



US00D833496S

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

(10) **Patent No.:** **US D833,496 S**

(45) **Date of Patent:** **** Nov. 13, 2018**

(54) **INDUSTRIAL ROBOT UPPER ARM**

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

(72) Inventors: **Bin Liu**, Shanghai (CN); **Said Zahrai**, Shanghai (CN)

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

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

(21) Appl. No.: **29/575,458**

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

(30) **Foreign Application Priority Data**

Feb. 26, 2016 (CN) 2016 3 0053423

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

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

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

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
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

(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 — Eric L Goodman

Assistant Examiner — Fritzgerald L Butac

(74) *Attorney, Agent, or Firm* — J. Bruce Schelkopf; Taft Stettinius & Hollister LLP

(57) **CLAIM**

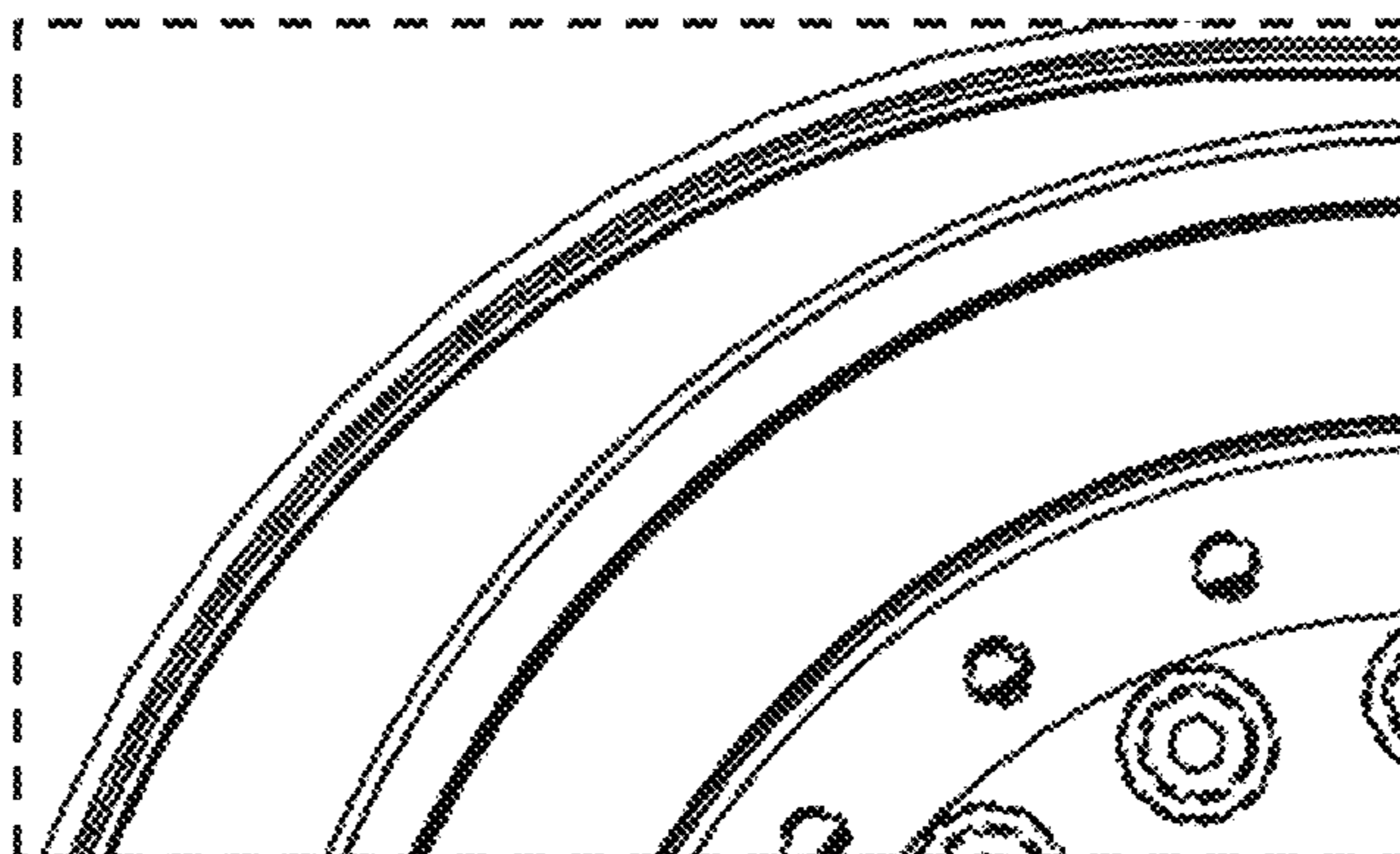
The ornamental design for an industrial robot upper arm, as shown and described.

