



US00D806621S

(12) **United States Design Patent**
Burch, V et al.

(10) **Patent No.:** **US D806,621 S**
(45) **Date of Patent:** **** Jan. 2, 2018**

(54) **WHEEL ANGLE SENSOR ADAPTER HOUSING**

(71) Applicant: **FEDEX CORPORATE SERVICES, INC.**, Collierville, TN (US)

(72) Inventors: **Reuben F. Burch, V**, Mississippi State, MS (US); **Howard McKinney**, Bartlett, TN (US); **Matthew Doude**, Starkville, MS (US); **Andrew LeClair**, Starkville, MS (US); **Matthew Bilson**, Starkville, MS (US); **Gregory Alan Morris**, Starkville, MS (US); **Davis Donald Hesler**, Biloxi, MS (US)

(73) Assignee: **FEDEX CORPORATE SERVICES, INC.**, Collierville, TN (US)

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

(21) Appl. No.: **29/577,557**

(22) Filed: **Sep. 14, 2016**

(51) **LOC (11) Cl.** **12-16**

(52) **U.S. Cl.**
USPC **D12/179**

(58) **Field of Classification Search**
USPC D12/114, 174, 177, 178, 179, 406, 407;
D8/88, 300, 303, 308, 359; D6/710
CPC F16C 1/10; F16C 1/101; F16H 59/0204;
F16H 59/0217; F16H 59/0278; F16H
59/042; F16H 61/30; G05G 1/06; G05G
19/00; G05G 9/02

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,287,896 A * 11/1966 Kolodziej G04B 18/028
368/186
3,915,534 A * 10/1975 Yonkers H01H 9/085
174/71 R

5,249,478 A * 10/1993 Moroto F16H 59/0204
74/473.18
5,588,330 A * 12/1996 Kataumi F16H 59/10
192/219.6
5,901,045 A * 5/1999 Bencivenga H01R 4/72
337/186

(Continued)

OTHER PUBLICATIONS

Scale Locking Hubs, image post date Dec. 11, 2014, site visited Sep. 16, 2017, (online). <<https://www.archive.org/web/20141211124032/http://www.ssd-rc.com/wheels.html>>.*

(Continued)

