



US00D847890S

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

(10) **Patent No.:** **US D847,890 S**  
(45) **Date of Patent:** **\*\* May 7, 2019**

(54) **INDUSTRIAL ROBOT**

(71) Applicant: **ABB Schweiz AG**, Baden (CH)

(72) Inventors: **Bin Liu**, Shanghai (CN); **Hui Yu**, Shanghai (CN); **Jing Wu**, Shanghai (CN); **Kaiyuan Cao**, Shanghai (CN); **Said Zahrai**, Shanghai (CN); **Heng Xie**, Shanghai (CN); **Bing Xu**, Shanghai (CN)

(73) Assignee: **ABB Schweiz AG**, Baden (CH)

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

(21) Appl. No.: **29/575,457**

(22) Filed: **Aug. 25, 2016**

(30) **Foreign Application Priority Data**

Feb. 26, 2016 (CN) ..... 2016 3 0053528

(51) **LOC (11) Cl.** ..... **15-99**

(52) **U.S. Cl.**  
USPC ..... **D15/199**; D21/578

(58) **Field of Classification Search**  
USPC ..... D7/300, 305, 306-311, 397-400;  
D10/16, 22, 23, 25, 28; D15/10-13, 22,  
(Continued)

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

4,951,517 A \* 8/1990 Azuma ..... B25J 9/04  
414/744.5  
5,954,446 A \* 9/1999 Ireland ..... B23K 9/32  
403/11

(Continued)

**FOREIGN PATENT DOCUMENTS**

EP 2177325 A1 \* 4/2010 ..... B25J 9/042

**OTHER PUBLICATIONS**

IRB 910SC SCARA, posted on new.abb.com, no posted date given, no production date given, [online], [site visited Aug. 17, 2017],

Available from Internet, <URL: <http://new.abb.com/products/robotics/industrial-robots/irb-910sc>>.\*

(Continued)

*Primary Examiner* — Garth Rademaker  
*Assistant Examiner* — Fritzgerald L Butac  
(74) *Attorney, Agent, or Firm* — Taft Stettinius & Hollister LLP

(57) **CLAIM**

The ornamental design for an industrial robot, as shown and described.

**DESCRIPTION**

FIG. 1 is a front side view of a first embodiment of an industrial robot.

FIG. 2 is a rear side view of the device shown in FIG. 1.

FIG. 3 is a left side view of the device shown in FIG. 1.

FIG. 4 is a right side view of the device shown in FIG. 1.

FIG. 5 is a top side view of the device shown in FIG. 1.

FIG. 6 is a bottom side view of the device shown in FIG. 1.

FIG. 7 is a rear side perspective view of the device shown in FIG. 1.

FIG. 8 is a front side perspective view of the device shown in FIG. 1.

FIG. 9 is a front side view of a second embodiment of an industrial robot.

FIG. 10 is a rear side view of the device shown in FIG. 9.

FIG. 11 is a left side view of the device shown in FIG. 9.

FIG. 12 is a right side view of the device shown in FIG. 9.

FIG. 13 is a top side view of the device shown in FIG. 9.

FIG. 14 is a bottom side view of the device shown in FIG. 9.

FIG. 15 is a rear side perspective view of the device shown in FIG. 9.

FIG. 16 is a front side perspective view of the device shown in FIG. 9.

FIG. 17 is a front side view of a third embodiment of an industrial robot.

FIG. 18 is a rear side view of the device shown in FIG. 17.

FIG. 19 is a left side view of the device shown in FIG. 17.

FIG. 20 is a right side view of the device shown in FIG. 17.

(Continued)

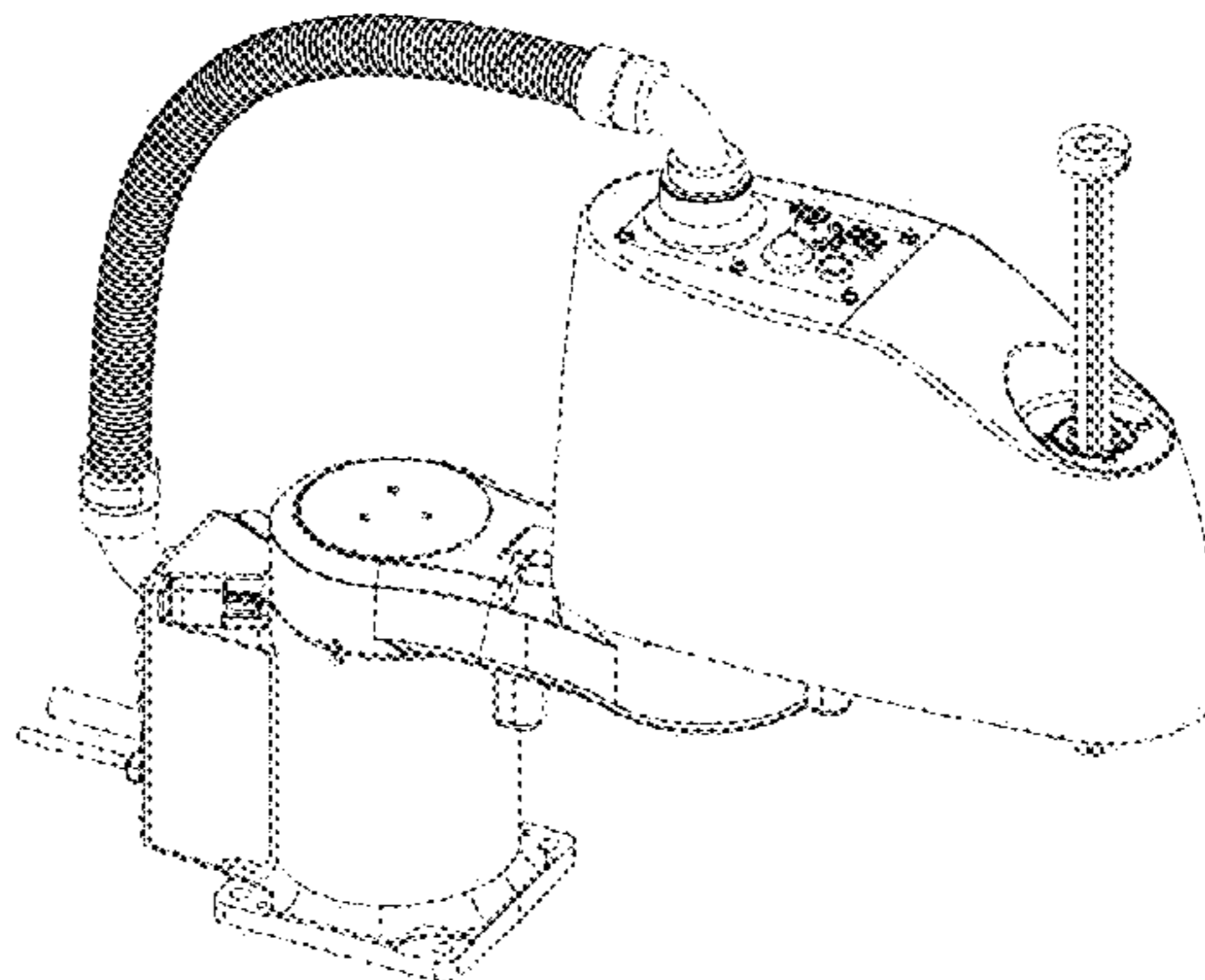
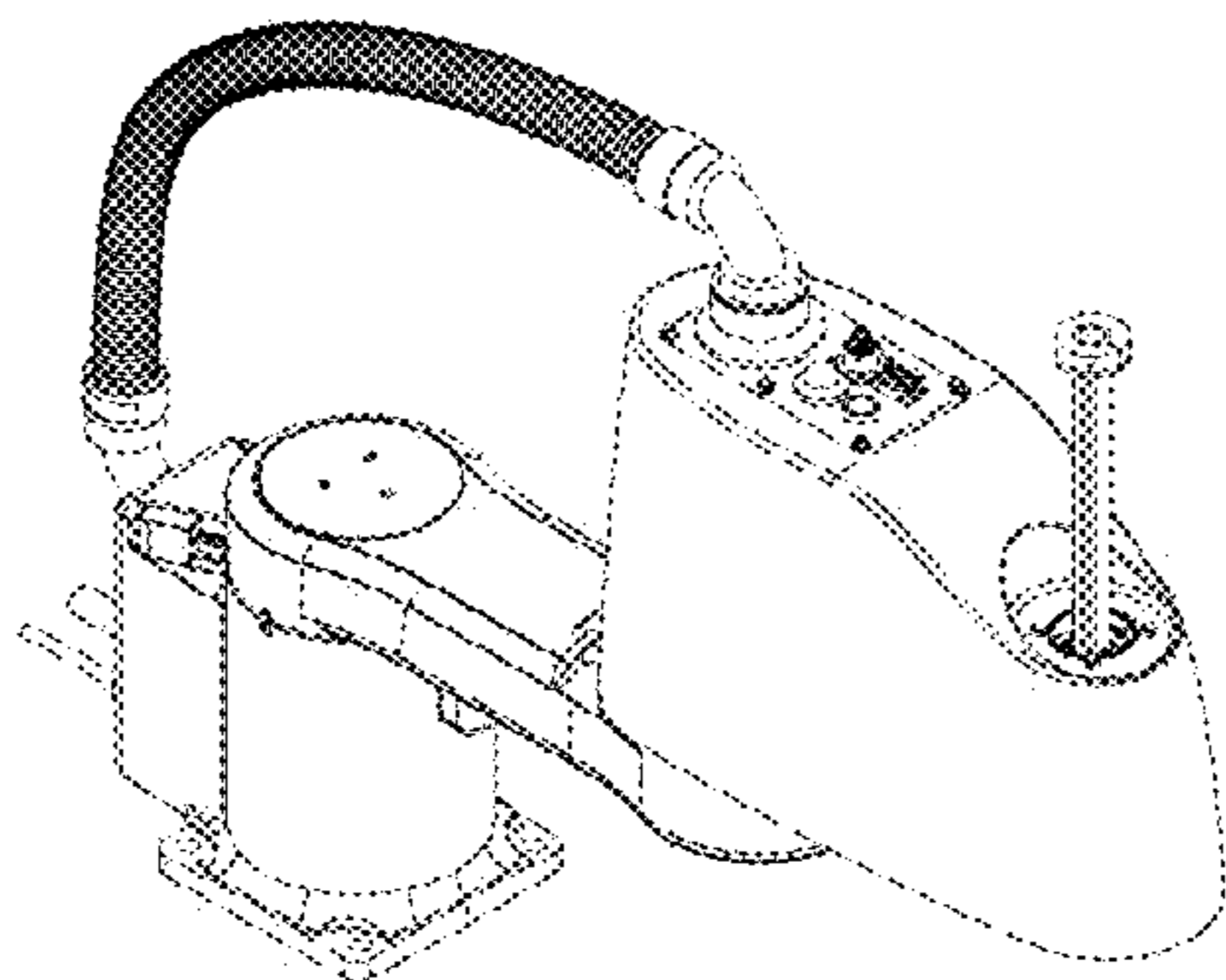


FIG. 21 is a top side view of the device shown in FIG. 17. FIG. 22 is a bottom side view of the device shown in FIG. 17.

