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

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(54) **HEAT RADIATION FIN OF HEAT INSULATING CYLINDER FOR MANUFACTURING SEMICONDUCTOR WAFERS**

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

(21) Appl. No.: **29/309,702**

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(51) **LOC (9) Cl.** ..... **13-03**

(52) **U.S. Cl.** ..... **D13/182; D13/179**

(58) **Field of Classification Search** ..... D13/179, D13/182; 165/80.3, 104.33, 151, 122, 185; 257/706, 707, 718-722; 361/687, 695, 697, 361/700, 702, 704, 709, 710, 711, 719; 414/935; 211/41.18; 118/728, 729; 432/241, 253, 432/258

See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

5,567,986 A \* 10/1996 Ishida ..... 257/707  
5,718,574 A \* 2/1998 Shimazu ..... 432/253  
D404,373 S \* 1/1999 Kimura ..... D13/182

D404,374 S \* 1/1999 Kimura ..... D13/182  
6,099,302 A \* 8/2000 Hong et al. .... 432/259  
6,575,231 B1 \* 6/2003 Wu ..... 165/121  
6,716,027 B2 \* 4/2004 Kim et al. .... 432/253  
7,163,393 B2 \* 1/2007 Adachi ..... 432/253  
7,204,887 B2 \* 4/2007 Kawamura et al. .... 118/725  
2003/0000472 A1 \* 1/2003 Lim et al. .... 118/715  
2004/0069453 A1 \* 4/2004 Tanaka et al. .... 165/80.3

\* cited by examiner

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(57) **CLAIM**

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

**DESCRIPTION**

FIG. 1 is a perspective view;

FIG. 2 is a front view;

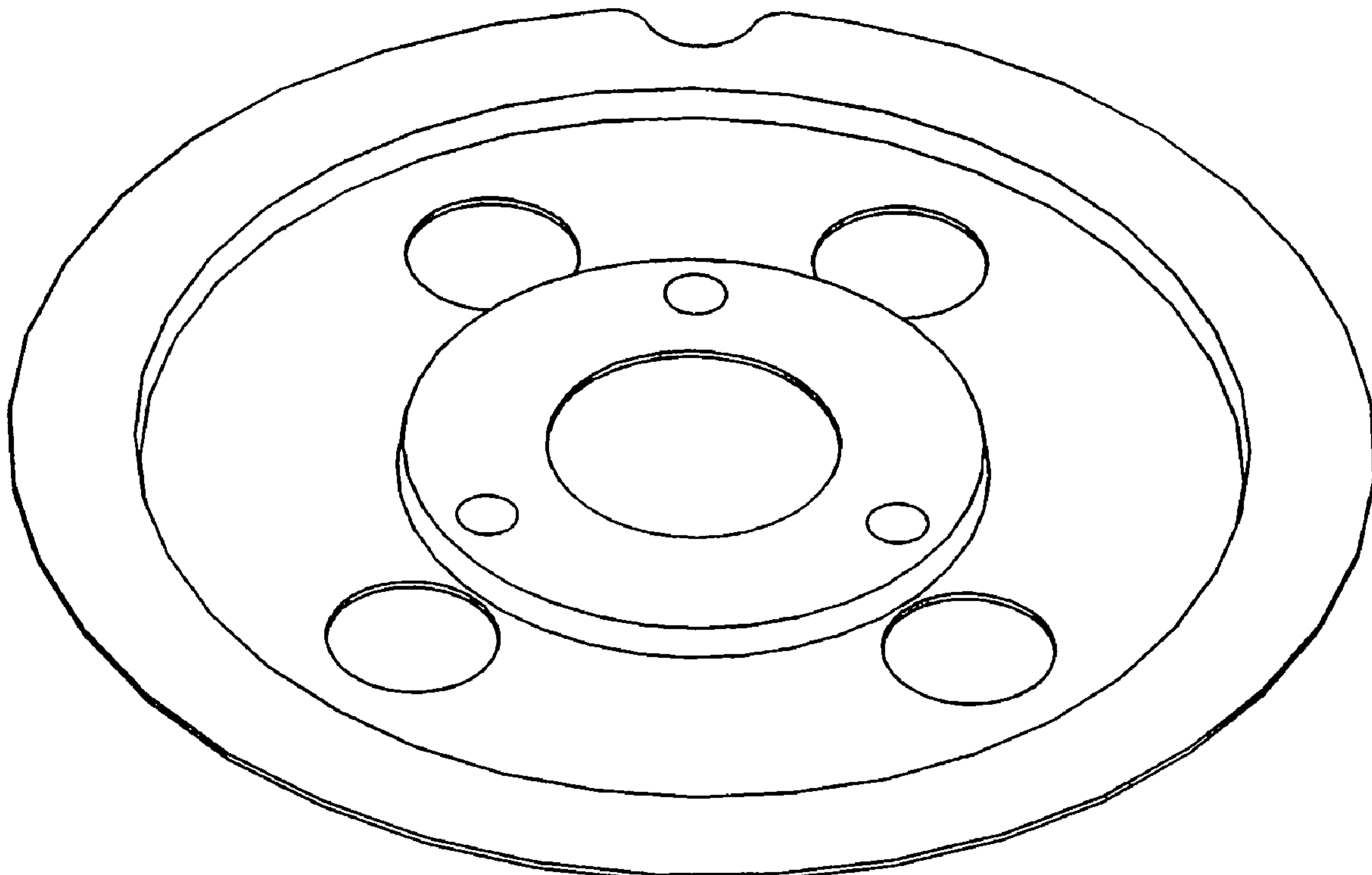
FIG. 3 is a rear view;

