



(12) **United States Design Patent** (10) **Patent No.:** **US D944,901 S**
Ewing et al. (45) **Date of Patent:** **** Mar. 1, 2022**

(54) **MODEL VEHICLE LOWER SUSPENSION ARM**

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

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(51) **LOC (13) Cl.** **12-08**

(52) **U.S. Cl.**
 USPC **D21/562; D21/533**

(58) **Field of Classification Search**
 USPC D21/533, 562, 548, 549, 550, 551, 552, D21/561; D12/159, 160
 CPC A63H 17/262; B60G 7/001; B60G 2206/124; B60G 2200/144; B60G 11/16; B60G 2300/20; B60G 2204/1244; B60G 2206/16

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

197,670	A	*	11/1877	Saladee	.....	B60G 7/001 280/124.121
D31,946	S	*	12/1899	Stanley et al.	.....	D12/160
D31,948	S	*	12/1899	Stanley et al.	.....	D12/159
D32,661	S	*	5/1900	Morgan et al.	.....	D12/160
D34,632	S	*	6/1901	Warner	.....	D12/159
903,080	A		11/1908	Granieri		

(Continued)

FOREIGN PATENT DOCUMENTS

CN	304279714	*	9/2017
CN	304904482	*	11/2018

(Continued)

OTHER PUBLICATIONS

Stephen Mitchell, "Awesome Part Replacement," Mar. 25, 2018 (review with photo), amazon.com, site visited Dec. 14, 2021, URL: <https://www.amazon.com/dp/B01DUCYDZC/> (Year: 2018).*

(Continued)

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(57) **CLAIM**

We claim the ornamental design for a model vehicle lower suspension arm, as shown and described.

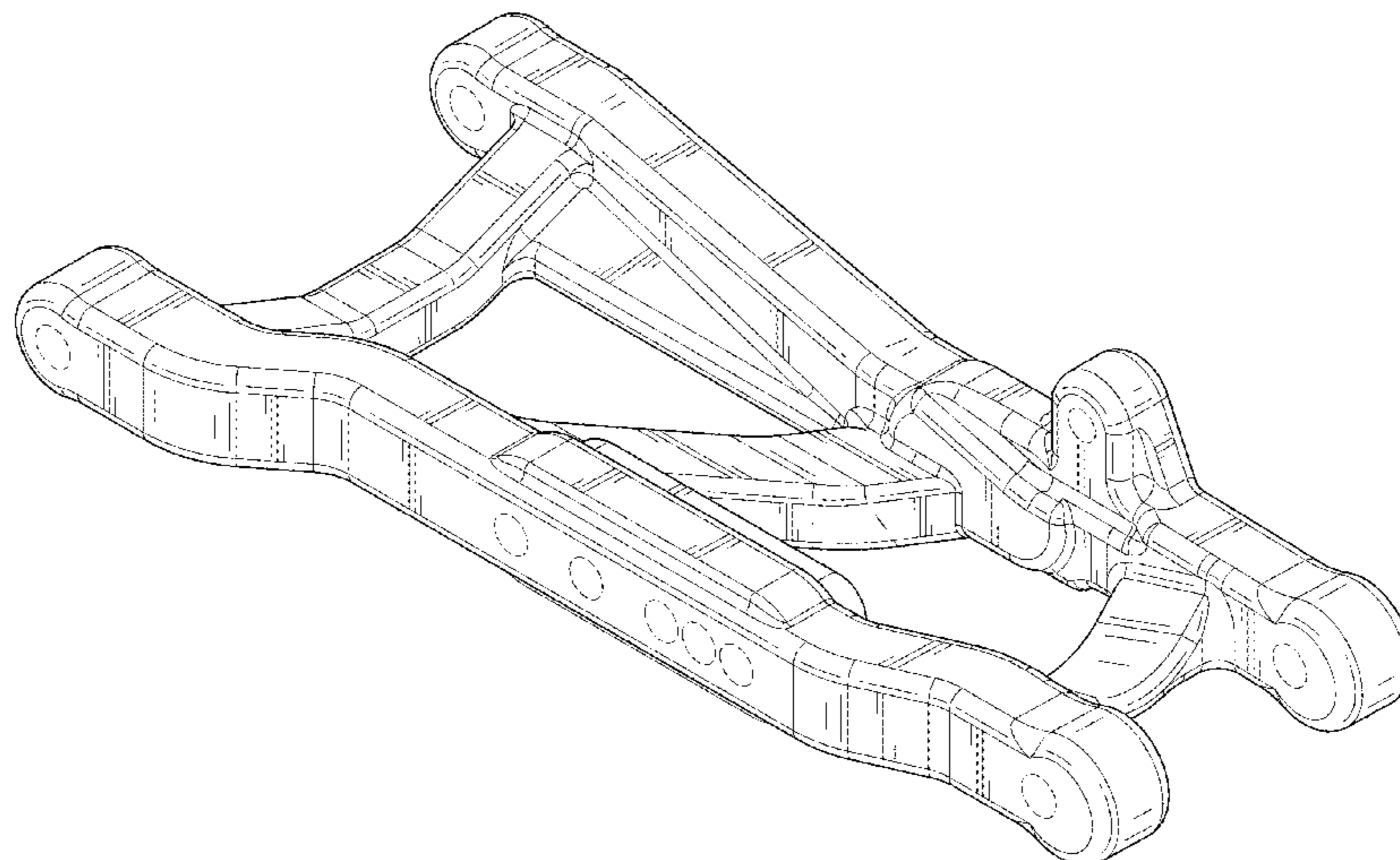
DESCRIPTION

FIG. 1 is an upper, left, front perspective view of a model vehicle lower suspension arm showing our new design; FIG. 2 is a front elevation view thereof; FIG. 3 is a rear elevation view thereof; FIG. 4 is a left side elevation view thereof; FIG. 5 is a right side elevation view thereof; FIG. 6 is an upper plan view thereof; FIG. 7 is a bottom plan view thereof; and, FIG. 8 is a bottom, right, rear perspective view of the model vehicle lower suspension arm.

