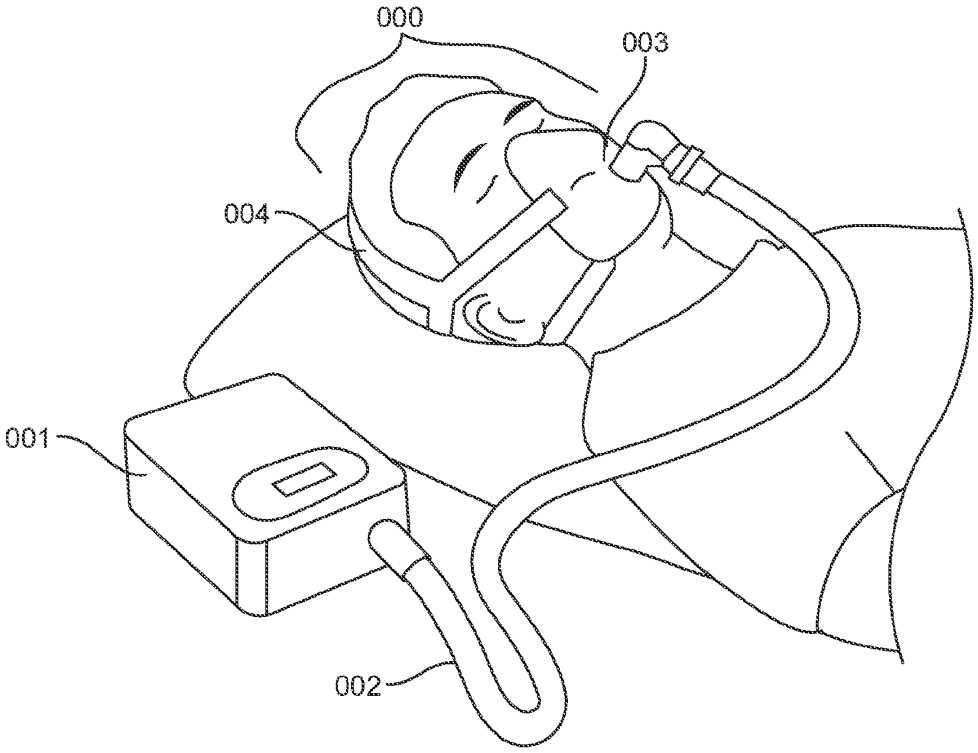


FIG. 1
(PRIOR ART)

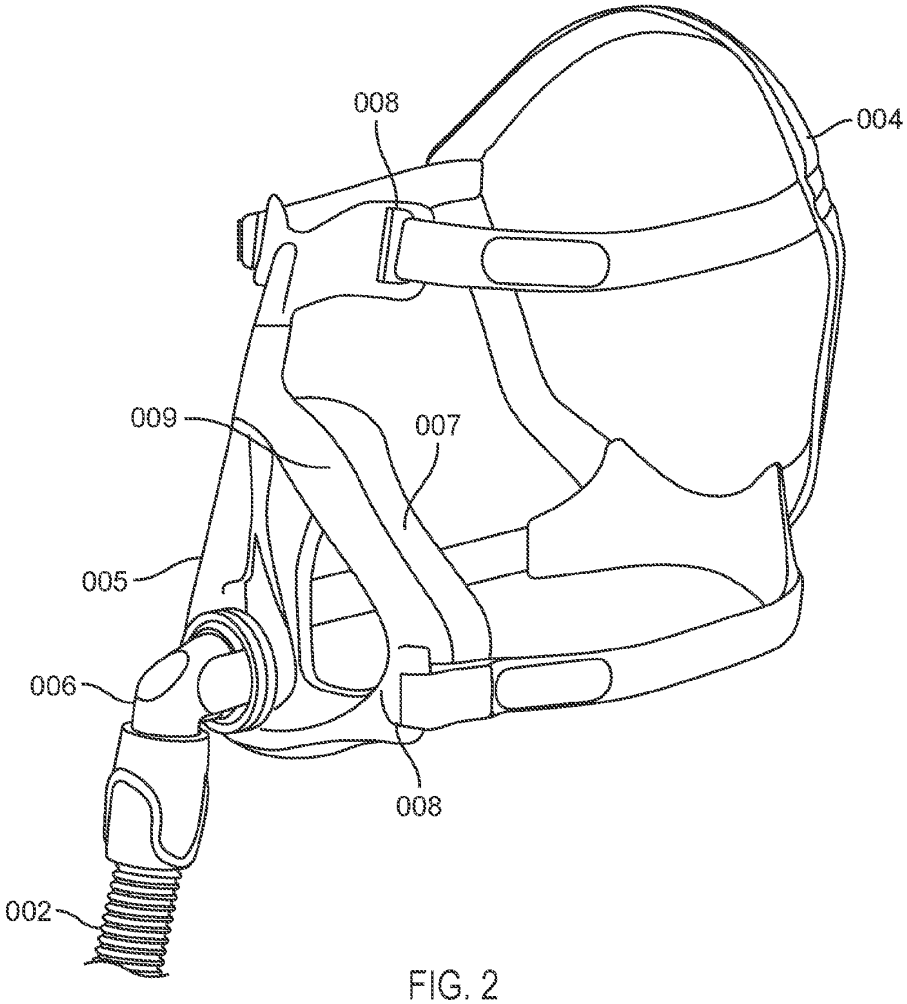


FIG. 2
(PRIOR ART)

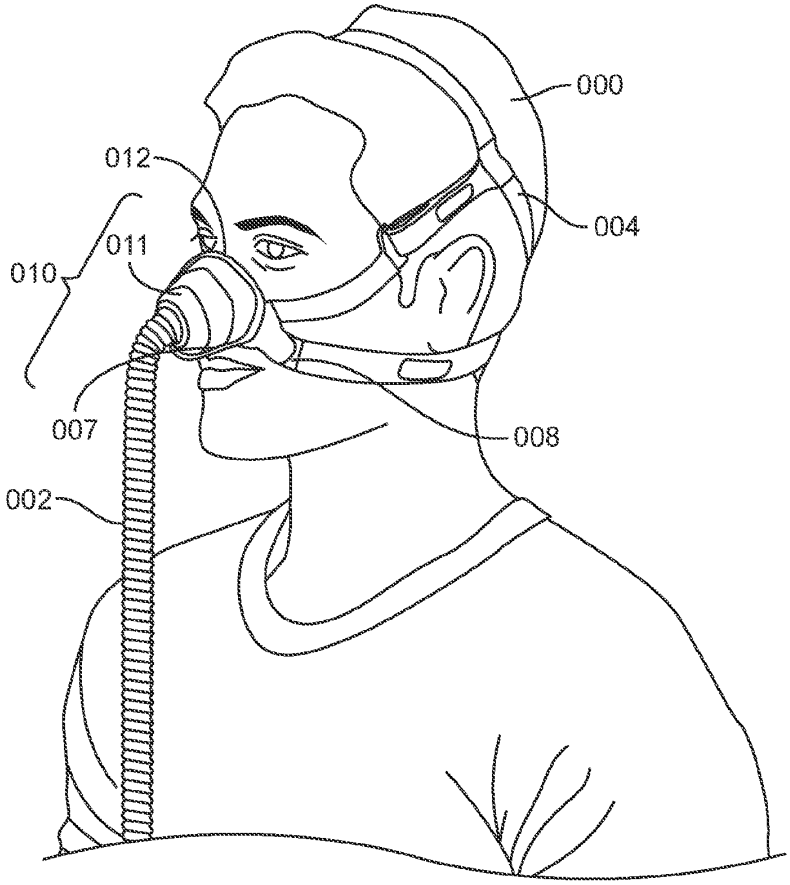


FIG. 3
(PRIOR ART)

