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

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(45) **Date of Patent:** **** Jun. 27, 2017**

(54) **REACTION TUBE**

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

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(30) **Foreign Application Priority Data**

Sep. 4, 2015 (JP) 2015/019681

(51) **LOC (10) Cl.** **13-03**

(52) **U.S. Cl.**
USPC **D13/182**

(58) **Field of Classification Search**
USPC D13/182
CPC H01L 21/67098; H01L 21/67103; H01L 21/67109; H01L 21/67115; C23C 16/455; C23C 16/45502; C23C 16/45504; C23C 16/4506; C23C 16/45508; C23C 16/4551; C23C 16/4586; C23C 16/4587; C23C 16/46; C23C 16/463; C23C 16/466
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

- 4,950,870 A * 8/1990 Mitsuhashi C30B 25/10 219/390
- D405,062 S * 2/1999 Shimazu D13/182
- D405,429 S * 2/1999 Hanagata D13/182
- D405,431 S * 2/1999 Shimazu D13/182

- D406,113 S * 2/1999 Hanagata D13/182
- 5,948,300 A * 9/1999 Gero C30B 25/14 118/725
- D417,438 S * 12/1999 Matsushima D13/182
- D423,463 S * 4/2000 Hanagata D13/182
- D424,024 S * 5/2000 Hanagata D13/182
- 6,251,189 B1 * 6/2001 Odake C23C 16/44 118/715
- D586,768 S * 2/2009 Inoue D13/182

(Continued)

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(57) **CLAIM**

The ornamental design for a reaction tube, as shown and described.

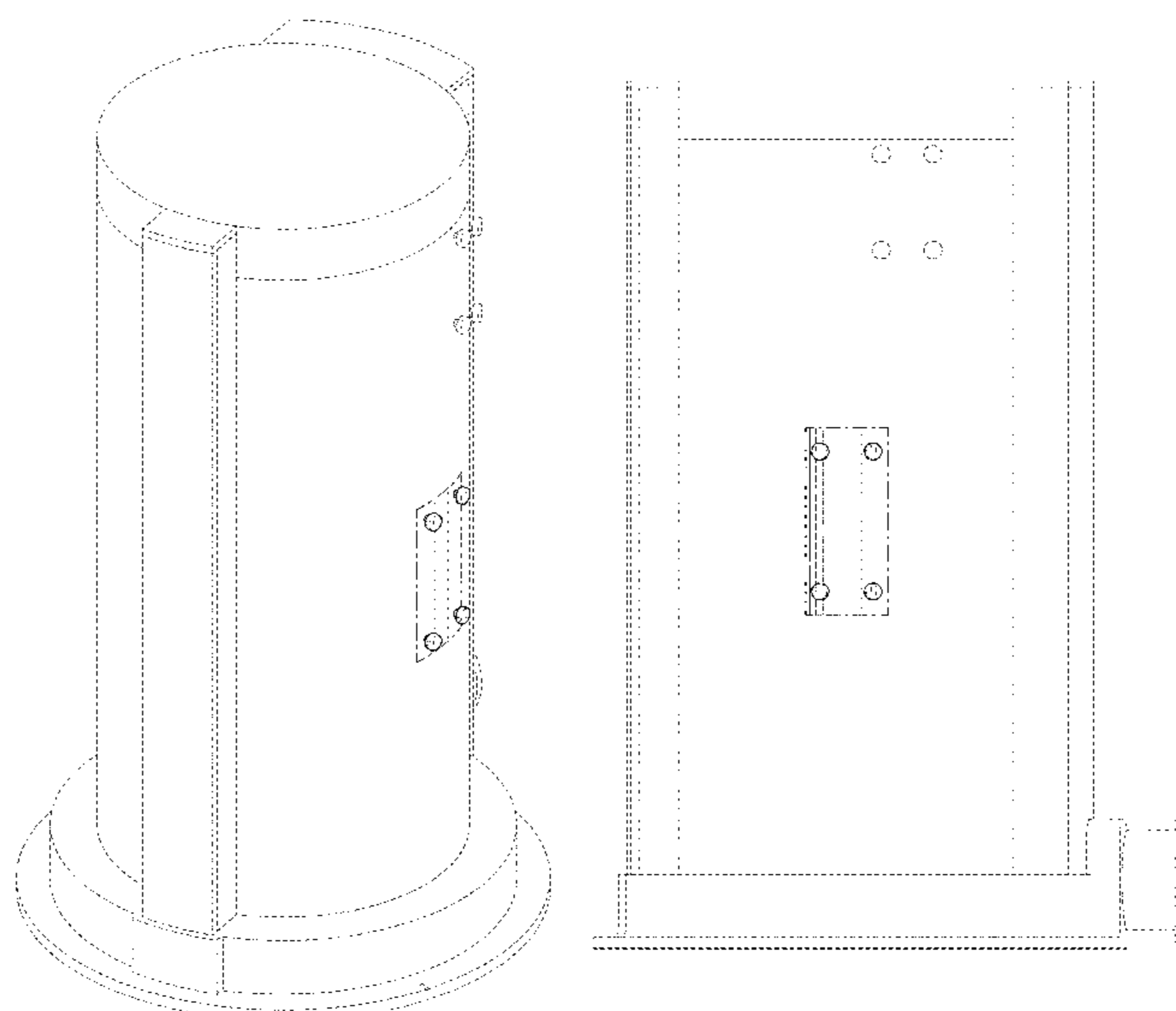
DESCRIPTION

FIG. 1 is a rear, top, and left side perspective view of a reaction tube showing our new design;
 FIG. 2 is a front elevational view thereof;
 FIG. 3 is a rear elevational view thereof;
 FIG. 4 is a left side elevational view thereof;
 FIG. 5 is a right side elevational view thereof;
 FIG. 6 is a top plan view thereof;
 FIG. 7 is a bottom plan view thereof;
 FIG. 8 is a cross sectional view take along line 8-8 in FIG. 2 thereof;
 FIG. 9 is a cross sectional view take along line 9-9 in FIG. 2 thereof;
 FIG. 10 is a cross sectional view view taken along line 10-10 in FIG. 5; and,
 FIG. 11 is a cross sectional view view taken along line 11-11 in FIG. 5.

The dashed-dot-dashed lines represent the boundary lines of the claimed design.

The broken lines shown in the drawings represent portions of the reaction tube that form no part of the claimed design.