FIG. 23 is a rear side perspective view of the device shown in FIG. 17; and,

FIG. 24 is a front side perspective view of the device shown in FIG. 17.

The broken lines are included for purposes of illustrating portions of the article that form no part of the claimed design.

**1 Claim, 15 Drawing Sheets**

(58) **Field of Classification Search**

USPC ..... D15/122, 199; D20/1, 4, 5, 8; D21/578; D23/383; D24/176; D32/17, 18, 21, 22, D32/31-34

CPC ..... A63H 11/00; A63H 2200/00; B25J 9/00; B25J 9/04; B25J 18/00; G06N 3/00; G06N 3/004; G06N 3/008

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D503,943	S	*	4/2005	Kawaguchi	.....	D15/199
D625,347	S	*	10/2010	Feng	.....	D15/199
D650,820	S	*	12/2011	Long	.....	D15/199
D670,319	S	*	11/2012	Liu	.....	D15/199
D678,085	S	*	3/2013	Bailey	.....	D10/63
D678,378	S	*	3/2013	Selic	.....	D15/199
D679,016	S	*	3/2013	Jarva	.....	D24/158
D681,708	S	*	5/2013	Miyake	.....	D15/199
D691,498	S	*	10/2013	Bailey	.....	D10/63

D707,277	S	*	6/2014	Olsson	.....	D15/199
D712,447	S	*	9/2014	He	.....	D15/199
D754,227	S	*	4/2016	Parrot	.....	D15/140
D755,268	S	*	5/2016	Parrot	.....	D15/140
D757,144	S	*	5/2016	Parrot	.....	D15/199
D766,348	S	*	9/2016	Long	.....	D15/199
D769,343	S	*	10/2016	Bordegnoni	.....	D15/199
D774,578	S	*	12/2016	Yamamoto	.....	D15/199
D776,178	S	*	1/2017	Ries	.....	D15/199
2003/0062858	A1	*	4/2003	Shimizu	.....	B25J 9/1615 318/34
2006/0216207	A1	*	9/2006	Lehto	.....	G01N 35/109 422/510
2008/0271561	A1	*	11/2008	Ohara	.....	B23K 9/133 74/490.01
2009/0070936	A1	*	3/2009	Henderson	.....	A61B 6/0457 5/601
2014/0264294	A1	*	9/2014	Holman	.....	H01L 51/56 257/40
2016/0046020	A1	*	2/2016	Chuo	.....	B25J 9/1615 74/490.02

OTHER PUBLICATIONS

Adept SCARA robot, posted on directindustry.com, no posted date given, no production date given, [online], [site visited Aug. 17, 2017], Available from Internet, <URL: <http://www.directindustry.com/prod/adept-technology/product-6076-153983.html>>.\*

Toshiba SCARA Robots, posted on robotflex.fr, copyrighted 2016, no production date given, [online], [site visited Aug. 17, 2017], Available from Internet, <URL: <http://www.robotflex.fr/PBCPPlayer.asp?ID=937042>>.\*

Yamaha Robot SCARA, posted on directindustry.fr, no posted date given, no production date given, [online], [site visited Aug. 17, 2017], Available from Internet, <URL: <http://www.directindustry.fr/prod/yamaha-motor-co-ltd/product-25092-570232.html>>.\*