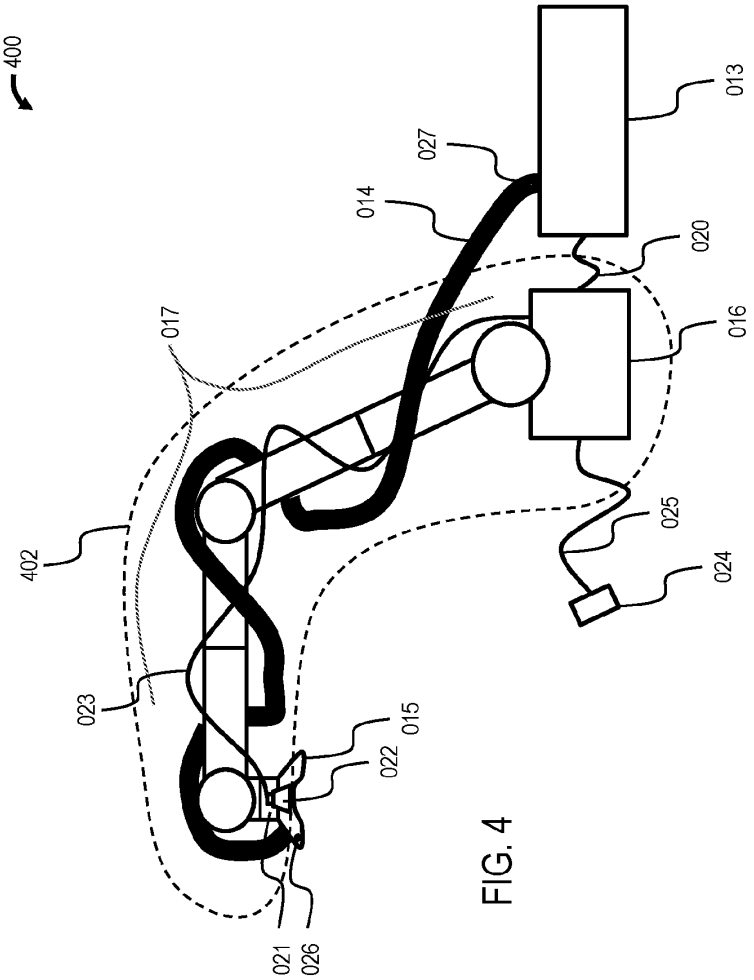


FIG. 4

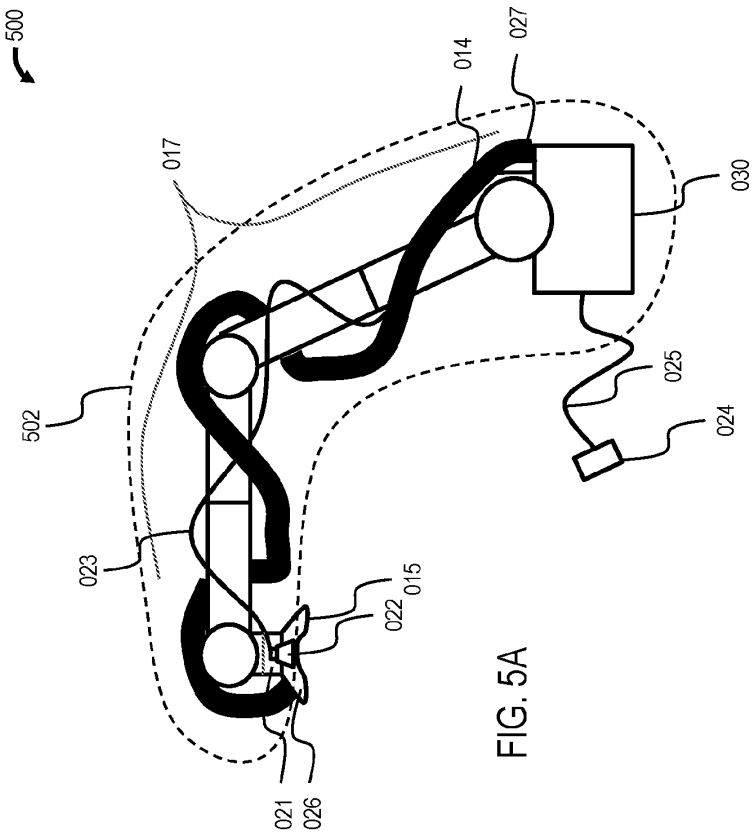
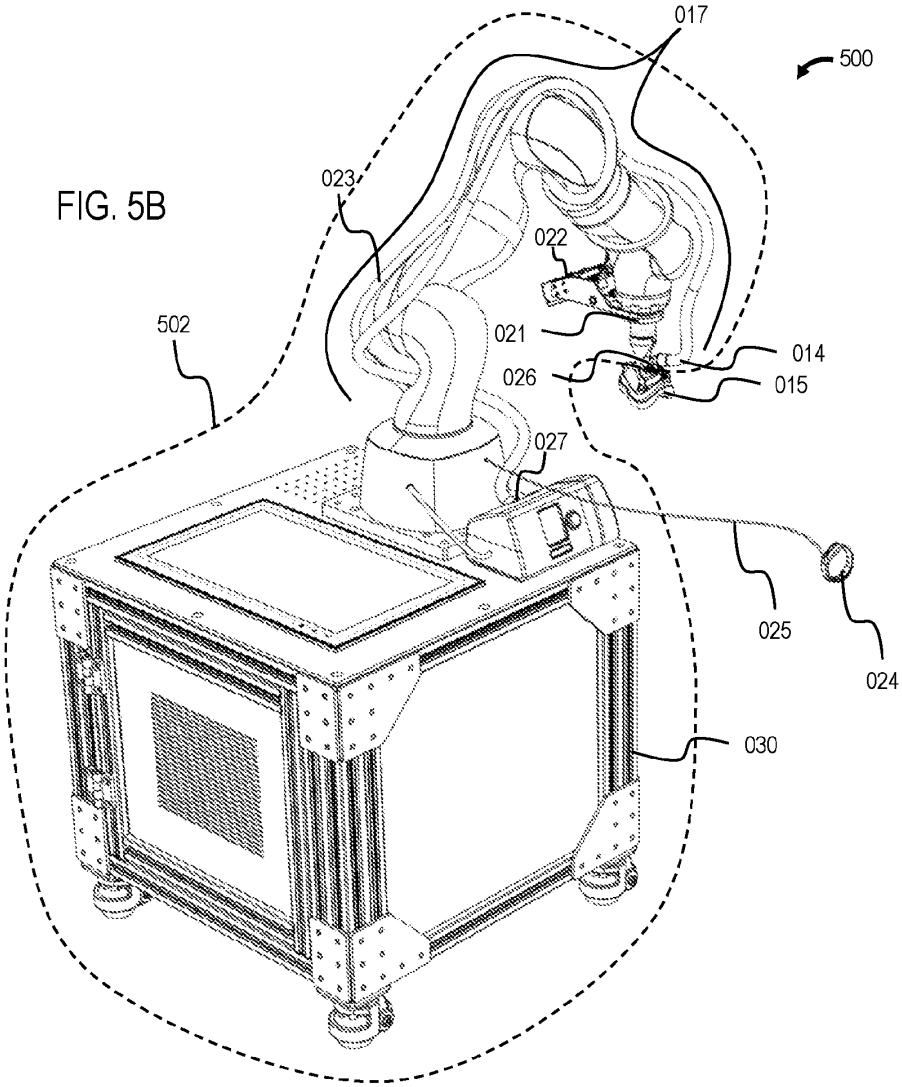


