



US00D898254S

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

(10) **Patent No.:** **US D898,254 S**

(45) **Date of Patent:** **** Oct. 6, 2020**

(54) **COMBINED LOCK AND LIGHT SIGNALING SYSTEM FOR MULTI-WHEELED VEHICLES**

(71) Applicant: **North Carolina State University,**
Raleigh, NC (US)

(72) Inventors: **Brian Himmelright,** Raleigh, NC (US);
David P. Majeski, Raleigh, NC (US);
George Carl Pinther, II, Raleigh, NC (US);
Shadaab Khan, Raleigh, NC (US);
Nishad Santosh Sabnis, Raleigh, NC (US);
Kevin Ullatuthodi, Raleigh, NC (US)

(73) Assignee: **North Carolina State University,**
Raleigh, NC (US)

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

(21) Appl. No.: **29/623,606**

(22) Filed: **Oct. 25, 2017**

(51) **LOC (12) Cl.** **26-02**

(52) **U.S. Cl.**
USPC **D26/38**

(58) **Field of Classification Search**
USPC **D26/37-50**

(Continued)

(56) **References Cited**

U.S. PATENT DOCUMENTS

D375,374 S * 11/1996 Yuen D26/42
6,874,592 B2 4/2005 Yokotani et al.

(Continued)

OTHER PUBLICATIONS

Mintel (2015) Mad About the Bike: Sales of Bicycle Accessories
Outstrip Sales of Bikes. <http://www.mintel.com/press-centre/leisure/mad-about-the-bike-sales-of-bicycle-accessories-outstrip-sales-of-bikes-1-9>.

(Continued)

Primary Examiner — Marcus A Jackson

(74) *Attorney, Agent, or Firm* — Jenkins, Wilson, Taylor & Hunt, P.A.

(57) **CLAIM**

The ornamental design for combined lock and light signaling system for multi-wheeled vehicles, as shown and described.

DESCRIPTION

FIG. 1 is a top perspective view of combined lock and light signaling system for multi-wheeled vehicles showing our design according to an embodiment wherein the large leg is assembled with the small leg;

FIG. 2 is an exploded top perspective view thereof;

FIG. 3 is a top plan view thereof;

FIG. 4 is a bottom view thereof, opposite the view of FIG. 3;

FIG. 5 is a front view thereof;

FIG. 6 is a rear view thereof, opposite the view of FIG. 5;

FIG. 7 is a right side view thereof;

FIG. 8 is a left side view thereof, opposite the view of FIG. 7;

FIG. 9 is a top perspective view of combined lock and light signaling system for multi-wheeled vehicles showing our design according to an embodiment wherein only the large leg is presented;

FIG. 10 is a top plan view thereof;

FIG. 11 is a bottom view thereof, opposite the view of FIG. 10;

FIG. 12 is a rear view thereof;

FIG. 13 is a front view thereof, opposite the view of FIG. 12;

FIG. 14 is a right side view thereof;

FIG. 15 is a left side view thereof, opposite the view of FIG. 14;

FIG. 16 is a top perspective view of combined lock and light signaling system for multi-wheeled vehicles showing our design according to an embodiment wherein only the small leg is presented;

FIG. 17 is a top plan view thereof;

FIG. 18 is a bottom view thereof, opposite the view of FIG. 17;

FIG. 19 is a front view thereof;

(Continued)

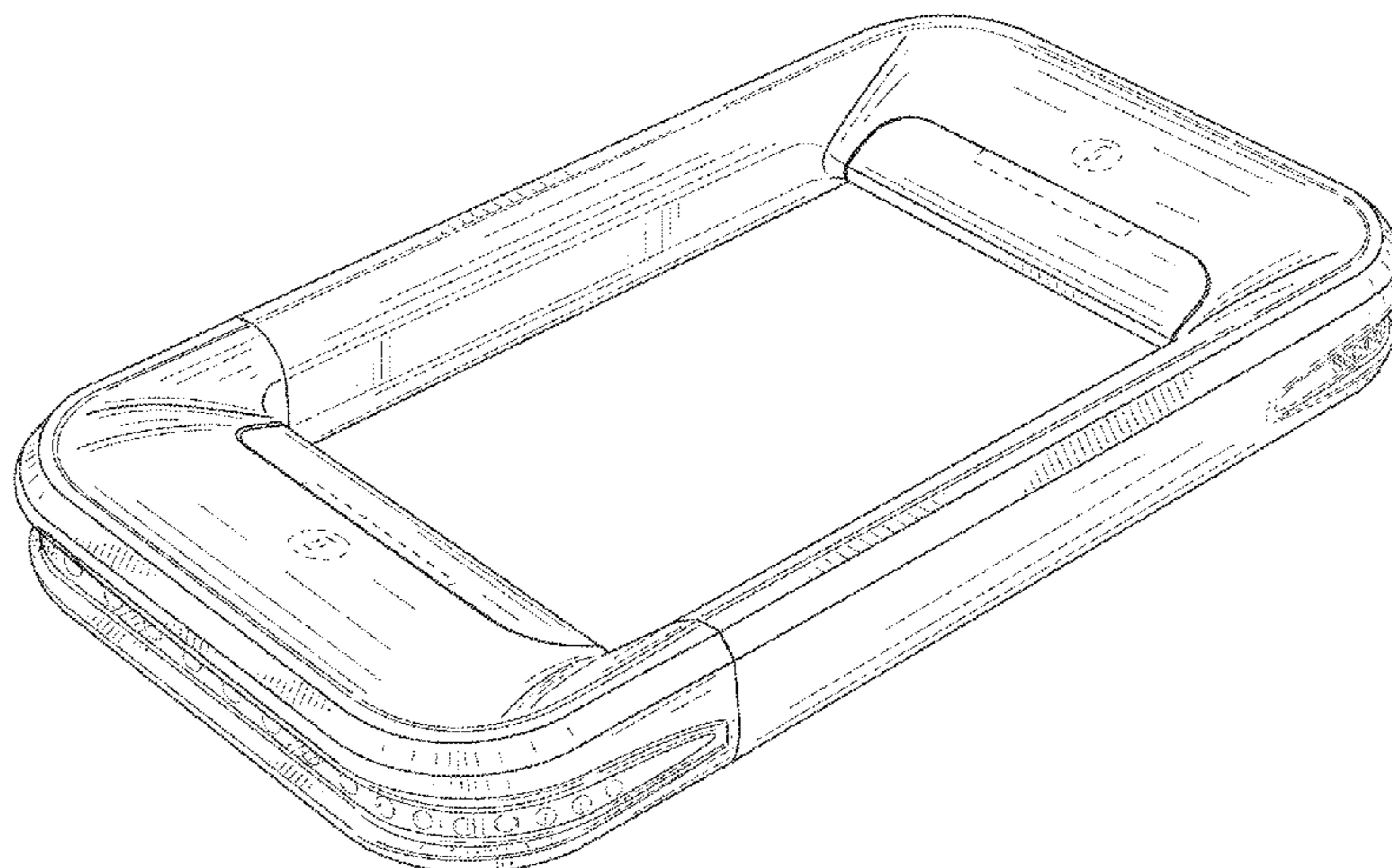


FIG. 20 is a rear view thereof, opposite the view of FIG. 19; FIG. 21 is a right side view thereof; and, FIG. 22 is a left side view thereof, opposite the view of FIG. 21.

The broken/dotted lines are for illustrative purposes only and form no part of the claimed design.

1 Claim, 15 Drawing Sheets

(58) Field of Classification Search

CPC F21V 33/00; F21V 14/045; F21V 21/406;
F21V 2101/02; F21L 17/00; F21L 13/08;
F21L 14/02; F21L 2001/00

See application file for complete search history.

(56) References Cited

U.S. PATENT DOCUMENTS

D523,575 S * 6/2006 Bhavnani D26/38
D546,490 S * 7/2007 Brown D26/42
D551,788 S * 9/2007 Bao D26/38

7,515,056 B2 4/2009 Knoop et al.
D636,915 S * 4/2011 Bryant F21L 4/08
D26/42
D640,400 S * 6/2011 Huang D26/42
8,803,674 B2 8/2014 Langlois
D750,822 S * 3/2016 Hernandez D26/38

OTHER PUBLICATIONS

National Bicycle Dealers Association (2015) Industry Overview 2015. <http://nbda.com/articles/industry-overview-2015-pg34.htm> 1-13.
Bicycle Industry in the U.S. (Retrieved Sep. 10, 2016) <https://www.statista.com/topics/1448/bicycle-industry-in-the-us/> 1-3.
Xtreme Bright (2018) Illumilock Blade Bicycle U-Lock and LED Bike Light Combination. <https://www.xtremebrightlights.com/products/illumilock-blade-u-lock-and-led-bike-light?variant=19975444359> 1-3.
Gluskin Townley Group, LLC, The US Bicycle Market—A Trent Overview Report.pdf. pp. 1-10 (2010).
National Highway Traffic Safety Administration, Traffic Safety Facts 2013 Data. DOT HS 212 151 (2013).
Breakaway Research Group, U.S. Bicycling Participation Benchmarking Study Report (2015).

