



US00D624462S

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

(10) **Patent No.:** **US D624,462 S**

(45) **Date of Patent:** **\*\* Sep. 28, 2010**

(54) **SPRING HOUSING FOR A SUSPENSION**

(75) Inventors: **Shawn D. Noble**, Naperville, IL (US);  
**Michael P. Robinson**, Chicago, IL (US);  
**Hormoz Kerendian**, Buffalo Grove, IL  
(US); **Ashley T. Dudding**, Yorkville, IL  
(US)

(73) Assignee: **Hendrickson USA, L.L.C.**, Itasca, IL  
(US)

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

(21) Appl. No.: **29/337,985**

(22) Filed: **Jun. 2, 2009**

(51) **LOC (9) Cl.** ..... **12-16**

(52) **U.S. Cl.** ..... **D12/159**

(58) **Field of Classification Search** ..... D12/118,  
D12/400, 161, 159, 160; 188/281, 298, 297,  
188/315, 316, 274, 286; 267/195, 136, 64.15,  
267/217; 464/173; D21/76; 293/134  
See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

3,279,820 A	10/1966	Hickman	
3,997,151 A	12/1976	Leingang	
4,132,433 A	1/1979	Willet	
4,144,978 A	3/1979	Drake	
4,162,799 A	7/1979	Willetts	
4,182,338 A	1/1980	Stanulis	
4,193,612 A	3/1980	Masser	
4,358,096 A	11/1982	Paton et al.	
4,371,189 A	2/1983	Raidel	
4,420,171 A	12/1983	Raidel	
4,486,029 A	12/1984	Raidel	
4,504,080 A	3/1985	VanDenberg	
4,753,456 A *	6/1988	Booher	280/124.134
4,793,597 A	12/1988	Smith	
5,114,178 A	5/1992	Baxter	
5,150,918 A	9/1992	Heitzmann	
5,237,933 A	8/1993	Bucksbee	
D344,254 S *	2/1994	Zimmerman	D12/159

5,676,356 A	10/1997	Ekonen et al.
5,810,337 A	9/1998	McLaughlin
5,868,384 A	2/1999	Anderson
5,957,441 A	9/1999	Tews
6,276,674 B1	8/2001	Randell
6,328,294 B1	12/2001	Palinkas
6,478,321 B1	11/2002	Heitzmann
6,572,087 B2	6/2003	Schleinitz et al.
6,585,286 B2	7/2003	Adema et al.
6,659,438 B2	12/2003	Michael et al.
6,817,301 B1	11/2004	Bullock
6,877,623 B2	4/2005	Salis
7,185,903 B2	3/2007	Dove
7,229,088 B2	6/2007	Dudding et al.
7,234,723 B2	6/2007	Sellers
7,303,200 B2	12/2007	Ramsey
2004/0262877 A1	12/2004	Sellers
2008/0030006 A1	2/2008	Sellers
2009/0008846 A1	1/2009	Yamakawa et al.

**OTHER PUBLICATIONS**

Hendrickson, A Boler Company, Hendrickson Frame Hanger Selection Guide, May 1990.

Hendrickson, A Boler Company, Hendrickson RS Series, Single Axle Suspension, Sep. 1995.

Hendrickson, RS Series Rubber Load Cushion, Only Hendrickson makes choosing a heavy-duty suspension this easy, Jun. 1993.

Hendrickson, A Boler Company, HN Series Technical Sales Publication, Jun. 1997.

Hendrickson Suspension, RS Series rubber load cushion, Jul. 1991.

Hendrickson Mfg., Tandem Division, Wide spread equalizing beams, sales bulletin, May 1981.

Hendrickson Mfg. Co., Tandem Division, Hendrickson Tandem Suspensions for GMC Trucks, Aug. 1979.

Hendrickson, The Boler Company, RS Frame Hanger, Dec. 1997.

Hendrickson, A Boler Company, RS Series Rubber Load Cushion Suspensions, Mar. 1996.

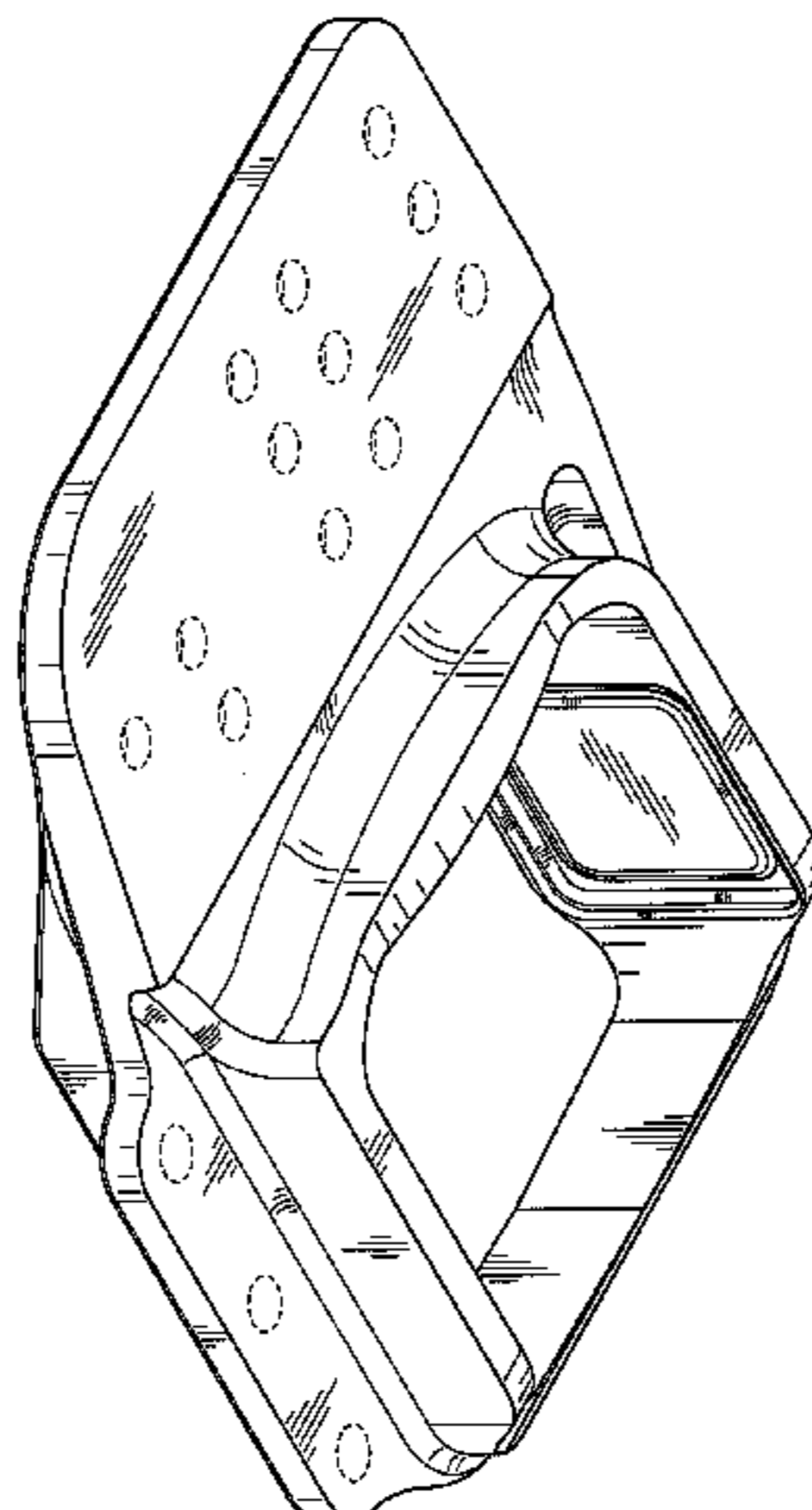
Hendrickson, A Boler Company, RS Series Rubber Load Cushion Suspensions, Jul. 1996.

Hendrickson, A Boler Company, RS Series Rubber Load Cushion, Mar. 1998.

Hendrickson Suspension, HN Series Premium Rubber, Hendrickson introduces a completely new concept in Walking Beam Suspension, Jun. 1993.

Hendrickson Suspension, A Boler Company, Hendrickson HNT Series, Feb. 1992.

Hendrickson Suspension, Sales Engineering Update, Mar. 1993.





- Hendrickson Truck Suspension Systems, A Boler Company, RS Series Rubber Load Cushion, Dec. 1996.
- Hendrickson Truck Suspension Systems, A Boler Company, RS Series Rubber Load Cushion, Apr. 1998.
- Hendrickson Truck Suspension Systems, A Boler Company, HN Series VariRate Spring System, May 1997.
- Hendrickson Truck Suspension Systems, A Boler Company, HN Series VariRate Spring System, Nov. 1997.
- Hendrickson Truck Suspension Systems, A Boler Company, HN Series VariRate Spring System, Sep. 1998.
- Hendrickson Truck Suspension Systems, A Boler Company, HN Series VariRate Spring System, Jul. 1999.
- Hendrickson, HN Series VariRate Spring System, Nov. 2000.
- Hendrickson, HN Series VariRate Spring System, Nov. 2005.
- Hendrickson Truck Suspension Systems, A Boler Company, HN 402, Feb. 1996.
- Hendrickson Truck Suspension Systems, A Boler Company, R Series Solid Mount, Jul. 1999.
- Hendrickson Truck Suspension Systems, A Boler Company, RS Series Rubber Load Cushion, Jun. 1999.
- Hendrickson, Haulmaax Heavy Duty Suspension, Oct. 2001.
- Hendrickson, Haulmaax Heavy Duty Suspension, Dec. 2003.
- Hendrickson, Haulmaax Heavy Duty Suspension, Mar. 2005.
- Hendrickson, Haulmaax Heavy Duty Suspension, Jan. 2007.
- Hendrickson, Haulmaax Heavy Duty Suspension, Mar. 2008.
- Hendrickson, Assembly Instructions Haulmaax, Subject: Kit Nos. 64178-003 & 004, Feb. 2003.
- Hendrickson, Assembly Instructions Haulmaax, Subject: Tie-bar Bolster Spring Kit Nos. 64179-037, Jun. 2006.
- Hendrickson, Assembly Instructions Haulmaax, Subject: Outboard Frame Bracket for Paccar Vehicles Built after May 1, 2005 through Aug. 31, 2006, Oct. 2006.
- Hendrickson, Assembly Instructions Haulmaax Saddle Assembly, Subject: Service Kit No. 57974-048, Dec. 2008.
- Hendrickson, Technical Bulletin HN 402/462/522, Subject: Auxiliary Spring Shim Design, Oct. 2000.
- Hendrickson, Technical Bulletin HN 402/462/522, Subject: Auxiliary Spring Shim Design, Dec. 2000.
- Hendrickson, Technical Bulletin HN 402/462/522, Subject: Auxiliary Spring Shim Design, Jun. 2006.
- Hendrickson, Technical Bulletin Haulmaax Series, Subject: Mandatory Shock Applications, Nov. 2004.
- Hendrickson, Technical Bulletin R, RS, RT/RTE 46K Capacity, Subject: 46K Heavy-Duty Beam Option, Dec. 2004.
- Hendrickson, Technical Bulletin Haulmaax, Subject: 54" Equalizing Beam Assembly, Oct. 2005.
- Hendrickson, Technical Bulletin Haulmaax 460, Subject: Bolster Spring Assembly with Tie-bar, Jun. 2006.
- Hendrickson Truck Suspension Systems, A Boler Company, Sales engineering update, Subject: HN-402/462 Auxiliary Spring Assembly, Aug. 1998.
- Hendrickson Truck Suspension Systems, A Boler Company, Sales engineering update, Subject: Model Designation and Discontinuation, Aug. 1999.
- Hendrickson Truck Suspension Systems, A Boler Company, Sales engineering update, Subject: Equalizer Beam, Aug. 1999.
- Hendrickson, Parts List RS Series, Nov. 2004.
- Hendrickson, Parts List Haulmaax, May 2002.
- Hendrickson, Parts List Haulmaax, Jul. 2003.
- Hendrickson, Parts List Haulmaax, Jul. 2006.
- Hendrickson, Parts List Haulmaax, Dec. 2007.
- Hendrickson, Parts List RS 400/460/480/520 Jan. 1998.
- Hendrickson, Parts List HN 402/462, Sep. 1997.
- Hendrickson, Parts List HN Series, Dec. 2004.
- Hendrickson Truck Suspension Systems, A Boler Company, Technical Publication RS-340 thru 520, Subject: Springing: Frame Hangers, Load Cushions and Saddle Assembly, Jul. 1993.
- Hendrickson Truck Suspension Systems, A Boler Company, Technical Publication HN Series Truck & Trailer Suspension No: 17730-198, Mar. 1993.
- Hendrickson, Technical Procedure HN/HNT-400/460 Truck & Trailer Suspension in Production Nov. 1988-Sep. 1996, Apr. 1998.
- Hendrickson Truck Suspension Systems, A Boler Company, Technical Publication HN 402 Series, Subject: Service Instructions, Aug. 1996.
- Hendrickson Truck Suspension Systems, A Boler Company, Technical Publication HN 402/462 Series, Subject: Service Instructions, Aug. 1998.
- Hendrickson, Technical Procedure Haulmaax, Subject: Service Instructions, May 2002.
- Hendrickson, Technical Procedure Haulmaax, Subject: Service Instructions, Jun. 2007.
- Hendrickson, Technical Procedure Haulmaax, Subject: Pre-delivery Inspection and Preventive Maintenance, Apr. 2006.
- Hendrickson, Technical Procedure Haulmaax, Subject: Service Instructions, Dec. 2007.
- Hendrickson, Technical Procedure R/RS/RT Heavy Duty, Subject: 650K/850K/1000K Pound Capacity Beam End Connection Tightening Torque Procedure, Jul. 2006.
- Hendrickson, RS Series Rubber Load Cushion, Feb. 2000.
- MOR/Ryde, The MOR/ryde Steer and Drive Axle Suspension Systems, Mar. 7, 2008.
- MOR/Ryde, Company Profile, downloaded from the World Wide Web at <http://www.morrydede.com/php/about/profile/php> on Feb. 28, 2008.
- MOR/Ryde, T/A Modular Rubber Suspension System, Service Manual, Mar. 5, 2003.
- MOR/Ryde, Tandem Axle Rubber Suspension Sytem, Service Manual, Suspension Codes: T01-01 and L01-01, Mar. 5, 2003.
- MOE/Ryde, RL Rubber Leaf Suspension System, Owner's Manual, Mar. 12, 2003.
- MOR/Ryde, Commercial Trailer Suspension, Jun. 1973.
- MOR/Ryde, School Bus Suspension, Aug. 1973.
- MOR/Ryde, a rubber spring . . . heart of the Mor/ryde system, Aug. 1973.
- Jorn, Technology in Rubber—Metal, Sep. 29, 2008.
- Hendrickson, Parts List RS Series, Apr. 2008.
- Hendrickson, Technical Procedure, R/RS Heavy Duty, Subject: 85K/100K/120K lbs Capacity Tightening Torgue for Torque Rod and Saddle Assembly Fasteners, Oct. 2008.
- Hendrickson USA, L.L.C., Technical Procedure R/RS/RT Heavy Duty, Lit. No. 17730149, Revision C, Jul. 2006.
- Hendrickson, HN FR Series, HN FR Suspension 42 - 58K Fire/Rescue, Feb. 2009.
- Hendrickson, Haulmaax Heavy-Duty Suspension, Jan. 2009.
- Kenworth Truck Company, Haulmaax, May 14, 2009.
- U.S. Appl. No. 12/045,069, filed Mar. 10, 2008 and entitled "Elastomeric Spring Vehicle Suspension."
- U.S. Appl. No. 12/334,195, filed Dec. 12, 2008 and entitled "Modular Suspension System and Components Thereof."
- U.S. Appl. No. 12/545,828, filed Aug. 22, 2009 and entitled "Tie-plate and Frame Hanger of a Suspension Assembly."
- U.S. Appl. No. 29/315,182, filed Jun. 2, 2009 and entitled "Suspension Assembly."
- U.S. Appl. No. 29/329,357, filed Dec. 12, 2008 and entitled "Spring Housing for a Suspension."
- U.S. Appl. No. 29/329,354, filed Dec. 12, 2008 and entitled "Suspension Assembly."
- U.S. Appl. No. 29/339,132, filed Jun. 24, 2009 and entitled "Spring Housing."
- U.S. Appl. No. 29/339,134, filed Jun. 24, 2009 and entitled "Suspension Assembly."

