



US00D700113S

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

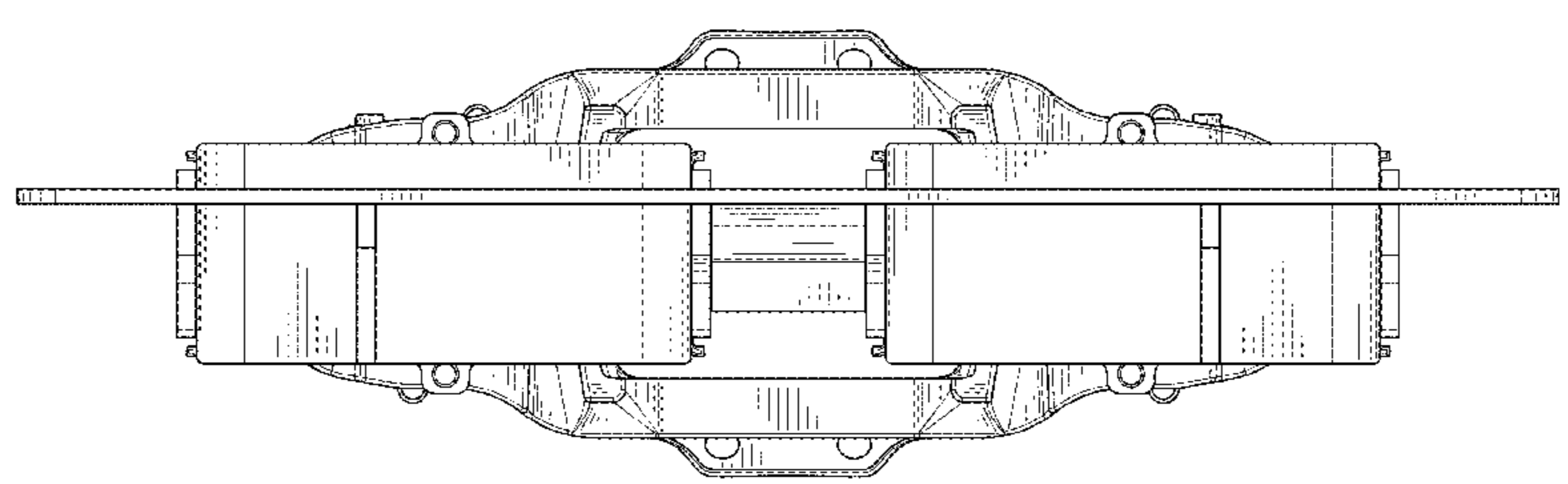
(10) **Patent No.:** **US D700,113 S**  
(45) **Date of Patent:** **\*\* Feb. 25, 2014**

- (54) **SUSPENSION ASSEMBLY**
- (75) Inventors: **Shawn D. Noble**, Naperville, IL (US);  
**Mukund Nemail**, Chicago, IL (US)
- (73) Assignee: **Hendrickson USA, L.L.C.**, Itasca, IL (US)
- (\*\*) Term: **14 Years**
- (21) Appl. No.: **29/426,571**
- (22) Filed: **Jul. 6, 2012**
- (51) **LOC (10) Cl.** ..... **12-16**
- (52) **U.S. Cl.**  
USPC ..... **D12/160**
- (58) **Field of Classification Search**  
USPC ..... D12/160; 280/11.225, 86.752, 104,  
280/124.145–124.147, 124.155, 676, 677,  
280/681, 682, 687; 267/64.15, 136, 195,  
267/217; 188/274, 281, 286, 297–298,  
188/315–316; 464/173; D21/763; 293/134  
See application file for complete search history.

2,333,650 A	11/1943	Hickman
2,437,158 A	3/1948	Heiney
2,655,005 A	10/1953	Kinneman
2,663,570 A	12/1953	Hickman
2,689,136 A	9/1954	Hendrickson
2,704,664 A	3/1955	Hickman
2,706,113 A	4/1955	Hickman
2,739,821 A	3/1956	Hickman
2,750,200 A	6/1956	Scheel
2,758,832 A	8/1956	Hickman
2,775,353 A	12/1956	Tillou
2,788,222 A	4/1957	Wilson et al.
2,798,735 A	7/1957	Compton
2,802,662 A	8/1957	Hirst
2,872,207 A	2/1959	Hirst
2,880,885 A	4/1959	Willison
2,905,390 A	9/1959	Saul
2,940,771 A	6/1960	Hendrickson
2,980,439 A	4/1961	Miller
2,981,208 A	4/1961	Sinclair
2,995,383 A	8/1961	Barker
3,004,715 A	10/1961	Gadd
3,011,776 A	12/1961	Reed
3,017,195 A	1/1962	Hickman
3,030,098 A	4/1962	Roubal
3,037,764 A	6/1962	Paulsen
3,045,998 A	7/1962	Hirst
3,047,163 A	7/1962	Johnson
3,071,422 A	1/1963	Hinks
3,121,560 A	2/1964	Reed
3,134,585 A	5/1964	Trask
3,241,856 A	3/1966	Raidel
3,276,395 A	10/1966	Heintzel
3,279,779 A	10/1966	Thomas et al.
3,279,820 A	10/1966	Hickman
3,297,339 A	1/1967	Hendrickson
3,301,573 A	1/1967	Hickman
3,305,227 A	2/1967	Henley
3,315,951 A	4/1967	Boschi, et al.
3,368,806 A	2/1968	Szonn
3,436,155 A	4/1969	Perin, Jr.
3,471,165 A	10/1969	Raidel
3,482,852 A	12/1969	Hickman
3,485,040 A	12/1969	Niskanen
3,539,170 A	11/1970	Hamel
3,545,787 A	12/1970	Miller
3,563,525 A	2/1971	Narabu
3,572,745 A	3/1971	Willets
3,575,403 A	4/1971	Hamel et al.
3,580,611 A	5/1971	McNitt
3,606,295 A	9/1971	Appleton
3,618,533 A	11/1971	Hirst
3,618,971 A	11/1971	Wragg

(56) **References Cited**  
U.S. PATENT DOCUMENTS

7,706 A	10/1850	Ray
1,409,044 A	3/1922	Tusar
1,516,051 A	11/1924	Lundie
1,576,376 A	3/1926	Sudekum
1,604,961 A	11/1926	Bell et al.
1,608,507 A	11/1926	Hogan
1,640,179 A	8/1927	Buckwalter
1,640,204 A	8/1927	Biagio
1,679,528 A	8/1928	Johanson
1,817,325 A	8/1931	Sinkovich
1,853,166 A	4/1932	Nibbe
1,949,363 A	2/1934	Willard
1,974,160 A	9/1934	Peirson
2,094,335 A	9/1937	Willard et al.
2,111,475 A	3/1938	Kegresse
2,197,727 A	4/1940	Ledwinka
2,245,296 A	6/1941	Piron
2,284,484 A	5/1942	Eksergian
2,286,563 A	6/1942	Mussey
2,323,919 A	7/1943	Knox



# US D700,113 S

3,625,501 A	12/1971	Hein et al.	5,465,997 A	11/1995	Heitzmann
3,626,465 A	12/1971	Hirst	5,482,406 A	1/1996	Arlt, III
3,687,477 A	8/1972	Miller	5,508,482 A	4/1996	Martin et al.
3,695,737 A	10/1972	Alexander et al.	D377,961 S	2/1997	Dickson et al.
3,699,897 A	10/1972	Sherrick	5,615,786 A	4/1997	Hoyon et al.
3,712,246 A	1/1973	Lich	D381,338 S	7/1997	Johansson
3,716,999 A	2/1973	Middelbeek	D384,877 S	10/1997	Perrin et al.
3,731,913 A	5/1973	Hirst	5,676,356 A	10/1997	Ekonen et al.
3,797,851 A	3/1974	Hirst	D390,305 S	2/1998	Dickson et al.
3,811,700 A	5/1974	Moore	D391,915 S	3/1998	Miller
3,817,551 A	6/1974	Moore	5,753,429 A	5/1998	Pugh
3,830,483 A	8/1974	Gaydecki	D397,667 S	9/1998	White
3,831,923 A	8/1974	Meldrum	5,810,337 A	9/1998	McLaughlin
3,857,556 A	12/1974	Wing	5,868,384 A	2/1999	Anderson
3,936,073 A	2/1976	Hickman et al.	5,887,881 A	3/1999	Hatch
3,952,669 A	4/1976	Mauzin et al.	D409,077 S	5/1999	Brooks
3,955,808 A	5/1976	Jorn et al.	5,899,470 A	5/1999	Heitzmann
D240,239 S	6/1976	Calandrino	5,909,821 A	6/1999	Guridi
3,984,125 A	10/1976	Paton et al.	5,938,221 A	8/1999	Wilson
3,997,151 A	12/1976	Leingang	5,947,458 A	9/1999	Rhodes et al.
3,999,497 A	12/1976	Hamel	5,957,441 A	9/1999	Tews
D246,572 S	12/1977	Walter	D415,950 S	11/1999	Anderson
4,082,316 A	4/1978	Raidel	5,989,075 A	11/1999	Hsiao et al.
4,095,690 A	6/1978	Baldwin	6,008,460 A	12/1999	Demari
4,108,470 A	8/1978	Vinton	D423,342 S	4/2000	Popesco
4,111,131 A	9/1978	Bullock	6,045,328 A	4/2000	Jones
4,111,406 A	9/1978	Zanow	6,129,369 A	10/2000	Dudding
4,132,433 A	1/1979	Willetts	6,176,345 B1	1/2001	Perkins et al.
4,134,343 A	1/1979	Jackson	6,178,894 B1	1/2001	Leingang
4,144,978 A	3/1979	Drake	6,189,904 B1	2/2001	Gentry et al.
4,162,799 A	7/1979	Willetts	6,193,266 B1 *	2/2001	Cortez et al. .... 280/677
4,182,338 A	1/1980	Stanulis	6,206,407 B1	3/2001	Fuchs et al.
4,193,612 A	3/1980	Masser	6,264,231 B1	7/2001	Scully
4,213,633 A	7/1980	Moore	6,276,674 B1	8/2001	Randell
4,258,629 A	3/1981	Jackson et al.	6,328,294 B1	12/2001	Palinkas
4,278,271 A	7/1981	Raidel	6,478,321 B1	11/2002	Heitzmann
D265,285 S	7/1982	Englert, Jr.	6,516,914 B1	2/2003	Andersen et al.
4,358,096 A	11/1982	Paton et al.	D471,888 S	3/2003	Solland
4,371,189 A	2/1983	Raidel	D474,274 S	5/2003	Walters
4,382,547 A	5/1983	Phillips	6,572,087 B2	6/2003	Schleinitz et al.
D270,574 S	9/1983	Black	6,585,286 B2	7/2003	Adema et al.
4,420,171 A	12/1983	Raidel	6,588,820 B2	7/2003	Rice
4,452,007 A	6/1984	Martin	D479,793 S	9/2003	Jones
D275,178 S	8/1984	Yeater	6,659,438 B2	12/2003	Michael et al.
4,486,029 A	12/1984	Raidel	6,666,474 B2	12/2003	Pavuk
4,488,495 A	12/1984	Dean, II	6,702,240 B1	3/2004	Bradley
4,504,080 A	3/1985	Van Denberg	D496,887 S	10/2004	Carlson
4,527,365 A	7/1985	Yoshizawa et al.	6,817,301 B1	11/2004	Bullock
4,548,150 A	10/1985	Drewett	D503,231 S	3/2005	Daugherty
4,585,086 A	4/1986	Hiramatsu	6,877,623 B2	4/2005	Salis
4,589,347 A	5/1986	Colford et al.	D507,658 S	7/2005	Wescott, III
4,705,294 A	11/1987	Raidel	6,916,037 B2	7/2005	Baxter et al.
4,733,855 A	3/1988	Balczun et al.	6,951,260 B1	10/2005	Isley
4,753,456 A	6/1988	Booher	D515,942 S	2/2006	Hamblin et al.
4,781,365 A	11/1988	Harrison	D515,943 S	2/2006	Hamblin et al.
4,793,597 A	12/1988	Smith	D519,104 S	4/2006	Richter
D306,476 S	3/1990	Millard	D520,322 S	5/2006	Orlando
4,944,402 A	7/1990	Wu	7,059,631 B2	6/2006	Schorle et al.
D312,205 S	11/1990	de Rooij	7,077,411 B2	7/2006	Peters et al.
4,968,010 A	11/1990	Odobasic	D530,187 S	10/2006	Esbaugh
4,995,636 A	2/1991	Hall et al.	7,185,903 B2	3/2007	Dove
D318,010 S	7/1991	Clinkscates	D543,492 S	5/2007	Lyew
5,114,178 A	5/1992	Baxter	7,229,088 B2	6/2007	Dudding et al.
5,118,086 A	6/1992	Stevenson et al.	7,234,723 B2	6/2007	Sellers
5,150,657 A	9/1992	Bourgeot	D551,315 S	9/2007	Zimmerman
5,150,918 A	9/1992	Heitzmann	7,287,760 B1 *	10/2007	Quick et al. .... 280/5.512
5,237,933 A	8/1993	Bucksbee	7,293,794 B2	11/2007	Clarke et al.
D341,529 S	11/1993	Jacobs	7,303,200 B2	12/2007	Ramsey
5,271,678 A	12/1993	Bourgeot	D559,081 S	1/2008	Myers
D344,254 S	2/1994	Zimmerman	7,320,538 B2	1/2008	Ko et al.
5,283,404 A	2/1994	Prescaro, Jr.	7,387,074 B2	6/2008	Myers
D349,041 S	7/1994	Wical	D582,918 S	12/2008	Scott
5,327,674 A	7/1994	Powell	D586,204 S	2/2009	Robbins et al.
5,333,897 A	8/1994	Landis et al.	7,490,852 B2	2/2009	Marotzke et al.
5,364,086 A	11/1994	Paton	7,607,668 B2	10/2009	Dugandzic et al.
D356,641 S	3/1995	Stewart et al.	D603,303 S	11/2009	Noble et al.
5,413,320 A	5/1995	Herbst	D604,792 S	11/2009	Stanley
D360,544 S	7/1995	Gauthier	D605,984 S	12/2009	Noble et al.
5,447,324 A	9/1995	Raidel, Sr.	D606,459 S	12/2009	Noble et al.



D610,952	S	3/2010	Noble et al.
D615,005	S	5/2010	Noble et al.
7,708,309	B2	5/2010	Kim et al.
D622,642	S	8/2010	Noble et al.
D624,461	S	9/2010	Noble et al.
D624,462	S	9/2010	Noble et al.
D624,463	S	9/2010	Noble et al.
D624,464	S	9/2010	Noble et al.
D624,465	S	9/2010	Noble et al.
7,832,508	B2	11/2010	Isley
7,845,288	B2	12/2010	Forbes et al.
D630,137	S	1/2011	Noble et al.
D632,230	S	2/2011	Noble et al.
D632,619	S	2/2011	Noble et al.
D632,620	S	2/2011	Noble et al.
D633,011	S	2/2011	Noble et al.
7,926,836	B2	4/2011	Noble et al.
D645,794	S	9/2011	Noble et al.
8,033,565	B2	10/2011	Holroyd
D648,031	S	11/2011	Roggenkamp
D648,249	S	11/2011	Noble et al.
8,052,166	B2	11/2011	Noble et al.
8,061,698	B2	11/2011	Palinkas
D649,917	S	12/2011	Noble et al.
D650,082	S	12/2011	Roggenkamp
D650,483	S	12/2011	Roggenkamp
8,070,143	B2	12/2011	Wietharn
D655,419	S	3/2012	Roggenkamp
8,152,195	B2	4/2012	Noble et al.
8,210,507	B2	7/2012	Mitsch
8,262,112	B1	9/2012	Noble et al.
8,302,988	B2	11/2012	Noble et al.
D672,286	S	12/2012	Noble et al.
D672,287	S	12/2012	Noble et al.
2002/0163165	A1	11/2002	Adema et al.
2003/0047907	A1	3/2003	Hicks et al.
2003/0196648	A1	10/2003	Schroer et al.
2004/0262877	A1	12/2004	Sellers
2005/0110233	A1	5/2005	Hedenberg
2006/0071441	A1	4/2006	Mathis
2006/0208445	A1	9/2006	Gideon
2007/0262547	A1	11/2007	Warinner
2008/0018070	A1	1/2008	Gottschalk
2008/0030006	A1	2/2008	Sellers
2008/0122146	A1	5/2008	Herntier et al.
2008/0134413	A1	6/2008	Guo
2008/0258361	A1	10/2008	Wen et al.
2008/0290572	A1	11/2008	Desprez et al.
2009/0008846	A1	1/2009	Yamakawa et al.
2009/0108086	A1	4/2009	Mospan et al.
2009/0218740	A1	9/2009	Gedenk
2009/0224504	A1	9/2009	Noble et al.
2009/0224513	A1	9/2009	Noble et al.
2009/0230650	A1	9/2009	Mayen
2010/0044992	A1	2/2010	Noble et al.
2010/0072733	A1	3/2010	Levi
2010/0270719	A1	10/2010	Ranum et al.
2011/0031662	A1	2/2011	Toyama
2011/0057407	A1	3/2011	Noble et al.
2012/0001373	A1	1/2012	McLaughlin
2012/0018983	A1	1/2012	Oriet
2012/0325107	A1*	12/2012	Wicks et al. .... 105/215.2
2013/0019774	A1*	1/2013	Ahuja et al. .... 105/133
2013/0033018	A1*	2/2013	Kiselis et al. .... 280/124.116
2013/0069333	A1*	3/2013	Pizzeta ..... 280/124.116
2013/0162007	A1*	6/2013	Oriet ..... 301/36.1

FOREIGN PATENT DOCUMENTS

CN	301294475	7/2010
CN	301364969	10/2010
DE	973418	2/1960
DE	3524916	1/1987
DE	4128488	3/1993
DE	4204783	8/1993
EP	0419057	3/1991
EP	1911661	4/2008
EP	2006129	12/2008
FR	2270487	12/1975

FR	2342193	9/1977
FR	2550918	3/1985
FR	2797432	2/2001
GB	997305	7/1965
GB	2069424	8/1981
GB	2128942	5/1984
GB	2226867	7/1990
GB	2252276	8/1992
JP	64-035134	2/1989
JP	05149035	6/1993
JP	05338552	12/1993
JP	D1337440	8/2008
TW	528545	4/2003
WO	92/15800	9/1992
WO	02/42097	5/2002
WO	2006/067551	6/2006
WO	2010/068319	6/2010

OTHER PUBLICATIONS

Hendrickson, A Boler Company, Hendrickson Frame Hanger Selection Guide, May 1990.