DESCRIPTION

FIG. 1 is a front side view of an industrial robot upper arm. 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 an enlarged view of the bounded area in FIG. 6; and, FIG. 8 is a front side perspective view of the device shown in FIG. 1.

The broken lines show portions of an industrial robot upper arm that form no part of the claimed design.

1 Claim, 8 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

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

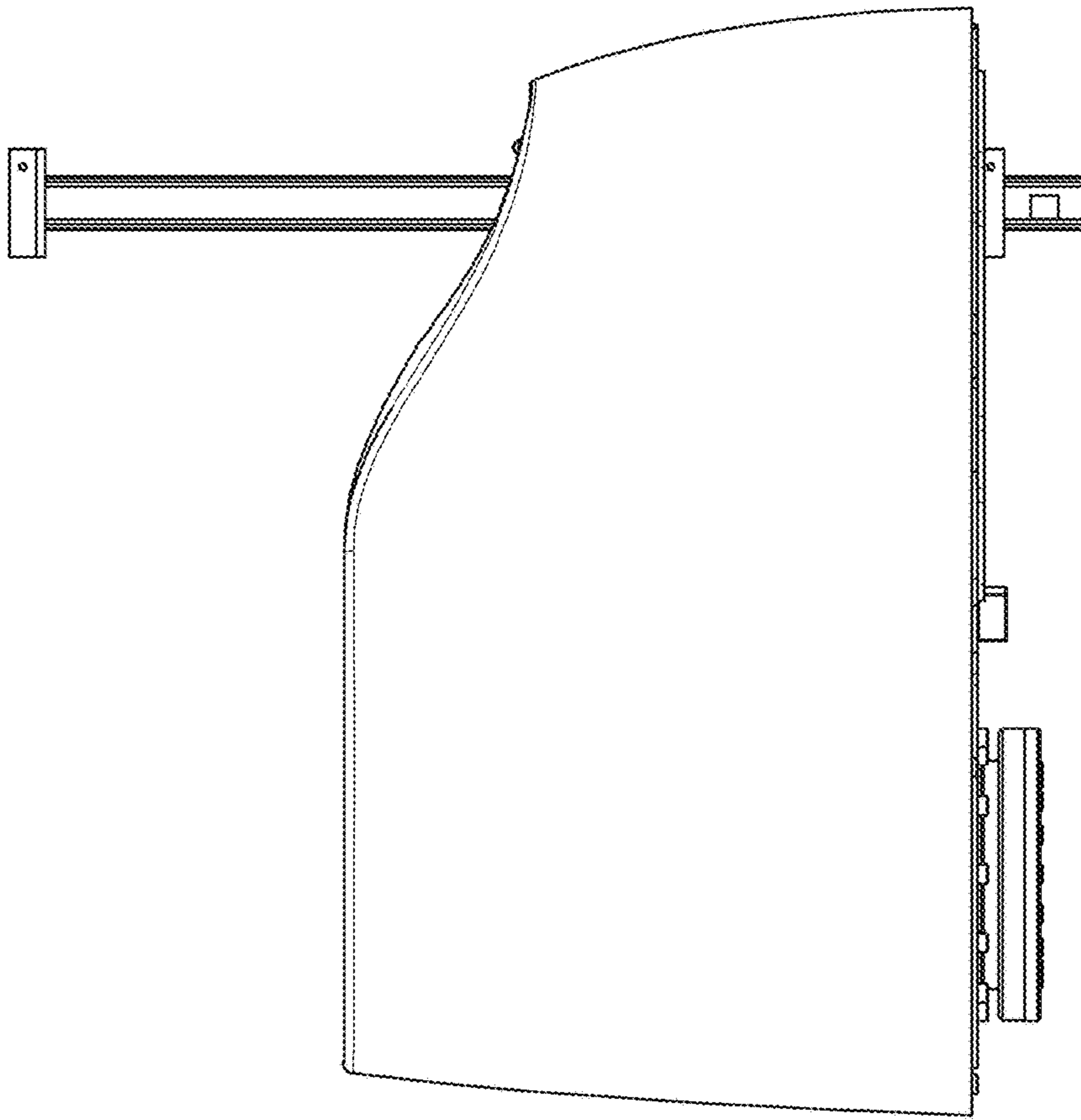


