



US00D886237S

(12) **United States Design Patent** (10) **Patent No.:** **US D886,237 S**
Dixon et al. (45) **Date of Patent:** **** Jun. 2, 2020**

(54) **THERMAL TRACE VALVE BODY**
(71) Applicant: **Swagelok Company**, Solon, OH (US)
(72) Inventors: **Matthew R. Dixon**, Parma, OH (US);
Karim Mahraz, Willoughby, OH (US);
Bryan S. Reiger, Willowick, OH (US);
Robert Bianco, Columbia Station, OH
(US); **Jeremy Elek**, Chagrin Falls, OH
(US); **Andrew P. Marshall**, University
Heights, OH (US)

3,973,585 A 8/1976 Henderson
5,368,063 A 11/1994 Kida et al.
6,116,267 A 9/2000 Suzuki et al.
6,427,717 B1 8/2002 Kimura
7,527,068 B2 5/2009 Jansen
7,874,310 B1 1/2011 Jansen

(Continued)

FOREIGN PATENT DOCUMENTS

CN 104677688 6/2015
CN 204479342 7/2015

(Continued)

(73) Assignee: **SWAGELOK COMPANY**, Solon, OH
(US)

OTHER PUBLICATIONS

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

International Search Report and Written Opinion from PCT/US2018/
020572 dated Jun. 8, 2018.

(21) Appl. No.: **29/662,228**

Primary Examiner — Gino Colan

(22) Filed: **Sep. 4, 2018**

(74) *Attorney, Agent, or Firm* — Calfee, Halter &
Griswold LLP

(51) **LOC (12) Cl.** **23-01**

(52) **U.S. Cl.**
USPC **D23/233**

(57) **CLAIM**

(58) **Field of Classification Search**
USPC D23/233, 235, 241, 247, 248, 249;
236/92 B, 91 D; 137/468, 334, 457
CPC ... F16K 31/002; F16K 11/0716; F25B 41/062
See application file for complete search history.

We claim the ornamental design for a thermal trace valve
body, as shown and described.

