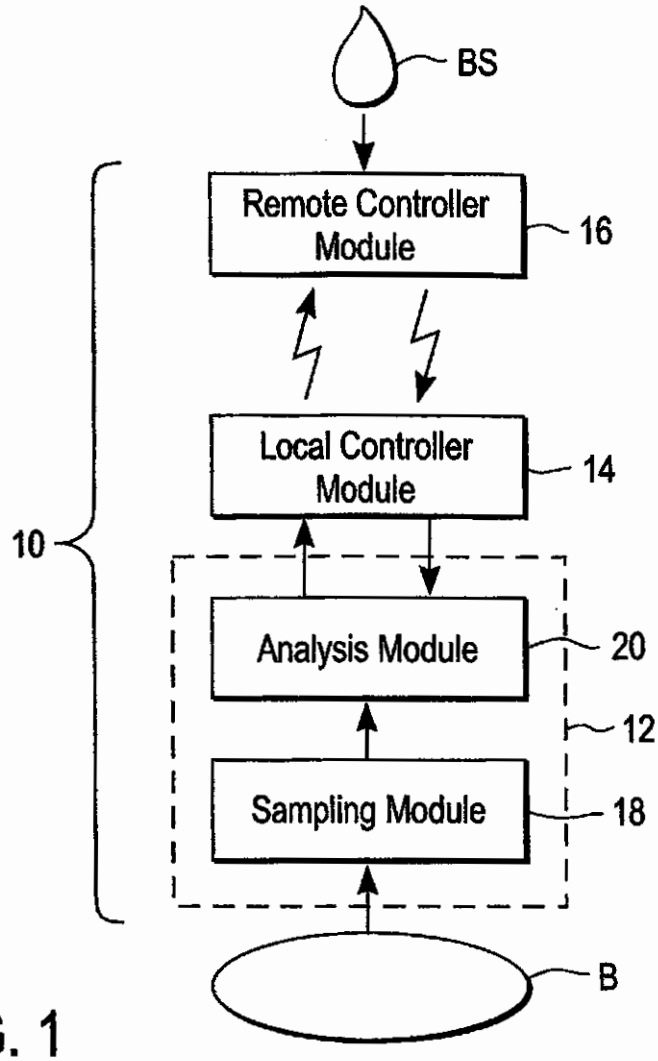

BS
Remote Controller Module
16
Local Controller Module
14
10
Analysis Module
20
12
Sampling Module
18
B

FIG. 1

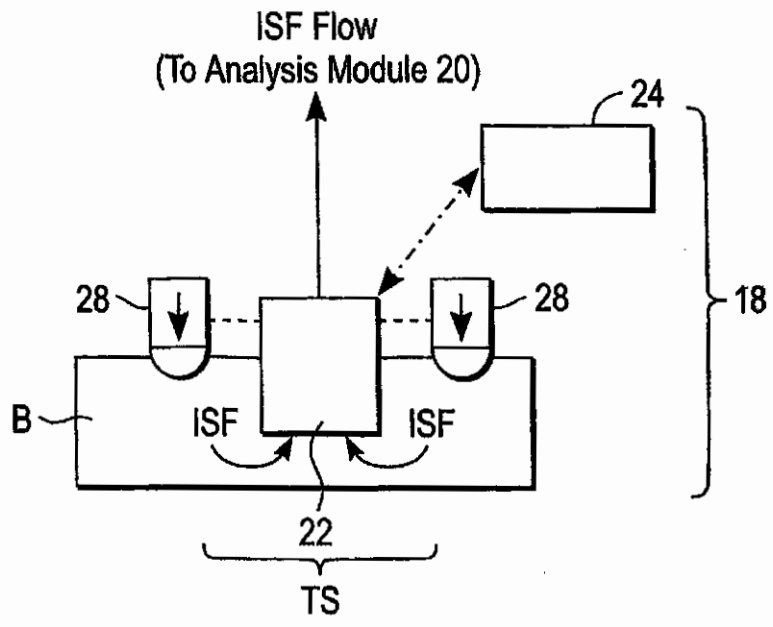

ISF Flow
(To Analysis Module 20)
24
28
28
18
B
ISF
ISF
22
TS

FIG. 2

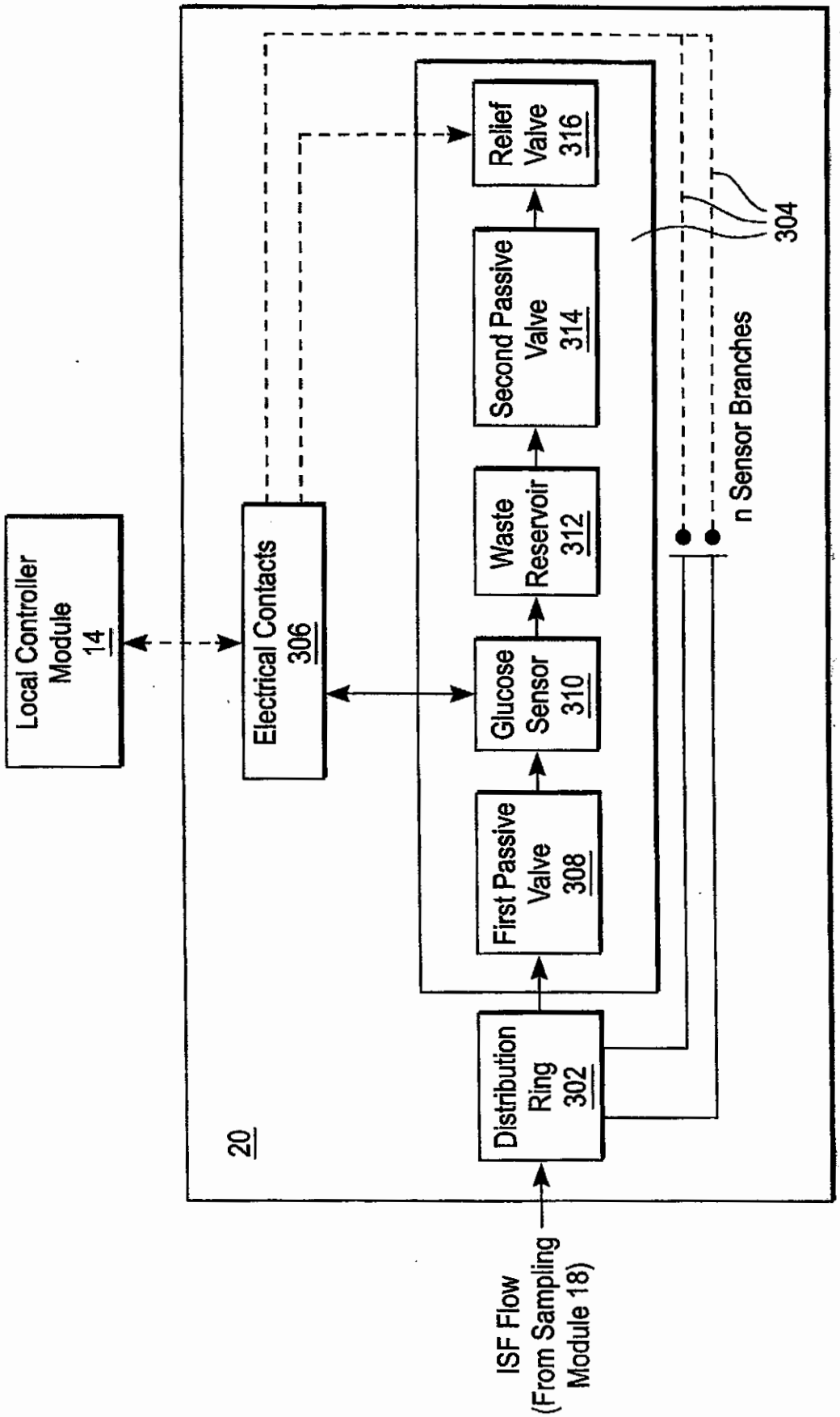

Local Controller Module 14
Electrical Contacts 306
20
Distribution Ring 302
First Passive Valve 308
Glucose Sensor 310
Waste Reservoir 312
Second Passive Valve 314
Relief Valve 316
304
n Sensor Branches
ISF Flow (From Sampling Module 18)

