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(54) **PERISTALTIC MEDICAL PUMP**

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USPC **D24/108**

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CPC A61M 5/20; A61M 5/30; A61M 5/142;
A61M 5/14228; A61M 2005/14208;
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See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D65,832 S	10/1924	Remark	
D76,595 S	10/1928	Balzer	
D89,168 S	2/1933	Carlson	
D107,079 S	11/1937	Hedfield et al.	
D263,997 S	4/1982	Preussner	
D309,662 S *	7/1990	Gorton	D24/111
D327,123 S	6/1992	Stracener et al.	
5,256,157 A	10/1993	Samiotes et al.	
5,295,967 A	3/1994	Rondelet et al.	
D348,730 S	7/1994	Walker et al.	

D353,667 S *	12/1994	Tsubota	D24/111
D354,010 S	1/1995	Pistilli	
D360,259 S	7/1995	Ijiri et al.	
5,482,446 A	1/1996	Williamson et al.	
5,505,709 A	4/1996	Funderburk et al.	
5,533,981 A	7/1996	Mandro et al.	

(Continued)

FOREIGN PATENT DOCUMENTS

CN	201379850 Y	1/2010
CN	201431672 Y	3/2010

(Continued)

OTHER PUBLICATIONS

European Community Design Registration 002260604/0001-0008,
Filed Jun. 21, 2013 and published on Jun. 23, 2015, 64 pgs.

(Continued)

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(57)

CLAIM

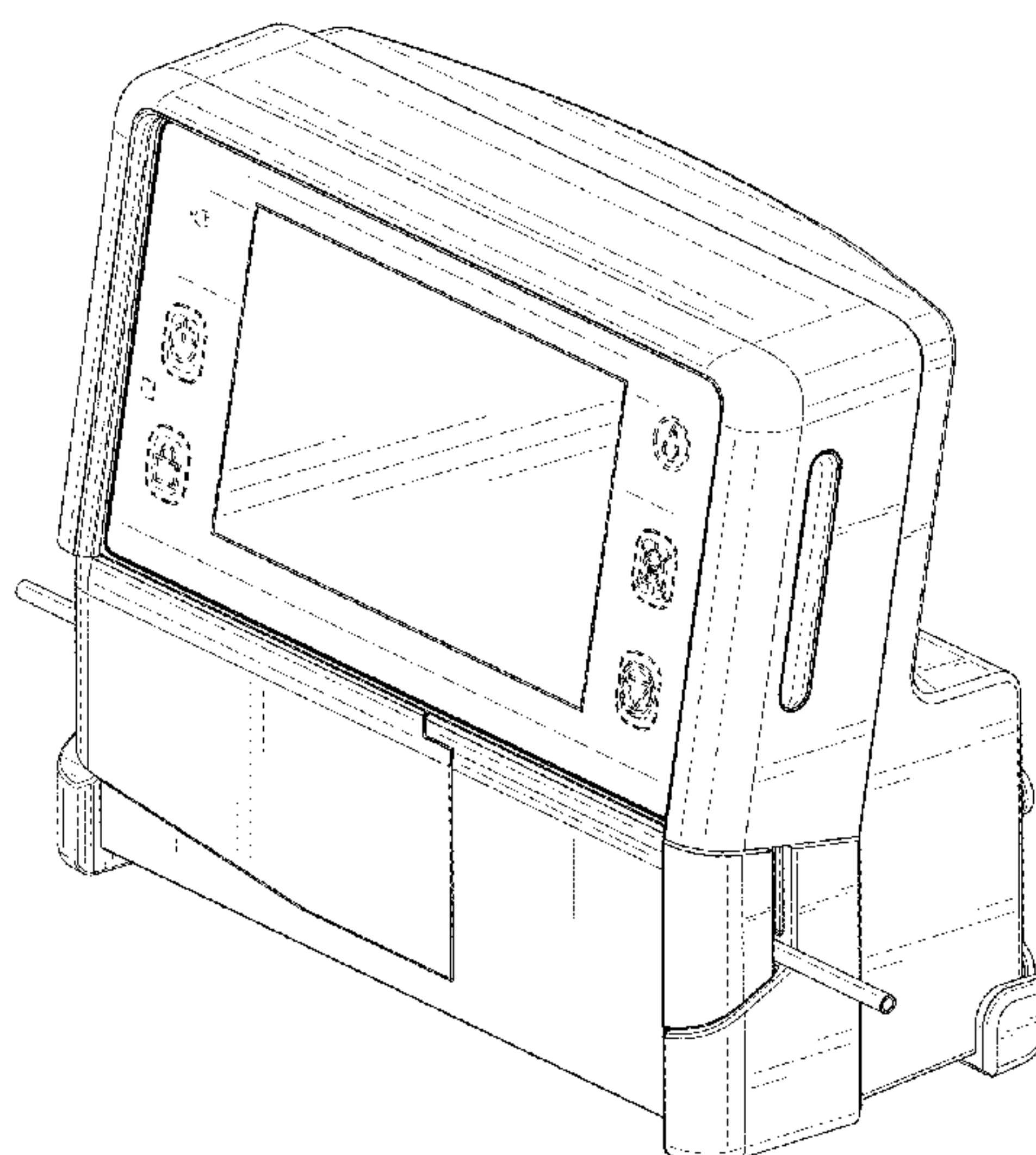
The ornamental design for a peristaltic medical pump, as
shown and described.

DESCRIPTION

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

The broken lines in the drawings illustrate portions of the
peristaltic medical pump that form no part of the claimed
design.

