

US00D944878S

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

(10) **Patent No.:** **US D944,878 S**
(45) **Date of Patent:** **** Mar. 1, 2022**

(54) **LINEAR ACTUATOR**

(71) Applicant: **LINAK A/S**, Nordborg (DK)

(72) Inventors: **Matt Huang**, Shenzhen (CN); **Asger Mengel**, Sønderborg (DK)

(73) Assignee: **Linak A/S**, Nordborg (DK)

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

(21) Appl. No.: **29/759,147**

(22) Filed: **Nov. 20, 2020**

(30) **Foreign Application Priority Data**

May 21, 2020 (DK) DA 2020 00054

(51) **LOC (13) Cl.** **15-99**

(52) **U.S. Cl.**
USPC **D15/148**

(58) **Field of Classification Search**
USPC D13/158, 160; D15/143, 148, 199
CPC F15B 15/00; F15B 15/12; F15B 15/065;
H02K 7/00; H02K 19/06; H02K 26/00;
H02K 33/00; H02K 33/16
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D458,284 S *	6/2002	Landerholm	.....	D15/143
D577,753 S *	9/2008	Lund	.....	D15/143
D595,752 S *	7/2009	Lin	.....	D15/143
D595,753 S *	7/2009	Tseng	.....	D15/143
D646,310 S *	10/2011	Lan	.....	D15/143
D654,524 S *	2/2012	Iversen	.....	D15/199
D656,975 S *	4/2012	Tseng	.....	D15/143
8,725,438 B2 *	5/2014	Jensen	.....	F16H 25/20 702/60
D765,748 S *	9/2016	Bogelund	.....	D15/143
D776,728 S *	1/2017	Wu	.....	D15/143
D785,061 S *	4/2017	Gong	.....	D15/148
D785,062 S *	4/2017	Gong	.....	D15/148

(Continued)

OTHER PUBLICATIONS

Product Brochure for LINAK Actuator LA27 (7 pgs.), with date of Dec. 2018.

(Continued)

Primary Examiner — Michael C Stout
Assistant Examiner — Fitzgerald L Butac

(74) *Attorney, Agent, or Firm* — Dykema Gossett PLLC

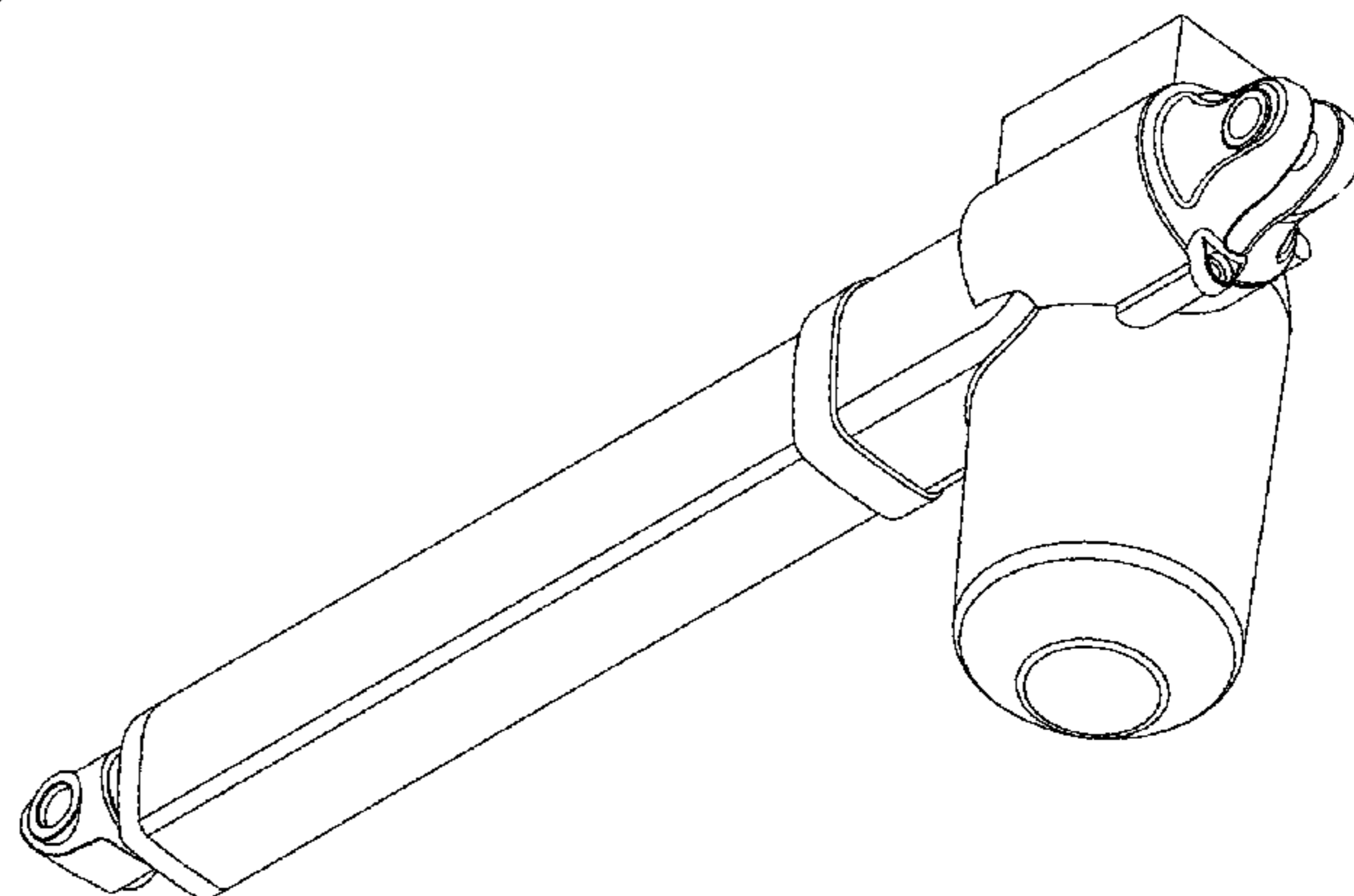
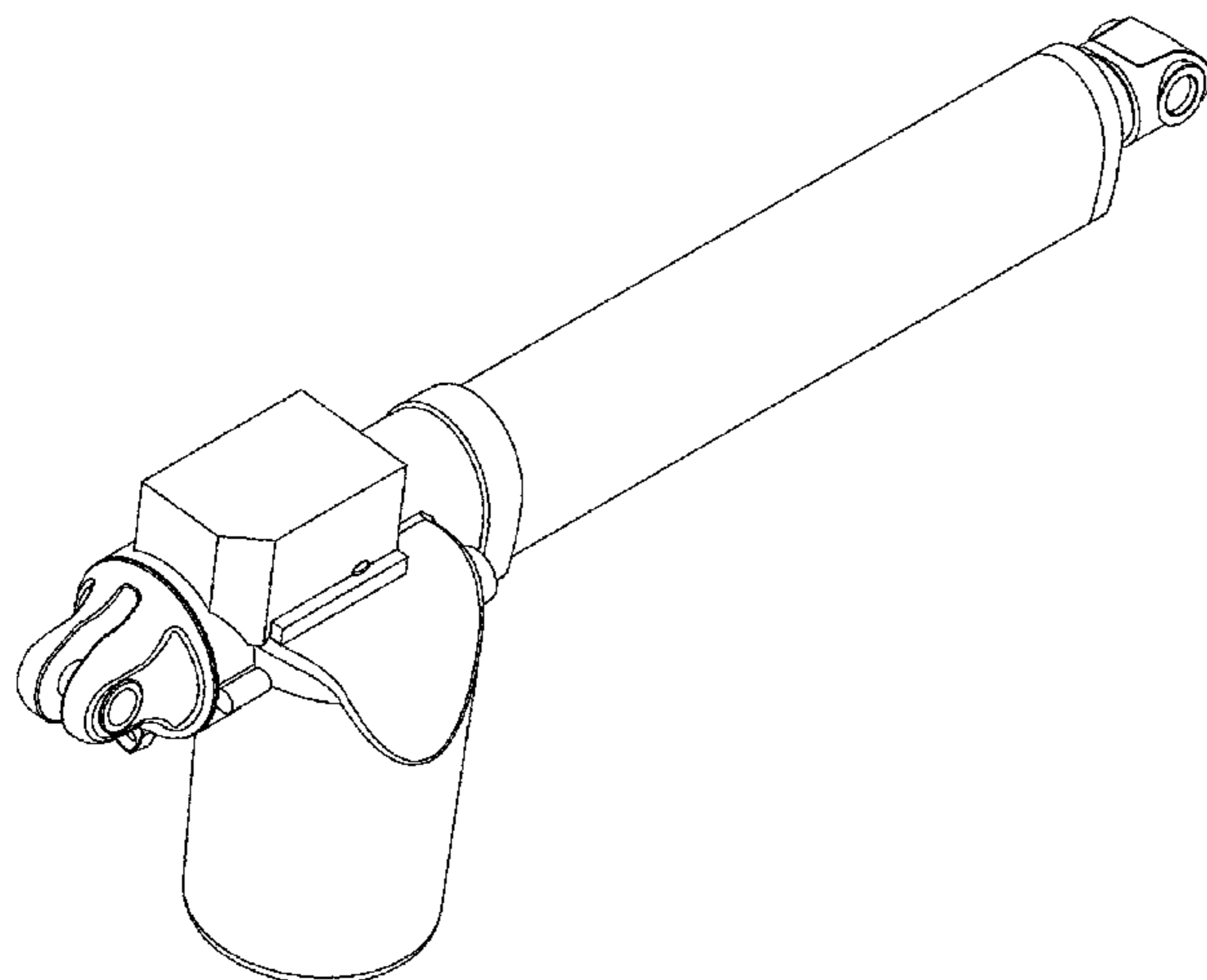
(57) **CLAIM**

