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(12) **United States Design Patent** (10) **Patent No.:** **US D834,334 S**  
**Underwood et al.** (45) **Date of Patent:** **\*\* Nov. 27, 2018**

- (54) **FLAME RESISTANT FABRIC**
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- (\*\*) Term: **14 Years**
- (21) Appl. No.: **29/521,529**
- (22) Filed: **Mar. 24, 2015**

**Related U.S. Application Data**

- (60) Division of application No. 14/470,615, filed on Aug. 27, 2014, now Pat. No. 9,364,694, which is a continuation of application No. 13/436,081, filed on Mar. 30, 2012, now Pat. No. 8,819,866.
- (51) **LOC (11) Cl.** ..... **05-05**
- (52) **U.S. Cl.**  
USPC ..... **D5/7**
- (58) **Field of Classification Search**  
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CPC ... B31F 1/00; B31F 1/07; B32B 3/266; B32B 5/024; B44F 1/00; B44F 1/02; B44F 1/08; B44F 1/10; B44F 5/00; B44F 7/00; B44F 9/00; B44F 9/04; B44F 11/00; B44F 11/02; B44F 11/04; D03D 1/00; D04H 1/00; D10B 2503/04; D21H 27/02  
See application file for complete search history.

- (56) **References Cited**  
U.S. PATENT DOCUMENTS  
279,669 A \* 6/1883 Smith ..... 2/10  
524,441 A \* 8/1894 Johns ..... D03D 15/00  
139/420 D  
D89,157 S \* 1/1933 Schweizer ..... D5/46  
1,990,880 A \* 2/1935 Reuter ..... F16D 69/022  
5/263  
2,106,457 A \* 1/1938 Hyman ..... D03D 15/00  
139/420 R  
D118,109 S \* 12/1939 Callahan ..... D2/836  
(Continued)

**FOREIGN PATENT DOCUMENTS**

GB 2516134 1/2015

**OTHER PUBLICATIONS**

Safety Components "Filament Twill Technology" (online), retrieved from Internet Jan. 10, 2017. URL: <http://www.safetycomponents.com/FTT/> (2 pages).\*

(Continued)

