

[54] SEMI-CONDUCTOR MOUNTING SUBSTRATE

[75] Inventors: Terutomi Hasegawa, Ogaki; Nobumichi Goto, Seki, both of Japan

[73] Assignee: Ibiden Co., Ltd., Ogaki, Japan

[\*] Notice: The portion of the term of this patent subsequent to Oct. 24, 2003 has been disclaimed.

[\*\*] Term: 14 Years

[21] Appl. No.: 181,252

[22] Filed: Apr. 13, 1988

[52] U.S. Cl. .... D13/182

[58] Field of Search ..... D13/12, 20, 99; 361/401, 403, 404, 405; 357/70, 72, 74, 80; 174/52.4; 437/209

647078 3/1985 Japan .

673983-1 3/1986 Japan .

673983 3/1986 Japan .

673984 3/1986 Japan .

150353 7/1986 Japan .

0271863 12/1986 Japan .

0035653 2/1987 Japan ..... 357/74

OTHER PUBLICATIONS

*Electronics*, p. 7, Feb. 24, 1986 by Fujitsu Microelectronics, Inc.

*Electronic Design*, p. 7, dtd 10-16-86, NRC IC package pictured thereon.

*Electronic Design*, p. 190, dtd 10-16-86, Disc Control pictured thereon.

*Electronics*, p. 131, dtd 8-7-86, CMOS chip pictured thereon.

Primary Examiner—Susan J. Lucas  
 Assistant Examiner—Joel Sincavage  
 Attorney, Agent, or Firm—Lorusso & Loud

[56] References Cited

U.S. PATENT DOCUMENTS

4,288,841 9/1981 Gogal ..... 357/74

4,338,621 7/1982 Braun ..... 357/80 X

4,437,141 3/1984 Prokop ..... 357/74

4,458,291 7/1984 Yanagisawa et al. .... 361/212

4,513,355 4/1985 Shroeder et al. .... 174/52.4

4,677,526 6/1987 Muehling ..... 357/70

4,698,663 10/1987 Sugimoto et al. .... 357/81

FOREIGN PATENT DOCUMENTS

0232827 8/1987 European Pat. Off. .... 357/74

0048945 3/1983 Japan .

644662 2/1985 Japan .

647072 3/1985 Japan .

