

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,

Petitioner,

v.

MASIMO CORPORATION,

Patent Owner.

Case IPR2024-00290

U.S. Patent 8,190,223

**DECLARATION OF R. JAMES DUCKWORTH, Ph.D.**

I declare that all statements made herein on my own knowledge are true and that all statements made on information and belief are believed to be true, and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

I reserve the right to supplement my opinions in the future to respond to any arguments or positions Apple may raise, taking account of new information as it becomes available to me.

Dated: 4/15/2025



R. James Duckworth, Ph.D.

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## **I. INTRODUCTION**

1. I, R. James Duckworth, Ph.D. have been retained by Knobbe, Martens, Olson & Bear, LLP, counsel for Patent Owner Masimo Corporation (“Masimo”). I am making this declaration at the request of Masimo in the matter of *Inter Partes* Review of U.S. Patent No. 8,190,223 (“the ’223 Patent”).

2. I am being compensated for my work in this matter at my standard hourly rate for expert consulting services. My compensation in no way depends on the outcome of this proceeding. I have no financial interest in any of the parties to these matters.

## **II. INFORMATION AND MATERIALS CONSIDERED**

3. In conducting the analyses and forming the opinions set forth in this Declaration, I have reviewed and considered the materials considered in connection with my earlier declaration in this matter, as well as Apple’s Reply, Apple’s exhibits EX1021-1025 filed with the Reply, Dr. Cockburn’s second declaration (EX1022), and the parties’ oral hearing demonstratives (EX1079, EX2045). To the extent not listed above, I have also reviewed any other materials I discuss or cite herein.

4. In preparing this Declaration, I have considered my own knowledge and experience, including my work in the fields of electrical and computer engineering; my experience teaching within those subjects; my experience working with others involved in those fields; and the materials identified herein. I understand

my analyses and opinions, including my review of any materials cited herein, should be made from the perspective of a person of ordinary skill in the art related to the '223 Patent at the relevant time ("POSITA"). I understand the relevant time is March 1, 2005. Accordingly, my analyses and opinions are made from that relevant perspective. My testimony herein refers to the knowledge of a POSITA as of March 1, 2005, unless indicated otherwise.

5. Paragraphs 27-35 of my September 15, 2024 declaration (EX2042) outline my understanding of the legal requirements I have used in forming my opinions.

### **III. ANALYSIS**

6. I provide this declaration to address three arguments in Apple's Reply and in Dr. Cockburn's second declaration. **First**, Apple's Reply argued that Naghavi's description of rearranging icons/health objects satisfies the claimed replacements/changes. *See* Reply, 20 ("A rearrangement of displayed icons/health objects involves moving displayed objects around such that one object is displayed in the place previously occupied by another—*i.e.*, replacement of one health object with another.") (emphasis omitted). **Second**, Apple's Reply and Dr. Cockburn's second declaration argued that Naghavi's reference to "show[ing] different types of icons and health objects according to different disease and/or physical conditions of patient 1" also satisfies the claimed replacements/changes because a "change in

which objects are displayed entails removal of an already-displayed object, new display of a previously undisplayed object, or both.” Reply, 25-26 (emphasis omitted); EX1022, ¶¶11-12. **Third**, Apple’s Reply and Dr. Cockburn’s second declaration argued that the Naghavi-Hochstedler-Burnes combination must be actively monitoring the replacing (and undisplayed) parameter as a matter of “common sense.” EX1022, ¶¶8-9; Reply, 18-19. Each of these three arguments are wrong, as I explain below.

**A. Rearrangement Is Not Replacement**

7. Every challenged claim of the ’223 Patent requires one measured value be replaced by another measured value (independent claims 1, 15, 18, 21, and 27), or changed from displaying one measured value to displaying another measured value (independent claims 13, 28).<sup>1</sup> I provide excerpts of claims 1 and 13 below as examples of the replacement or change required by all claims:

**Claim 1:** .... wherein in the common display area, the display of one of the measured values of the first or second physiological parameter *is replaced* with the other of the measured values based on an occurrence of an event....

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<sup>1</sup> The actual terms recited in Claims 1, 15, 18, 21, and 27 are “replaced,” “replaces,” or “replacing.” Claims 13 and 28 use the phrase “changes from displaying ... to displaying ...” When referring to the claimed replacements (or similar terms) in this declaration, I am referring to the various “replaced,” “replaces,” “replacing” limitations in Claims 1, 15, 18, and 21. Similarly, when referring to the claimed changes, I am referring to the recited “changes from displaying ... to displaying ...” in Claims 13 and 28.