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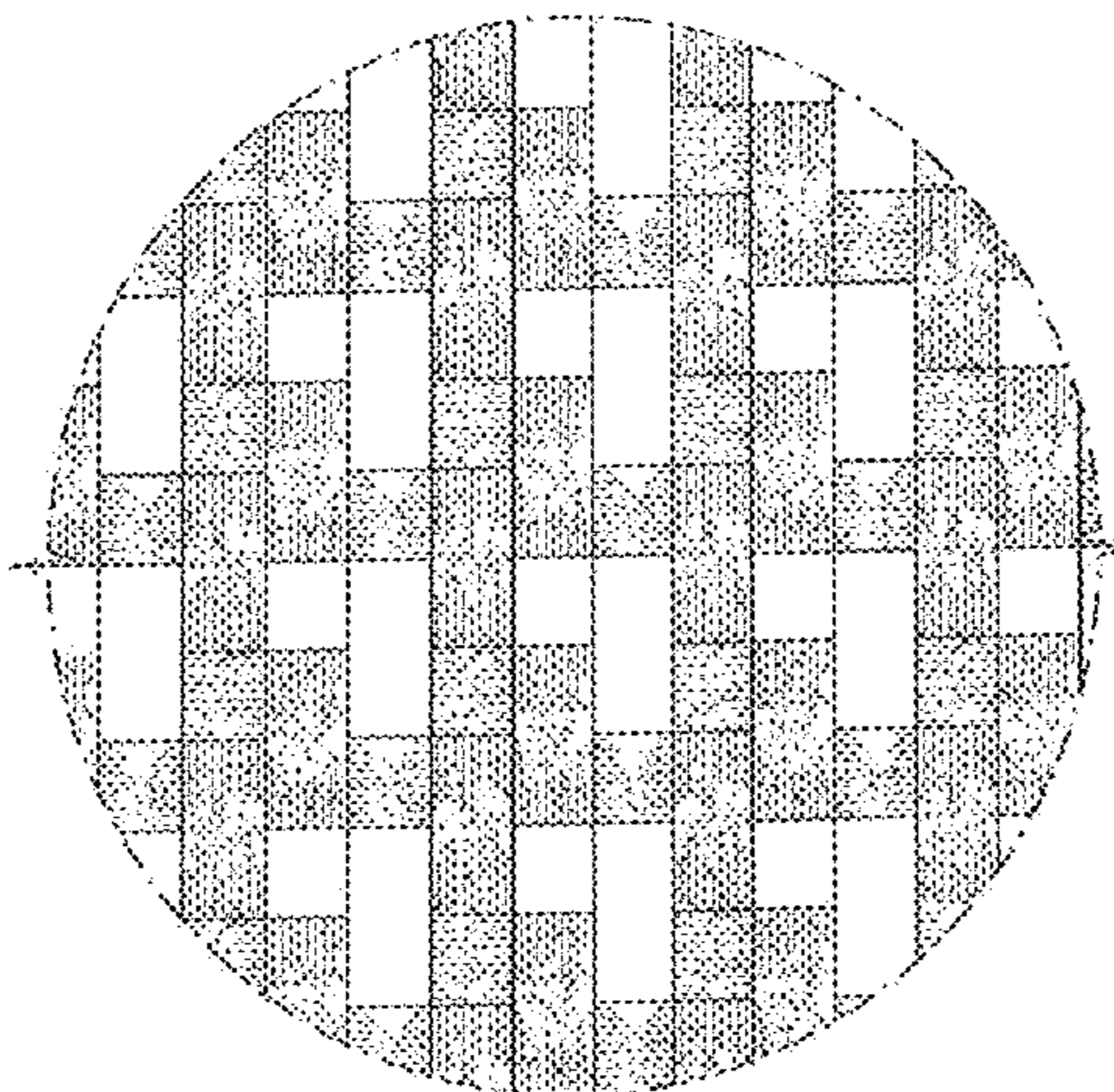
(57) **CLAIM**

The ornamental design for flame resistant fabric, as shown and described.

**DESCRIPTION**

FIG. 1 is a perspective view of a first embodiment of a flame resistant fabric according to the present design. FIG. 2 is a top perspective view thereof; and, FIG. 3 is a top perspective view of a second embodiment of a flame resistant fabric according to the present design. The broken lines in the drawings depict the boundaries of the claim and form no part thereof.

**1 Claim, 3 Drawing Sheets**



(56)