Primary Examiner — Kevin Rudzinski

Assistant Examiner — Sean D Lough

(74) *Attorney, Agent, or Firm* — Withers & Keys, LLC

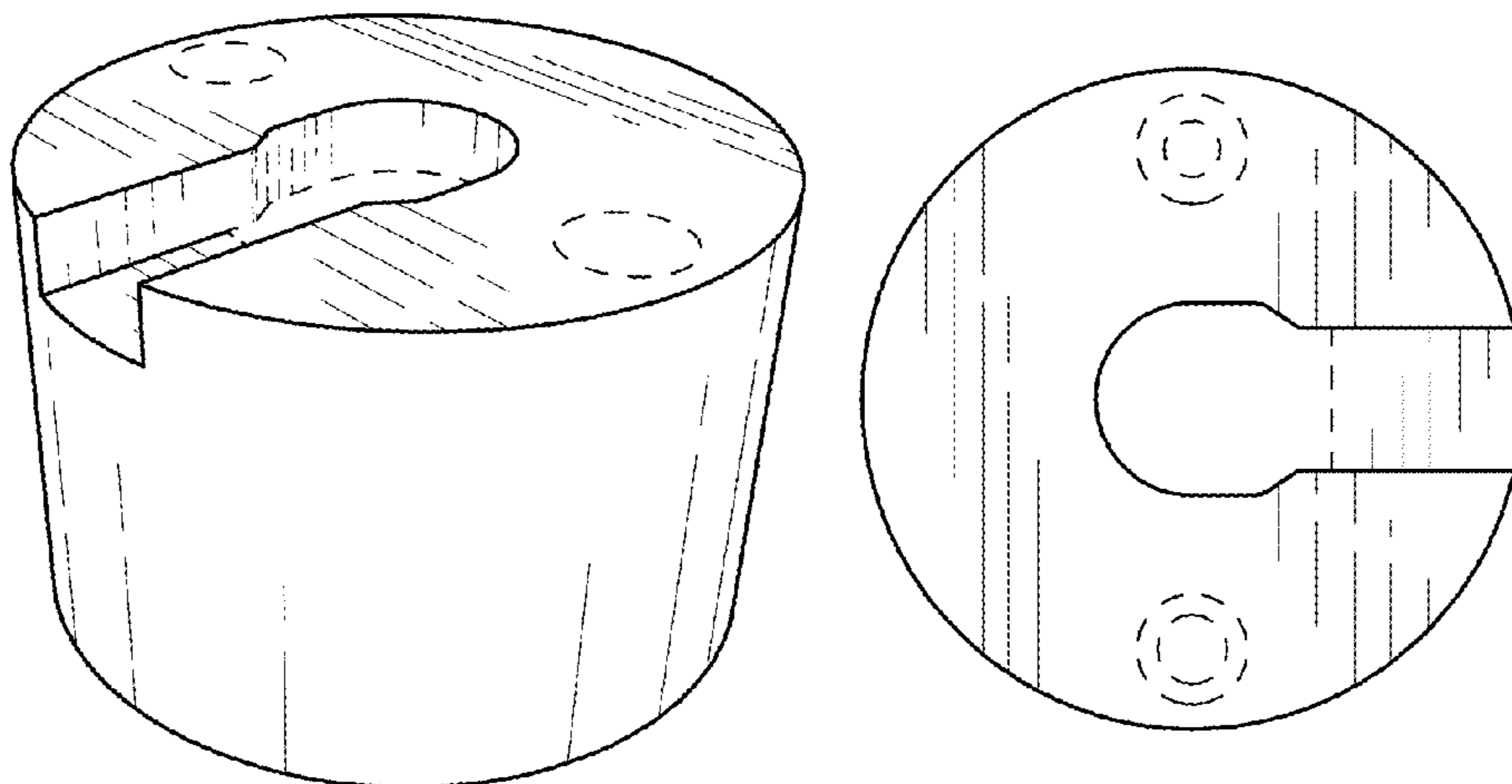
(57) **CLAIM**

The ornamental design for wheel angle sensor adapter housing, as shown and described.

DESCRIPTION

FIG. 1 is a perspective view of a wheel angle sensor adapter housing showing our new design;
FIG. 2 is a side view thereof as viewed from the left-hand side of the wheel angle sensor adapter housing shown in FIG. 1;
FIG. 3 is a side view thereof as viewed from the right-hand side of the wheel angle sensor adapter housing shown in FIG. 1;
FIG. 4 is a rear view of the wheel angle sensor adapter housing shown in FIG. 1;
FIG. 5 is a frontal view of the wheel angle sensor adapter housing shown in FIG. 1;
FIG. 6 is a top view thereof; and,
FIG. 7 is a bottom view thereof.
The broken lines shown in the drawings illustrate portions of the wheel angle sensor adapter housing that forms no part of the claimed design.

1 Claim, 7 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

6,058,603 A * 5/2000 Reed G02B 6/3887
174/84 R
6,817,192 B2 * 11/2004 Ector, Jr. G01K 3/04
206/459.1
7,121,438 B2 * 10/2006 Hoepner B65D 47/089
220/254.2
8,070,194 B2 * 12/2011 Houis E05B 3/00
16/412
8,403,124 B2 * 3/2013 Dimig B60N 2/442
192/84.1
8,567,831 B2 * 10/2013 Roti E05C 17/56
16/82
9,027,571 B2 * 5/2015 Baker A45D 19/00
132/212
D764,674 S * 8/2016 Quinn D11/27
9,498,091 B2 * 11/2016 Yamada B65D 75/5894
D777,567 S * 1/2017 Diener D8/356
2004/0104567 A1 * 6/2004 Kinme B62D 1/192
280/777
2005/0217407 A1 * 10/2005 Yamamura B62D 1/184
74/492
2007/0097697 A1 * 5/2007 Huang B60Q 1/076
362/465
2010/0212119 A1 * 8/2010 Dendo B60N 3/046
24/453

2011/0058757 A1 * 3/2011 Bruder F16C 33/201
384/42
2015/0260275 A1 * 9/2015 Okumoto F16H 59/0213
74/473.34

OTHER PUBLICATIONS

Cylinder with D hole—SketchUp Community, image post date Jan. 2016, site visited Sep. 15, 2017, (online), <<https://forums.sketchup.com/t/holes-in-cylinders/18710/6>>.*
Turck Valve Position Sensor Accessories, image post date 2011, site visited Sep. 16, 2017, (online), <<http://www.clwrtr.com/TURCK-Valve-Position-Sensors.htm>>.*
Hexagonal adapter D-shaped shaft, image post date Nov. 2, 2012, site visited Sep. 16, 2017, (online), <<http://www.cnczone.com/forums/mechanical-calculations-engineering-design/166652-tormach.html>>.*
D hole gear, image post date 2010, site visited Sep. 16, 2017, (online), <<https://www.aliexpress.com/item/25GA370-motor-output-shaft-gear-D-hole-gear-For-JGA25-370-GA25-310-Powder-metallurgy-gear/32811986091.html?spm=2114.search0306.4.97.e4QNh3>>.*
D-Shaft Sprocket for No. 25 Pitch Chain, image post date May 3, 2016, site visited Sep. 16, 2017, (online)<<https://web.archive.org/web/20160503060826/http://www.superdroidrobots.com:80/shop/item.aspx/steel-d-shaft-sprocket-for-25-pitch-chain-15-teeth/2209/>>.*