**Claim 13:** ....wherein the common display area *changes* from displaying one of the measured values of the first or second physiological parameter to displaying the other of the measured values based on an occurrence of an event ....

8. A POSITA would have understood these claim limitations mean that when a measured value of a first parameter is “replaced” or “changed” by the measured value of a second parameter, “the measured value of the first parameter is removed from the display, and the measured value of the second parameter is displayed in place of the measured value of the first parameter.” EX2042, ¶¶ 64-85.

9. Apple’s Reply incorrectly suggested that rearranging icons satisfies the claimed “replaced” or “changes” limitations:

Naghavi provides that the icons/health objects are ‘*rearrange[d]* ... to best suit the condition of [the] patient,’ *e.g.*, to “show different types of icons and health objects according to different ... physical conditions of the patient.” APPLE-1005, [0059], [0063]; *see* Petition, 18, 27. A *rearrangement* of displayed icons/health objects involves moving displayed objects around such that one object is displayed in the place previously occupied by another—*i.e.*, **replacement** of one health object with another. *See* Petition, 25-27.

Reply, 20 (emphasis modified).

10. “Rearrangement” is not the same as “replacement,” and a POSITA would not have understood that the claimed replacement or change encompasses

merely rearranging two things on a display. As I stated previously, “The term ‘replaced,’ as generally used in the English language, means ‘to take the place of.’” EX2042, ¶65. A POSITA would have understood that, when something is “replaced,” the thing that was replaced no longer remains. *See id.* (explaining that when a car windshield gets replaced, the old windshield does not remain). I also explained that the ’223 Patent uses the terms “replace” and “replaced” consistent with that ordinary meaning. For example, the specification uses the phrase “replace the batteries” in the conventional sense of removing the old batteries from the device and replacing them with new batteries. *Id.*, ¶66 (citing EX1001, 12:62-65). Nothing suggests the new batteries are moved from some other part of the device or that the old batteries are moved to some other part of the device. *See id.*

11. Apple’s suggestion that merely “moving displayed objects around such that one object is displayed in the place previously occupied by another” satisfies the claimed replaced/changes limitation is inconsistent with the meaning of “replace.” A POSITA would not have understood that merely moving displayed objects around—rearranging them on the display—constitutes a replacement because nothing has been replaced; both objects remain displayed.

12. Dr. Cockburn did not present any opinion supporting Apple’s assertion that rearranging objects on a display constitutes replacement, much less offered an

opinion that a POSITA would have understood the claimed replaced/changes encompasses mere rearrangement. *See generally* EX1022.

13. Apple relied on the following two figures from the '223 Patent to argue incorrectly that a measured value that has been replaced could appear elsewhere on the display:

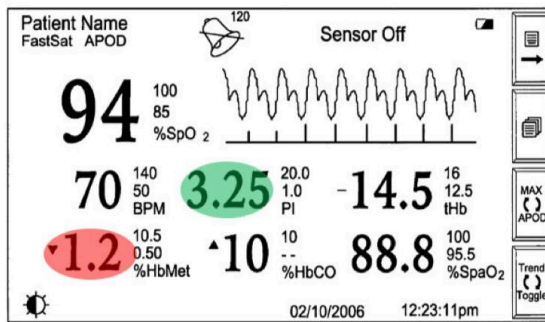


FIG. 11B

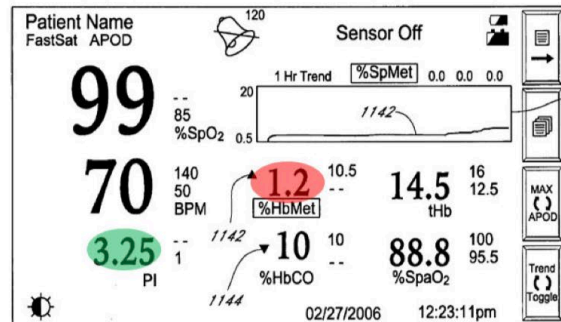


FIG. 11C

Reply, 10 (citing EX1001, Figs. 11B-11C) (Apple's annotations); *see also id.* at 5-6. I disagree. Notably, Dr. Cockburn did not provide any opinion supporting this argument. *See generally* EX1022.

