HERBERT SMITH FREEHILLS KRAMER

PTAB Oral Argument

ResMed Corp. *v.*

Cleveland Medical Devices, Inc.

April 29, 2026

Case No.: IPR2025-00247
Patent No.: 11,872,029

Kramer Levin is now HSF Kramer

IPR2025-00247 (‘029 Patent) – Grounds

Ground	Challenged Claims	35 U.S.C. §	References
1	1*-11, 13-16, 18-19	103	Truitt, Kumar
2	14-15	103	Truitt, Kumar, Dong
3	12, 17	103	Truitt, Kumar, Wright
4	1-11,13-16, 18-19	103	Truitt, Kumar, Mumford
5	10, 14-16	103	Truitt, Kumar, Mumford, Dong
6	12,17	103	Truitt, Kumar, Mumford, Wright

*Claim 1 is the only challenged independent claim

Summary of the Arguments

- **Measuring Within the Device ≠ Measuring Patient:**
  - Truitt does not measure or derive the patient's "respiratory airflow" because its sensors only measure the airflow *provided to the patient* internally within the device housing.

- **Detection ≠ Calculation:**
  - Truitt merely detects events to trigger auto-titration; it does not perform a calculation of "data of a severity".

- **Serverside Signal Processing Is Not In PAP Device:**
- The Truitt-Kumar combination improperly relies on Kumar's remote server to satisfy the requirement of signal processing on the PAP device (Claims 8, 11).

- **No Retransmission to Remote Internet Site:**
  - Kumar does not disclose a remote internet site adapted to retransmit data back to the cell phone (Claims 9, 13).
- Mumford's required mask-integrated electrodes destroys Truitt's core objective.

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

Truitt + Kumar Does Not Render Obvious Challenged Claims 1-18

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

What the ’029 Patent Claims

- **Claim 1 requires:**
  - An airflow sensor internal to the PAP device for measuring the subject’s respiratory airflow
  - A second processor receiving that airflow sensor data
  - The processor calculating data of a severity of sleep disorder symptoms
  - The processor calculating an index based on severity and/or usage data
  - Transmission of that data to a remote internet site AND a cell phone

- **’029 Patent’s distinction from conventional CPAP:**
  - Conventional CPAPs detect generic events (snore, apnea) and provide ineffective responses
    - *“More advanced, but still very basic devices...have been found to be expensive and largely ineffective.”* *’029 Patent at 2:32–37*
  - ’029 Patent quantitatively determines severity and calculates diagnostic indices (e.g., AHI, RDI) to provide specific responses

POR at 2-4

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

Truitt: A Conventional Auto-Titration CPAP — Nothing More

- **What Truitt discloses that it does:**
  - Monitors pressure or flow of breathing gas delivered to the patient without a dedicated flow element
  - Adjusts pressure in a feedback fashion to meet prescription level
  - Detects snoring, apneas, hypopneas to change pressure (auto-titration mode)
- **What Truitt does NOT do:**
  - Does not measure the patient's respiratory airflow
  - Does not quantitatively determine severity of symptoms
  - Does not transmit diagnostic data to a remote internet site or cell phone

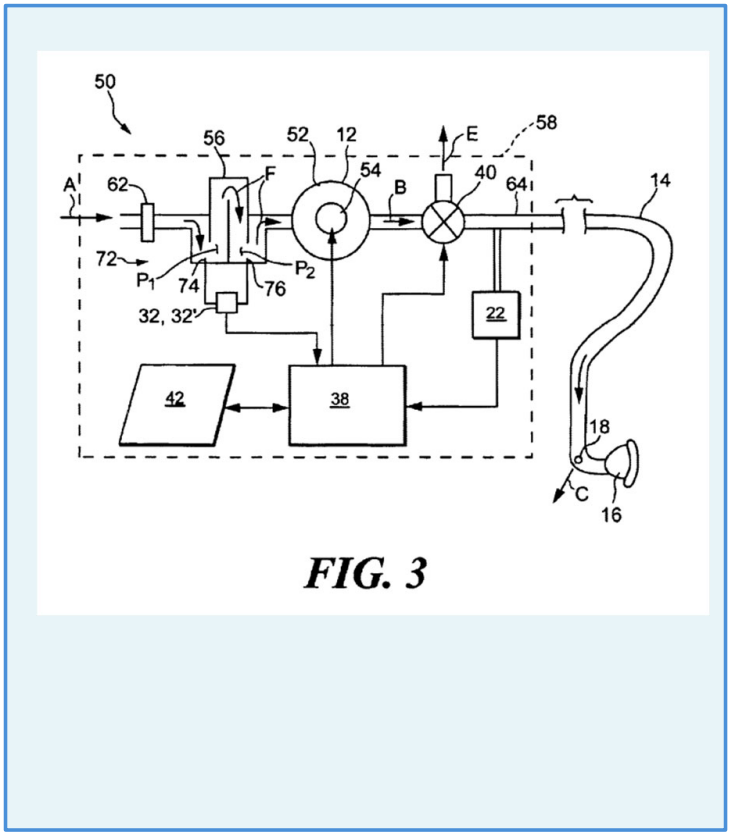


FIG. 3

POR at 4-7, Sur-Reply at 2-6

Truitt Does Not Measure Airflow of the Subject

- Claim 1 requires an internal airflow sensor **"adapted for measuring or deriving the respiratory airflow of a subject while using the PAP"**
- **Truitt's flow sensing assembly 72 measures gas flow through conduit 56 to regulate blower 52.**
    - This measures airflow INSIDE the device. There is no disclosure showing how to measure or derive the airflow the patient is actually breathing.