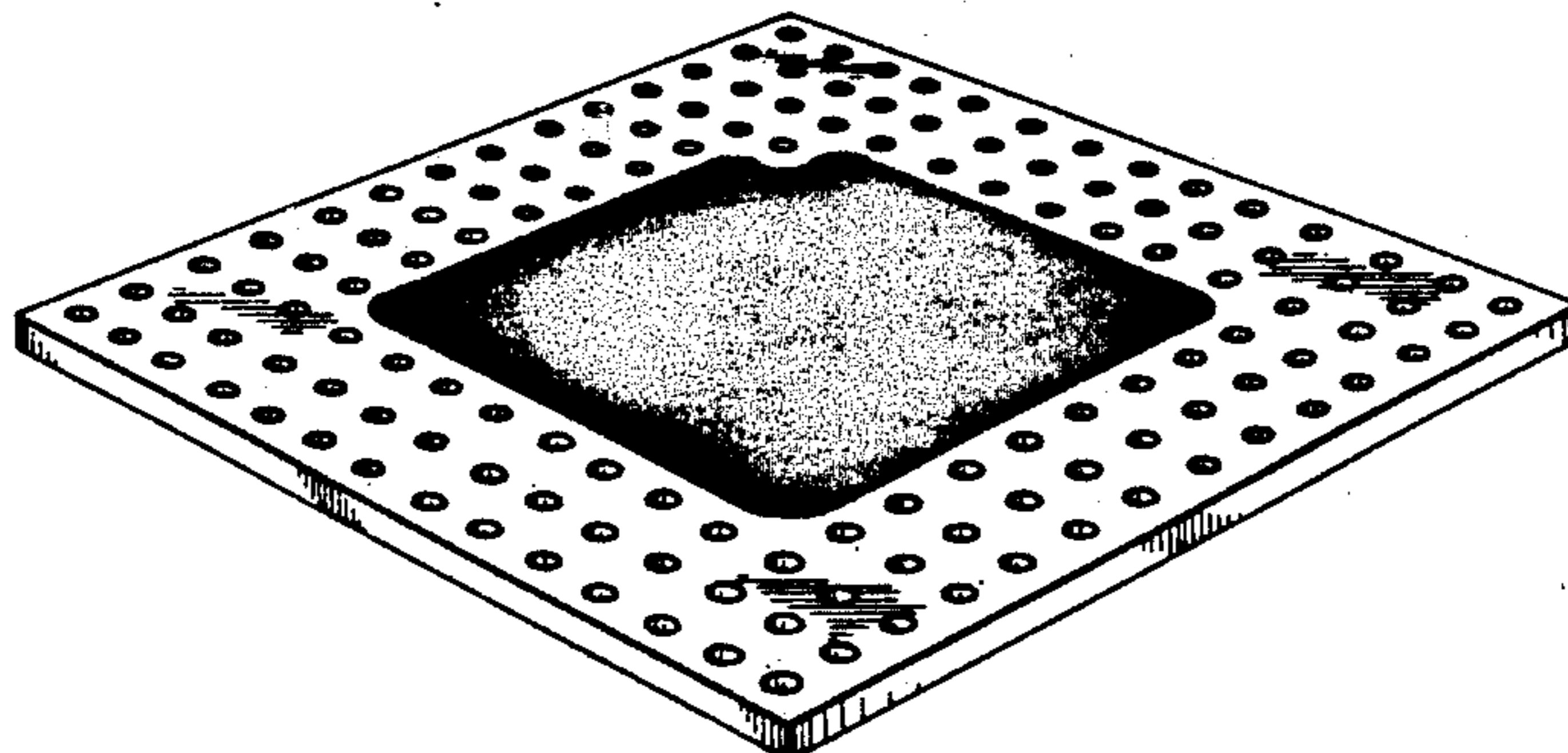
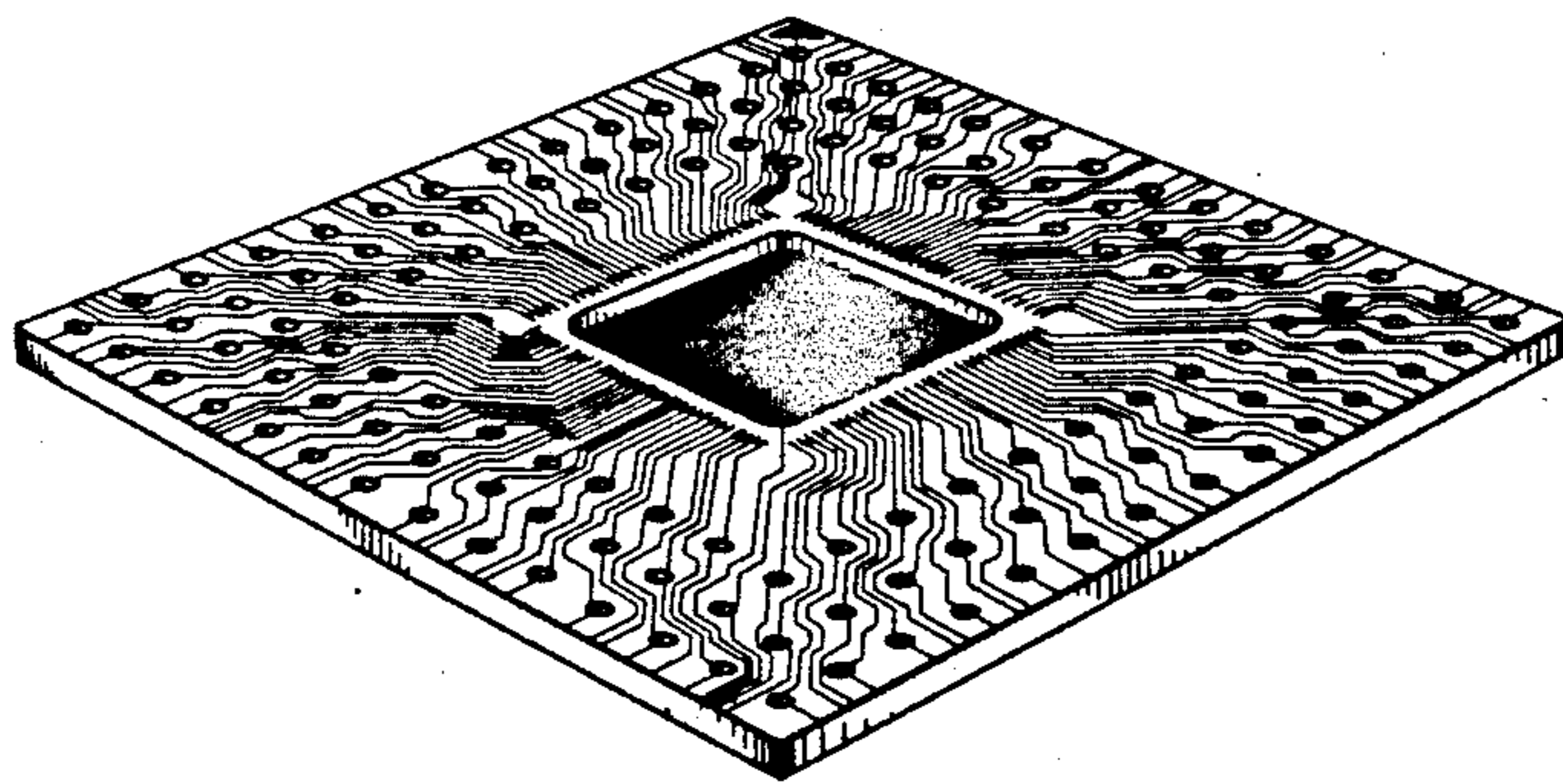
647074 3/1985 Japan .