FIGURE 1

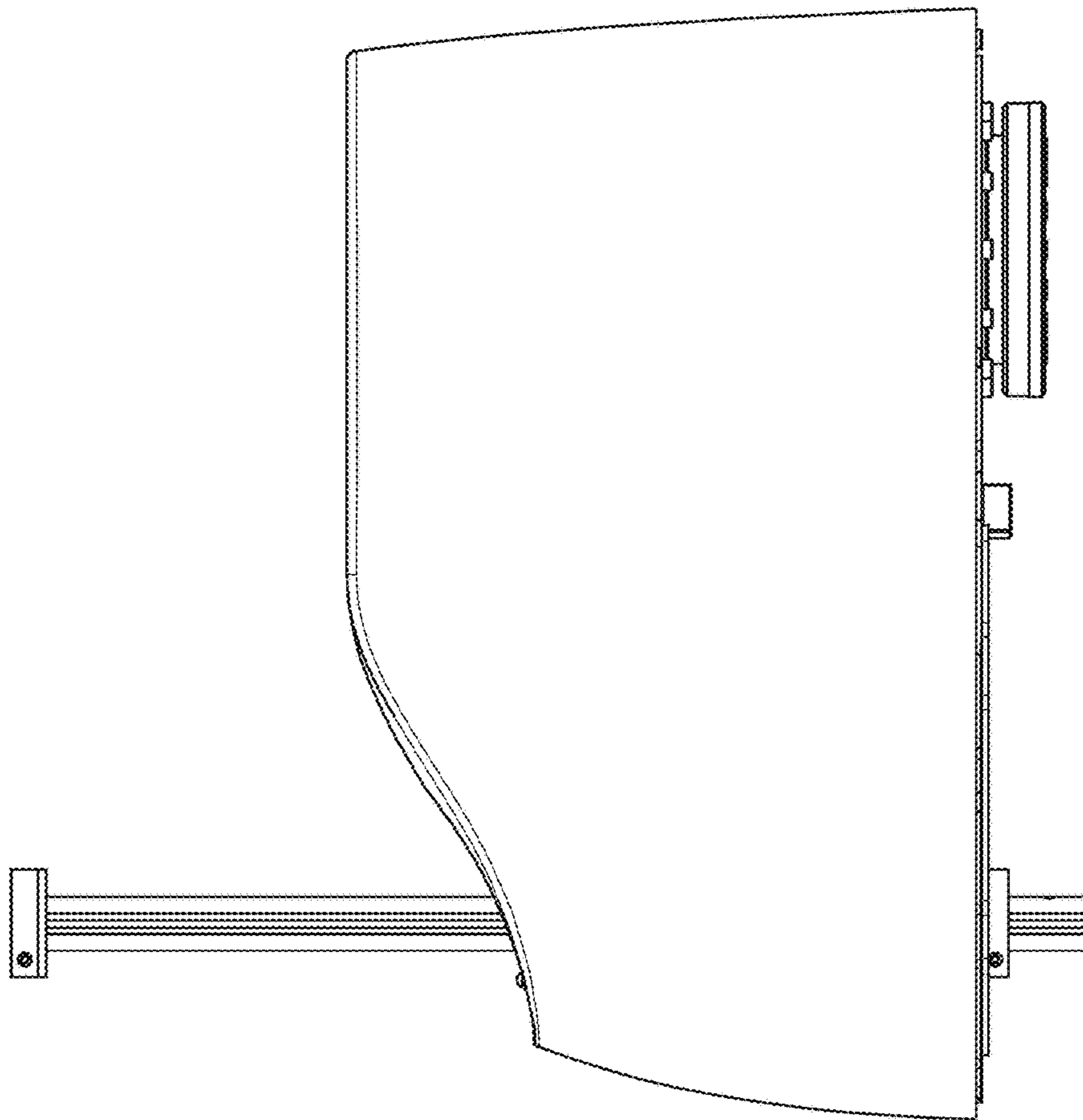


FIGURE 2

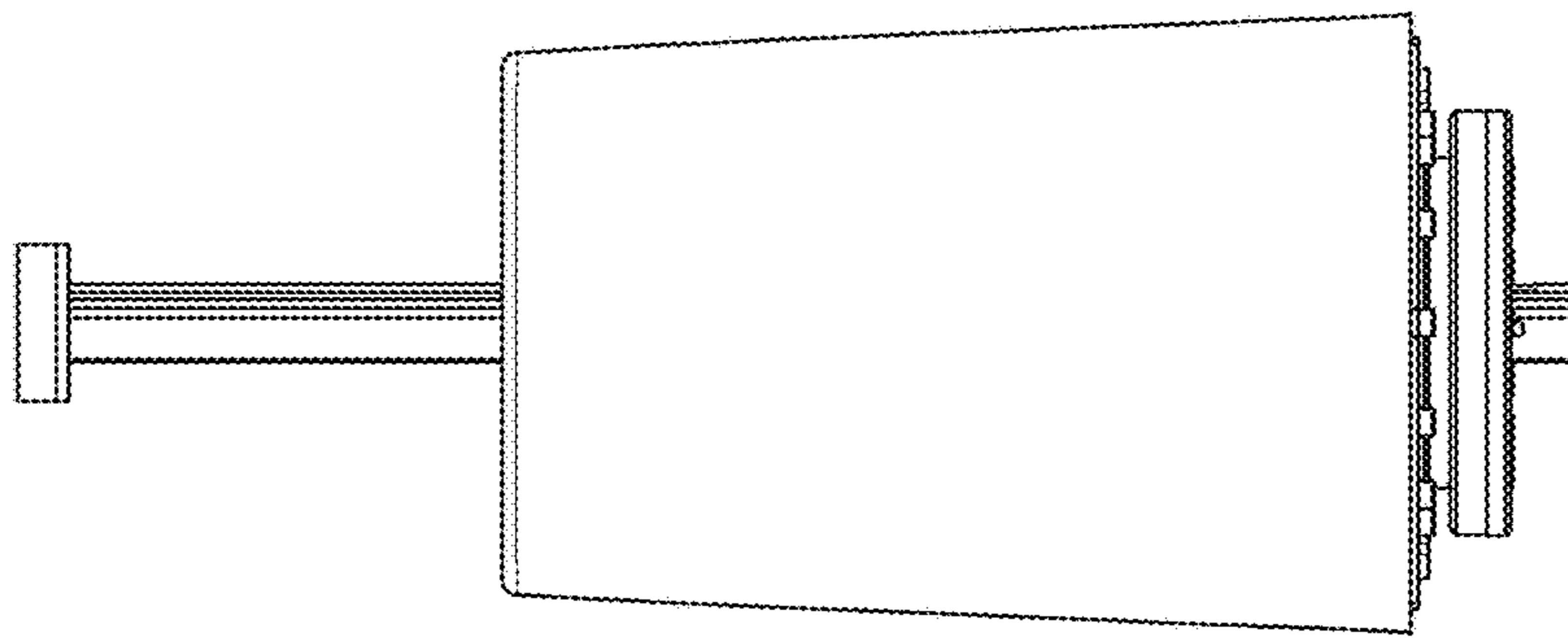


FIGURE 3