The ornamental design for a linear actuator, as shown and described.

DESCRIPTION

FIG. 1 is a top, rear, and left side perspective view a linear actuator according to a first embodiment showing our new design;
 FIG. 2 is a bottom, rear, and right side perspective view thereof;
 FIG. 3 is a left side elevational view thereof;
 FIG. 4 is a right side elevational view thereof;
 FIG. 5 is a top view thereof;
 FIG. 6 is a bottom view thereof;
 FIG. 7 is a front end elevational view thereof; and
 FIG. 8 is a rear end elevational view thereof.
 FIG. 9 is a top, rear, and left side perspective view of a linear actuator according to a second embodiment showing our new design;
 FIG. 10 is a bottom, rear, and right side perspective view thereof;
 FIG. 11 is a left side elevational view thereof;
 FIG. 12 is a right side elevational view thereof;
 FIG. 13 is a top view thereof;
 FIG. 14 is a bottom view thereof;
 FIG. 15 is a front end elevational view thereof; and,
 FIG. 16 is a rear end elevational view thereof.

1 Claim, 16 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

D792,490 S * 7/2017 Lin D15/143
 D792,492 S * 7/2017 Lin D15/143
 D800,195 S * 10/2017 Lin D15/148
 D806,153 S * 12/2017 Skov D15/148
 D819,100 S * 5/2018 Lin D15/148
 D821,471 S * 6/2018 Zhuang D15/148
 10,153,678 B2 * 12/2018 Sorensen H02K 7/081
 D851,147 S * 6/2019 Knudsen D15/148
 D852,248 S * 6/2019 Zhuang D15/148
 D861,052 S * 9/2019 Zhuang D15/143
 D865,018 S * 10/2019 Zhou D15/148
 D865,019 S * 10/2019 Zhou D15/148
 10,432,062 B2 * 10/2019 Sorensen H02K 7/06
 10,436,301 B2 * 10/2019 Sorensen H02K 7/102
 10,516,318 B2 * 12/2019 Iversen H02K 11/21
 D919,683 S * 5/2021 Zhuang D15/148
 D923,068 S * 6/2021 Chen D15/143
 D923,677 S * 6/2021 Zhuang D15/143
 11,035,446 B2 * 6/2021 Mengel A61G 7/018
 D925,631 S * 7/2021 Knudsen D15/148
 D925,632 S * 7/2021 Knudsen D15/148
 11,060,592 B2 * 7/2021 Schewe F16H 25/20

OTHER PUBLICATIONS

Data Sheet for LINAK Actuator LA44 (2 pgs.), <https://web.archive.org/web/20170603063409/https://www.linak.com/products/linear-actuators/la44/>, with date of Jun. 3, 2017.

Product Brochure for TiMotion TA23 Series Linear Actuator (2 pgs.), with date of Dec. 6, 2018.

Product Brochure for TiMotion TA31 Series Linear Actuator (2 pgs.), with date of Dec. 21, 2017.

Installation Instructions for DewertOkin ALPHADRIVE 5 (4 pgs.), with date of Nov. 25, 2019.