14. Apple's argument is wrong because the '223 Patent describes multiple embodiments, some of which are claimed in the challenged claims (space-limited displays that require replacing/changing to display measured values of parameters) and some of which are not (other displays). Figures 11B and 11C describe unclaimed embodiments with large screens, not the claimed embodiments that require replacement/change. The '223 Patent describes those and other surrounding figures

as “display screens of the patient monitor of FIG. 11A.” EX1001, 4:42-43; *see also id.* at 17:17-22. The specification does not describe Figures 11B and 11C as showing a sequence of events and never describe Figures 11B or 11C as illustrating the displayed values are “replaced” or “changed.” *Id.* at 17:15-17:67.

15. The specification later describes that, in some embodiments, “the monitor 1000 may advantageously employ enlargement or reorganization of parameter data based on, for example, the severity of the measurement.” *Id.* at 19:24-26. “[E]nlargement,” “reorganization,” and rearrangement of data is not replacement. Thus, Figures 11B and 11C do not show replacement within the meaning of the claims, and Apple and Dr. Cockburn have not shown otherwise.

16. I understand Apple also relies on the claim term “common display area” that appears in some of the challenged claims in support of its rearrangement argument. *See* Reply, 4-5 (arguing that the “replacement occurs ‘in the common display area’” and therefore replacement “also encompasses instances where the replaced parameter is displayed elsewhere on the display (*e.g.*, outside of the common display area) following the replacement”). As discussed in my prior declaration, I disagree that the term “common display area” changes the correct construction of “replace/replacing” because “common display area” does not appear in all challenged claims. EX2042, ¶91. Rather, the “common display area” appears only in independent Claims 1, 13, 15, and 18. In contrast, independent Claims 27 and 28

recite a “display.” Neither Apple’s Reply nor Dr. Cockburn’s second declaration address this difference in claim language. Thus, Apple’s argument does not apply to Claims 27 and 28.

17. Indeed, Claim 27 emphasizes that the claim term “replaced” refers to displaying one value or the other, not moving them around. The claim recites:

[A] display capable of displaying a measured value of a first blood parameter of body tissue of a monitored patient **or** displaying a measured value of a second blood parameter of the body tissue” and “wherein the display of the measured value of the first blood parameter is **replaced by** the measured value of the second blood parameter....

EX 1001, 40-41 (Claim 27) (emphases added).

18. Thus, the display of Claim 27 displays either the first measured value or the second measured value but not both. *See id.* The claim describes this as one measured value is “replaced” with the other. Claim 28 is similar. It recites “wherein **the display** also **changes from** displaying the measured value of the first blood parameter **to displaying** the measured value of the second blood parameter...”

EX1001, 41 (Claim 28).

19. Regardless of Apple’s arguments regarding other claims, moving two displayed objects around on a display would not satisfy Claims 27 or 28 at least because (1) the claims recite a display that shows a first measured value **or** a second

measured value, and (2) the replacement/change occurs on the “display,” and not merely a “common display area.”

**B. Naghavi’s Showing of Different Types of Icons/Health Objects Does Not Disclose Replacement of a Measured Value with Another Measured Value Based on an Event**

20. Apple’s Reply and Dr. Cockburn’s second declaration argue that Naghavi discloses the replacement of a measured value. Reply, 25-26; EX1022, ¶¶11-12. Naghavi does not.

21. Dr. Cockburn asserts that Naghavi “state[s] that changing its display responsive to a health status change involves ‘show[ing] *different types of icons and health objects* according to different diseases and/or physical conditions of patient 1.’” EX1022, ¶11 (citing EX1005, [0059]). Dr. Cockburn then argues that “[c]hanging a display to show ‘different types of icons and health objects’ ... entails (1) changing the display to show a different type of icon/health object that was not previously displayed, and/or (2) changing the display to remove a type of icon health object from display.” *Id.*, ¶ 11. I disagree.

22. Dr. Cockburn cites no evidence that Naghavi discloses changing a display either to show a previously undisplayed icon/health object or to remove a type of icon or health object. *See id.* Contrary to Dr. Cockburn’s suggestion, paragraph 59 of Naghavi describes the types of changes Naghavi contemplated when discussing changing and showing different types of health objects:

GUI 80 may further change and show different types of icons and health objects according to different diseases and/or other physical conditions of patient 1. The icons and health objects may change in *color, shape, order, or other mutable attribute* according to different time schedules and severity or degree of some findings, e.g., the *shape, size, color, and relative position* of each icon can change according to a current health status and health plan of patient 1.

