



US00D789505S

(12) **United States Design Patent** (10) **Patent No.:** **US D789,505 S**  
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(54) **FILTER FOR REMOVING PARTICLE MATTER**

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(\*\*) Term: **15 Years**

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(30) **Foreign Application Priority Data**

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(52) **U.S. Cl.**  
USPC ..... **D23/365**

(58) **Field of Classification Search**

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261/DIG. 17, DIG. 42, DIG. 65, DIG. 88,  
261/DIG. 89; D15/5; 55/DIG. 30

CPC ..... A61L 9/00; A61L 9/02; A61L 9/03; A61L  
9/032; A61L 9/035; A61L 9/037; A61L  
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9/127; A61L 9/142; B01D 46/0005;  
B01D 46/10; B01D 46/521; B01D  
46/523; B01D 29/111; B01D 35/02;  
B01D 35/30; B01D 35/147; B01D  
35/153; B01D 2279/50; B01D 2279/60;  
B01D 36/003; B32B 27/08;

(Continued)

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

D138,688 S \* 8/1944 Young ..... D15/5  
4,416,676 A \* 11/1983 Montierth ..... B01D 25/26  
210/510.1

D285,308 S \* 8/1986 Albertsen ..... D15/5  
(Continued)

**FOREIGN PATENT DOCUMENTS**

EP 1741479 A2 \* 1/2007 ..... B01D 46/0005  
EP 2592059 A1 \* 5/2013 ..... C03C 8/02  
WO WO 2013054793 A1 \* 4/2013 ..... C04B 41/89

**OTHER PUBLICATIONS**

Air Vents, Traditional Block Vent Pattern, web archive on Aug. 13, 2014, [online], [site visited on Jan. 31, 2017]. Available from Internet, <URL: <https://web.archive.org/web/20140813041149/http://airvents.net/turn-of-the-century/traditional-block-air-vent.html>>.\*

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(57) **CLAIM**

The ornamental design for a filter for removing particle matter, as shown and described.

**DESCRIPTION**

FIG. 1 is a perspective view of a filter for removing particle matter illustrating my new design;

FIG. 2 is a front view thereof;

FIG. 3 is a rear view thereof;

FIG. 4 is a top view thereof, the bottom view thereof being a mirror image;

FIG. 5 is a right view thereof, the left view thereof being a mirror image;

FIG. 6 is an enlarged view delimited by the four lines labelled 6 in FIG. 2;

