



Petitioner's Demonstratives

Resmed Corp. v. Cleveland Medical Devices, Inc.

April 29, 2026

IPR2025-00247

U.S. Patent No. 11,872,029

Agenda

Overview

The '029 Patent

State of the Art

Asserted Prior Art

Disputed Limitations

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“Measuring or deriving the respiratory airflow of a subject”

“Calculating severity of the sleep disorder symptoms”

“Second Processor Signal Processing Techniques” (Claims 8 & 11)

“Remote internet site adapted to retransmit to cell phone”
(Claims 9 & 13)

Grounds IV-VI: Truitt in view of Kumar and Mumford

Sleep Efficacy Algorithm

Overview

Grounds

Ground 1	Truitt in view of Kumar renders obvious Claims 1-11, 13-16, and 18-19
Ground 2	Truitt in view of Kumar and Dong renders obvious Claims 14 and 15
Ground 3	Truitt in view of Kumar and Wright renders obvious Claims 12, 17
Ground 4-6	The combinations of Grounds 1-3 in further view of Mumford render obvious the challenged claims

The Purported Invention

“[A] networked PAP system that transmits symptom severity and usage data to a cell phone and remote internet site.”



The present invention relates to an integrated sleep diagnosis and treatment device, and more particularly to an integrated apnea diagnosis and treatment device. The present invention additionally relates to method of sleep diagnosis and treatment.



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Ex. 1087 - Page 6

State of the Art

A Number of Auto-Adjusting PAPs Were Available at the Time

Table 1
Comparison of parameters detected by automatic positive airway devices

Device	Manufacturer	Parameters detected			
		Sn	A/H (flow)	A/H (FOT)	FL
Autoset	ResCare/ResMed, Sydney, Australia,	+	+		+
Autoset Clinical	San Diego, CA,				
Autoset Portable	Saint Priest,				
Autoset T	France				
Autoset Spirit					
Eclipse Auto	Taema, Antony, France	+	+		
Goodknight TM418A	Puritan Bennett, Pleasanton, CA/Mallinckrodt, Les Ulis, France	+	+		
Goodknight TM418P	Puritan Bennett, Pleasanton, CA/Mallinckrodt, Les Ulis, France	+	+		+
Horizon AutoAdjust	DeVilbiss Healthcare, Inc./Sunrise Medical, Somerset, PA, Parçay Meslay, France	+	+		
Morphee Plus Cloudnine	Pierre Medical, Verrières-Le-Buisson, France/Nellcor-Puritan Bennett, Minneapolis, MN		+		
REM + with MC + REM + Auto	SEFAM/Nellcor-Puritan Bennett, Nancy, France	+	+		
REMstar Auto	Respironics Inc., Murrysville, PA	+	+		+
Somnosmart	Weiman, Hamburg, Germany			+	
Tranquility Auto	Respironics Inc., Murrysville, PA		+		+
Virtuoso LX	Respironics Inc., Murrysville, PA	+			

Abbreviations: Sn, snoring (detected by mask pressure vibration); A, apnea; H, hypopnea; flow, airflow detected by pneumotachograph, nasal pressure, or changes in compressor speed; FOT, forced oscillation technique; FL, flow limitation (detected by flow versus time profile).

EX1003 (Kirkness Decl.), ¶¶82, 86
(citing EX1032, 2-3)

Pet., 1

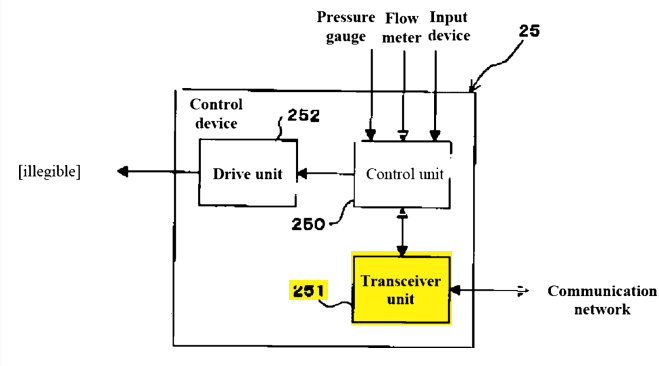
Wireless Transceivers and Microphones in PAPs Were Well-established

(57) [Abstract]

[Problem] Enabling remote monitoring of the patient's condition during the use of a positive pressure artificial respiration assisting device, or the condition of the positive pressure artificial respiration assisting device.

Ex. 1044, Abstract

[Figure 3]



Ex. 1044, Fig. 3

[0029] In reference to FIG. 1, the invention provides apparatus that includes a computer-controlled blower 2, flow and pressure sensors 4, a mask 6, air delivery conduit 8 for connection between the blower 2 and the mask 6. The apparatus further includes a communication port or module 10, for example, a wireless communication transceiver and/or a network card, for communication with other devices or computers such as hand-held display and control devices 12. The apparatus further includes an oximeter in the main blower housing. There is a sense tube 14 connected to the main housing of the blower to the mask which allows the apparatus to sense oxygen concentration and pressure levels in the mask 6. The apparatus further includes a communications interface 16 for connection to a diagnosis unit. The diagnosis unit includes a pulse oximeter 20, respiratory movement sensors 22, EEG & ECG 24.

Ex. 1013, [0029]

embodiment, a wireless communication link is used. Preferably, communication module 350 supports "blue-tooth" RF bidirectional wireless communication and is connected to

Ex. 1045, [0155]

computers such as hand-held display or control devices."'). Further, as Truitt teaches, microphones are often used for flow sensors in PAP machines. Ex. 1007, 3:4-9. Wireless microphones have been around since the 1950s. For example, McClelland Sound, Shure Brothers, and Sennheiser all marketed wireless microphones.