* cited by examiner

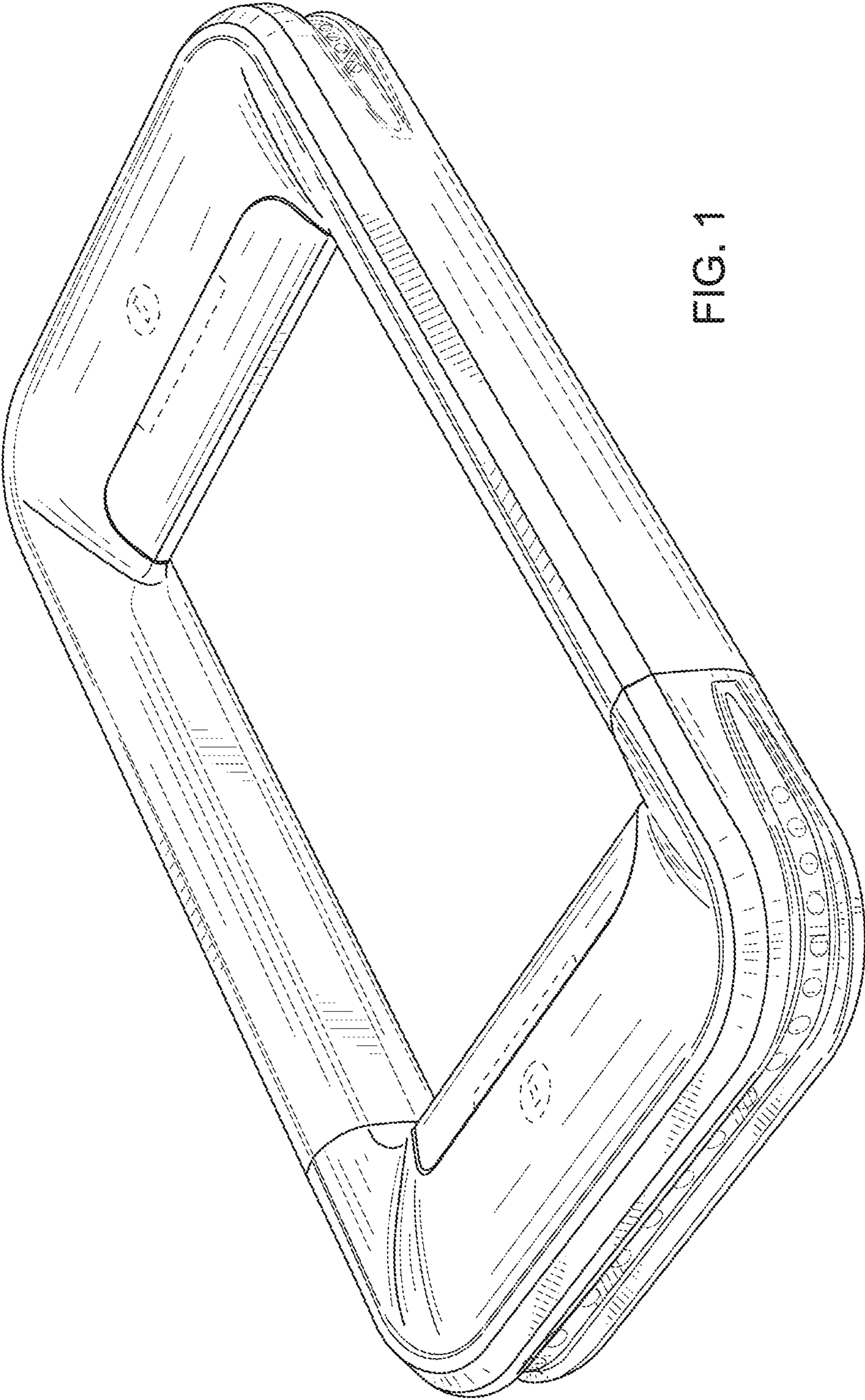
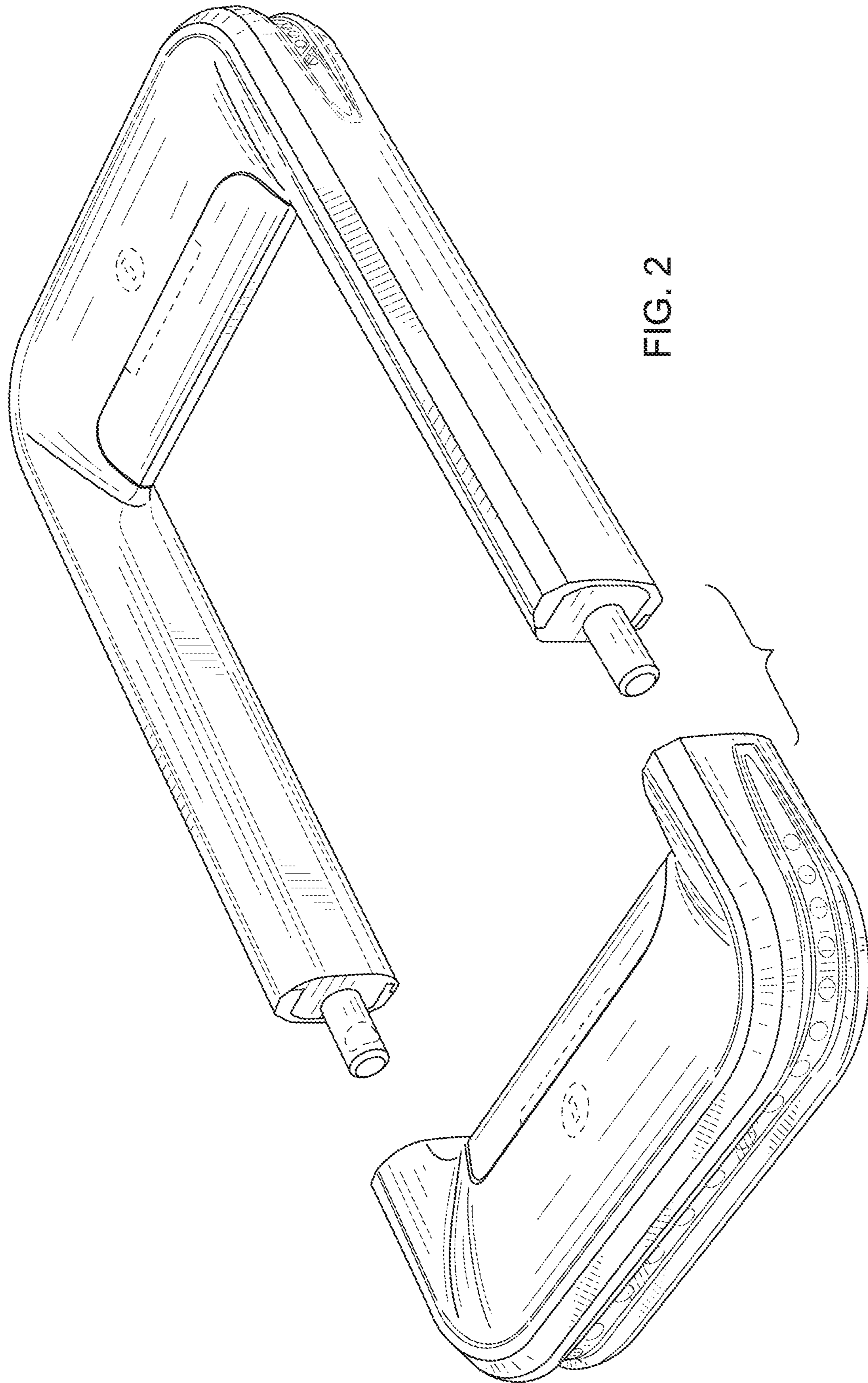