  Measurements of airflow delivered to the patient do not represent the patient's respiratory airflow. Borkholder Decl. ¶¶46–51.
- **Petitioner's expert confirmed that neither he nor the Petition identify the additional sensors relied upon for measuring or deriving a patient's respiratory airflow**

> Furthermore, Petitioner's claim of Truitt measuring or deriving a patient's respiratory airflow "at the patient" relies upon additional sensors, which ResMed failed to identify in the Petition. *See* Reply at 1-2 (citing to Ex. 1071 at ¶¶4-7); Ex. 2036 ("Kirkness Tr.") at 15:4-21:24 (confirming that he has "not provided an opinion on the other sensors" referred to in Truitt). The Petition only identifies Truitt's flow sensing system 72 as the airflow sensor that is responsible for measuring or deriving the respiratory airflow of the patient, not an additional pressure sensor associated with the "pressure pick-off port in or near the patient interface device:"
>
> > Truitt also discloses the PAP device includes flow sensing system 72 within housing 58 (*airflow sensor being any type of sensor internal to the enclosure of the PAP device*), as shown in Figure 3, providing a signal to controller 38 for calculating gas flow and/or volume passing through conduit 56 and controlling operations of the PAP device, including operations of motor 54 and/or valve 40 that control air flow and pressure provided to the patient (air flow sensor *adapted for measuring or deriving the respiratory airflow of a subject while using the PAP device and outputting airflow sensor data*).

Sur-Reply at 3

'POR at 12-14; Sur-Reply at 2-4

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

POR at 11-18; Sur-Reply at 3-7

“Data of a Severity . . .” Requires A Quantitative Determination

’029 Patent — Claimed Invention	Truitt — What It Actually Does
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** of a data acquisition system, a separate computer, base station or processor, a PDA, a processor on a device for treating the subject’s sleeping disorder or a combination of these processors, the severity of the subject’s sleeping disorder and/or symptoms is determined and is used at least in part to regulate the physical or chemical treatment of the subject. Also optionally, the one or more sensors used in the	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.
’029 Patent at 19:8-22	Ex. 1007 at 3:4-9

- The Board’s finding in PGR2024-00012, Paper 7 at 16 is instructive:
  - The specification discloses that to monitor the condition of the subject ***“the system quantitatively estimate or determine the ‘severity of sleep disorder symptoms’”*** — not merely the detection of events.

- “Data of a severity” means “the degree of deviation from the baseline characteristics of a patient without sleep disorder symptoms.” Borkholder Decl. ¶53; Ex. 2020 at ¶¶ 41-42, 46.

"Data of a Severity . . ." Requires A Quantitative Determination

Truitt offers no guidance on how monitor a patient by quantitatively calculating or determining "data of a severity"

- Petitioner's focus for this element is to equate Truitt's ***monitoring*** with ***detecting.*** Pet. at 17

> **Second**, Truitt discloses the PAP device calculating "data of severity of sleep disorder symptoms of the subject" because it discloses monitoring the patient's condition, and specifically detecting snoring, apneas, and hypopneas. Kirkness¶¶172-178; Chatterjee¶98.

- *But to monitor is to quantitatively calculate — "**merely identifying symptoms, like snores, apneas, and hypopneas [is] not tantamount to calculating data of a severity of the symptoms.**"* Borkholder Decl. ¶55

- Truitt's feedback loop changes pressure when an event is detected — it never computes a severity level. Borkholder Decl. ¶59.

