



US00D870730S

(12) **United States Design Patent**
Wang

(10) **Patent No.:** **US D870,730 S**
(45) **Date of Patent:** **** Dec. 24, 2019**

(54) **OMNIDIRECTIONAL MOTION SIMULATOR**

(71) Applicant: **Hangzhou Virtual And Reality Technology Co., LTD.**, Hangzhou (CN)

(72) Inventor: **Bo Wang**, Hangzhou (CN)

(73) Assignee: **HANGZHOU VIRTUAL AND REALITY TECHNOLOGY CO., LTD.**, Hangzhou (CN)

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

(21) Appl. No.: **29/646,143**

(22) Filed: **May 2, 2018**

(30) **Foreign Application Priority Data**

Mar. 14, 2018 (CN) 2018 3 0093797

(51) **LOC (12) Cl.** **14-02**

(52) **U.S. Cl.**
USPC **D14/388**; D21/324; D21/669; D21/828;
D14/356

(58) **Field of Classification Search**

USPC D14/419, 356, 388, 389, 399, 400, 402,
D14/408, 432, 433, 439, 454, 299, 218,
D14/496, 511; D21/324, 333, 669, 671,
D21/686-691, 694, 811, 828; D13/164;
D25/62, 66; D34/28; D10/87, 88, 91,
D10/92, 93; D19/59, 60

CPC A63B 2024/0096; A63B 2069/0037; A63B
2225/093; A63B 2225/50; A63B 2210/50;
A63B 2220/10; A63B 2220/12; A63B
2220/40; A63B 2220/805; A63B
2071/0638; A63B 2208/12; A63B
21/0023; A63F 2300/8082; G06F
2203/012; G06F

(Continued)

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,604,722 A * 9/1971 Boley A63G 1/00
280/87.01

D275,413 S * 9/1984 Shroads D21/792

(Continued)

FOREIGN PATENT DOCUMENTS

WO WO-2010089618 A2 * 8/2010 A63B 69/0035

OTHER PUBLICATIONS

VR Treadmills. (Design—© Questel) orbit.com. [online PDF] 17 pgs. Print Dates Range Jul. 1, 2015 through Jul. 2, 2019. [Retrieved on Sep. 10, 2019] <https://sobjprd.questel.fr/export/QPTUJ214/pdf2/b50f869b-0ef6-45e3-9b4c-fe425d4f97cd-223842.pdf>.*

(Continued)

Primary Examiner — Marie D. Fast Horse

(74) *Attorney, Agent, or Firm* — Gokalp Bayramoglu

(57) **CLAIM**

The ornamental design for an omnidirectional motion simulator, as shown and described.

DESCRIPTION

The patent or application file contains at least one drawing executed in color. Copies of this patent or patent application publication with color drawing(s) will be provided by the Office upon request and payment of the necessary fee.

FIG. 1 is a perspective view of an omnidirectional motion simulator showing the new design;

FIG. 2 is another perspective view thereof;

FIG. 3 is a front view thereof;

FIG. 4 is a rear view thereof;

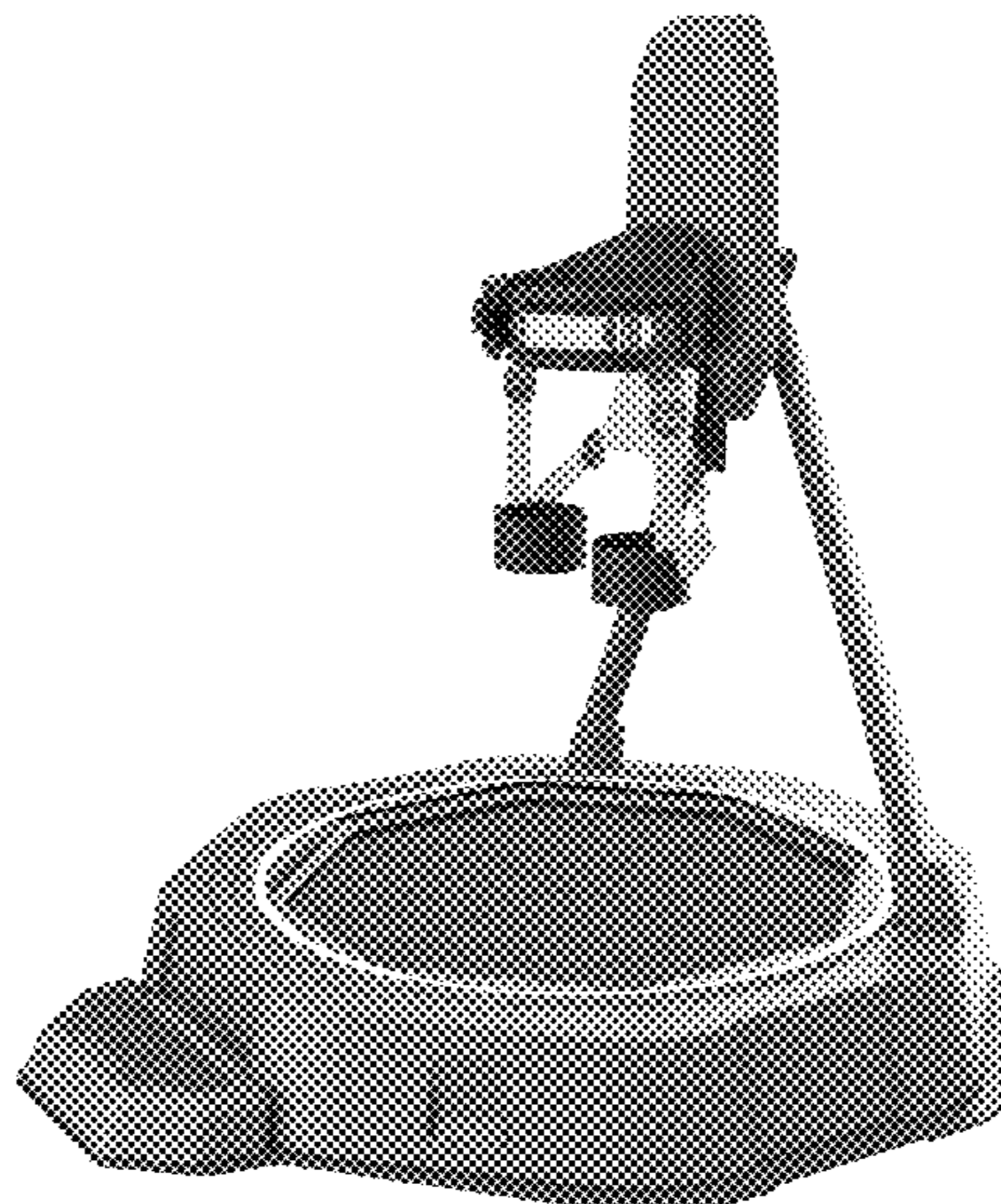
FIG. 5 is a left side view thereof;