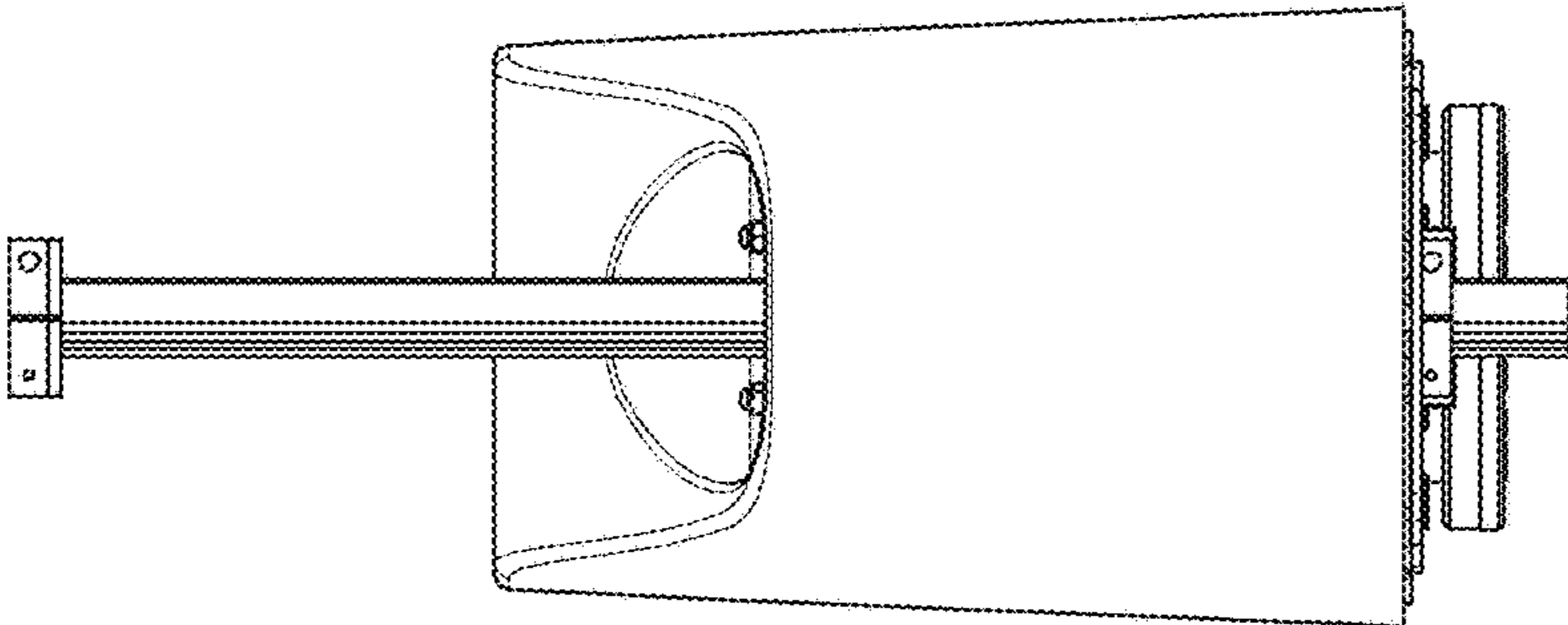


FIGURE 4

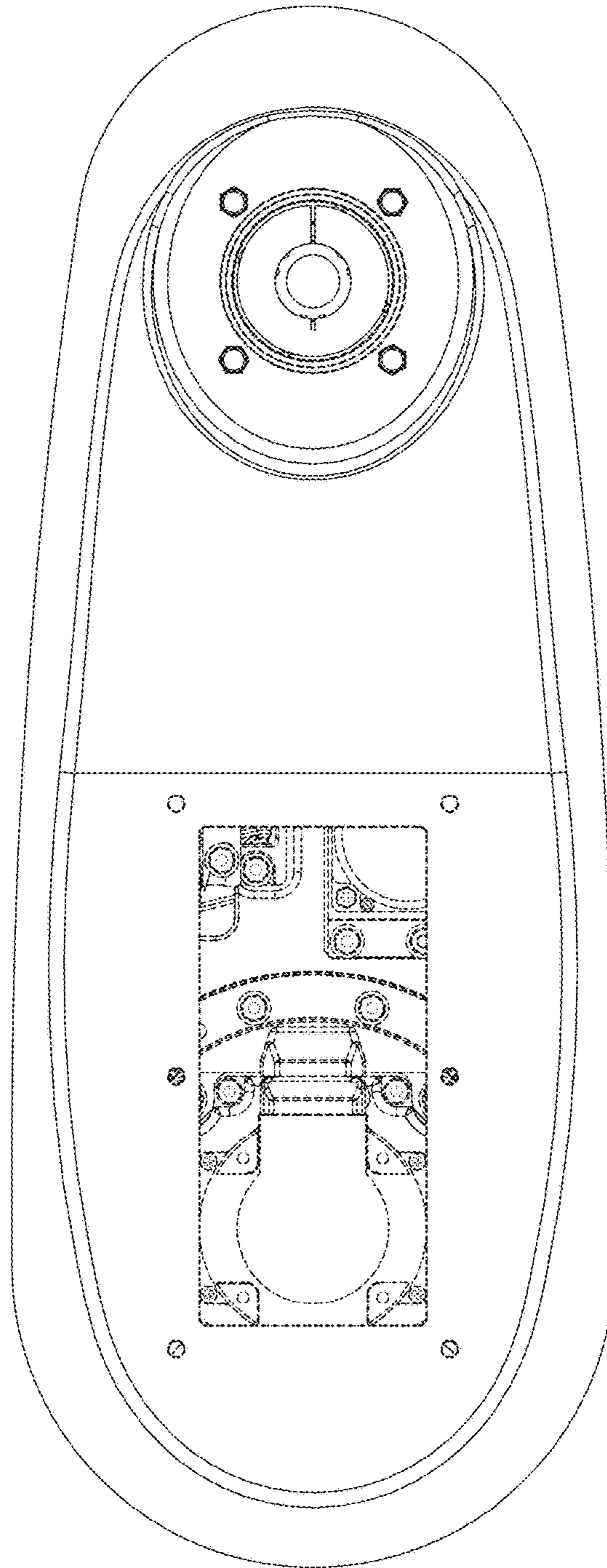


FIGURE 5

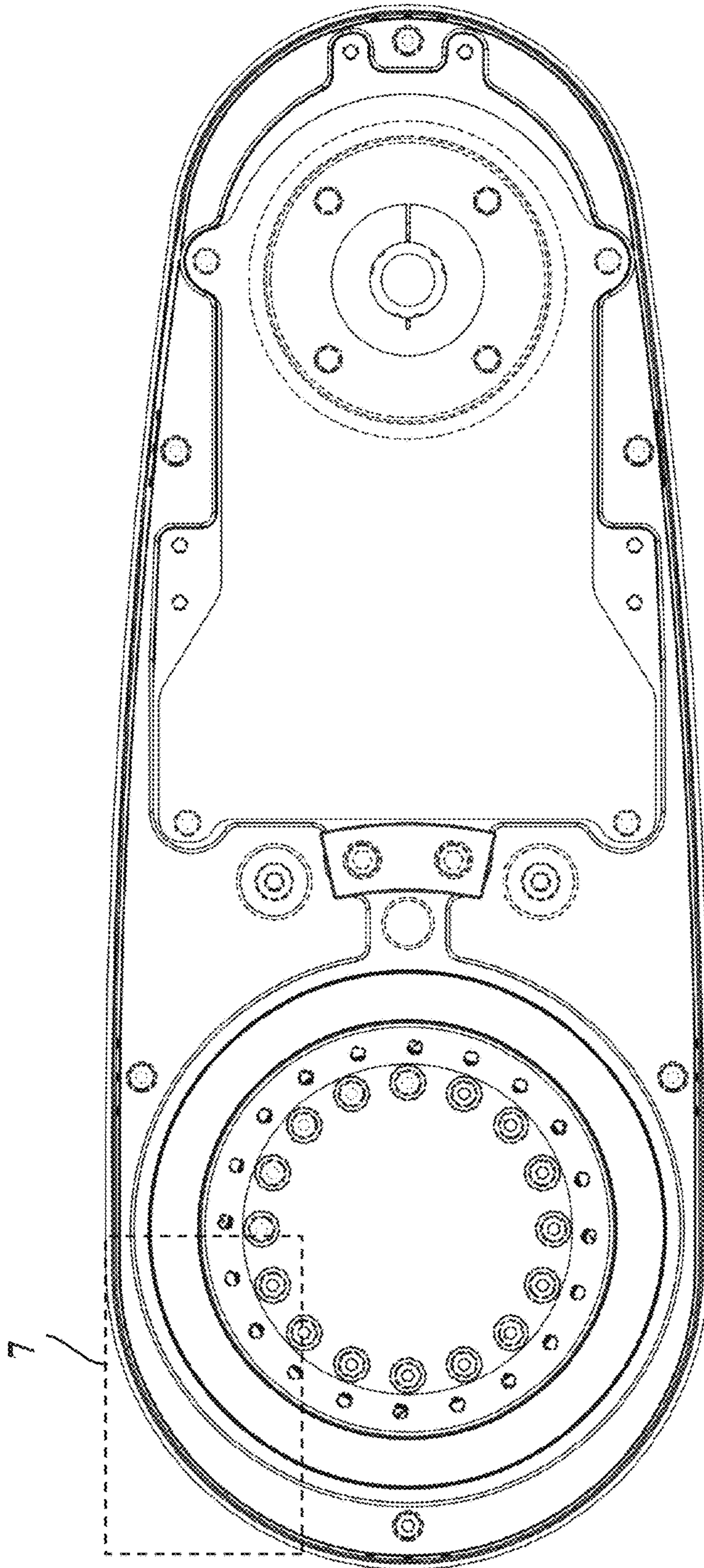


