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(12) **United States Design Patent** (10) **Patent No.:** **US D959,379 S**
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(54) **COUPLER**
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(73) Assignee: **Shanghai Microport Medbot (Group) Co., Ltd.**, Shanghai (CN)

D794,190 S * 8/2017 Russell D24/140
D863,936 S * 10/2019 Pratt D8/349
D893,713 S * 8/2020 Stengele D24/133
D896,625 S 9/2020 Lah
D920,772 S * 6/2021 McClung D8/394
D932,291 S * 10/2021 Grondal D8/382
2003/0108384 A1* 6/2003 Huang F16D 1/101
403/383
2003/0170074 A1* 9/2003 Mills F16B 19/109
403/324
2006/0111209 A1* 5/2006 Hinman A61B 17/28
474/206
2007/0213691 A1* 9/2007 Summerer H01R 13/627
606/1

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

(Continued)

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FOREIGN PATENT DOCUMENTS

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(51) **LOC (13) Cl.** **13-03**

CN 305854057 * 6/2020
CN 305854132 * 6/2020

(52) **U.S. Cl.** **D13/133; D24/231**
USPC **D13/133; D24/231**

(Continued)

(58) **Field of Classification Search**
USPC D8/382, 354; D24/133, 231, 140;
D13/133, 154, 118, 120
CPC F16D 1/06; F16D 1/02; A61B 2017/2905;
A61B 2017/00477; A61B 2017/00314
See application file for complete search history.

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(57) **CLAIM**

The ornamental design for a coupler, as shown.

(56) **References Cited**

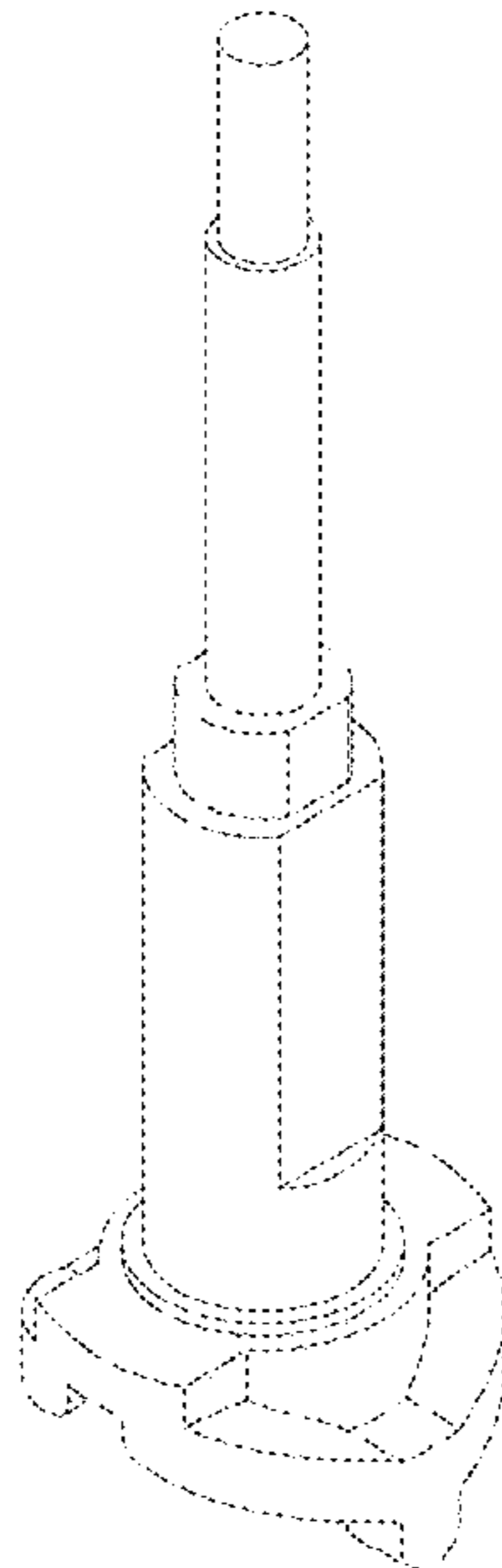
DESCRIPTION

U.S. PATENT DOCUMENTS

587,855 A * 8/1897 Park F16D 1/06
403/342
2,374,244 A * 4/1945 Standish F16D 1/06
12/91
D286,597 S * 11/1986 Hughes D8/382
D369,958 S * 5/1996 Huang D8/382
D462,768 S * 9/2002 Meyer D24/155
D558,037 S 12/2007 Chelchowski
D610,681 S * 2/2010 Frey D24/140
D624,181 S * 9/2010 Harata D24/129
D687,701 S 8/2013 Rast
D756,760 S * 5/2016 Fay, II D8/382

