



US00RE46590E

(19) **United States**
(12) **Reissued Patent**
Oren

(10) **Patent Number:** **US RE46,590 E**
(45) **Date of Reissued Patent:** **Oct. 31, 2017**

(54) **TRAIN CAR FOR PROPPANT CONTAINERS**

OTHER PUBLICATIONS

(71) Applicant: **Oren Technologies, LLC**, Houston, TX (US)

International Search Report for PCT/US15/35635, dated Oct. 30, 2015. (12 pages).

(Continued)

(72) Inventor: **Joshua Oren**, Houston, TX (US)

Primary Examiner — Darlington Ly

(73) Assignee: **Oren Technologies, LLC**, Houston, TX (US)

(74) *Attorney, Agent, or Firm* — Hogan Lovells US LLP

(21) Appl. No.: **29/537,567**

(57) **CLAIM**

The ornamental design for a train car for proppant containers, as shown and described.

(22) Filed: **Aug. 27, 2015**

DESCRIPTION

Related U.S. Patent Documents

Reissue of:

(64) Patent No.: **Des. 703,582**
Issued: **Apr. 29, 2014**
Appl. No.: **29/455,204**
Filed: **May 17, 2013**

[FIG. 1 is an upper perspective view of the train car for proppant containers showing my new design.]

[FIG. 2 is a side elevation view thereof;]

[FIG. 3 is an opposite side elevation view thereof;]

[FIG. 4 is a front elevation view thereof;]

[FIG. 5 is a rear elevation view thereof;]

[FIG. 6 is a top plan view thereof; and,]

[FIG. 7 is a bottom plan view thereof.]

(51) **LOC (10) Cl.** **12-10**

(52) **U.S. Cl.**
USPC **D12/101**

(58) **Field of Classification Search**
USPC D12/19, 100–106, 111, 112, 129;
D21/425, 435; D34/12, 16–19, 21–26;

FIG. 8 is an upper perspective view of a train car for proppant containers showing my new design;

FIG. 9 is a side elevation view thereof;

FIG. 10 is an opposite side elevation view thereof;

FIG. 11 is a front elevation view thereof;

FIG. 12 is a rear elevation view thereof;

FIG. 13 is a top plan view thereof; and,

FIG. 14 is a bottom plan view thereof.

(Continued)

(56) **References Cited**

U.S. PATENT DOCUMENTS

137,871 A 4/1873 Worsley
150,894 A 5/1874 Safely

(Continued)

[The features presented in broken lines are for environmental purposes only and form no part of the claimed design.]

The broken lines in the drawings illustrate environmental structure of the proppant containers and portions of the train car that forms no part of the claimed design.

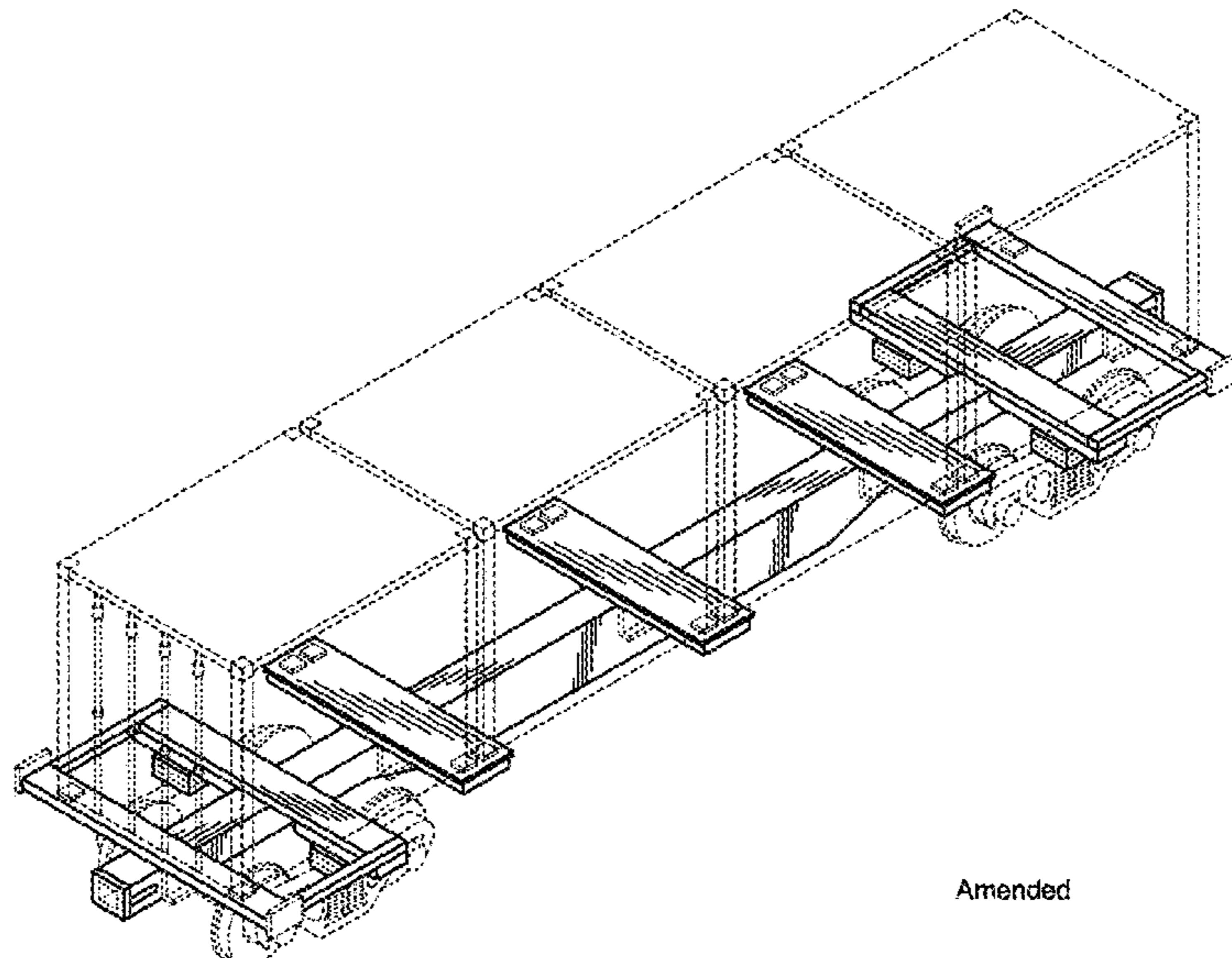
1 Claim, 6 Drawing Sheets

FOREIGN PATENT DOCUMENTS

CA 2023138 2/1992
CA 2791088 3/2013

(Continued)

Matter enclosed in heavy brackets [] appears in the original patent but forms no part of this reissue; matter printed in italics indicates the additions made by reissue.



Amended

US RE46,590 E

(58) **Field of Classification Search**
 USPC 280/63, 204, 205, 475, 482, 647; 296/61,
 296/10, 100.01-100.08, 168, 180, 180.2
 CPC B60P 1/52; B60P 1/56
 See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

384,443 A	6/1888	Hoover
448,238 A	3/1891	Johnson
711,632 A	10/1902	Johnson
917,649 A	4/1909	Otto
1,143,641 A	6/1915	McGregor
1,331,883 A	2/1920	Stuart
1,344,768 A	6/1920	Messiter
1,434,488 A	11/1922	Forsythe et al.
1,520,560 A	12/1923	Burno
1,506,936 A	9/1924	Lea
1,526,527 A	2/1925	Butler
1,573,664 A	2/1926	Wetherill
1,807,447 A	5/1931	Smith
1,850,000 A	3/1932	Fernand
1,932,320 A	10/1933	Steward
1,973,312 A	9/1934	Hardinge
2,233,005 A	2/1941	Garlinghouse
2,293,160 A	8/1942	Miller et al.
2,368,672 A	2/1945	McNamara
2,381,103 A	8/1945	Frank
2,423,879 A	7/1947	De Frees
2,564,020 A	8/1951	Mengel
2,603,342 A	7/1952	Martinson
2,616,758 A	11/1952	Meyers
2,622,771 A	12/1952	Tulou
2,652,174 A	9/1953	Shea et al.
2,678,145 A	5/1954	Ejuzwiak et al.
2,693,282 A	11/1954	Sensibar
2,700,574 A	1/1955	Tourneau
2,792,262 A	4/1955	Hathom
2,774,515 A	12/1956	Johansson et al.
2,791,973 A	5/1957	Dorey
2,801,125 A	7/1957	Page et al.
2,808,164 A	10/1957	Glendinning
2,812,970 A	11/1957	Martinson
2,837,369 A	6/1958	Stopps
2,865,521 A	12/1958	Fisher et al.
2,873,036 A	2/1959	Noble
2,894,666 A	7/1959	Campbell, Jr.
2,988,235 A	6/1961	Ronyak
2,994,460 A	8/1961	Matthews
3,049,248 A	8/1962	Heltzel et al.
3,064,832 A	11/1962	Heltzel
3,083,879 A	4/1963	Coleman
3,090,527 A	5/1963	Rensch
3,109,389 A	11/1963	Karlsson
3,122,258 A	2/1964	Raymond
3,135,432 A	6/1964	McKinney
D199,118 S *	9/1964	McKillop D12/102
3,163,127 A	12/1964	Guttridge et al.
3,185,519 A *	5/1965	Turnbull B62D 25/2054 280/789
3,187,684 A	6/1965	Ortner
3,198,494 A	8/1965	Curran et al.
3,199,585 A	8/1965	Cronberger
3,248,026 A	4/1966	Kemp
3,255,927 A	6/1966	Ruppert et al.
3,265,443 A	8/1966	Simas
3,270,921 A	9/1966	Nadolske et al.
3,281,006 A	10/1966	Wei
3,294,306 A	12/1966	Areddy
3,318,473 A	5/1967	Jones et al.
3,353,599 A	11/1967	Swift
3,354,918 A	11/1967	Coleman
3,378,152 A	4/1968	Warner
3,387,570 A	6/1968	Pulcrano et al.
3,396,675 A	8/1968	Stevens
3,397,654 A	8/1968	Snyder

