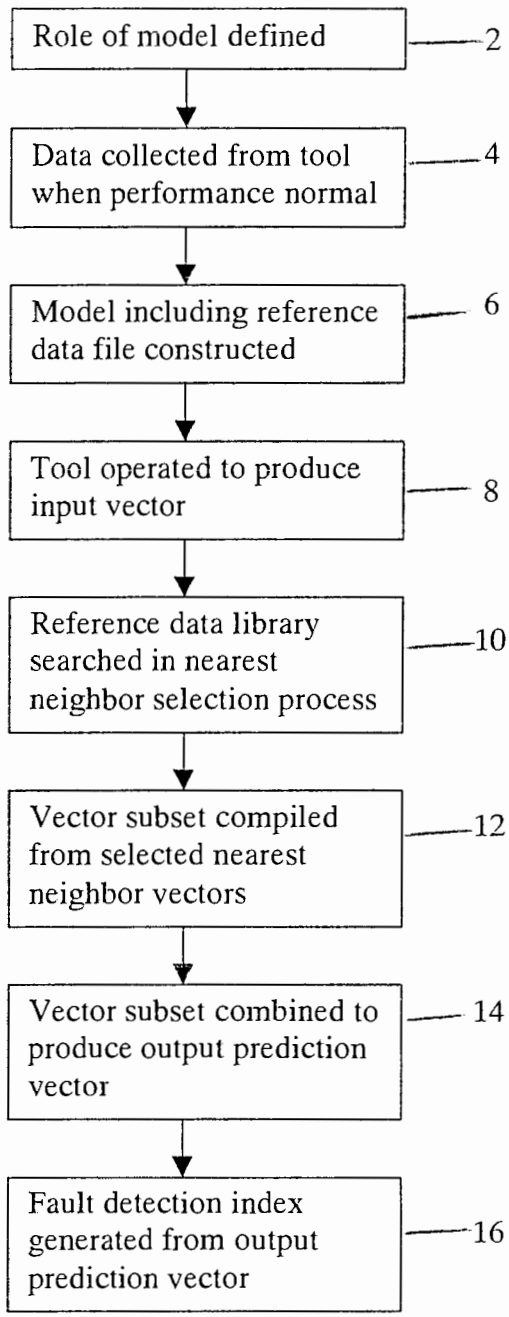

Role of model defined
2
Data collected from tool when performance normal
4
Model including reference data file constructed
6
Tool operated to produce input vector
8
Reference data library searched in nearest neighbor selection process
10
Vector subset compiled from selected nearest neighbor vectors
12
Vector subset combined to produce output prediction vector
14
Fault detection index generated from output prediction vector
16