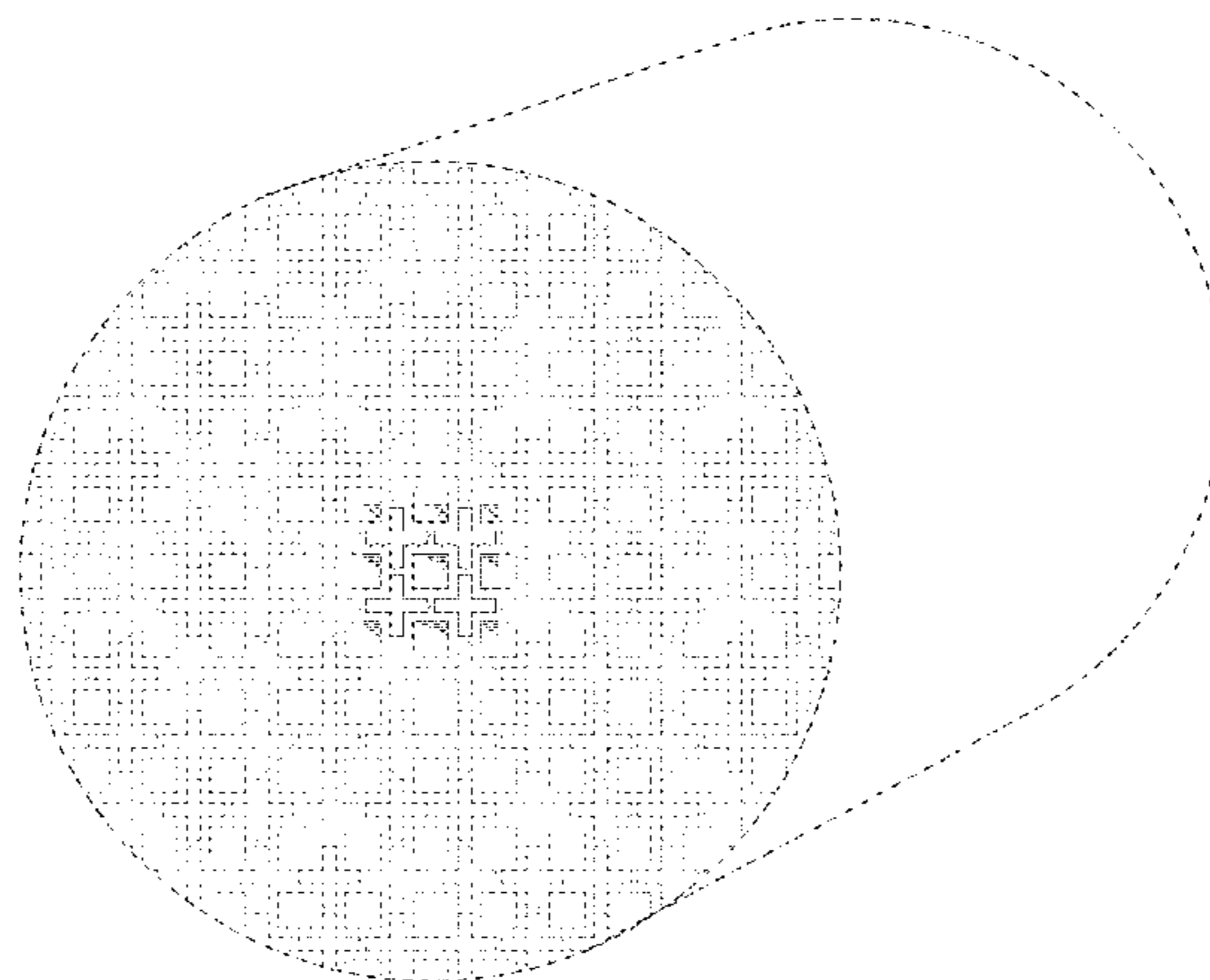
FIG. 7 is an end view taken through line 7-7 of FIG. 2;

FIG. 8 is a middle omitted end view taken through line 8-8 of FIG. 6; and,

FIG. 9 is an enlarged view delimited by the four lines labelled 9 in FIG. 3.

The broken line showing portions of the filter for removing particle matter are included for the purpose of illustrating the portions of the article and forms no part of the claimed design.

**1 Claim, 9 Drawing Sheets**



(58) **Field of Classification Search**

CPC ..... C04B 41/009; E04C 5/161; E04F 15/02;  
E04F 15/04

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,835,044 A \* 5/1989 Hattori ..... B01D 53/86  
156/89.22  
6,395,370 B1 \* 5/2002 Noda ..... B01D 39/2068  
428/116  
D519,197 S \* 4/2006 Komori ..... D15/5  
D522,117 S \* 5/2006 Komori ..... D15/5  
D523,544 S \* 6/2006 Komori ..... D15/5  
D647,607 S \* 10/2011 Ohno ..... D23/365  
8,043,658 B2 \* 10/2011 Phelps ..... B01D 46/0078  
427/244  
8,361,399 B2 \* 1/2013 Mizuno ..... B01D 46/2429  
422/177  
D675,718 S \* 2/2013 Komori ..... D23/365  
D700,693 S \* 3/2014 Komori ..... D23/365  
D704,746 S \* 5/2014 Richard ..... D15/5  
D704,747 S \* 5/2014 Richard ..... D15/5  
D705,411 S \* 5/2014 Enstrom ..... D23/365  
2010/0133193 A1 \* 6/2010 Zulauf ..... C10G 25/003  
210/660

