



US00D467002S

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

(10) **Patent No.:** **US D467,002 S**  
(45) **Date of Patent:** **\*\* Dec. 10, 2002**

(54) **HANDHELD ULTRASONIC TRANSDUCER WITH CURVED BULB GRIP**

(75) Inventors: **Ian Felix**, Los Gatos, CA (US); **Gene Zierdt**, Saratoga, CA (US); **Imraan Aziz**, Oakland, CA (US); **Neil Goldberg**, Berkeley, CA (US)

(73) Assignee: **Novasonics, Inc.**, Mountain View, CA (US)

(\*\*) Term: **14 Years**

(21) Appl. No.: **29/148,421**

(22) Filed: **Sep. 19, 2001**

(51) **LOC (7) Cl.** ..... **24-01**

(52) **U.S. Cl.** ..... **D24/187**

(58) **Field of Search** ..... D24/187; 600/437, 600/441, 445, 446, 447, 453, 455, 456, 457

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

D245,513 S \* 8/1977 Kopel ..... D24/187  
4,409,982 A 10/1983 Plesset et al.  
4,413,629 A \* 11/1983 Durley, III ..... 600/453  
4,517,840 A \* 5/1985 Thompson et al. .... 73/644

(List continued on next page.)

**OTHER PUBLICATIONS**

U.S. patent application Ser. No. 09/860,209, Mir Imran, Miniaturized Ultrasound Apparatus and Method, May 18, 2001.

U.S. patent application Ser. No. 09/872,541, Glen McLaughlin, System and Method for Phase Inversion Ultrasonic Imaging, May 31, 2001.

U.S. patent application Ser. No. 10/039,858, Umit Tarakci, A System and Method for Acoustic Imaging at Two Focal Lengths with a Single Lens, Oct. 20, 2001.

U.S. patent application Ser. No. 10/039,862, Ting-Lan Ji, Simultaneous Multi-Mode and Multi-Band Ultrasonic Imaging, Oct. 20, 2001.

U.S. patent application Ser. No. 10/039,910, Umit Tarakci, System and Method for Coupling Ultrasound Generating Elements to Circuitry, Oct. 20, 2001.

U.S. patent application Ser. No. 10/039,922, Xufeng Xi, Block Switching in Ultrasound Imaging, Oct. 20, 2001.

U.S. patent application Ser. No. 29/147,576, Ian Felix, Handheld Ultrasonic Display Device, Aug. 31, 2001.

U.S. patent application Ser. No. 29/147,660, Ian Felix, Handheld Ultrasonic Display Device with Cover, Aug. 31, 2001.

U.S. patent application Ser. No. 29/148,532, Ian Felix, Handheld Ultrasonic Transducer with Bulb Grip, Sep. 19, 2001.

U.S. patent application Ser. No. 29/149,730, Ian Felix, Docking Station, Oct. 15, 2001.

*Primary Examiner*—Stella Reid

(74) *Attorney, Agent, or Firm*—Carr & Ferrell LLP

(57) **CLAIM**

The ornamental design for a handheld ultrasonic transducer with curved bulb grip, as shown and described.

**DESCRIPTION**

FIG. 1 is a perspective view of a handheld ultrasonic transducer with curved bulb grip showing the front and left side our new design;

FIG. 2 is a front elevation view of the handheld ultrasonic transducer with curved bulb grip of FIG. 1; the rear elevation view is a mirror image of the front and is therefore not shown;

