

US00D538911S

(12) **United States Design Patent**
Komori et al.

(10) **Patent No.: US D538,911 S**
(45) **Date of Patent: ** Mar. 20, 2007**

(54) **PARTICULATE FILTER FOR DIESEL ENGINE**

(75) Inventors: **Teruo Komori**, Gifu-ken (JP); **Sungtae Hong**, Gifu-ken (JP)

(73) Assignee: **Ibiden Co., Ltd.**, Gifu (JP)

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

(21) Appl. No.: **29/240,508**

(22) Filed: **Oct. 14, 2005**

Related U.S. Application Data

(62) Division of application No. 29/218,098, filed on Nov. 29, 2004, now Pat. No. Des. 522,117, which is a division of application No. 29/173,322, filed on Dec. 27, 2002, now Pat. No. Des. 505,194.

(30) **Foreign Application Priority Data**

Jun. 28, 2002	(JP)	.....	2002-017495
Jun. 28, 2002	(JP)	.....	2002-017496
Jun. 28, 2002	(JP)	.....	2002-017497
Jun. 28, 2002	(JP)	.....	2002-017498
Jun. 28, 2002	(JP)	.....	2002-017499
Jun. 28, 2002	(JP)	.....	2002-017500
Sep. 25, 2002	(JP)	.....	2002-026179
Dec. 6, 2002	(JP)	.....	2002-033889

(51) **LOC (8) Cl.** **23-04**

(52) **U.S. Cl.** **D23/365; D15/5**

(58) **Field of Classification Search** D23/365,
D23/364; D15/5; 55/385.3, 523
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,276,071 A	6/1981	Outland
4,364,761 A	12/1982	Berg et al.
4,416,676 A	11/1983	Montierth
4,417,908 A	11/1983	Pitcher, Jr.
4,420,316 A	12/1983	Frost et al.

(Continued)

FOREIGN PATENT DOCUMENTS

FR	2789327	8/2000
FR	2840545	12/2003
JP	57-191421	12/1982
JP	58-092409	6/1983
JP	58-150015	9/1983
JP	62-020613	1/1987
JP	3-102016	10/1991

(Continued)

Primary Examiner—Robin Webster

(74) *Attorney, Agent, or Firm*—Banner & Witcoff, Ltd.

(57) **CLAIM**

The ornamental design for particulate filter for diesel engine, as shown and described.

DESCRIPTION

FIG. 1 is a front view of a particulate filter for diesel engine according to the present invention, the rear view being a mirror image of the front view;

FIG. 2 is a top plan view showing the particulate filter of FIG. 1, the bottom plan view being a mirror image of the top plan view;

FIG. 3 is a right side view showing the particulate filter of FIG. 1, the left side view being a mirror image of the right side view;

FIG. 4 is an enlarged view of FIG. 3;

FIG. 5 is a cross-sectional view taken along line 5—5 of FIG. 1;