In the drawings, the broken lines illustrate portions of the model vehicle lower suspension arm that form no part of the claimed design.

In the drawings, only the first embodiment of the model vehicle lower suspension arm is shown. The second embodiment of the claimed design is a right model vehicle lower suspension arm which is a mirror image of the left model vehicle lower suspension arm disclosed in the first embodiment.

1 Claim, 6 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

951,000 A	3/1910	Ewing		5,682,849 A	11/1997	Regueiro	
D46,086 S	7/1914	Clark		5,692,853 A	12/1997	Litz et al.	
1,135,577 A	4/1915	Hague		5,774,984 A	7/1998	Kotani	
1,647,438 A	11/1927	De Ram		5,816,357 A	10/1998	Camlin	
1,695,379 A	12/1928	Keck		5,839,742 A	11/1998	Holt	
1,998,477 A	4/1935	Wikander		5,845,926 A	12/1998	Davis et al.	
2,123,681 A	7/1938	Willgoos		5,915,727 A	6/1999	Bonnville	
2,126,085 A	8/1938	Balz		5,934,696 A	8/1999	Bloser et al.	
2,131,661 A	9/1938	Heyermans et al.		5,938,219 A	8/1999	Hayami et al.	
2,148,177 A *	2/1939	Sherman	B60G 11/16 267/254	5,992,863 A	11/1999	Forbes-Robinson et al.	
2,153,083 A	4/1939	Griswold		6,076,840 A	6/2000	Kincaid et al.	
2,186,065 A	1/1940	Fischer		6,142,268 A	11/2000	Kuo-An	
2,219,361 A	10/1940	Haberstump		D435,236 S	12/2000	Hanlon et al.	
2,232,397 A	2/1941	Leighton		6,170,838 B1	1/2001	Laurent et al.	
2,264,174 A	11/1941	Crump et al.		6,206,392 B1	3/2001	Siecinski et al.	
2,298,585 A *	10/1942	Phelps	B60G 7/001 267/254	6,478,655 B2	11/2002	Wu	
2,580,559 A	1/1952	Kolbe		6,550,796 B2	4/2003	Behr	
2,624,592 A	1/1953	Macpherson		D475,001 S *	5/2003	Roll	D12/159
2,643,110 A	6/1953	Gregoire		6,595,714 B2	7/2003	Moore	
2,678,803 A	5/1954	Wilkerson		6,641,457 B1	11/2003	Lai	
2,707,100 A *	4/1955	Schilberg	B60G 11/16 267/254	6,655,118 B1	12/2003	Thompson et al.	
2,718,409 A *	9/1955	Kishline	B60G 11/16 280/788	6,668,779 B2	12/2003	Hendriksma et al.	
2,776,147 A	1/1957	Bamford		6,685,203 B1	2/2004	Bodin et al.	
2,852,269 A	9/1958	Gaines		6,698,963 B1	3/2004	Parker et al.	
2,913,253 A	11/1959	Taber		6,702,307 B2	3/2004	Becker et al.	
2,931,663 A	4/1960	Ferand		6,719,313 B2	4/2004	Zadok	
2,992,014 A	7/1961	Muller		6,752,411 B2	6/2004	Few	
3,034,810 A	5/1962	Primean		6,761,372 B2	7/2004	Bryant	
3,059,950 A	10/1962	Hedges		6,767,021 B2	7/2004	Schnurpel	
3,177,004 A	4/1965	Schmidt		6,881,122 B2	4/2005	Bloch et al.	
3,231,040 A	1/1966	Blanchette		6,929,273 B2	8/2005	Dobson et al.	
3,410,575 A	11/1968	Turnbull et al.		6,932,366 B2	8/2005	Jones et al.	
3,448,991 A	6/1969	Leggett		6,945,843 B1	9/2005	Motosko	
3,545,125 A	12/1970	Okuma		6,968,931 B2	11/2005	Huisman	
3,583,052 A	6/1971	Herbenar et al.		7,152,866 B2	12/2006	Chalin et al.	
3,591,198 A	7/1971	Brando		7,185,902 B1	3/2007	Lloyd	
3,632,127 A	1/1972	Grosseau		7,367,573 B2	5/2008	Kudo et al.	
3,671,694 A	6/1972	Masuda		D622,642 S *	8/2010	Noble	B60G 11/16 D12/160
3,721,455 A	3/1973	Blanton		7,883,099 B2	2/2011	Byers et al.	
3,727,938 A	4/1973	Goodbary et al.		7,887,074 B2	2/2011	Byers et al.	
3,738,631 A	6/1973	Haley		8,549,752 B1	10/2013	Byers	
3,787,073 A	1/1974	Lievore		D785,513 S	5/2017	Park et al.	
3,938,822 A	2/1976	Guerrero		D788,653 S	6/2017	Smith	
D262,959 S	2/1982	Cowan		D827,054 S *	8/2018	Ewing	D21/561
4,470,611 A	9/1984	Duphily et al.		D828,460 S	9/2018	Wood	
D277,952 S	3/1985	Nakano et al.		D839,363 S *	1/2019	Ewing	D21/561
4,534,575 A	8/1985	Grove et al.		10,266,025 B2	4/2019	Lorenz et al.	
4,537,420 A *	8/1985	Ito	B60G 3/26 280/124.128	D852,095 S	6/2019	Walter	
4,546,997 A	10/1985	Smyers		D853,938 S *	7/2019	Smith	D12/223
D281,772 S	12/1985	Heideman et al.		D856,432 S	8/2019	Ewing et al.	
4,706,989 A	11/1987	Iijima et al.		D865,079 S	10/2019	Ewing	
4,786,075 A	11/1988	Takahashi		10,435,075 B2	10/2019	Lorenz et al.	
4,807,901 A	2/1989	Kondo		D867,475 S *	11/2019	Ewing	A63H 17/262 D21/561
D304,473 S *	11/1989	Poulsen	A63H 17/262 D21/561	D875,186 S	2/2020	Ewing et al.	
4,881,752 A	11/1989	Tanaka		D902,089 S *	11/2020	Ewing	B60G 7/001 D12/159
4,955,634 A	9/1990	Smith		D902,090 S *	11/2020	Ewing	B60G 7/001 D12/159
5,004,257 A	4/1991	MacIsaac		D905,798 S *	12/2020	Ewing	B60G 3/20 D21/562
5,080,389 A	1/1992	Kawano et al.		D905,799 S *	12/2020	Ewing	B60G 11/16 D21/562
5,108,126 A	4/1992	Banse		2002/0041076 A1	4/2002	Becker et al.	
D335,851 S	5/1993	Lofy		2002/0077025 A1	6/2002	Wu	
D337,555 S	7/1993	McNab et al.		2002/0125676 A1	9/2002	Bryant	
5,284,353 A	2/1994	Shinji et al.		2003/0107198 A1	6/2003	VanDenberg	
5,288,101 A	2/1994	Minnett		2003/0122336 A1	7/2003	Zadok	
5,332,255 A	7/1994	Velazquez		2003/0209217 A1	11/2003	Hendriksma et al.	
5,516,130 A	5/1996	Mitchell		2003/0227151 A1	12/2003	Schreiber et al.	
5,522,281 A	6/1996	Herman		2004/0004335 A1	1/2004	Rudder et al.	
5,603,583 A	2/1997	Jackson		2004/0045518 A1	3/2004	Abe	
D385,835 S	11/1997	Webster		2004/0261739 A1	12/2004	Shimizuya	
				2005/0040619 A1	2/2005	Melcher	
				2005/0156399 A1 *	7/2005	Chu	B60G 3/20 280/124.134
				2005/0200096 A1	9/2005	Izquierdo Nunez et al.	
				2005/0220535 A1	10/2005	Griffin	