* cited by examiner

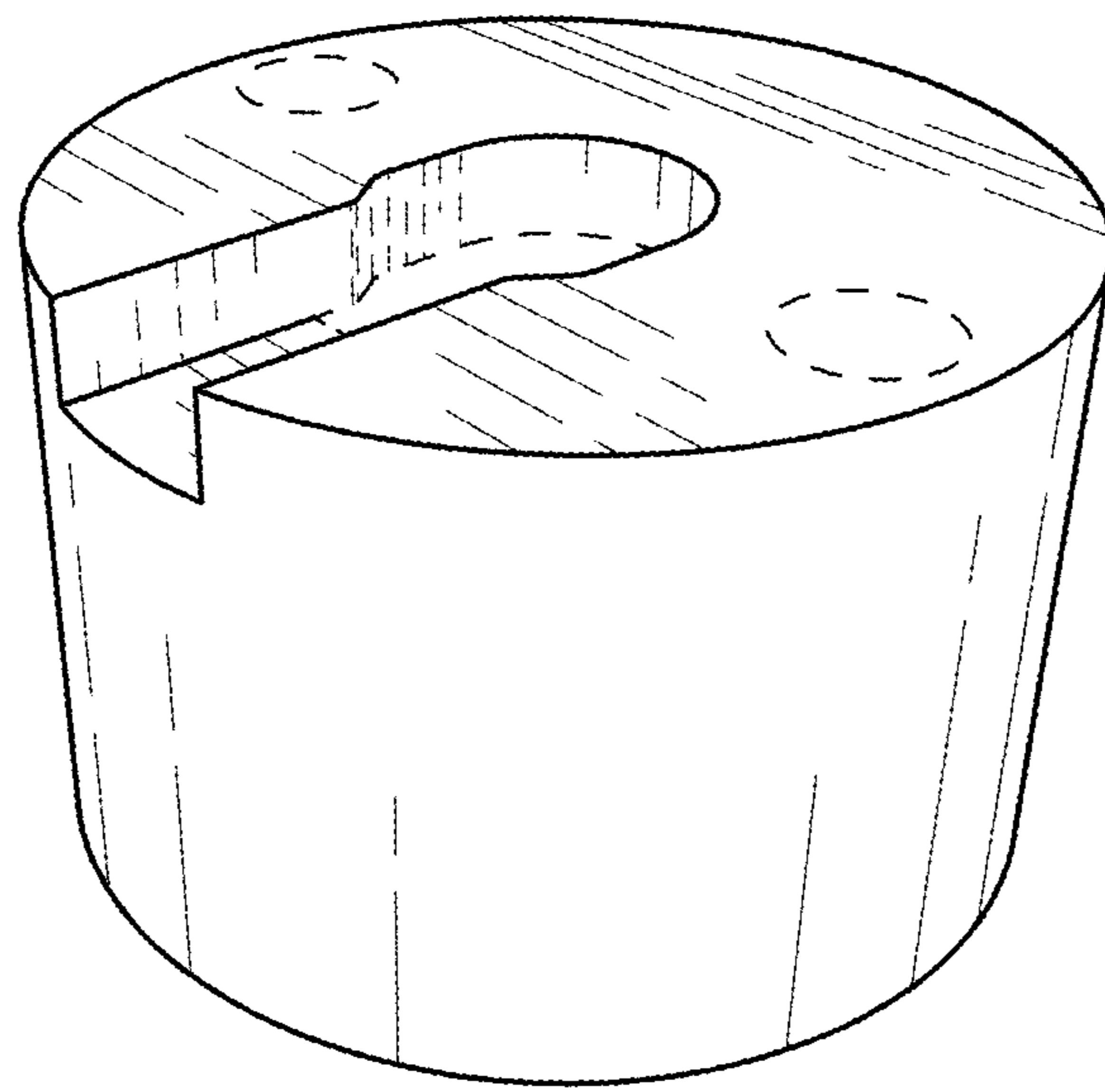


