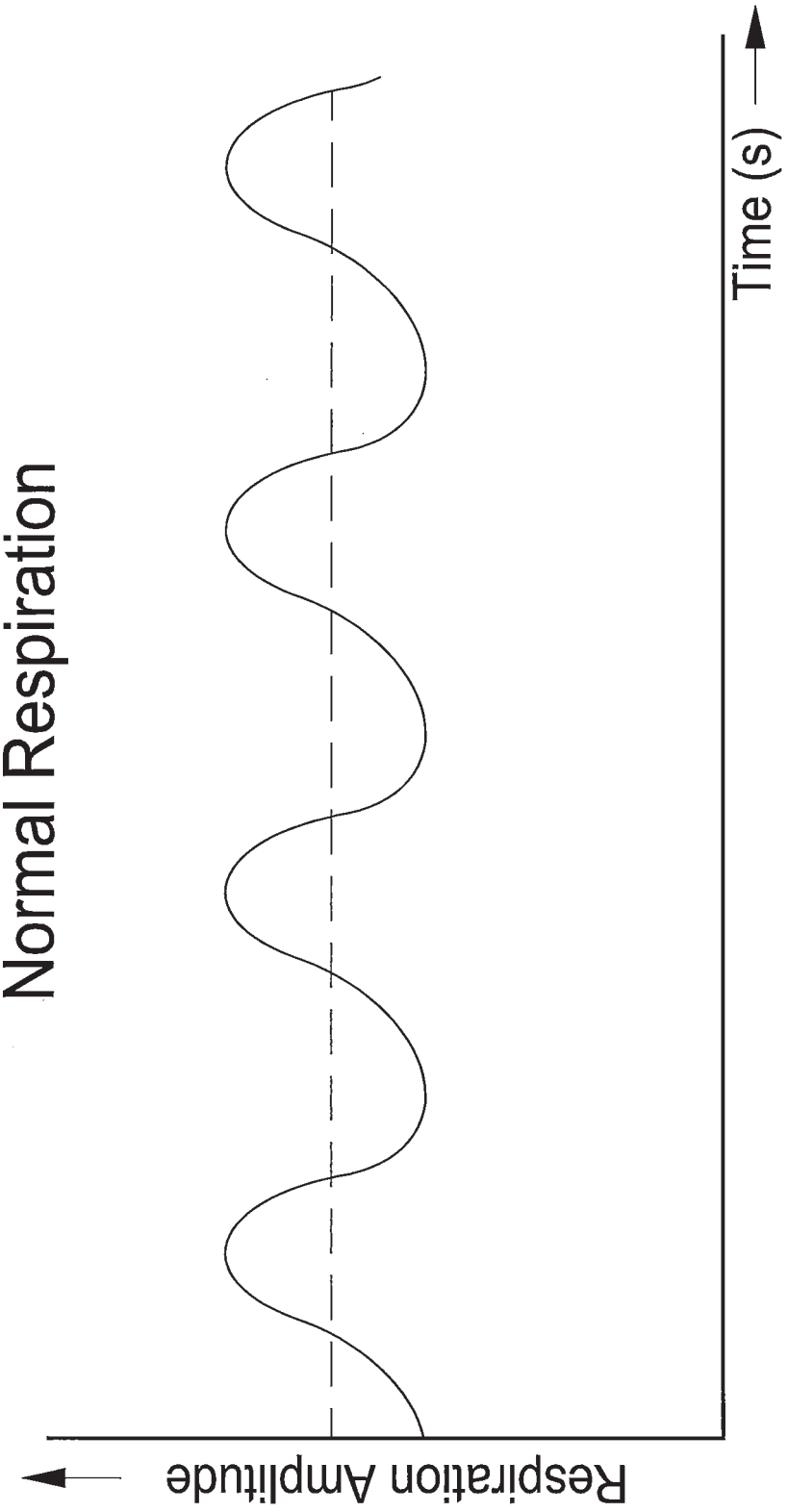


FIG. 1A

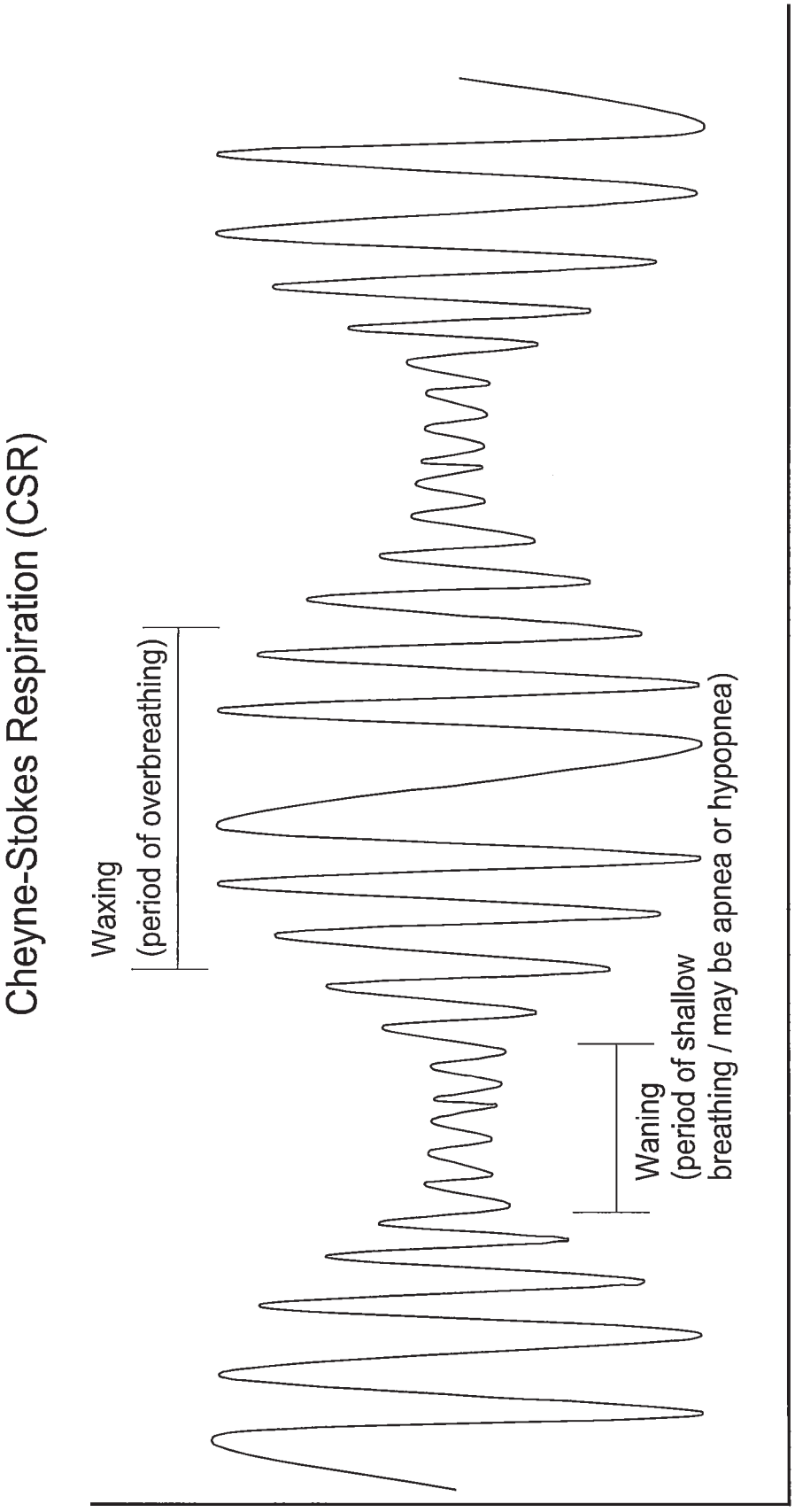

Cheyne-Stokes Respiration (CSR)
Waxing
(period of overbreathing)
Waning
(period of shallow
breathing / may be apnea or hypopnea)