\* cited by examiner

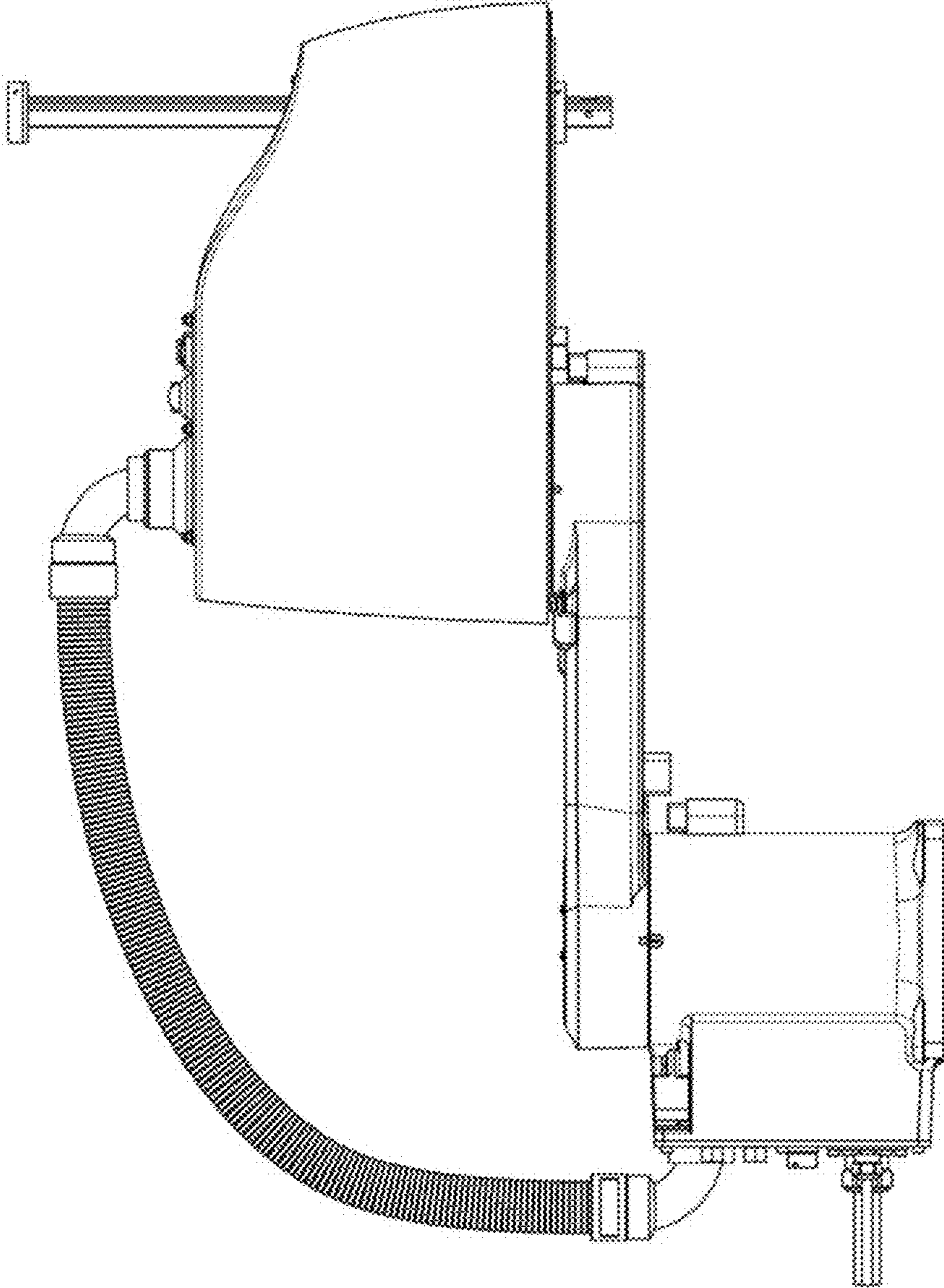


FIGURE 1



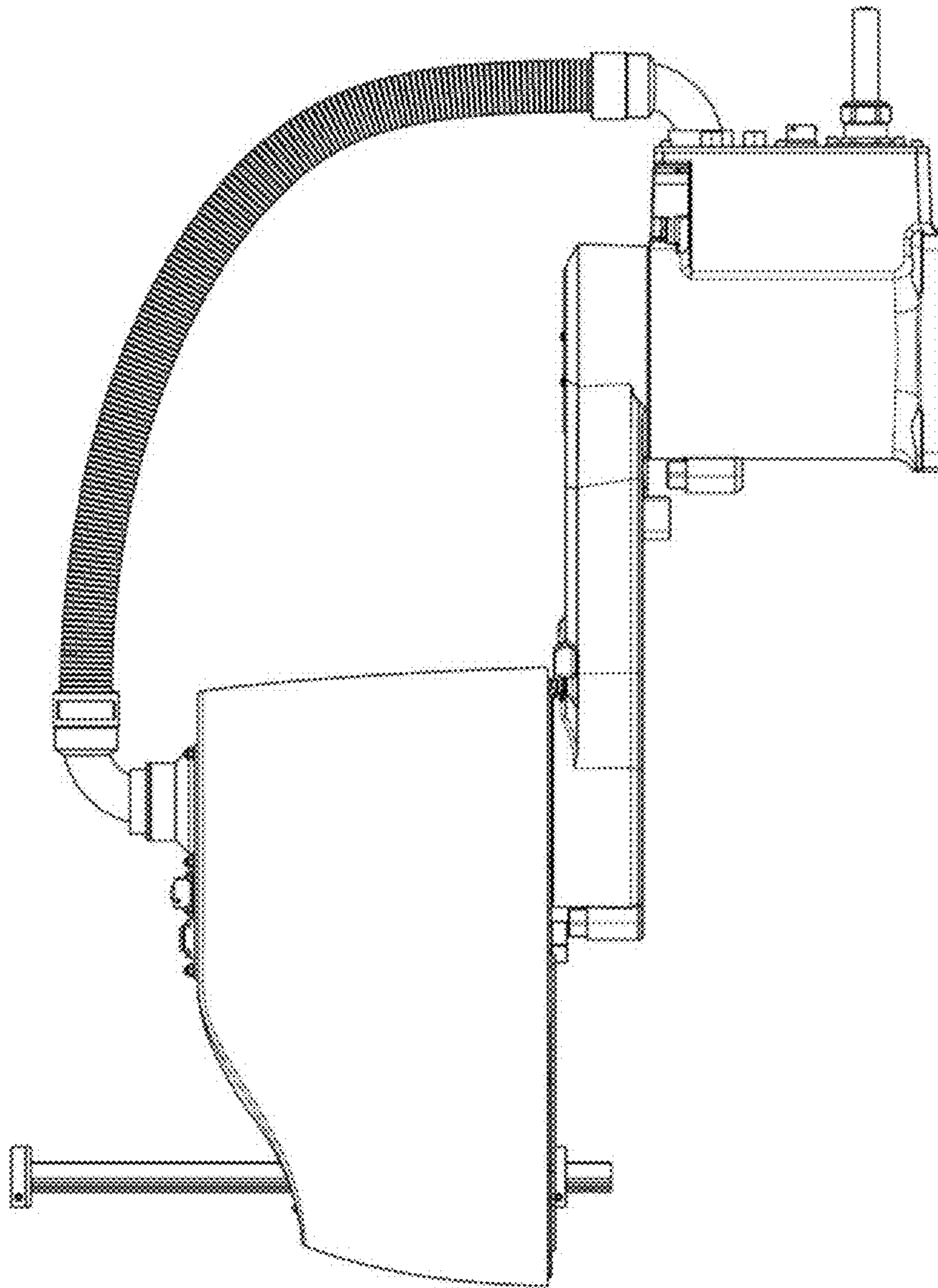


FIGURE 2

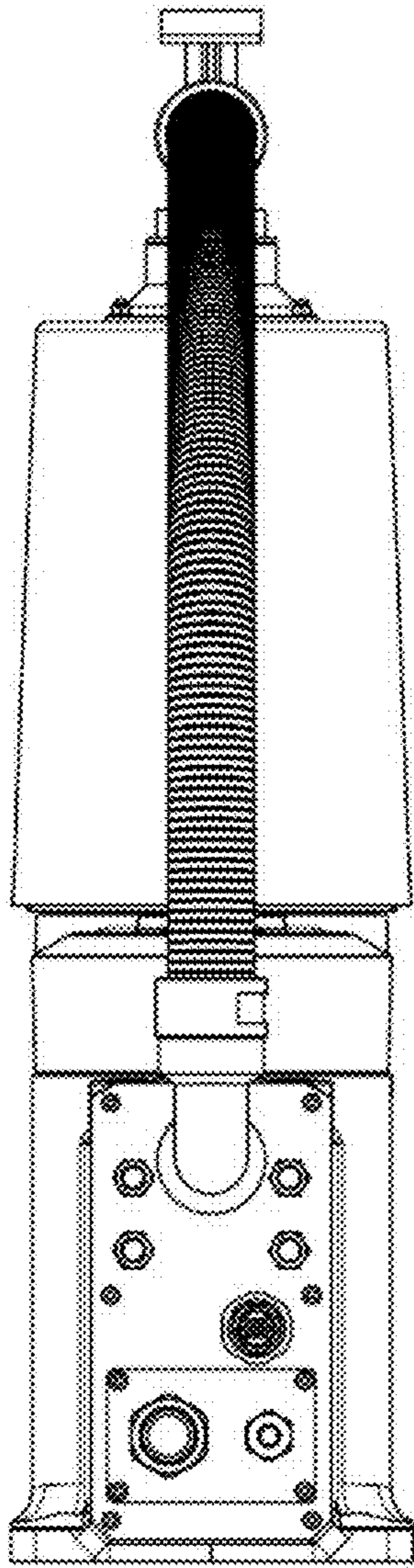


FIGURE 3

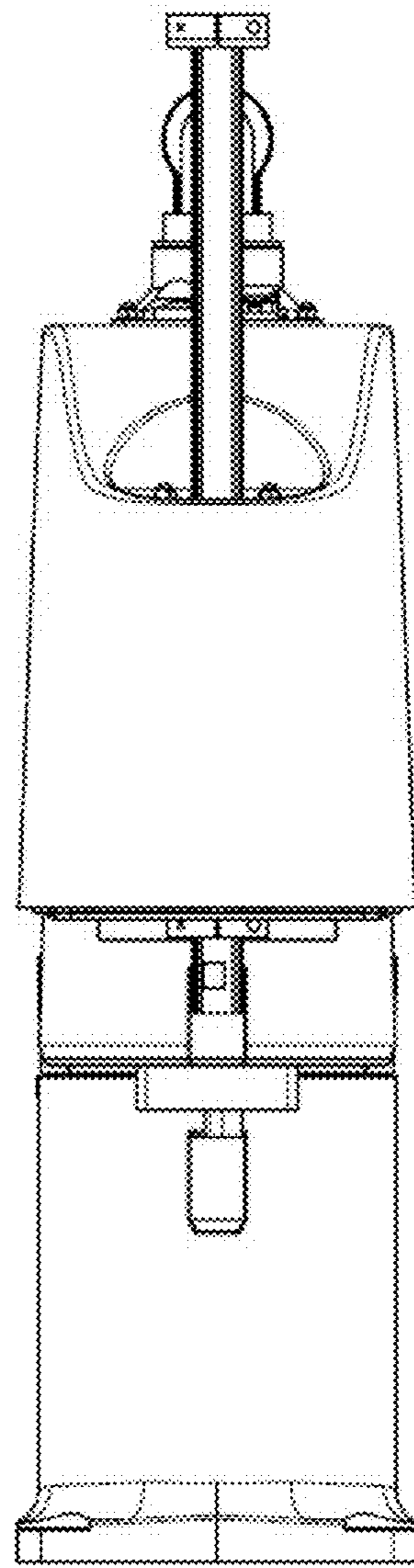