FIG. 3

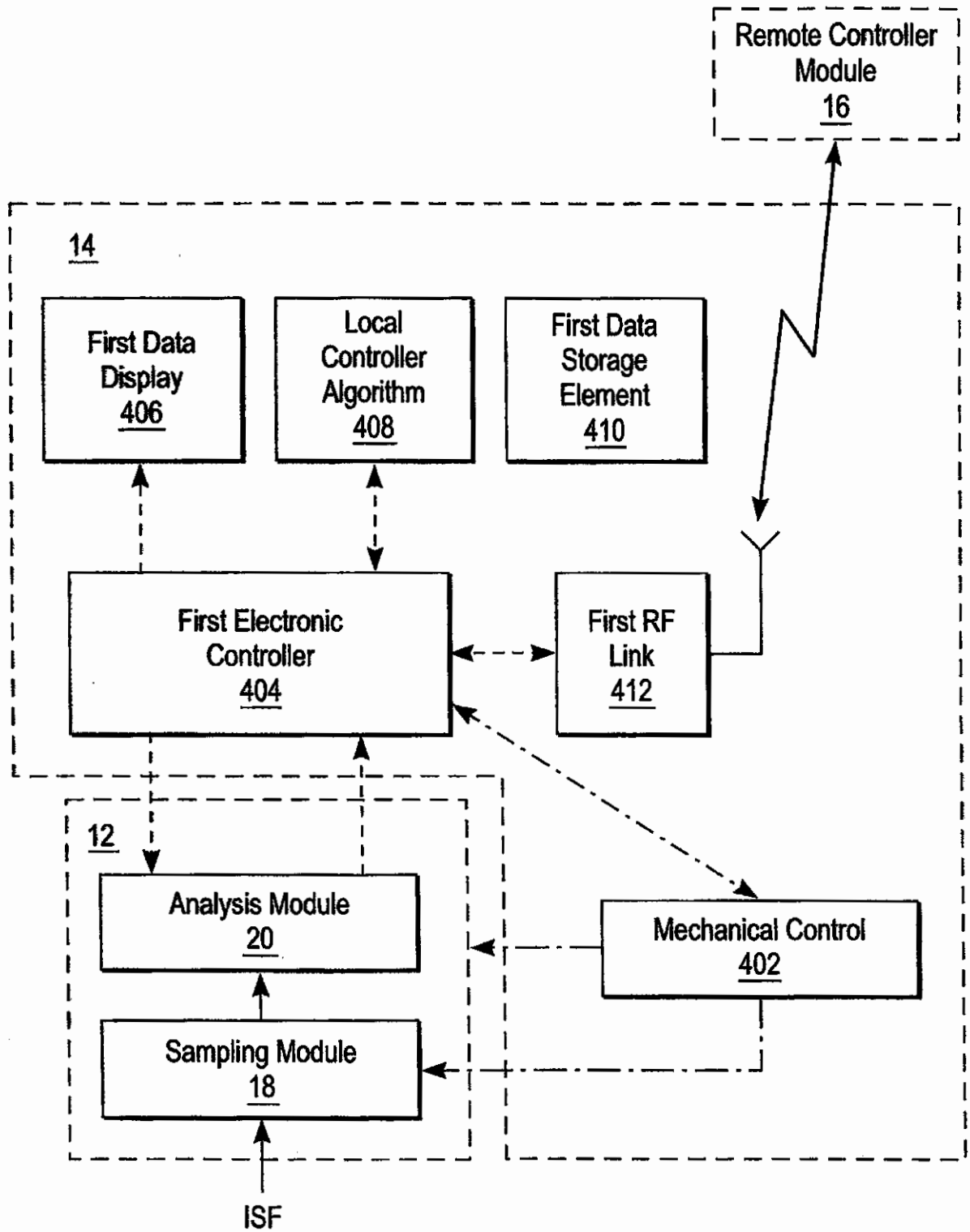

Remote Controller Module 16
14
First Data Display 406
Local Controller Algorithm 408
First Data Storage Element 410
First Electronic Controller 404
First RF Link 412
12
Analysis Module 20
Mechanical Control 402
Sampling Module 18
ISF

FIG. 4

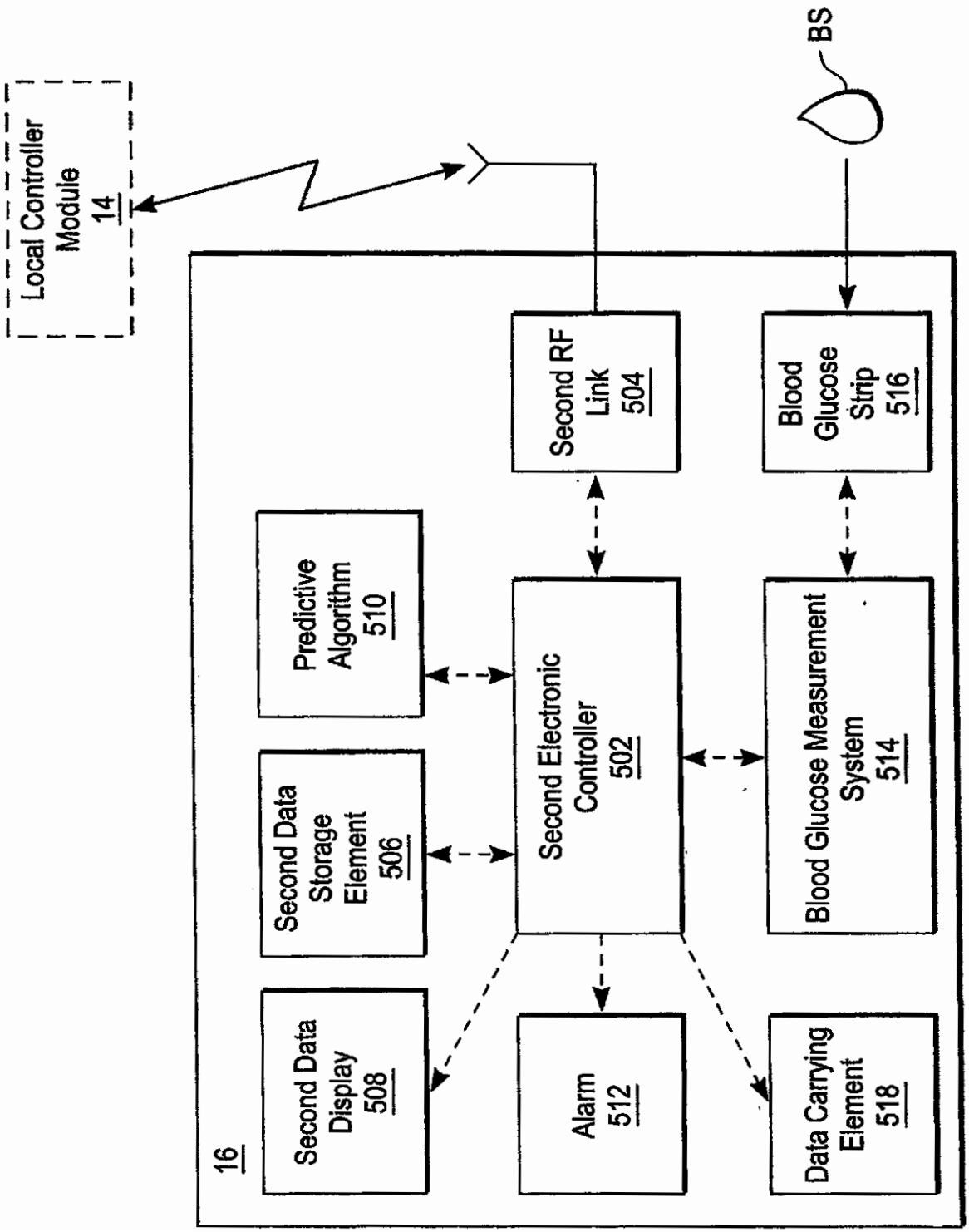

Local Controller Module 14
BS
16
Second RF Link 504
Blood Glucose Strip 516
Predictive Algorithm 510
Second Electronic Controller 502
Blood Glucose Measurement System 514
Second Data Storage Element 506
Second Data Display 508
Alarm 512
Data Carrying Element 518

