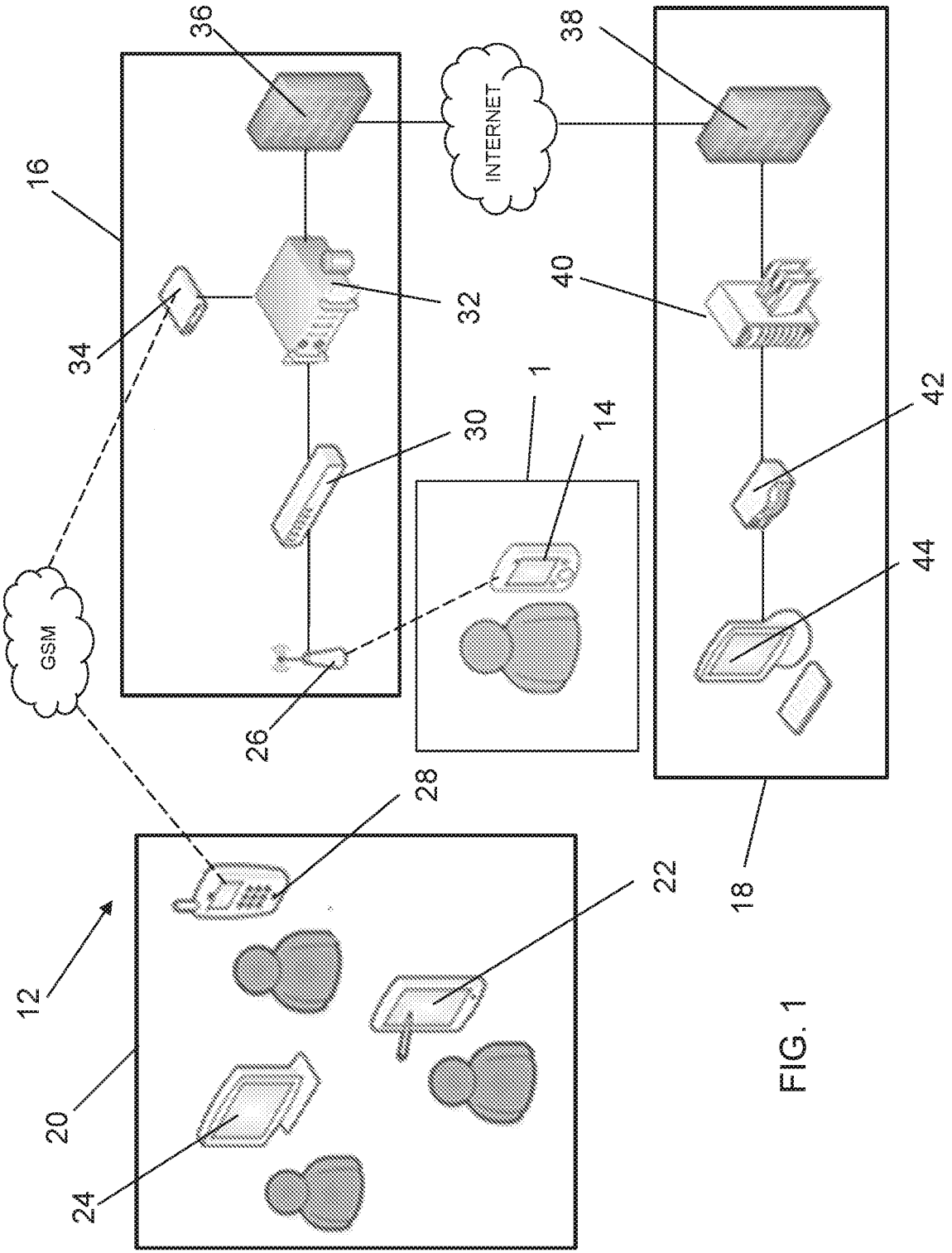
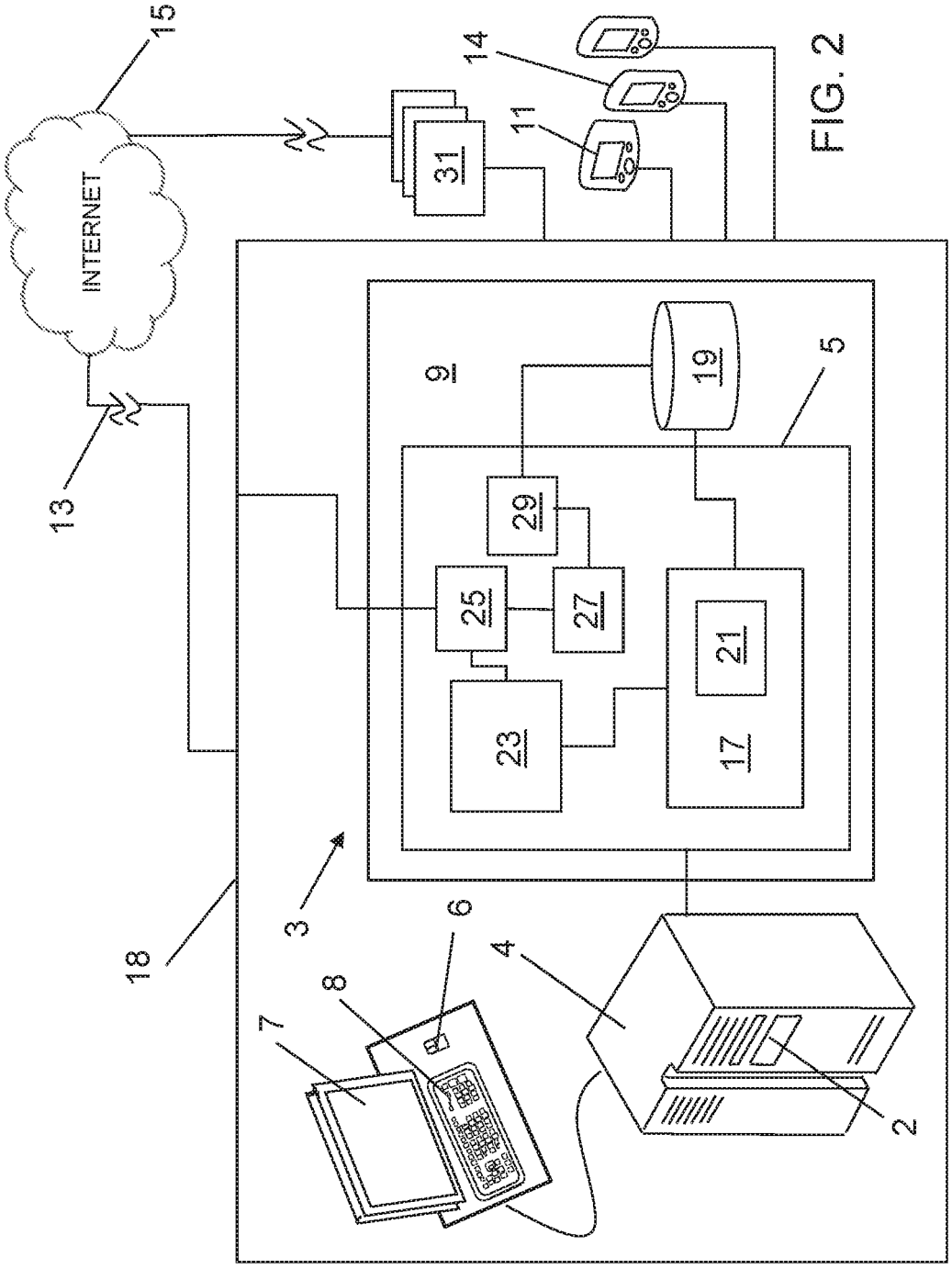


FIG. 1


15
INTERNET
14
11
31
FIG. 2
9
19
5
29
25
27
21
23
17
13
18
3
6
4
8
7
2

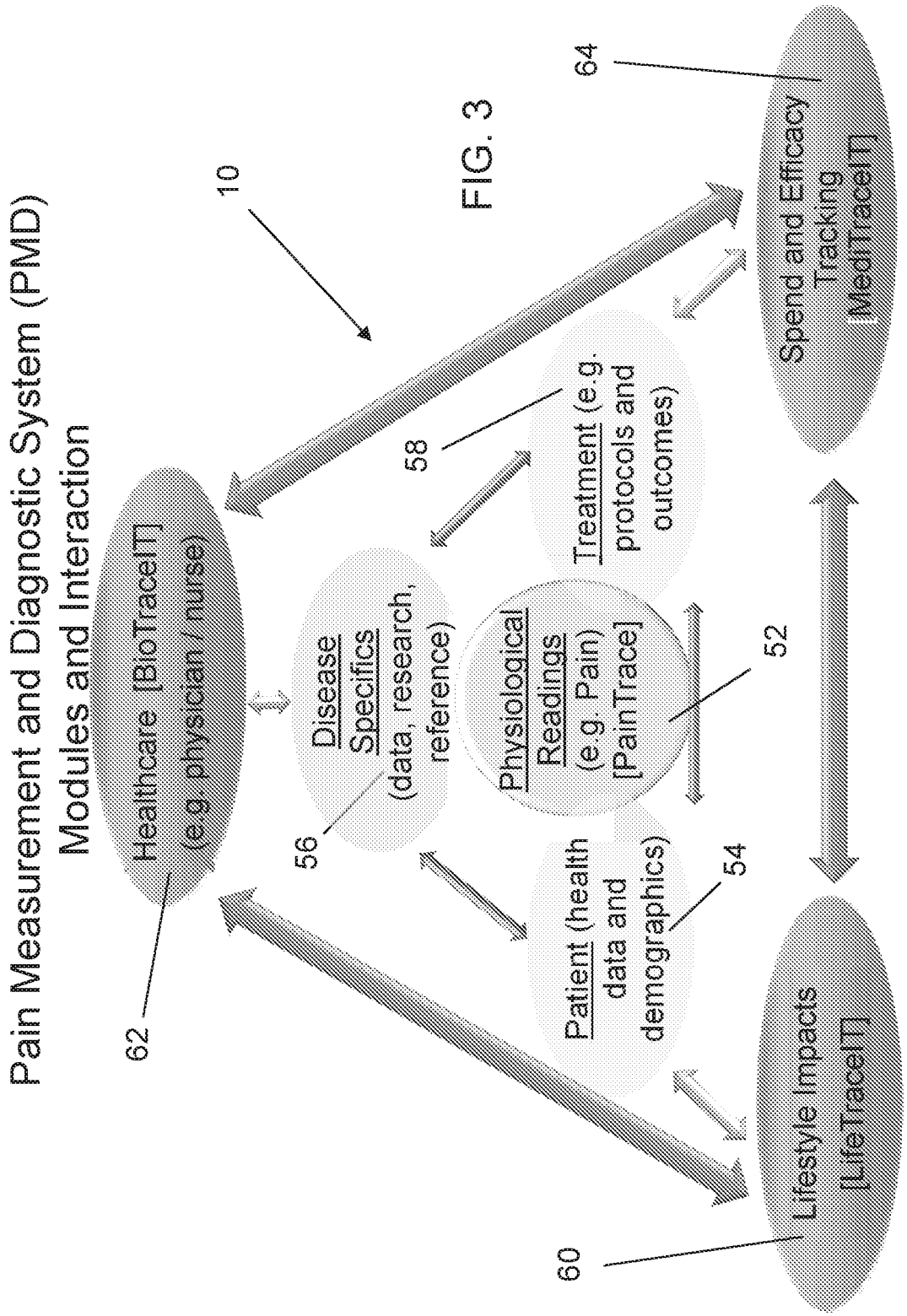

Pain Measurement and Diagnostic System (PMD)
Modules and Interaction
10
Healthcare [BioTraceIT]
(e.g. physician / nurse)
62
Disease
Specifics
(data, research,
reference)
56
Physiological
Readings
(e.g. Pain)
[PainTrace]
52
Patient (health
data and
demographics)
54
Treatment (e.g.
protocols and
outcomes)
58
Spend and Efficacy
Tracking
(MediTraceIT)
64
Lifestyle Impacts
[LifeTraceIT]
60