FIG. 6 is a right side view thereof;

FIG. 7 is a top view thereof; and,

FIG. 8 is a bottom view thereof.

1 Claim, 8 Drawing Sheets
(8 of 8 Drawing Sheet(s) Filed in Color)



- (58) **Field of Classification Search**
 CPC 3/011; G06F 3/016; G06F 3/0334; G06F
 3/0383; A61G 7/1038; A61G 7/1046;
 A61G 7/1076
 See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,149,043 A * 9/1992 Grundmann A47B 11/00
 108/139
 D345,473 S * 3/1994 Grundmann D15/140
 D351,026 S * 9/1994 Madera D24/183
 D355,660 S * 2/1995 Holmes D14/299
 D358,436 S * 5/1995 Piaget D21/669
 D362,479 S * 9/1995 Destasio, Jr. D21/688
 D363,067 S * 10/1995 Holmes D14/356
 D363,325 S * 10/1995 Wilkinson D21/797
 5,562,572 A * 10/1996 Carnein A61H 3/00
 482/4
 D380,508 S * 7/1997 Chang D21/688
 5,846,134 A * 12/1998 Latypov A63B 19/04
 463/46
 5,879,276 A * 3/1999 Miller A63B 22/14
 482/131
 D422,325 S * 4/2000 Broudy D21/689
 6,152,854 A * 11/2000 Carnein A63B 22/025
 482/4
 6,176,817 B1 * 1/2001 Carey A63B 22/18
 482/146
 D437,619 S * 2/2001 Nishimura D21/333
 D444,573 S * 7/2001 Owens D25/62
 D479,860 S * 9/2003 Lim D14/217
 6,692,419 B2 * 2/2004 Chen A63B 22/18
 482/146
 D517,437 S * 3/2006 Barmes D10/91
 D519,569 S * 4/2006 Kiyono D21/333
 D538,358 S * 3/2007 Glier D21/662
 D563,813 S * 3/2008 Tomita D10/92
 D591,804 S * 5/2009 Tsuchida D21/662
 D595,171 S * 6/2009 Robinson D10/91
 D614,056 S * 4/2010 Ulrich D10/92
 D615,436 S * 5/2010 Einfalt D10/92
 D640,335 S * 6/2011 Aboody D21/662
 8,016,732 B2 * 9/2011 Susnjara A63B 21/0004
 482/142
 D651,258 S * 12/2011 Rivard D21/333
 D660,928 S * 5/2012 Guarrasi D21/686
 D662,949 S * 7/2012 Otero D14/203.1
 8,512,142 B2 * 8/2013 Meldeau A63B 23/0458
 463/36
 D694,349 S * 11/2013 Chen D21/686
 D699,137 S * 2/2014 Wurts D10/91
 D713,466 S * 9/2014 Otero D21/324
 D738,444 S * 9/2015 Hilson D21/662