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

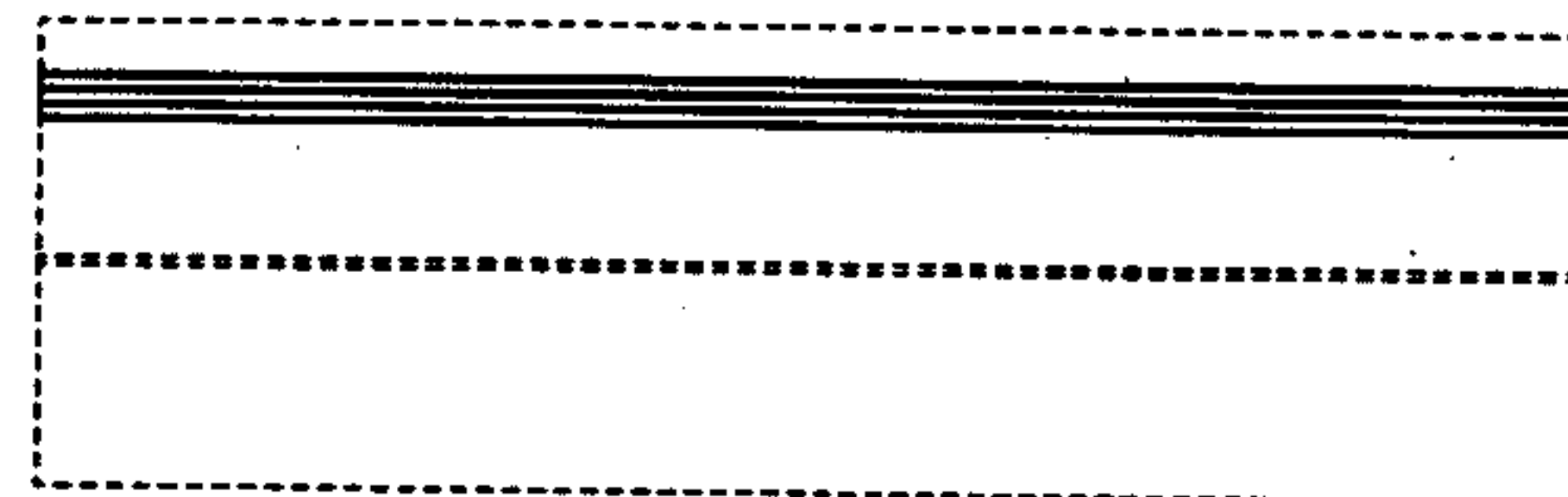
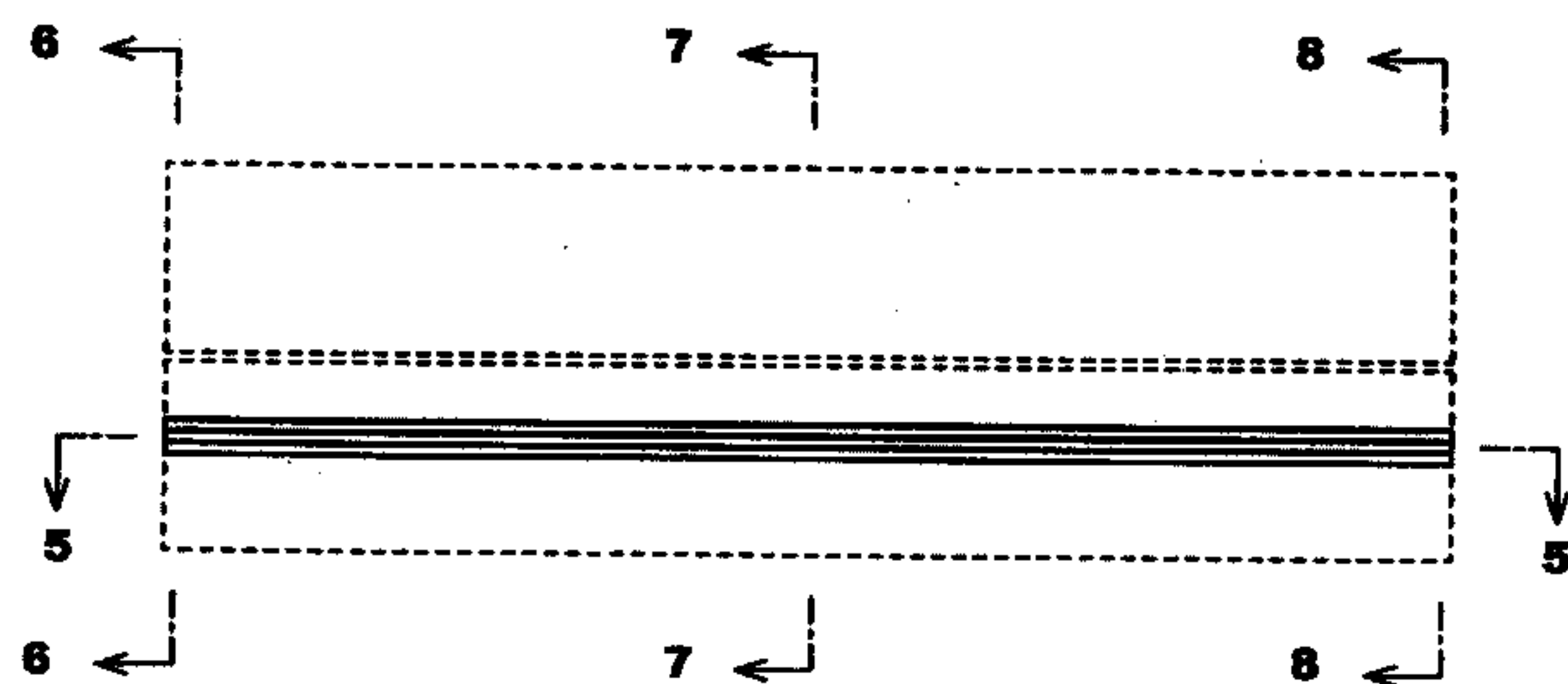
FIG. 7 is an enlarged cross-sectional view taken along line 7—7 of FIG. 1;

FIG. 8 is an enlarged cross-sectional view taken along line 8—8 of FIG. 1; and,

FIG. 9 is an enlarged view showing a section defined by line segments a—a' and b—b' of FIG. 3.

The broken lines in FIGS. 1 through 9 are shown for illustrative purposes only and form no part of the claimed design.

1 Claim, 5 Drawing Sheets



US D538,911 S

Page 2

U.S. PATENT DOCUMENTS

4,428,758	A	1/1984	Montierth
4,643,749	A	2/1987	Miura
4,857,089	A	8/1989	Kitagawa et al.
5,089,237	A	2/1992	Schuster et al.
5,098,455	A	3/1992	Doty et al.
5,396,764	A	3/1995	Rao et al.
5,519,993	A	5/1996	Rao et al.
5,545,243	A	8/1996	Kotani et al.
6,149,877	A	11/2000	Ogai
6,395,370	B1	5/2002	Noda et al.
D477,659	S	7/2003	Gieseke et al.
D483,459	S	12/2003	DeWit et al.
6,669,751	B1	12/2003	Ohno et al.
6,673,414	B2	1/2004	Ketcham et al.
6,764,527	B2	7/2004	Ishihara et al.
6,843,822	B2	1/2005	Beall et al.
6,849,181	B2	2/2005	Ogunwumi et al.
2002/0045541	A1	4/2002	Koike et al.
2002/0180117	A1	12/2002	Yamamoto et al.
2003/0024219	A1	2/2003	Harada et al.
2003/0093982	A1	5/2003	Suwabe et al.

2003/0165662	A1	9/2003	Suwabe et al.
2003/0167755	A1	9/2003	Nakatani et al.
2004/0053005	A1	3/2004	Hamanaka et al.
2004/0161596	A1	8/2004	Taoka et al.