FIG. 5

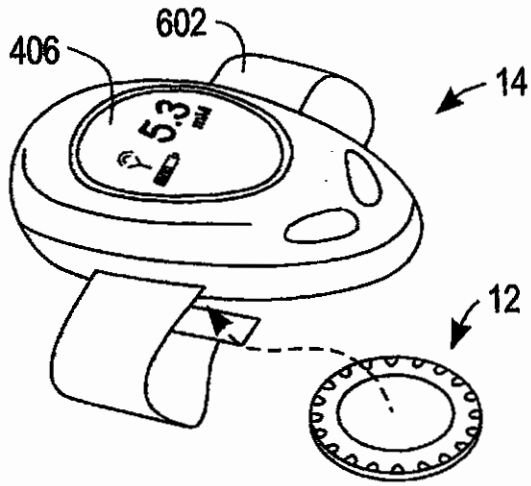


FIG. 6

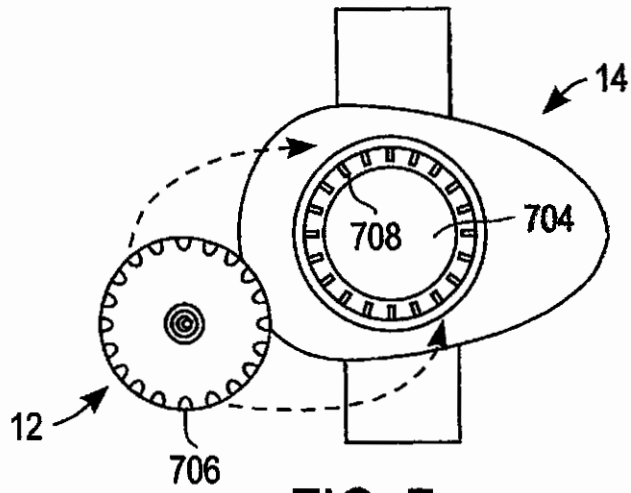


FIG. 7

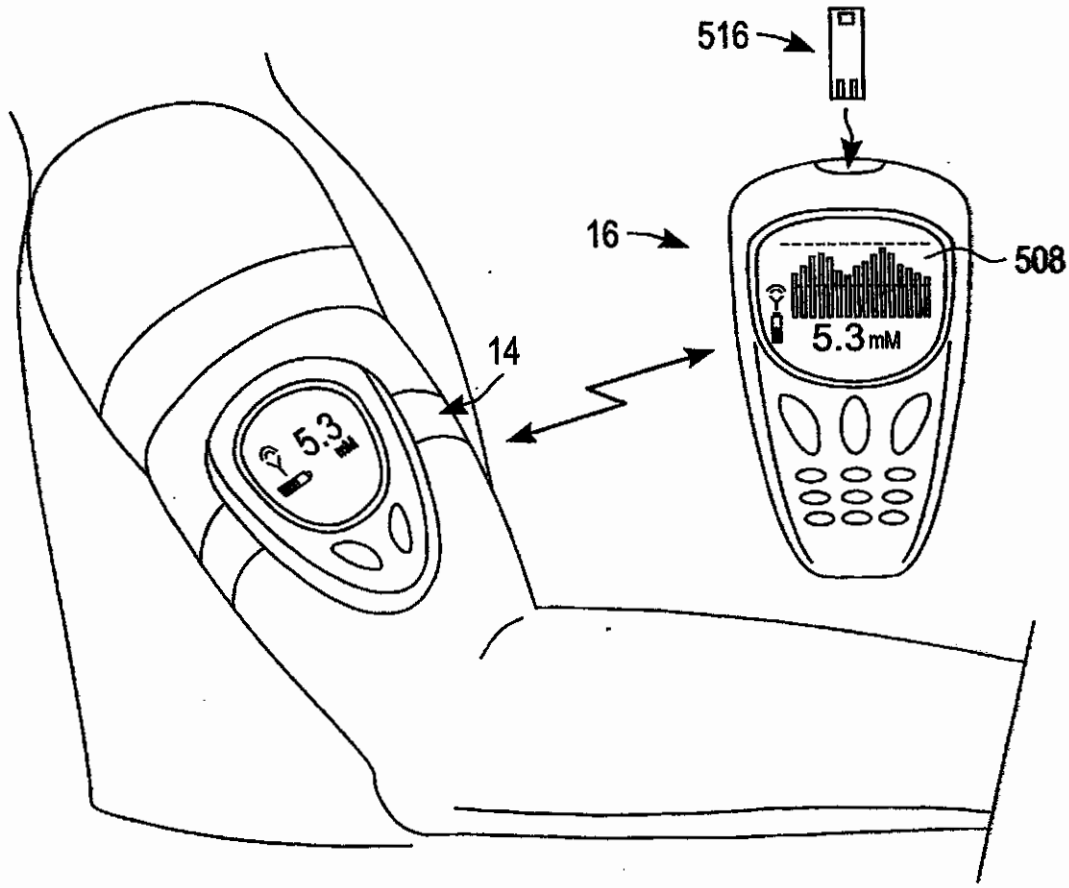


FIG. 8

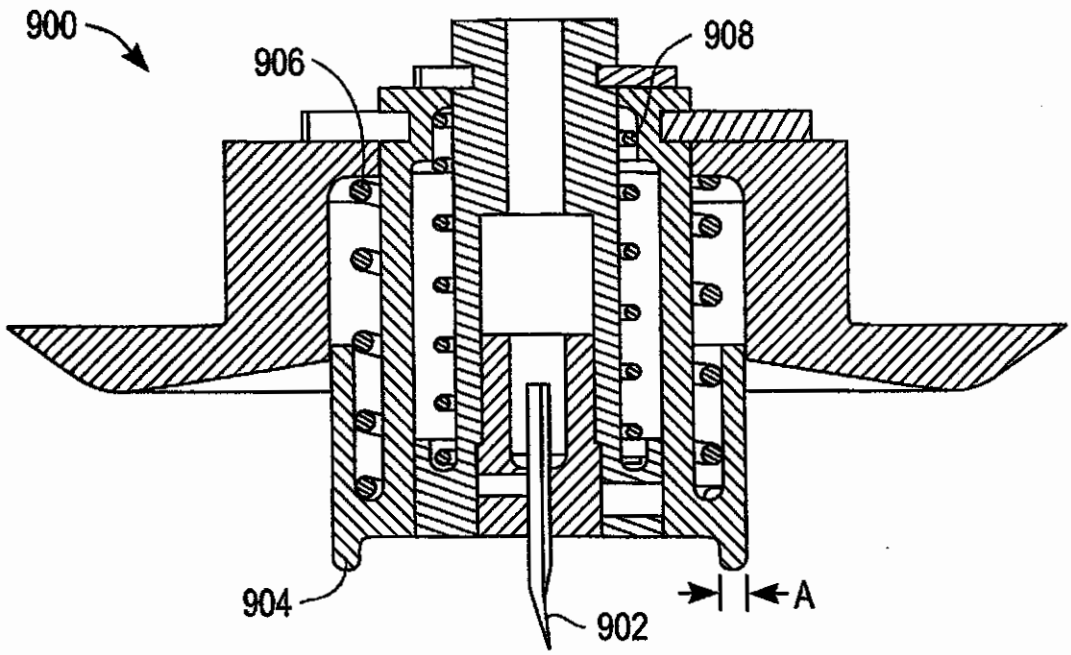


FIG. 9

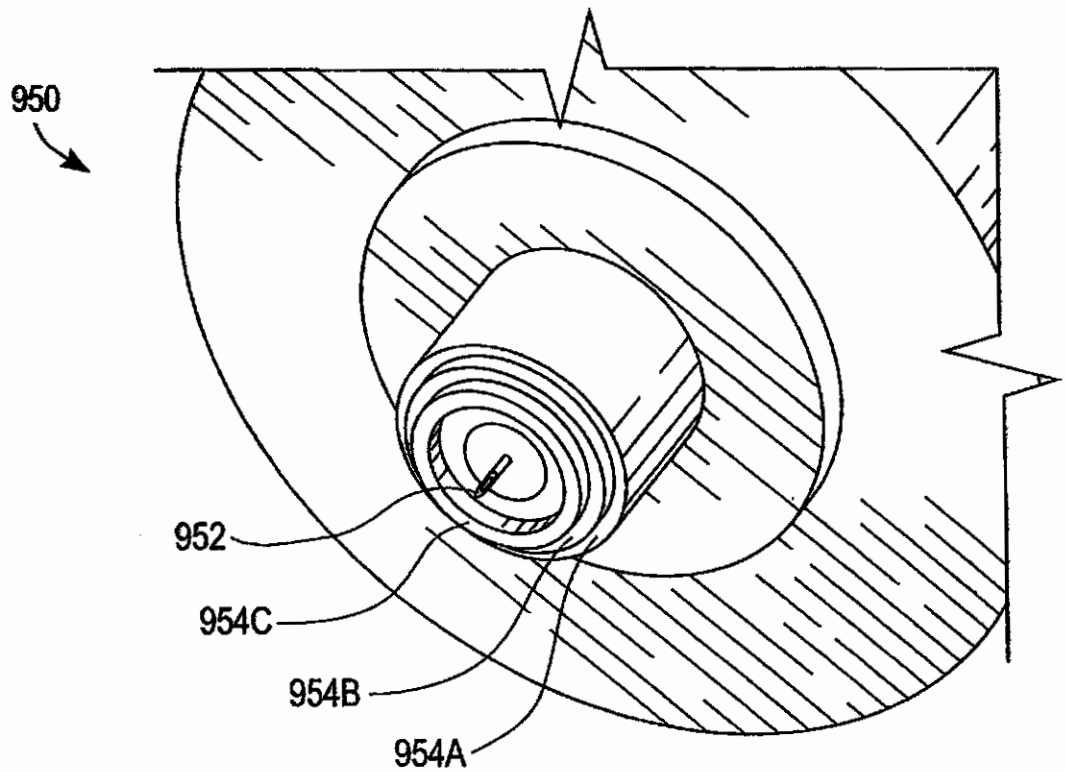


FIG. 10

