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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ROBERT W. FASCIANO

Appeal 2018-004155
Application 11/769,168
Technology Center 3700

Before PHILIP J. HOFFMANN, CYNTHIA L. MURPHY, and
KENNETH G. SCHOPFER, *Administrative Patent Judges*.

HOFFMANN, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's rejection of claims 1–3, 6–19, 21–25, 27, 28, and 30–33. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM IN PART.

According to Appellant, the “invention . . . relates to methods and devices for monitoring a patient[,] and for monitoring and displaying the

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as DePuy Synthes Products, Inc. Appeal Br. 1.

value of a physiological parameter.” Spec. ¶ 1. Claims 1, 8, 14, 22, and 28 are the independent claims on appeal. Below, we reproduce claim 1 as illustrative of the appealed claims.

1. A method for monitoring a physiological parameter, comprising:

receiving data representing a value of a physiological parameter over time with processing circuitry operatively connected to a display, the physiological parameter being measured from a patient and comprising intracranial pressure, the processing circuitry configured to perform the steps of:

displaying a current value screen on the display in a first window on a monitoring screen on the display;

displaying a trend screen on the display in a second, different window on the monitoring screen that is displaying the current value screen;

drawing, on the current value screen, a graphical representation of the value of the physiological parameter over a first time period;

determining a mean value of the physiological parameter over time;

drawing, on the trend screen, a graphical representation of the mean value of the physiological parameter over a second time period, the first time period having a duration shorter than the second time period;

drawing, superimposed on the graphical representation of the mean value on the trend screen, a threshold line indicating a predetermined value;

drawing, on the current value screen, a graphical representation of the mean value of the physiological parameter over a third time period in response to a user input that changes the first time period to the third time period; and

drawing, on the trend screen, a graphical representation of the mean value of the physiological

parameter over a fourth time period in response to a user input that changes the second time period to the fourth time period.

REJECTIONS AND PRIOR ART

The Examiner rejects the claims as follows:

- I. Claims 1, 6, 8, 11, 12, 28, and 33 under 35 U.S.C. § 103(a) as unpatentable over Bray, Jr. (US 4,893,630, iss. Jan. 16, 1990) (hereinafter “Bray”), Brauker et al. (US 2005/0203360 A1, pub. Sept. 15, 2005) (hereinafter “Brauker”), Griffiths et al. (US 4,937,037, iss. June 26, 1990) (hereinafter “Griffiths”), and Tarassenko et al. (US 7,031,857 B2, iss. Apr. 18, 2006) (hereinafter “Tarassenko”); and
- II. Claims 2, 3, 7, 9, 10, 13–19, 21–25, 27, and 30–32 under 35 U.S.C. § 103(a) as unpatentable over Bray, Brauker, Griffiths, Tarassenko, and Henry et al. (US 2005/0137488 A1, pub. June 23, 2005) (hereinafter “Henry”).

ANALYSIS

Rejection I—Obviousness rejection of claims 1, 6, 8, 11, 12, 28, and 33

Independent claim 1 and its dependent claims 6 and 33

As set forth above, independent claim 1 recites, in relevant part,

displaying a current value screen on the display in a first window on a monitoring screen on the display;

displaying a trend screen on the display in a second, different window on the monitoring screen that is displaying the current value screen;

drawing, on the current value screen, a graphical representation of the value of the physiological parameter over a first time period; . . . [and]

drawing, on the trend screen, a graphical representation of the mean value of the physiological parameter over a second time period, the first time period having a duration shorter than the second time period.

Appeal Br., Claims App. (emphases added).

In the Appeal Brief, Appellant argues that the Examiner errs in determining that it would have been obvious to combine the references to provide a method including displaying simultaneously on a same screen i) a value of a physiological parameter over a first, shorter time period and ii) a mean value of the physiological parameter over a second, longer time period. See *id.* at 6–9; see also, e.g., Figs. 2, 3. Based on our review of the record, for the following reasons, we agree with Appellant.

