



US00D771714S

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

(10) **Patent No.:** **US D771,714 S**

(45) **Date of Patent:** **** Nov. 15, 2016**

(54) **DIAPHRAGM PUMP**

(71) Applicant: **Graco Minnesota Inc.**, Minneapolis, MN (US)

(72) Inventors: **Bradley H. Hines**, Andover, MN (US); **Brian W. Koehn**, Minneapolis, MN (US); **Ronald A. Flor**, Anoka, MN (US); **David L. Breaser**, Minneapolis, MN (US); **Todd L. Johnson**, Minneapolis, MN (US)

(73) Assignee: **Graco Minnesota Inc.**, Minneapolis, MN (US)

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

(21) Appl. No.: **29/537,492**

(22) Filed: **Aug. 26, 2015**

(51) **LOC (10) Cl.** **15-02**

(52) **U.S. Cl.**
USPC **D15/7**

(58) **Field of Classification Search**
USPC D15/7-9; D23/231, 232, 225; 417/60, 417/235, 265, 321, 355, 358, 363, 359, 417/410.1, 415-416, 405, 900, 269, 539; 60/408, 412; 184/26-37; 415/140-147; 123/495, 509; 137/565.34
CPC F02M 37/04; F02M 37/14; F04B 53/92; F04B 1/005
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D77,851 S *	2/1929	Michelin	.....	D15/9
D185,000 S *	4/1959	Hoover	.....	D15/9
D258,436 S *	3/1981	McGilberry	.....	D15/7
5,711,658 A *	1/1998	Conti	.....	F04B 43/0736 417/344
D391,579 S *	3/1998	Myers	.....	D15/7
D398,614 S *	9/1998	Kartinen	.....	D15/7
5,848,878 A *	12/1998	Conti	.....	F04B 43/0736 417/393

D481,737 S *	11/2003	Sugiyama	.....	D15/7
D546,840 S *	7/2007	Sinders	.....	D15/9
D589,059 S *	3/2009	Pagotto	.....	D15/7
D605,664 S *	12/2009	Walter	.....	D15/7
7,631,725 B2 *	12/2009	Towne	.....	F04B 43/0736 181/230
D662,516 S *	6/2012	Pellin	.....	D15/7
D675,231 S *	1/2013	Headley	.....	D15/7
D682,316 S *	5/2013	Rogne	.....	D15/7
D721,103 S *	1/2015	Galloway	.....	D15/9

OTHER PUBLICATIONS

Graco Saniforce Diaphragm Pump Instructions—Parts List, Nov. 2010 revision, depicting earlier product line.
ABEL CM brochure, Jun. 2014 revision.

(Continued)

Primary Examiner — Ralf Seifert

(74) *Attorney, Agent, or Firm* — Douglas B. Farrow

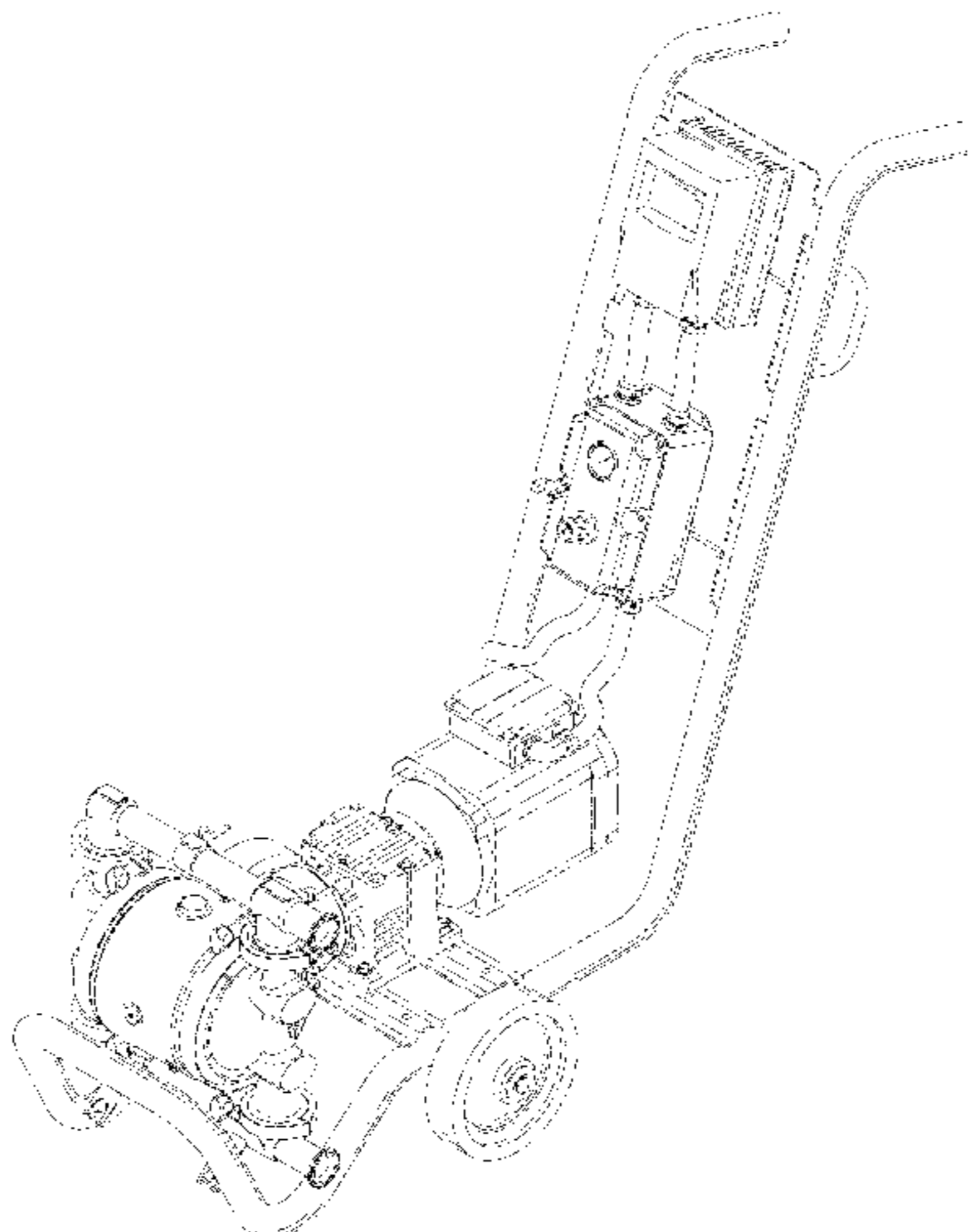
(57) **CLAIM**

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

DESCRIPTION

FIG. 1 is an isometric view of the first embodiment of a diaphragm pump;
FIG. 2 is a front view thereof;
FIG. 3 is a left view thereof;
FIG. 4 is a rear view thereof;
FIG. 5 is a right side view thereof;
FIG. 6 is a top view thereof;
FIG. 7 is a bottom view of a diaphragm pump;
FIG. 8 is an isometric view of the second embodiment of a diaphragm pump;
FIG. 9 is a front view of FIG. 8;
FIG. 10 is a left view of FIG. 8;
FIG. 11 is a rear view of FIG. 8;
FIG. 12 is a right side view of FIG. 8;
FIG. 13 is a top view of FIG. 8; and,
FIG. 14 is a bottom view of FIG. 8.

