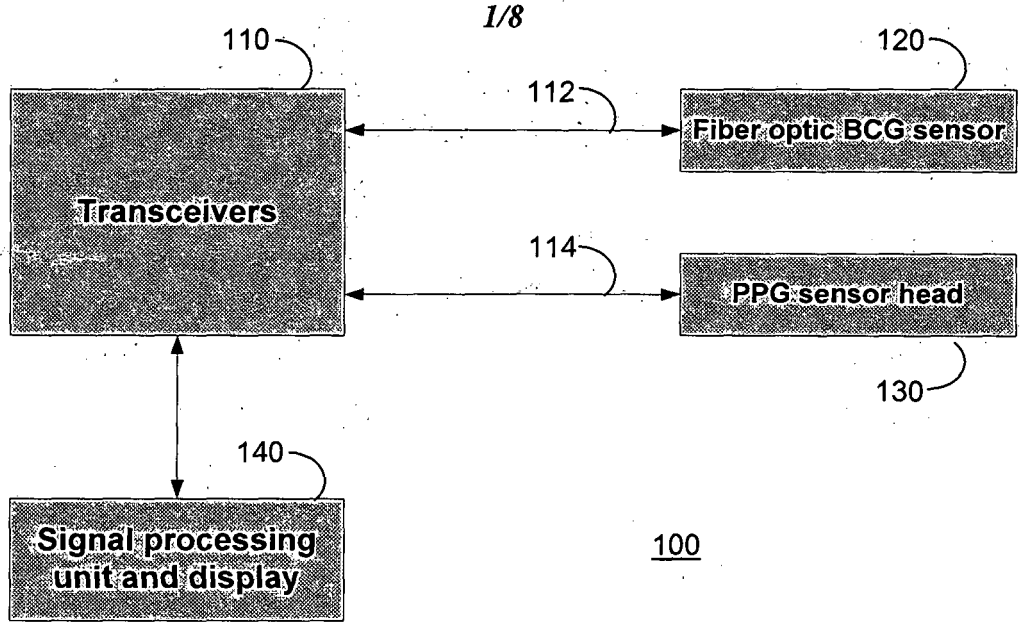

110
120
112
Fiber optic BCG sensor
Transceivers
114
PPG sensor head
130
140
Signal processing unit and display
100