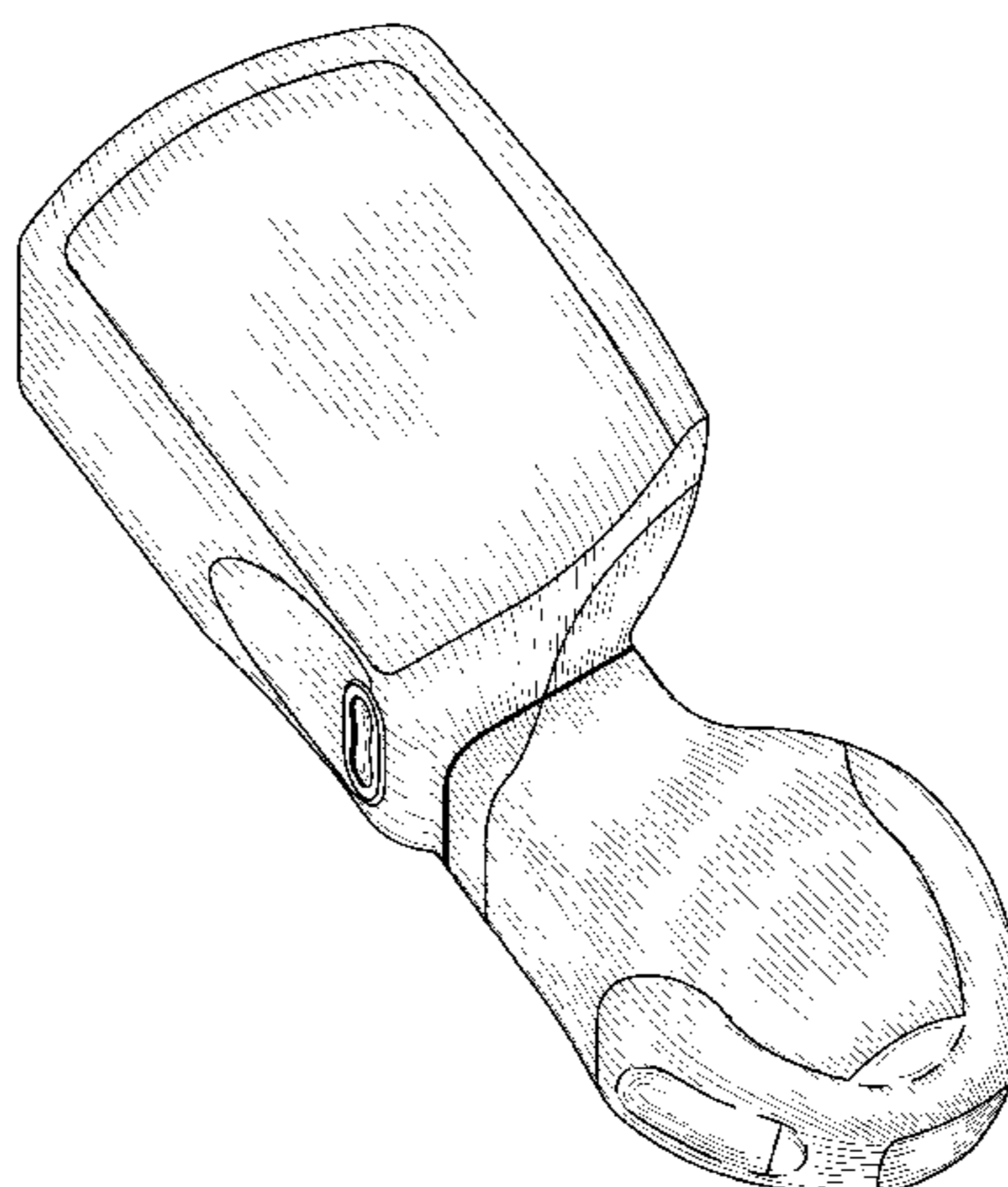
FIG. 3 is a left side elevation view of the handheld ultrasonic transducer with curved bulb grip of FIG. 1;

FIG. 4 is a right side elevation view of the handheld ultrasonic transducer with curved bulb grip of FIG. 1;

FIG. 5 is a top plan view of the handheld ultrasonic transducer with curved bulb grip of FIG. 1; and,

FIG. 6 is a bottom plan view of the handheld ultrasonic transducer with curved bulb grip of FIG. 1.