1 Claim, 11 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

D600,659	S *	9/2009	Matsuura	.....	D13/182
D610,559	S *	2/2010	Okada	.....	D13/182
D611,013	S *	3/2010	Takahashi	.....	D13/182
D618,638	S *	6/2010	Nakashima	.....	D13/182
D619,630	S *	7/2010	Kaneko	.....	D15/138
D711,843	S *	8/2014	Yamazaki	.....	D13/182
D719,114	S *	12/2014	Yamazaki	.....	D13/182
D720,707	S *	1/2015	Yamazaki	.....	D13/182
D725,053	S *	3/2015	Kaneko	.....	D13/182
D725,055	S *	3/2015	Yamazaki	.....	D13/182
D739,832	S *	9/2015	Yamazaki	.....	D13/182
D770,993	S *	11/2016	Yoshida	.....	D13/182
D772,824	S *	11/2016	Yoshida	.....	D13/182
2003/0221779	A1 *	12/2003	Okuda	.....	C23C 16/4405 156/345.26
2008/0083372	A1 *	4/2008	Inoue	.....	C23C 16/45578 118/725
2009/0194521	A1 *	8/2009	Kobayashi	.....	F27B 17/0025 219/520
2009/0250005	A1 *	10/2009	Kaneko	.....	H01L 21/67109 118/724