FIG. 1

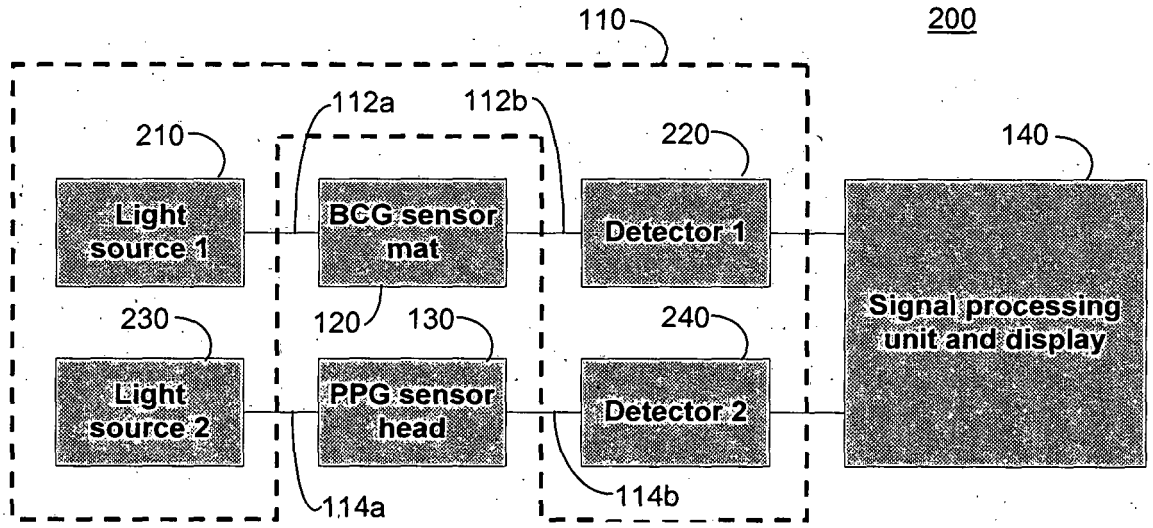

110
200
112a
112b
210
220
140
Light source 1
BCG sensor mat
Detector 1
230
120
130
240
Signal processing unit and display
Light source 2
PPG sensor head
Detector 2
114a
114b