FIG. 5A

FIG. 5B



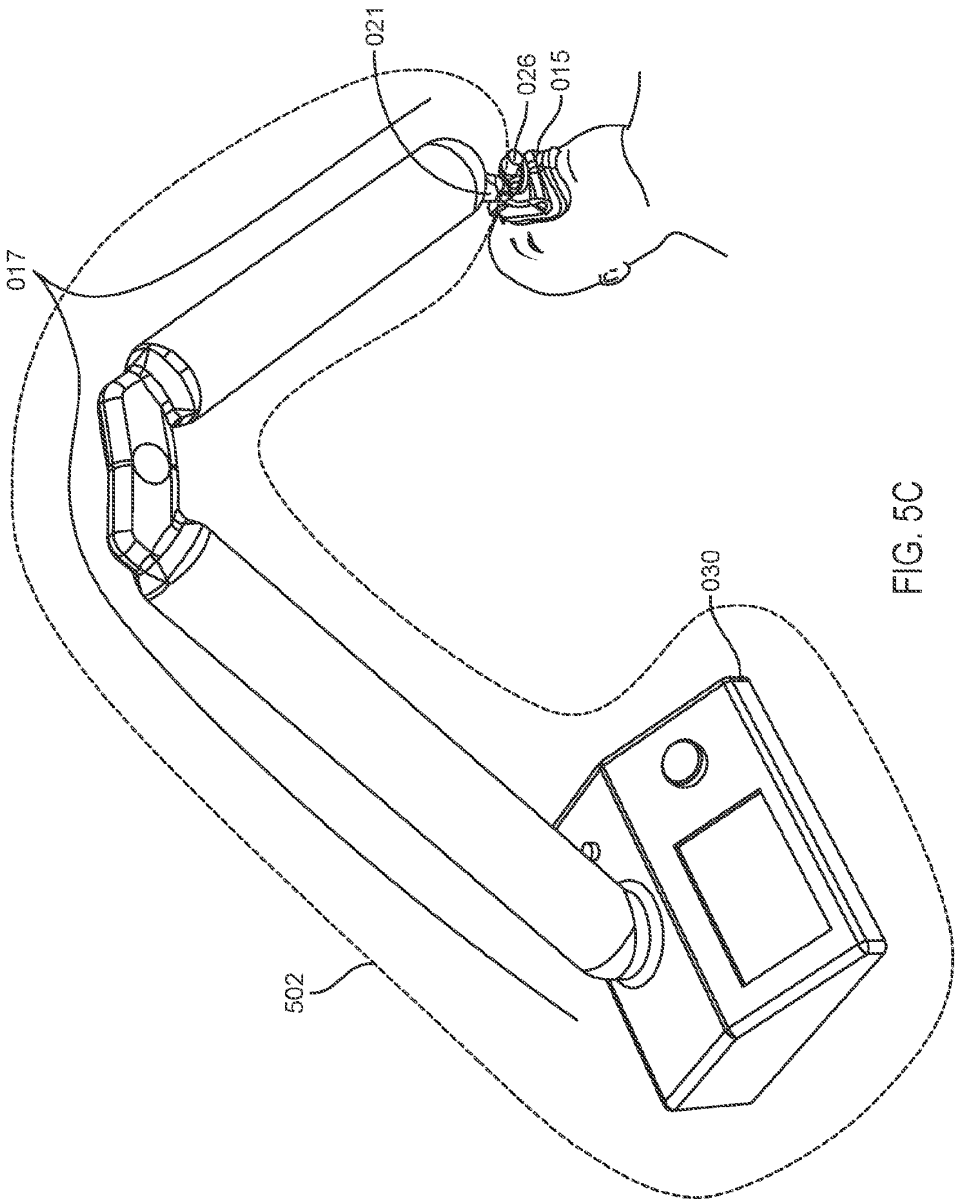


FIG. 5C

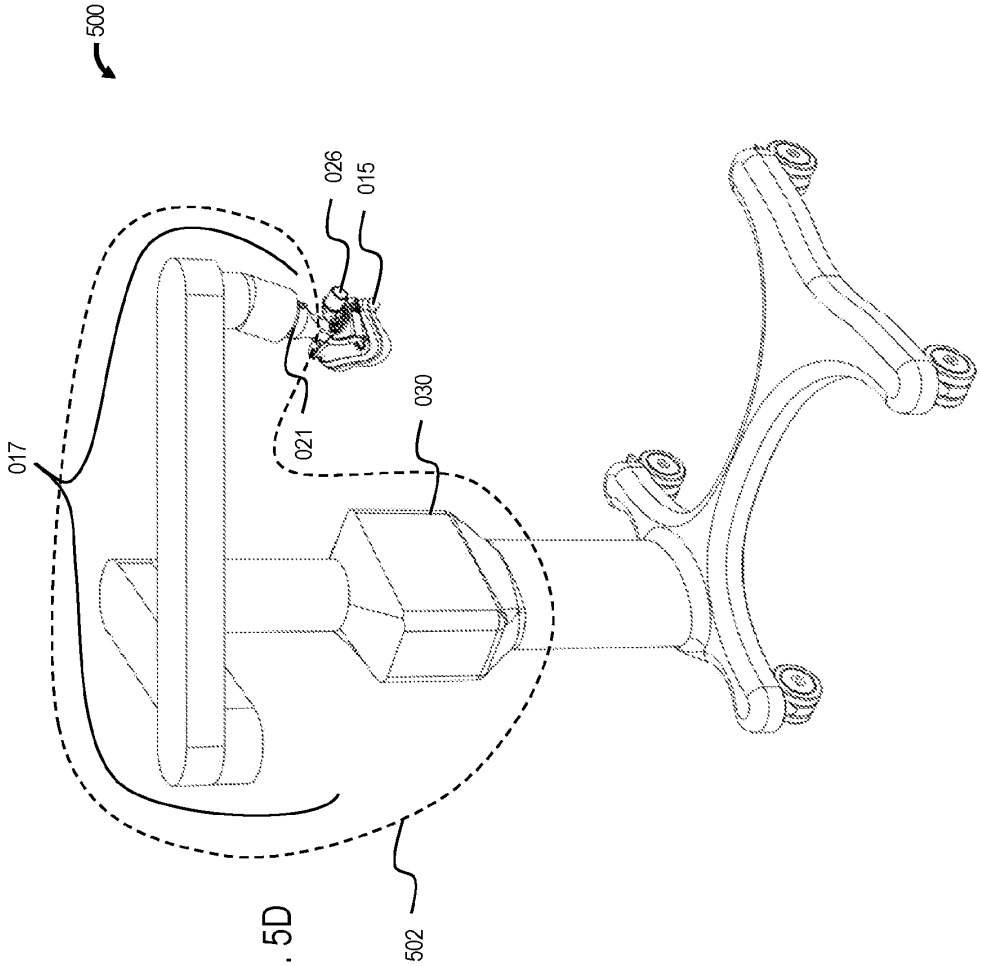


FIG. 5D

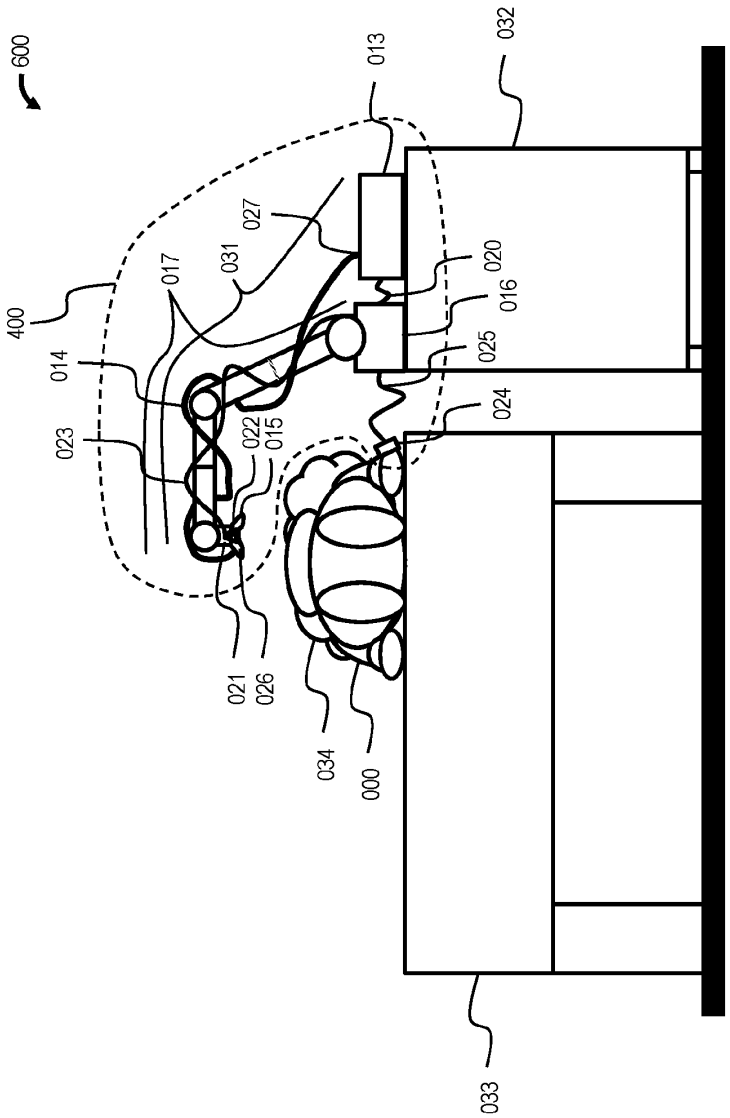

600
013
032
027
031
017
020
016
400
014
025
024
023
022