FOREIGN PATENT DOCUMENTS

JP	50-068828	3/1993
JP	6-47620	6/1994
JP	08-299809	11/1996
JP	2001-246250	9/2001
JP	2002-161726	6/2002
JP	2002-177793	6/2002
JP	2003-1029	1/2003
JP	2003-155908	5/2003
JP	2004-000896	1/2004
WO	WO 01/23069	4/2001
WO	WO 02/00514	1/2002
WO	WO 02/10562	A1 2/2002
WO	WO 02/096827	A1 12/2002
WO	WO 02/100514	A1 12/2002
WO	WO 03/020407	A2 3/2003

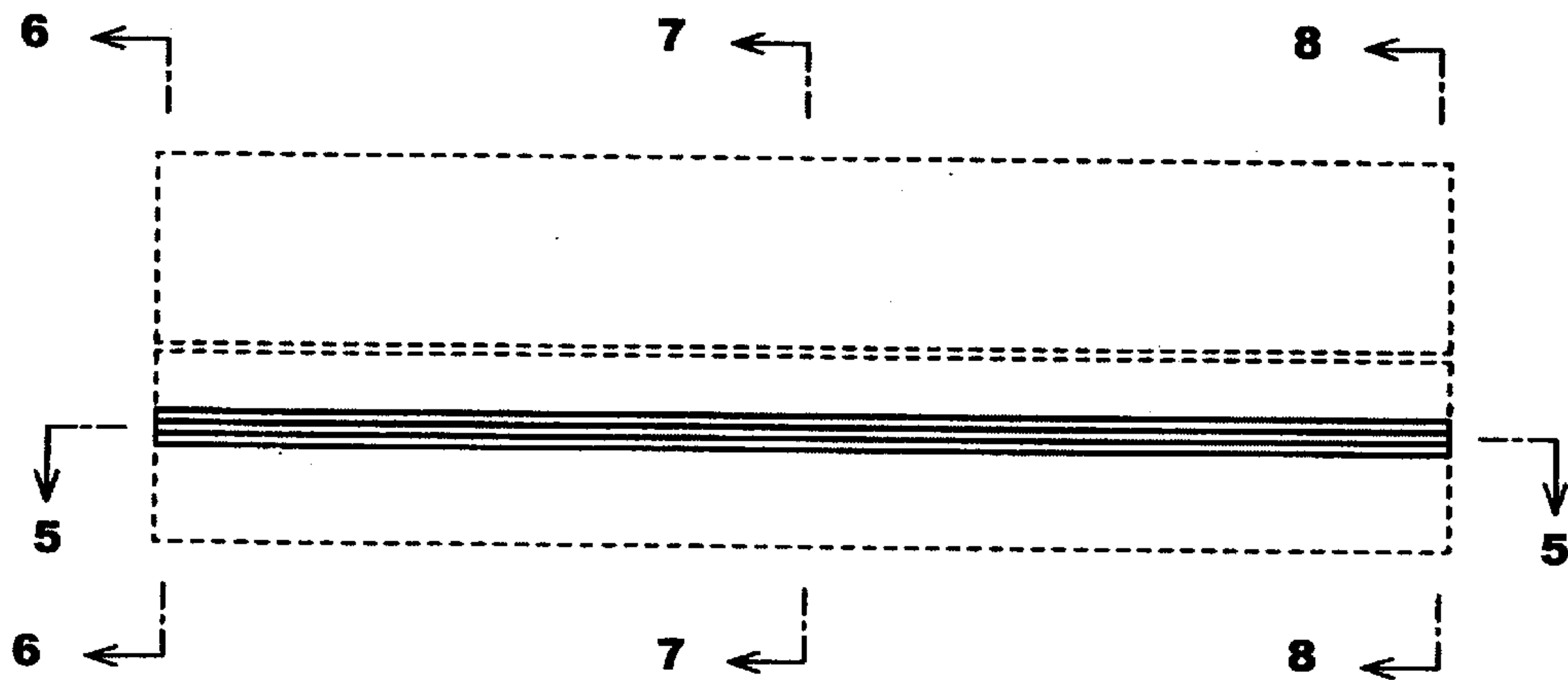