FIG. 2

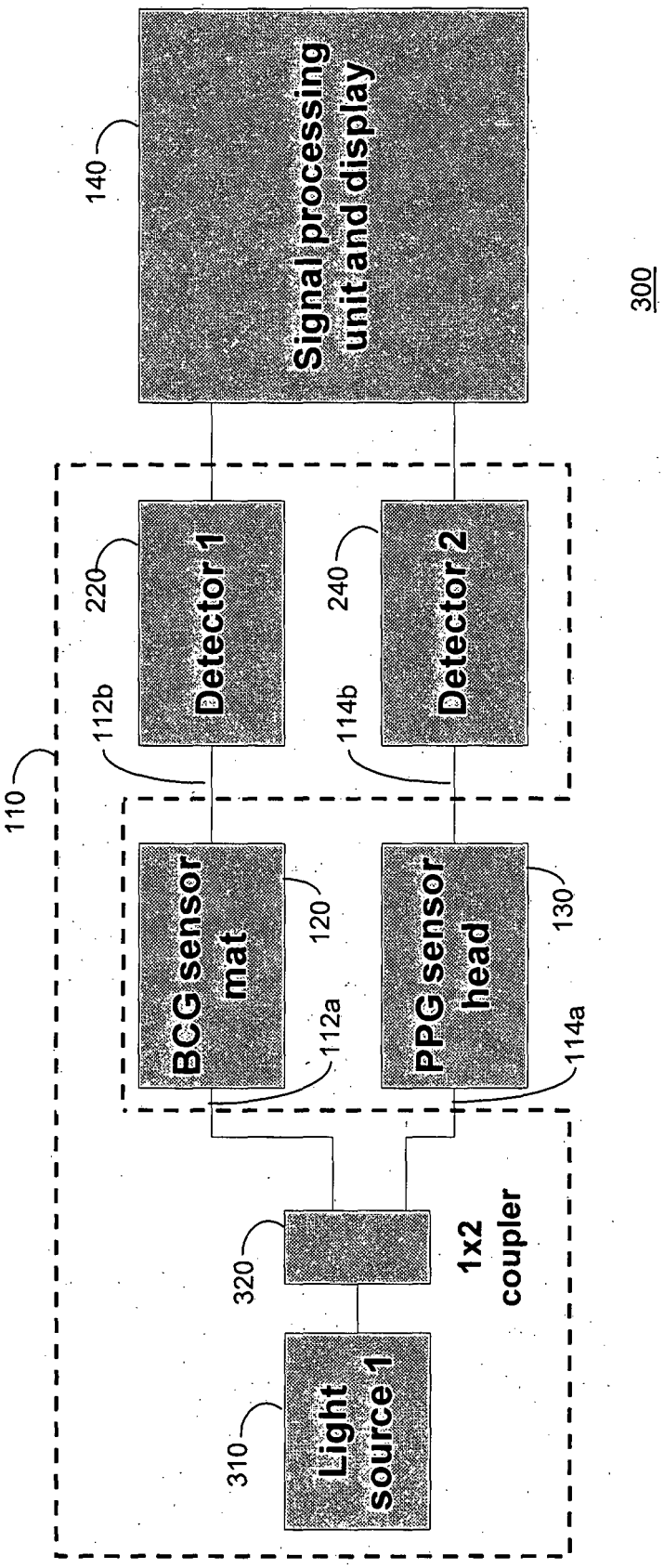

300
140
Signal processing unit and display
110
220
Detector 1
240
Detector 2
112b
114b
BCG sensor mat
120
PPG sensor head
130
112a
114a
320
1x2 coupler
310
Light source 1