DESCRIPTION

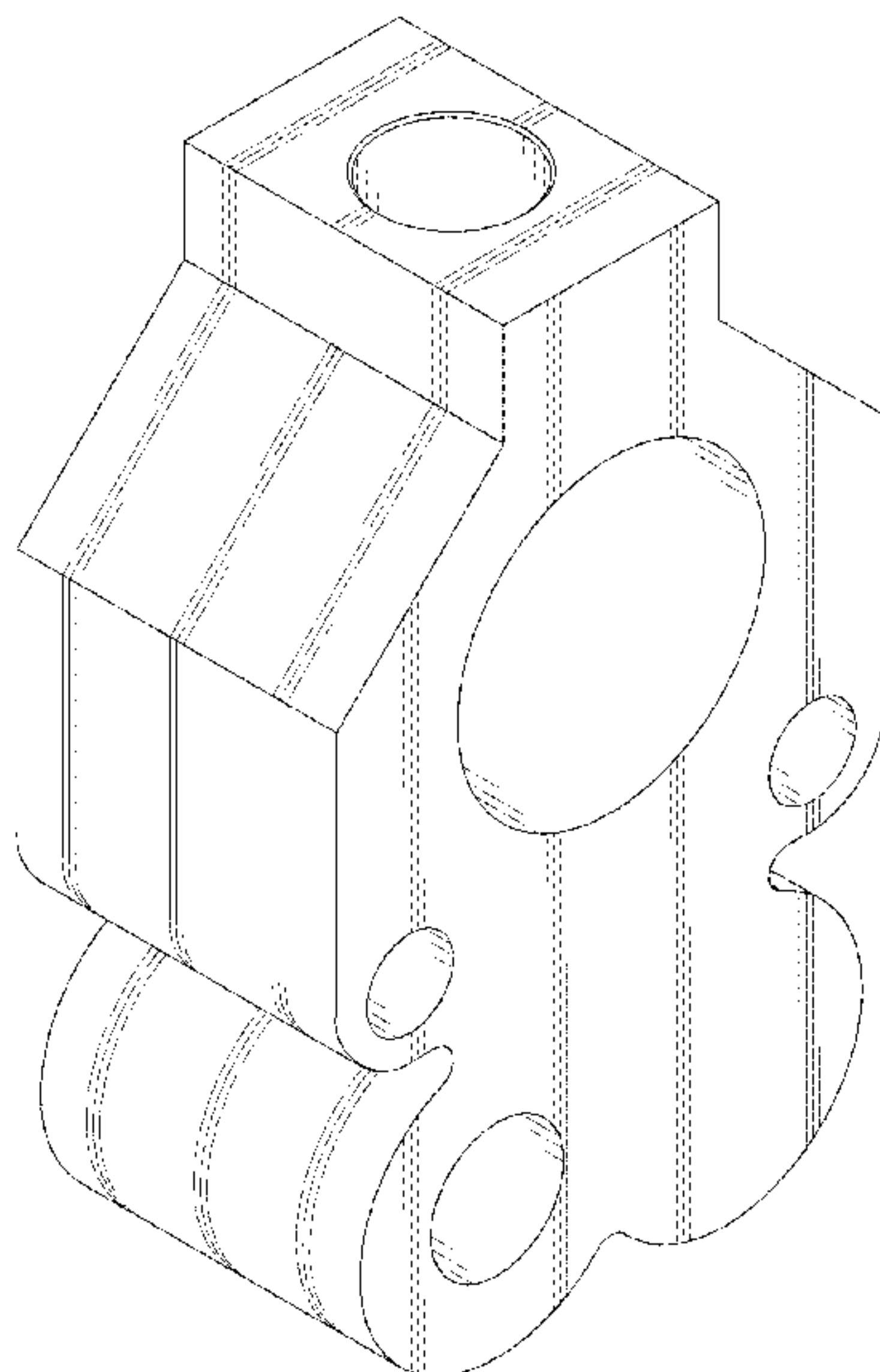
(56) **References Cited**

U.S. PATENT DOCUMENTS

566,592 A 8/1896 Long
772,007 A 10/1904 Theis
2,591,429 A 4/1952 Harrower
2,594,762 A 4/1952 Freund et al.
2,725,221 A 11/1955 Pontow
2,871,881 A 2/1959 Hewson
3,098,497 A 7/1963 Glasgow et al.
3,266,517 A 8/1966 Carr
3,636,972 A 1/1972 Scaramucci
3,770,005 A 11/1973 Bradenburg
3,901,269 A 8/1975 Henderson

FIG. 1 is an upper front perspective view of a thermal trace
valve body showing our new design;
FIG. 2 is a lower rear perspective view thereof;
FIG. 3 is a front elevational view thereof, the rear elevational
view being substantially identical thereto;
FIG. 4 is a right side elevational view thereof, the left side
elevational view being substantially identical thereto;
FIG. 5 is a top plan view thereof; and,
FIG. 6 is a bottom plan view thereof.
The broken lines shown in the figures are included for the
purpose of illustrating portions of the thermal trace valve
body that form no part of the claimed design.

1 Claim, 4 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

D648,419 S * 11/2011 Shimura D23/233
 D649,222 S * 11/2011 Kobayashi D23/233
 D683,815 S * 6/2013 Kobayashi D23/233
 D683,816 S * 6/2013 Kobayashi D23/233
 8,607,812 B2 12/2013 Steele
 9,133,961 B2 9/2015 Farinone
 D782,009 S * 3/2017 Watanabe D23/233
 D799,009 S * 10/2017 Satake D23/233
 D799,640 S * 10/2017 Satake D23/233
 D800,256 S * 10/2017 Satake D23/233
 D827,092 S * 8/2018 Hayakawa D23/233
 D854,655 S * 7/2019 Satake D23/233
 2002/0152988 A1 10/2002 Michels
 2011/0140023 A1 6/2011 Sauer et al.
 2012/0167862 A1 7/2012 Nishimori et al.
 2012/0192970 A1* 8/2012 Kobayashi F25B 41/062
 137/468