FIG. 1

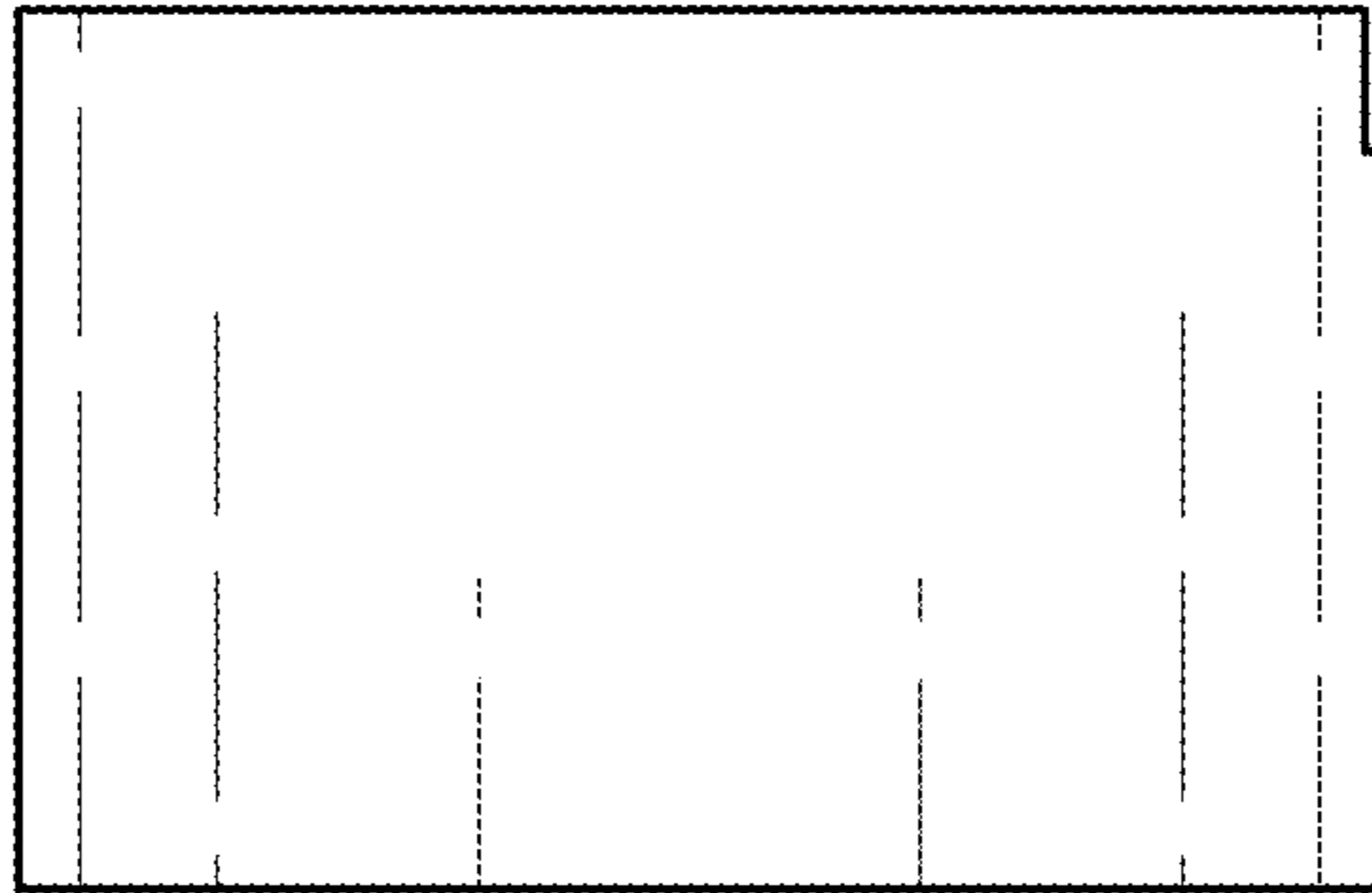


FIG. 2