FIG. 1



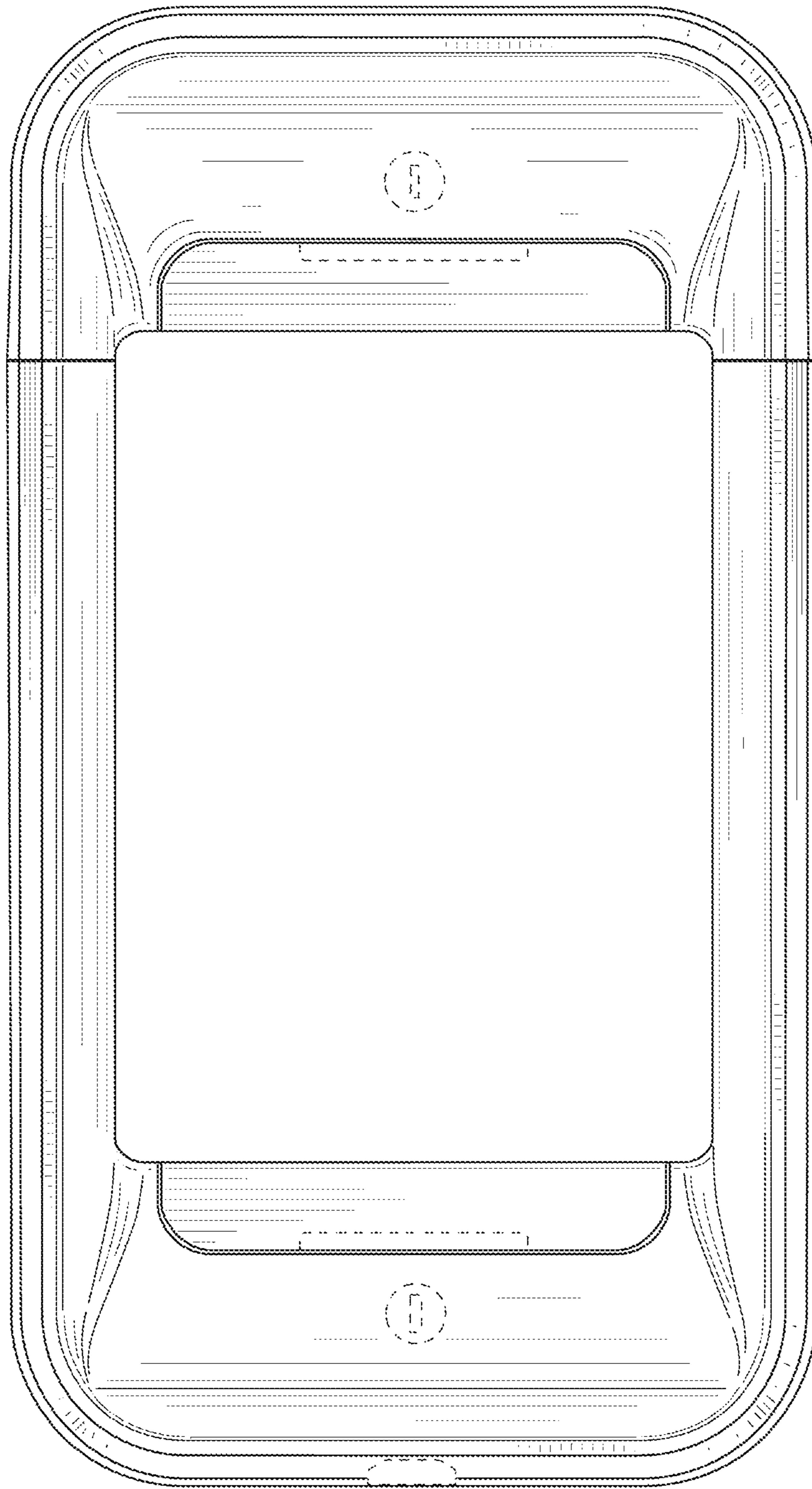


FIG. 3

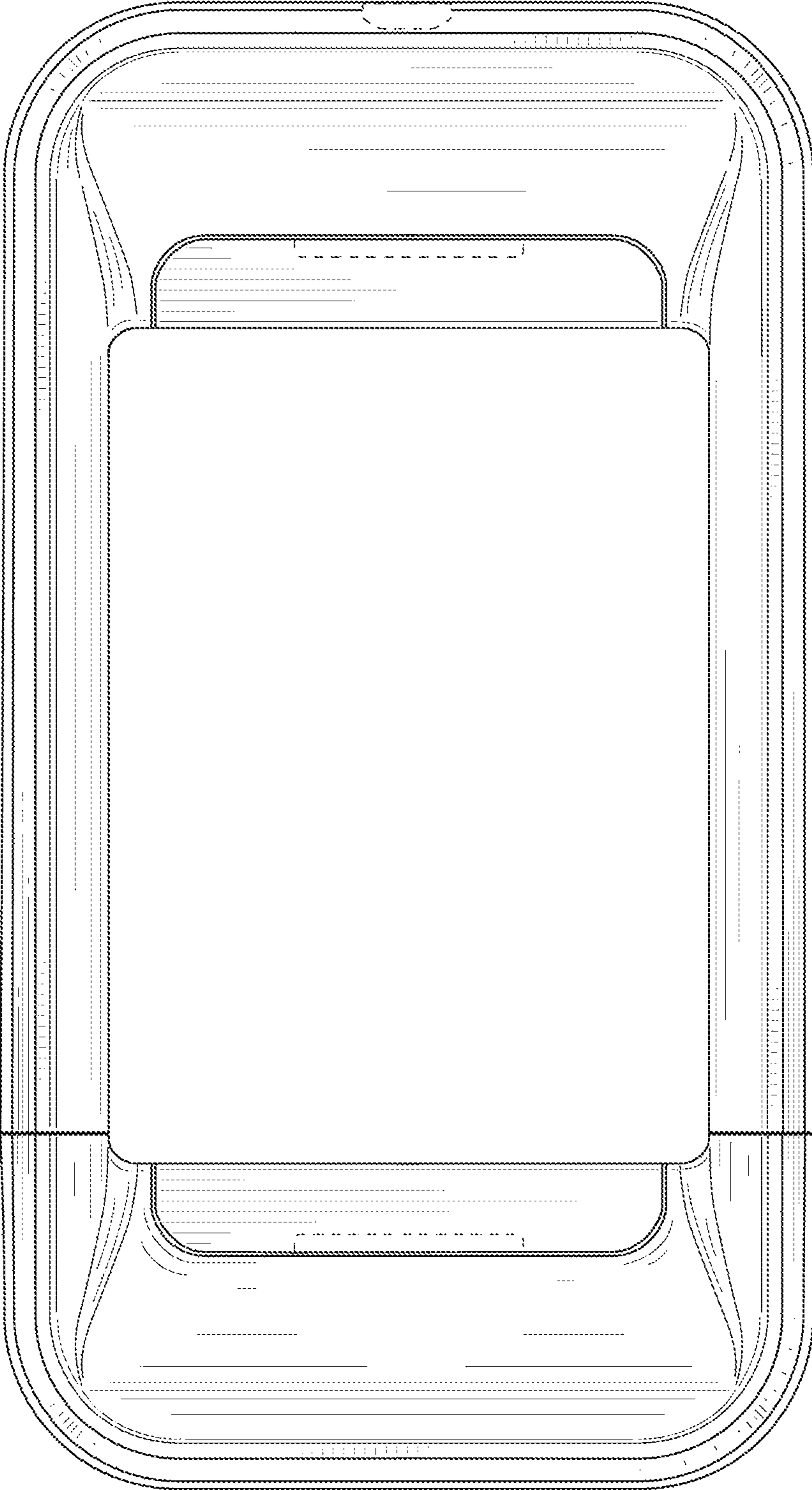


FIG. 4

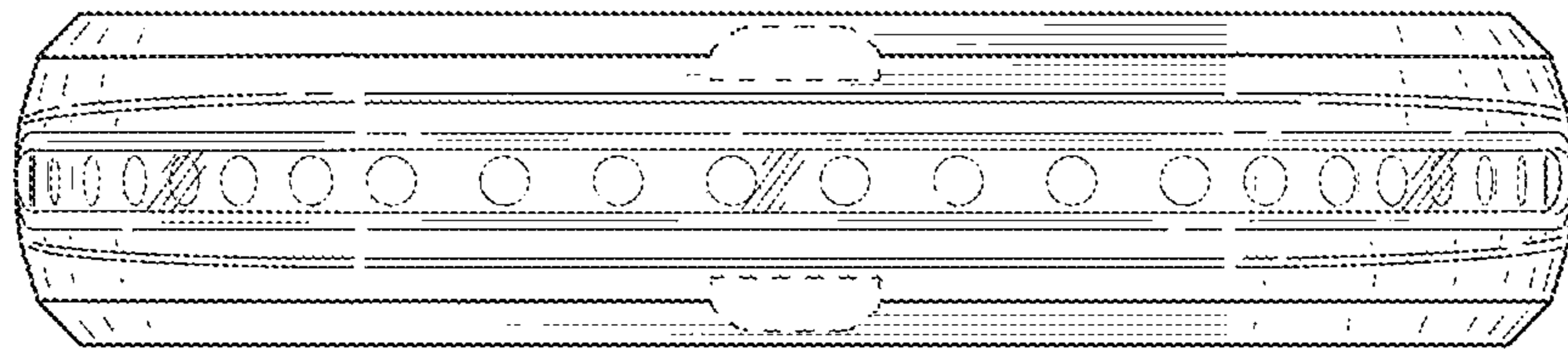


FIG. 5