1 Claim, 6 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

5,637,095 A	6/1997	Nason et al.	
5,681,285 A	10/1997	Ford et al.	
D390,654 S *	2/1998	Alsberg	D24/111
D393,072 S	3/1998	Rogler	
5,954,697 A	9/1999	Srisathapat et al.	
D440,575 S	4/2001	Wang et al.	
6,228,047 B1	5/2001	Dadson	
D446,860 S	8/2001	Mezière et al.	
6,428,509 B1	8/2002	Fielder	
D475,134 S	5/2003	Randolph	
D499,740 S	12/2004	Ombao et al.	
6,932,242 B2	8/2005	Gerlach et al.	
D512,151 S	11/2005	Ward et al.	
7,163,381 B1 *	1/2007	Barak	F04B 43/082 318/476
D551,243 S	9/2007	Young	
D556,910 S	12/2007	Reihanifam et al.	
D557,272 S	12/2007	Glaser et al.	
D559,262 S	1/2008	Young	
D576,281 S	9/2008	Reihanifam et al.	
D599,373 S	9/2009	Kobayashi et al.	
D604,740 S	11/2009	Matheny et al.	
D622,730 S	8/2010	Krum et al.	
D625,322 S	10/2010	Guntaur et al.	
D625,323 S	10/2010	Matsushima et al.	
7,890,881 B1	2/2011	Skidgel	
D633,517 S	3/2011	Weir et al.	
D640,376 S	6/2011	Amano et al.	
D640,377 S	6/2011	Amano et al.	
D649,973 S	12/2011	Matas	
D652,050 S	1/2012	Chaudhri	
D655,301 S	3/2012	Ray et al.	
D660,313 S	5/2012	Williams et al.	
D664,988 S	8/2012	Gleasant et al.	
D665,401 S	8/2012	Rai et al.	
D666,208 S	8/2012	Spears et al.	
8,256,984 B2	9/2012	Fathallah et al.	
D668,262 S	10/2012	Gleasant et al.	
D669,096 S *	10/2012	Katsura	D15/7
D669,165 S	10/2012	Estes et al.	
D671,550 S	11/2012	Chen et al.	
D671,551 S	11/2012	Deng et al.	
D673,168 S	12/2012	Frijlink et al.	
D675,224 S	1/2013	Lee et al.	
D675,727 S	2/2013	Collins et al.	
D678,320 S	3/2013	Kanalakis, Jr. et al.	
D679,379 S	4/2013	Katsura	
D685,817 S	7/2013	Kunieda et al.	
D689,195 S	9/2013	Nelsen	
D690,729 S	10/2013	Abratowski et al.	
D691,259 S	10/2013	Estes et al.	
D696,684 S	12/2013	Yuk et al.	
D696,686 S	12/2013	Yuk et al.	
D698,362 S	1/2014	Ramesh et al.	
D701,232 S	3/2014	Na et al.	
D704,213 S	5/2014	Agnew	
D705,244 S	5/2014	Arnold et al.	
D705,248 S	5/2014	McCormack et al.	
D708,626 S	7/2014	Klein et al.	
D708,627 S	7/2014	Klein et al.	
D709,085 S	7/2014	Wen	
D712,920 S	9/2014	Sloo et al.	
D715,320 S	10/2014	McCormack et al.	
D716,332 S	10/2014	Chotin et al.	
D717,814 S	11/2014	Zuckerberg et al.	
8,876,793 B2	11/2014	Ledford et al.	
D718,776 S	12/2014	Hobbs et al.	
D718,777 S	12/2014	Hobbs et al.	
D718,778 S	12/2014	Hobbs et al.	
D719,963 S	12/2014	Hobbs et al.	
D719,964 S	12/2014	Hobbs et al.	
D721,719 S	1/2015	Lee	
D722,612 S	2/2015	Lee et al.	
D722,614 S	2/2015	Williams et al.	
D723,052 S	2/2015	Lai et al.	
D725,670 S	3/2015	Zhang et al.	
D728,779 S	5/2015	Sabin et al.	
D731,509 S	6/2015	Sueishi et al.	
D732,062 S	6/2015	Kwon	
D732,063 S	6/2015	Kwon	
D732,567 S	6/2015	Moon et al.	
D733,740 S	7/2015	Lee et al.	
D733,741 S	7/2015	Lee et al.	
D734,475 S	7/2015	Ross	
D735,319 S *	7/2015	Sabin	D24/111
D735,746 S	8/2015	Zuckerberg et al.	
D736,370 S *	8/2015	Sabin	D24/111
D740,848 S	10/2015	Bolts et al.	
D741,358 S	10/2015	Seo et al.	
9,151,646 B2	10/2015	Kamen et al.	
D745,661 S	12/2015	Collins et al.	
D749,206 S	2/2016	Johnson et al.	
D750,222 S	2/2016	Chang	
D751,689 S	3/2016	Peret et al.	
D751,690 S	3/2016	Peret et al.	
D752,209 S	3/2016	Peret et al.	
9,295,778 B2	3/2016	Kamen et al.	
D754,065 S	4/2016	Gray et al.	
D756,386 S	5/2016	Kendler et al.	
D758,399 S	6/2016	Kendler et al.	
D760,288 S	6/2016	Kendler et al.	
D760,289 S	6/2016	Kendler et al.	
9,364,394 B2	6/2016	Demers et al.	
9,372,486 B2	6/2016	Peret et al.	
D760,782 S	7/2016	Kendler et al.	
D760,888 S *	7/2016	Gill	D24/108
9,400,873 B2	7/2016	Kamen et al.	
D765,832 S	9/2016	Hochman et al.	
D767,756 S	9/2016	Sabin	
9,435,455 B2	9/2016	Peret et al.	
D768,716 S	10/2016	Kendler et al.	
9,465,919 B2	10/2016	Kamen et al.	
9,488,200 B2	11/2016	Kamen et al.	
D789,516 S	6/2017	Gill et al.	
9,675,756 B2	6/2017	Kamen et al.	
9,677,555 B2	6/2017	Kamen et al.	
2001/0044602 A1	11/2001	Angersbach et al.	
2002/0127114 A1 *	9/2002	Barak	F04B 43/082 417/12
2003/0217962 A1	11/2003	Childers et al.	
2004/0057855 A1	3/2004	Gerlach et al.	
2004/0220526 A1	11/2004	Boyne-Aitken	
2005/0029277 A1	2/2005	Tachibana	
2005/0050301 A1	3/2005	Whittle et al.	
2005/0096593 A1	5/2005	Pope et al.	
2005/0267827 A1	12/2005	Grant, Jr. et al.	
2009/0040875 A1	2/2009	Buzescu et al.	
2009/0144620 A1	6/2009	Bauchot et al.	
2010/0153872 A1	6/2010	Ahn et al.	
2010/0169389 A1	7/2010	Weber et al.	
2010/0169783 A1	7/2010	Weber et al.	
2011/0085778 A1	4/2011	Iwase et al.	
2011/0161806 A1	6/2011	Stern et al.	
2011/0184383 A1	7/2011	Hasegawa	
2011/0271221 A1	11/2011	Lategan	
2011/0313789 A1	12/2011	Kamen et al.	
2012/0035581 A1	2/2012	Travis	
2012/0079416 A1	3/2012	Fagans	
2012/0083760 A1	4/2012	Ledford et al.	
2012/0177507 A1	7/2012	Bennett et al.	
2012/0185267 A1	7/2012	Kamen	
2012/0209197 A1	8/2012	Lanigan et al.	
2012/0254044 A1	10/2012	Flanagan et al.	
2012/0266964 A1	10/2012	West et al.	
2013/0053820 A1	2/2013	Estes et al.	
2013/0127870 A1	5/2013	Baudel et al.	
2013/0177455 A1	7/2013	Kamen	
2013/0182381 A1	7/2013	Gray	
2013/0184676 A1	7/2013	Kamen	
2013/0188040 A1	7/2013	Kamen	
2013/0191513 A1	7/2013	Kamen	
2013/0197693 A1	8/2013	Kamen	
2013/0204188 A1	8/2013	Kamen	
2013/0272773 A1	10/2013	Kamen	

(56)

References Cited**U.S. PATENT DOCUMENTS**

2013/0281965	A1	10/2013	Kamen
2013/0297330	A1	11/2013	Kamen
2013/0310990	A1	11/2013	Peret et al.
2013/0317753	A1	11/2013	Kamen
2013/0317837	A1	11/2013	Ballantyne
2013/0318429	A1	11/2013	Dantas et al.
2013/0325154	A1	12/2013	Oh et al.
2013/0336814	A1	12/2013	Kamen
2013/0339049	A1	12/2013	Blumberg, Jr.
2013/0346108	A1	12/2013	Kamen
2014/0046296	A1	2/2014	Clarke
2014/0152585	A1	6/2014	Andersson Reimer
2014/0165703	A1	6/2014	Wilt
2014/0180711	A1	6/2014	Kamen
2014/0188076	A1	7/2014	Kamen
2014/0188516	A1	7/2014	Kamen
2014/0195639	A1	7/2014	Kamen
2014/0227021	A1	8/2014	Kamen
2014/0237419	A1	8/2014	Ryu
2014/0243745	A1	8/2014	Ueda et al.
2014/0318639	A1	10/2014	Peret
2014/0343492	A1	11/2014	Kamen
2014/0359443	A1	12/2014	Hwang
2015/0002667	A1	1/2015	Peret et al.
2015/0002668	A1	1/2015	Peret et al.
2015/0002677	A1	1/2015	Peret et al.
2015/0018766	A1*	1/2015	Nakanishi A61M 5/14228 604/151
2015/0023808	A1*	1/2015	Zhu F04B 39/00 417/63
2015/0033823	A1	2/2015	Blumberg, Jr.
2015/0089364	A1	3/2015	Meller et al.
2015/0151057	A1*	6/2015	Nakanishi A61M 5/162 604/151
2015/0154364	A1	6/2015	Biasi et al.
2015/0157791	A1	6/2015	Desch et al.
2015/0238228	A1	8/2015	Langenfeld et al.
2015/0238689	A1*	8/2015	Shimizu A61M 5/14228 604/508
2015/0257974	A1	9/2015	Demers et al.
2015/0265763	A1	9/2015	Katsunuma
2015/0314066	A1*	11/2015	Shimizu A61M 5/16831 604/507
2015/0314083	A1	11/2015	Blumberg, Jr. et al.
2015/0332009	A1	11/2015	Kane et al.
2016/0055397	A1	2/2016	Peret et al.
2016/0055649	A1	2/2016	Peret et al.
2016/0061641	A1	3/2016	Peret et al.
2016/0063353	A1	3/2016	Peret et al.
2016/0073063	A1	3/2016	Peret et al.
2016/0084434	A1	3/2016	Janway et al.
2016/0097382	A1	4/2016	Kamen et al.
2016/0131272	A1	5/2016	Yoo et al.
2016/0158437	A1	6/2016	Biasi et al.
2016/0179086	A1	6/2016	Peret et al.
2016/0184510	A1	6/2016	Kamen et al.
2016/0203292	A1	7/2016	Kamen et al.
2016/0228633	A1	8/2016	Welsch et al.
2016/0262977	A1	9/2016	Demers et al.
2016/0319850	A1	11/2016	Kamen et al.