(56)

References Cited

U.S. PATENT DOCUMENTS

2006/0006622	A1	1/2006	Gesmer et al.	
2006/0246819	A1	11/2006	Byers et al.	
2014/0361507	A1	12/2014	Park et al.	
2016/0068036	A1*	3/2016	Minoda	B60G 21/055 280/124.109
2016/0318362	A1	11/2016	Watanabe et al.	
2017/0050483	A1	2/2017	Gordon et al.	
2017/0050485	A1	2/2017	Eleazar	
2017/0274932	A1	9/2017	Byrnes, Jr.	
2018/0065465	A1	3/2018	Ward et al.	
2018/0111433	A1	4/2018	Compigne et al.	
2018/0326843	A1	11/2018	Danielson et al.	
2018/0370310	A1	12/2018	Becker et al.	
2019/0070919	A1	3/2019	Andou et al.	
2019/0143871	A1	5/2019	Weber et al.	
2019/0145465	A1	5/2019	Olason	
2019/0217894	A1	7/2019	Upah et al.	
2019/0225042	A1	7/2019	Upah et al.	
2019/0241035	A1	8/2019	Wolf-Monheim	
2019/0283516	A1	9/2019	Gordon et al.	
2019/0285131	A1	9/2019	Garrett	
2019/0315174	A1	10/2019	Kwon et al.	
2019/0367117	A1	12/2019	Fischer et al.	

FOREIGN PATENT DOCUMENTS

DE	2137757	A1	2/1973	
DE	3622552	A1	1/1988	
DE	202018103151	U1	6/2018	
EM	002601971-0003	*	1/2015	..... B60G 7/001
EP	0070025	A2	1/1983	
EP	3271195	B1	5/2019	
FR	2957324	A1*	9/2011	..... B60G 21/051
KR	20080042707	A*	5/2008	..... B60G 3/265
WO	2010066226	A1	6/2010	
WO	WO-2021046302	A1*	3/2021	..... B60G 7/001

OTHER PUBLICATIONS

“Traxxas Heavy Duty Suspension Arms (Blue),” Feb. 15, 2019, amainhobbies.com, site visited Dec. 14, 2021, URL: <https://www.ainhobbies.com/traxxas-heavy-duty-suspension-arms-blue-tra3655p-p-qezltakq7z2xactz> (Year: 2019).*

“Traxxas Suspension arms, red,” Jun. 23, 2019, amazon.com, site visited Dec. 14, 2021, UR: https://www.amazon.ca/Traxxas-Suspension-Front-Weather-Material/dp/B07MXP4DTP/ref=sr_1_5?keywords=traxxas+suspension+arms&qid=1639510283&sr=8-5 (Year: 2019).*

Associated Electrics, “Monster GT” model truck; Associated Electrics, Inc., Costa Mesa, California, 1 photograph.

Associated Electrics, “RC10GT” model vehicle; Associated Electrics, Inc., Costa Mesa, California, 1 photograph.

Bradley, John; “The Racing Motorcycle”; 1996, pp. 246-273, 322-325; Broadland Leisure Publications, England.

Horizon Hobby, “Losi XXX buggy”; Horizon Hobby, Inc., Champaign, Illinois; 1 sketch of suspension geometry.

HPI Racing, “Savage 21” model truck; Hobby Products International, Foothill Ranch, California; 1 sketch of suspension geometry.

KYOSHO Inferno MP7.5 model car; Kyosho America, Lake Forest, California; 2 sketches of suspension geometry.

Milliken, William F. and Milliken, Douglas L.; “Race Car Vehicle Dynamics” 1995, pp. 580-583, 595-597, 628-631; SAE Publications Group, Pennsylvania USA.

Race Tech, “Profile—Chalmers Formula SAE Car” Race Tech magazine, Oct./Nov. 2003, p. 74; Racecar Graphic Ltd, London, England.

Racecar Engineering, Jun. 2003—vol. 13 No. 06, pp. 15, 106; Country & Leisure Media Ltd./IPC Media Ltd., Croydon, England.

