



US00D420023S

**United States Patent** [19]

[11] **Patent Number: Des. 420,023**

**Flanigan et al.**

[45] **Date of Patent: \*\* Feb. 1, 2000**

[54] **ELECTROSTATIC CHUCK WITH  
IMPROVED SPACING MASK AND  
WORKPIECE DETECTION DEVICE**

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5,691,876 11/1997 Chen et al. .... 361/234  
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[57] **CLAIM**

[\*\*] Term: **14 Years**

The ornamental design for an electrostatic chuck with  
improved spacing mask and workpiece detection device, as  
shown.

[21] Appl. No.: **29/098,986**

[22] Filed: **Jan. 9, 1999**

**DESCRIPTION**

**Related U.S. Application Data**

[63] Continuation-in-part of application No. 29/079,584, Nov.  
14, 1997, Pat. No. Des. 406,852.

FIG. 1 is a top view of the electrostatic chuck with the  
improved spacing mask and workpiece detection device;  
FIG. 2 is an elevation view of the electrostatic chuck when  
looking down along the y-axis of FIG. 1;  
FIG. 3 is a detailed view of part of the electrostatic chuck  
seen in FIG. 2;  
FIG. 4 is a bottom view of the electrostatic chuck;  
FIG. 5 is an elevation view of the electrostatic chuck when  
looking up along the y-axis of FIG. 1;  
FIG. 6 is an elevation view of the electrostatic chuck when  
looking to the left along the x-axis of FIG. 1; and,  
FIG. 7 is an elevation view of the electrostatic chuck when  
looking to the right along the x-axis in FIG. 1.

[51] **LOC (7) Cl.** ..... **15-09**  
[52] **U.S. Cl.** ..... **D15/140**  
[58] **Field of Search** ..... D15/140; 118/728;  
361/230, 233, 234, 235; 279/128