Hendrickson, A Boler Company, Hendrickson RS Series, Single Axle Suspension, Sep. 1995.

Hendrickson, RS Series Rubber Load Cushion, Only Hendrickson makes choosing a heavy-duty suspension this easy, Jun. 1993.

Hendrickson, A Boler Company, HN Series Technical Sales Publication, Jun. 1997.

Hendrickson Suspension, RS Series rubber load cushion, Jul. 1991.

Hendrickson Mfg., Tandem Division, Wide spread equalizing beams, sales bulletin, May 1981.

Hendrickson Mfg. Co., Tandem Division, Hendrickson Tandem Suspensions for GMC Trucks, Aug. 1979.

Hendrickson, The Boler Company, RS Frame Hanger, Dec. 1997.

Hendrickson, A Boler Company, RS Series Rubber Load Cushion Suspensions, Mar. 1996.

Hendrickson, A Boler Company, RS Series Rubber Load Cushion Suspensions, Jul. 1996.

Hendrickson, A Boler Company, RS Series Rubber Load Cushion, Mar. 1998.

Hendrickson Suspension, HN Series Premium Rubber, Hendrickson introduces a completely new concept in Walking Beam Suspension, Jun. 1993.

Hendrickson Suspension, A Boler Company, Hendrickson HNT Series, Feb. 1992.

Hendrickson Suspension, Sales Engineering Update, Mar. 1993.

Hendrickson Truck Suspension Systems, A Boler Company, RS Series Rubber Load Cushion, Dec. 1996.

Hendrickson Truck Suspension Systems, A Boler Company, RS Series Rubber Load Cushion, Apr. 1998.

Hendrickson Truck Suspension Systems, A Boler Company, HN Series VariRate Spring System, May 1997.

Hendrickson Truck Suspension Systems, A Boler Company, HN Series VariRate Spring System, Nov. 1997.

Hendrickson Truck Suspension Systems, A Boler Company, HN Series VariRate Spring System, Sep. 1998.

Hendrickson Truck Suspension Systems, A Boler Company, HN Series VariRate Spring System, Jul. 1999.

Hendrickson, HN Series VariRate Spring System, Nov. 2000.

Hendrickson, HN Series VariRate Spring System, Nov. 2005.

Hendrickson Truck Suspension Systems, A Boler Company, HN 402, Feb. 1996.

Hendrickson Truck Suspension Systems, A Boler Company, R Series Solid Mount, Jul. 1999.

Hendrickson Truck Suspension Systems, A Boler Company, RS Series Rubber Load Cushion, Jun. 1999.

Hendrickson, Haulmaax Heavy Duty Suspension, Oct. 2001.

Hendrickson, Haulmaax Heavy Duty Suspension, Dec. 2003.

Hendrickson, Haulmaax Heavy Duty Suspension, Mar. 2005.

Hendrickson, Haulmaax Heavy Duty Suspension, Jan. 2007.

Hendrickson, Haulmaax Heavy Duty Suspension, Mar. 2008.

Hendrickson, Assembly Instructions Haulmaax, Subject: Kit Nos. 64178-003 & 004, Feb. 2003.



- Hendrickson, Assembly Instructions Haulmaax, Subject: Tie-bar Bolster Spring Kit Nos. 64179-037, Jun. 2006.
- Hendrickson, Assembly Instructions Haulmaax, Subject: Outboard Frame Bracket for Paccar Vehicles Built after May 1, 2005 through Aug. 31, 2006, Oct. 2006.
- Hendrickson, Assembly Instructions Haulmaax Saddle Assembly, Subject: Service Kit No. 57974-048, Dec. 2008.
- Hendrickson, Technical Bulletin HN 402/462/522, Subject: Auxiliary Spring Shim Design, Oct. 2000.
- Hendrickson, Technical Bulletin HN 402/462/522, Subject: Auxiliary Spring Shim Design, Dec. 2000.
- Hendrickson, Technical Bulletin HN 402/462/522, Subject: Auxiliary Spring Shim Design, Jun. 2006.
- Hendrickson, Technical Bulletin Haulmaax Series, Subject: Mandatory Shock Applications, Nov. 2004.
- Hendrickson, Technical Bulletin R, RS, RT/RTE 46K Capacity, Subject: 46K Heavy-Duty Beam Option, Dec. 2004.
- Hendrickson, Technical Bulletin Haulmaax, Subject: 54" Equalizing Beam Assembly, Oct. 2005.
- Hendrickson, Technical Bulletin Haulmaax 460, Subject: Bolster Spring Assembly with Tie-bar, Jun. 2006.
- Hendrickson Truck Suspension Systems, A Boler Company, Sales engineering update, Subject: HN-402/462 Auxiliary Spring Assembly, Aug. 1998.
- Hendrickson Truck Suspension Systems, A Boler Company, Sales engineering update, Subject: Model Designation and Discontinuation, Aug. 1999.
- Hendrickson Truck Suspension Systems, A Boler Company, Sales engineering update, Subject: Equalizer Beam, Aug. 1999.
- Hendrickson, Parts List RS Series, Nov. 2004.
- Hendrickson, Parts List Haulmaax, May 2002.
- Hendrickson, Parts List Haulmaax, Jul. 2003.
- Hendrickson, Parts List Haulmaax, Jul. 2006.
- Hendrickson, Parts List Haulmaax, Dec. 2007.
- Hendrickson, Parts List RS 400/460/480/520 Jan. 1998.
- Hendrickson, Parts List HN 402/462, Sep. 1997.
- Hendrickson, Parts List HN Series, Dec. 2004.
- Hendrickson Truck Suspension Systems, A Boler Company, Technical Publication RS-340 thru 520, Subject: Springing: Frame Hangers, Load Cushions and Saddle Assembly, Jul. 1993.
- Hendrickson Truck Suspension Systems, A Boler Company, Technical Publication HN Series Truck & Trailer Suspension No. 17730-198, Mar. 1993.
- Hendrickson, Technical Procedure HN/HNT-400/460 Truck & Trailer Suspension in Production 11/88-9/96, Apr. 1998.
- Hendrickson Truck Suspension Systems, A Boler Company, Technical Publication HN 402 Series, Subject: Service Instructions, Aug. 1996.
- Hendrickson Truck Suspension Systems, A Boler Company, Technical Publication HN 402/462 Series, Subject: Service Instructions, Aug. 1998.
- Hendrickson, Technical Procedure Haulmaax, Subject: Service Instructions, May 2002.
- Hendrickson, Technical Procedure Haulmaax, Subject: Service Instructions, Jun. 2007.
- Hendrickson, Technical Procedure Haulmaax, Subject: Pre-delivery Inspection and Preventive Maintenance, Apr. 2006.
- Hendrickson, Technical Procedure Haulmaax, Subject: Service Instructions, Dec. 2007.
- Hendrickson, Technical Procedure R/RS/RT Heavy Duty, Subject: 650K/850K/1000K Pound Capacity Beam End Connection Tightening Torque Procedure, Jul. 2006.
- Hendrickson, RS Series Rubber Load Cushion, Feb. 2000.
- MOR/Ryde, The MOR/ryde Steer and Drive Axle Suspension Systems, Mar. 7, 2008.
- MOR/Ryde, Company Profile, downloaded from the World Wide Web at <http://www.morrydede.com/php/about/profile/php> on Feb. 28, 2008.
- MOR/Ryde, T/A Modular Rubber Suspension System, Service Manual, Mar. 5, 2003.
- MOR/Ryde, Tandem Axle Rubber Suspension System, Service Manual, Suspension Codes: T01-01 and L01-01, Mar. 5, 2003.
- MOR/Ryde, RL Rubber Leaf Suspension System, Owner's Manual, Mar. 12, 2003.
- MOR/Ryde, Commercial Trailer Suspension, Jun. 1973.
- MOR/Ryde, School Bus Suspension, Aug. 1973.
- MOR/Ryde, A rubber spring . . . heart of the MOR/ryde system, Aug. 1973.
- Jorn, Technology in Rubber—Metal, Sep. 29, 2008.
- Hendrickson, Parts List RS Series, Apr. 2008.
- Hendrickson, Technical Procedure, R/RS Heavy Duty, Subject: 85K/100K/120K lbs Capacity Tightening Torque for Torque Rod and Saddle Assembly Fasteners, Oct. 2008.
- Kenworth Truck Company, Haulmaxx, May 14, 2009.
- European Patent Office, International Search Report for International Application No. PCT/US2009/036662, Feb. 17, 2010.
- European Patent Office, Written Opinion of the International Searching Authority for International Application No. PCT/US2009/036662, Feb. 17, 2010.
- European Patent Office, International Search Report for International application No. PCT/US2009/056575, Mar. 3, 2010.
- European Patent Office, Written Opinion for International application No. PCT/US2009/056575, Mar. 3, 2010.
- Hendrickson, HN FR Series, HN FR Suspension 42-58K Fire/Rescue, Feb. 2009.
- Hendrickson, Haulmaxx Heavy-Duty Suspension, Jan. 2009.
- Noble et al., U.S. Appl. No. 29/396,890, filed Jul. 8, 2011.
- Noble et al., U.S. Appl. No. 29/396,892, filed Jul. 8, 2011.
- Noble et al., U.S. Appl. No. 29/396,893, filed Jul. 8, 2011.
- About.com, Progressive Rate Spring, downloaded from the World Wide Web at <http://autorepair.about.com/library/glossary/bldef-277.htm> on Nov. 21, 2008.
- Answers.com-tie plate. <http://www.answers.com/topic/tie-plate>. Downloaded from the World Wide Web on Jul. 28, 2009.
- Elastomer, downloaded from the World Wide Web at <http://en.wikipedia.org/wiki/Elastomer> on Nov. 24, 2008.
- European Patent Office, Communication Relating to the Results of the Partial International Search, PCT/US2009/036662, Mar. 2, 2010.
- Hendrickson USA, L.L.C., Technical Procedure HUV 270t Heavy-duty Rubber Suspension, Subject: Service Instructions, Lit. No. 17730-269, Revision C, Feb. 2010.
- European Patent Office, International Preliminary Report on Patentability for International Application No. PCT/US2009/056575, Mar. 29, 2011.
- Hendrickson Technical Brochure for "Bus Air Ride Suspensions" H621 Oct. 1998.
- Hendrickson Technical Brochure for "Non-Steerable Suspension Systems" H621 Dec. 2003.
- Hendrickson USA, L.L.C., HUV, Lightweight Design, Premium Ride and Performance, Outstanding Durability, Nov. 2010.
- Hendrickson USA, L.L.C., HUV Heavy-duty Rubber Suspension, Dec. 2009.
- "Hydropneumatic Suspension"—Wikipedia, the free encyclopedia, downloaded from the World Wide Web at [http://en.wikipedia.org/wiki/hydropneumatic\\_suspension](http://en.wikipedia.org/wiki/hydropneumatic_suspension) on Nov. 11, 2009.
- Paul Macioce, Rouch Industries, Inc., Viscoelastic Damping 101, Sep. 9, 2002.
- "Progressive Springs-Linear Springs," downloaded from the World Wide Web at <http://www.scoobytuner.com/tuning/?tSfID=1X6&tuningID=21> on Nov. 11, 2009.
- "PT-Tuning," downloaded from the World Wide Web at <http://autorepairabout.com/library/glossary/bldef-227.htm?p=1> on Nov. 11, 2009.
- Wikipedia-File:Tie Plates.jpg. [http://en.wikipedia.org/wiki/File:Tie\\_plates.jpg](http://en.wikipedia.org/wiki/File:Tie_plates.jpg) Downloaded from the World Wide Web Jul. 28, 2009.
- Wikipedia-Tie plate. [http://en.wikipedia.org/wiki/Tie\\_plate](http://en.wikipedia.org/wiki/Tie_plate). Downloaded from the World Wide Web on Jul. 28, 2009.
- Taiwan Search Report for TW Design Patent App. No. 100301032 dated Nov. 25, 2011.
- Taiwan Search Report for TW Design Patent App. No. 100301033 dated Nov. 25, 2011.
- Taiwan Search Report for TW Design Patent App. No. 100301028 dated Nov. 25, 2011.



International Search Report for PCT/US2011/049829 mailed Oct. 17, 2011.

Notice of Allowance for U.S. Appl. No. 29/369,287 mailed Mar. 1, 2012.

\* cited by examiner

*Primary Examiner* — Michael A Pratt

(74) *Attorney, Agent, or Firm* — McDonnell Boehnen Hulbert & Berghoff LLP

(57)

**CLAIM**

The ornamental design for a suspension assembly, as shown and described.

**DESCRIPTION**

FIG. 1 is a top plan view of a first suspension assembly having the inventive design;

FIG. 2 is a bottom plan view of the suspension assembly shown in FIG. 1;

FIG. 3 is a left side elevation view of the suspension assembly shown in FIG. 1;

FIG. 4 is a right side elevation view of the suspension assembly shown in FIG. 1;

FIG. 5 is a front elevation view of the suspension assembly shown in FIG. 1;

FIG. 6 is a rear elevation view of the suspension assembly shown in FIG. 1;

FIG. 7 is a top front right corner perspective view of the suspension assembly shown in FIG. 1;

FIG. 8 is a top front left corner perspective view of the suspension assembly shown in FIG. 1;

FIG. 9 is a bottom front left corner perspective view of the suspension assembly shown in FIG. 1;

FIG. 10 is a bottom front right corner perspective view of the suspension assembly shown in FIG. 1;

FIG. 11 is a top rear right corner perspective view of the suspension assembly shown in FIG. 1;

FIG. 12 is a top rear left corner perspective view of the suspension assembly shown in FIG. 1;

FIG. 13 is a bottom rear left corner perspective view of the suspension assembly shown in FIG. 1;

FIG. 14 is a bottom rear right corner perspective view of the suspension assembly shown in FIG. 1;

FIG. 15 is a top plan view of a second suspension assembly having the inventive design;

FIG. 16 is a bottom plan view of the suspension assembly shown in FIG. 15;

FIG. 17 is a left side elevation view of the suspension assembly shown in FIG. 15;

FIG. 18 is a right side elevation view of the suspension assembly shown in FIG. 15;

FIG. 19 is a front elevation view of the suspension assembly shown in FIG. 15;

FIG. 20 is a rear elevation view of the suspension assembly shown in FIG. 15;

FIG. 21 is a top front right corner perspective view of the suspension assembly shown in FIG. 15;

FIG. 22 is a top front left corner perspective view of the suspension assembly shown in FIG. 15;

FIG. 23 is a bottom front left corner perspective view of the suspension assembly shown in FIG. 15;

FIG. 24 is a bottom front right corner perspective view of the suspension assembly shown in FIG. 15;

FIG. 25 is a top rear right corner perspective view of the suspension assembly shown in FIG. 15;

FIG. 26 is a top rear left corner perspective view of the suspension assembly shown in FIG. 15;

FIG. 27 is a bottom rear left corner perspective view of the suspension assembly shown in FIG. 15; and,

FIG. 28 is a bottom rear right corner perspective view of the suspension assembly shown in FIG. 15.

The broken line showing of bolts and hardware and attachment holes in FIGS. 15-28 are for the purpose of illustrating portions of the suspension assembly and forms no part of the claimed design.