References Cited

U.S. PATENT DOCUMENTS

2,521,055 A \* 9/1950 Foster ..... D03D 15/00  
139/420 R  
2,757,435 A \* 8/1956 Bihaly ..... D03D 15/00  
139/420 R  
3,036,602 A \* 5/1962 Meyer ..... D03D 1/0011  
139/420 R  
3,729,920 A 5/1973 Sayers et al.  
4,304,811 A 12/1981 David et al.  
4,749,378 A 6/1988 Cates et al.  
4,759,770 A 7/1988 Cates et al.  
D320,475 S \* 10/1991 Jeter, Jr. .... D2/714  
5,299,602 A 4/1994 Barbeau et al.  
5,858,888 A 1/1999 Underwood et al.  
5,928,971 A 7/1999 Ellis et al.  
6,065,153 A 5/2000 Underwood et al.  
6,132,476 A 10/2000 Lunsford et al.  
6,192,520 B1 2/2001 Underwood et al.  
6,247,179 B1 6/2001 Underwood et al.  
6,367,513 B1 \* 4/2002 Cain ..... D03D 15/00  
139/383 R  
6,460,321 B1 10/2002 Koshimae et al.  
6,547,835 B1 4/2003 Lunsford et al.  
6,606,749 B2 8/2003 Underwood et al.  
6,624,096 B2 9/2003 Thomas et al.  
6,750,162 B2 6/2004 Underwood et al.  
6,818,024 B2 11/2004 Lunsford et al.  
6,867,154 B1 3/2005 Lunsford et al.  
6,886,184 B2 5/2005 Underwood et al.  
6,974,785 B1 12/2005 Barbeau et al.  
7,132,376 B2 \* 11/2006 Rashed ..... B32B 5/26  
139/383 R  
7,393,800 B2 7/2008 Corner  
7,581,260 B2 9/2009 Underwood et al.  
7,589,036 B2 9/2009 Corner et al.  
7,811,952 B2 10/2010 Truesdale, III et al.  
7,862,865 B2 1/2011 Truesdale, III et al.  
7,992,596 B2 \* 8/2011 Khokar ..... D03D 1/0052  
139/383 R  
8,071,492 B2 12/2011 Hess et al.  
8,209,785 B2 7/2012 Underwood et al.  
D670,435 S \* 11/2012 Blackford ..... D29/101.1  
8,528,120 B2 9/2013 Underwood et al.  
D695,530 S \* 12/2013 Javits, Jr. .... D5/7  
8,819,866 B2 9/2014 Underwood et al.  
8,826,469 B2 \* 9/2014 London ..... A41D 13/0007  
2/455  
D747,076 S \* 1/2016 Reisler ..... D2/839  
D751,274 S \* 3/2016 Moore ..... D2/742  
D767,824 S \* 9/2016 Hilliard ..... D29/100  
2002/0122908 A1 \* 9/2002 Li ..... B32B 27/12  
428/36.2

2002/0164912 A1 \* 11/2002 Fawcett ..... D03D 1/0052  
442/208  
2003/0040240 A1 2/2003 Thomas et al.  
2003/0228812 A1 12/2003 Stanhope et al.  
2004/0092187 A1 5/2004 Favier et al.  
2004/0152378 A1 8/2004 Stanhope et al.  
2005/0158559 A1 7/2005 Martin et al.  
2005/0251900 A1 \* 11/2005 Harlacker ..... A41D 31/0027  
2/457  
2006/0154542 A1 7/2006 Underwood et al.  
2006/0166577 A1 \* 7/2006 Rashed ..... D03D 1/00  
442/1  
2007/0072502 A1 3/2007 Underwood et al.  
2008/0095998 A1 \* 4/2008 Thiriot ..... A62B 17/003  
428/219  
2009/0019614 A1 \* 1/2009 Hagihara ..... A41D 19/01529  
2/16  
2010/0124862 A1 \* 5/2010 Smith ..... D03D 1/0052  
442/181  
2010/0154621 A1 \* 6/2010 Nilakantan ..... D03D 1/0052  
89/36.02  
2011/0049949 A1 3/2011 Basmaji et al.  
2011/0165807 A1 7/2011 Underwood et al.  
2011/0191949 A1 8/2011 Underwood et al.  
2012/0270456 A1 10/2012 Gstettner et al.  
2013/0174334 A1 \* 7/2013 Kuroda ..... A41D 31/0027  
2/455  
2014/0206248 A1 \* 7/2014 Vito ..... B32B 5/022  
442/2  
2015/0233028 A1 \* 8/2015 Tomiyori ..... D03D 11/00  
139/413  
2016/0083877 A1 \* 3/2016 Kalfa Kilickan ..... B32B 5/22  
442/184  
2016/0338433 A1 \* 11/2016 Underwood ..... A41D 27/02  
2016/0375277 A1 \* 12/2016 Underwood ..... A41D 31/0022  
2/458

OTHER PUBLICATIONS

Duralite Fabric Information Including Morning Pride Press Release and Slides, 7 pages (Feb. 1994).  
Safety Components Data Sheet on Armor 5.5, one page (Date Unknown).  
Safety Components Brochure on Armor 7.0, 34 pages (Date Unknown).  
Extended European Search Report for EP Application No. 12167962. 5-2314, dated Dec. 5, 2012.  
Properties of Armos Para-Aramid Fibres in Conditions of Use. Comparison with Other Para-Aramids, K.E. Perepelkin et al., Fibre Chemistry, vol. 33, No. 2, 2001, pp. 105-114.  
Abstract of JP 2009280942 dated Dec. 3, 2009, 2 pages.  
U.S. Appl. No. 14/470,615, Underwood, et al., dated Aug. 27, 2014.

