



US00D427611S

# United States Patent [19]

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Yokota et al.

[45] Date of Patent: \*\* Jul. 4, 2000

## [54] PISTON FOR COMPRESSORS EMPLOYED IN AUTOMOBILE AIR-CONDITIONERS

## DESCRIPTION

[75] Inventors: Masahiro Yokota; Fuminobu Enokijima, both of Kariya, Japan

FIG. 1 is a front elevational view showing a piston for compressors employed in automobile air-conditioners according to a first embodiment of the present invention; FIG. 2 is a rear elevational view showing the piston of FIG. 1;

[73] Assignee: Kabushiki Kaisha Toyoda Jidoshokki Seisakusho, Aichi-Ken, Japan

FIG. 3 is a top plan view showing the piston of FIG. 1; FIG. 4 is a bottom plan view showing the piston of FIG. 1; FIG. 5 is a right side elevational view showing the piston of FIG. 1, the left side view being a mirror image thereof;

[\*\*] Term: 14 Years

FIG. 6 is a cross-sectional view taken along line 6—6 of FIG. 1;

[21] Appl. No.: 29/109,282

FIG. 7 is a cross-sectional view taken along line 7—7 of FIG. 5;

[22] Filed: Aug. 12, 1999

FIG. 8 is a cross-sectional view taken along line 8—8 of FIG. 5;

### [30] Foreign Application Priority Data

Feb. 16, 1999 [JP] Japan ..... 11-3557  
Feb. 16, 1999 [JP] Japan ..... 11-3558

FIG. 9 is a perspective view showing the piston of FIG. 1;

[51] LOC (7) Cl. .... 15-02

[52] U.S. Cl. .... D15/9

FIG. 10 is a front elevational view showing a piston for compressors employed in automobile air-conditioners according to a second embodiment of the present invention;

[58] Field of Search ..... D15/7-9; 417/545, 417/222.1, 209, 266, 273, 269; 91/505; 92/71, 165 R; 74/60

FIG. 11 is a rear elevational view showing the piston of FIG. 10;

### [56] References Cited

#### U.S. PATENT DOCUMENTS

D. 402,295 12/1998 Kayukawa et al. .... D15/9  
D. 417,225 11/1999 Kinura et al. .... D15/5  
D. 417,876 12/1999 Kayukawa et al. .... D15/9  
5,461,967 10/1995 Burkett et al. .... 97/71  
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FIG. 12 is a top plan view showing the piston of FIG. 10;

FIG. 13 is a bottom plan view showing the piston of FIG. 10;

FIG. 14 is a right side elevational view showing the piston of FIG. 10, the left side view being a mirror image thereof;

FIG. 15 is a cross-sectional view taken along line 15—15 of FIG. 10;

FIG. 16 is a cross-sectional view taken along line 16—16 of FIG. 14;

FIG. 17 is a cross-sectional view taken along line 17—17 of FIG. 14;

FIG. 18 is a perspective view showing the piston of FIG. 10; and,

FIG. 19 is a cross-sectional view showing a piston according to the present invention employed in a compressor.

The broken lines in FIG. 19 are shown for illustrative purposes only and form no part of the claimed design.

#### FOREIGN PATENT DOCUMENTS

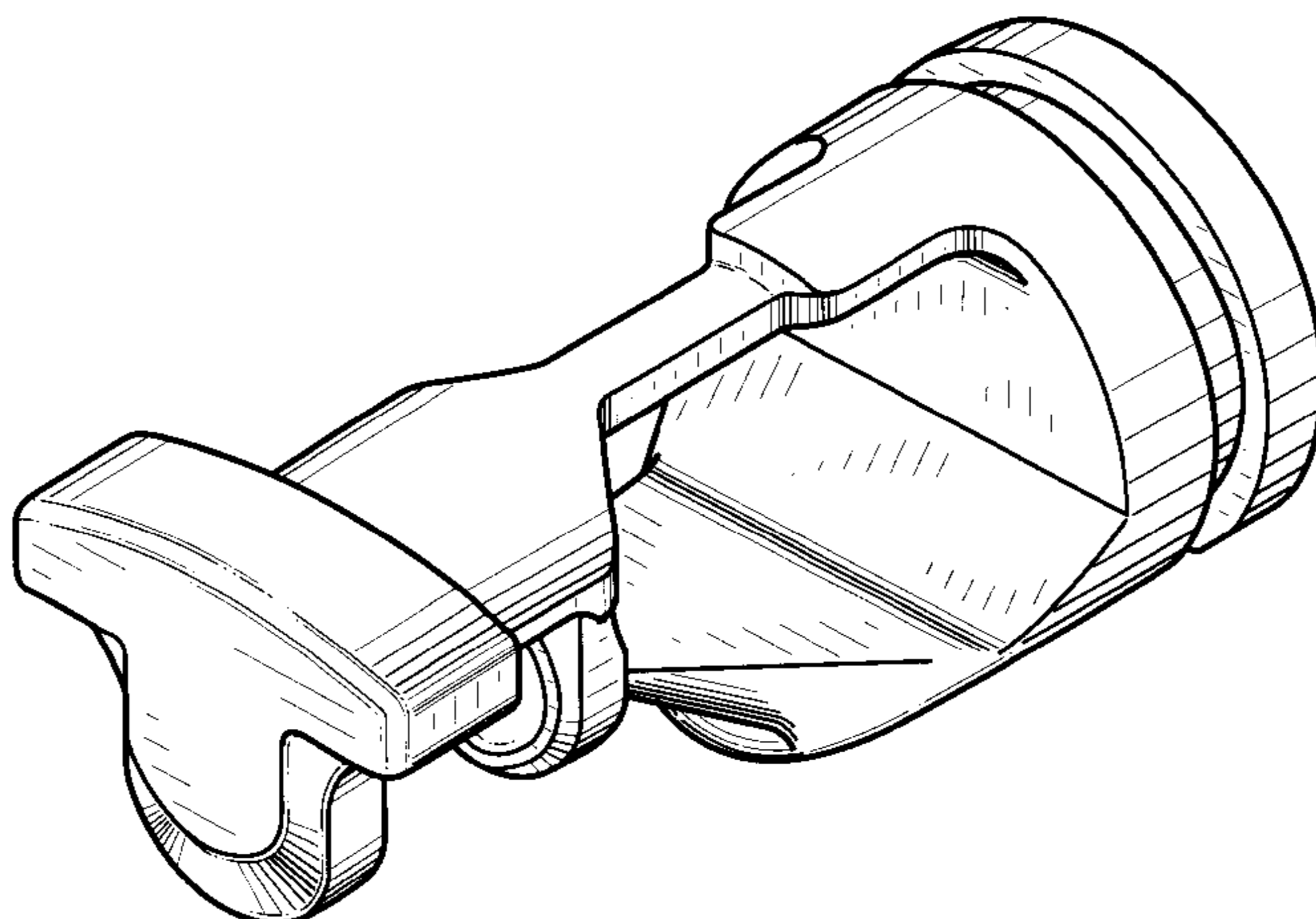
07189900 7/1995 Japan .  
9-203378 8/1997 Japan .

Primary Examiner—Ralf Seifert  
Attorney, Agent, or Firm—Morgan & Finnegan, L.L.P.