EX1005 (Chatterjee Decl.), ¶184

Pet., 11 (citing Kirkness, ¶152; Chatterjee, ¶184)

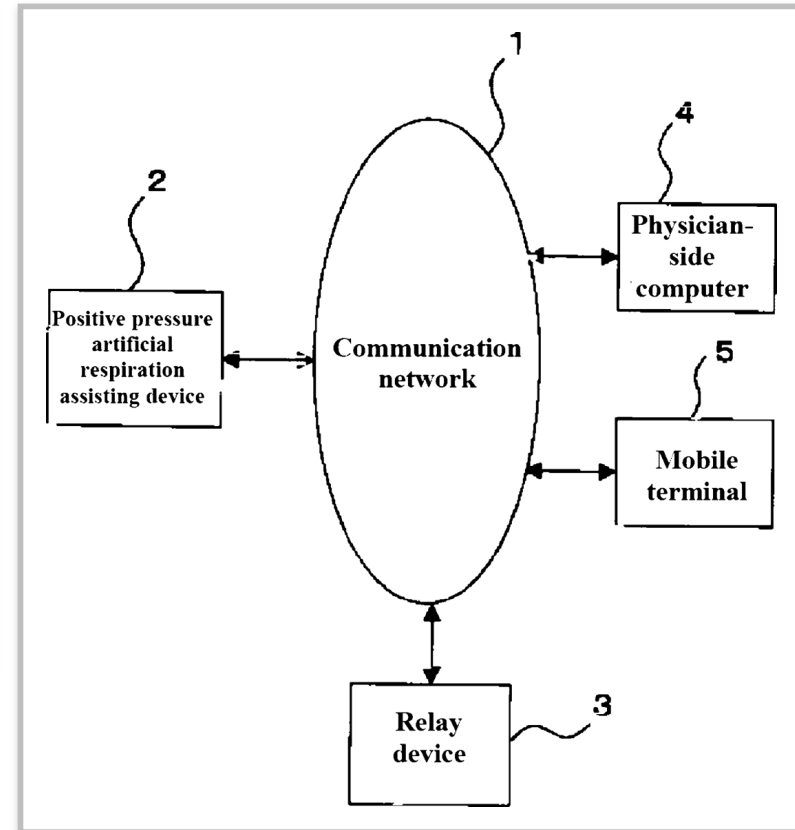
A Telemedicine system Was Demonstrated and Known

[0008]

[Embodiment of the Invention] 1. Figure 1 is a block diagram illustrating the overall configuration of a remote medical (telemedicine) system according to the present invention. This telemedicine system comprises a positive pressure artificial respiration assisting device 2, a relay device 3, and physician-side terminal devices, namely a physician-side computer 4 and a mobile terminal 5, all connected to communication network 1.

[0009] The communication network 1 may be any of a public telephone network, the Internet, a mobile communication network, or a dedicated line network; alternatively, it may also be a combination of these networks.

EX1044, [0008]

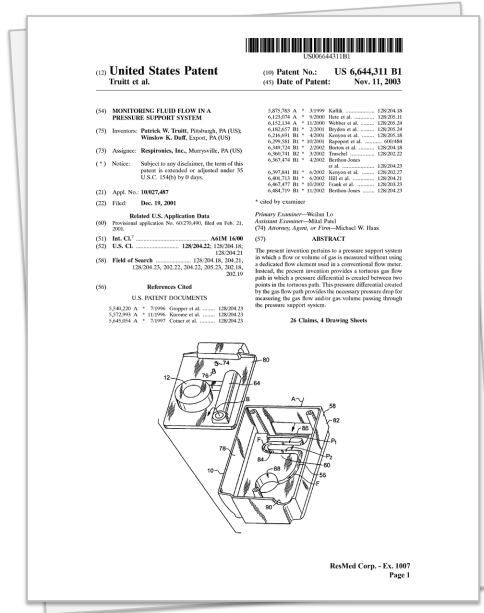


EX1044, Fig. 1

Pet., 11 (citing Kirkness, ¶154)

Asserted Prior Art

Truitt Discloses a PAP/CPAP That Can Measure or Derive a Patient's Respiratory Airflow



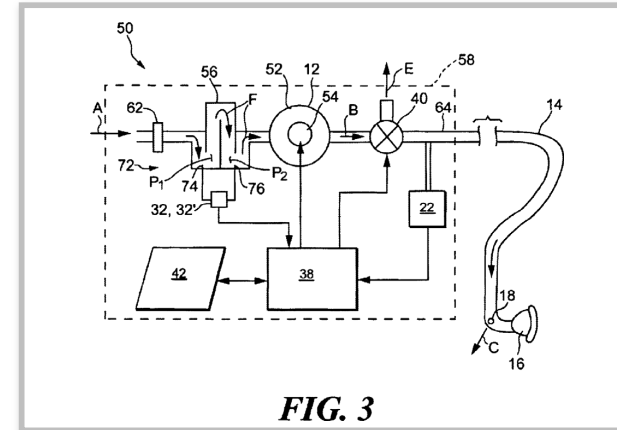
Ex1001,
Fig. 7

Monitoring Fluid Flow in a Pressure Support System

Filed: Dec. 19, 2001

Priority: Feb. 21, 2001 (Prov.)