FIG. 3

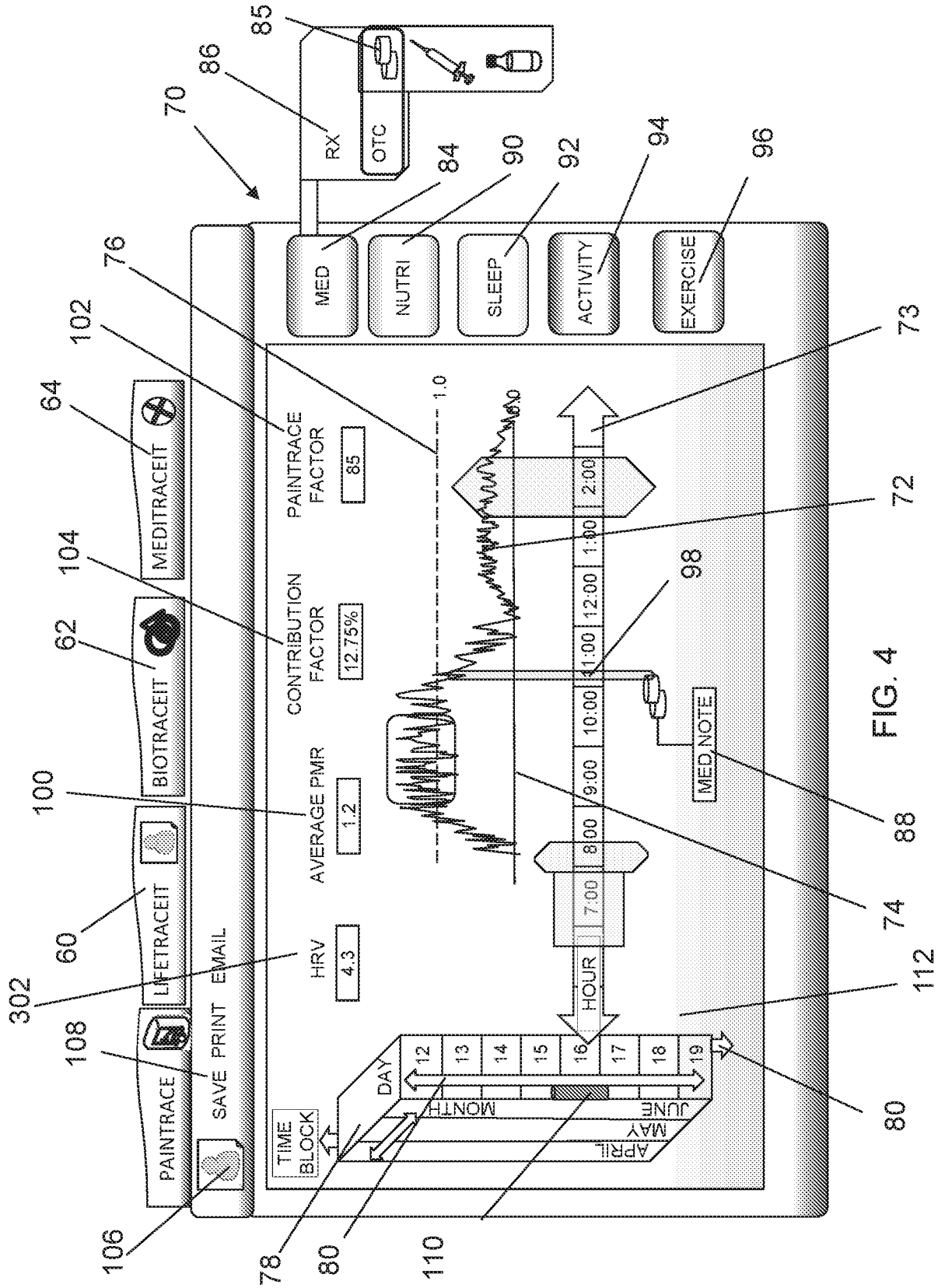

85
86
70
RX
OTC
84
90
92
94
96
MED
NUTRI
SLEEP
ACTIVITY
EXERCISE
76
102
64
MEDITRACEIT
PAINTRACE FACTOR
85
1.0
73
104
62
BIOTRACEIT
CONTRIBUTION FACTOR
12.75%
72
98
100
AVERAGE PMR
1.2
60
LIFETRACEIT
HRV
4.3
MED NOTE
88
302
EMAIL
PRINT
74
108
SAVE
112
PAINTRACE
HOUR
7:00
8:00
9:00
10:00
11:00
12:00
1:00
2:00
DAY
12
13
14
15
16
17
18
19
MONTH
APRIL
MAY
JUNE
TIME BLOCK
80
106
78
80
110

FIG. 4

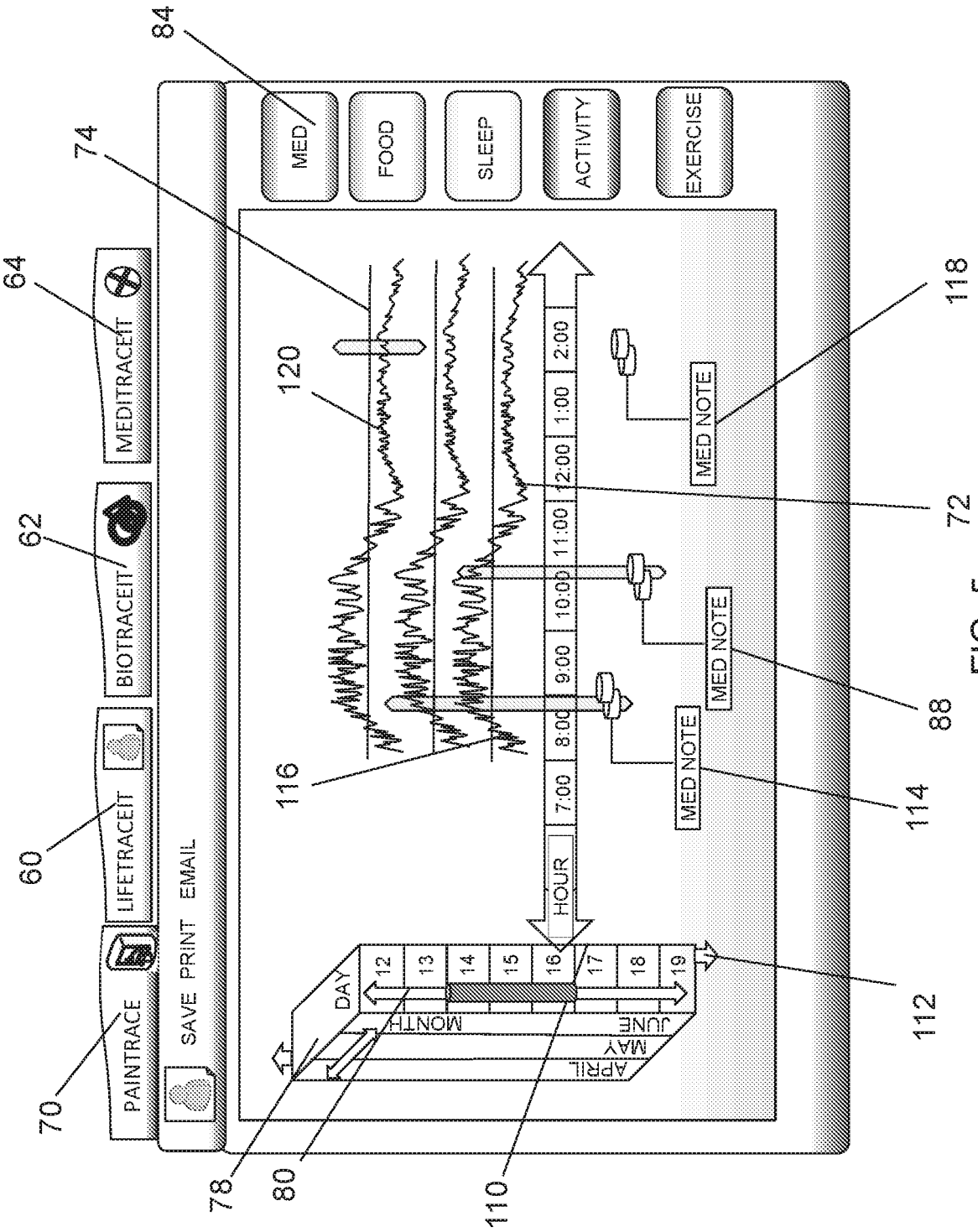

84
74
64
62
60
70
78
80
110
112
114
116
118
120
72
88
MED
FOOD
SLEEP
ACTIVITY
EXERCISE
MEDITRACEIT
BIOTRACEIT
LIFETRACEIT
PAINTRACE
SAVE PRINT EMAIL
HOUR
7:00
8:00
9:00
10:00
11:00
12:00
1:00
2:00
DAY
MONTH
12
13
14
15
16
17
18
19
APRIL
MAY
JUNE
MED NOTE
MED NOTE
MED NOTE