\* cited by examiner

Primary Examiner—T. Chase Nelson

Assistant Examiner—Michael A Pratt

(74) Attorney, Agent, or Firm—McDonnell Boehnen Hulbert & Berghoff LLP



(57)

**CLAIM**

The ornamental design for a spring housing for a suspension, as shown and described.

**DESCRIPTION**

FIG. 1 is a perspective view showing the top, back, and left sides of a First embodiment of a spring housing for a suspension having an inventive design;

FIG. 2 is a back elevational view of the spring housing shown in FIG. 1, and includes sectional lines 10—10;

FIG. 3 is a front elevational view of the spring housing shown in FIG. 1, and includes sectional lines 7—7, 8—8, and 9—9;

FIG. 4 is a left side elevational view of the spring housing shown in FIG. 1;

FIG. 5 is a right side elevational view of the spring housing shown in FIG. 1;

FIG. 6 is a bottom view of the spring housing shown in FIG. 1;

FIG. 7 is a sectional view of the spring housing illustrated in FIG. 3, taken along sectional lines 7—7 thereof;

FIG. 8 is a sectional view of the spring housing illustrated in FIG. 3, taken along sectional lines 8—8 thereof;

FIG. 9 is a sectional view of the spring housing illustrated in FIG. 3, taken along sectional lines 9—9 thereof;

FIG. 10 is a sectional view of the spring housing illustrated in FIG. 2, taken along sectional lines 10—10 thereof;

FIG. 11 is a perspective view showing the bottom, back, and left sides of the spring housing shown in FIG. 1;

FIG. 12 is a perspective view showing the bottom, back, and right sides of the spring housing shown in FIG. 1;

FIG. 13 is a perspective view showing the top, front, and right sides of the spring housing shown in FIG. 1;

FIG. 14 is a perspective view showing the top, back, and left sides of a Second embodiment of a spring housing for a suspension having an inventive design;

FIG. 15 is a back elevational view of the spring housing shown in FIG. 14, and includes sectional lines 23—23;

FIG. 16 is a front elevational view of the spring housing shown in FIG. 14, and includes sectional lines 20—20, 21—21, and 22—22;

FIG. 17 is a left side elevational view of the spring housing shown in FIG. 14;

FIG. 18 is a right side elevational view of the spring housing shown in FIG. 14;

FIG. 19 is a bottom view of the spring housing shown in FIG. 14;

FIG. 20 is a sectional view of the spring housing illustrated in FIG. 16, taken along sectional lines 20—20 thereof;

FIG. 21 is a sectional view of the spring housing illustrated in FIG. 16, taken along sectional lines 21—21 thereof;

FIG. 22 is a sectional view of the spring housing illustrated in FIG. 16, taken along sectional lines 22—22 thereof;

FIG. 23 is a sectional view of the spring housing illustrated in FIG. 15, taken along sectional lines 23—23 thereof;

FIG. 24 is a perspective view showing the bottom, back, and left sides of the spring housing shown in FIG. 14;

FIG. 25 is a perspective view showing the bottom, back, and right sides of the spring housing shown in FIG. 14; and,

FIG. 26 is a perspective view showing the top, front, and right sides of the spring housing shown in FIG. 14.

The sectional lines and sectional line reference numbers in FIG. 2, FIG. 3, FIG. 15, and FIG. 16 form no part of the claimed designs. The broken lines showing various holes in FIG. 1, FIG. 2, FIG. 3, FIG. 11, FIG. 12, FIG. 13, FIG. 14, FIG. 15, FIG. 16, FIG. 24, FIG. 25, and FIG. 26 are for the purpose of illustrating an example of attachment holes of the spring housings and form no part of the claimed designs.