Fig. 1

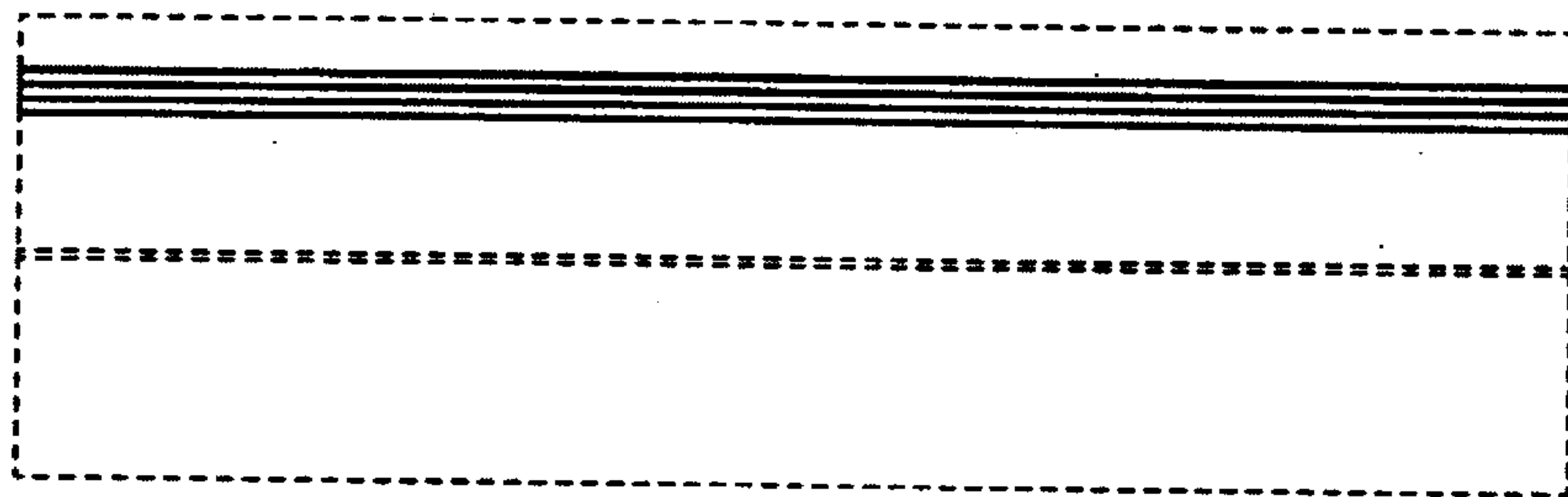


Fig. 2

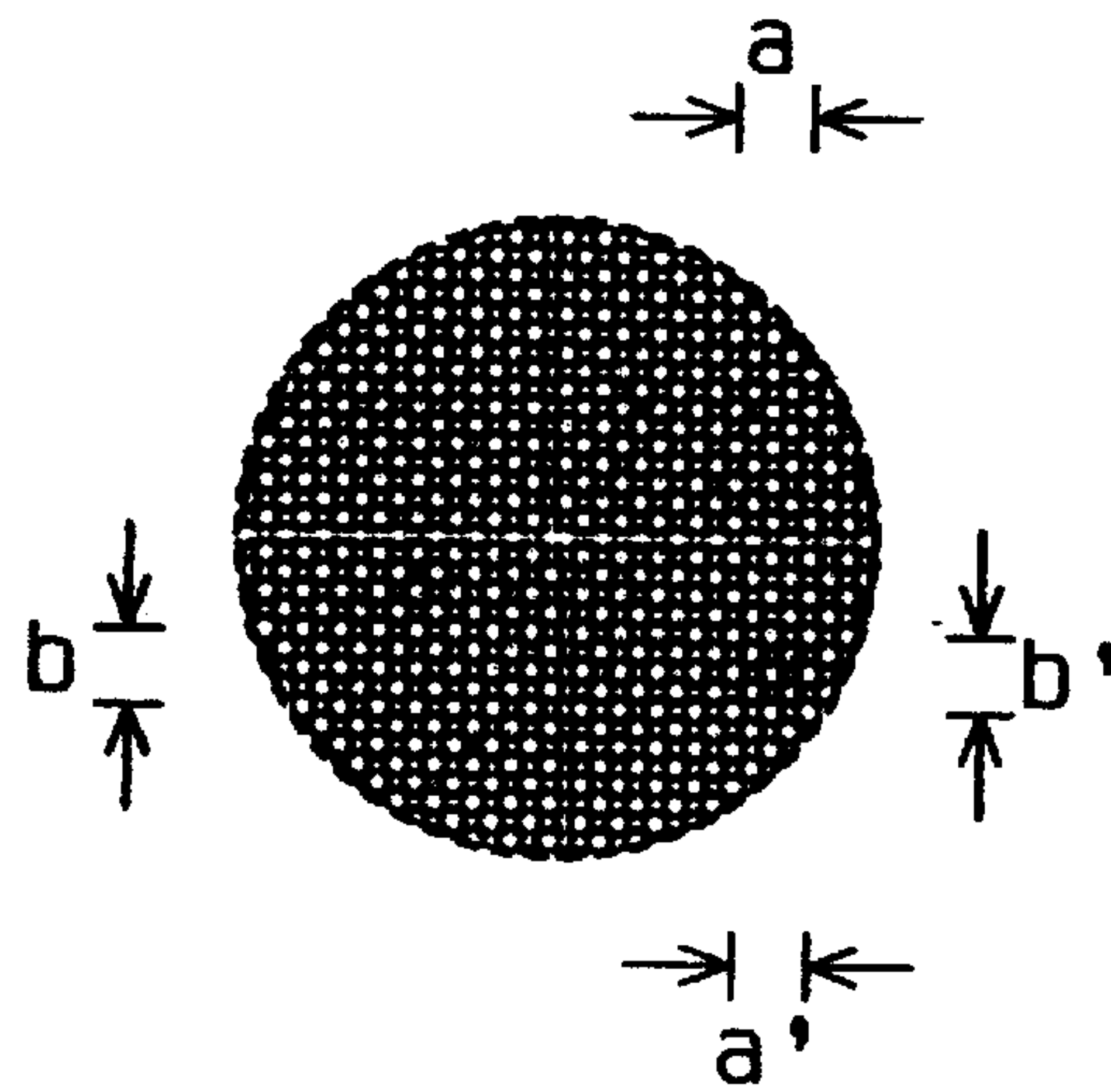


Fig. 3

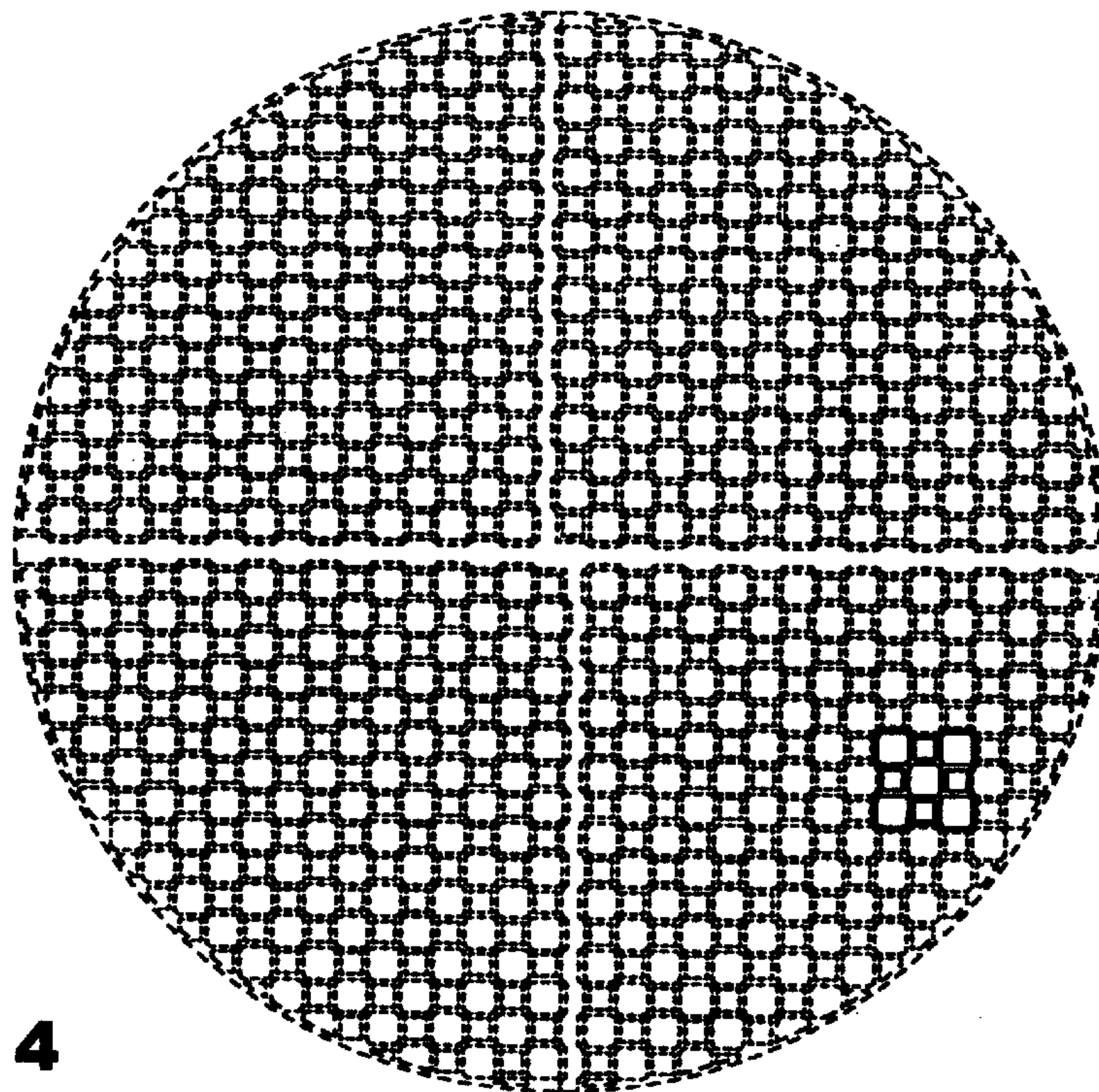


