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(12) **United States Design Patent**
Sato

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(54) **LOWER HEAT INSULATING CYLINDER FOR MANUFACTURING SEMICONDUCTOR WAFERS**

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(73) Assignee: **Tokyo Electron Limited**, Tokyo (JP)

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

(21) Appl. No.: **29/272,820**

(22) Filed: **Feb. 20, 2007**

(30) **Foreign Application Priority Data**

Aug. 23, 2006 (JP) 2006-022201

(51) **LOC (8) Cl.** **13-03**
(52) **U.S. Cl.** **D13/182**
(58) **Field of Classification Search** D13/182; 118/715; 206/454, 711; 211/41.18; 432/253
See application file for complete search history.

(56) **References Cited**

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Copending U.S. Appl. No. 29/272,821, filed Feb. 20, 2007, "Upper Heat Insulating Cylinder for Manufacturing Semiconductor Wafers".

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Primary Examiner—Selina Sikder
(74) *Attorney, Agent, or Firm*—Smith, Gambrell & Russell, LLP

(57) **CLAIM**

The ornamental design for a lower heat insulating cylinder for manufacturing semiconductor wafers, as shown and described.

DESCRIPTION

FIG. **1** is a perspective view of the design for a lower heat insulating cylinder for manufacturing semiconductor wafers in accordance with the invention;

FIG. **2** is a front view thereof;

FIG. **3** is a left side view thereof;

FIG. **4** is a right side view thereof;

FIG. **5** is a rear view thereof;

FIG. **6** is a top view thereof;

FIG. **7** is a bottom view thereof;

FIG. **8** is another top view thereof which shows sectional line **9**—**9**;

FIG. **9** is a sectional view thereof along line **9**—**9** of FIG. **8**; and,

FIG. **10** shows a lower heat insulating cylinder for manufacturing semiconductor wafers in accordance with the invention in use wherein the broken line showing of the environment is for illustrative purpose only and forms no part of the claimed design.