3,406,995 A	10/1968	McCarthy
3,407,971 A	10/1968	Oehler
3,425,599 A	2/1969	Sammamo et al.
3,455,474 A	7/1969	Truncali
3,524,567 A	8/1970	Coleman
3,528,570 A	9/1970	Pase
3,561,633 A	2/1971	Morrison et al.
3,587,834 A	6/1971	Dugge
3,596,609 A	8/1971	Ortner
3,601,244 A	8/1971	Ort et al.
3,602,400 A	8/1971	Cooke
3,650,567 A	3/1972	Danielson
3,653,521 A	4/1972	Bridge
3,661,293 A	5/1972	Gerhard et al.
3,692,363 A	9/1972	Tenebaum et al.
3,704,797 A	12/1972	Suykens
3,721,199 A	3/1973	Hassenauer
3,729,121 A	4/1973	Cannon
3,734,215 A	5/1973	Smith
3,738,511 A	6/1973	Lemon et al.
3,777,909 A	12/1973	Rheinfrank
3,785,534 A	1/1974	Smith
3,800,712 A	4/1974	Krug, Jr.
3,802,584 A	4/1974	Sackett
3,817,261 A	6/1974	Rogge
3,820,762 A	6/1974	Bostrom et al.
3,840,141 A	10/1974	Allom et al.
3,854,612 A	12/1974	Snape
3,861,716 A	1/1975	Baxter et al.
3,879,050 A *	4/1975	Young E04B 1/34352 280/639
3,883,005 A	5/1975	Stevens
3,933,100 A	1/1976	Dugge
3,970,123 A	7/1976	Poulton et al.
3,986,708 A	10/1976	Hellzel et al.
3,997,089 A	12/1976	Clarke et al.
4,003,301 A	1/1977	Norton
4,004,700 A	1/1977	Empey
4,057,153 A	11/1977	Weaver
4,058,239 A	11/1977	Van Mill
4,063,656 A	12/1977	Lambert
4,073,410 A	2/1978	Melcher
4,138,163 A	2/1979	Calvert et al.
4,178,117 A	12/1979	Brugler
4,204,773 A	5/1980	Bates
4,210,273 A	7/1980	Hegele
4,210,963 A	7/1980	Ricciardi et al.
RE30,358 E	8/1980	Sensibar
4,222,498 A	9/1980	Brock
4,227,732 A	10/1980	Kish
4,232,884 A	11/1980	DeWitt
4,239,424 A	12/1980	Pavolka
4,247,228 A	1/1981	Gray et al.
4,258,953 A	3/1981	Johnson
4,265,266 A	5/1981	Kierbow et al.
4,278,190 A	7/1981	Oory et al.
4,282,988 A	8/1981	Hulbert, Jr.
4,287,921 A	9/1981	Sanford
4,287,997 A	9/1981	Rolfe et al.
4,289,353 A	9/1981	Merritt
4,329,106 A	4/1982	Francis D12/101
4,350,241 A	5/1982	Adler
4,359,176 A	9/1982	Wenzel
4,359,176 A	11/1982	Johnson
4,363,396 A	12/1982	Wolf et al.
4,397,406 A	8/1983	Croley
4,398,653 A	8/1983	Daloisio
4,402,392 A	9/1983	Fabian et al.
4,407,202 A	10/1983	McCormick
4,408,886 A	10/1983	Sampson et al.
4,410,106 A	10/1983	Kierbow et al.
4,427,133 A	1/1984	Kierbow et al.
4,428,504 A	1/1984	Bassett et al.
4,449,861 A	5/1984	Saito et al.
4,453,645 A	6/1984	Usui et al.
4,474,204 A	10/1984	West
4,475,672 A	10/1984	Whitehead
4,478,155 A	10/1984	Cena et al.
4,483,462 A	11/1984	Heintz

(56)

References Cited

U.S. PATENT DOCUMENTS

4,525,071 A	6/1985	Horowitz	5,613,446 A	3/1997	DiLuigi et al.
4,532,098 A	7/1985	Campbell	5,617,974 A	4/1997	Sawyer
4,569,394 A	2/1986	Sweatman et al.	5,647,514 A	7/1997	Toth et al.
4,571,143 A	2/1986	Hellerich	RE35,580 E	8/1997	Heider et al.
4,608,931 A	9/1986	Ruhmann et al.	5,667,298 A	9/1997	Musil
4,619,531 A	10/1986	Dunstan	5,687,881 A	11/1997	Rouse et al.
4,626,155 A	12/1986	Hlinsky et al.	5,690,466 A	11/1997	Gaddis et al.
4,626,166 A	12/1986	Jolly	5,697,535 A	12/1997	Coleman
4,628,825 A	12/1986	Taylor et al.	5,706,614 A	1/1998	Wiley et al.
4,660,733 A	4/1987	Snyder et al.	5,718,555 A	2/1998	Swalheim
4,701,095 A	10/1987	Berryman et al.	5,722,552 A	3/1998	Olson
4,715,754 A	12/1987	Scully	5,761,854 A	6/1998	Johnson et al.
4,738,774 A	4/1988	Patrick	5,762,222 A	6/1998	Liu
4,741,273 A	5/1988	Sherwood	5,772,390 A	6/1998	Walker
4,801,389 A	1/1989	Brannon et al.	5,782,524 A	7/1998	Heider et al.
4,819,830 A	4/1989	Schultz	5,785,421 A	7/1998	Milek
4,848,605 A	7/1989	Wise	5,803,296 A	9/1998	Olson
4,882,784 A	11/1989	Tump	5,806,863 A	9/1998	Heger et al.
4,889,219 A	12/1989	Key	5,836,480 A	11/1998	Epp et al.
4,901,649 A	2/1990	Fehrenbach et al.	5,845,799 A	12/1998	Deaton
4,909,378 A	3/1990	Webb	5,876,172 A	3/1999	Di Rosa
4,909,556 A	3/1990	Koskinen	5,906,471 A	5/1999	Schwoerer
4,917,019 A	4/1990	Hesch et al.	5,911,337 A	6/1999	Bedeker
4,919,583 A	4/1990	Speakman, Jr.	5,927,558 A	7/1999	Bruce
4,923,358 A	5/1990	Van Mill	5,971,219 A	10/1999	Karpisek
4,946,068 A	8/1990	Erickson et al.	6,002,063 A	12/1999	Bilak et al.
4,947,760 A	8/1990	Dawson et al.	6,006,918 A	12/1999	Hart
4,954,975 A	9/1990	Kalata	6,069,118 A	5/2000	Hinkel et al.
4,956,821 A	9/1990	Fenelon	6,077,068 A	6/2000	Okumura
4,975,205 A	12/1990	Sloan	6,092,974 A	7/2000	Roth
4,995,522 A	2/1991	Barr	6,109,486 A	8/2000	Lee
5,004,400 A	4/1991	Handke	6,120,233 A	9/2000	Adam
5,042,538 A	8/1991	Wiese	6,155,175 A	12/2000	Rude et al.
5,069,352 A	12/1991	Harbolt et al.	6,186,654 B1	2/2001	Gunteret et al.
5,080,259 A	1/1992	Hadley	6,190,107 B1	2/2001	Lanigan et al.
5,082,304 A	1/1992	Preller	6,192,985 B1	2/2001	Hinkel et al.
5,102,281 A	4/1992	Handke	6,196,590 B1	3/2001	Kim
5,102,286 A	4/1992	Fenton	6,205,938 B1	3/2001	Foley et al.
5,105,858 A	4/1992	Levinson	6,247,594 B1	6/2001	Garton
5,131,524 A	7/1992	Uehara	6,263,803 B1	7/2001	Dohr et al.
5,190,182 A	3/1993	Copas et al.	6,269,849 B1	8/2001	Fields
5,191,842 A *	3/1993	Tinkler B61D 3/16	6,283,212 B1	9/2001	Hinkel et al.
		105/355	6,286,986 B2	9/2001	Grimland
5,195,861 A	3/1993	Handke	6,296,109 B1	10/2001	Nohl
5,199,826 A	4/1993	Lawrence	6,306,800 B1	10/2001	Samuel et al.
5,201,546 A *	4/1993	Lindsay E04B 5/14	6,328,156 B1	12/2001	Otsman
		280/789	6,328,183 B1	12/2001	Coleman
5,224,635 A	7/1993	Wise	6,364,584 B1	4/2002	Taylor
5,253,746 A	10/1993	Friesen et al.	6,374,915 B1	4/2002	Andrews
5,253,776 A	10/1993	Decroix et al.	6,382,446 B1	5/2002	Hinkle et al.
5,265,763 A	11/1993	Heinrici et al.	6,401,983 B1	6/2002	McDonald et al.
5,286,158 A	2/1994	Zimmerman	6,412,422 B2	7/2002	Dohr et al.
5,290,139 A	3/1994	Hedrick	6,415,909 B1	7/2002	Mitchell et al.
5,320,046 A	6/1994	Hesch	6,416,271 B1	7/2002	Pigott et al.
5,324,097 A	6/1994	DeCap	6,425,725 B1	7/2002	Ehlers
5,339,996 A	8/1994	Dubbert	6,457,291 B2	10/2002	Wick
5,351,990 A *	10/1994	Thomas B62D 53/061	6,505,760 B1	1/2003	Werner
		280/789	6,508,387 B1	1/2003	Simon et al.
5,358,137 A	10/1994	Shuert et al.	6,508,615 B2	1/2003	Taylor
5,373,792 A	12/1994	Pileggi et al.	6,523,482 B2	2/2003	Wingate
5,402,915 A	4/1995	Hogan	6,537,002 B2	3/2003	Gloystein
5,413,154 A	5/1995	Hurst et al.	6,543,368 B1 *	4/2003	Forbes B61D 45/003
5,429,259 A	7/1995	Robin			105/396
5,441,321 A	8/1995	Karpisek	6,575,614 B2	6/2003	Tosco et al.
5,445,289 A	8/1995	Owen	6,660,693 B2	12/2003	Miller et al.
5,465,829 A	11/1995	Kruse	6,666,573 B2	12/2003	Grassi
5,470,175 A	11/1995	Jensen et al.	6,668,496 B1 *	12/2003	Clapp et al. B60P 3/32
5,493,852 A	2/1996	Stewart			52/745.02
5,538,286 A	7/1996	Hoff	6,675,073 B2	1/2004	Kieman et al.
5,549,278 A	8/1996	Sidler	6,705,449 B2	3/2004	Wagstaffe
5,564,599 A	10/1996	Barber et al.	6,720,290 B2	4/2004	England et al.
5,570,743 A	11/1996	Padgett et al.	6,772,912 B1	8/2004	Schall et al.
5,590,976 A	1/1997	Kilheffer et al.	6,774,318 B2	8/2004	Beal et al.
5,601,181 A	2/1997	Lindhorst	6,776,235 B1	8/2004	England
5,602,761 A	2/1997	Spoerre et al.	6,783,032 B2	8/2004	Fons
			6,811,048 B2	11/2004	Lau
			6,828,280 B2	12/2004	England et al.
			6,835,041 B1	12/2004	Albert
			6,882,960 B2	4/2005	Miller