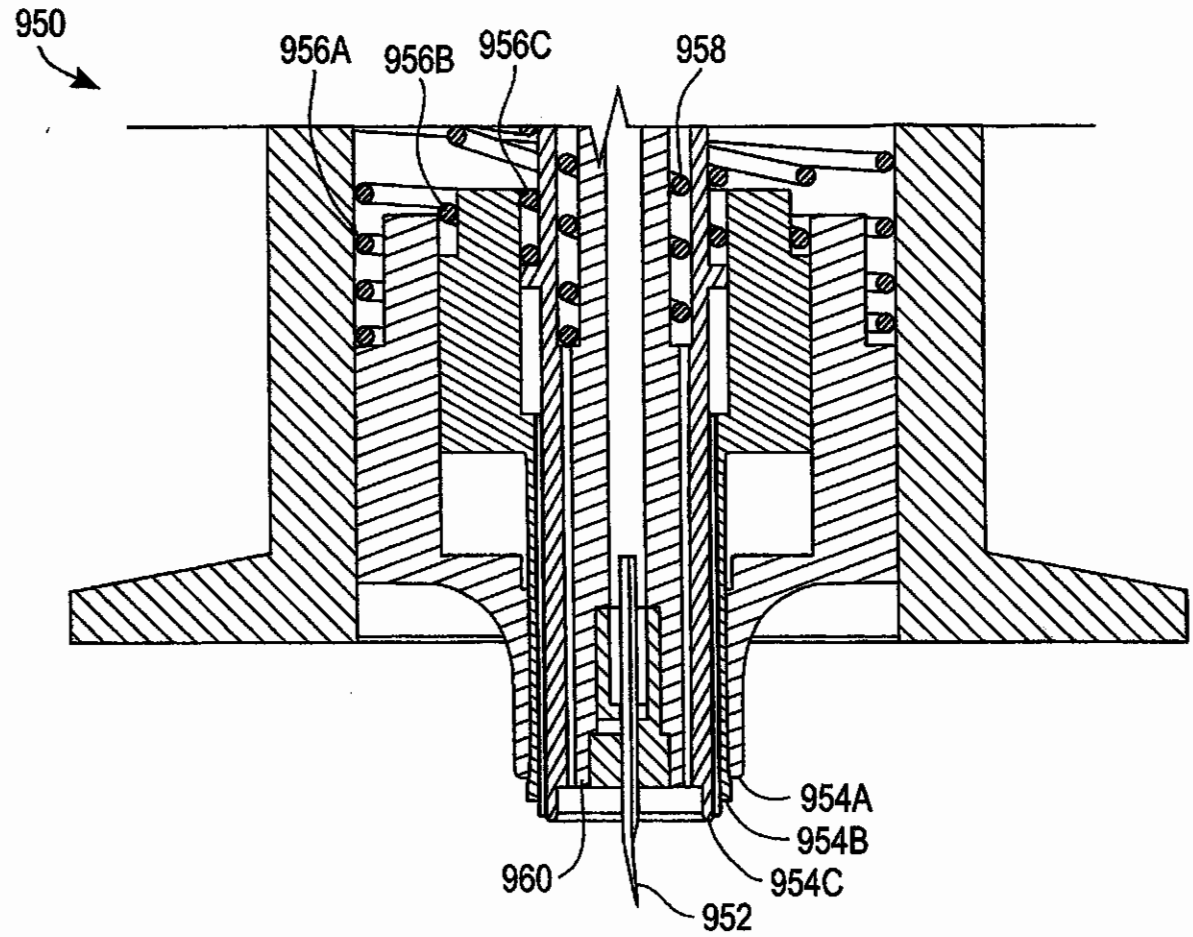

950
956A
956B
956C
958
954A
954B
954C
960
952

FIG. 11

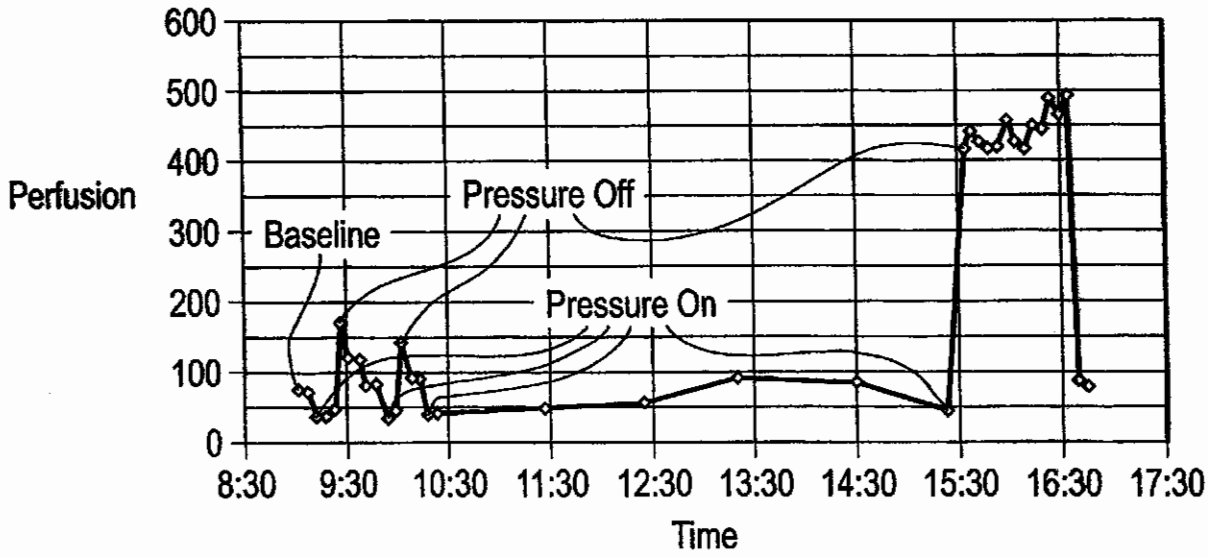

Perfusion
600
500
400
300
200
100
0
Baseline
Pressure Off
Pressure On
8:30
9:30
10:30
11:30
12:30
13:30
14:30
15:30
16:30
17:30
Time