FOREIGN PATENT DOCUMENTS

CN	201524307	U	7/2010
EP	1722310	A1	11/2006
GB	2020735	A	11/1979
WO	WO02100262	A1	12/2002
WO	WO2006086723	A2	8/2006
WO	WO2009055639	A2	4/2009
WO	WO2011021098	A1	2/2011
WO	WO2013095459	A9	6/2013
WO	WO2013096713	A2	6/2013
WO	WO2013096718	A2	6/2013
WO	WO2013096722	A2	6/2013

WO	WO2013096909	A2	6/2013
WO	WO2013176770	A2	11/2013
WO	WO2013177357	A1	11/2013
WO	WO2014100557	A2	6/2014
WO	WO2014100571	A2	6/2014
WO	WO2014100658	A1	6/2014
WO	WO2014100687	A2	6/2014
WO	WO2014100736	A2	6/2014
WO	WO2014100744	A2	6/2014
WO	WO2014144557	A2	9/2014
WO	WO2015017275	A1	2/2015
WO	WO2016089572	A1	6/2016
WO	WO2016176042	A1	11/2016
WO	WO2016179389	A1	11/2016
WO	WO2016205584	A1	12/2016

OTHER PUBLICATIONS

European Community Design Registration 002374777/0001, Filed Dec. 20, 2013 and published on Dec. 23, 2013, 8 pgs.

European Community Design Registration 002374900/0001-0006, Filed Dec. 20, 2013 and published on Dec. 23, 2013, 44 pgs.

International Search Report & Written Opinion, dated Nov. 7, 2013, received in International patent application No. PCT/US2013/042350 18 pgs.

International Search Report & Written Opinion, dated Oct. 1, 2013, received in International patent application No. PCT/US2012/071490 20 pgs.

AAMI and FDA, Infusing Patients Safely: Priority Issues from the AAMI/FDA Infusion Device Summit, Symposium, Oct. 5-6, 2010, pp. 1-48, AAMI, Arlington, VA, USA., www.aami.org.

Care Everywhere, Gateway User Manual: V1.0.13 W/CQI 1.6: For Use with the Sigma Spectrum Pump: Care Everywhere Document No. CE-100-003-IFU, manual, pp. 1-55, CareEverywhere LLC, 9 Tech Circle, Natick, MA, USA., Release 1.0.9 (Initial Release) www.sigmapumps.com.

Fresenius Kabi AG, Agilia® Product Line, 1 pg., Sep. 24, 2013, Germany, www.fresenius-kabi.com/5316.htm.

Fresenius Kabi AG, Alyx™, 1 pg., Sep. 24, 2013, Germany, www.fresenius-kabi.com/8825.htm.

Fresenius Kabi AG, Amicus™, 2 pgs., Sep. 24, 2013, Germany, www.fresenius-kabi.com/8823.htm.

Fresenius Kabi AG, Amika®, 2 pgs., Sep. 24, 2013, Germany, www.fresenius-kabi.com/8934.htm.

Fresenius Kabi AG, Applix Smart, 2 pgs., Sep. 24, 2013, Germany, www.fresenius-kabi.com/2202.htm.

Fresenius Kabi AG, Applix Vision, 2 pgs., Sep. 24, 2013, Germany, www.fresenius-kabi.com/2224.htm.

Fresenius Kabi AG, Aurora™, 2 pgs., Sep. 24, 2013, Germany, www.fresenius-kabi.com/8829.htm.

Fresenius Kabi AG, Autopheresis-C™, 2 pgs., Sep. 24, 2013, Germany, www.fresenius-kabi.com/8827.htm.

Fresenius Kabi AG, C.A.T.S Plus, 2 pgs., Sep. 24, 2013, Germany, www.fresenius-kabi.com/2246.htm.

Fresenius Kabi AG, Com.Tec®, 2 pgs., Sep. 24, 2013, Germany, www.fresenius-kabi.com/2306.htm.

Fresenius Kabi AG, CompoDock®, 2 pgs., Sep. 24, 2013, Germany, www.fresenius-kabi.com/2324.htm.

Fresenius Kabi AG, CompoGuard®, 3 pgs., Sep. 24, 2013, Germany, www.fresenius-kabi.com/2308.htm.

Fresenius Kabi AG, CompoLab TS, 1 pg., Sep. 24, 2013, Germany, www.fresenius-kabi.com/6921.htm.

Fresenius Kabi AG, Compomat® G4, 2 pgs., Sep. 24, 2013, Germany, www.fresenius-kabi.com/2320.htm.

Fresenius Kabi AG, CompoMat® G5 & CompoSure, 3 pgs., Sep. 24, 2013, Germany, www.fresenius-kabi.com/6931.htm.

Fresenius Kabi AG, CompoSeal® Mobile II, 1 pg., Sep. 24, 2013, Germany, www.fresenius-kabi.com/6945.htm.

Fresenius Kabi AG, CompoSeal® Universal, 1 pg., Sep. 24, 2013, Germany, www.fresenius-kabi.com/2326.htm.

Fresenius Kabi AG, HemoLight® Plus, 2 pgs., Sep. 24, 2013, Germany, www.fresenius-kabi.com/6953.htm.

(56)

References Cited

OTHER PUBLICATIONS

Fresenius Kabi AG, HemoSeal®, 1 pg., Sep. 24, 2013, Germany, www.fresenius-kabi.com/6961.htm.

Fresenius Kabi AG, Injectomat MC Agilia, 2 pgs., Sep. 24, 2013, Germany, www.fresenius-kabi.com/6195.htm.

Fresenius Kabi AG, Injectomat TIVA Agilia, 2 pgs., Sep. 24, 2013, Germany, www.fresenius-kabi.com/6197.htm.

Fresenius Kabi AG, Link+ Agilia, 1 pg., Sep. 24, 2013, Germany, www.fresenius-kabi.com/8924.htm.

Fresenius Kabi AG, MRI Guard Agilia, 1 pg., Sep. 24, 2013, Germany, www.fresenius-kabi.com/8926.htm.

Fresenius Kabi AG, Orchestra® Base A, 2 pgs., Sep. 24, 2013, Germany, www.fresenius-kabi.com/1630.htm.

Fresenius Kabi AG, Orchestra® Base Intensive, 2 pgs., Sep. 24, 2013, Germany, www.fresenius-kabi.com/1669.htm.

Fresenius Kabi AG, Orchestra® Base Primea, 2 pgs., Sep. 24, 2013, Germany, www.fresenius-kabi.com/1676.htm.

Fresenius Kabi AG, Orchestra® Module DPS, 2 pgs., Sep. 24, 2013, Germany, www.fresenius-kabi.com/1699.htm.

Fresenius Kabi AG, Orchestra® Module DPS+, 2 pgs., Sep. 24, 2013, Germany, www.fresenius-kabi.com/1707.htm.

Fresenius Kabi AG, Orchestra® Module DPS Visio, 2 pgs., Sep. 24, 2013, Germany, www.fresenius-kabi.com/1714.htm.

Fresenius Kabi AG, Orchestra® Module MVP MS, 2 pgs., Sep. 24, 2013, Germany, www.fresenius-kabi.com/1682.htm.

Fresenius Kabi AG, Orchestra® Module MVP PT, 2 pgs., Sep. 24, 2013, Germany, www.fresenius-kabi.com/1691.htm.

Fresenius Kabi AG, Orchestra® Module MVP ST, 2 pgs., Sep. 24, 2013, Germany, www.fresenius-kabi.com/2026.htm.

Fresenius Kabi AG, Pilot Enteral, 2 pgs., Sep. 24, 2013, Germany, www.fresenius-kabi.com/2238.htm.

Fresenius Kabi AG, PlaquetaMix®, 1 pg., Sep. 24, 2013, Germany, www.fresenius-kabi.com/6963.htm.

Fresenius Kabi AG, Vacuum Pump Bora, 1 pg., Sep. 24, 2013, Germany, www.fresenius-kabi.com/2249.htm.