\* cited by examiner

Fig. 1

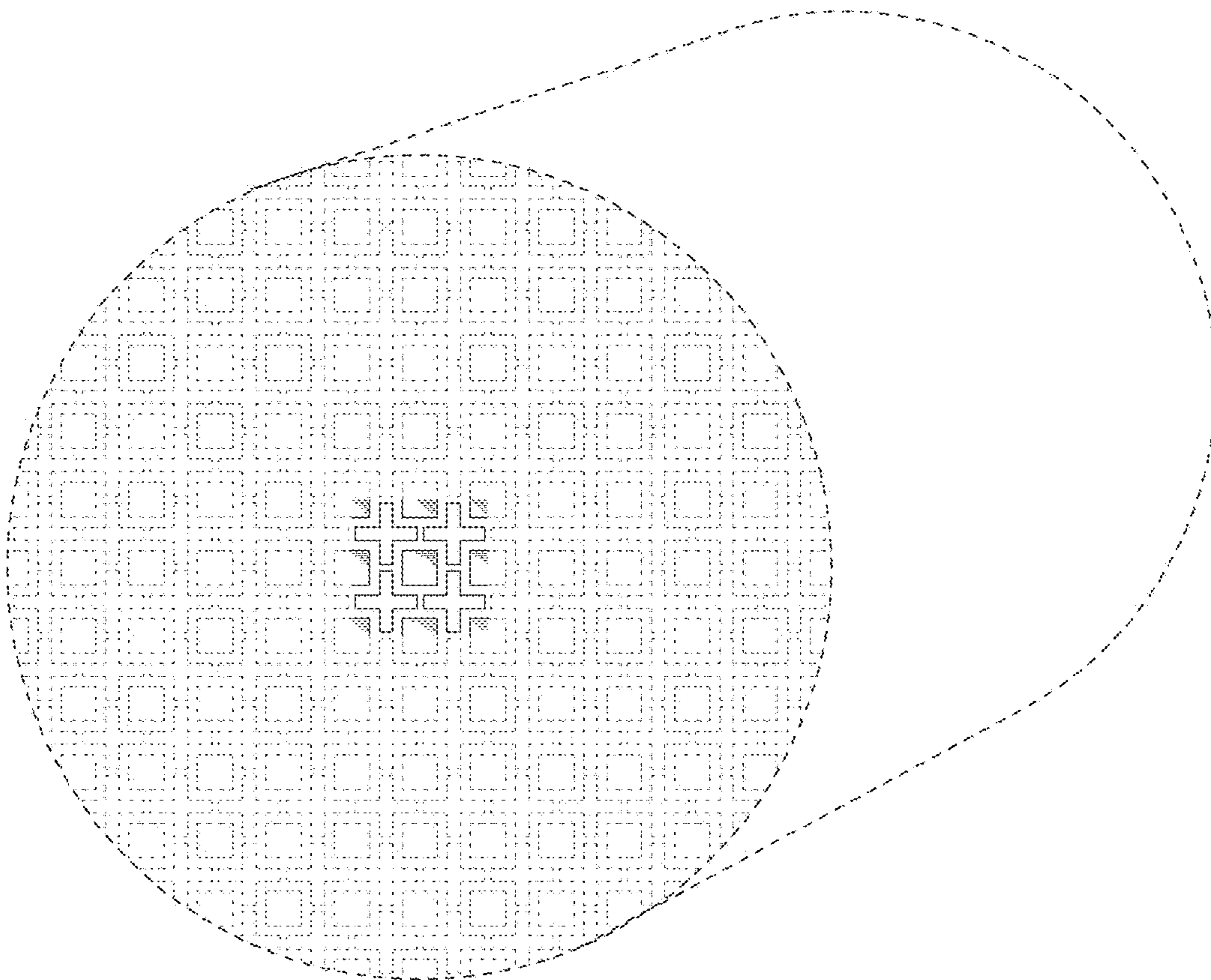