FIGURE 4



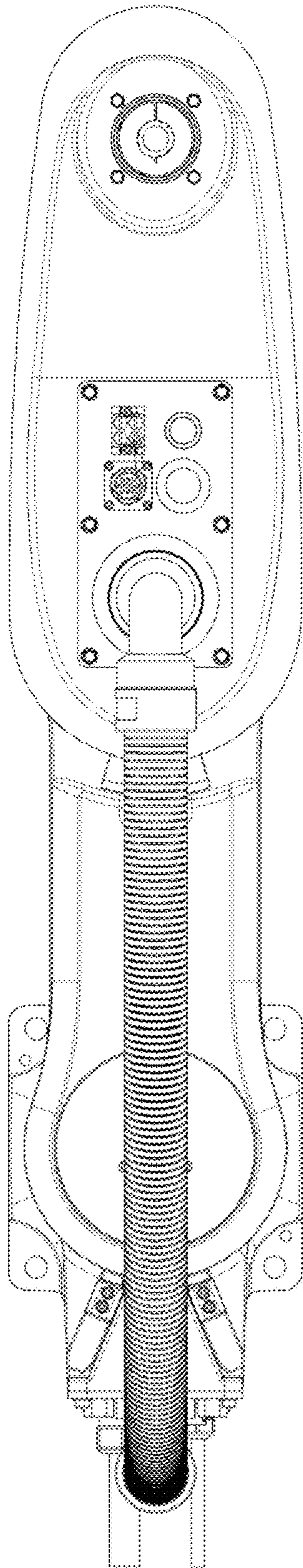


FIGURE 5

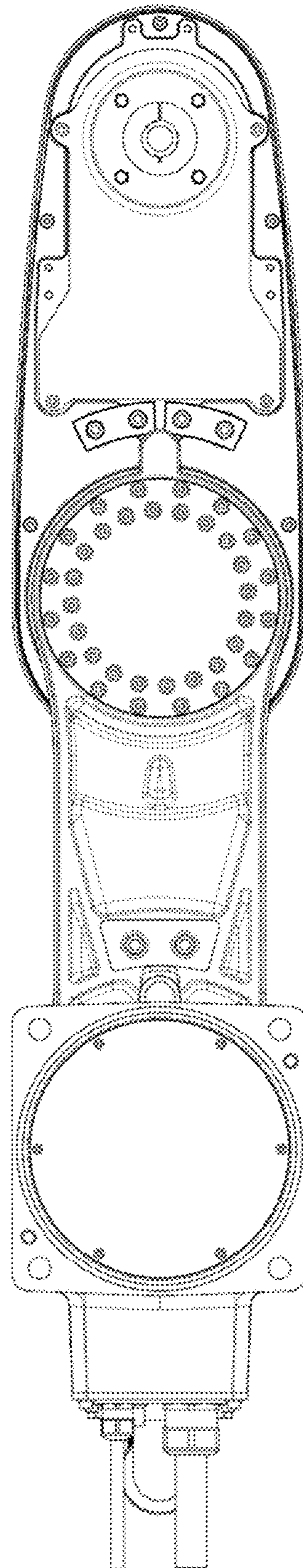


FIGURE 6

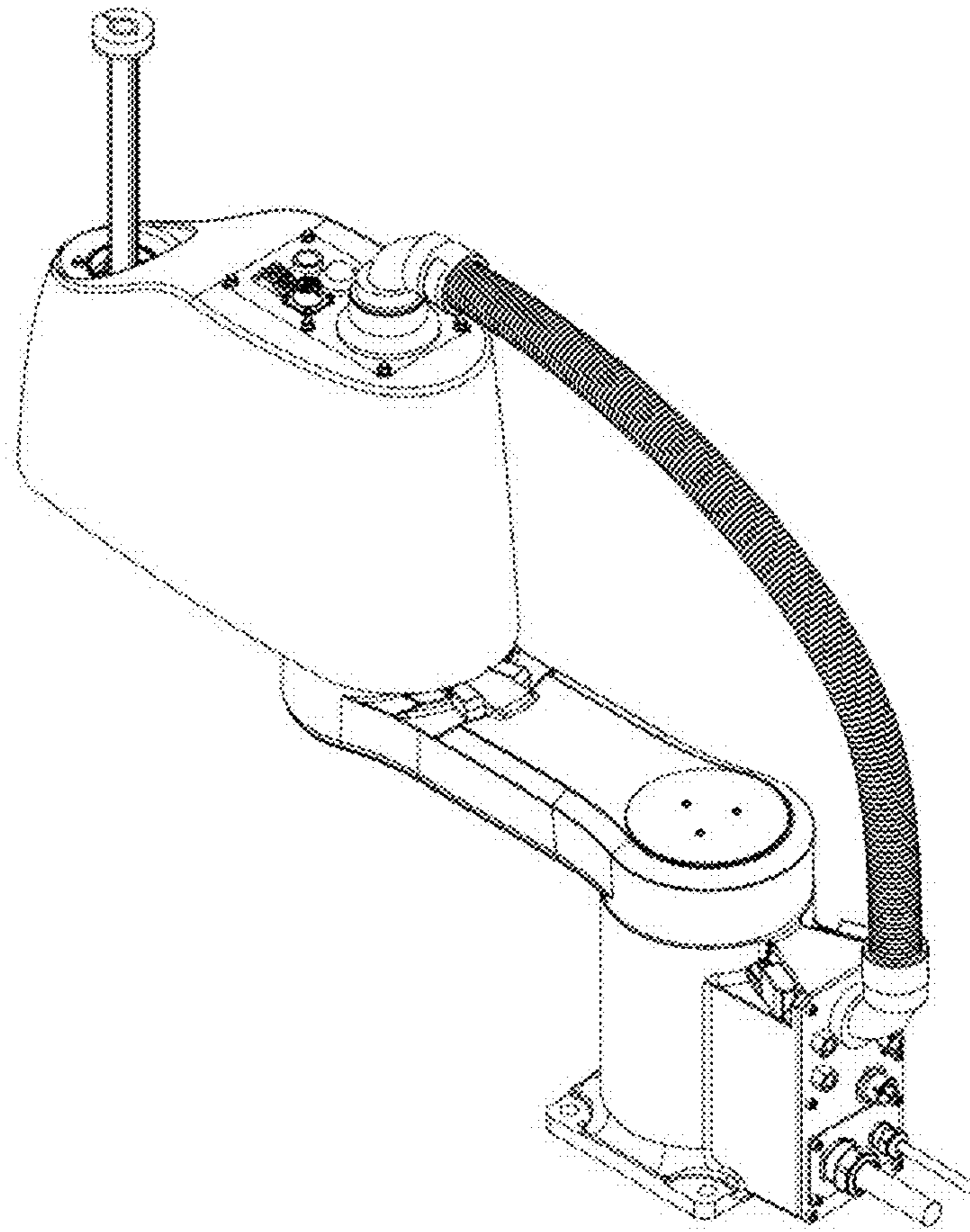


FIGURE 7

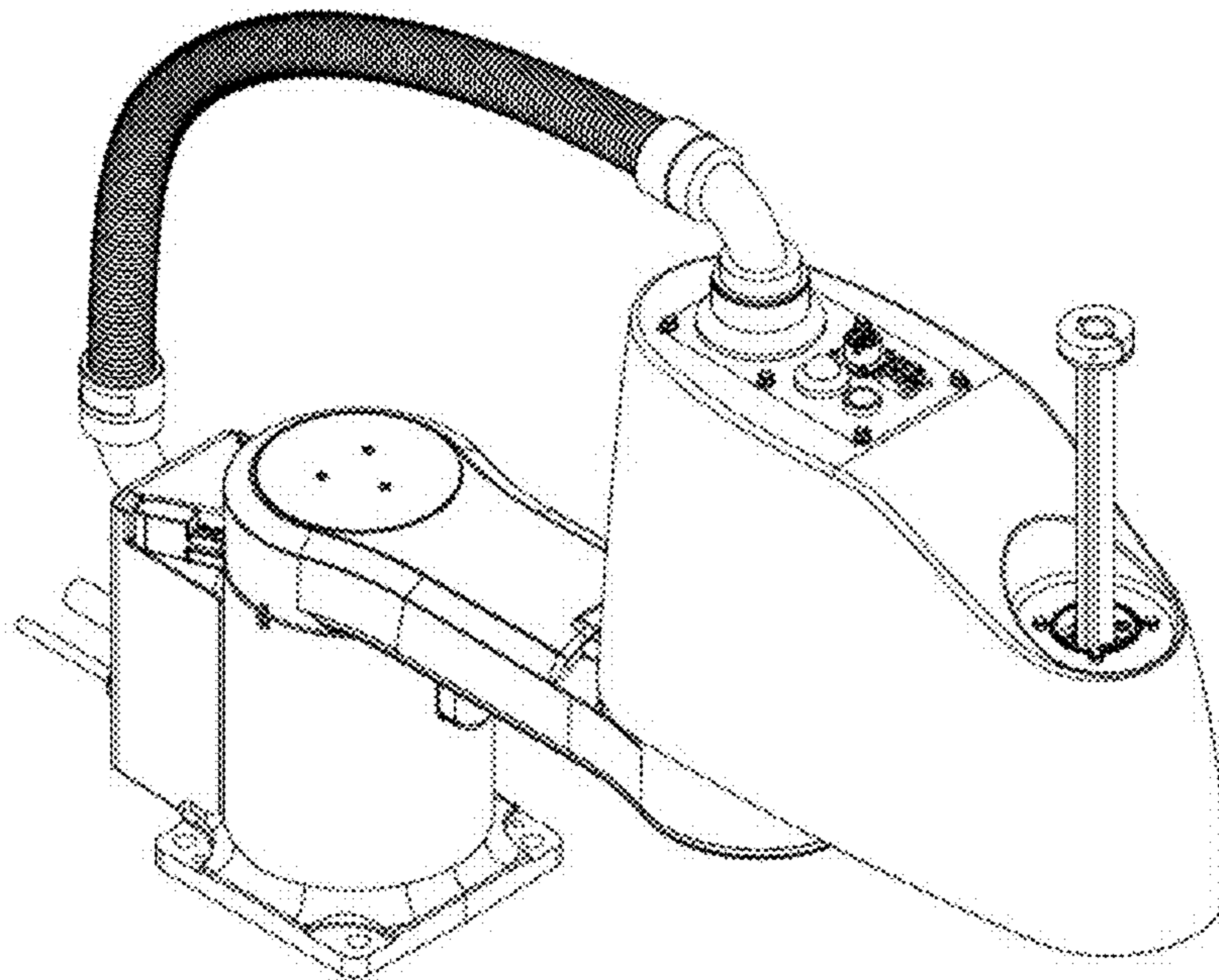