Fresenius Kabi AG, Volumat Agilia, 3 pgs., Sep. 24, 2013, Germany, www.fresenius-kabi.com/VolumatAgilia.htm.

Fresenius Kabi AG, Volumat MC Agilia, 3 pgs., Sep. 24, 2013, Germany, www.fresenius-kabi.com/VolumatMCAGilia.htm.

National Patient Safety Agency, Design for Patient Safety: A Guide to the Design of Electronic Infusion Devices, Ref: 0976 Mar. 2010, ISBN: 978-1-906624-10-1, pp. 1-96, Edition 1, National Patient Safety Agency, National Reporting and Learning Service, Helen Hamlyn Centre, Royal College of Art, London, USA. www.nrls.npsa.nhs.uk.

“Alaris Syringe Pumps,” Technical Service Manual, 2006, Cardinal Health Inc., accessed at http://frankshospitalworkshop.com/equipment/documents/infusion_pumps/service_manuals/Cardinal_Alaris_-_Service_Manual.pdf.

“Asena GH Syringe Pump with Gaurdrails Safety Software,” Directions for Use, 2003, Alaris Medical Systems, accessed at http://video.rch.org.au/bme_rch/1PB1453N01.pdf on Apr. 16, 2014.

“Alaris GP Volumetric Pump,” Technical Service Manual, 2008, Cardinal Health Inc., accessed at http://frankshospitalworkshop.com/equipment/documents/infusion_pumps/service_manuals/Cardinal_Health_Alaris_GP_-_Service_manual.pdf on Apr. 16, 2014.

“Alaris GW Volumetric Pump,” Directions for Use, 2011, Carefusion Corporation, accessed at <http://www.carefusion-products.com/assets/supportdocs/DFUs/1000DF00440.pdf> on Apr. 16, 2014.

“Gemini PC-2 Volumetric Infusion Pump/Controller,” Operator’s Manual, 1994, IMED Corporation, accessed at <http://www.triumphmed.com/manuals/GEMINI-PC-2v3.44.pdf> on Apr. 16, 2014.

“Gemini PC-4 Volumetric Infusion Pump/Controller,” Maintenance Manual, Nov. 1, 1995, IMED Corporation, accessed at http://frankshospitalworkshop.com/equipment/documents/infusion_pumps/service_manuals/Imed_Gemini_PC-4_Infusion_Pump_-_Service_manual.pdf on Apr. 16, 2014.

Photograph of a vital signs monitor by Carefusion Corporation, Alaris IVAC 4410 Vital Signs Monitor, accessed at <http://kahntactusa.com/Products/1136-alaris-ivac-4410-vital-signs-monitor-w-cuff-spo2.aspx> on Apr. 16, 2014.

Photograph of a pump product by Carefusion Corporation, Alaris PC, accessed at <http://www.carefusion.com/medical-products/infusion/devices/> on Apr. 16, 2014.

“Alaris PC Unit, Models 8000 and 8015” and “Alaris Pump Module, Model 8100,” Technical Service Manual, Mar. 2007, Cardinal Health, Inc., accessed at http://frankshospitalworkshop.com/equipment/documents/infusion_pumps/service_manuals/Cardinal_Health_Alaris_8100_-_Service_manual.pdf on Apr. 16, 2014.

“Alaris SE Pump Models 7130/7131 and 7230/7231,” Directions for Use, Nov. 2010, Carefusion Corporation, accessed at http://www.carefusion.com/pdf/Infusion/clinical_documentation/user_manuals/12155838.pdf on Apr. 16, 2014.

“Volumetric Infusion Pump ARGUS 707 V,” Service Manual, Mar. 28, 2006, ARGUS Medical AG, accessed at http://www.helse-mr.no/ftp/eqspublic/legemiddelprosessen/docs/doc_15163/attachments/Argus%20%20707%20infusionspumpe.pdf on Apr. 16, 2014.

“Volumetric Infusion Pump ARGUS 708 V,” Service Manual, Mar. 28, 2006, ARGUS Medical AG, accessed at http://www.internetmed.com/sites/default/files/Argus_708_-_Service_manual.pdf on Apr. 16, 2014.

“Auto Syringe AS40A Model AS40A Infusion Pump,” Operation Manual, 1993, Baxter Healthcare Corporation, accessed at <http://www.triumphmed.com/manuals/BAXTER-AS40A.pdf> on Apr. 16, 2014.

“Auto Syringe AS50 Model AS50 Infusion Pump,” Operator’s Manual, May 2002, Baxter Healthcare Corporation, accessed at http://www.lhsc.on.ca/Health_Professionals/CCTC/eduquiz/as50.pdf on Apr. 16, 2014.

“Colleague Volumetric Infusion Pump” and “Colleague 3 Volumetric Infusion Pump,” Global Service Manual, 2004, Baxter Healthcare Corporation, accessed at http://frankshospitalworkshop.com/equipment/documents/infusion_pumps/service_manuals/Baxter_Colleague_-_Service_manual.pdf on Apr. 16, 2014.

“Colleague CX Volumetric Infusion Pump,” Addendum to Operator’s Manual, 2001, Baxter Healthcare Corporation, accessed at <http://www.triumphmed.com/manuals/Baxter-Colleague-CX.pdf> on Apr. 16, 2014.

“Flo-Gard 6301 Dual Channel Volumetric Infusion Pump,” Operator’s Manual, 1999, Baxter Healthcare Corporation, accessed at <http://www.meql.com/Manuals/Baxter-6301-Operators-Manual.pdf> on Apr. 16, 2014.

“Sigma Spectrum,” Operator’s Manual, May 15, 2008, Sigma International, accessed at <http://www.meql.com/Manuals/Sigma-Spectrum-User-Manual.pdf> on Apr. 16, 2014.

“Sigma International Model Spectrum Infusion Pump,” Service Manual, Aug. 2008, SIGMA International, Inc., accessed at <http://photos.medwrench.com/equipmentManuals/3519-3759.pdf> on Apr. 17, 2014.

Photograph of a pump product by Smiths Medical, CADD-Solis Ambulatory Infusion Pump, accessed at <http://www.smiths-medical.com/catalog/ambulatory-pumps-sets/cadd-ambulatory-infusion-pumps/cadd-solis/cadd-solis-ambulatory-infusion.html> on Apr. 16, 2014 (image on website at least as early as Nov. 16, 2008).

“Production Engineering—Medical Equipment Division,” Images on website since at least Sep. 17, 2008, PEMED, accessed at <http://www.pemed.com/surgery/pumps/pumps.htm> on Apr. 18, 2014.

“Curlin 6000 CMS Ambulatory Infusion System,” 2008, B. Braun Medical Inc., accessed at <http://zivotberstrevva.cz/wp-content/uploads/2013/10/Curlin-6000-male.pdf> on Apr. 16, 2014.

“Delphia IVantage Volumetric Ambulatory Infusion System,” 2006, Delphia Corporation, accessed at <https://delphi.com/shared/pdf/ppd/medical/IVantage-Volumetric-Ambulatory-Infusion-Product-Sheet.pdf> on Apr. 16, 2014.

“Syringe Pumps Range when accuracy matters,” Smiths Medical International Ltd, accessed at <http://www.smiths-medical.com/up->

(56)

References Cited

OTHER PUBLICATIONS

load/products/pdf/SMI_syringe_pumps_range9.pdf on Apr. 16, 2014 (file on website at least as early as Oct. 21, 2007).

“Model 500 and Micro 505 Volumetric Infusion Pump,” Instruction Manual, 2002, Graseby Medical Limited, accessed at <http://isurplus.com.au/manuals/Graseby%20500%20&%203000%20Infusion%20Pump%20User%20Manual.pdf> on Apr. 16, 2014.

“Micro Macro Plum XL with DataPort,” System Operating Manual, Aug. 1997, Abbott Laboratories, accessed at <http://www.elitemedicalmall.com/manuals/Abbott-PLUM-XLwDATAPORT.pdf> on Apr. 16, 2014.

“LifeCare 4100 PCA Plus II Infuser with Microgram Delivery,” System Operating Manual, Oct. 1996, Abbott Laboratories, accessed at <http://www.meql.com/Manuals/Abbott-PCA-II-Plus-User-Manual.pdf> on Apr. 16, 2014.