[56] **References Cited**

**U.S. PATENT DOCUMENTS**

D. 406,852 3/1999 Burkhardt et al. .... D15/140

**1 Claim, 2 Drawing Sheets**

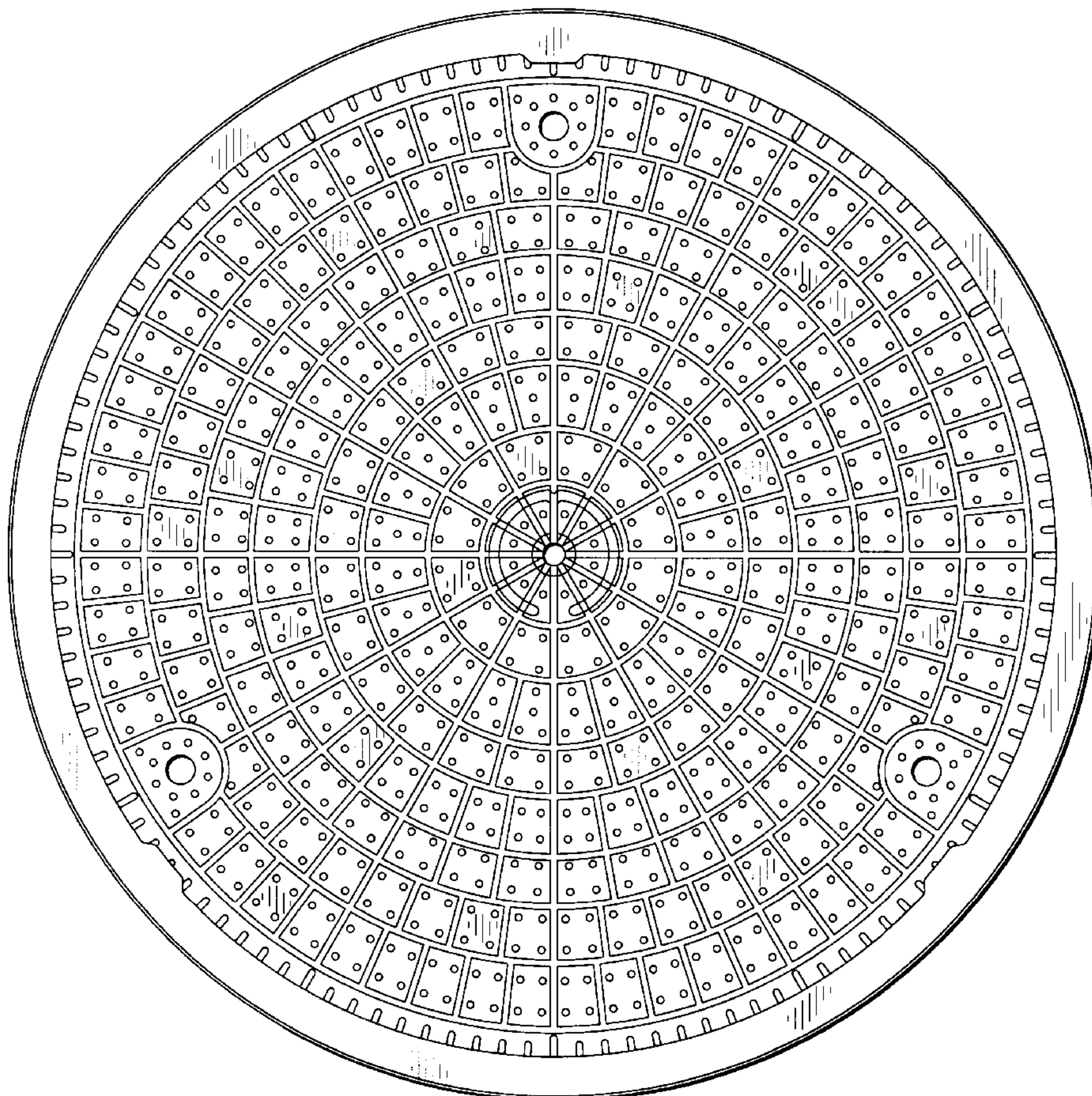