Serpent, Veteq; Serpent Model Racing Cars, Noord-Holland, Netherlands; 3 pictures.

Serpent, Veteq; Serpent Model Racing Cars, Noord-Holland, Netherlands; 1 sletch of suspension geometry.

Staniforth, Allan; “Competition Car Suspension” 1988, pp. 76-81, 84-85; Haynes Publications, Newbury Park, California.

Tamiya, “Terra Crusher” model truck; Tamiya America, Inc., Aliso Viejo, California; 1 sketch of suspension geometry.

Traxxas LP; “T-Maxx Assemblies, Front Assembly” exploded view; Traxxas LP, Plano, Texas.

Traxxas, “Nitro Rustler” model vehicle; Traxxas LP, Plano, Texas; 1 photograph.

Traxxas, “T-Maxx” model vehicle; Traxxas LP, Plano, Texas; 1 photograph.

Full size vehicle with suspension linkage #1.

Full size vehicle with suspension linkage #2.

Chassis Shop, “Tube Adapters” Catalog pp. 46-51, Chassis Shop Performance Products, Mears, MI, USA.

Coleman Racing, “Hex Trailing Arm” web pages: http://www.colemanracing.com/catalog/index.php?cPath=49_1024 http://www.colemanracing.com/catalog/product_info.php?cPath=49_1024&products_id=4714 Coleman Racing, Memominee, MI, USA.

Traxxas, “T-Maxx Rear Assembly” exploded view drawing; Traxxas LP, Plano, TX, USA.

Aerosticks, 2 pages photographs, DPD Enterprises, Ventura, CA, USA.

CN-304138171, posted at Orbit.com, publication date May 17, 2017. Site visited Apr. 12, 2019. Available from Internet. (Year: 2017).

CN-304110963, posted at Orbit.com, publication date Apr. 19, 2017. Site visited Apr. 12, 2019. Available from Internet. (Year: 2017).

ARTINCbydb, Traxxas E-Revo Upper/Lower Arm Replacement, posted at YouTube, posting date Feb. 4, 2013. Site visited Apr. 12, 2019. URL: <https://www.youtube.com/watch?v=fGMtjrezT0> (Year: 2013).

Traxxas 5331 Right Front Upper & Lower Arms, posted at Amazon, review posted Dec. 30, 2014. Site visited Apr. 12, 2019. URL <https://www.amazon.com/Traxxas-Right-Front-Upper-Suspension/dp/B000BOPT0G> (Year: 2014).

Traxxas 7729 X-Maxx Upper Suspension Arms (pair), Earliest available date Jan. 5, 2016 [Online], [Site Visited Oct. 23, 2020] Available From Internet, URL: <https://www.amazon.com/Traxxas-7729-X-Maxx-Upper-Suspension/dp/B01A6Z068O> (Year: 2016).

Traxxas X-Maxx 8s F/R Left Lower Suspension Arm (1), Tin-Eye date May 26, 2017 [Online], [Site Visited Oct. 23, 2020] Available From Internet, URL: <https://www.modelsport.co.uk/traxxas-x-maxx-8s-f-r-left-lower-suspension-arm-1-/rc-car-products/396018> (Year: 2017).

Traxxas 7831G Suspension arm lower left F orR Green X-Maxx series, Earliest available date Oct. 15, 2020 [Online], [Site Visited Oct. 23, 2020] Available From Internet, URL: <https://www.ebay.com/itm/Traxxas-7831G-Suspension-arm-lower-left-F-orR-Green-X-Maxx-series-Heavy-Duty-New/402480149730?epid=20038117293&hash=item5db5afb4e2:g:lt4AAOSw9she7BMU> (Year: 2020).