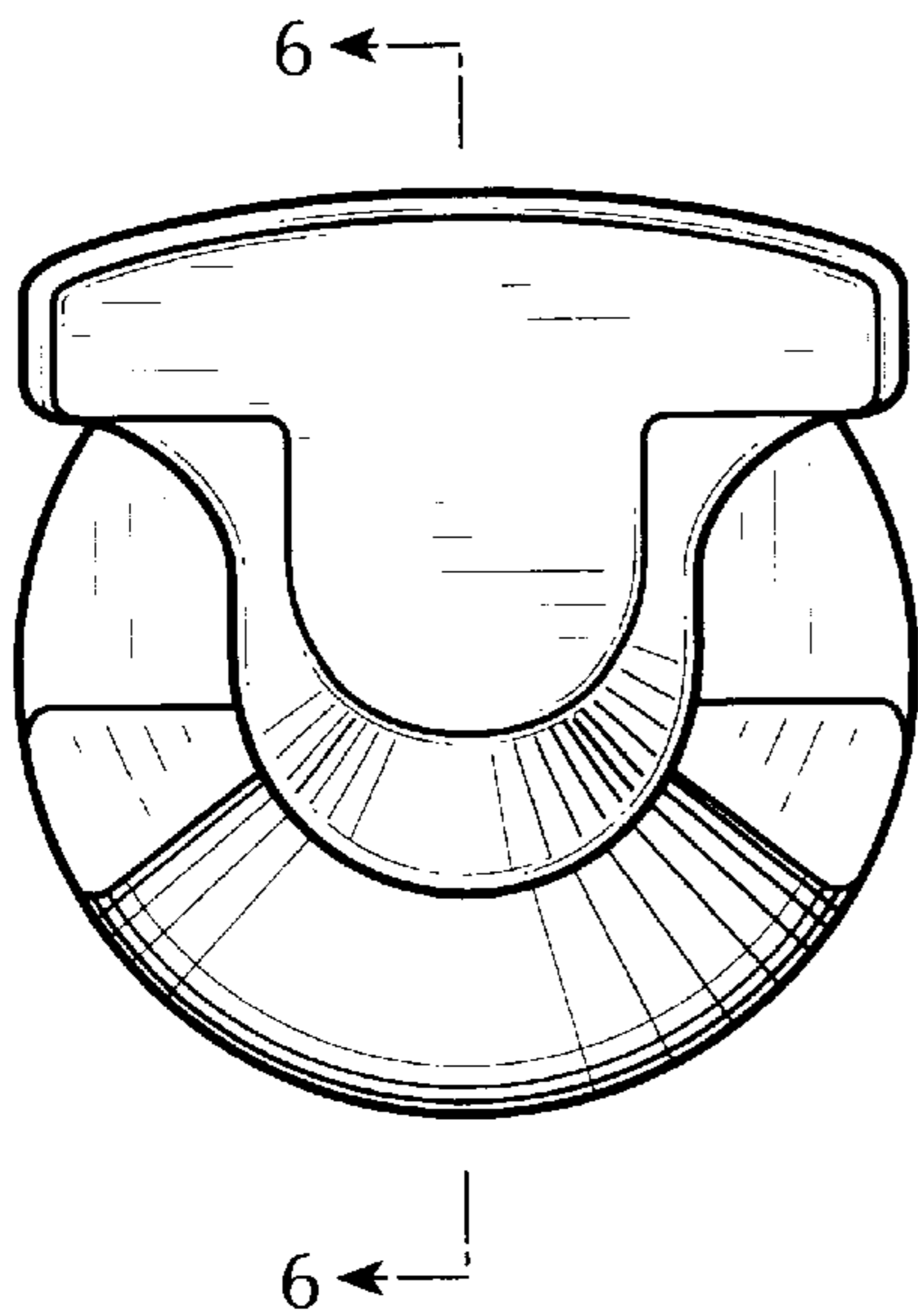
### [57] CLAIM

The ornamental design for a piston for compressors employed in automobile air-conditioners, as shown and described.