015
021
026
034
000
033

FIG. 6A

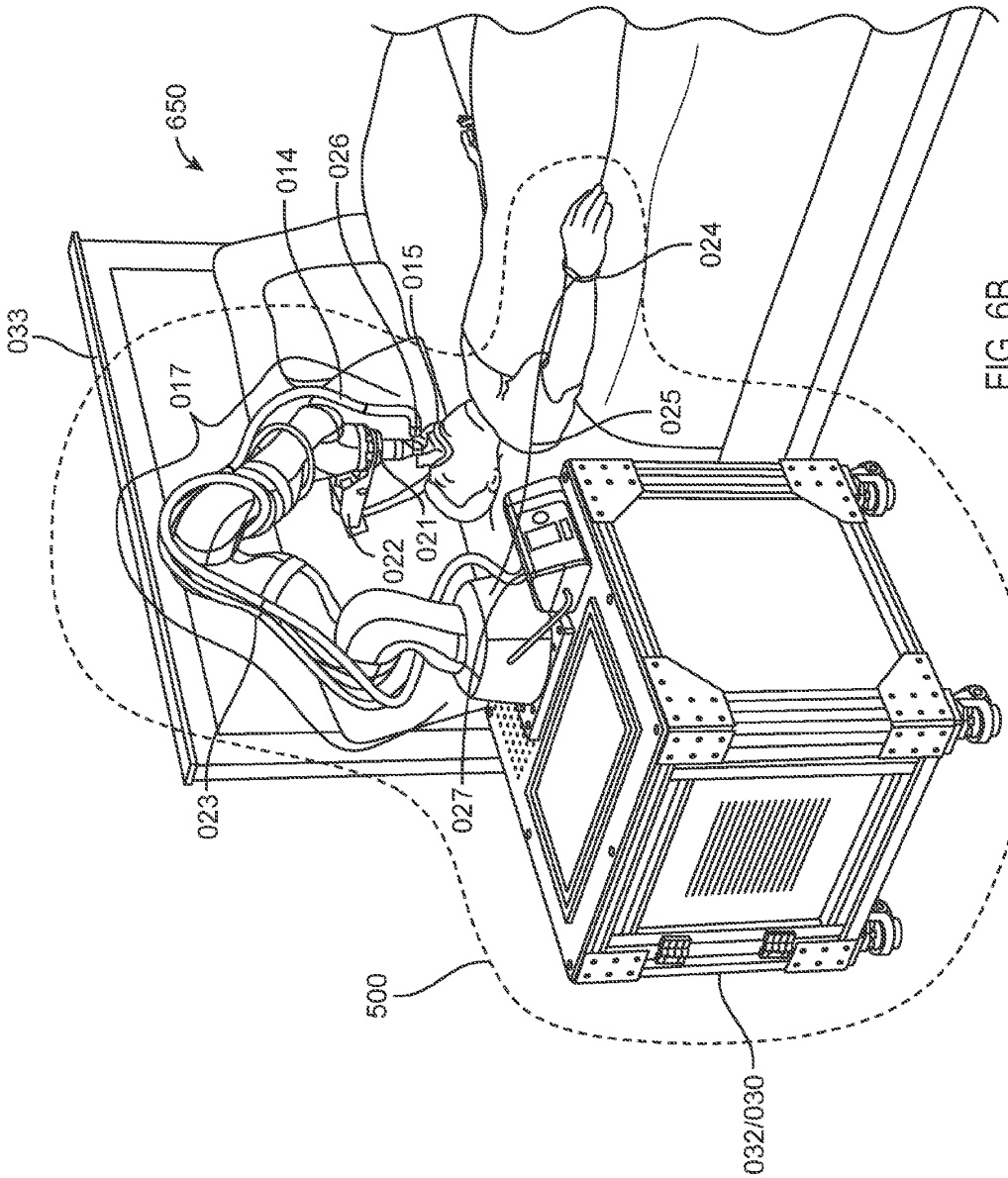


FIG. 6B

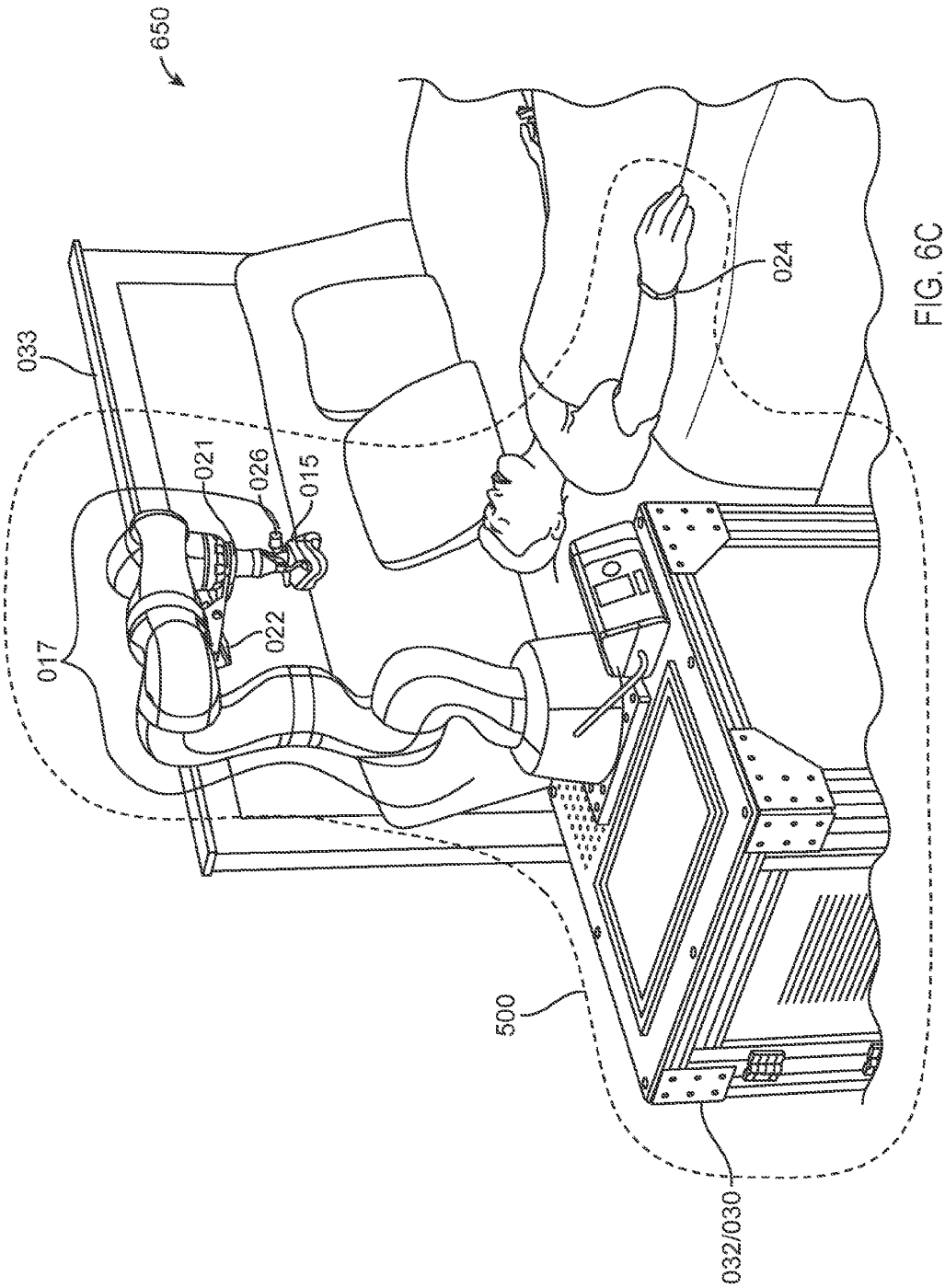


FIG. 6C

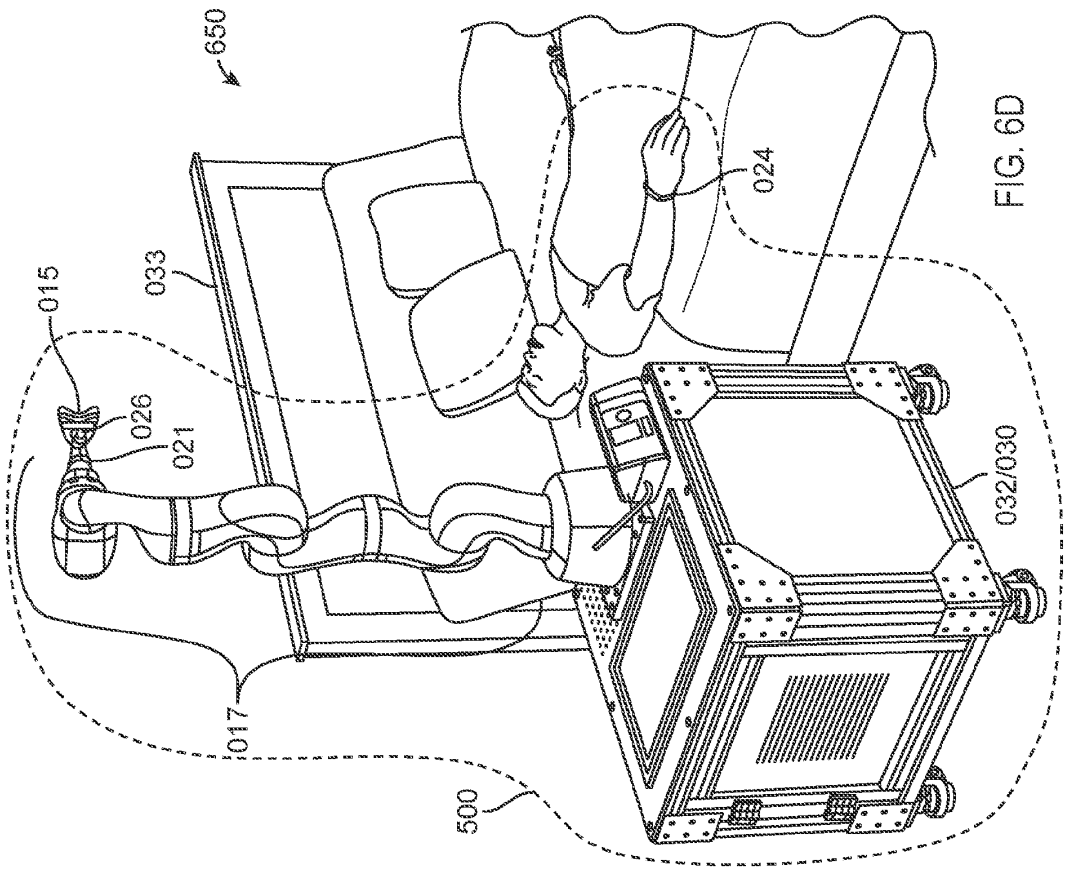
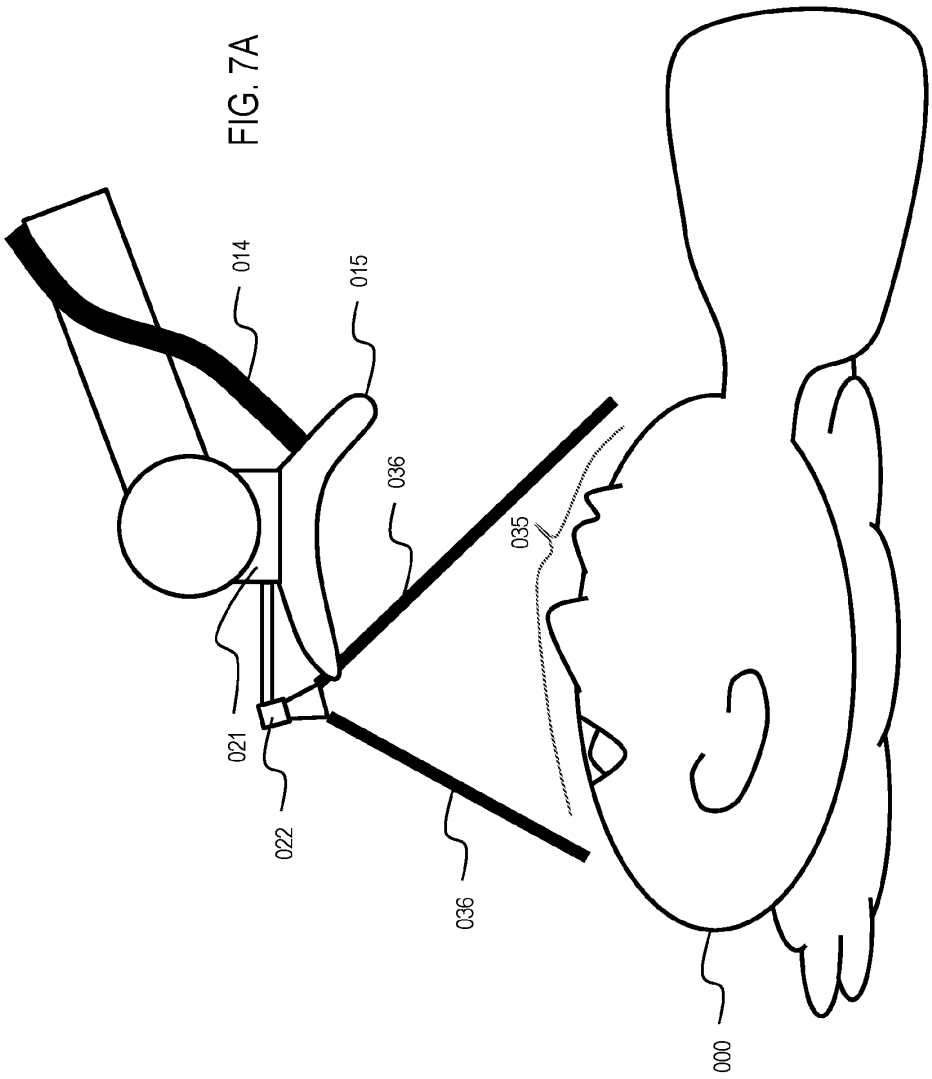