Published: Nov. 11, 2003



Ex1007,
Fig. 3

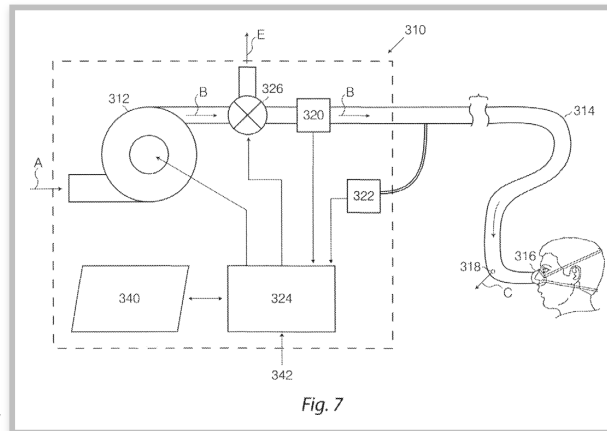


Fig. 7

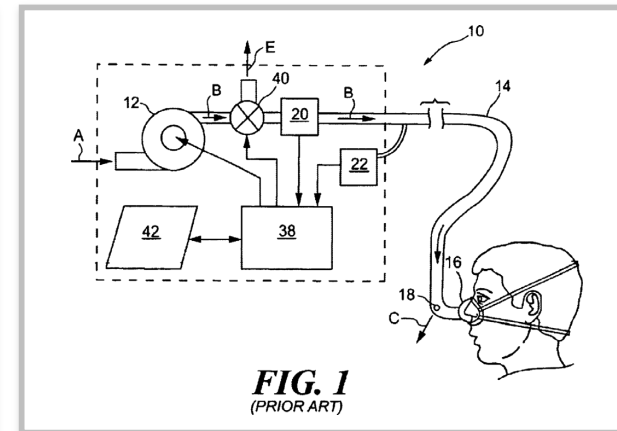
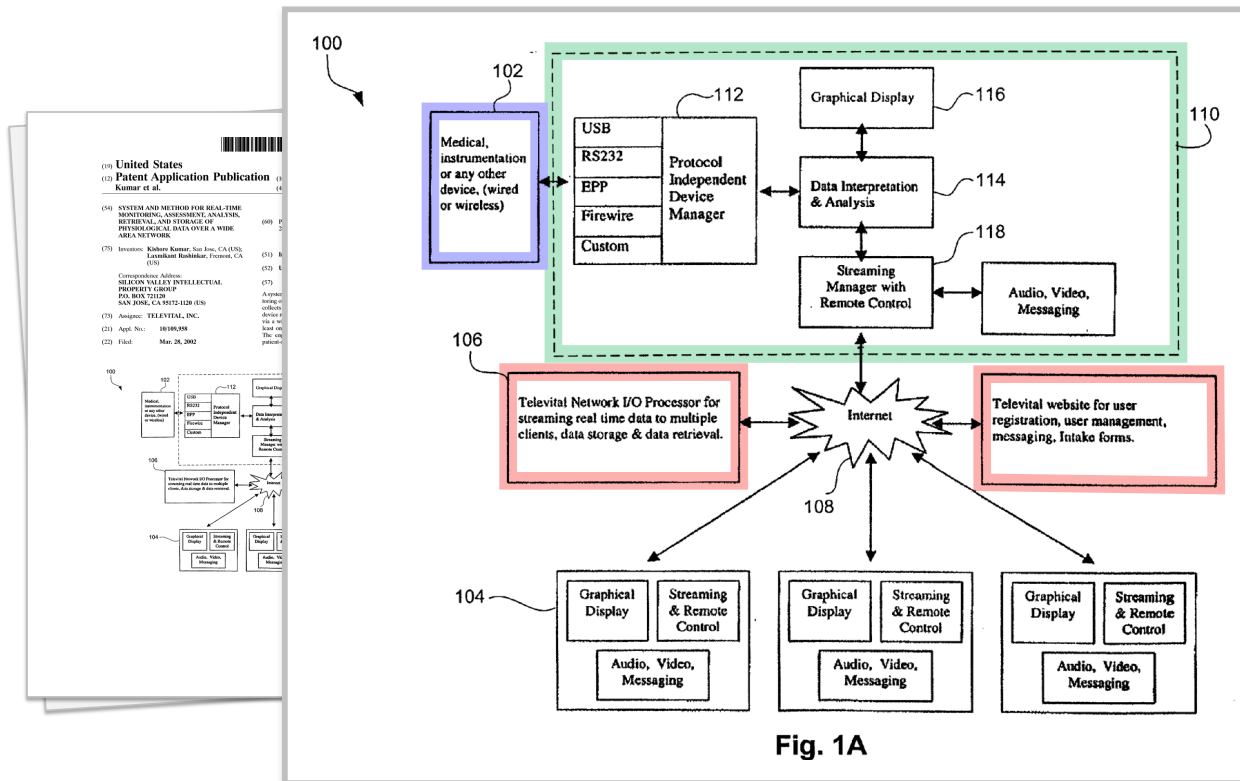


FIG. 1
(PRIOR ART)

Ex1007,
Fig. 1

Pet., 12-13, 16-17

Kumar Discloses a Networked Multi-Purpose Telemedicine System



EX1008 (Kumar), Fig. 1A (annotated)

System and Method for Real-time Monitoring, Assessment, Analysis, Retrieval, and Storage of Physiological Data Over a Wide Area Network

Filed: Mar. 28, 2002

Priority: Mar. 28, 2001 (Prov.)

Published: Dec. 26, 2002

Pet., 10-11

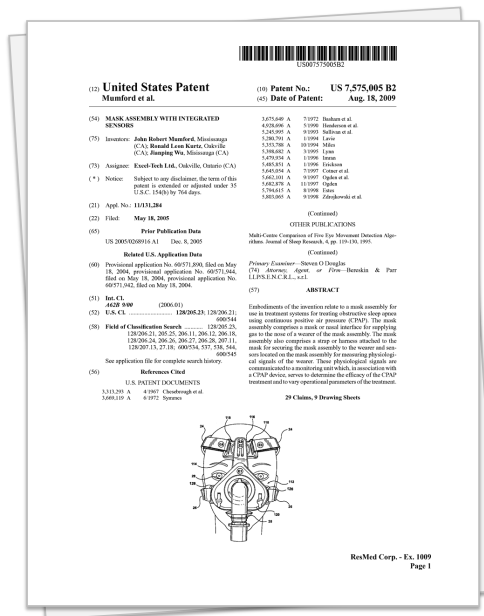
Mumford Discloses A Sleep Efficacy Algorithm for PAP Devices

Mask Assembly With Integrated Sensors

Filed: May 18, 2005

Priority: May 18, 2004 (Prov.)

Published: Aug. 18, 2009



the wearer 18 has experienced. Accordingly, the sleep efficacy control algorithm 36 can generate sleep profile information for the wearer 18 (the sleep profile information may include data, such as a test score, related to efficacy and compliance). The sleep efficacy algorithm 36 further gener-

EX1009 (Mumford), 7:42-46

Pet., 64-71; Rep., 20

Petitioner's Experts



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Ph.D. (Medicine)

Johns Hopkins University
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- Post-doctoral Fellowship, Medicine

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Western Sydney University

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- Fisher & Paykel Healthcare
- 4DMedical
- American Thoracic Society
- SMSbiotech



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Ph.D.

Harvard University

- Exec. Ed., Global Leadership

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- Ph.D., Computer Science
- M.S., Electrical Engineering & Computer Science

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17+ Years Work Experience in Network Data
Systems

- SourceTrace Systems, Inc.
- Cyndeo, LLC.
- Satora Networks, Inc.
- MIT Researcher

EX1004

EX1006

POSITA in 2005 would have had at least a bachelor's degree in mechanical engineering, electrical engineering, computer science, biomedical engineering, or a similar technical field, with at least two years of relevant product design experience working with diagnostic sensor systems and network data systems, such as networked PAP machines. Additional experience could substitute for less education, and additional education could likewise substitute for less experience.

EX1003
(Kirkness Decl.),
at ¶¶44-46

Pet., 4

Claim 1

1. A positive airway pressure (PAP) sleep disorder treatment system comprising:

a non-transitory computer readable medium comprising a first software, the first software adapted to be downloaded to a cell phone and executable by a first processor on the cell phone to display to a subject for viewing on the cell phone an index of treatment efficacy of the subject using a PAP device, the index based in whole or in part on a data of severity of sleep disorder symptoms of the subject and/or a data of usage of the PAP device by the subject, the cell phone comprising at least one first radio frequency wireless transceiver, the first processor, the first software when downloaded, and a display;

the PAP device with an enclosure further comprising:

a blower having an air output within the enclosure,
an airflow sensor being any type of sensor internal to the enclosure of the PAP device adapted for measuring or deriving the respiratory airflow of a subject while using the PAP device and outputting airflow sensor data,

a second processor within the enclosure adapted for receiving the airflow sensor data and for calculating:

- i) the data of a severity of the sleep disorder symptoms of the subject,
- ii) the data of usage of the PAP device by the subject, and/or
- iii) the index based in whole or in part on either i) or ii) or both i) and ii), a mask or a nasal cannula connected to the enclosure, and

at least one second radio frequency wireless transceiver within the enclosure, the at least one second radio frequency wireless transceiver adapted for transmitting i) and ii), and/or iii); and

a remote internet site, the remote internet site adapted for receiving i) and ii), or i), ii), and iii), related to the subject's treatment and the treatment's efficacy in whole or part, generated by the PAP device and transmitted via the at least one second radio frequency wireless transceiver.