1 Claim, 10 Drawing Sheets

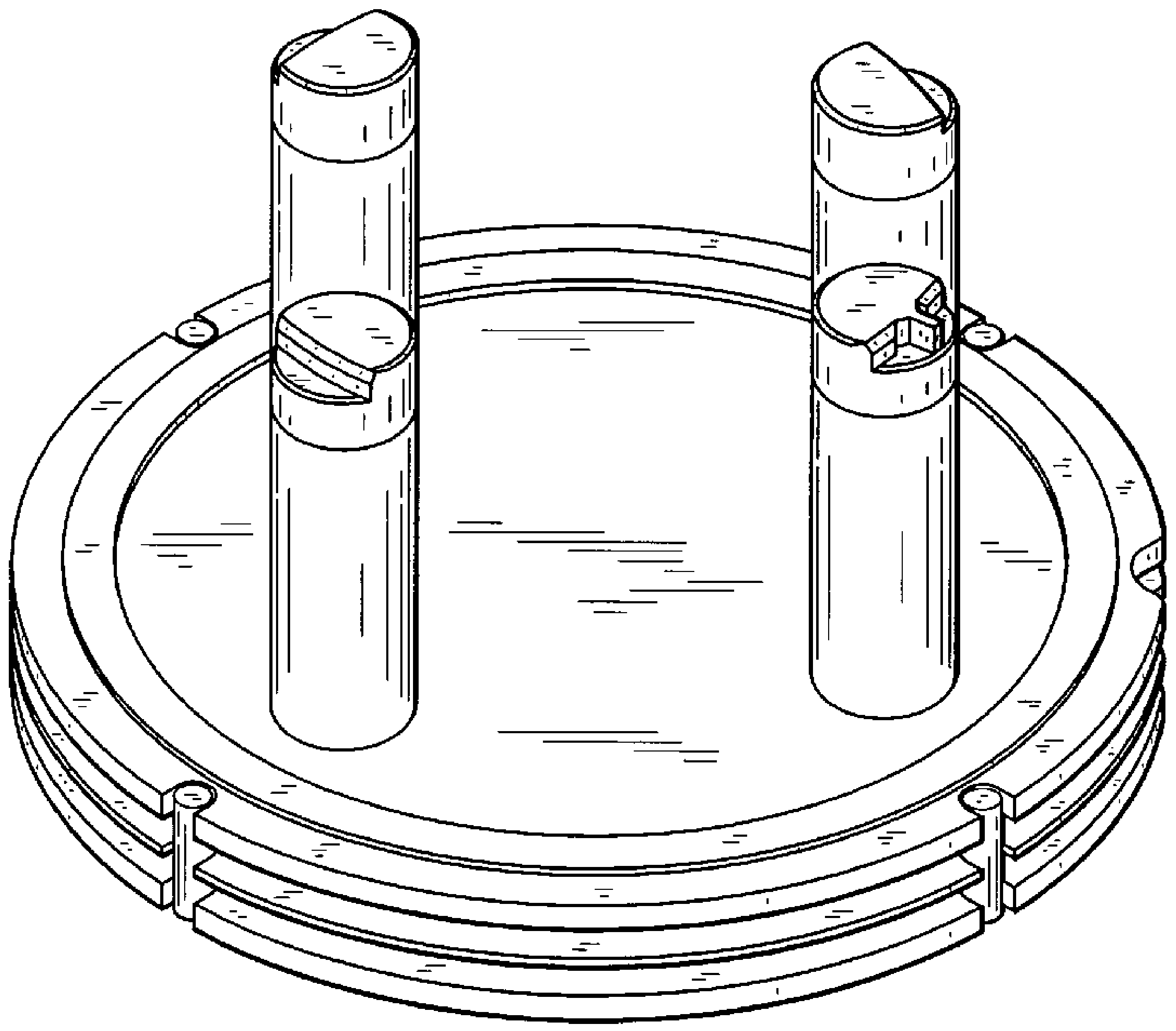

FIG. 1