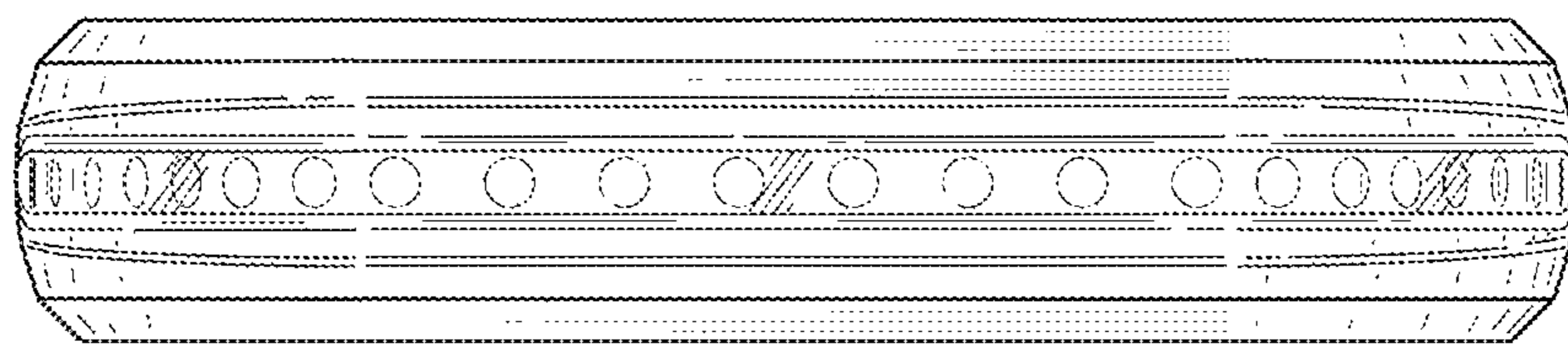


FIG. 6

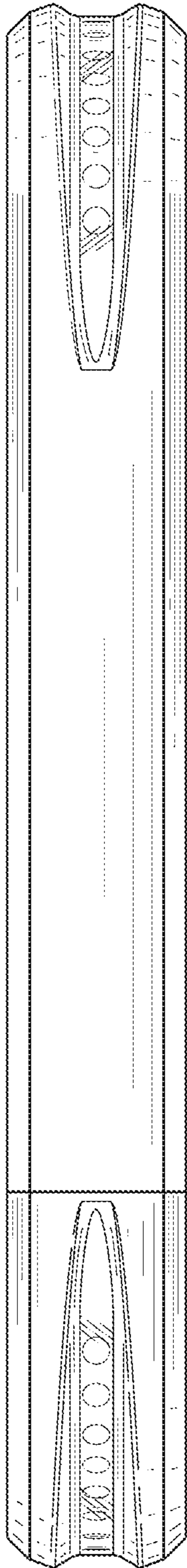


FIG. 7

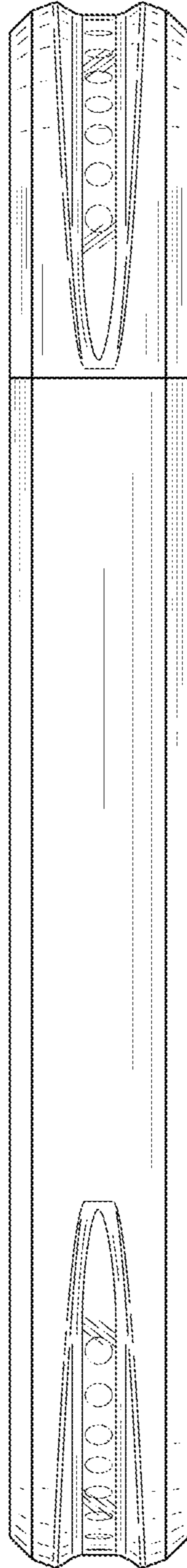


FIG. 8

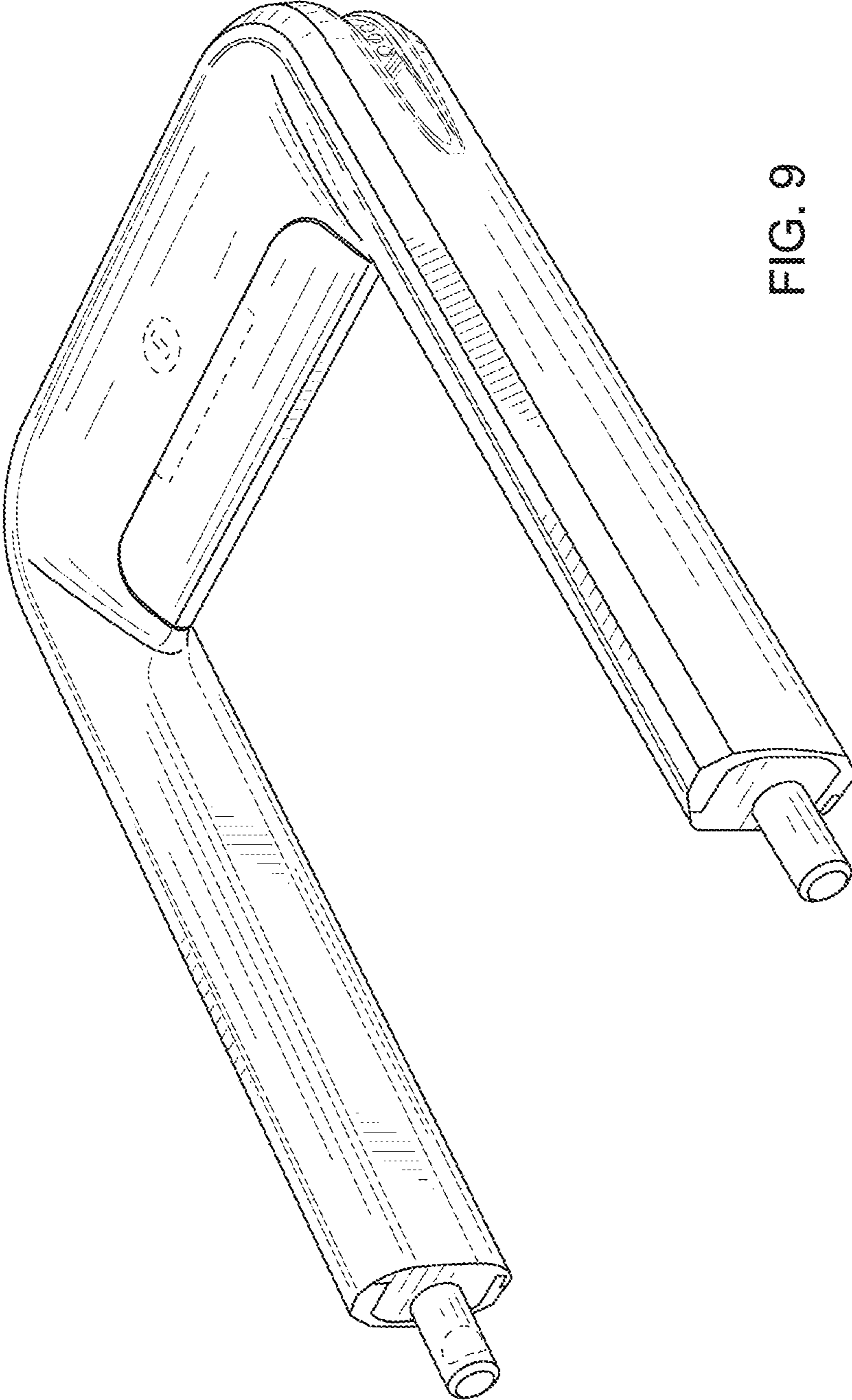