* cited by examiner

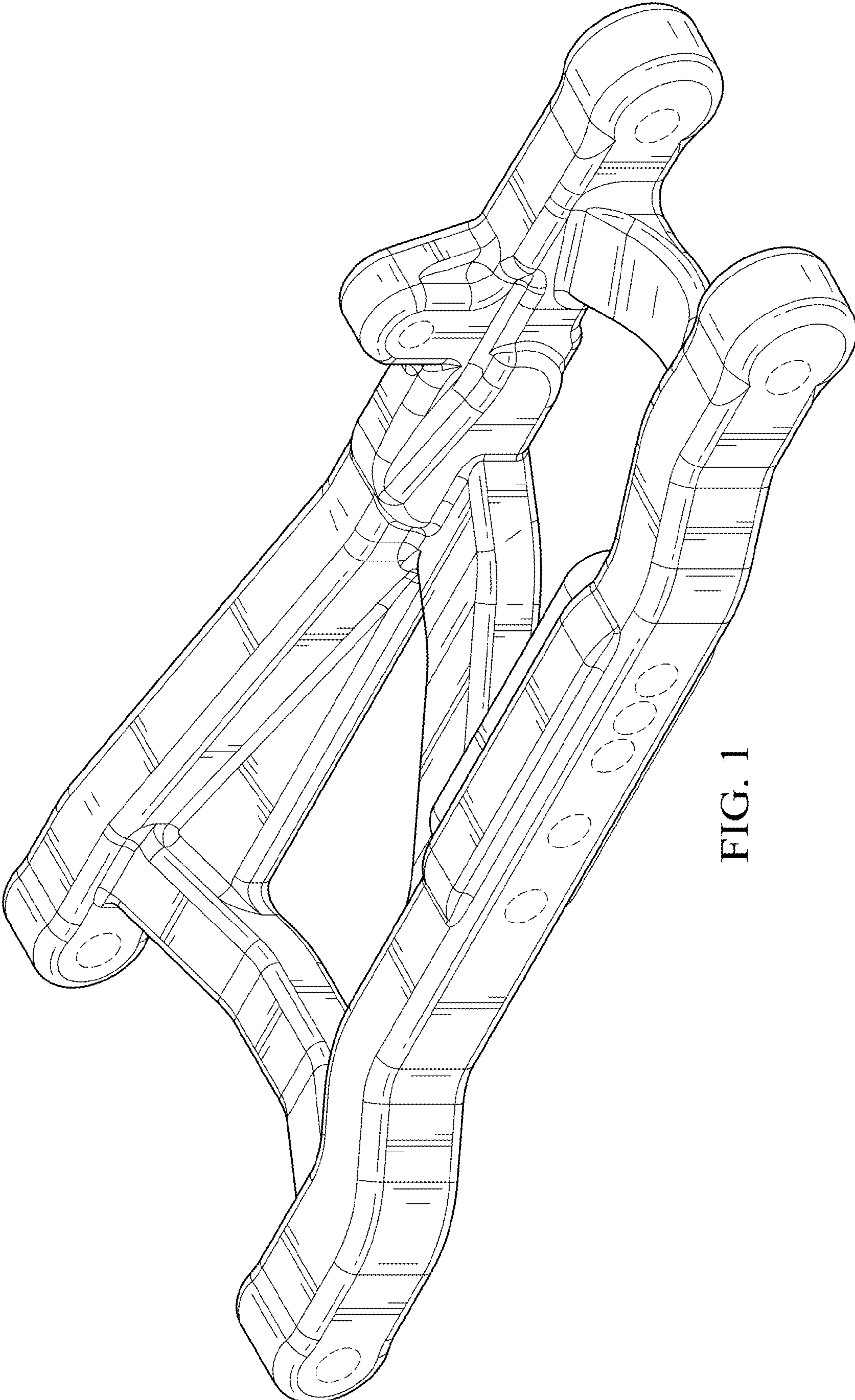


FIG. 1

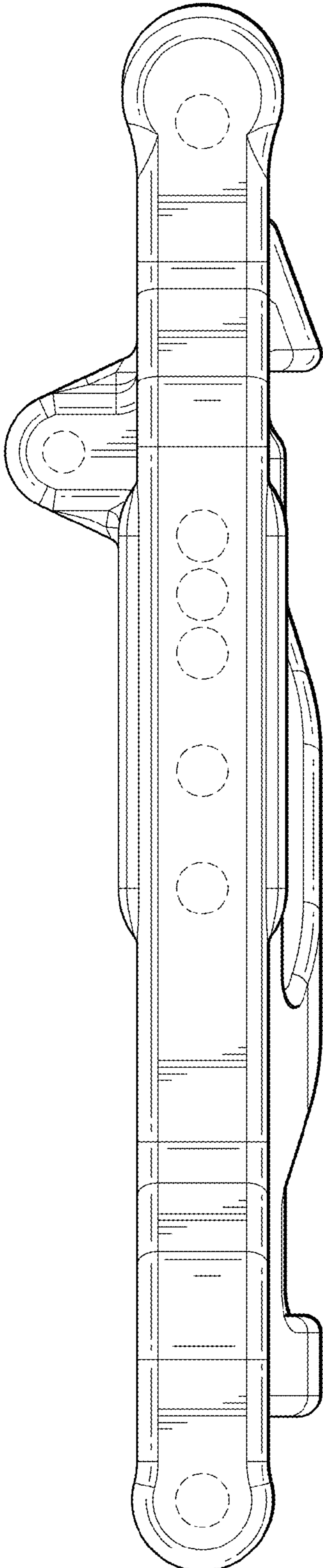