* cited by examiner

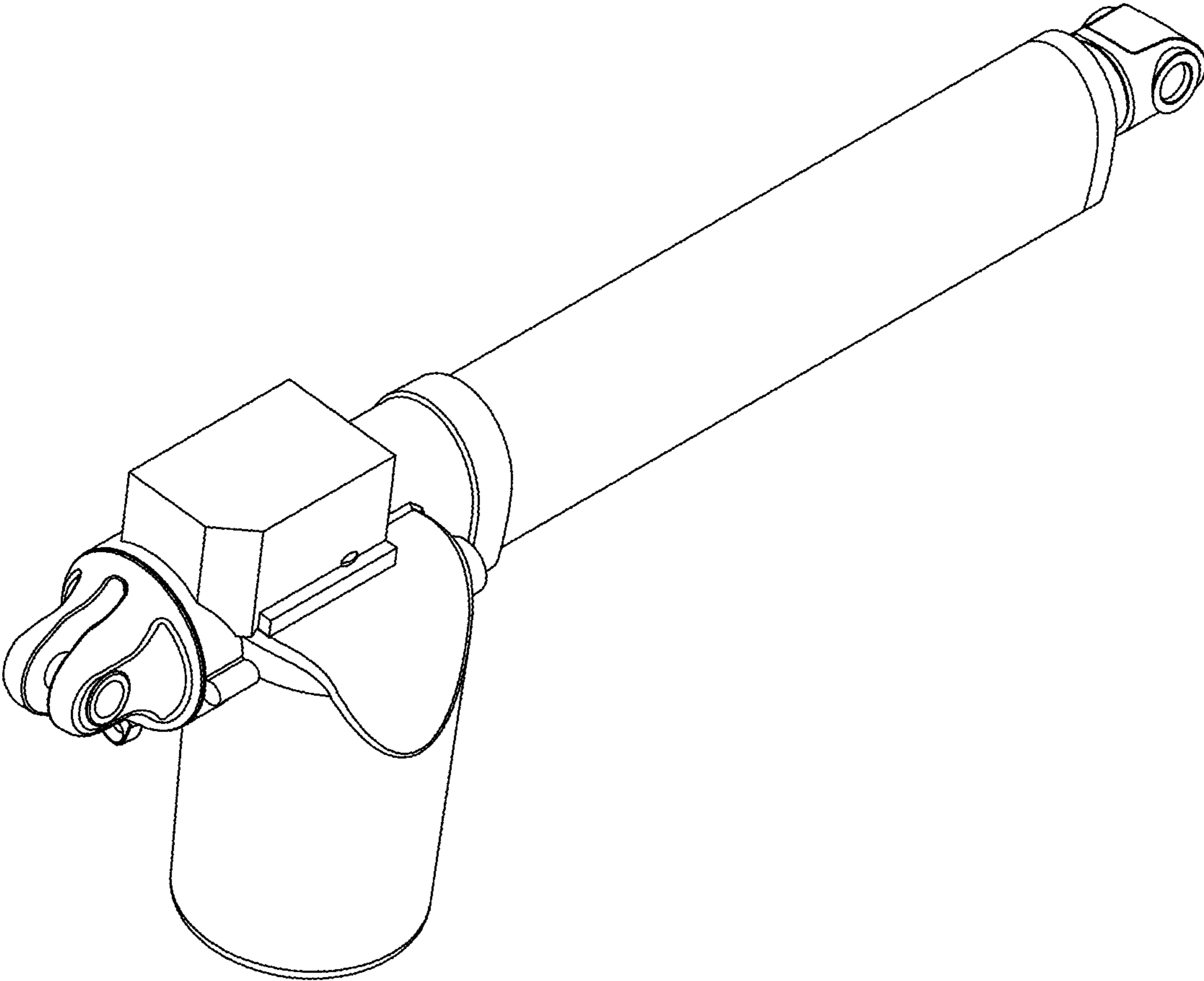


FIG. 1

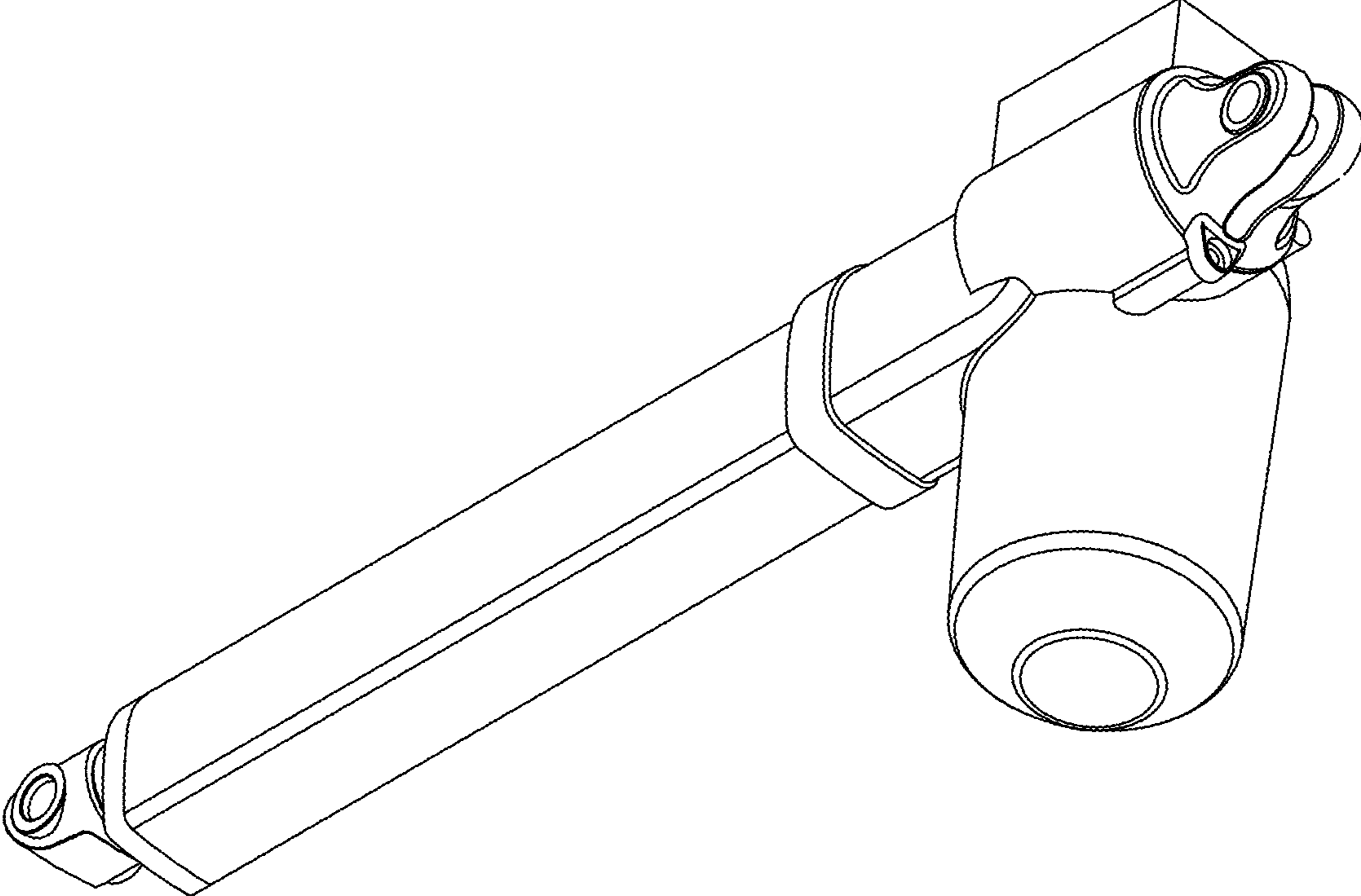


FIG. 2