FIG. 1A

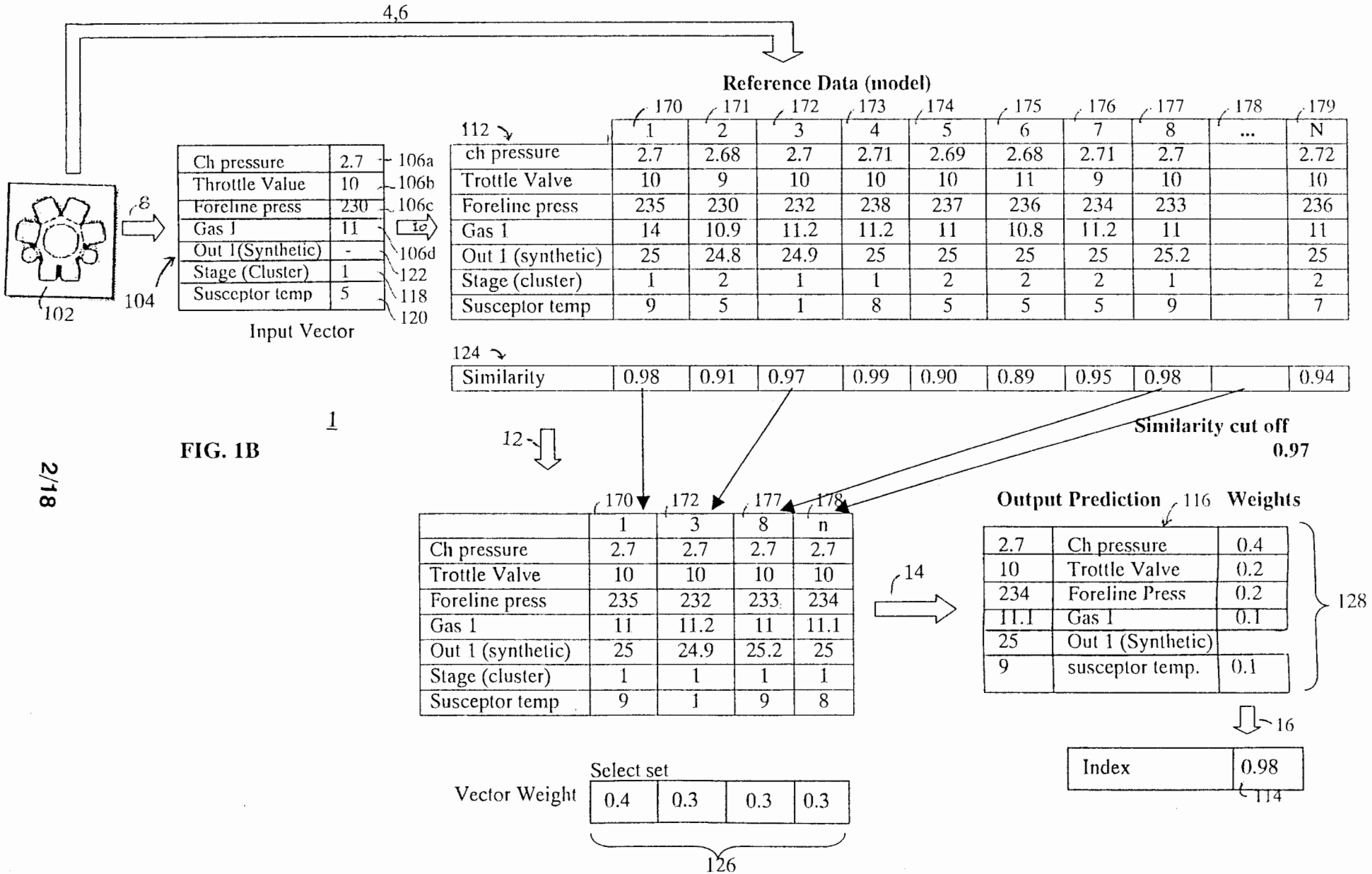


FIG. 1B

12 APR 2005

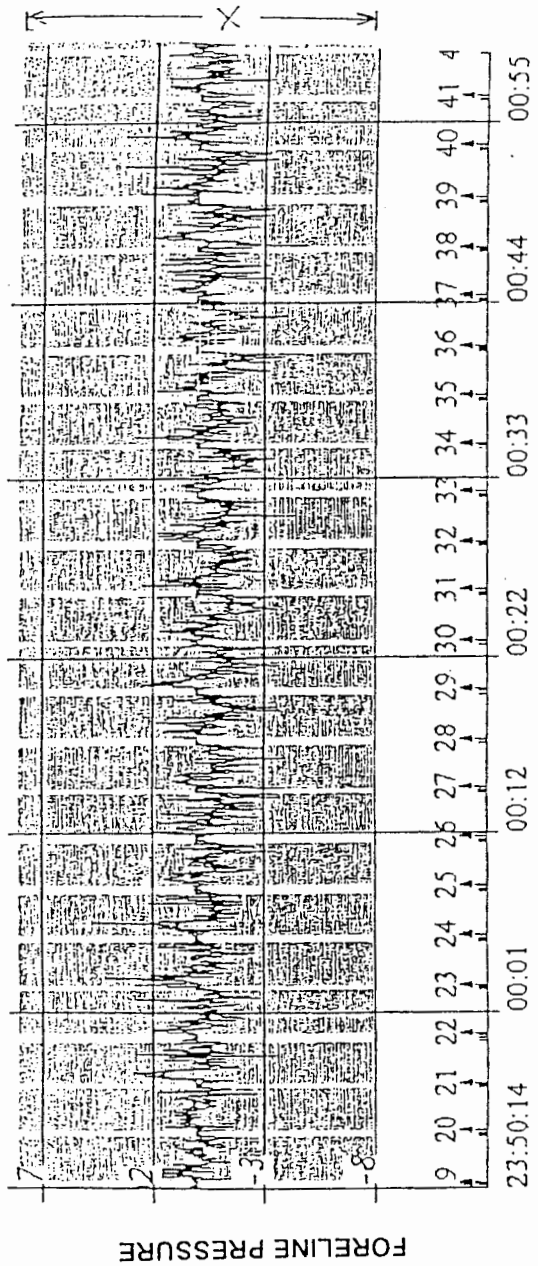

X
7
2
-3
-8
FORELINE PRESSURE
9 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 4
23:50:14 00:01 00:12 00:22 00:33 00:44 00:55
TIME