D742,972 S * 11/2015 Corrigan D21/324
 9,358,422 B2 * 6/2016 Brontman A63B 22/0023
 D766,239 S * 9/2016 Goetgeluk D14/356
 D787,516 S * 5/2017 Goetgeluk D14/356
 D789,368 S * 6/2017 Goetgeluk G06F 3/011
 D14/388
 D807,445 S * 1/2018 Gettle D21/686
 D840,400 S * 2/2019 Wang D14/388
 2004/0242390 A1 * 12/2004 Williams A63B 23/0464
 482/146
 2005/0156878 A1 * 7/2005 Logue G06F 3/011
 345/156
 2006/0139317 A1 * 6/2006 Leu G06F 3/011
 345/156
 2007/0109259 A1 * 5/2007 Liu G06F 3/011
 345/156
 2008/0280740 A1 * 11/2008 Knecht A61B 3/113
 482/146
 2008/0284725 A1 * 11/2008 Logue G06F 3/011
 345/156
 2009/0111670 A1 * 4/2009 Williams A63B 23/0464
 482/146
 2010/0103093 A1 * 4/2010 Izumi G06F 3/0334
 345/156
 2011/0009241 A1 * 1/2011 Lane A63B 24/0087
 482/8
 2011/0105288 A1 * 5/2011 Susnjara A63B 21/0004
 482/142
 2013/0237378 A1 * 9/2013 Carrell A63C 17/061
 482/51
 2014/0111424 A1 * 4/2014 Goetgeluk G06F 3/011
 345/156
 2015/0092015 A1 * 4/2015 Stafford G02B 27/017
 348/46
 2015/0190713 A1 * 7/2015 Goetgeluk A63F 13/40
 345/156
 2016/0035228 A1 * 2/2016 Cakmak F41G 3/26
 434/247
 2016/0328028 A1 * 11/2016 Khojasteh G06F 3/0334
 2018/0157318 A1 * 6/2018 Wang A63B 71/0054

OTHER PUBLICATIONS

virtuix-omni-treadmill-controller.jpg. gajitz.com. [online] 1 page
 Uploaded Mar. 4, 2013 [retrieved on Feb. 11, 2016]. <http://gajitz.com/virtual-reality-gets-realer-motion-based-treadmill-control/>.
 Omni treadmill concept. mtbs3d.com [online] 4 pages Posted May
 29, 2013 [retrieved on Feb. 11, 2016] <http://www.mtbs3d.com/phpbb/viewtopic.php?f=138&t=17696>.
 Kat Walk Mini-Kat VR. [online] 1 pg. uploaded Mar. 11, 2018
 [Retrieved on Sep. 10, 2019] <https://katvr.com/wp-content/uploads/2018/03/11.jpg>.