**1 Claim, 24 Drawing Sheets**

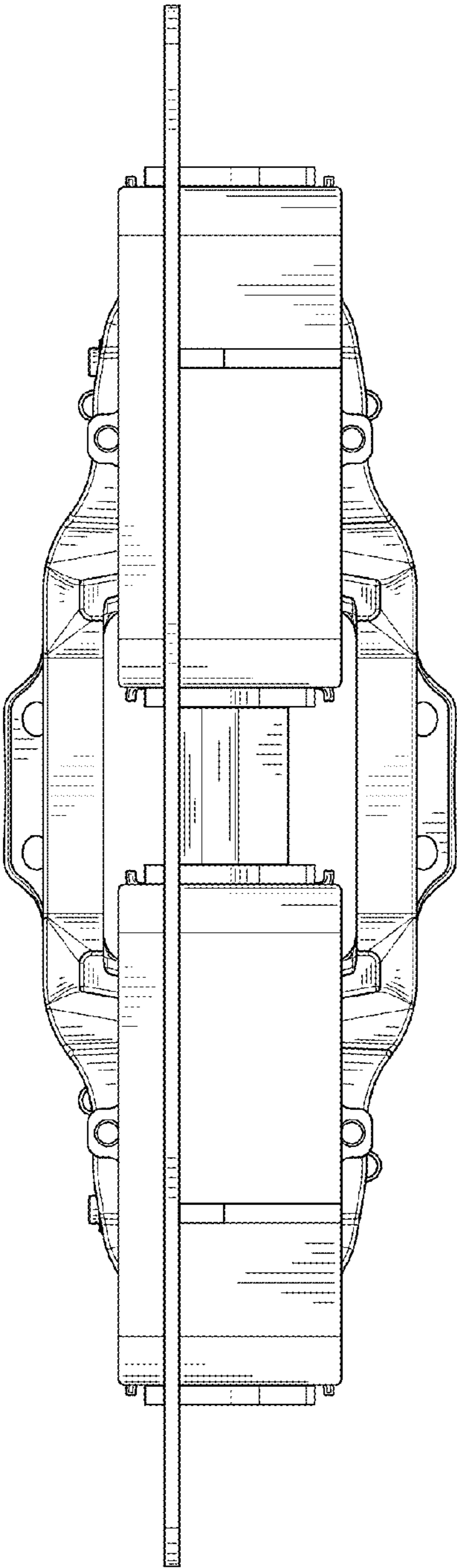


FIG. 1

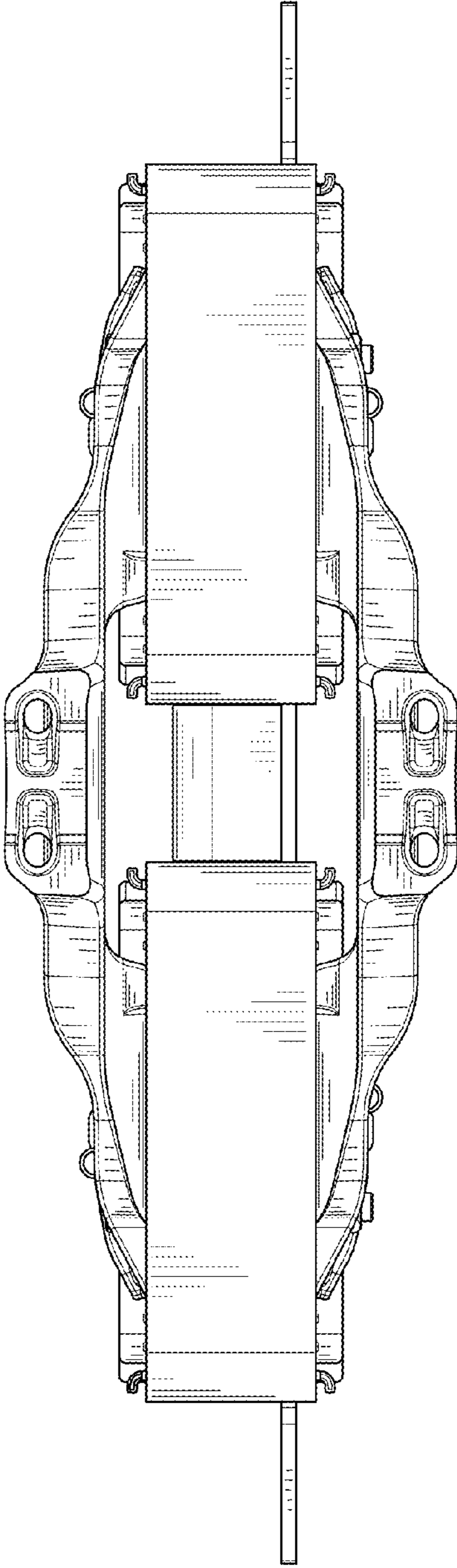


FIG. 2

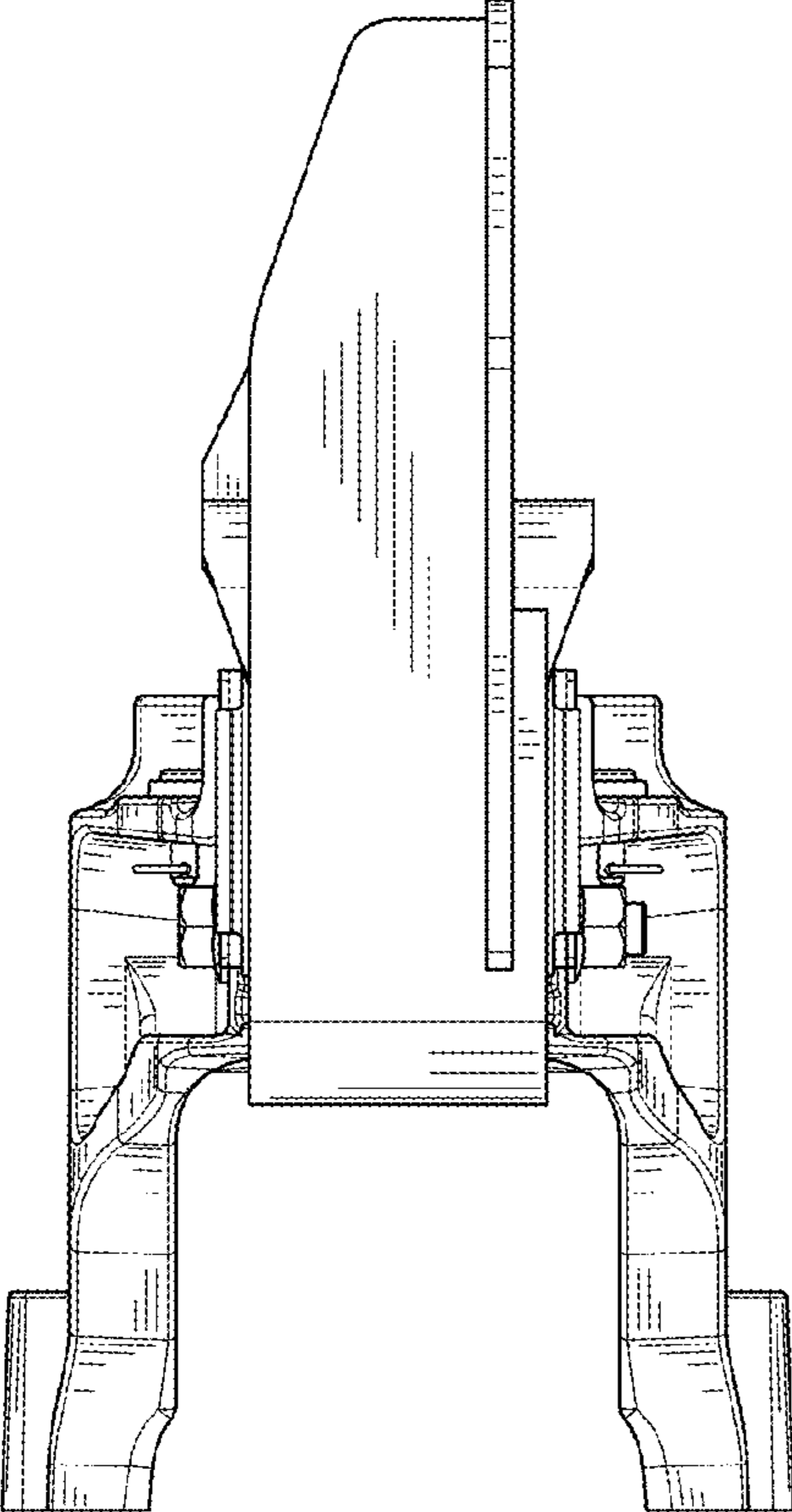


FIG. 3

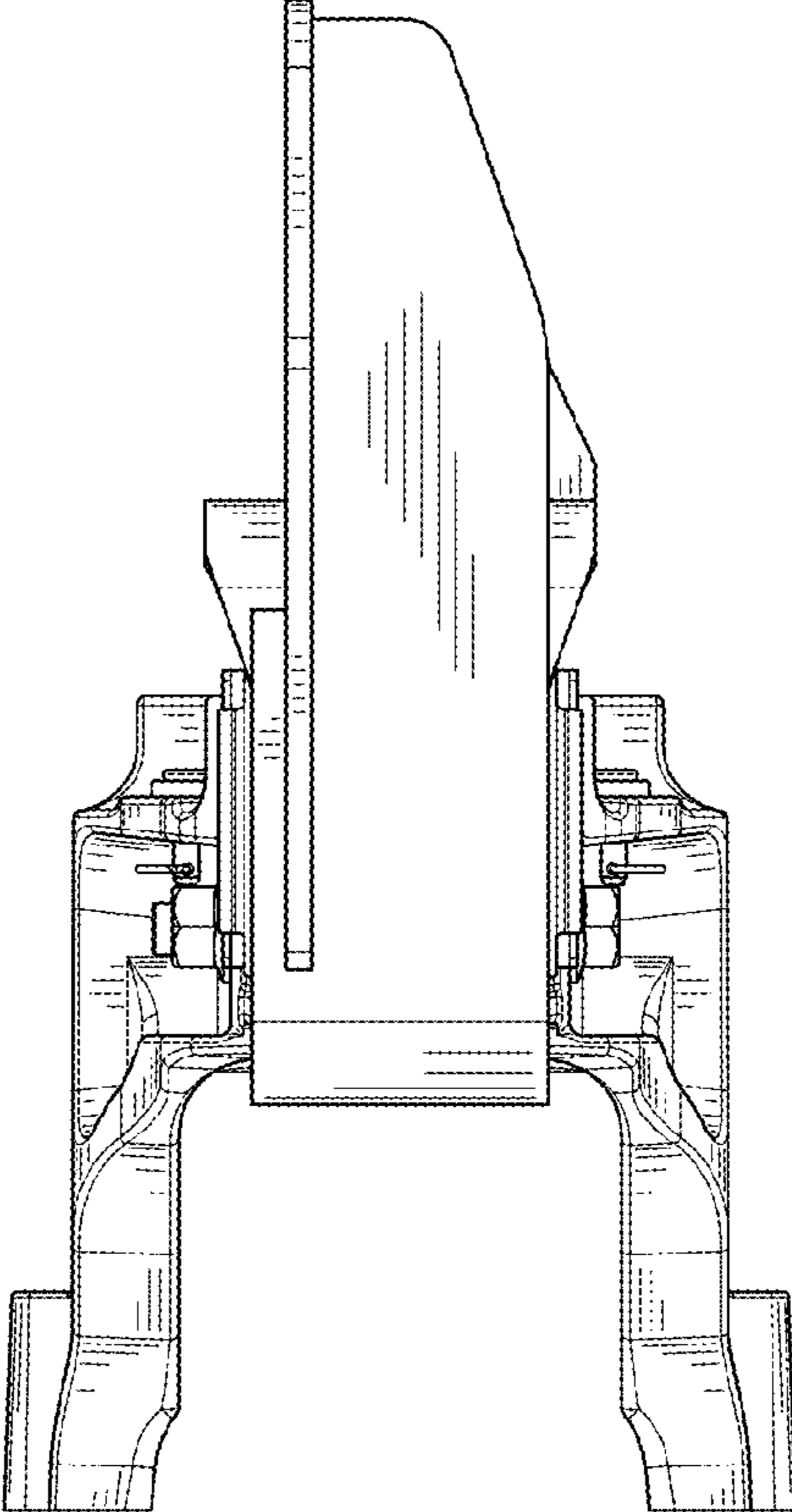


FIG. 4