US RE46,590 E

(56)

References Cited

U.S. PATENT DOCUMENTS

6,902,061	B1	6/2005	Elstone		8,915,691	B2	12/2014	Mintz
6,915,854	B2	7/2005	England et al.		9,051,801	B1	6/2015	Mintz
6,932,388	B2*	8/2005	Few	B60G 3/12 280/787	9,052,034	B1	6/2015	Wegner et al.
6,953,119	B1	10/2005	Wening		2001/0022308	A1	9/2001	Epp et al.
6,955,127	B2	10/2005	Taylor		2001/0045338	A1	11/2001	Ransil et al.
6,964,551	B1	11/2005	Friesen		2002/0134550	A1	9/2002	Leeson et al.
6,968,946	B2	11/2005	Shuert		2002/0139643	A1	10/2002	Peltier et al.
6,974,021	B1	12/2005	Boevers		2003/0111470	A1	6/2003	Fouillet et al.
7,008,163	B2	3/2006	Russell		2003/0156929	A1	8/2003	Russell
7,051,661	B2	5/2006	Herzog et al.		2004/0065699	A1	4/2004	Schoer et al.
7,084,095	B2	8/2006	Lee et al.		2004/0074922	A1	4/2004	Bother et al.
7,104,425	B2	9/2006	Le Roy		2004/0084874	A1	5/2004	McDougall et al.
7,140,516	B2	11/2006	Bothor		2004/0206646	A1	10/2004	Goh
7,146,914	B2	12/2006	Morton et al.		2004/0245284	A1	12/2004	Mehus et al.
7,201,290	B2	4/2007	Mehus et al.		2005/0158158	A1	7/2005	Porta
7,214,028	B2	5/2007	Boasso		2005/0178285	A1*	8/2005	Beers et al. B60P 3/20 105/404
7,228,805	B2*	6/2007	Beers et al.	105/423	2005/0201851	A1	9/2005	Jonkka
7,240,681	B2	7/2007	Saik		2006/0012183	A1	1/2006	Marchiori et al.
7,252,309	B2	8/2007	Eng Soon et al.		2006/0027582	A1	2/2006	Beach
7,284,579	B2	10/2007	Elgan et al.		2006/0151058	A1	7/2006	Salaoras et al.
7,316,333	B2	1/2008	Wegner		2006/0180062	A1	8/2006	Furrer et al.
7,367,271	B2	5/2008	Early		2006/0180232	A1	8/2006	Glewwe et al.
7,377,219	B2	5/2008	Brandt		2006/0239806	A1	10/2006	Yelton
7,410,623	B2	8/2008	Mehus et al.		2006/0267377	A1	11/2006	Lusk et al.
7,475,796	B2	1/2009	Garton		2006/0277783	A1	12/2006	Garton
7,478,600	B2*	1/2009	Beers et al.	105/423	2006/0289166	A1	12/2006	Stromquist et al.
7,500,817	B2	3/2009	Furrer et al.		2007/0096537	A1	5/2007	Hicks
7,513,280	B2	4/2009	Brashears et al.		2007/0125543	A1	6/2007	McNeel et al.
7,591,386	B2	9/2009	Hooper		2007/0234927	A1*	10/2007	Beers et al. B61D 17/005 105/404
7,640,075	B2	12/2009	Wietgreffe		2008/0008562	A1	1/2008	Beckel et al.
7,753,637	B2	7/2010	Benedict et al.		2008/0029546	A1	2/2008	Shuld
7,798,558	B2	9/2010	Messier		2008/0029553	A1	2/2008	Culleton
7,802,958	B2	9/2010	Garcia et al.		2008/0017905	A1	7/2008	McGough et al.
7,803,321	B2	9/2010	Lark et al.		2008/0179054	A1	7/2008	McGough et al.
7,837,427	B2	11/2010	Beckel		2008/0179324	A1	7/2008	McGough et al.
7,841,394	B2	11/2010	McNeel et al.		2008/0213073	A1	9/2008	Benedict et al.
7,845,516	B2	12/2010	Pessin et al.		2008/0226434	A1	9/2008	Smith et al.
7,858,888	B2	12/2010	Lucas et al.		2008/0264641	A1	10/2008	Slabaugh et al.
7,891,304	B2	2/2011	Herzog et al.		2008/0277423	A1	11/2008	Garton
7,891,523	B2	2/2011	Mehus et al.		2009/0038242	A1	2/2009	Cope
7,896,198	B2	3/2011	Mehus et al.		2009/0078410	A1	3/2009	Krenek et al.
7,921,783	B2	4/2011	Forbes et al.		2009/0278326	A1	11/2009	Rowland et al.
7,967,161	B2	6/2011	Townsend		2010/0021258	A1	1/2010	Kim
7,980,803	B2	7/2011	Brandstatter et al.		2010/0038143	A1	2/2010	Burnett et al.
7,997,623	B2	8/2011	Williams		2010/0040446	A1	2/2010	Renyer
D648,656	S*	11/2011	Crane	D12/101	2010/0065466	A1	3/2010	Perkins
D649,912	S*	12/2011	Chen	D12/101	2010/0108711	A1	5/2010	Wietgreffe
8,083,083	B1	12/2011	Mohns		2010/0278621	A1	11/2010	Redekop
8,201,520	B2	6/2012	Meritt		2010/0288603	A1	11/2010	Schafer
8,313,278	B2	11/2012	Simmons et al.		2011/0011893	A1	1/2011	Cerny
8,366,349	B2	2/2013	Beachner		2011/0017693	A1	1/2011	Thomas
8,379,927	B2	2/2013	Taylor		2011/0101040	A1	5/2011	Weissbrod
8,387,824	B2	3/2013	Wietgreffe		2011/0109703	A1	5/2011	Williams
8,393,502	B2	3/2013	Renyer et al.		2011/0127178	A1	6/2011	Claussen
8,424,666	B2	4/2013	Beming et al.		2011/0160104	A1	6/2011	Wu et al.
D688,351	S	8/2013	Oren		2011/0162838	A1	7/2011	Mackenzie et al.
D688,597	S*	8/2013	Oren	D12/101	2011/0168593	A1	7/2011	Neufeld et al.
8,505,780	B2	8/2013	Oren		2011/0222983	A1	9/2011	Dugic et al.
8,545,148	B2	10/2013	Wanek-Pusset et al.		2011/0297702	A1	12/2011	Hildebrandt et al.
8,562,022	B2	10/2013	Nadeau et al.		2012/0103848	A1	5/2012	Allegretti et al.
8,573,387	B2	11/2013	Trimble		2012/0219391	A1	8/2012	Teichrob et al.
8,573,917	B2	11/2013	Renyer		2013/0004272	A1	1/2013	Mintz
8,585,341	B1	11/2013	Oren		2013/0022441	A1	1/2013	Uhlyn et al.
D694,670	S*	12/2013	Oren	D12/101	2013/0206415	A1	8/2013	Sheesley
8,616,370	B2	12/2013	Allegretti		2013/0209204	A1	8/2013	Sheesley
8,622,251	B2	1/2014	Oren		2013/0233545	A1	9/2013	Mahoney
8,636,832	B2	1/2014	Stutzman et al.		2013/0284729	A1	10/2013	Cook et al.
8,646,641	B2	2/2014	Moir		2013/0309052	A1	11/2013	Luharuka
8,668,430	B2	3/2014	Oren		2013/0323005	A1	12/2013	Rexius et al.
D703,582	S*	4/2014	Oren	D12/42	2014/0020765	A1	1/2014	Oren
8,820,559	B2	9/2014	Beitler et al.		2014/0020892	A1	1/2014	Oren
8,827,118	B2	9/2014	Oren		2014/0023465	A1	1/2014	Oren et al.
8,887,914	B2	11/2014	Allegretti		2014/0044507	A1	2/2014	Naizer et al.
8,905,266	B2	12/2014	De Brabanter		2014/0083554	A1	3/2014	Harris
					2014/0097182	A1	4/2014	Sheesley
					2014/0166647	A1	6/2014	Sheesley
					2014/0203046	A1	7/2014	Allegretti