“Gemstar,” Technical Service Manual, May 2007, Hospira, Inc., accessed at http://frankshospitalworkshop.com/equipment/documents/infusion_pumps/service_manuals/Abbott_Gemstar_-_Service_Manual.pdf on Apr. 16, 2014.

“LifeCare 5000 Plum Concurrent Flow Infusion System With DataPort,” System Operating Manual, Jul. 1998, Abbott Laboratories, accessed at <http://www.meql.com/Manuals/Abbott-Plum-5000-User-Manual.pdf> on Apr. 16, 2014.

“Plum XL 3 Multi-Line Infusion System,” System Operating Manual, Jan. 1997, Abbott Laboratories, accessed at <http://www.elitemedicalmall.com/manuals/Abbott-PLUM-XL-3.pdf> on Apr. 16, 2014.

“Abbott Plum A+,” System Operating Manual, May 2001, Abbott Laboratories, accessed at <http://www.elitemedicalmall.com/manuals/Abbott-Plum-A+-Op-Manual.pdf> on Apr. 16, 2014.

“On ‘Grey’s Anatomy’: A supporting role for Hospira,” Sep. 8, 2008, by Laura Bianchi in Crain’s Chicago Business, accessed at <http://www.chicagobusiness.com/article/20080906/ISSUE03/100030530/on-greys-anatomy-a-supporting-role-for-hospira#> on Apr. 16, 2014.

“Symbiq Infusion System with Hospira MedNet Software,” Nov. 2006, Hospira, accessed at http://www.hospira.ca/englishLdocs/P06-0589_Symbiq_Sets.pdf on Apr. 18, 2014.

“Monitors flex their muscles, hospitals reap rewards,” May 2007, Julie E. Williamson, accessed at <http://www.hpnonline.com/inside/2007-05/0705-or-monitors.html> on Apr. 18, 2014.

“The Incremental Commitment Model for System of Systems Development Tutorial,” p. 42, Jun. 18, 2007, Barry Boehm and Jo Ann Lane, accessed at <http://www.ieee-stc.org/proceedings/2007/pdfs/BB1686.pdf> on Apr. 18, 2014.

“Medication Management Systems,” p. 19, Sep. 2006, Hospira, accessed at http://media.corporate-ir.net/media_files/irol/17/175550/presentations/hsp0906.pdf on Apr. 17, 2014.

“Leon leon plus Modern anaesthesia work stations,” May 2006, Heinen + Löwenstein Medical Technology, accessed at <http://www.dodhysagencies.com/brochures/Anesthesia/Leon.pdf> on Apr. 16, 2014.

“Super Technology for Precise Breathing,” created Oct. 22, 2008 Heinen + Löwenstein Medical Technology, accessed at http://www.diagnos.pl/uploads/pdf/169/elisa_sonata_enlisch_221008.pdf on Apr. 18, 2014.

“Medfusion 2001 Syringe Pump,” Operations Manual, Oct. 1996, Medexinc, accessed at <http://www.triumphmed.com/manuals/MEDFUSION-2001.pdf> on Apr. 16, 2014.

“Operations Manual for Medfusion 2010 Syringe Pump,” Oct. 1996, Medexinc, accessed at <http://www.triumphmed.com/manuals/MEDFUSION-2010.pdf> on Apr. 16, 2014.

“3850 MRidium MRI Infusion System,” Operation Manual, 2006, IRadimed Corporation, accessed at http://www.iradimed.com/en-us/technical_support/MRidium%201124-3A.pdf on Apr. 16, 2014.

“Sabratek 3030 Volumetric Infusion Pump,” Operation Manual, 1996, Sabratek Corporation, accessed at <http://www.triumphmed.com/manuals/Sabratek-3030-Op-Manual.pdf> on Apr. 16, 2014.

Photograph of pump products by Abbott, Abbott Lifecare III and Abbott Lifecare 4, accessed at <http://www.msdistibutors.com/biomed/meh/LIFECARE.HTM> on Apr. 16, 2014 (image on website at least as early as Mar. 6, 2001).

“Horizon Nxt,” Operation Manual, 1999, B. Braun Medical Inc. , accessed at <http://www.triumphmed.com/manuals/BBraun-Horizon-NXT.pdf> on Apr. 16, 2014.

“Perfusor compact,” Service Manual, approved by B. Braun on Mar. 16, 2006 and created on Mar. 17, 2006, B. Braun, accessed at http://frankshospitalworkshop.com/equipment/documents/infusion_pumps/service_manuals/B.Braun_Perfusor_Compact_-_Service_manual.pdf on Apr. 16, 2014.

“B. Braun Space,” created Oct. 19, 2004, B. Braun Melsungen Ag, accessed at http://info.bbBraun.de/Extranet/Infusioonipumbad/Tutvustavad%20materjalid/Perfusor-space-tehniline_data.pdf on Apr. 16, 2014.

“LifeCare PCA for use with Hospira MedNet Software,” System Operating Manual, Jan. 2006, Hospira, accessed at <http://www.meql.com/Manuals/Abbott-Hospira-PCA-III-Mednet-User-Manual.pdf> on Apr. 16, 2014.

“Abbott AIM plus,” System Operating Manual, Feb. 1996, Abbott Laboratories, accessed at http://www.eecs.qmul.ac.uk/~masci/works/PVS/fluorouracil_example/ABBOTT-13967-04.pdf on Apr. 16, 2014.

“Omni-flow 4000 Plus IV Medication Management System,” System Operating Manual, Aug. 1996, Abbott Laboratories, accessed at <http://www.elitemedicalmall.com/manuals/Abbott-Omniflow-Op-Manual.pdf> on Apr. 16, 2014.

Photograph of pump product by Kendall, SCD Model 5325, accessed at <http://www.msdonline.com/biomed/meh/kendall.htm> on Apr. 16, 2014 (image on website at least as early as Nov. 29, 2006).

Photograph of pump product by Abbott, Provider 5500 Ambulatory Pump, accessed at <http://www.msdistibutors.com/BioMed/MEH/abbottpt.htm> (image on website at least as early as Mar. 6, 2001).

“Model AP12 Single—Syringe Pump,” Medaid Inc., created Feb. 15, 2008, accessed at http://www.mediainc.com/Brochures/M-AP12_IndiOval_English_HR.pdf on Apr. 17, 2014.

“Syringe Pumps AP 12 / 22,” Operating Manual, created Jan. 11, 2007, Ascor S. A. , accessed at http://www.ascor.com.pl/eng/pdf/AP12_AP22_OM36_070111_GB.pdf on Apr. 18, 2014.

“Biomedical Rental Equipment—Enteral Pumps and Accessories,” created Oct. 13, 2003, MSD, accessed at http://www.msdistibutors.com/Drill_Downs/enteral%20pumps%20and%20accessories.pdf on Apr. 17, 2014, p. 4/5.

“Military Communications,” Product Catalogue, Sep. 2007, Codan US, Inc., accessed at http://www.codan.com.au/Portals/0/publications/hfradio/Military_Catalogue.pdf on Apr. 18, 2014.

U.S. Appl. No. 29/517,101, filed Feb. 10, 2015.

U.S. Appl. No. 29/517,097, filed Feb. 10, 2015.

U.S. Appl. No. 29/517,095, filed Feb. 10, 2015.

U.S. Appl. No. 29/517,100, filed Feb. 10, 2015.

U.S. Appl. No. 29/531,366, filed Jun. 25, 2015.

U.S. Appl. No. 29/532,660, filed Jul. 9, 2015.

U.S. Appl. No. 29/569,460, filed Jun. 28, 2016.

U.S. Appl. No. 29/569,450, filed Jun. 28, 2016.

U.S. Appl. No. 29/570,648, filed Jul. 11, 2016.

U.S. Appl. No. 29/571,387, filed Jul. 18, 2016.

