



US00D978352S

(12) **United States Design Patent** (10) **Patent No.:** **US D978,352 S**  
**Lacy et al.** (45) **Date of Patent:** **\*\* Feb. 14, 2023**

(54) **CARTRIDGE CAP**  
(71) Applicant: **Smiths Medical ASD, Inc.**, Plymouth, MN (US)

4,678,408 A 7/1987 Nason et al.  
4,950,245 A 8/1990 Brown et al.  
5,080,653 A 1/1992 Voss et al.  
D326,153 S 5/1992 Eastman et al.  
(Continued)

(72) Inventors: **Christopher Lacy**, Danbury, WI (US); **Dean Sibik**, Harris, MN (US); **Mark Kiviahde**, Monticello, MN (US); **David Haas**, Mounds View, MN (US); **Sarah Thole**, Minneapolis, MN (US)

FOREIGN PATENT DOCUMENTS

CN 303729266 \* 6/2016  
JP D1698397 11/2021  
(Continued)

(73) Assignee: **Smiths Medical ASD, Inc.**, Plymouth, MN (US)

OTHER PUBLICATIONS

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

Ambulatory Blood Pressure Monitor ABPM50, Sep. 17, 2019, youtube.com(online),[ site visited Jul. 28, 2022], Available from internet, URL: https://www.youtube.com/watch?v=BHW0vIK2dIU (Year: 2019).

(21) Appl. No.: **29/652,698**

(Continued)

(22) Filed: **Oct. 28, 2020**

(51) **LOC (14) Cl.** ..... **24-02**

(52) **U.S. Cl.**  
USPC ..... **D24/164**; D24/231

(58) **Field of Classification Search**  
USPC ..... D6/700, 866.21, 406.5, 405.6, 694, 685, D6/641, 553; D19/66, 67, 68, 69; D11/164; D8/367, 382; D18/50, 53, 54, D18/55, 56, 57, 58, 59, 34.7, 34.3, 34.1, D18/4.1; D24/127, 164, 165, 166, 186, D24/231

CPC ..... G06F 3/02; H04N 1/00278; B32B 27/08; G11B 23/40

See application file for complete search history.

*Primary Examiner* — Jennifer L Rempfer  
*Assistant Examiner* — Danielle Nichole Bowly  
(74) *Attorney, Agent, or Firm* — Patterson Thuent IP

(57) **CLAIM**

We claim the ornamental design for a cartridge cap, as shown and described.

**DESCRIPTION**

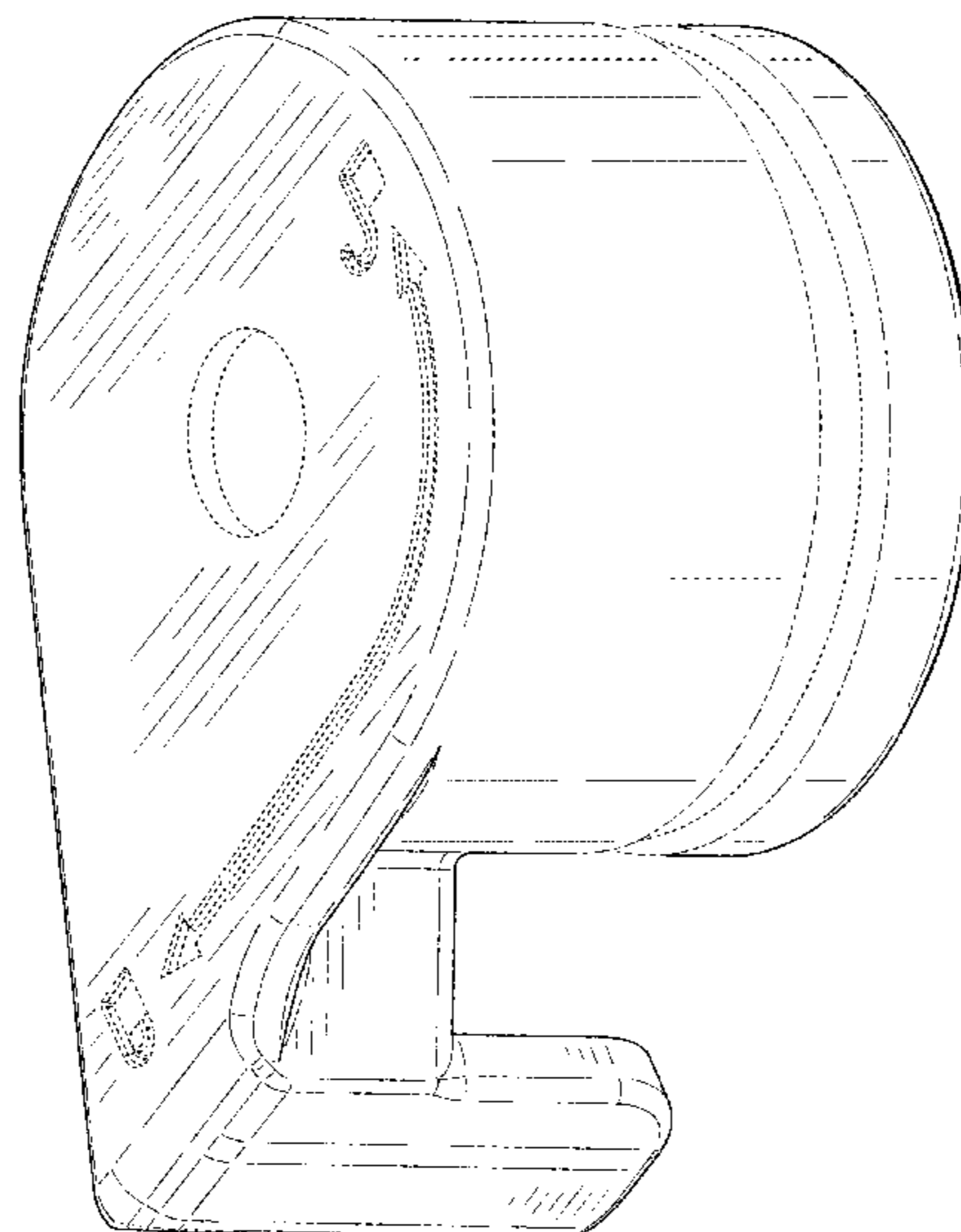
FIG. 1 is a perspective view of a cartridge cap. FIG. 2 is a front elevation view thereof. FIG. 3 is a rear elevation view thereof. FIG. 4 is a left side elevation view thereof. FIG. 5 is a right side elevation view thereof. FIG. 6 is a top plan view thereof. FIG. 7 is a bottom plan view thereof; and, FIG. 8 is a bottom perspective view thereof. Items shown in broken lines depict environment and portions of the cartridge cap that form no part of the claimed invention.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D116,599 S \* 9/1939 Reinecke ..... D19/69  
D118,629 S \* 1/1940 Reinecke ..... D19/69  
D170,429 S \* 9/1953 Reinecke ..... D19/69  
4,267,836 A 5/1981 Whitney et al.  
D274,825 S \* 7/1984 Lissoni ..... D19/69  
D276,354 S \* 11/1984 Spitzer ..... D19/69  
4,562,751 A 1/1986 Nason et al.