Fig. 4

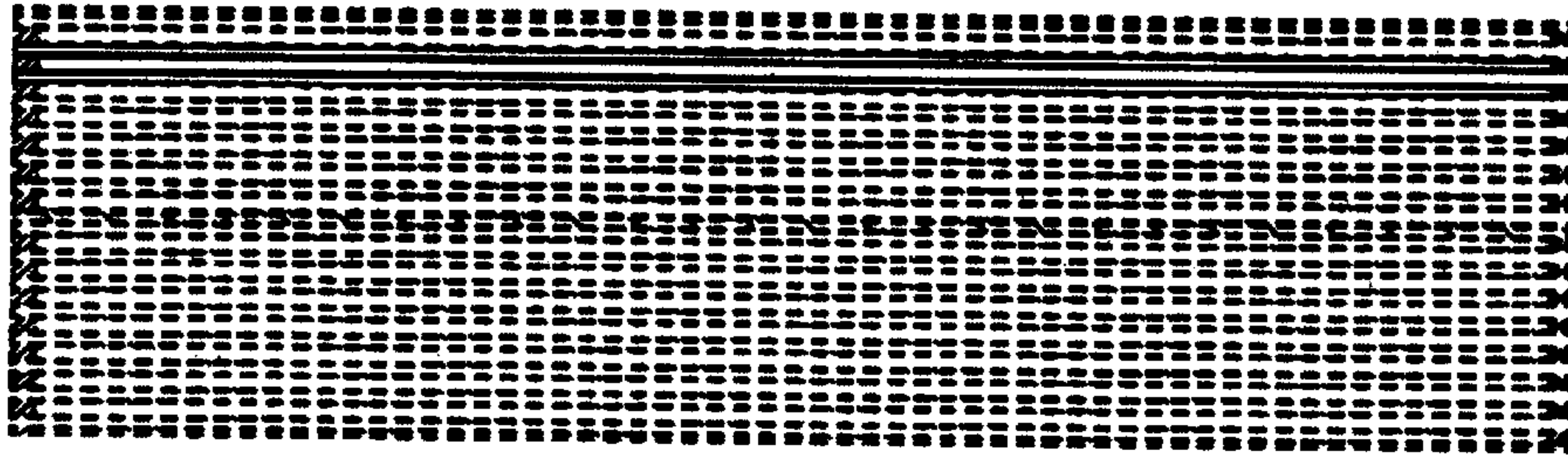


Fig. 5

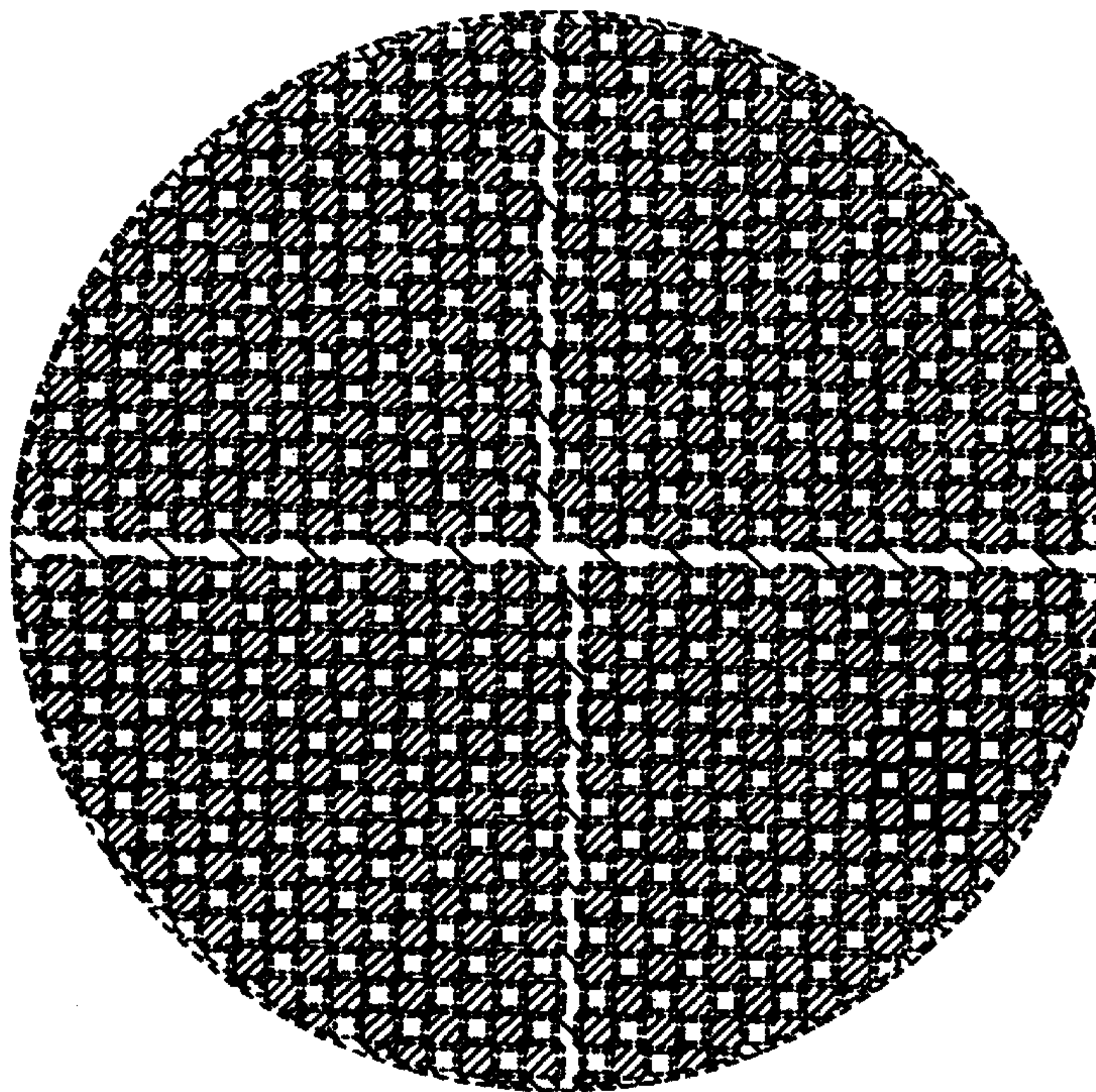


Fig. 6