FIG. 12

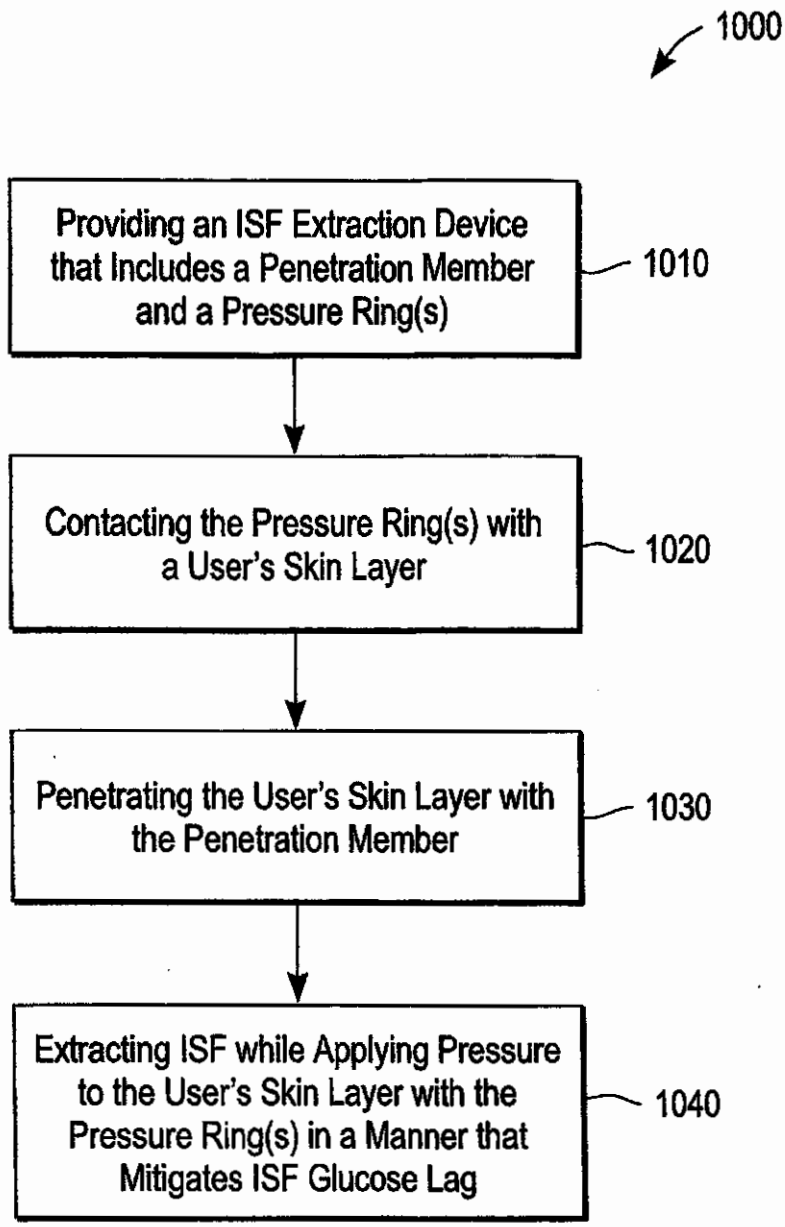

1000
Providing an ISF Extraction Device that Includes a Penetration Member and a Pressure Ring(s)
1010
Contacting the Pressure Ring(s) with a User's Skin Layer
1020
Penetrating the User's Skin Layer with the Penetration Member
1030
Extracting ISF while Applying Pressure to the User's Skin Layer with the Pressure Ring(s) in a Manner that Mitigates ISF Glucose Lag
1040