FIG. 5

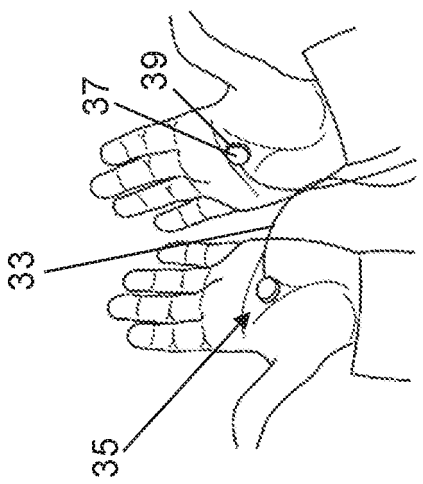


FIG. 6A

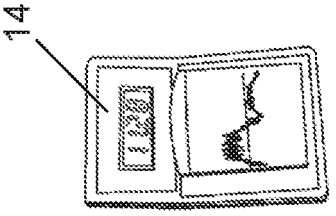


FIG. 6B

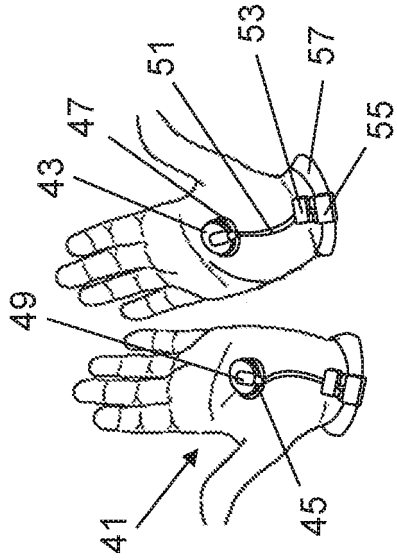


FIG. 6C

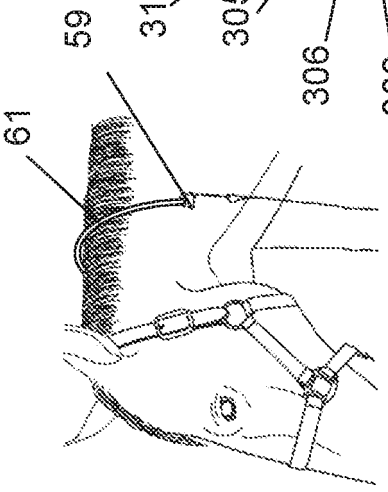


FIG. 6D

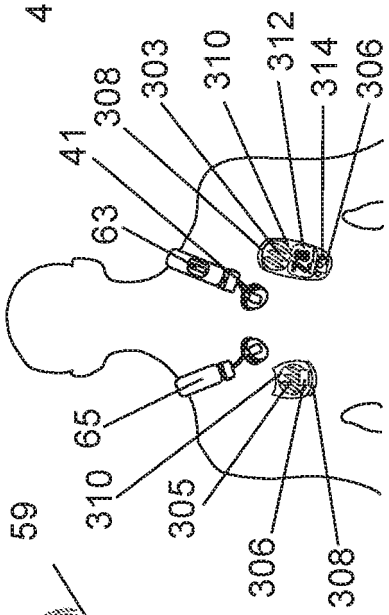


FIG. 6E

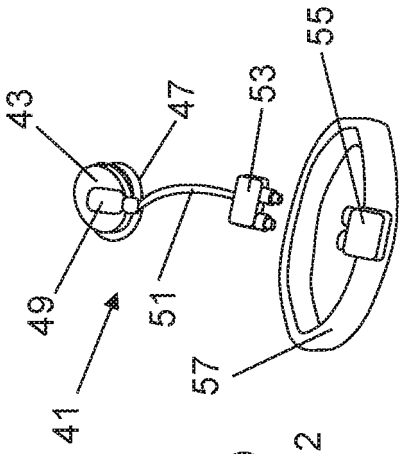


FIG. 6F

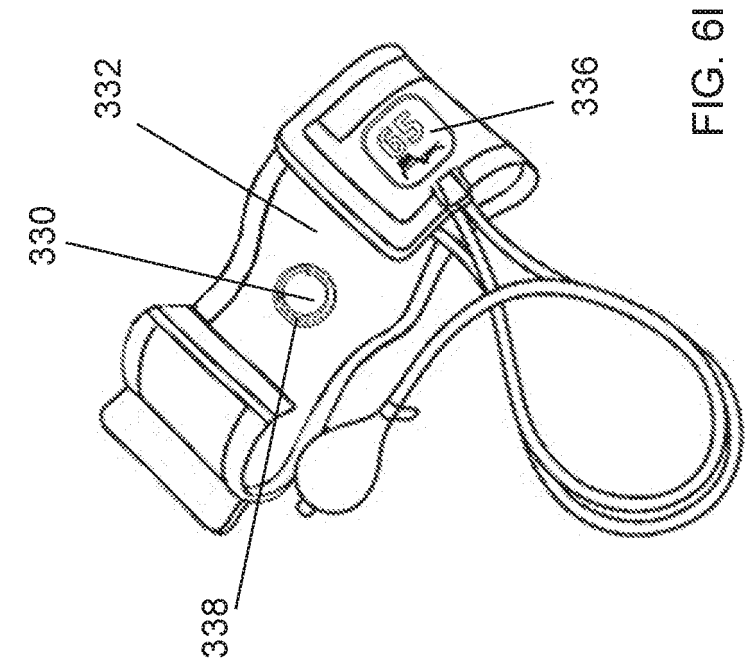


FIG. 6I

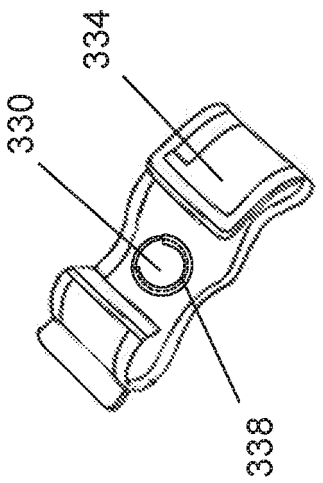


FIG. 6J

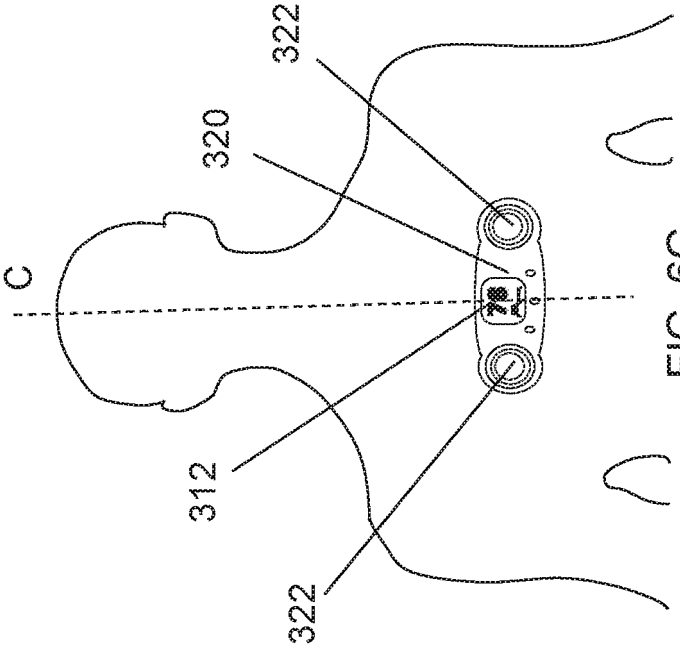


FIG. 6G

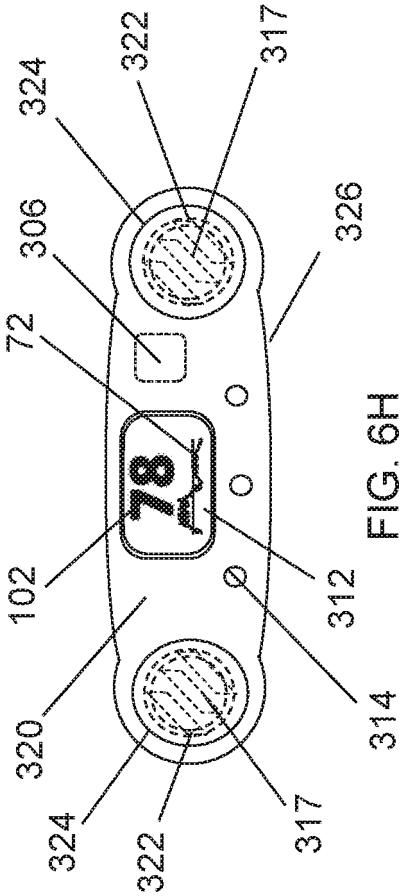


FIG. 6H

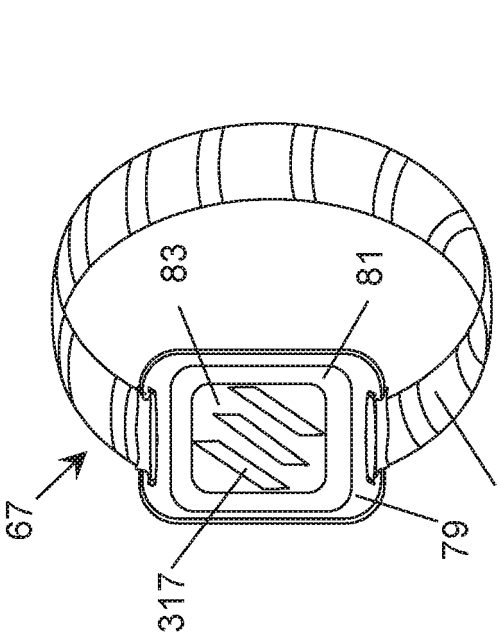


FIG. 7B

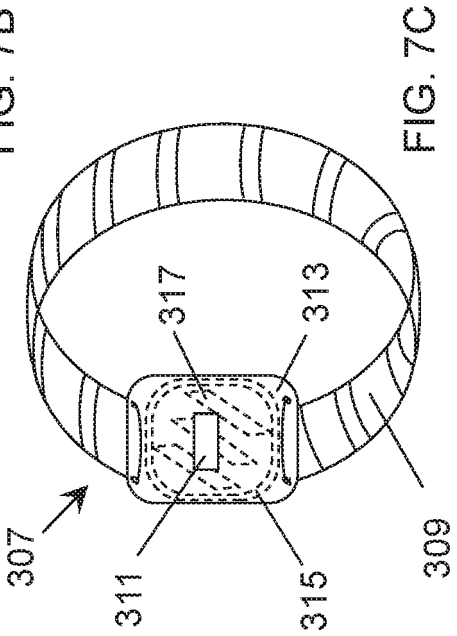


FIG. 7C

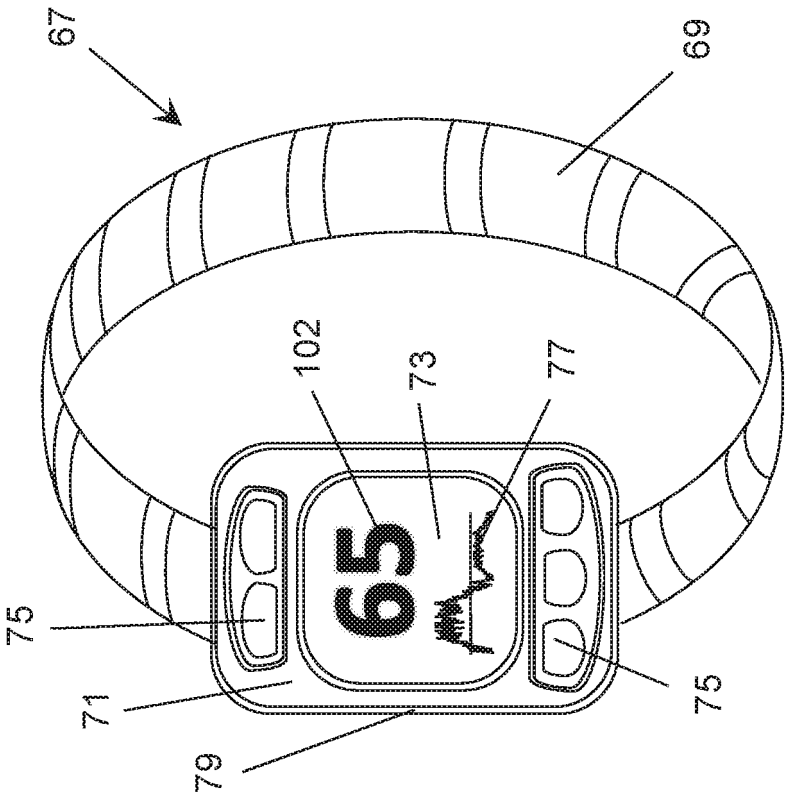


FIG. 7A

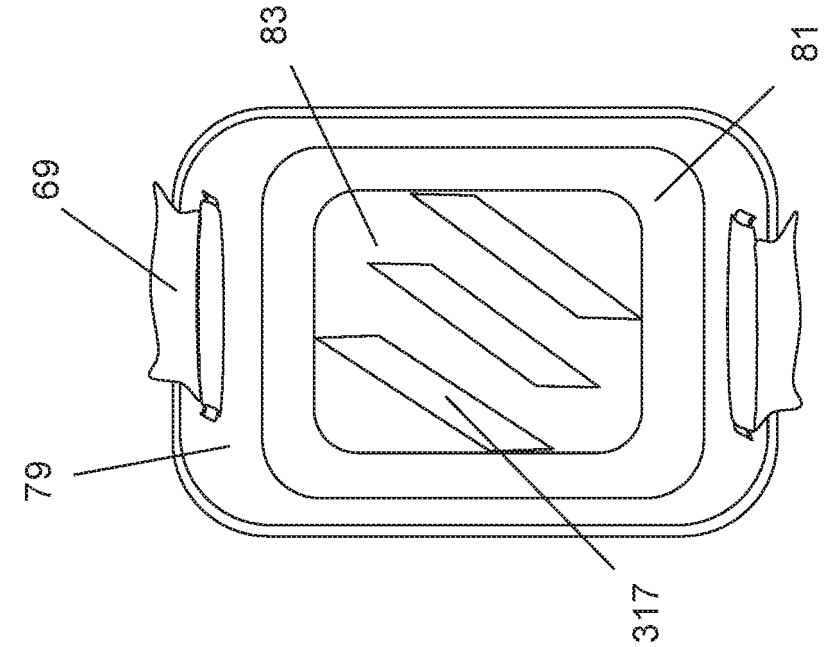


FIG. 8B

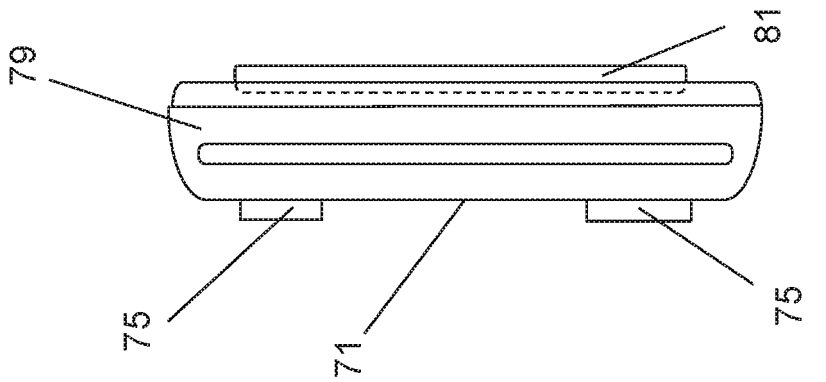


FIG. 8A

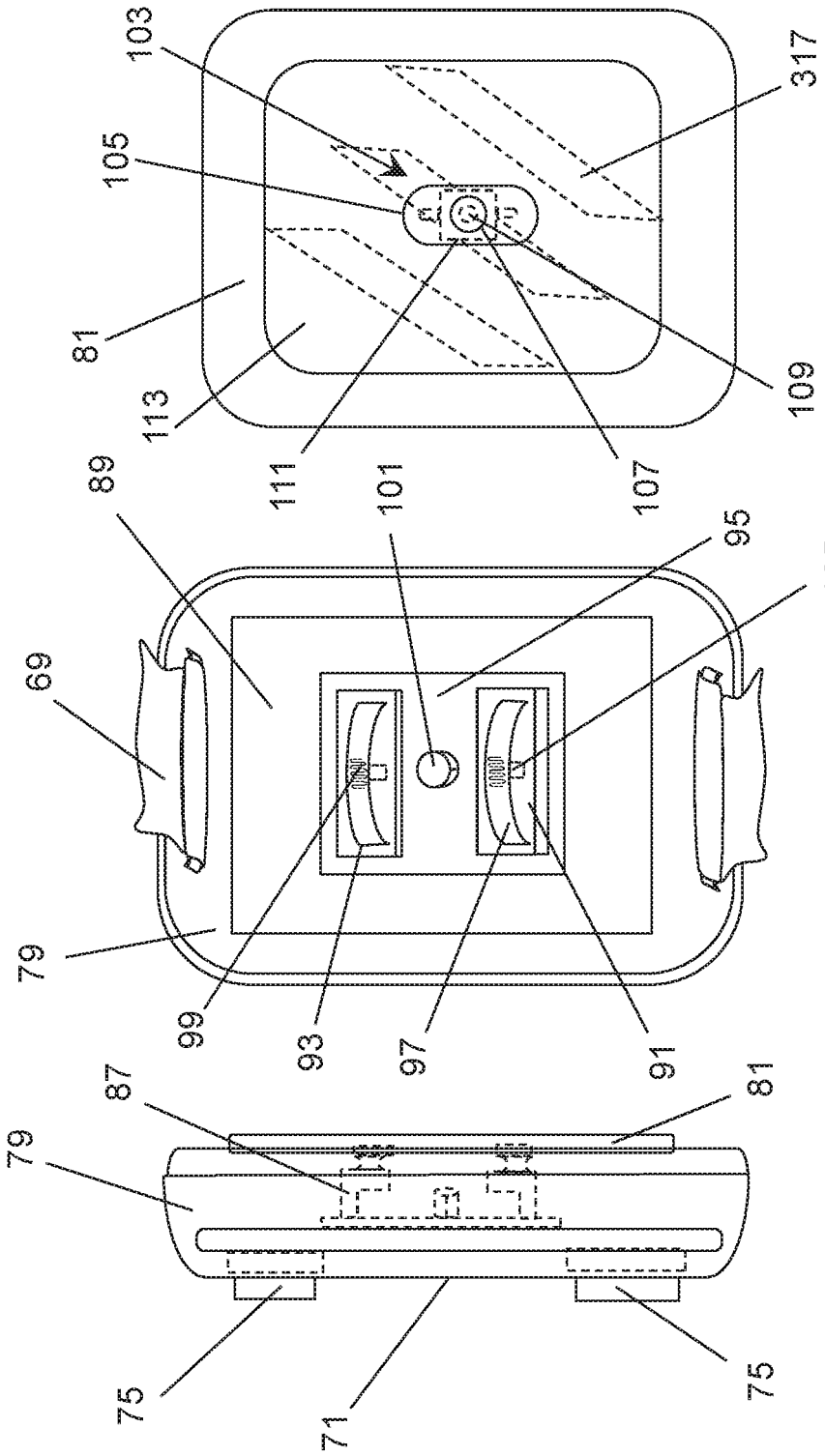
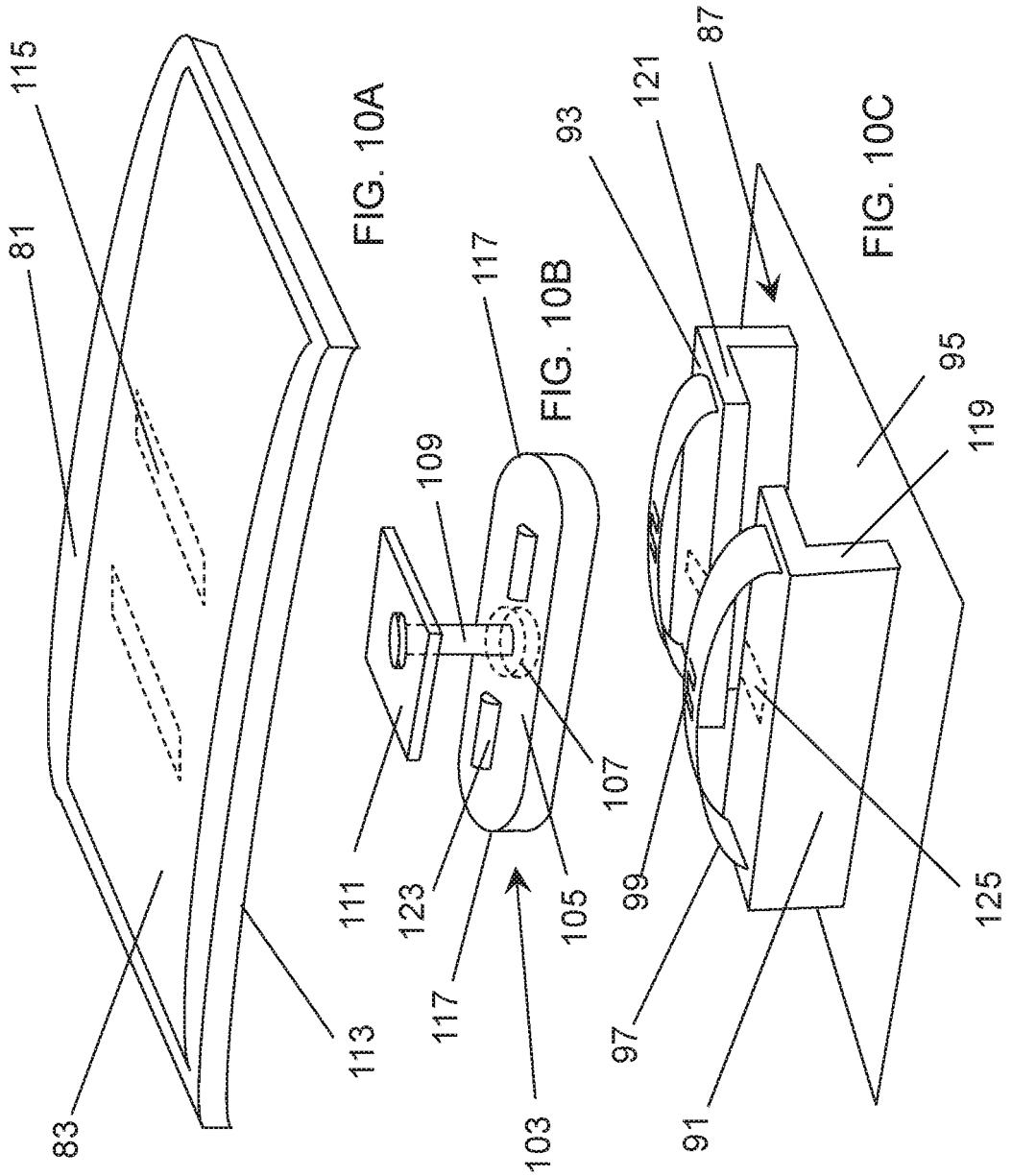