**1 Claim, 20 Drawing Sheets**

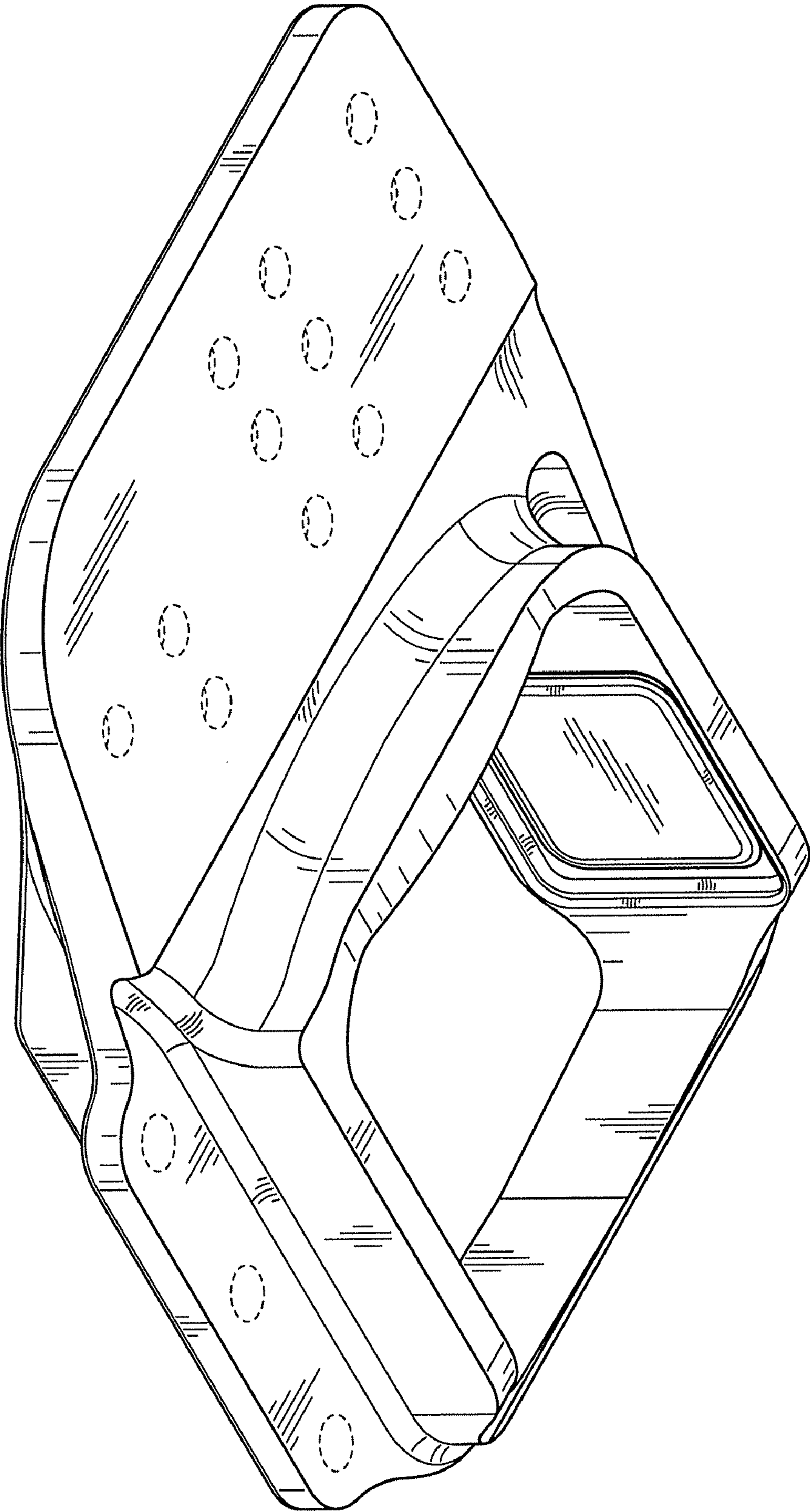


FIG. 1

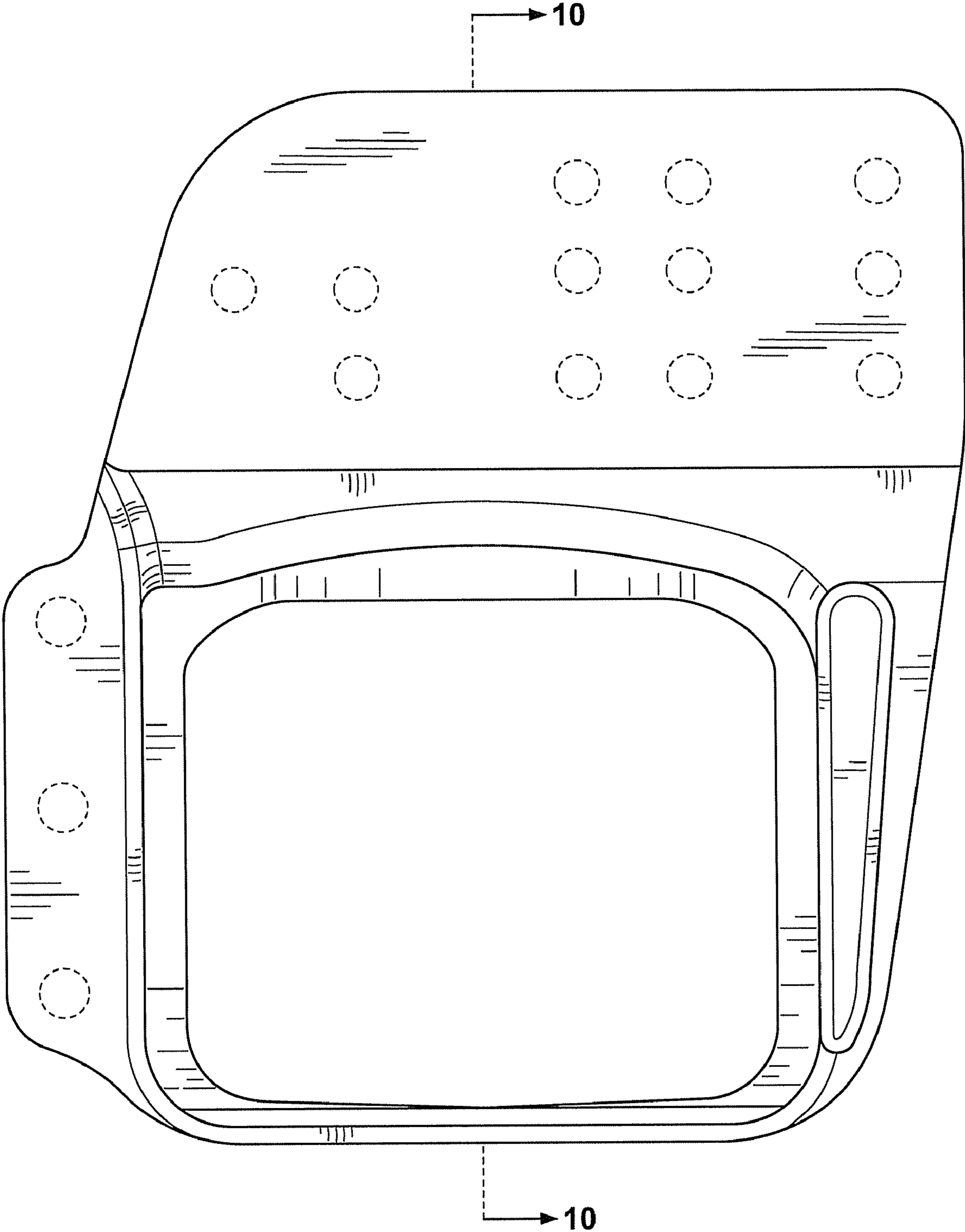


FIG. 2



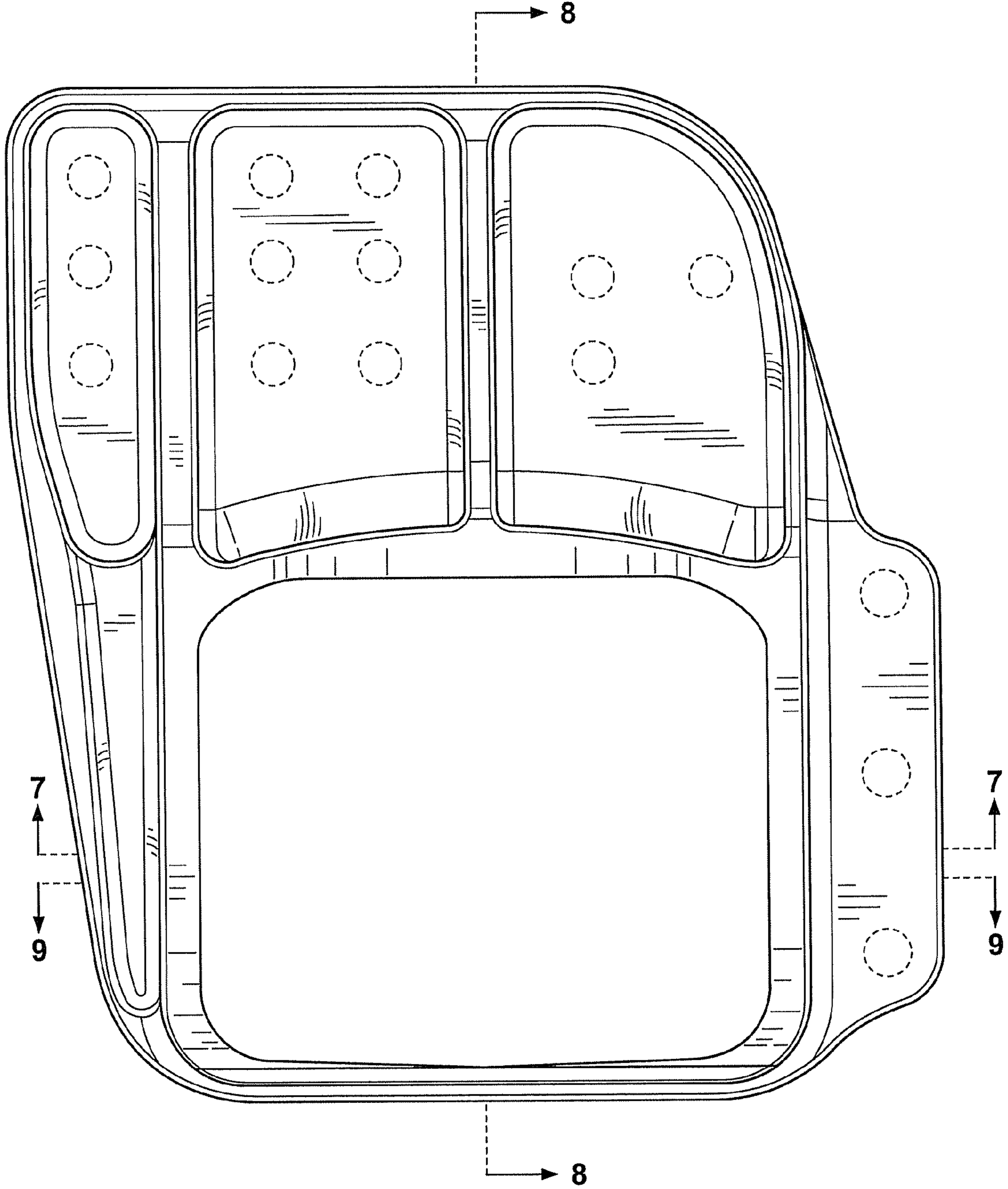


FIG. 3

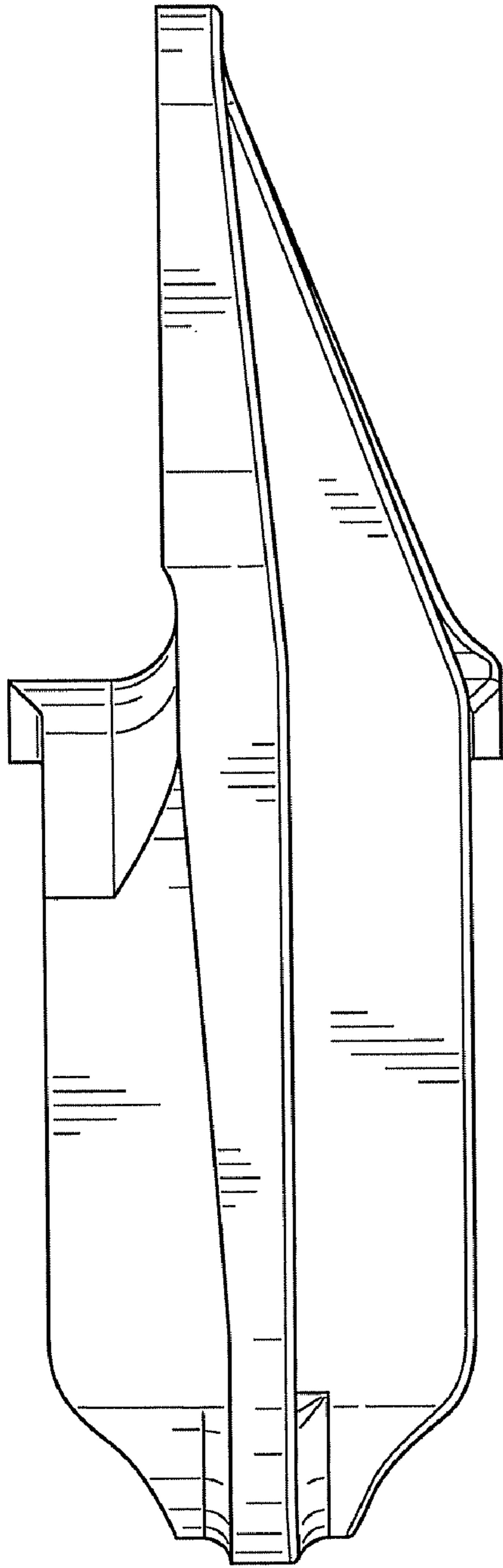