FIG. 1 is a top, front, and right side perspective view of a coupler showing our new design;
FIG. 2 is a bottom, front, and left side perspective view thereof;
FIG. 3 is a front elevation view thereof;
FIG. 4 is a rear elevation view thereof;
FIG. 5 is a left side elevation view thereof;
FIG. 6 is a right side elevation view thereof;
FIG. 7 is a top plan view thereof; and,
FIG. 8 is a bottom plan view thereof.

1 Claim, 8 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

2009/0256318 A1* 10/2009 Stolz F16D 1/06
279/28
2010/0183364 A1* 7/2010 Harif B23B 31/4073
403/295
2014/0142384 A1* 5/2014 Chung A61B 1/128
600/117
2015/0110522 A1* 4/2015 Ikeda F16D 1/112
399/111
2017/0016484 A1* 1/2017 Sugiyama F16D 3/223
2017/0175818 A1* 6/2017 Kulkarni F16D 1/06
2018/0023629 A1* 1/2018 Sugiyama F16D 3/227
464/143
2018/0348695 A1* 12/2018 Ueno F16D 1/108
2019/0331168 A1* 10/2019 Kim F16D 1/06
2019/0363608 A1* 11/2019 Haun F04D 29/38
2020/0011381 A1* 1/2020 Cymbal F16D 1/112
2020/0023443 A1 1/2020 Abd El Haq
2020/0217371 A1* 7/2020 Zhu F16B 21/18
2021/0044196 A1* 2/2021 Meyer B64C 13/24
2021/0164522 A1* 6/2021 Wang F16D 1/06
2021/0222737 A1* 7/2021 Sugiyama F16D 1/06
2022/0031351 A1 2/2022 Moubarak