FIG. 9C

FIG. 9B

FIG. 9A


115
81
83
113
FIG. 10A
117
109
111
123
117
103
105
107
FIG. 10B
87
121
93
95
119
99
97
91
125
FIG. 10C

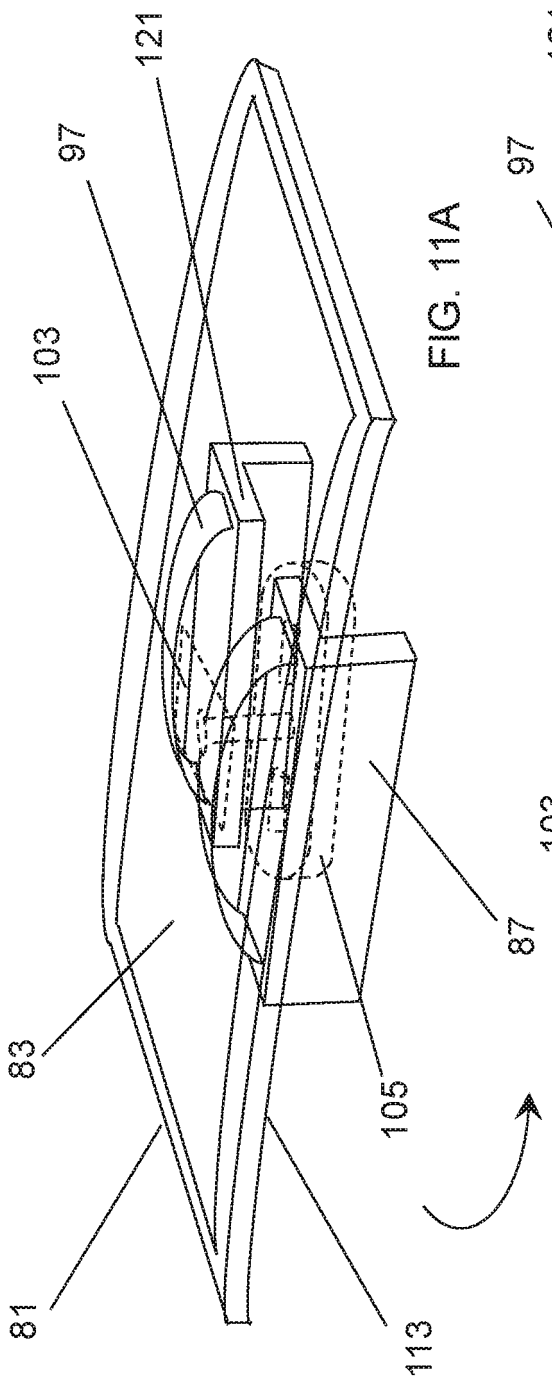


FIG. 11A

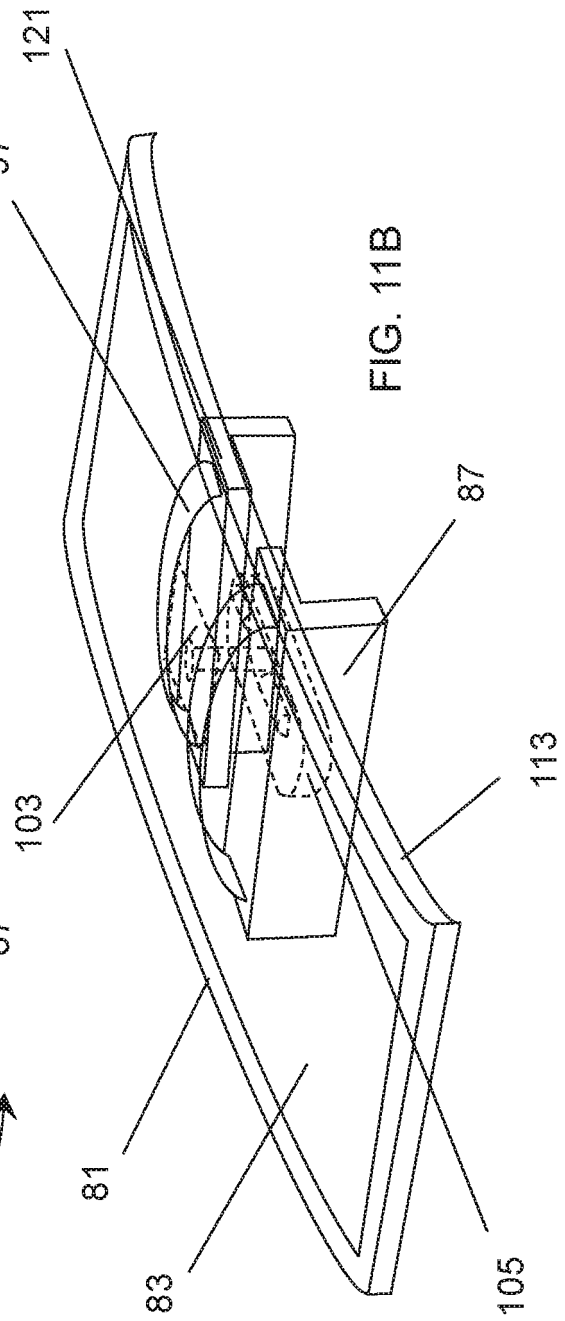


FIG. 11B

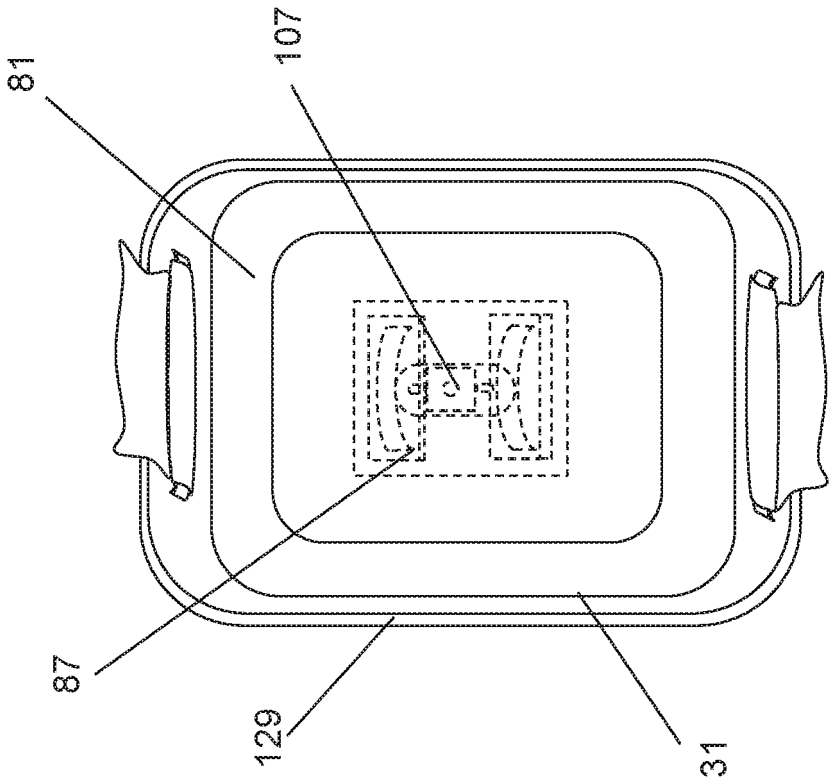


FIG. 12B

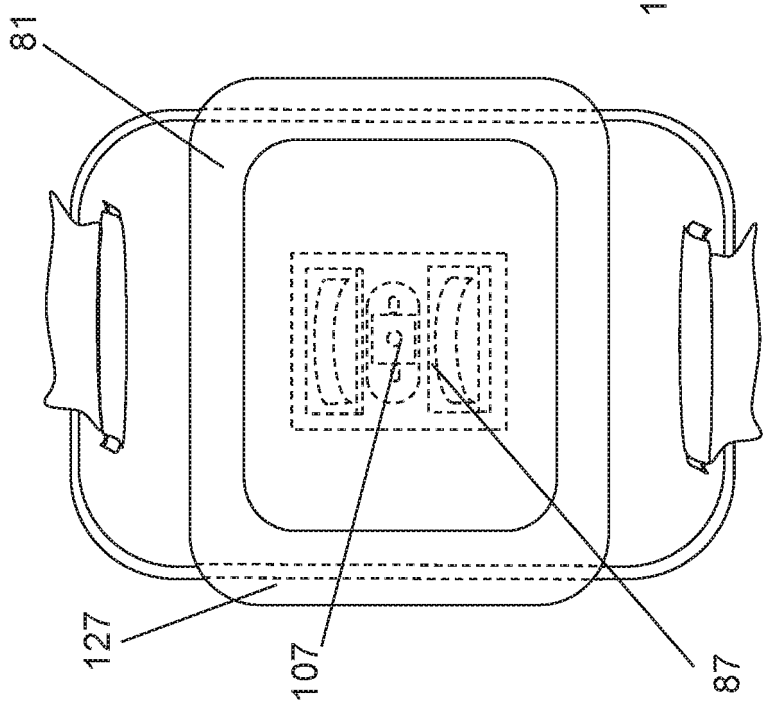


FIG. 12A

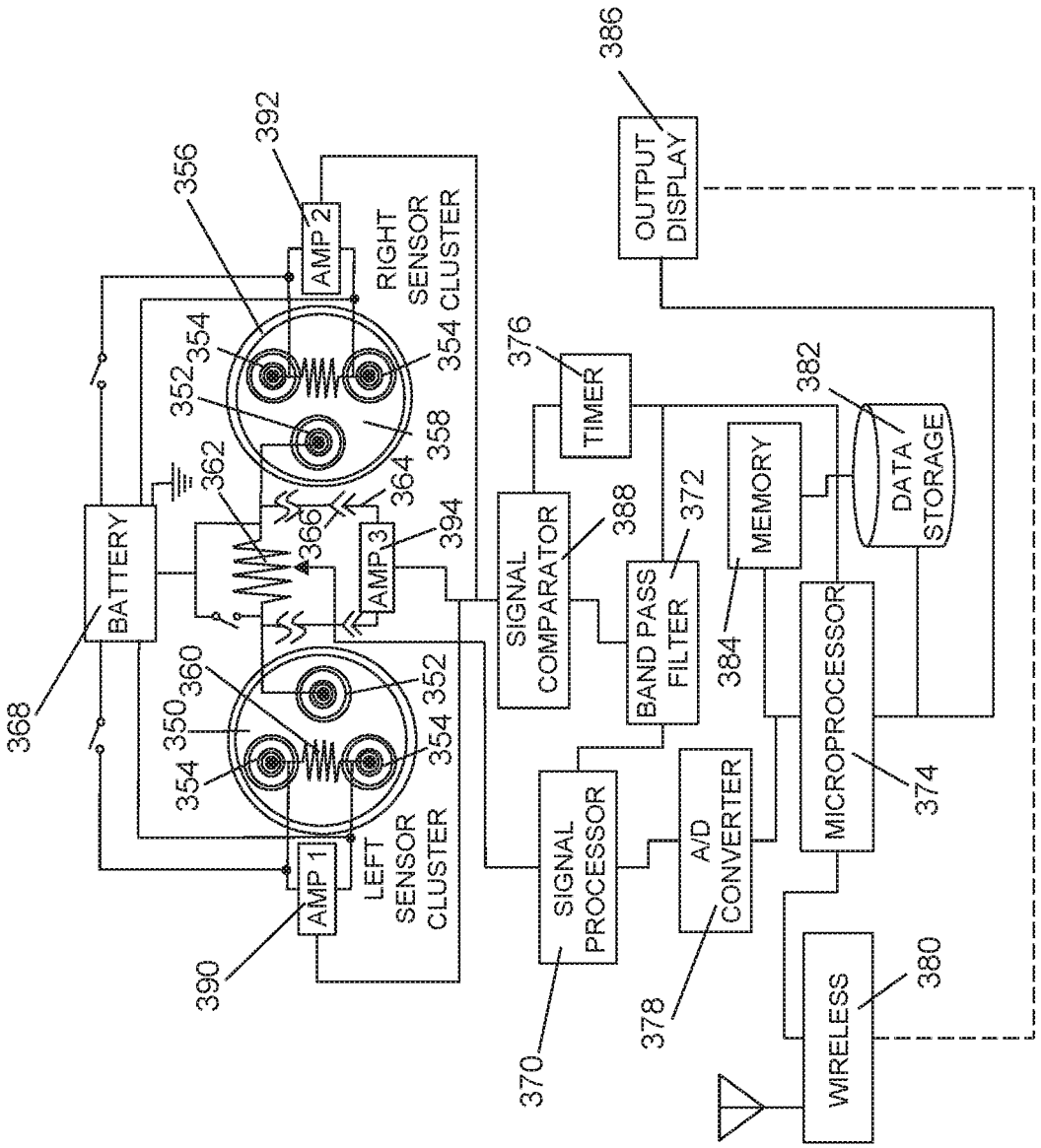

386
OUTPUT DISPLAY
392
356
AMP 2
RIGHT SENSOR CLUSTER
354
352
358
362
364
366
394
AMP 3
376
TIMER
382
DATA STORAGE
MEMORY
SIGNAL COMPARATOR
388
BAND PASS FILTER
372
384
BATTERY
368
360
350
354
352
MICROPROCESSOR
374
AMP 1
LEFT SENSOR CLUSTER
390
SIGNAL PROCESSOR
A/D CONVERTER
370
378
WIRELESS
380