FIG. 13

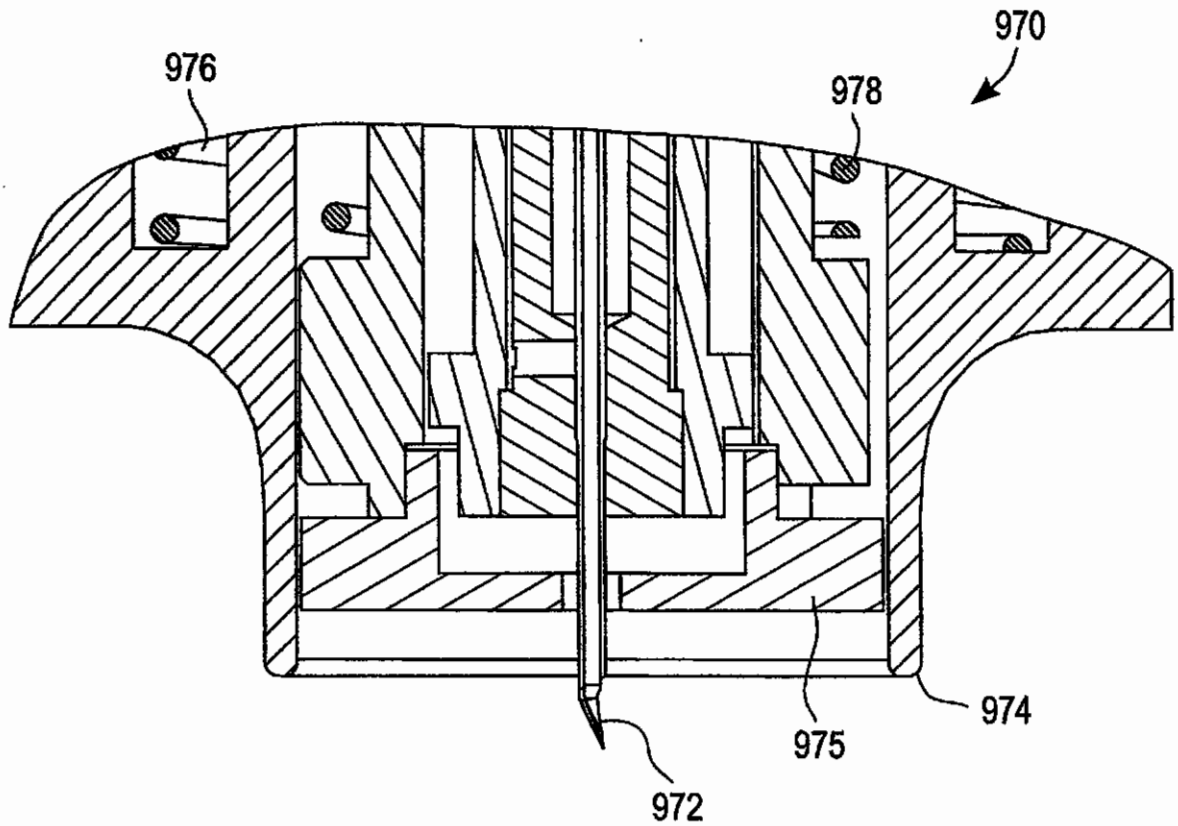


FIG. 14

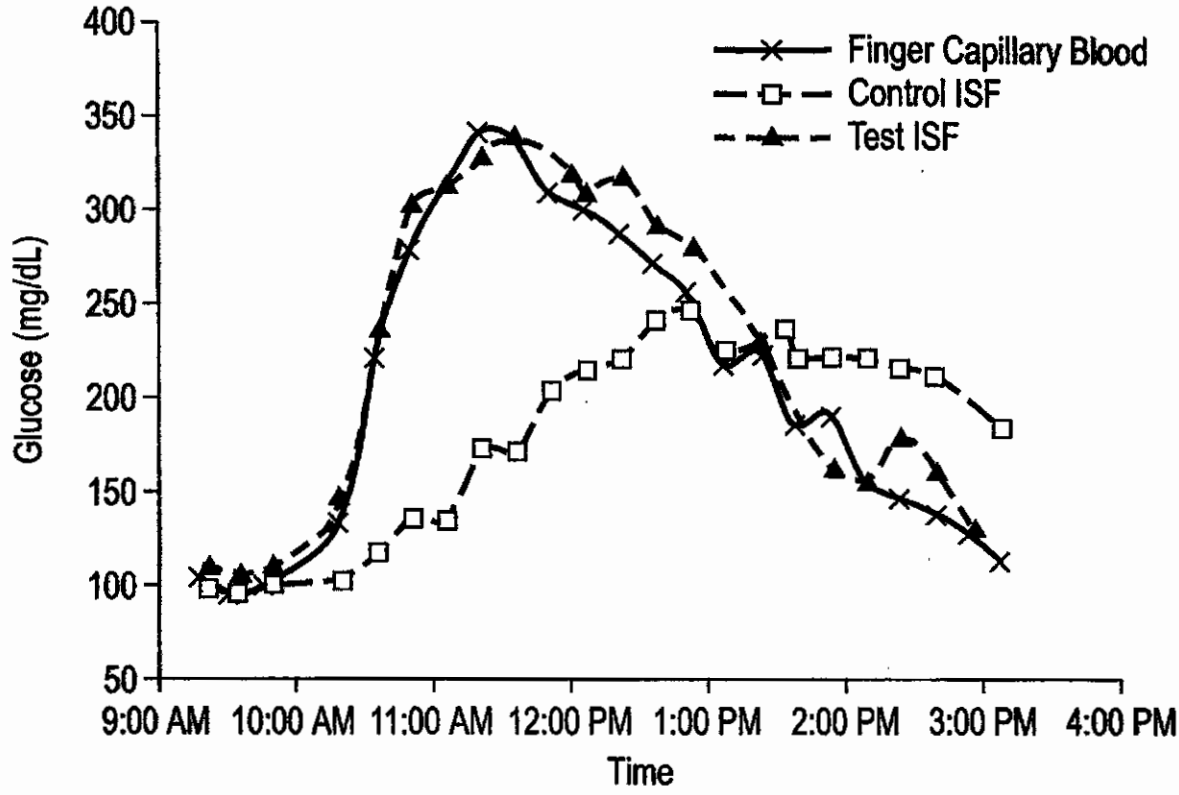

400
350
300
250
200
150
100
50
Glucose (mg/dL)
Finger Capillary Blood
Control ISF
Test ISF
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
Time

FIG. 15

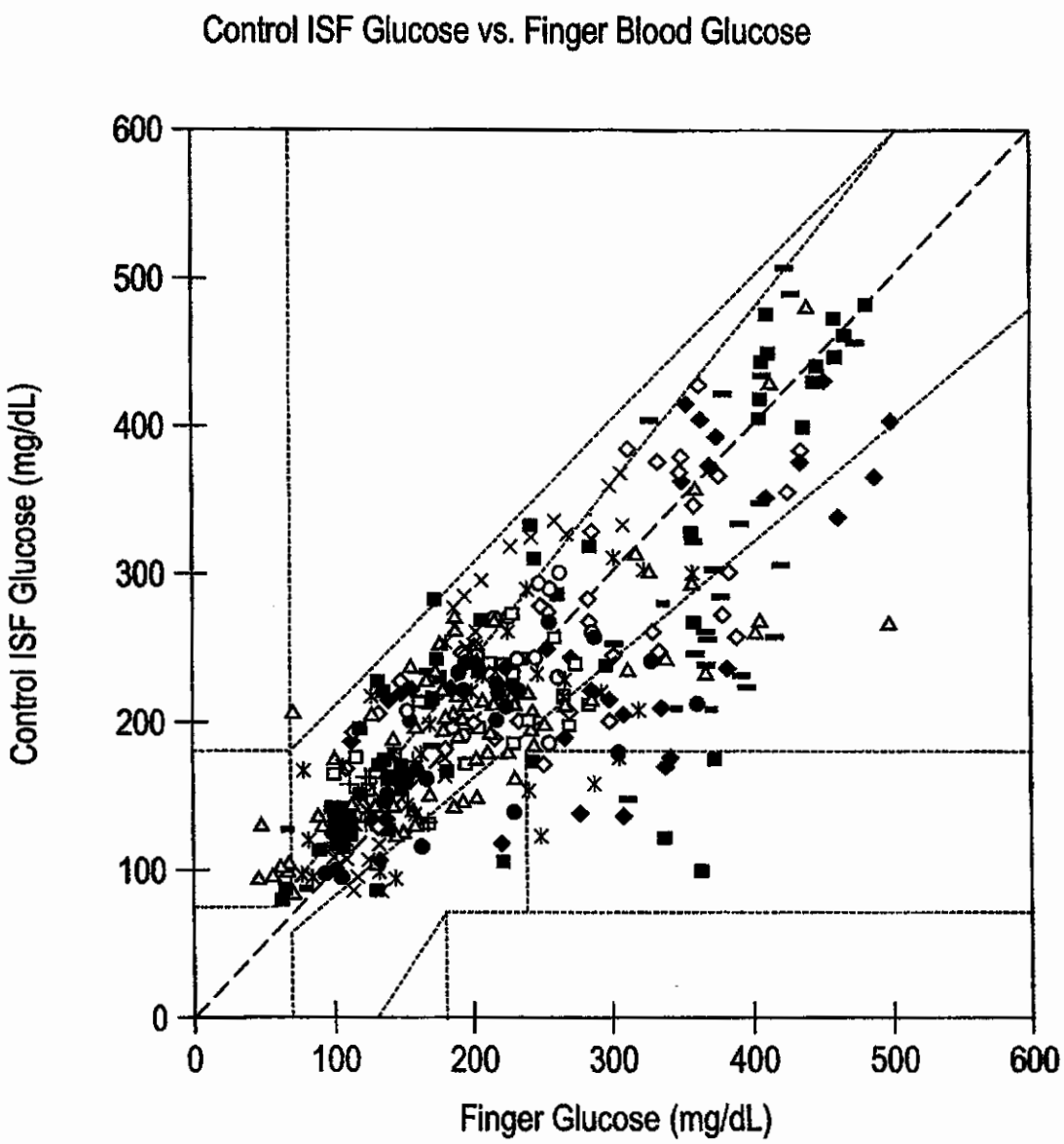

Control ISF Glucose vs. Finger Blood Glucose
Control ISF Glucose (mg/dL)
Finger Glucose (mg/dL)
0
100
200
300
400
500
600