**1 Claim, 8 Drawing Sheets**



(56)

References Cited

U.S. PATENT DOCUMENTS

D331,262 S \* 11/1992 O'Brien ..... D19/67  
 D332,629 S \* 1/1993 Oh ..... D19/67  
 D336,492 S \* 6/1993 Samuelson ..... D19/67  
 D365,852 S \* 1/1996 Parsey ..... D19/67  
 5,637,095 A 6/1997 Nason et al.  
 5,779,675 A 7/1998 Reilly et al.  
 D408,911 S 4/1999 Moubayed et al.  
 5,947,935 A 9/1999 Rhinehart et al.  
 6,305,908 B1 10/2001 Hermann et al.  
 6,460,800 B1 \* 10/2002 Watanabe ..... B43M 99/00  
 242/598.5  
 D502,508 S \* 3/2005 Hung ..... D19/67  
 D507,832 S 7/2005 Yanniello et al.  
 D524,374 S \* 7/2006 Carlson ..... D19/69  
 D528,603 S \* 9/2006 Carlson ..... D19/69  
 7,193,521 B2 3/2007 Moberg et al.  
 D541,347 S \* 4/2007 Porcini ..... D19/69  
 D541,864 S \* 5/2007 Porcini ..... D19/69  
 D549,287 S \* 8/2007 Pitzen ..... D19/69  
 D586,463 S 2/2009 Evans et al.  
 7,628,772 B2 12/2009 McConnell et al.  
 D615,592 S \* 5/2010 Shaha ..... D19/69  
 7,766,873 B2 8/2010 Moberg et al.  
 7,828,528 B2 11/2010 Estes et al.  
 7,905,859 B2 3/2011 Bynum et al.  
 D640,323 S \* 6/2011 Broen ..... D19/69  
 D640,325 S \* 6/2011 Broen ..... D19/69  
 7,988,683 B2 8/2011 Adair et al.  
 D659,836 S 5/2012 Bensch et al.  
 D663,775 S \* 7/2012 Hsu ..... D19/69  
 D666,243 S \* 8/2012 Hagglund ..... D19/69  
 D725,784 S 3/2015 Xia et al.

9,017,307 B2 4/2015 Kow et al.  
 D752,229 S 3/2016 Chen et al.  
 D767,756 S 9/2016 Sabin  
 9,579,452 B2 2/2017 Adair et al.  
 D804,017 S 11/2017 Sabin  
 D812,218 S 3/2018 Lacy et al.  
 9,980,140 B1 5/2018 Spencer et al.  
 D823,456 S 7/2018 Lacy et al.  
 10,029,045 B2 7/2018 Smith et al.  
 D828,547 S 9/2018 Lacy et al.  
 D836,769 S 12/2018 Kabel-Eckes et al.  
 D855,212 S 7/2019 Komuro  
 D908,894 S 1/2021 Eslava et al.  
 D921,905 S 6/2021 Castanet et al.  
 D935,615 S 11/2021 Ben Dor et al.  
 D954,729 S 6/2022 Sit et al.  
 D956,788 S 7/2022 Sit et al.  
 D958,816 S 7/2022 Sit et al.  
 2020/0371548 A1 11/2020 Lund  
 2021/0170096 A1 6/2021 Buxton et al.  
 2021/0236719 A1 8/2021 Peterson et al.  
 2022/0005599 A1 1/2022 Poeze et al.