[57] CLAIM

The ornamental design for a semi-conductor mounting substrate, as shown.

DESCRIPTION

FIG. 1 is a top perspective view of a semi-conductor mounting substrate showing our new design; FIG. 2 is a bottom perspective view thereof; FIG. 3 is a right side elevational view thereof; FIG. 4 is a left side elevational view thereof; FIG. 5 is a rear elevational view thereof; FIG. 6 is a front elevational view thereof; FIG. 7 is a top plan view thereof; and FIG. 8 is a bottom plan view thereof.



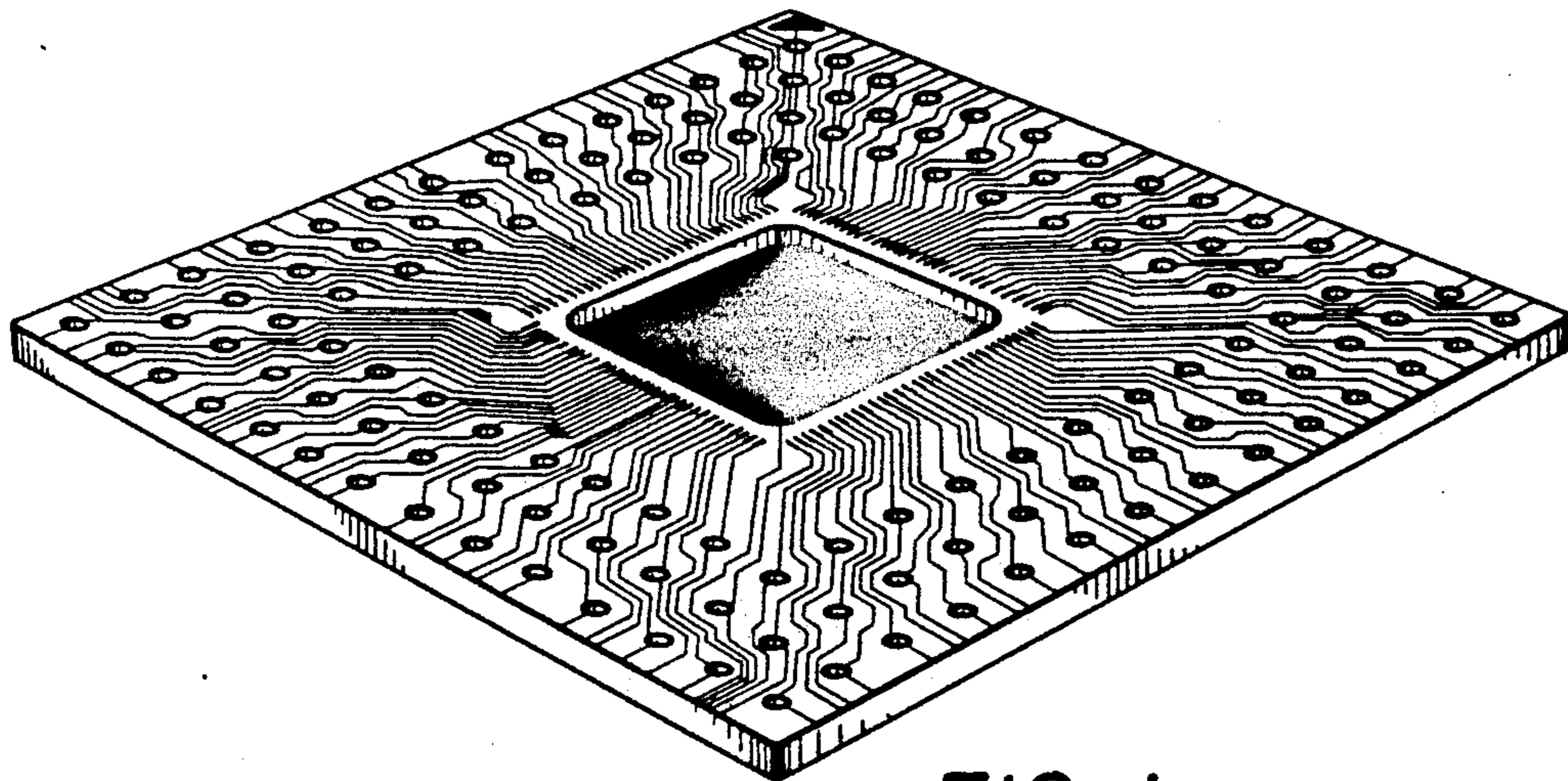


FIG. 1

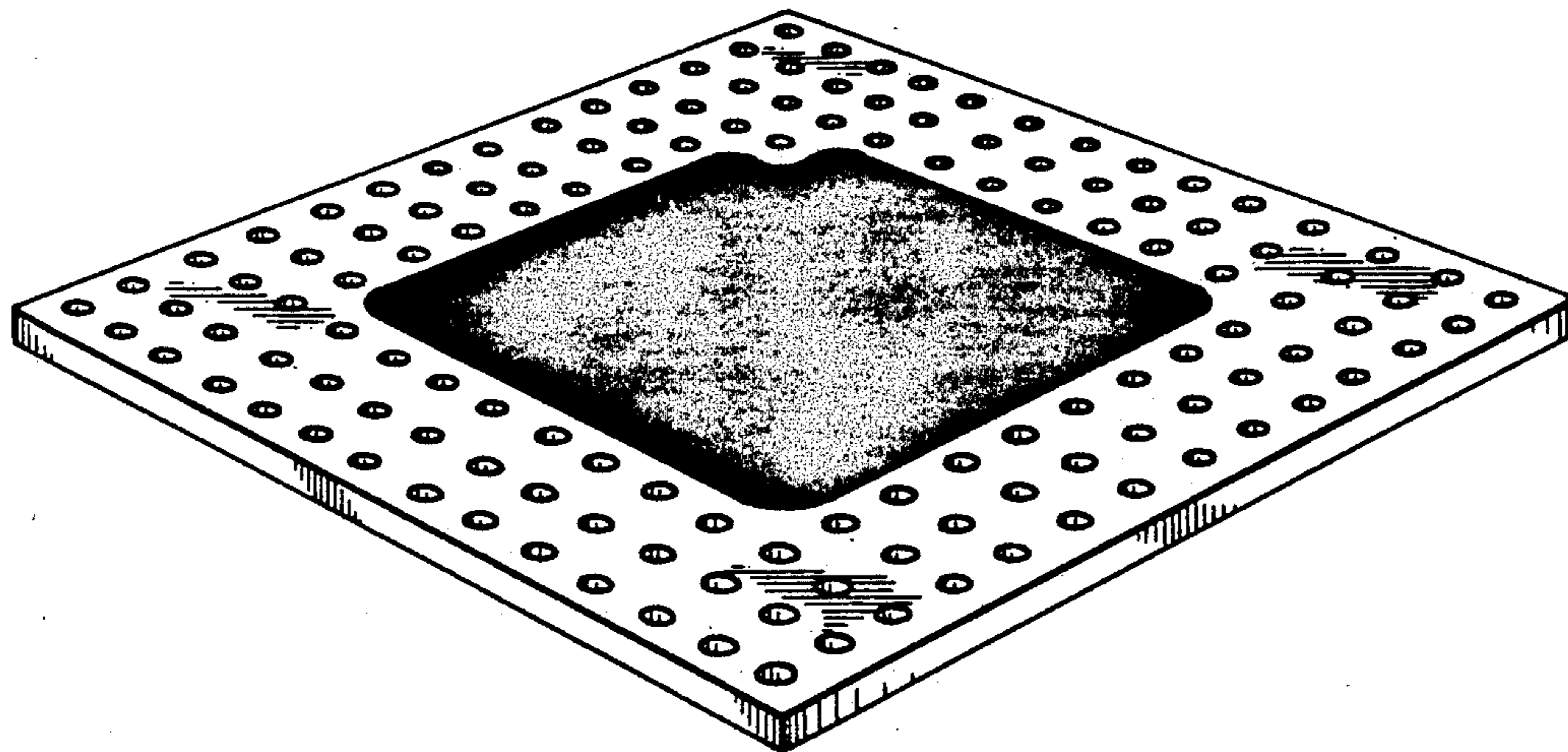


FIG. 2



*FIG. 3*



*FIG. 4*