FIG. 3

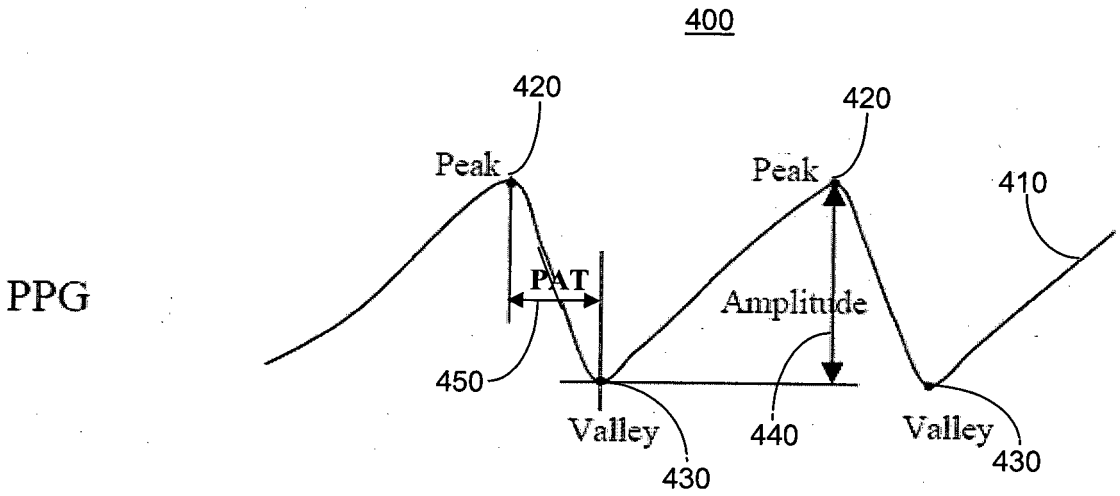

400
PPG
420
Peak
420
Peak
410
PAT
Amplitude
450
Valley
430
440
Valley
430

FIG. 4

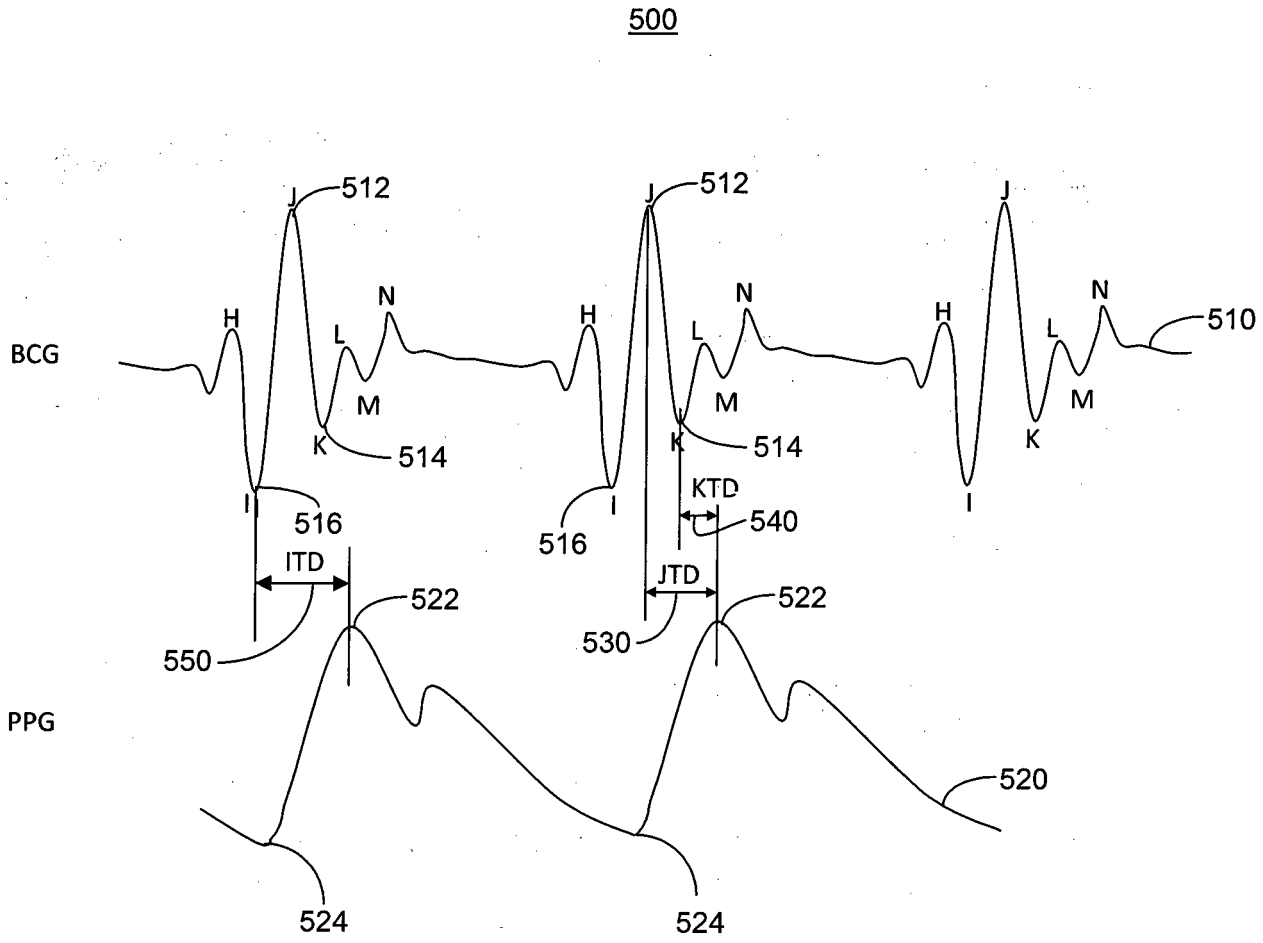

500
BCG
PPG
H
I
J
K
L
M
N
512
514
516
510
520
522
524
530
540
550
ITD
JTD
KTD

FIG. 5