* cited by examiner

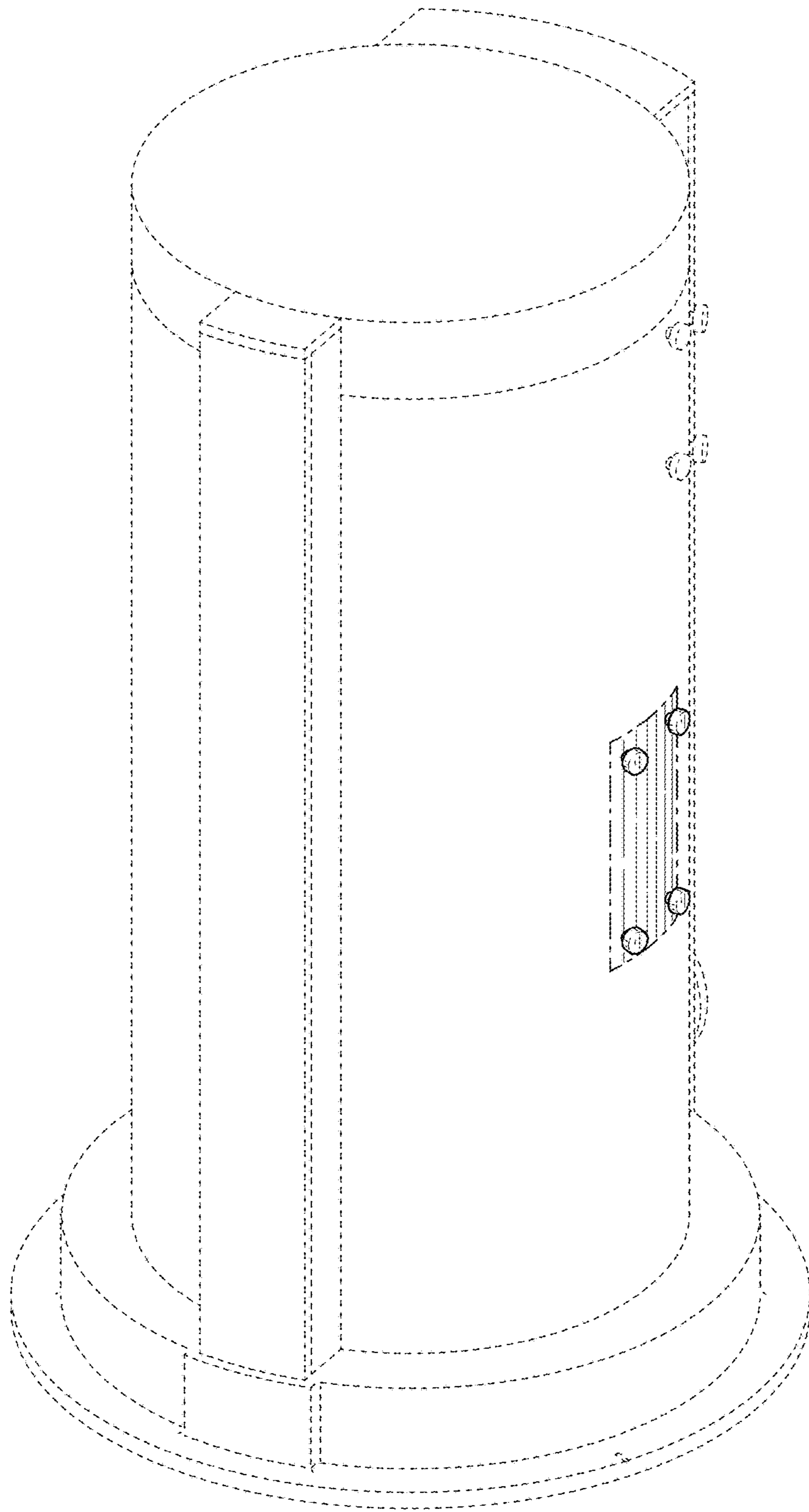


FIG. 1

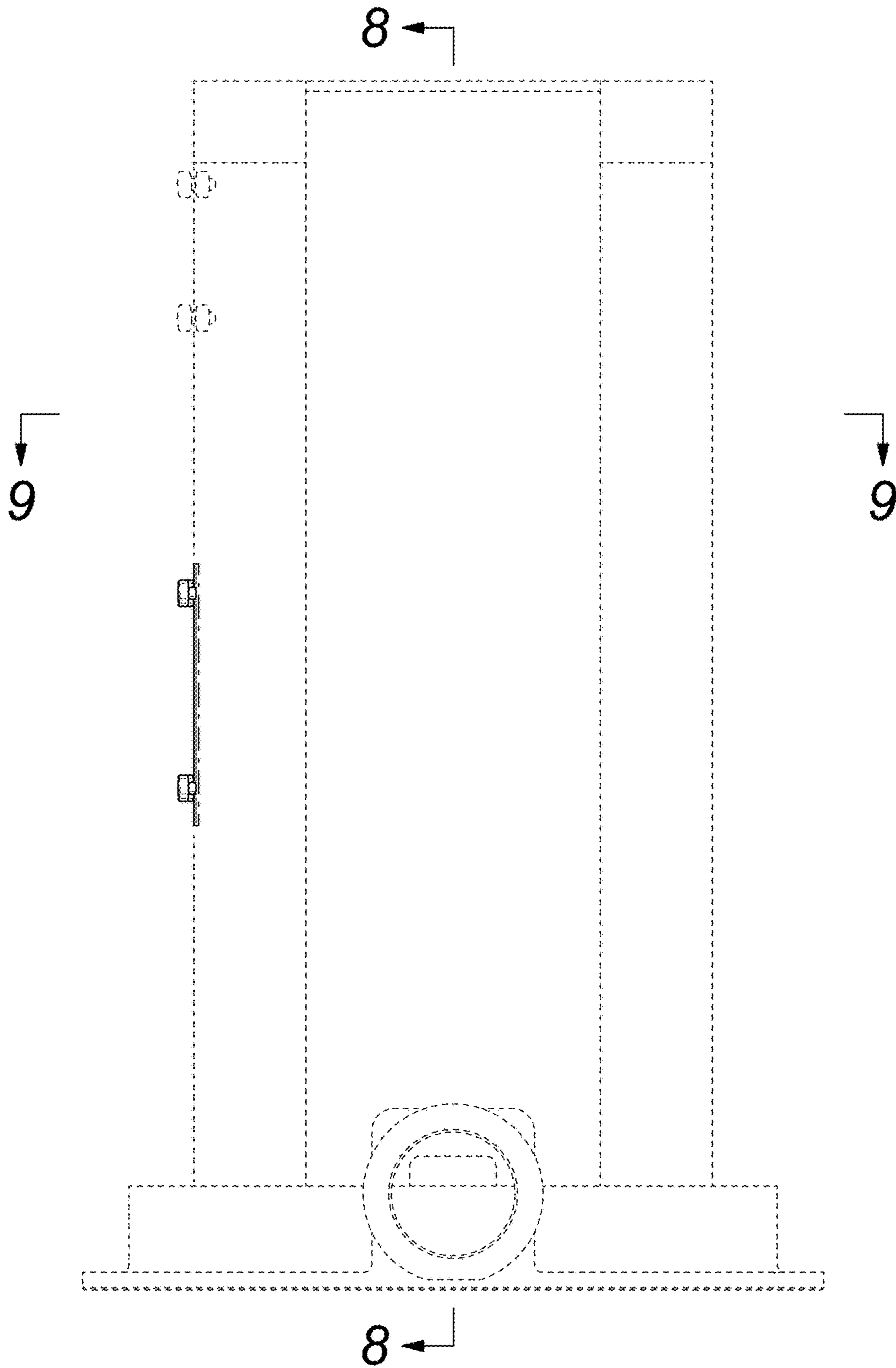