FIG. 2A

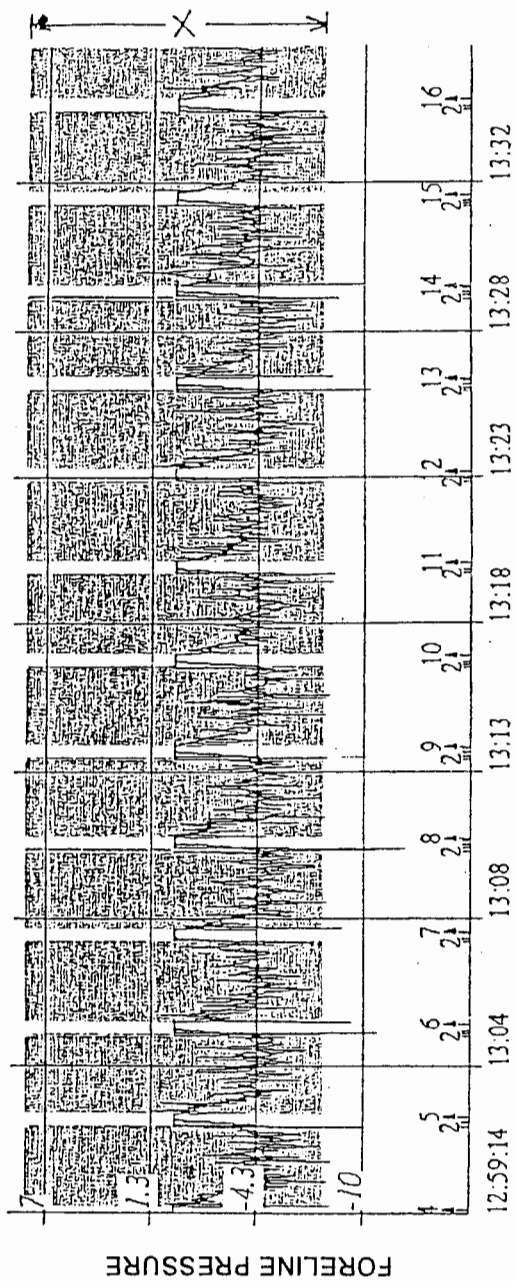

X
Y
7
1.3
-4.3
-10
FORELINE PRESSURE
12:59:14
13:04
13:08
13:13
13:18
13:23
13:28
13:32
TIME

FIG. 2B

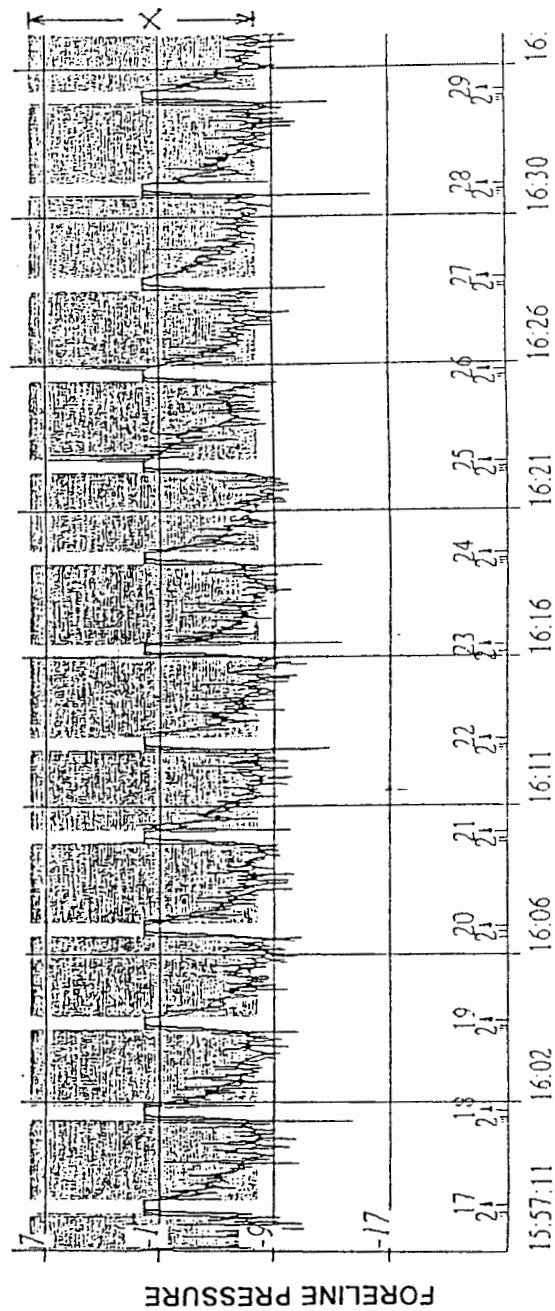

FORELINE PRESSURE
TIME
15:57:11
16:02
16:06
16:11
16:16
16:21
16:26
16:30
16:
17
-1
-9
-17
X
Y

FIG. 2C

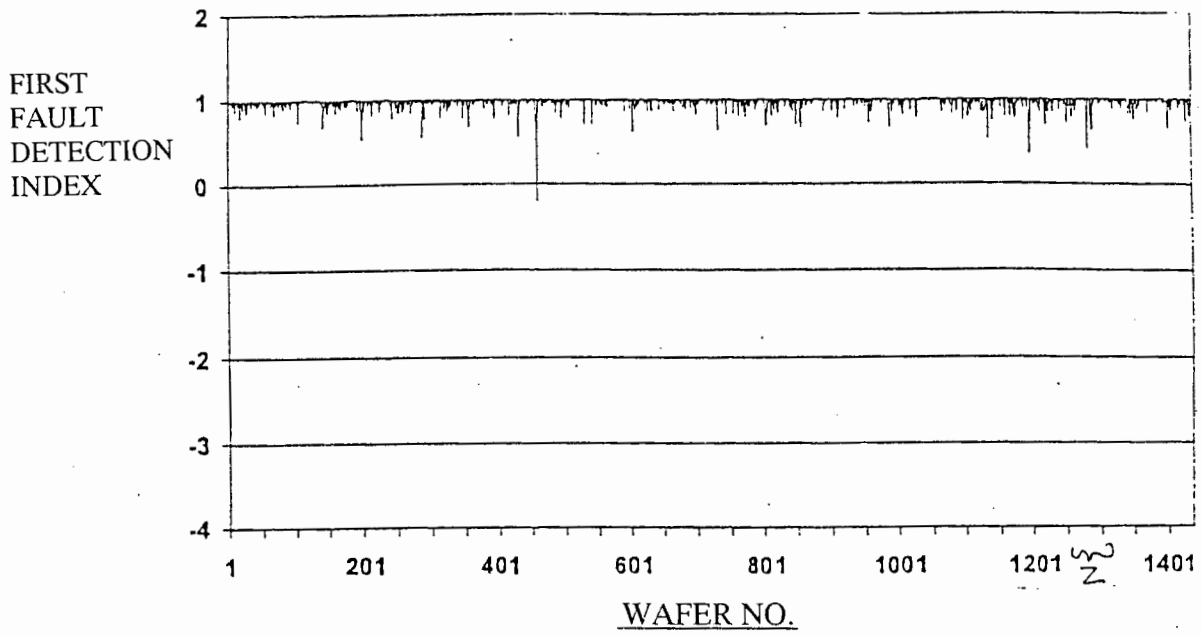

FIRST
FAULT
DETECTION
INDEX
2
1
0
-1
-2
-3
-4
1
201
401
601
801
1001
1201
1401
WAFER NO.

FIG. 3

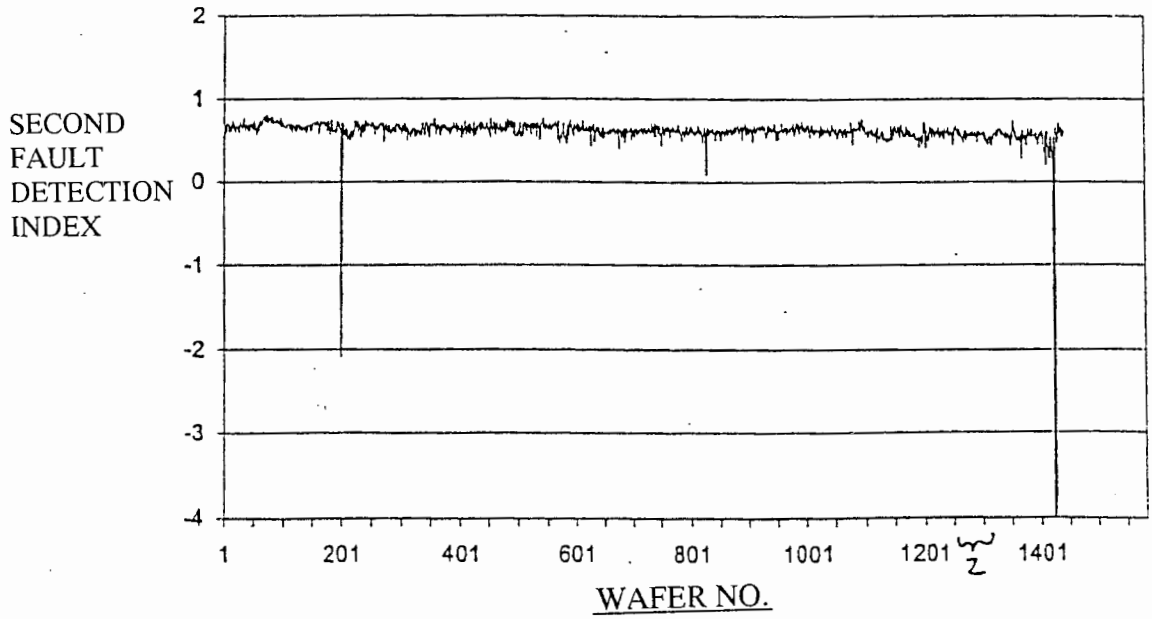

SECOND
FAULT
DETECTION
INDEX
2
1
0
-1
-2
-3
-4
1
201
401
601
801
1001
1201
1401
WAFER NO.