FIGURE 8



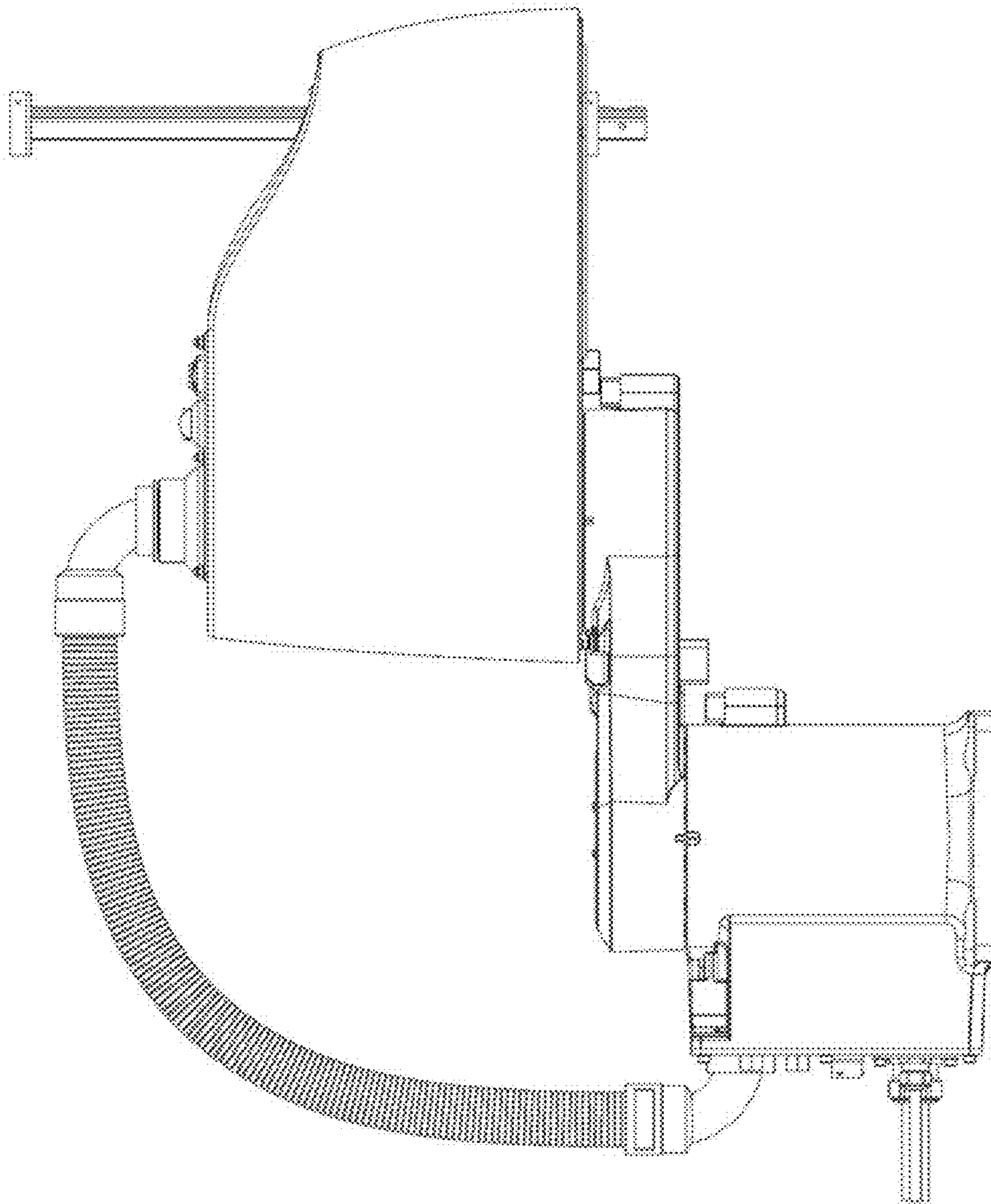


FIGURE 9



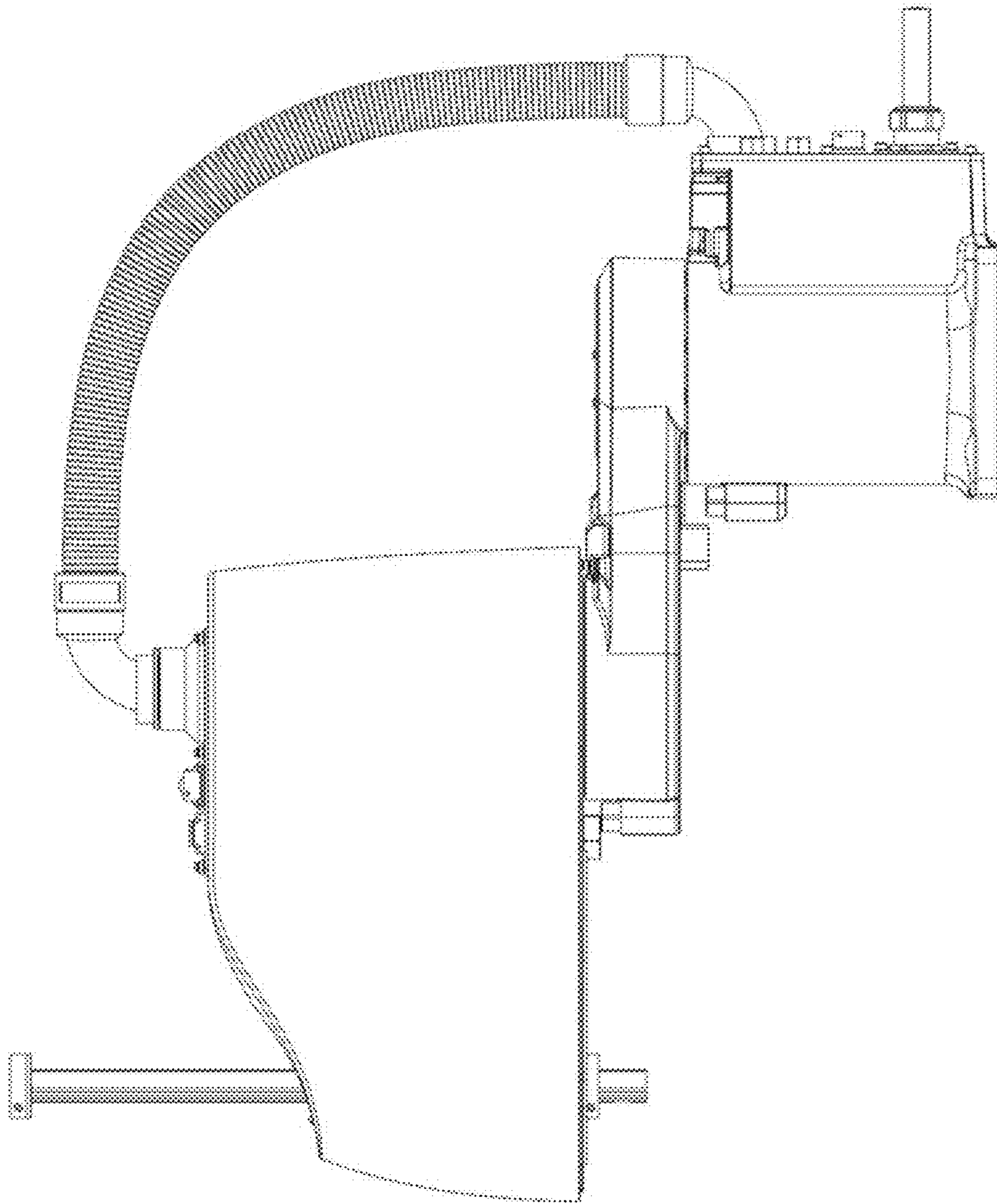


FIGURE 10

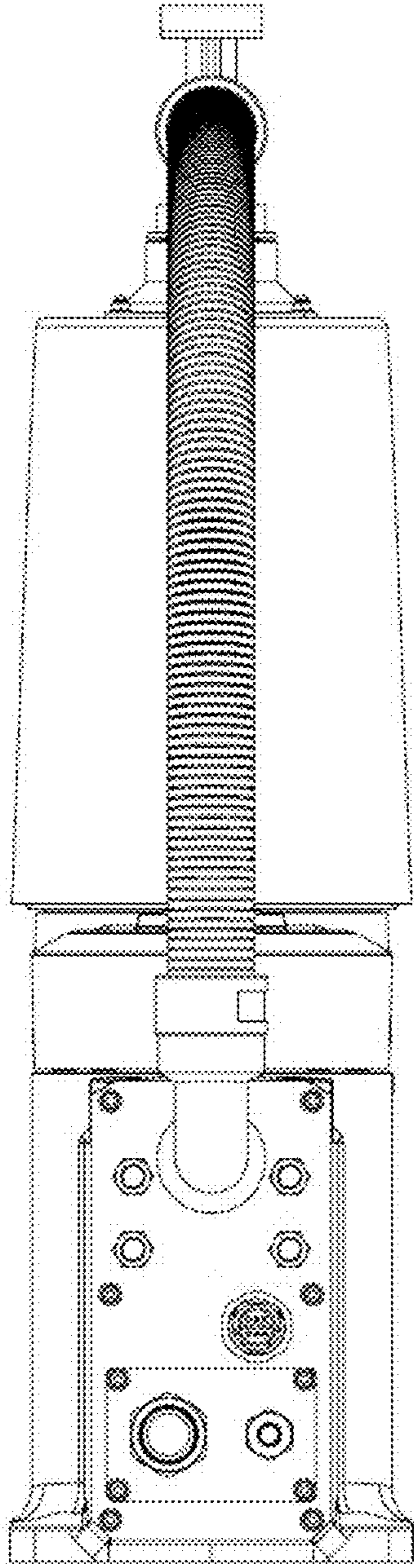


FIGURE 11

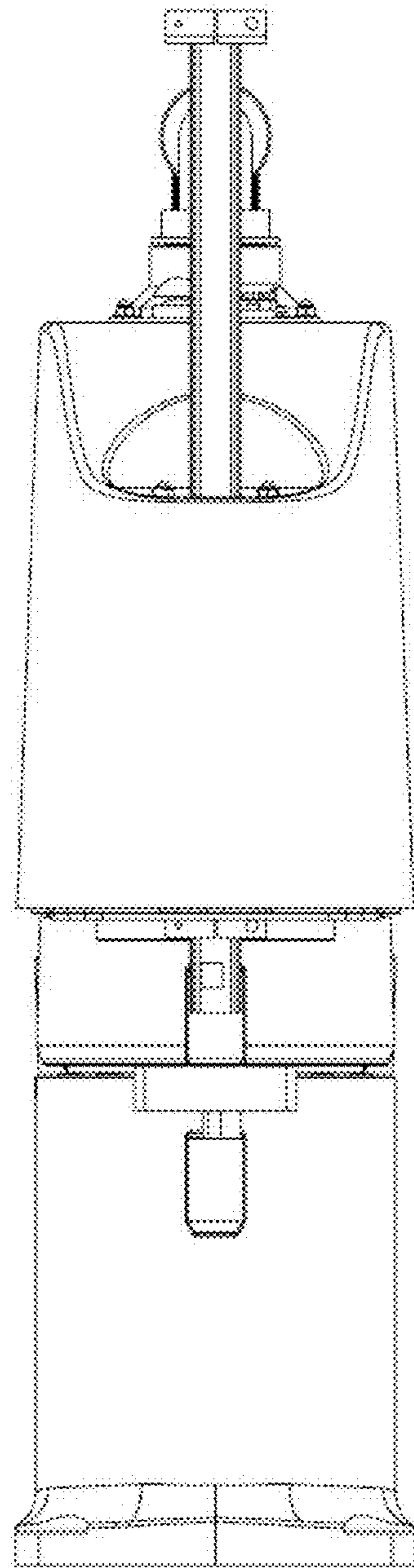