(56)

References Cited

U.S. PATENT DOCUMENTS

2014/0234059	A1	8/2014	Thomeer	
2014/0305769	A1	10/2014	Eiden et al.	
2014/0321950	A1	10/2014	Krenek et al.	
2015/0069052	A1	3/2015	Allegretti et al.	
2015/0086307	A1	3/2015	Stefan	
2015/0224905	A1*	8/2015	Oren	B60P 1/56 414/518

FOREIGN PATENT DOCUMENTS

CN	201390486	1/2010
CN	201881469	6/2011
CN	103350017	10/2013
DE	3108121	9/1982
DE	3342281	6/1985
DE	4217329	5/1993
EP	0019967	12/1980
EP	322283	6/1989
EP	0564969	10/1993
EP	0997607	5/2000
EP	1052194	11/2000
EP	1167236	1/2002
EP	1775190	4/2007
EP	2062832	5/2009
EP	2311757	4/2011
FR	2640598	6/1990
GB	1296736	11/1972
GB	2374864	10/2002
JP	S4871029	9/1973
JP	S4876041	9/1973
JP	S58161888	10/1983
JP	410087046	4/1998
JP	10264882	10/1998
MX	2012011046	5/2013
WO	1990008082	7/1990
WO	1992002437	2/1992
WO	1993001997	2/1993
WO	1993006031	4/1993
WO	2006039757	4/2006
WO	2007005054	1/2007
WO	2007061310	5/2007
WO	2010026235	3/2010
WO	2011099358	8/2011
WO	2012021447	2/2012
WO	2012058059	5/2012

OTHER PUBLICATIONS

International Search Report for related International Application No. PCT/US2012/066639, dated Feb. 25, 2013.

International Search Report for related International Application No. PCT/US2013/035442, dated Jun. 23, 2013.

International Search Report for related International Application No. PCT/US2013/032819, dated May 23, 2013.

International Search Report for related International Application No. PCT/US2013/049028, dated Mar. 4, 2014.

International Preliminary Report on Patentability for PCT/US2012/066639, dated Feb. 26, 2013.

International Preliminary Report on Patentability for PCT/US2013/032819, dated Sep. 23, 2014.

International Search Report for PCT/US2015/012990, dated May 6, 2015. (15 pages).

FS-35 Desert Frac-Sanders. NOV (National Oilwell Varco). Mar. 19, 2012. (https://web.archive.org/web/20120319070423/http://www.nov.com/Well_Service_and_Completion/Frac_Sand_Handling_Equipment/Frac_Sanders/FS-35.aspx).

File history for U.S. Appl. No. 61/538,616, Robert A. Harris, filed Sep. 23, 2011. (21 pages).

International Search Report for PCT/US2015/024810, dated Jul. 8, 2015. (13 pages).

European Search Report for Application No. 15167039.5, dated Sep. 8, 2015. (7 pages).

SandBox Logistics, "Mine to Wellhead Logistics," Houston, TX, May 2013.

SandBox Logistics, screenshots from video made in Apr. 2013 and publicly shown in May 2013, Arnegard, North Dakota.

PCT International Search Report for PCT/US615/57601, dated May 6, 2016. (11 pages).

PCT International Search Report for PCT/US15/49074, dated Dec. 17, 2015. (11 pages).

Frac Sand Primer by Brian D. Olmen, Kelrick, LLC, from Hydraulic Fracturing by Michael Berry Smith and Carl Montgomery (CRC Press, Dec. 16, 2015), p. 384.

Premier Silica LLC, Sands Application in the Energy Market, Irving, TX, Copyright 2016.

Getty, John, Montana Tech; ASTM International, Overview of Proppants and Existing Standards and Practices, Jacksonville, FL, Jan. 29, 2013.

Arrows Up, Inc., Jumbo BTS—Bulk Transport System, Aug. 1, 2014.

Arrows Up, Inc., Reusable Packaging Association, Member Spotlight: John Allegretti, President & CEO, Arrows Up, Inc., Jun. 23, 2016.

Seed Today, Arrows Up, Inc. Bulk Transport System (BTS), Country Journal Publishing Co., Decatur, IL, Mar. 2, 2011.

SeedQuest, Arrows Up, Inc. launches innovative bulk transport system for see, Barrington, IL, Mar. 2, 2011.

Monster Tanks, Inc., Sand Monster Website, <http://monstertanksinc.com/sandmonster.html>, 2012.

Solaris Oilfield Infrastructure, Mobile Sand Silo System, 2016.

Final Office Action dated Sep. 27, 2016 for co-pending U.S. Appl. No. 13/555,635.

Non-Final Office Action dated Mar. 23, 2016 for co-pending U.S. Appl. No. 13/555,635.

Final Office Action dated Jul. 30, 2015 for co-pending U.S. Appl. No. 13/555,635.

Non-Final Office Action dated Oct. 22, 2014 for co-pending U.S. Appl. No. 13/555,635.

Final Office Action dated Jun. 21, 2016 for co-pending U.S. Appl. No. 13/628,702.

Non-Final Office Action dated Feb. 23, 2016 for co-pending U.S. Appl. No. 13/628,702.

Final Office Action dated Sep. 22, 2015 for co-pending U.S. Appl. No. 13/628,702.

Non-Final Office Action dated Jul. 28, 2015 for co-pending U.S. Appl. No. 13/628,702.

Final Office Action dated Mar. 24, 2015 for co-pending U.S. Appl. No. 13/628,702.

Non-Final Office Action dated Sep. 18, 2014 for co-pending U.S. Appl. No. 13/628,702.

Final Office Action dated Jun. 27, 2016 for co-pending U.S. Appl. No. 14/831,924.

Non-Final Office Action dated Feb. 16, 2016 for co-pending U.S. Appl. No. 14/831,924.

Final Office Action dated Jun. 27, 2016 for co-pending U.S. Appl. No. 14/923,920.

Non-Final Office Action dated Feb. 9, 2016 for co-pending U.S. Appl. No. 14/923,920.

Final Office Action dated Sep. 15, 2016 for co-pending U.S. Appl. No. 14/943,111.

Non-Final Office Action dated Apr. 5, 2016 for co-pending U.S. Appl. No. 14/943,111.

Final Office Action dated Jul. 18, 2016 for co-pending U.S. Appl. No. 14/948,494.

Non-Final Office Action dated Apr. 8, 2016 for co-pending U.S. Appl. No. 14/948,494.

Non-Final Office Action dated Sep. 6, 2016 for co-pending U.S. Appl. No. 15/144,296.

Non-Final Office Action dated Jul. 25, 2016 for co-pending U.S. Appl. No. 13/660,855.

Final Office Action dated Apr. 28, 2016 for co-pending U.S. Appl. No. 13/660,855.

(56)

References Cited

OTHER PUBLICATIONS

Non-Final Office Action dated Oct. 6, 2015 for co-pending U.S. Appl. No. 13/660,855.
 Final Office Action dated Aug. 6, 2015 for co-pending U.S. Appl. No. 13/660,855.
 Non-Final Office Action dated Apr. 29, 2015 for co-pending U.S. Appl. No. 13/660,855.
 Final Office Action dated Dec. 17, 2014 for co-pending U.S. Appl. No. 13/660,855.
 Non-Final Office Action dated Sep. 4, 2014 for co-pending U.S. Appl. No. 13/660,855.
 Final Office Action dated Sep. 24, 2013 for co-pending U.S. Appl. No. 13/660,855.
 Non-Final Office Action dated May 14, 2013 for co-pending U.S. Appl. No. 13/660,855.
 Non-Final Office Action dated Jul. 5, 2016 for co-pending U.S. Appl. No. 14/996,362.
 Non-Final Office Action dated Jul. 6, 2016 for co-pending U.S. Appl. No. 15/144,450.
 Final Office Action dated Sep. 29, 2016 for co-pending U.S. Appl. No. 13/768,962.
 Non-Final Office Action dated Apr. 5, 2016 for co-pending U.S. Appl. No. 13/768,962.
 Final Office Action dated Oct. 9, 2015 for co-pending U.S. Appl. No. 13/768,962.
 Non-Final Office Action dated May 1, 2015 for co-pending U.S. Appl. No. 13/768,962.
 Non-Final Office Action dated Jul. 18, 2016 for co-pending U.S. Appl. No. 15/152,744.
 Non-Final Office Action dated Apr. 13, 2016 for co-pending U.S. Appl. No. 14/738,485.
 Non-Final Office Action dated Sep. 7, 2016 for co-pending U.S. Appl. No. 14/841,942.
 Final Office Action dated May 12, 2016 for co-pending U.S. Appl. No. 14/841,942.
 Non-Final Office Action dated Nov. 30, 2015 for co-pending U.S. Appl. No. 14/841,942.
 Non-Final Office Action dated Jul. 21, 2016 for co-pending U.S. Appl. No. 15/083,596.
 Non-Final Office Action dated Aug. 19, 2016 for co-pending U.S. Appl. No. 15/084,613.
 Non-Final Office Action dated Sep. 6, 2016 for co-pending U.S. Appl. No. 15/143,942.
 Final Office Action dated Sep. 1, 2016 for co-pending U.S. Appl. No. 14/848,447.
 Non-Final Office Action dated Apr. 8, 2016 for co-pending U.S. Appl. No. 14/848,447.
 SandBox Logistics, LLC, screenshots from video dated Sep. 19, 2013.
 SandBox Logistics, LLC, screenshots from video dated Aug. 22, 2014.
 SandBox Logistics, LLC, screenshots from video dated Oct. 11, 2013.
 SandBox Logistics, LLC, screenshots from video dated Apr. 10, 2013.
 Non-Final Office Action dated May 13, 2016 for co-pending U.S. Appl. No. 14/986,826.
 Final Office Action dated Sep. 15, 2016 for co-pending U.S. Appl. No. 14/922,836.
 Non-Final Office Action dated Feb. 4, 2016 for co-pending U.S. Appl. No. 14/922,836.
 Final Office Action dated Aug. 25, 2016 for co-pending U.S. Appl. No. 14/927,614.
 Non-Final Office Action dated Mar. 1, 2016 for co-pending U.S. Appl. No. 14/927,614.