FOREIGN PATENT DOCUMENTS

CN 306853097 S 9/2021
GB 6179730 12/2021

* cited by examiner

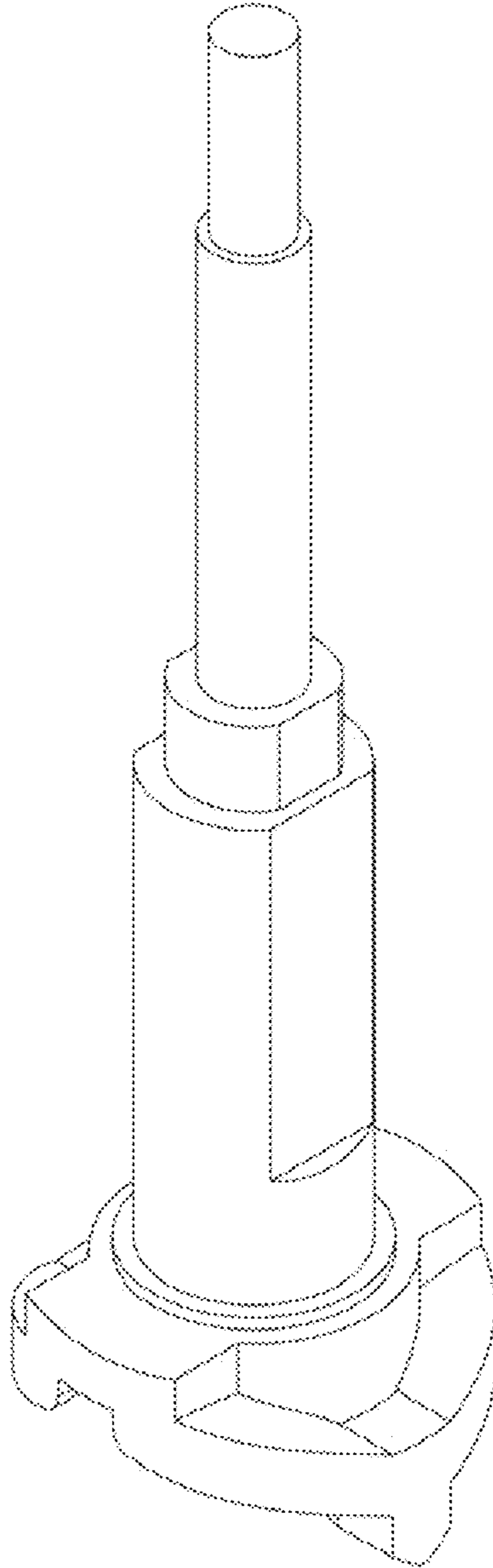


FIG. 1

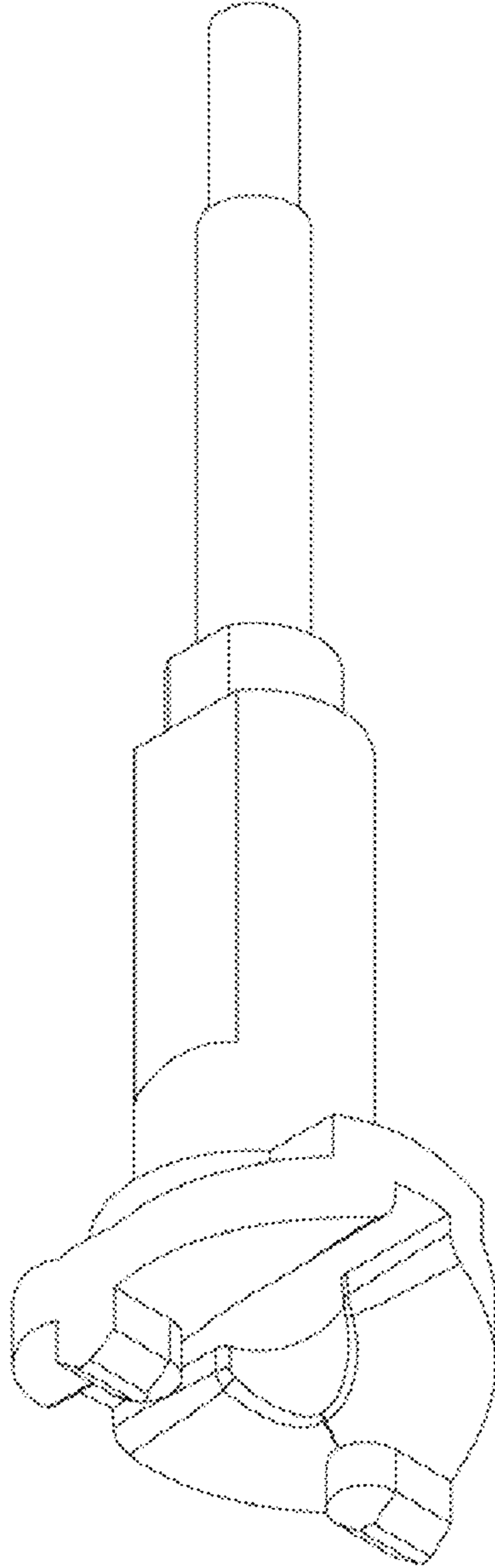


FIG. 2