Fig.2

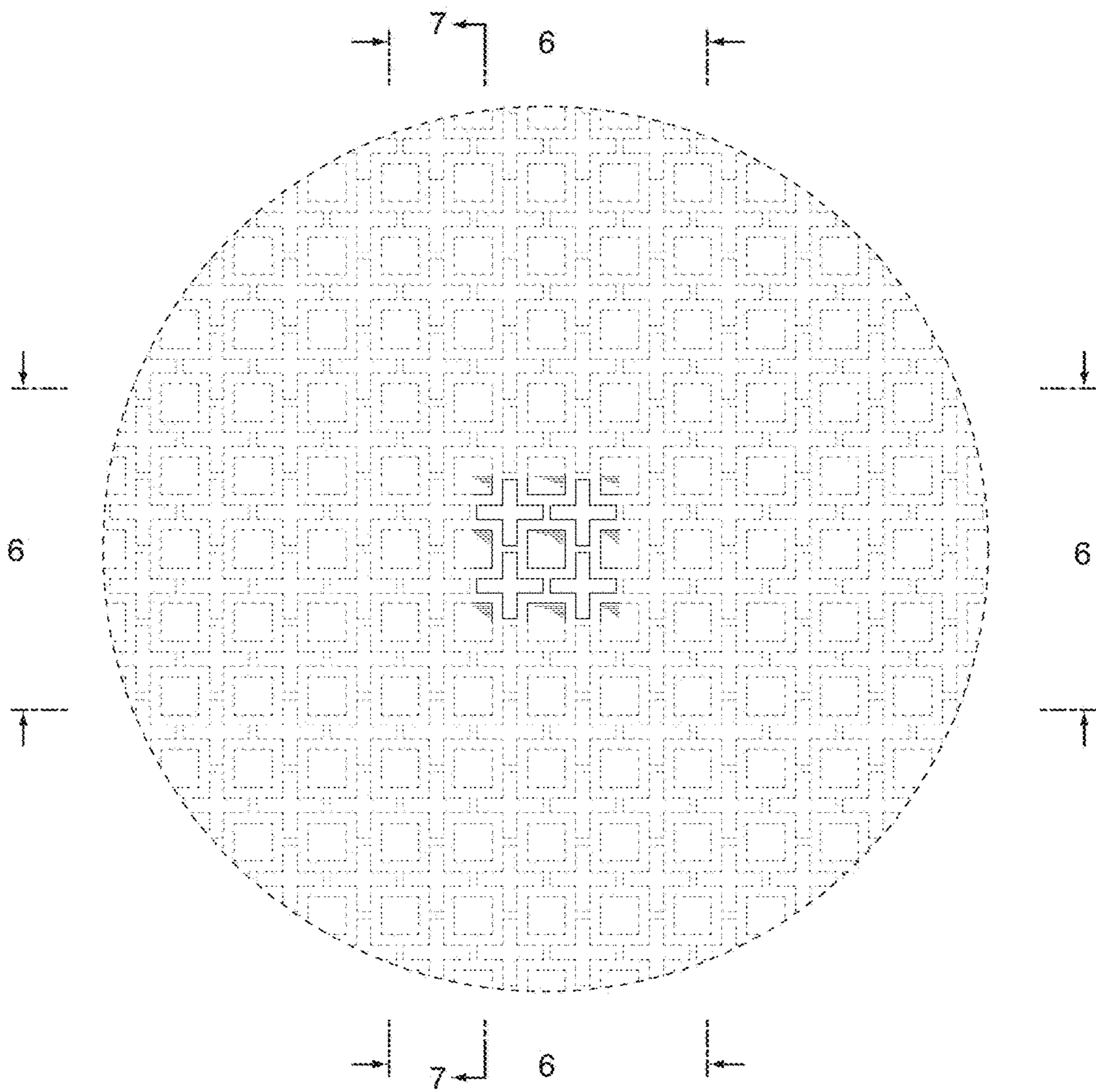