Non-Final Office Action dated Apr. 29, 2016 for co-pending U.S. Appl. No. 14/943,182.
 Final Office Action dated Sep. 15, 2016 for co-pending U.S. Appl. No. 14/882,973.
 Non-Final Office Action dated Feb. 11, 2016 for co-pending U.S. Appl. No. 14/882,973.
 Non-Final Office Action dated Aug. 11, 2016 for co-pending U.S. Appl. No. 13/625,675.
 Final Office Action dated Nov. 11, 2015 for co-pending U.S. Appl. No. 13/625,675.
 Non-Final Office Action dated Mar. 11, 2015 for co-pending U.S. Appl. No. 13/625,675.
 Grit Energy Solutions, LLC, Fidelity, Screenshots from video dated May 16, 2014.
 Grit Energy Solutions, LLC, Gate, Screenshots from video dated Dec. 6, 2013, <https://www.youtube.com/user/gritstack>.
 Grit Energy Solutions, LLC, Screen, Screenshots from video dated Dec. 6, 2013, <https://www.youtube.com/user/gritstack>.
 Grit Energy Solutions, LLC, The Grit Stack System—Live Frac, Screenshots from video dated Jun. 15, 2015, <https://www.youtube.com/user/gritstack>.
 Grit Energy Solutions, LLC, The Grit Stack System, Screenshots from video dated Feb. 7, 2014, <https://www.youtube.com/user/gritstack>.
 Non-Final Office Action dated Oct. 27, 2016 for co-pending U.S. Appl. No. 15/219,676.
 Non-Final Office Action dated Nov. 9, 2016 for co-pending U.S. Appl. No. 14/948,494.
 Final Office Action dated Nov. 4, 2016 for co-pending U.S. Appl. No. 14/738,485.
 Non-Final Office Action dated Dec. 28, 2016 for co-pending U.S. Appl. No. 13/628,702.
 Non-Final Office Action dated Jan. 13, 2017 for co-pending U.S. Appl. No. 14/923,920.
 Final Office Action dated Jan. 12, 2017 for co-pending U.S. Appl. No. 14/841,942.
 Non-Final Office Action dated Dec. 23, 2016 for co-pending U.S. Appl. No. 14/485,686.
 Non-Final Office Action dated Jan. 27, 2017 for co-pending U.S. Appl. No. 14/485,687.
 Non-Final Office Action dated Dec. 20, 2016 for co-pending U.S. Appl. No. 14/831,924.
 Final Office Action dated Jan. 19, 2017 for co-pending U.S. Appl. No. 13/660,855.
 Final Office Action dated Nov. 25, 2016 for co-pending U.S. Appl. No. 15/152,744.
 Non-Final Office Action dated Dec. 15, 2016 for co-pending U.S. Appl. No. 14/848,447.
 Non-Final Office Action dated Dec. 9, 2016 for co-pending U.S. Appl. No. 14/927,614.
 International Search Report for PCT Application No. PCT/US2016/050859 dated Dec. 9, 2016.
 Non-Final Office Action dated Apr. 3, 2017 for co-pending U.S. Appl. No. 13/555,635.
 Non-Final Office Action dated Feb. 14, 2017 for co-pending U.S. Appl. No. 14/943,111.
 Final Office Action dated Mar. 7, 2017 for co-pending U.S. Appl. No. 15/144,296.
 Non-Final Office Action dated Apr. 6, 2017 for co-pending U.S. Appl. No. 13/768,962.
 Non-Final Office Action dated Mar. 6, 2017 for co-pending U.S. Appl. No. 15/152,744.
 Non-Final Office Action dated Feb. 24, 2017 for co-pending U.S. Appl. No. 14/943,182.