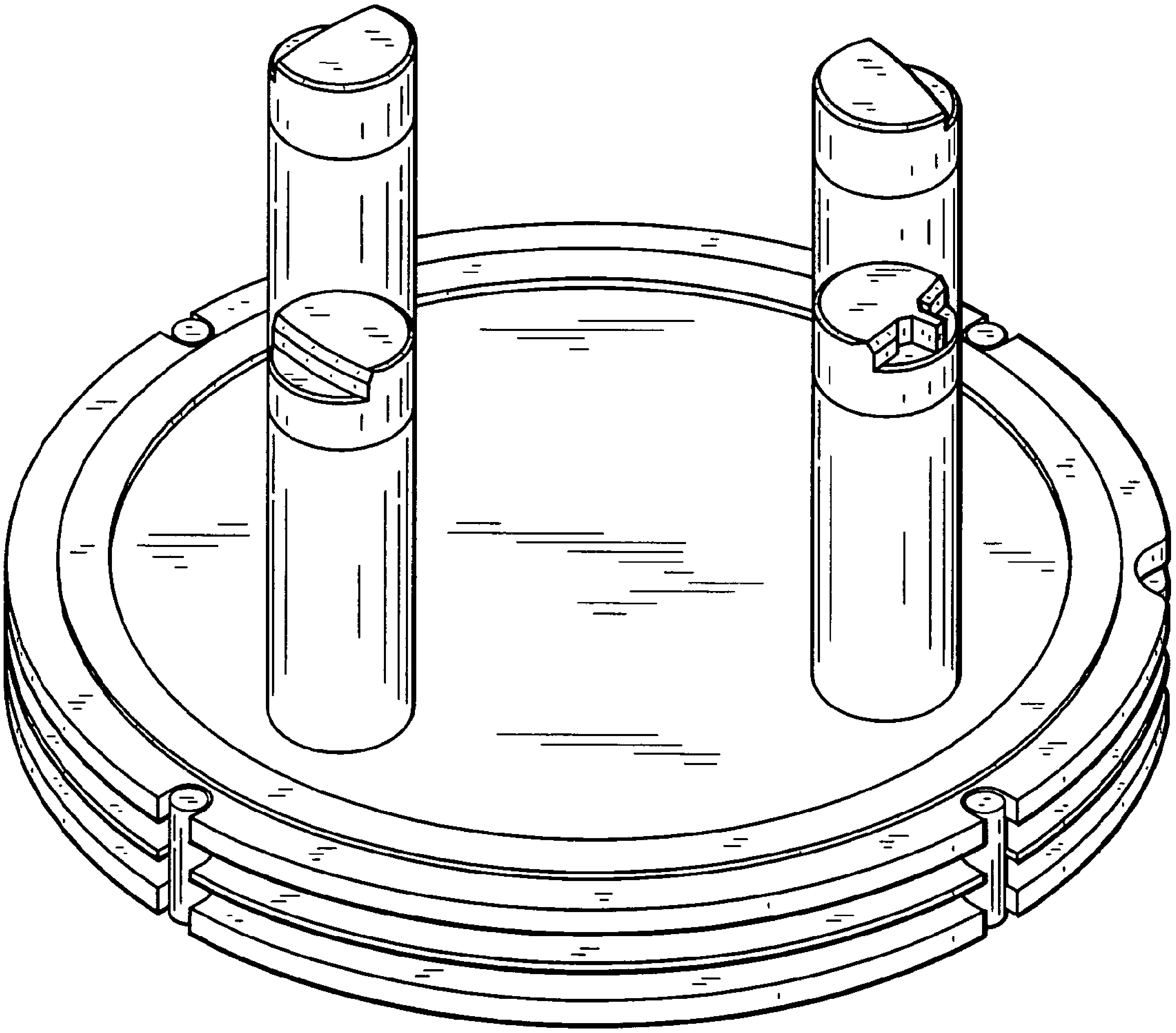

FIG. 2

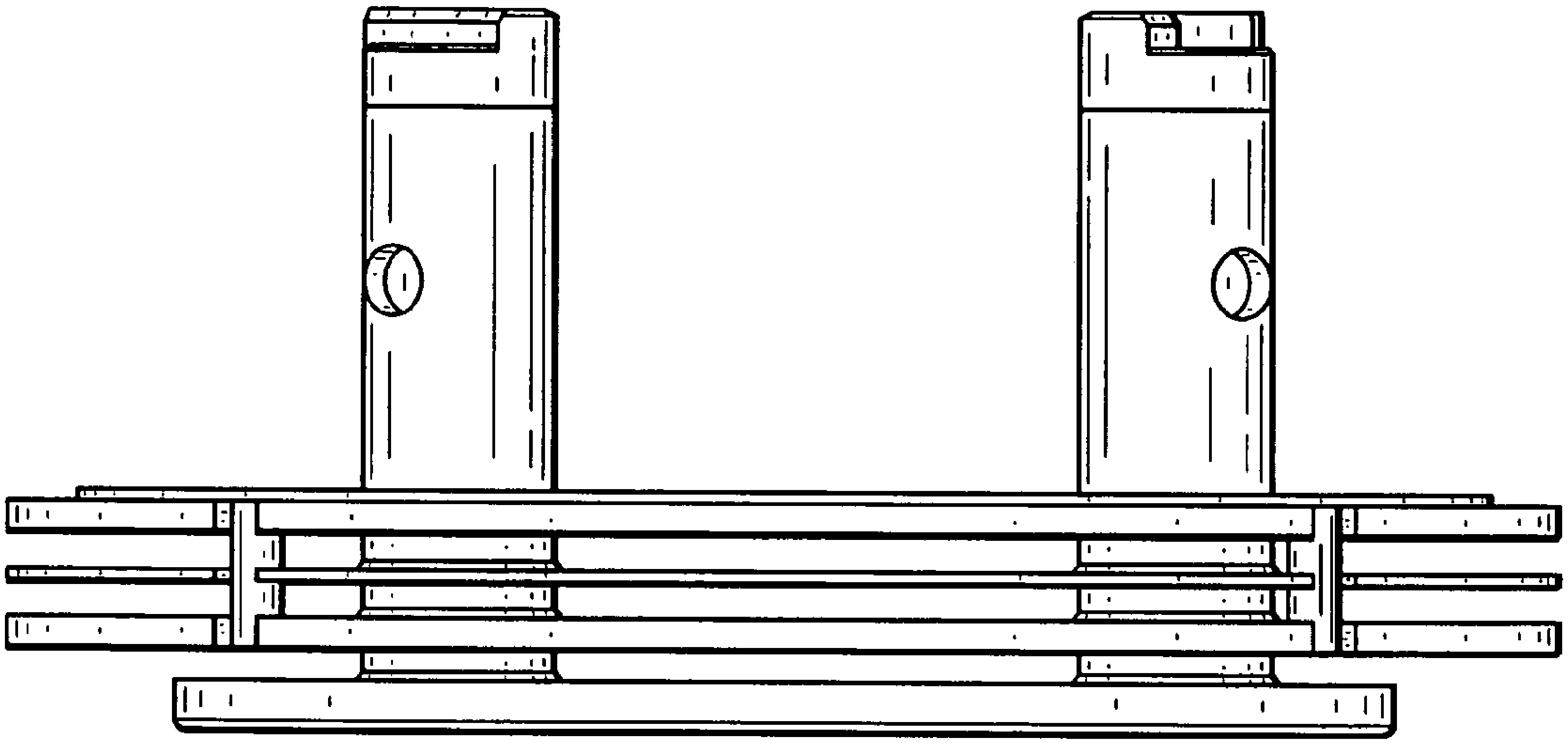