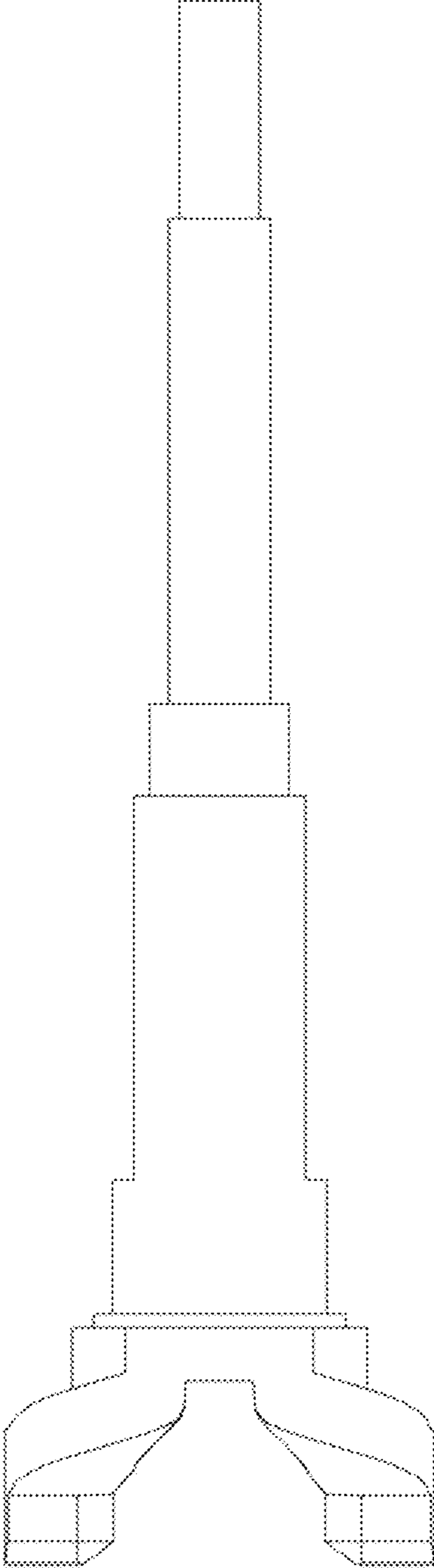


FIG. 3

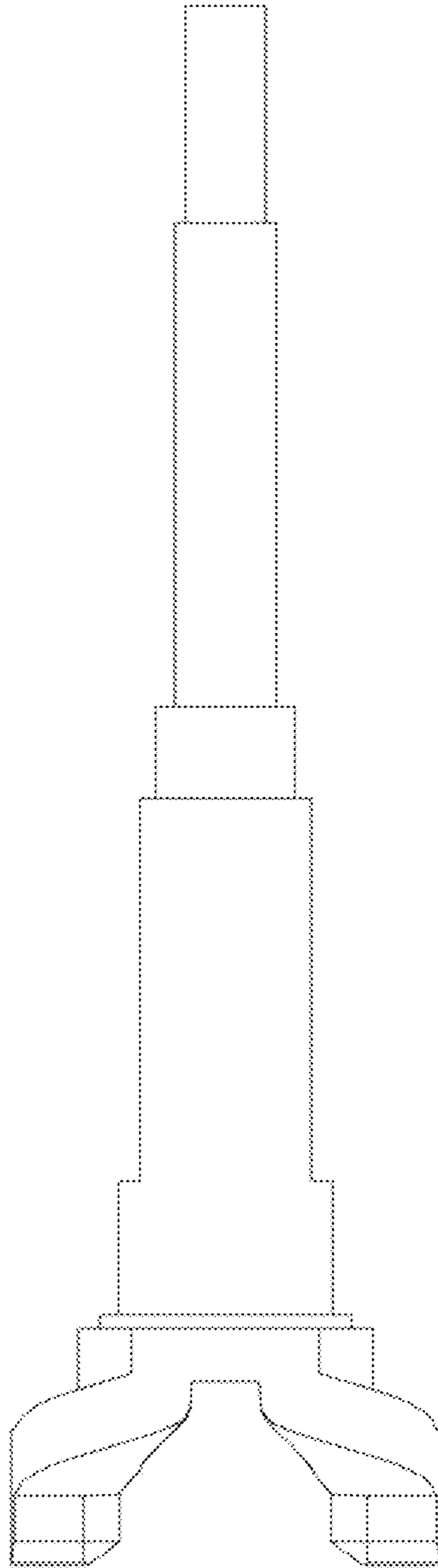


FIG. 4