EX1001 at Claim 1

Disputed Limitations

Ground I: Truitt in View of Kumar

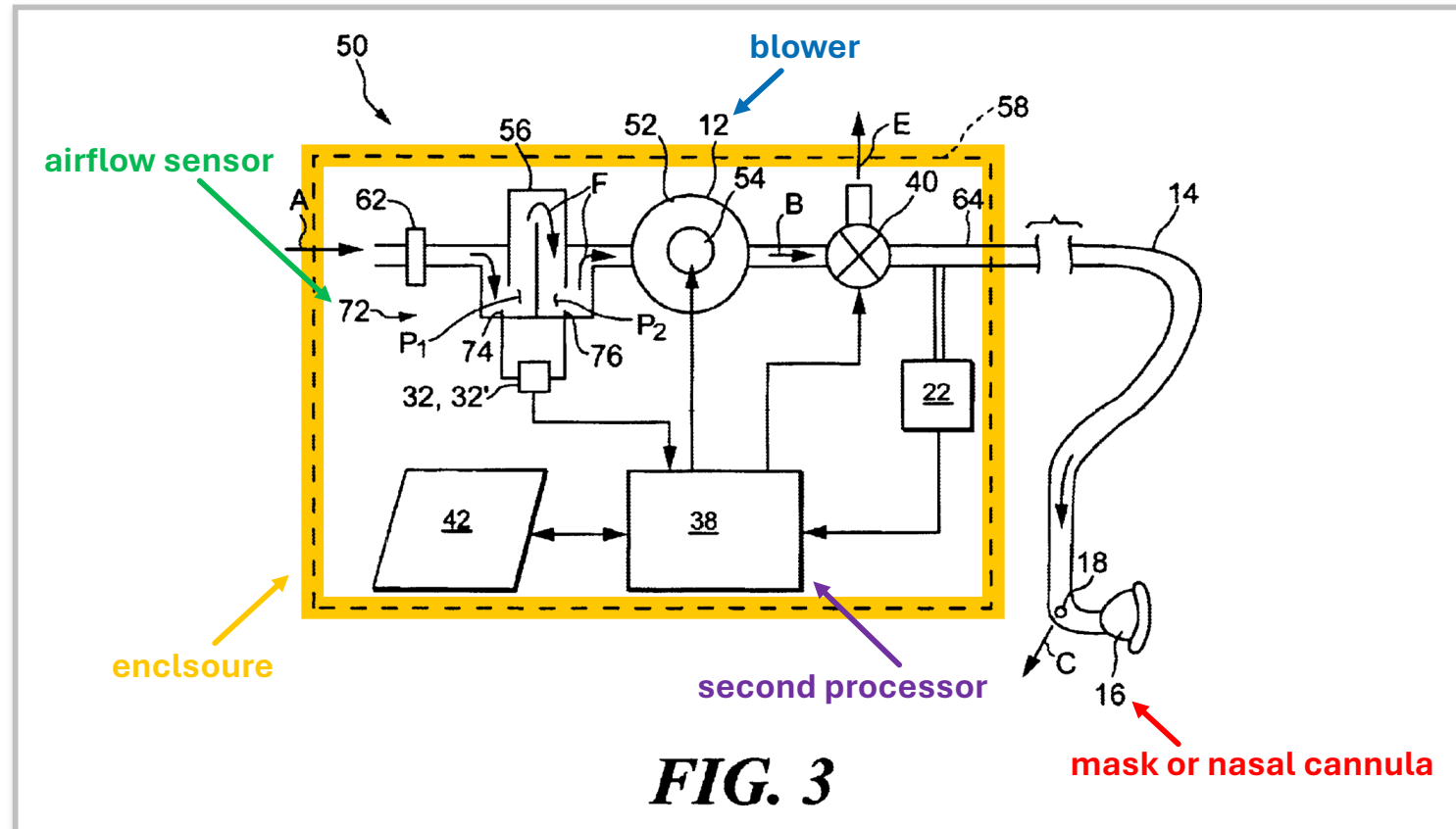
Measuring or deriving the respiratory airflow of a subject



* * *

Ex1001, Claim 1

Truitt Discloses “Measuring or Deriving the Respiratory Airflow of a Subject”



Pet., 28 (citing EX1007, 6:11-62; Kirkness, ¶1219; Chatterjee, ¶106)

EX1007, Fig. 3 (annotated)

Truitt Discloses “Measuring or Deriving the Respiratory Airflow of a Subject”

operation of motor 54 and/or valve 40. For example, in a bi-level mode of operation, controller 38 receives flow signals and pressure signals from flow/volume sensing assembly 72 and pressure sensor 22, respectively, to distinguish between the inspiratory and expiratory phase of the patient's breathing cycle, as is known in the art, and delivers the appropriate IPAP and EPAP pressures by controlling valve 40, motor 54, or a combination thereof. It is to be further understood that other sensors can be provided to provide additional information to the controller.

EX1007, 6:53-62

mouth and nose respectively. Airflow can be estimated by measuring nasal or oral airway pressure that decreases during inspiration and increases during expiration. Inspiration and expiration produce fluctuations on the pressure transducer's signal that is proportional to airflow. A modified

EX1001, 8:18-22

Pet., 14 (citing EX1007, 2:64–3:4), 28; Rep., 1-2

Truitt Discloses “Measuring or Deriving the Respiratory Airflow of a Subject”

“within [the] patient interface device.” *Id.*, 6:1-2. The claims themselves also make clear that Truitt’s device measures the patient’s respiratory airflow. For instance, claims 2 and 12 recite a processing unit that, based on the measured airflow, determines “a flow of the *breathing* [sic] [gas] within the conduit, a volume of breathing gas passing through the conduit, or both.” *Id.*, claims 2, 12; *see also* EX1007, 7:65-8:2 (“flow/volume sensing assembly” placed in-line between “an end of second conduit 64 and a corresponding end of patient circuit 14” that measures the instantaneous flow of breathing gas going into the patient circuit). “Breathing gas,” a mixture of the supplied air and the patient’s breath, includes the patient’s respiratory airflow.

EX1071 (Kirkness Reply), ¶5

2. A system according to claim 1, further comprising a processing unit adapted to receive the signal and to determine, based thereon, a flow of the breathing within the conduit, a volume of breathing gas passing through the conduit, or both, as the characteristic of the breathing gas.