Fig.3

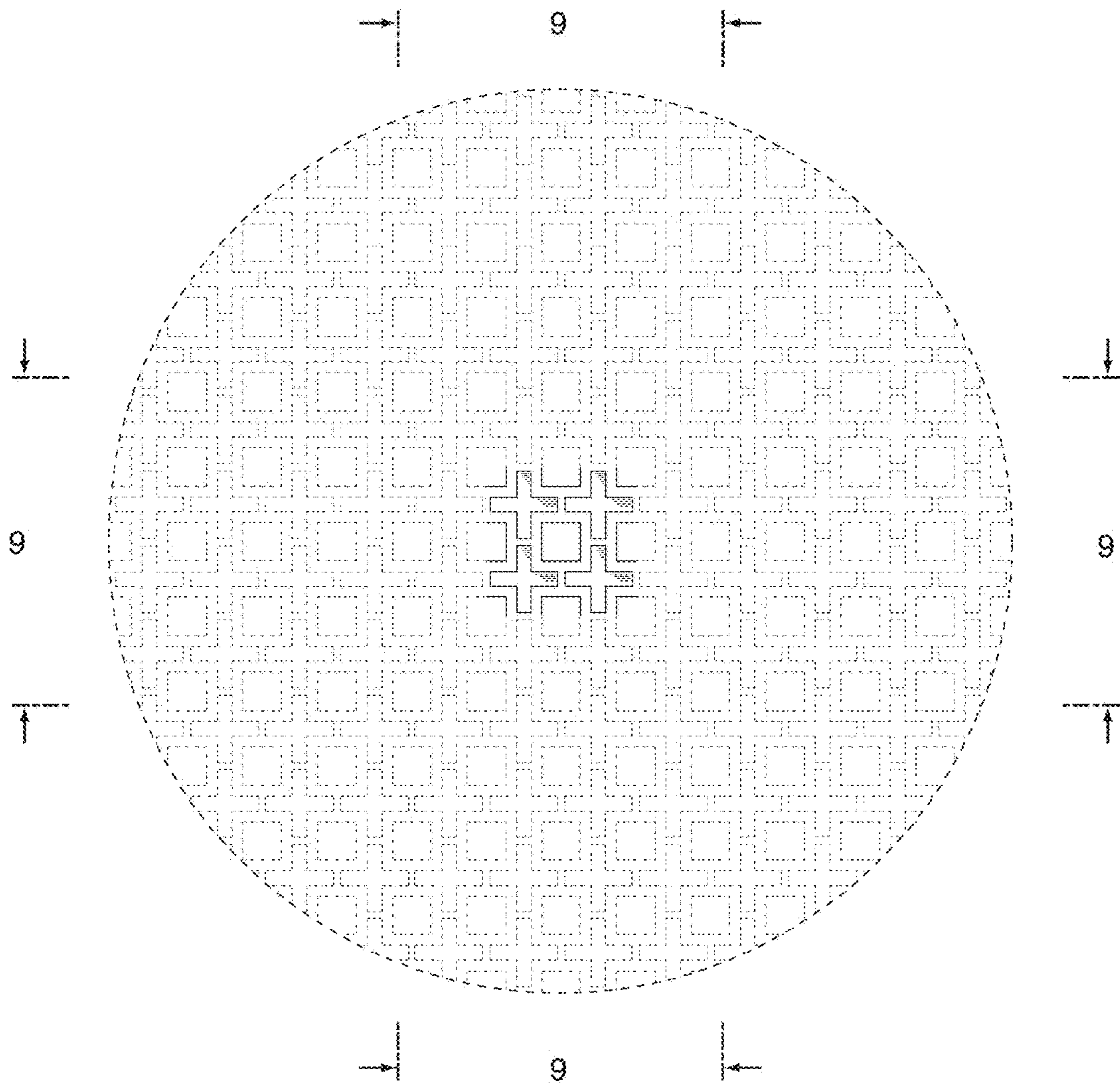