FIG. 13

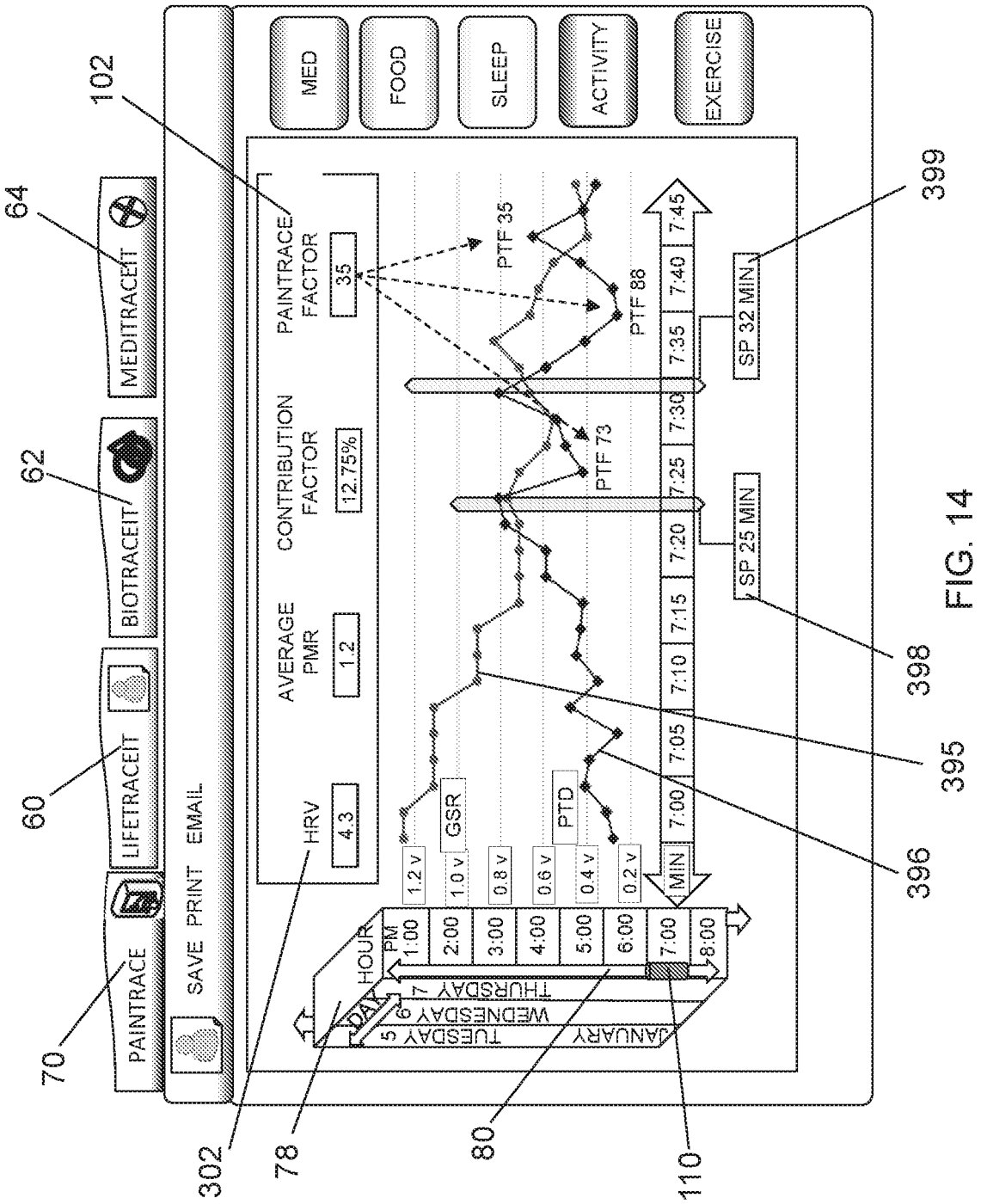
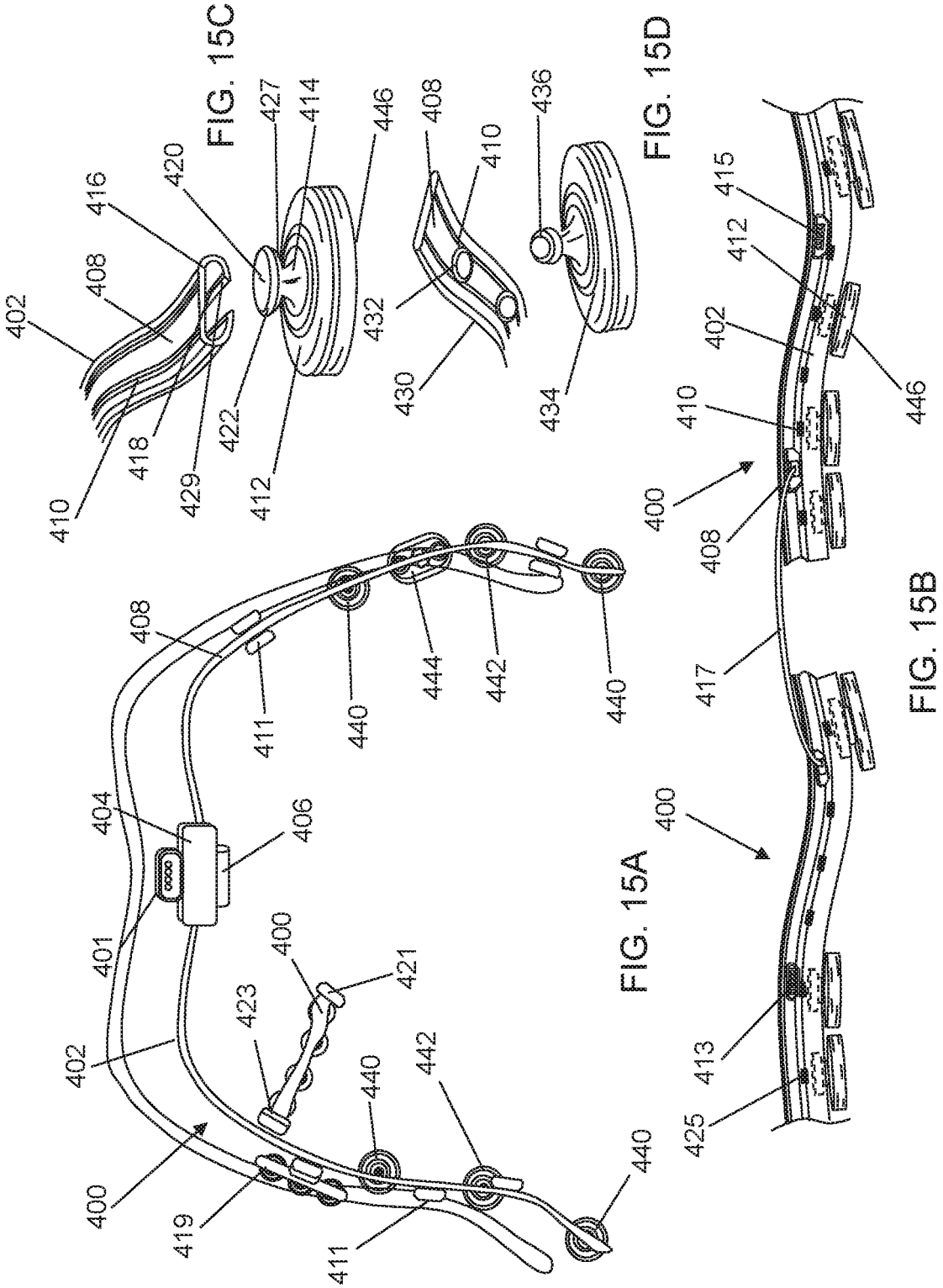

102
64
62
60
70
302
78
80
110
398
395
396
399
PAINTRACE
SAVE PRINT EMAIL
LIFETRACEIT
BIOTRACEIT
MEDITRACEIT
MED
FOOD
SLEEP
ACTIVITY
EXERCISE
PAINTRACE FACTOR
35
CONTRIBUTION FACTOR
12.75%
AVERAGE PMR
1.2
HRV
4.3
GSR
PTD
PTF 35
PTF 88
PTF 73
SP 32 MIN
SP 25 MIN
HOUR
DAY
JANUARY
TUESDAY 5
WEDNESDAY 6
THURSDAY 7
PM
1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
MIN
7:00
7:05
7:10
7:15
7:20
7:25
7:30
7:35
7:40
7:45
1.2 v
1.0 v
0.8 v
0.6 v
0.4 v
0.2 v

FIG. 14


FIG. 15C
FIG. 15D
FIG. 15A
FIG. 15B

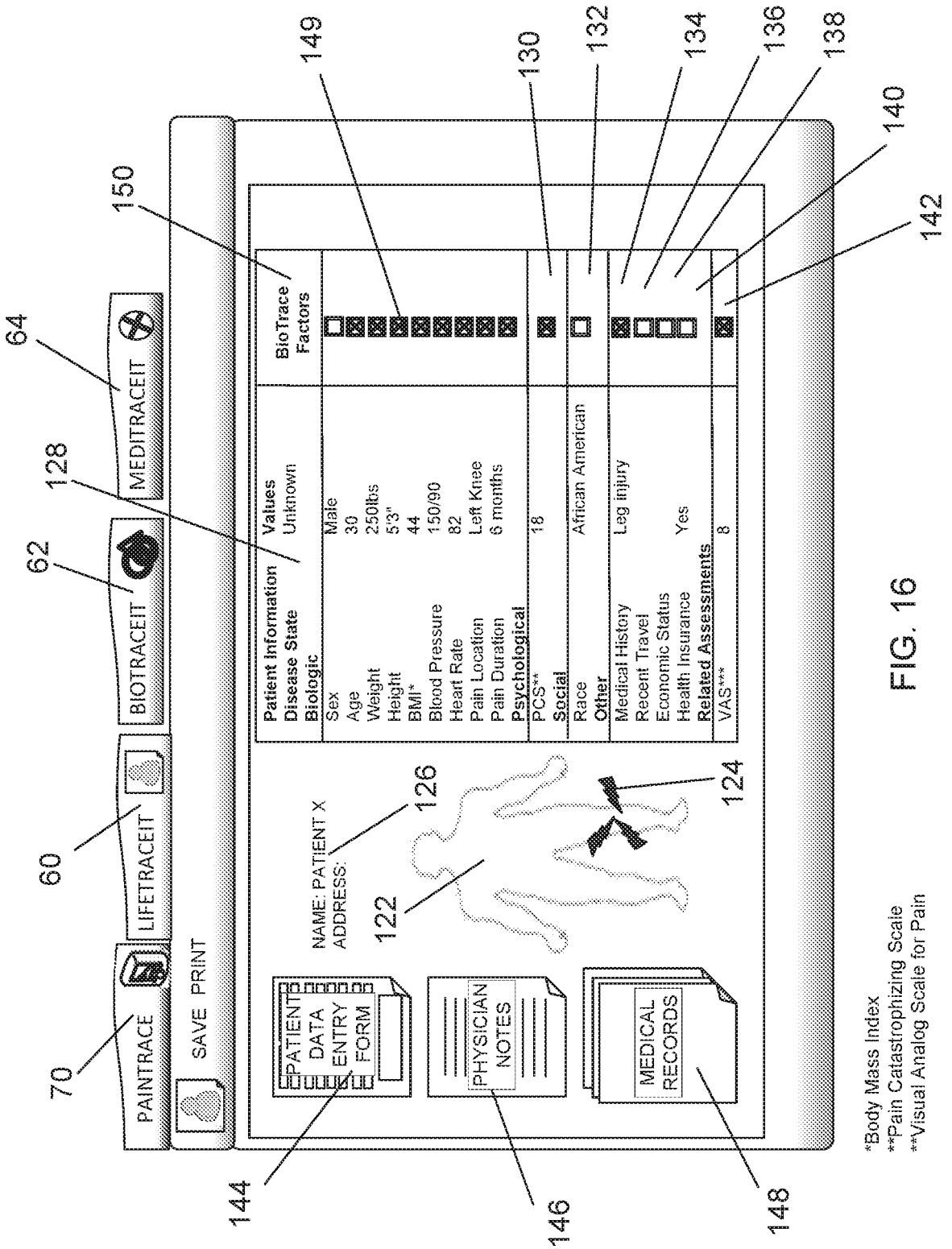

PAINTRACE
LIFETRACEIT
BIOTRACEIT
MEDITRACEIT
SAVE PRINT
NAME: PATIENT X
ADDRESS:
PATIENT DATA ENTRY FORM
PHYSICIAN NOTES
MEDICAL RECORDS
Patient Information
Disease State
Biologic
Sex
Age
Weight
Height
BMI*
Blood Pressure
Heart Rate
Pain Location
Pain Duration
Psychological
PCS**
Social
Race
Other
Medical History
Recent Travel
Economic Status
Health Insurance
Related Assessments
VAS***
Values
Unknown
Male
30
250lbs
5'3"
44
150/90
82
Left Knee
6 months
18
African American
Leg injury
Yes
8
BioTrace Factors
*Body Mass Index
**Pain Catastrophizing Scale
***Visual Analog Scale for Pain
70
60
62
64
128
150
149
130
132
134
136
138
140
142
122
124
126
144
146
148