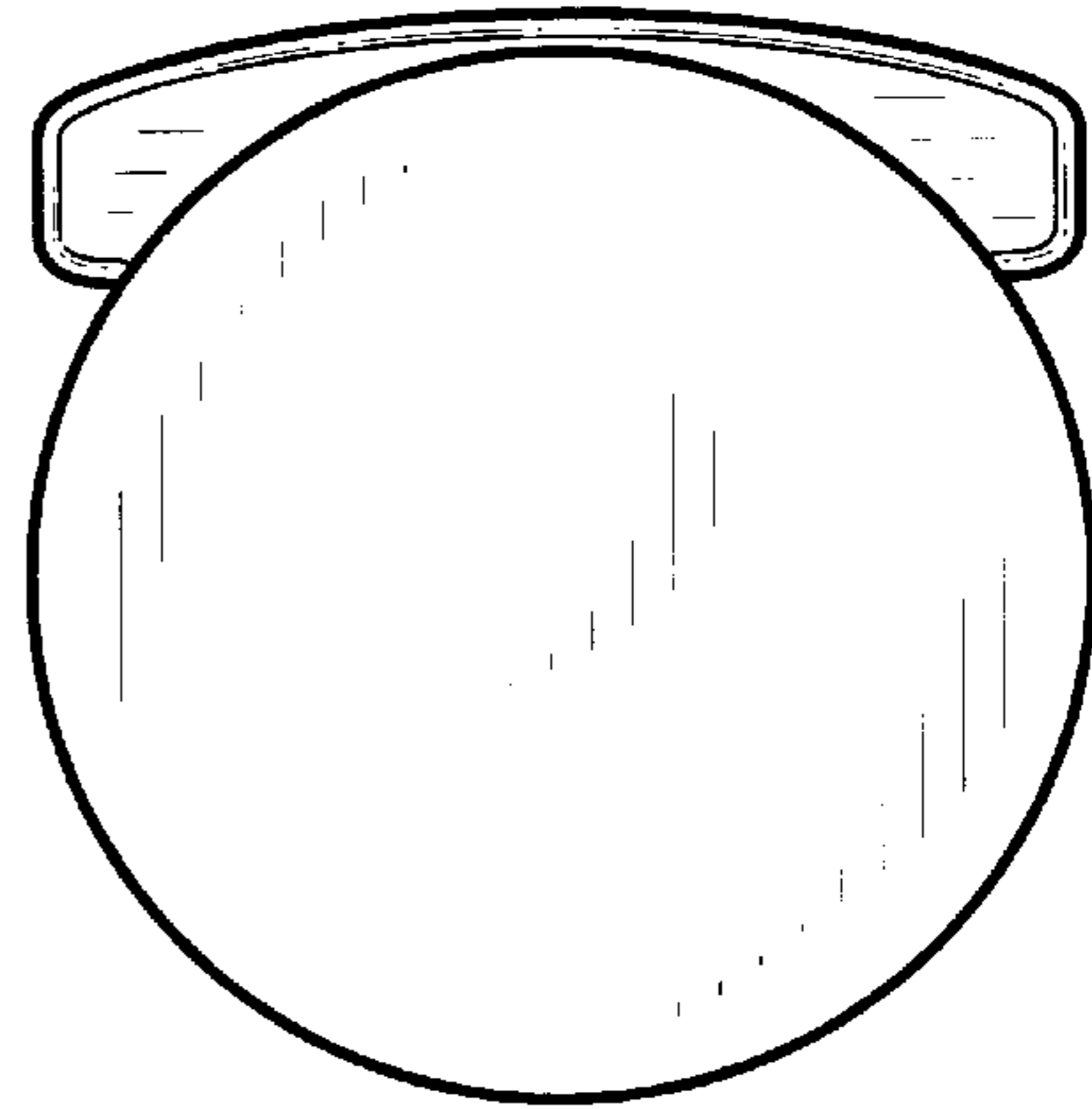
1 Claim, 7 Drawing Sheets



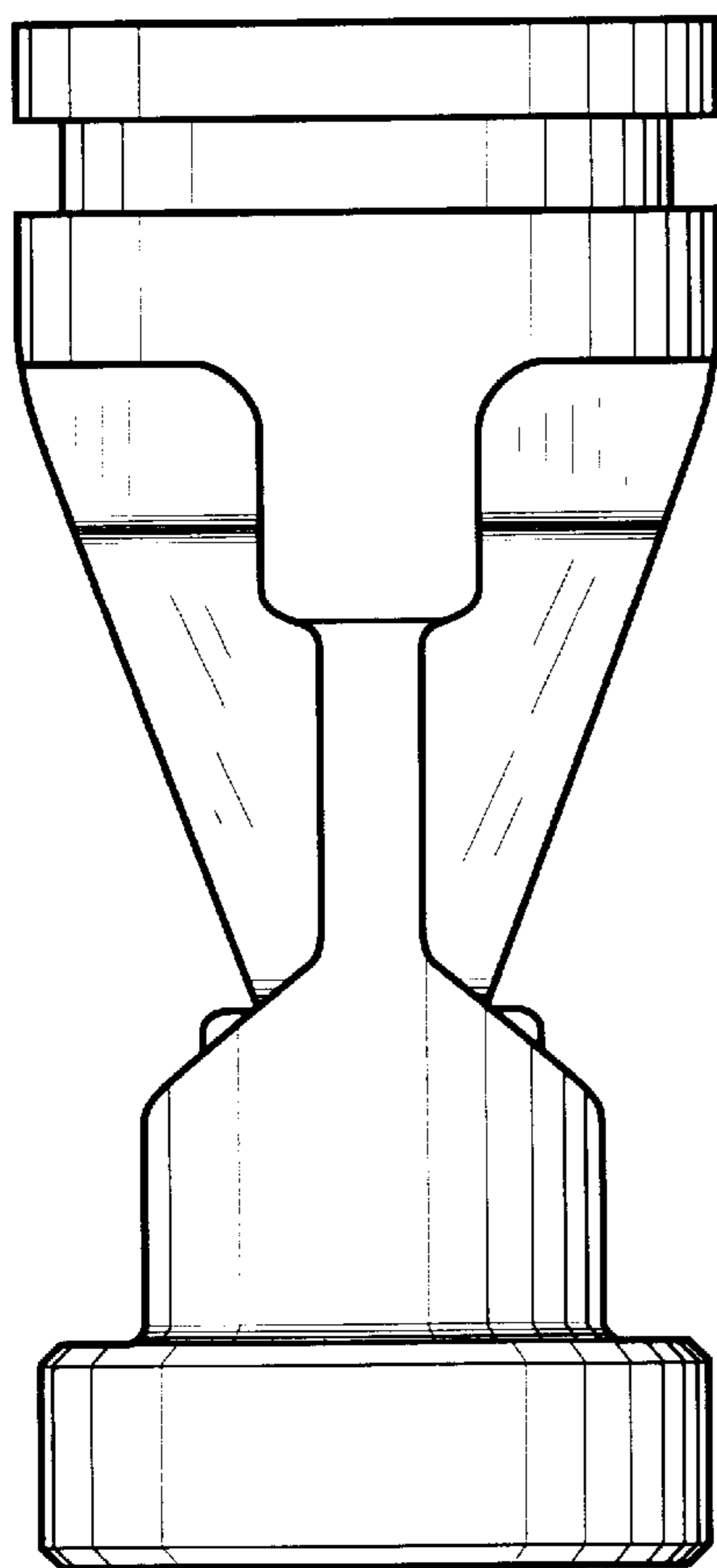
**FIG. 1**



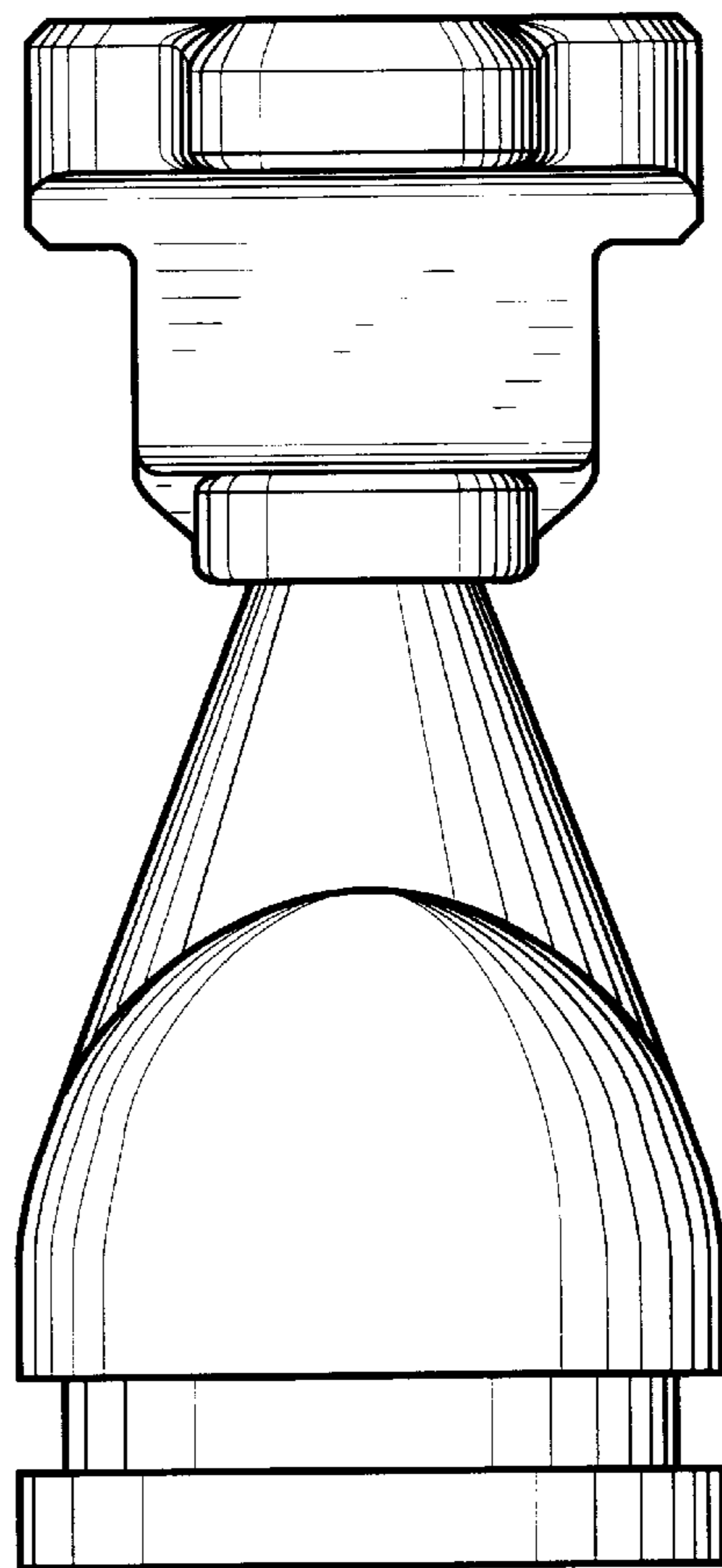