Fig. 4



Fig. 5



Fig.6

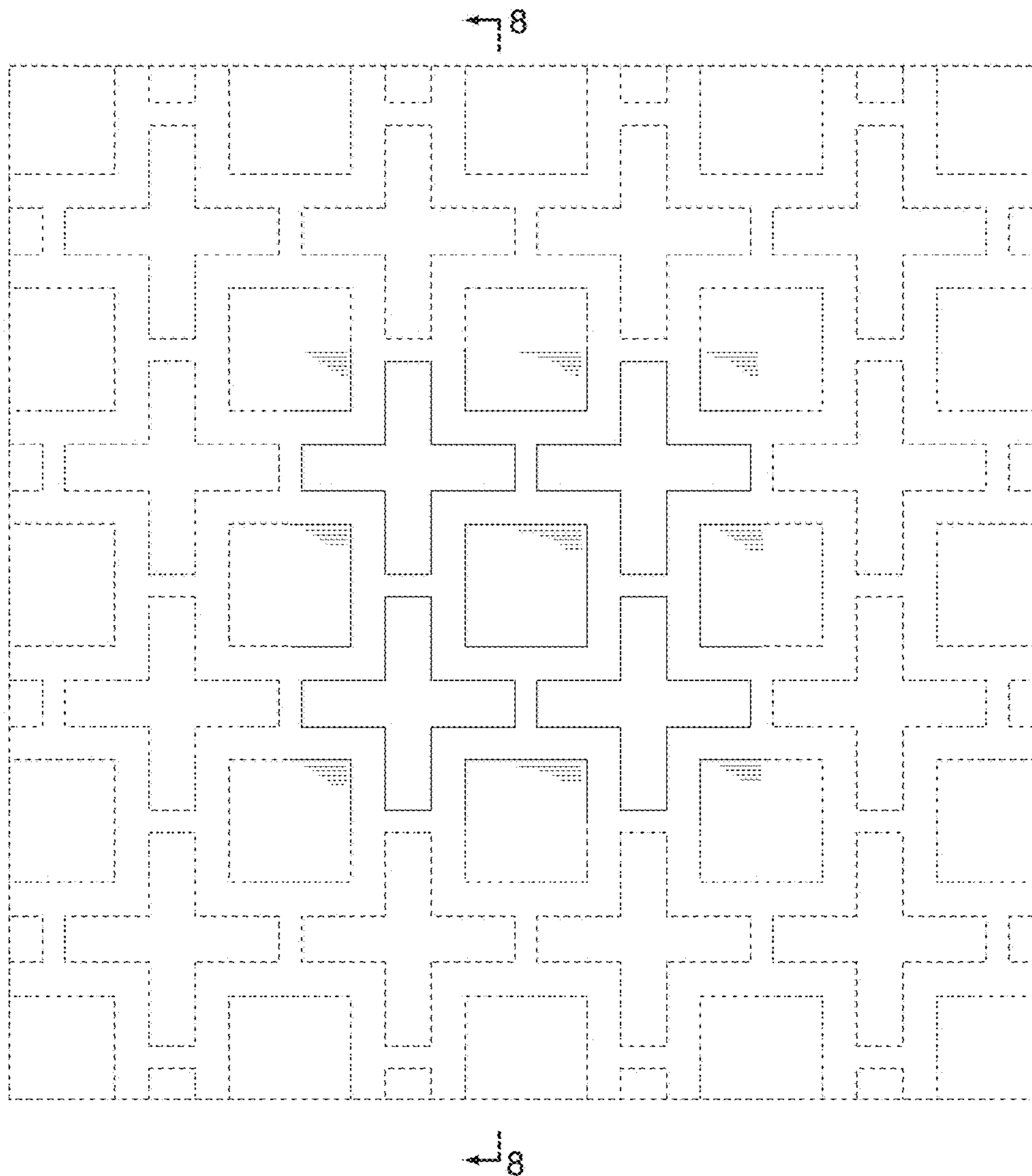