FIG. 2

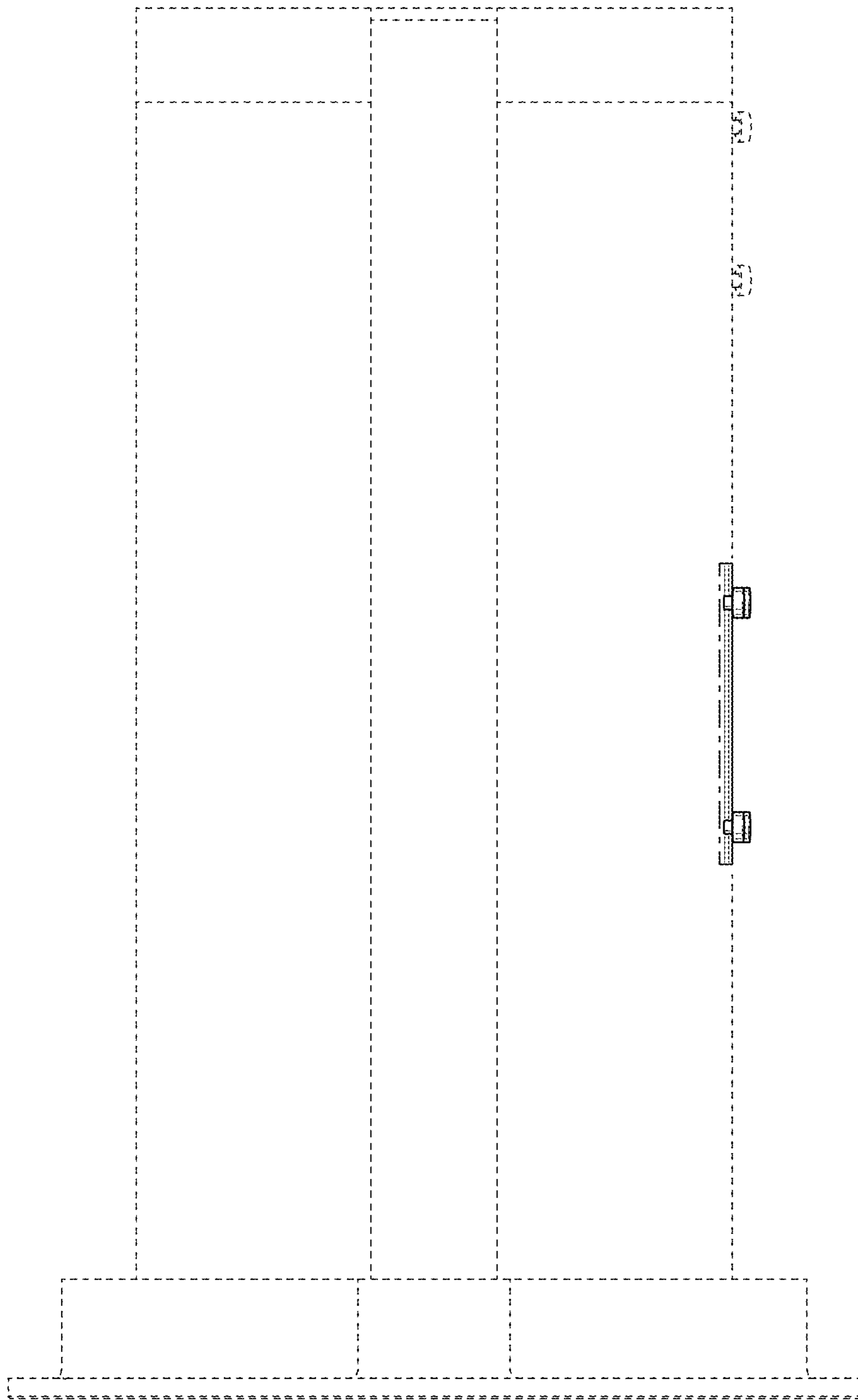


FIG. 3