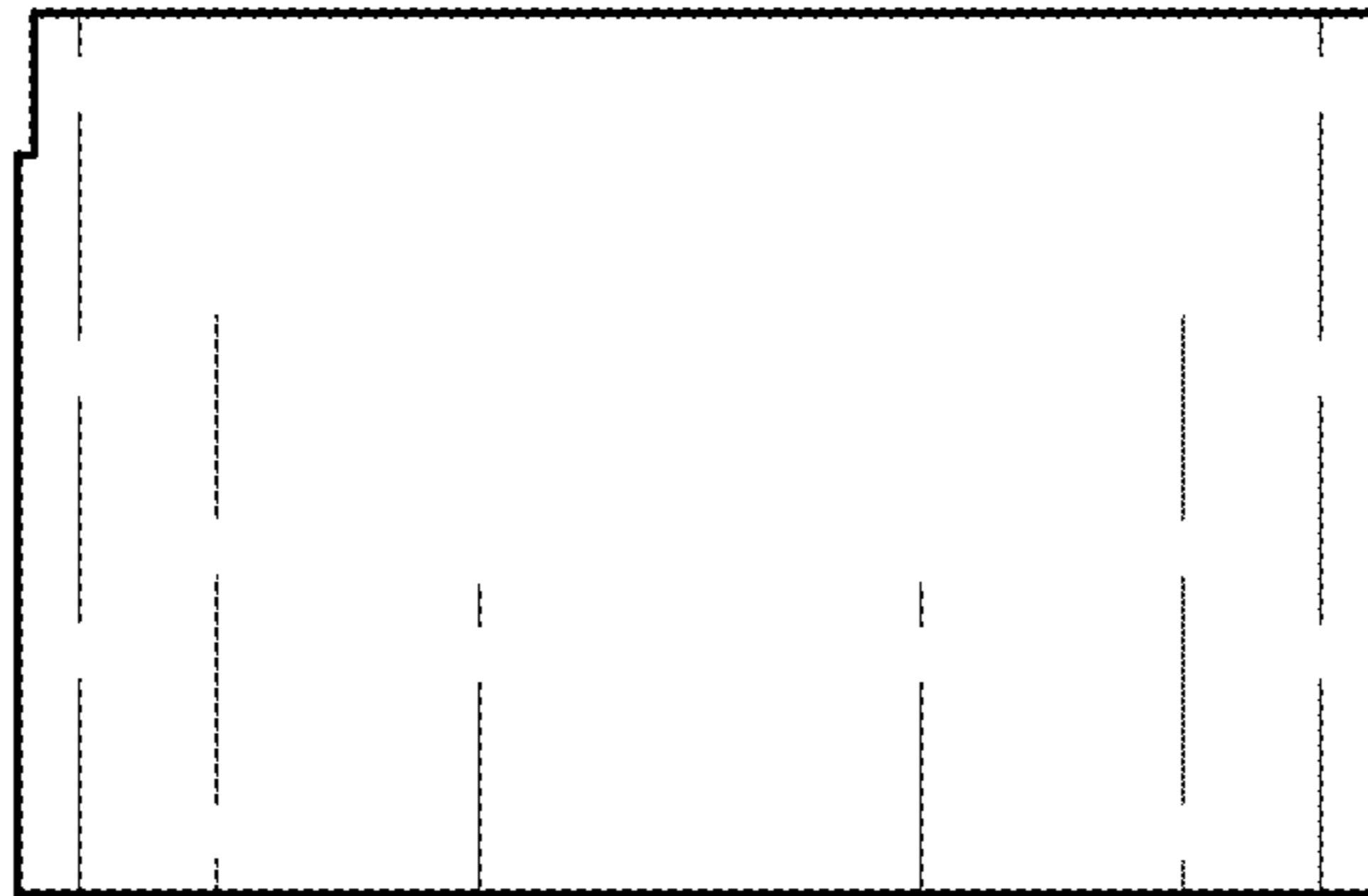


FIG. 3