* cited by examiner

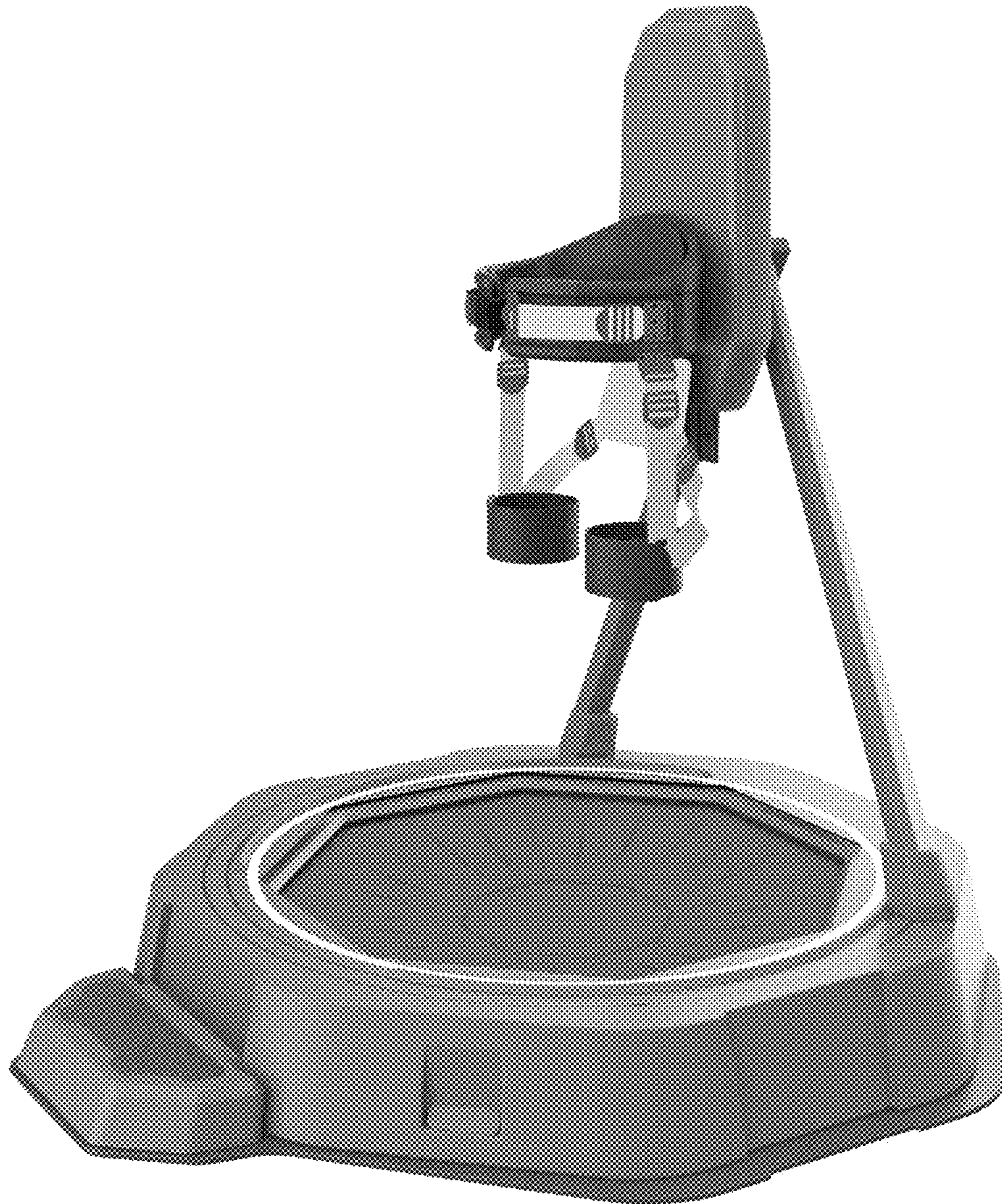


FIG. 1