FIG. 3

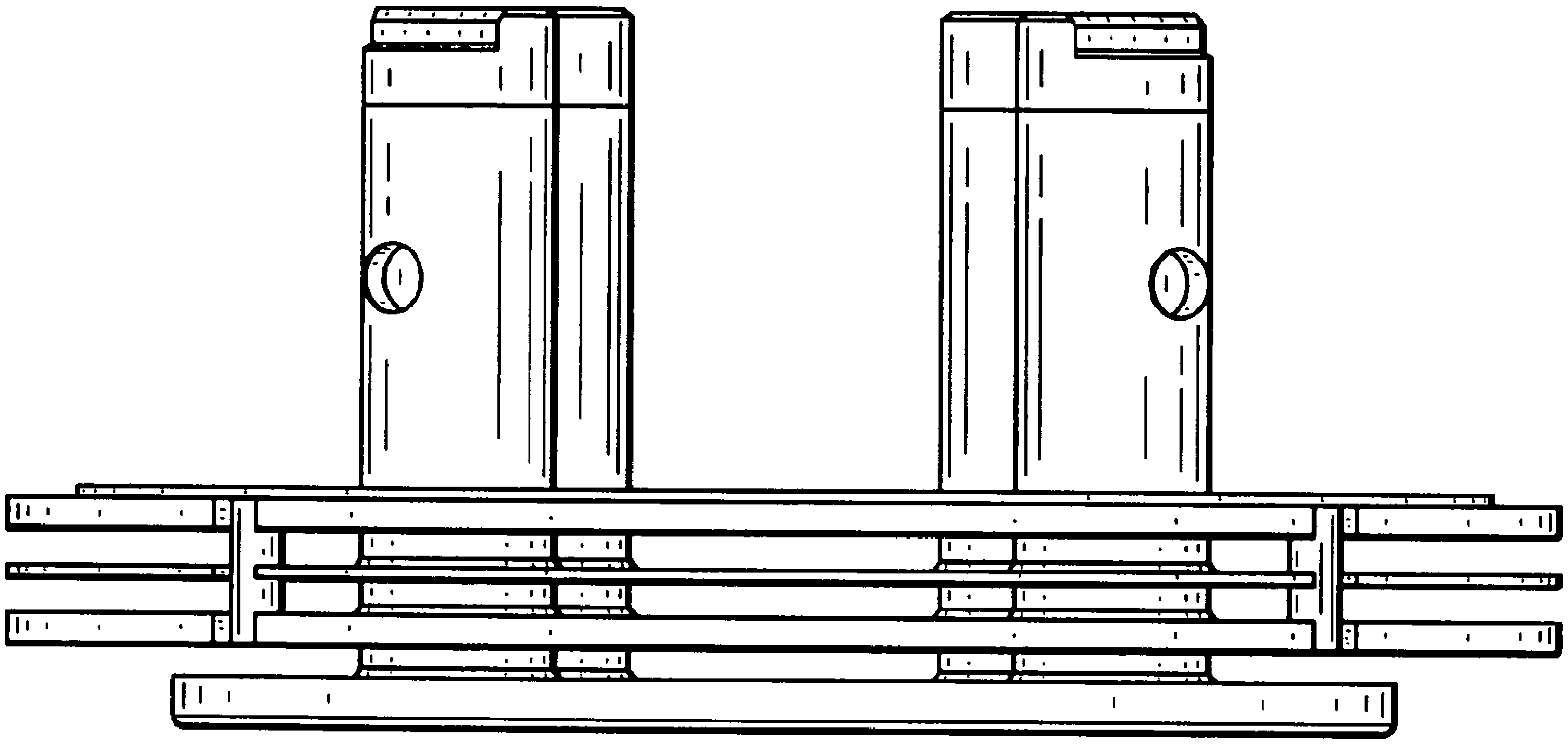

FIG. 4