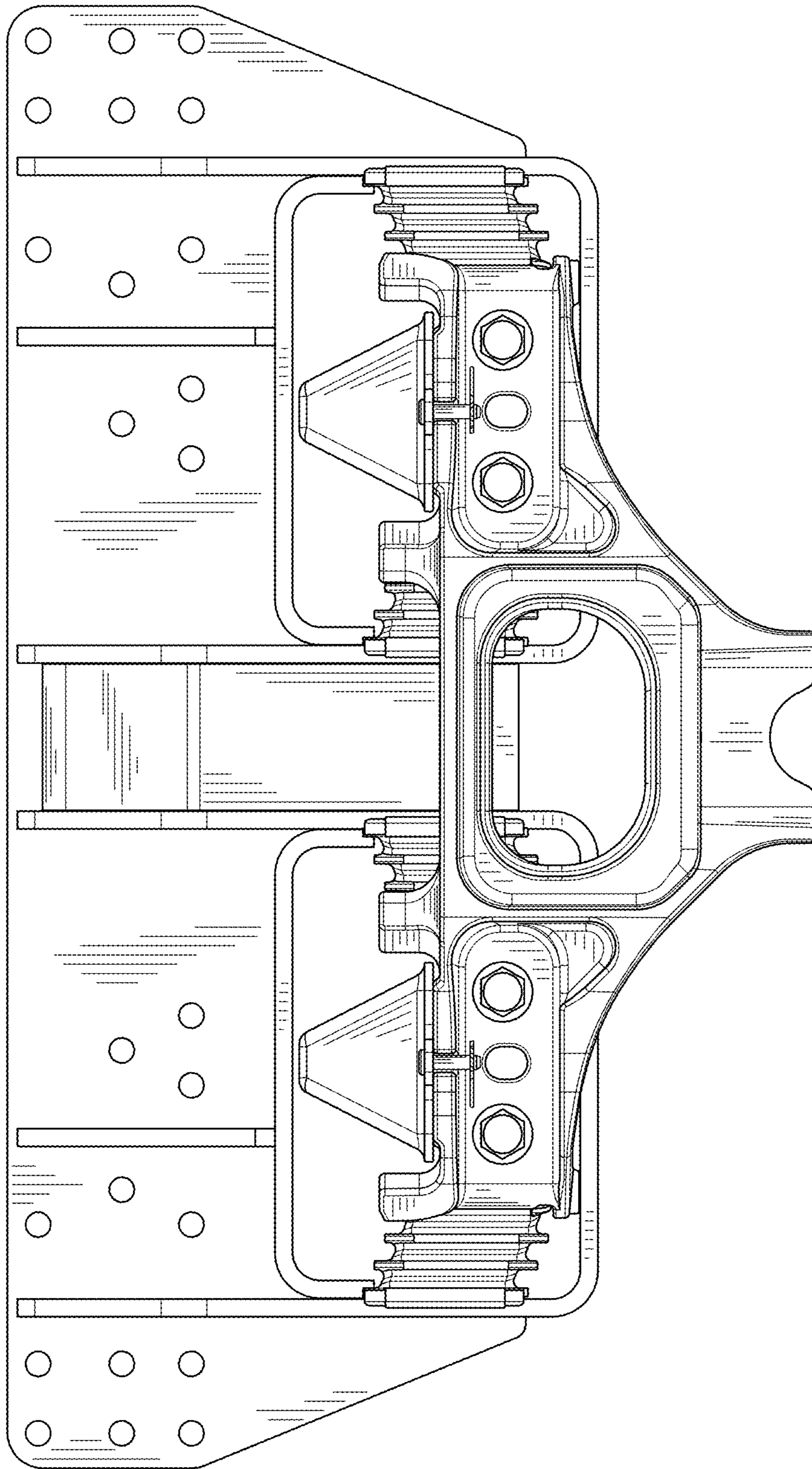


FIG. 5



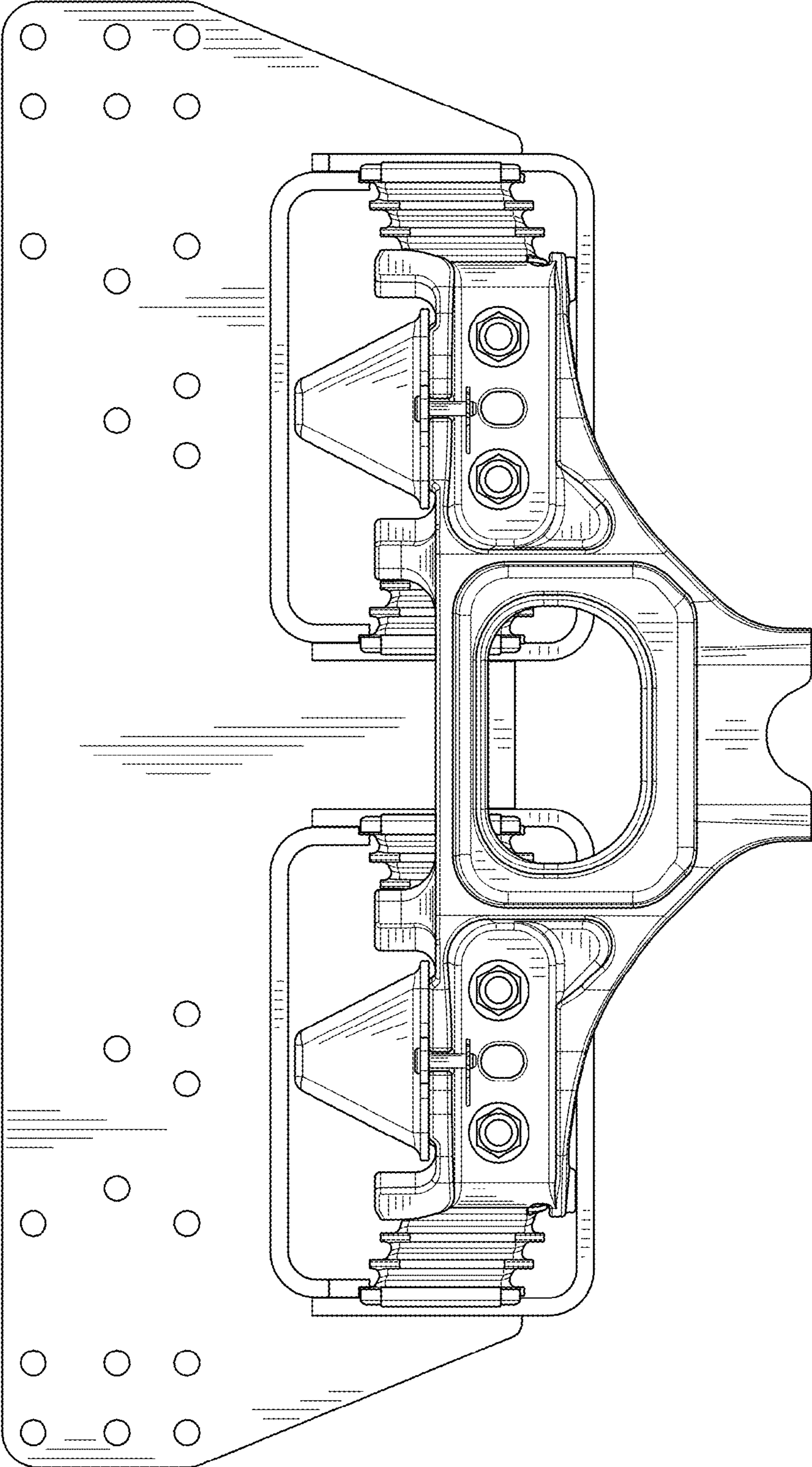


FIG. 6

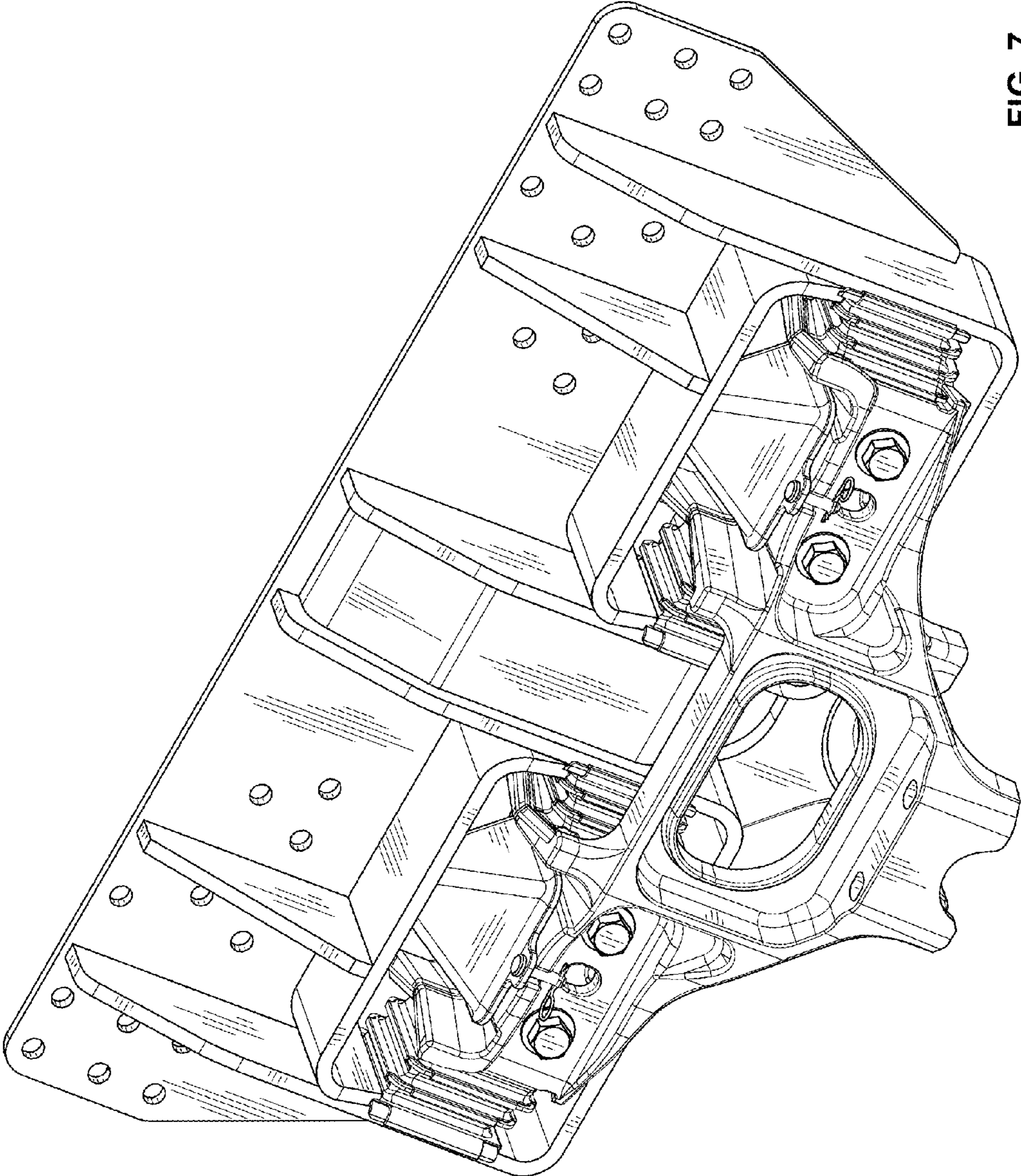


FIG. 7



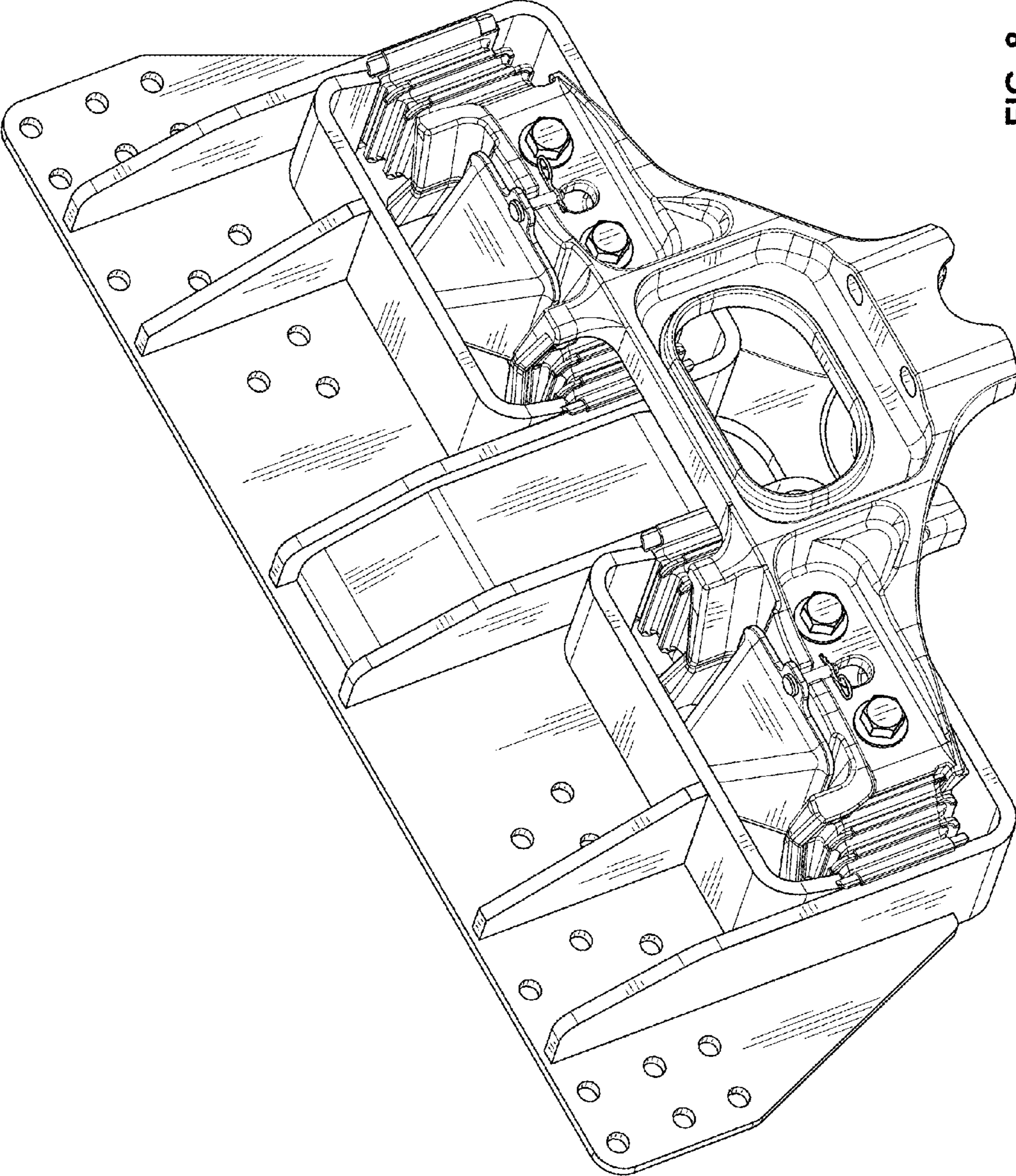


FIG. 8

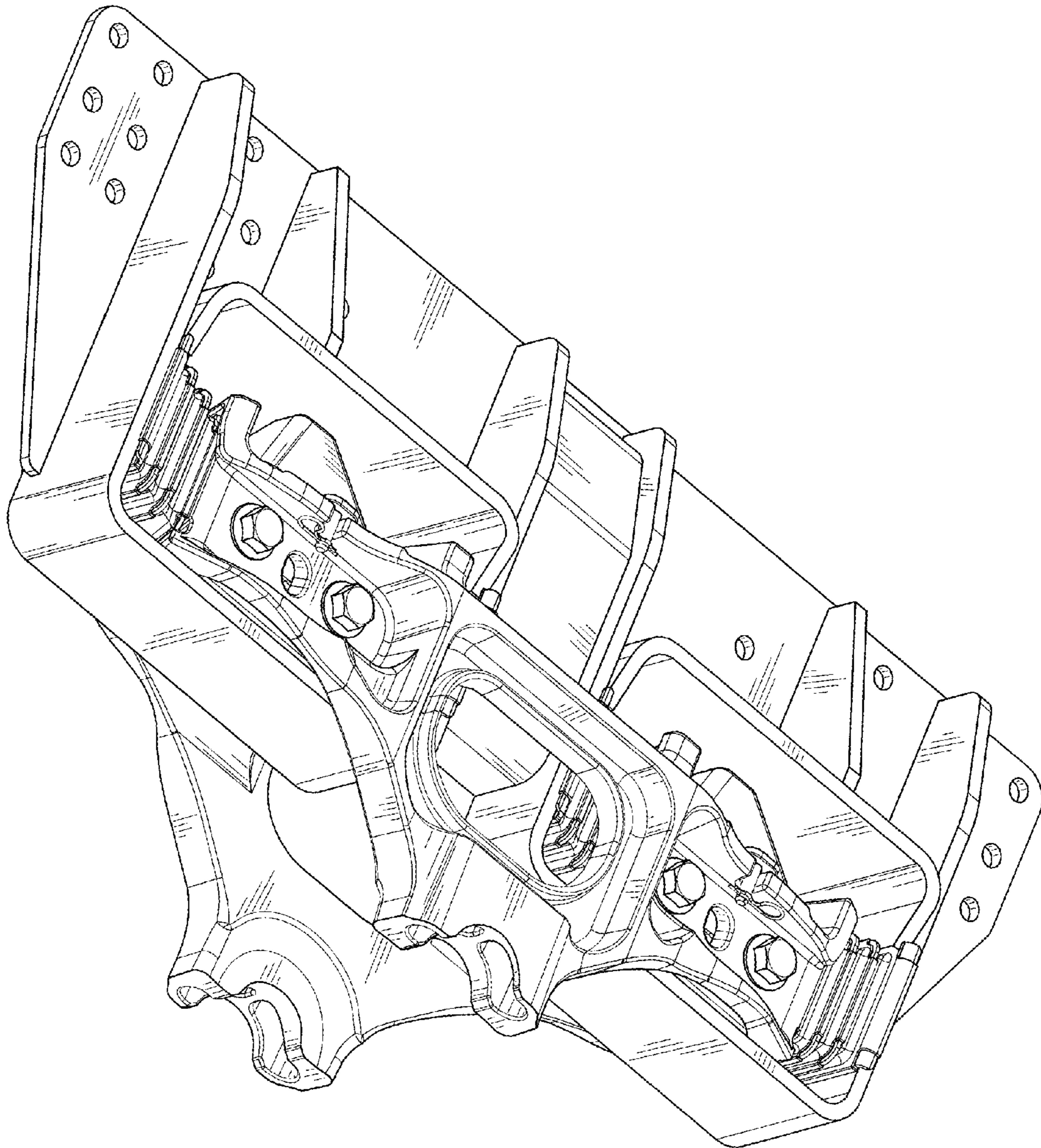


FIG. 9