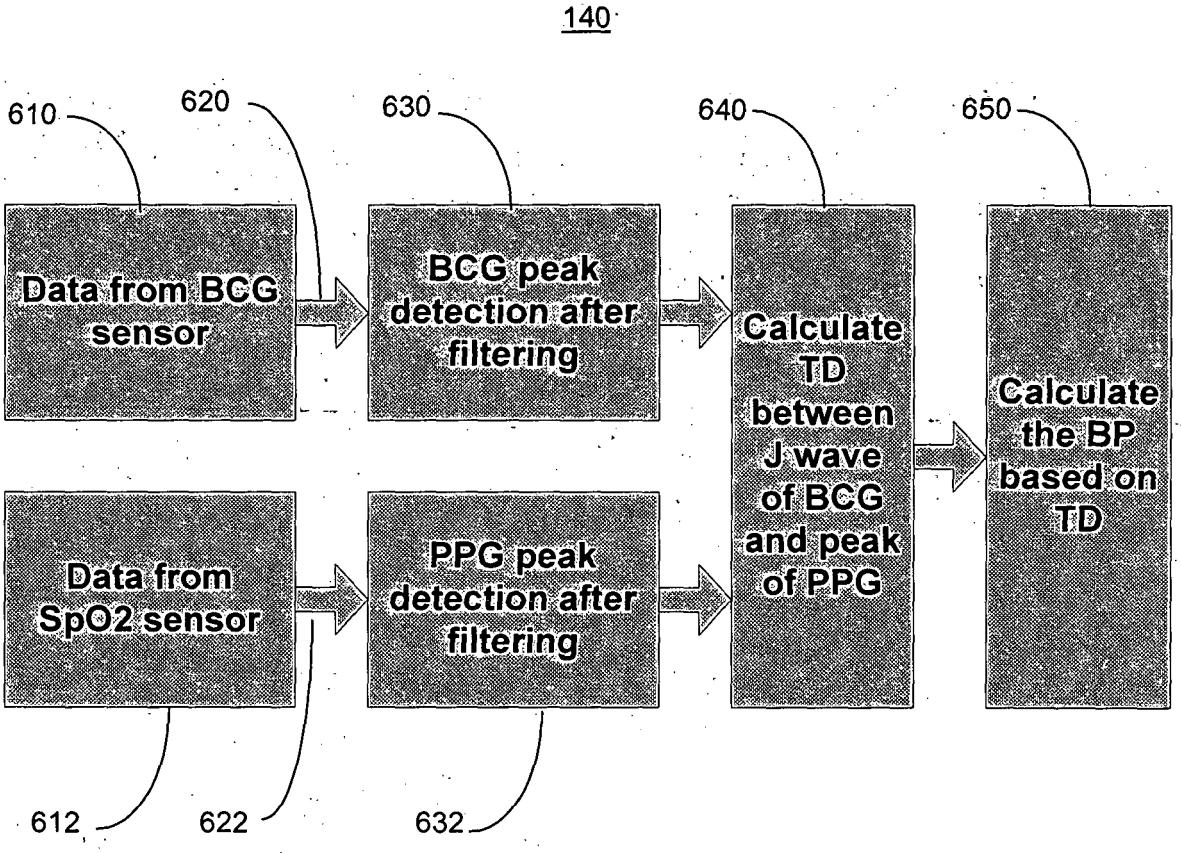

140
610
620
630
640
650
Data from BCG sensor
BCG peak detection after filtering
Calculate TD between J wave of BCG and peak of PPG
Calculate the BP based on TD
Data from SpO2 sensor
PPG peak detection after filtering
612
622
632