FIG. 9

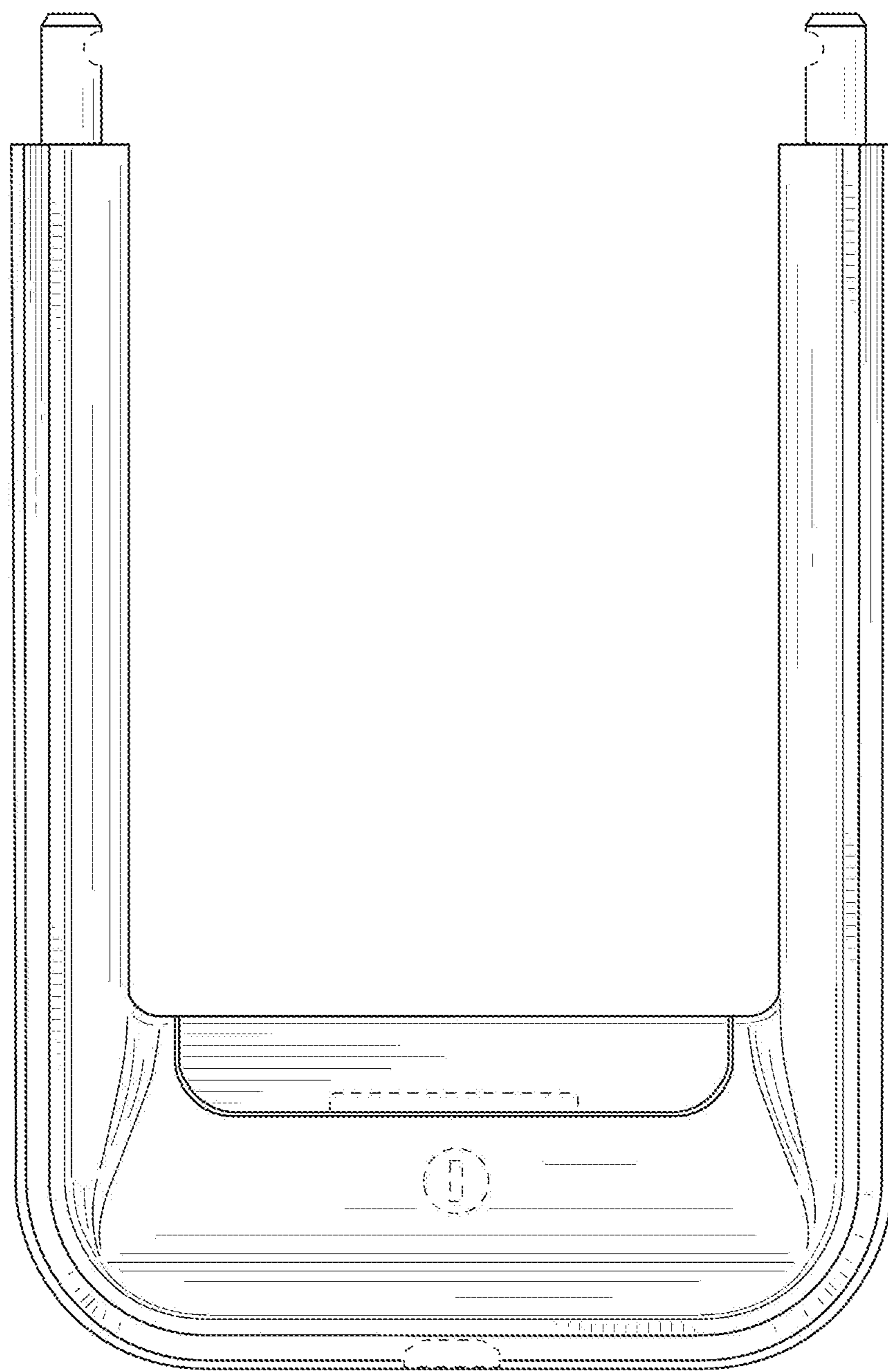


FIG. 10

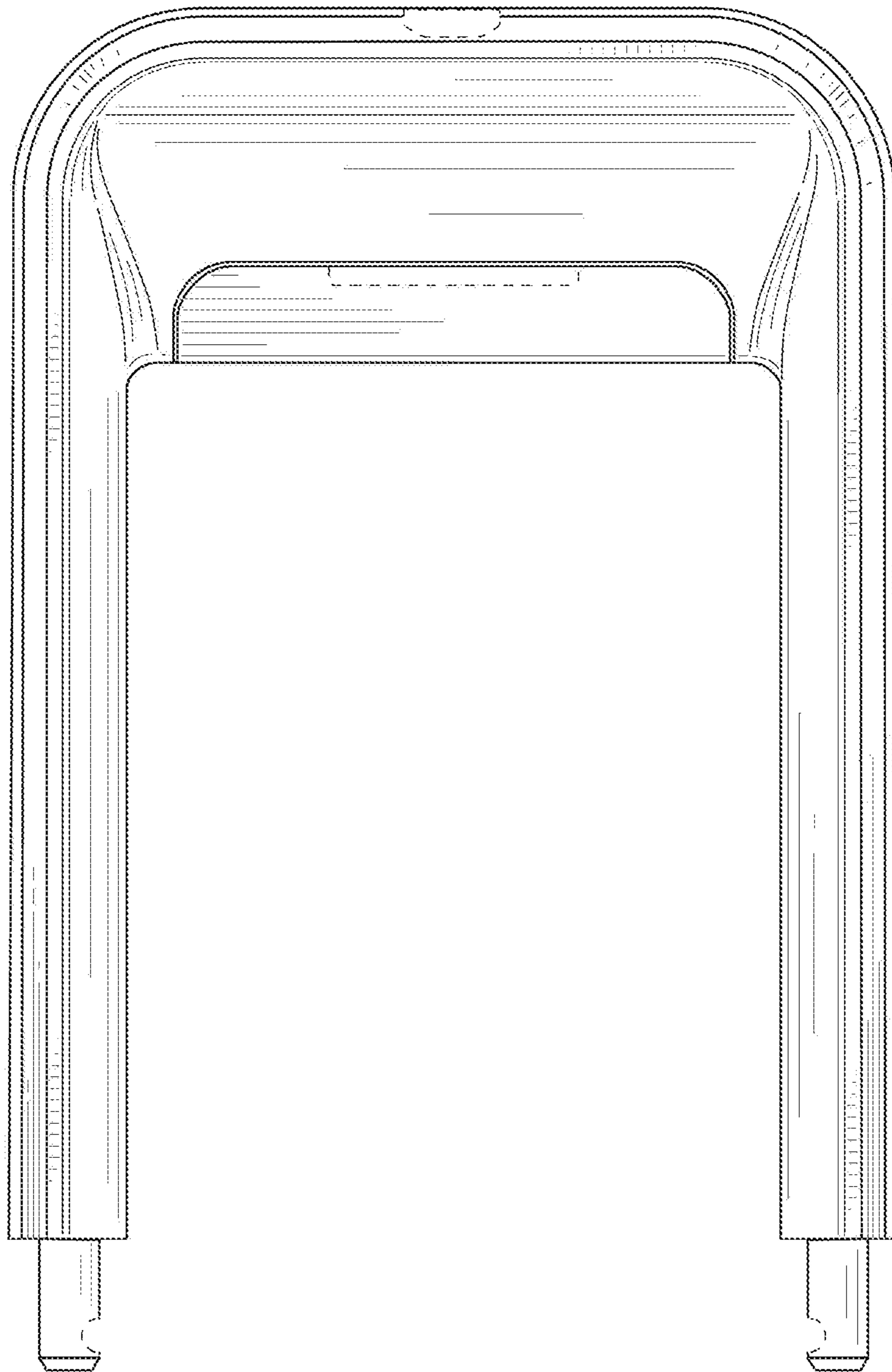


FIG. 11

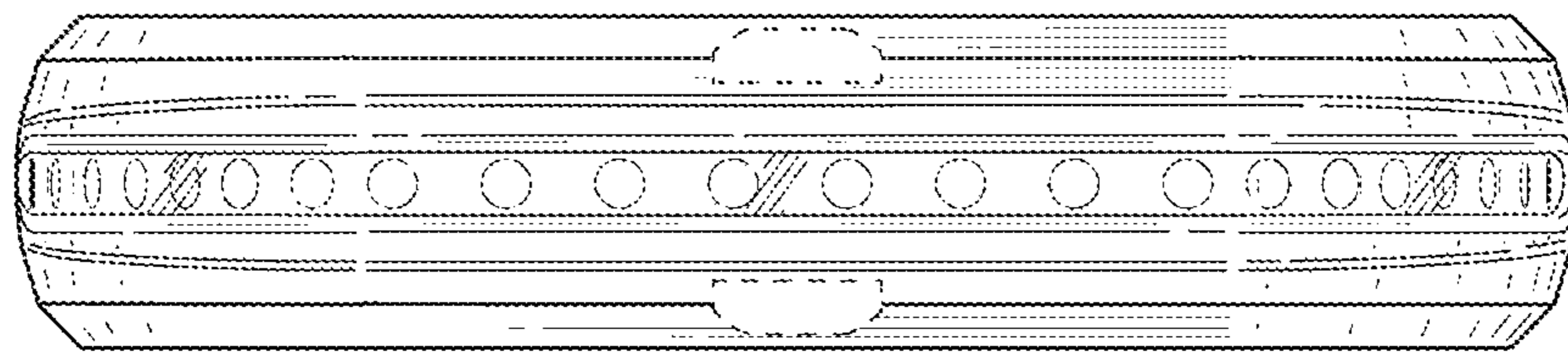


FIG. 12