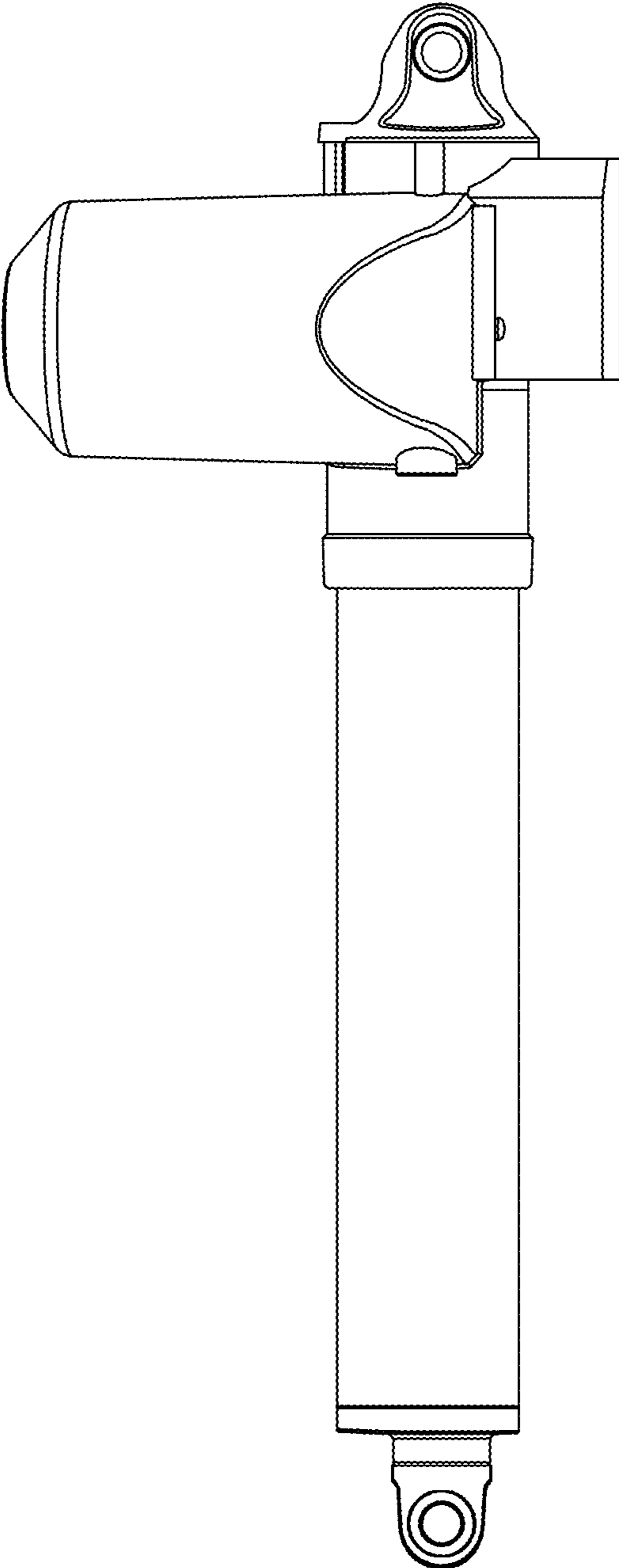


FIG. 3

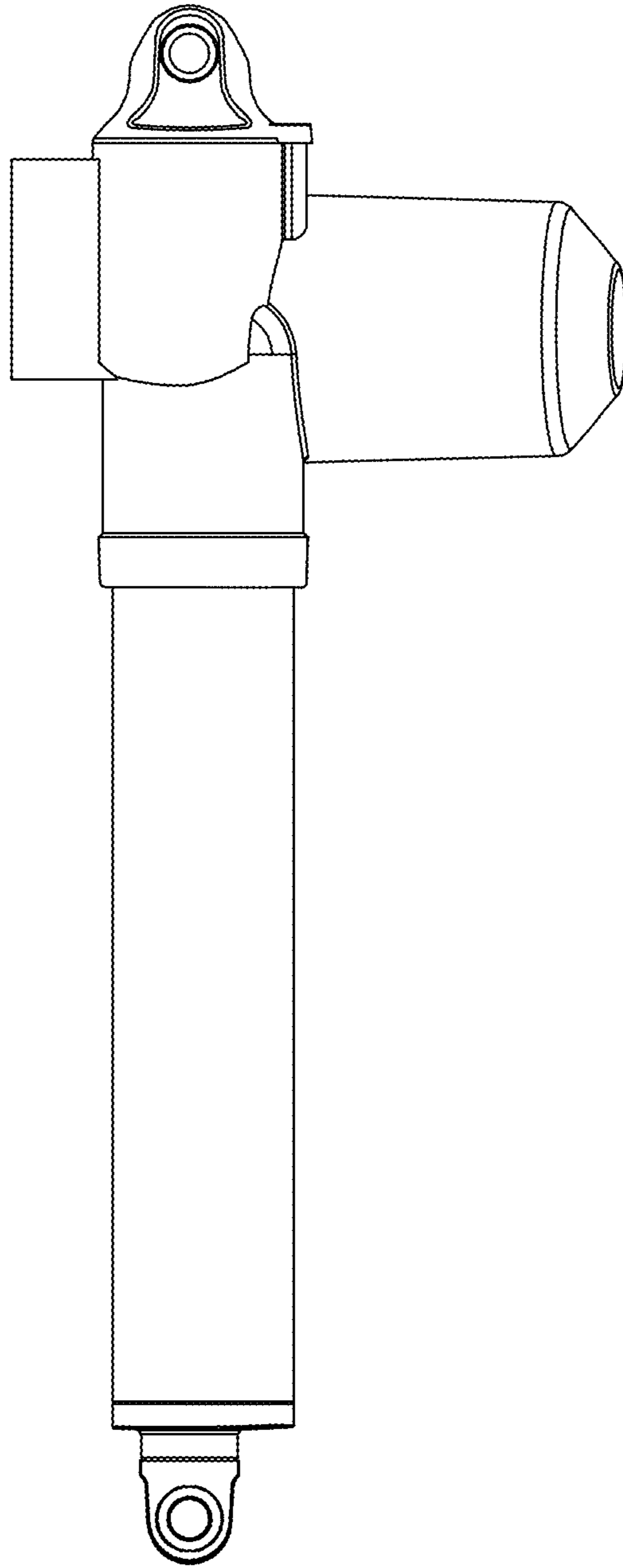


FIG. 4

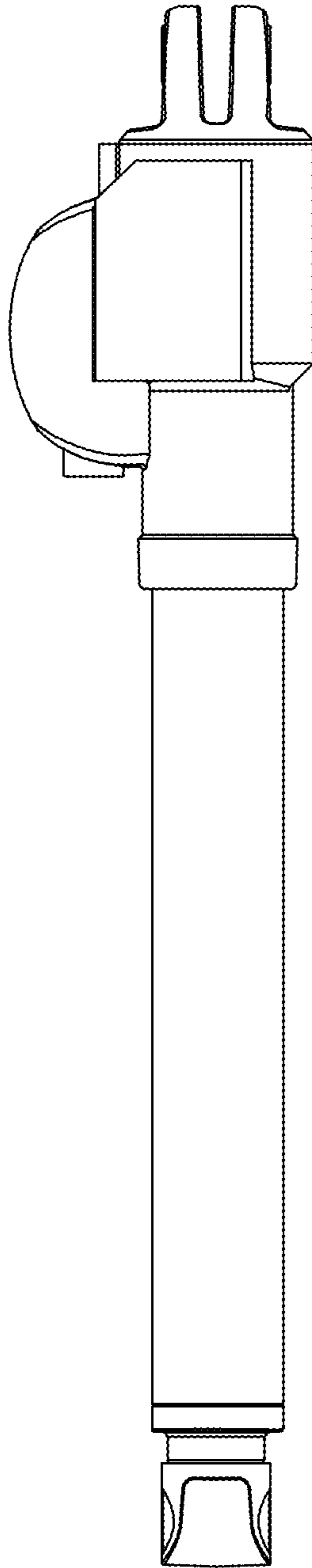


FIG. 5