2015/0361847 A1 12/2015 Fahrenkrug et al.
 2016/0076816 A1 3/2016 Deegan
 2016/0102798 A1 4/2016 Shin
 2016/0303656 A1 10/2016 Lacy et al.
 2016/0305712 A1 10/2016 Harris

FOREIGN PATENT DOCUMENTS

CN 204709869 10/2015
 CN 105736717 7/2016
 CN 205896210 1/2017
 CN 205918994 2/2017
 CN 206361241 7/2017
 EP 911561 4/1999
 JP 11-125344 5/1999
 JP 2001033128 2/2001
 KR 10-2014-0128769 11/2014
 WO 2002/057670 7/2002
 WO 2014/178452 11/2014

* cited by examiner

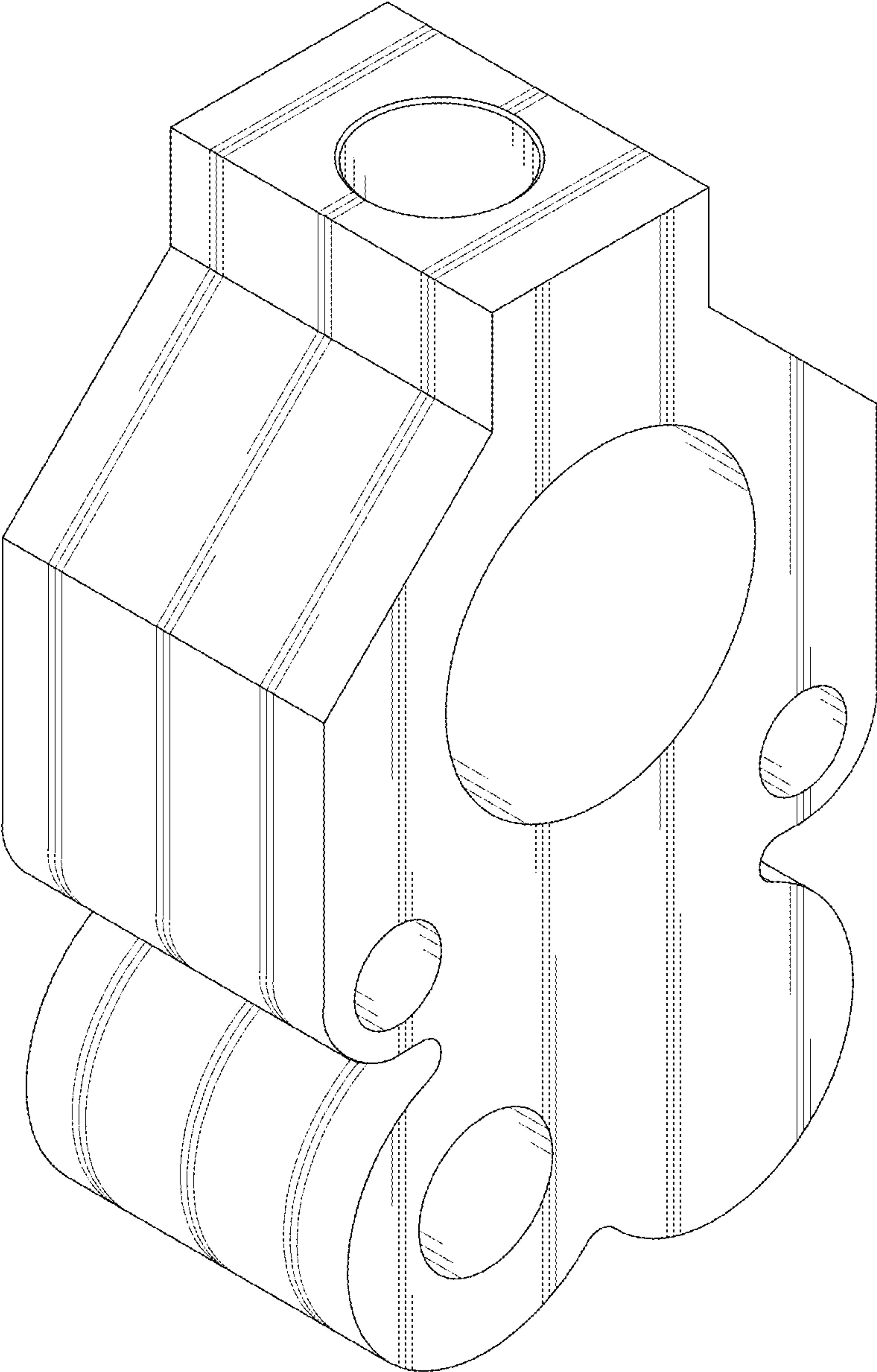


FIG. 1