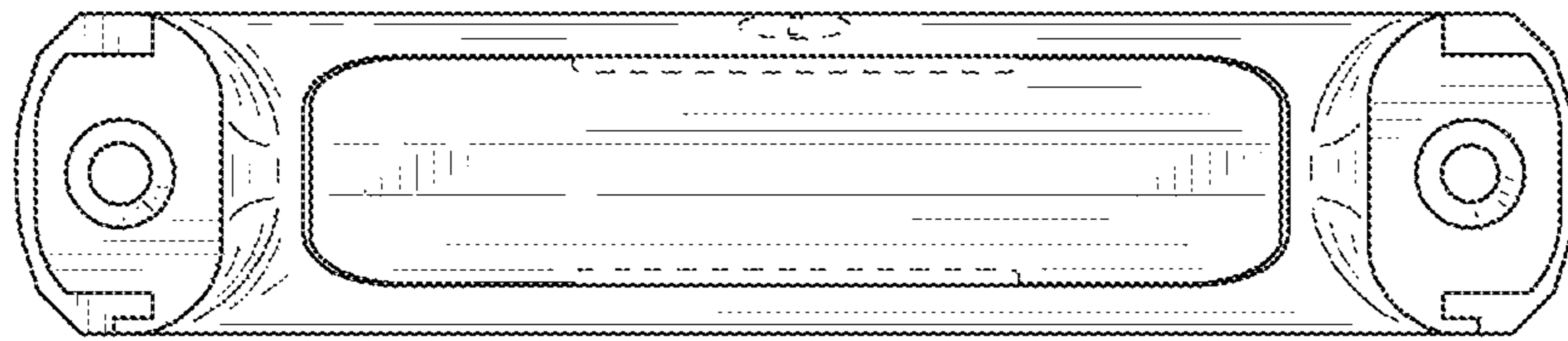


FIG. 13

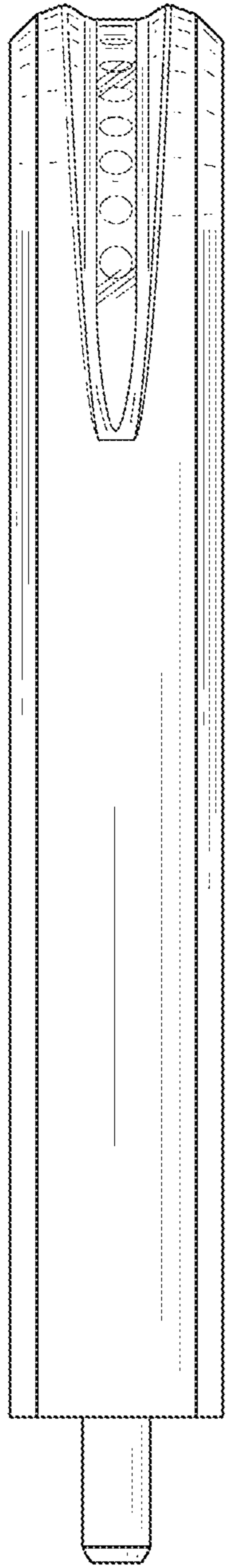


FIG. 14

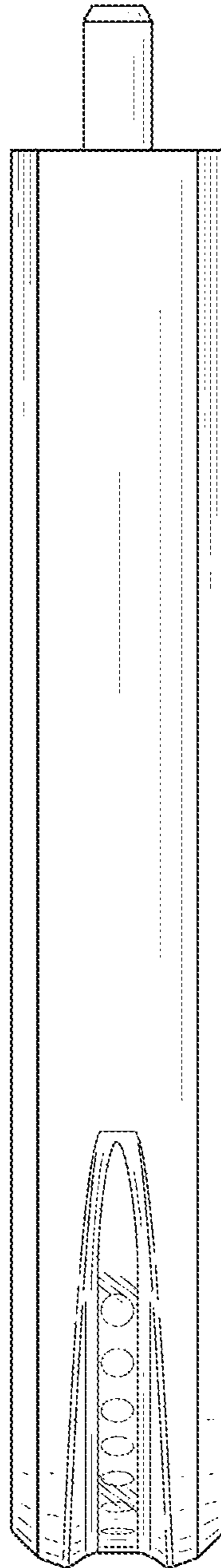


FIG. 15