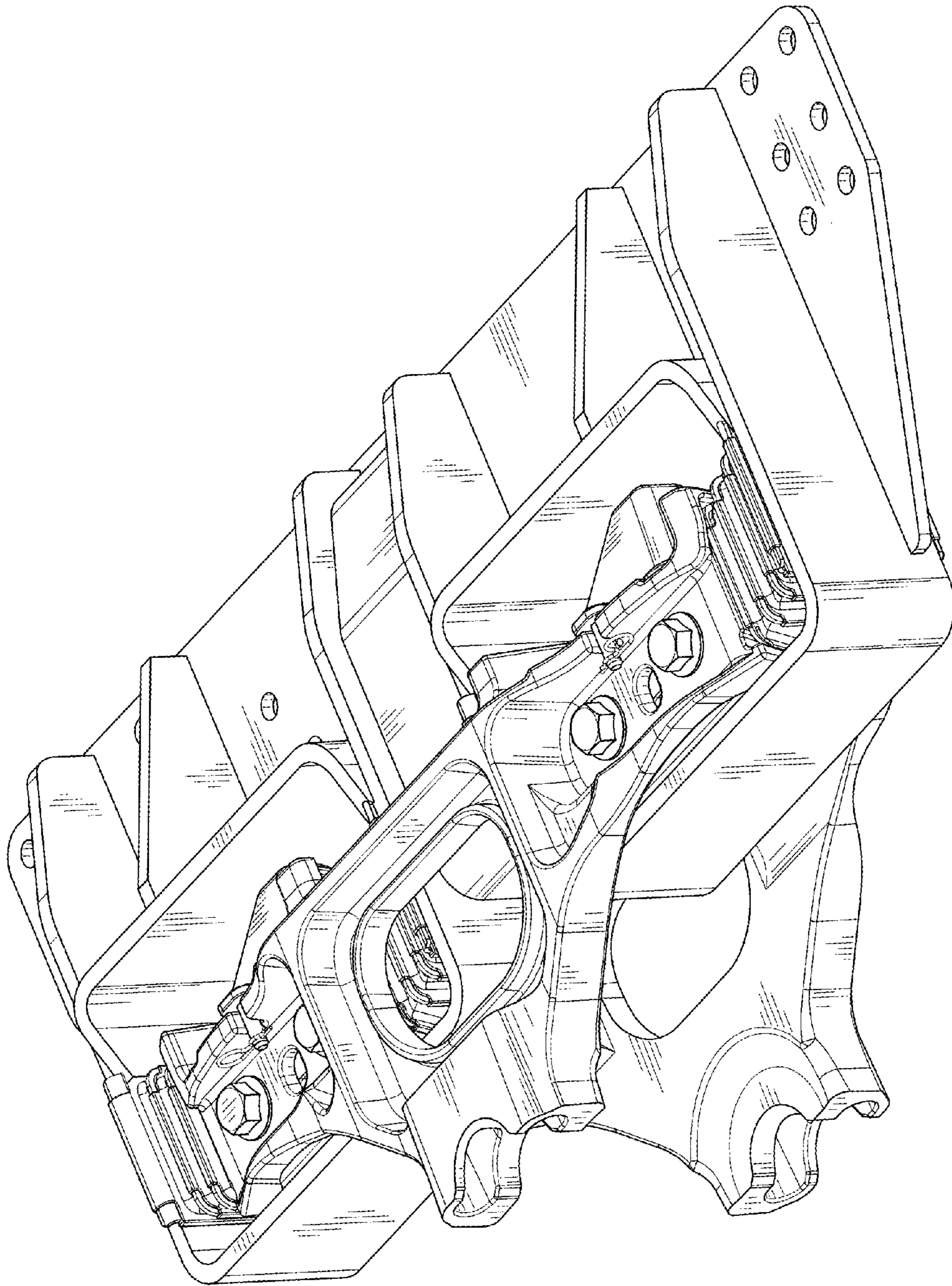


FIG. 10

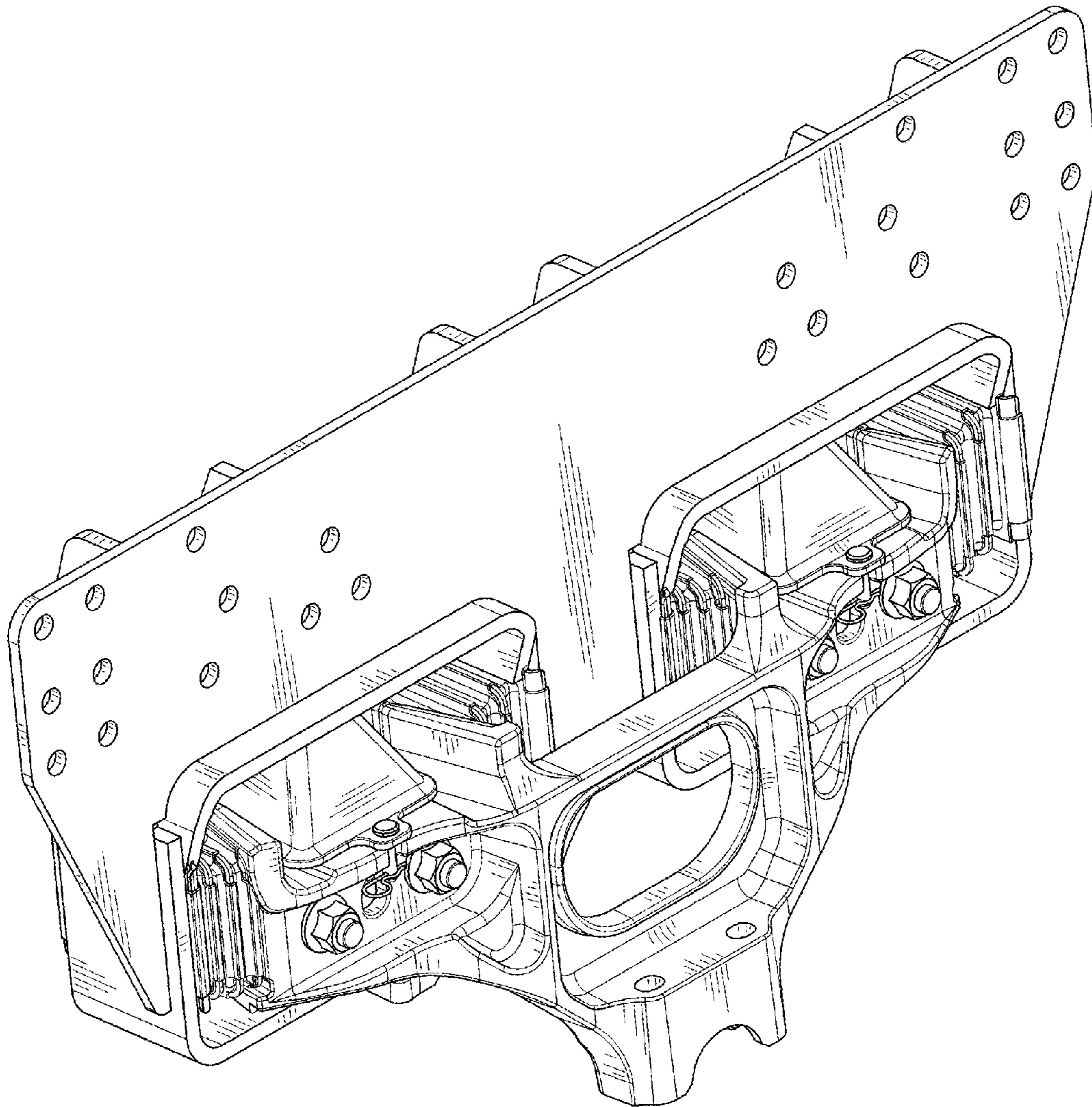


FIG. 11



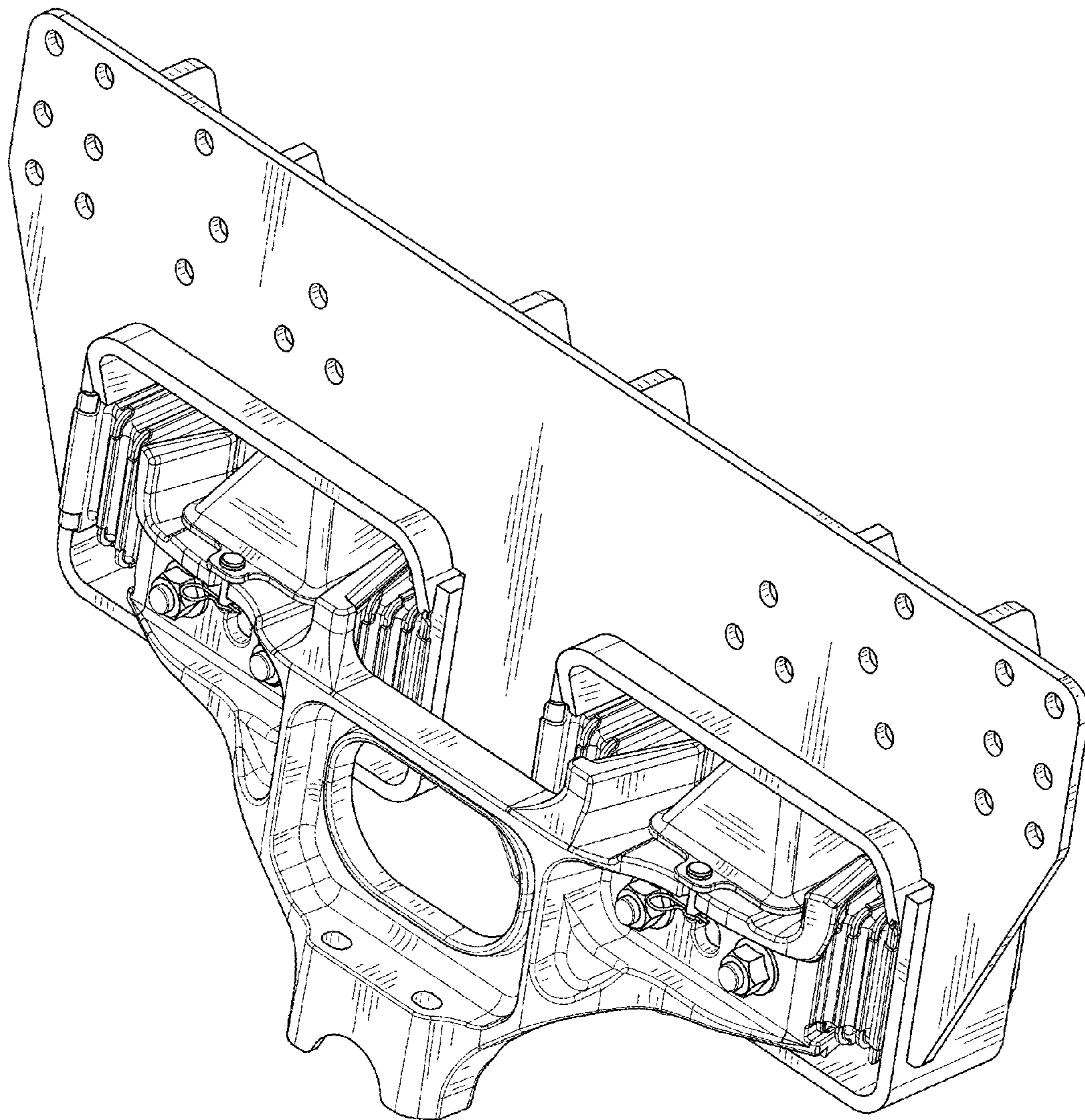


FIG. 12

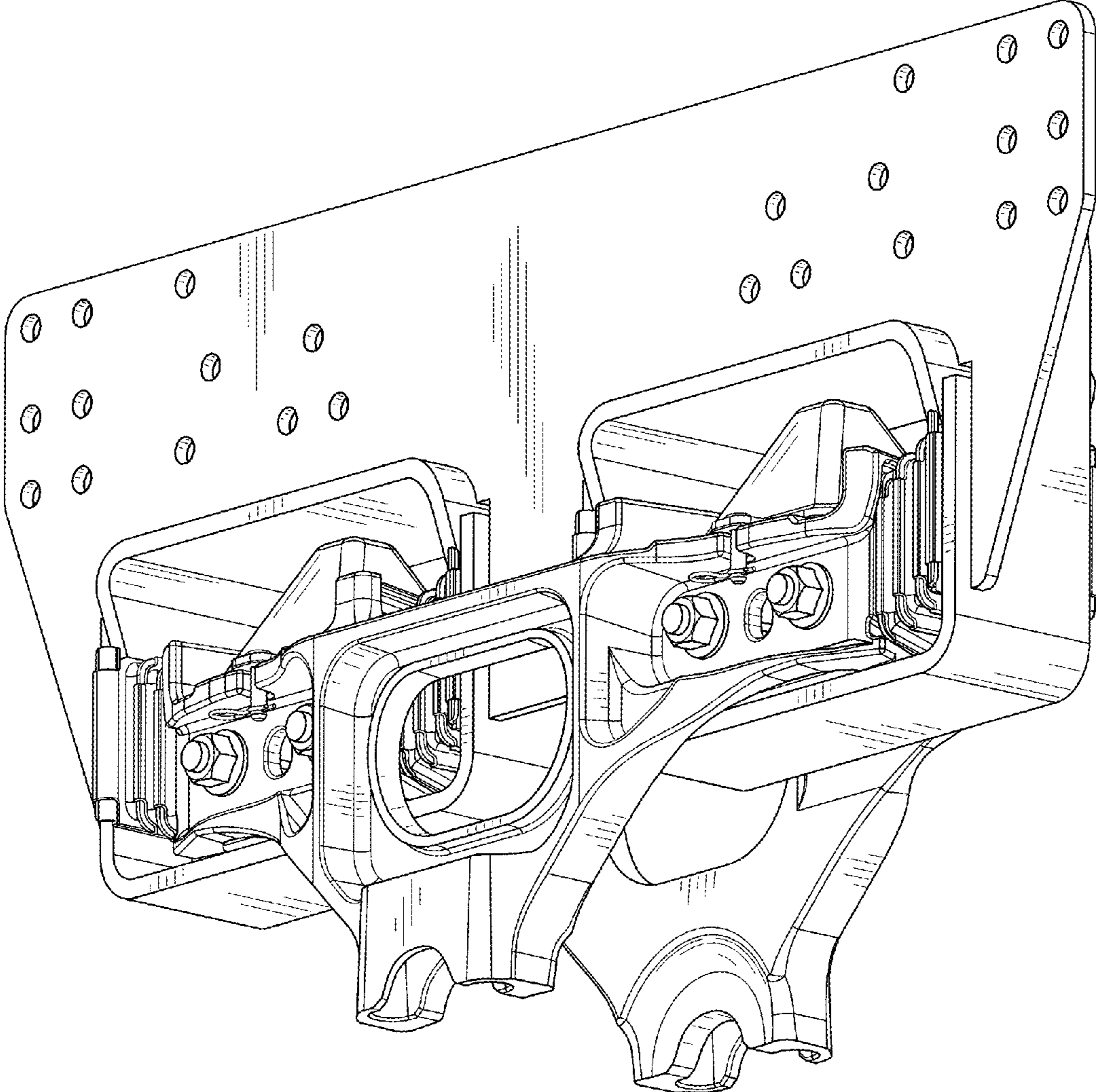


FIG. 13



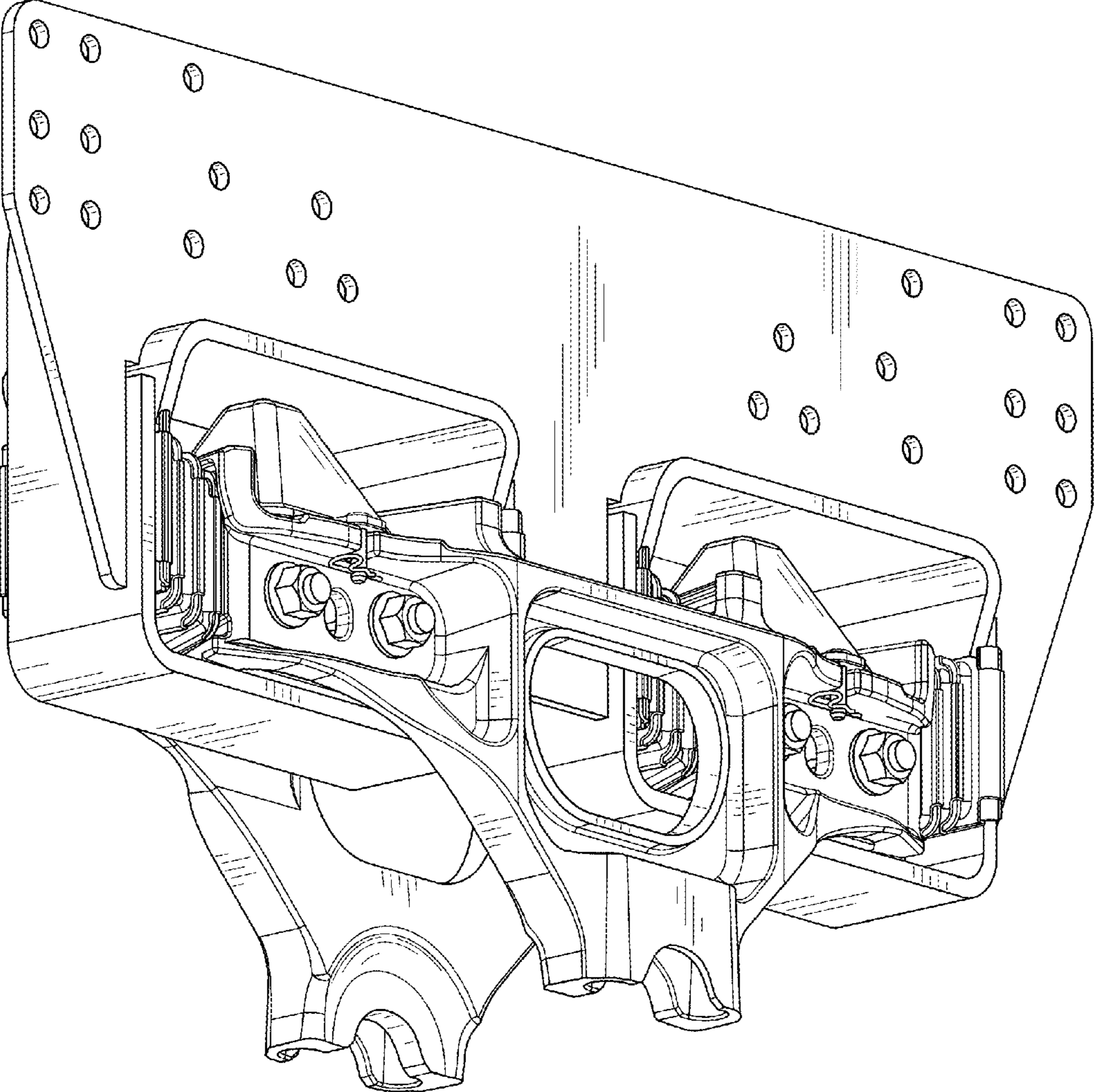