1 Claim, 14 Drawing Sheets



(56)

References Cited

OTHER PUBLICATIONS

RAN D25E-PX information sheet (pulled from RAN website)
document properties indicate Feb. 2014 creation date.

RAN D25E-AX information sheet (pulled from RAN website)
document properties indicate Feb. 2104 creation date.

RAN D25E-SX information sheet (pulled from RAN website)
document properties indicate Feb. 2104 creation date.

* cited by examiner

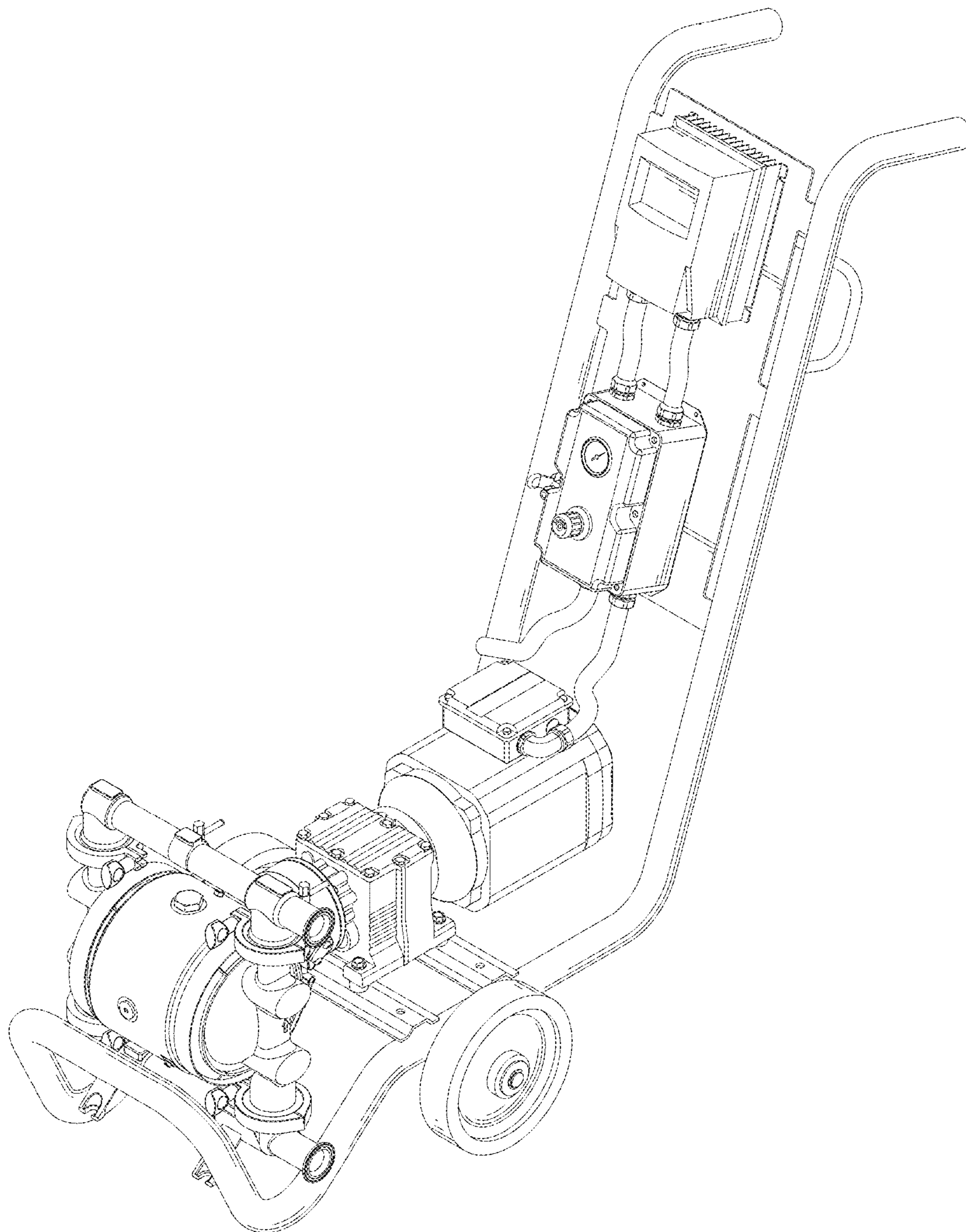


FIG. 1