FIG. 16

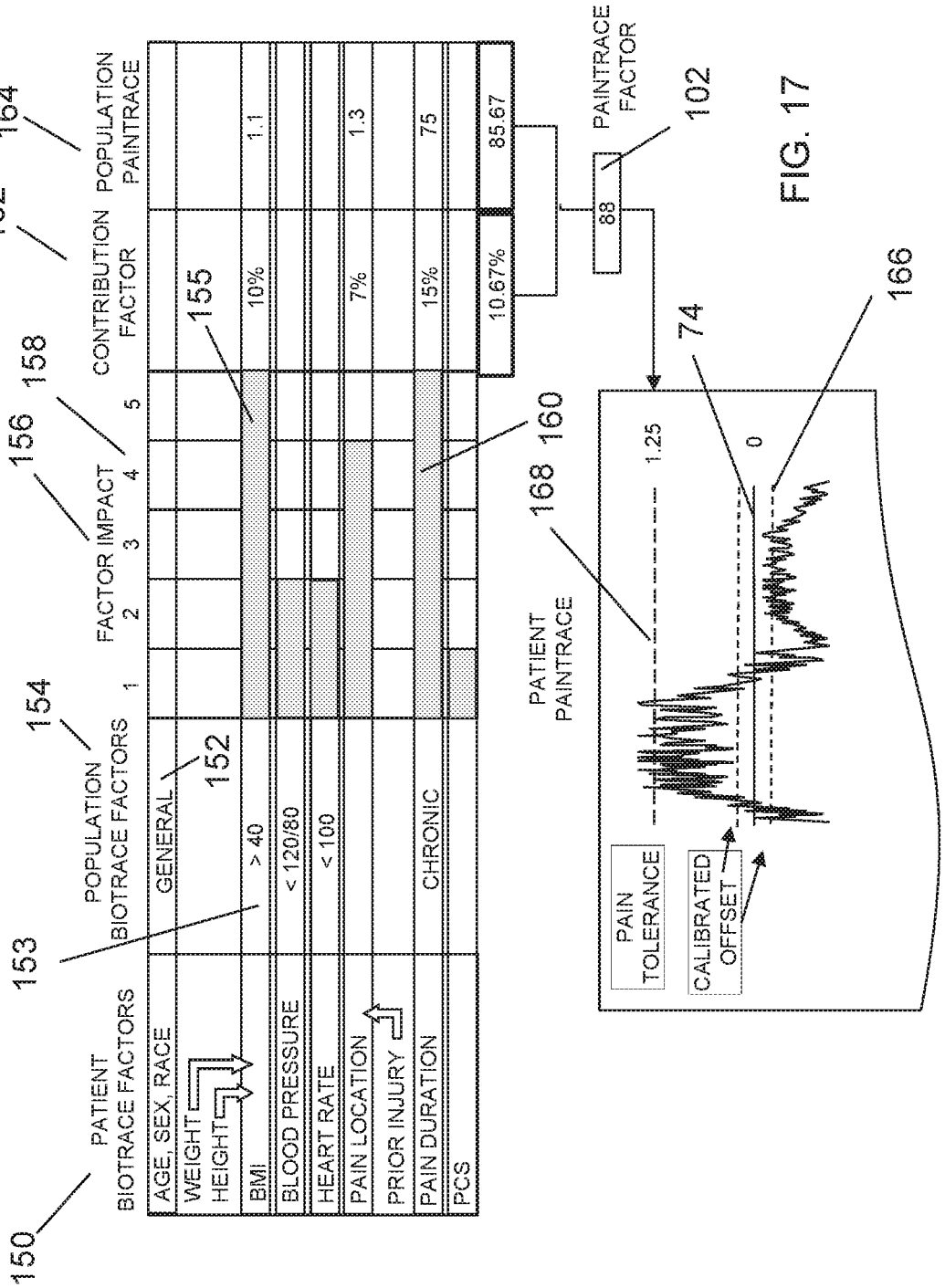

150
PATIENT BIOTRACE FACTORS
AGE, SEX, RACE
WEIGHT
HEIGHT
BMI
BLOOD PRESSURE
HEART RATE
PAIN LOCATION
PRIOR INJURY
PAIN DURATION
PCS
153
POPULATION BIOTRACE FACTORS
154
GENERAL
152
> 40
< 120/80
< 100
CHRONIC
FACTOR IMPACT
1
2
3
4
5
156
158
155
CONTRIBUTION FACTOR
162
10%
7%
15%
10.67%
POPULATION PAINTRACE
164
1.1
1.3
75
85.67
160
PATIENT PAINTRACE
168
PAINTRACE FACTOR
102
88
74
1.25
0
166
PAIN TOLERANCE
CALIBRATED OFFSET

FIG. 17

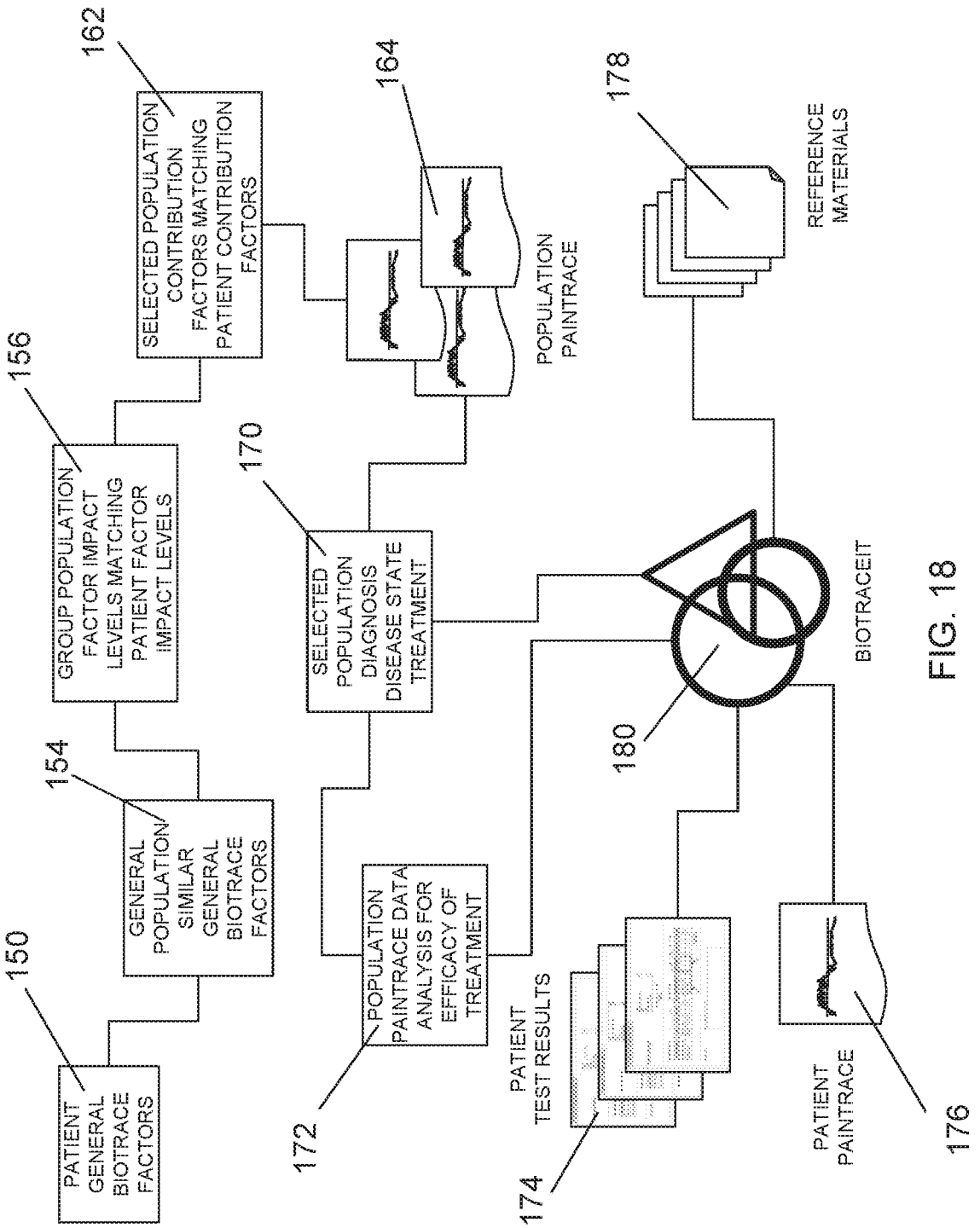

150
PATIENT GENERAL BIOTRACE FACTORS
154
GENERAL POPULATION SIMILAR GENERAL BIOTRACE FACTORS
156
GROUP POPULATION FACTOR IMPACT LEVELS MATCHING PATIENT FACTOR IMPACT LEVELS
162
SELECTED POPULATION CONTRIBUTION FACTORS MATCHING PATIENT CONTRIBUTION FACTORS
164
POPULATION PAINTRACE
170
SELECTED POPULATION DIAGNOSIS DISEASE STATE TREATMENT
172
POPULATION PAINTRACE DATA ANALYSIS FOR EFFICACY OF TREATMENT
174
PATIENT TEST RESULTS
176
PATIENT PAINTRACE
178
REFERENCE MATERIALS
180
BIOTRACEIT

FIG. 18

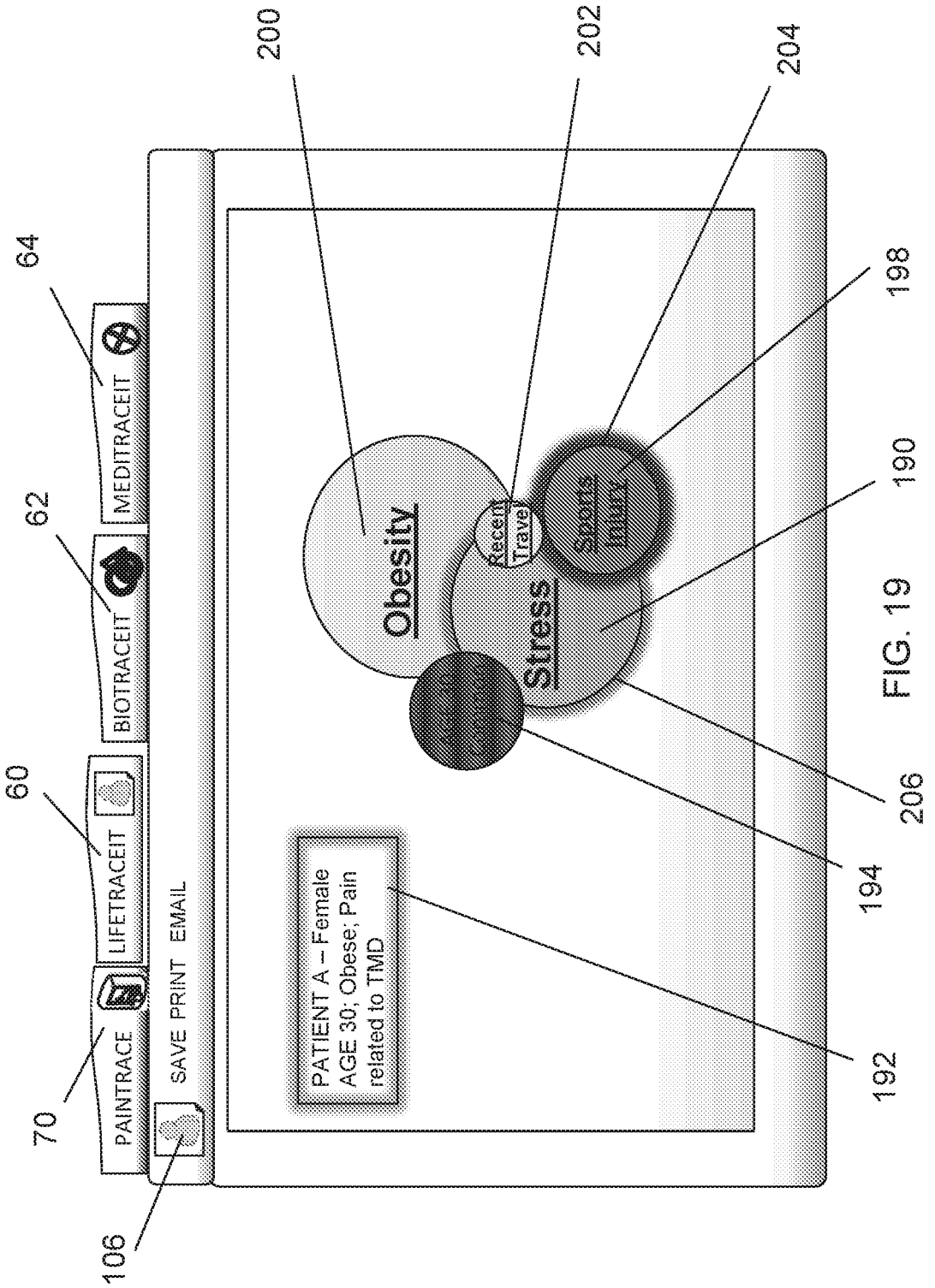

200
202
204
64
62
60
70
106
198
190
194
206
192
MEDITRACEIT
BIOTRACEIT
LIFETRACEIT
PAINTRACE
SAVE PRINT EMAIL
Obesity
Recent Travel
Stress
Sports Injury
PATIENT A – Female
AGE 30; Obese; Pain
related to TMD