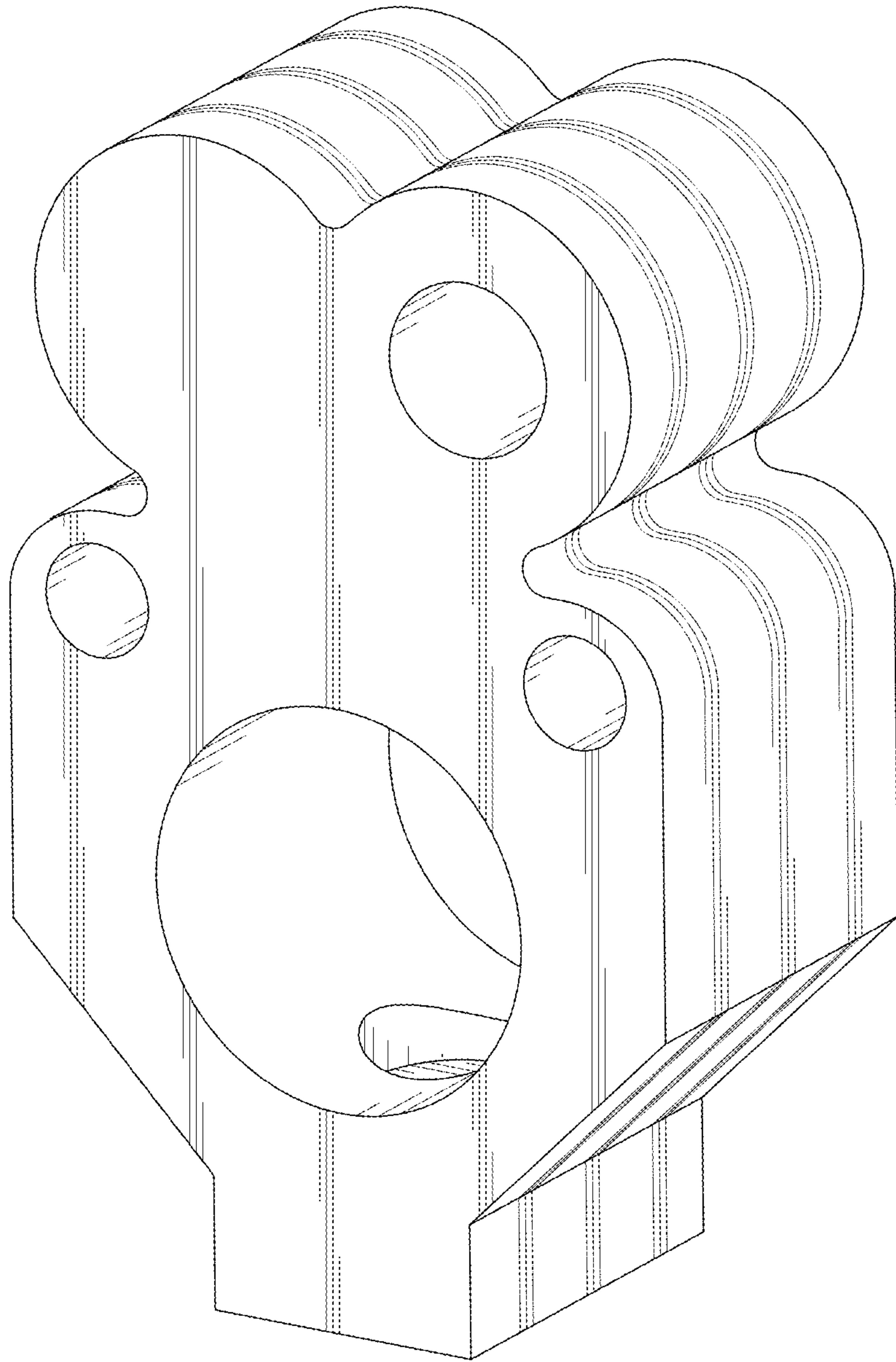


FIG. 2

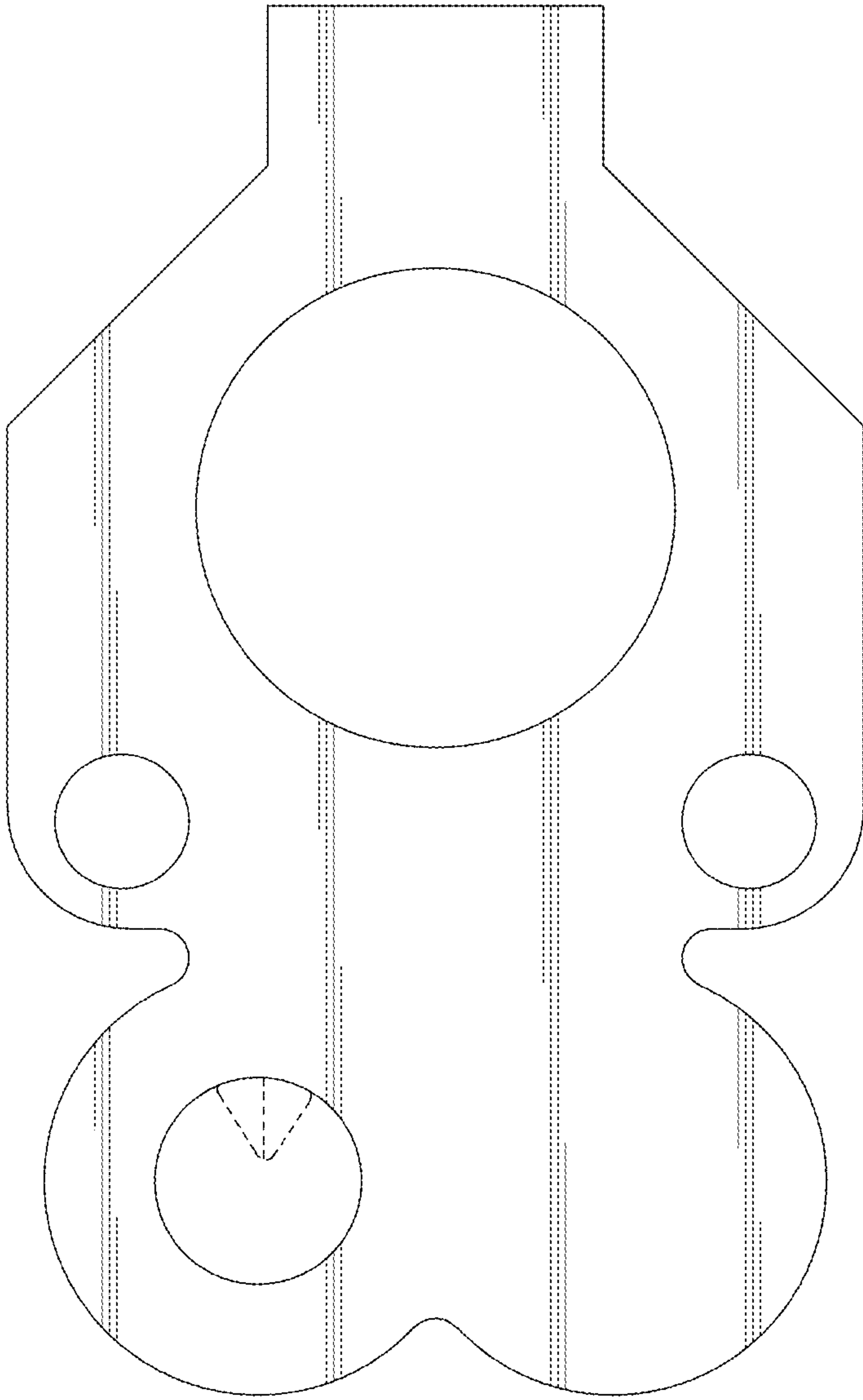


FIG. 3

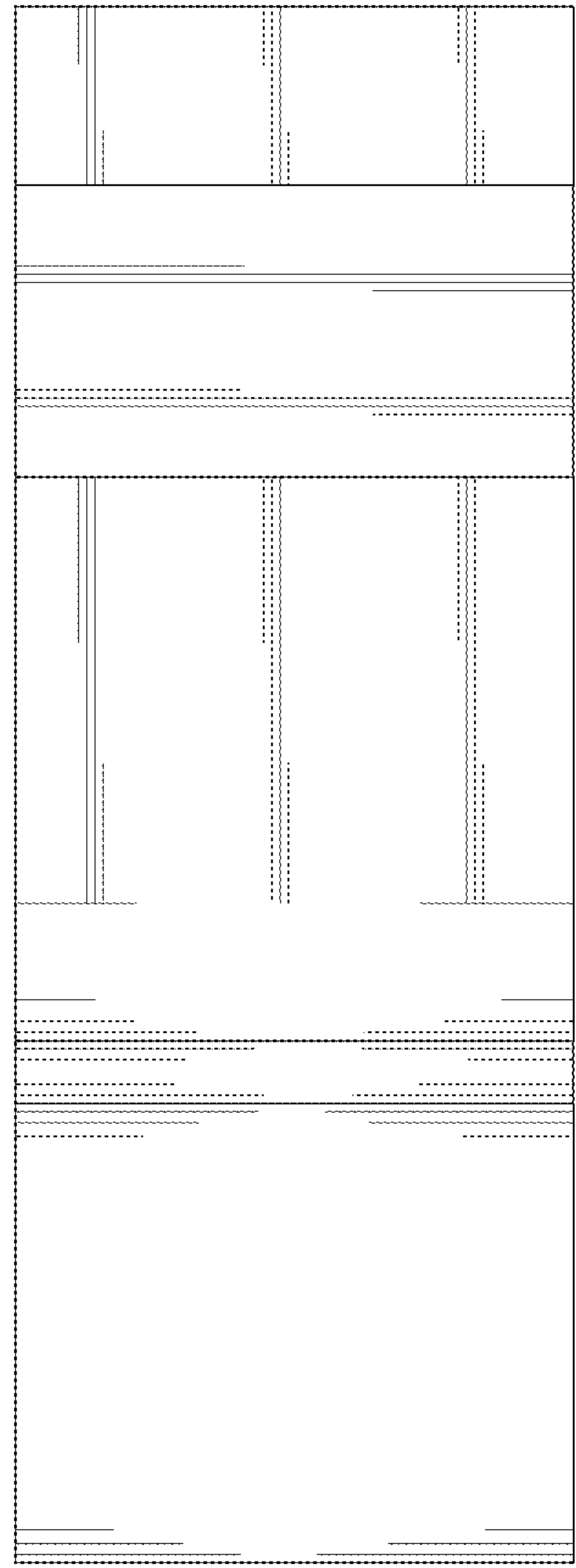