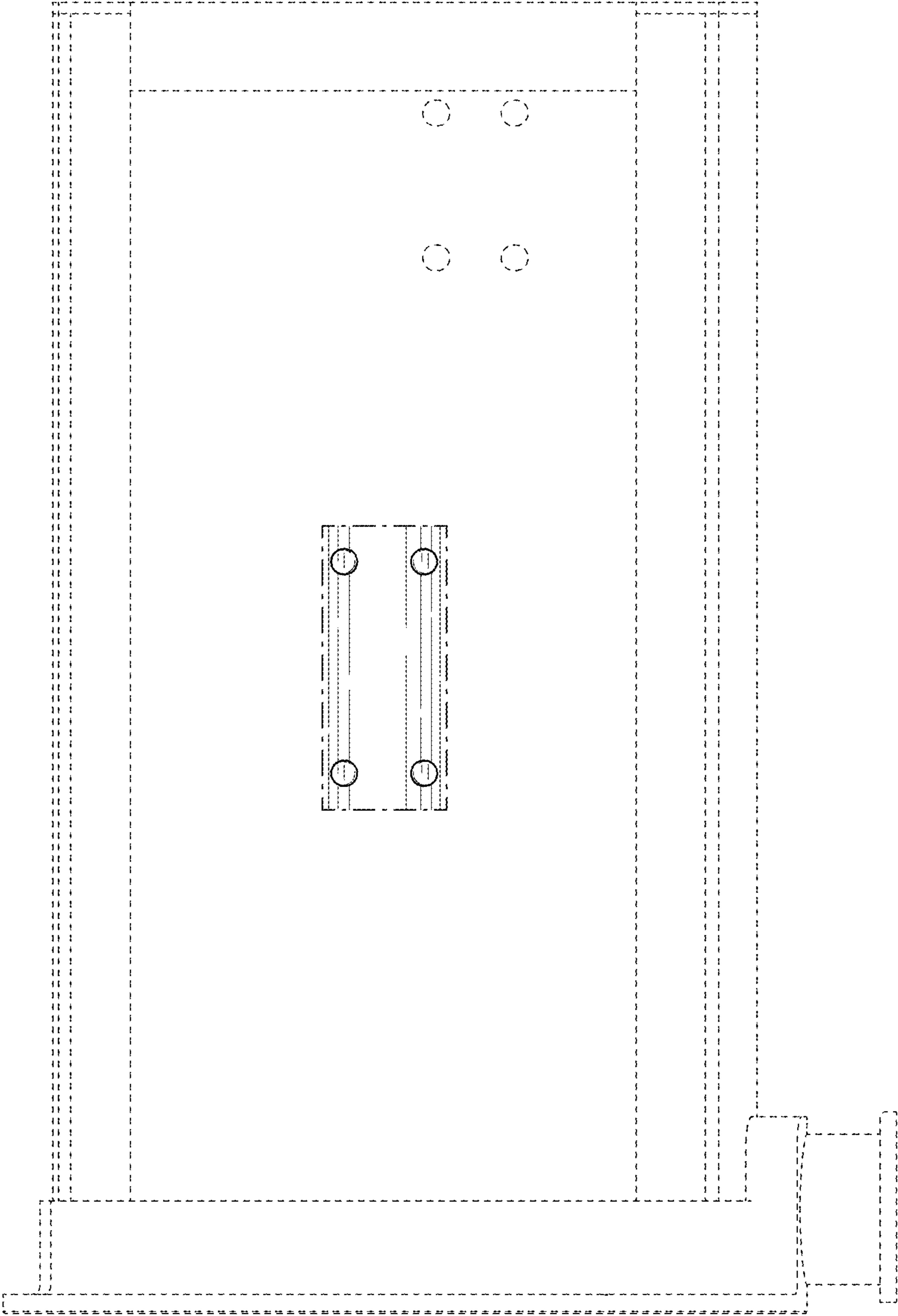


FIG. 4

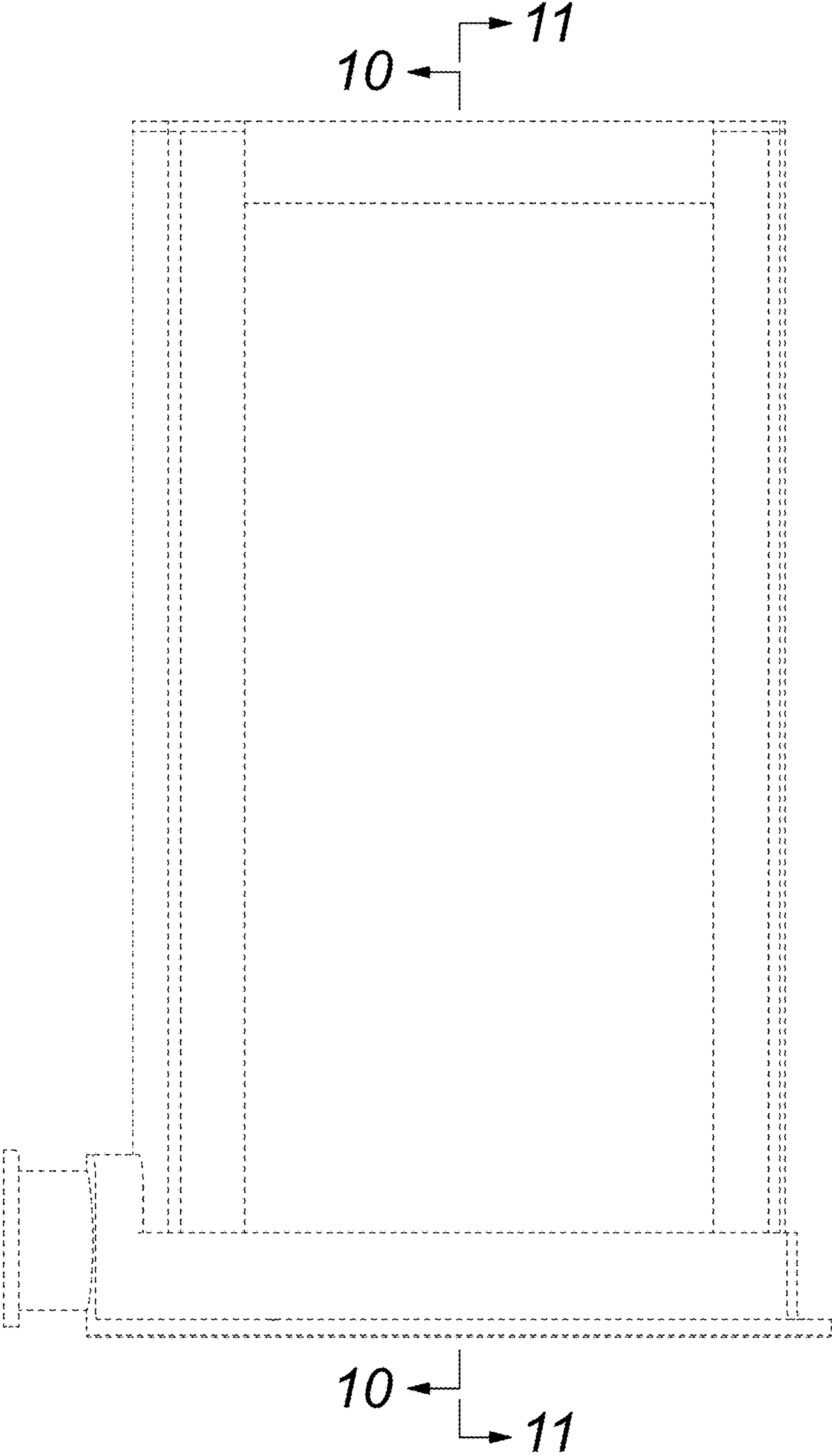


FIG. 5