FIG. 4

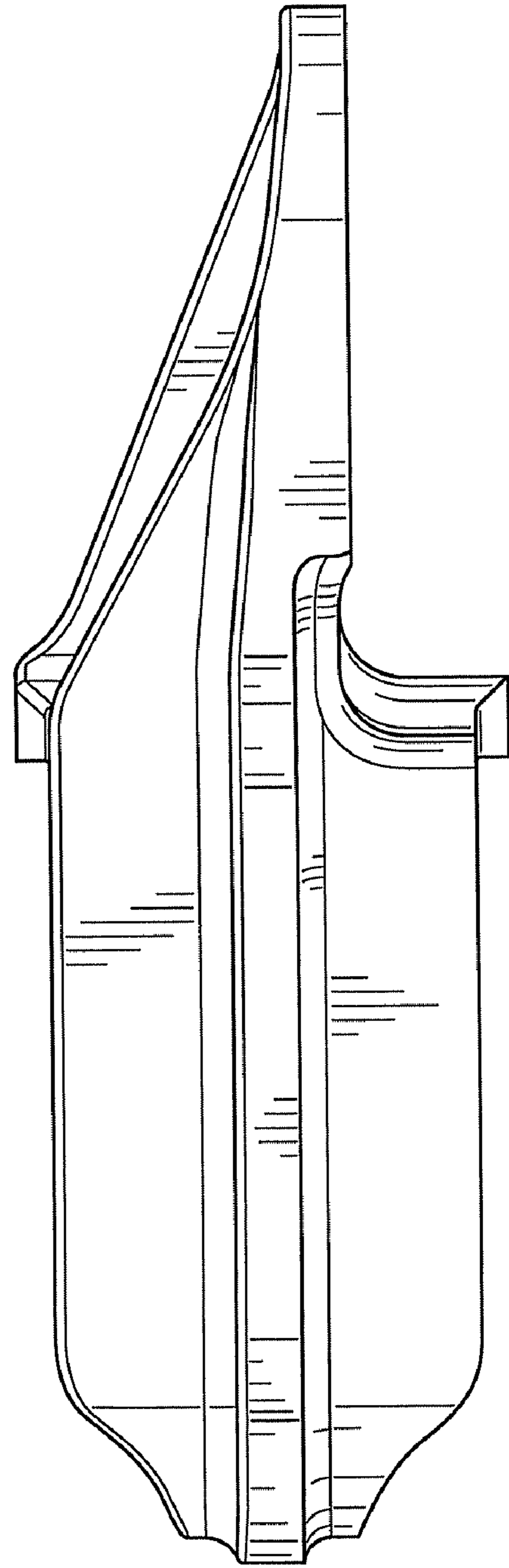


FIG. 5

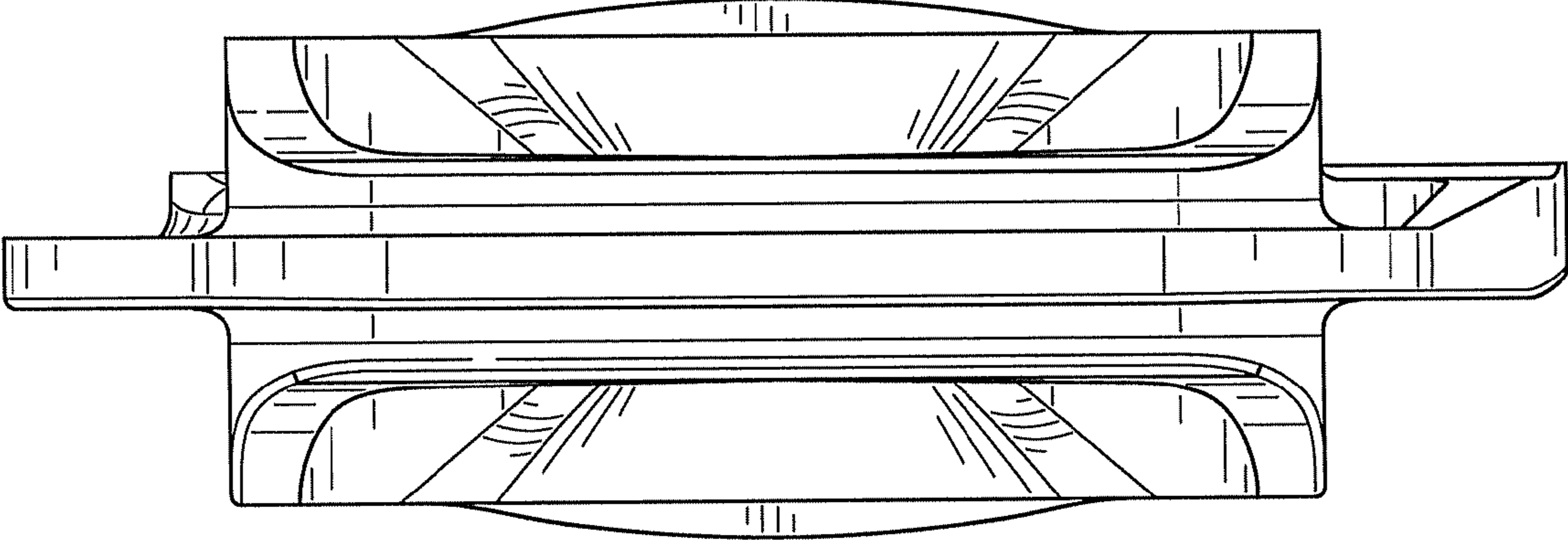


FIG. 6

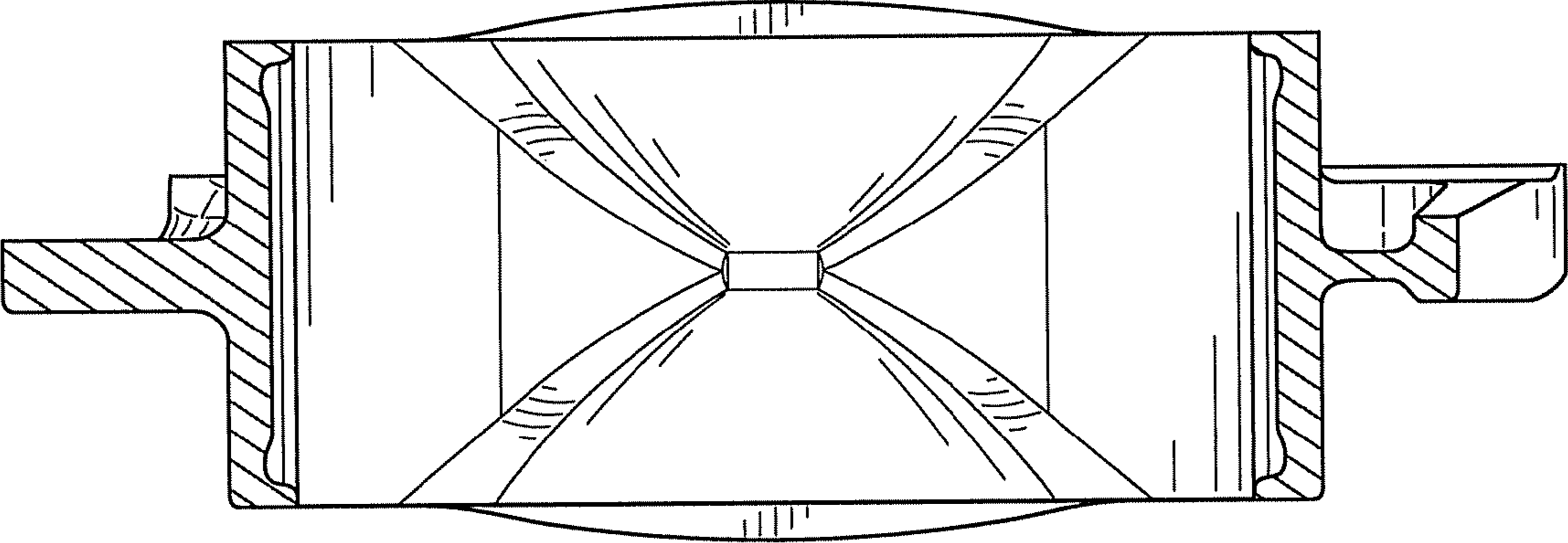


FIG. 7



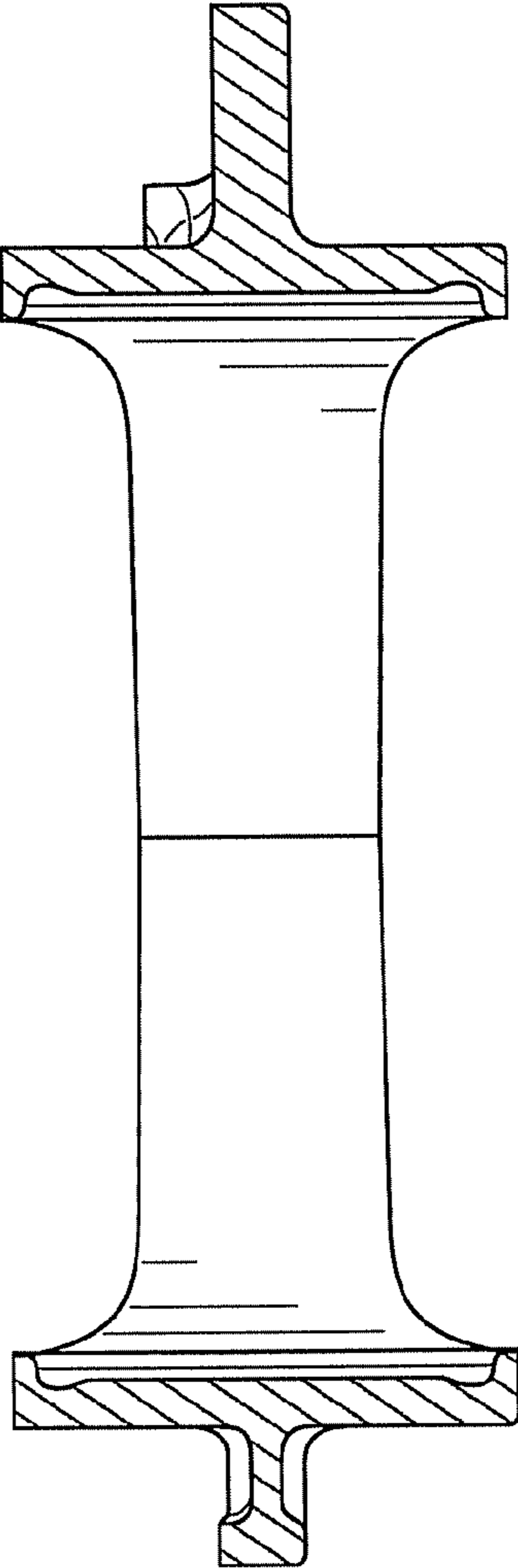


FIG. 9