FIG. 16A

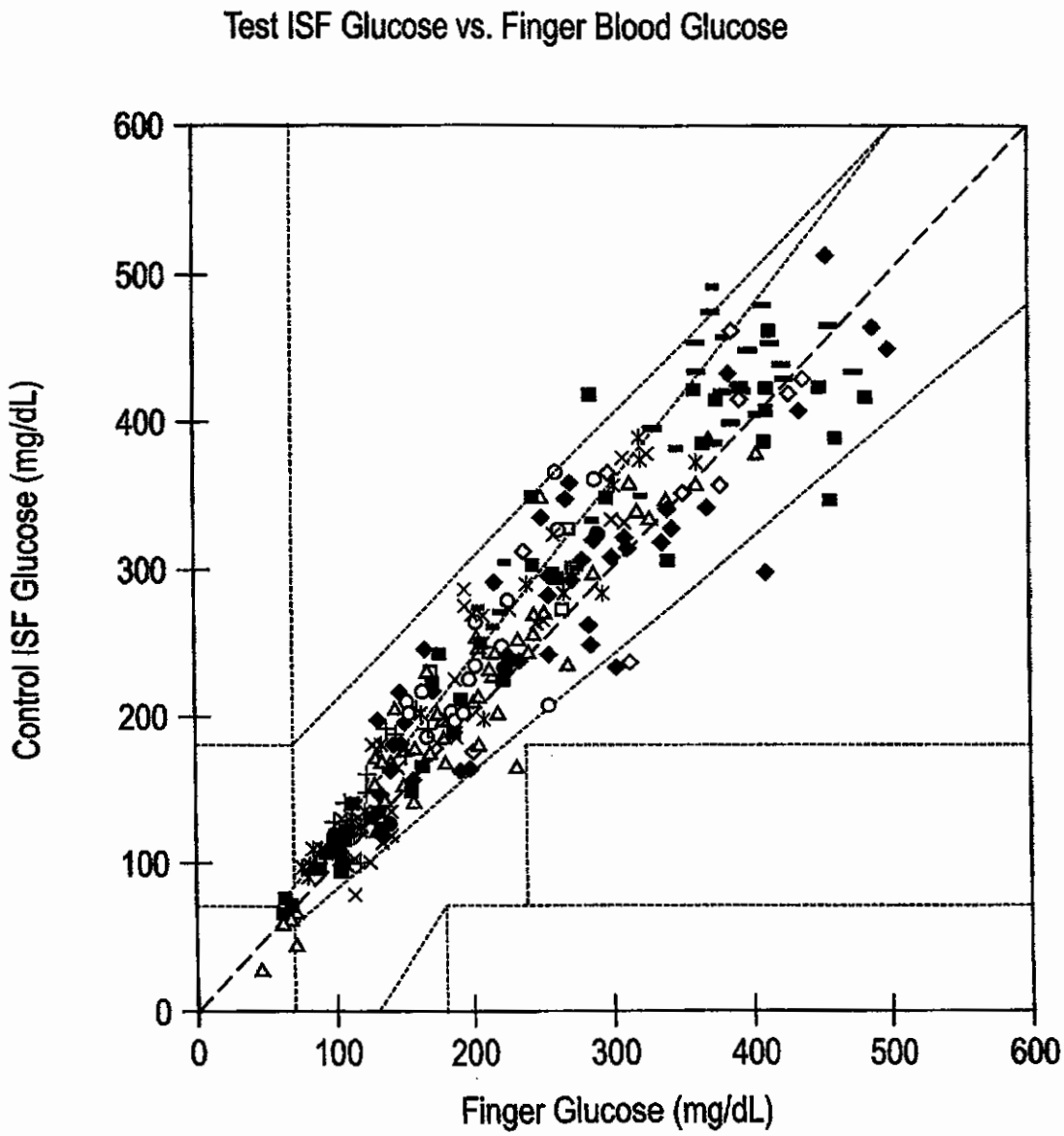

Test ISF Glucose vs. Finger Blood Glucose
Control ISF Glucose (mg/dL)
Finger Glucose (mg/dL)
0
100
200
300
400
500
600

FIG. 16B

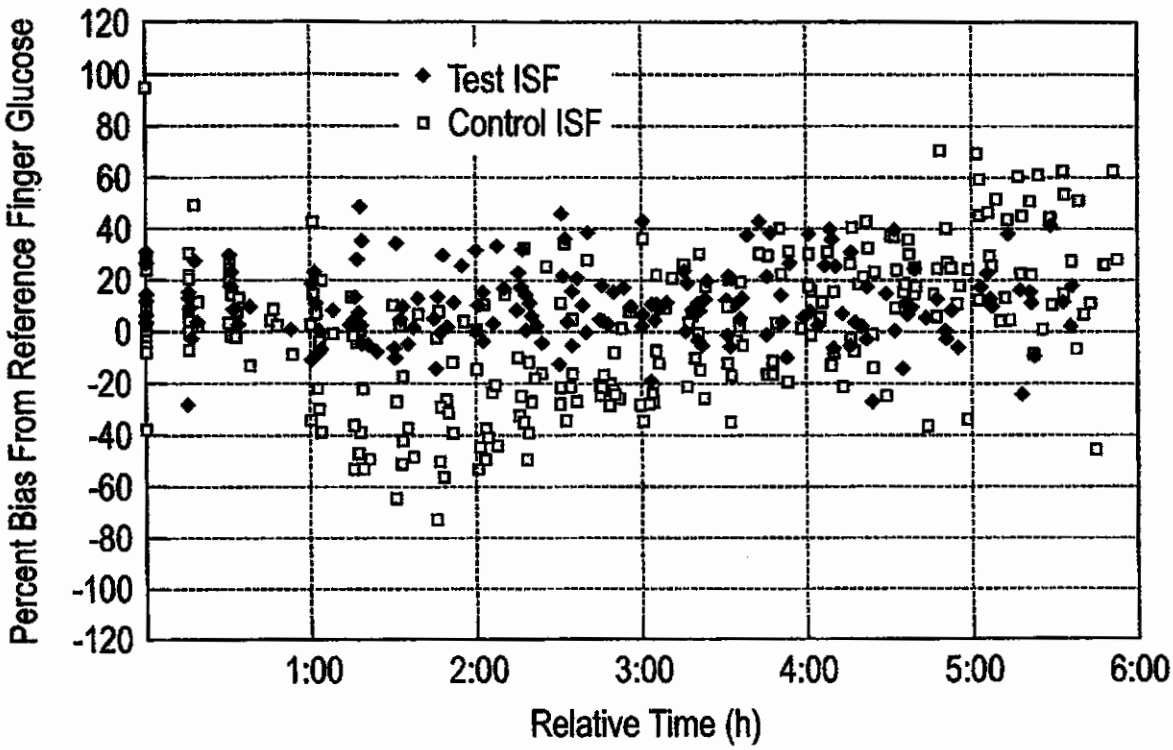

Percent Bias From Reference Finger Glucose
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
Test ISF
Control ISF
1:00
2:00
3:00
4:00
5:00
6:00
Relative Time (h)

FIG. 17

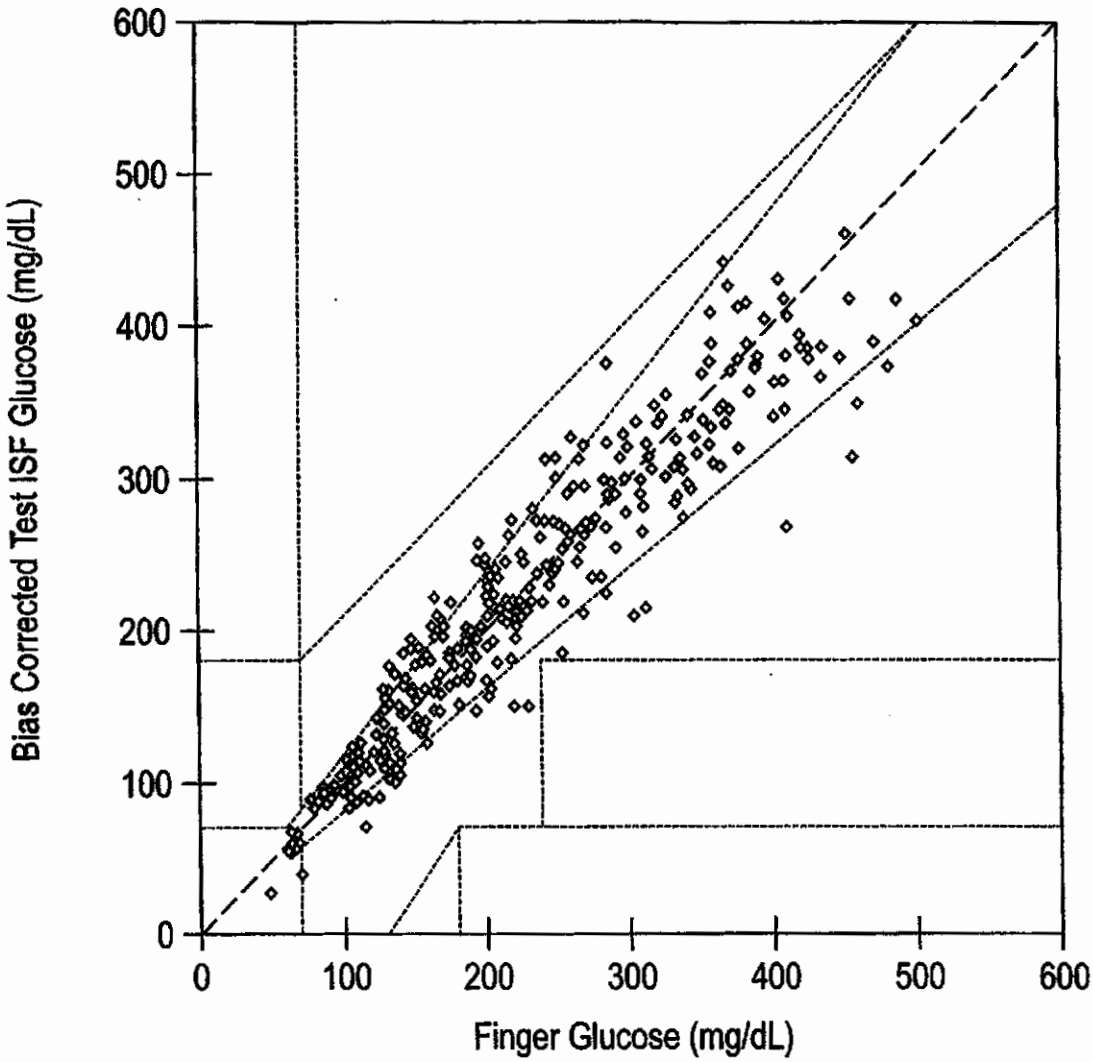

600
500
400
300
200
100
0
Bias Corrected Test ISF Glucose (mg/dL)
0
100
200
300
400
500
600
Finger Glucose (mg/dL)