FIG. 1B

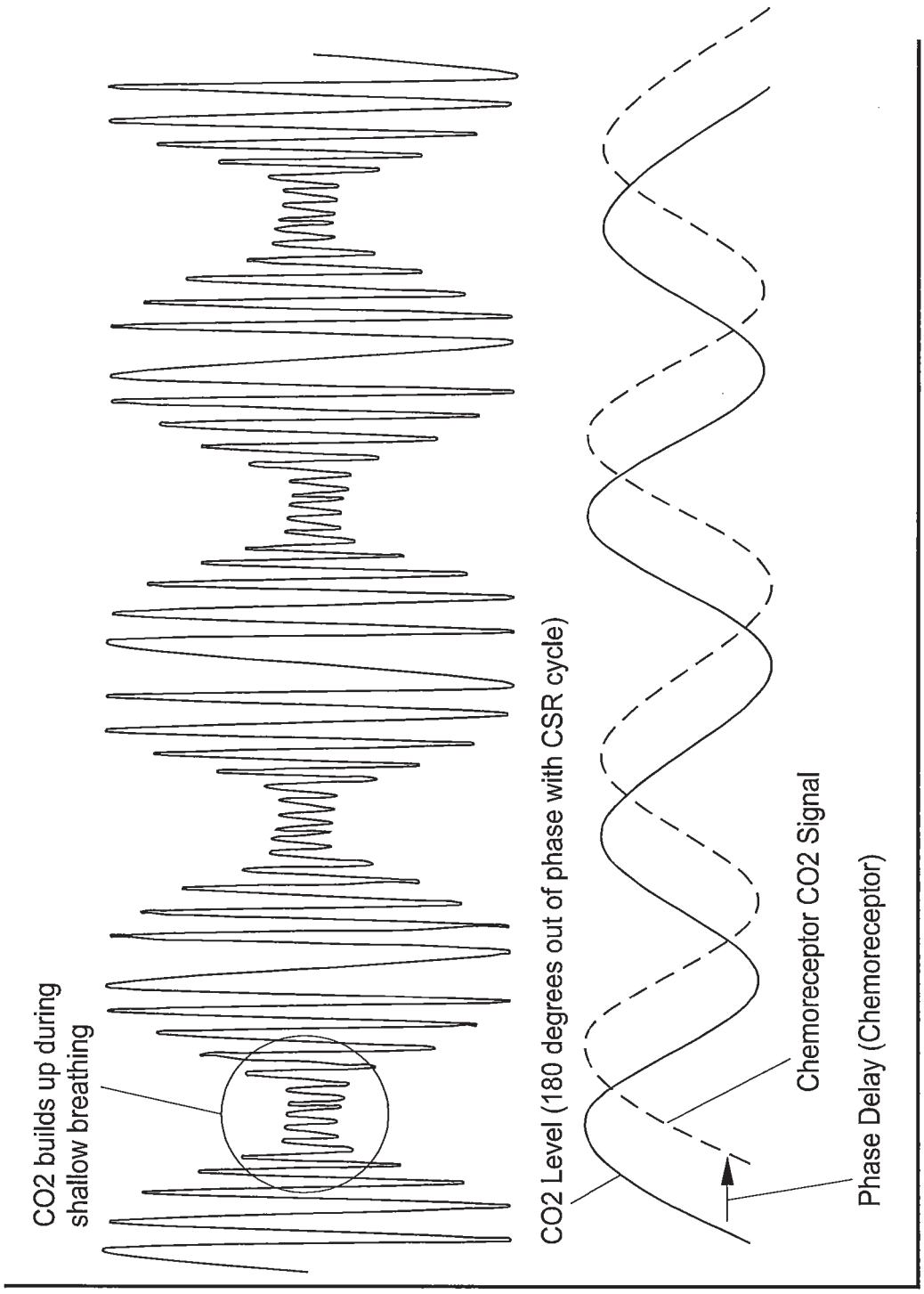

CO2 builds up during shallow breathing
CO2 Level (180 degrees out of phase with CSR cycle)
Chemoreceptor CO2 Signal
Phase Delay (Chemoreceptor)