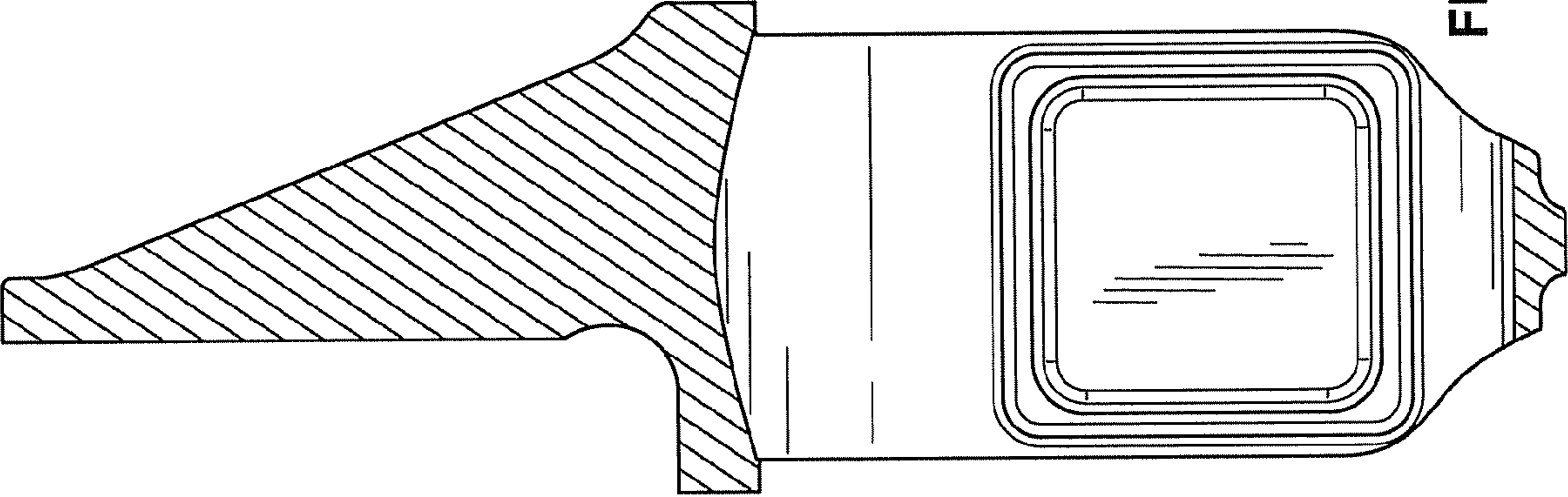


FIG. 8

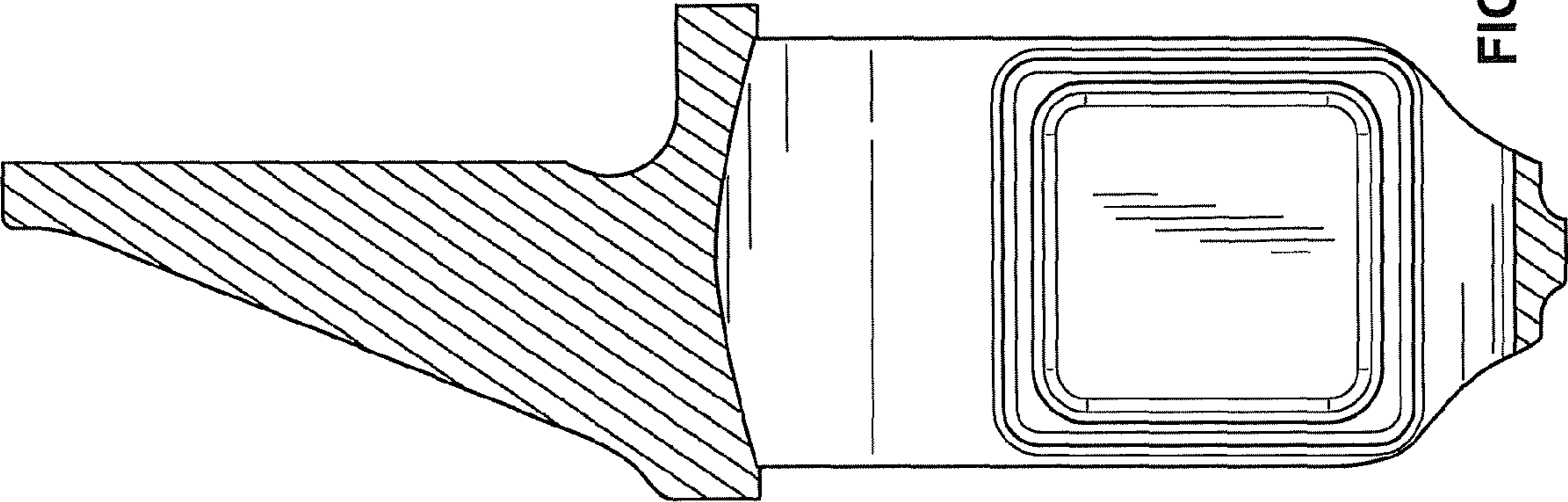


FIG. 10

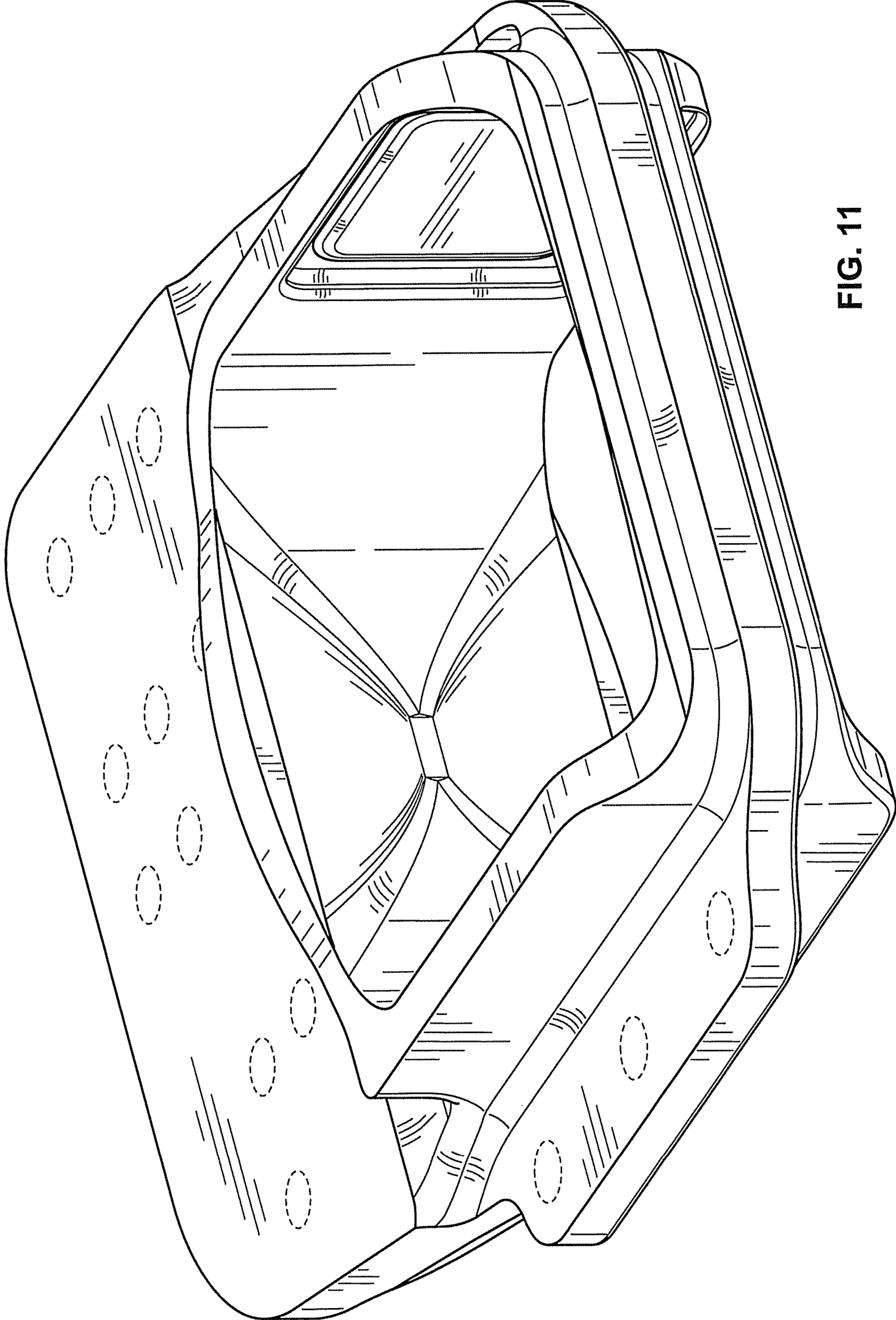


FIG. 11



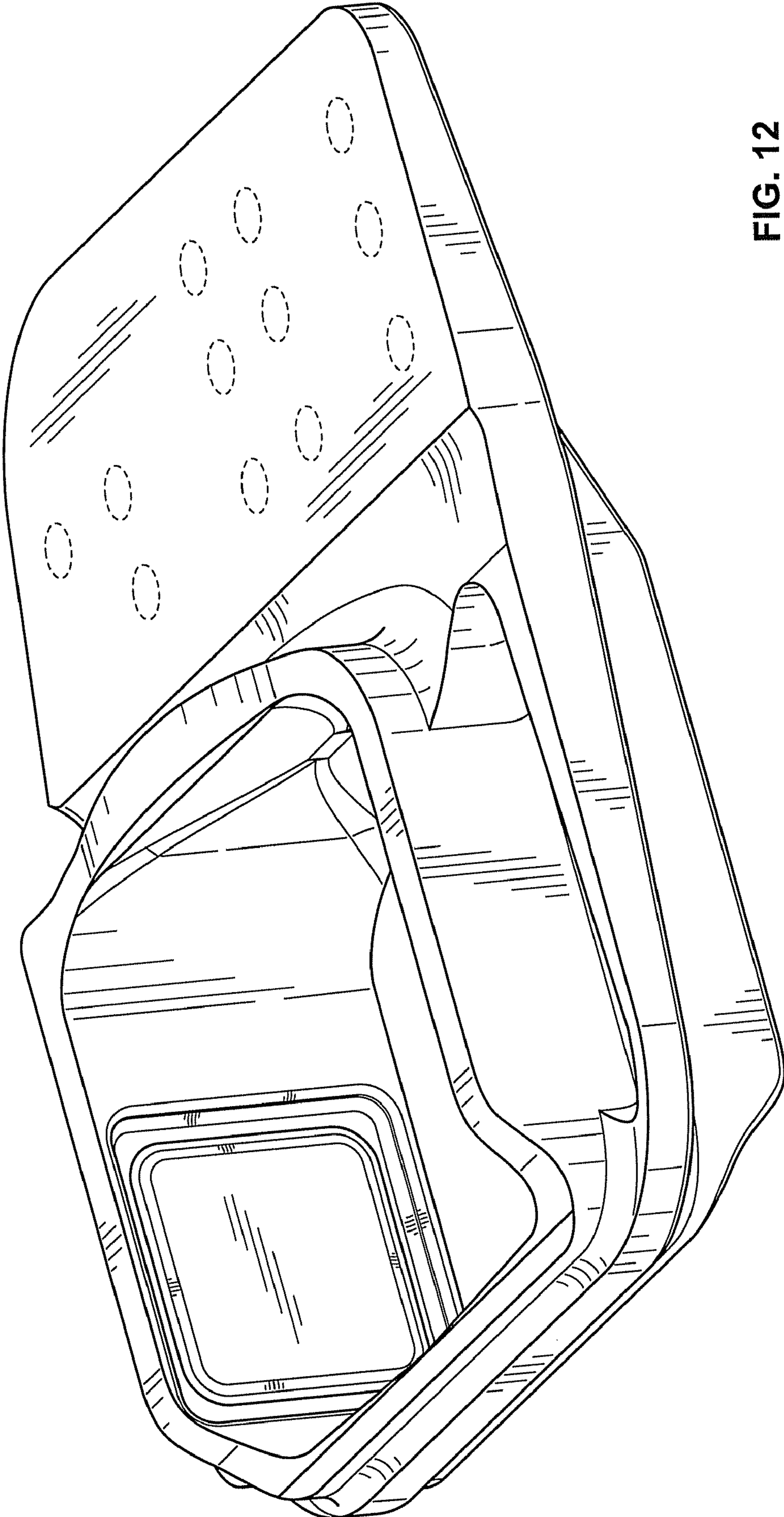


FIG. 12

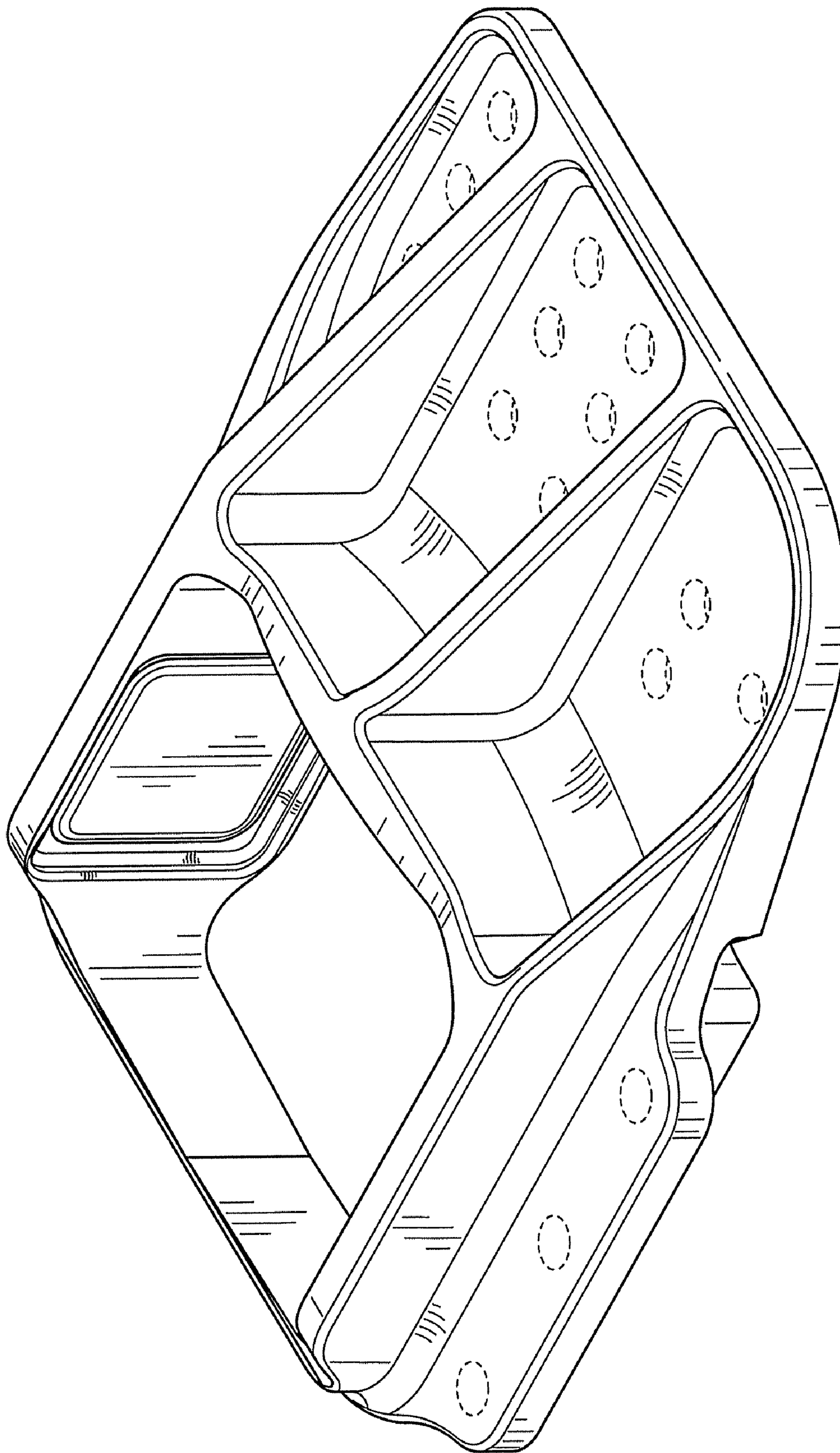