EX1005, [0059] (emphases added).

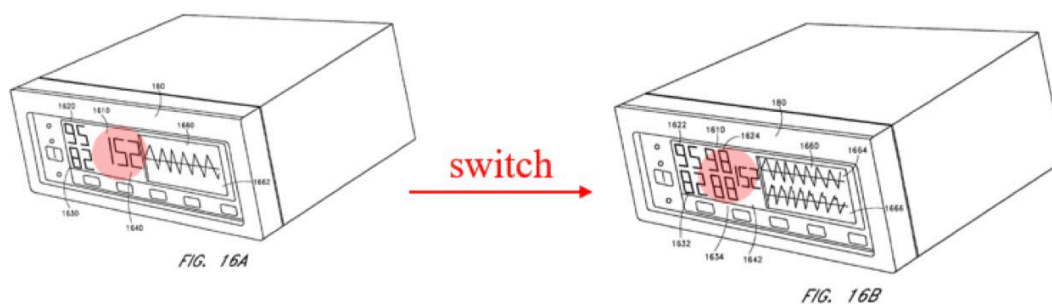
23. A POSITA would not have recognized Naghavi as disclosing that one icon/health object is replaced by another icon/health object. Changing aspects of an icon/health object, such as color, shape, ordering or other mutable attribute, does not entail removing one icon from a display and, in its place, displaying a second, different icon. Indeed, as I explained in my prior declaration, Naghavi displays all currently measured parameters. EX2042, ¶¶114-116; *see also id.* ¶¶93-113 (explaining Hochstedler and Burnes also display all measured parameters).

24. Nowhere does Naghavi suggest displaying an icon that was previously undisplayed or removing an icon/health object from the display, much less that one icon/health object *replaces* another. Instead, Dr. Cockburn hypothesized scenarios in which an icon or health object might be removed from the display when a physical condition changes or when an icon or health object “become(s) no longer relevant.” *See, e.g., id.* Dr. Cockburn’s unsupported hypotheticals are not disclosed in Naghavi

and do not demonstrate that Naghavi discloses replacing one measured value with another measured value as required by the claims of the '223 Patent.

25. Moreover, regardless of whether Naghavi disclosed displaying a previously undisplayed icon/health object or removing an icon/health object (it does not), the proposed combination would not render the challenged claims obvious. The claims require **replacement** of a measured value of one parameter with the measured value of another parameter (or changing from/to). Apple agreed that the claims that recite “replace” (and similar terms) at least require “the measured value of the second parameter is displayed ***in place of*** the measured value of the first parameter.” Reply, 3-4 (emphasis added), 7-9 (“being replaced ... indicates only that the second parameter value is displayed ***in the place previously occupied*** by the first parameter”). Dr. Cockburn’s description of changing the display to show a new icon/health object does not describe **replacing** one icon/health object with another. EX1022, ¶12. Instead, he describes only adding or removing icons, without any replacement occurring. *Id.* ¶ 11.

26. Dr. Cockburn’s suggestion regarding adding new icon/health objection is akin to the Al-Ali reference that was distinguished during reexamination:



EX2038, Figs. 16A, 16B (annotated); *see also* EX2042, ¶¶77-78. As the examiner explained, adding additional parameters without removing others did not disclose replacing as required by the claims. EX1020, 6-7, 99. Similarly, Dr. Cockburn's description of removing an icon/health object from display also does not describe replacement. EX1022, ¶12. Removing an object from display is analogous to the reverse of Al-Ali's figures shown above (e.g., going from Fig. 16B to Fig. 16A). Again, that does not show that an icon/health object has been replaced. Even adding and removing icons/health objects in different parts of the display would not demonstrate that one icon/health object is displayed in the place previously occupied by another, as Apple agreed is necessary for a replacement. Reply, 3-4, 7-8.

27. Naghavi also fails to disclose two distinct and currently measured values, namely: (1) the currently displayed measured value, and (2) the measured value that replaces it. Naghavi's statements regarding showing different icons/objects according to different diseases or physical conditions does not disclose contemporaneously monitored parameters. Naghavi's disclosure suggests no more

than that the monitor may display one icon, such as oxygen saturation, if the monitored patient has the flu, or a different icon, such as carbon monoxide, if the patient were hospitalized with smoke inhalation. A POSITA would therefore understand Naghavi does not disclose a system where one currently measured value is replaced by a second currently measured value.