FIG. 4

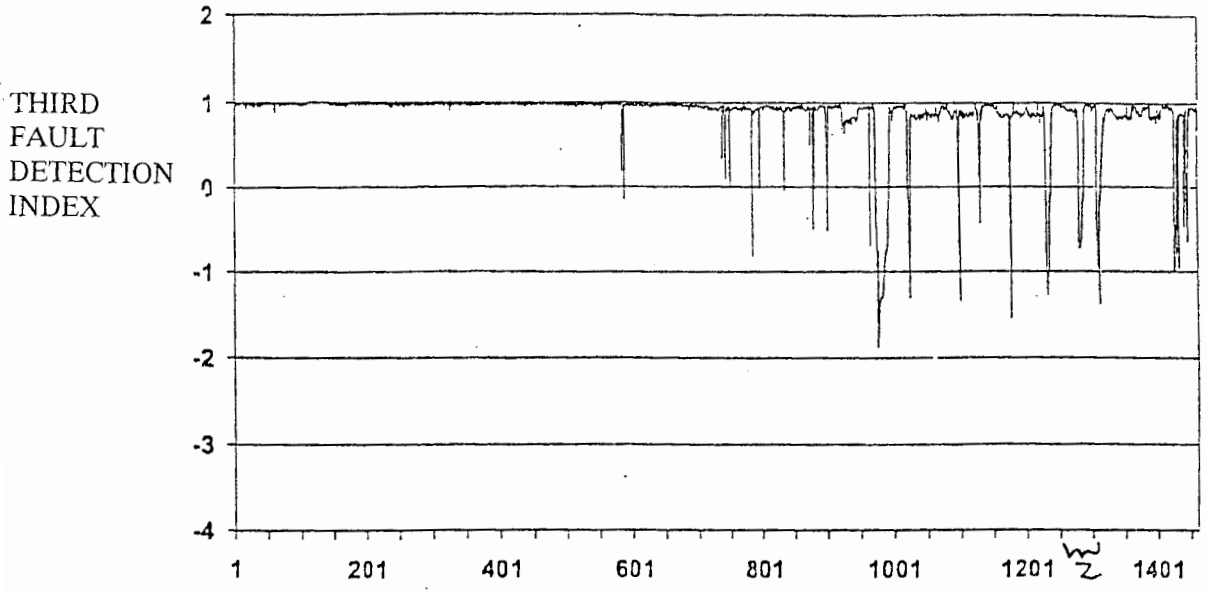

THIRD
FAULT
DETECTION
INDEX
2
1
0
-1
-2
-3
-4
1
201
401
601
801
1001
1201
1401
WAFER NO.

FIG. 5

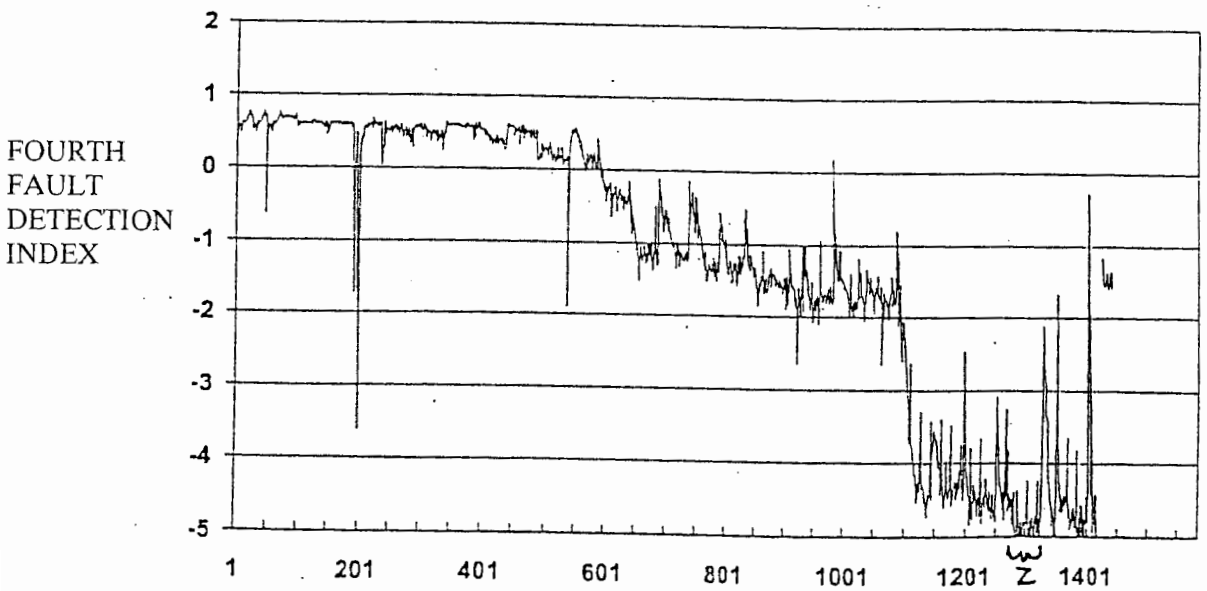

FOURTH
FAULT
DETECTION
INDEX
2
1
0
-1
-2
-3
-4
-5
1
201
401
601
801
1001
1201
1401
WAFER NO.