FIG. 13

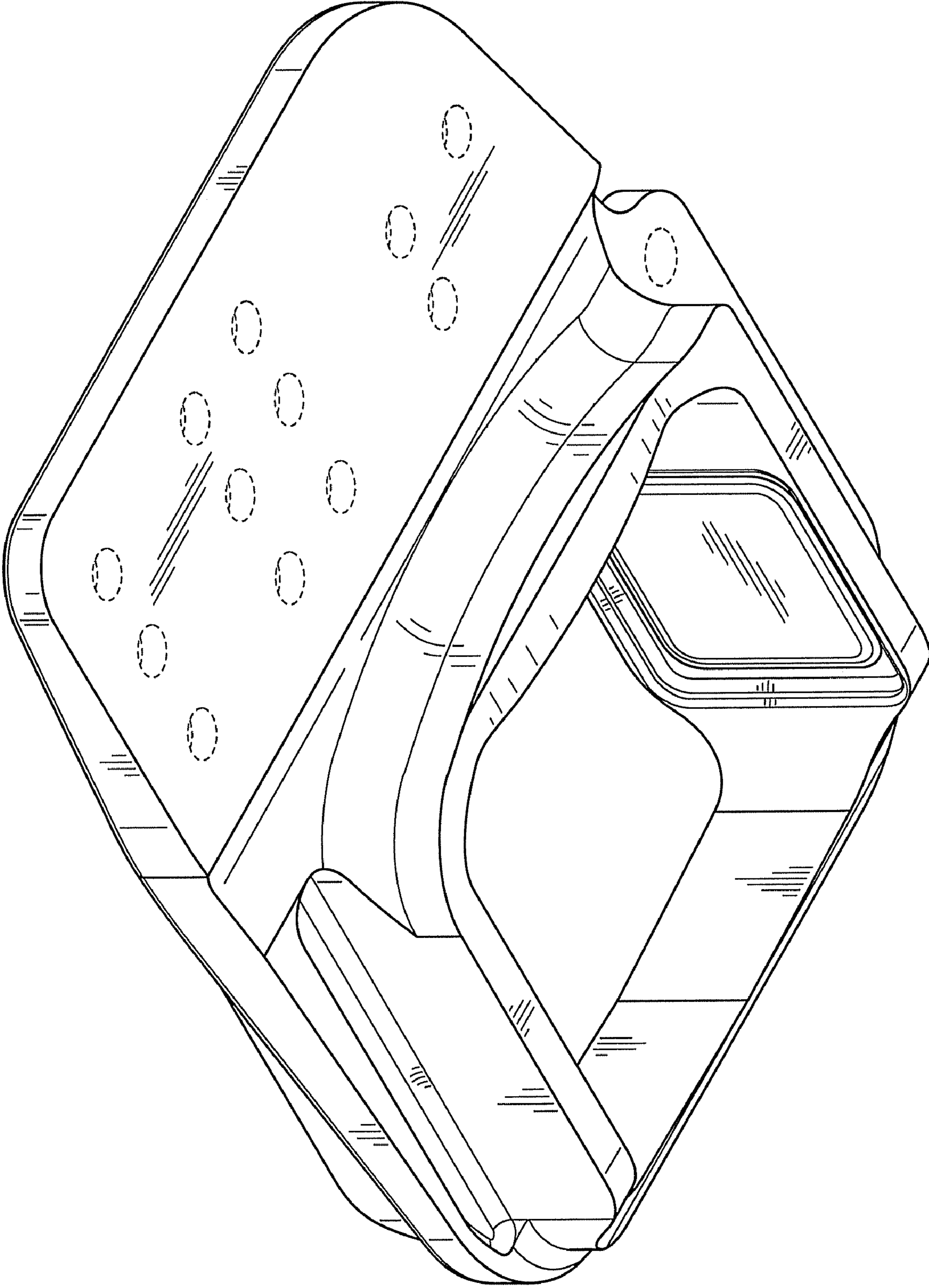


FIG. 14



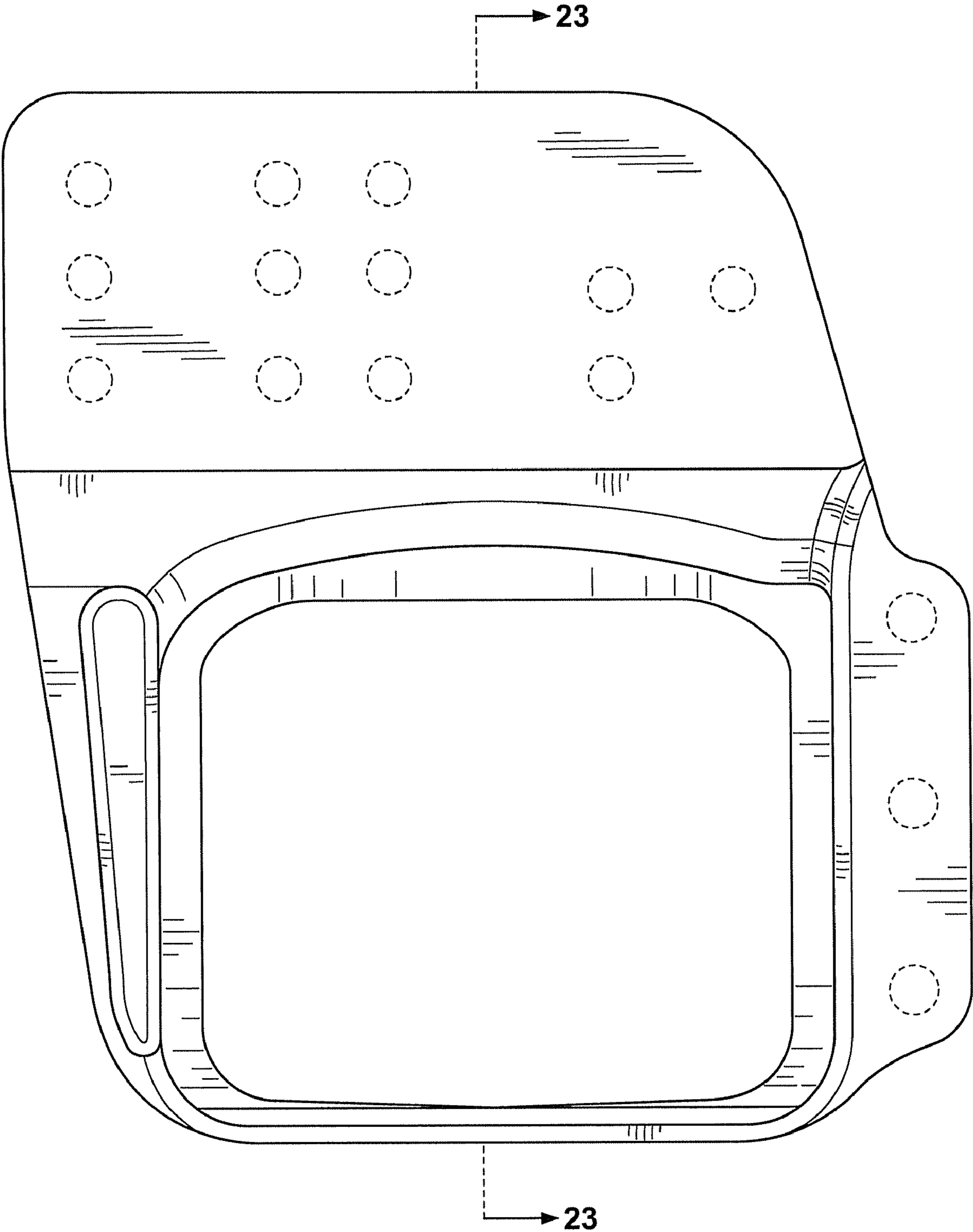


FIG. 15

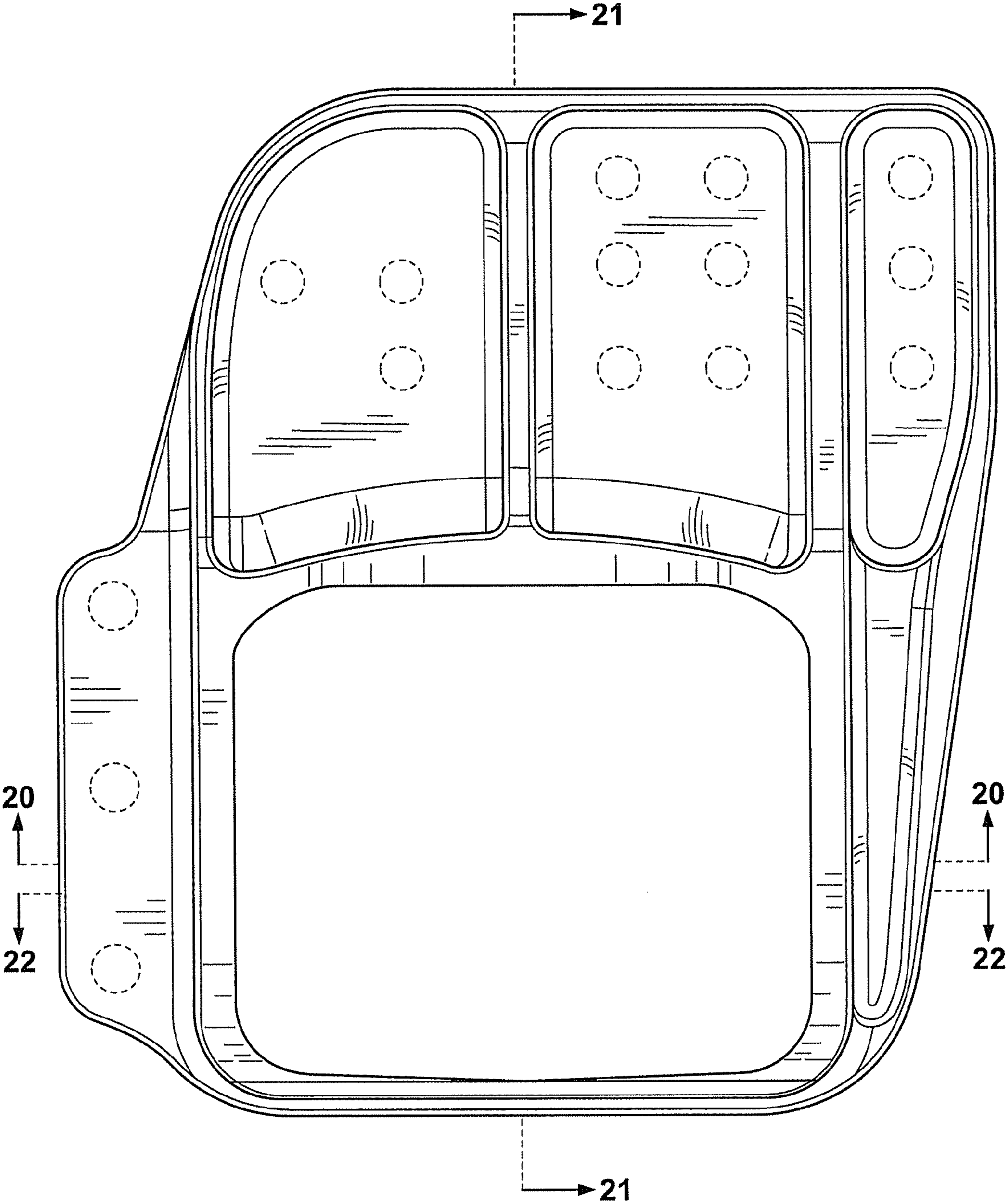


FIG. 16

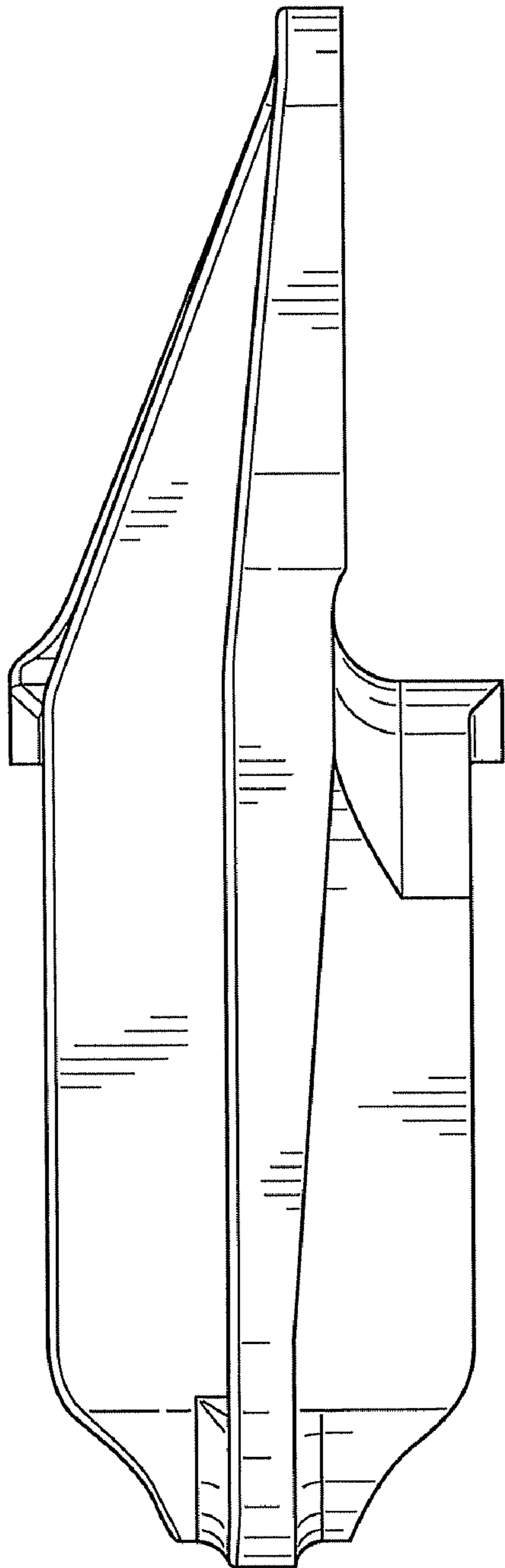


FIG. 17