FOREIGN PATENT DOCUMENTS

JP D1698399 11/2021  
 JP DI698400 11/2021

OTHER PUBLICATIONS

Ambulatory PCA Pump, Oct. 30, 2020, youtube.com(online),[site visited Jul. 28, 2022], Available from internet, URL: <https://www.youtube.com/watch?v=IGH2o0Ktrv8> (Year:2020).

\* cited by examiner

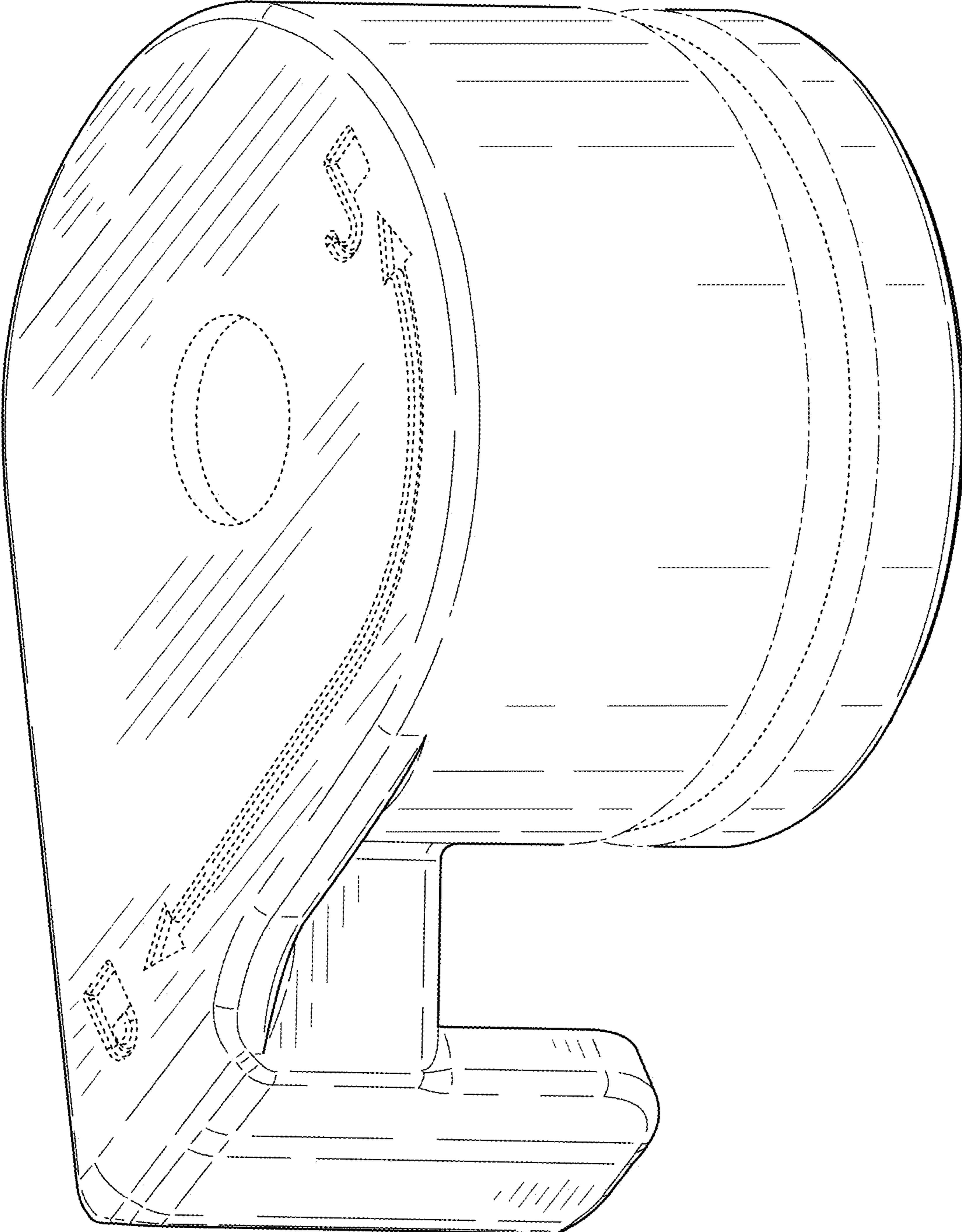


FIG. 1