Fig.7

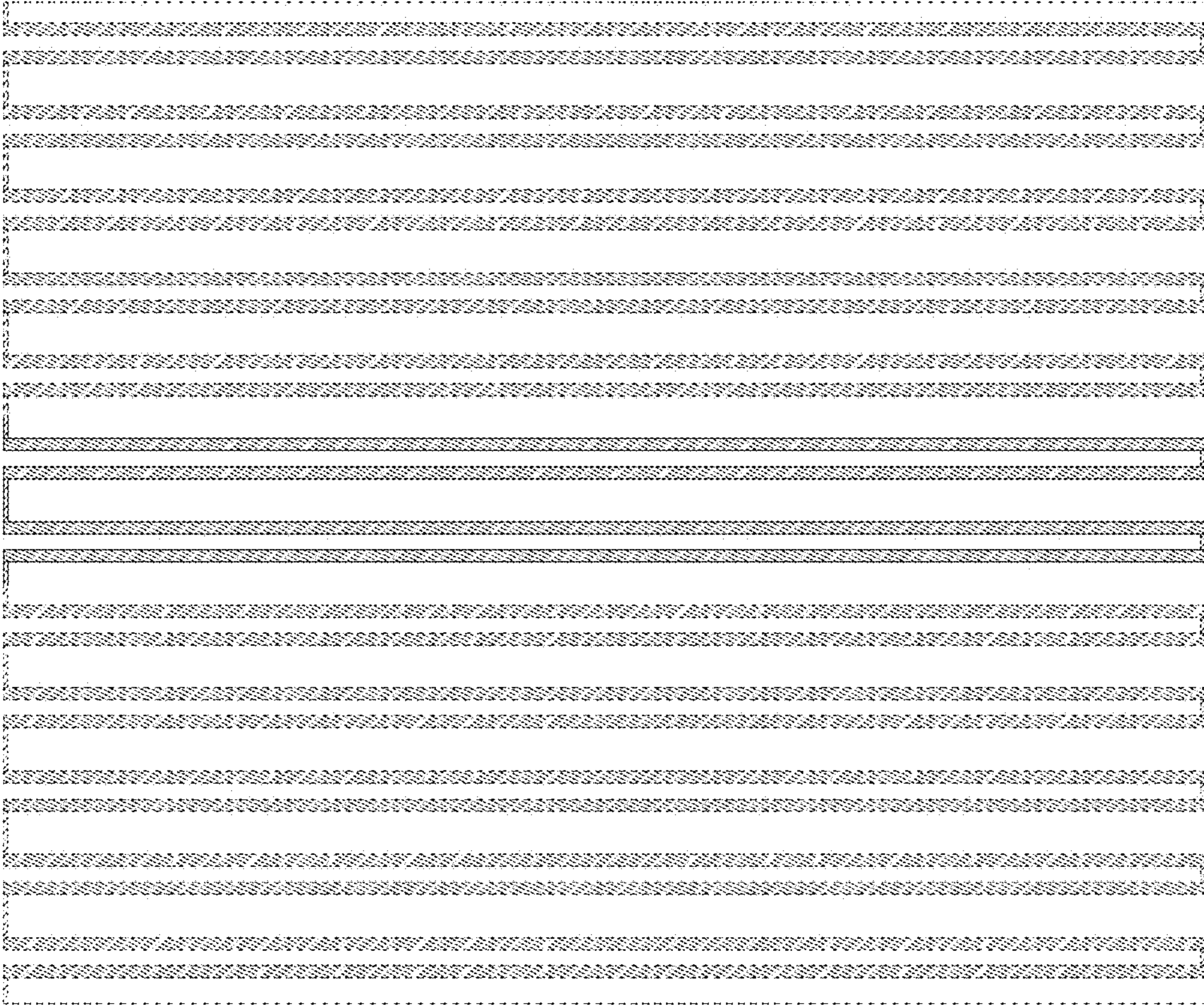