FIG. 1

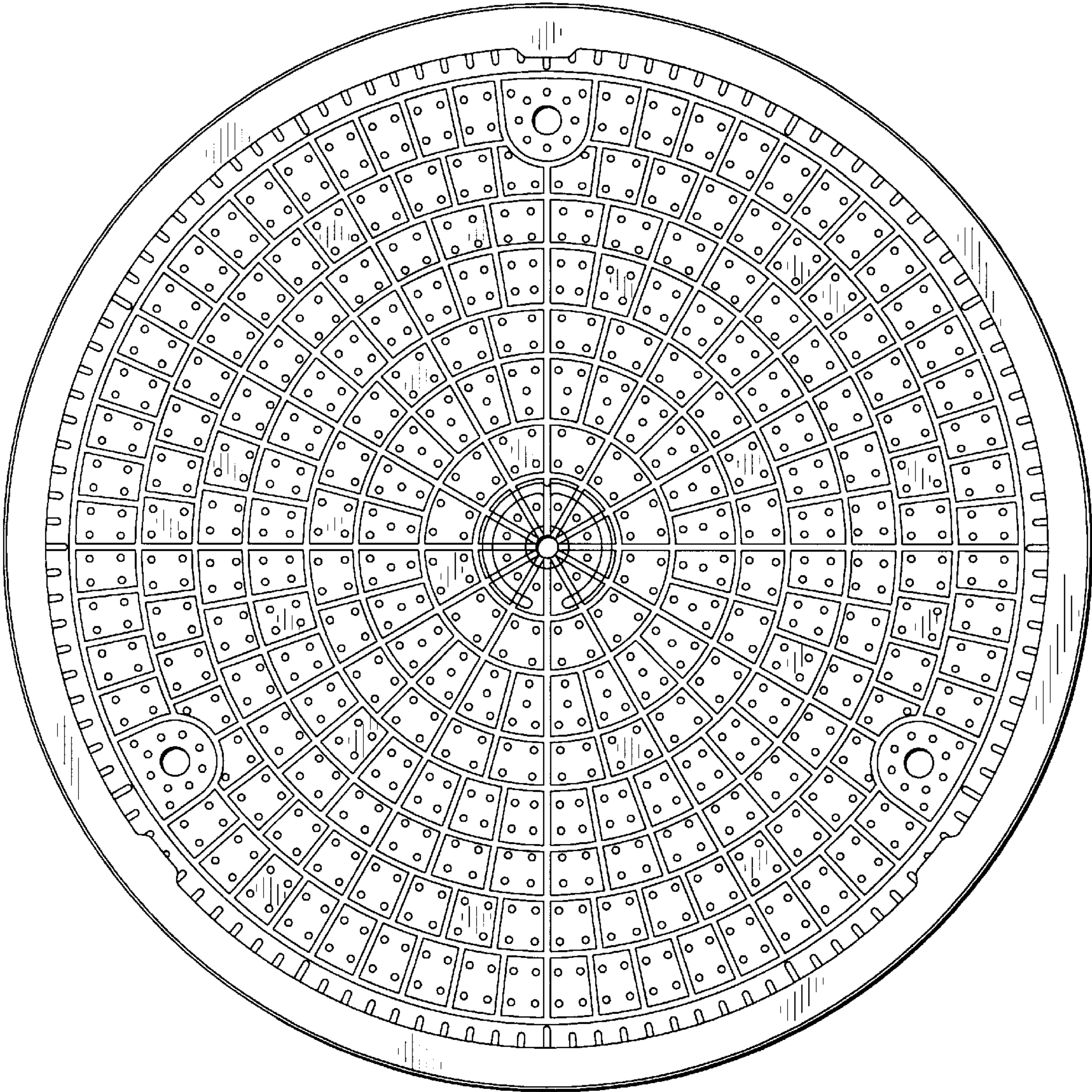


FIG. 2

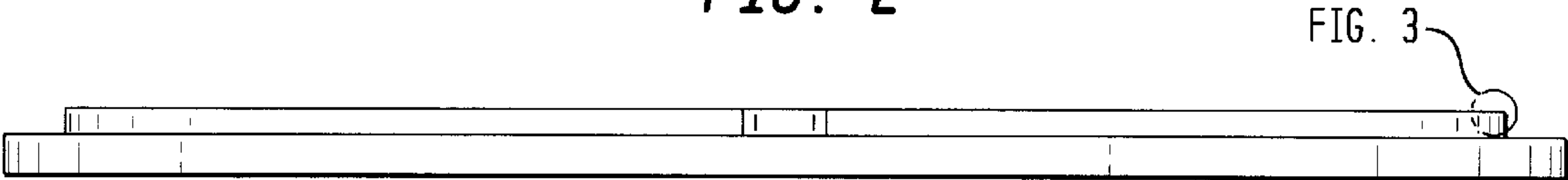


FIG. 3

FIG. 3

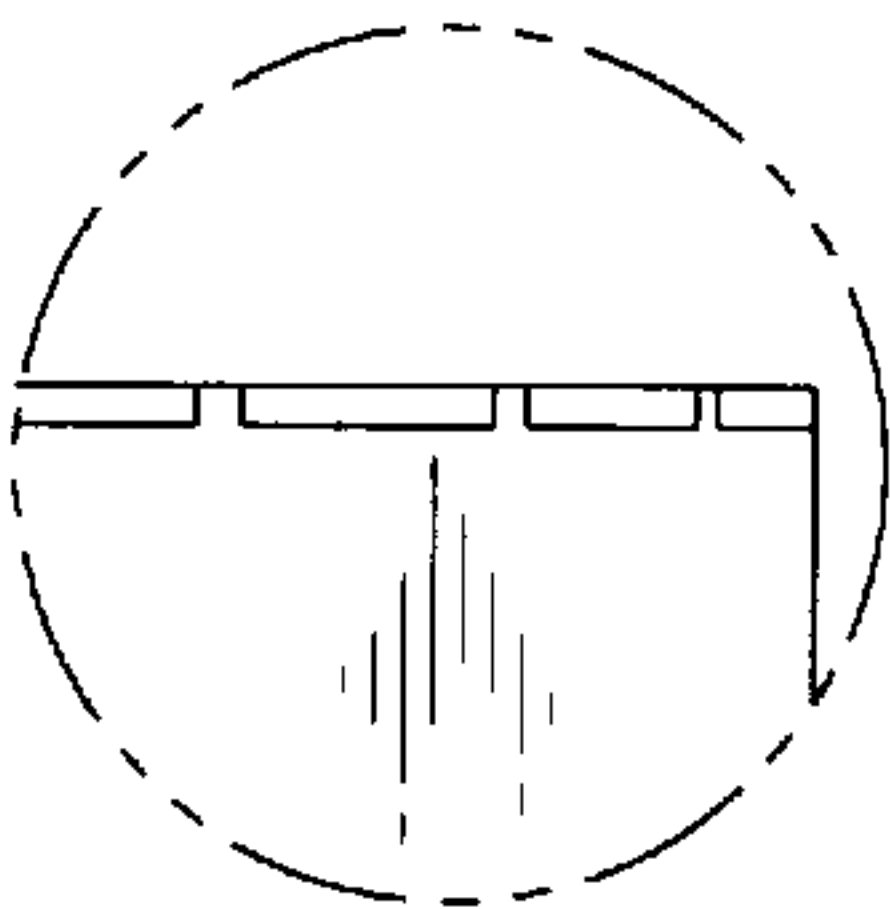