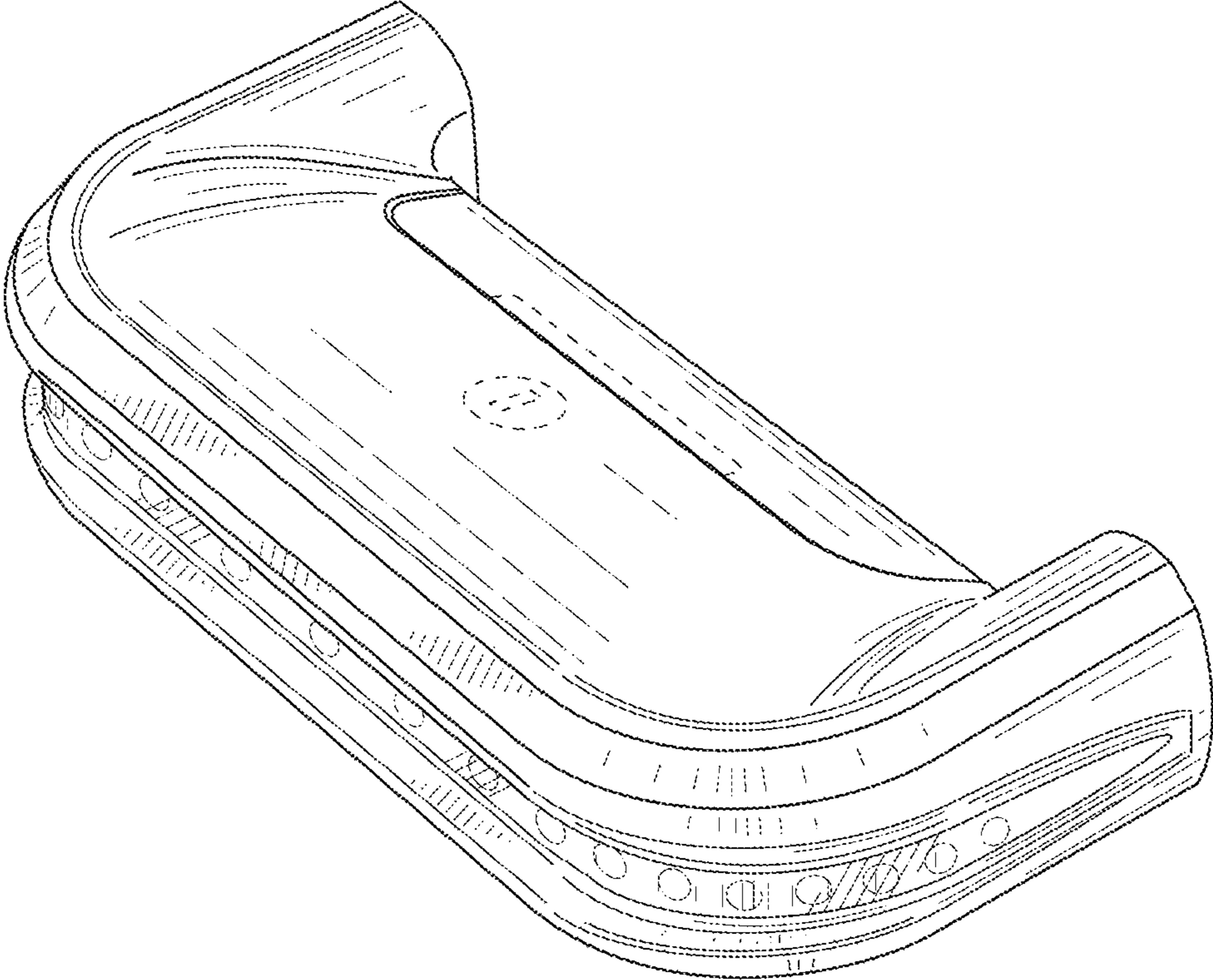


FIG. 16

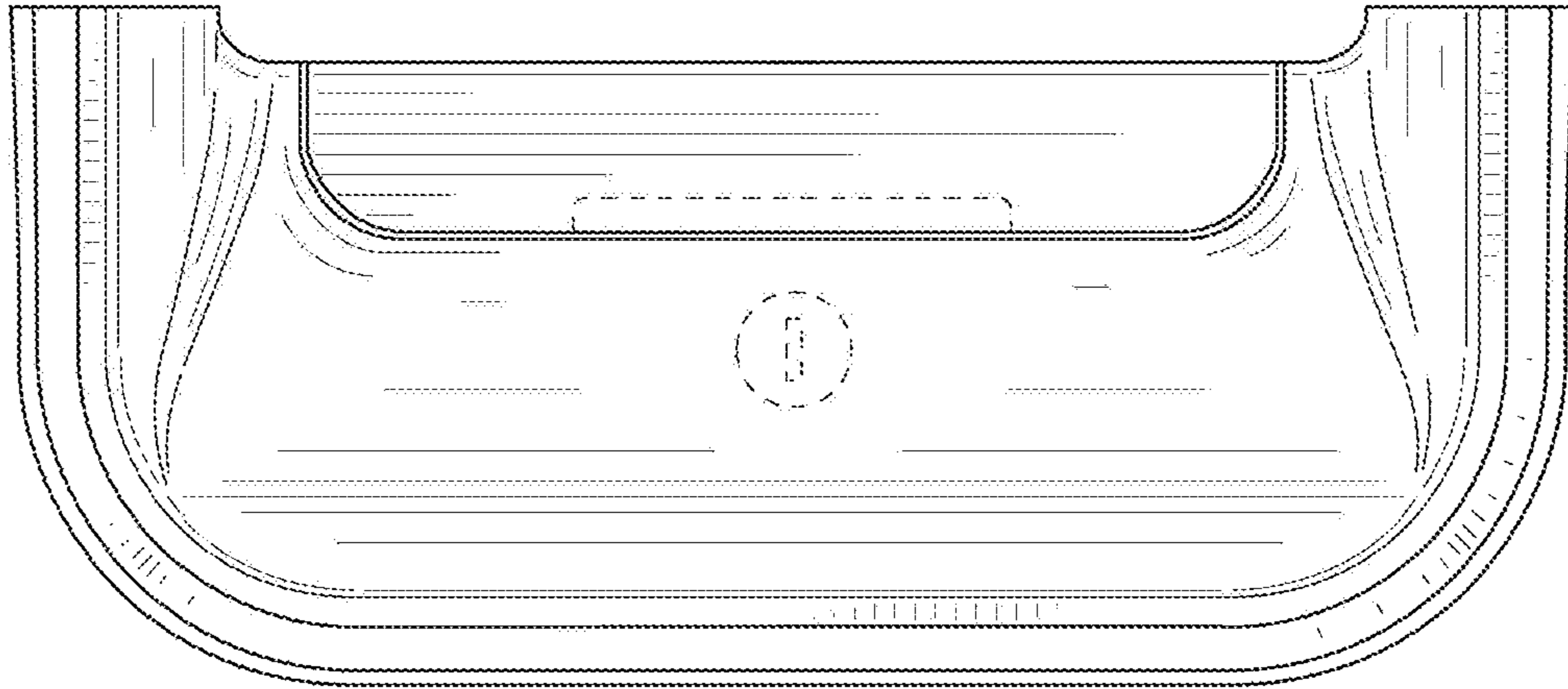


FIG. 17

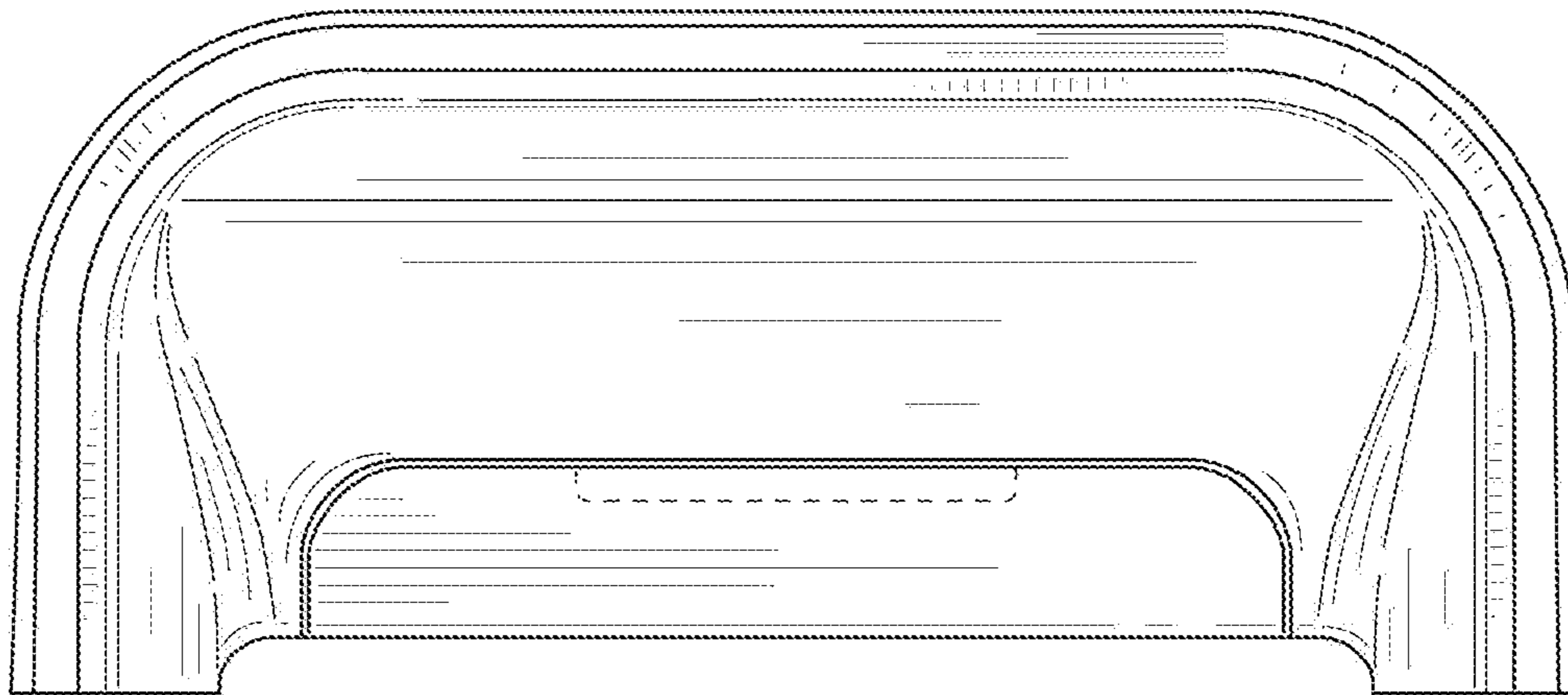


FIG. 18

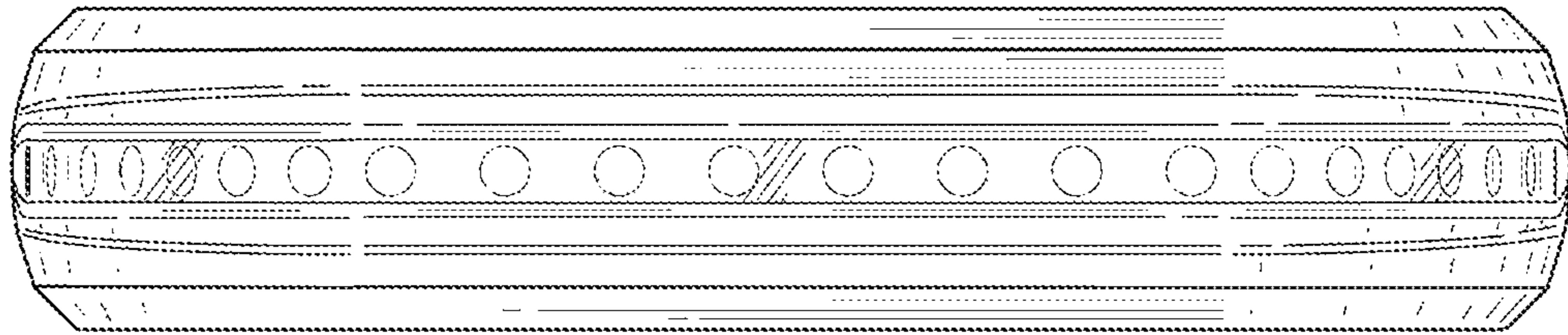