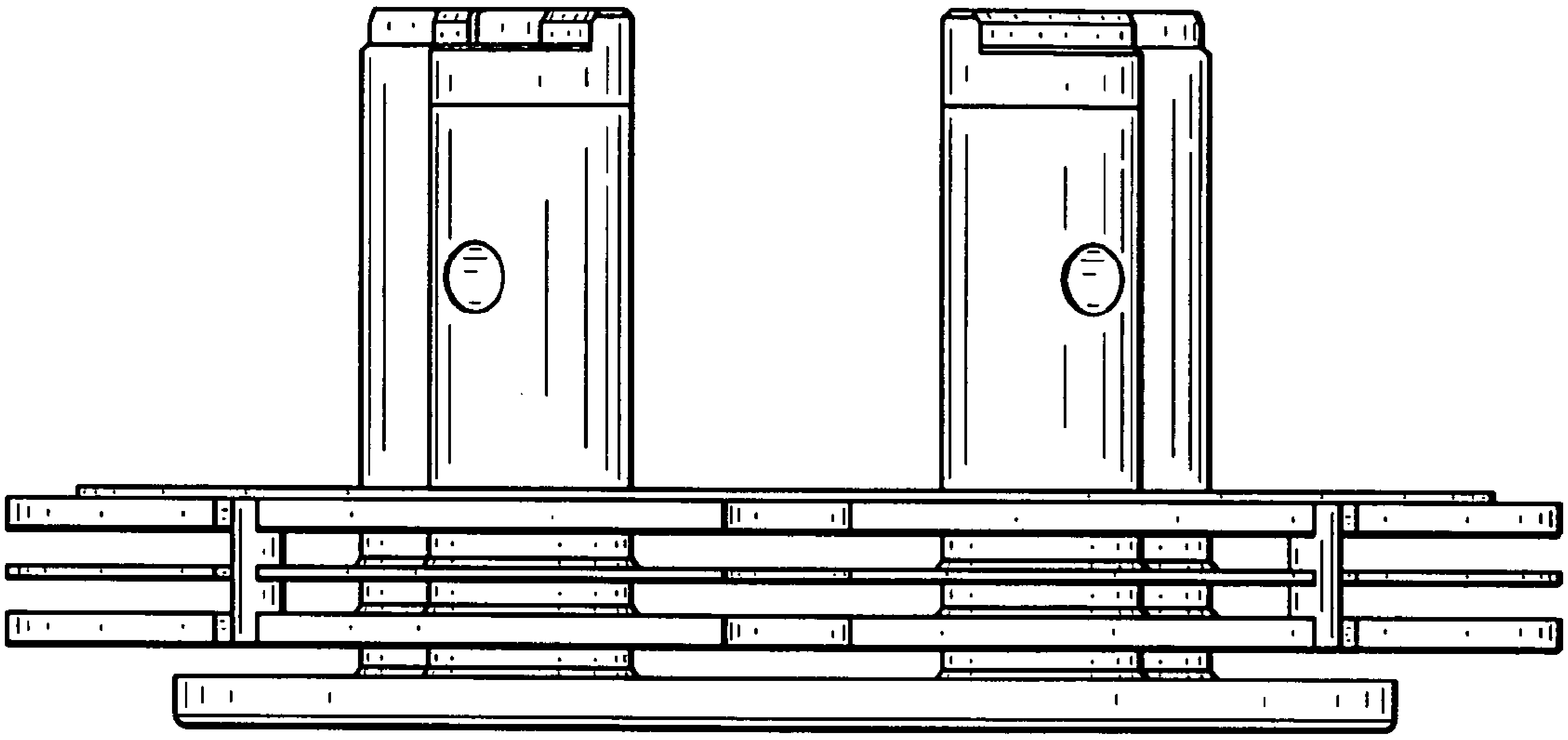

FIG. 5

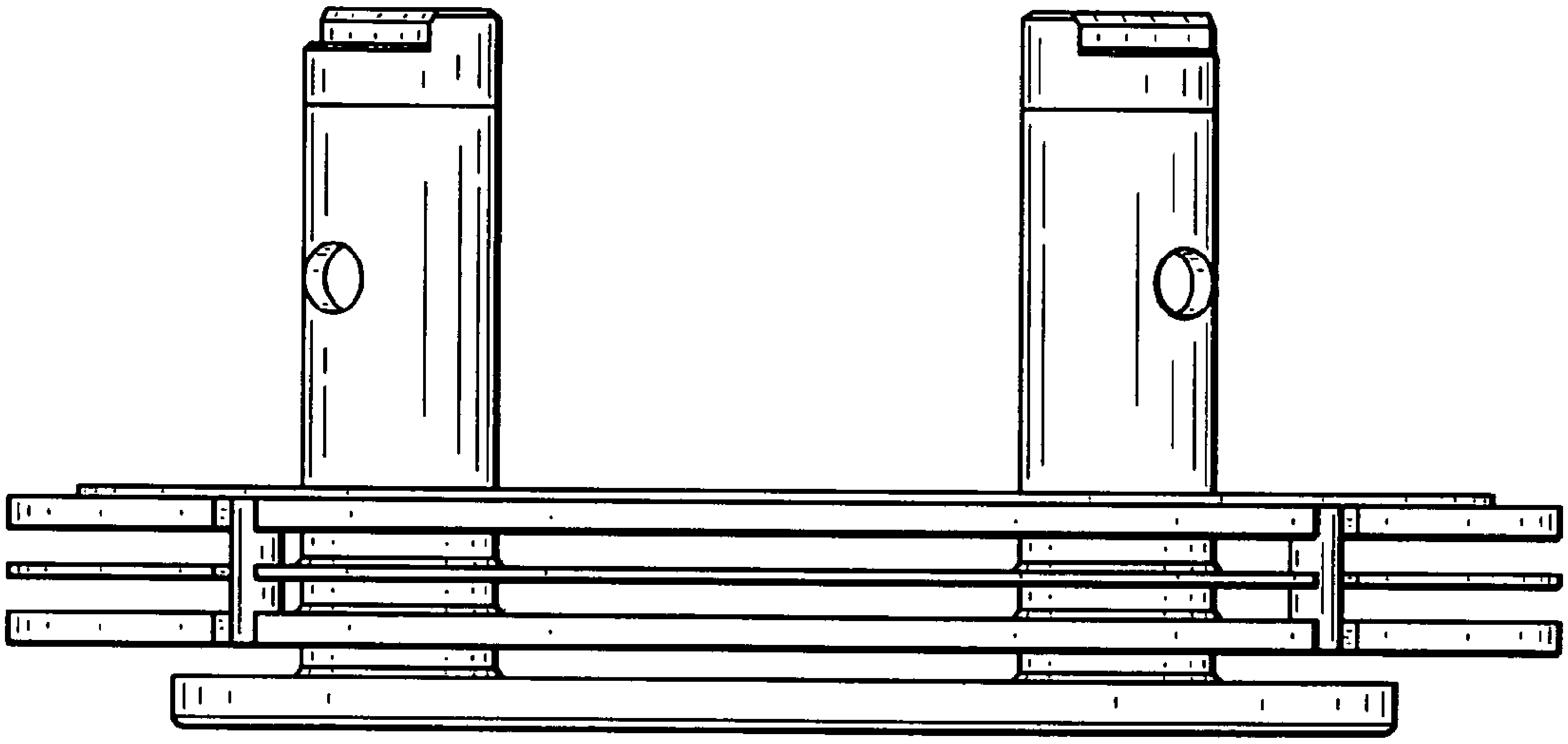