FIG. 18

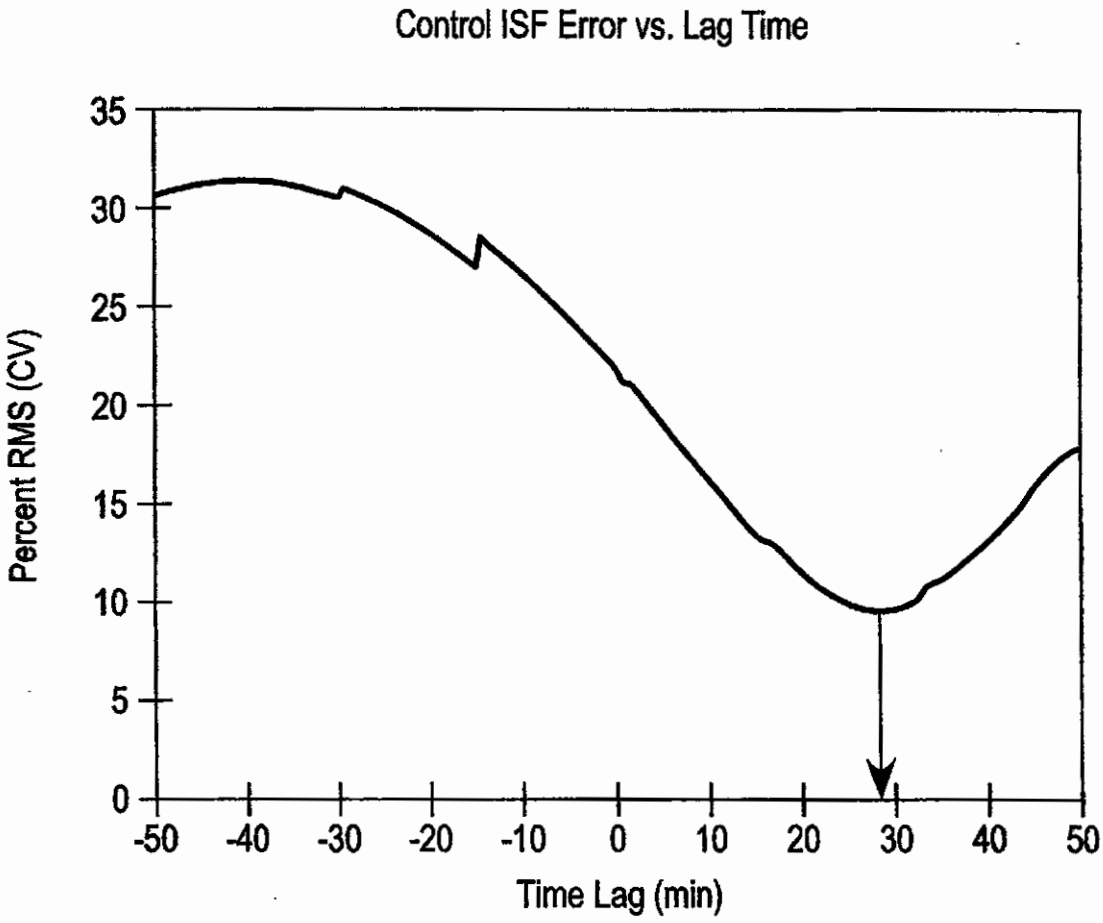

Control ISF Error vs. Lag Time
Percent RMS (CV)
35
30
25
20
15
10
5
0
-50
-40
-30
-20
-10
0
10
20
30
40
50
Time Lag (min)

FIG. 19A

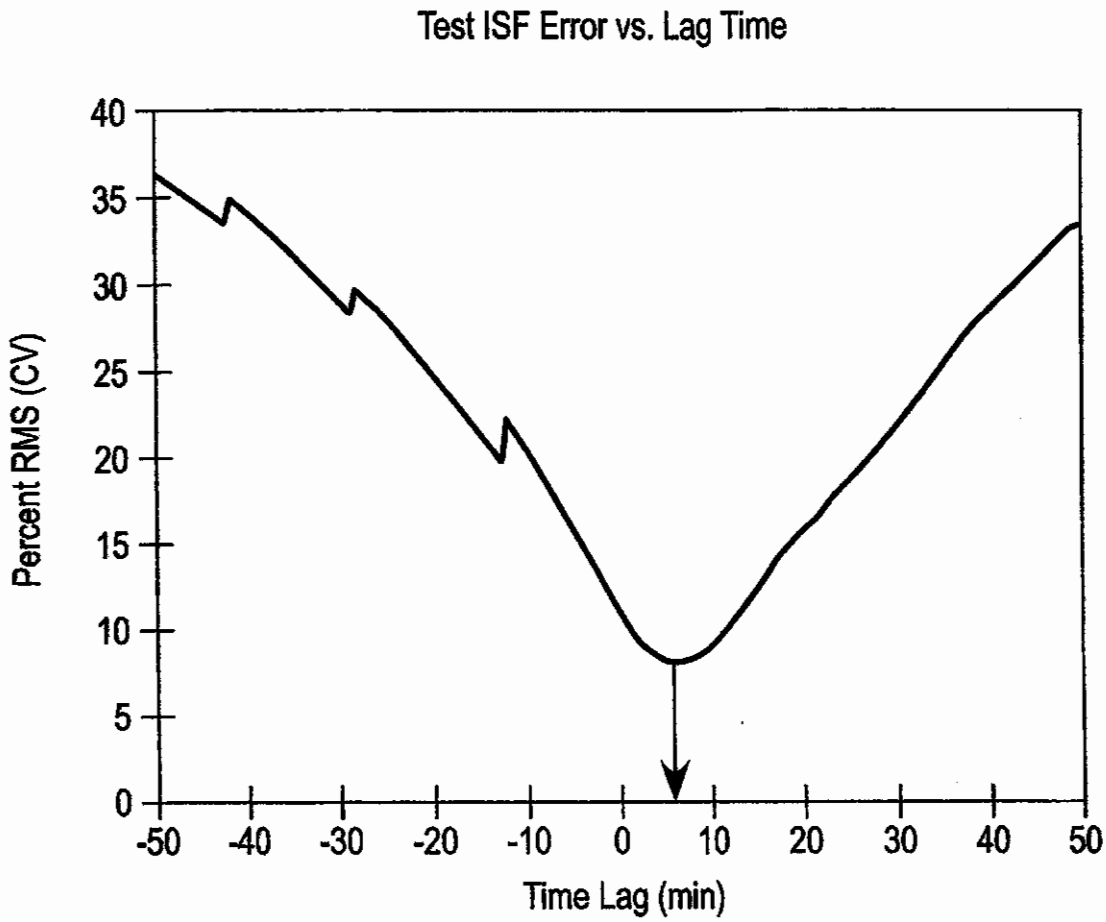

Test ISF Error vs. Lag Time
Percent RMS (CV)
40
35
30
25
20
15
10
5
0
-50
-40
-30
-20
-10
0
10
20
30
40
50
Time Lag (min)

FIG. 19B