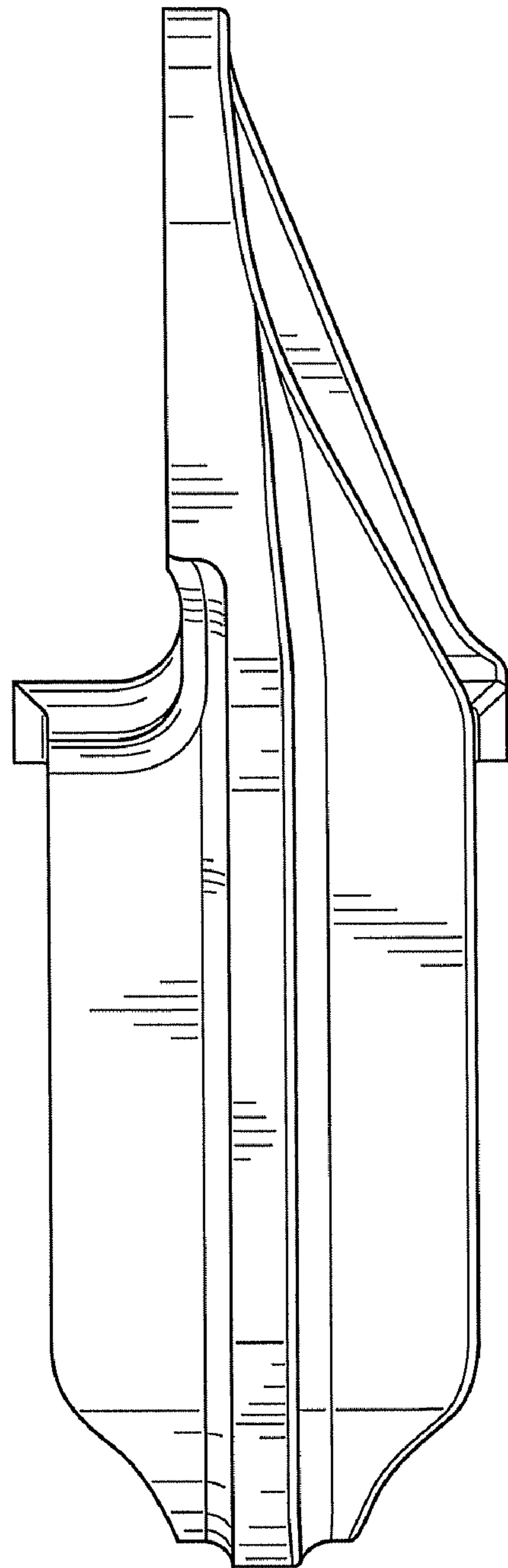


FIG. 18



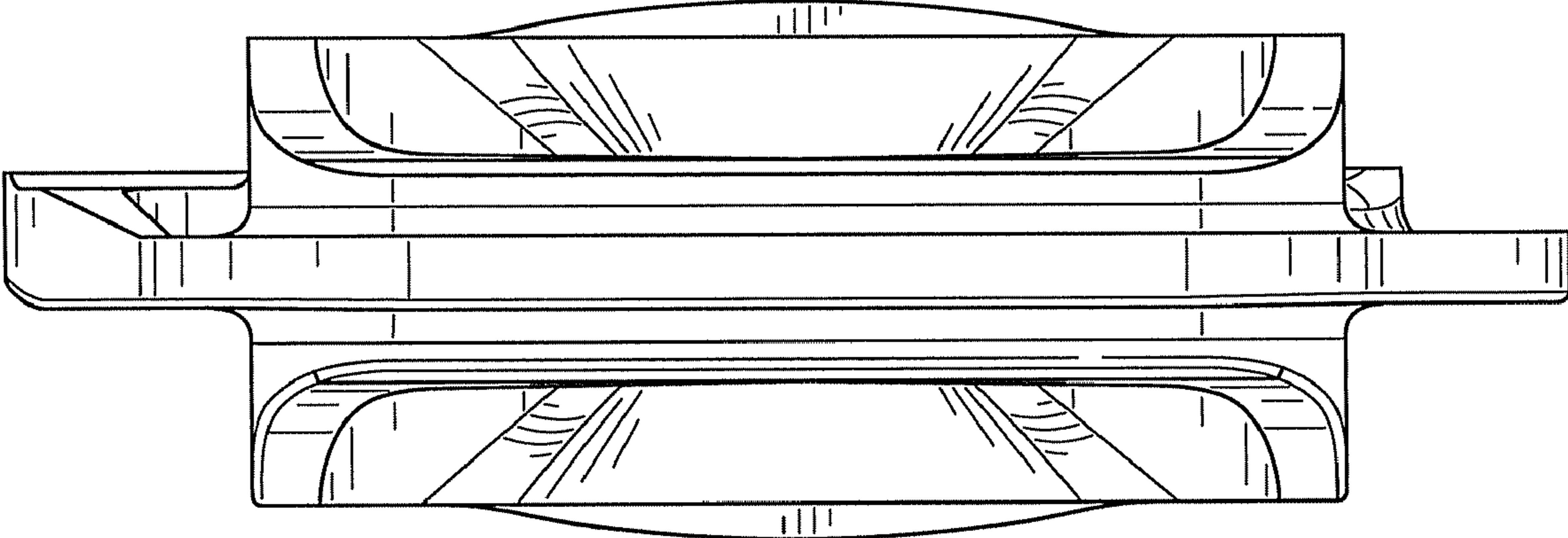


FIG. 19

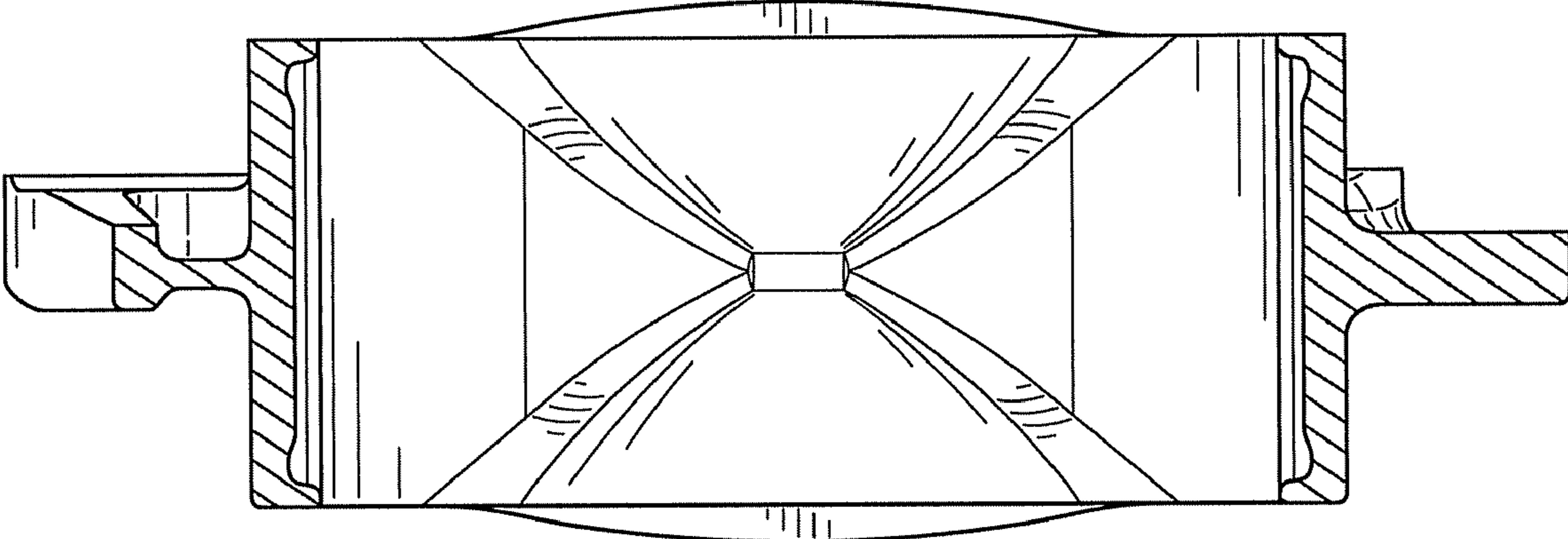


FIG. 20

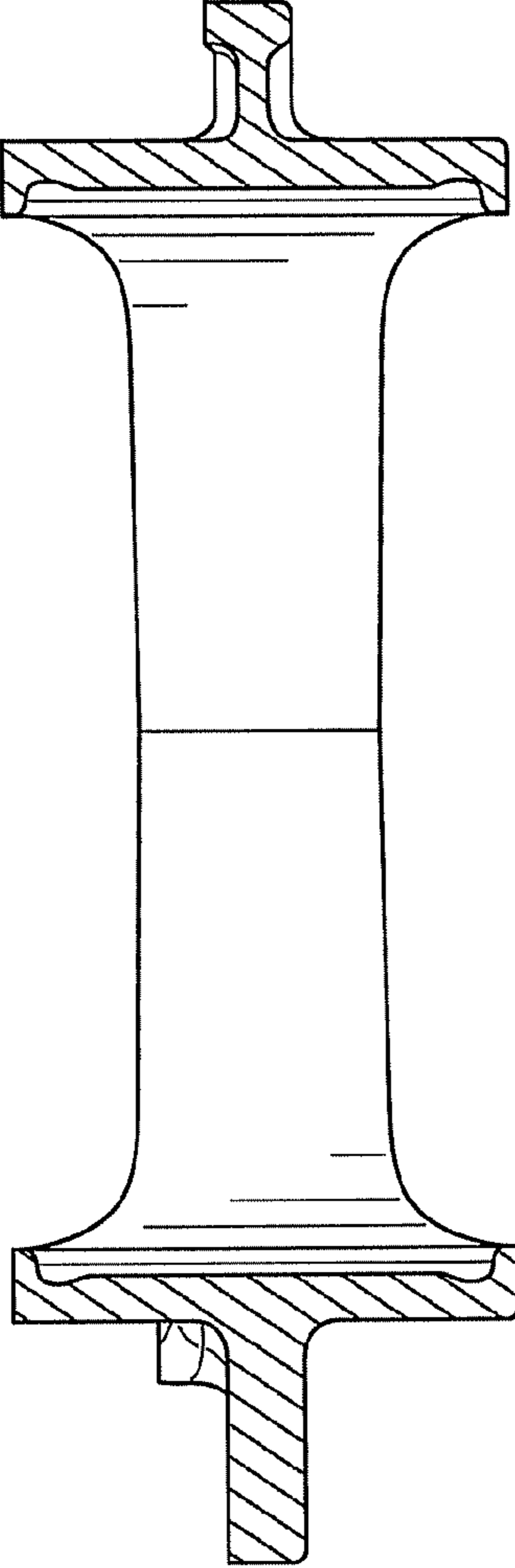


FIG. 22

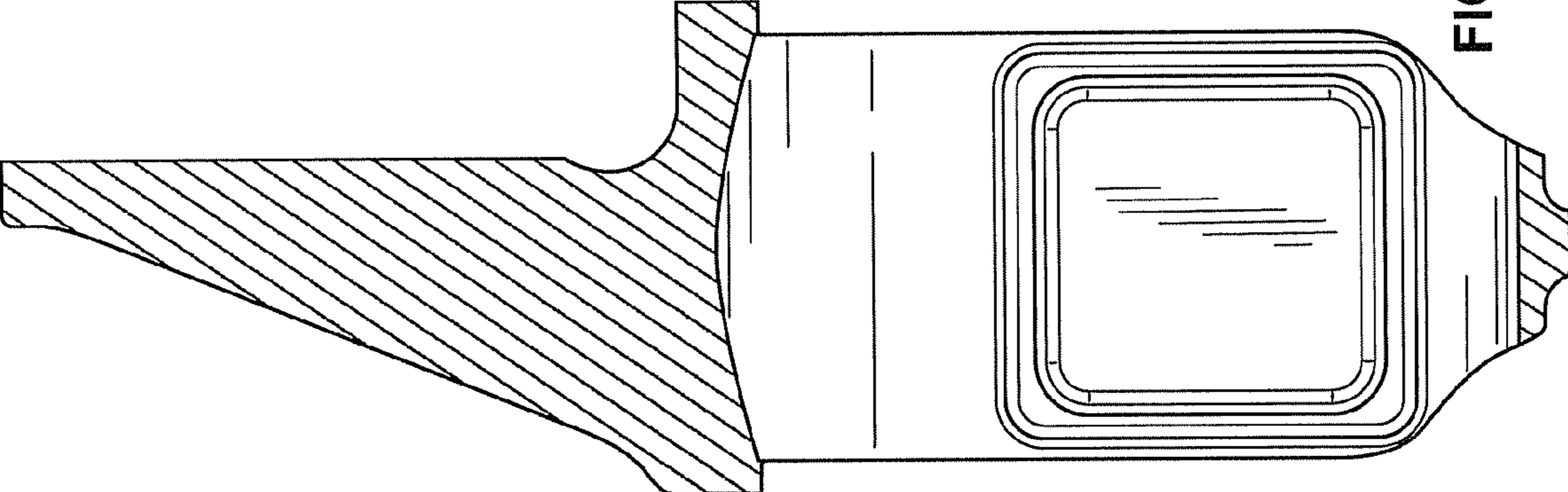