FIG. 6

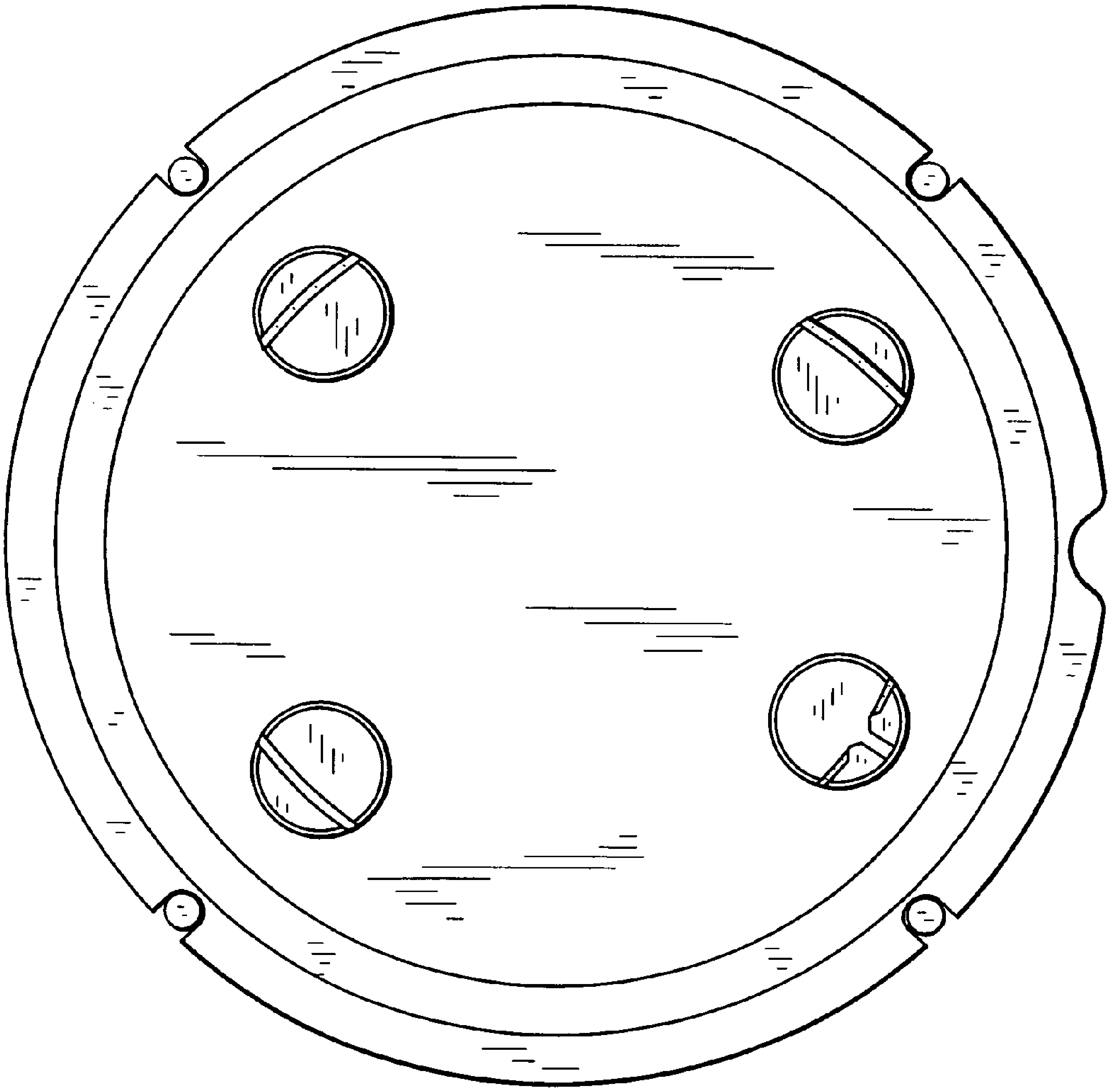

FIG. 7

