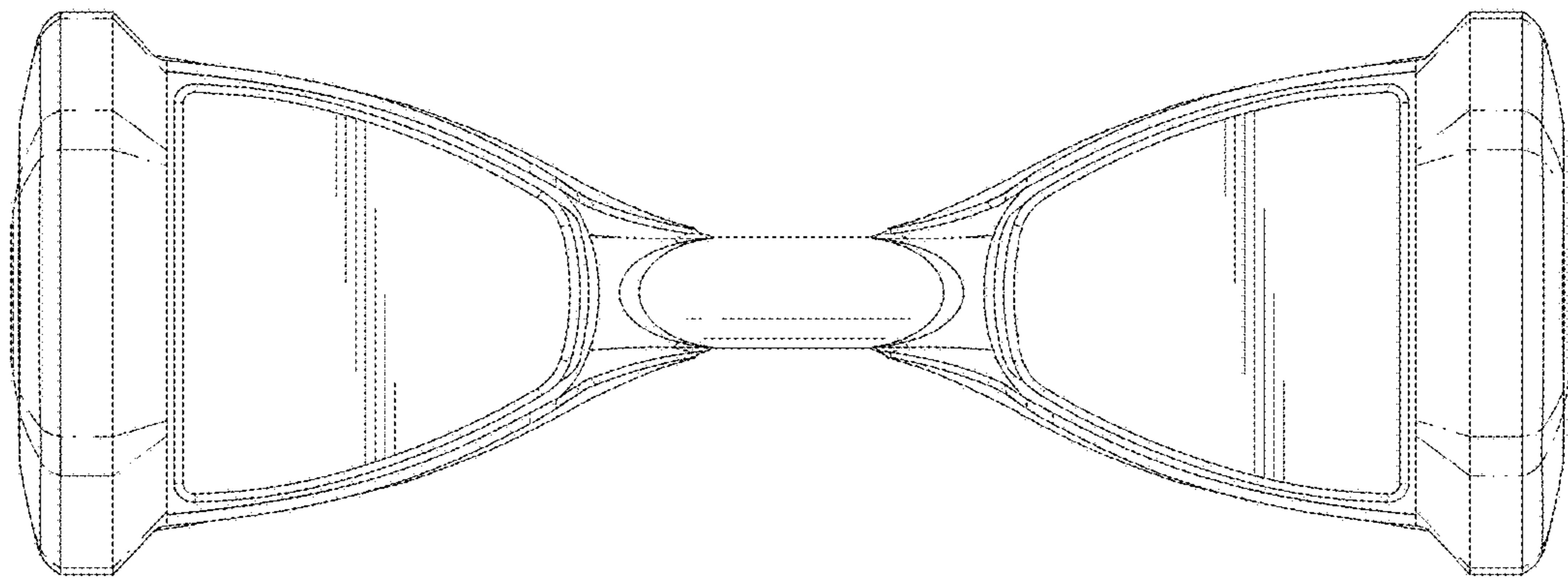


FIG. 7

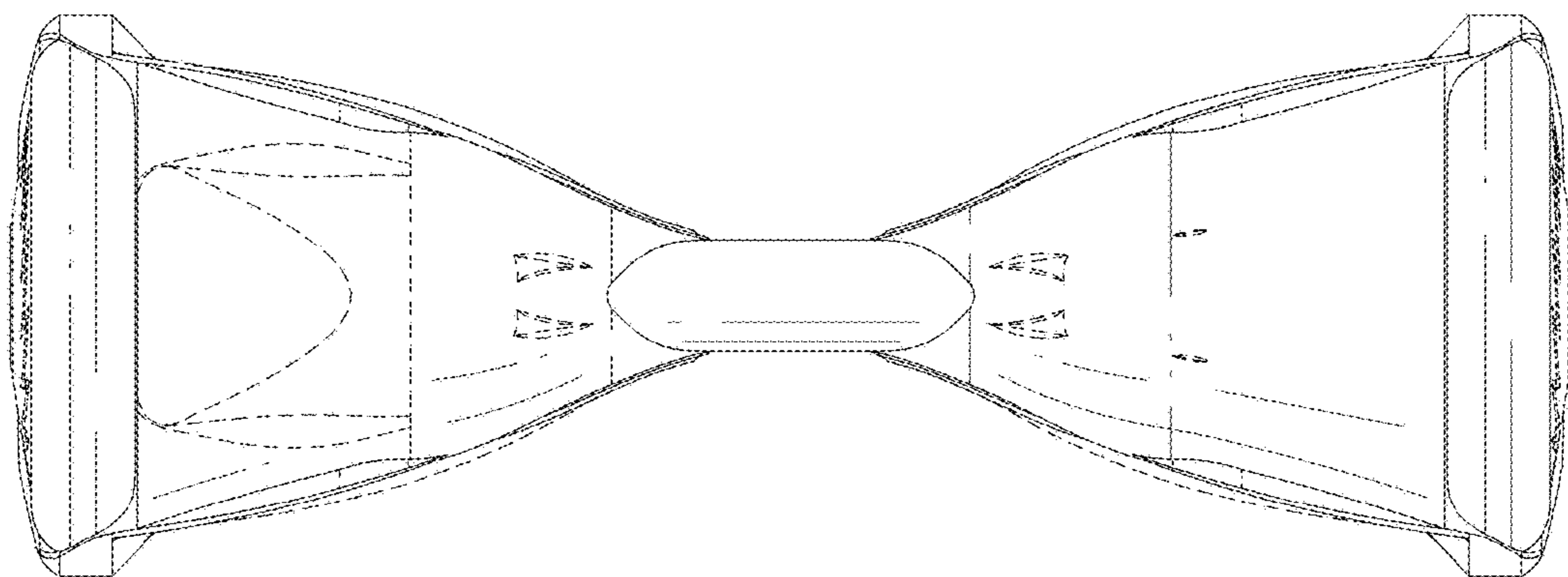


FIG. 8