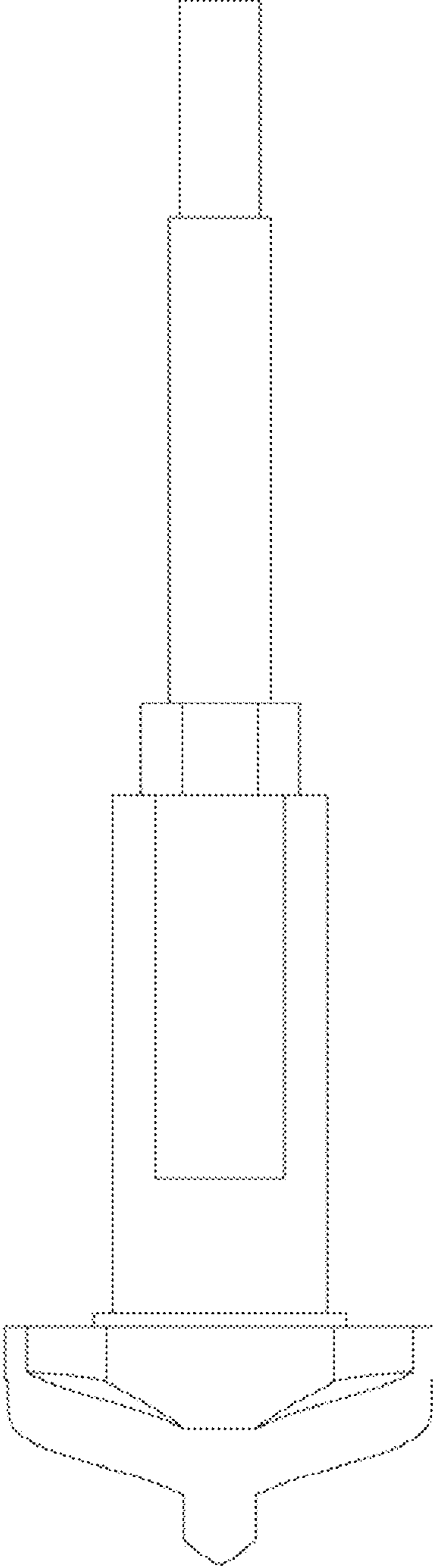


FIG. 5

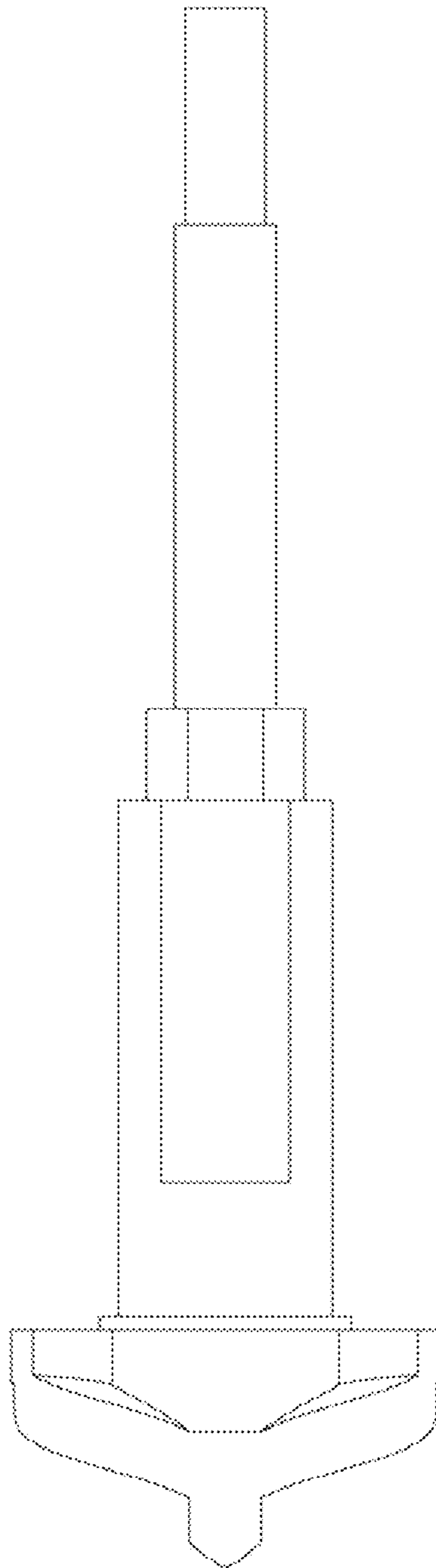


FIG. 6