Ex1007, Claim 2

Pet., 14, 28 (citing EX1007, 6:11-62; Kirkness, ¶219; Chatterjee, ¶106)

A POSITA Would Have Well-Known How to “Deriv[e] the Respiratory Airflow”

of a subject’s respirations. The subject’s respirations can be measured by measurement of airflow, respiratory effort, oxygenation and ventilation, and the like. Measurement of airflow is preferably measuring using sensors or devices such as a pneumotachometer, strain gauges, thermal sensors, transducers, piezo sensors, magnetometers, pressure sensors, static charge-sensitive beds, and the like. These sensors

EX1001, 7:44-50

Ground I: Truitt in View of Kumar

Calculating severity of the sleep disorder symptoms

25



the PAP device with an enclosure further comprising:

i) the data of a severity of the sleep disorder symptoms of the subject,

ii) the data of usage of the PAP device by the subject, and/or

iii) the index based in whole or in part on either i) or ii) or both i) and ii), a mask or a nasal cannula connected to the enclosure, and

EX1001, Claim 1

Apneas, Hypopneas, and Snores Are Data of a Severity of Sleep Disorder Symptoms

vice versa, to control the pressure accordingly. In the auto-titration mode of pressure support, where the flow of breathing gas and the pressure level thereof is controlled based on the conditions of the patient, these pressure and flow sensors, or other sensors, such as a microphone, are used to detect snoring, apneas, hypopneas, etc. The pressure and/or flow is then controlled to counteract or prevent these conditions.

EX1007, 3:4-11

Patent Owner

⁴ A skilled artisan would know that apnea and hypopnea events, which are indicated based on breathing metrics, represent data of severity of the patient's sleep disorder symptoms. See Ex. 2006 at 516 (describing that apnea events are indicated based

Ex1010, 19

Pet., 14, 17-18(citing Kirkness, ¶¶172-178; Chatterjee, ¶98; PO quote on Pet., 18); Rep., 4

Truitt Discloses Calculating Data of a Severity of Sleep Disorder Symptoms

measure this sidestream flow. The output of flow sensor **32'** is provided to controller **38** for **calculating** the flow and/or volume of gas passing through conduit **56**.

EX1007, 6:46-48

EX1010,³ 27); *see also* Pet., 17-18. Truitt's monitoring of a patient's condition for sleep disorder events like snores, apneas, and hypopneas (i.e., "data of severity") **requires** both measurement of the patient's airflow and **a calculation of the number of disordered events**, which is "quantitatively" "calculating the data of severity of sleep disorder symptoms." Truitt's utilization of sensor (e.g., airflow) data over time "in a feedback fashion" to adjust PAP/CPAP pressure as needed would have also involved evaluating the number of sleep disorder events (e.g., apneas, hypopneas).

Kirkness Reply, ¶12

Pet., 17, 20; Rep.. 8-9

PAP Devices Calculate [Severity] Data of Sleep Disorder Symptoms

169. Data calculation is a common feature in PAP devices. Accordingly, many PAP devices calculate various types of data and use that information to, among others, monitor the patient's usage of the device. For example, Truitt discloses that

Kirkness, ¶169

172. **Second**, Truitt discloses the PAP device calculating “data of severity of sleep disorder symptoms of the subject.” As mentioned above, data calculation is a common feature for PAP devices, and there are various forms of data calculations. For example, Truitt discloses controller 38 adjusts the pressure and flow provided by the PAP system based on the sensor signals “in a feedback fashion.” Ex. 1007, 2:57-59 (“Controller 38 receives the signals output from sensors 20 and 22 and controls the operation of valve 40, pressure generator 12, or a combination thereof in a feedback fashion based on these received signals.”). In other words, controller

Kirkness, ¶172

Pet., 16-17; Rep., 3-4.

Patent Owner's Expert

of the sleep disorder symptoms of the subject and calculating an index based on such data. A POSITA would understand the purpose of the integrated diagnostic and treatment device to calculate data. See, e.g., '029 Patent at 1:31-35. A POSITA would understand the disclosed

EX2020, ¶46

Truitt Discloses Index and Quantifying Data of a Severity

F. Respiratory Events ^{NI}

1. Number of obstructive apneas	RECOMMENDED
2. Number of mixed apneas	RECOMMENDED
3. Number of central apneas	RECOMMENDED
4. Number of hypopneas	RECOMMENDED

EX1070 (AASM Manual), 9

181. For example, the “apnea hypopnea index” or “AHI” is a measured number of apnea and hypopnea events per unit time. Ex. 1012, 8:8-17. Because AHI includes the detection of hypopnea events (in addition to apnea events), a POSITA would have known that AHI could be calculated based on the number of apneas and hypopneas detected by Truitt. Ex. 1007, 3:4-11. Moreover, Patent Owner identified

Kirkness, ¶181

Pet., 18-20 (citing Kirkness, ¶¶179-186; Chatterjee, ¶100); Rep., 8-12 (citing Kirkness Reply, ¶¶10-12)

Data of a Severity Should Not Be Limited to “quantitatively”

The signals from the one or more sensors used in various embodiments of the present invention are **preferably** analyzed using a processor and software that can quantitatively estimate or determine the severity of the subject's sleeping disorder or symptoms. Using either the microcontroller 26

EX1001, 19:8-12

The “use of the term ‘**preferably**’ makes clear that the language describes a **preferred** embodiment, not the invention as a whole.”

Cordis Corp. v. Medtronic AVE, Inc. 339 F.3d 1352, 1357 (Fed. Cir. 2013)
(emphasis in original)

Rep., 5-6, 8.

A POSITA Would Have Been Motivated to Calculate AHI

- Determining device effectiveness
- Changing overall prescription pressure

Rep., 11 (citing Kirkness Reply, ¶¶14-19)

Ground I: Truitt in View of Kumar

Second Processor Signal Processing Techniques (Claims 8 & 11)

Primary Dispute #3 – Claims 8 and 11

8. The system of claim 4, wherein the airflow sensor data is processed by the second processor, at least in part using one or more of the signal processing techniques from the group consisting of a standard deviation technique, a recursively fit ARMAX system identification model, a short-time Fourier transform technique, a discrete Fourier transform technique, a fast Fourier transform technique, a time-frequency signal analysis with a variety of different kernels, and a wavelet analysis.

EX1001, Claim 8

11. The system of claim 2, wherein the airflow sensor data is processed by the second processor, at least in part using one or more of the signal processing techniques from the group consisting of a standard deviation technique, a recursively fit ARMAX system identification model, a short-time Fourier transform technique, a discrete Fourier transform technique, a fast Fourier transform technique, a time-frequency signal analysis with a variety of different kernels, and a wavelet analysis.