FIG. 2

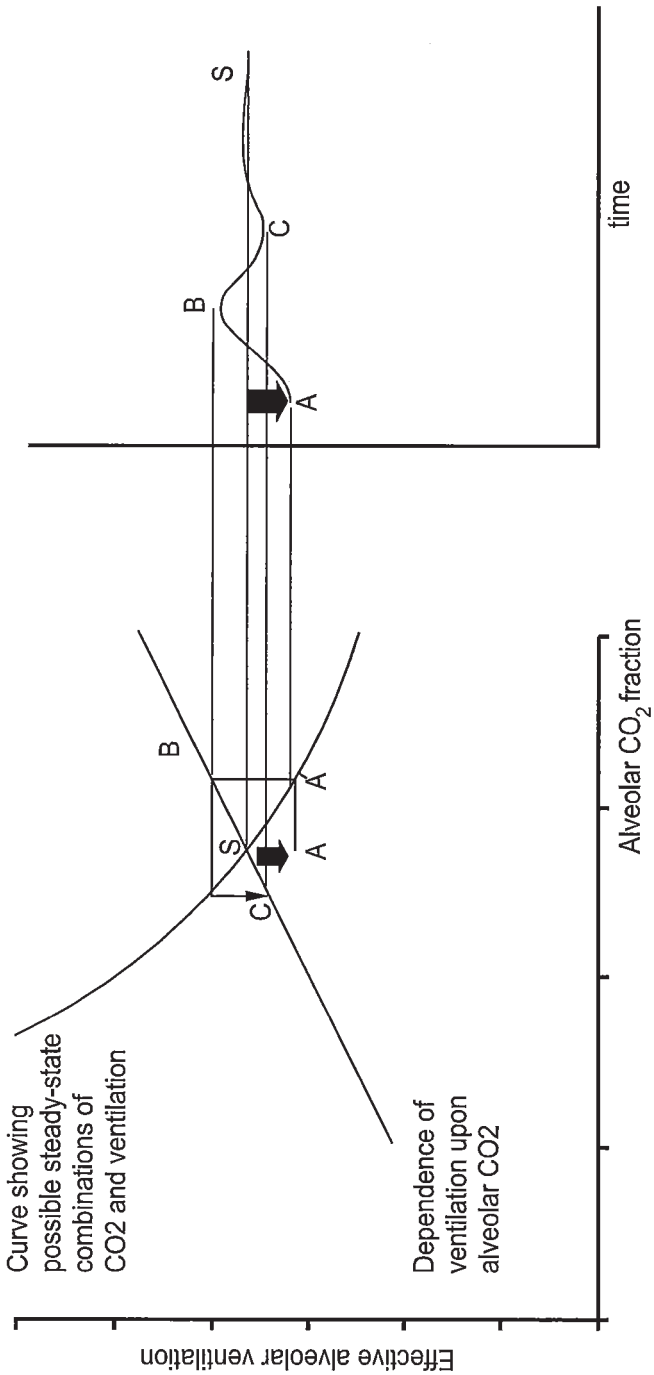

Effective alveolar ventilation
Curve showing possible steady-state combinations of CO2 and ventilation
Dependence of ventilation upon alveolar CO2
Alveolar CO_2 fraction
time
S
B
C
A
A'