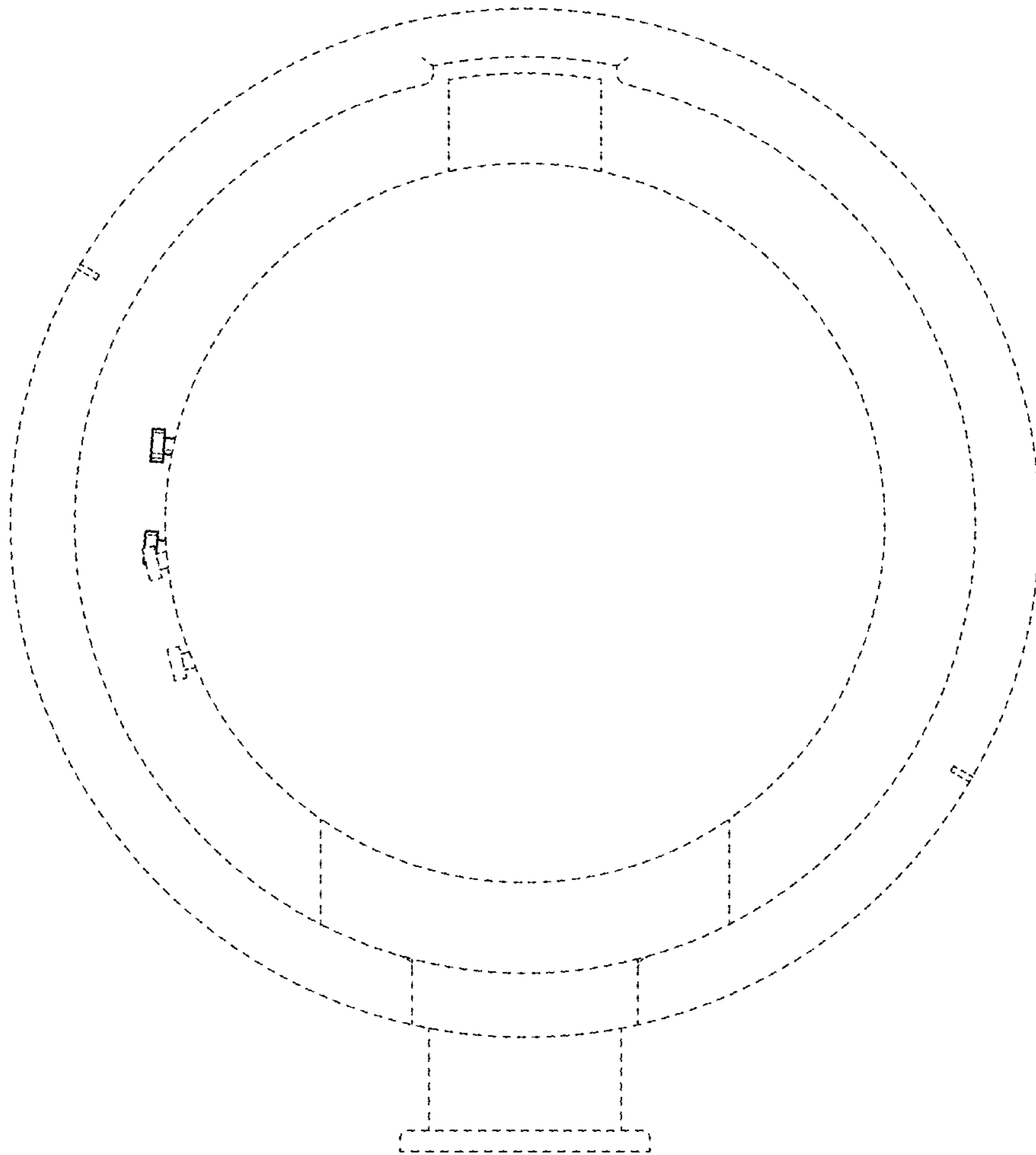


FIG. 6

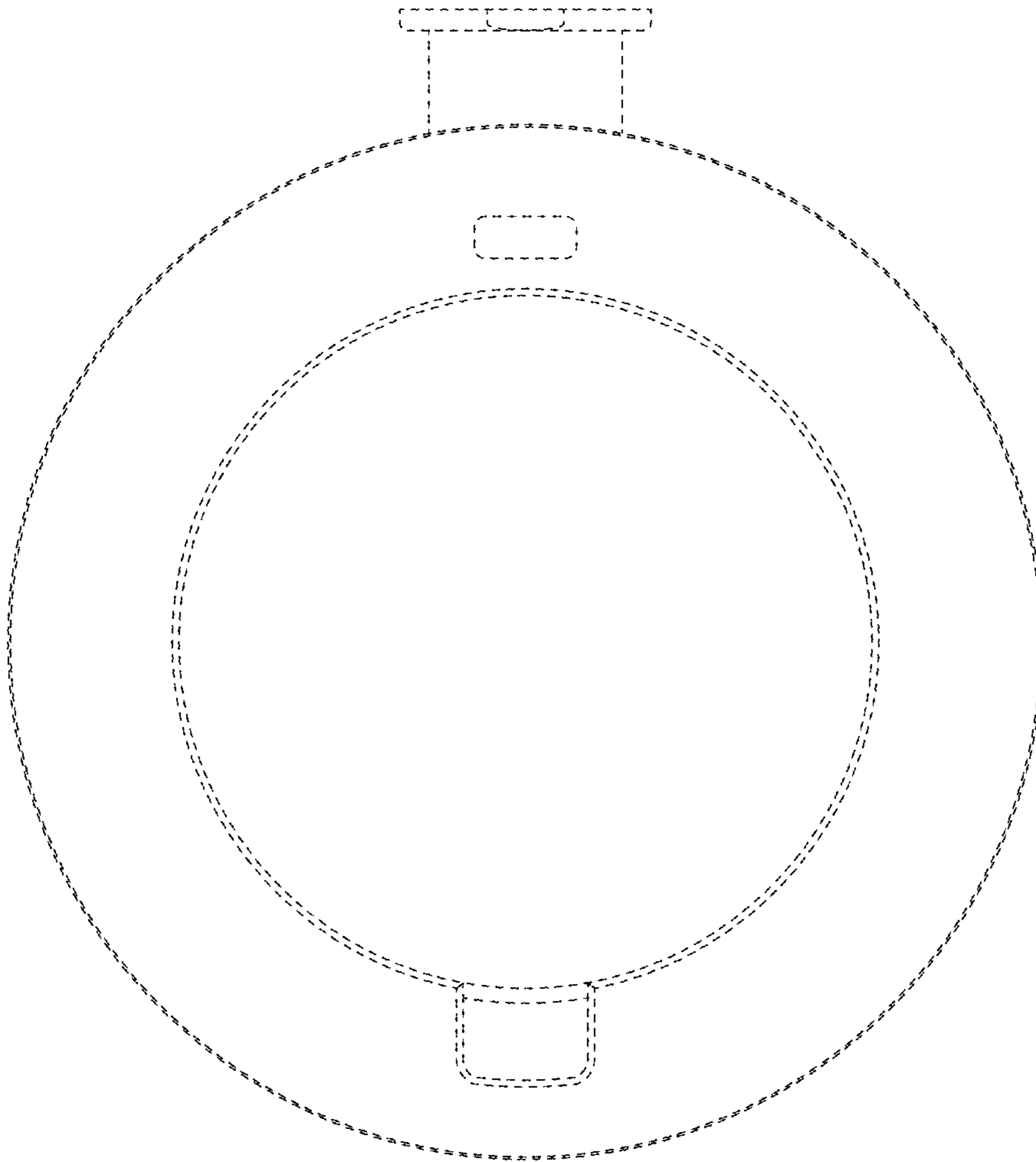


FIG. 7