FIG. 6D

FIG. 7A



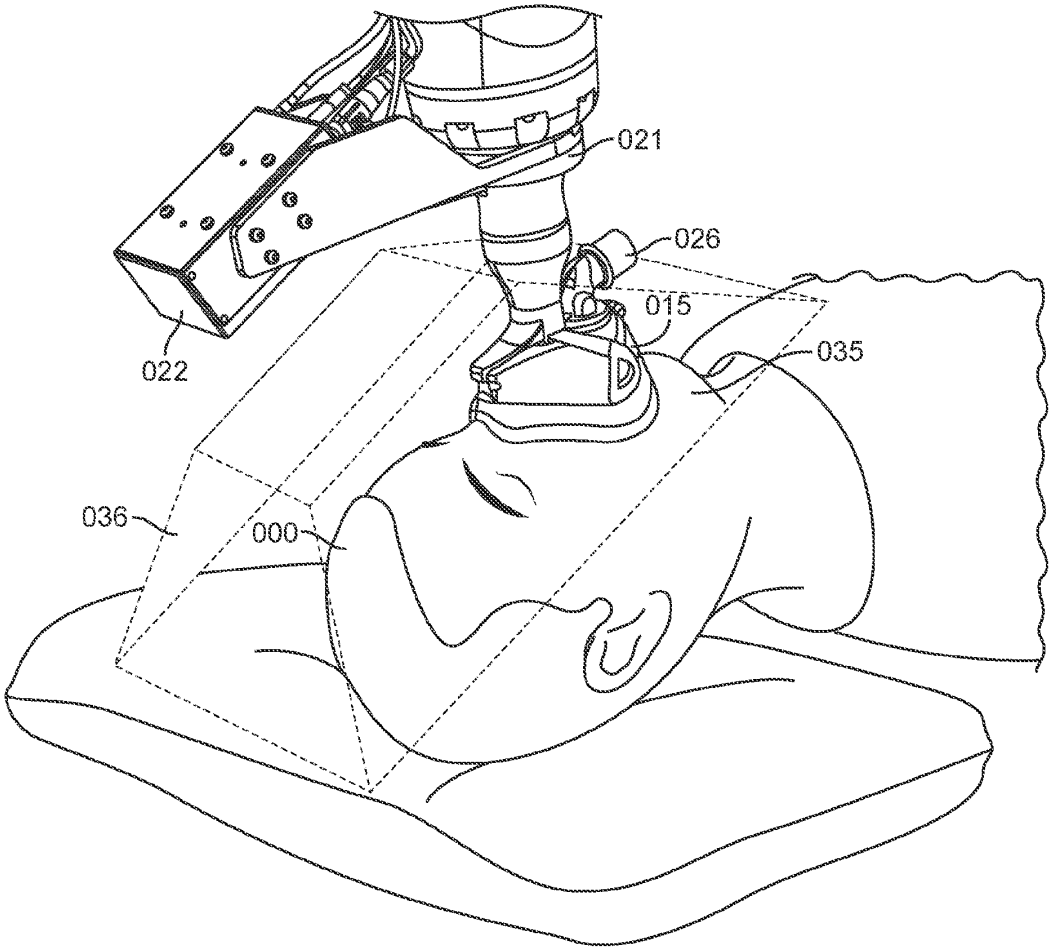


FIG. 7B

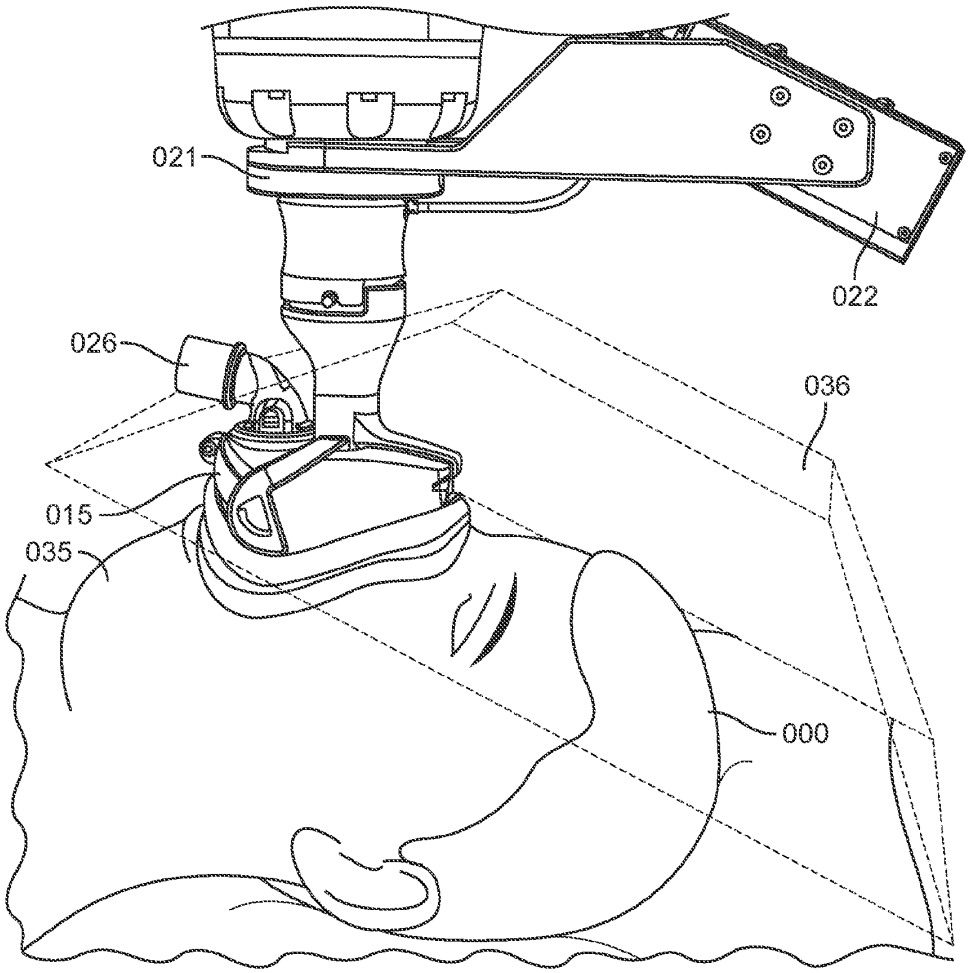


FIG. 7C

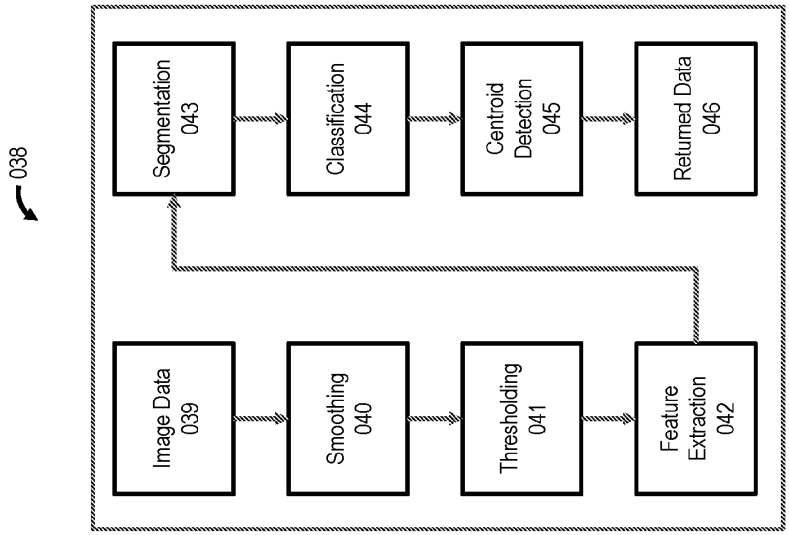

038
Segmentation 043
Classification 044
Centroid Detection 045
Returned Data 046
Image Data 039
Smoothing 040
Thresholding 041
Feature Extraction 042