FIG. 14

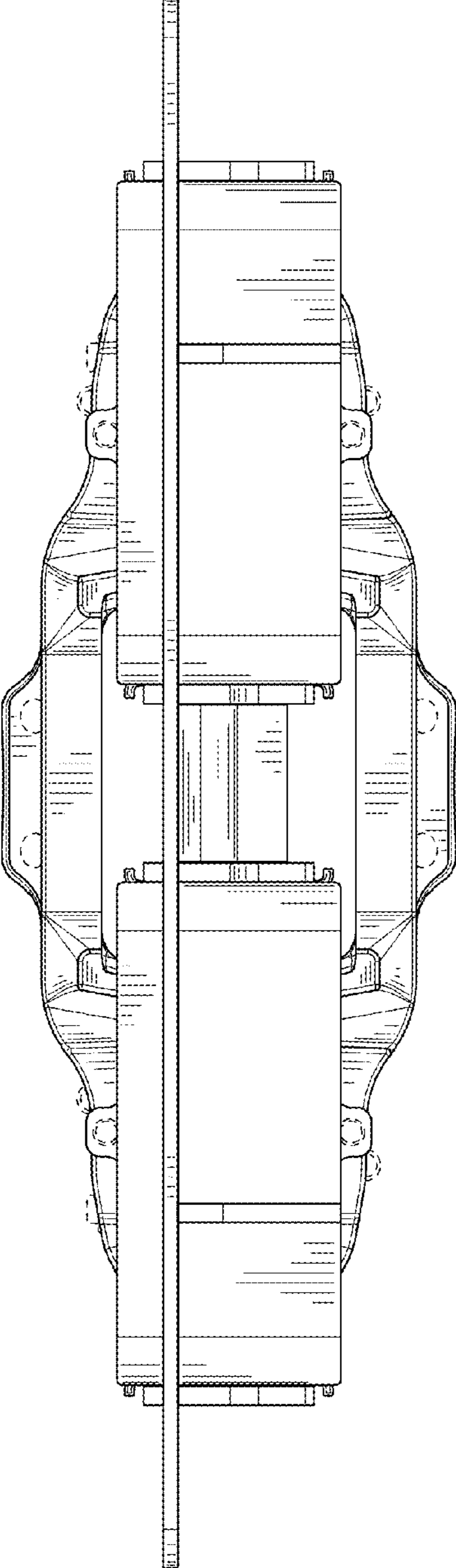


FIG. 15

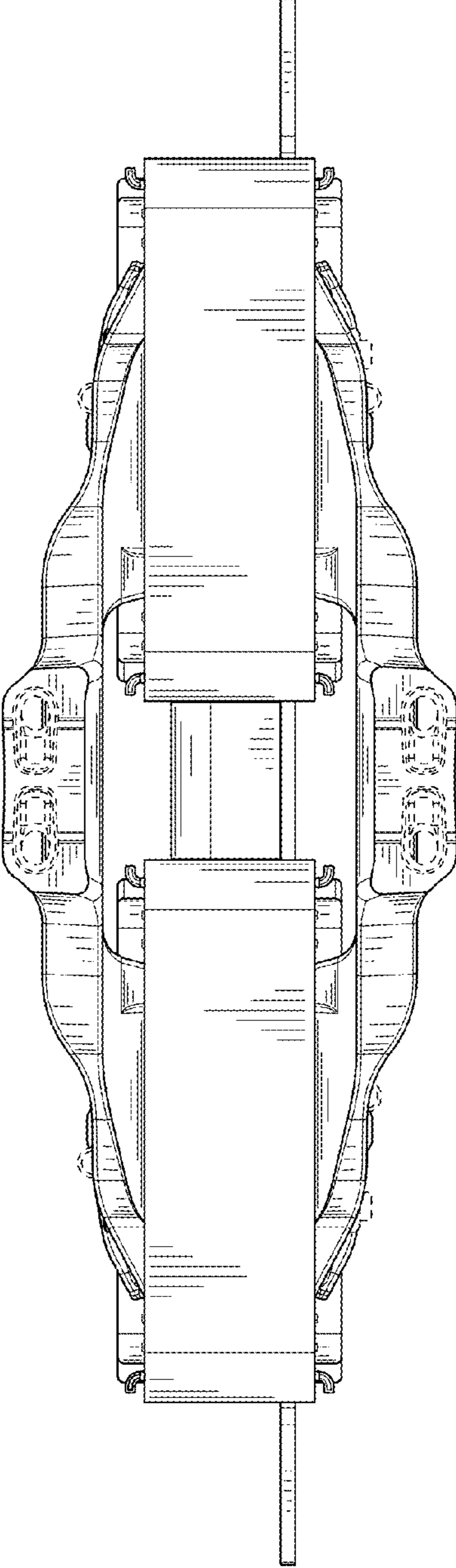


FIG. 16



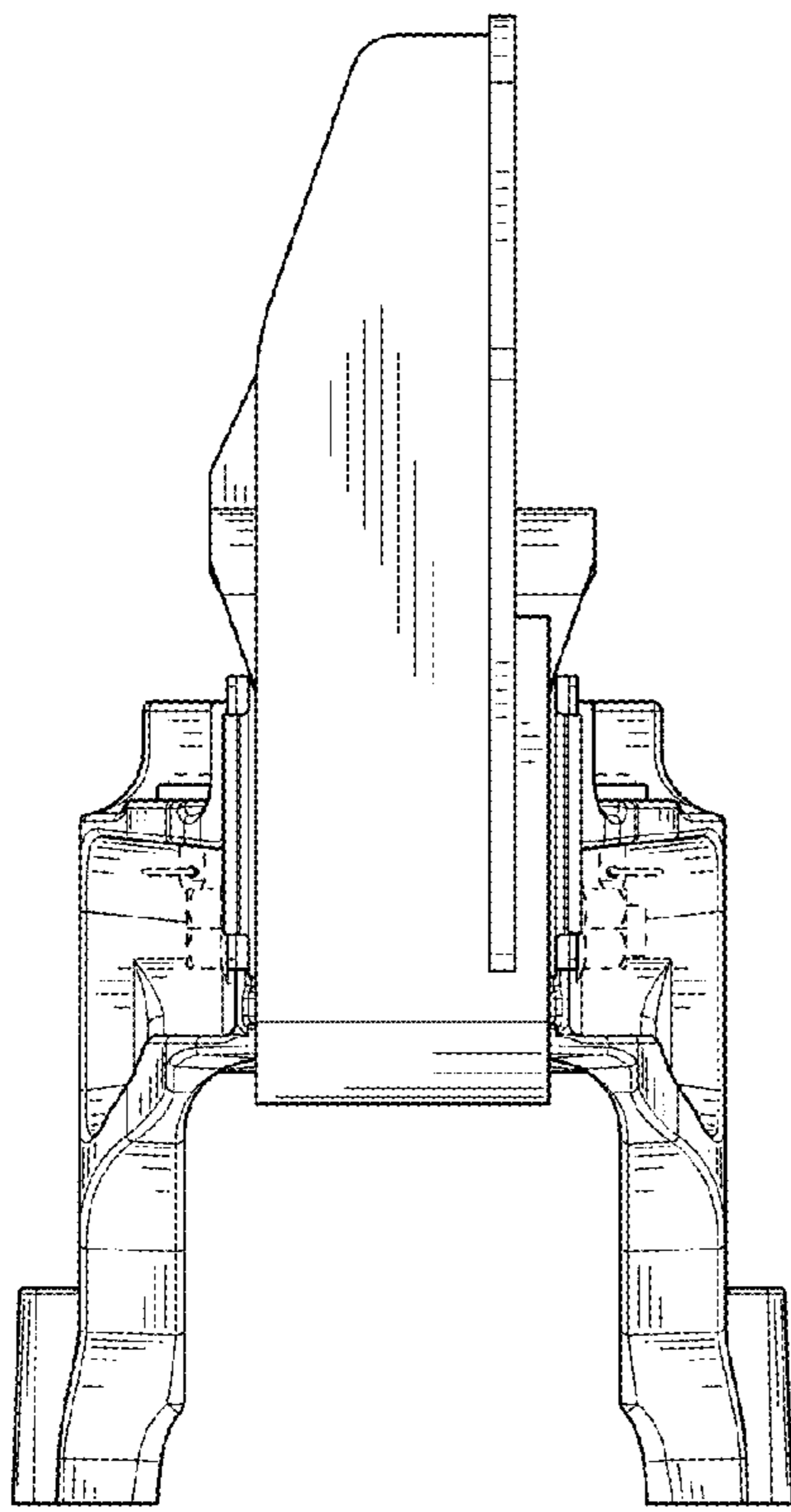


FIG. 17

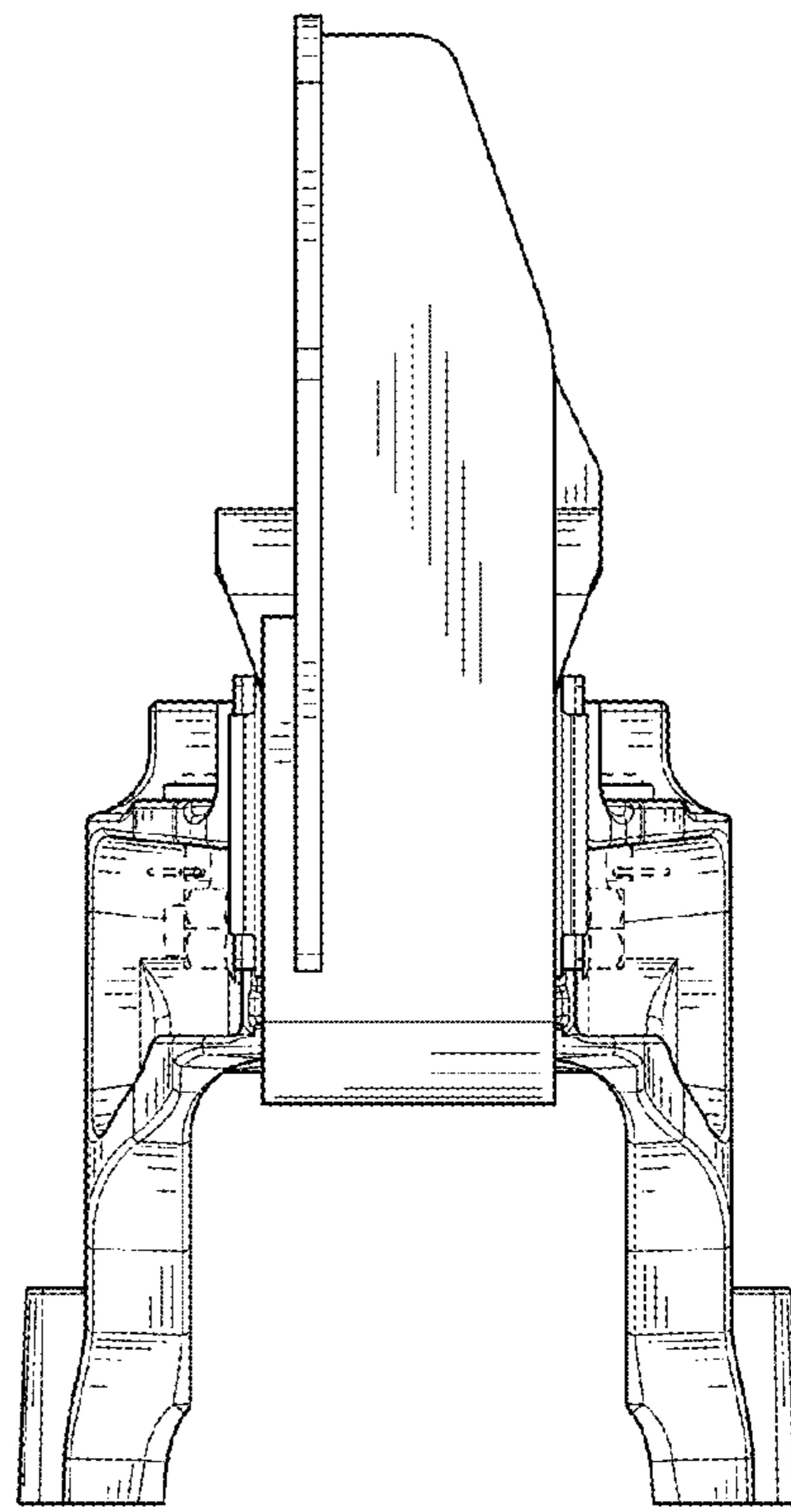


FIG. 18

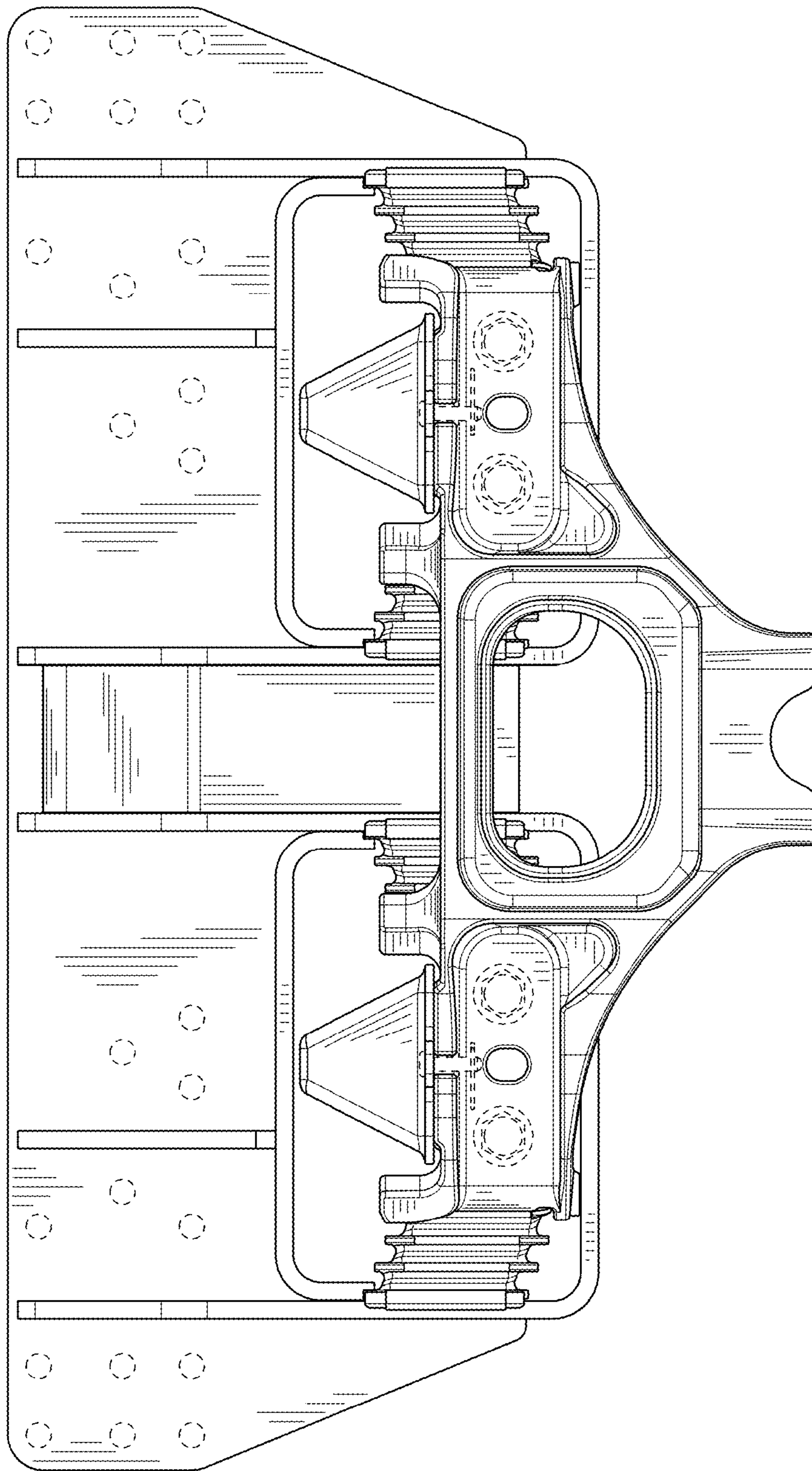