FIG. 2

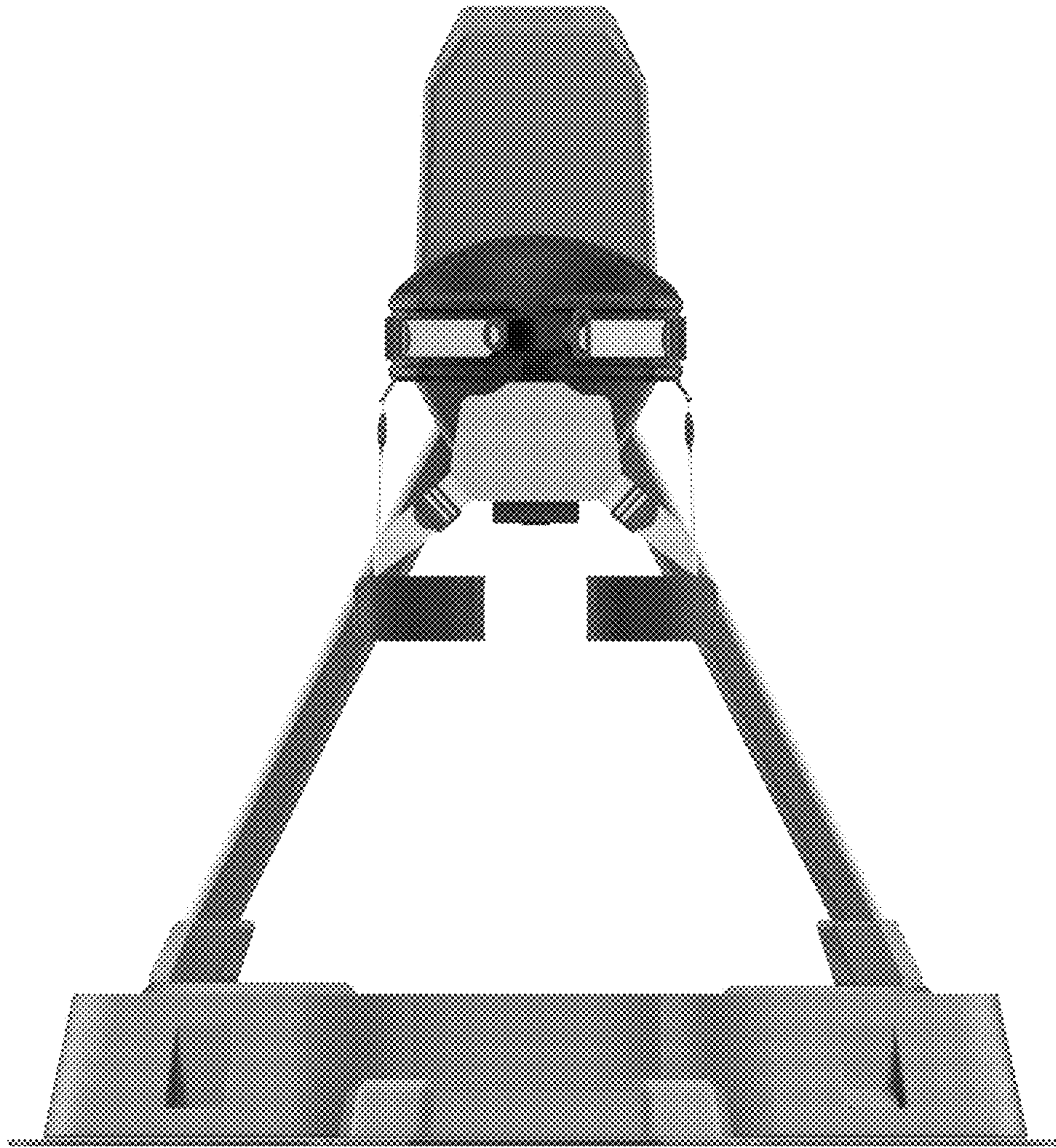


FIG. 3

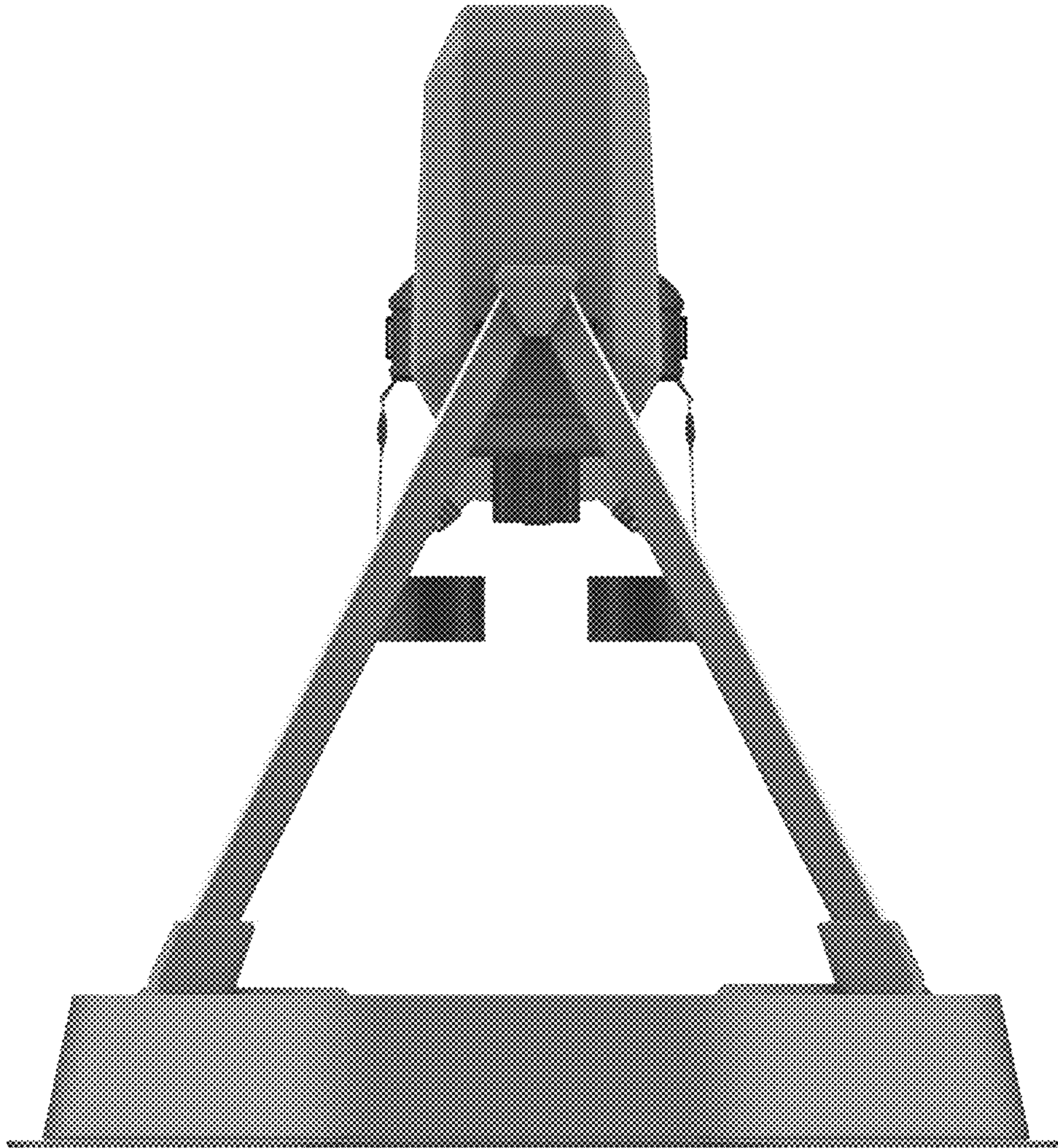