\* cited by examiner



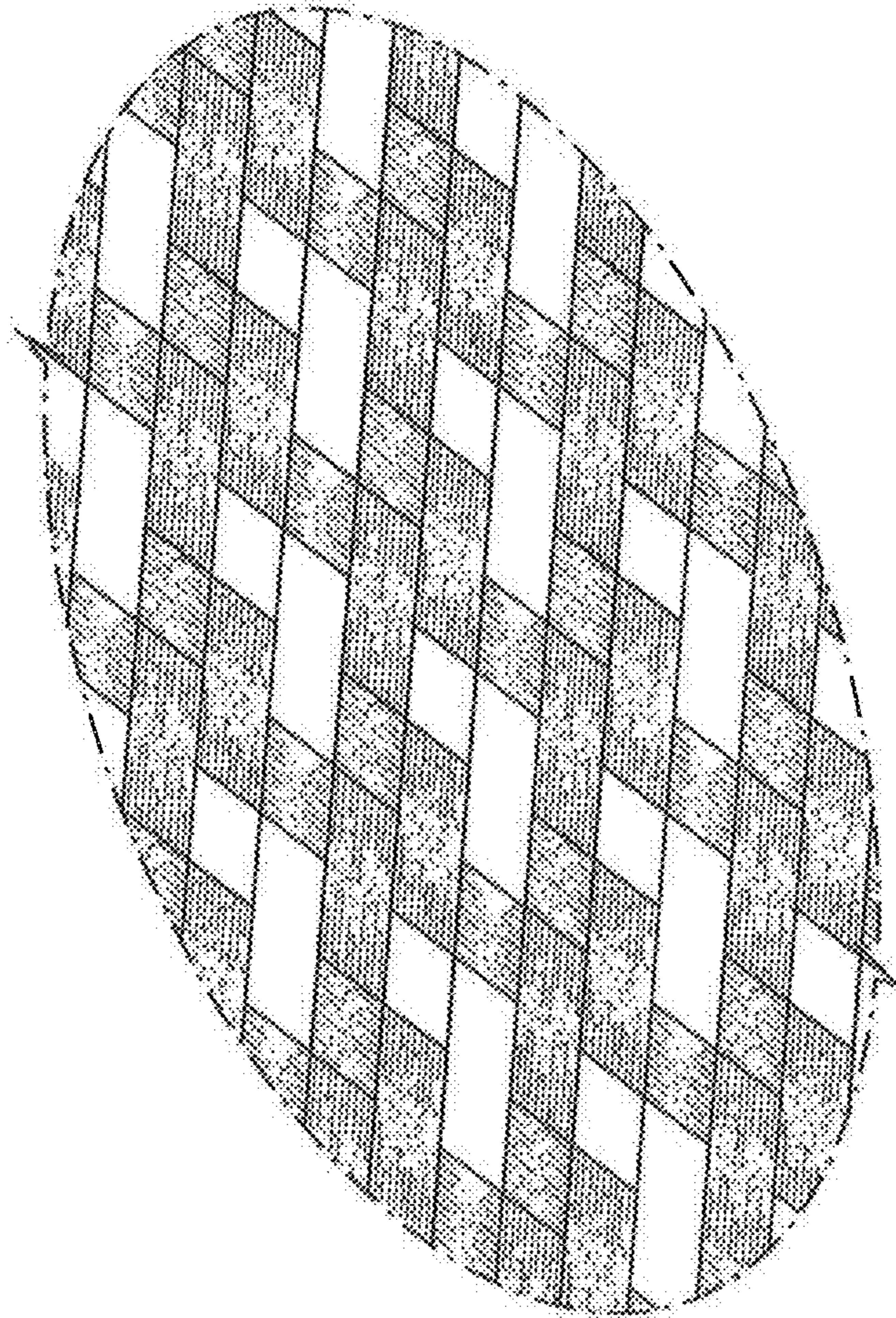