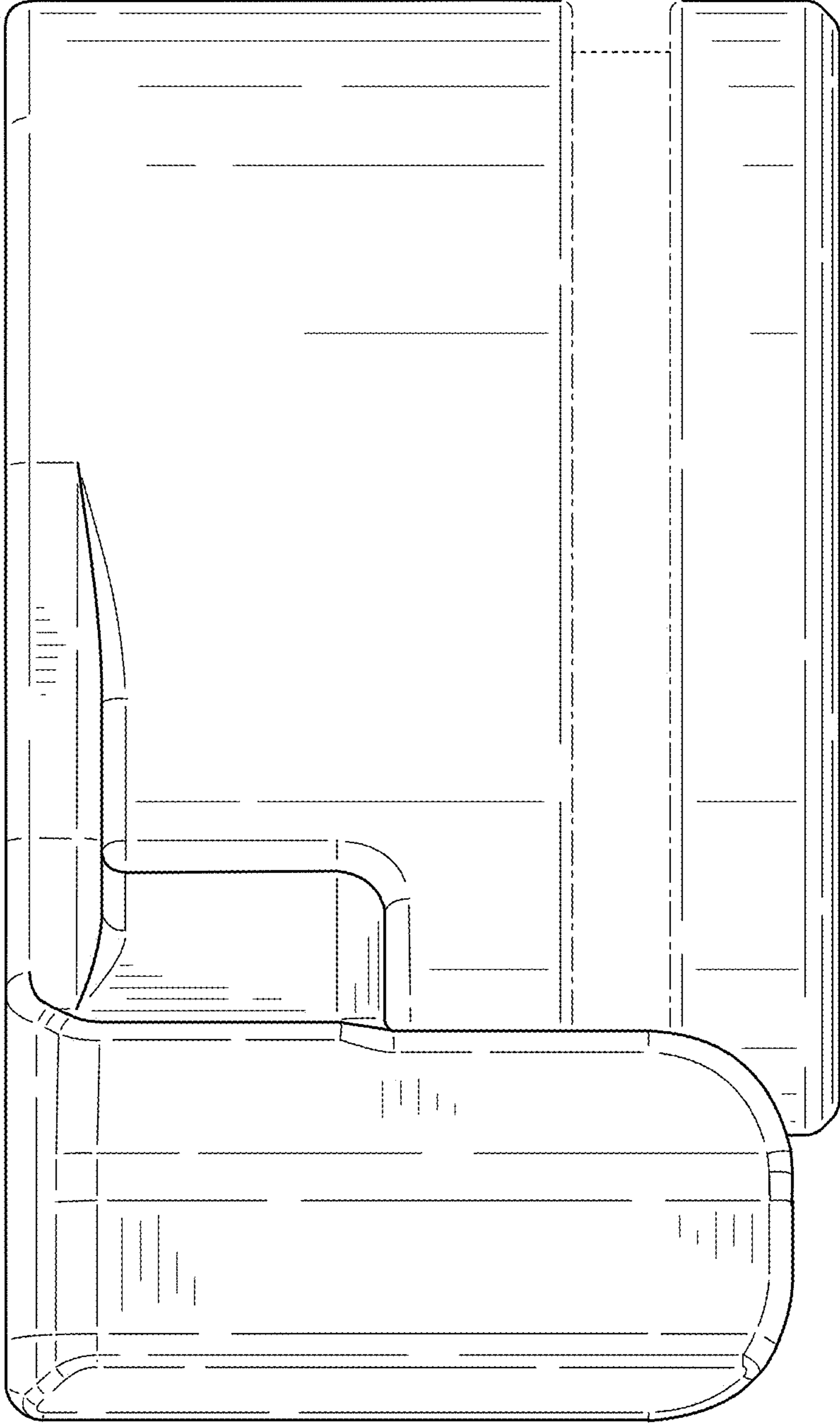


FIG. 2

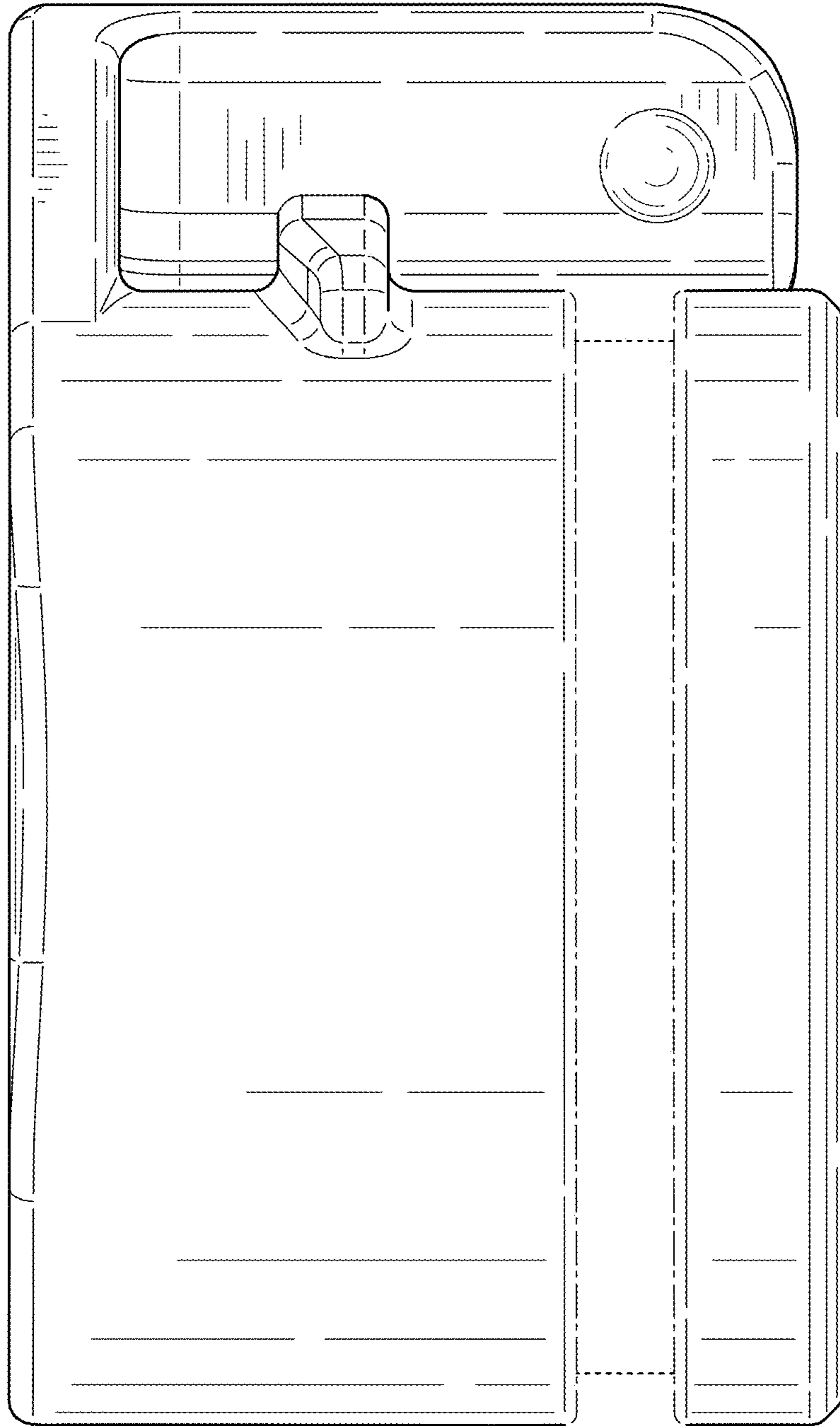


FIG. 3

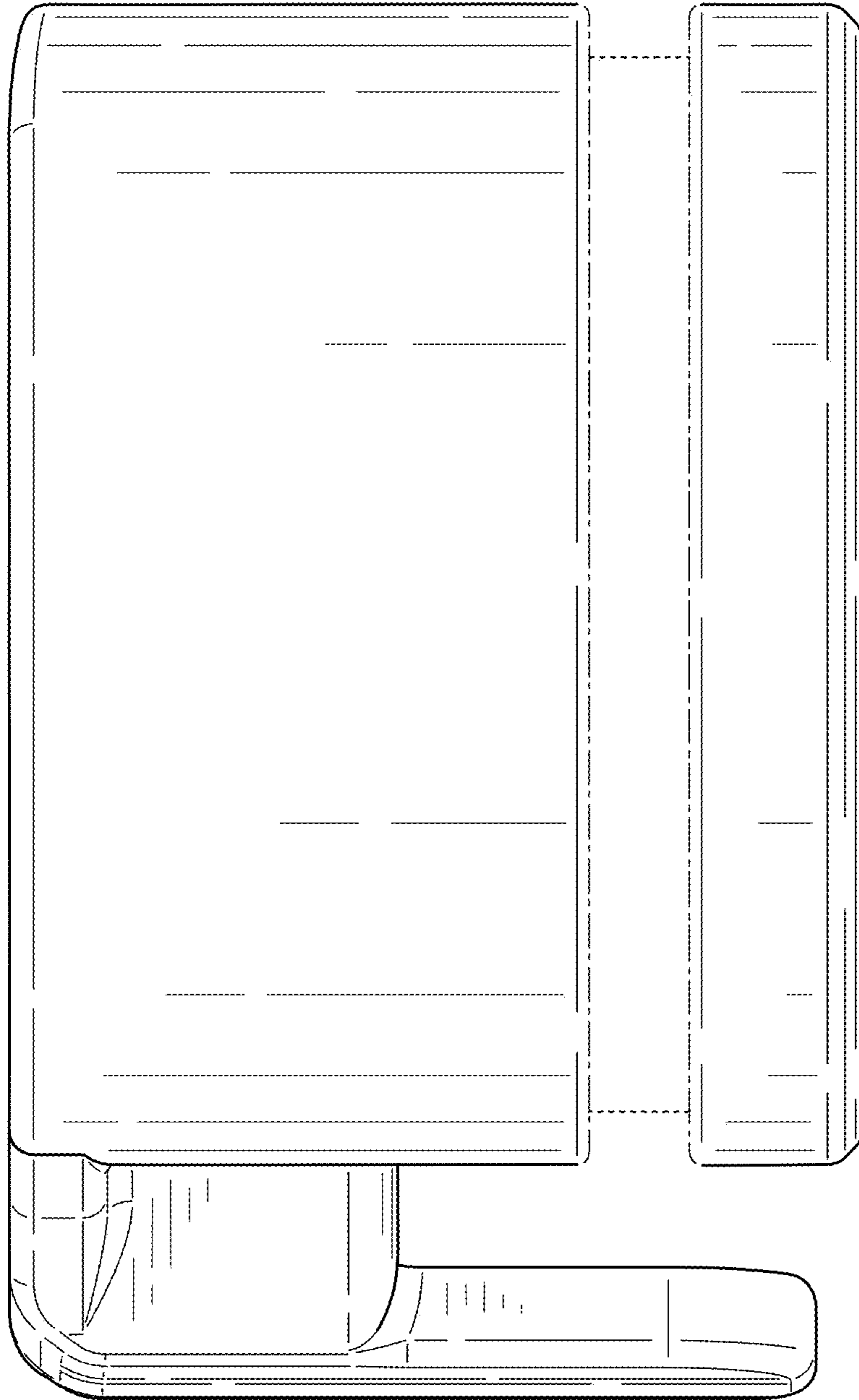