* cited by examiner

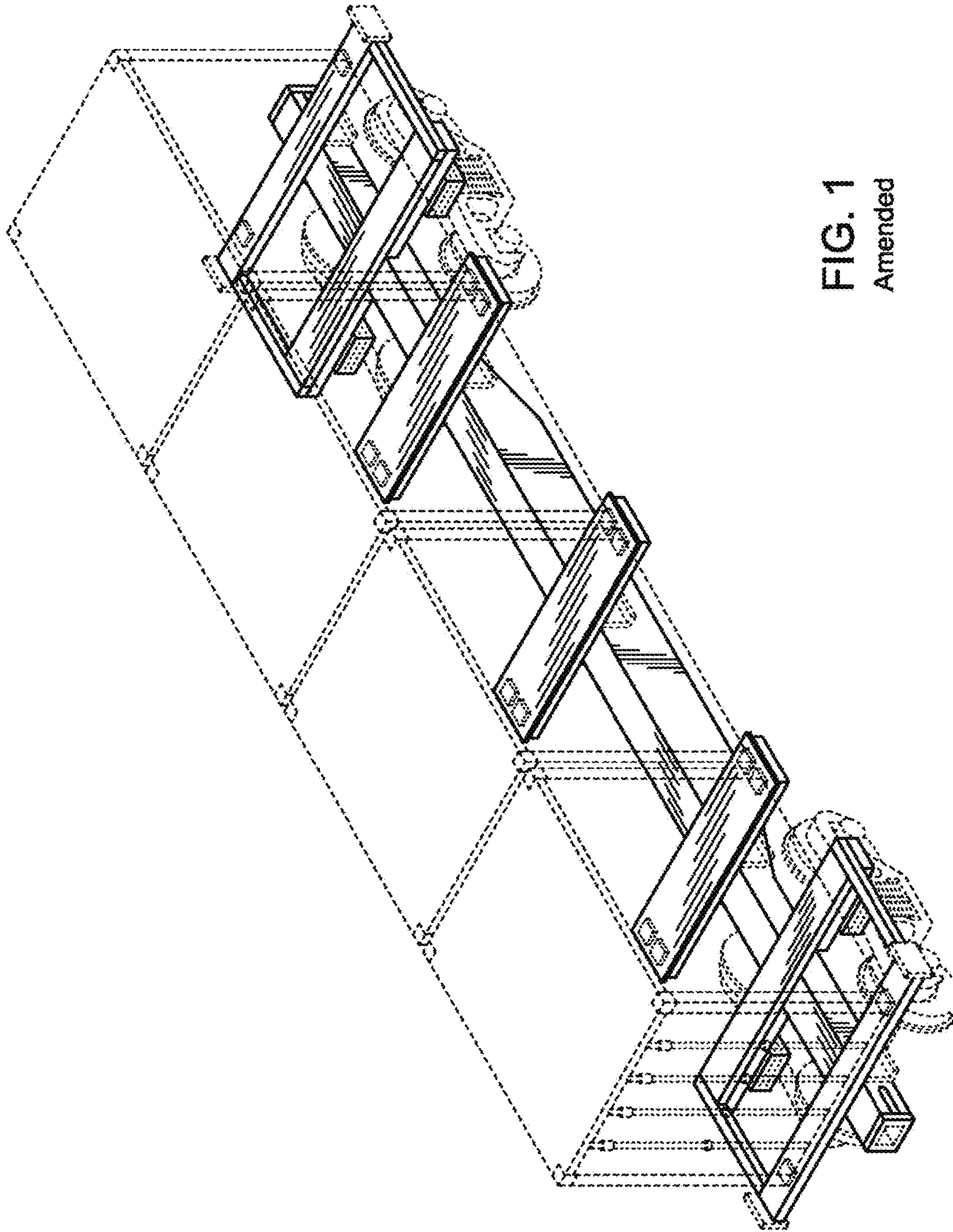


FIG. 1
Amended

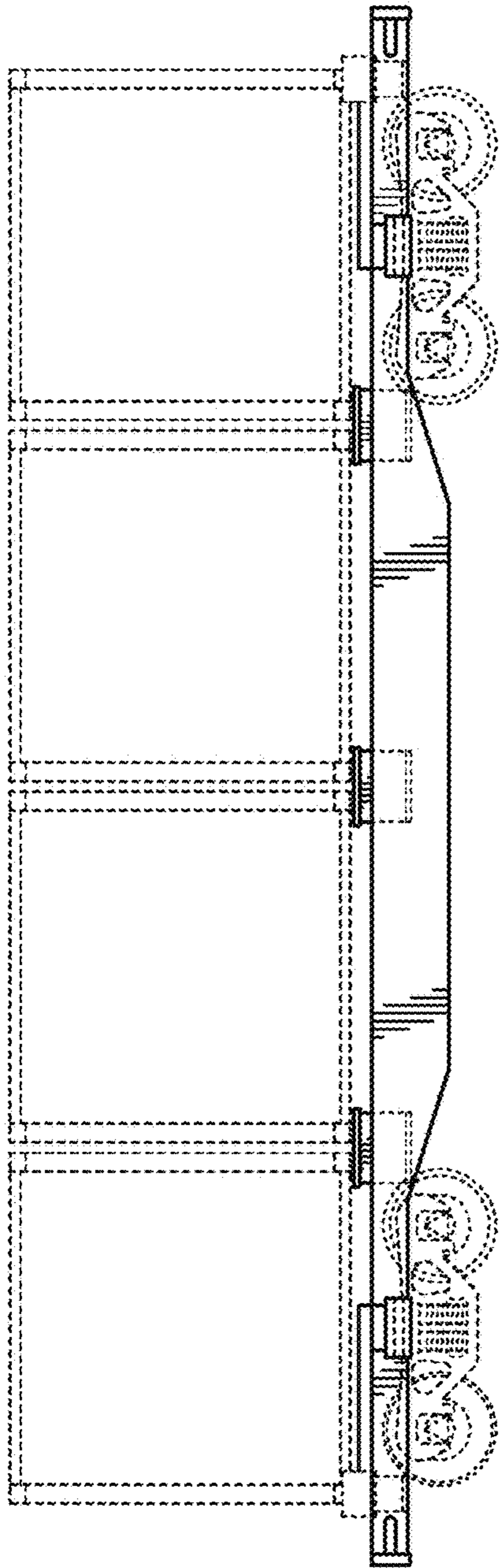


FIG. 2
Amended

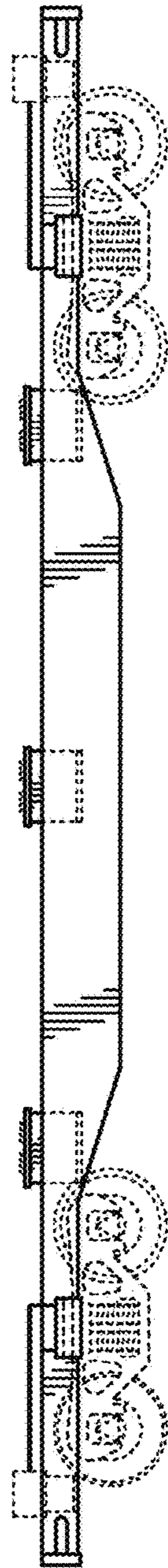


FIG. 3
Amended

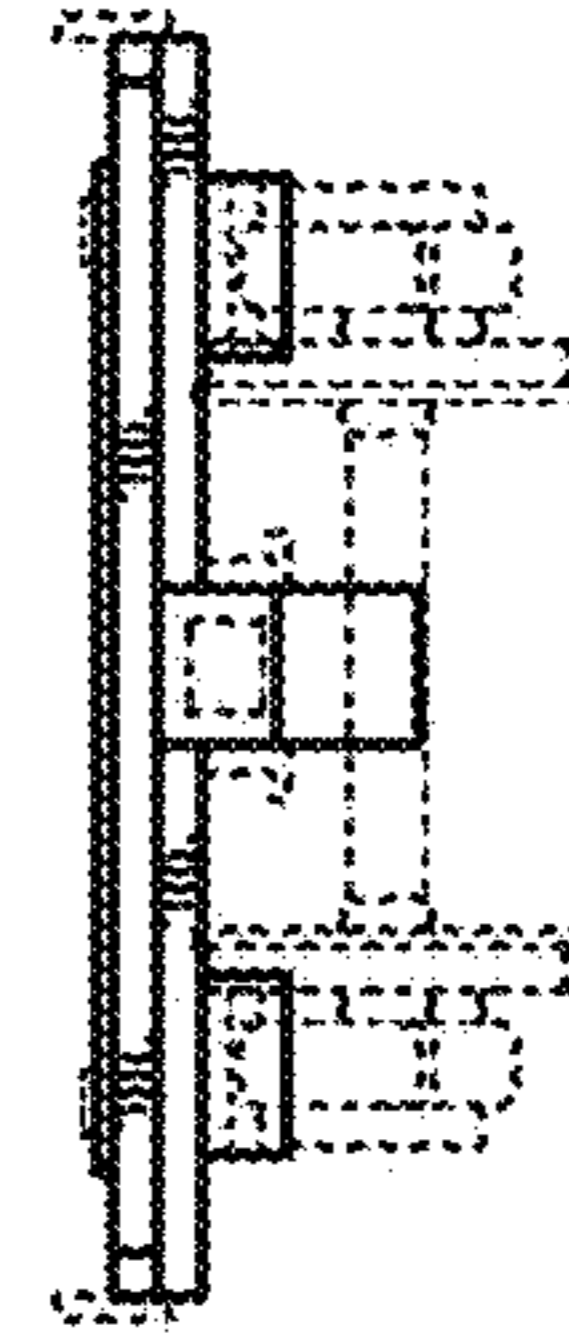


FIG. 5
Amended