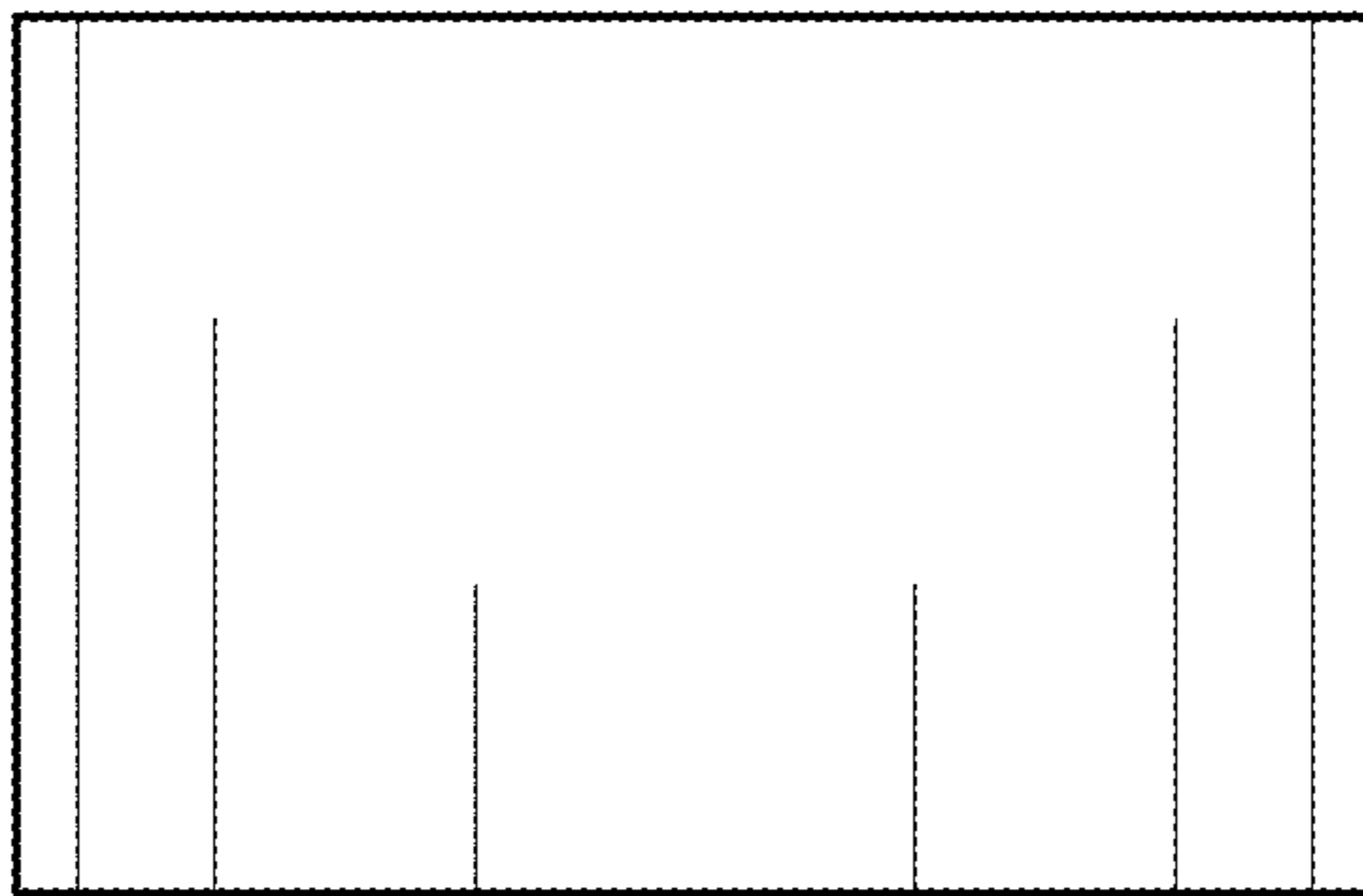


FIG. 4

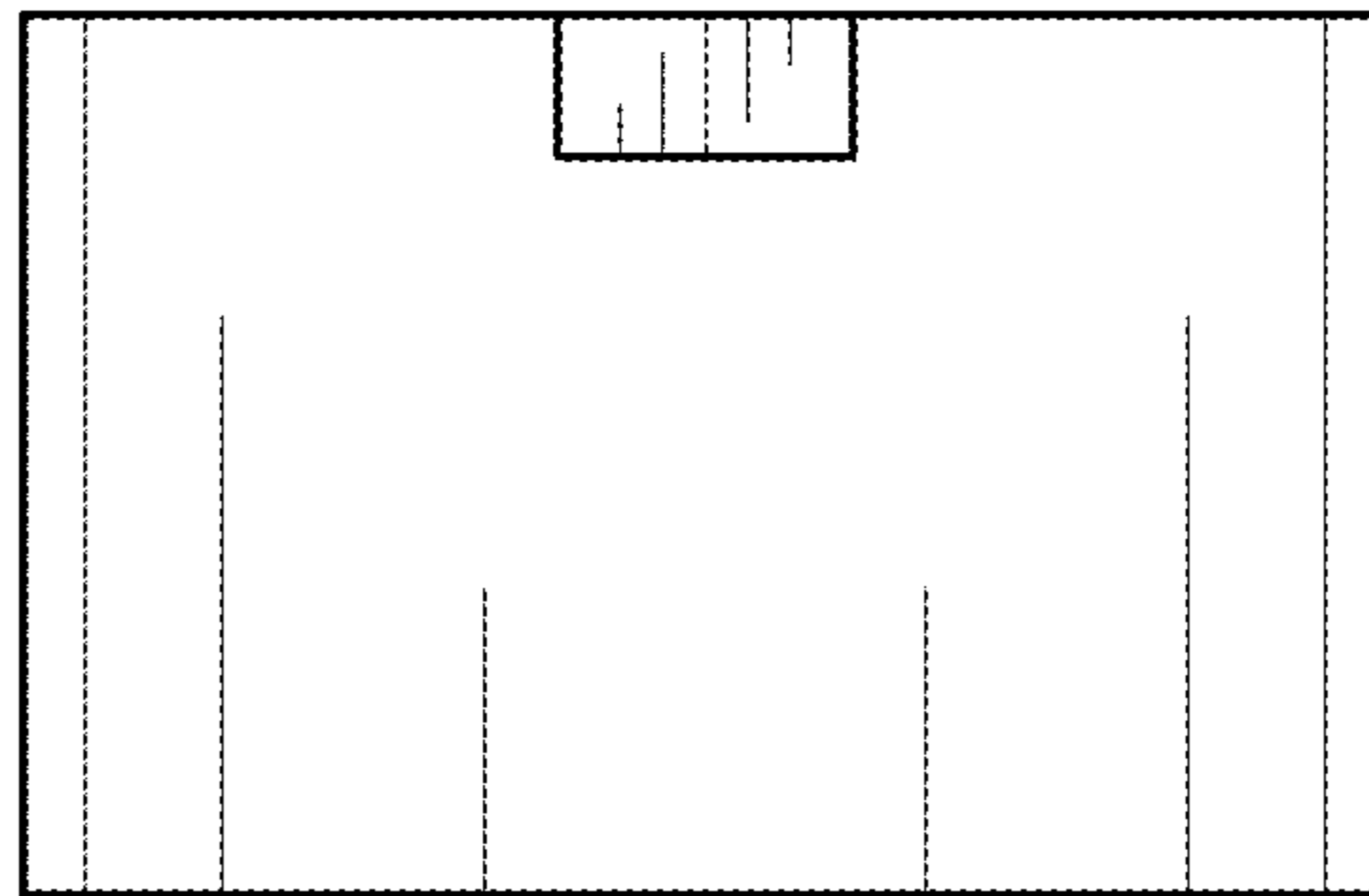