28. Apple's new Naghavi argument also does not render the claims obvious because Hochstedler teaches away from replacing a measured value of a first parameter with the measured value of a second parameter. As I explained in my prior declaration, Hochstedler discloses a "best guess algorithm" that ensures all currently monitored parameters are displayed and avoids leaving any monitored parameter undisplayed. EX2042, ¶¶135-136. Neither Apple's Reply nor Dr. Cockburn's second declaration address Hochstedler's teaching away. *See generally* Reply, EX1022. Hochstedler's teaching away from leaving any currently monitored parameters undisplayed confirms that a POSITA would not have been motivated to combine Naghavi-Hochstedler-Burnes in a manner resulting in a measured value of a parameter being replaced with the measured value of another parameter.

**C. The Naghavi-Hochstedler-Burnes Combination Does Not Monitor the Replacing Parameter**

29. Dr. Cockburn asserts in his second declaration that, "[i]n the specific context of the Naghavi-Hochstedler-Burnes combination, where a change in one parameter value causes that parameter value to be displayed in place of another

parameter value (*see* my First Declaration, ¶¶75-82), this means that the replacing parameter must be actively monitored by the combination system.” *See* EX1022, ¶ 9.

I disagree because Dr. Cockburn’s premise is unsupported and wrong.

30. Dr. Cockburn does not address my prior explanation that he lacks any basis for assuming the proposed Naghavi-Hochstedler-Burnes combination would measure a parameter that is not displayed in order to determine when that undisplayed parameter “changes in severity.” *See* EX2042, ¶¶119-122; *see also, e.g.,* Pet., 12 (“For example, in the combination, when a parameter that is ***not displayed*** in a current layout becomes (near) out of range, it would have been obvious to change the layout to include a block for that parameter, as shown by Hochstedler.”). As I explained, the Naghavi-Hochstedler-Burnes combination would not be able to determine when an undisplayed parameter changes in severity because ***none*** of the references disclose monitoring an undisplayed parameter. EX2042, ¶¶119-124. Instead, each reference teaches displaying all measured parameters. EX2042, ¶¶93-116.

31. Neither Apple nor Dr. Cockburn identified any disclosure in any of Naghavi, Hochstedler, or Burnes of monitoring an undisplayed parameter. *Id.*, ¶123. Therefore, Dr. Cockburn has no basis for asserting that the combination of the three references would somehow monitor an undisplayed parameter.

32. Dr. Cockburn's second declaration *still* failed to identify any such disclosure. Instead, Dr. Cockburn recognized that the claimed replacement would have required monitoring an undisplayed parameter. He asserted:

It is common sense that in order for a change in a parameter value to be a trigger for some action (here, a trigger for a change in the display layout), that parameter must be actively monitored. If the triggering parameter were not being monitored, the system would have no way of knowing about a change in the value of that parameter.

EX1022, ¶8.

33. This is the point I raised at paragraphs 119-124 of my prior declaration (EX2042). In order for a change in an undisplayed parameter value to trigger the claimed replacement, it would be necessary for that undisplayed parameter to be monitored by the system. But Dr. Cockburn never addresses that *none* of the references disclose that feature. Therefore, combining them would not result in a combination that can trigger a display layout change based on a change in an undisplayed parameter value.

34. Dr. Cockburn's argument is logically flawed because it uses the claims as a roadmap to *begin with the assumption* that the Naghavi-Hochstedler-Burnes combination has the claimed feature ("where a change in one parameter value causes that parameter value to be displayed in place of another parameter value"). He then works backwards to conclude that the combination would have the functionality

necessary to enable it (monitoring the undisplayed, replacing parameter) – despite none of the references disclosing that functionality and Hochstedler teaching away from such functionality. That is hindsight and circular reasoning.

35. A POSITA would not have combined Naghavi, Hochstedler, and Burnes in a way that replaced a displayed parameter based on an event because none of the references disclose monitoring an undisplayed parameter.

#### **IV. CONCLUSION**

36. For at least the foregoing reasons, none of Apple's and Dr. Cockburn's arguments demonstrate that any challenged claim would have been obvious.