FIG. 4 is a right side view the left side being a mirror image thereof;

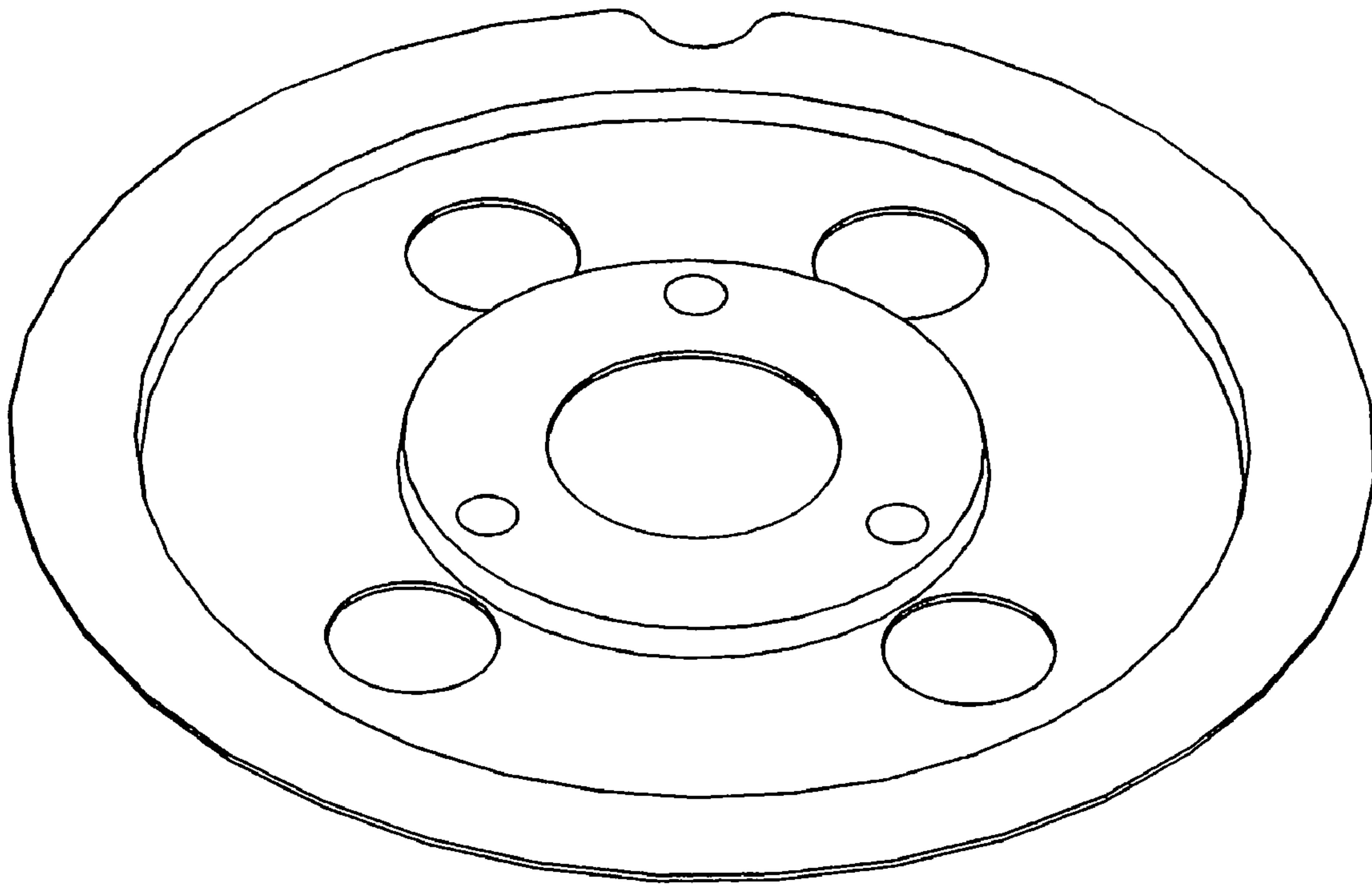
FIG. 5 is a plan view the bottom view being a mirror image thereof; and;