FIG. 1

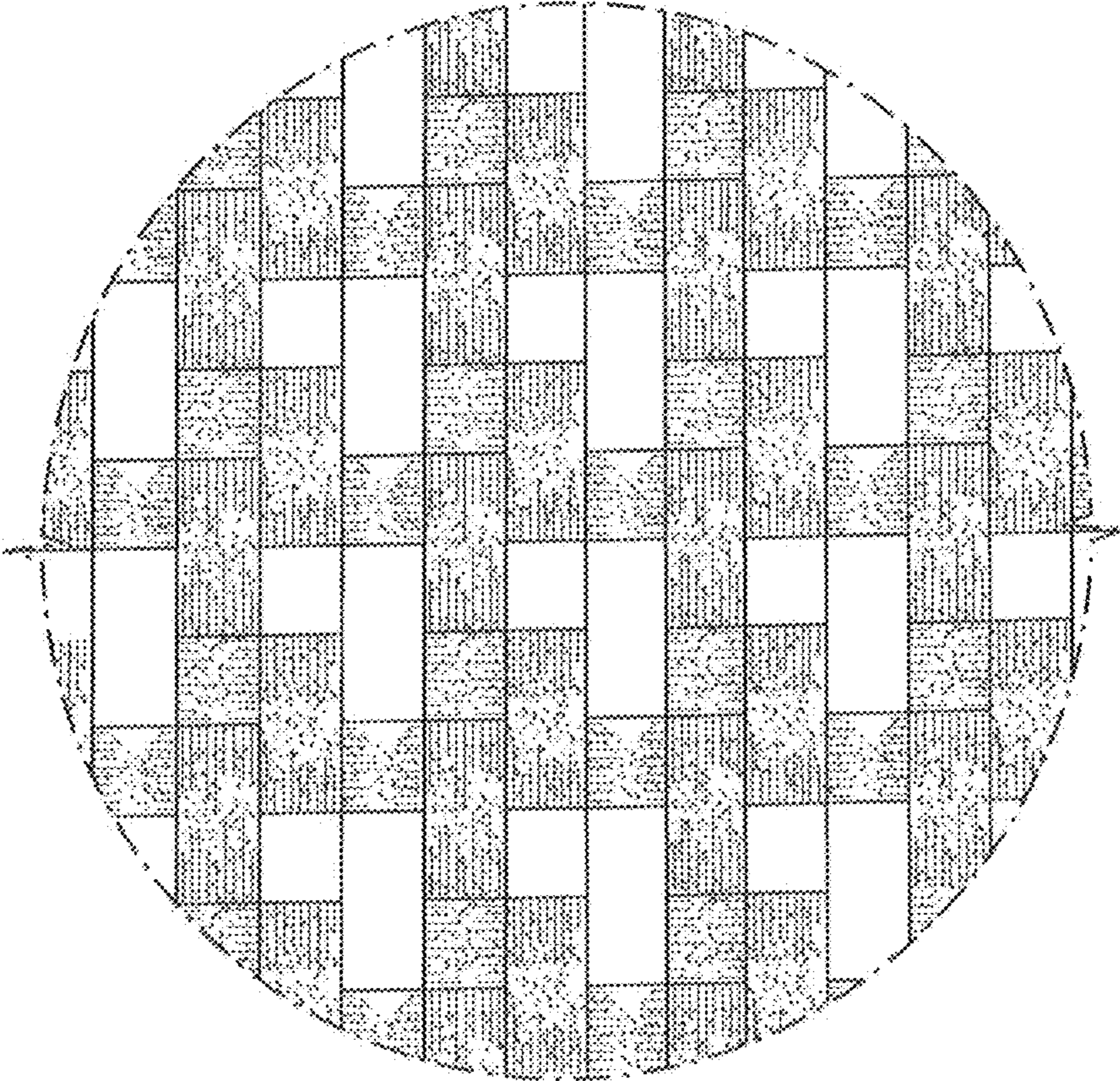