FIG. 8

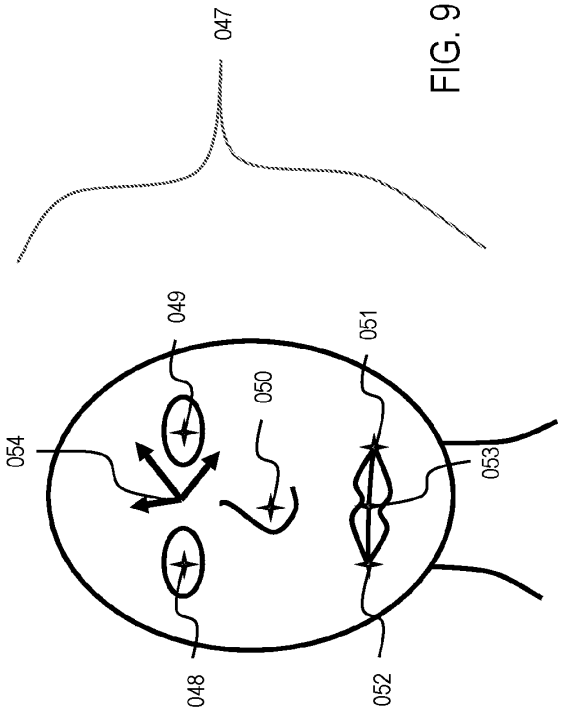


FIG. 9

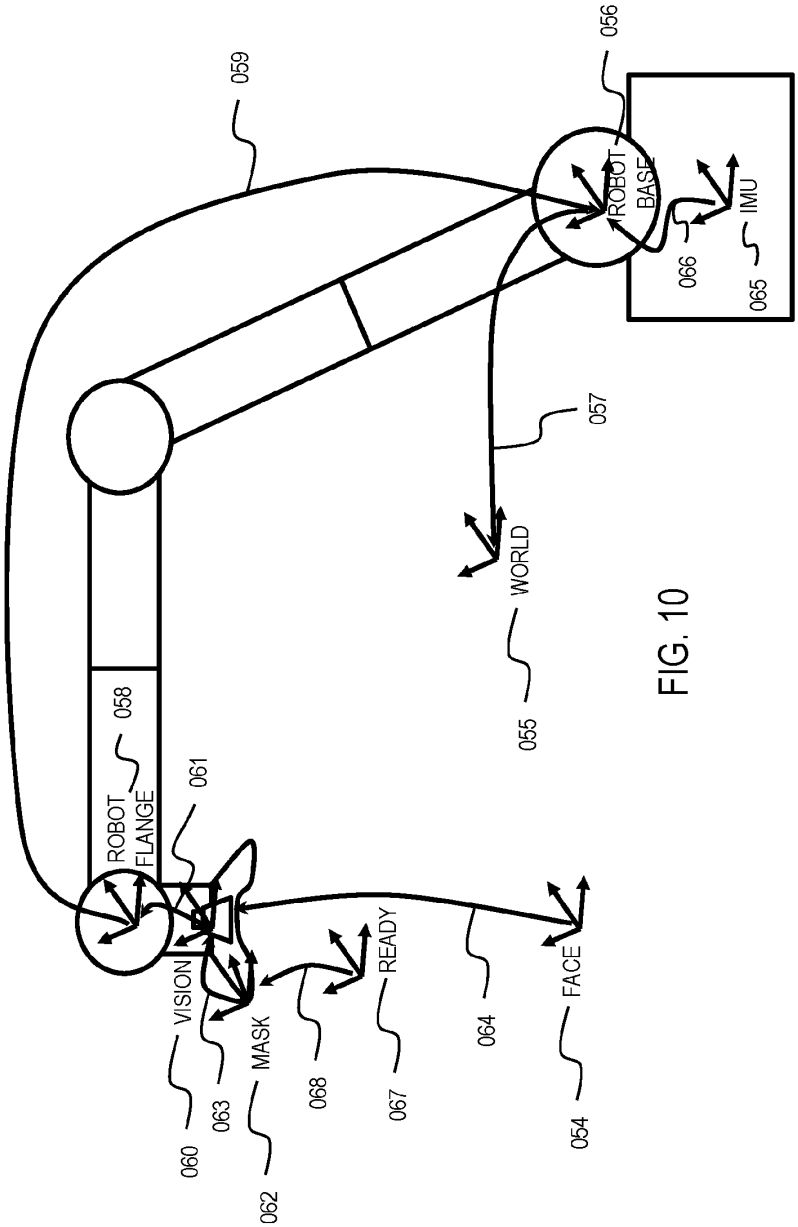

059
056
ROBOT BASE
IMU
066
065
057
WORLD
055
058
ROBOT FLANGE
061
VISION
MASK
READY
FACE
060
063
062
068
067
064
054

FIG. 10

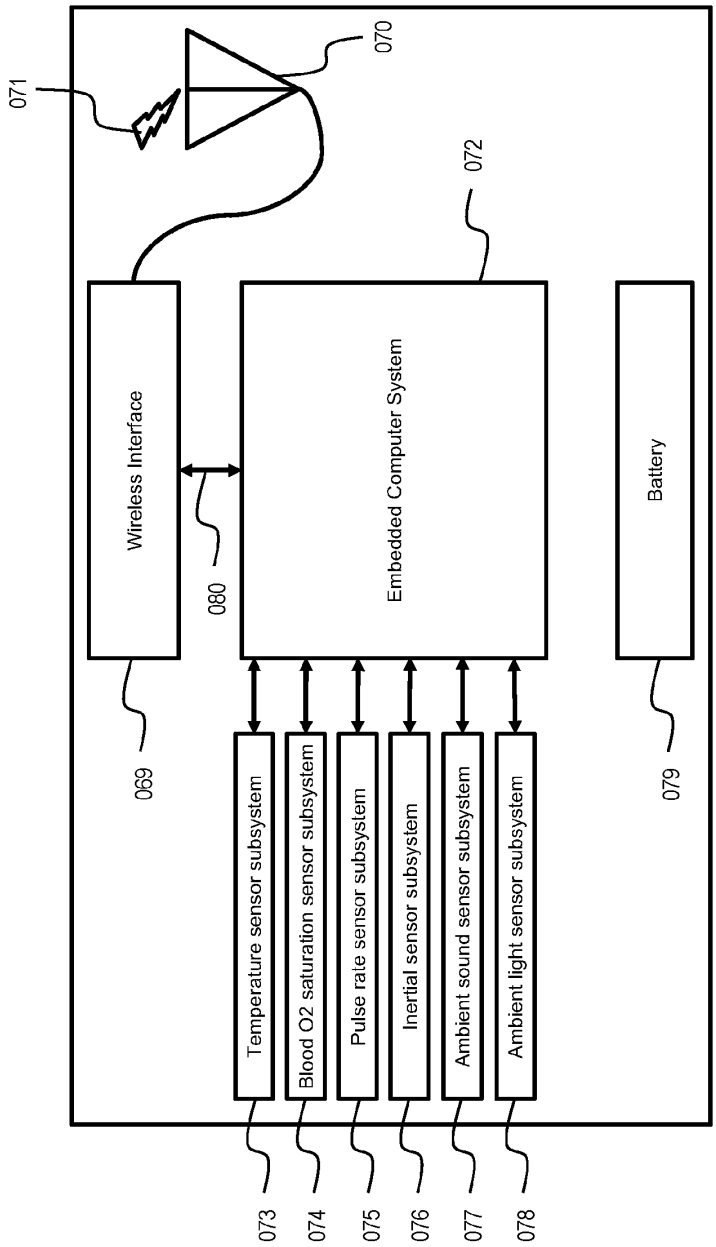

071
070
072
Wireless Interface
080
Embedded Computer System
Battery
069
079
Temperature sensor subsystem
Blood O2 saturation sensor subsystem
Pulse rate sensor subsystem
Inertial sensor subsystem
Ambient sound sensor subsystem
Ambient light sensor subsystem
073
074
075
076
077
078