FIG. 19

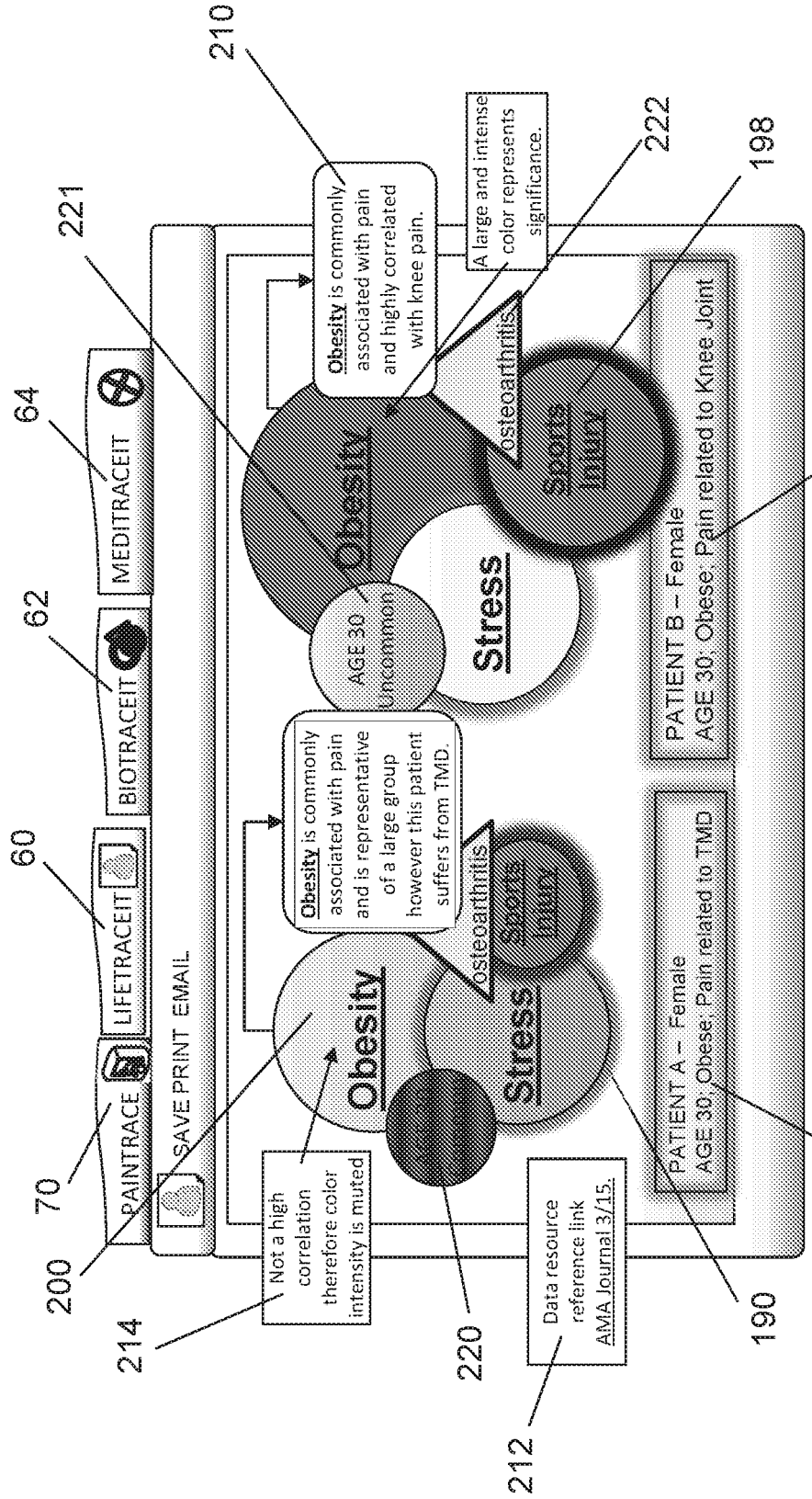

PAINTRACE
LIFETRACEIT
BIOTRACEIT
MEDITRACEIT
SAVE PRINT EMAIL
Obesity
Stress
Sports Injury
Osteoarthritis
AGE 30 Uncommon
Obesity is commonly associated with pain and highly correlated with knee pain.
A large and intense color represents significance.
Obesity is commonly associated with pain and is representative of a large group however this patient suffers from TMD.
Not a high correlation therefore color intensity is muted
Data resource reference link AMA Journal 3/15.
PATIENT A – Female
AGE 30, Obese, Pain related to TMD
PATIENT B – Female
AGE 30, Obese, Pain related to Knee Joint
60
62
64
70
200
214
220
212
210
221
222
198
218
216
190

FIG. 20

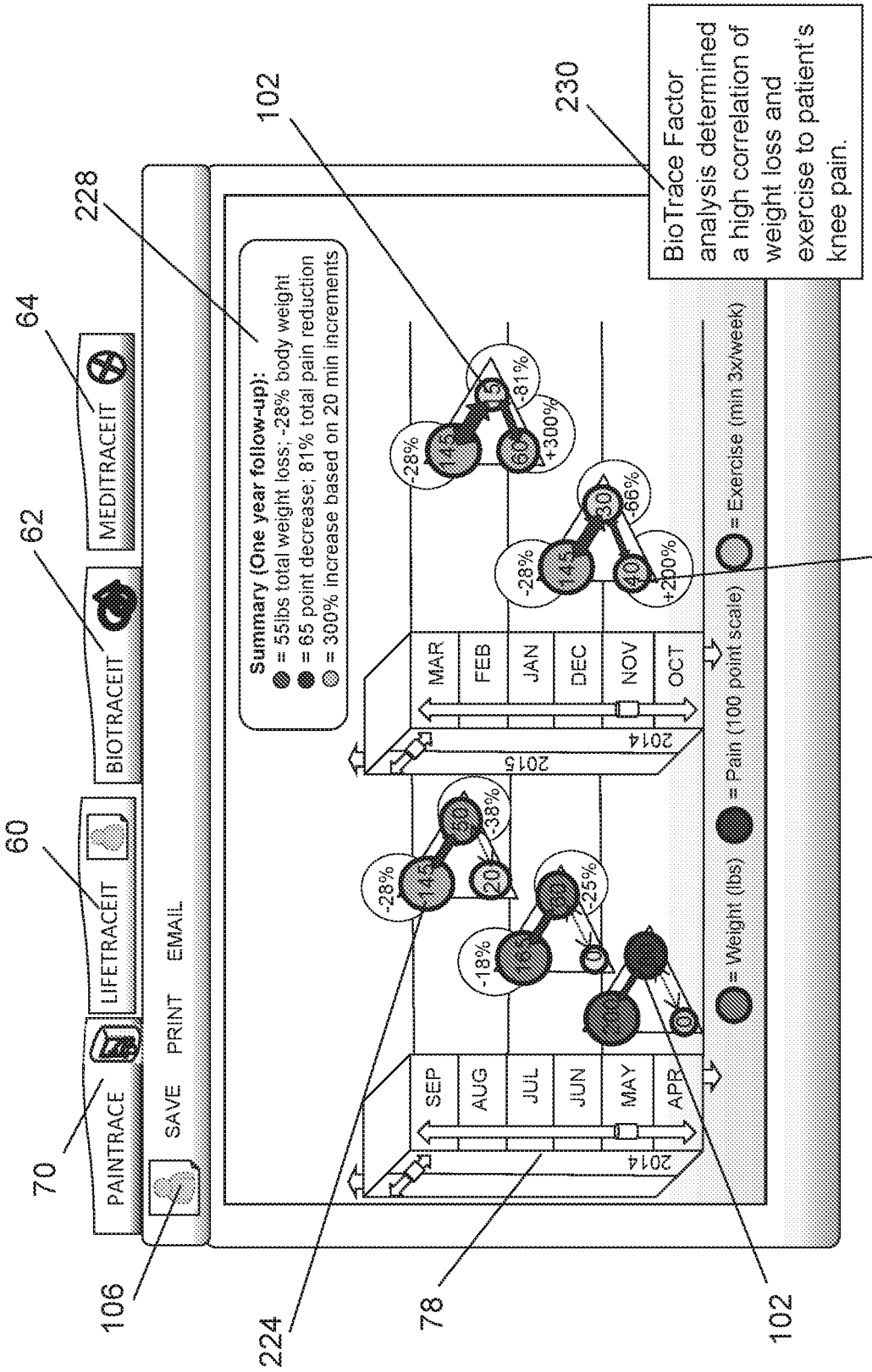

PAINTRACE
LIFETRACEIT
BIOTRACEIT
MEDITRACEIT
SAVE
PRINT
EMAIL
Summary (One year follow-up):
= 55lbs total weight loss; -28% body weight
= 65 point decrease; 81% total pain reduction
= 300% increase based on 20 min increments
BioTrace Factor analysis determined a high correlation of weight loss and exercise to patient's knee pain.
= Weight (lbs)
= Pain (100 point scale)
= Exercise (min 3x/week)
2014
2015
SEP
AUG
JUL
JUN
MAY
APR
MAR
FEB
JAN
DEC
NOV
OCT
-28%
-38%
-18%
-25%
-81%
+300%
-66%
+200%
70
106
60
62
64
228
102
230
224
78
226

FIG. 21

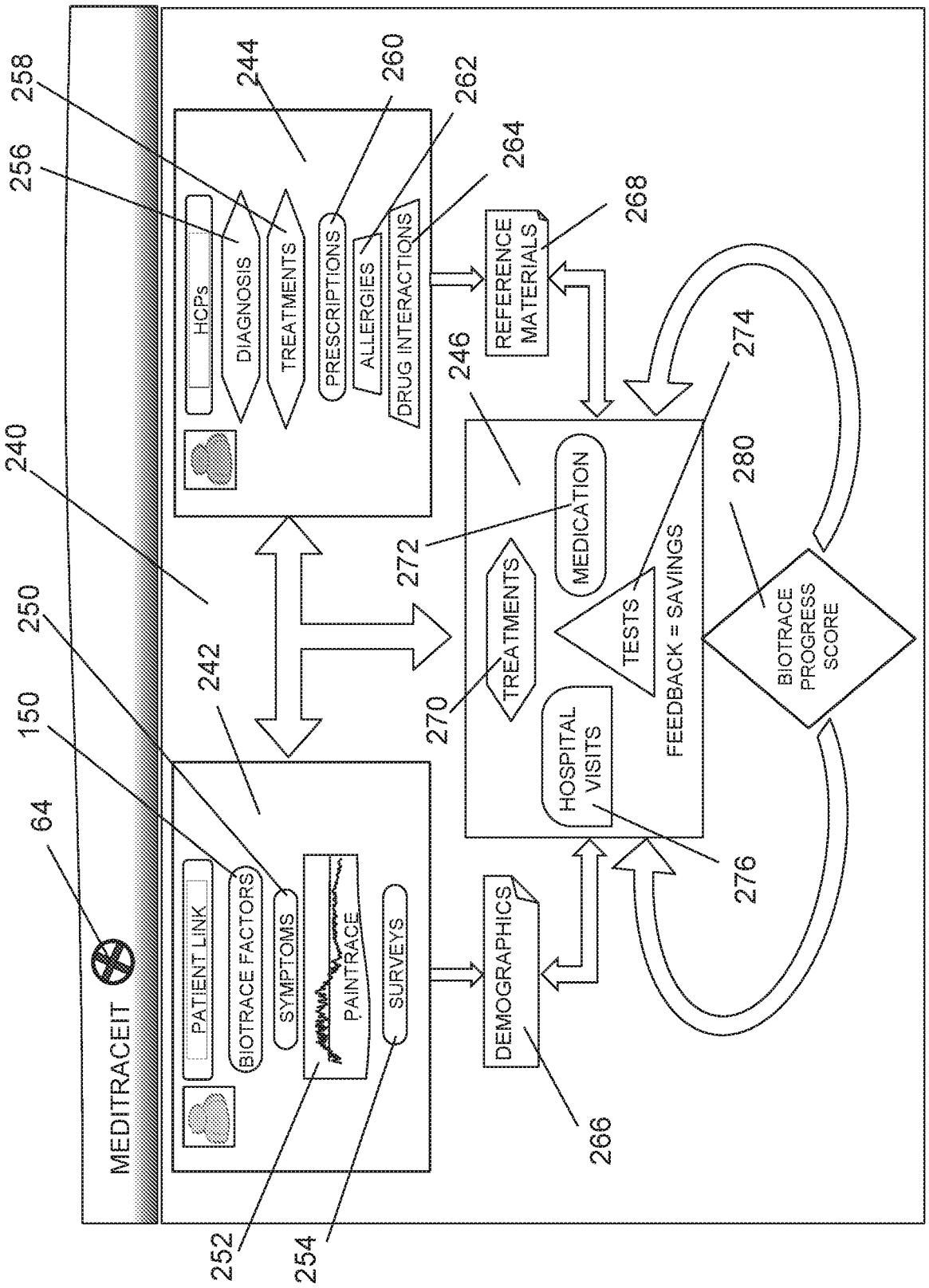

MEDITRACEIT
PATIENT LINK
BIOTRACE FACTORS
SYMPTOMS
PAINTRACE
SURVEYS
HCPs
DIAGNOSIS
TREATMENTS
PRESCRIPTIONS
ALLERGIES
DRUG INTERACTIONS
REFERENCE MATERIALS
DEMOGRAPHICS
TREATMENTS
MEDICATION
HOSPITAL VISITS
TESTS
FEEDBACK = SAVINGS
BIOTRACE PROGRESS SCORE
64
150
240
242
244
246
250
252
254
256
258
260
262
264
266
268
270
272
274
276
280

FIG. 22

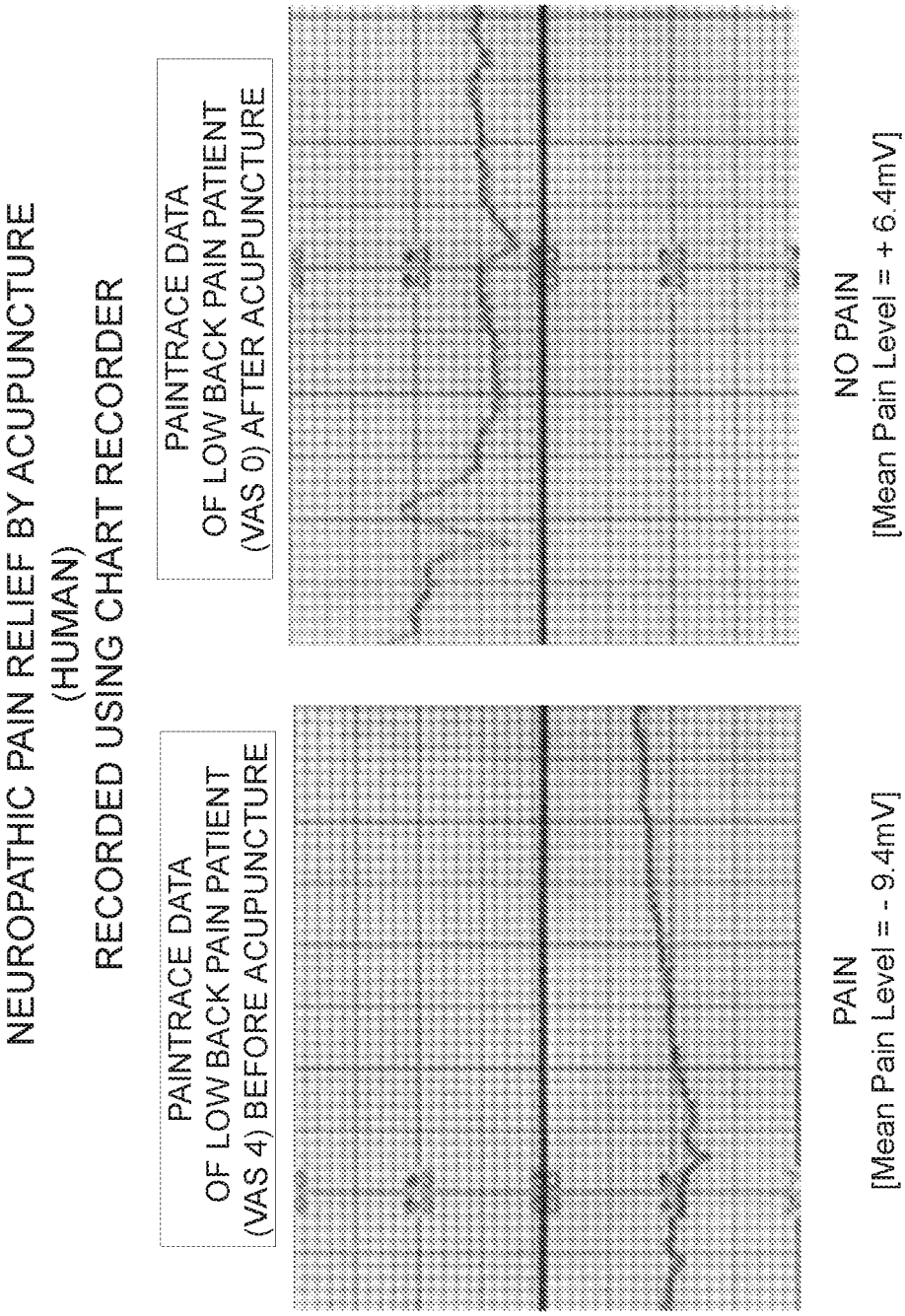

NEUROPATHIC PAIN RELIEF BY ACUPUNCTURE
(HUMAN)
RECORDED USING CHART RECORDER
PAINTRACE DATA
OF LOW BACK PAIN PATIENT
(VAS 4) BEFORE ACUPUNCTURE
PAIN
[Mean Pain Level = - 9.4mV]
PAINTRACE DATA
OF LOW BACK PAIN PATIENT
(VAS 0) AFTER ACUPUNCTURE
NO PAIN
[Mean Pain Level = + 6.4mV]