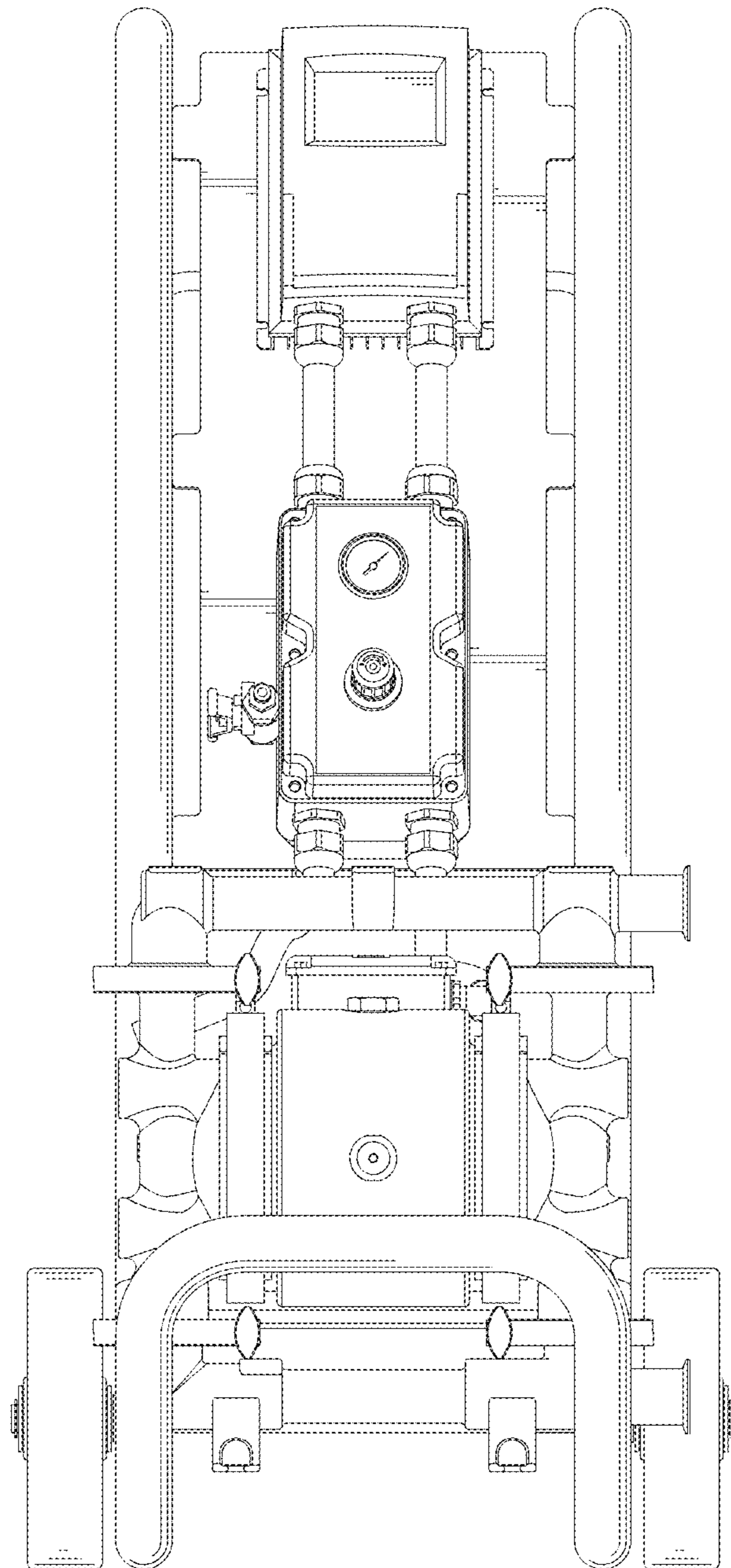


FIG. 2

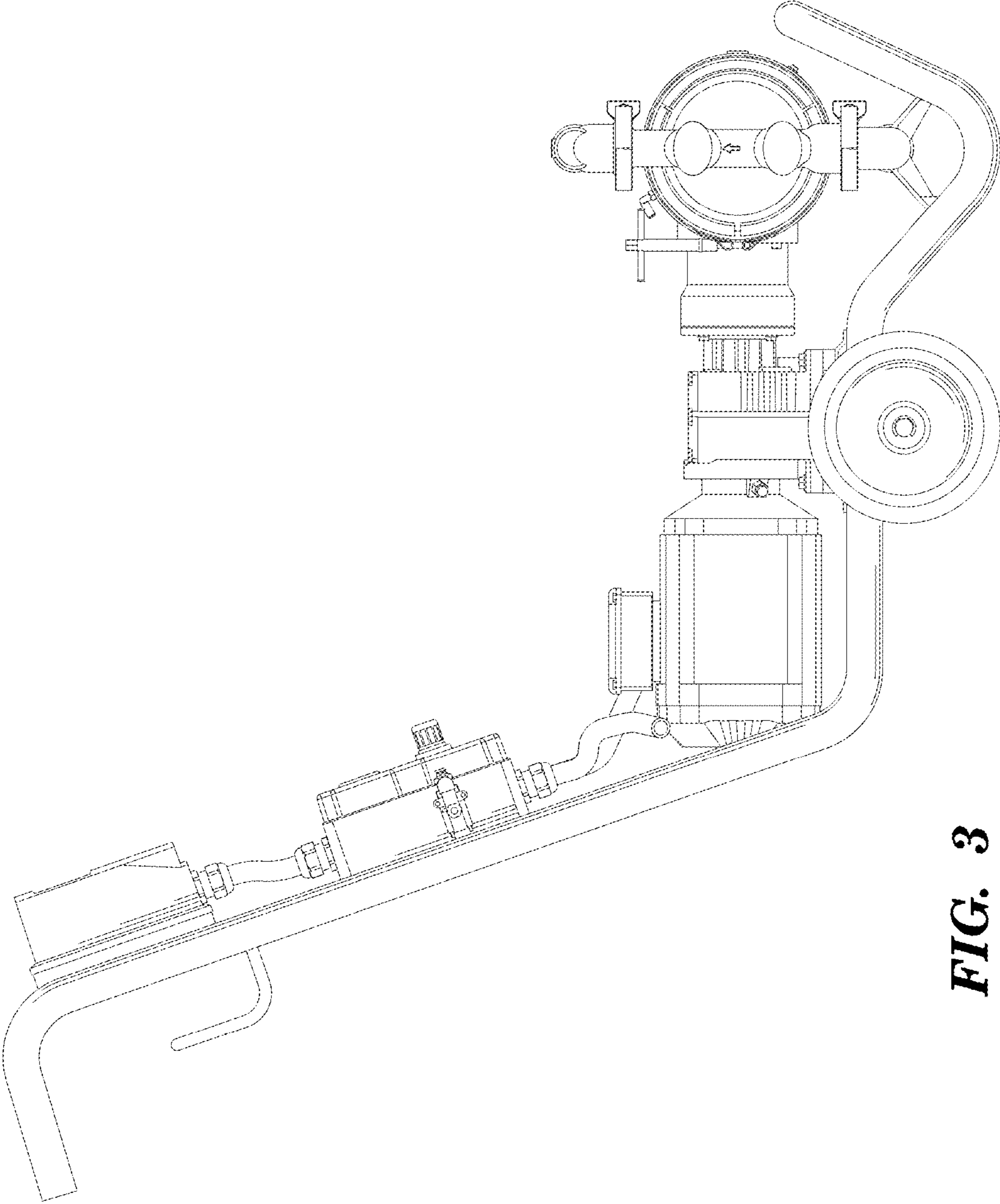


FIG. 3

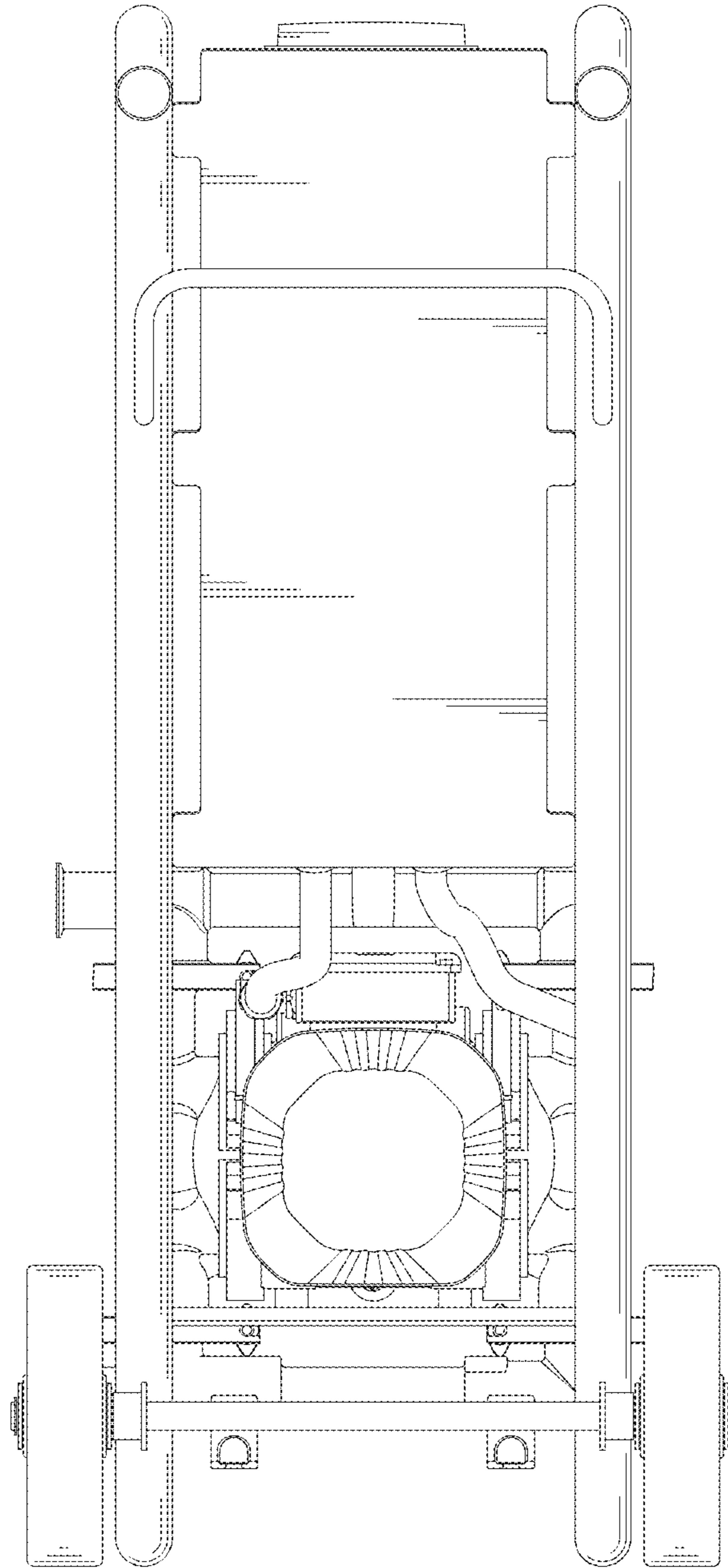


FIG. 4

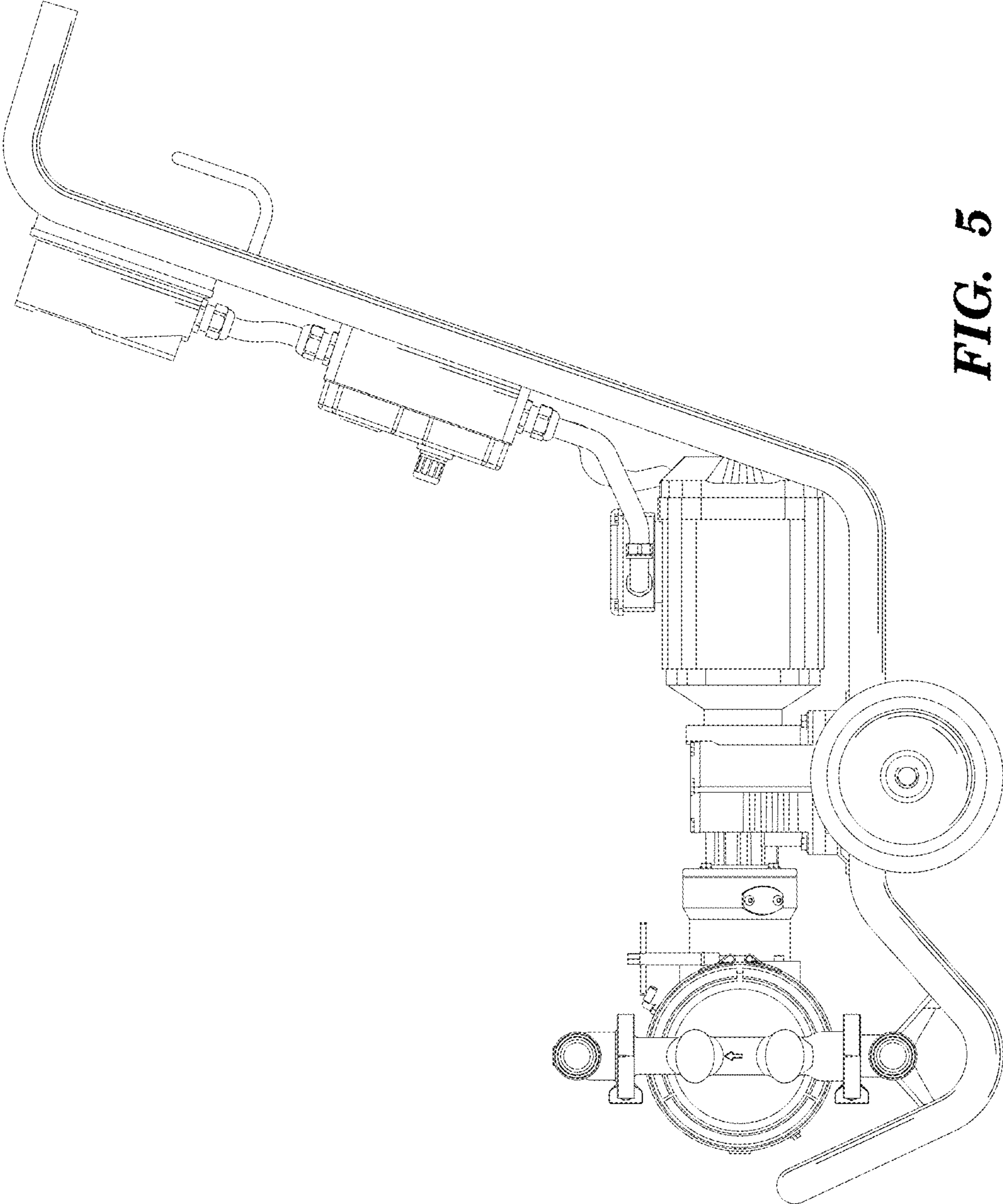