FIG. 19

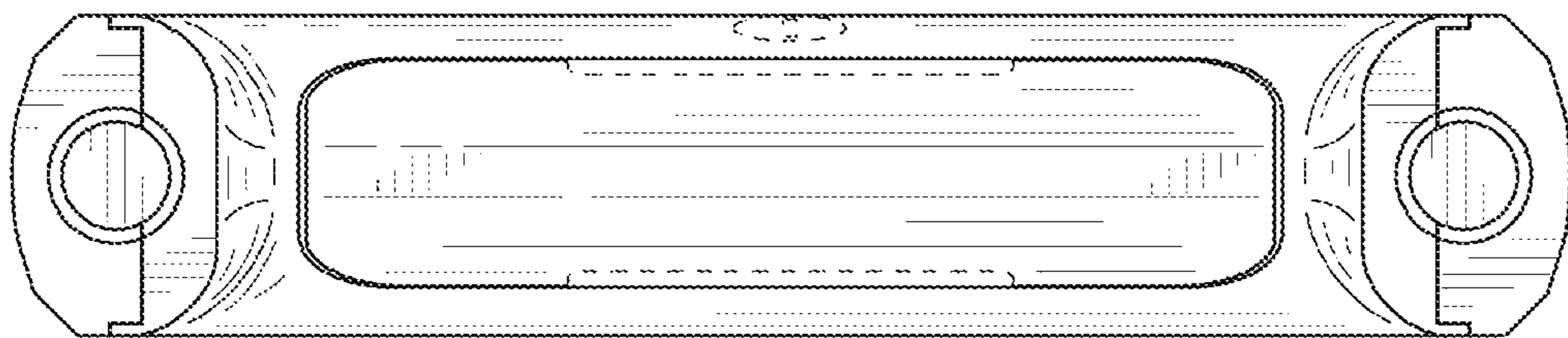


FIG. 20

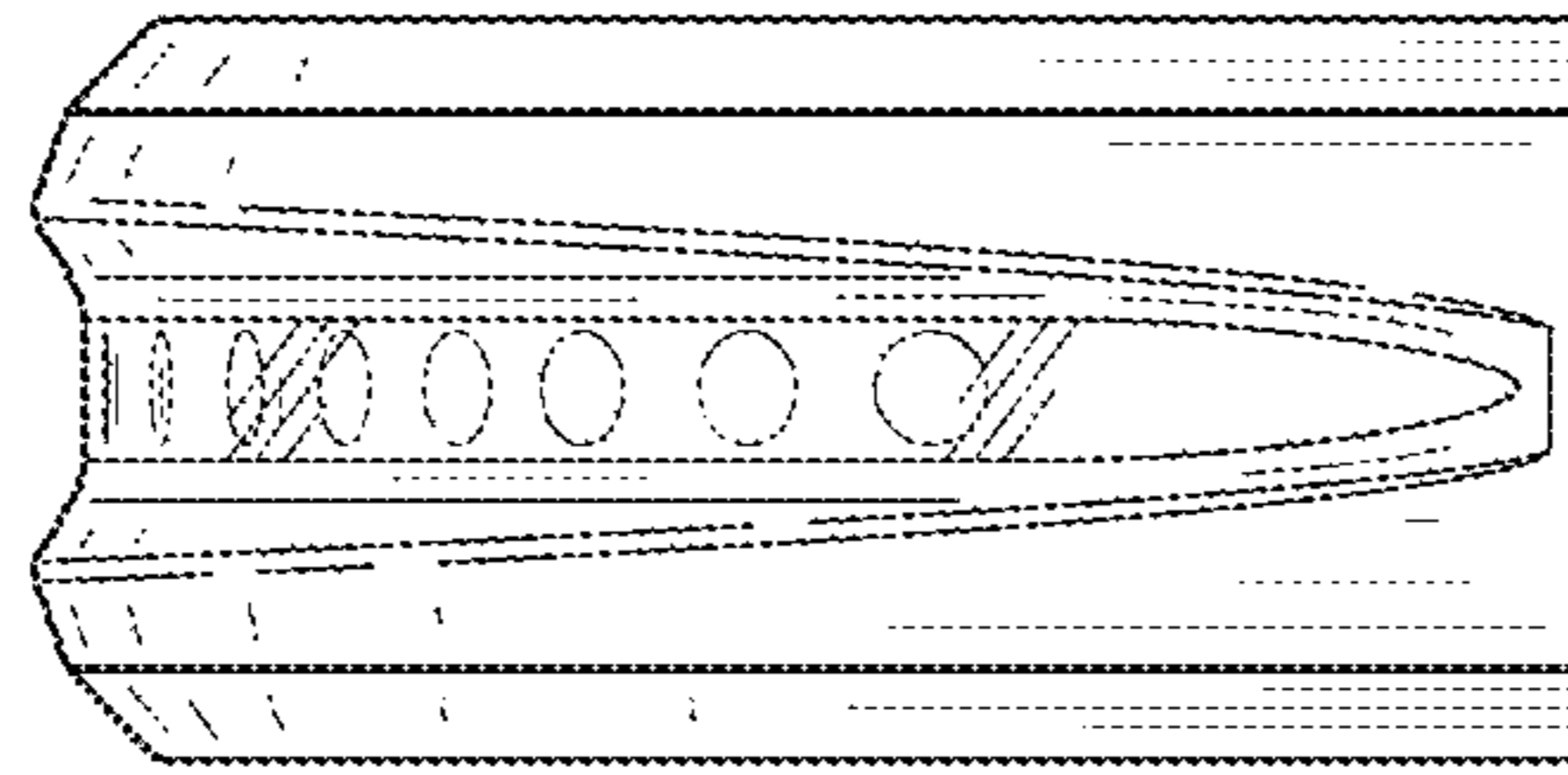


FIG. 21

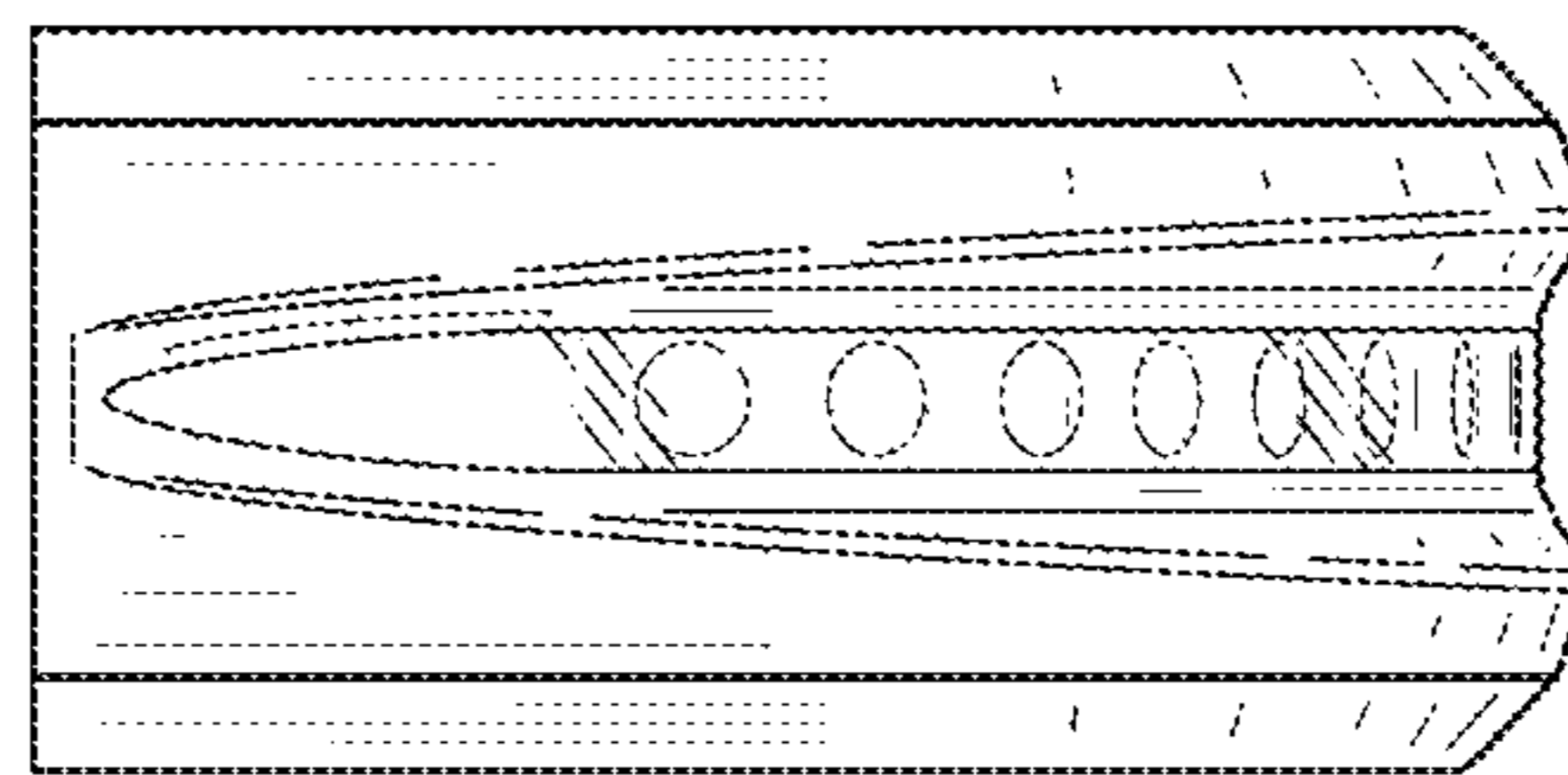


FIG. 22