* cited by examiner

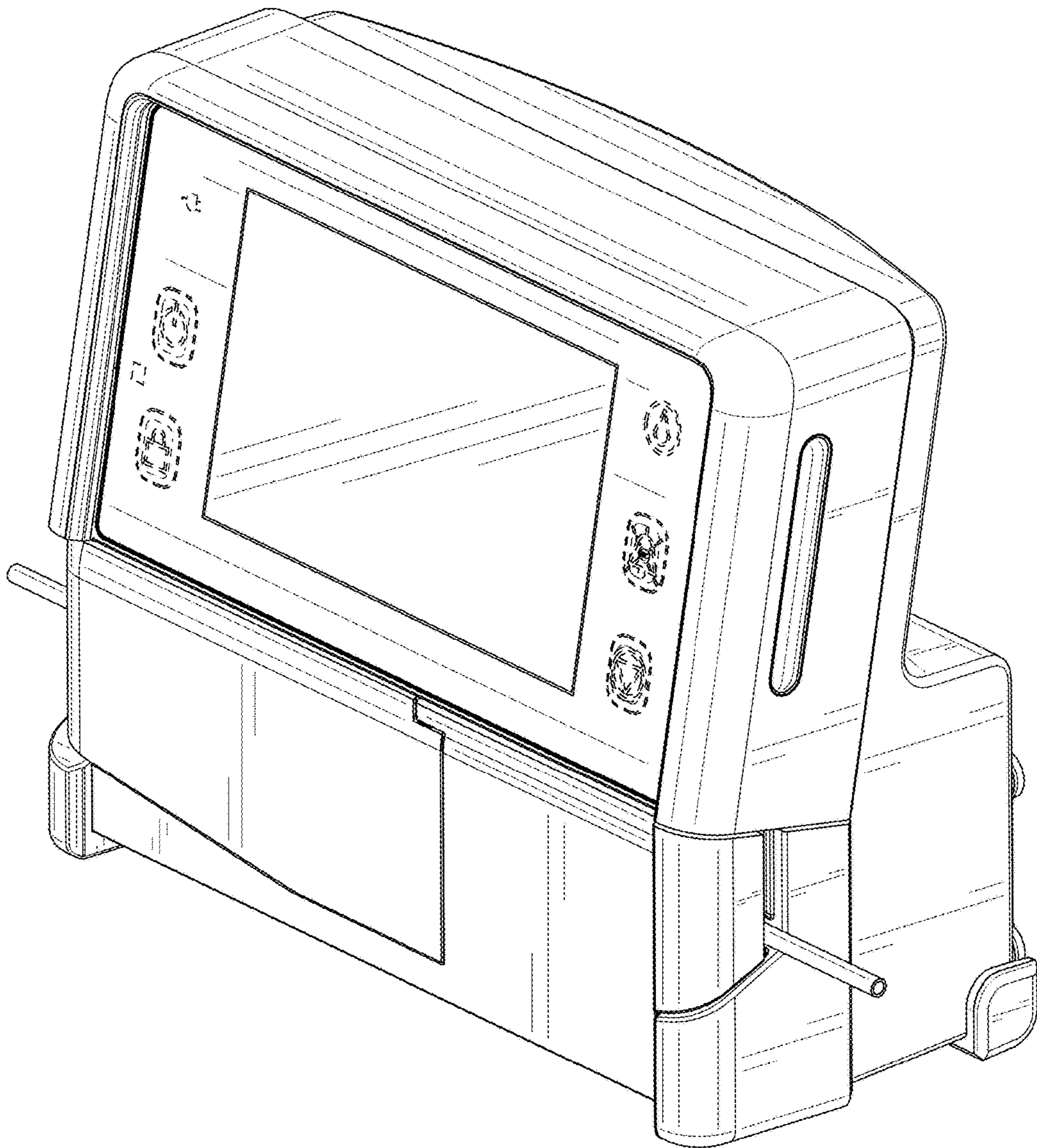


FIG. 1

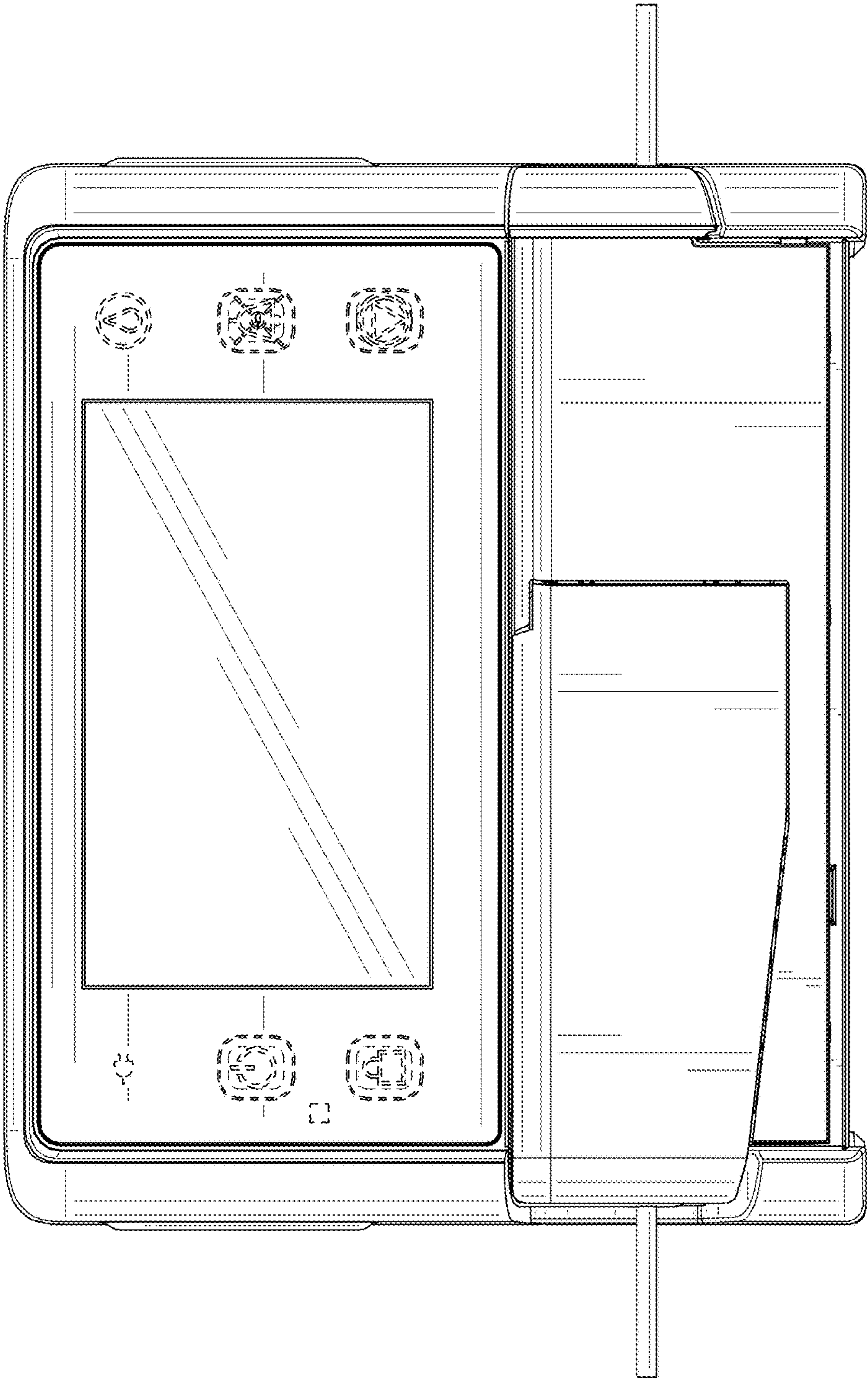


FIG. 2