FIG. 4

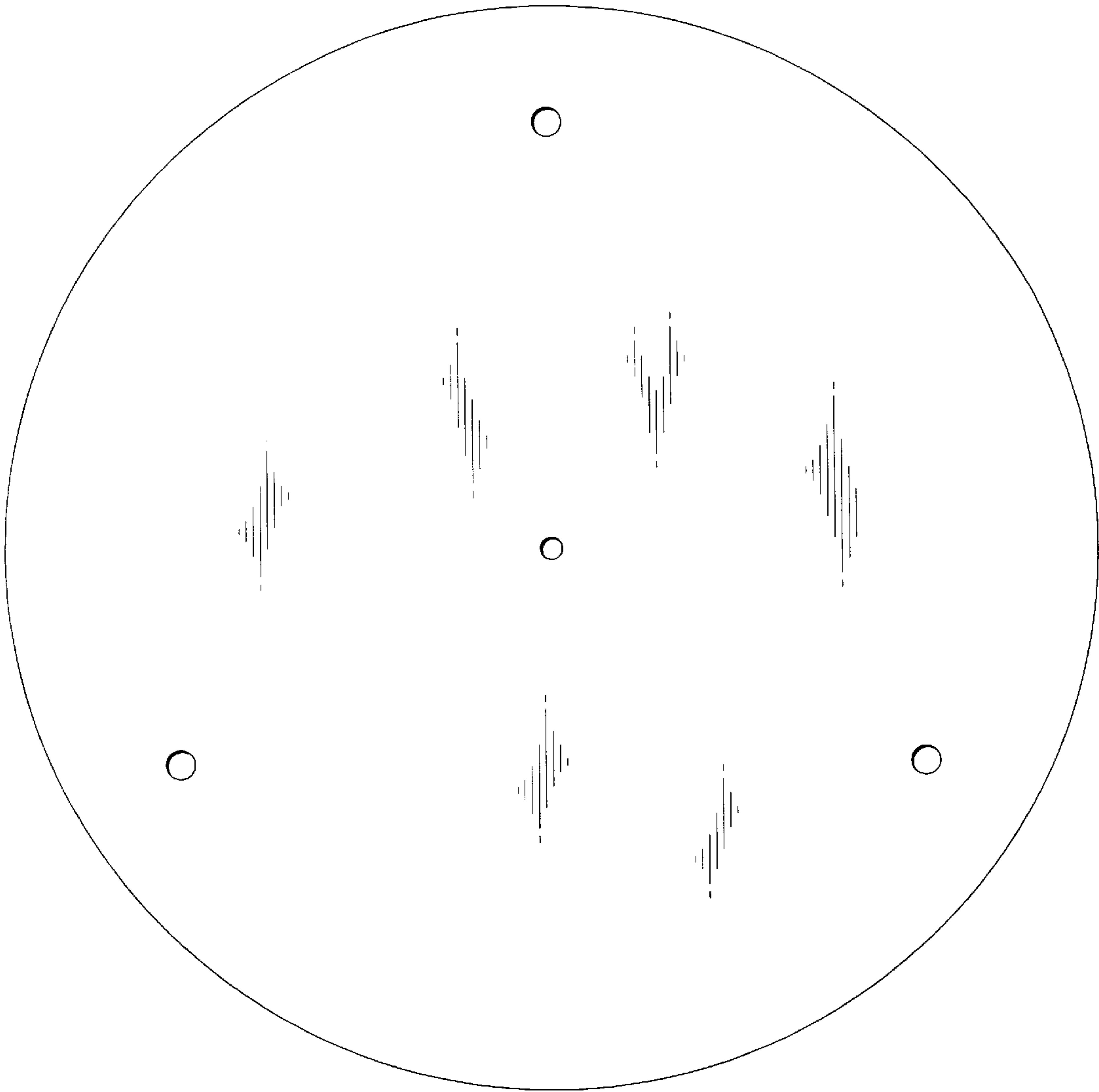


FIG. 5

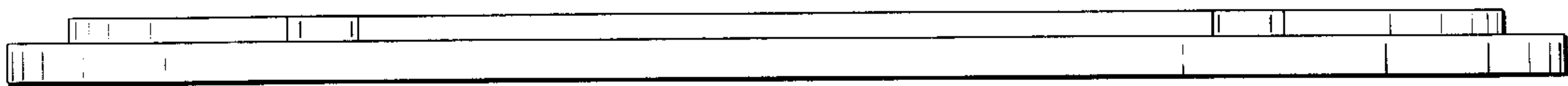


FIG. 6

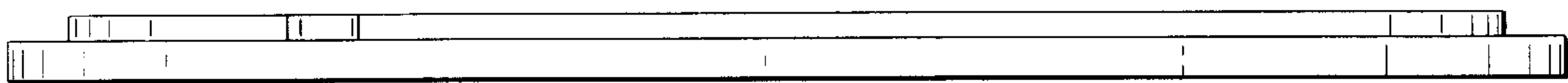


FIG. 7