**FIG. 2**



**FIG. 3**



**FIG. 4**



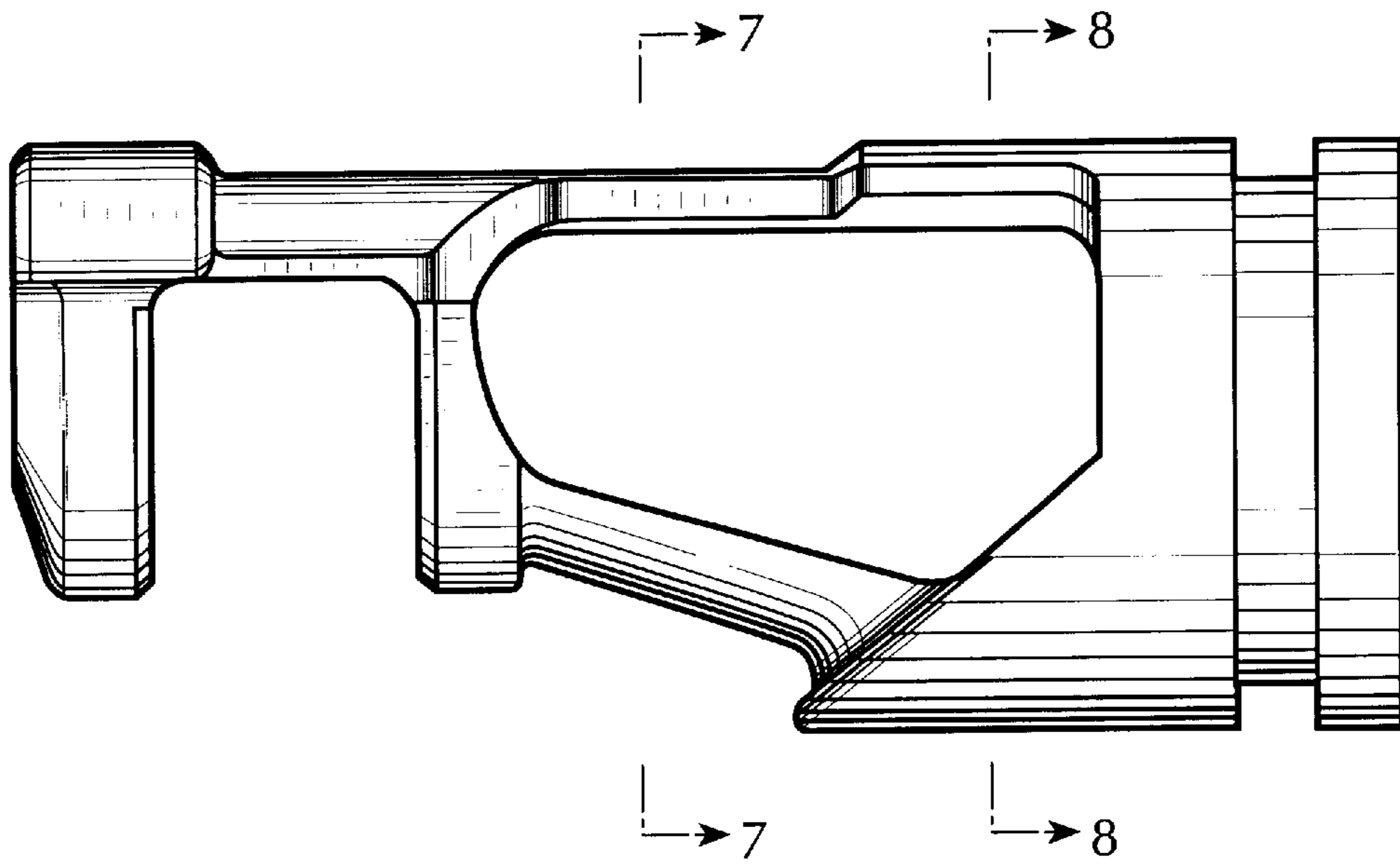


FIG. 5

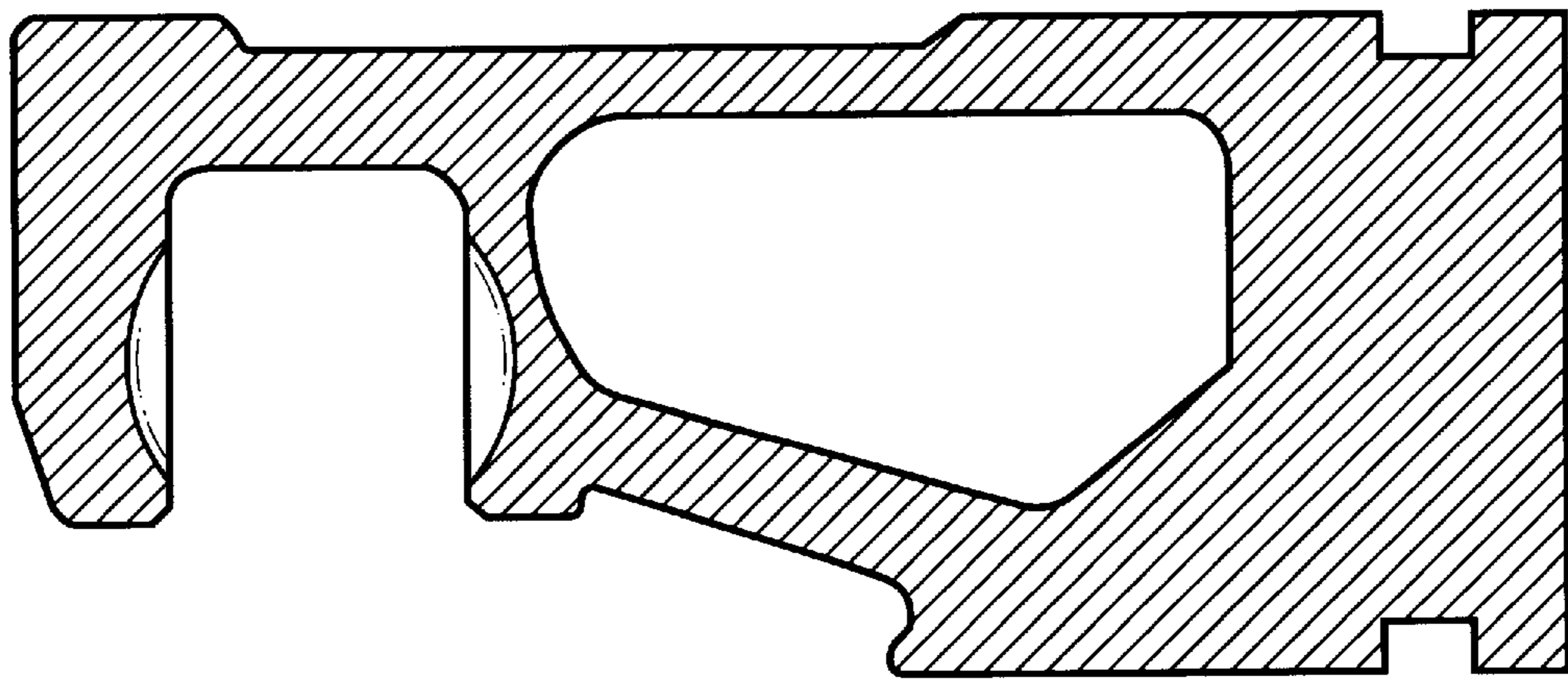
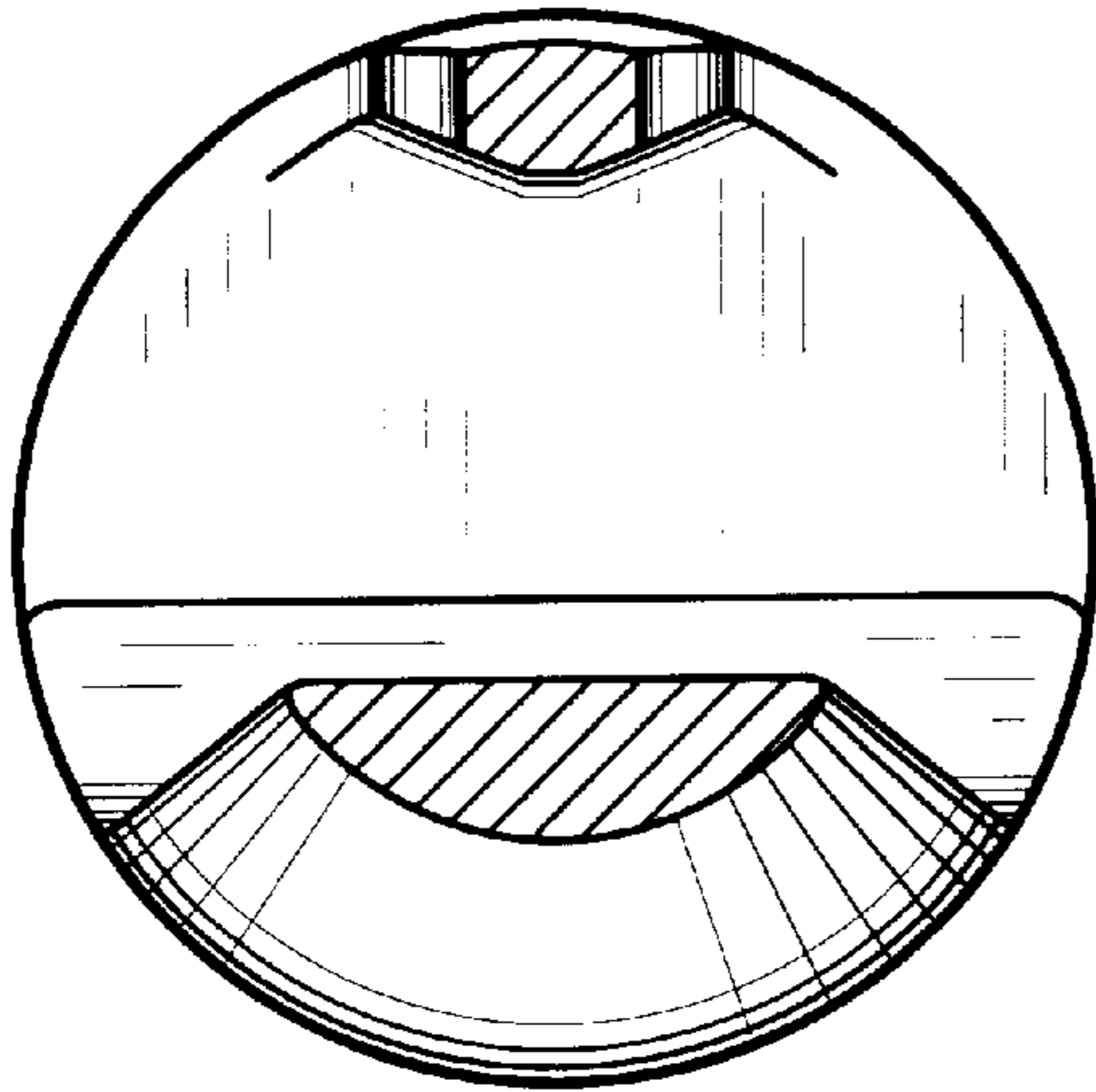
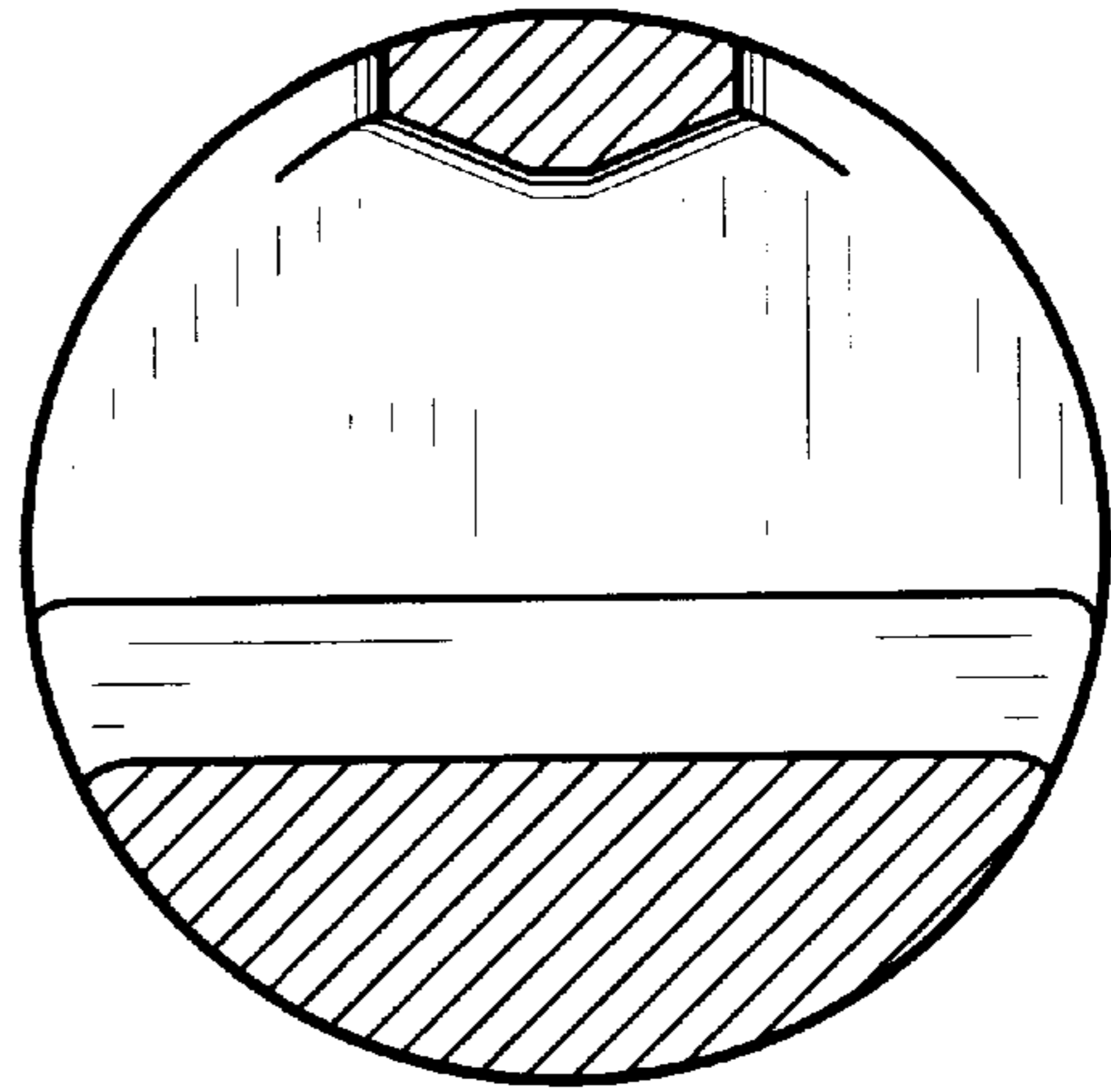