FIGURE 12



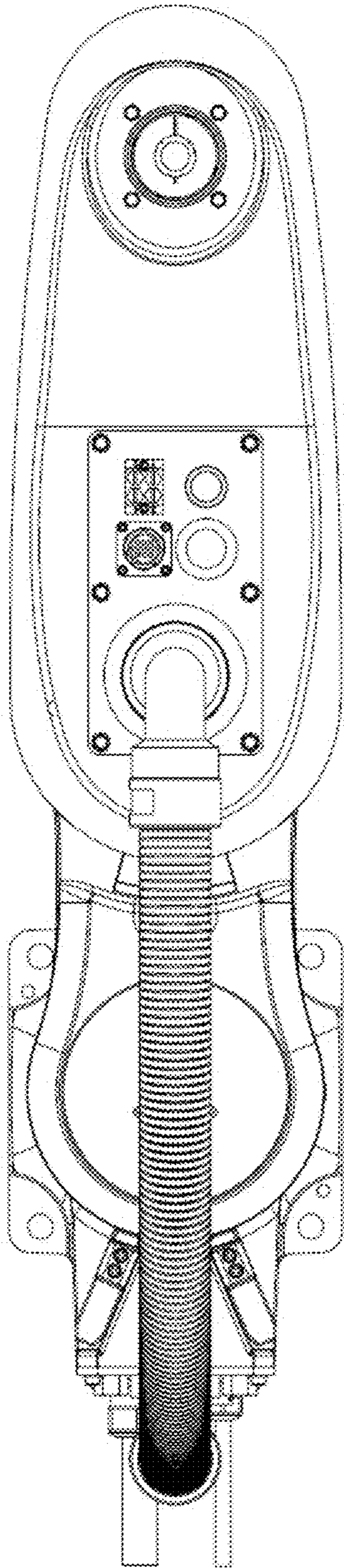


FIGURE 13

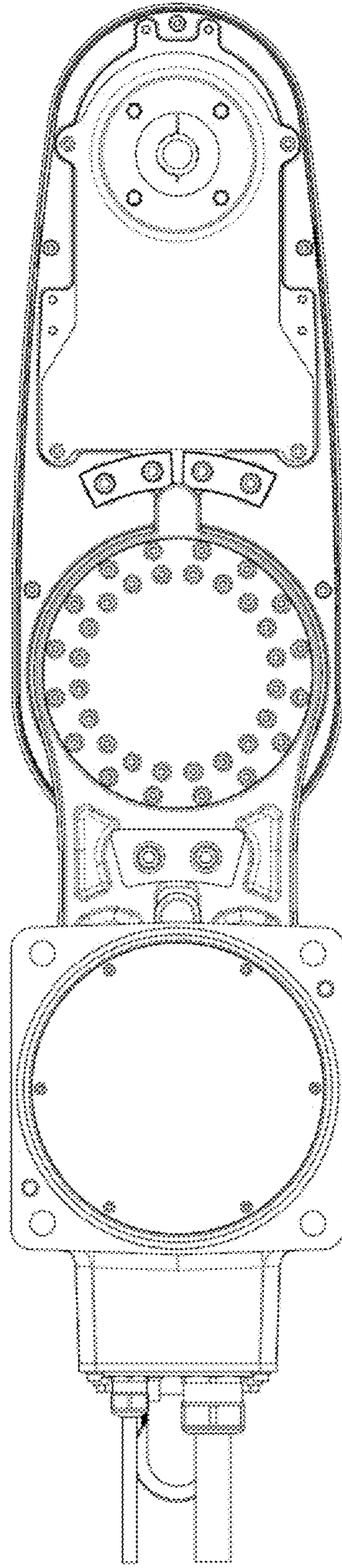


FIGURE 14



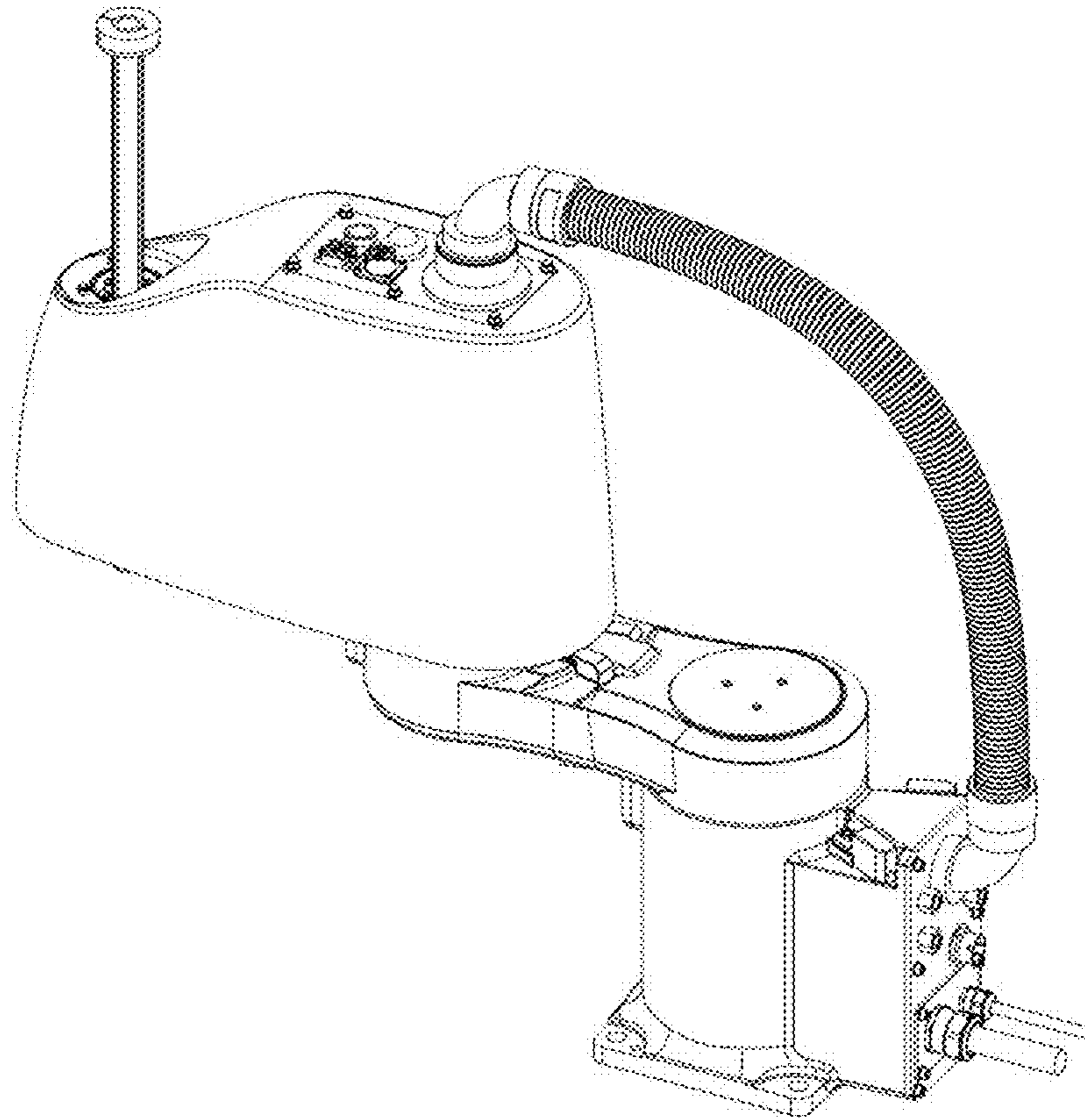


FIGURE 15

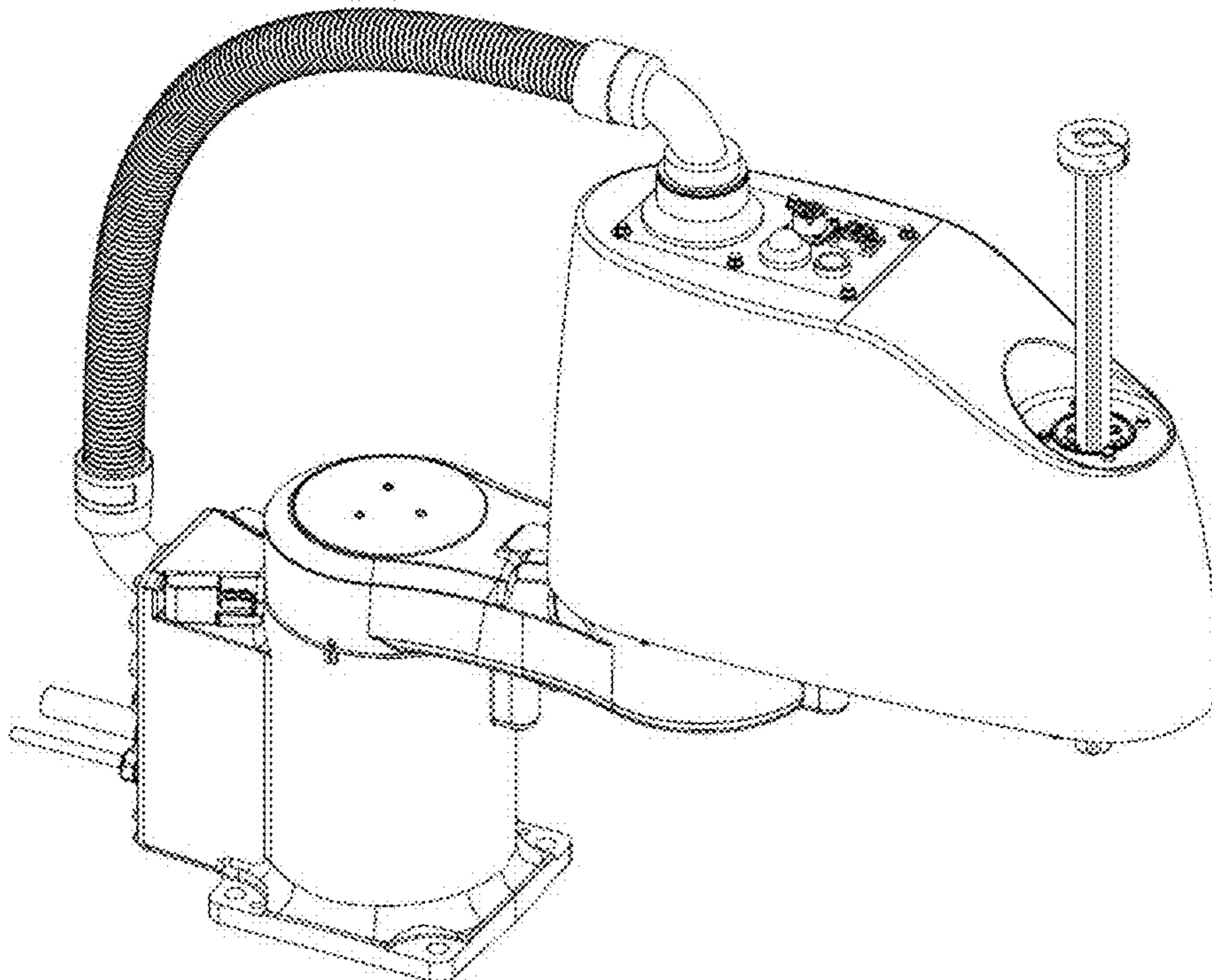