FIG. 6 is a sectional view along 6—6 of a front view of FIG. 2.

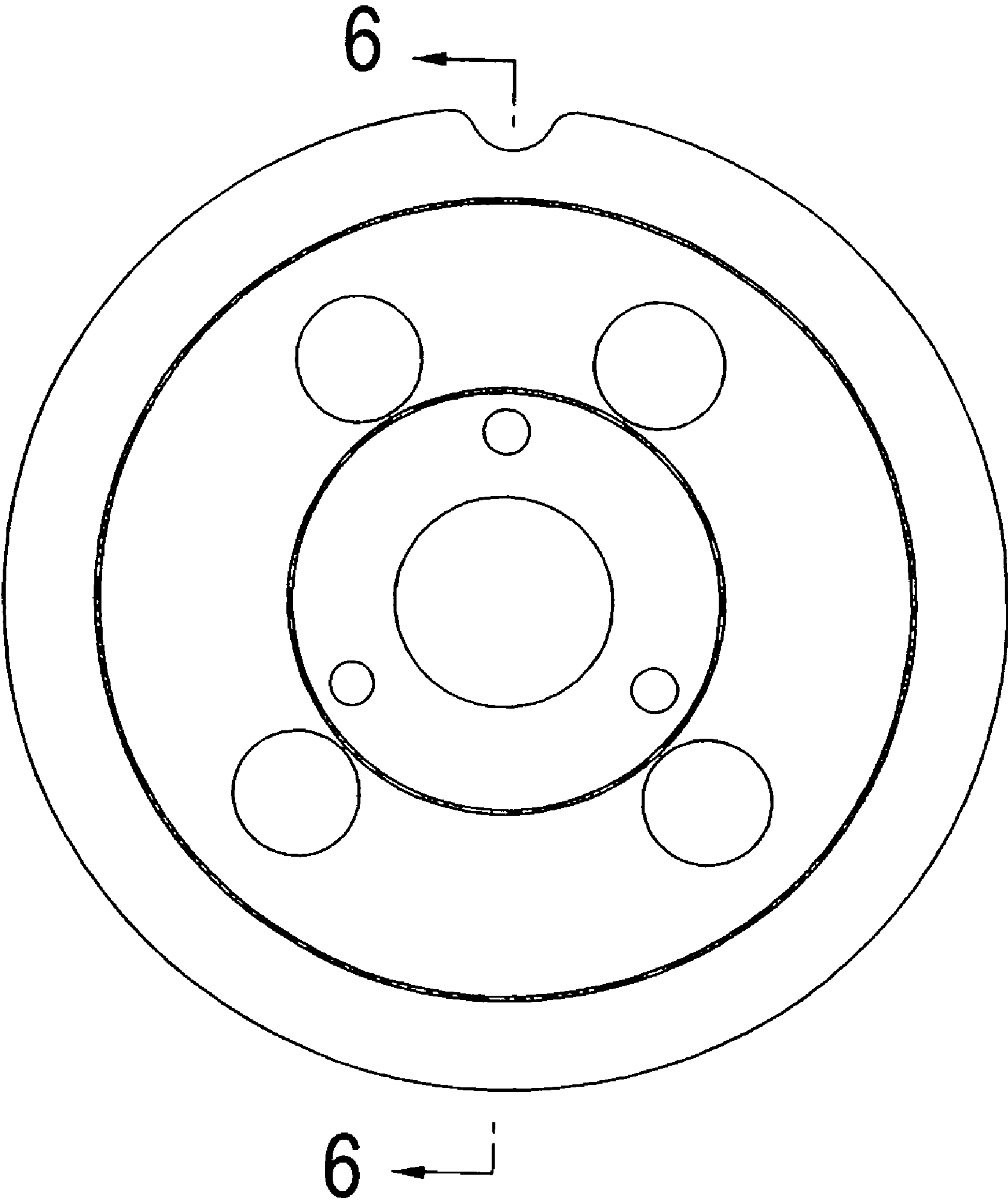
**1 Claim, 6 Drawing