FIG. 2

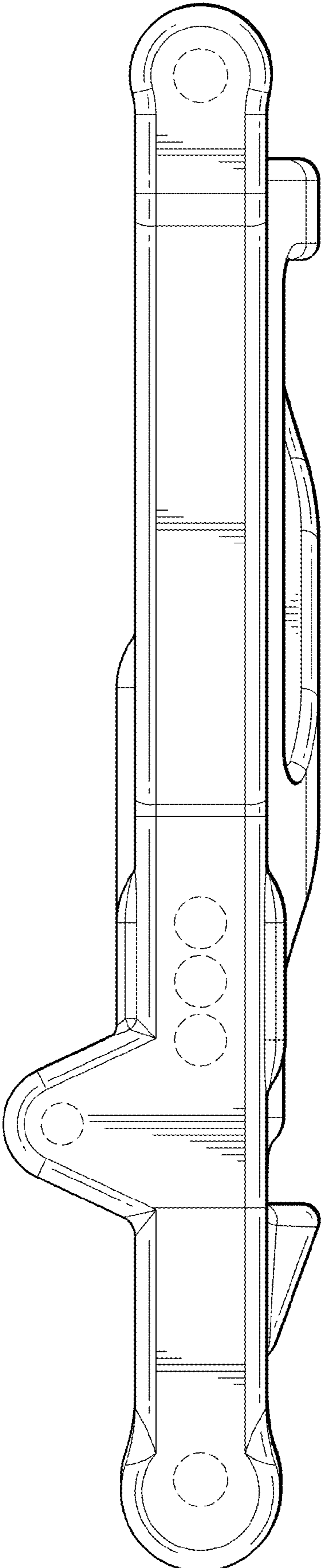


FIG. 3

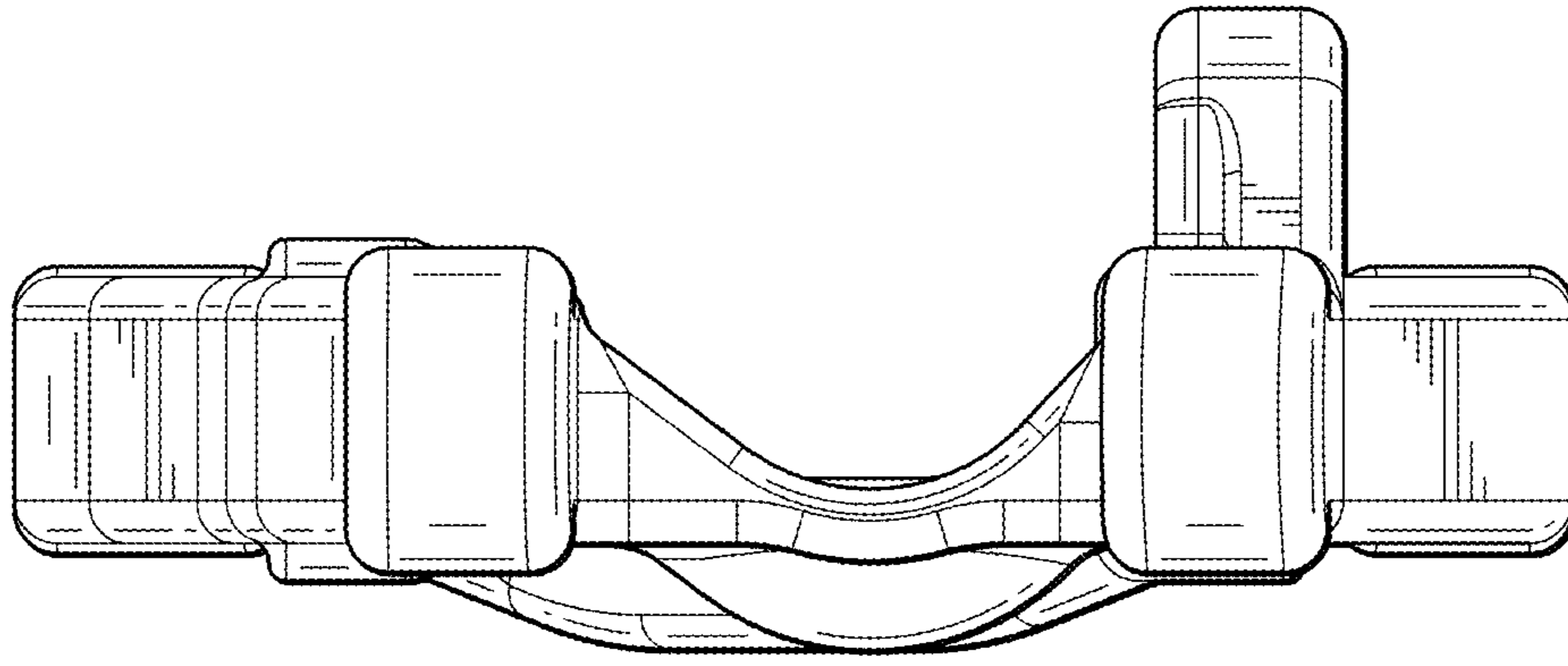