FIGURE 16

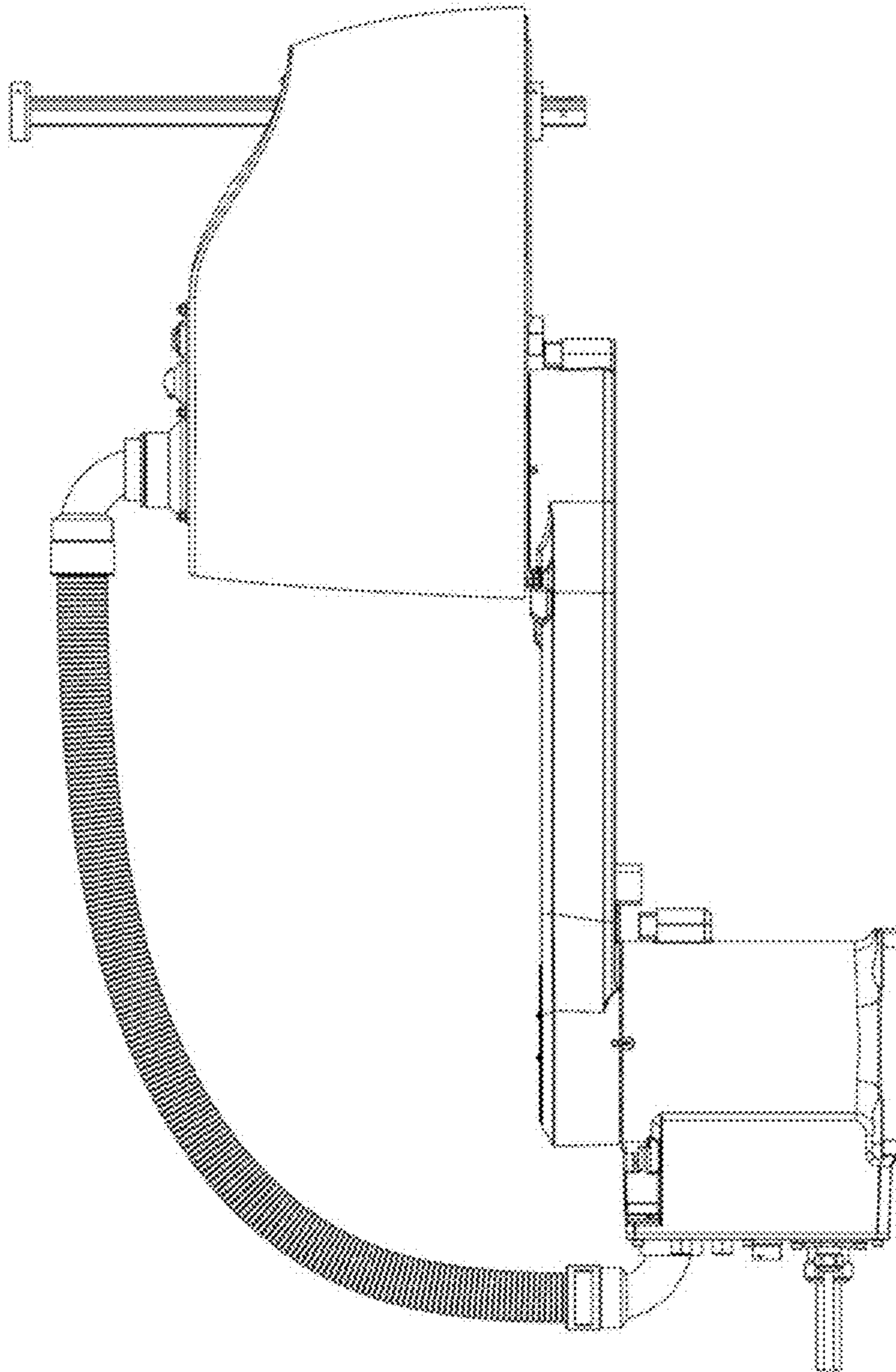


FIGURE 17

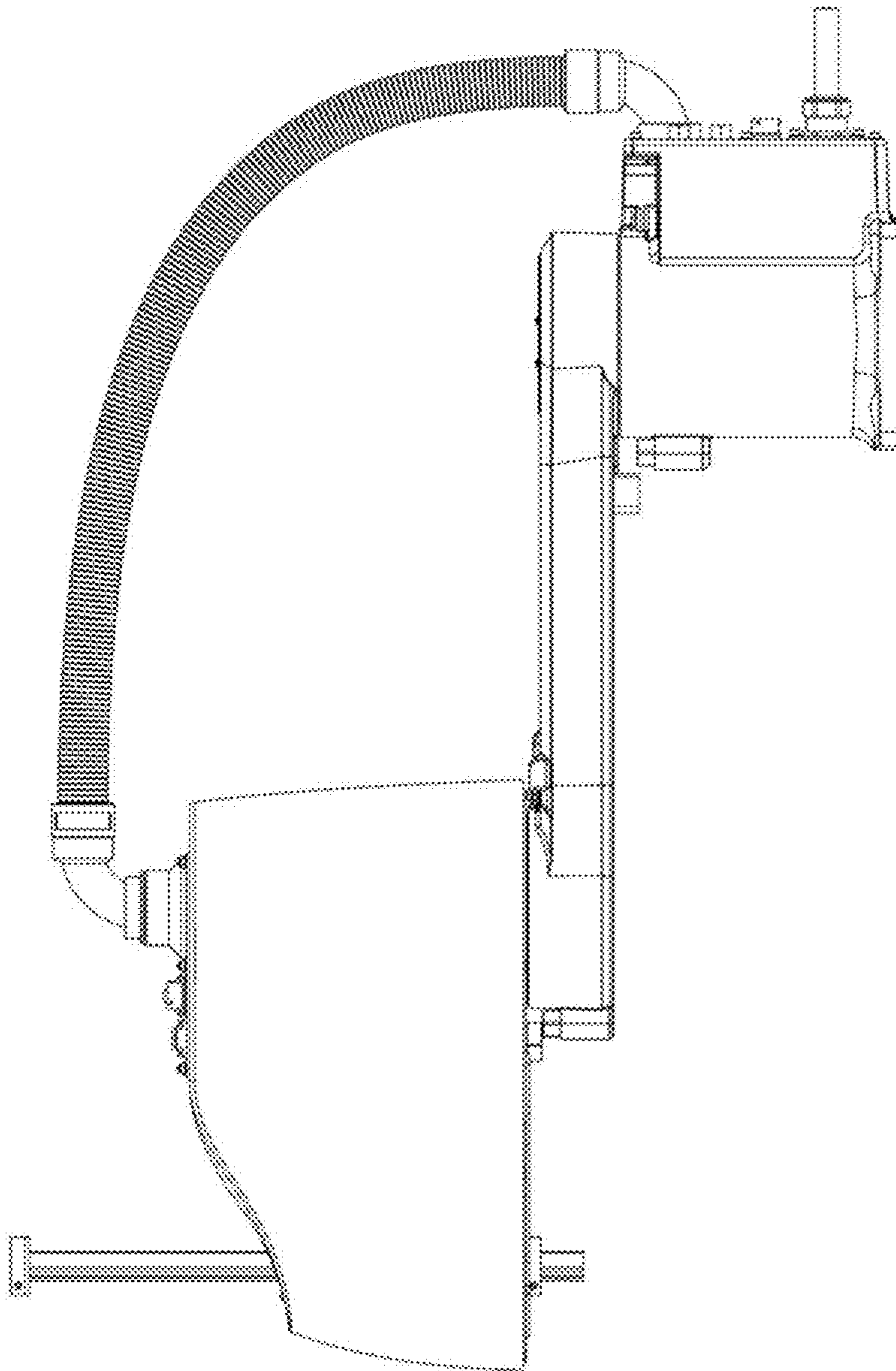


FIGURE 18



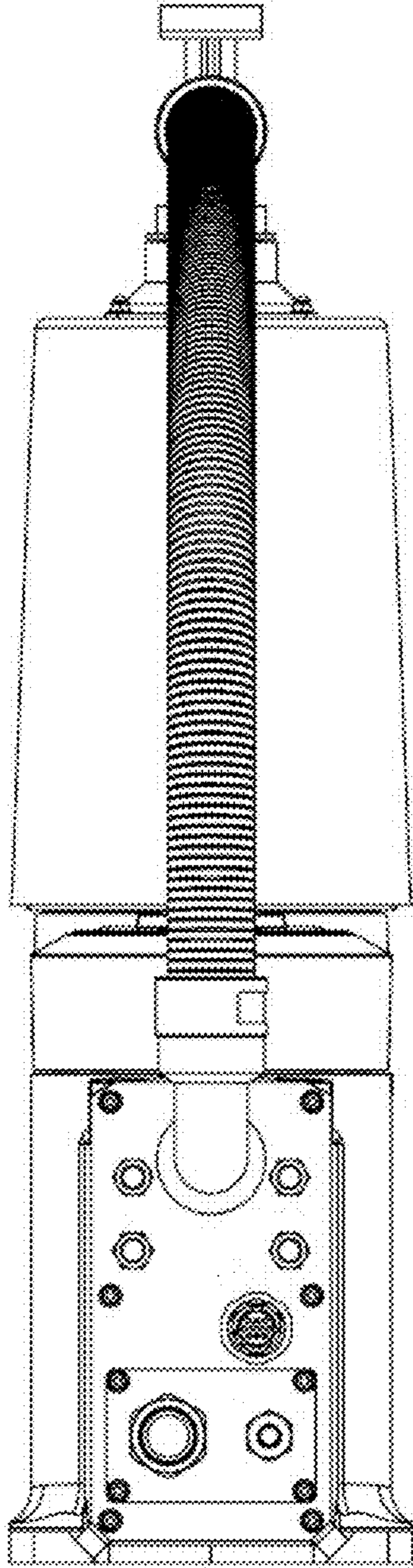


FIGURE 19

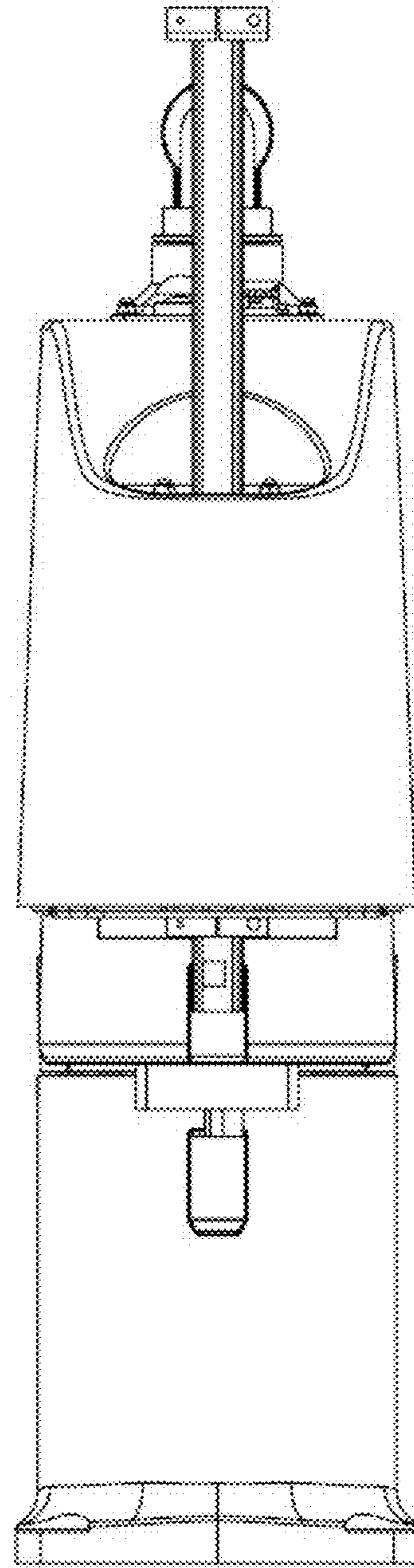


FIGURE 20