Sheets**



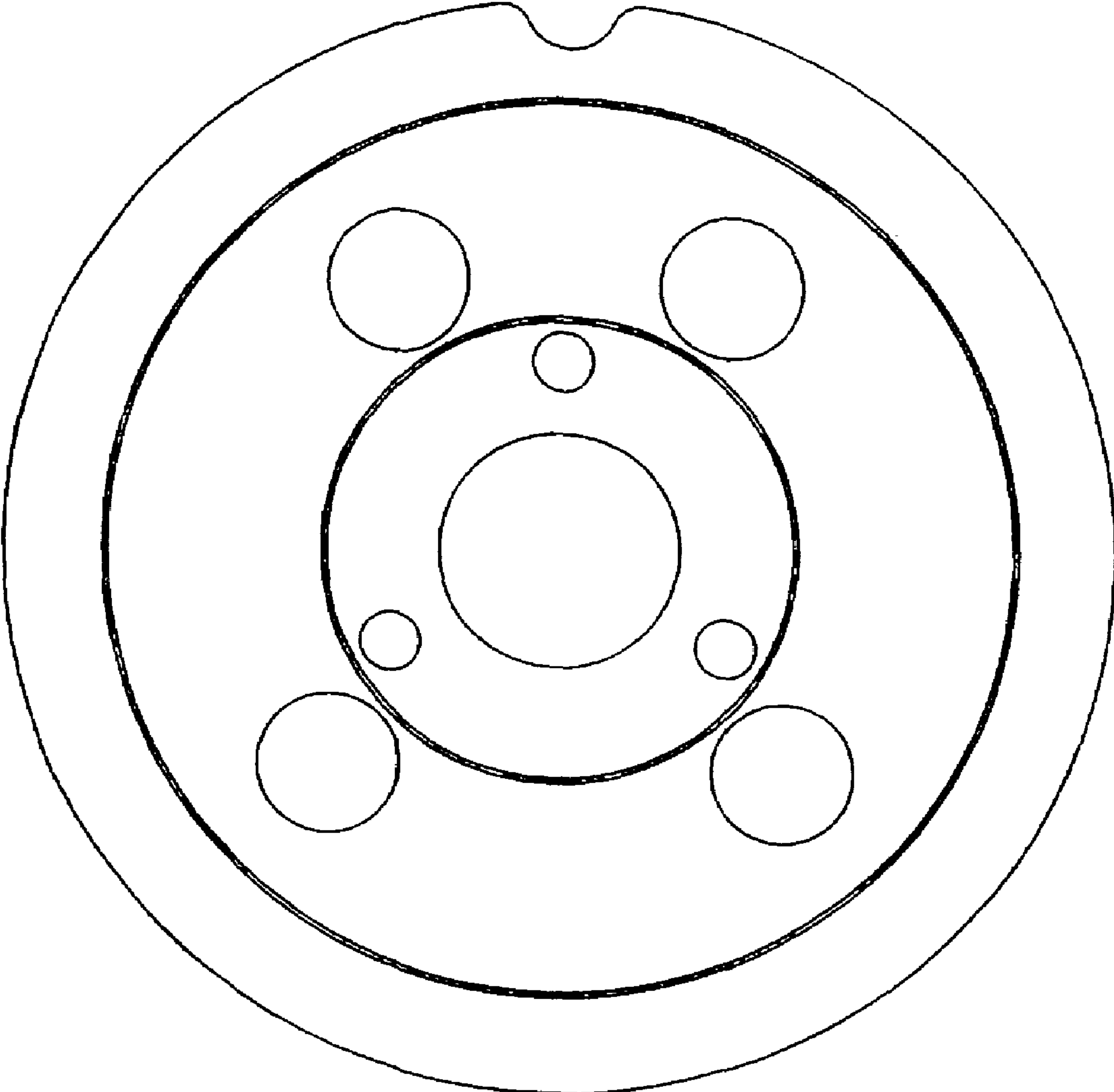
**FIGURE 1**



# FIGURE 2



**FIGURE 3**



# FIGURE 4



# FIGURE 5



# FIGURE 6