FIG. 21

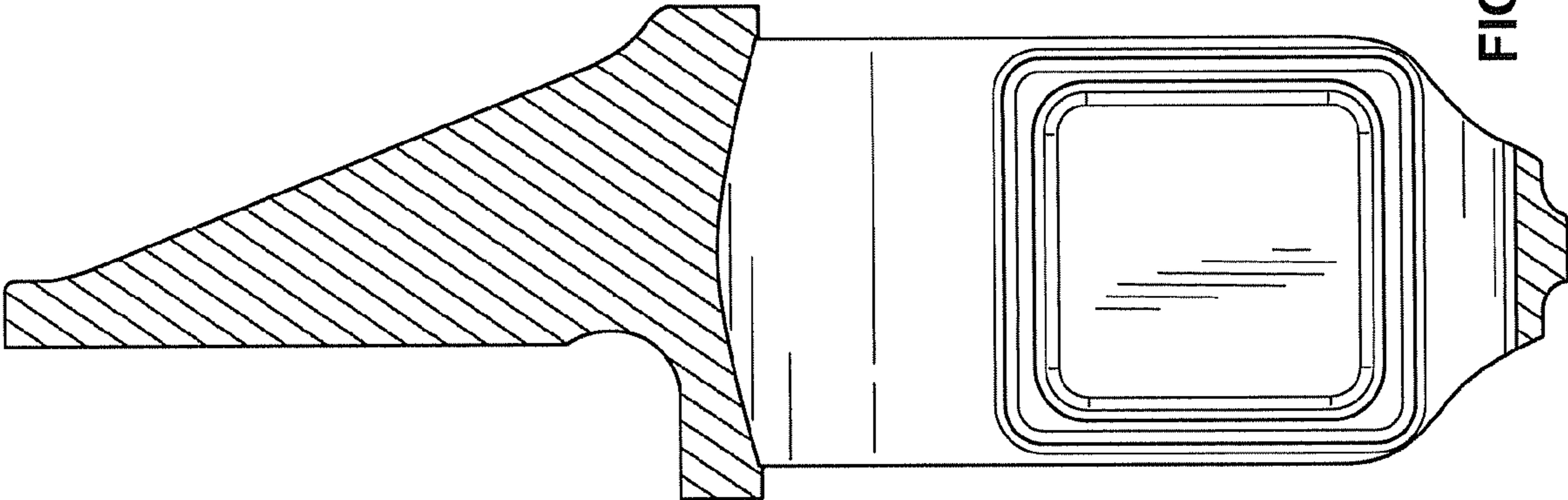


FIG. 23



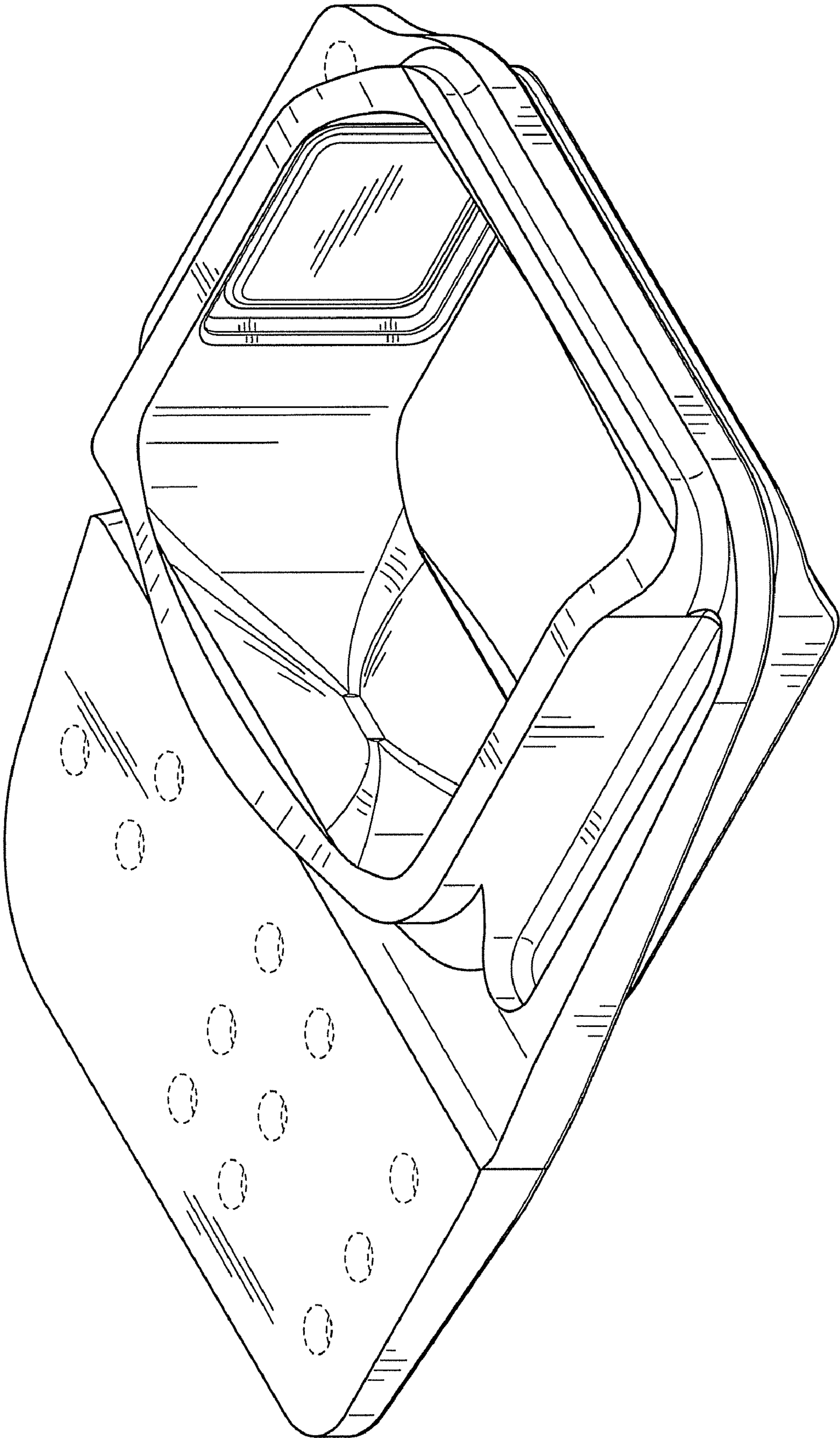


FIG. 24

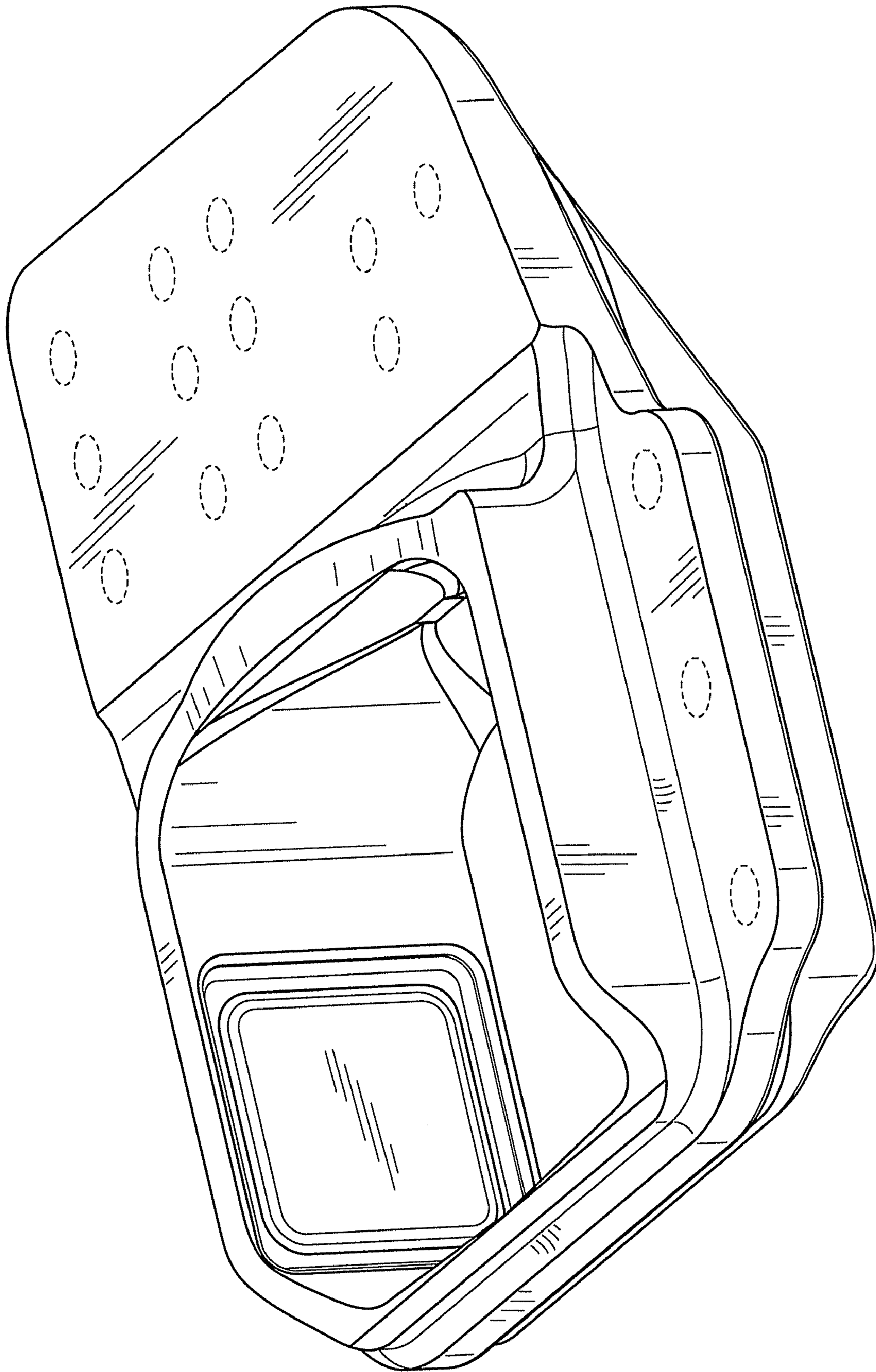


FIG. 25

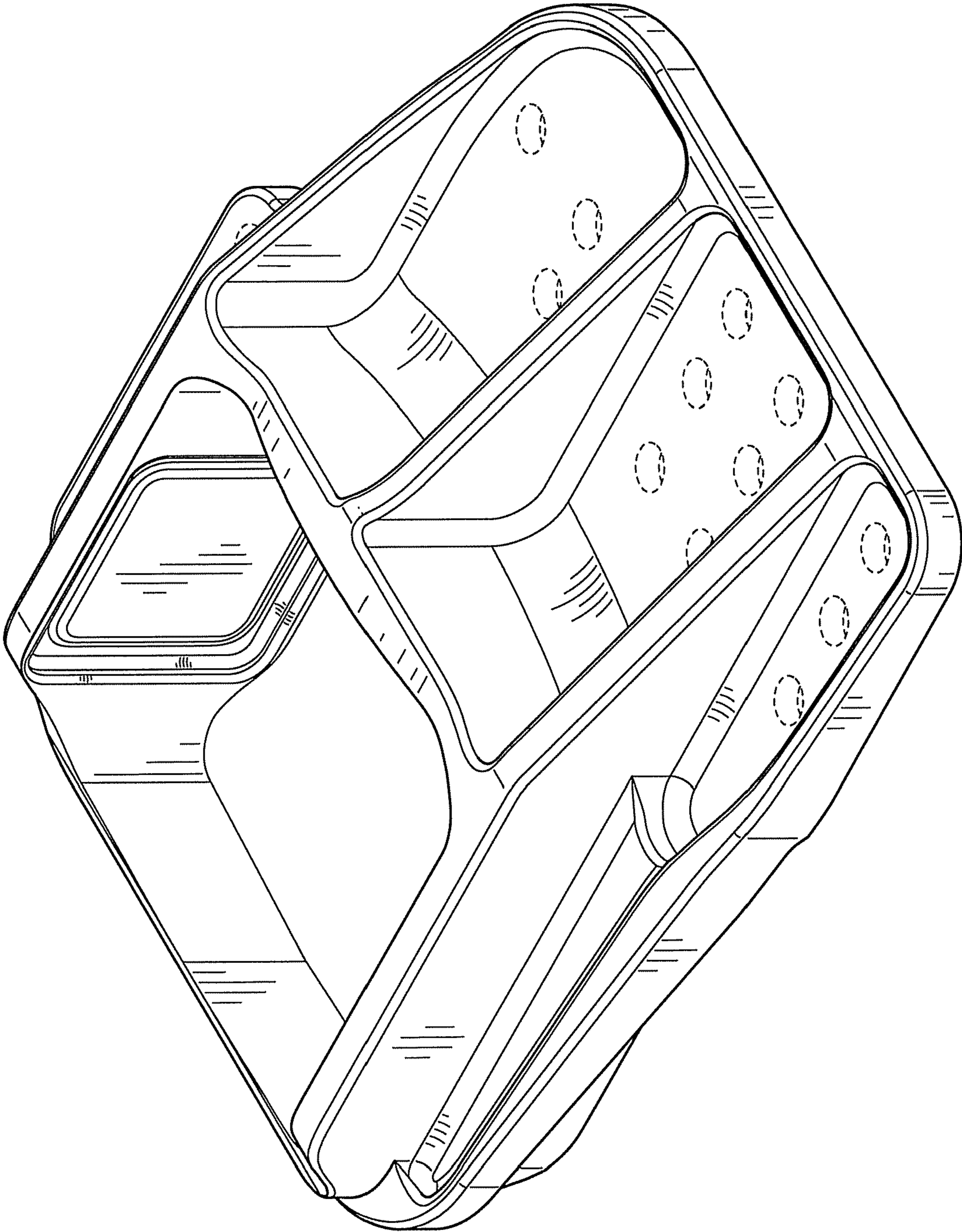


FIG. 26