FIG. 6

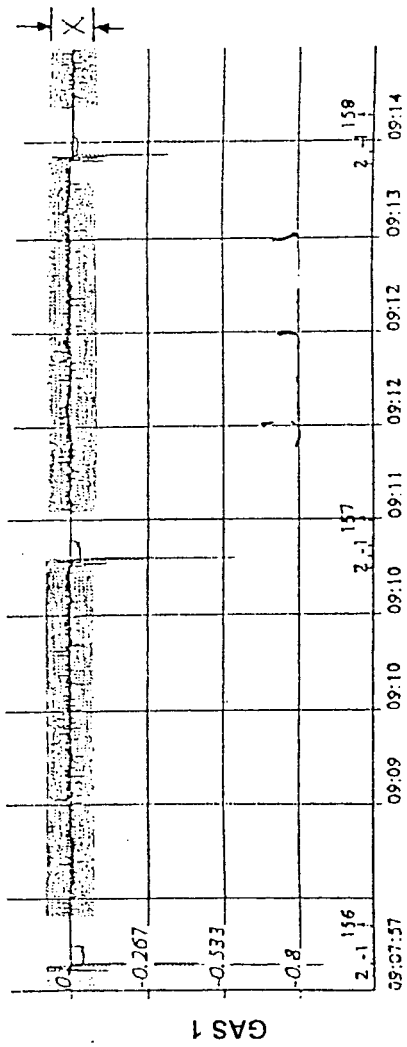

X
-0.267
-0.533
-0.8
156
157
158
09:07:57
09:09
09:10
09:10
09:11
09:12
09:12
09:13
09:14
GAS 1
TIME

FIG. 7A

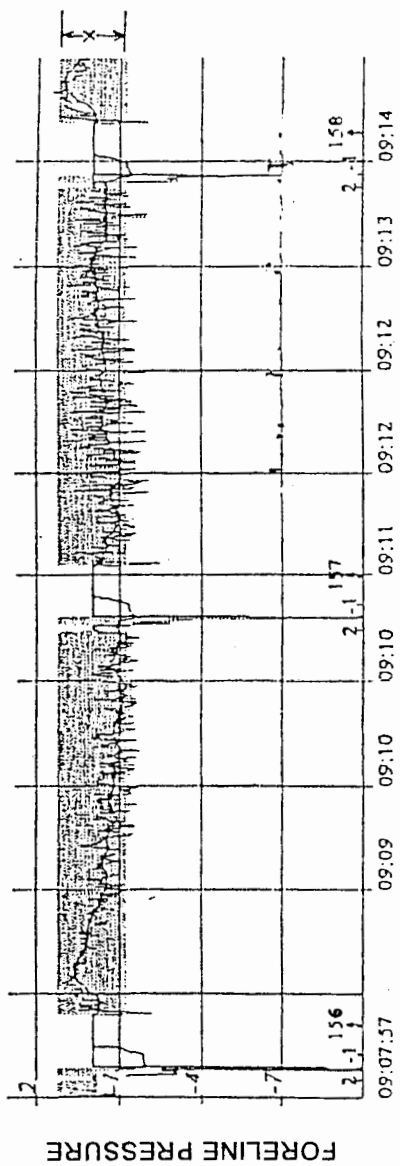

FORELINE PRESSURE
TIME
09:07:57
09:09
09:10
09:11
09:12
09:12
09:13
09:14
156
157
158

FIG. 7B