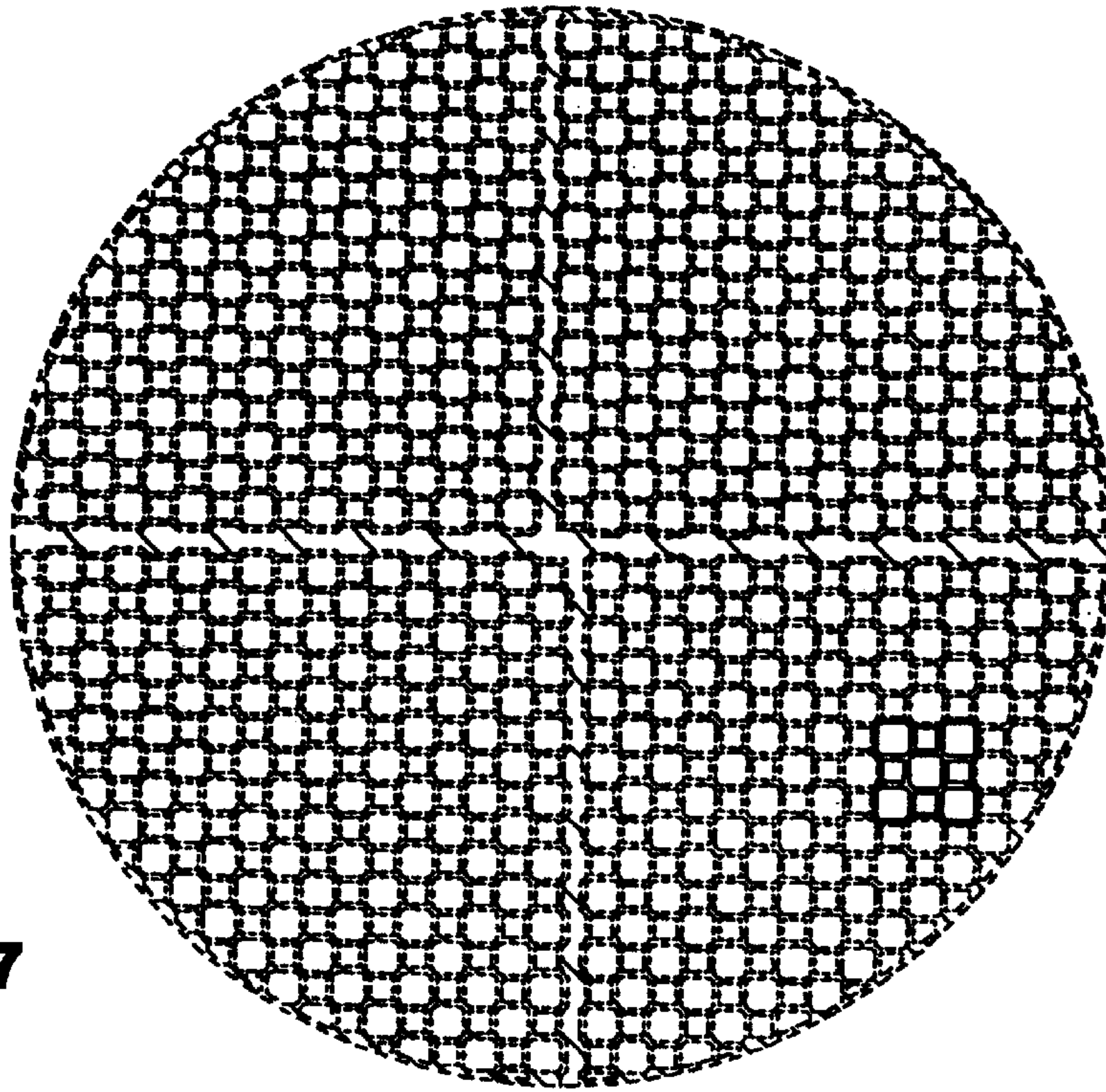


Fig. 7

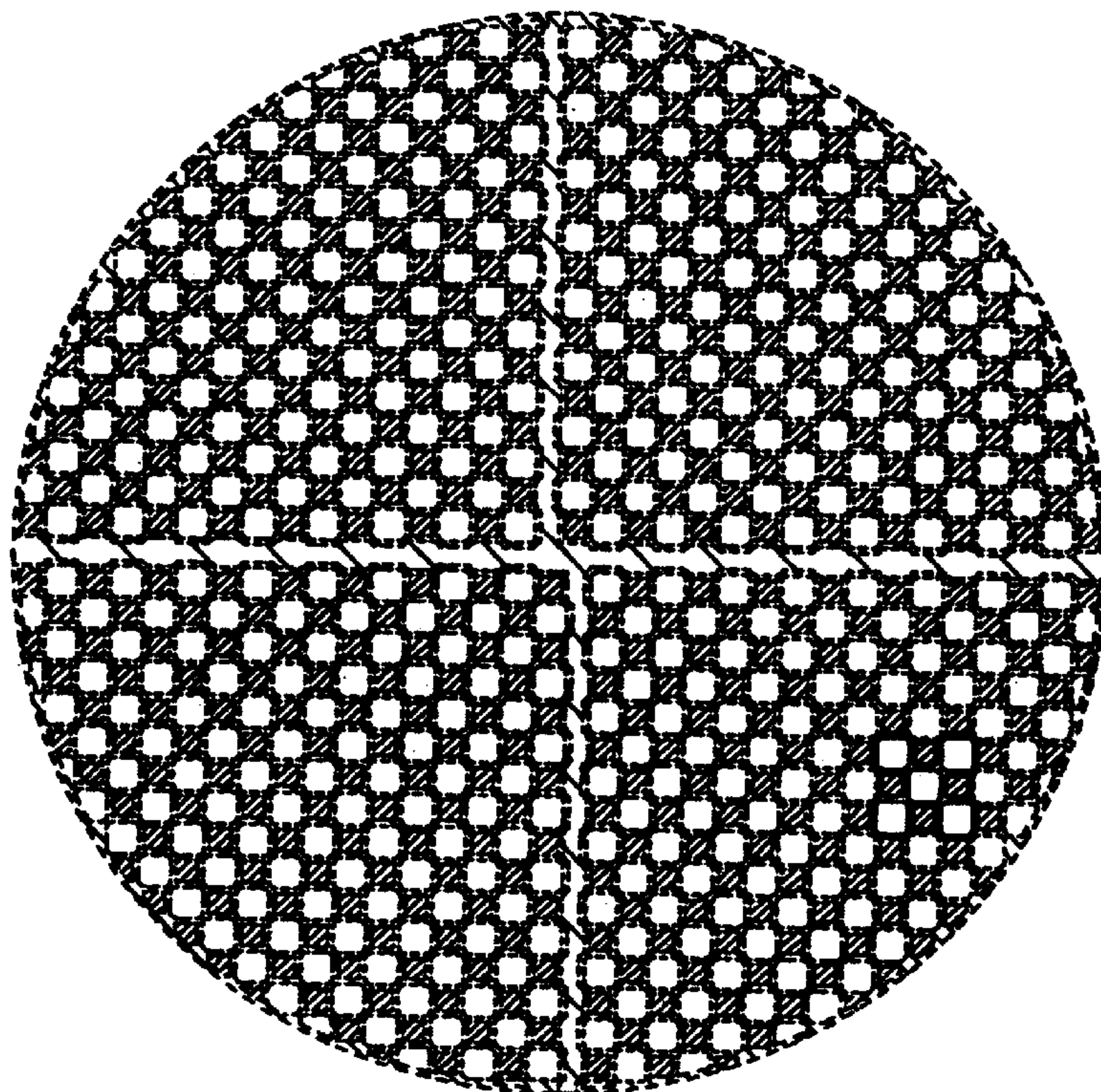


Fig. 8

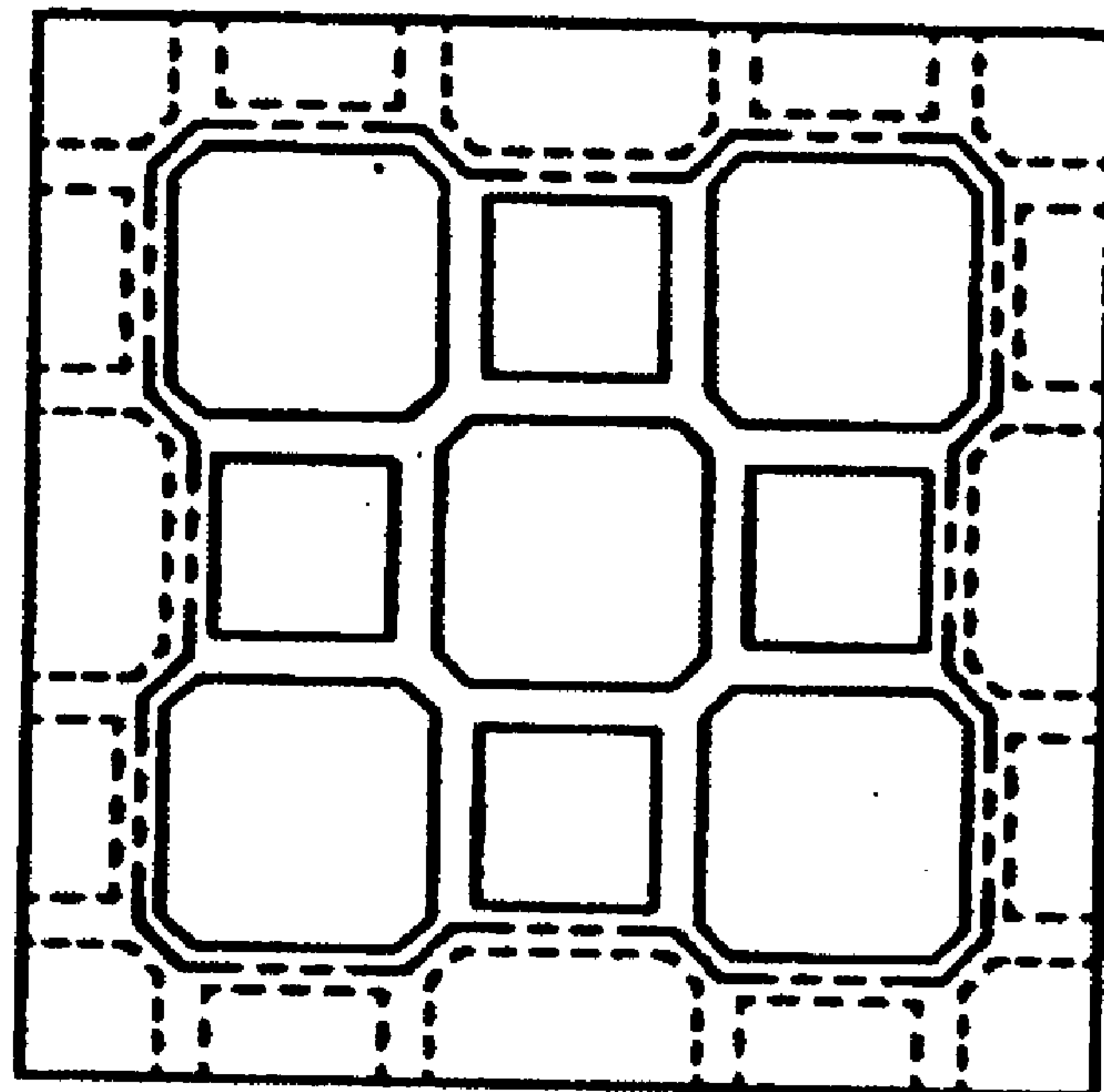


Fig. 9