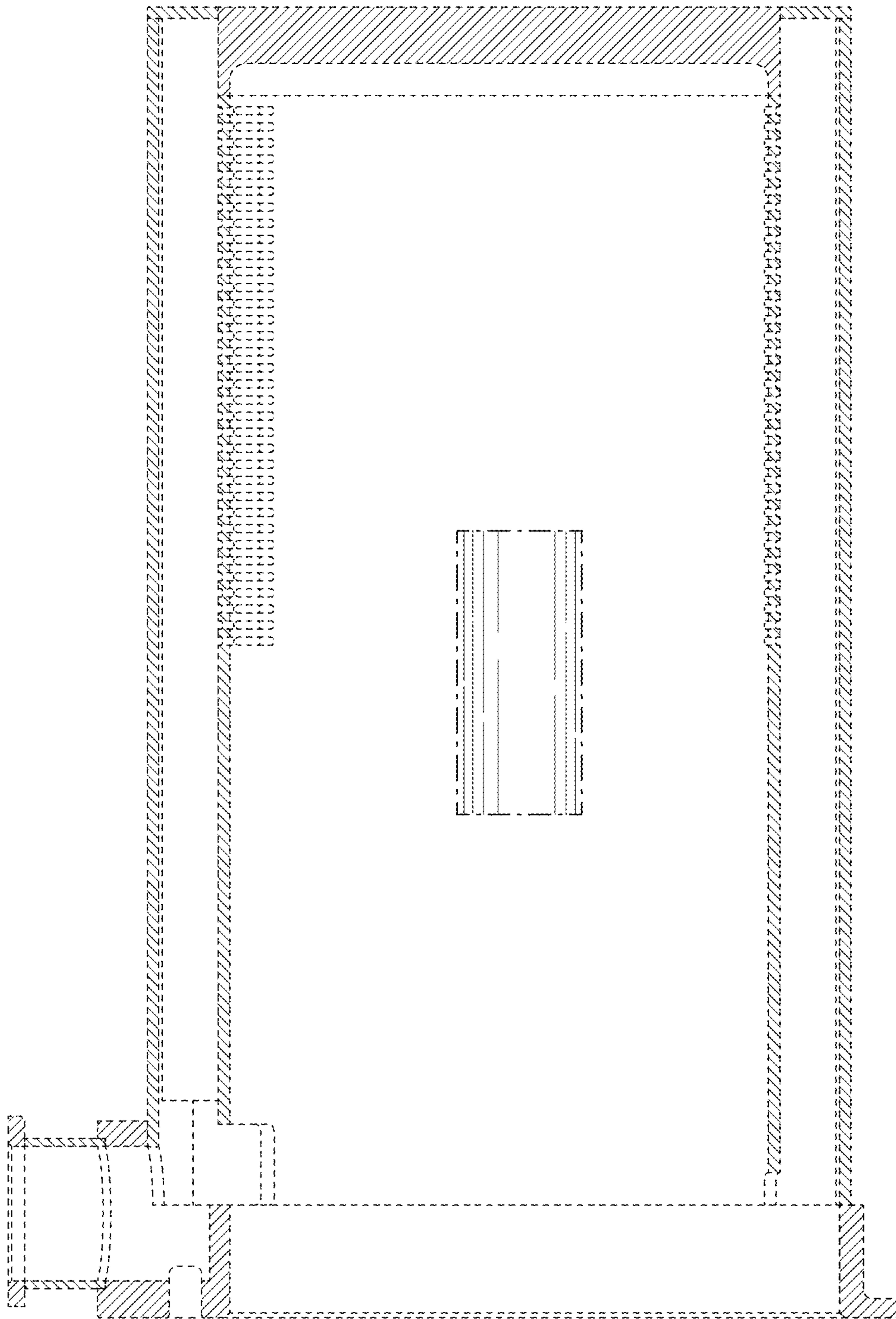


FIG. 8

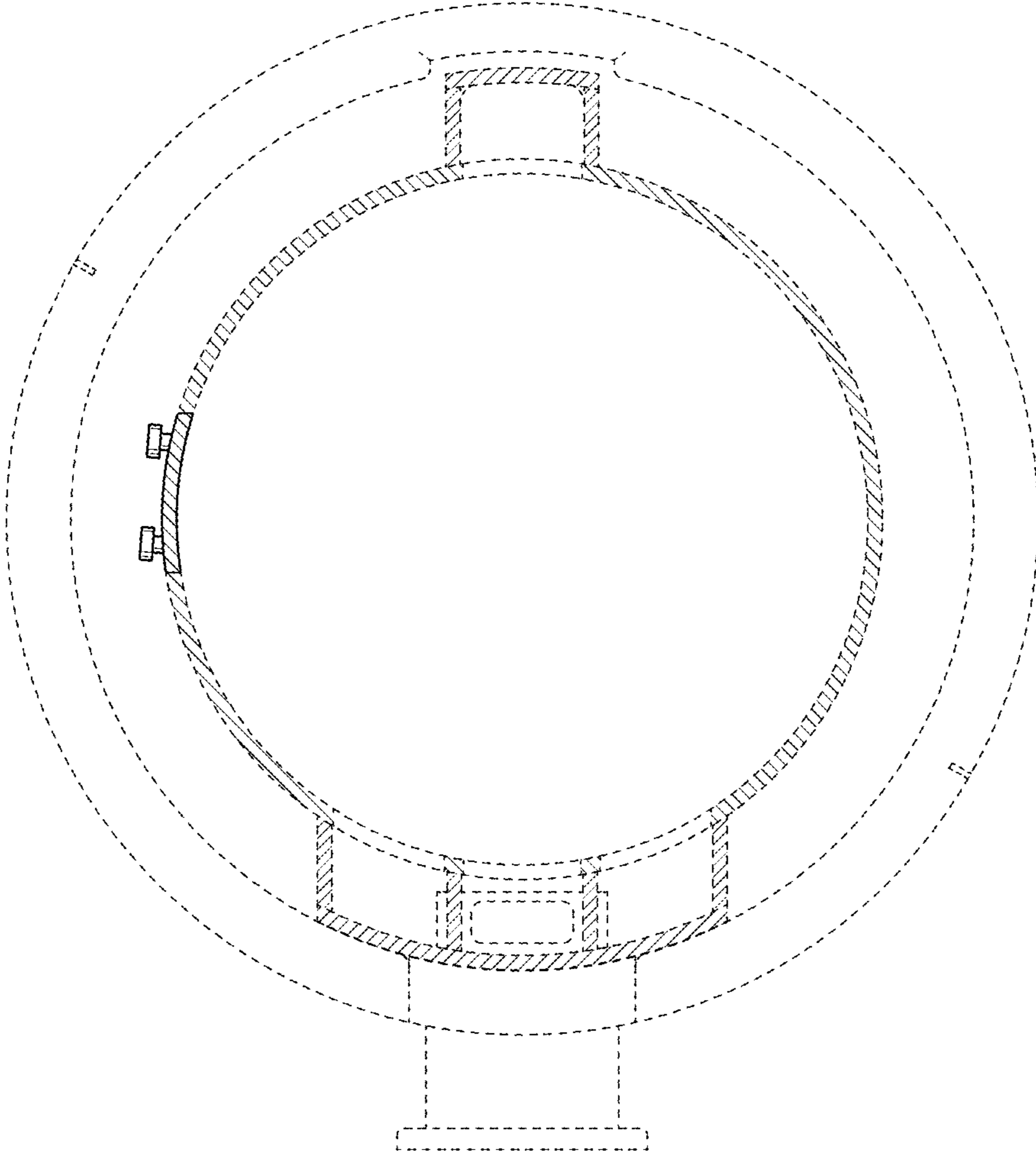


FIG. 9