FIG. 6

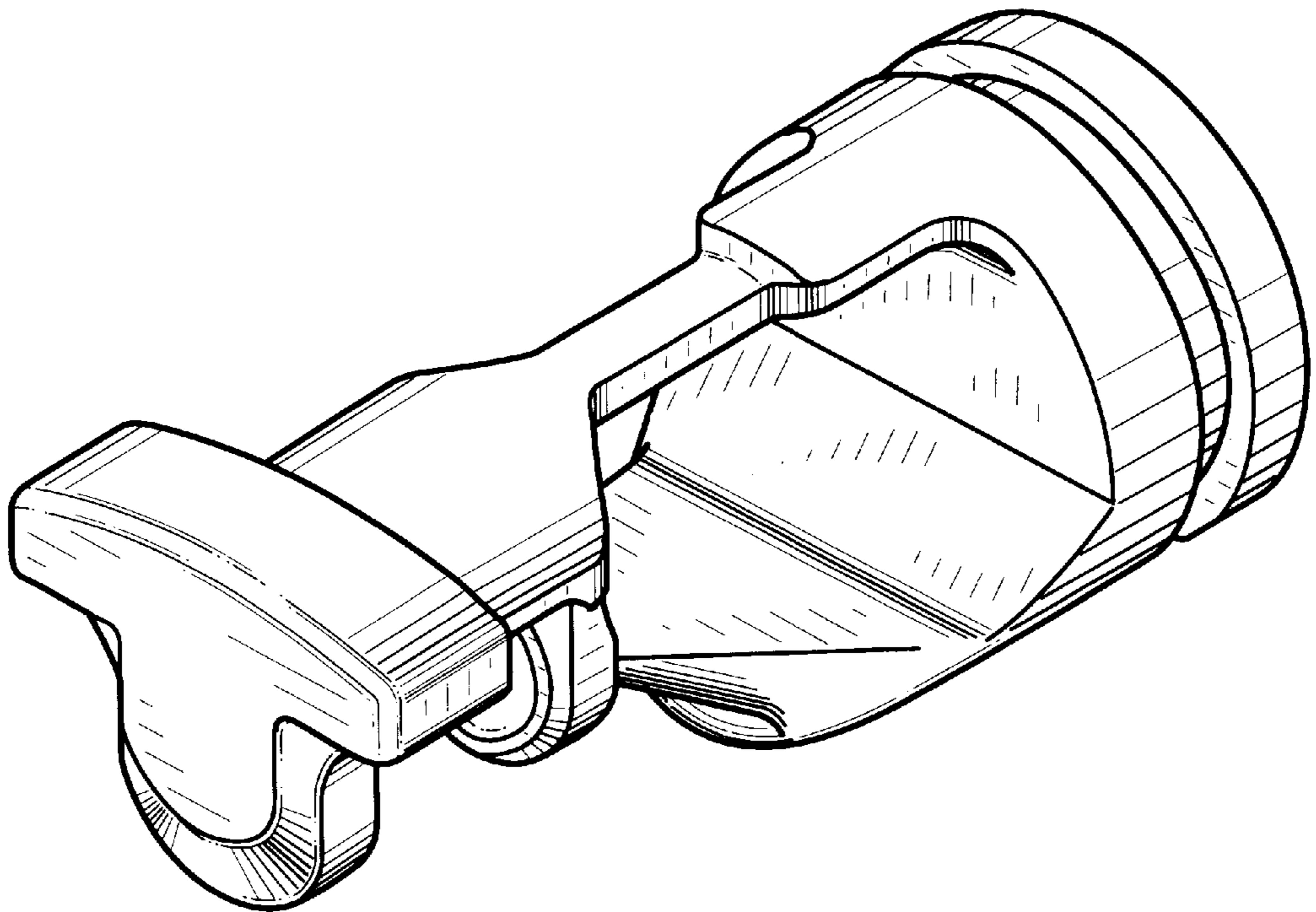
**FIG. 7**



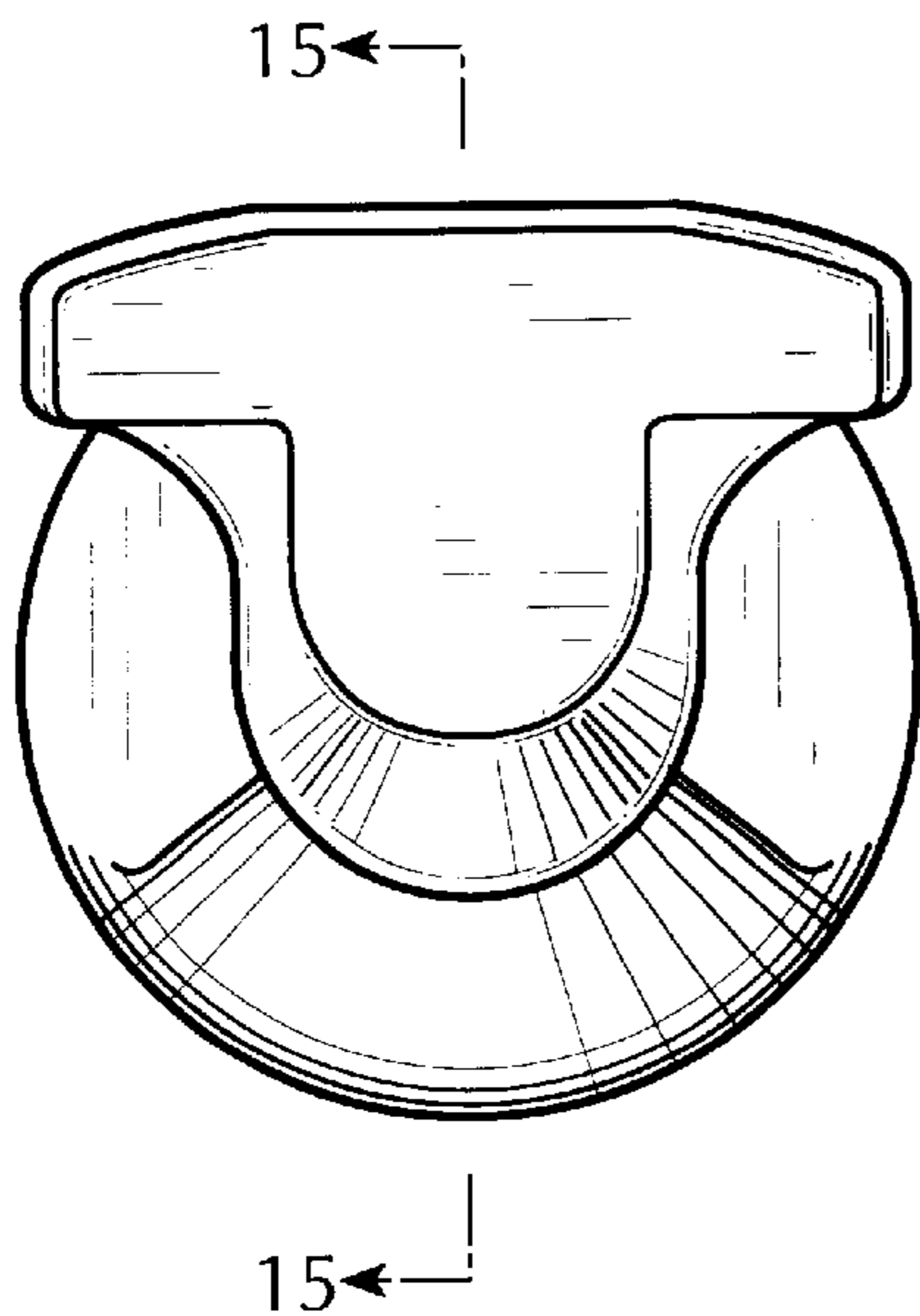
**FIG. 8**



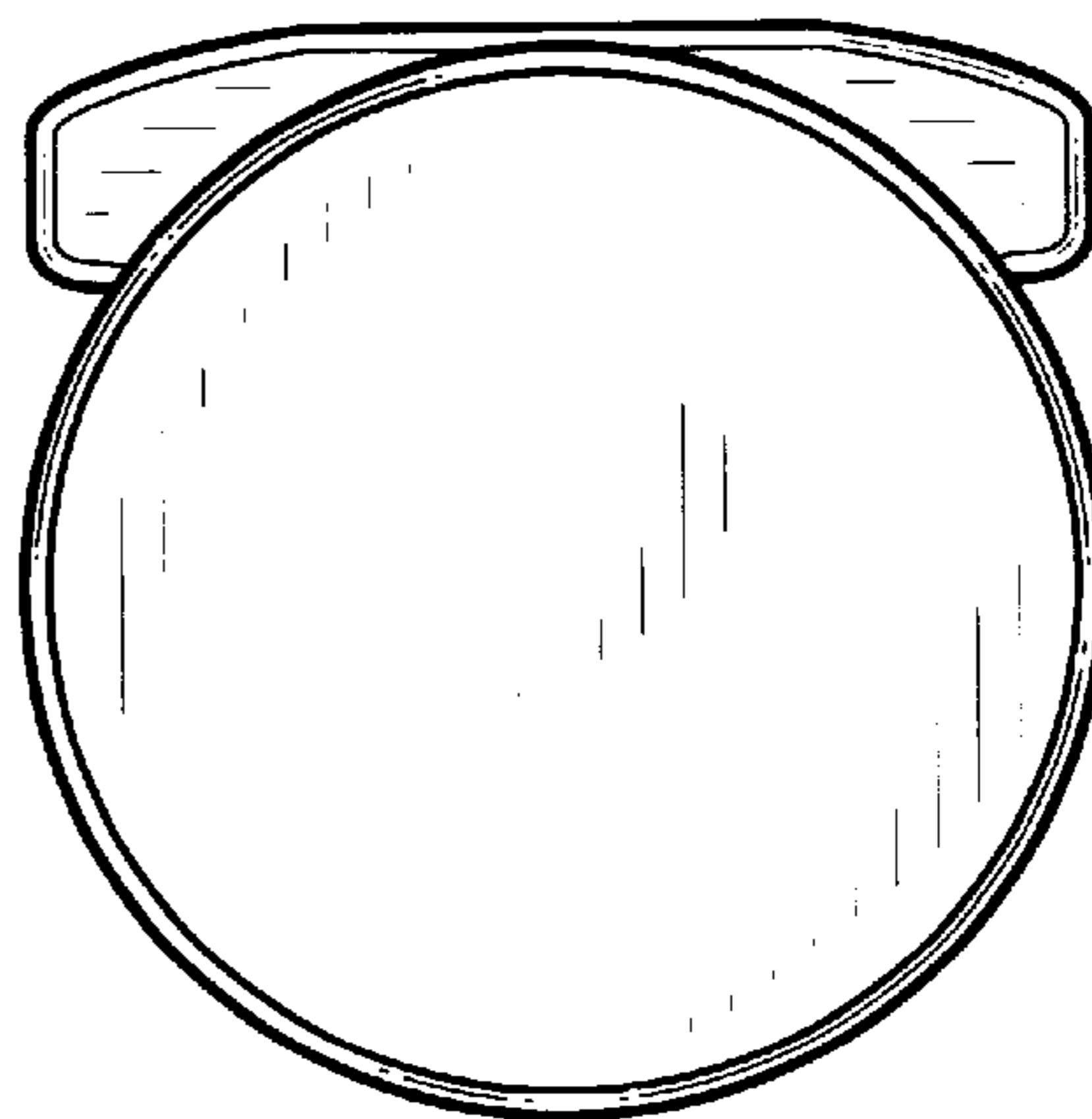