FIG. 2



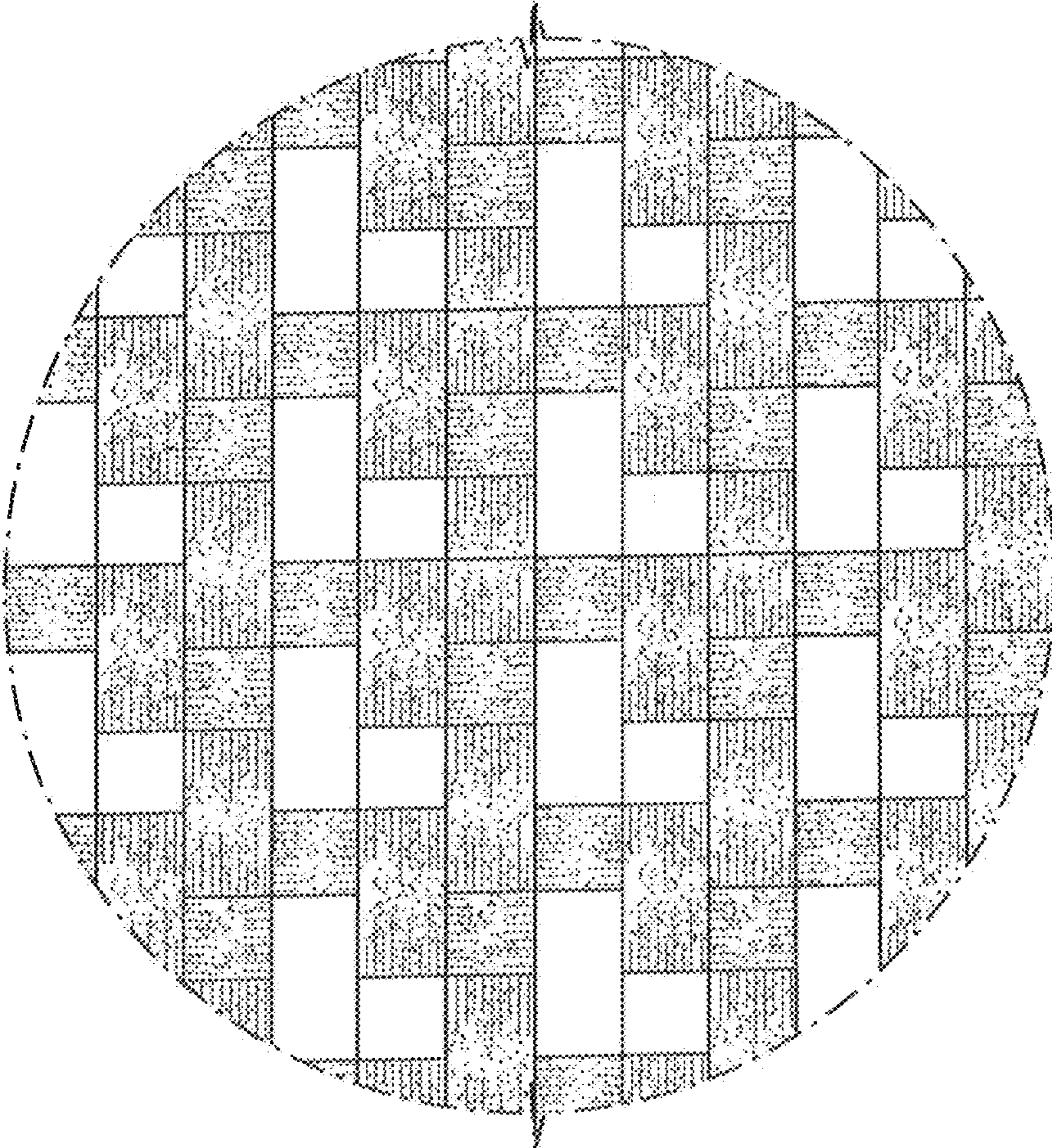


FIG. 3