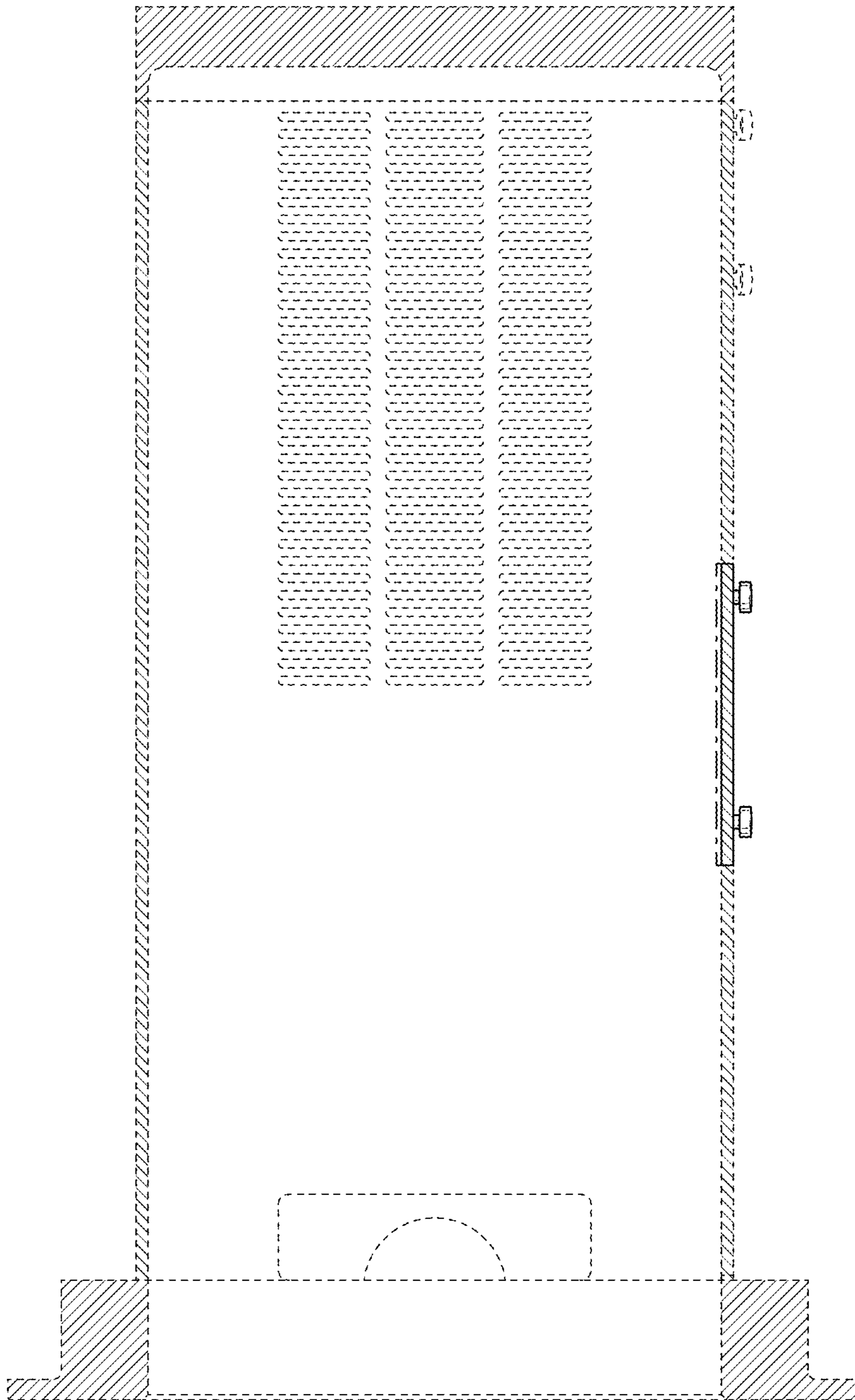


FIG. 10

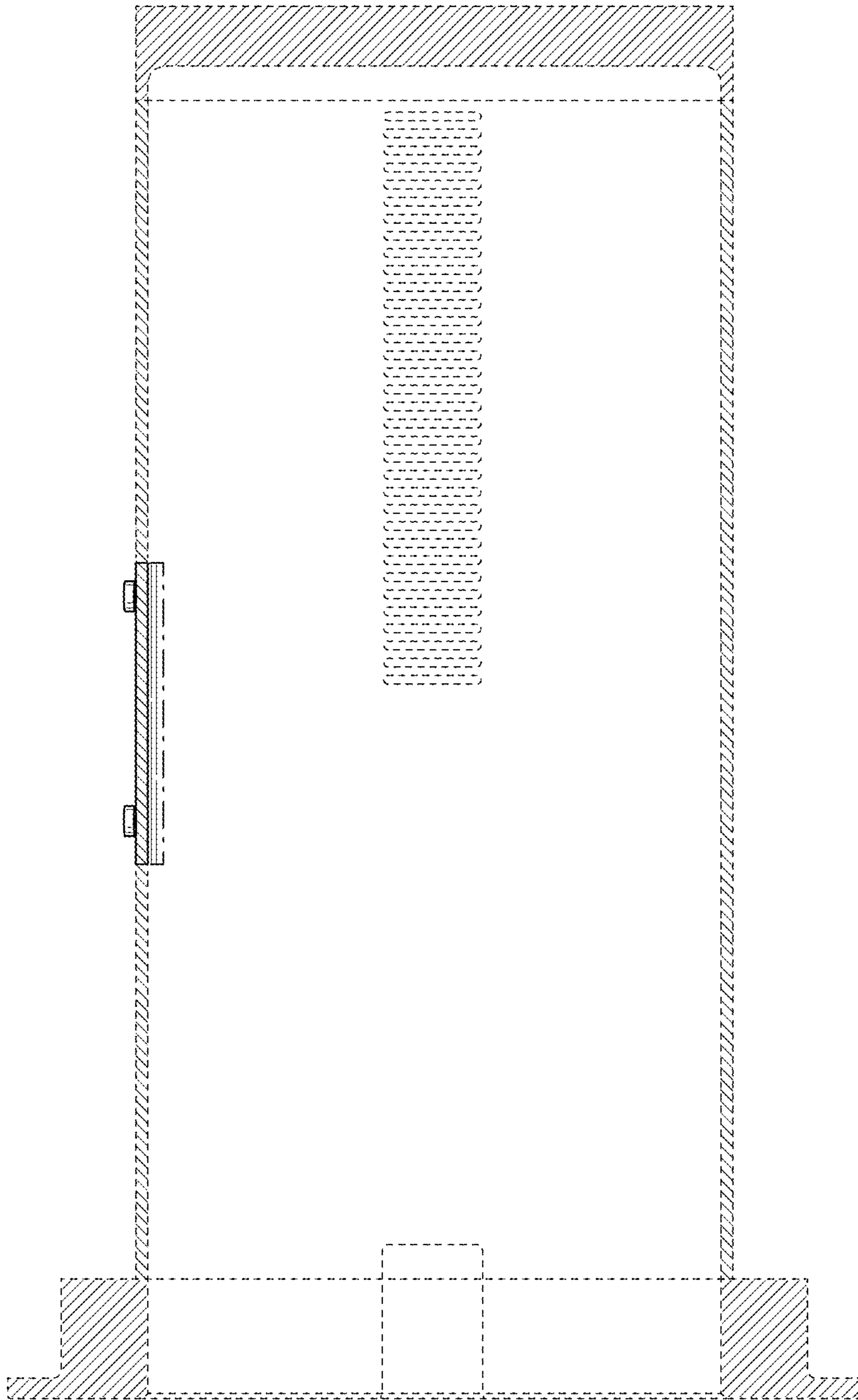


FIG. 11