FIG. 5

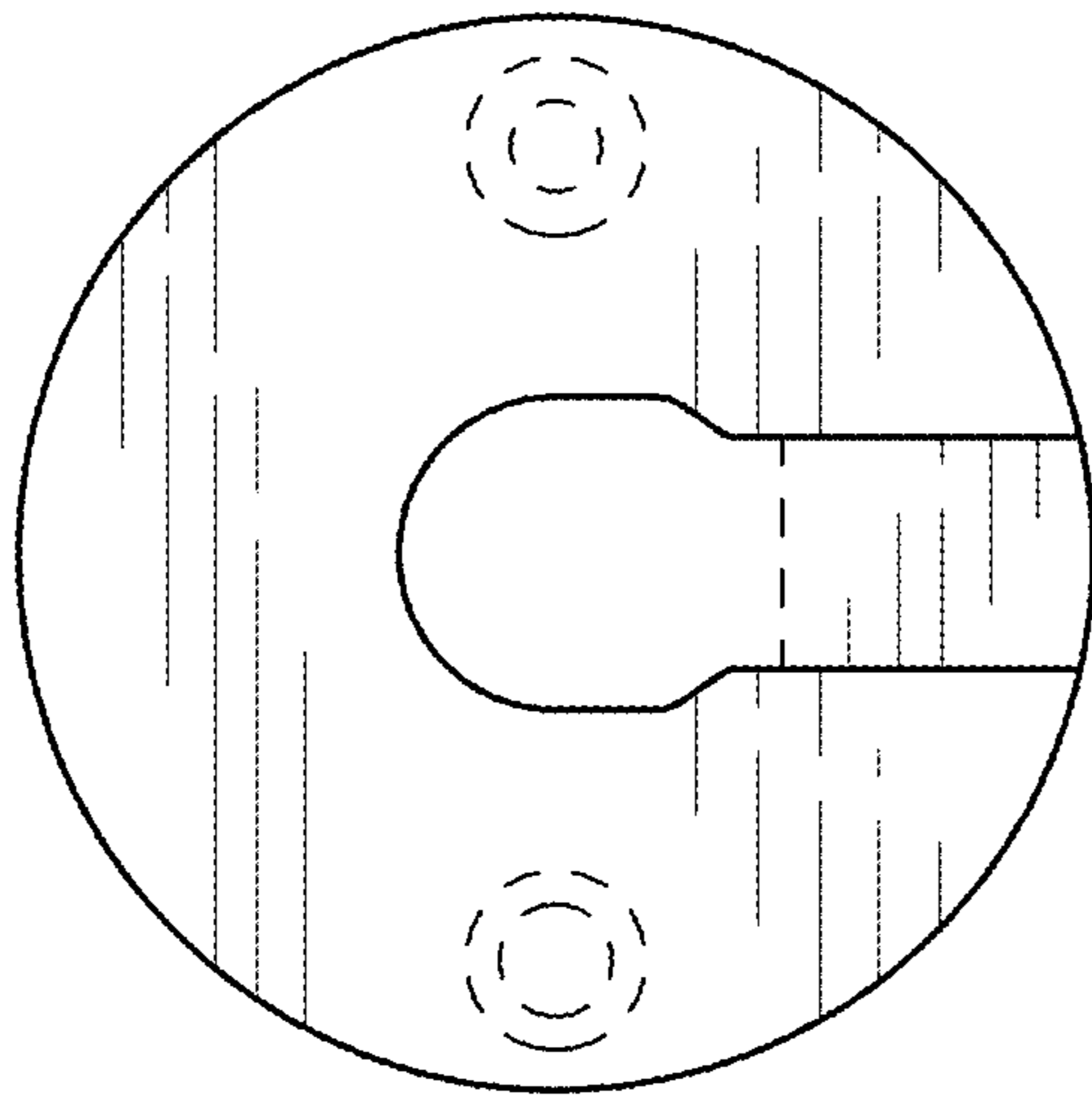