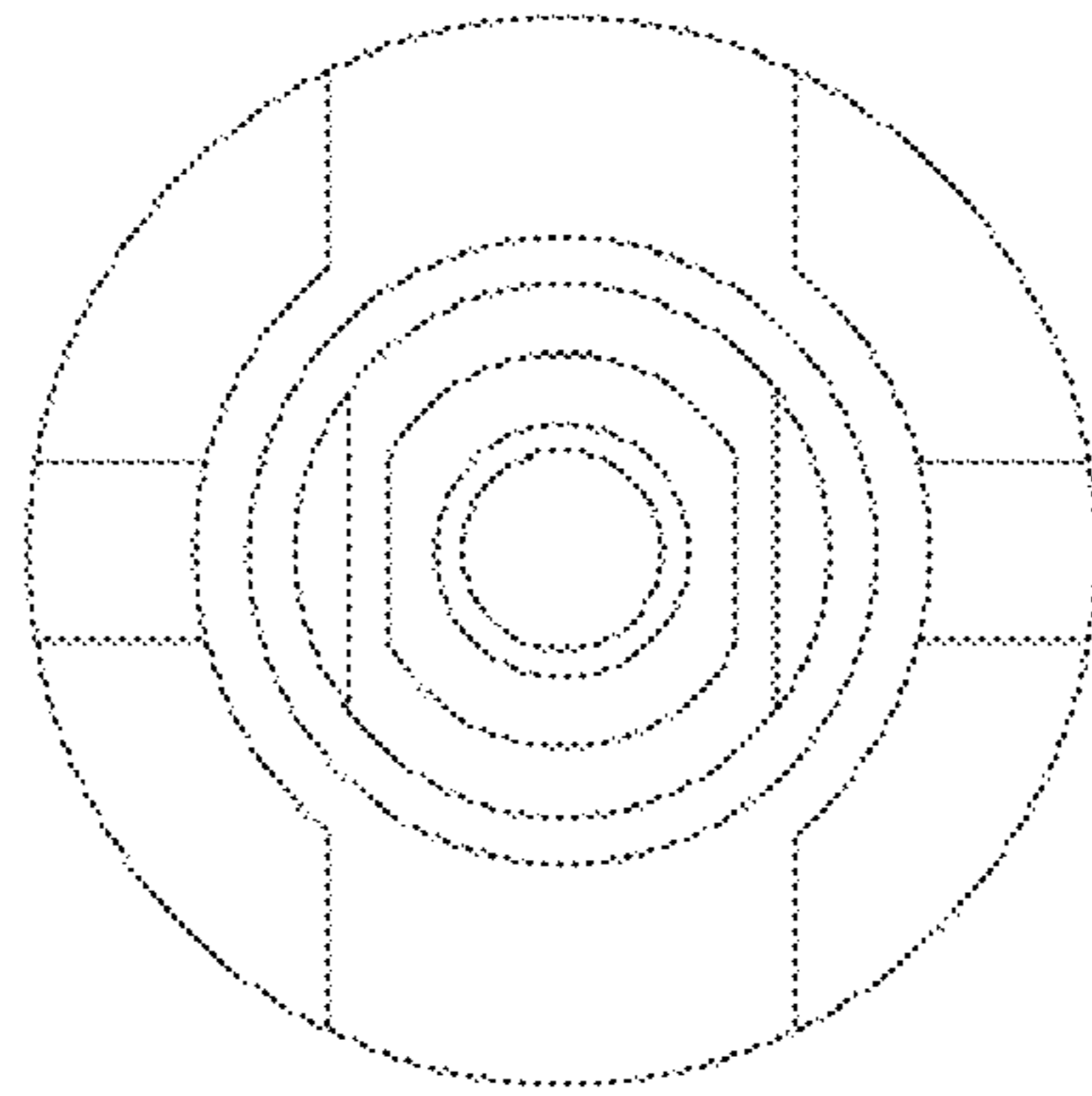


FIG. 7

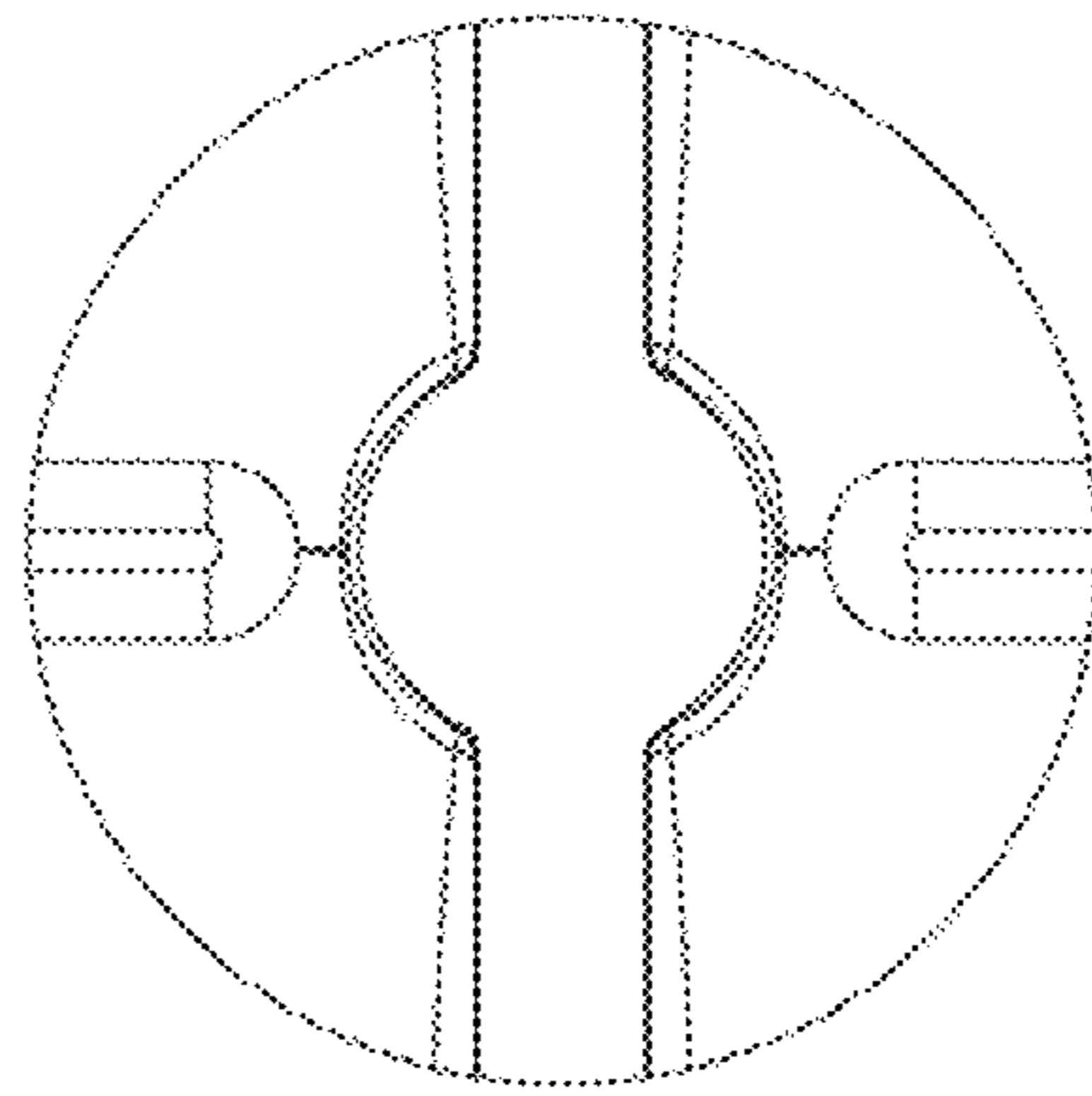


FIG. 8