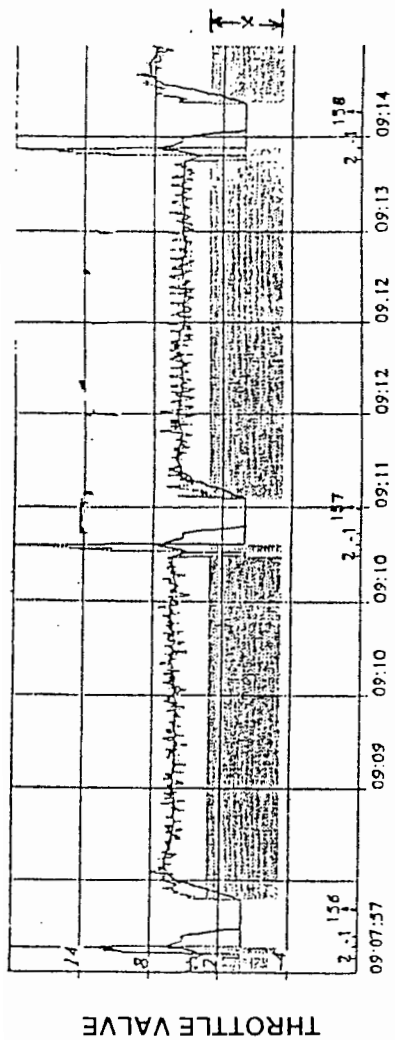

THROTTLE VALVE
TIME
09:07:57
09:09
09:10
09:11
09:12
09:13
09:14
2.1 136
2.1 137
2.1 138

FIG. 7C

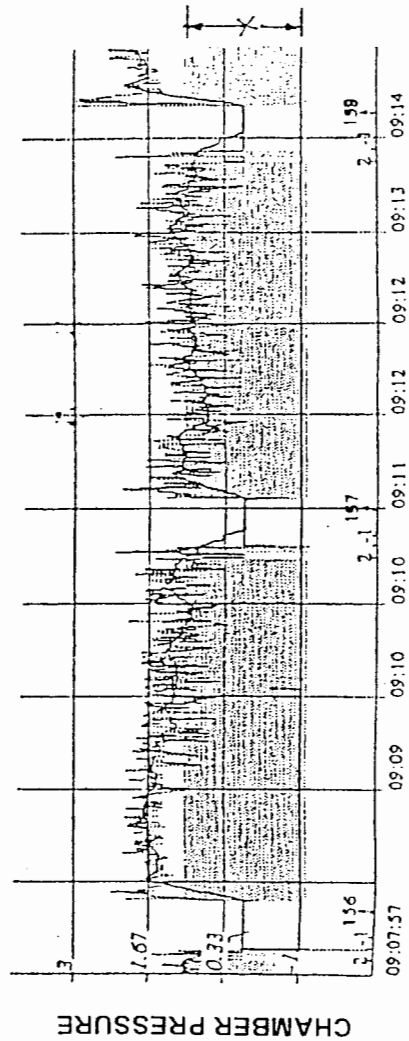

CHAMBER PRESSURE
TIME
09:07:57
09:09
09:10
09:11
09:12
09:13
09:14
1.67
0.33
156
157
159

FIG. 7D

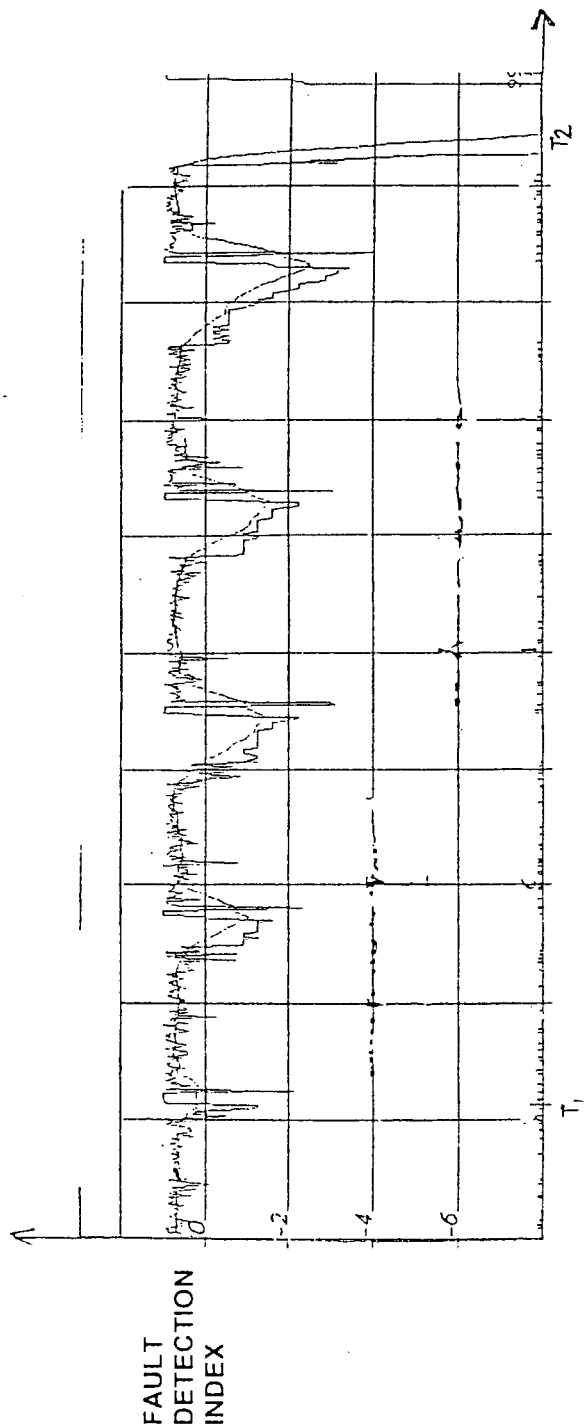