EX1001, Claim 11

The Original Dispute Was Entirely Dependent of Upstream Failure

“Because Truitt does not disclose how its airflow sensor data related to the patient’s respiratory airflow and fails to disclose calculation of a level of severity for the subject’s symptoms, Challenged Claims 8 and 11 are patentable.”

POR, 31

Rep., 17-18

34

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

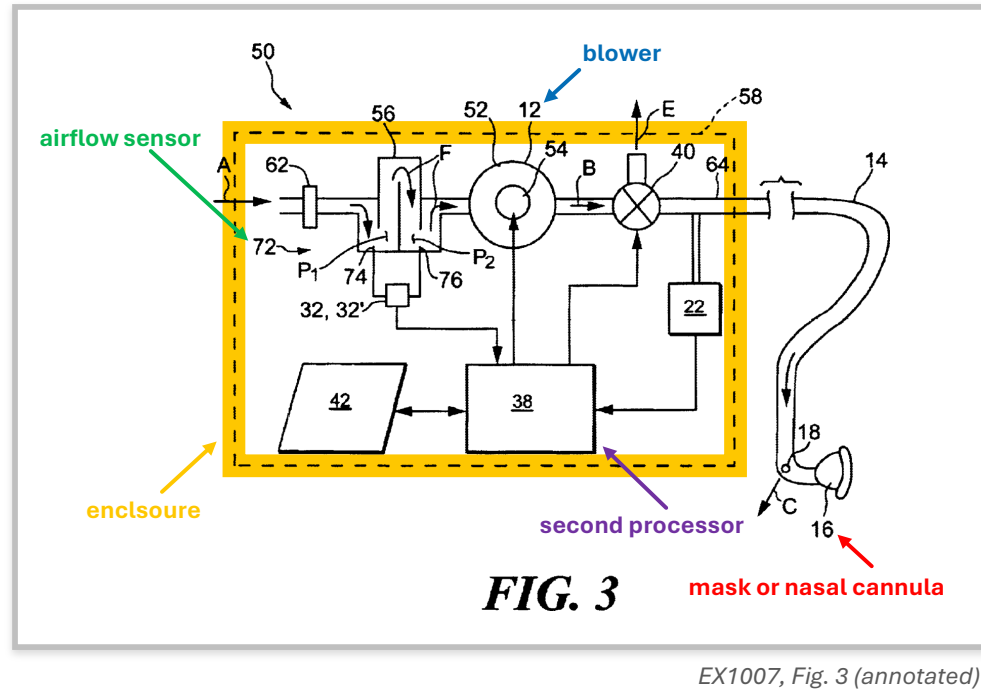


PO's New Argument on Location Gap Is Untimely

“Patent Owner is cautioned that any arguments not raised in the response may be deemed waived.”

Paper 13 (Scheduling Order) at 10

APOSITA Would Have Implemented Kumar's Algorithms With Truitt's Processor in the PAP



166. A POSITA would have also had a reasonable expectation of success in implementing this feature in the Truitt-Kumar combination. Moreover, it would have involved a combination of known technologies, e.g., a known PAP device that processes/calculates airflow sensor data (Truitt), according to known methods of analyzing patient-side device data using FFT or DFT (Kumar), to yield the predictable result of a PAP device where the airflow sensor data is processed/calculated by the second processor, in part, using the FFT or DFT technique, as discussed above.

Ground I: Truitt in View of Kumar

Remote Internet Site Adapted to Retransmit to Cell Phone (Claims 9 & 13)

Primary Dispute #4 – Claims 9 and 13

9. The system of claim 4, wherein the remote internet site is adapted to retransmit to the first radio frequency wireless transceiver on the cell phone the data, in whole or in part, the data of i) and ii), or i), ii), and iii) or a second index related to the data of the subject's treatment and the treatment's efficacy calculated and transmitted by the PAP device.

EX1001, Claim 9

13. The system of claim 2, wherein the remote internet site is adapted to retransmit the data to the first radio frequency wireless transceiver on the cell phone, in whole or in part, of i) and ii), or i), ii), and iii) related to the data of the subject's treatment and the treatment's efficacy calculated and transmitted by the PAP device.

EX1001, Claim 13

Kumar Discloses Retransmission from the Remote Internet Site to the Cell Phone

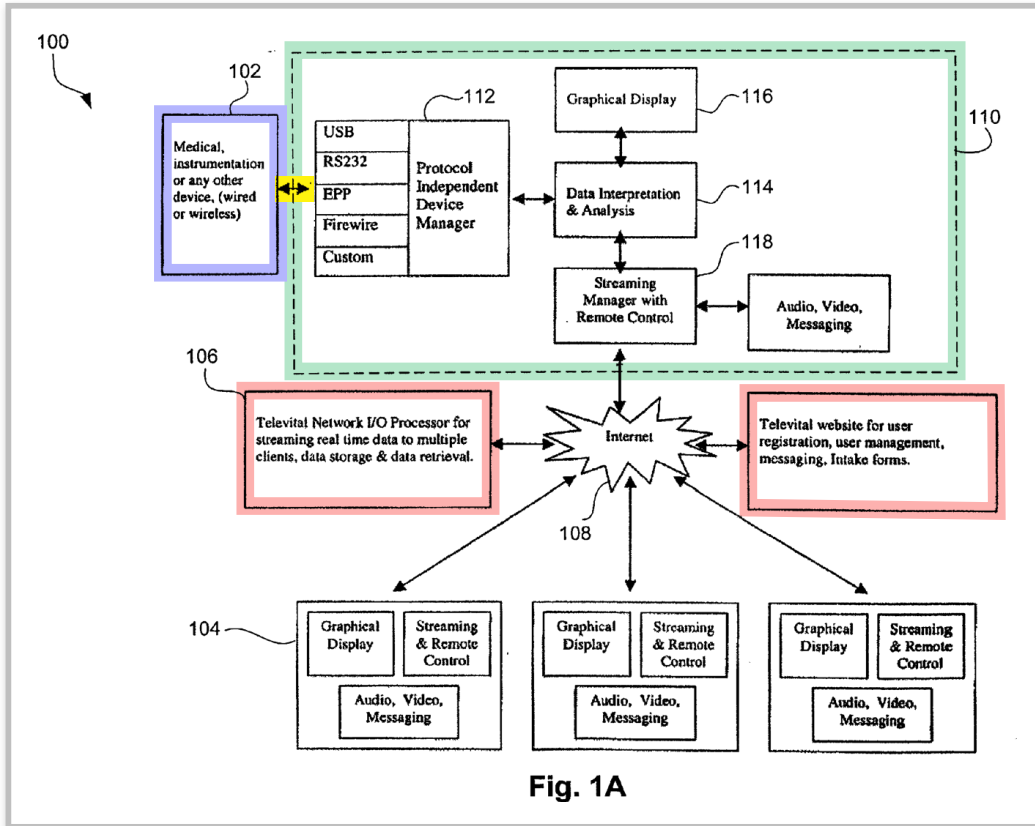


Fig. 1A

EX1008 (Kumar), Fig. 1A (annotated)

[0011] The system of the exemplary embodiment preferably includes at least one patient-side device for collecting data from a patient/client, a provider-side device, and an engine, each coupled to the WAN. The engine manages transmission of the data from the patient-side device to the provider-side device. This means that the engine may configure the devices to transfer the data directly from one device to the other; may receive the data from the patient-side device and transmit the raw or processed data to the provider-side device; may store the data for later transmission to the provider-side device, etc.