FIG. 11

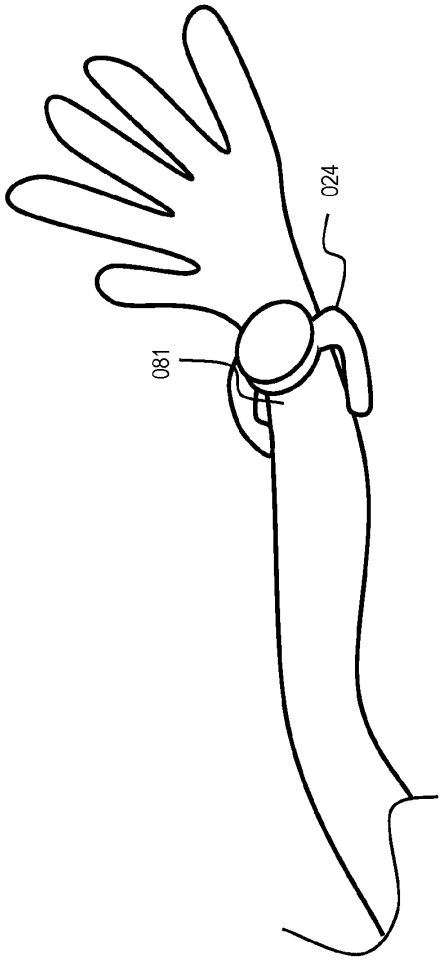


FIG. 12A

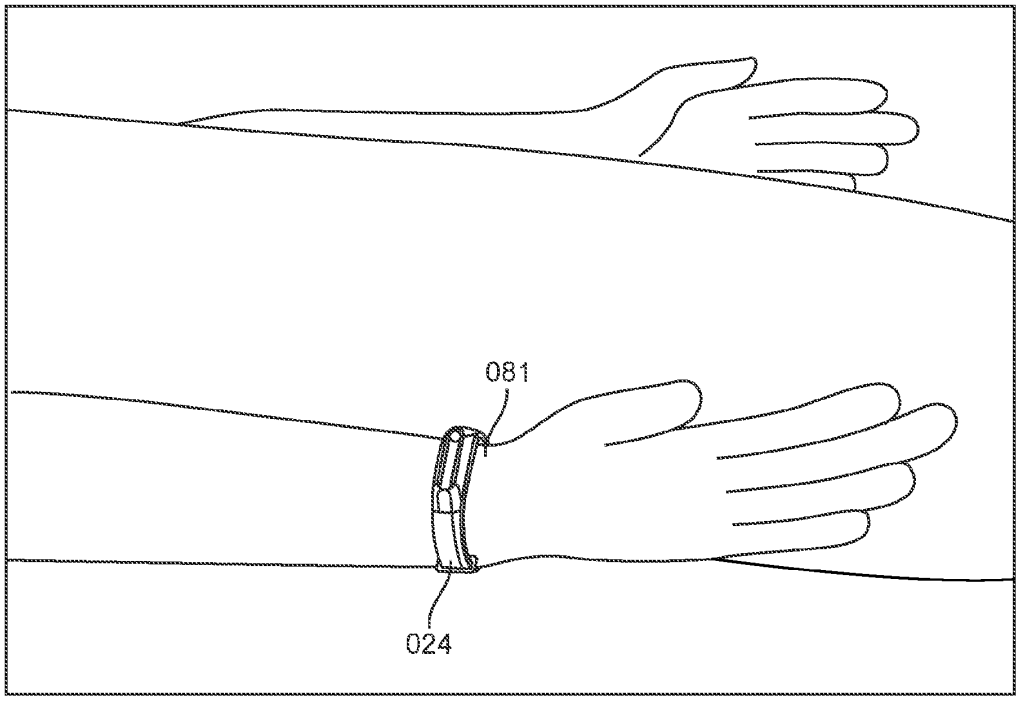


FIG. 12B

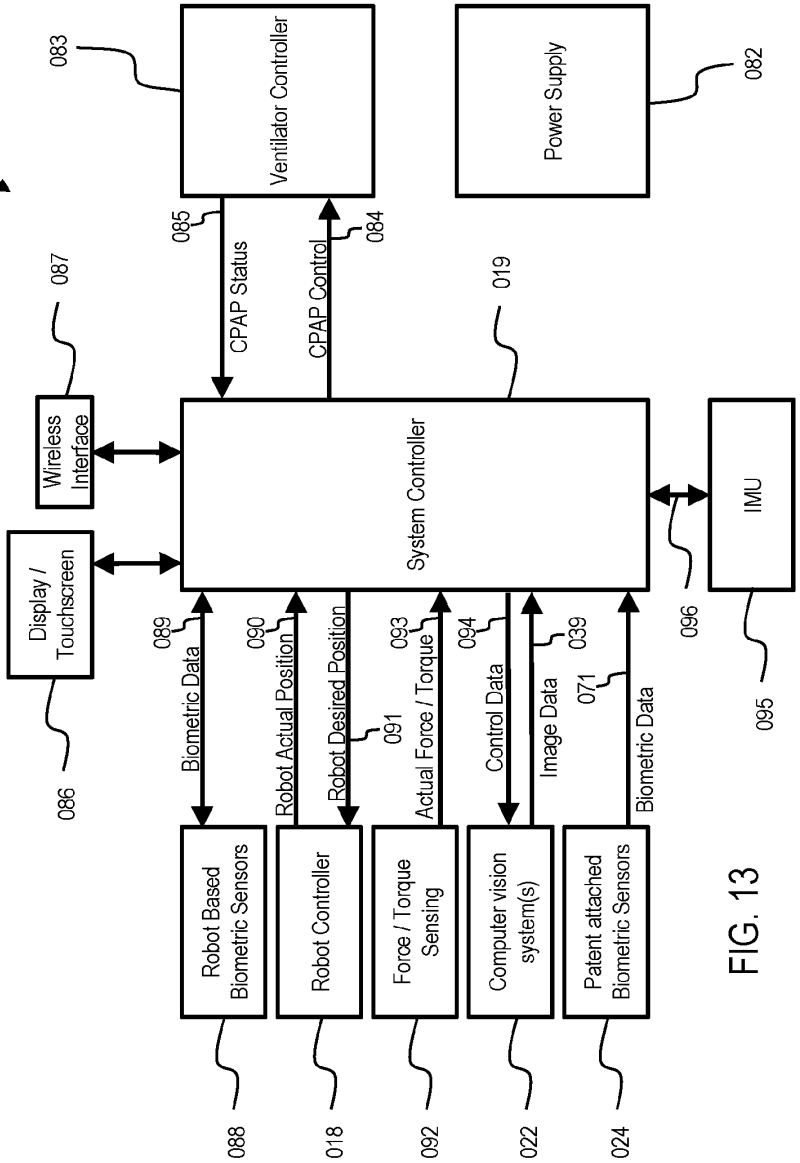

1300
083
Ventilator Controller
Power Supply
082
085
CPAP Status
CPAP Control
084
087
019
Wireless Interface
System Controller
IMU
Display / Touchscreen
089
090
091
093
094
039
071
096
086
Biometric Data
Robot Actual Position
Robot Desired Position
Actual Force / Torque
Control Data
Image Data
Biometric Data
095
Robot Based Biometric Sensors
Robot Controller
Force / Torque Sensing
Computer vision system(s)
Patent attached Biometric Sensors
088
018
092
022
024

FIG. 13

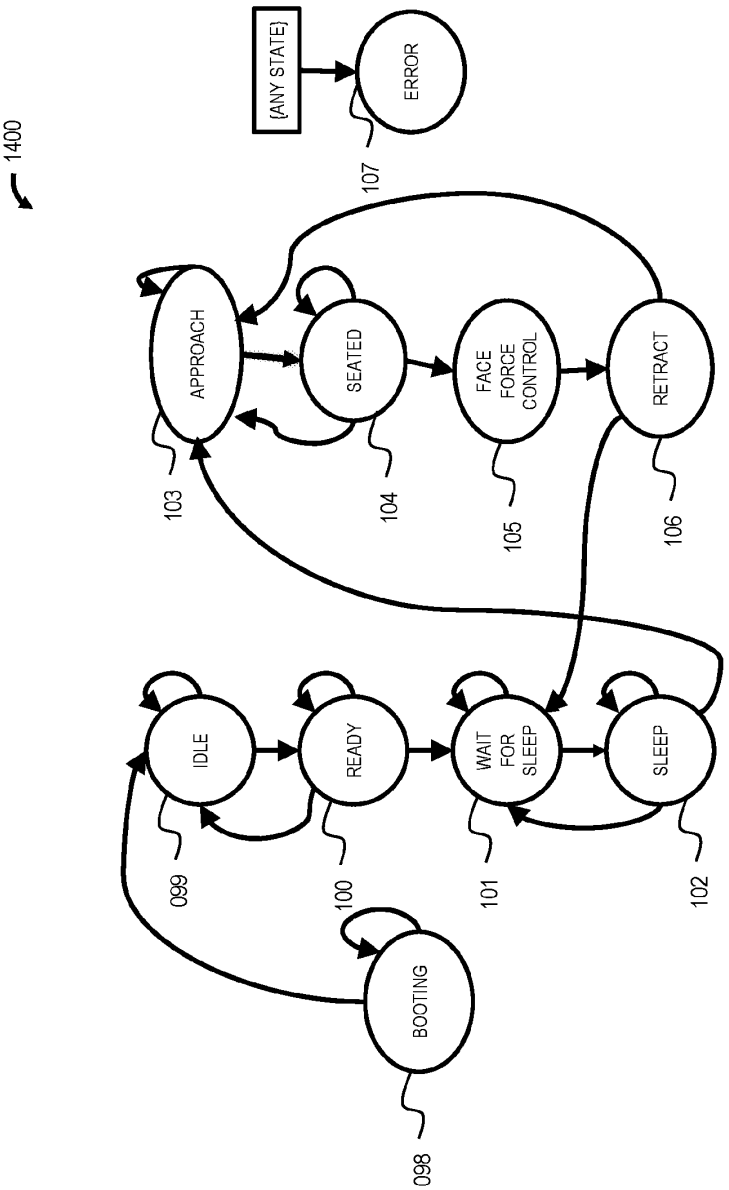

1400
{ANY STATE}
ERROR
107
APPROACH
SEATED
FACE FORCE CONTROL
RETRACT
103
104
105
106
IDLE
READY
WAIT FOR SLEEP
SLEEP
099
100
101
102
BOOTING
098