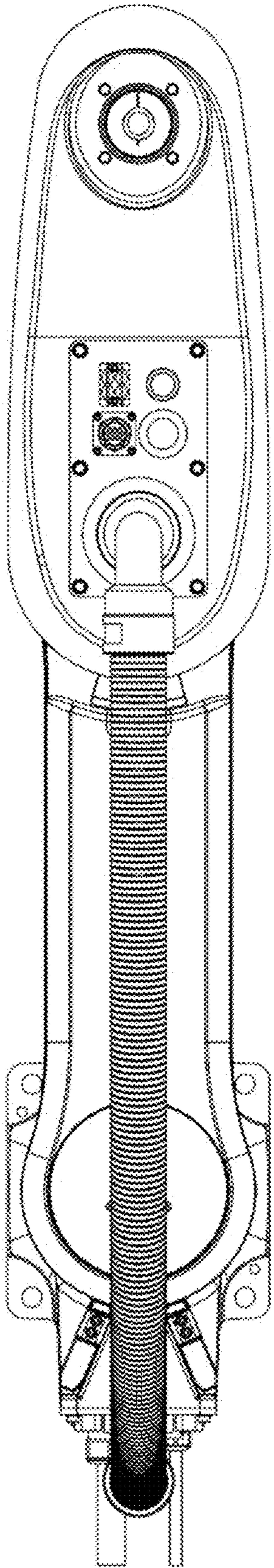


FIGURE 21

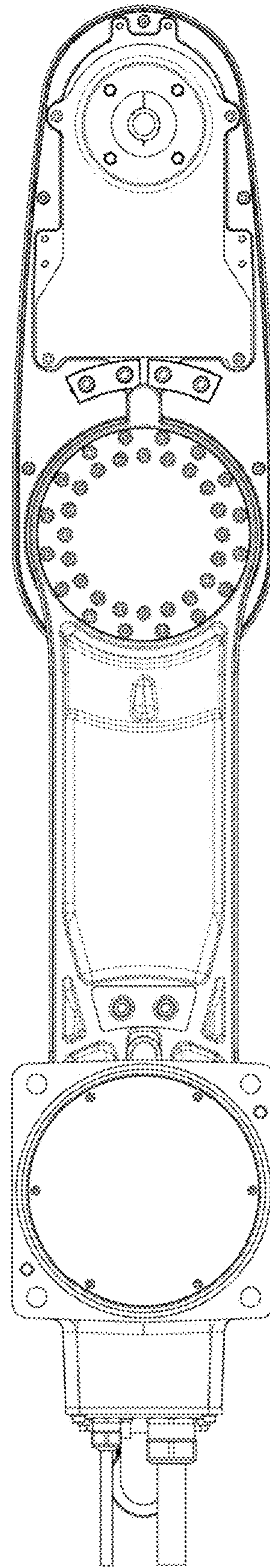


FIGURE 22



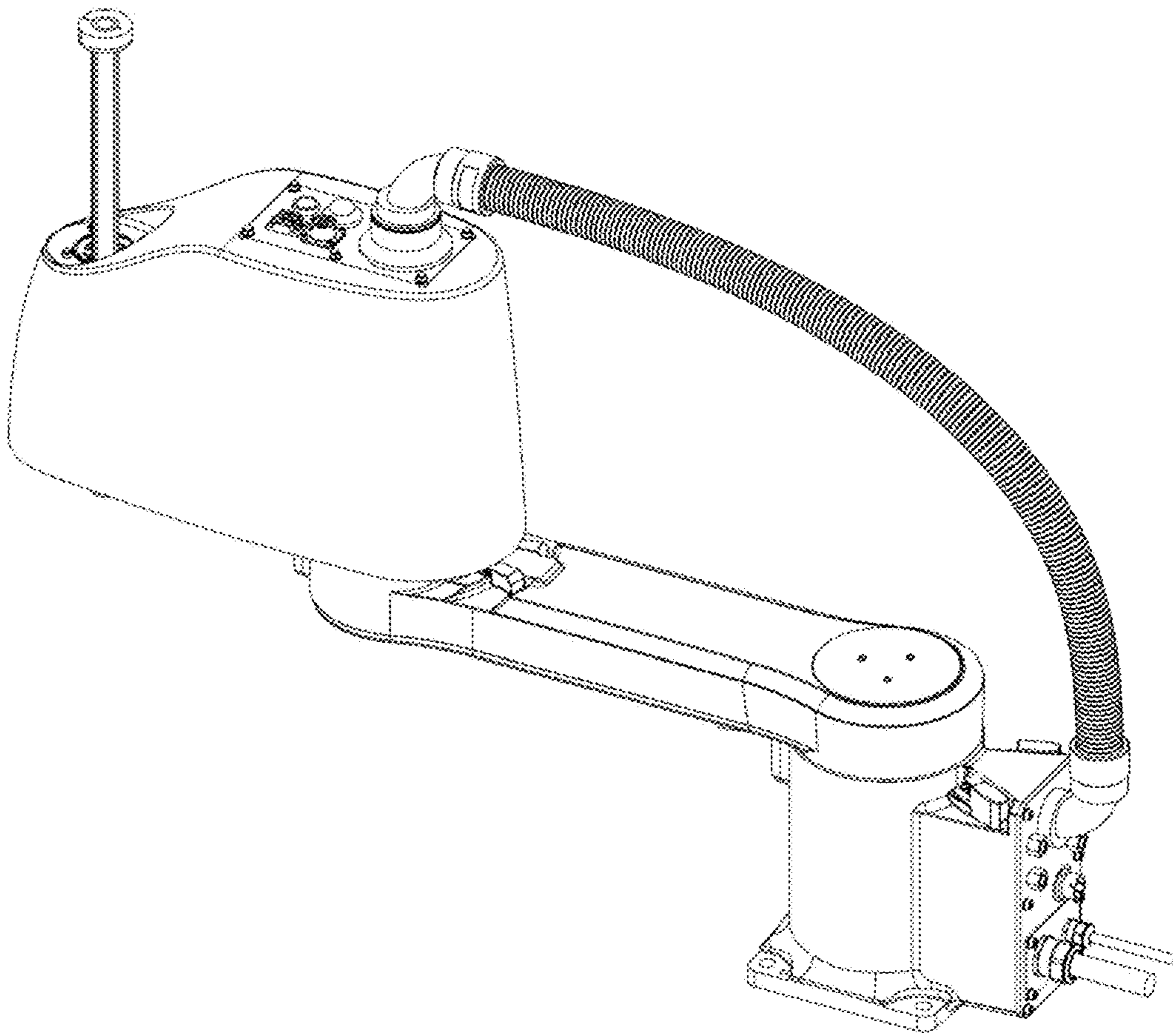


FIGURE 23

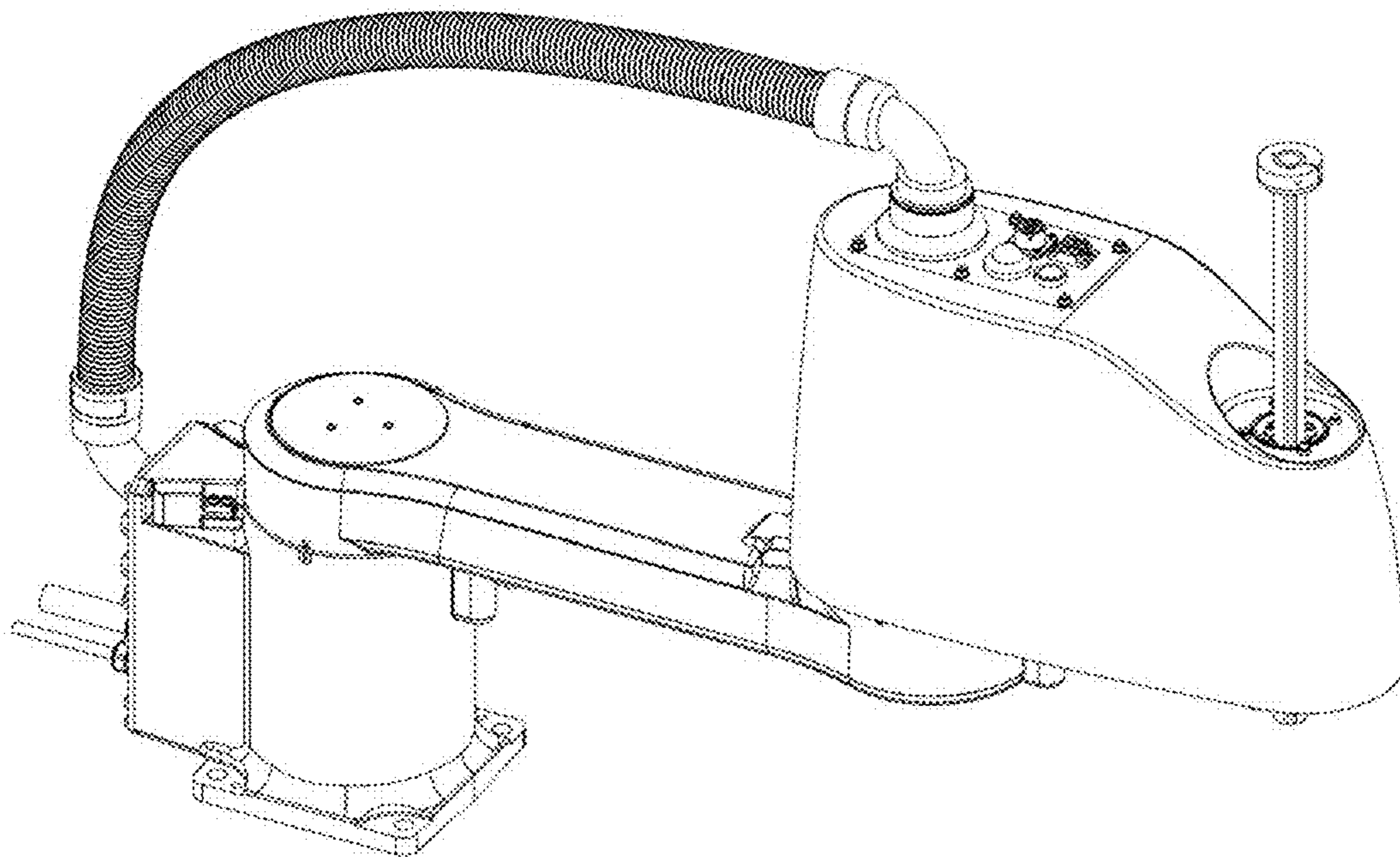


FIGURE 24