**1 Claim, 4 Drawing Sheets**



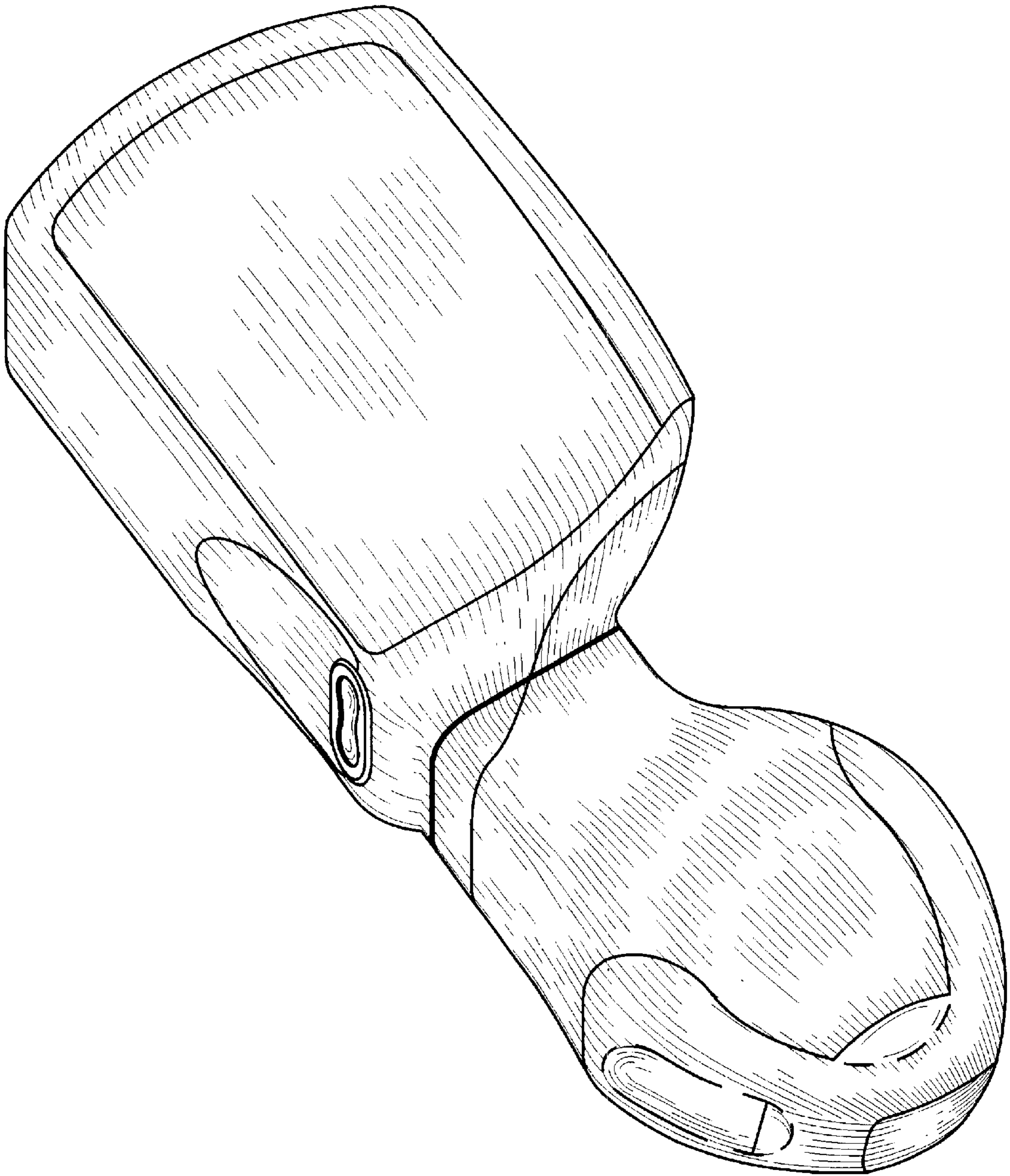
# US D467,002 S

Page 2

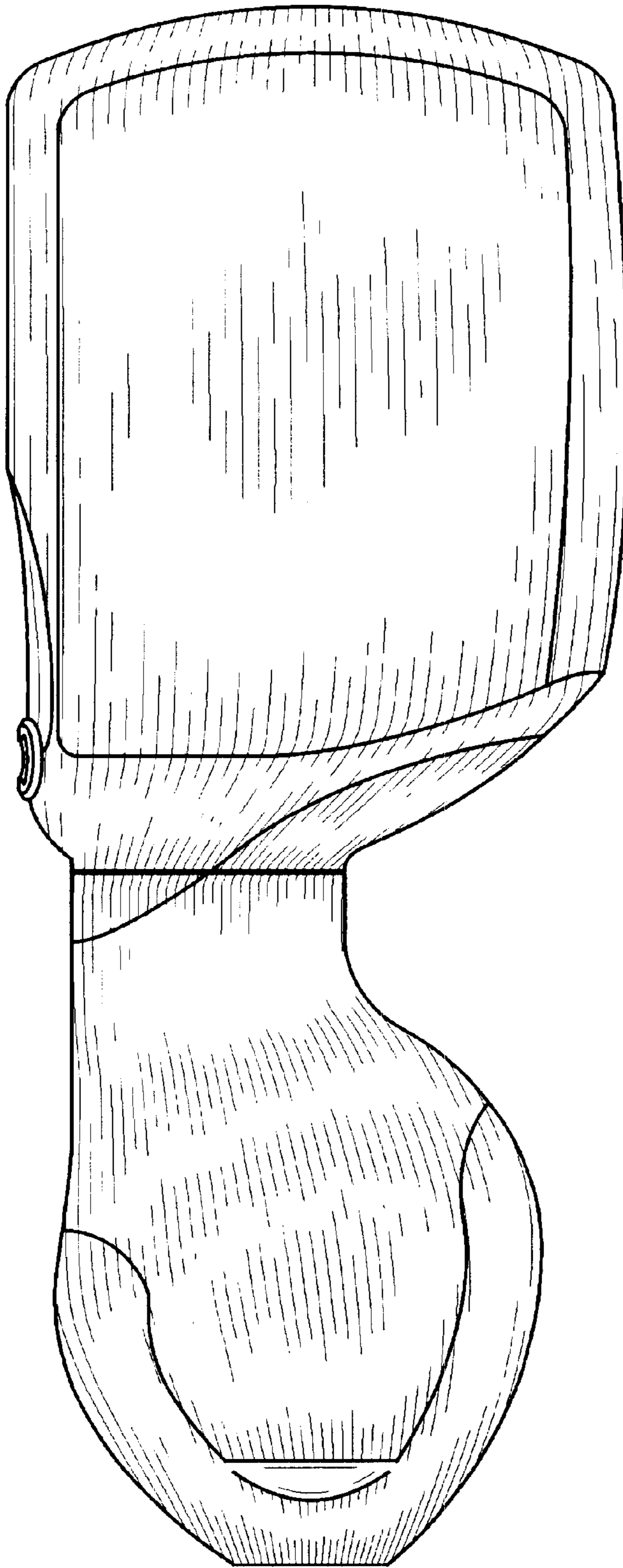
## U.S. PATENT DOCUMENTS

4,803,990 A	2/1989	Bonnefous et al.	5,839,442 A	11/1998	Chiang et al.
4,853,904 A	8/1989	Pesque	5,893,363 A	4/1999	Little et al.
5,119,342 A	6/1992	Harrison, Jr. et al.	5,897,501 A	4/1999	Wildes et al.
5,140,558 A	8/1992	Harrison, Jr. et al.	5,904,652 A	5/1999	Gilbert et al.
5,159,931 A *	11/1992	Pini ..... 128/660.07	5,905,692 A	5/1999	Dolazza et al.
5,278,757 A	1/1994	Hocctor et al.	5,919,138 A	7/1999	Ustuner
5,291,090 A	3/1994	Dias	5,925,967 A	7/1999	Toda
5,295,485 A	3/1994	Shinomura et al.	D412,580 S *	8/1999	Kellstedt et al. .... D24/187
5,483,963 A	1/1996	Butler et al.	5,957,846 A *	9/1999	Chiang et al. .... 600/447
5,485,842 A *	1/1996	Quistgaard ..... 600/443	5,964,709 A	10/1999	Chiang et al.
5,505,203 A	4/1996	Deitrich et al.	5,970,025 A	10/1999	Cole et al.