FIG. 6

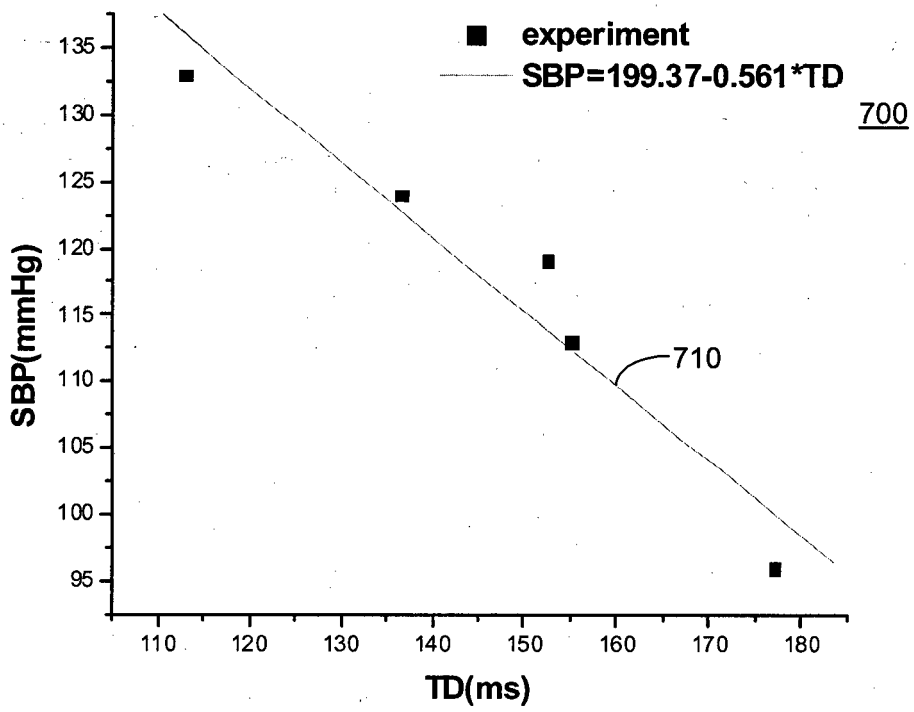

experiment
SBP=199.37-0.561*TD
700
710
SBP(mmHg)
TD(ms)
135
130
125
120
115
110
105
100
95
110
120
130
140
150
160
170
180

FIG. 7A

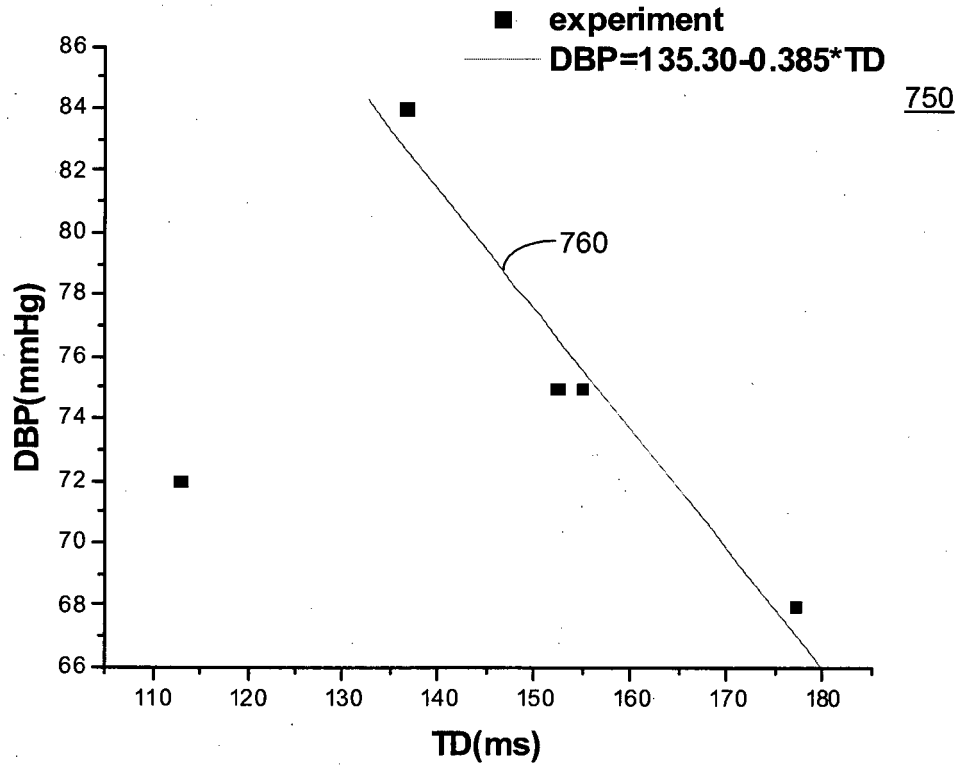

experiment
DBP=135.30-0.385*TD
750
760
DBP(mmHg)
TD(ms)
86
84
82
80
78
76
74
72
70
68
66
110
120
130
140
150
160
170
180