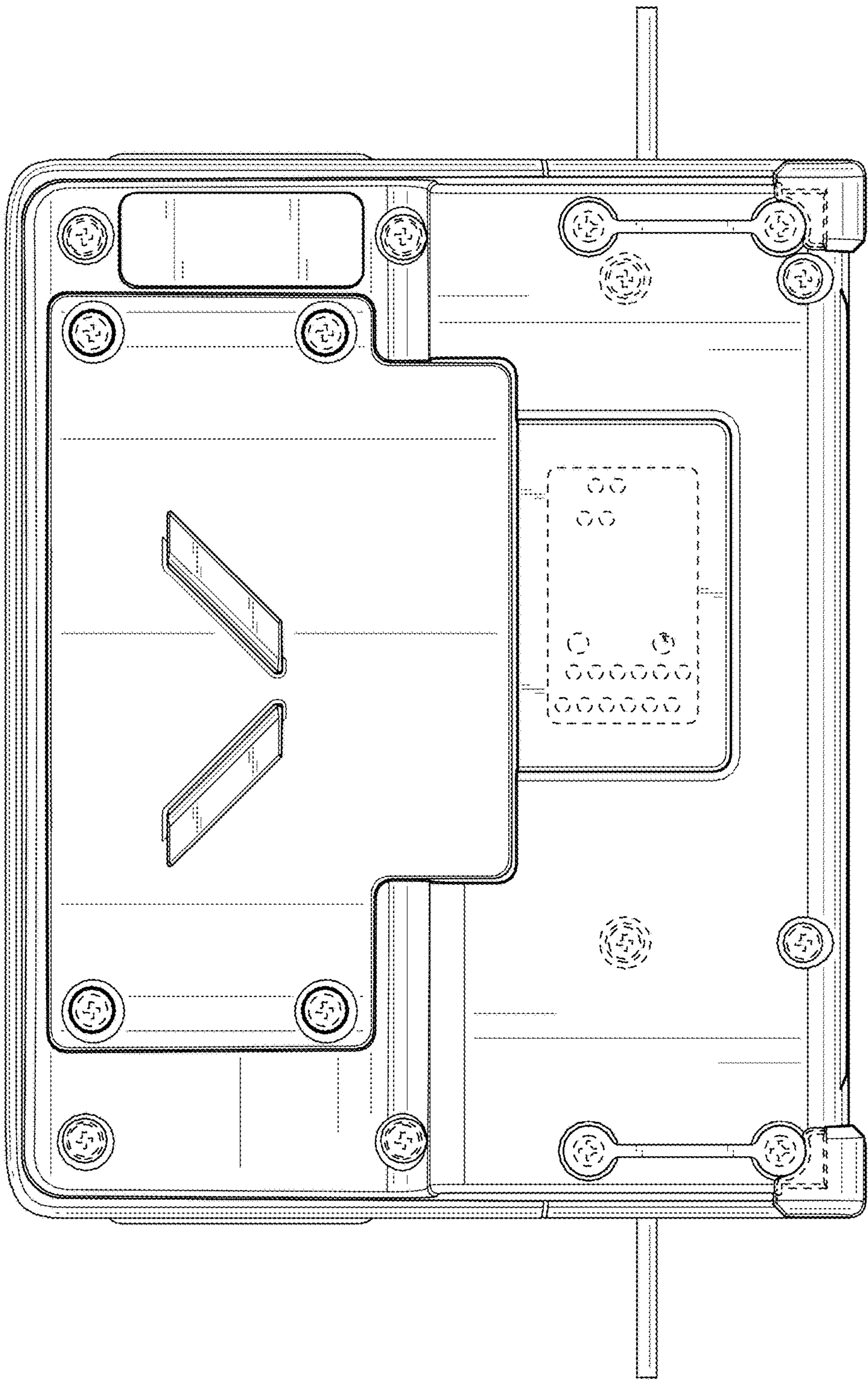


FIG. 3

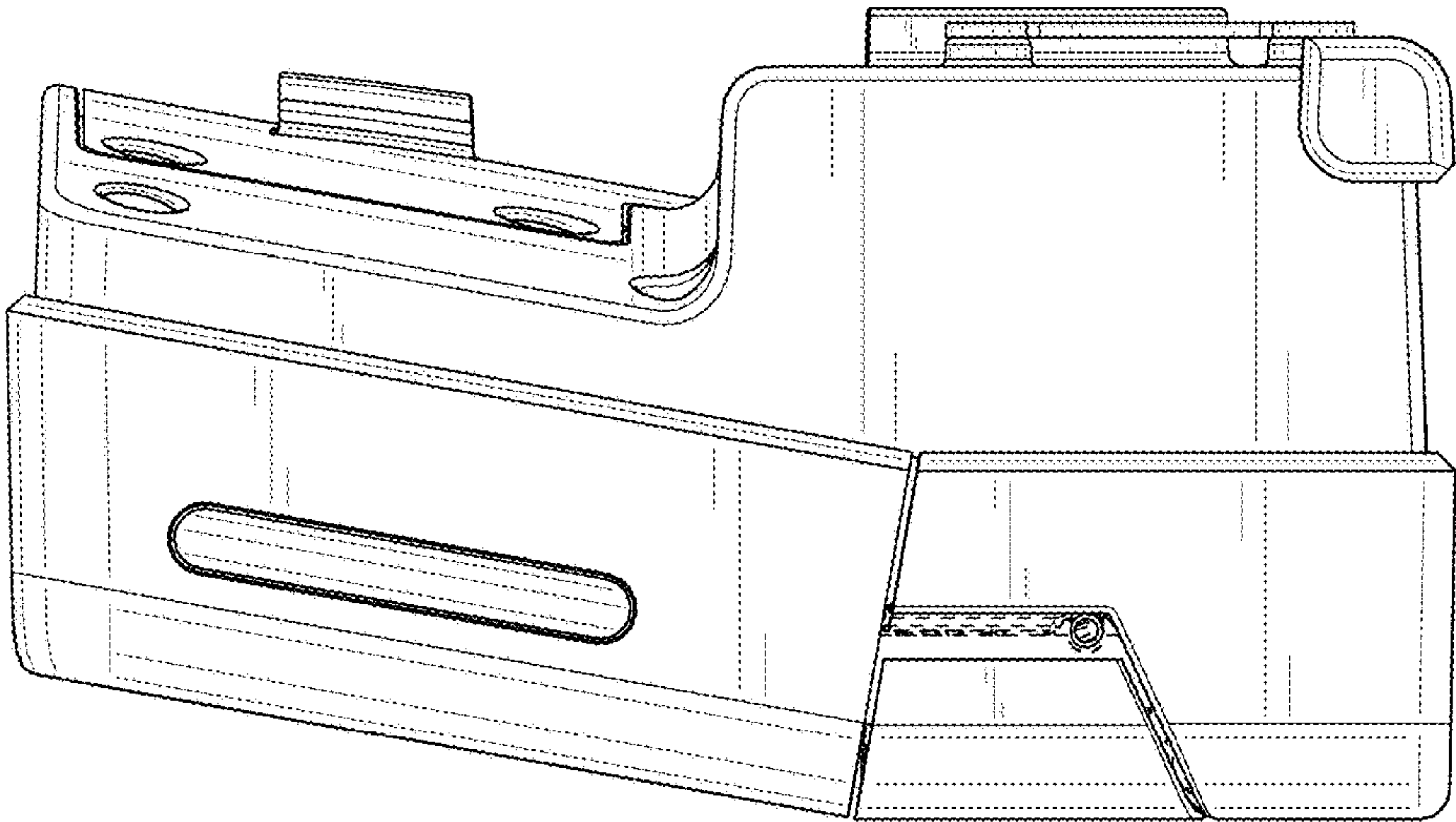


FIG. 5

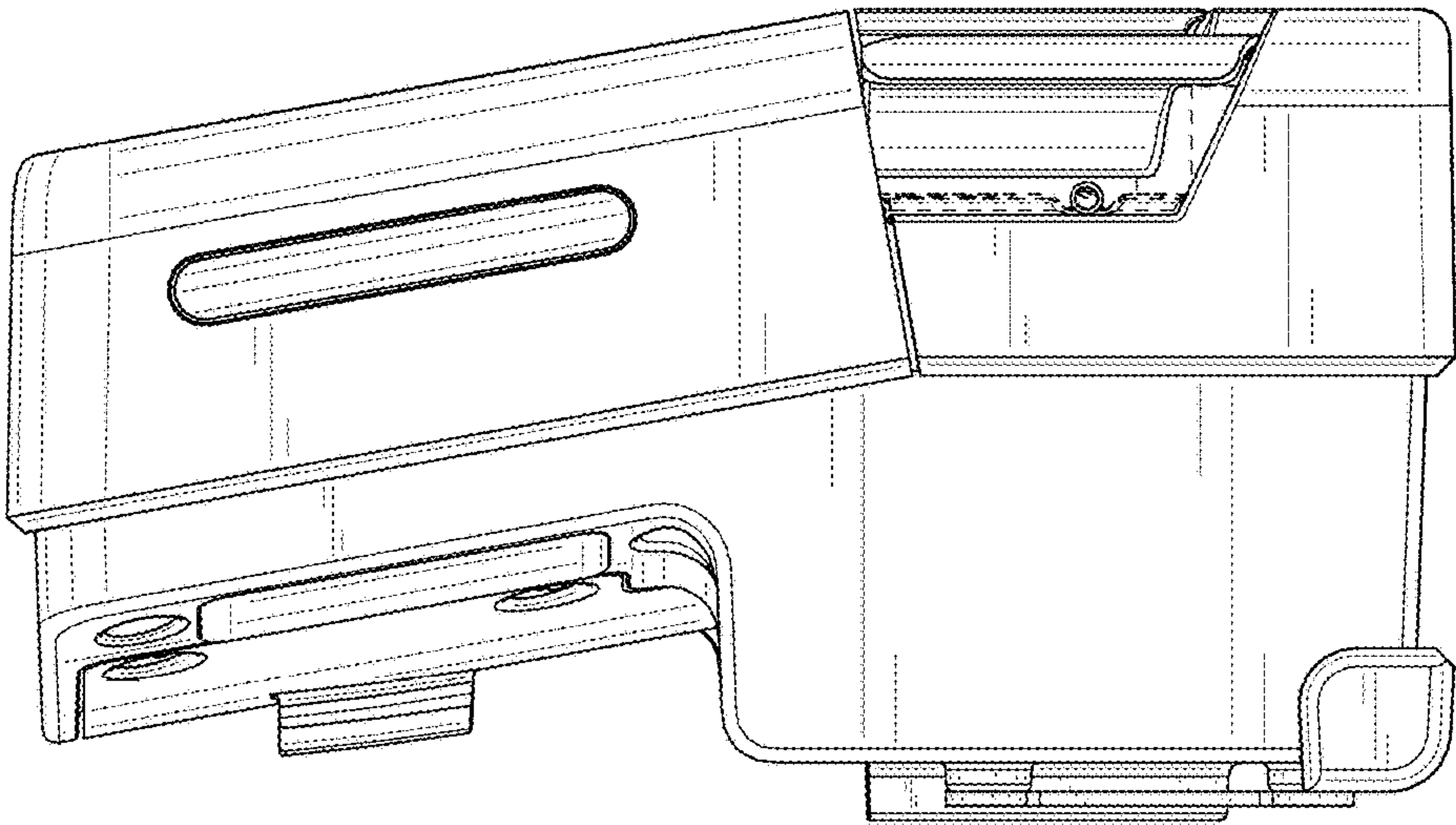