FIG. 3

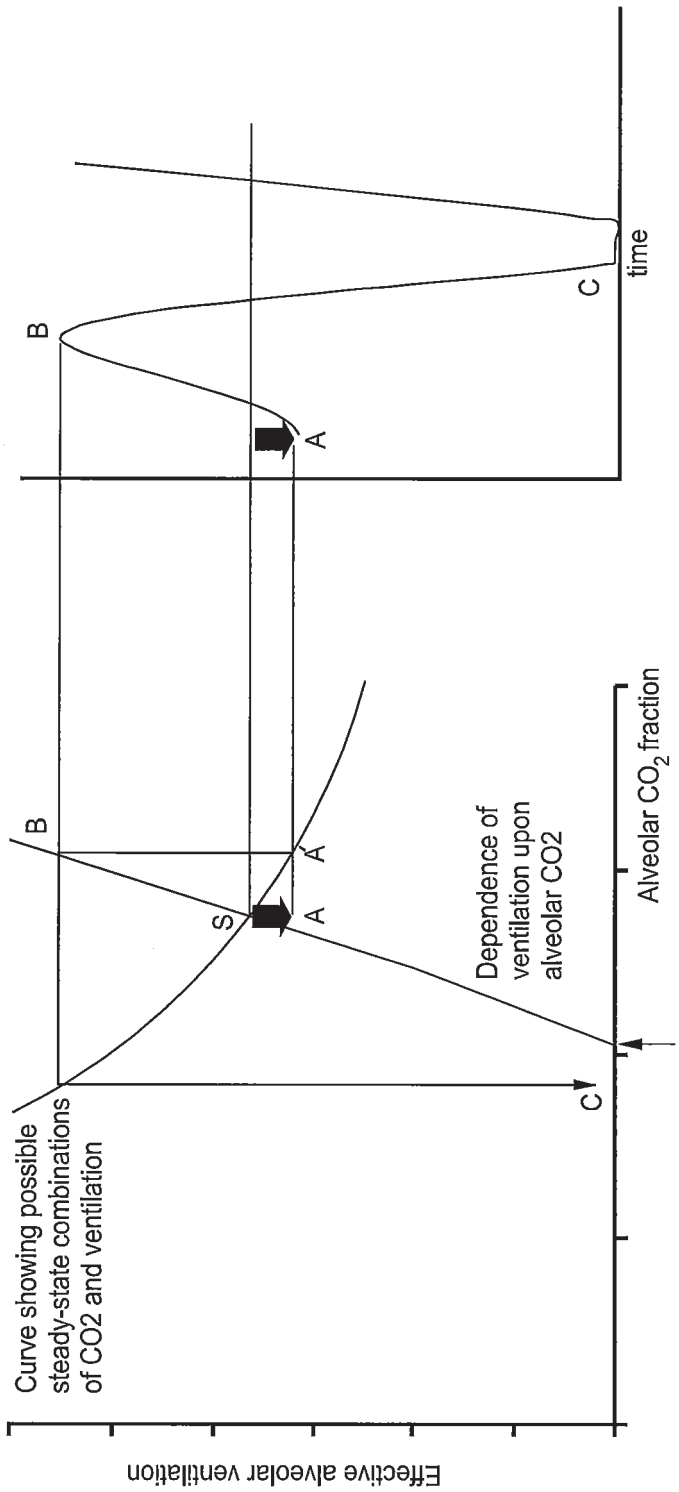

Effective alveolar ventilation
Curve showing possible steady-state combinations of CO2 and ventilation
Dependence of ventilation upon alveolar CO2
Alveolar CO_2 fraction
Apnceic threshold
time
A
B
C
S