FIG. 19



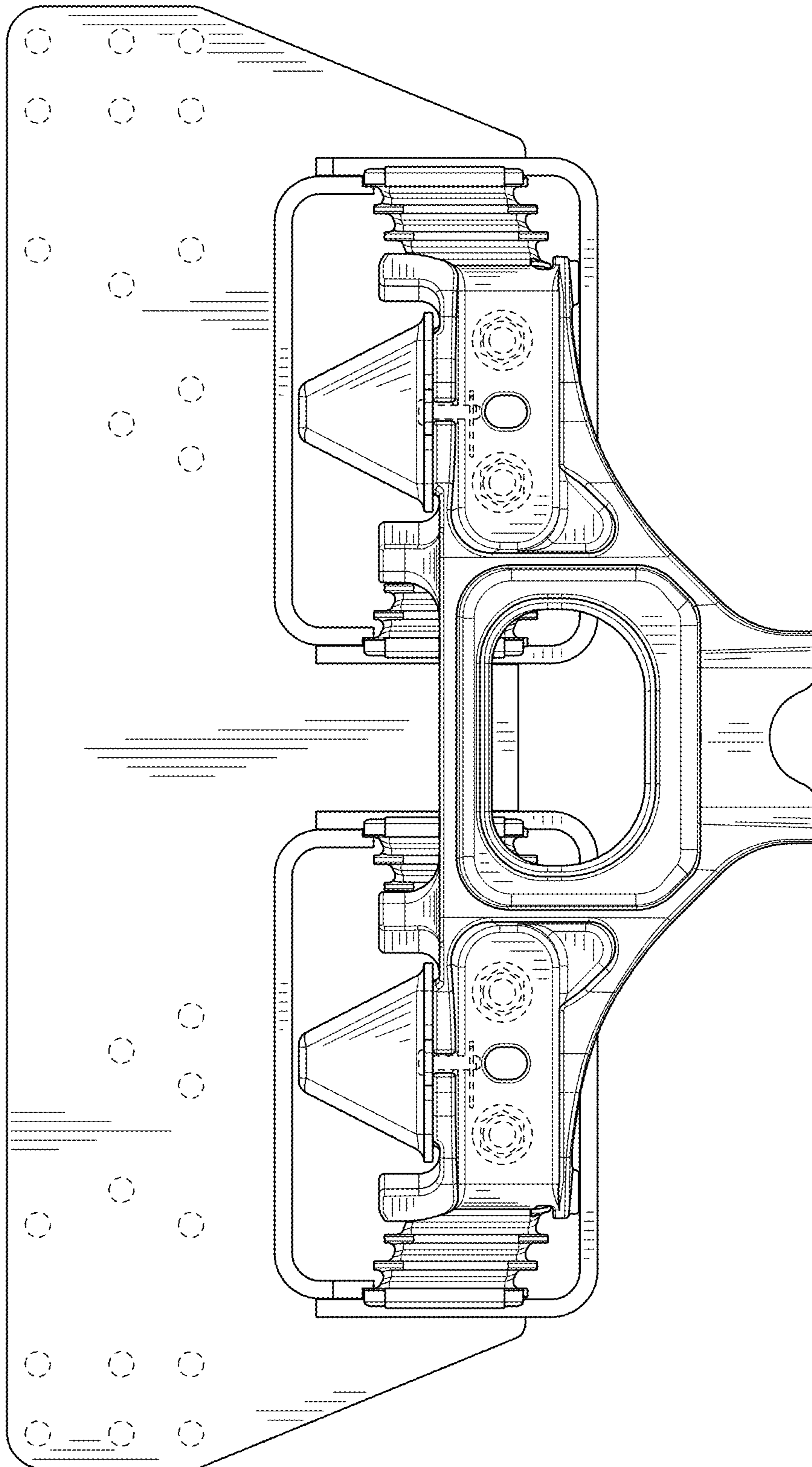


FIG. 20

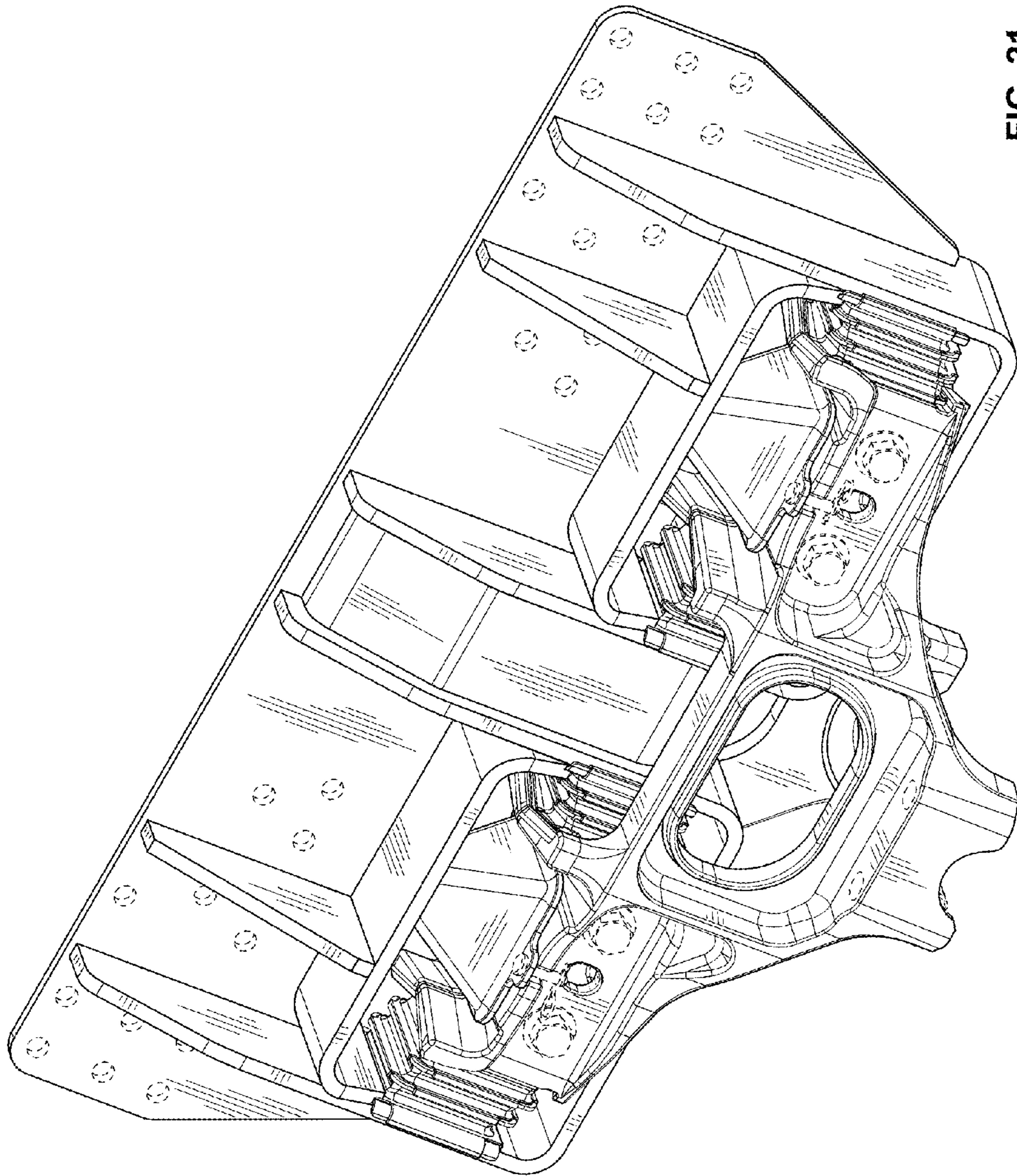


FIG. 21



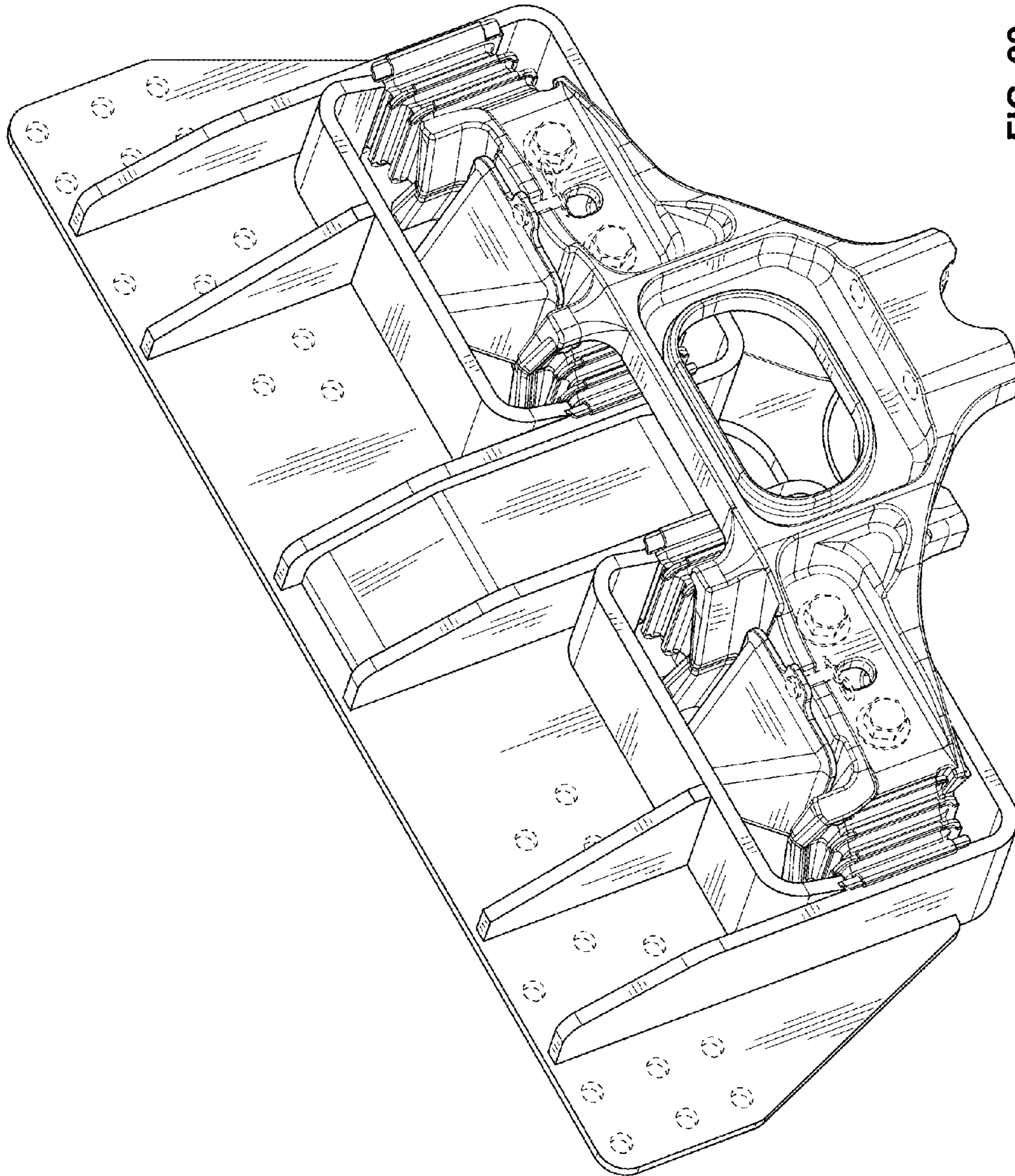


FIG. 22

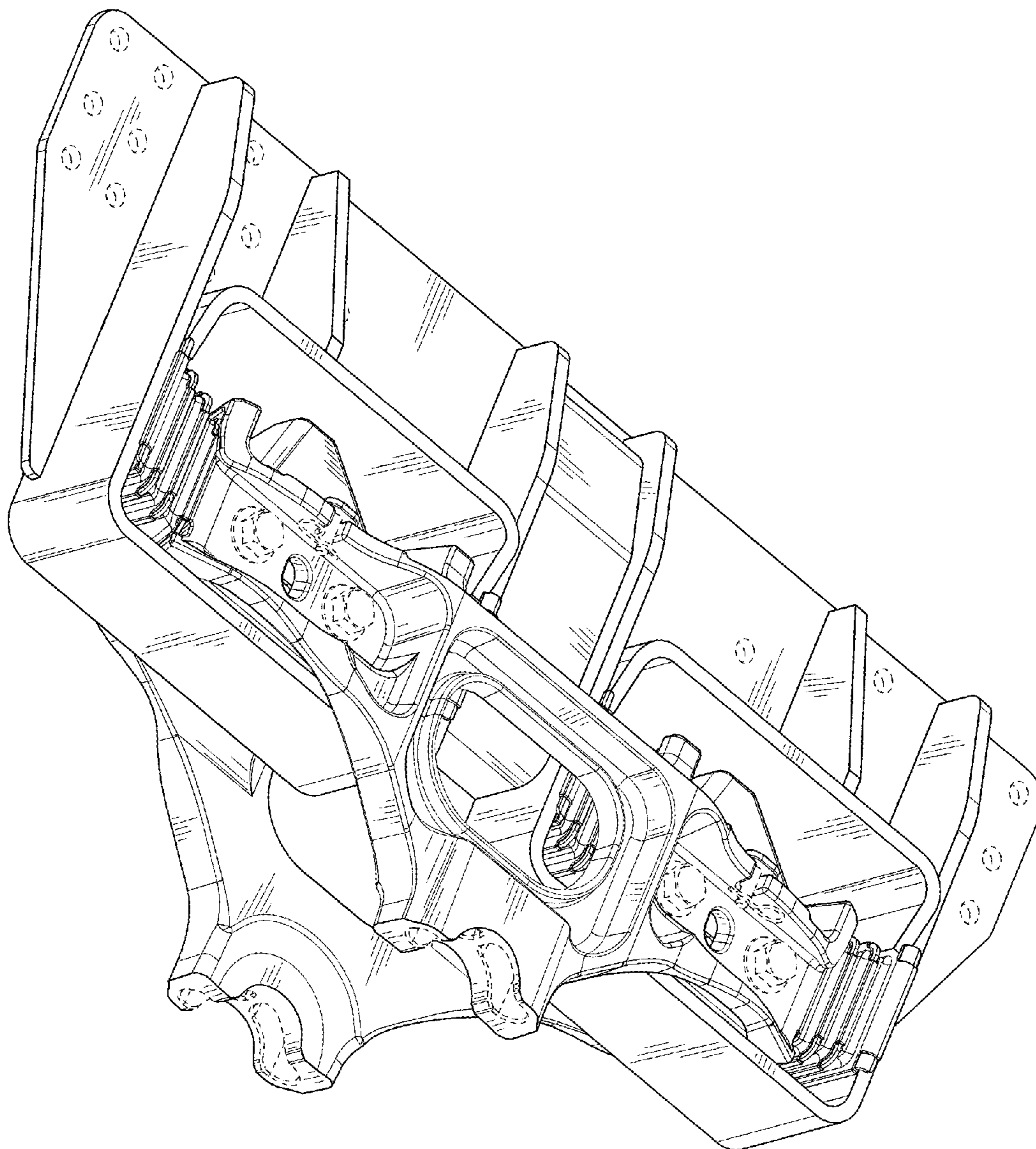


FIG. 23