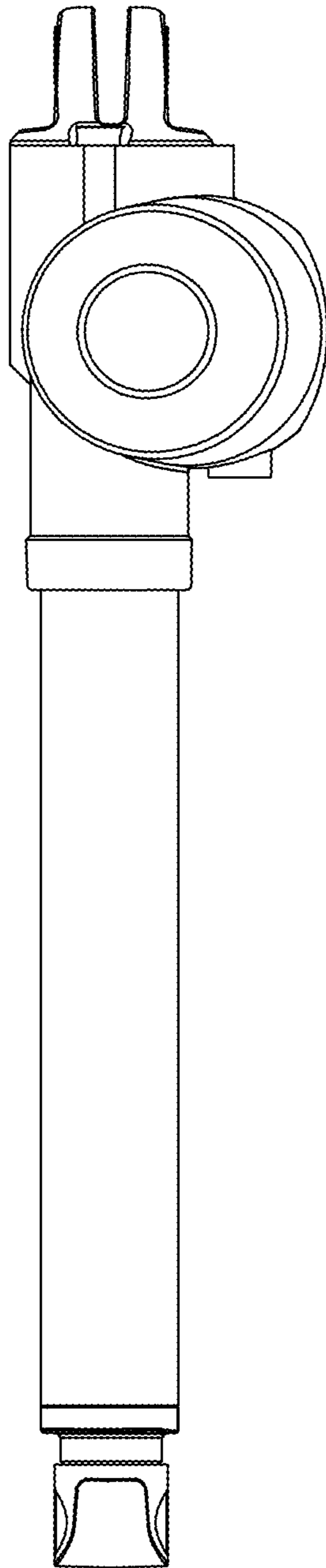


FIG. 6

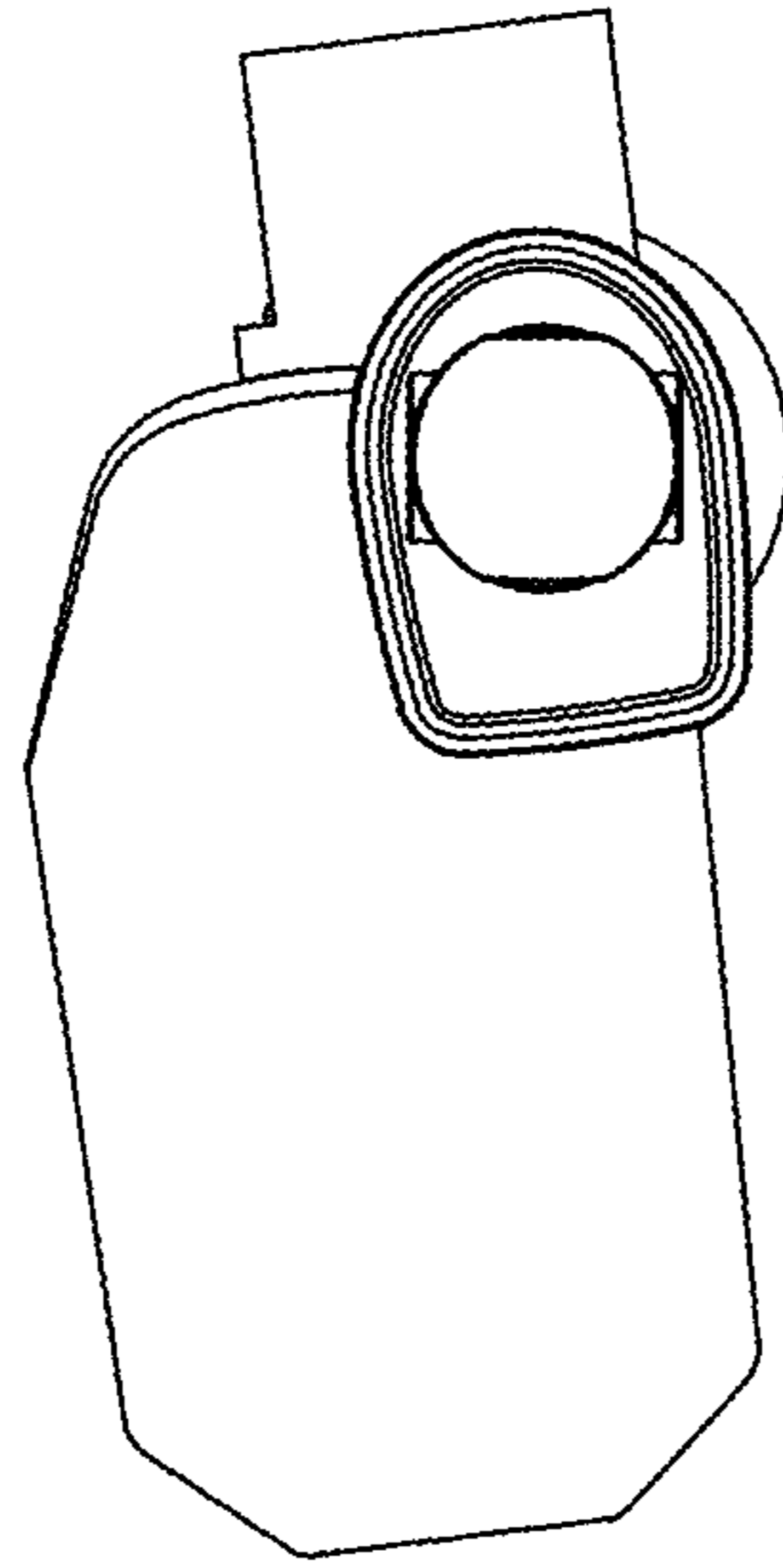


FIG. 7

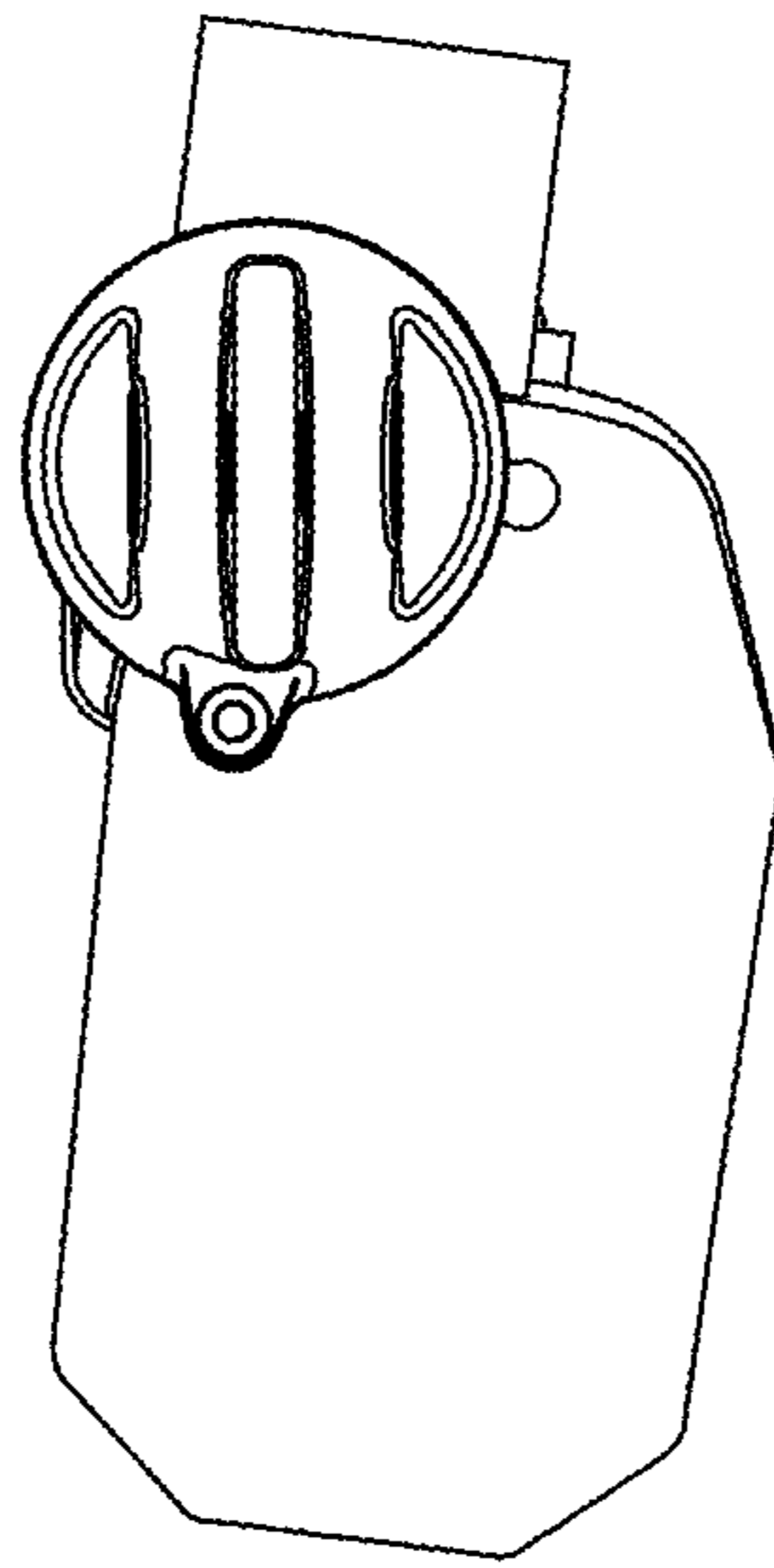