FIG. 8A

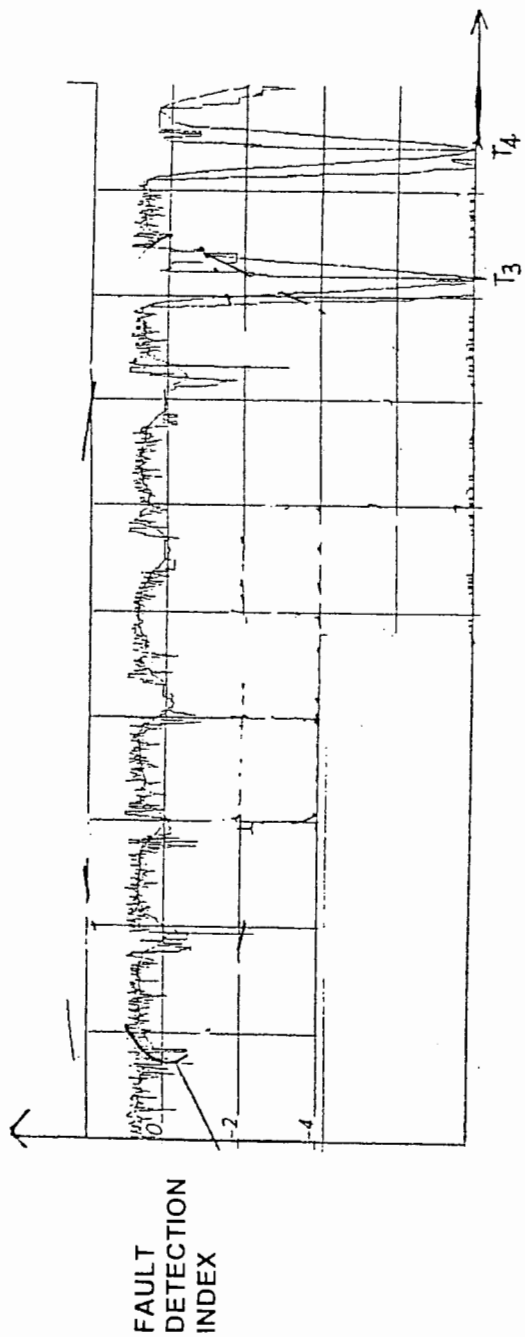


FIG. 8B

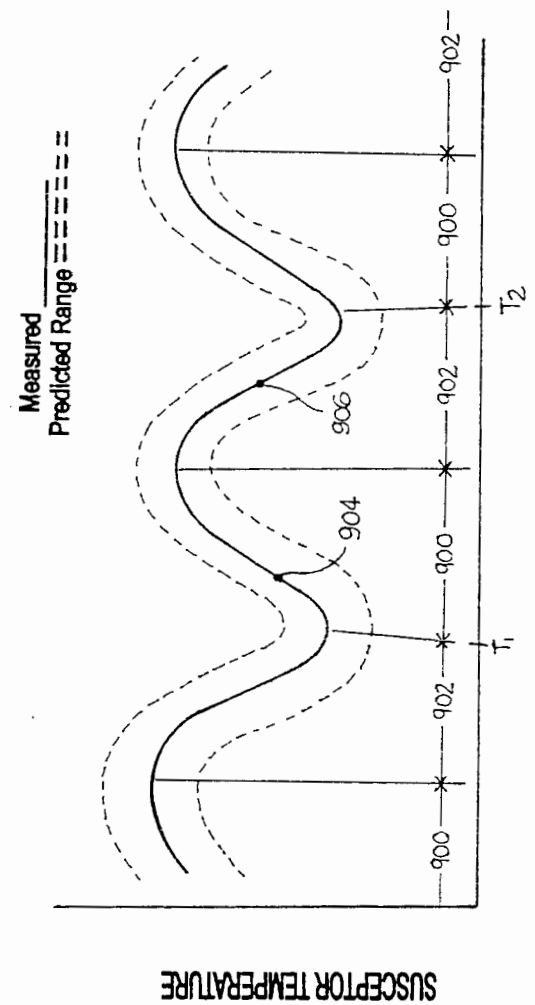

Measured
Predicted Range
SUSCEPTOR TEMPERATURE
TIME
900
902
904
906
T1
T2

FIG. 9A

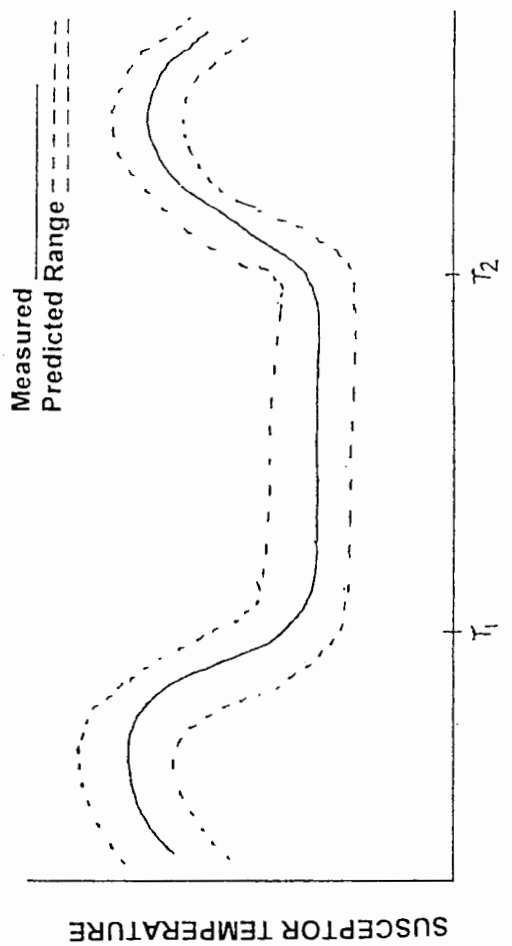

Measured
Predicted Range
SUSCEPTOR TEMPERATURE
TIME
T_1