FIG. 4

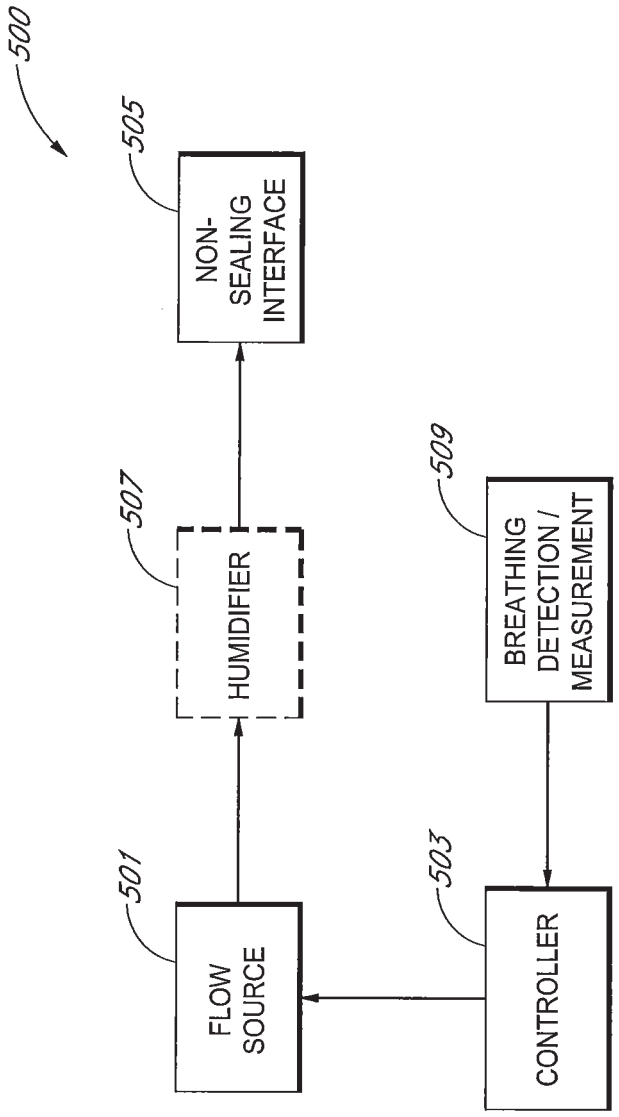

500
505
NON-SEALING INTERFACE
507
HUMIDIFIER
509
BREATHING DETECTION / MEASUREMENT
501
FLOW SOURCE
503
CONTROLLER

FIG. 5

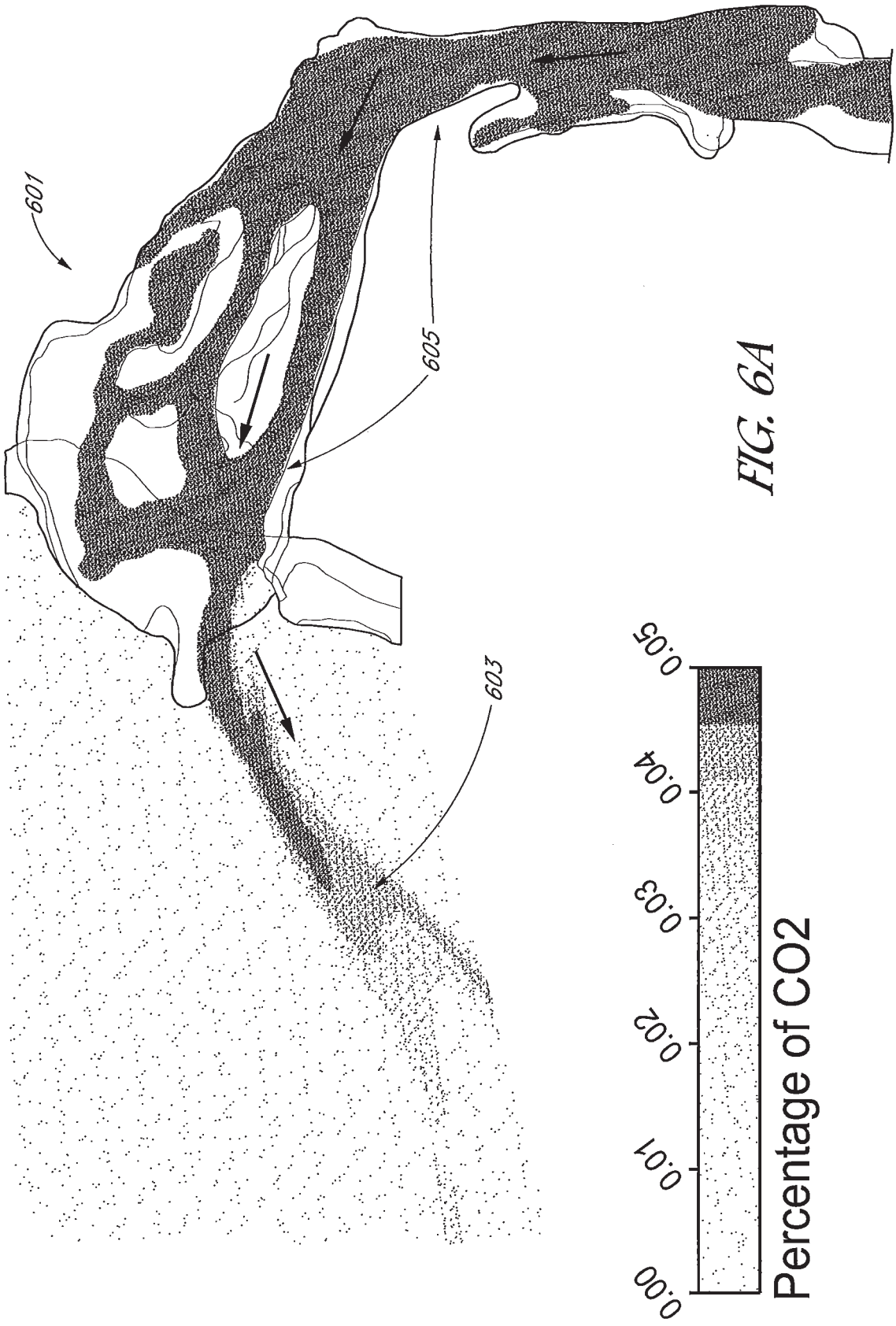


FIG. 6A