EX1008 (Kumar), [0011]

Pet., 34-35, 50; Rep., 18-20.

A POSITA Would Have Been Motivated to Retransmit Data From the Remote Internet Site to the Cell Phone

[0083] Whether or not the provider is currently accessing real-time streamed information, the data may be stored in a secured storage device at the central server for later access, replay, and/or analysis. The storage device may also be used to store all patient data or information, and integrate the data, whether as raw data, trended data, or summary data, into any electronic medical records system, for example. Thus, the exemplary embodiment may allow for simultaneous storage, retrieval, print, analysis, and play back from anywhere in the world with access to the storage device. This beneficially

EX1008 (Kumar), [0011]

- Improved user experience
- Communication between the patient and the medical care provider
- Patient compliance

Pet., 50-51 (citing Kirkness, ¶¶273-274; Chatterjee, ¶175)

Grounds IV-VI: Truitt in view of Kumar and Mumford

Sleep Efficacy Algorithm

Mumford's Algorithm Can Be Incorporated Into Truitt

Data of usage of the PAP device	Mumford tracks compliance; Mumford discloses the sleep efficacy control algorithm generates sleep profile information including a test score related to compliance. <i>EX1009 (Mumford), 7:42-46, 15:30-33; Kirkness, ¶322</i>
Data of severity of sleep disorder symptoms	Mumford calculates data for the quality of sleep and a POSITA would have understood the quality of sleep is the data of severity. <i>Ex. 1009, 1:27-35; 1:36-45, 1:46-55, 2:4-127:34-42; Kirkness, ¶323</i>
Index of treatment efficacy	Mumford discloses a test score of efficacy (“index [of treatment efficacy of the subject using a PAP device is]”) is generated by sleep efficacy control algorithm 36 based on (1) quality of sleep and (2) compliance. <i>Ex. 1009, 7:34-46, 11:44-47, 1:32-34, 16:8-13; Kirkness, ¶324-331</i>

Pet., 66-70 (citing Kirkness, ¶321-331)

Mumford's Algorithm Can Be Incorporated Into Truitt

Both Mumford and Truitt Contemplate the Use of Additional Sensors in Their PAP Systems

- Mumford: Oximeter and pressure transducer in Mumford also detect apnea.
- Truitt: Truitt's ports 74 and 76 incorporated electric sensing elements "mounted on a circuit board."

EX1009, 12:22-23

Kirkness Reply, ¶28

Rep., 21-23

Mumford's Algorithm Does Not Require the Use of Electrode Sensors.

“the use of the word ‘may’ in the [specification] [] strongly implies”
the condition is “not *necessarily*” required.

Rep., 21 (citing *Game and Tech. Co., Ltd. v. Wargaming Grp. Ltd.*
942 F.3d 1343, 1351 (Fed. Cir. 2019) (emphasis in original))

The oximeter sensor **314** may be used to help detect sleep
apnea since it provides physiological information from which

EX1009,
12:22-23

The pressure transducer **316** is used to detect the pressure
within the cavity of the nasal mask **20** from which the breath-
ing rate of the wearer **18** can be derived. The breathing rate of
the wearer **18** can provide an indication of apnea and hypop-
nea events. Any suitable pressure transducer with an appro-

EX1009,
12:42-46

Rep., 21-22

Scope of the '029 Patent Is Broad, and Not Limited to A Single/Particular Sensor

processing module 16. Although, one sensor 14 and one external input 12 are shown, the signal processing module 16 is capable of accepting multiple external inputs 12 from multiple sensors 14. The signal processing module 16 gen-

EX1001, 9:9-12

Sensors which can be used are known to those skilled in the art. These sensors include electrodes for measuring electro-physiological signals such as EEG, ECG, EMG, EOG and the like. These electro-physiological signals can be

EX1001, 6:25-28

Other sensors can be used to measure various parameters of a subject's respirations. The subject's respirations can be measured by measurement of airflow, respiratory effort, oxygenation and ventilation, and the like. Measurement of airflow is preferably measuring using sensors or devices such as a pneumotachometer, strain gauges, thermal sensors, transducers, piezo sensors, magnetometers, pressure sensors, static charge-sensitive beds, and the like. These sensors or devices, also preferably measure nasal pressure, respiratory inductance plethysmography, thoracic impedance, expired carbon dioxide, tracheal sound and the like. Mea-

EX1001, 7:43-53

and/or symptoms. In various embodiments, preferably at least two EEG electrodes are used to develop this data. In other embodiments, preferably, at least two ECG electrodes are used. In still other embodiments, preferably a pulse oximeter is used. In still even other embodiments, preferably, either an O² or CO² blood gas monitor is used.

EX1001, 19:2-7

PO Is Mischaracterizing Dr. Kirkness' Testimony

Petitioner's expert states that he would need additional sensor data to make the claimed severity calculation, but what those sensors are and how they are incorporated in the combinations is never described or discussed. Ex. 2036 at 32:16-34:4.

*PO's Sur-reply
at p. 9*

- Q.** So just to be clear, then, you don't have an opinion on whether or not a 10-second apnea is more or less severe than a 30-second apnea? Do I understand that correctly?
- A.** So if, for example, you're asking me whether within an individual there is a difference in the severity between a 10- and a 30-second apnea, what I'm saying is that you would -- we would need to examine something else in order to determine whether the response to that apnea created something that you would determine as sufficient to be able to discriminate severity. That's what I'm saying. I'm not saying that a 30 second apnea has a physiological -- I'm saying it's longer, but in terms of whether it creates a physiological response that's different, we couldn't say that unless we were looking at some data.

* * *

So, for example, if somebody has longer -- a longer apnea versus shorter apnea, you could look and see whether they're sleepy, is there any objective sleepiness. Do they have -- do they require more or less pressure support in order to overcome an apnea. So is their airway more collapsable. So, yeah, there's a number of different physiological variables that could go into determining whether a longer apnea results in some other physiological response.