Fig.8

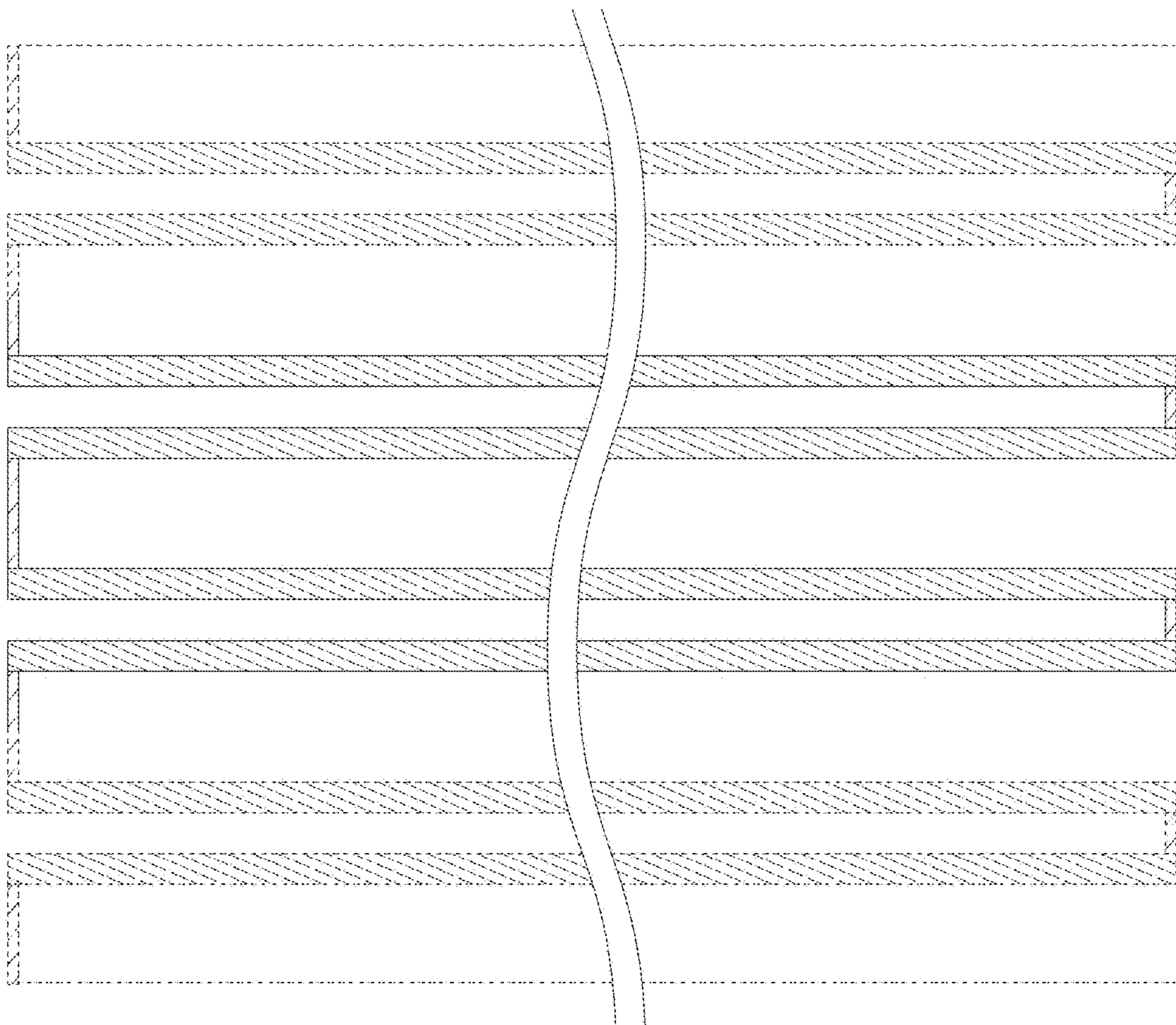


Fig.9