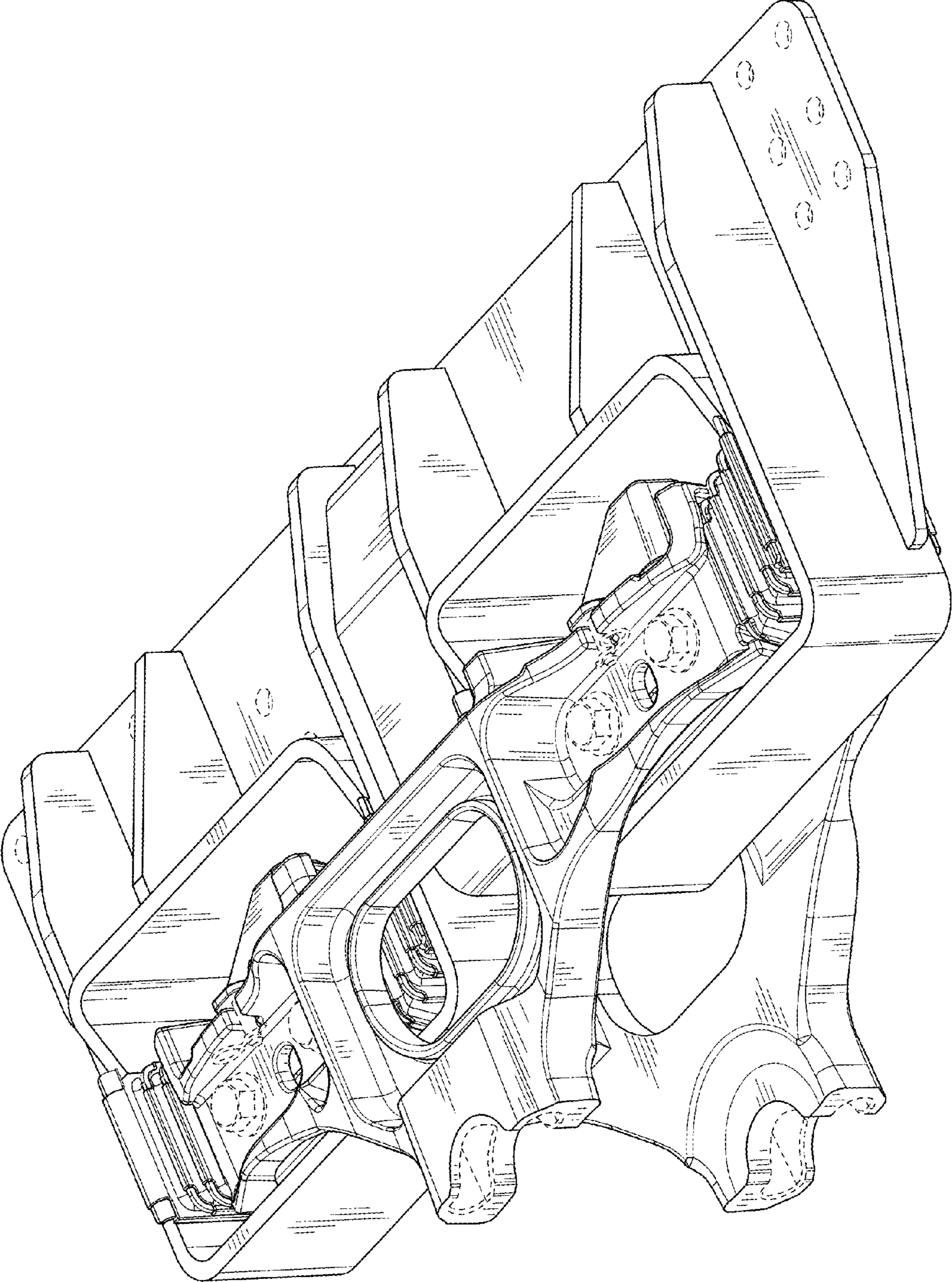


FIG. 24

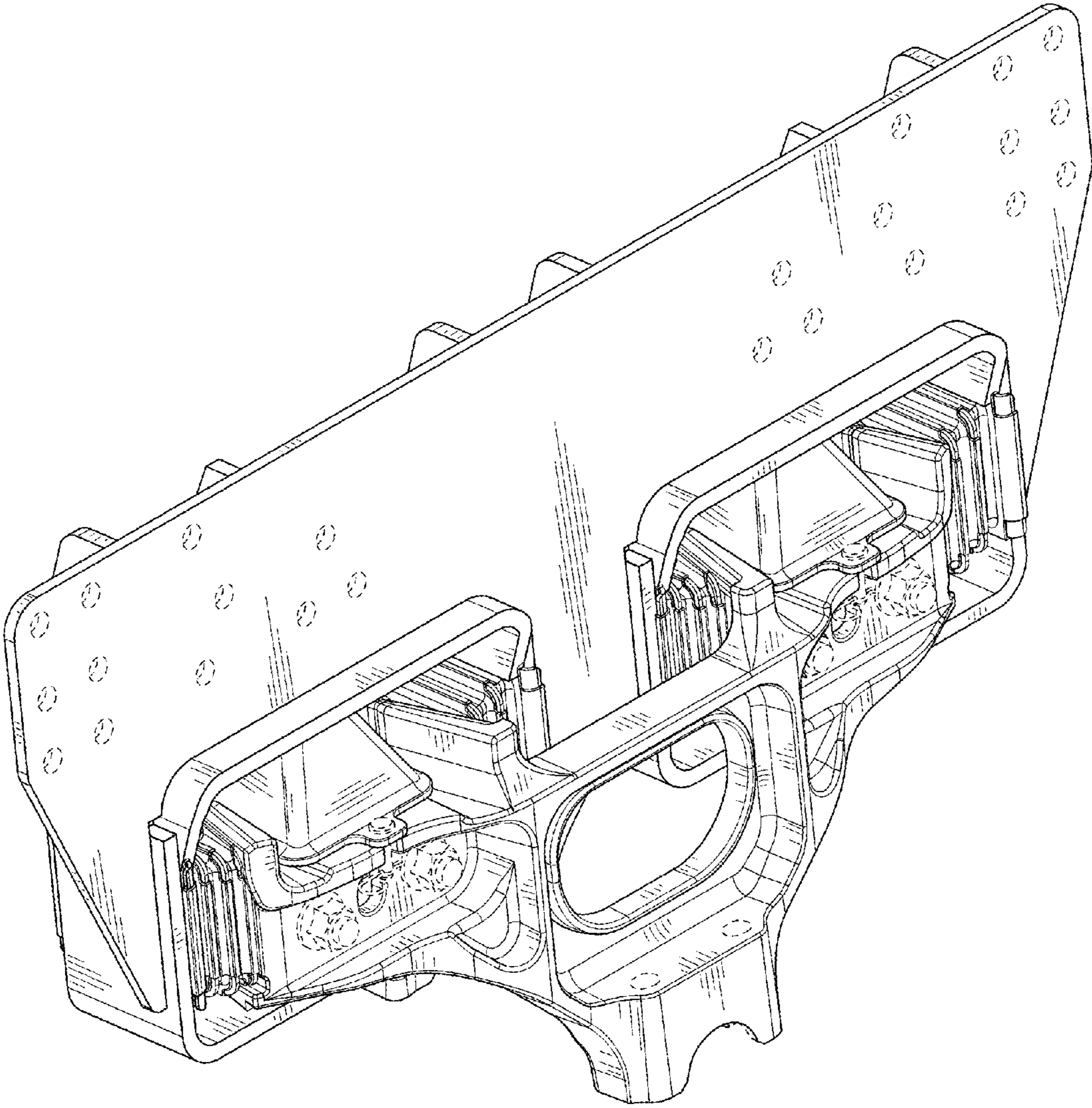


FIG. 25



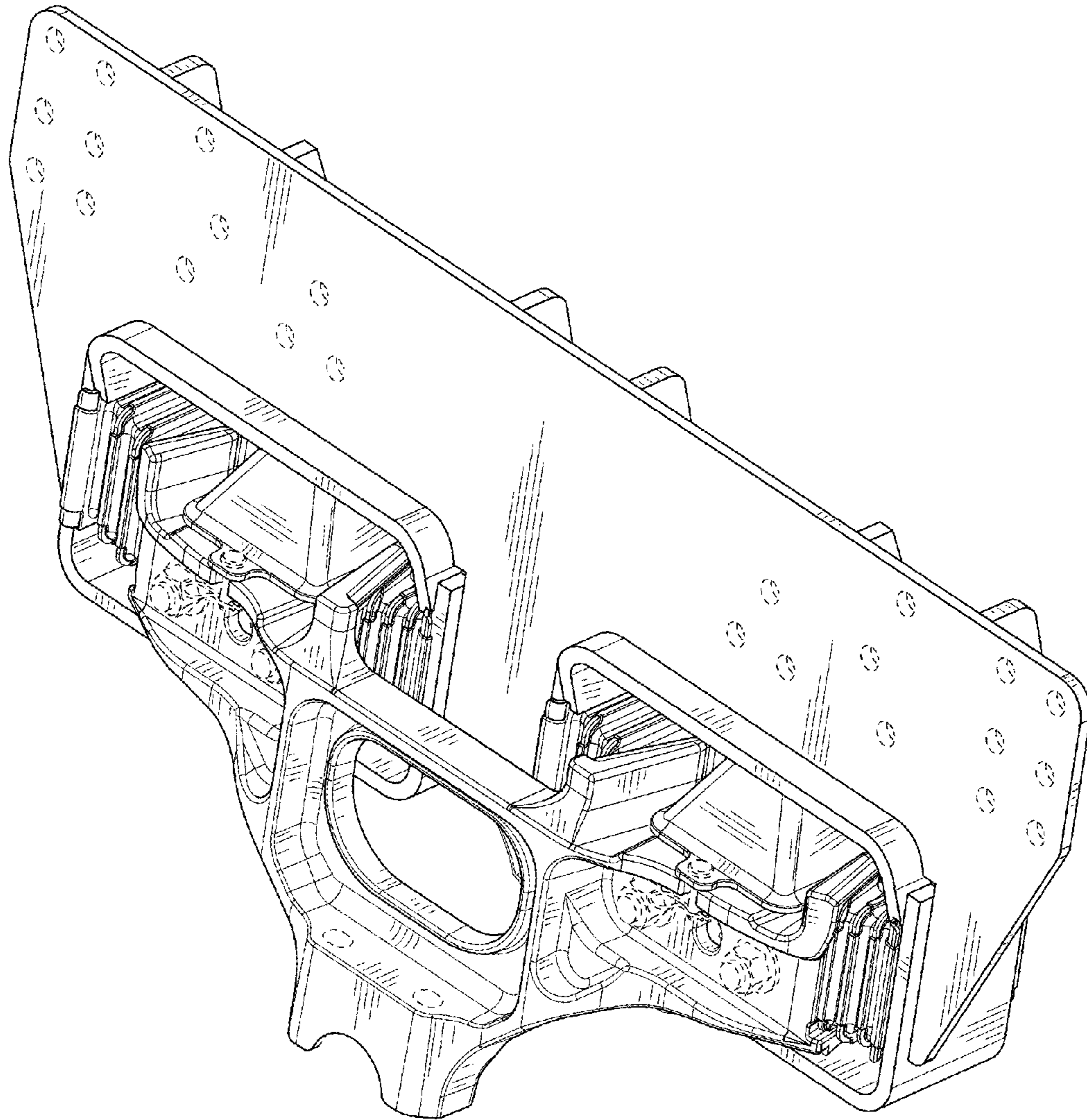


FIG. 26

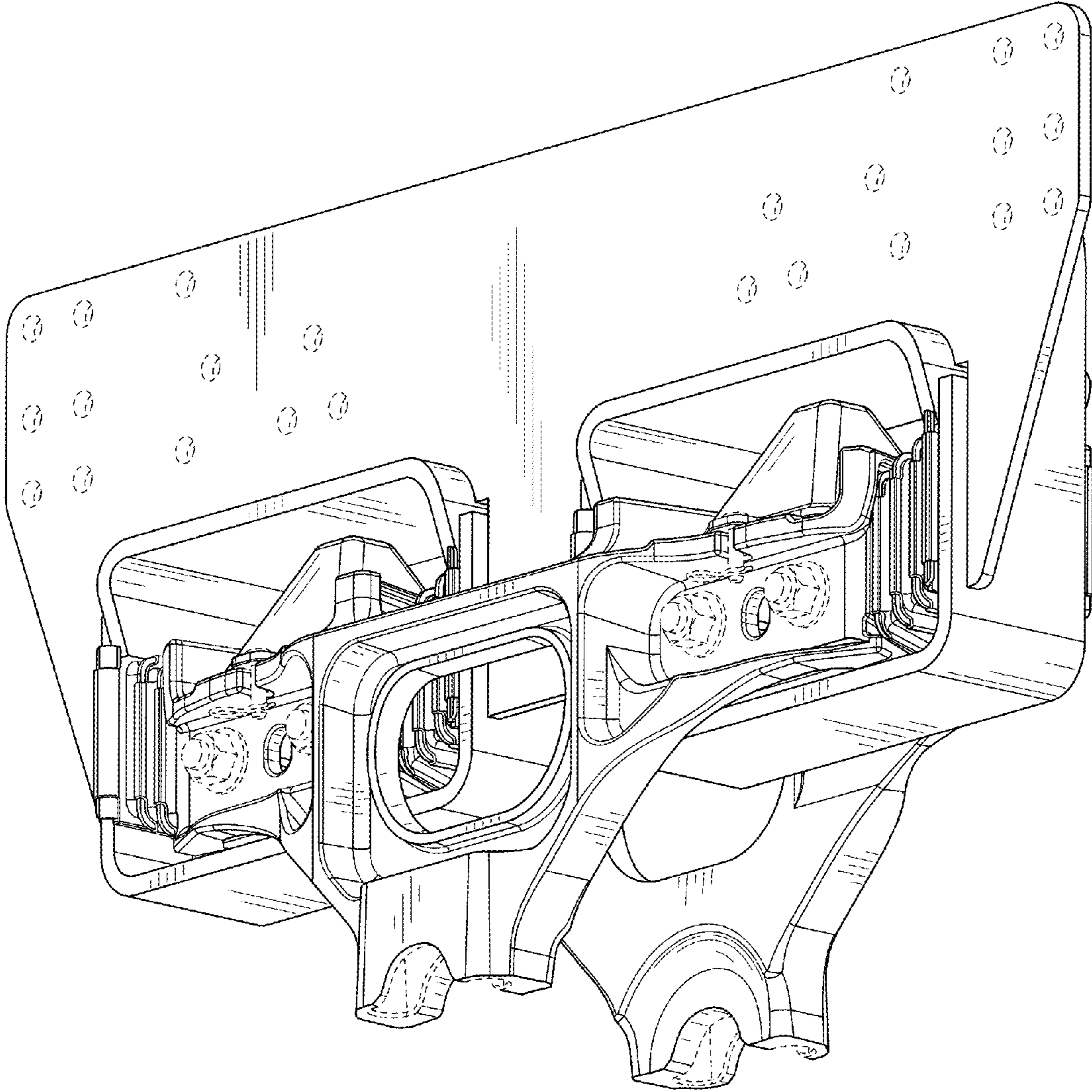


FIG. 27



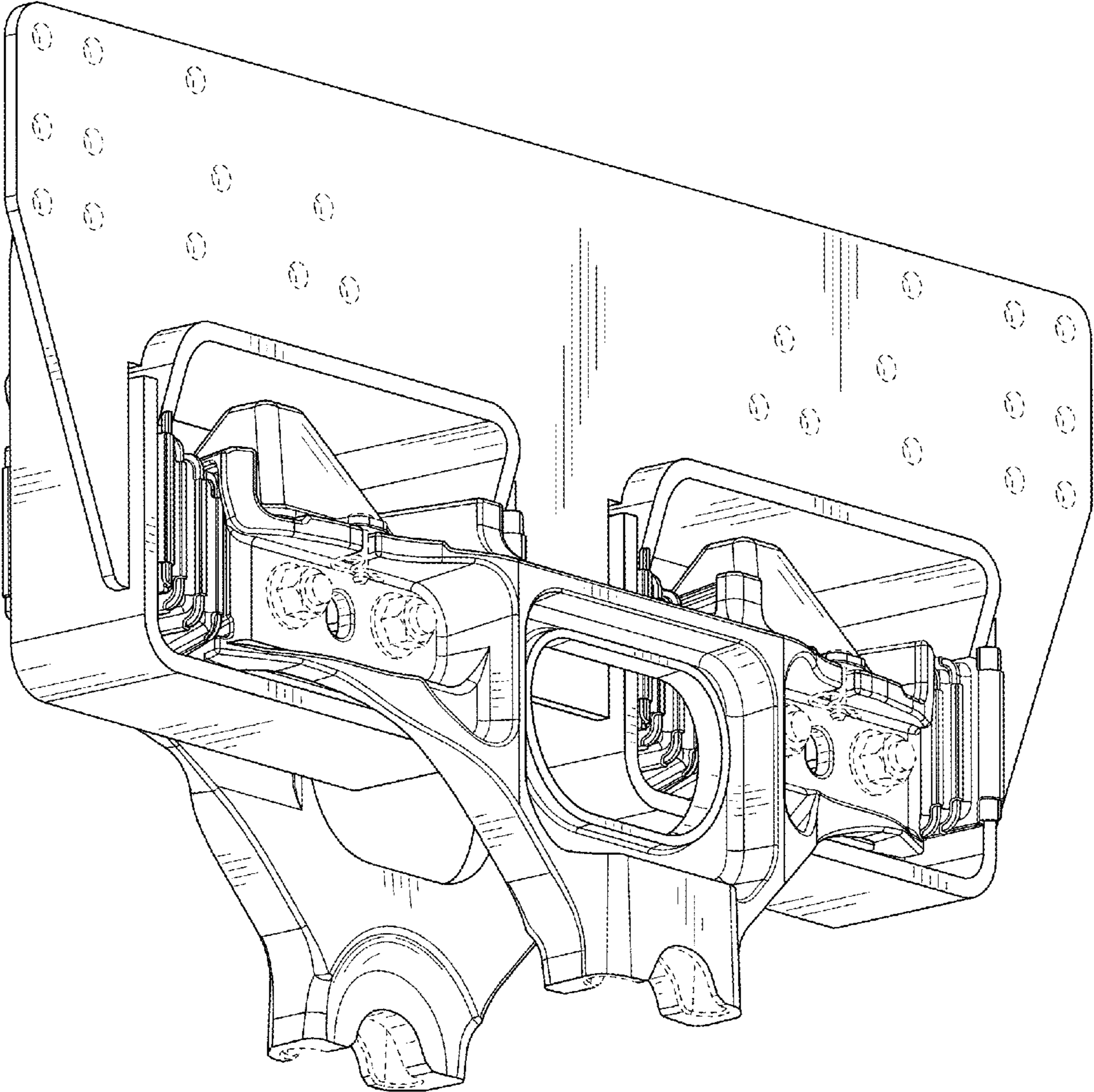


FIG. 28