5,559,301 A	9/1996	Bryan, Jr. et al.	5,973,438 A	10/1999	Toda
5,633,912 A	5/1997	Tsoi	D418,226 S *	12/1999	Cody et al. .... D24/187
D381,750 S *	7/1997	Sasady ..... D24/187	6,055,861 A	2/2000	Banta, Jr. et al.
5,667,373 A	9/1997	Wright et al.	6,063,030 A	5/2000	Vara et al.
D387,867 S *	12/1997	Henderson et al. .... D24/187	6,089,096 A	7/2000	Alexandru
5,699,244 A	12/1997	Clark, Jr. et al.	6,113,545 A	9/2000	Chiao et al.
5,722,412 A	3/1998	Pflugrath et al.	6,126,608 A	10/2000	Kemme et al.
5,740,806 A	4/1998	Miller	6,135,961 A	10/2000	Pflugrath et al.
5,745,716 A	4/1998	Tchao et al.	6,139,498 A	10/2000	Katsman et al.
5,754,179 A	5/1998	Hocker et al.	6,174,286 B1	1/2001	Ramamurthy et al.
5,774,540 A	6/1998	Davidson et al.	6,203,498 B1	3/2001	Bunce et al.
5,793,701 A	8/1998	Wright et al.	6,238,346 B1	5/2001	Mason
5,805,159 A	9/1998	Bertram et al.	6,251,073 B1	6/2001	Imran et al.
5,817,024 A	10/1998	Ogle et al.			