FIG. 8

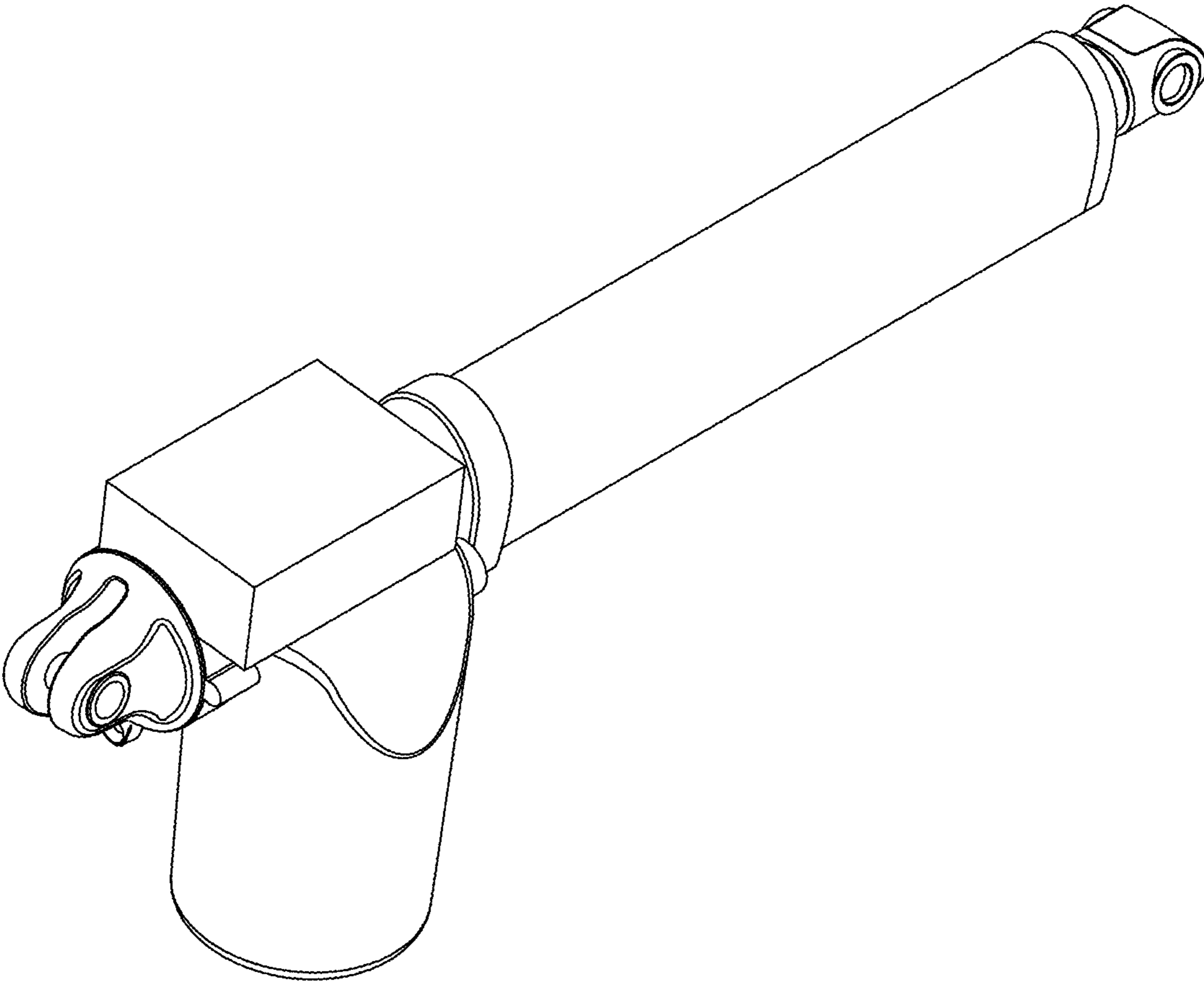


FIG. 9

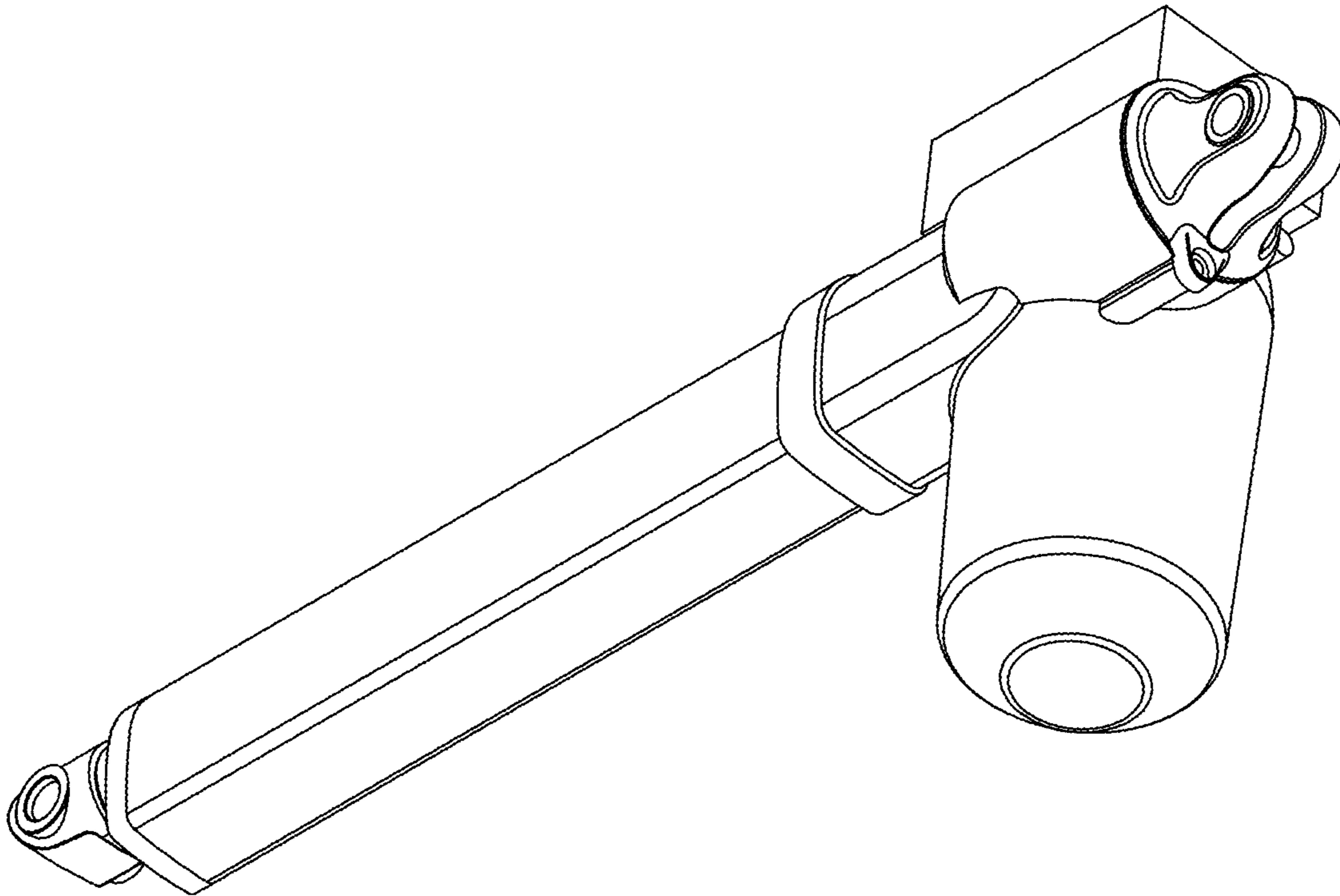


FIG. 10

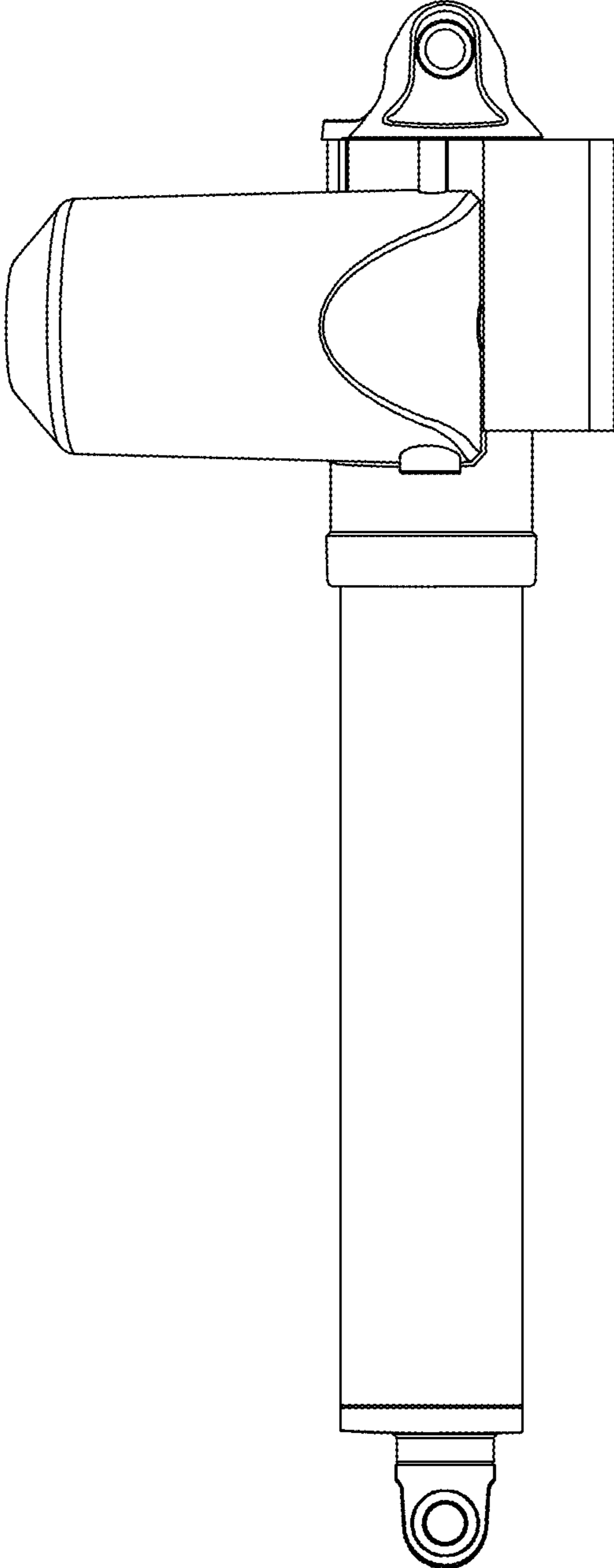