EX2036 at 32:16-34:4

Motivation to Combine/Reasonable Expectation of Success

A POSITA Would Have Been Motivated to Combine Truitt With Kumar

- Obtain more representative data
- Convenience and efficiency
- Treat additional people
- Greater efficiency, cost reduction
- Automation, real-time access

Pet., 7-11 (citing Kirkness, ¶¶144-149; Chatterjee, ¶¶73-81);
Rep., 13-17 (citing Kirkness Reply, ¶¶22-26; Chatterjee, ¶¶75, 88-90)

A POSITA Would Have Had a Reasonable Expectation of Success Combining Truitt With Kumar

- Kumar expressly teaches that a device can be incorporated into its system
- The sensors in Truitt were known to be implemented wirelessly
- The proposed modification would simply be a change of programming and the addition of wireless transceivers
- In 2002, a telemedicine system (including a PAP device, mobile phone, and physician-side computer, all connected to a network) was demonstrated and known

Pet., 10-11 (citing *Kirkness*, ¶¶150-154; *Chatterjee*, ¶¶82-85)

A POSITA Would Have Been Motivated to Combine Truitt and Kumar With Mumford

- The combination would have improved the performance of the Truitt PAP device.
- The modification would have been advantageous to minimize the pressure applied, increase comfort, and therefore improve compliance.

Pet., 64-66, 70-71 (citing *Kirkness*, ¶¶310-313, 328-329)

A POSITA Would Have Had a Reasonable Expectation of Success Combining Mumford With Truitt and Kumar

- Truitt and Mumford are analogous art describing CPAP systems that include flow sensors and processors.
- The proposed modification involves a simple change in a programming algorithm (programming a processor based on signals from flow sensors) to yield predictable results (provide signals that increase or decrease the gas pressure).

the wearer 18. The sleep efficacy algorithm 36 may use standard techniques, as is commonly known to those skilled in the art, to process the physiological signals, determine the quality of sleep and generate the control signal. The sleep efficacy

EX1009, 7:51-54

Pet., 66 (citing Kirkness, ¶¶315-317), 71 (citing Kirkness, ¶¶330-331)

PO Is Mischaracterizing Dr. Kirkness' Testimony

Dr. Kirkness' testimony strikes at the Petition's motivations to combine regarding the need to obtain more representative data from the patients home and physician convenience. Pet. at 7-8; POR at 22-23. Dr. Kirkness confirmed that CPAPs were used by patients at home and that physicians were obtaining the data from them since the 90's without issue. Ex. 2036 at 38:5-40:9.

*PO's Sur-reply
at p. 10*

- Q.** And were those devices incapable of recording usage and patient symptom data?
- A.** So there are definitely CPAP machines that were able to have a SMART card or a storage device that was capable of measuring usage, and some of that usage may have included the pressure level, some of that usage may have included the airflow in the device. That data most likely at the earlier devices might have required analysis -- additional analysis as well.
- Q.** And were doctors unable to obtain that data?
- A.** So again, I think that doctors were primarily the ones that were receiving patient data. So anything from -- any data from the treatment of a patient would be the data that was privileged by their treating physician.

EX2036 at 38:5-40:9

Real Party-in-Interest

“[A] party that funds and directs and controls an IPR or [PGR] proceeding constitutes a ‘real party-in-interest.’”

Wi-Fi One, LLC v. Broadcom Corp., 887 F.3d 1329, 1336 (Fed. Cir. 2018)

The RPI analysis examines the “relationship between a party and a proceeding,” not “between parties.”

Par Pharm. v. Jazz Pharm., Inc., IPR2015-00546, Paper 25, at 14 (July 28, 2015)

Resmed Corp. Is the Only Real Party in Interest

Invoice Number	Invoice Date	Payee	ResMed Matter Reference	Invoice Total with Currency (Use this for currency)	Type Reader	Matter Type	Source Currency	Raw Status Category	Owner	Client
2420617	11/25/2024	Paul Hastings LLP - Los Angeles	J344		J	Litigation	USD	litigation	ResMed Corp.	ResMed Corp
2423487	12/19/2024	Paul Hastings LLP - Los Angeles	J344		J	Litigation	USD	litigation	ResMed Corp.	ResMed Corp
2431735	2/28/2025	Paul Hastings LLP - Los Angeles	J344		J	Litigation	USD	litigation	ResMed Corp.	ResMed Corp
2440932	5/13/2025	Paul Hastings LLP - Los Angeles	J344		J	Litigation	USD	litigation	ResMed Corp.	ResMed Corp
2445470	6/24/2025	Paul Hastings LLP - Los Angeles	J344		J	Litigation	USD	litigation	ResMed Corp.	ResMed Corp
2449361	7/31/2025	Paul Hastings LLP - Los Angeles	J344		J	Litigation	USD	litigation	ResMed Corp.	ResMed Corp
JP33015	12/11/2024	Jason Paul Kirkness PhD (NLV), S J344			J	Litigation	USD	litigation	ResMed Corp.	ResMed Corp
JP33016	2/2/2025	Jason Paul Kirkness PhD (NLV), S J344			J	Litigation	USD	litigation	ResMed Corp.	ResMed Corp
JP33017	2/2/2025	Jason Paul Kirkness PhD (NLV), S J344			J	Litigation	USD	litigation	ResMed Corp.	ResMed Corp

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Resmed Corp. Is the Only Real Party in Interest

The screenshot displays the Resmed legal system interface. The top navigation bar includes the Resmed logo and tabs for VIEWS, FIND, CREATE, REPORTS, and ADMIN. The current case is J344, titled 'Conflict / Dispute Reference J344'. The left sidebar shows a navigation menu with categories like Main Details, Clients, Parties, Subjects, Classifications, Contacts, Organizations, Associations, Prosecution, Opinions, Conflict / Dispute Umbrella, Financials, Assoc. Agreements, Verification, Locations, Questionnaires, Documents, Security, Related Records, and Links. The main content area shows the 'Conflict / Dispute Organizations' section for case J344 - Live - US - Cancellation - RMD v CleveMed IPR. A table lists the organizations:

Relationship	Organization Name	Organization Name (National)	Firm Code	Comments
☐ Client	ResMed Corp.		RMCORP	
☐ Law Firm	Paul Hastings LLP		PHLLP	

Below the table is an 'Add Organization' section with fields for Organization, Relationship, and Comments, and an 'ADD' button. A callout box on the right highlights the 'RMD v CleveMed IPR' case, showing the 'Organization Name' field with 'ResMed Corp.' and 'Paul Hastings LLP' listed below it.

Record created on 27 Oct 2024 by Piyush Tikoo

Law Engine Status: Enabled

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