FIGURE 6

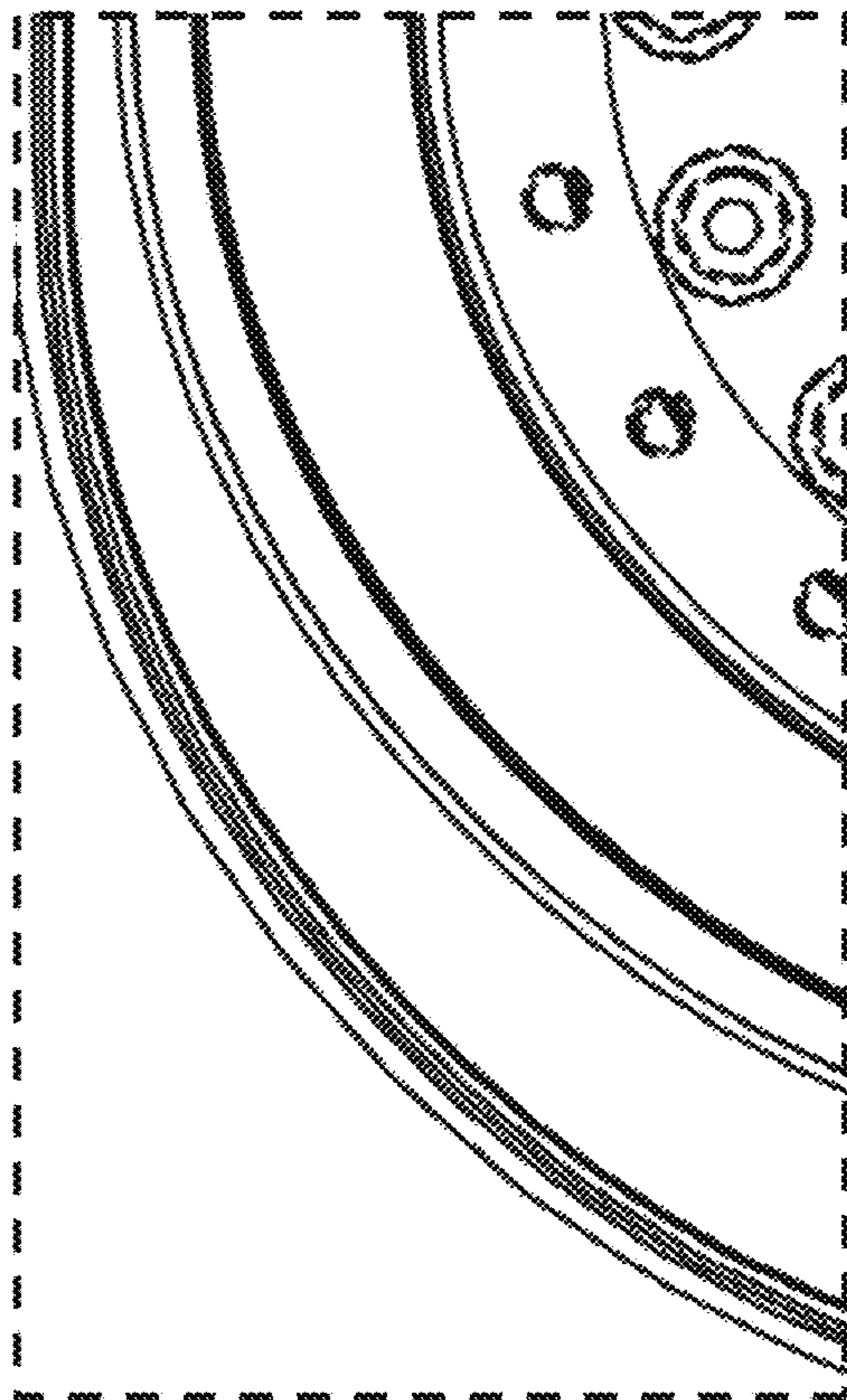


FIGURE 7

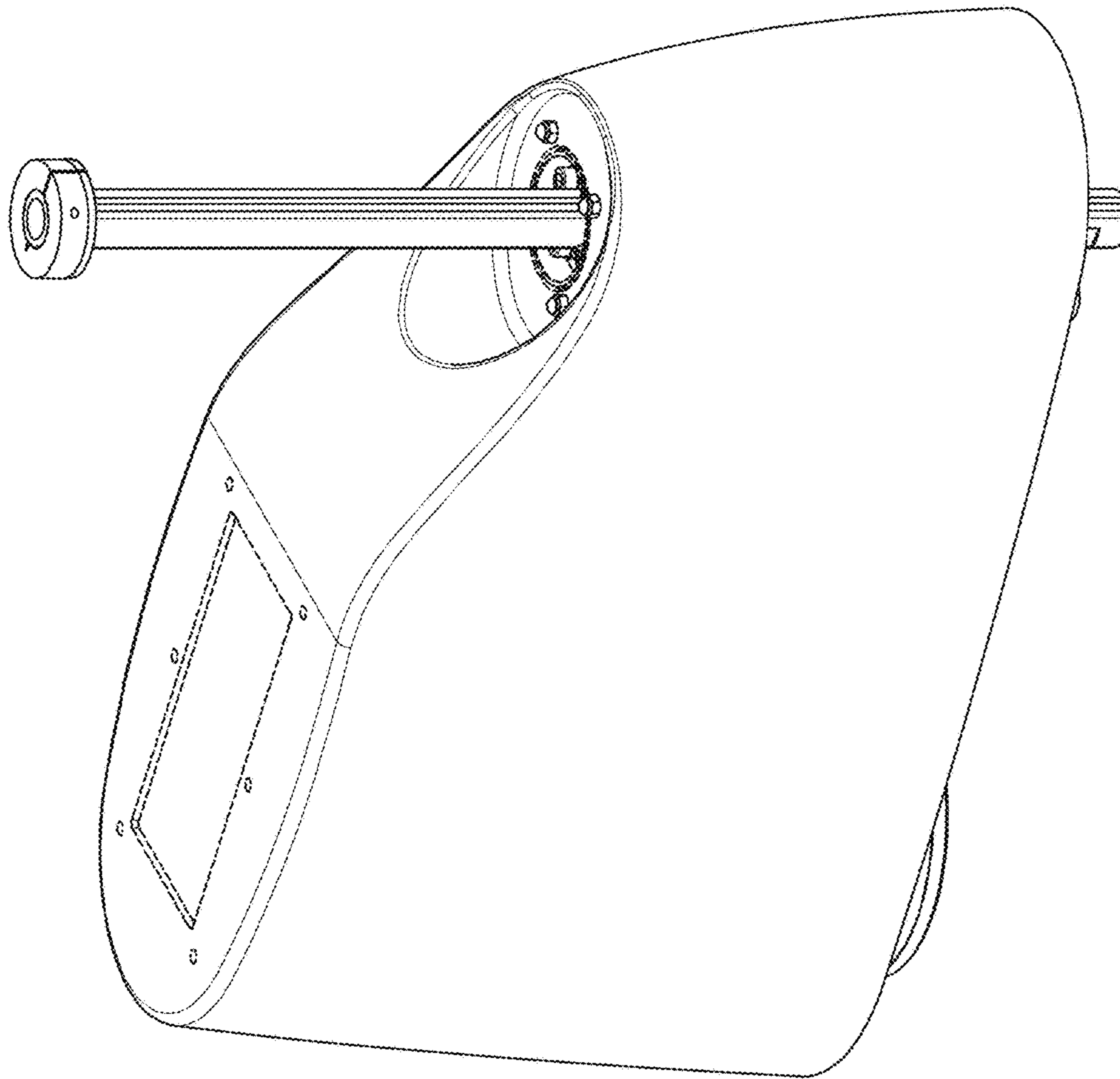


FIGURE 8