FIG. 6

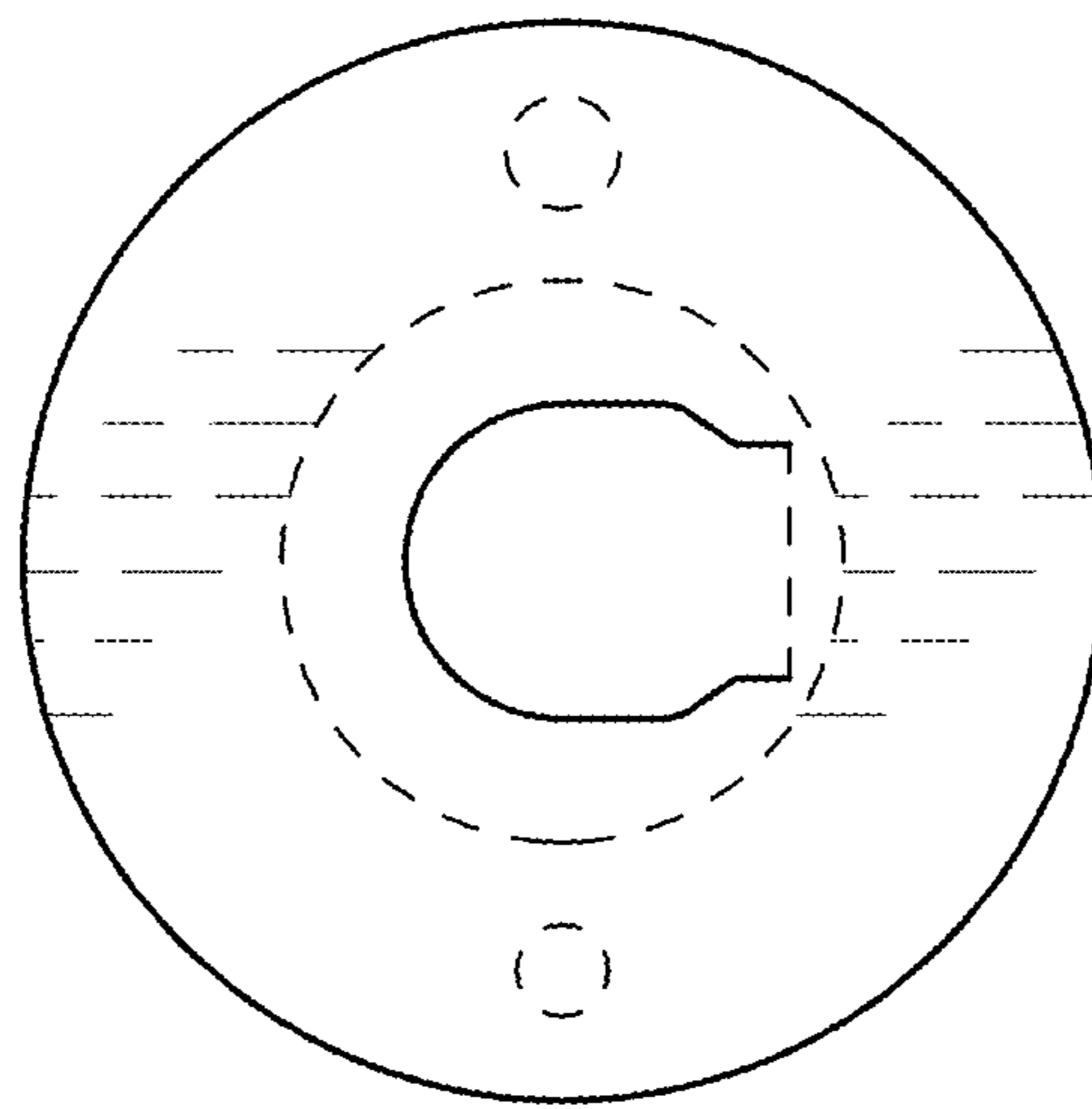


FIG. 7