In response to Appellant’s argument in the Appeal Brief, the Examiner relies on Griffiths’s

disclos[ure] . . . [of a] system [that] is capable of displaying 2 or more windows simultaneously on a display (column 4, lines 5–14)[, and] that the user can display any set of recorded data on the display depending on the user input into the system controlling the displayed data (column 2, lines 52–61)

to support the determination that

it would have been obvious . . . to select a first time period for the current value screen . . . [which] has a duration shorter than the second time period of the trend screen as obvious to try, choosing from a finite number of identified predictable solutions (either displaying the same duration for the first and second time periods, the second time period a shorter duration than the first time period, or the second time period a longer duration for the first time period).

Answer 13, 14 (underlining omitted). We determine that the Examiner does not support adequately that, based on the cited portions of Griffiths, it would have been obvious to display simultaneously on a same screen i) a value of a physiological parameter over a first, shorter time period and ii) a mean value of the physiological parameter over a second, longer time period, as the Examiner states.

The portion of Griffiths's column 4 that the Examiner cites reads as follows:

In addition, the display control means may select a set of values from one location in the memory and another set of values for display from another location in the memory, [the display screen then being split to allow two sets] of values to be displayed at once for comparison purposes. The screen may be split longitudinally or transversely (in relation to the time axis) for this purpose and, indeed, more than two separate sets of signals may be displayed at any one time if comparison . . . [among] three or more sets of signals is required.

Griffiths col. 4, ll. 5–14. This portion of Griffiths does not disclose anything about adjusting or changing a time period over which a data set is displayed, or displaying different data sets over different time periods on a same screen. The portion of Griffiths's column 2 cited by the Examiner states the following:

A very much greater number of signals than can be displayed at any one time on the display screen can be stored in the memory and, therefore, there are preferably provided means for selecting the set of displayed digitized values from the total set of stored values in the memory. An operator may thus choose to display the set of most recent signals, or any set of signals from a period in the past selected by operating, for example, on a keyboard linked to a microprocessor controlling the apparatus.

Griffiths col. 2, ll. 52–61. This portion of Griffiths also does not disclose anything about adjusting a time period over which a data set is displayed, displaying different data sets over different time periods on a same screen, or even displaying different data sets on the same screen.

Therefore, the Examiner does not support adequately that, based on the cited portions of Griffiths, it would have been obvious to display different data sets over different time periods on a same screen.

It is not clear whether the Examiner is providing an alternate basis for the rejection, for the first time in the Answer. Specifically, the Examiner states

that in view of Brauker it would be obvious to show a trend value screen over a longer period of time than the current value screen as the data of a trend value screen is meant to show data over a longer period of time (i.e.,] *see* [F]igure 29 of Brauker) than a current value screen (i.e.,] *see* [F]igure[s] 5 and 7 of Brauker which show raw current value data).

Answer 14 (italics added). However, even if we agree with the Examiner that each of Brauker's Figures 5, 7, and 29 discloses drawing a graphical representation of data on a display screen (as opposed to these figures simply providing graphical representations of data which Brauker does not display), each figure at most illustrates a screen showing a single set of data over a single time period. Thus, Brauker also does not disclose displaying different data sets over different time periods on a same screen.

Based on the foregoing, we do not sustain the Examiner's obviousness rejection of independent claim 1. We also do not sustain the obviousness rejection of claims 6 and 33 that depend from claim 1.