FIG. 5

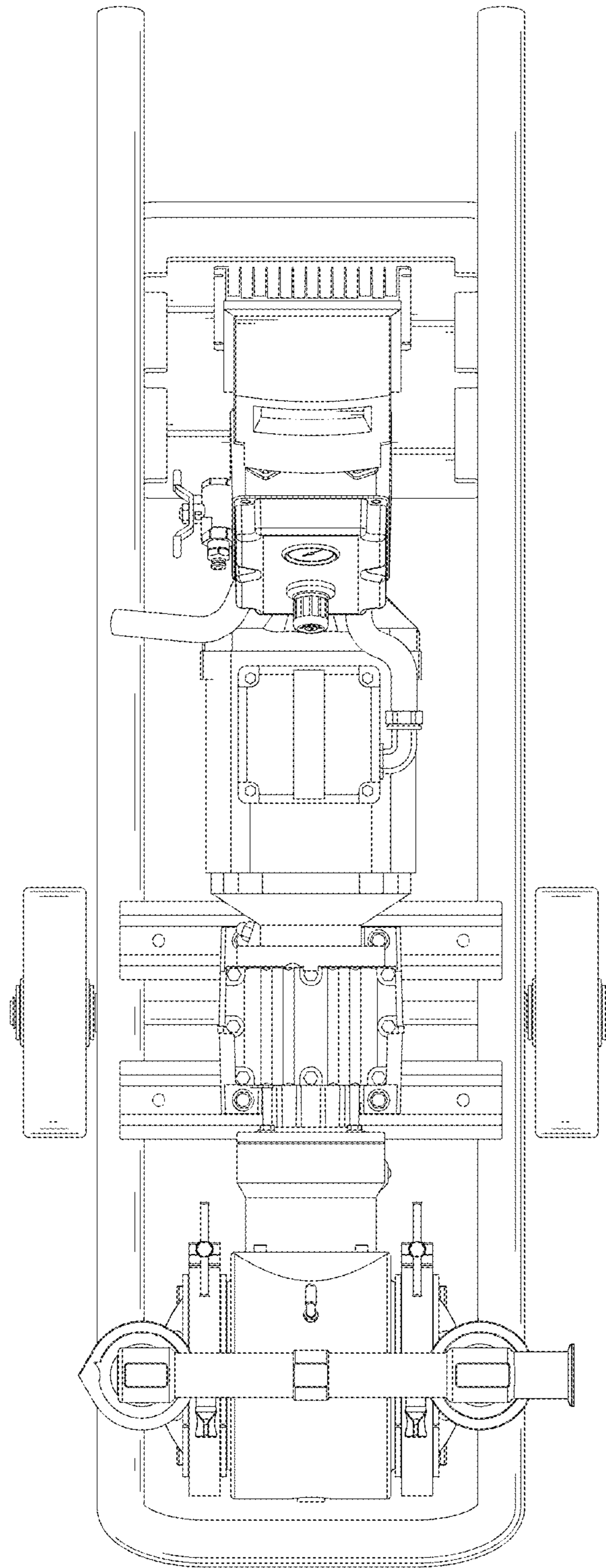


FIG. 6

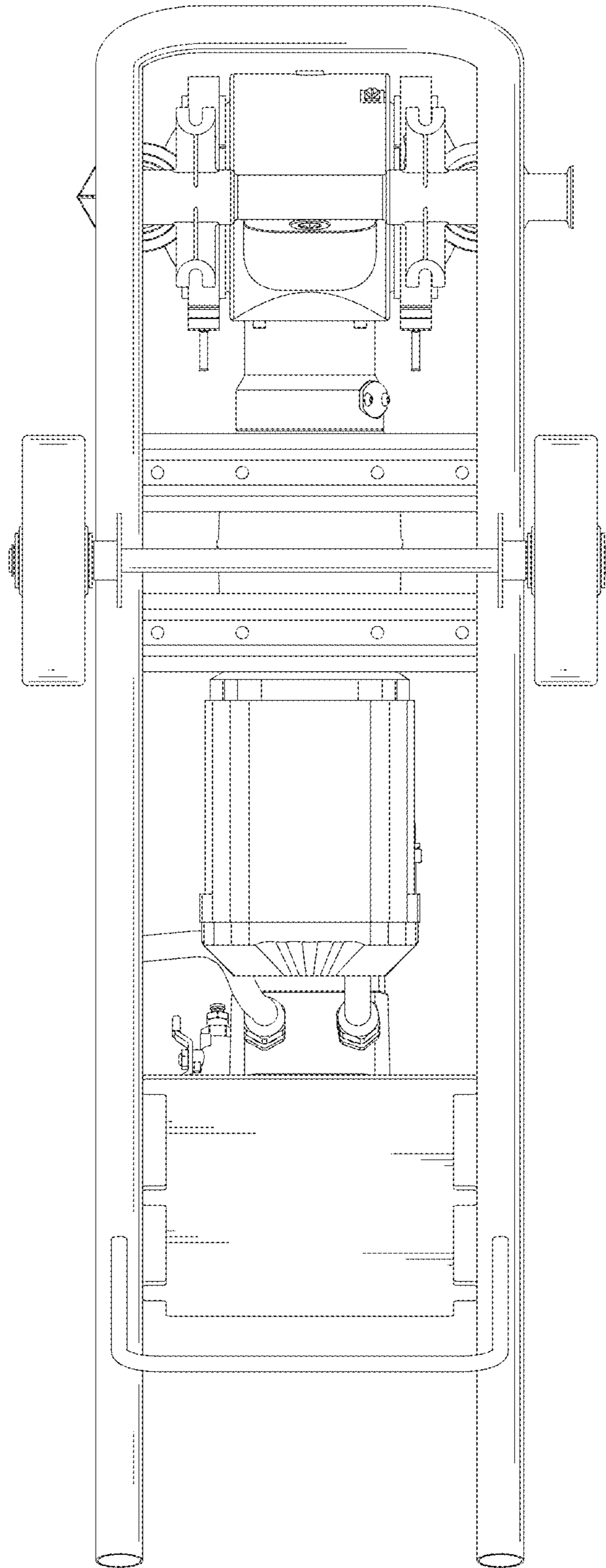


FIG. 7

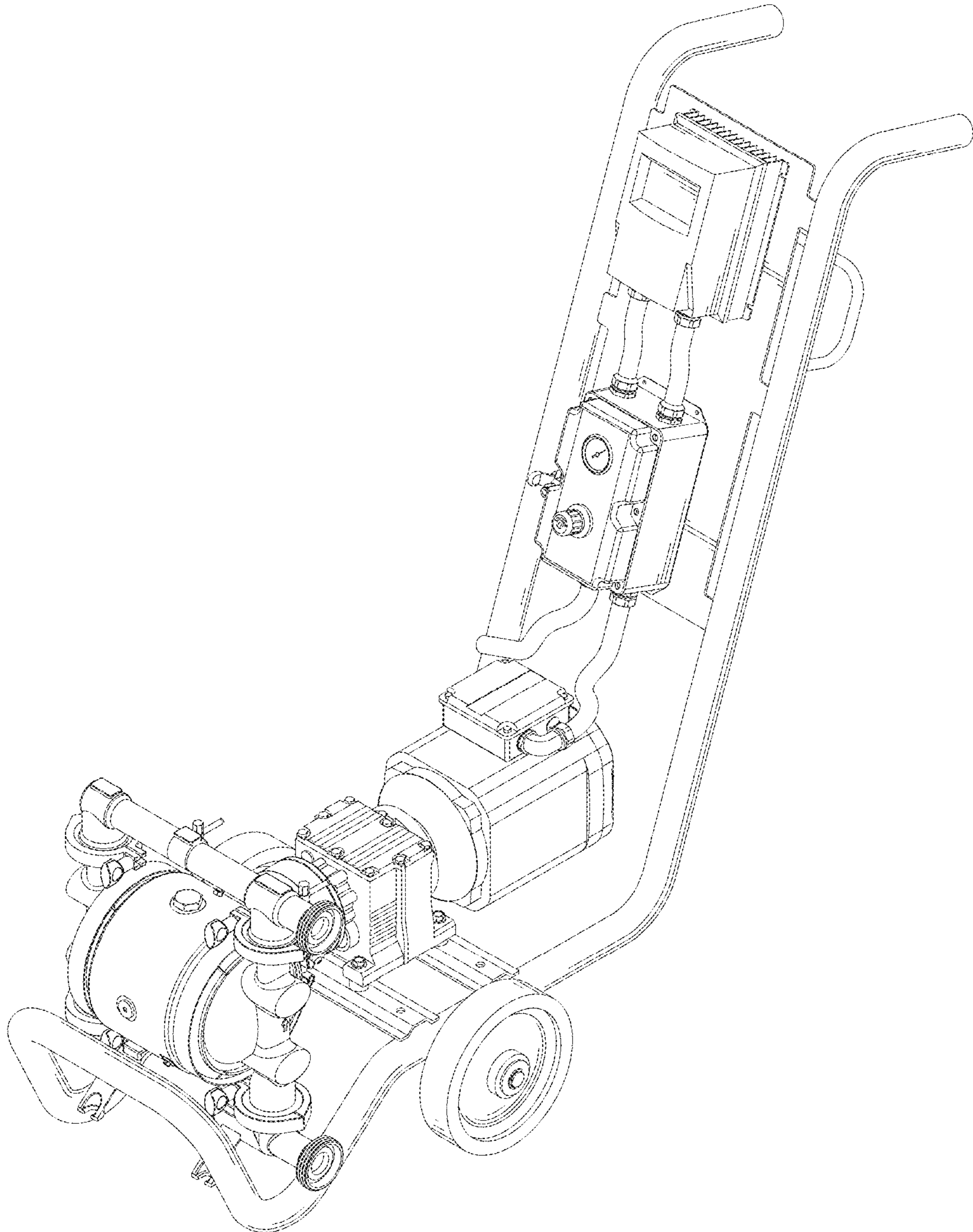