No Motivation to Combine Truitt Into a Network PAP Treatment System Based on Kumar

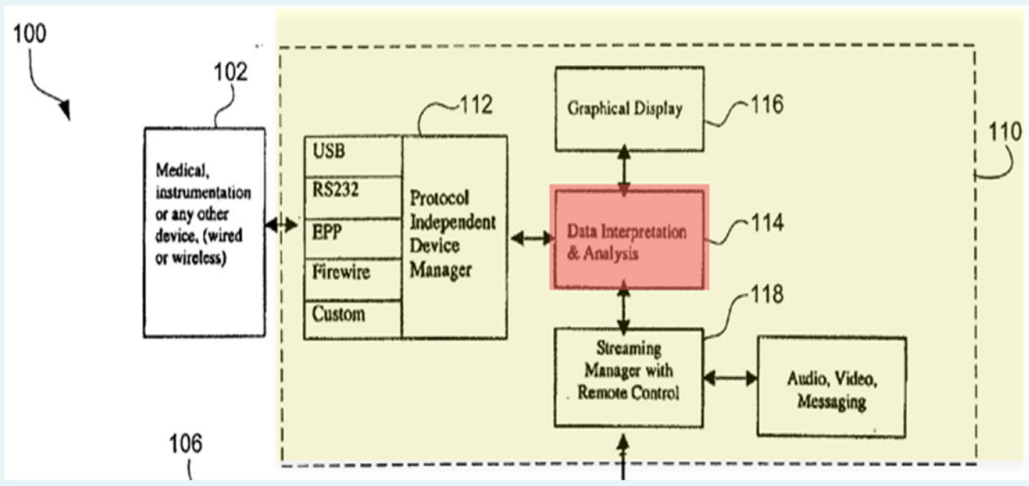
- **Petitioner's motivations define the "problem" in terms of the solution so the Petition rest upon impermissible hindsight.** ***Purdue Pharma*****, 643 F. App'x at 966.**

- Petitioner offers four reasons to combine that are classic hindsight-driven analysis:
  - (1) **"More representative data from home"** — Untethered to the record facts.
  - (2) **"Real-time physician monitoring"** — CPAP therapy is prescribed precisely where live monitoring is **NOT** required.
  - (3) **"Increase health access"** — The only way to increase CPAP access is via home sleep testing, not networking the device.
  - (4) **"IoT/wireless market trends"** — General consumer IoT trends do **NOT** motivate PAP-device integration. Restricted health data is not refrigerator data.

POR at 21-27; Sur-Reply at 9-12

Claims 8 & 11: Kumar Does Not Process Airflow Sensor Data Using A PAP Processor

- Claims require the airflow sensor data be processed by the PAP device's internal processor using FFT, DFT, ARMAX, wavelets, or similar techniques.
- Petitioner relies on Kumar for this limitation in light of Truitt's deficiencies – but Kumar's calculations are performed at a separate computing device, not the PAP device.
- Petitioner identifies no disclosure that relocates these signal processing techniques into the PAP device.



Ex. 1008 at Fig. 1A

- Kumar confirms that it was not well-known to perform these signal processing techniques and calculations on the PAP device.

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

POR at 27-31; Sur-Reply at 6-7

Claims 9 & 13: Kumar Has No Retransmission Back to the Cell Phone

- **Claims 9 and 13 require the remote internet site be "adapted to retransmit to the first radio frequency wireless transceiver on the cell phone" which includes the data of severity, usage, and/or index.**
- **Petitioner relies on Kumar for this limitation. BUT Kumar does not describe a retransmission of data back to the phone.**
- Kumar does not disclose: a system whose server is designed to push or return processed severity/usage data back to the patient's phone.
- Kumar's Data Flow:

  1) data from client device →
  2) Computing Device 110 →
  3) server for storage→
  4) accessed by physicians.

POR at 31-33; Sur-Reply at 7-8

Truitt + Kumar + Mumford Does Not Render Obvious the Challenged Claims

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

A POSITA Would Not Have Been Motivated to Modify Truitt with Mumford

- Petitioner recognizes Truitt's inability to calculate the claimed symptom severity data and seeks to fill the gap using the sleep efficacy algorithm of Mumford. Sur-Reply at 8.
- **BUT** a POSITA would not have combined Truitt with Mumford because:
  - The references are directed to different objectives.
    - **Truitt**: real-time adjustment of PAP therapy and elimination of additional sensors. POR at 33-35.
    - **Mumford**: diagnostic sleep-stage and arousal analysis using multiple physiological inputs. POR at 33.
  - Mumford does not further the objective of Truitt.
    - Mumford: its sleep efficacy algorithm requires electrodes that are not present in Truitt, which its "invention is to eliminate the extra sensors." POR at 37.

SUMMARY OF THE INVENTION

It is, therefore, an object of the present invention to provide a pressure support system that overcomes the disadvantages associated with conventional pressure support systems. In particular, it is an object of the present invention to provide a pressure support system that allows for a relatively accurate flow or volume measurement of the gas passing therethrough, without the need for a dedicated flow element.

Truitt at 3:42-47

POR at 33-40; Sur-Reply at 8-13

A POSITA Would Not Have Had a Reasonable Expectation of Success

- Mumford's algorithm requires multiple electrode sensors (e.g. EEG, EOG, EMG). **But** Truitt only uses its flow sensing assembly. Sur-reply at 10-12 ; POR at 34-36.

- Because Mumford's sleep efficacy algorithm requires multiple electrode sensors that Truitt was expressly designed to eliminate, a POSITA would not have expected success in the combination. Sur-reply at 10-12 ; POR at 34-36.