T_2

FIG. 9B

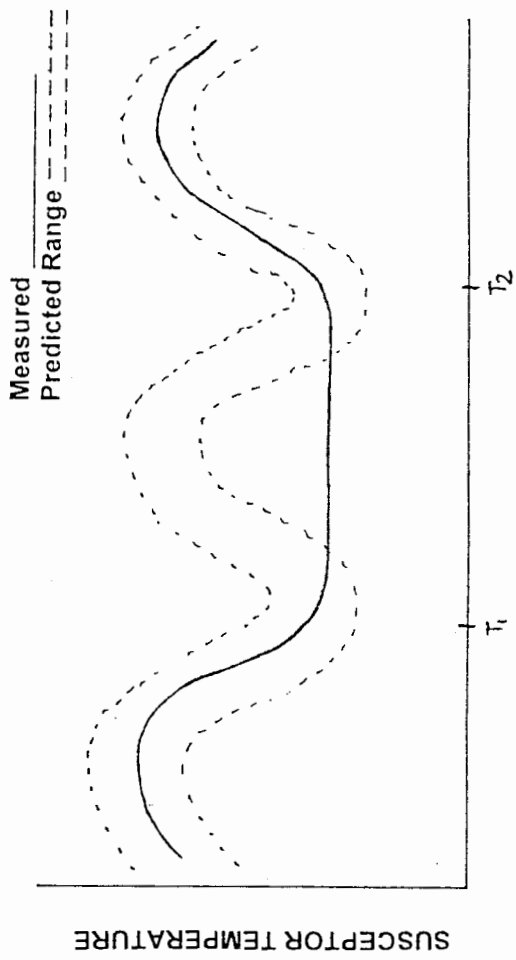

Measured
Predicted Range
SUSCEPTOR TEMPERATURE
TIME
T1
T2

FIG. 9C

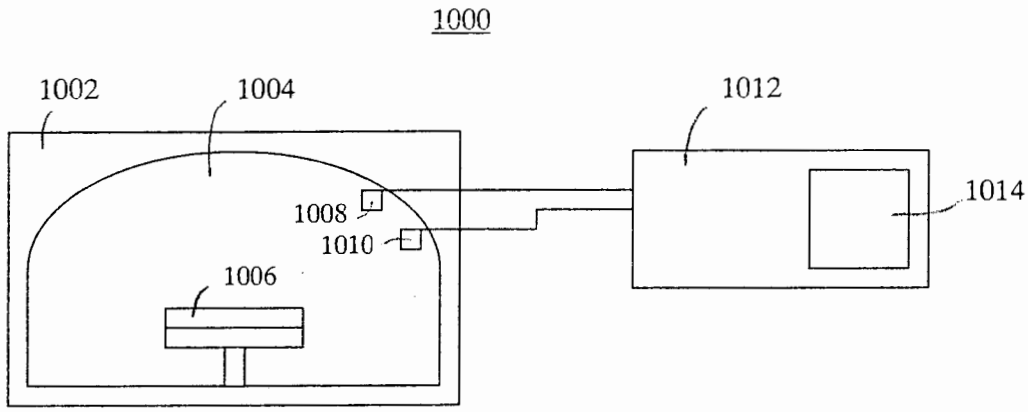


FIG. 10

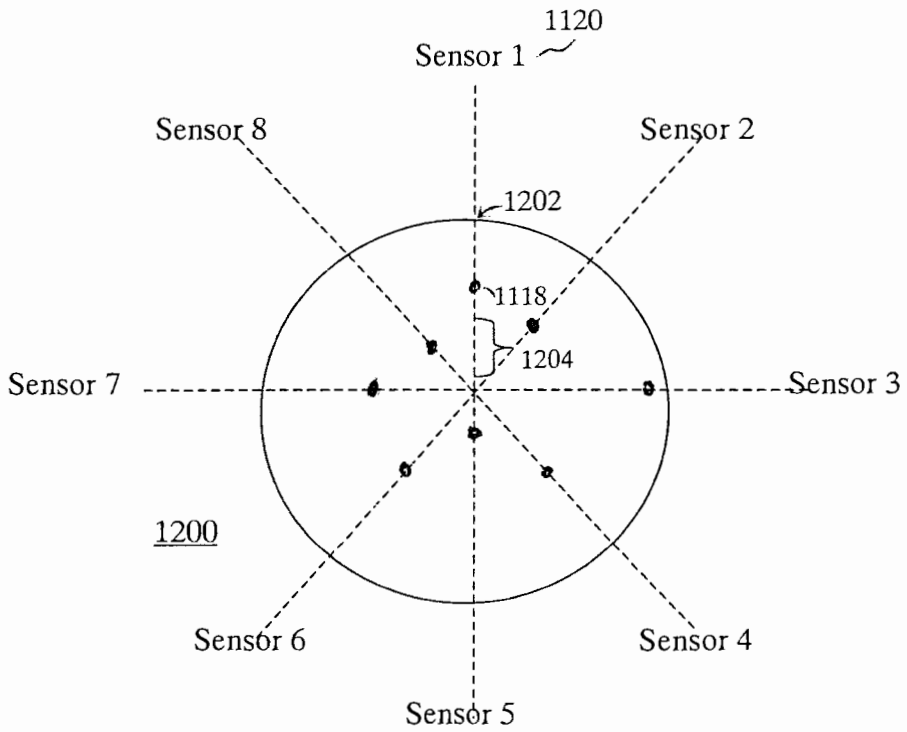


FIG. 12
(Prior Art)

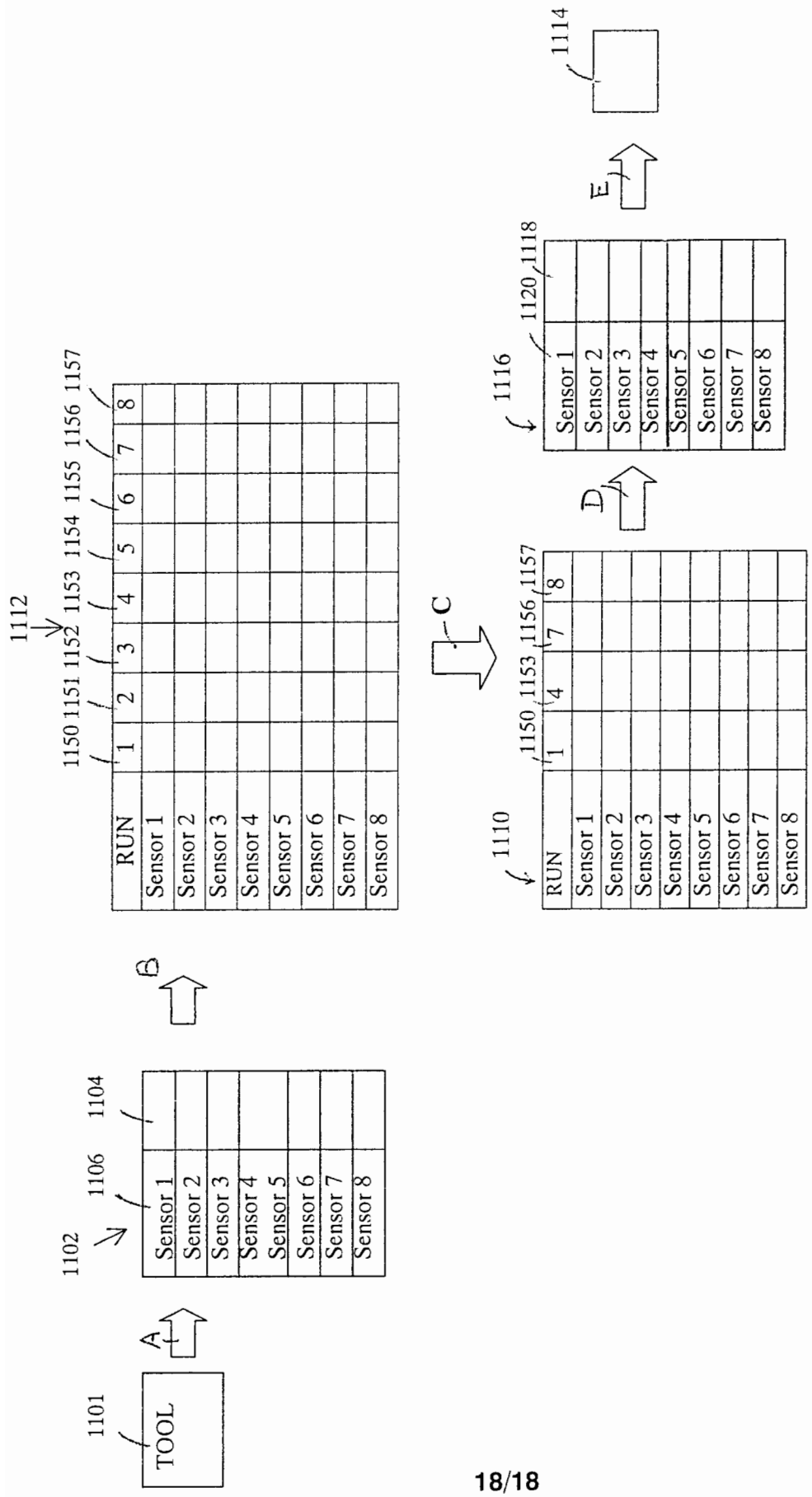


FIG. 11
(Prior Art)