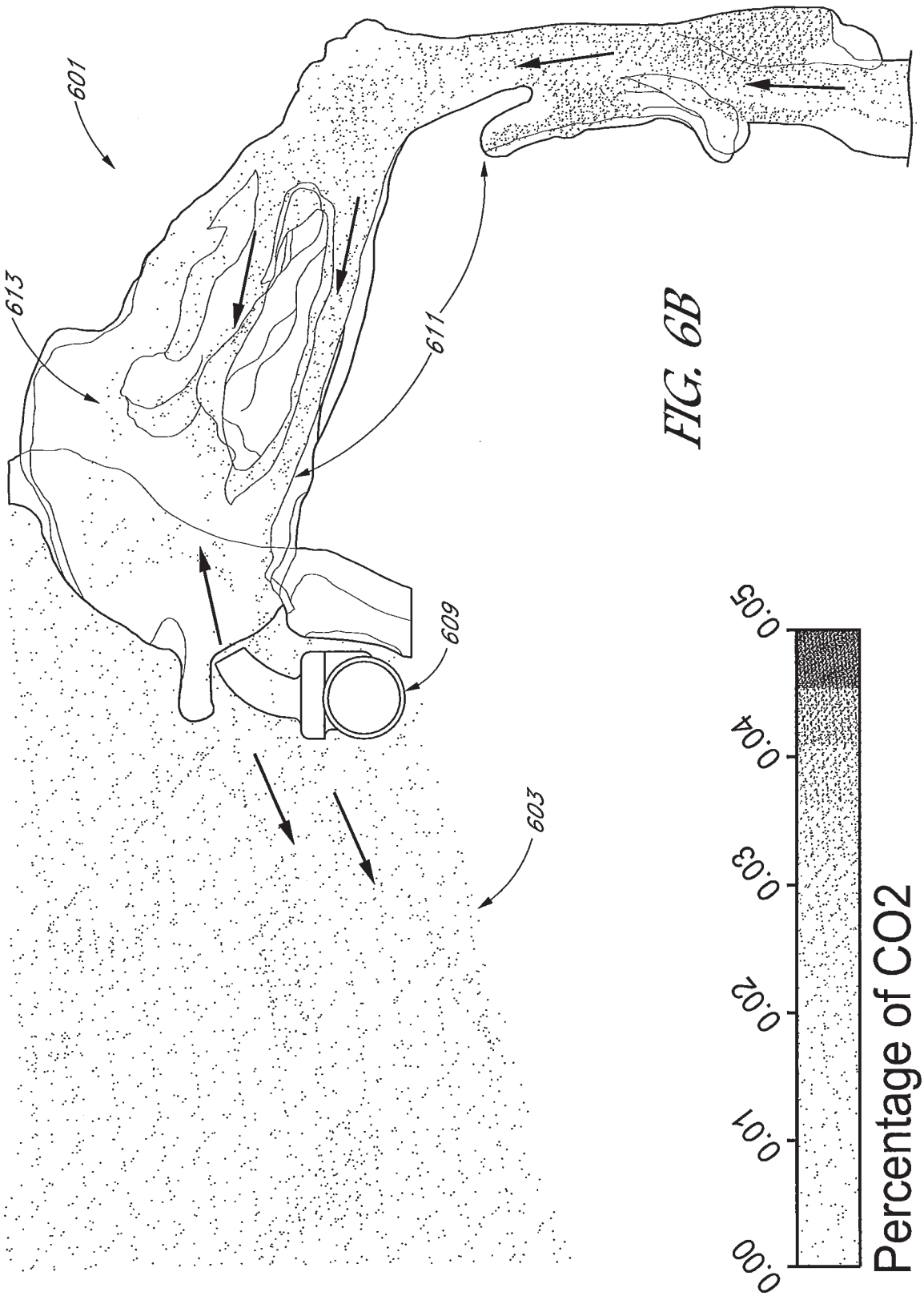


FIG. 6B

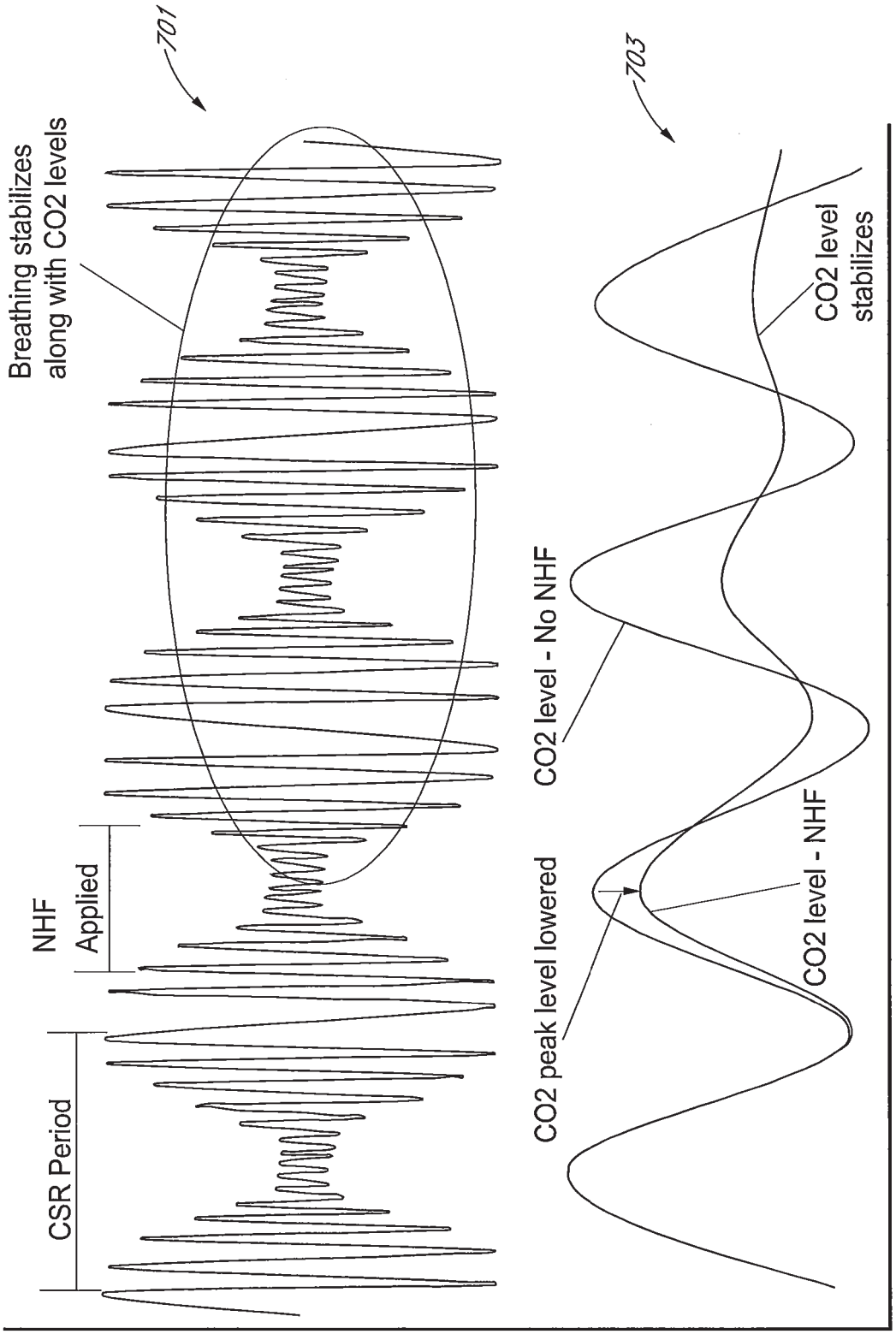

701
Breathing stabilizes along with CO2 levels
NHF Applied
CSR Period
703
CO2 level - No NHF
CO2 peak level lowered
CO2 level - NHF
CO2 level stabilizes