FIG. 4

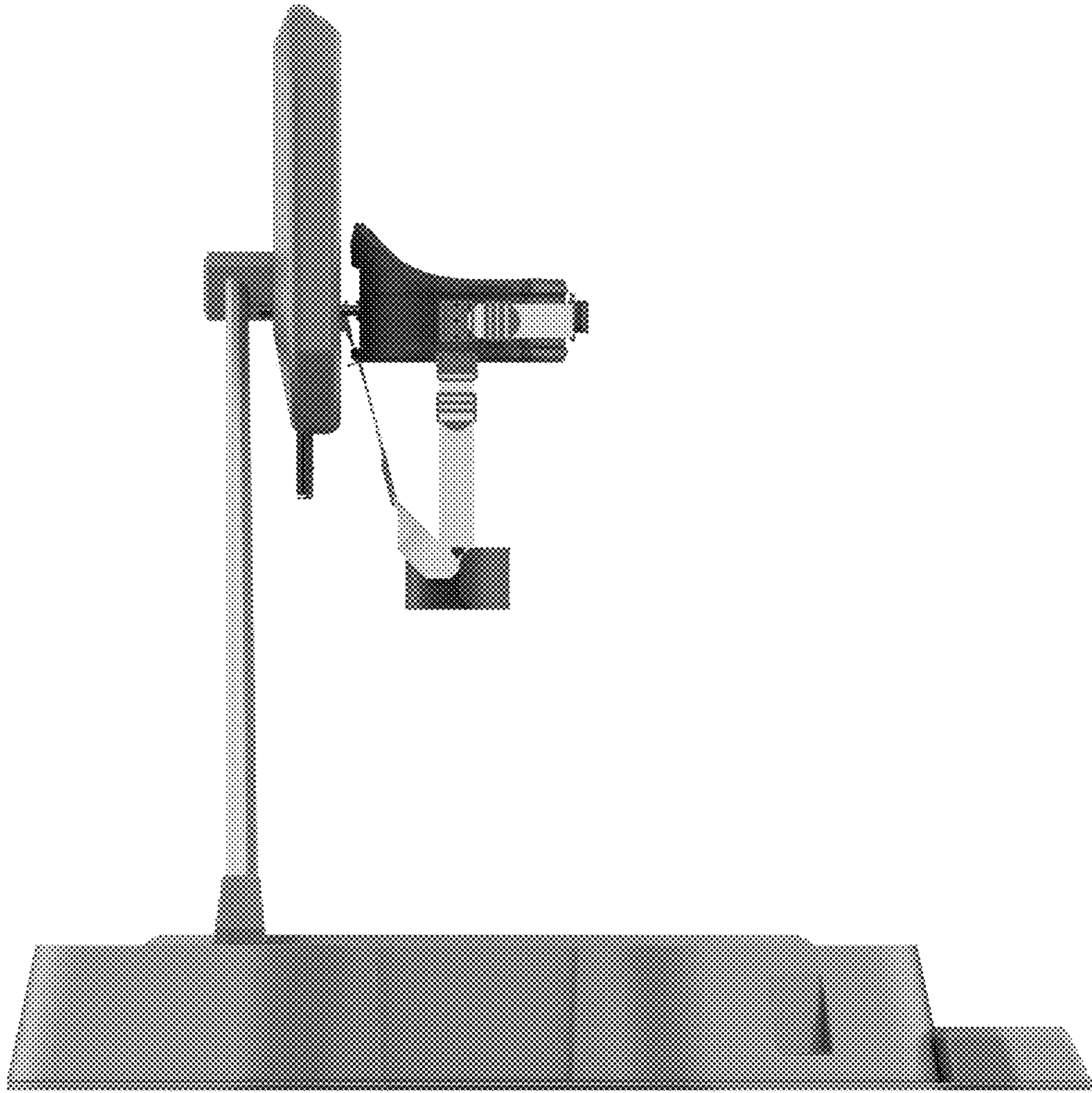


FIG. 5