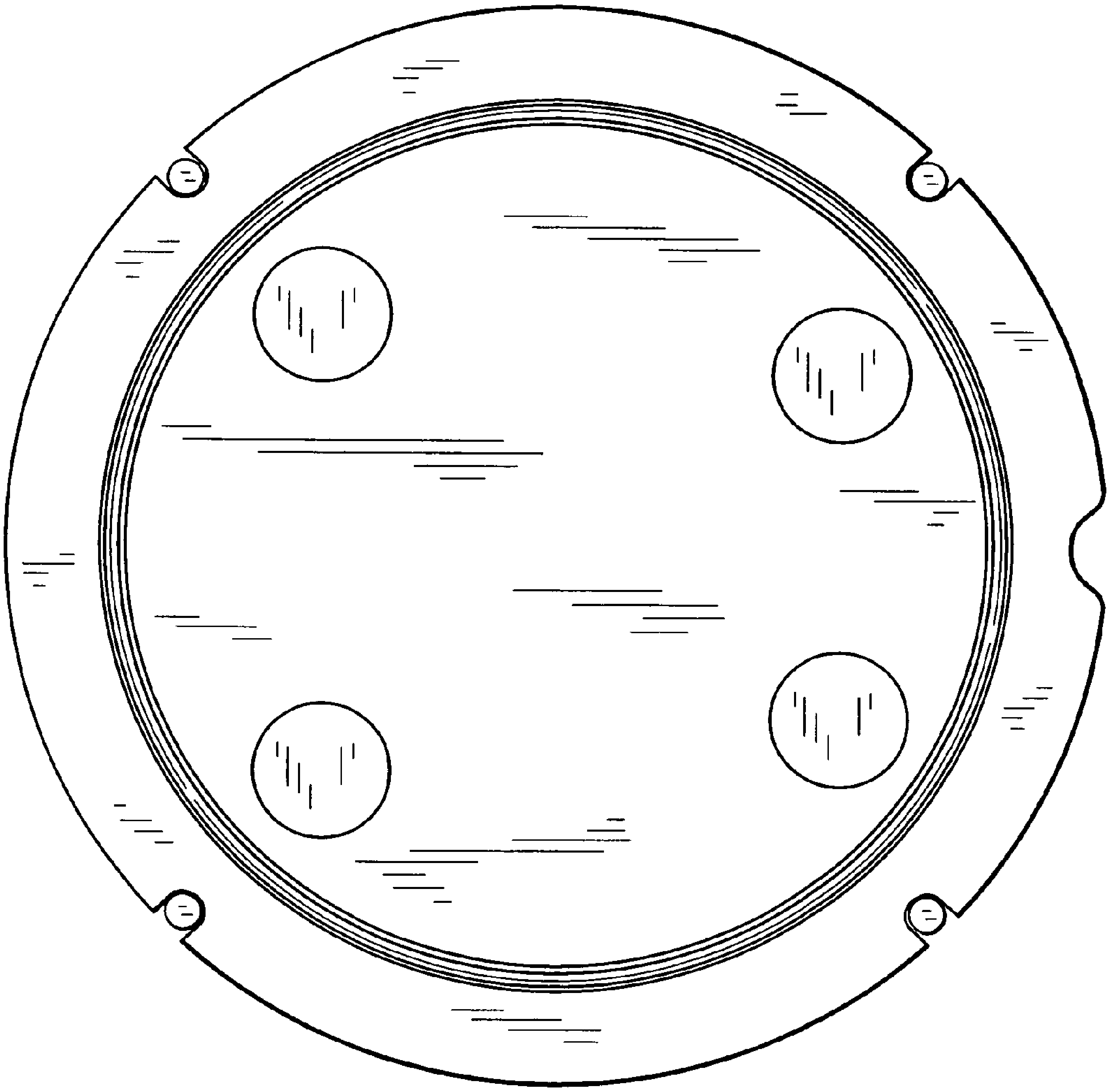

FIG. 8

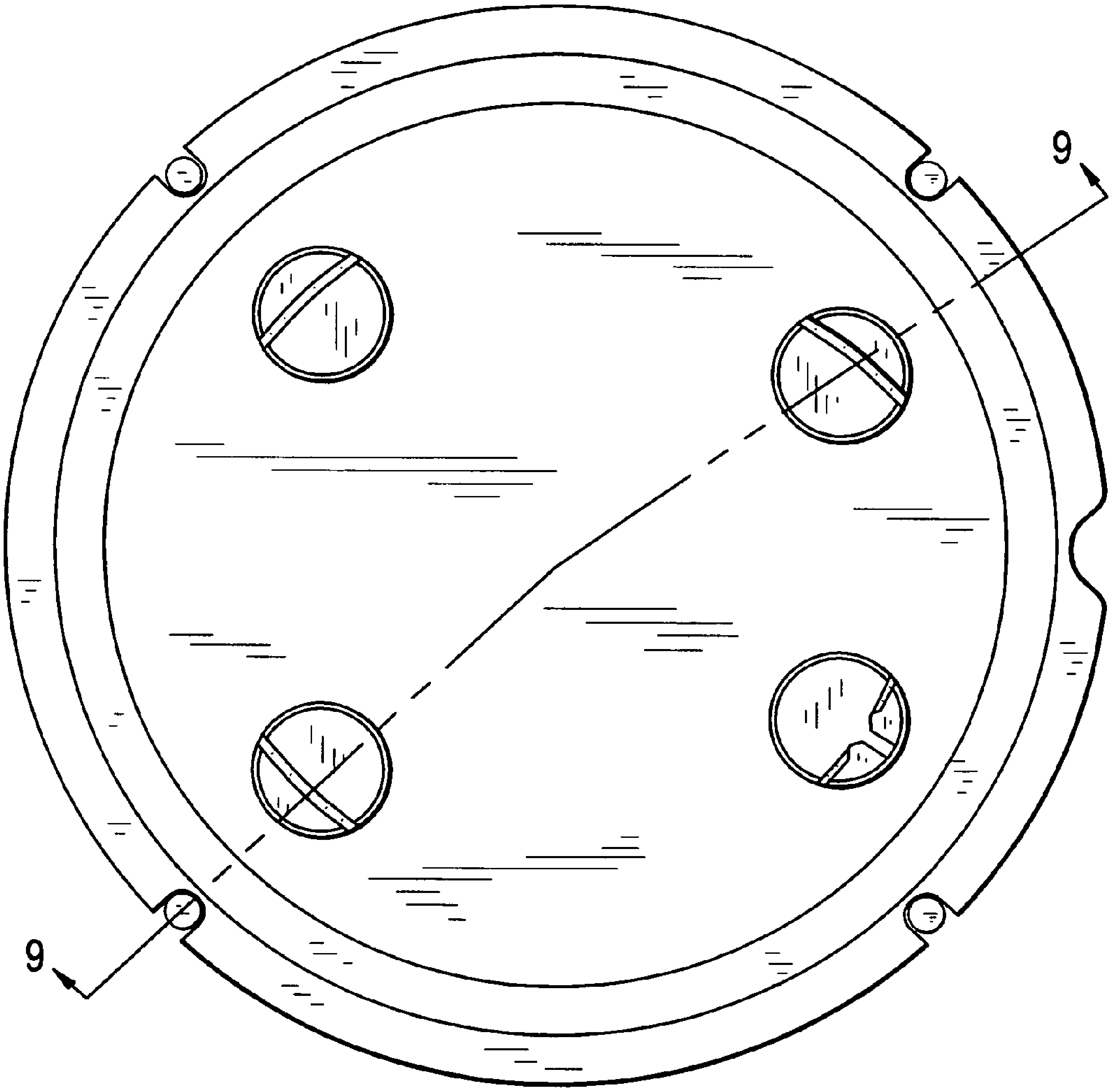