FIG. 8

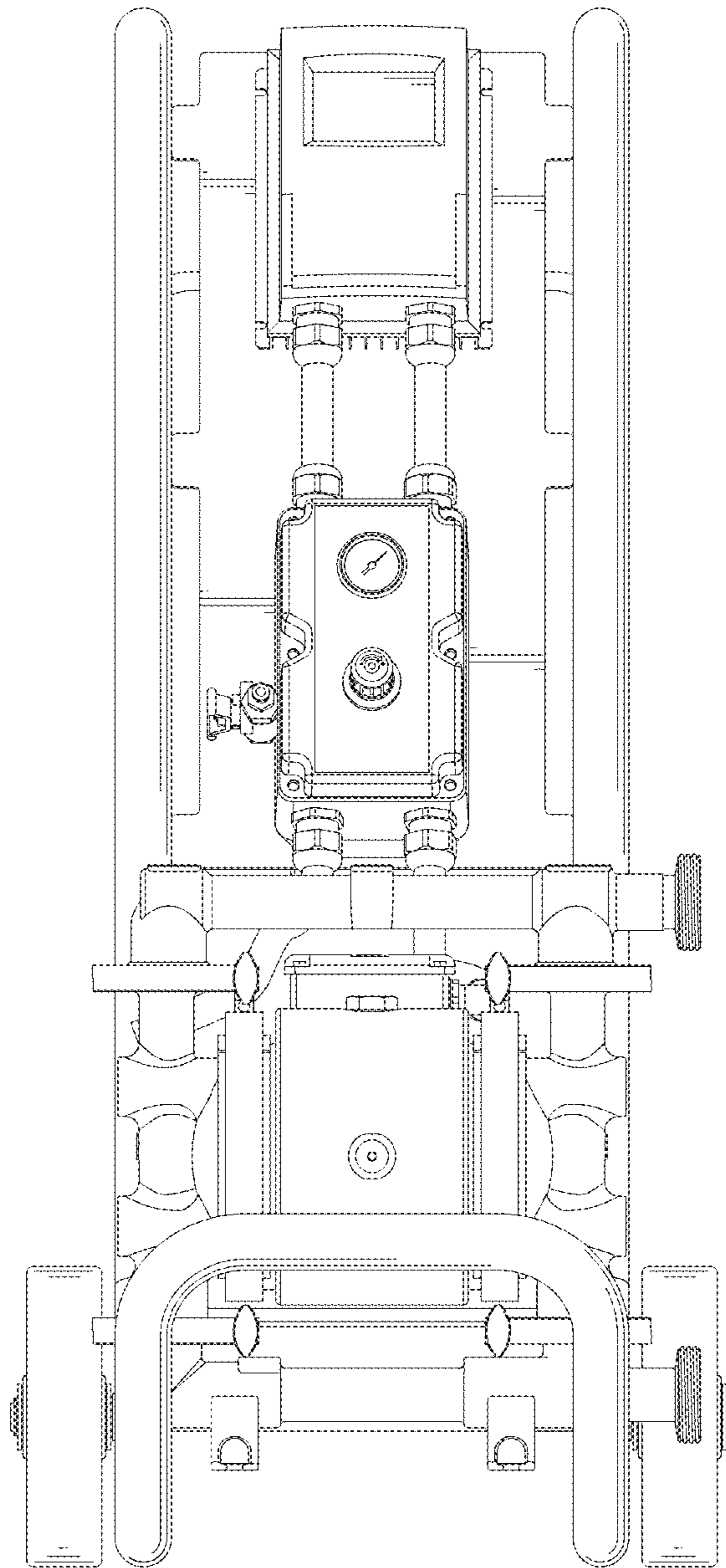


FIG. 9

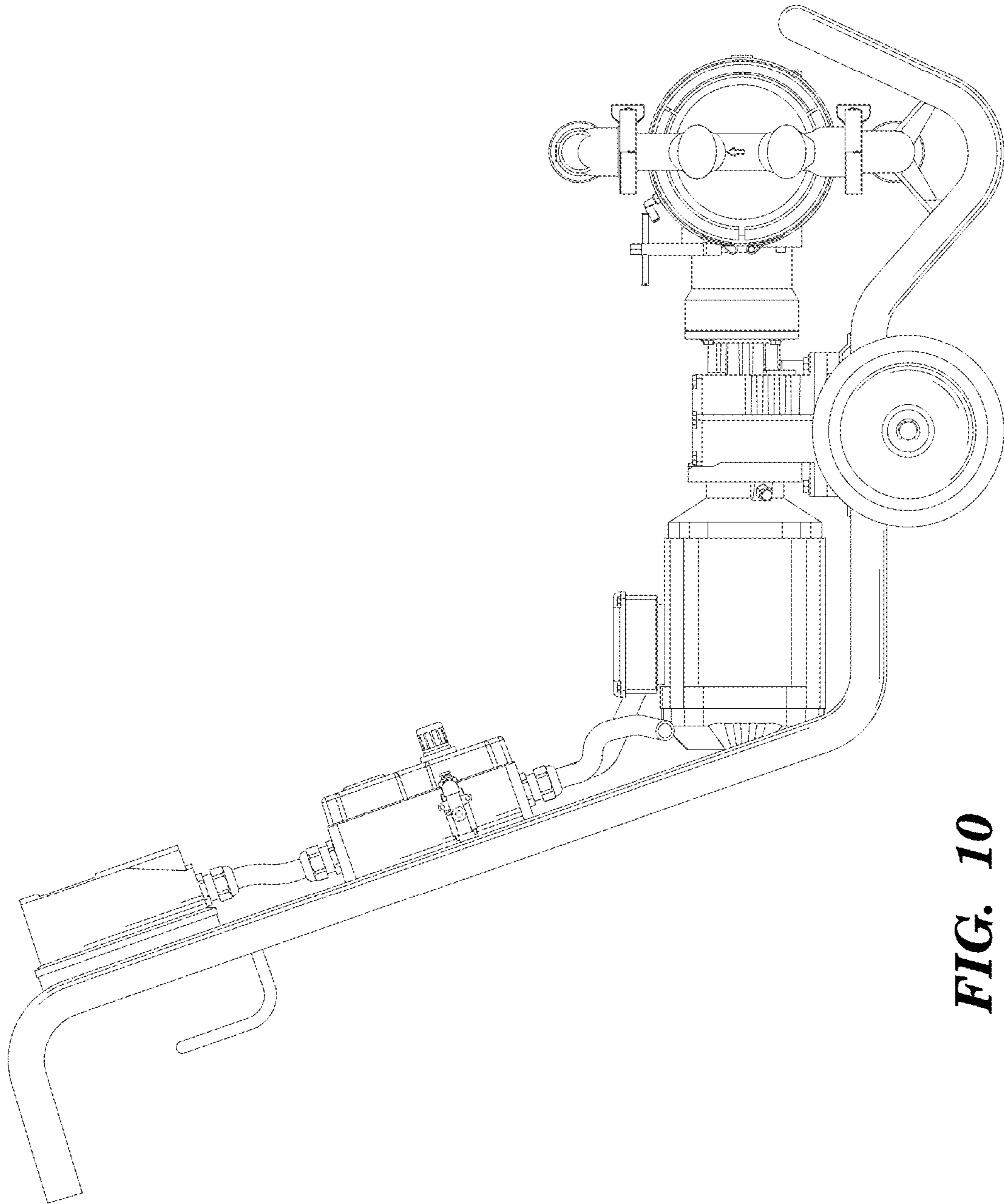


FIG. 10

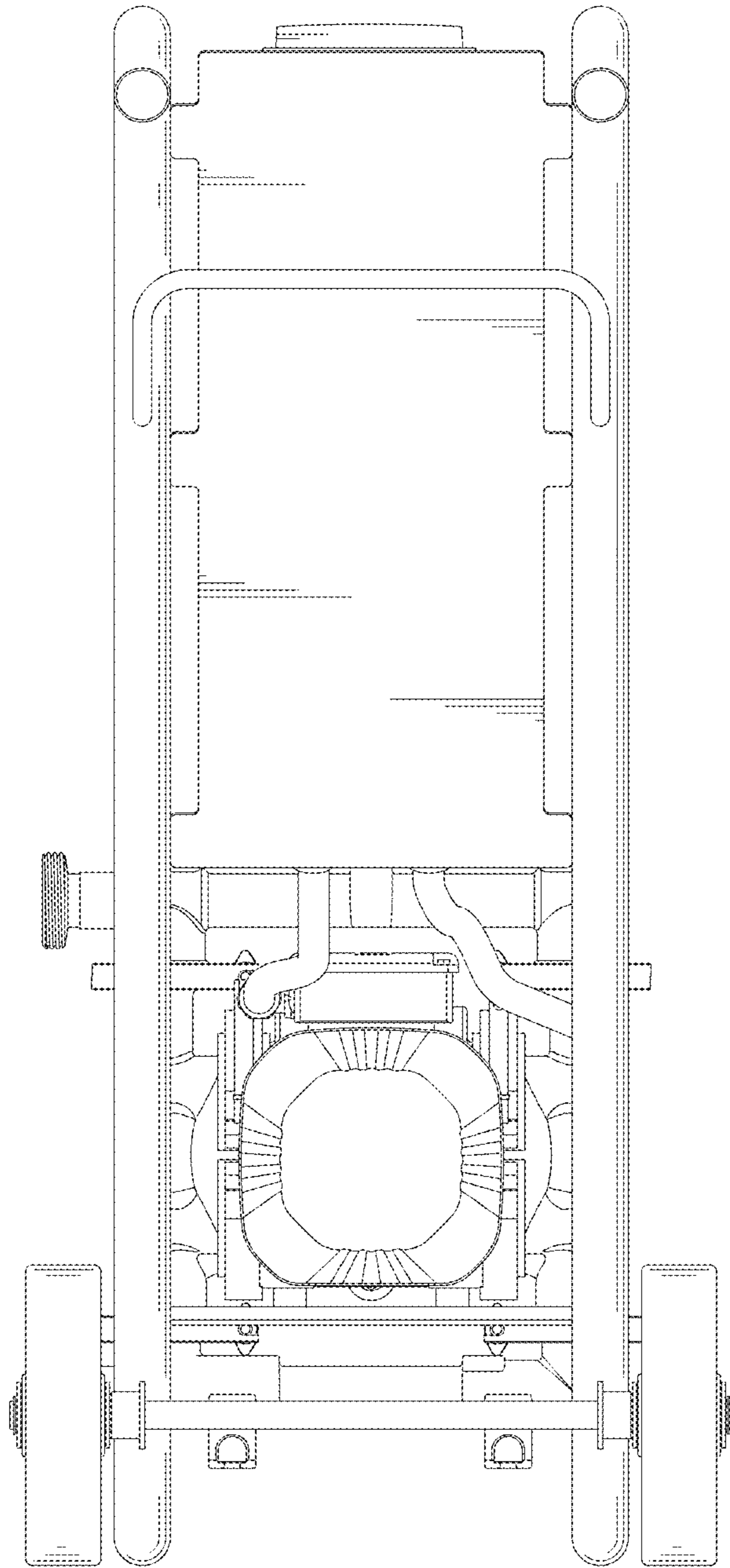