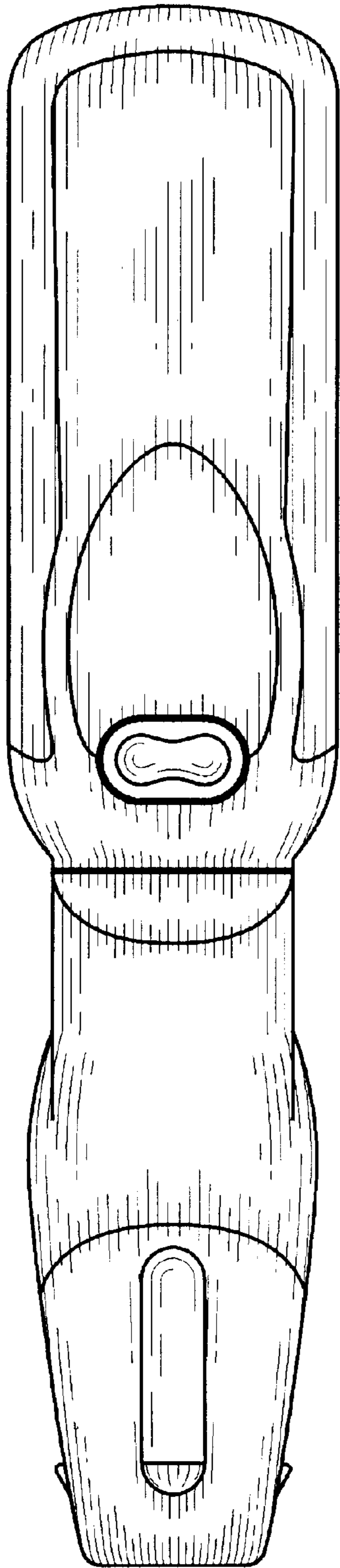
\* cited by examiner



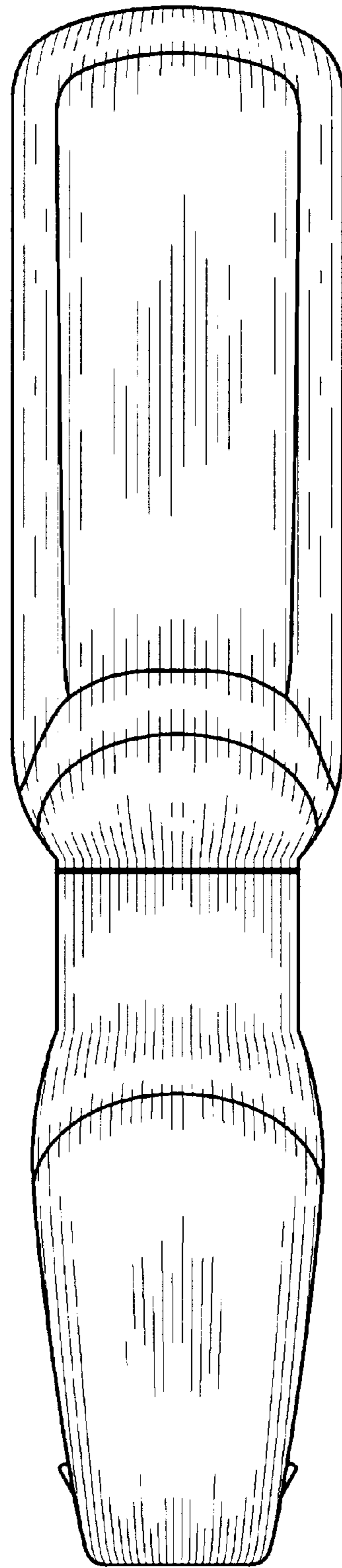