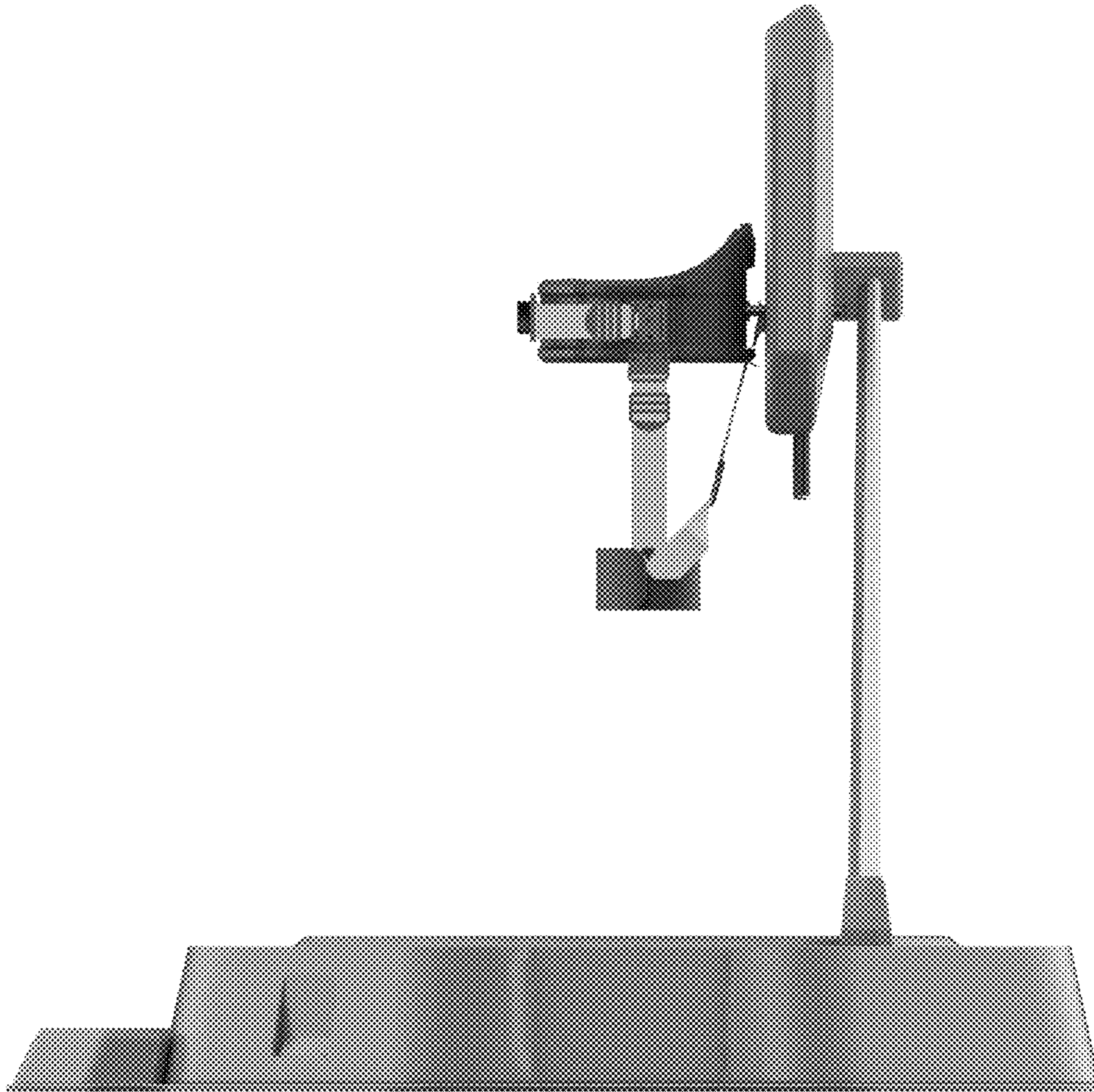


FIG. 6

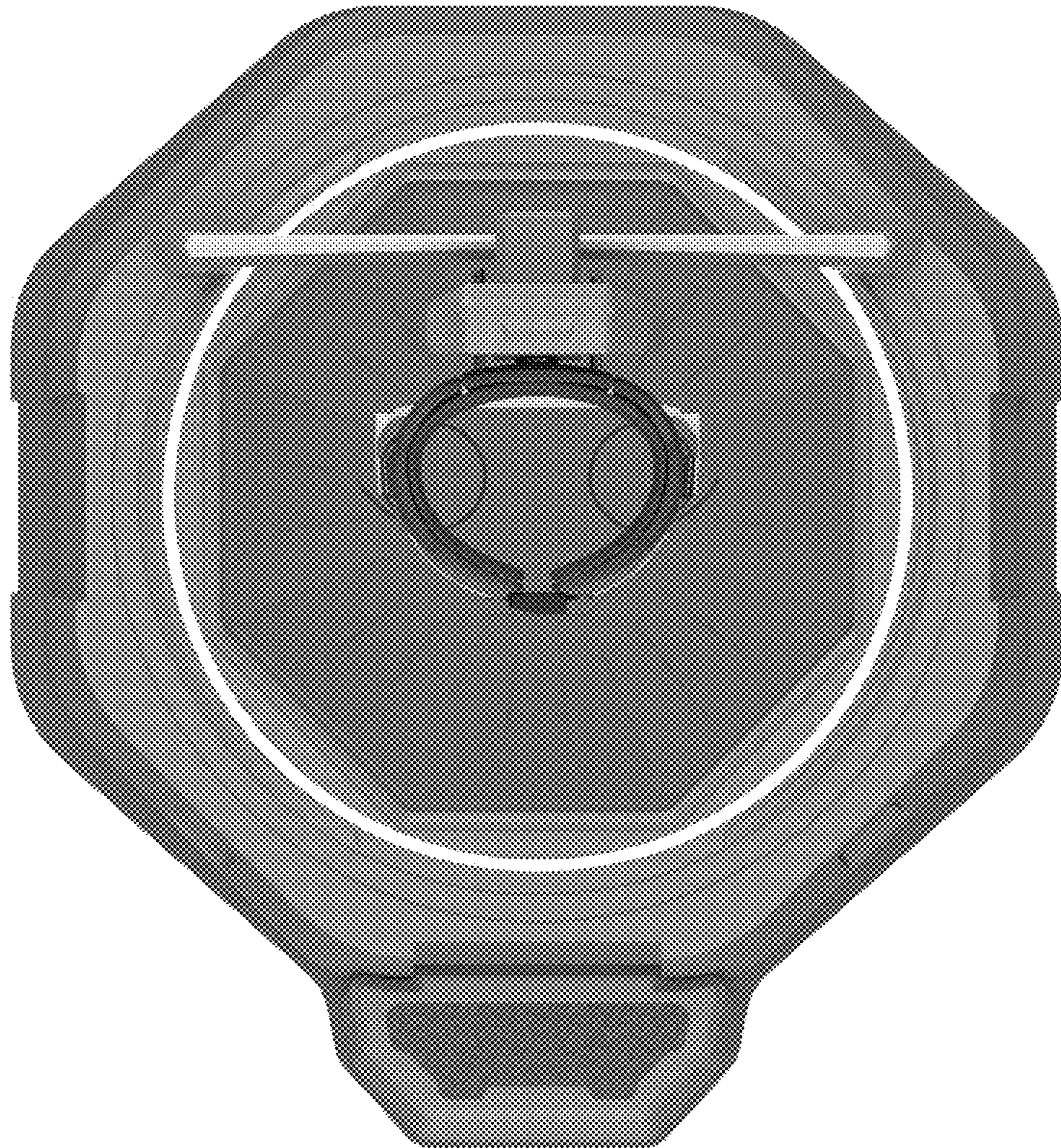