**FIG. 9**



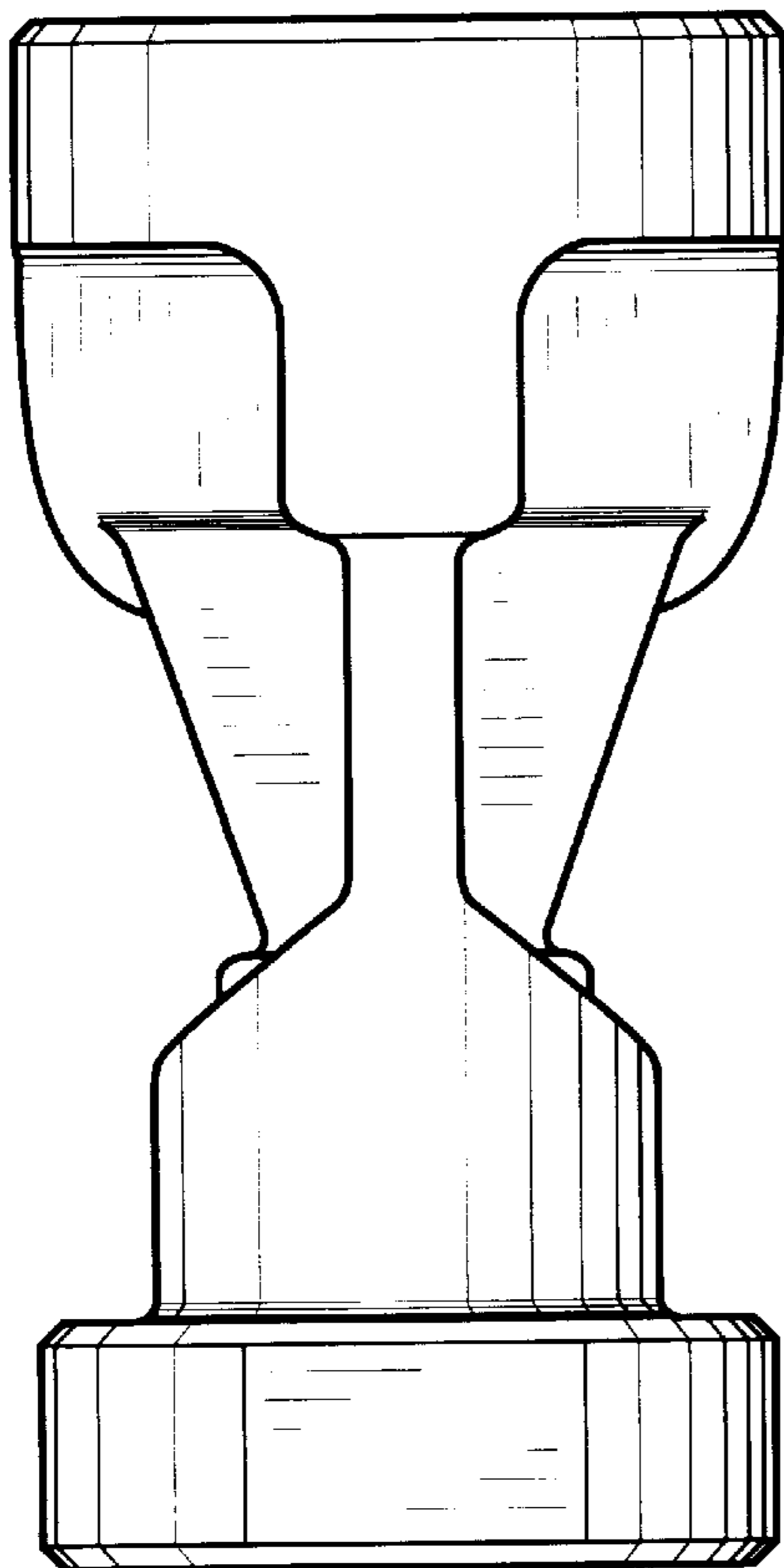
**FIG. 10**



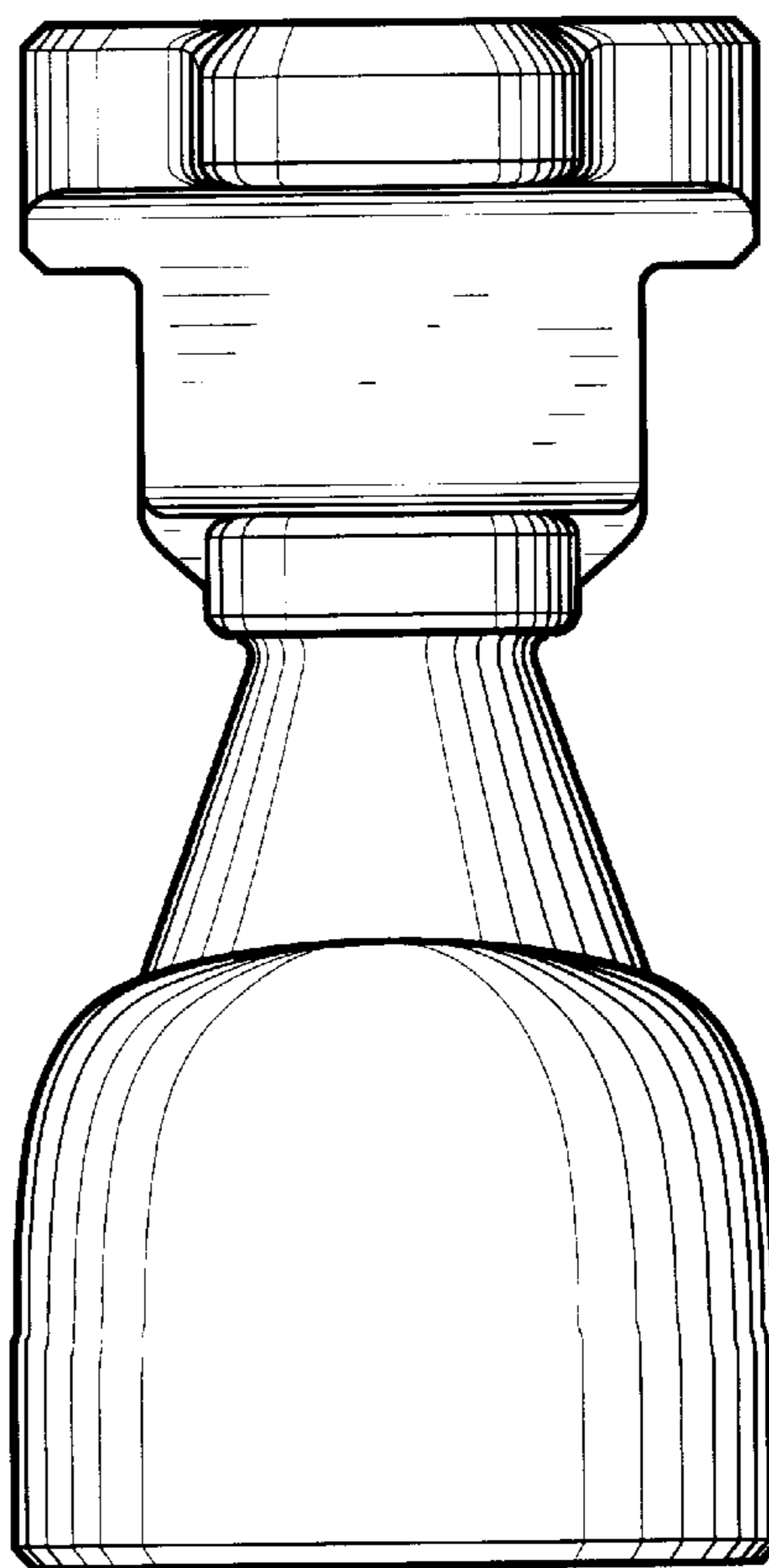
**FIG. 11**