FIG. 11

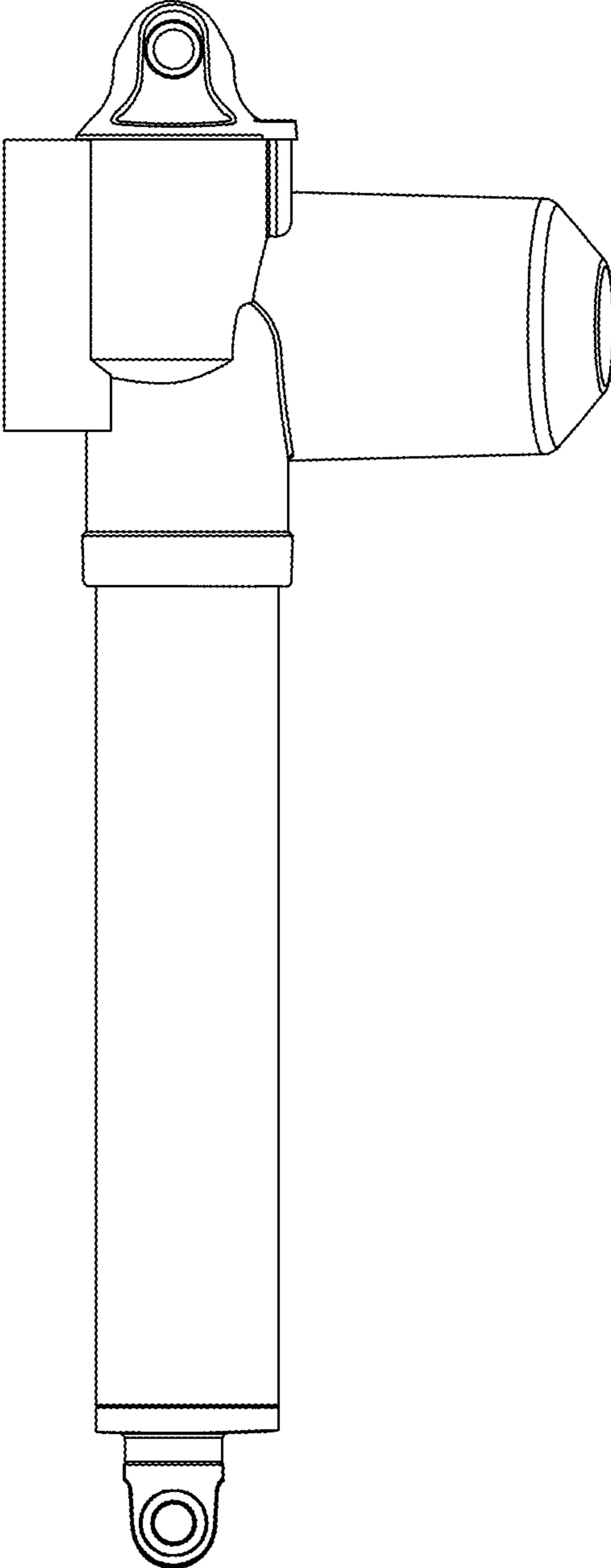


FIG. 12

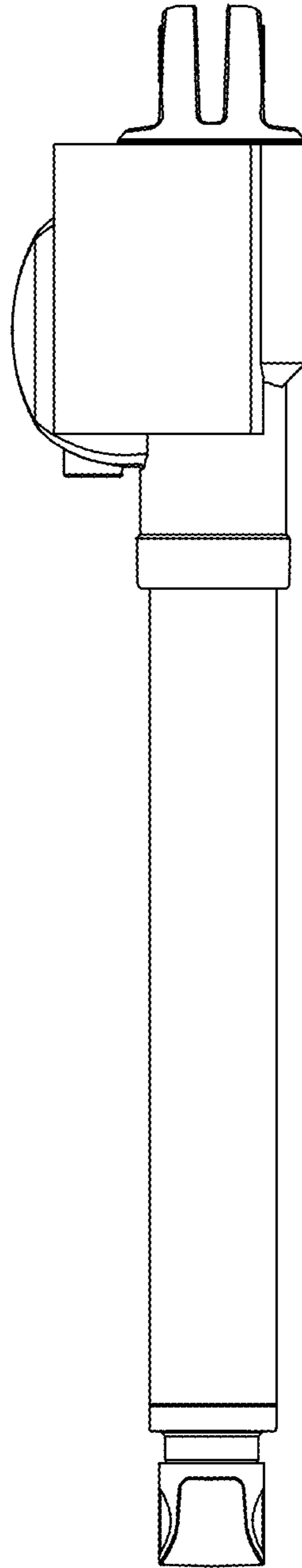


FIG. 13