FIG. 7B

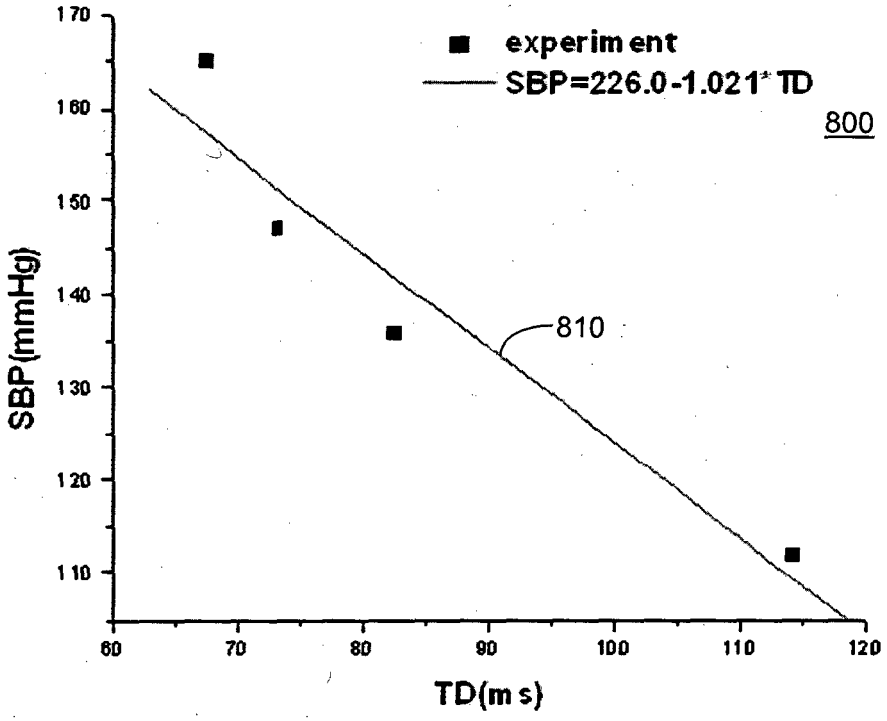

experiment
SBP=226.0-1.021* TD
800
810
SBP(mmHg)
170
160
150
140
130
120
110
60
70
80
90
100
110
120
TD(ms)

FIG. 8A

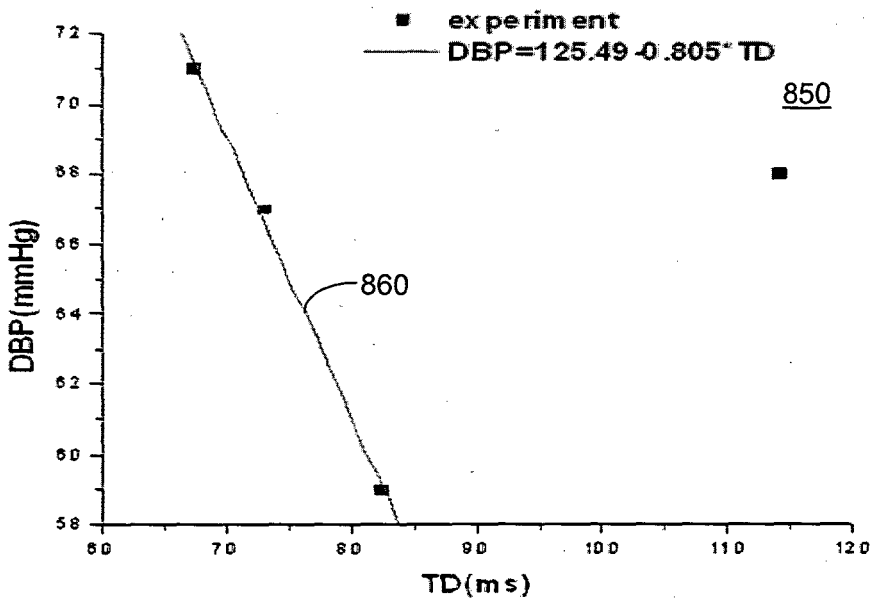

experiment
DBP=125.49-0.805* TD
850
860
DBP(mmHg)
72
70
68
66
64
62
60
58
60
70
80
90
100
110
120
TD(ms)