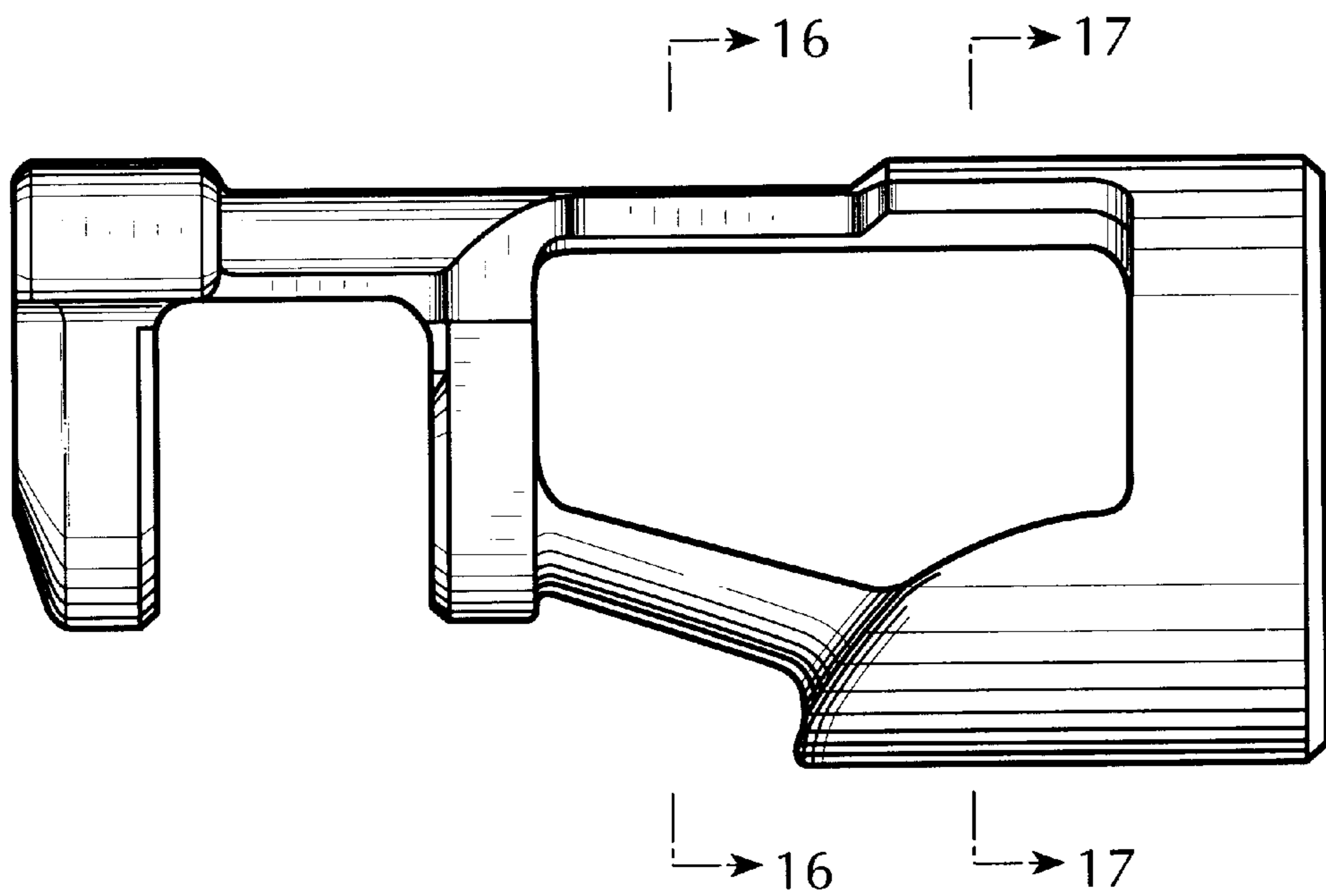


**FIG. 12**

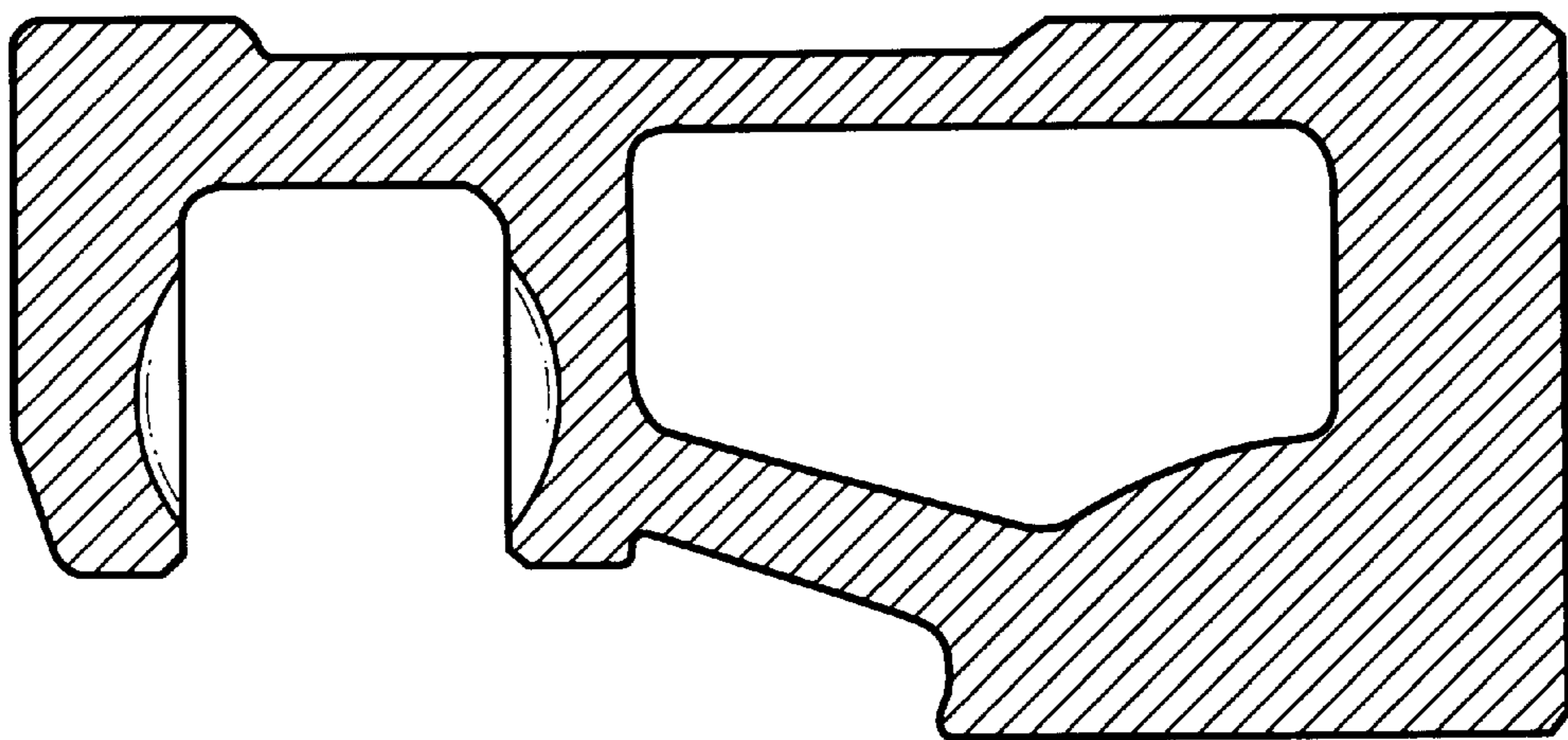


**FIG. 13**



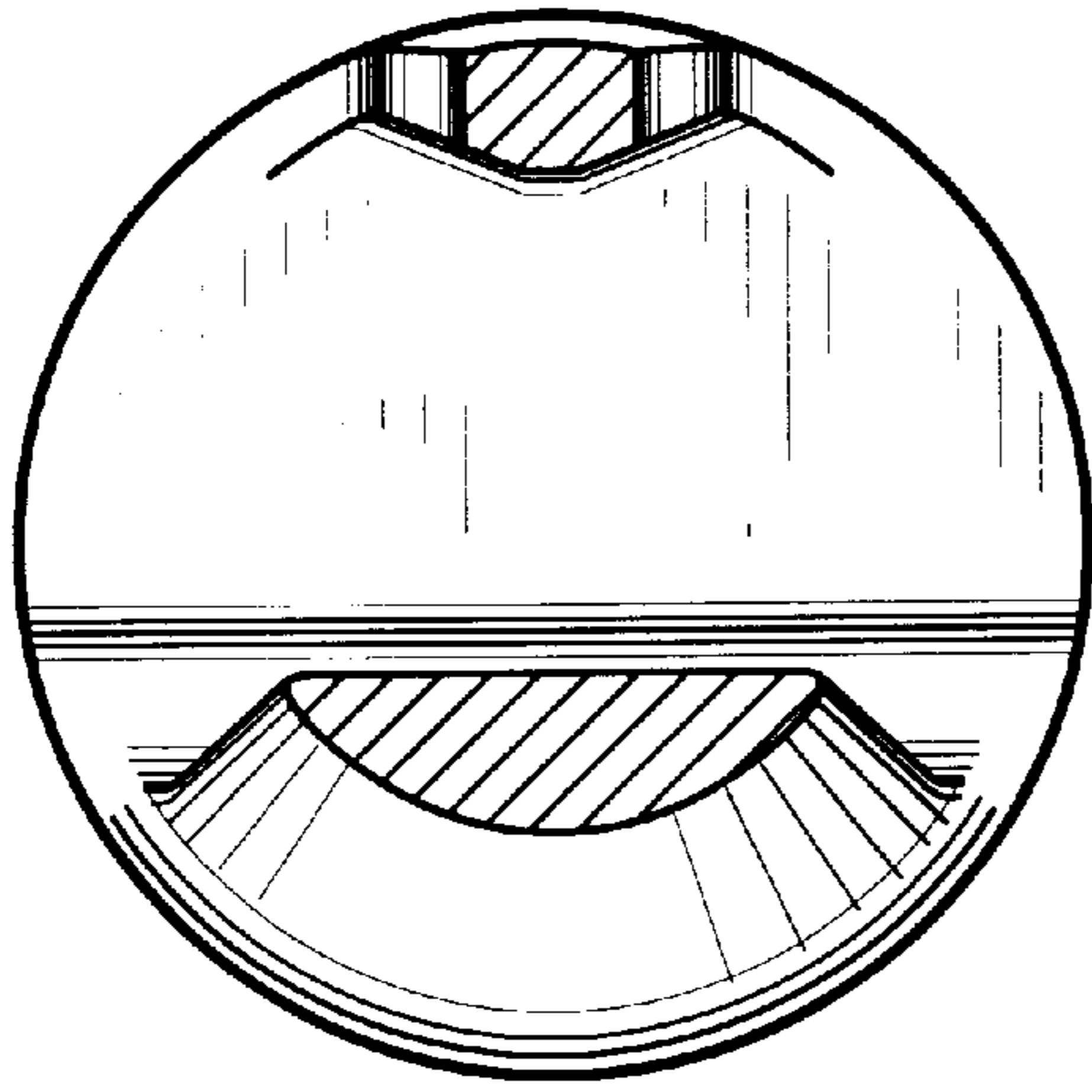