FIG. 7

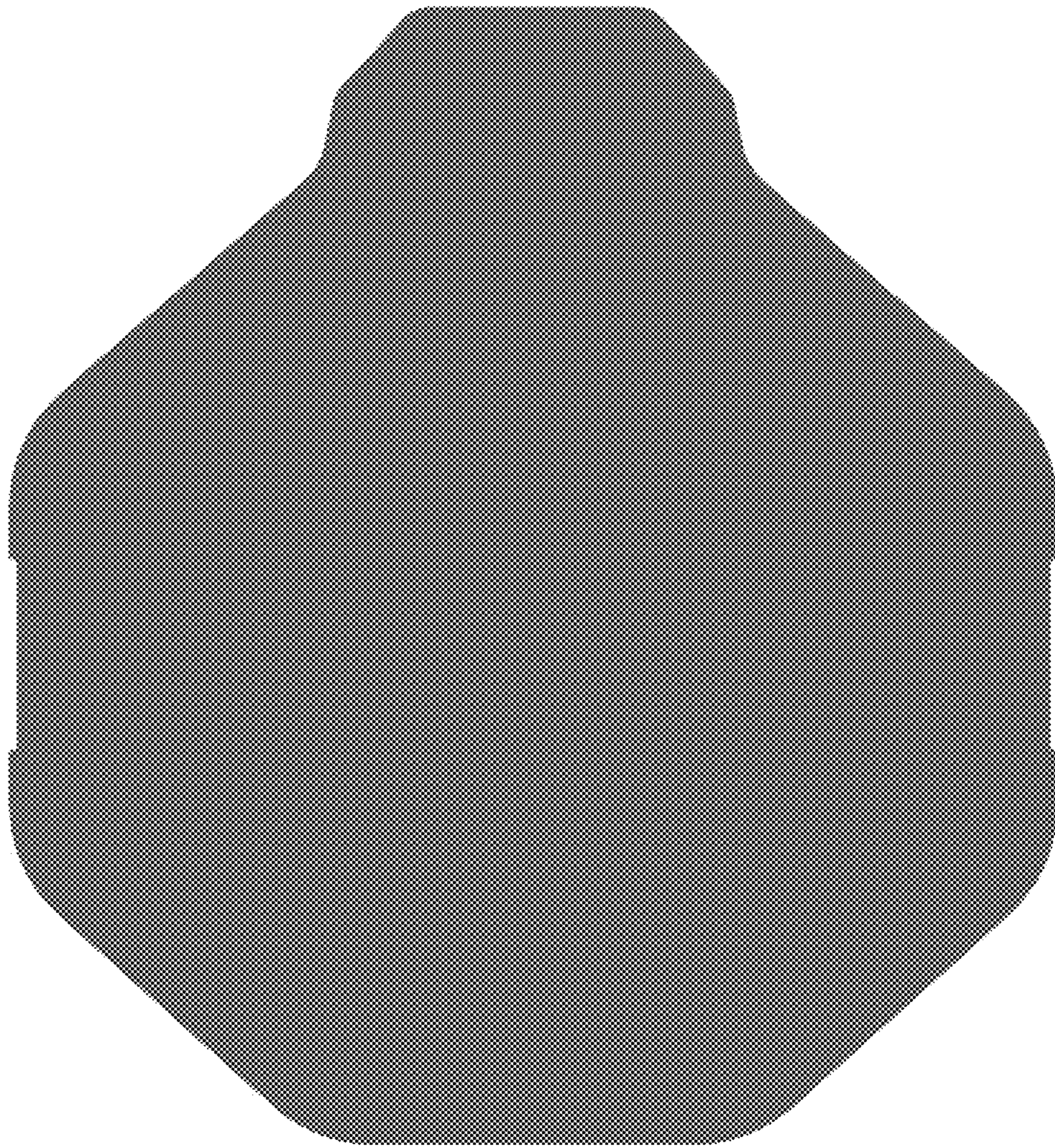


FIG. 8