FIG. 4

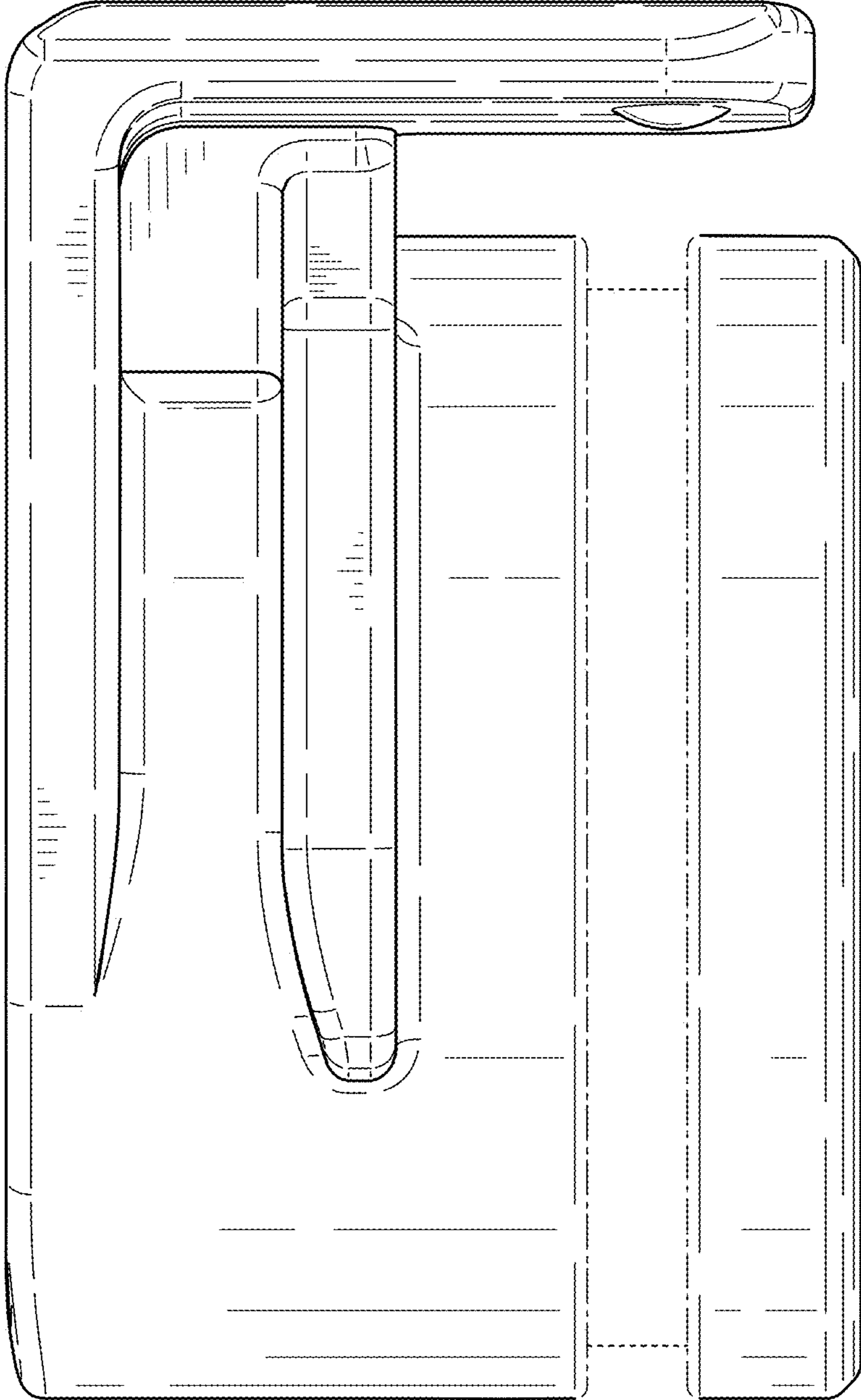


FIG. 5

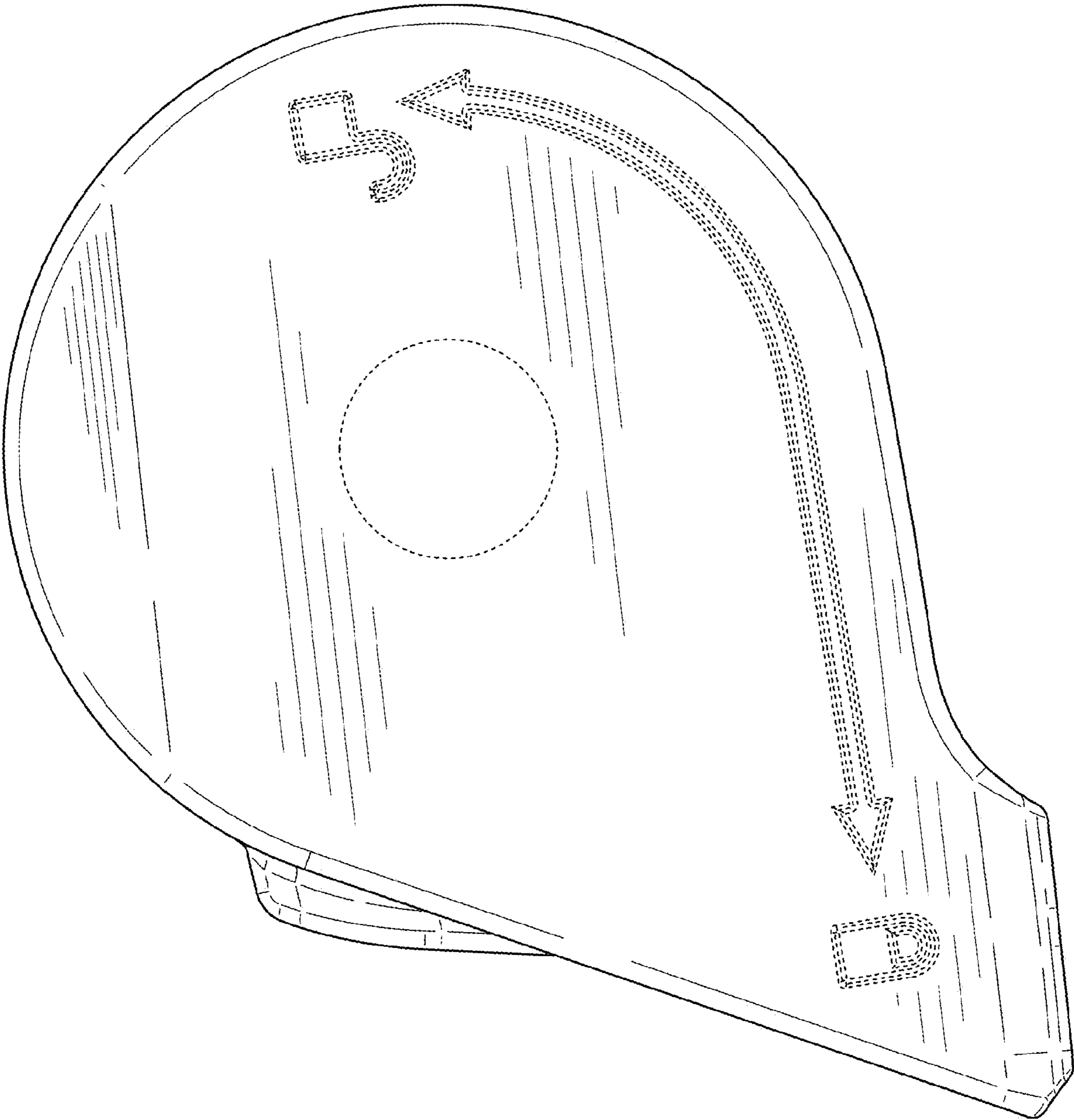