FIG. 9

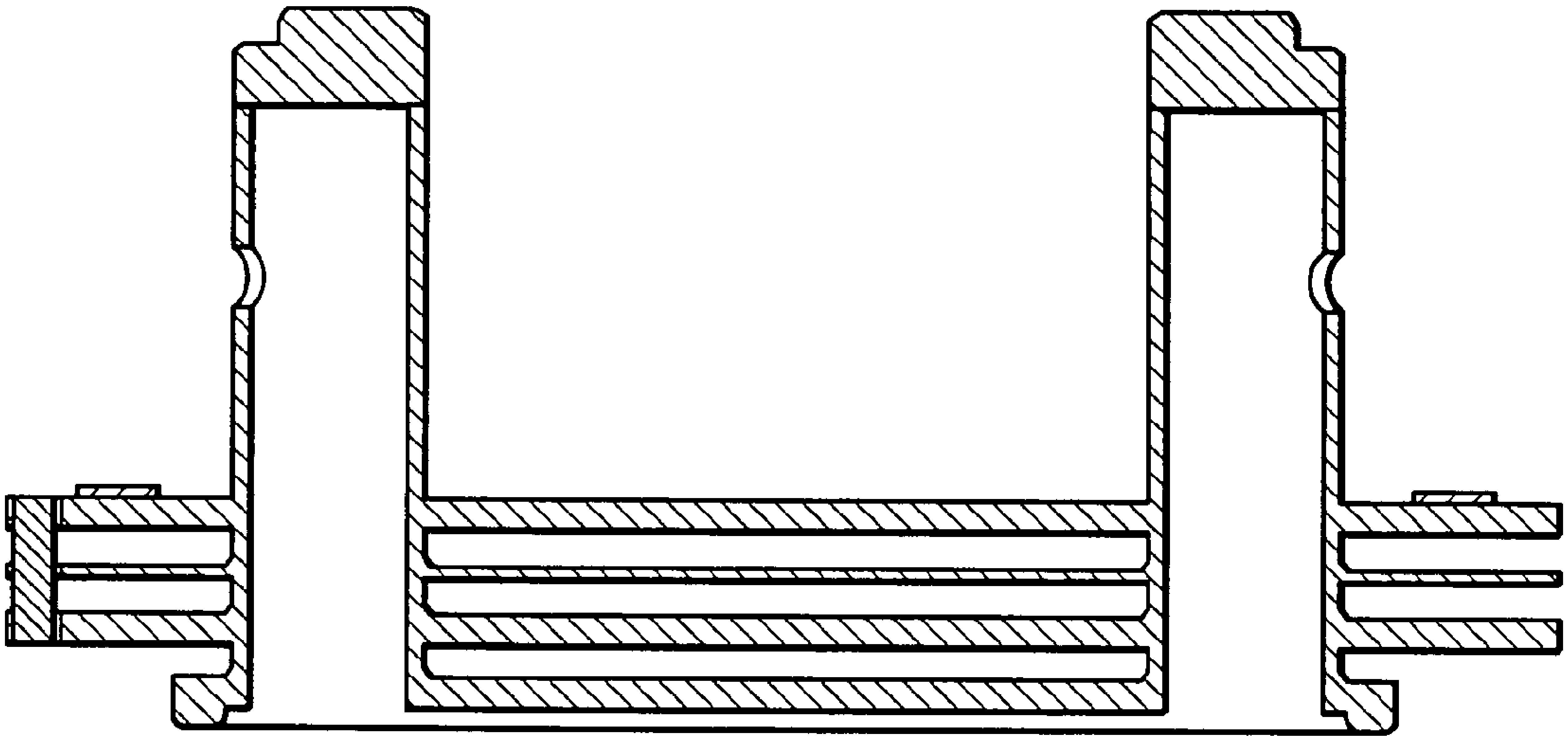

FIG. 10