FIG. 4

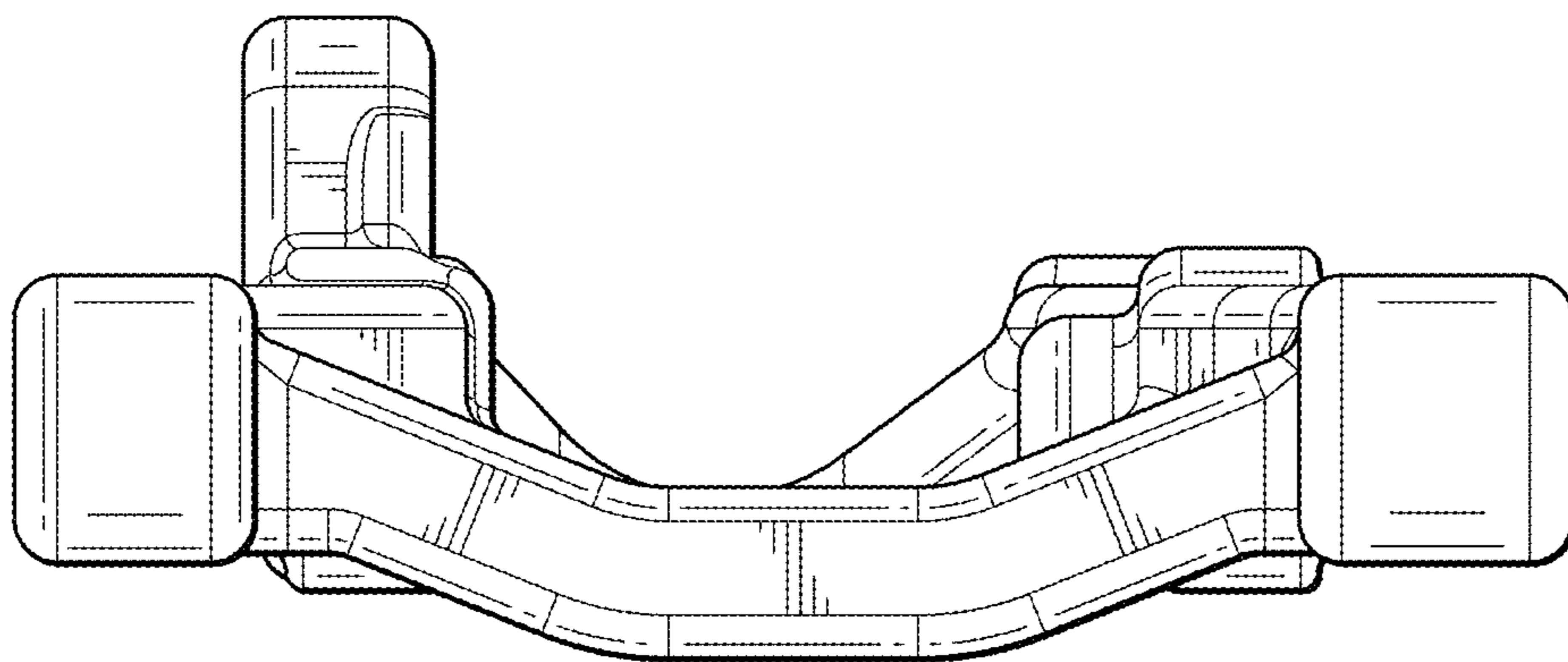


FIG. 5

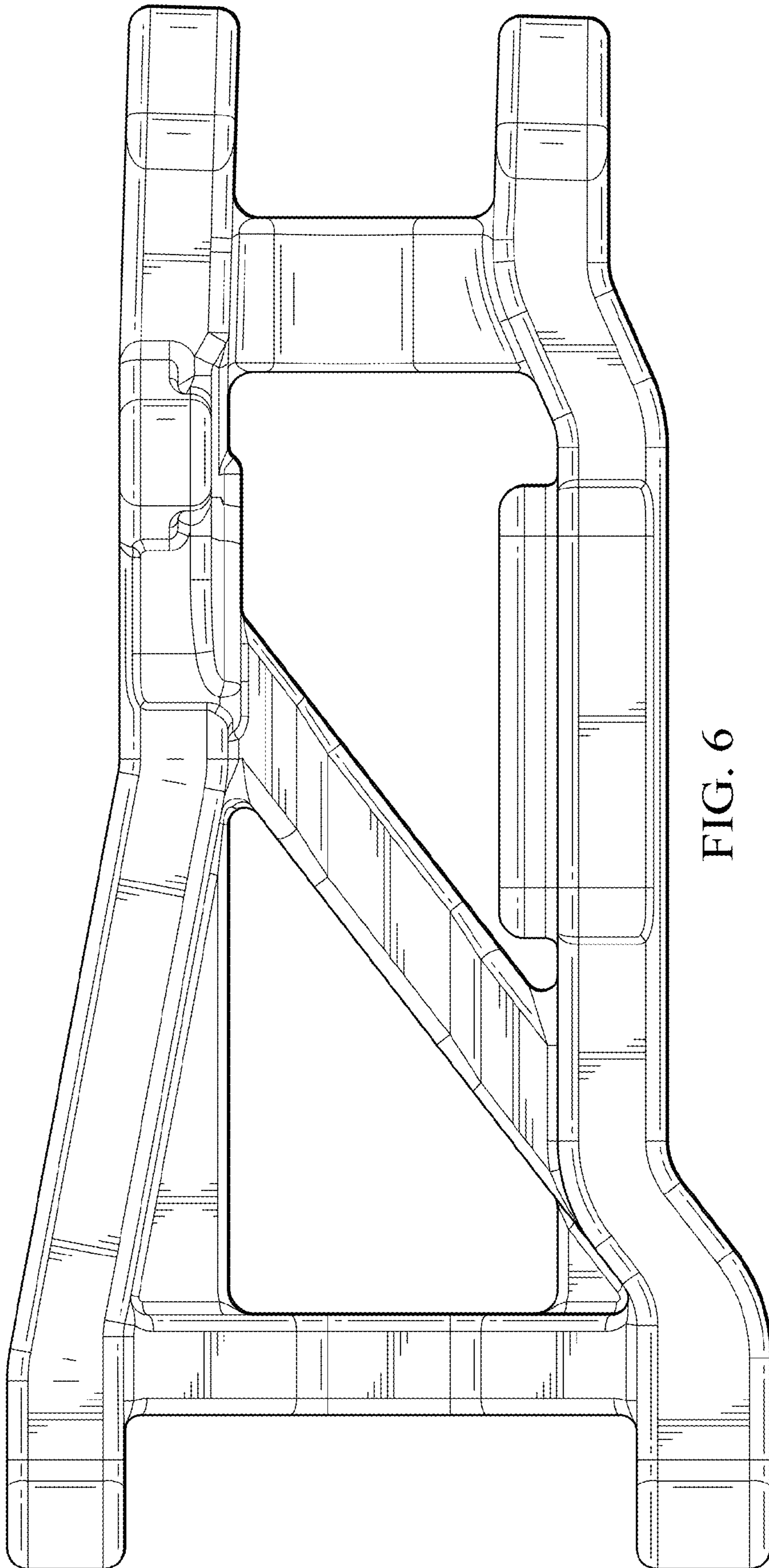