FIG. 11

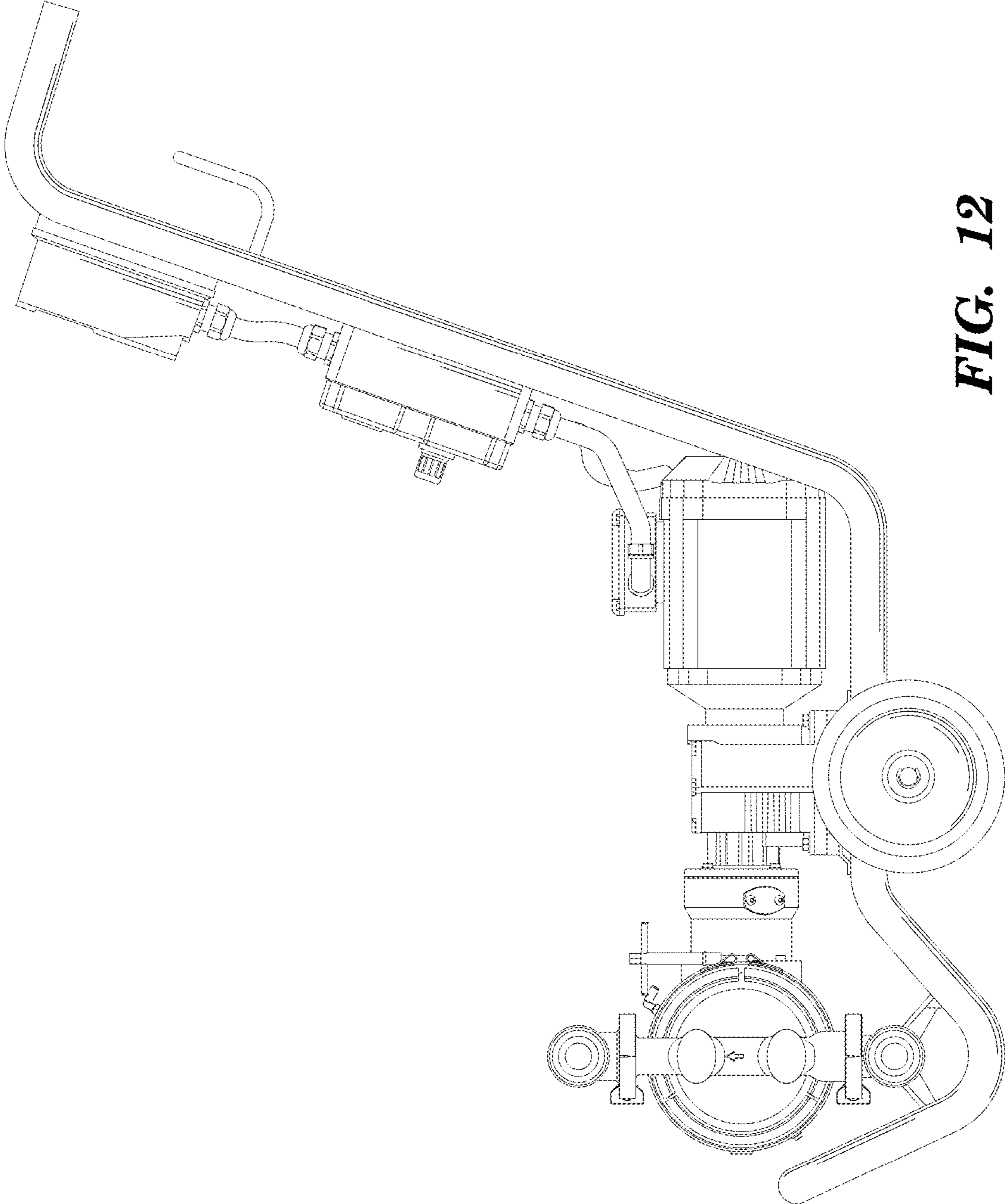


FIG. 12

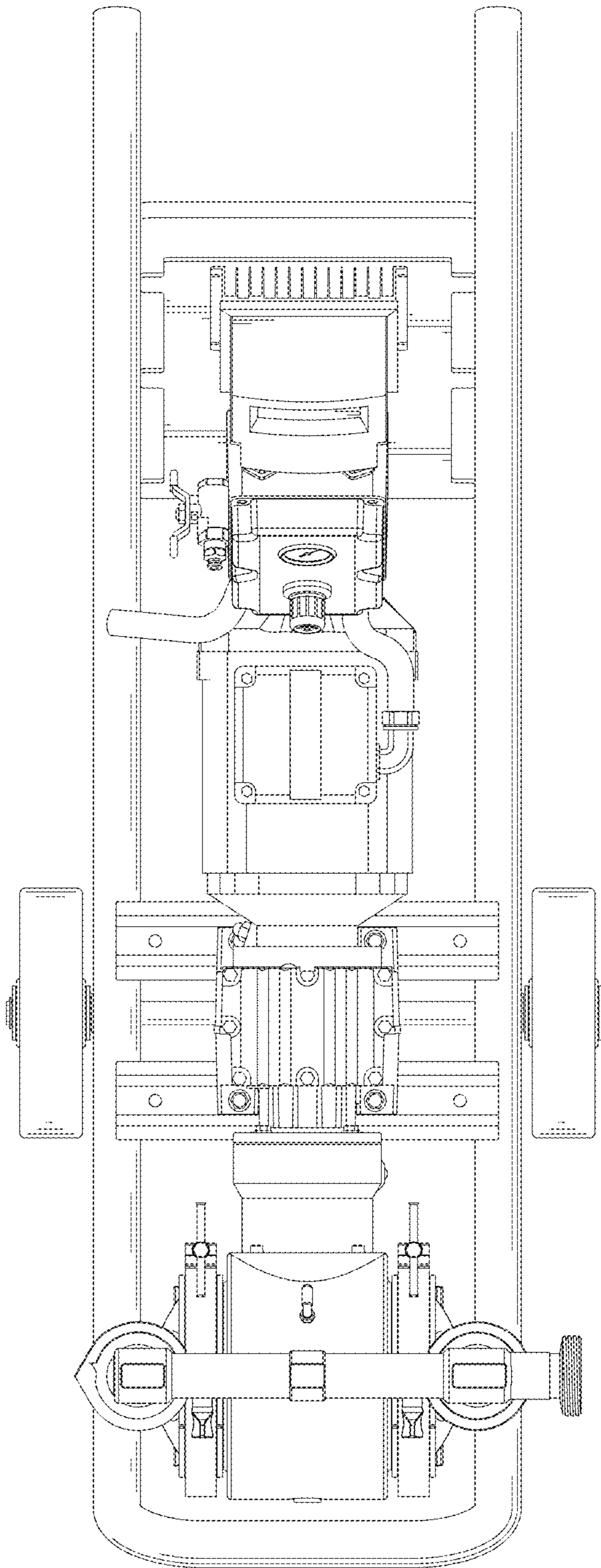


FIG. 13

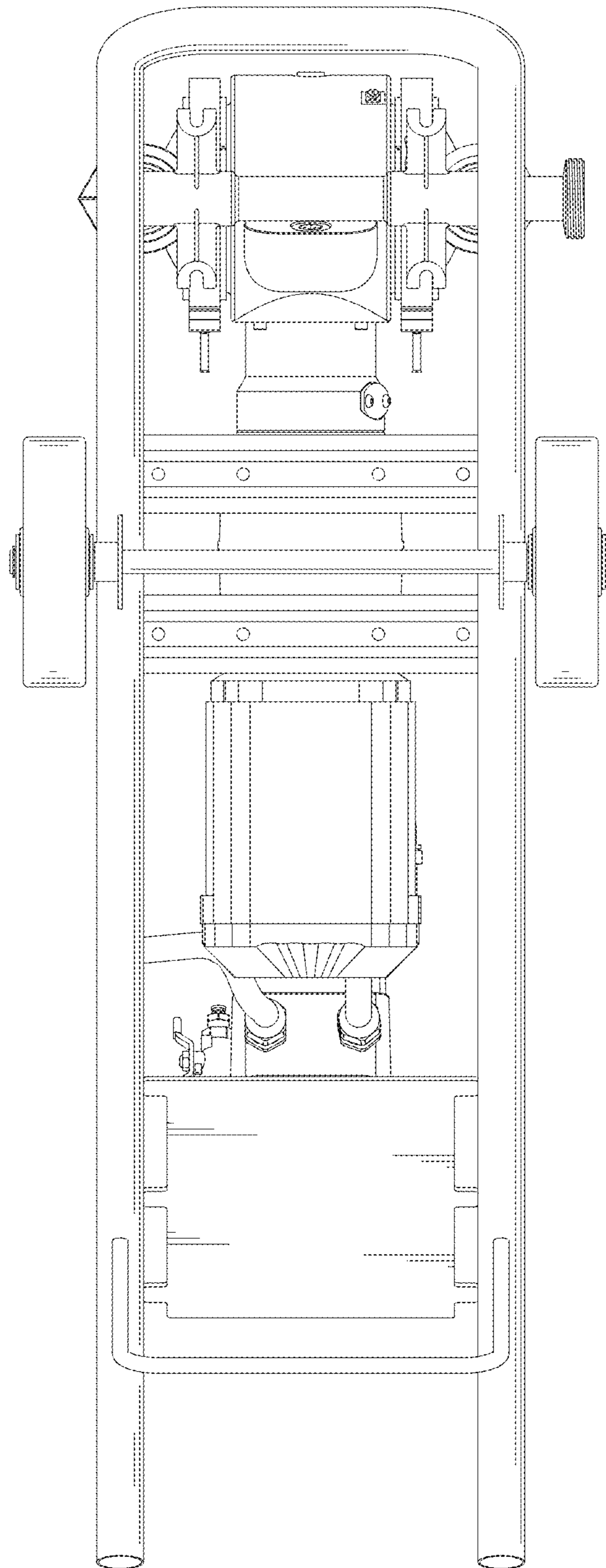


FIG. 14