FIG. 7

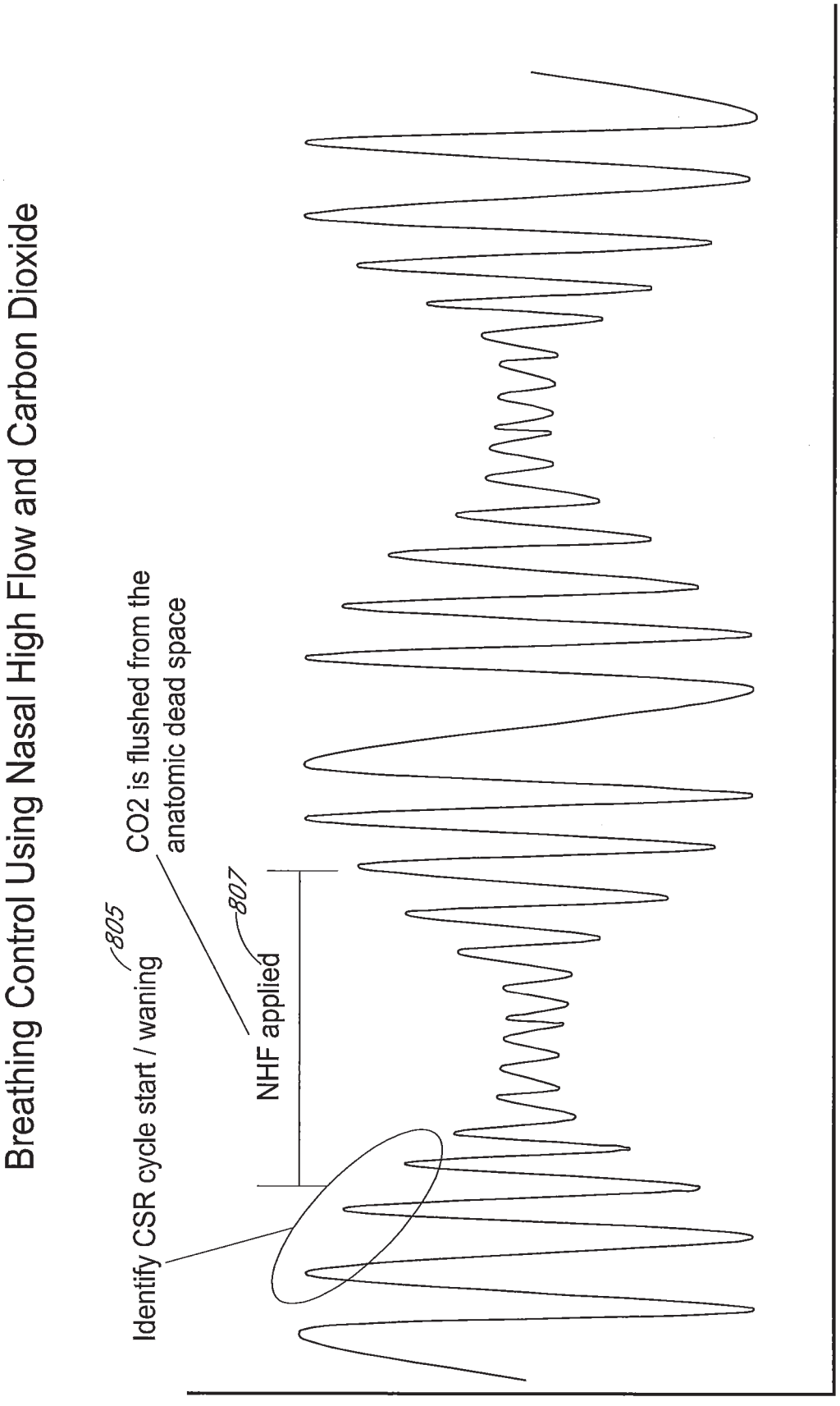

Breathing Control Using Nasal High Flow and Carbon Dioxide
805
Identify CSR cycle start / waning
CO2 is flushed from the anatomic dead space
807
NHF applied

FIG. 8

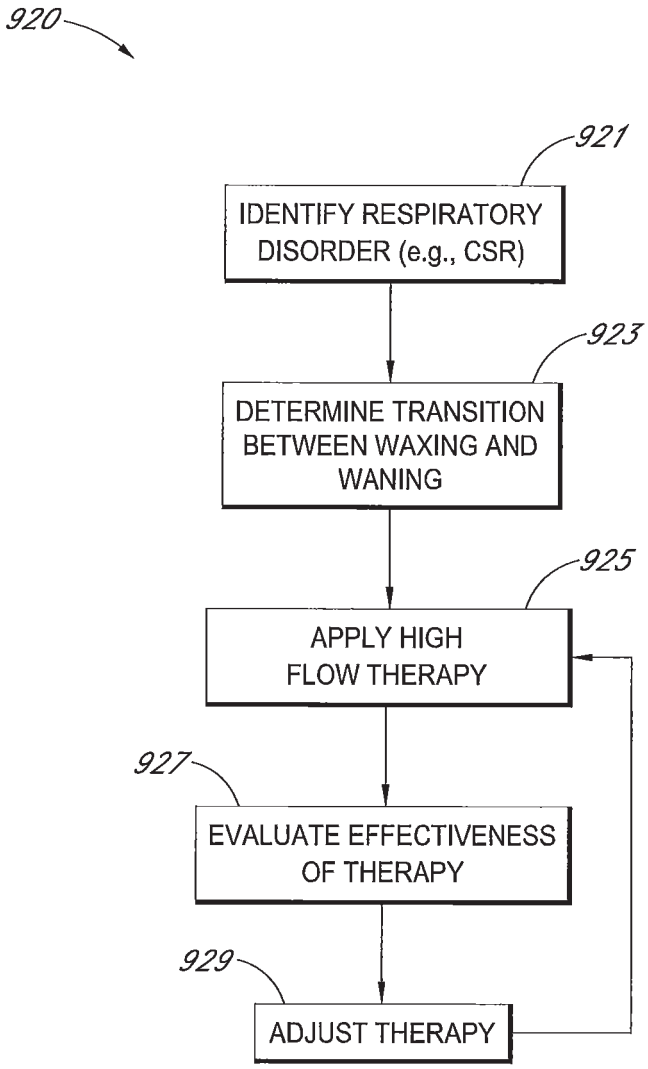

920
921
IDENTIFY RESPIRATORY DISORDER (e.g., CSR)
923
DETERMINE TRANSITION BETWEEN WAXING AND WANING
925
APPLY HIGH FLOW THERAPY
927
EVALUATE EFFECTIVENESS OF THERAPY
929
ADJUST THERAPY