FIG. 6

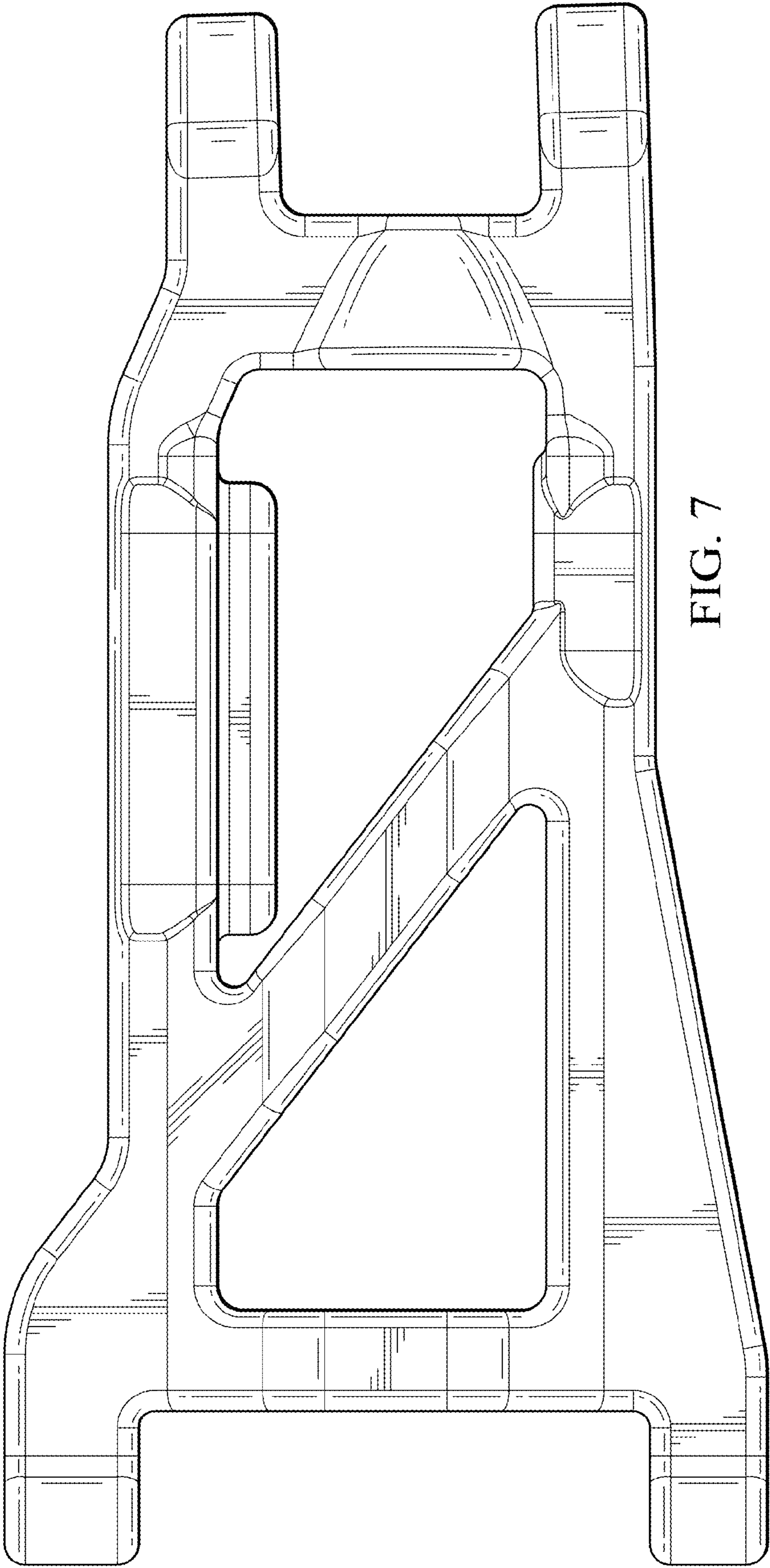


FIG. 7

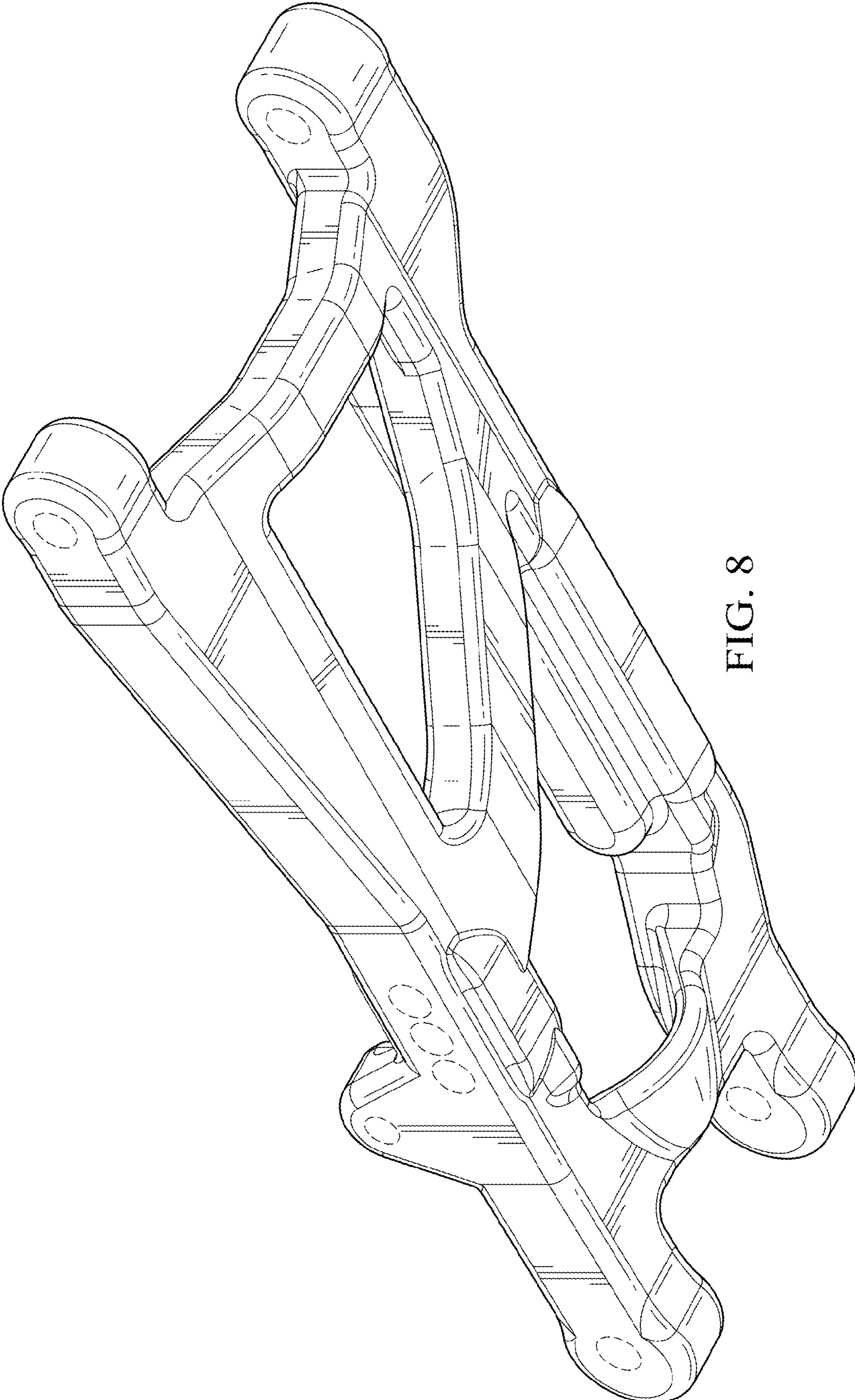


FIG. 8