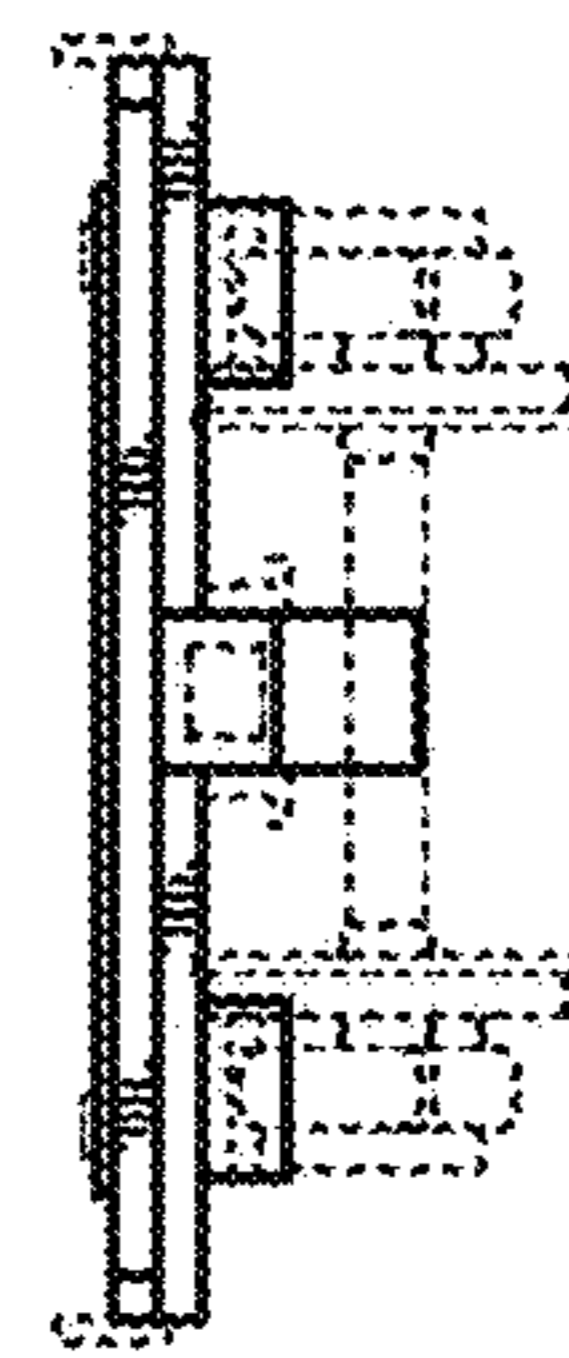


FIG. 4
Amended

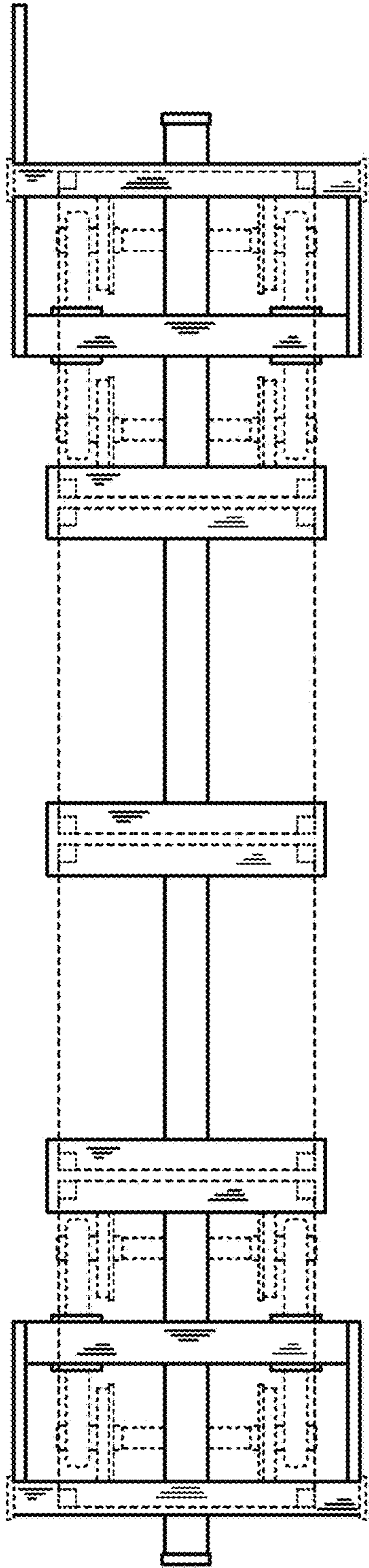


FIG. 6
Amended

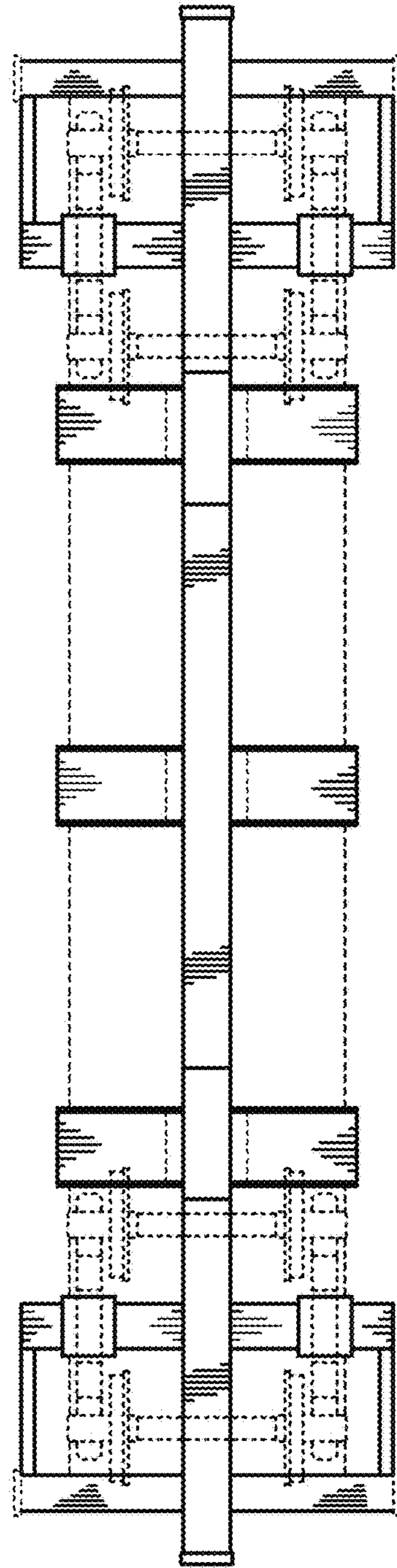


FIG. 7
Amended

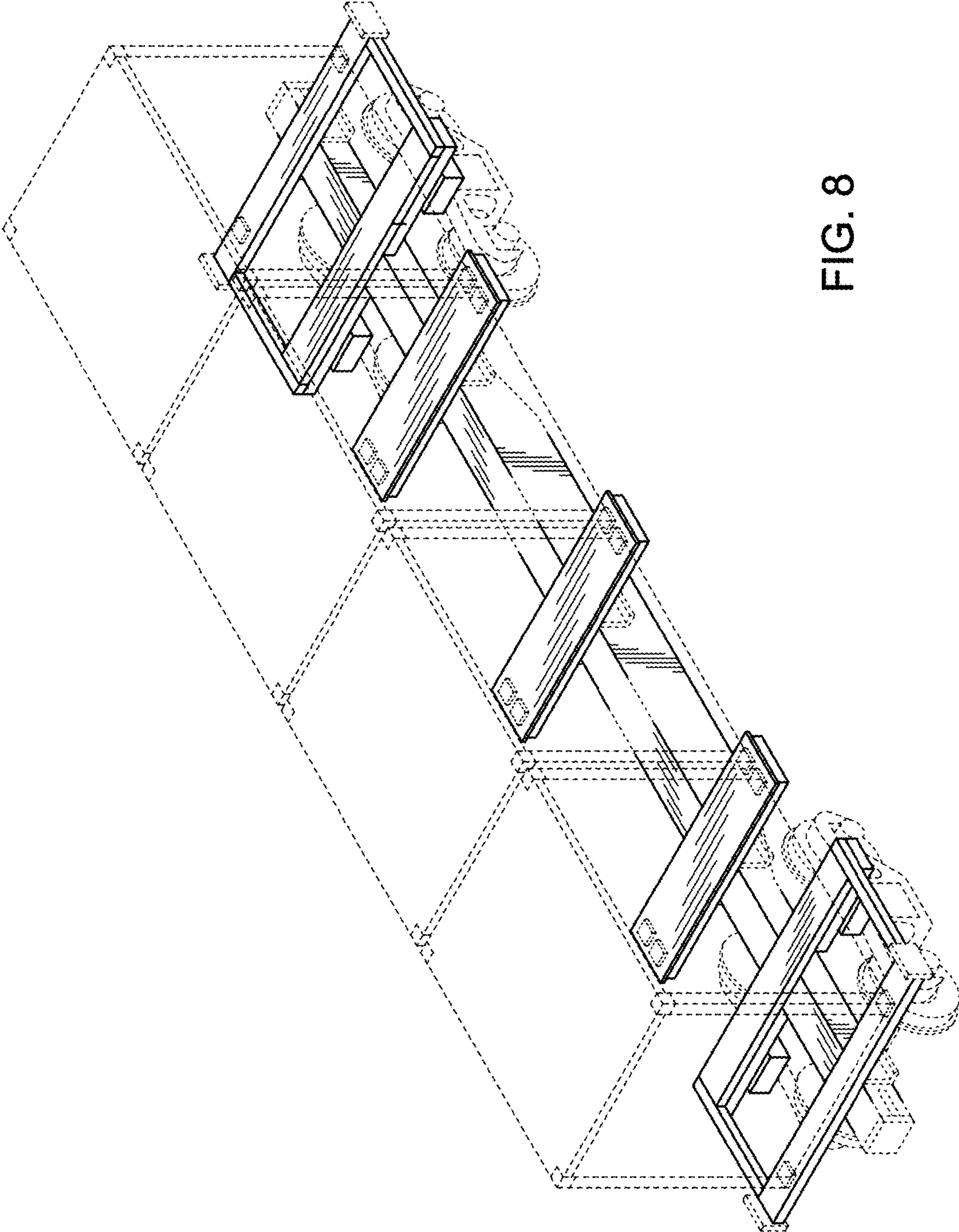


FIG. 8

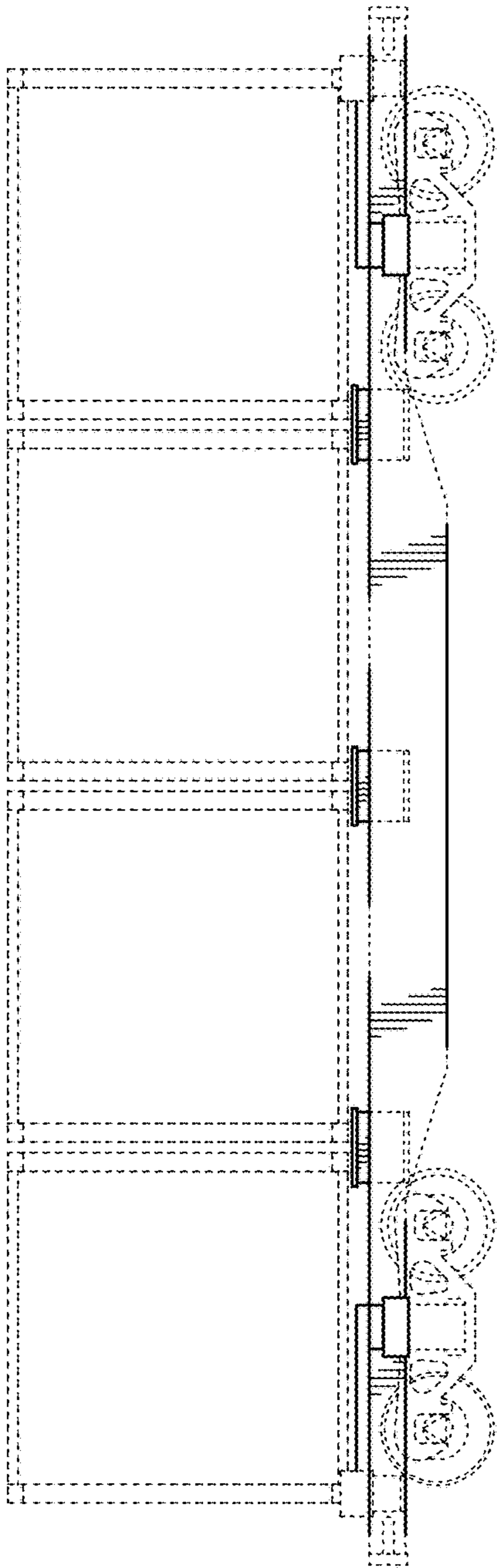