FIG. 8B

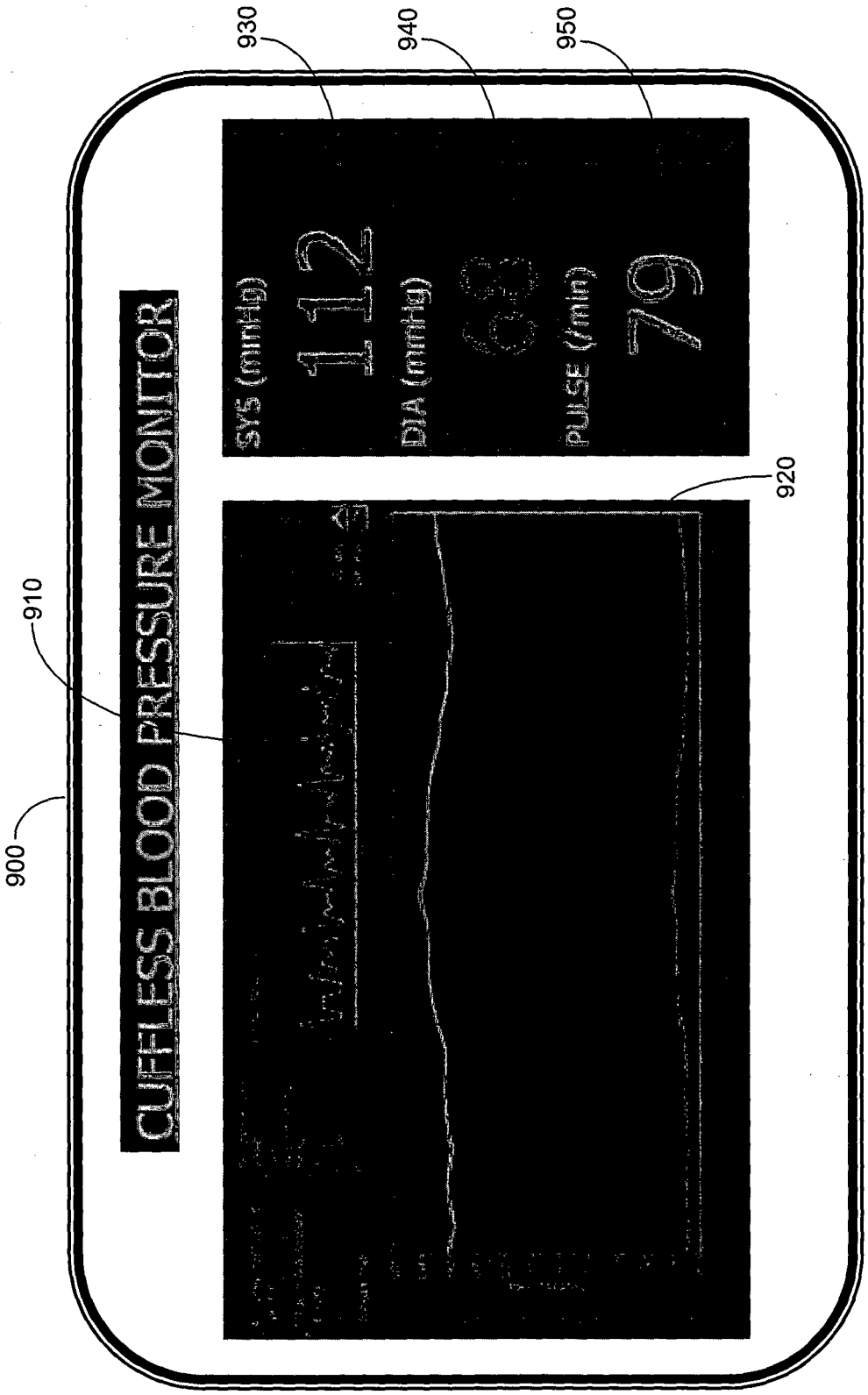

930
940
950
910
900
920
CUFFLESS BLOOD PRESSURE MONITOR
SYS (mmHg)
112
DIA (mmHg)
88
PULSE (/min)
79

FIG. 9