FIG. 6



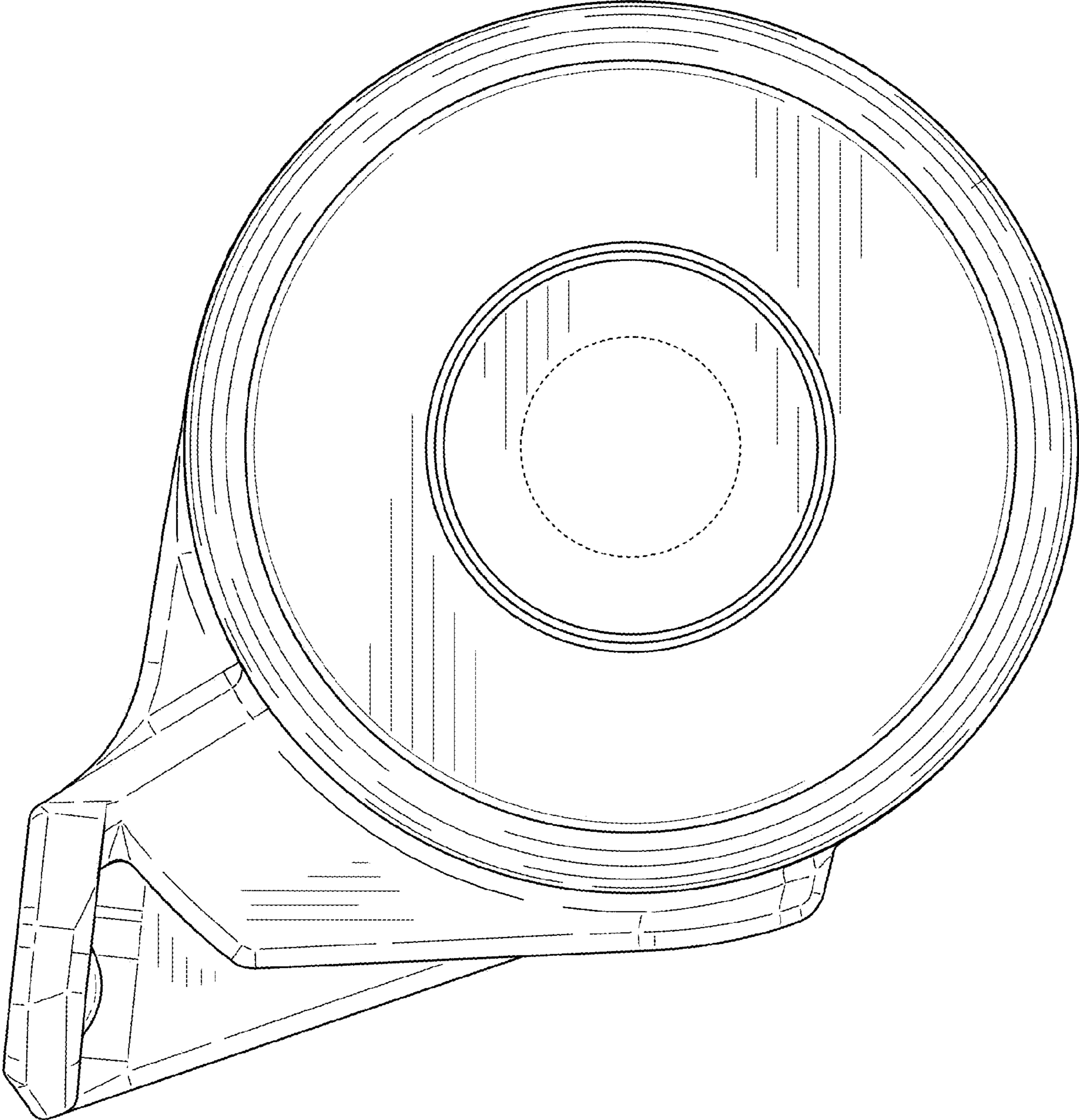


FIG. 7

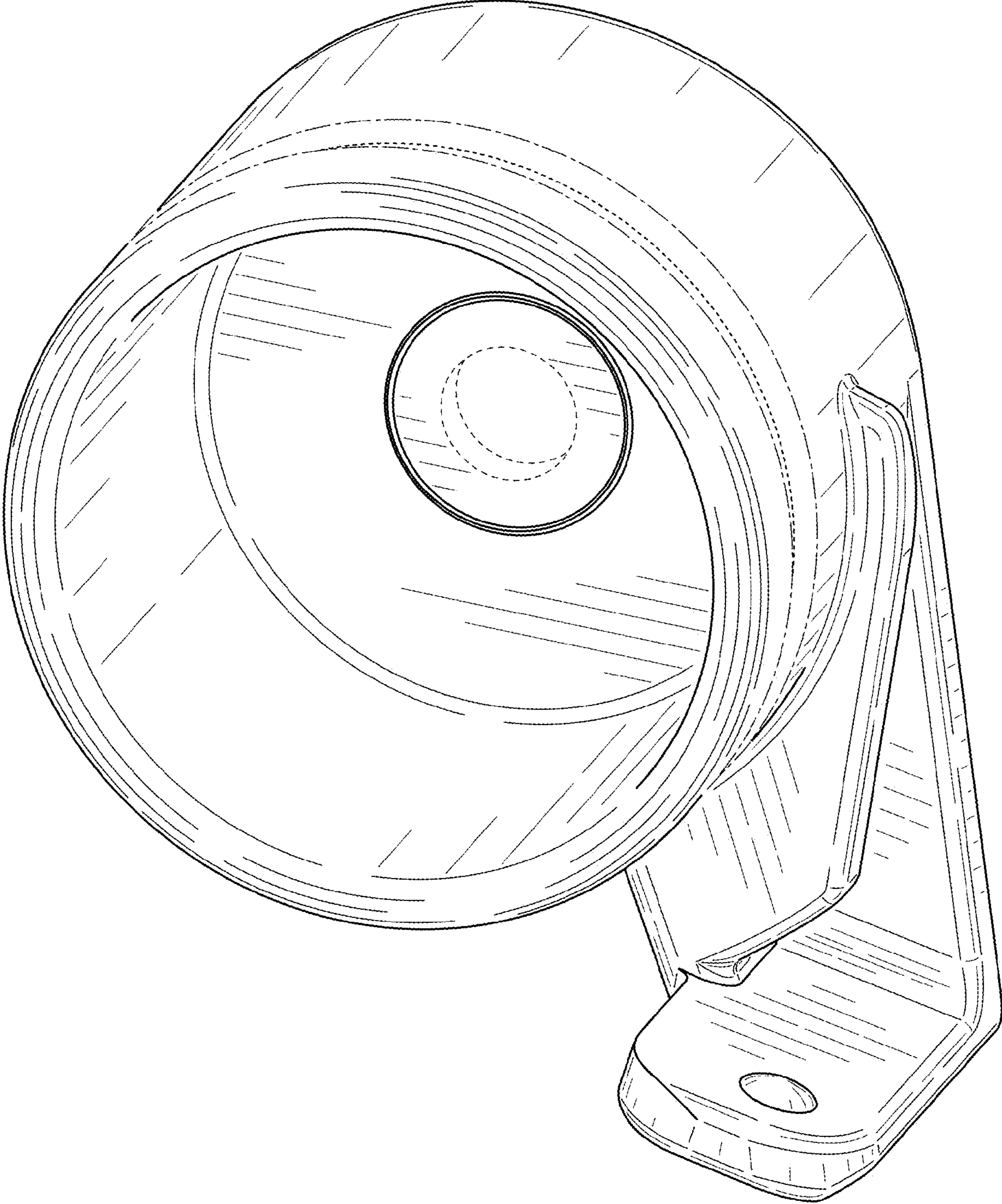


FIG. 8