FIG. 23

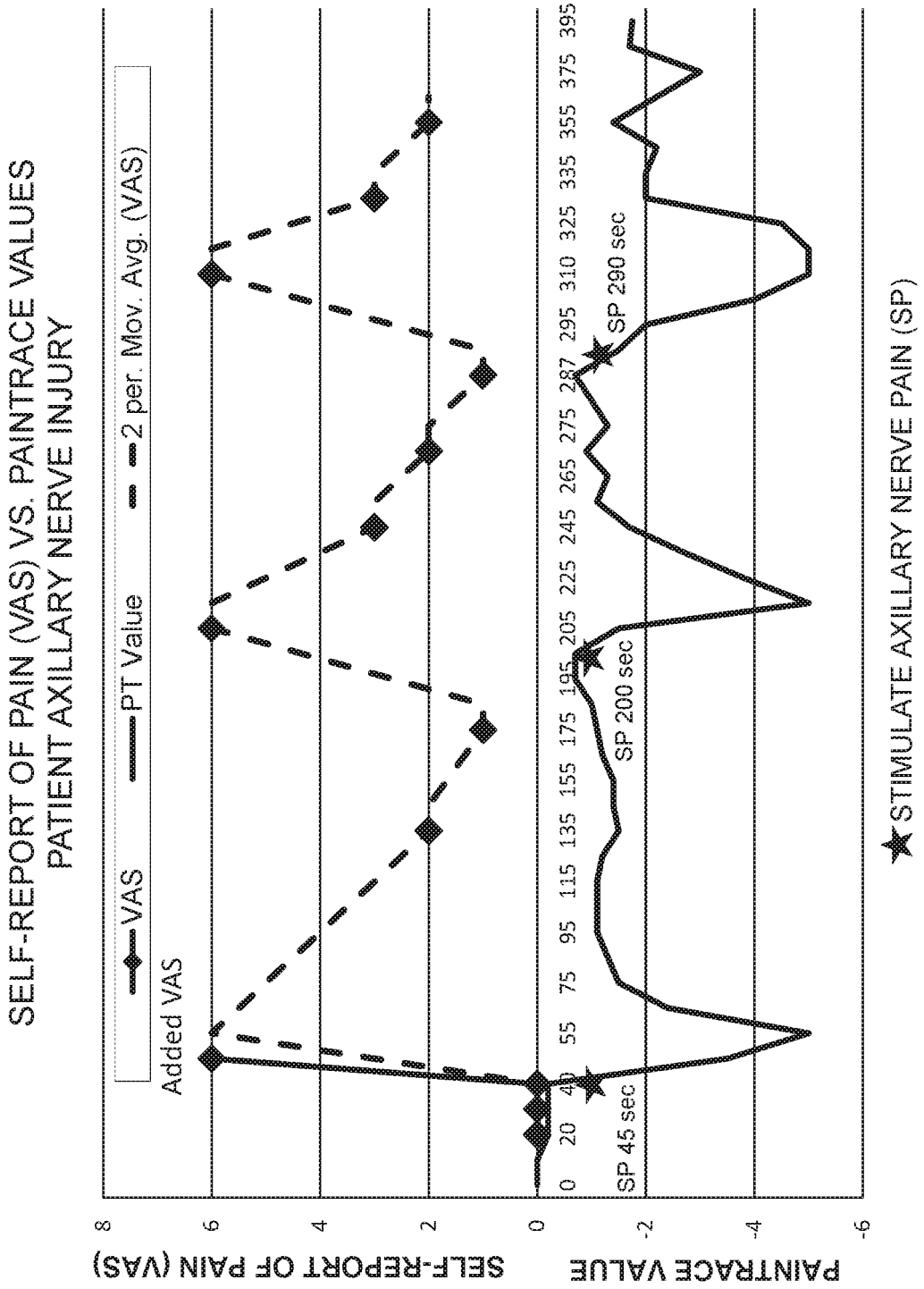

SELF-REPORT OF PAIN (VAS) VS. PAINTRACE VALUES
PATIENT AXILLARY NERVE INJURY
VAS
PT Value
2 per. Mov. Avg. (VAS)
Added VAS
SELF-REPORT OF PAIN (VAS)
PAINTRACE VALUE
8
6
4
2
0
-2
-4
-6
0
20
40
55
75
95
115
135
155
175
195
205
225
245
265
275
287
295
310
325
335
355
375
395
SP 45 sec
SP 200 sec
SP 290 sec
STIMULATE AXILLARY NERVE PAIN (SP)

FIG. 24

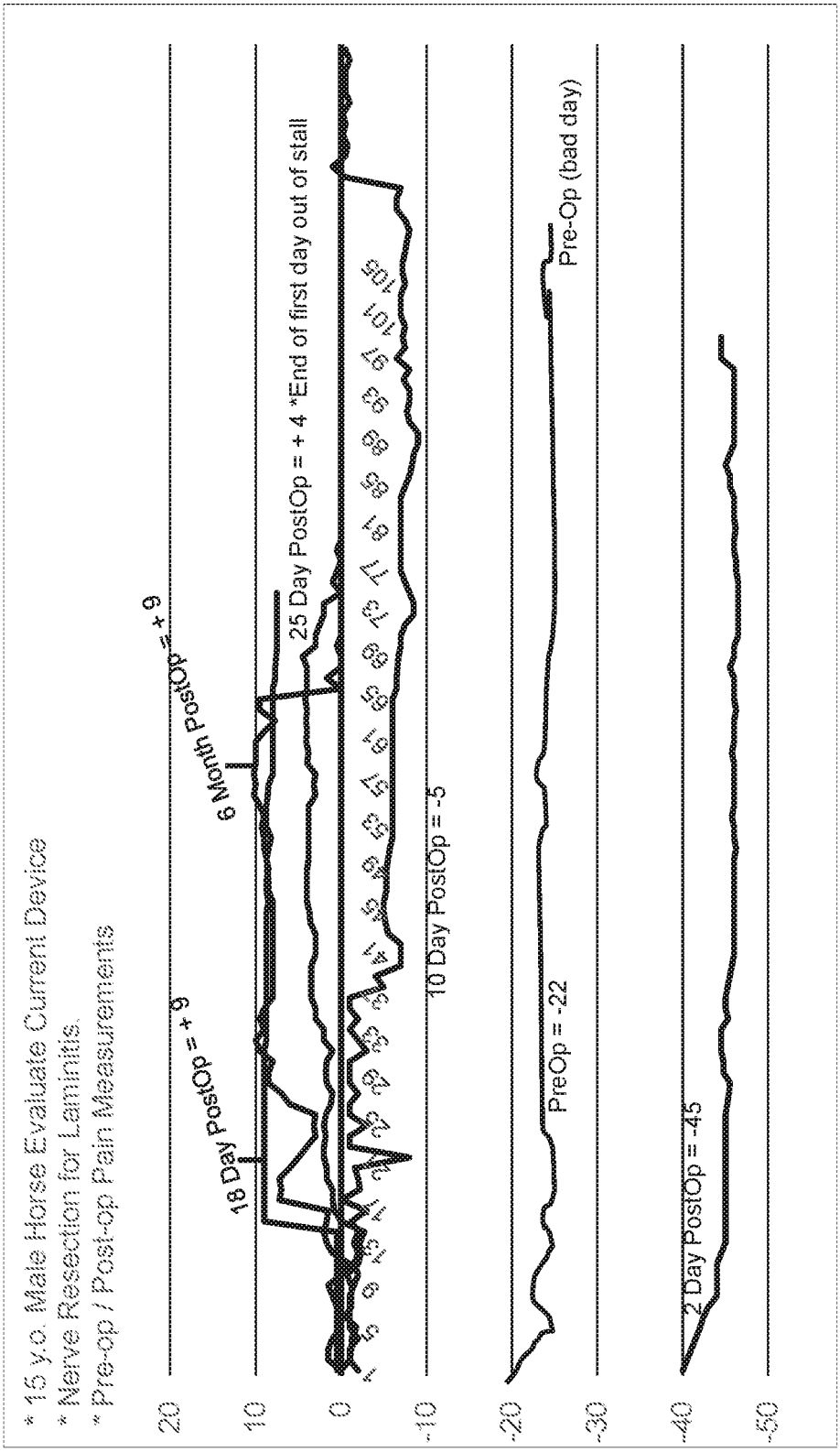

* 15 y.o. Male Horse Evaluate Current Device
* Nerve Resection for Laminitis
* Pre-op / Post-op Pain Measurements
20
10
0
-10
-20
-30
-40
-50
18 Day PostOp = + 9
6 Month PostOp = + 9
25 Day PostOp = + 4 *End of first day out of stall
10 Day PostOp = -5
PreOp = -22
Pre-Op (bad day)
2 Day PostOp = -45

FIG. 25

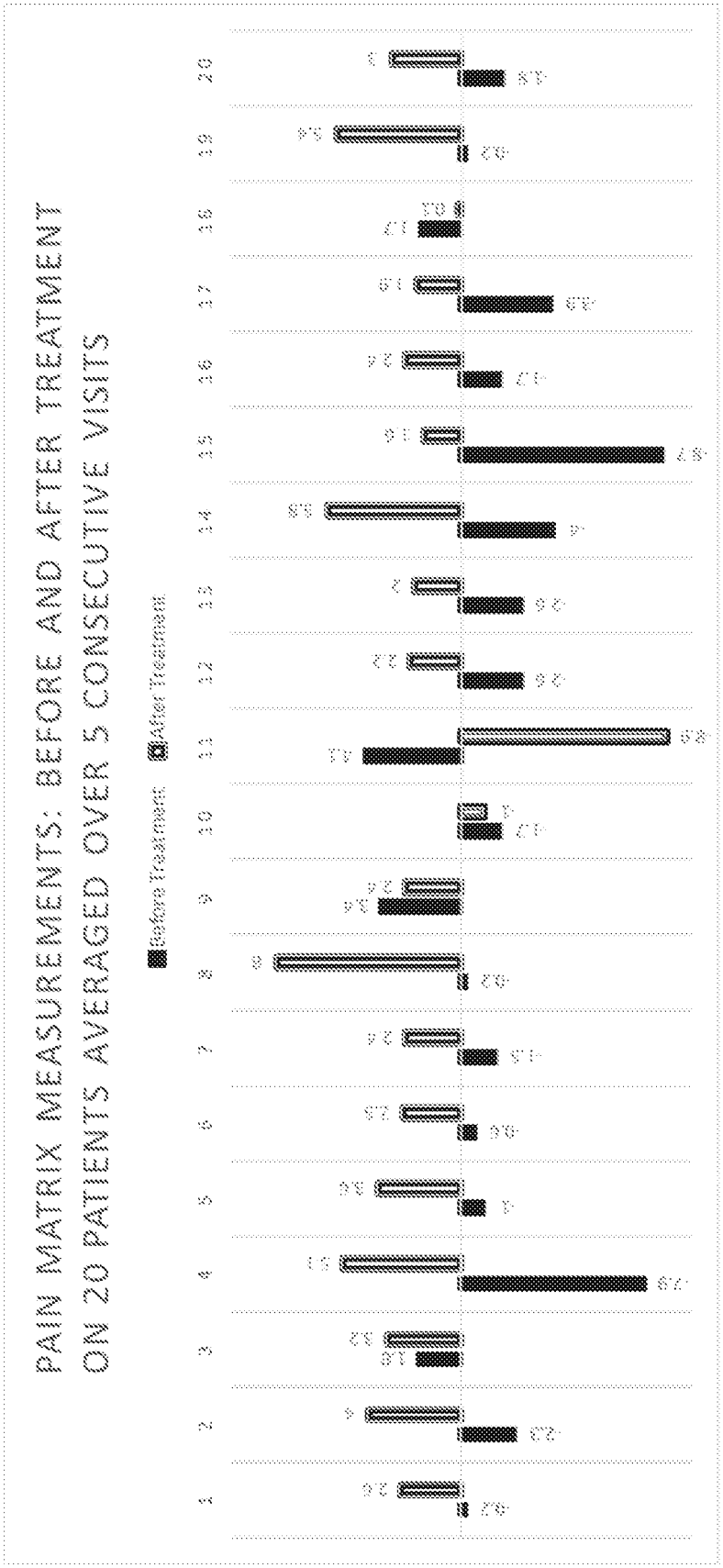

PAIN MATRIX MEASUREMENTS: BEFORE AND AFTER TREATMENT
ON 20 PATIENTS AVERAGED OVER 5 CONSECUTIVE VISITS
Before Treatment
After Treatment

FIG. 26