FIG. 4

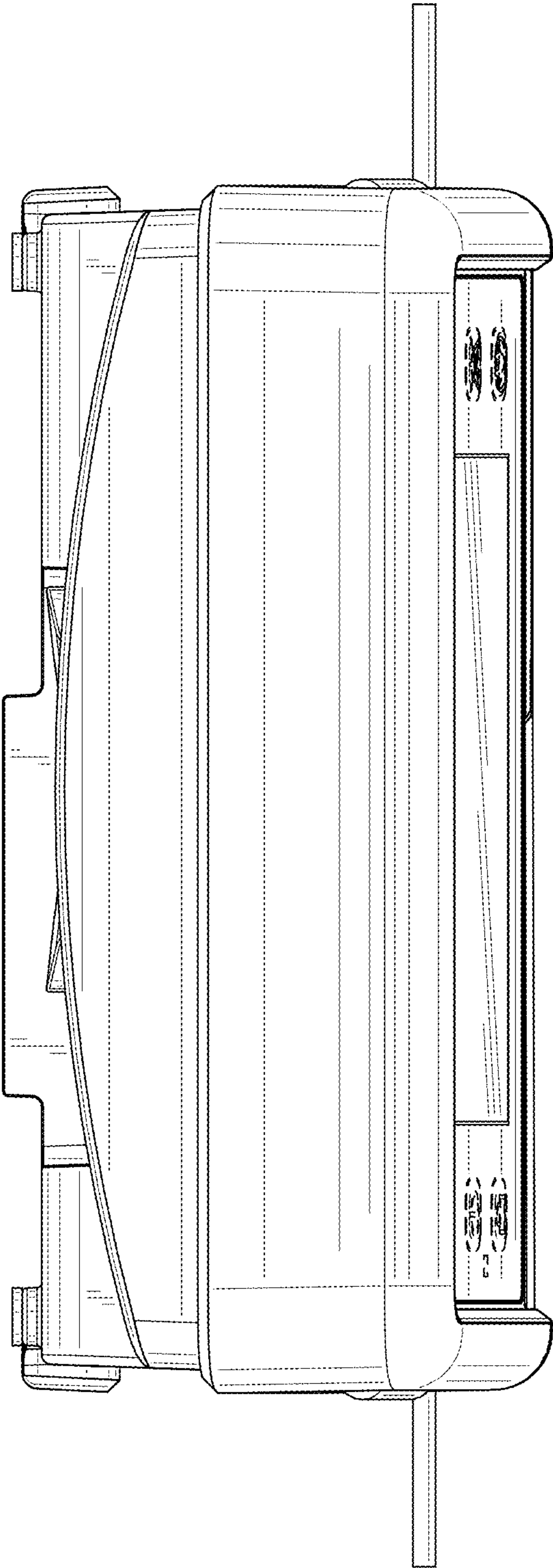


FIG. 6

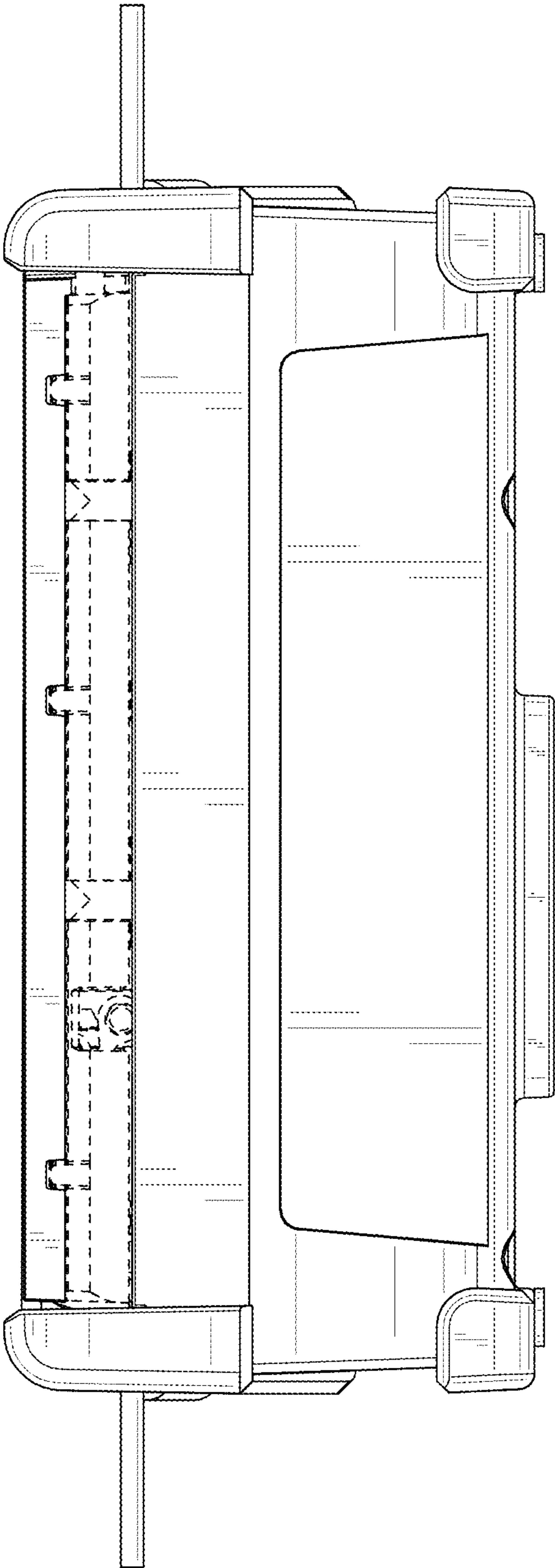


FIG. 7