**FIG. 1**



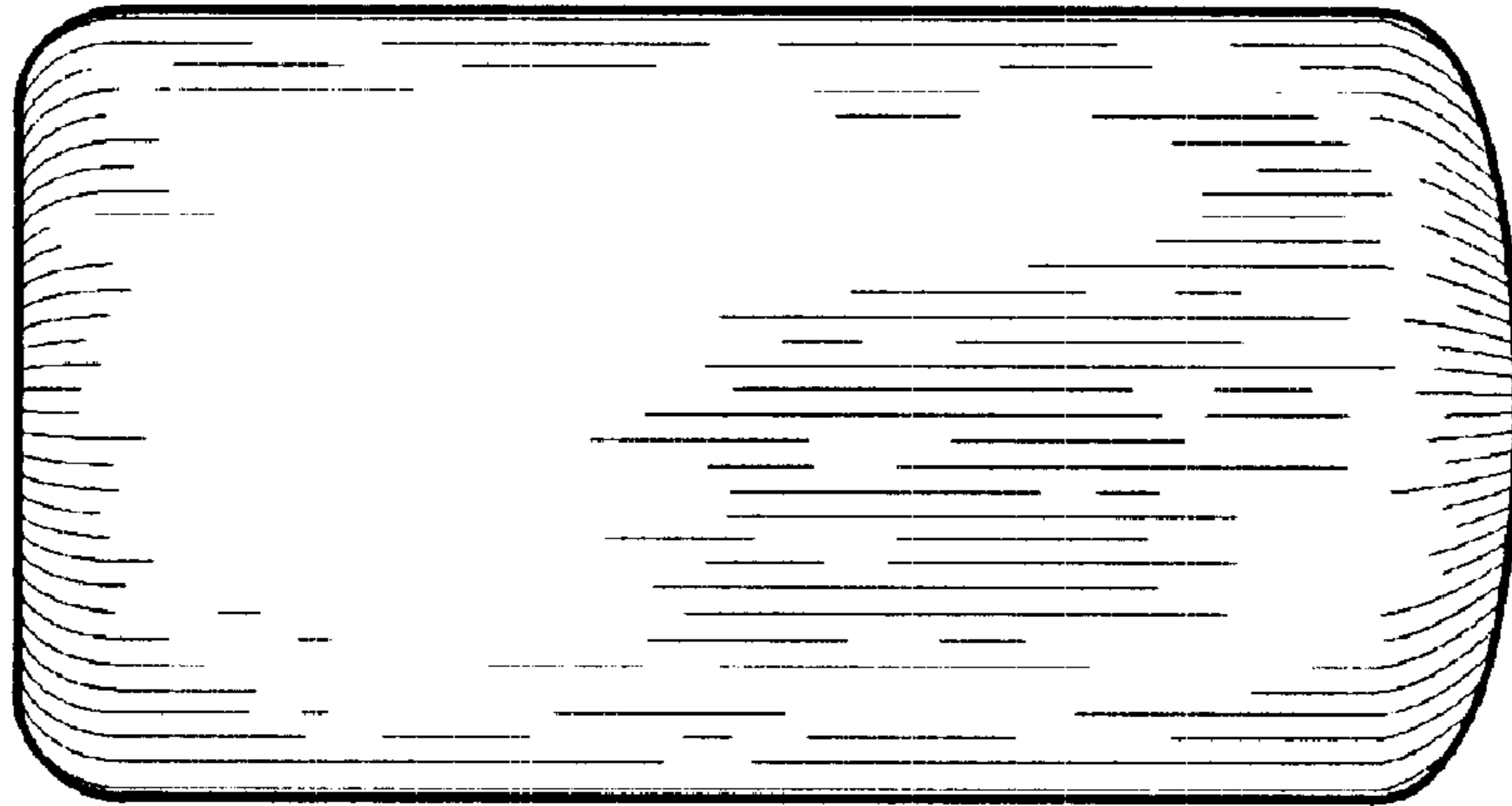
**FIG. 2**