FIG. 14

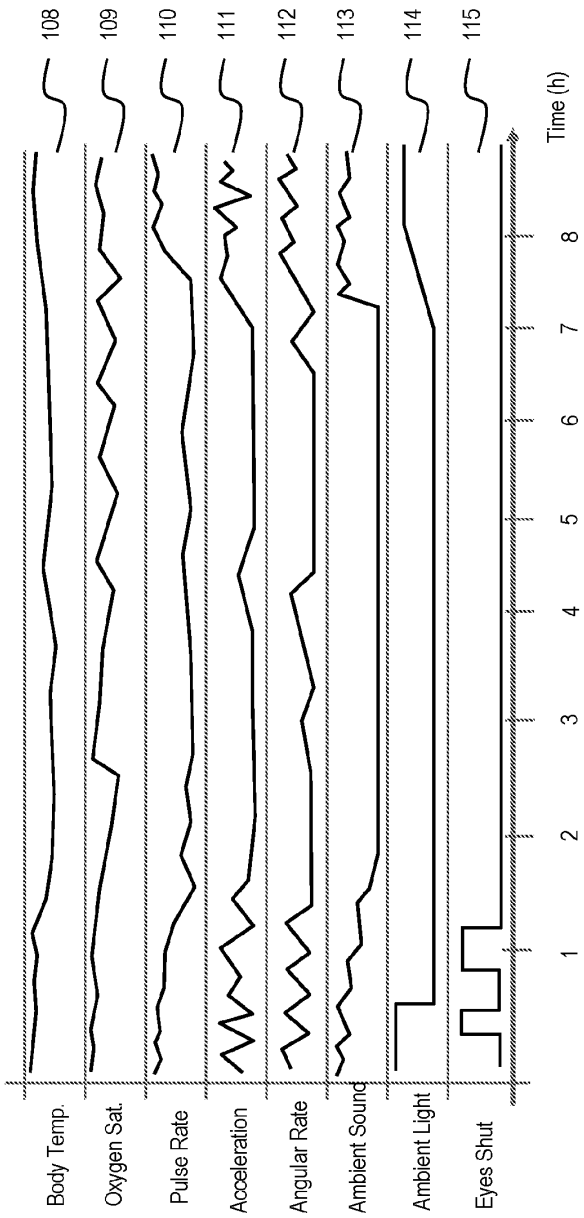

108
109
110
111
112
113
114
115
Body Temp.
Oxygen Sat.
Pulse Rate
Acceleration
Angular Rate
Ambient Sound
Ambient Light
Eyes Shut
1
2
3
4
5
6
7
8
Time (h)

FIG. 15

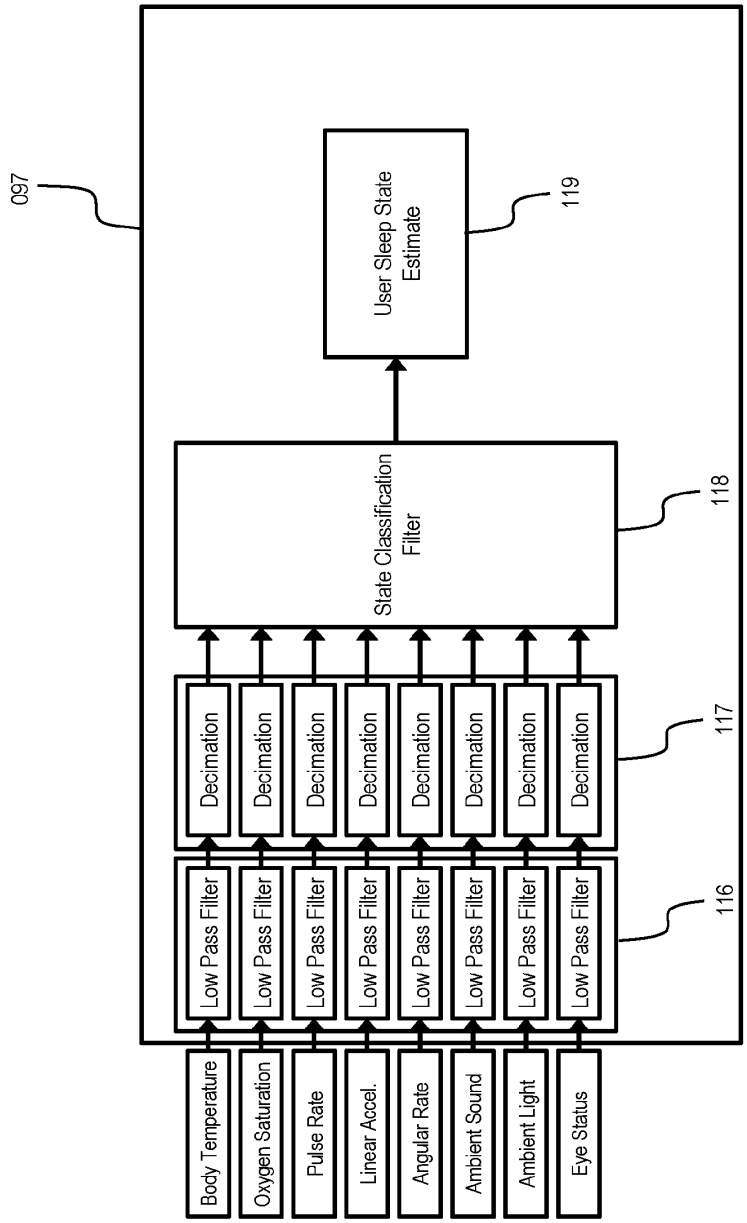

097
User Sleep State Estimate
119
State Classification Filter
118
Decimation
117
Low Pass Filter
116
Body Temperature
Oxygen Saturation
Pulse Rate
Linear Accel.
Angular Rate
Ambient Sound
Ambient Light
Eye Status

FIG. 16

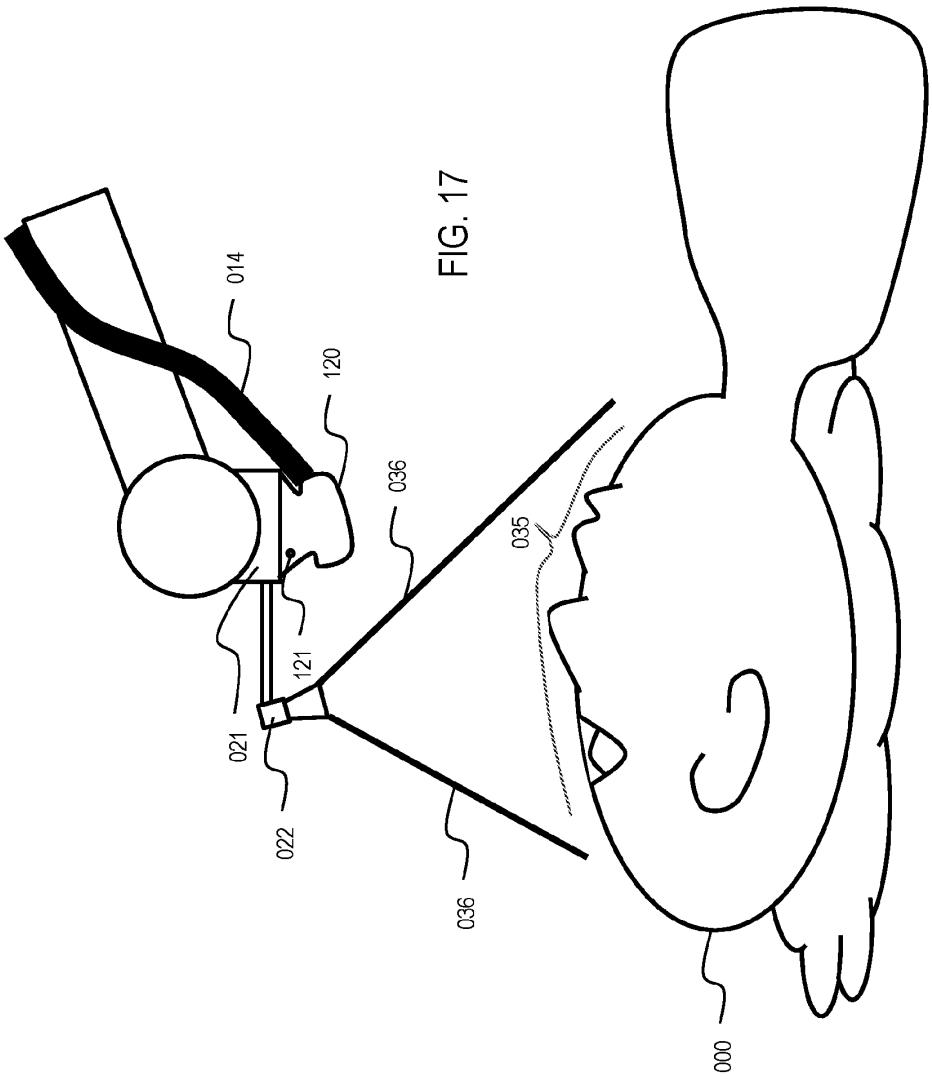


FIG. 17