*FIG. 5*



*FIG. 6*

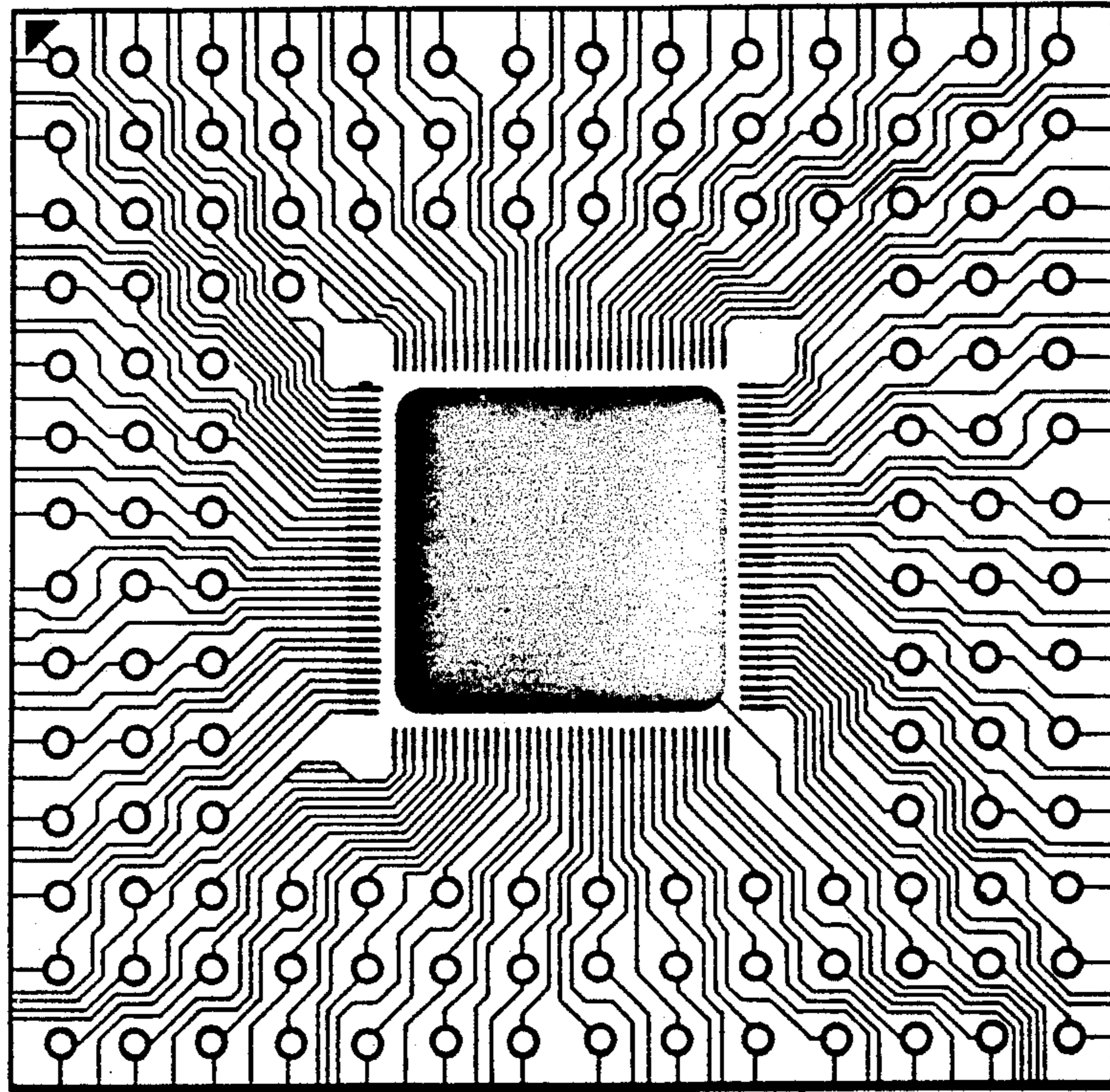


FIG. 7

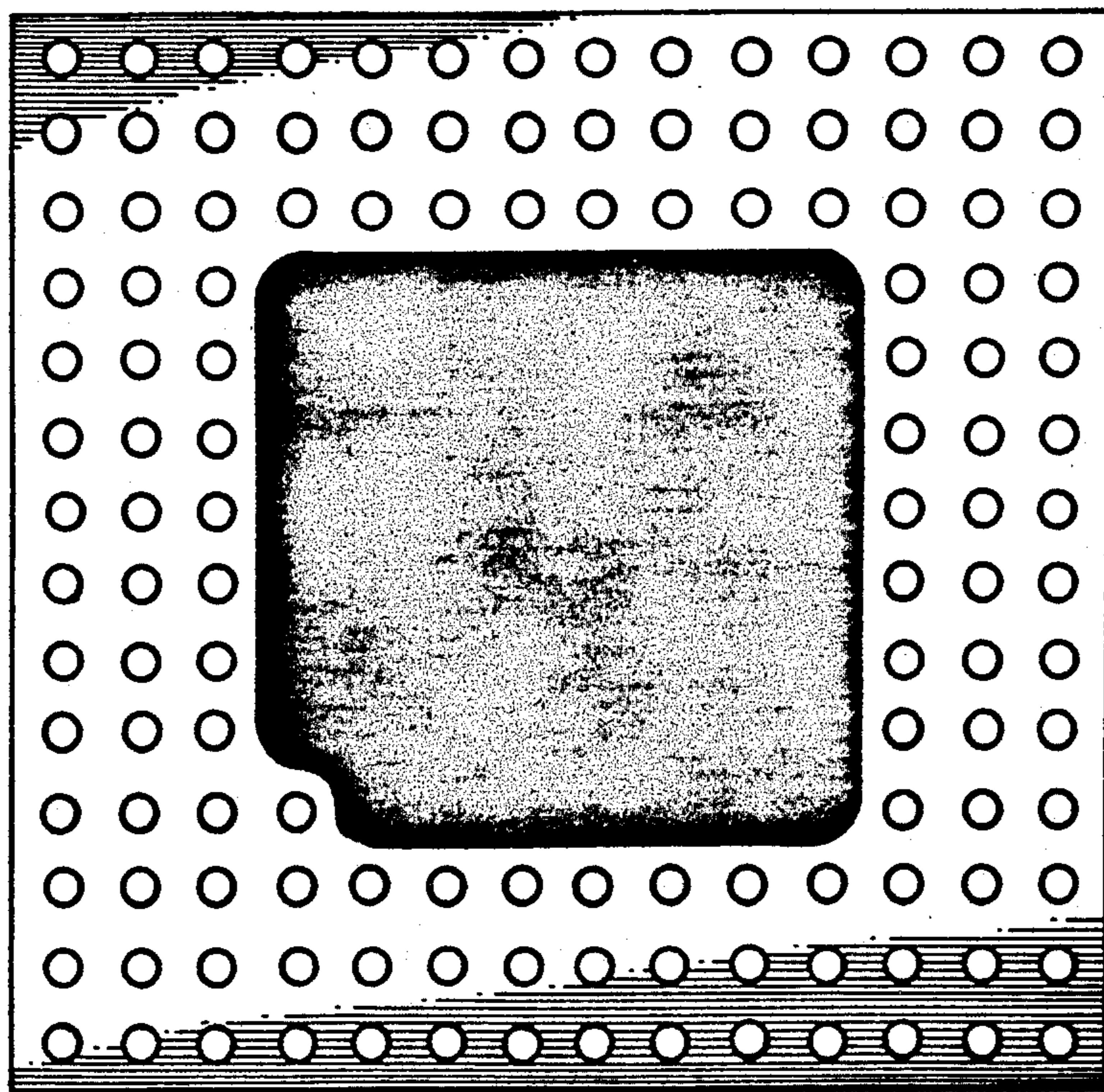


FIG. 8

UNITED STATES PATENT AND TRADEMARK OFFICE  
CERTIFICATE OF CORRECTION

PATENT NO. : Des. 318,461

DATED : July 23, 1991

INVENTOR(S) : Hasegawa et al.

It is certified that error appears in the above—identified patent and that said Letters Patent is hereby corrected as shown below:

In Col. 1, line 6, the "[\*] Notice:" section should be delete in its entirety.

Signed and Sealed this  
Fifteenth Day of June, 1993

Attest:



MICHAEL K. KIRK

Attesting Officer

Acting Commissioner of Patents and Trademarks