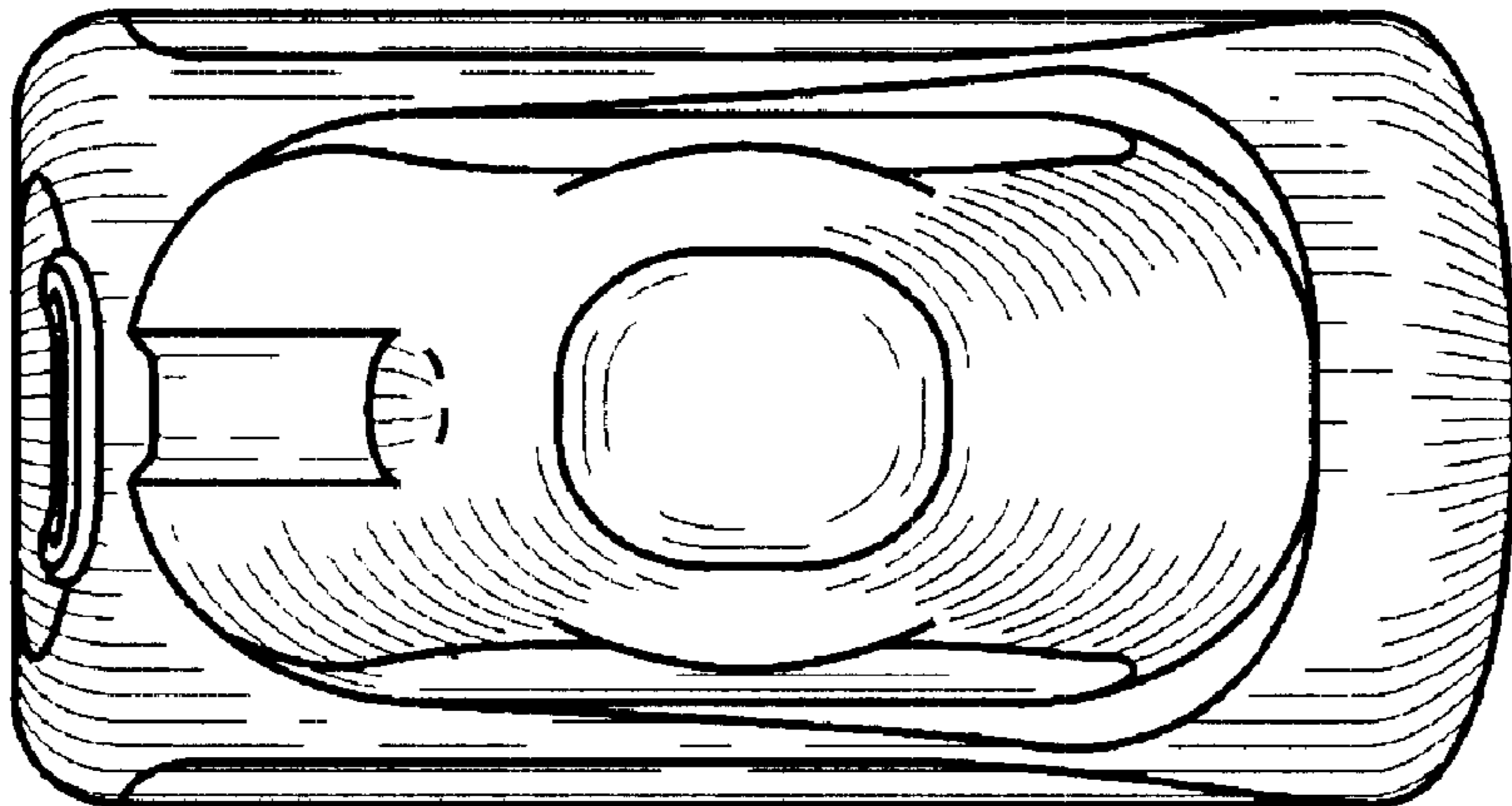
**FIG. 3**



**FIG. 4**



**FIG. 5**



**FIG. 6**