FIG. 9

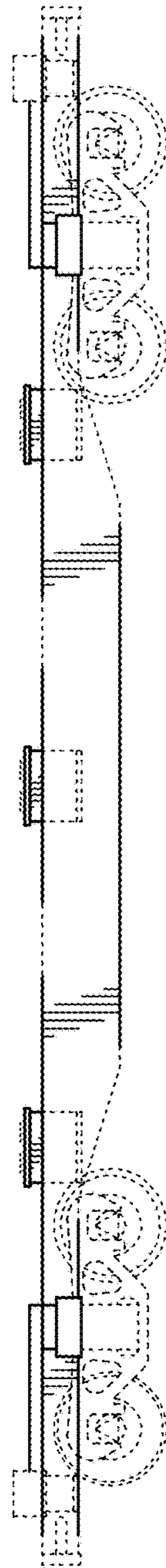


FIG. 10

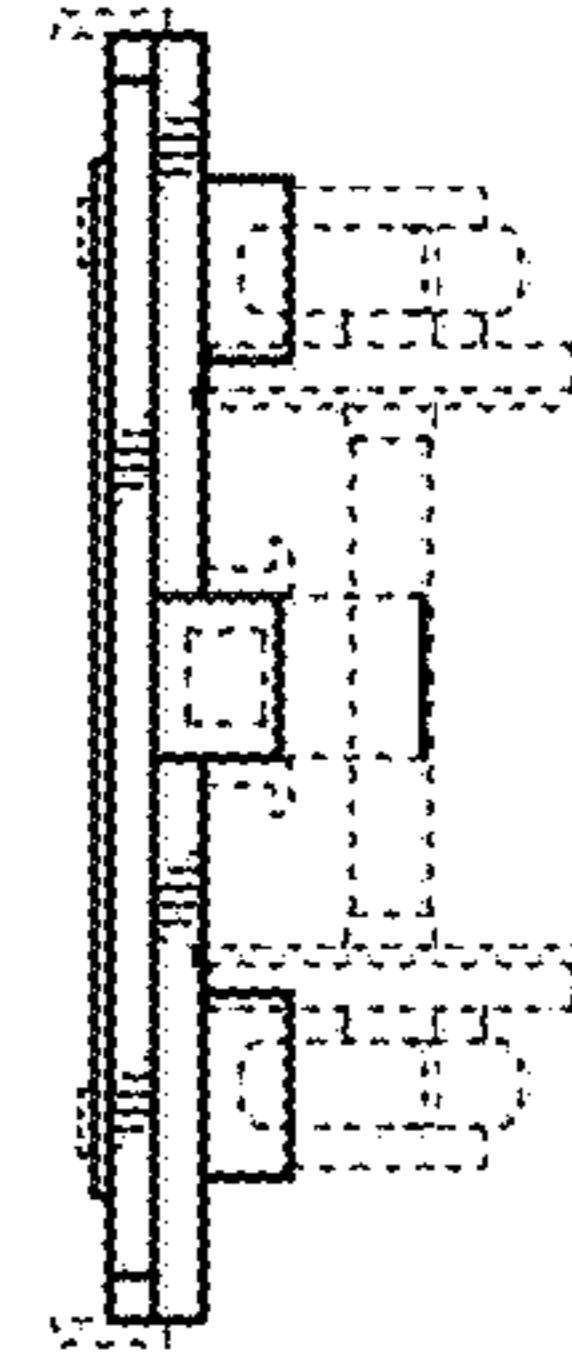


FIG. 11

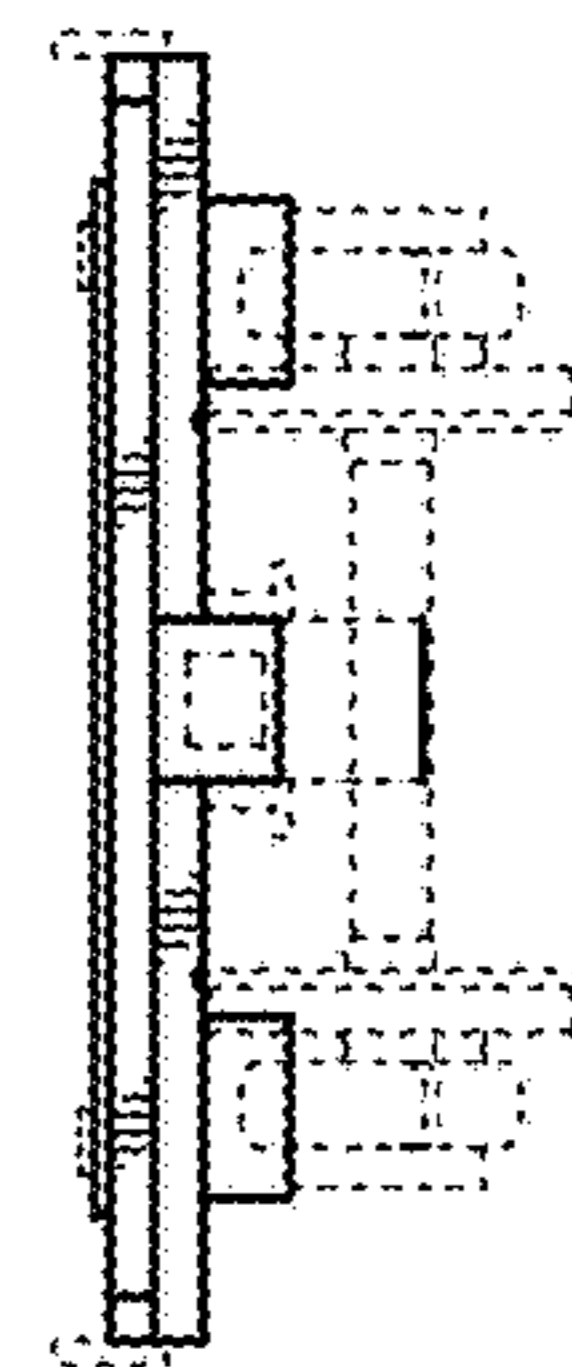


FIG. 12

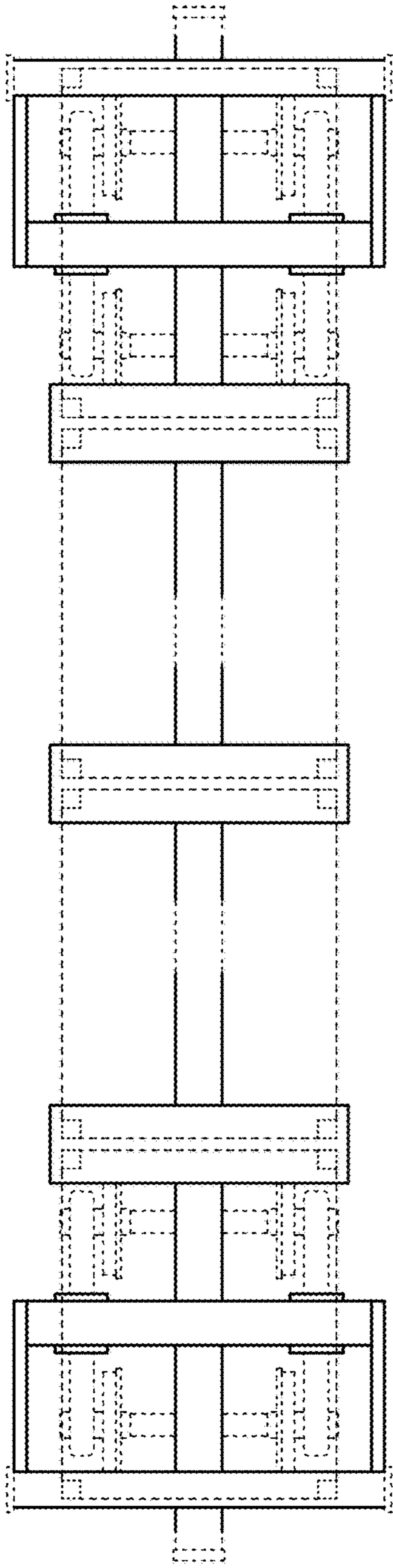


FIG. 13

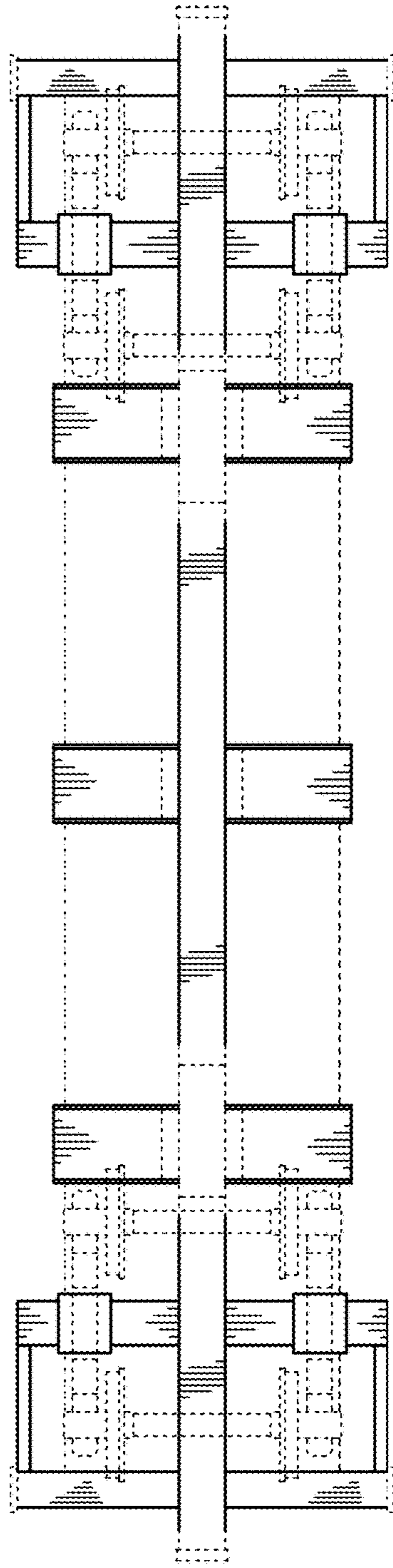


FIG. 14