**FIG. 14**

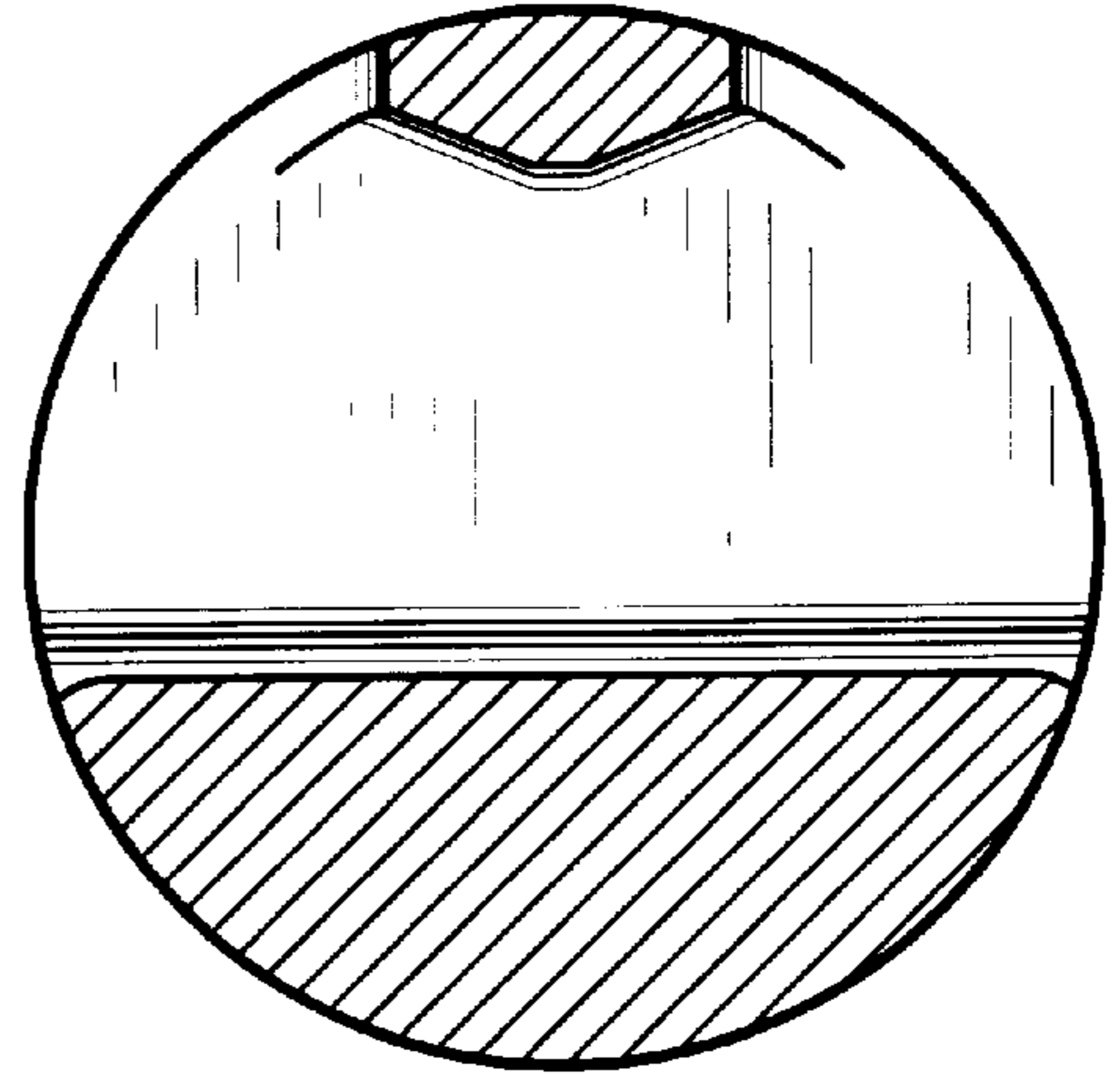


**FIG. 15**

**FIG. 16**



**FIG. 17**



**FIG. 18**

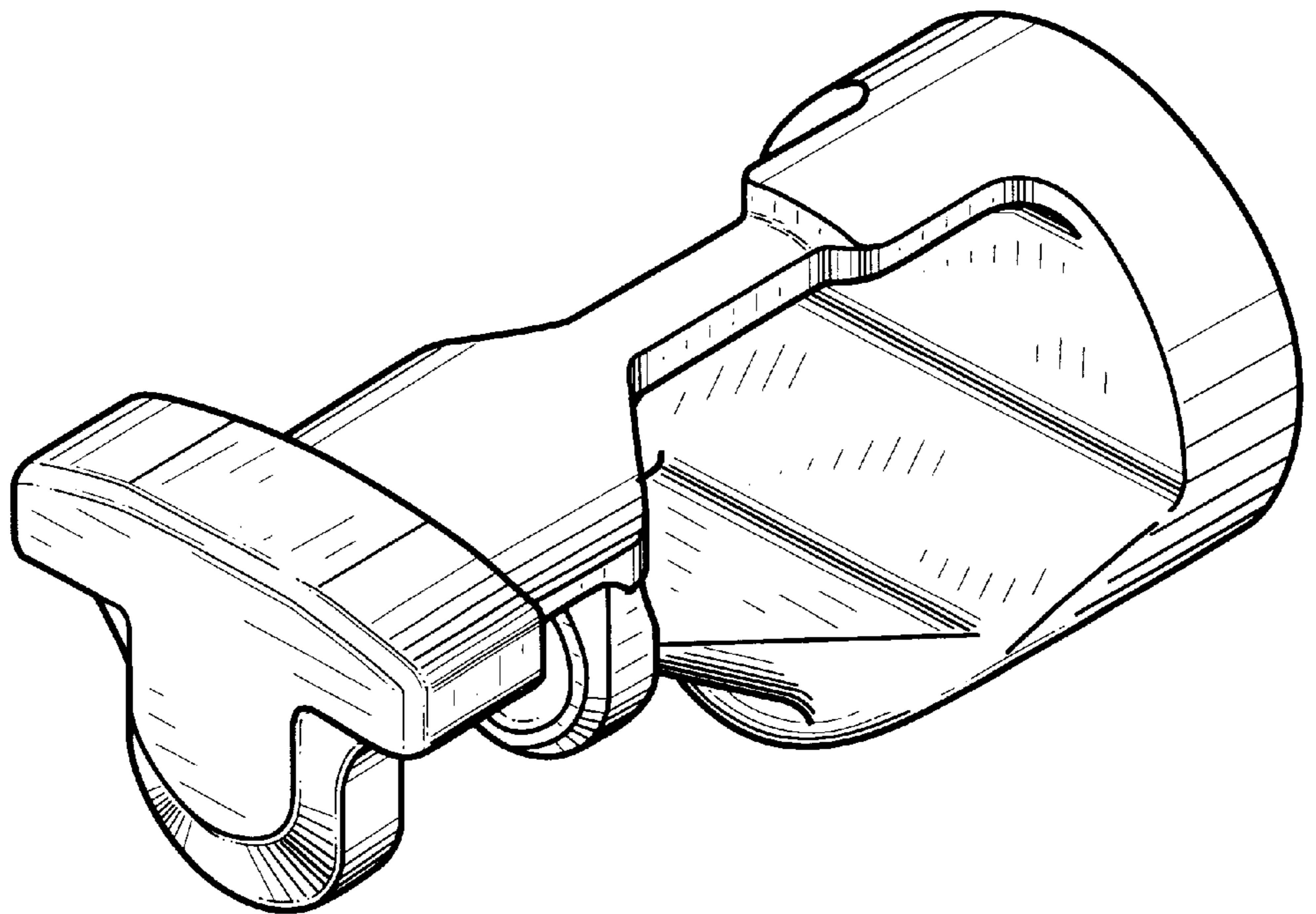


FIG. 19