FIG. 9

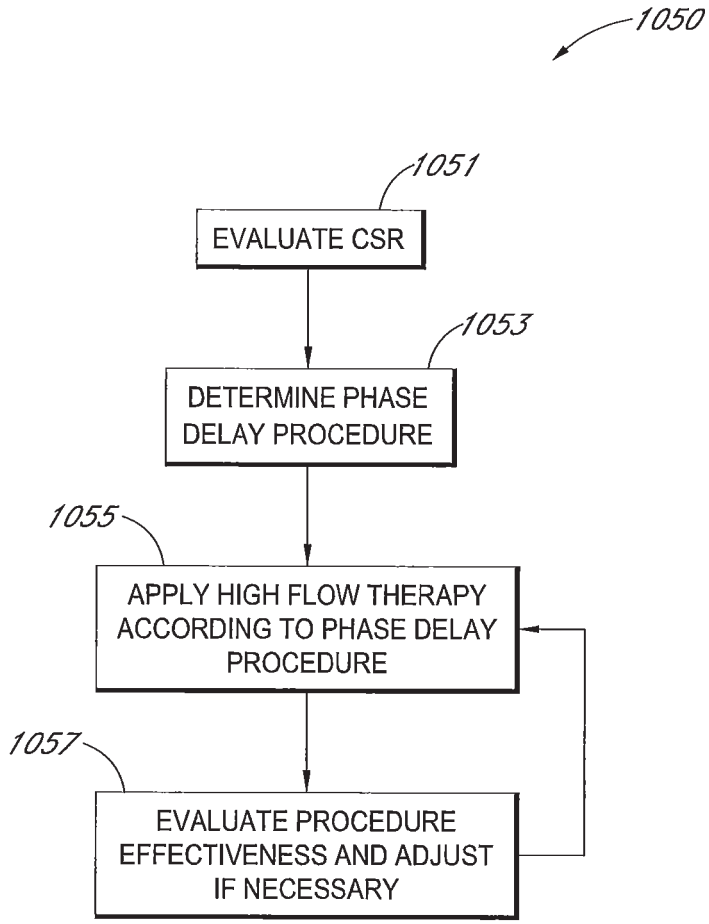

1050
1051
EVALUATE CSR
1053
DETERMINE PHASE DELAY PROCEDURE
1055
APPLY HIGH FLOW THERAPY ACCORDING TO PHASE DELAY PROCEDURE
1057
EVALUATE PROCEDURE EFFECTIVENESS AND ADJUST IF NECESSARY

FIG. 10

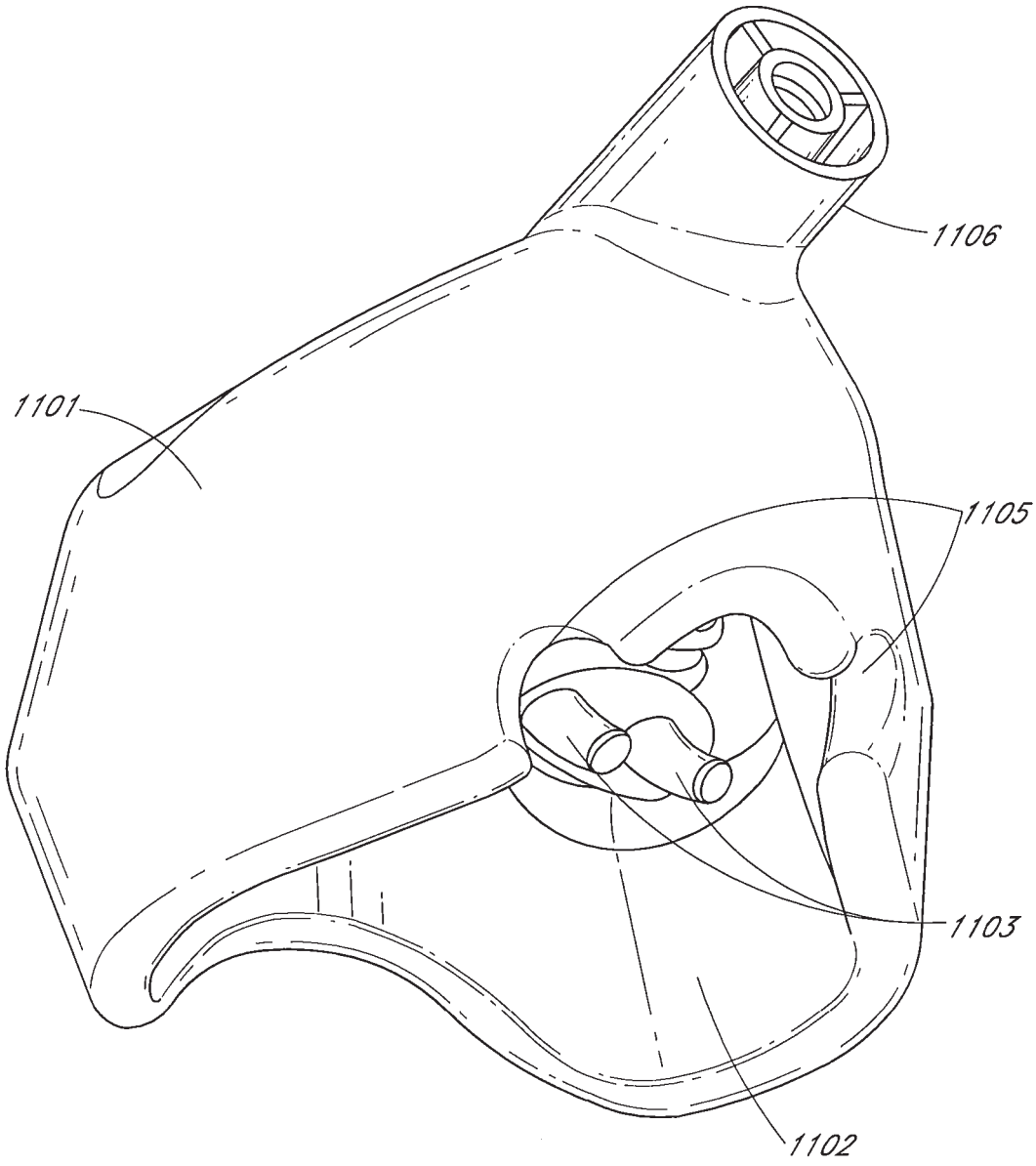


FIG. 11