FIG. 4

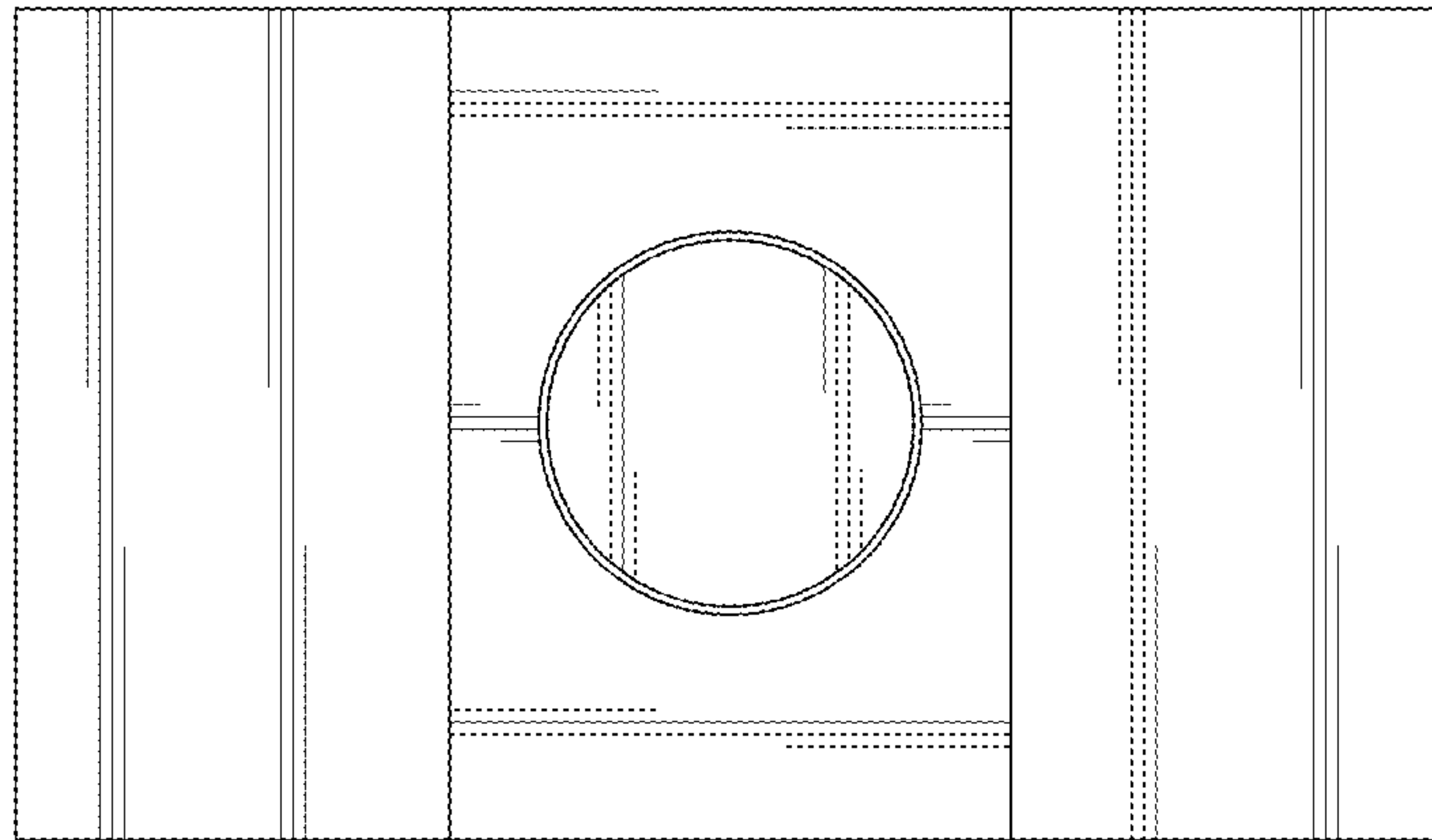


FIG. 5

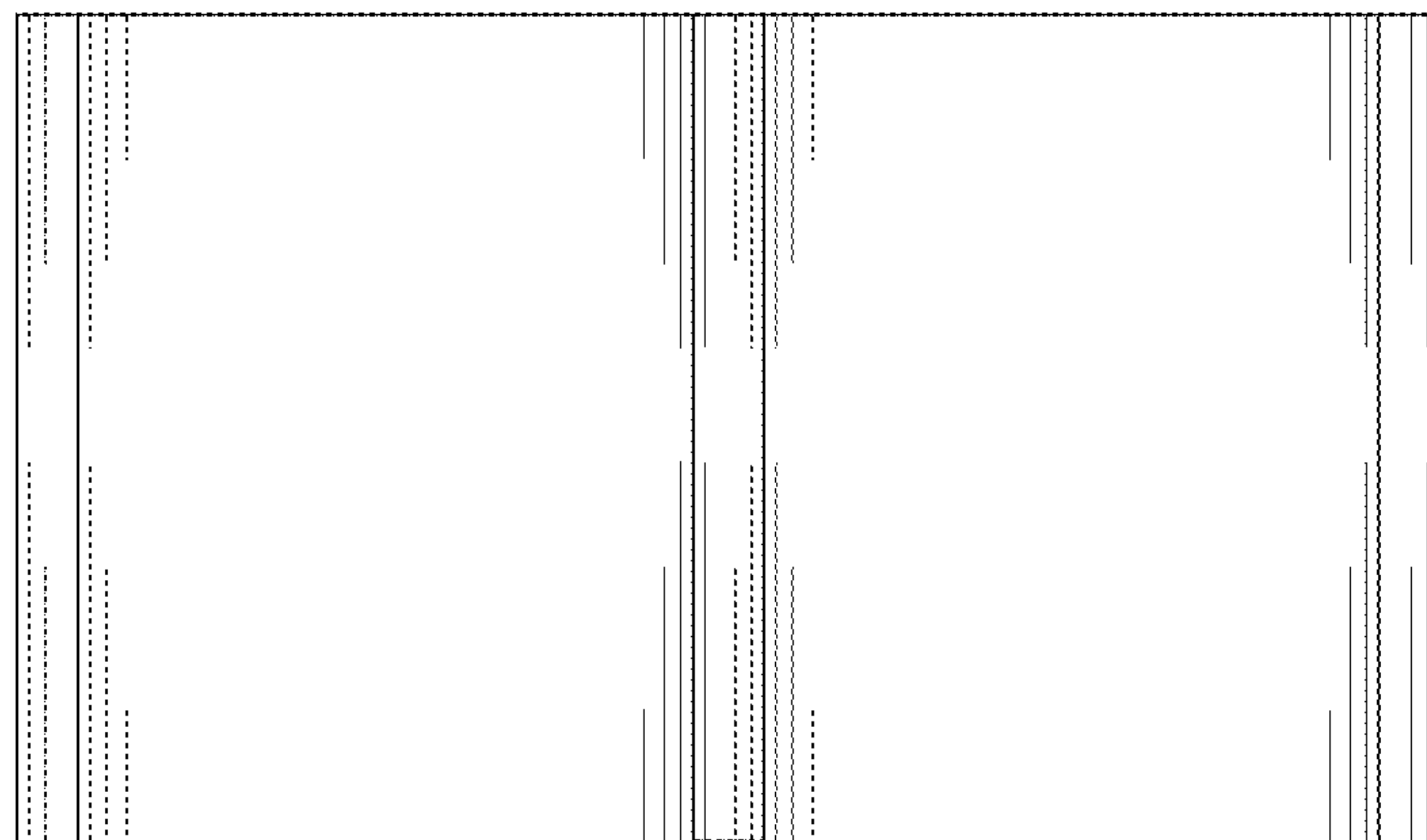


FIG. 6