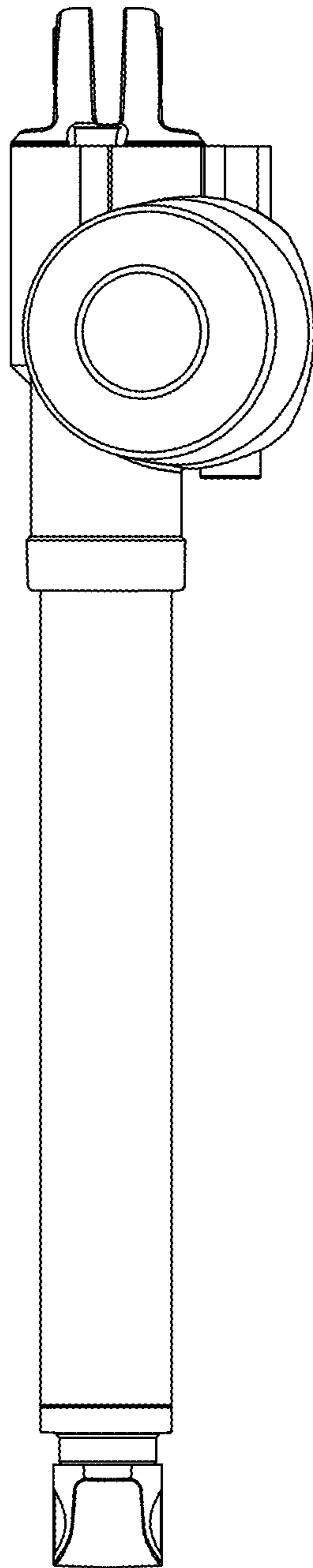


FIG. 14

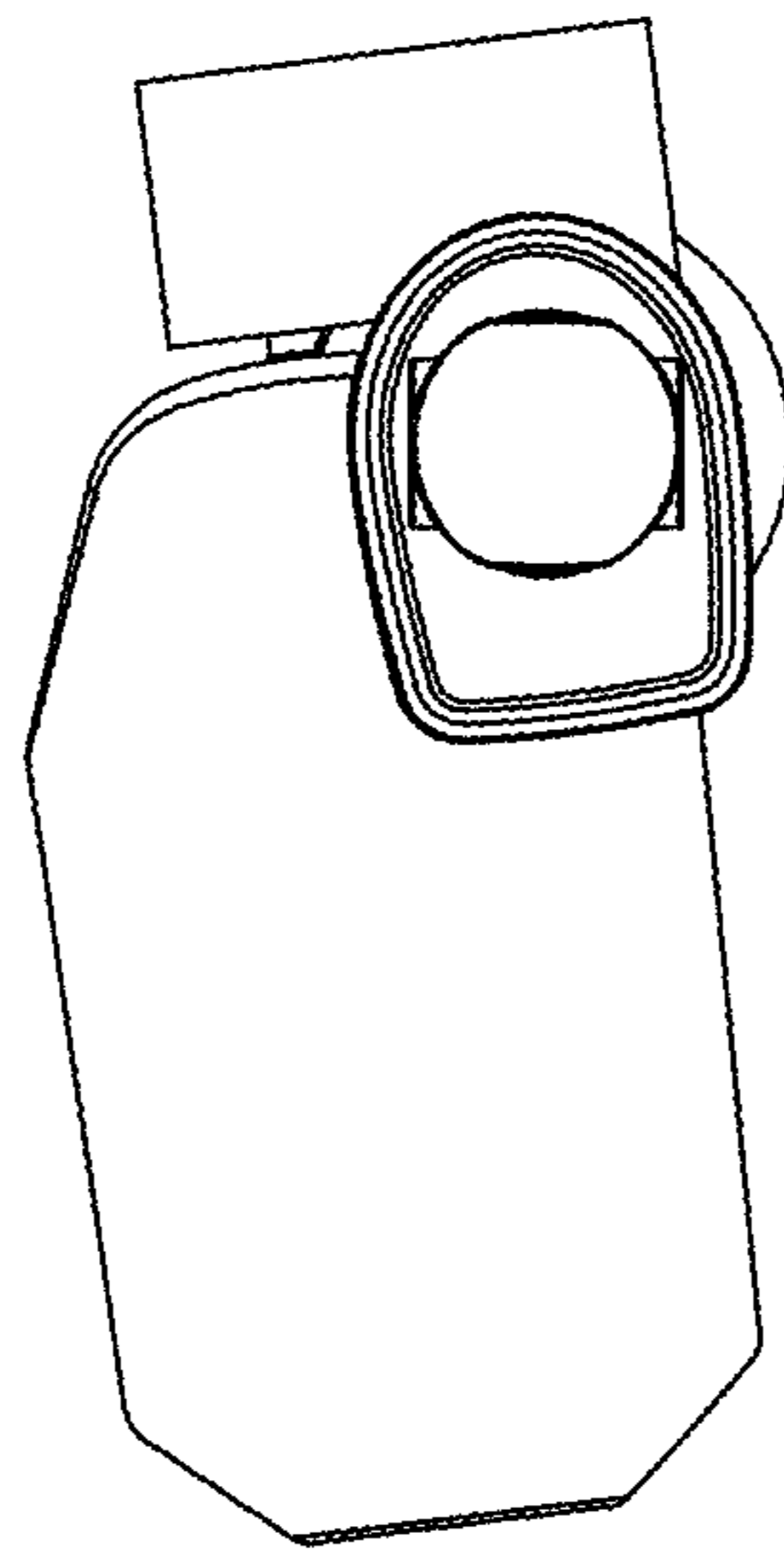


FIG. 15

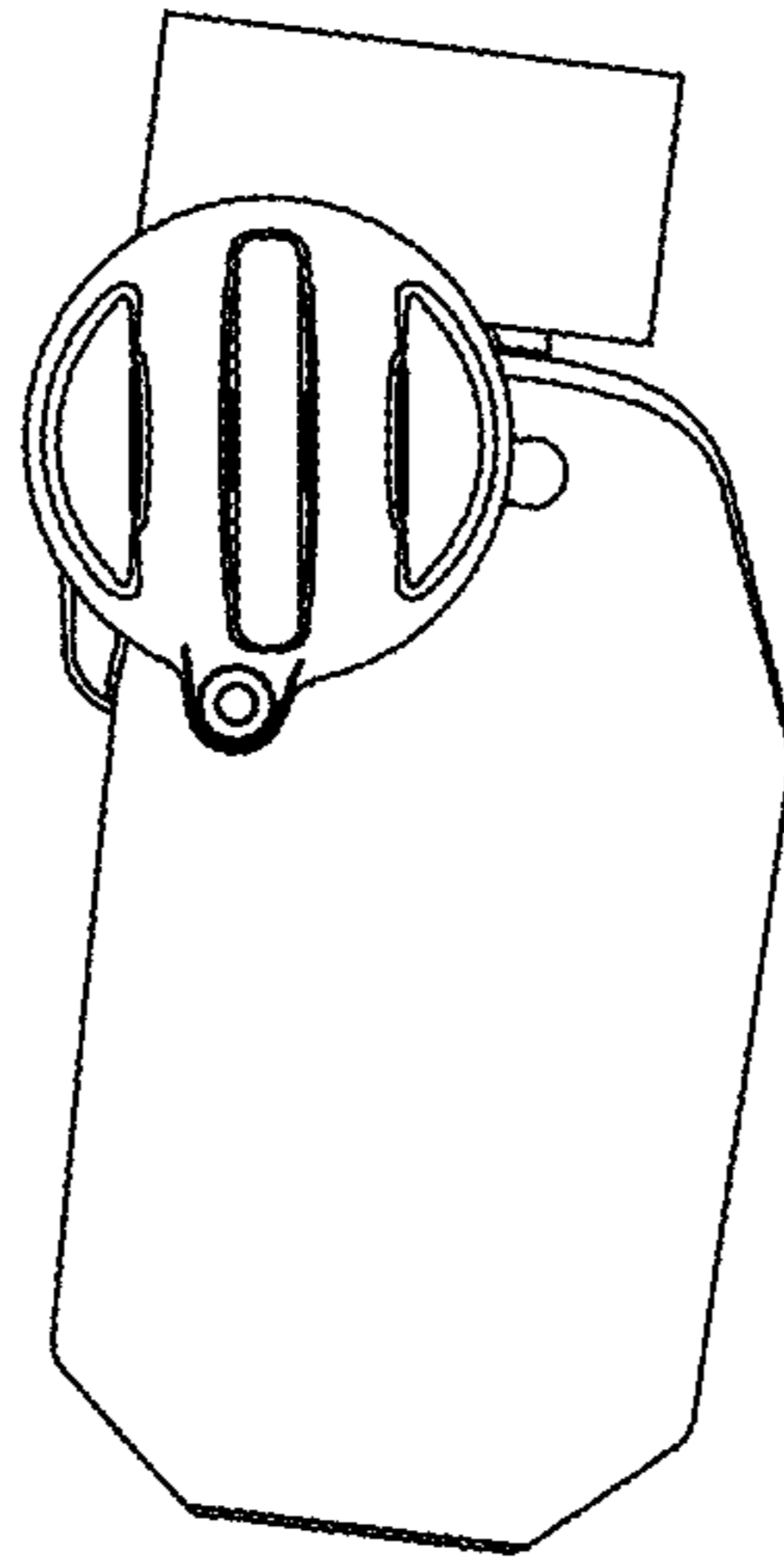


FIG. 16