Independent claim 8 and its dependent claims 11 and 12

Independent claim 8 recites the following:

8. A user interface for a medical monitoring device, comprising:

a display;

processing circuitry operatively connected to the display and configured to cause the display to show:

a current value screen for displaying a graphical representation of a value of a physiological parameter over a first time period, the physiological parameter being measured from a patient;

a trend screen for displaying a graphical representation of a mean value of the physiological parameter calculated over a time period including multiple heartbeats over a second time period, and for displaying a threshold line indicating a predetermined value, the threshold line being superimposed on the graphical representation of the mean value on the trend screen, the current value screen and the trend screen each being displayed together as part of a monitoring screen;
and

a historical trend screen for displaying on the monitoring screen a graphical representation of a mean value of the physiological parameter that is calculated over at least a third time period that precedes the second time period,

wherein the physiological parameter comprises intracranial pressure.

Appeal Br., Claims App. (emphases added). Thus, independent claim 8 includes recitations similar to those discussed above with respect to independent claim 1. Therefore, we do not sustain the Examiner's obviousness rejection of independent claim 8 for substantially the same reasons that we do not sustain claim 1's obviousness rejection. We also do

not sustain the Examiner's rejection of claims 11 and 12 that depend from, and the Examiner rejects with, independent claim 8.

Independent claim 28

Independent claim 28 recites the following:

28. A method for monitoring a physiological parameter, comprising:

receiving data representing a value of a physiological parameter over time with processing circuitry operatively connected to a display, the physiological parameter being measured from a patient, the processing circuitry configured to perform the steps of:

displaying together on the display, on a monitoring screen, a current value screen and a trend screen;

drawing, on the current value screen, a graphical representation of the value of the physiological parameter over a first time period;

determining a plurality of mean values of the physiological parameter, each mean value calculated over multiple patient heartbeats;

drawing, on the trend screen, a graphical representation of the plurality of mean values of the physiological parameter over a second time period, the graphical representation of the plurality of mean values only being displayed when the physiological parameter is in an out-of-limit condition in which the measured physiological parameter exceeds a predetermined threshold value.

Appeal Br., Claims App. (emphases added). Appellant argues that the Examiner's rejection is in error because "Tarassenko . . . displays the measured value at all times, not just when the threshold value is crossed." *Id.* at 15 (underlining omitted). Thus, according to Appellant, the Examiner

does not support adequately that it would have been obvious to combine the references such that “a graphical representation of the plurality of mean values . . . [is] only . . . displayed when the physiological parameter is in an out-of-limit condition.” *Id.* at 16. Based on our review of the record, we agree with Appellant.

In the Final Office Action, the Examiner relies on Tarassenko to disclose the claimed predetermined threshold value. *See, e.g.*, Final Action 4. We agree with Appellant, however, that Tarassenko discloses “that the monitored value is displayed even when the value moves between being below and above the threshold line TH.” Appeal Br. 16 (citing Tarassenko Figs. 18(C), 20(C)).

According to the Examiner,

it would have been obvious . . . to further modify the Bray/Brauker/Griffiths combination to superimpose a threshold line on the graphical representation of the current value screen and trend screen as taught by Tarassenko in order to allow the user to visualize a threshold line with indicates a predetermined alarm condition for the user for that measured parameter.

Answer 6. Also according to the Examiner,

Tarassenko teaches measuring and monitoring the area of the signal when it exceeds the predetermined threshold value for an alarm condition. Thus it would have been obvious . . . to modify the Bray/Brauker/Griffiths/Tarassenko combination to indicate and display the representation and time period of the data when the signal exceeds the threshold value as taught by Tarassenko to allow the practitioner to monitor the alarm condition area of the measured signals when the alarm is sounded.

Id. at 7–8. None of these determinations, however, adequately supports that it would have been obvious to combine the references to “draw[] . . . a graphical representation of the plurality of mean values of the physiological

parameter . . . , the graphical representation of the plurality of mean values only being displayed when the physiological parameter is in an out-of-limit condition in which the measured physiological parameter exceeds a predetermined threshold value.” Further, the Examiner’s response to Appellant’s argument also does not adequately support only displaying a value when a threshold is exceeded, based on Tarassenko’s disclosure that a value is constantly displayed.

Based on the foregoing, we do not sustain the Examiner’s obviousness rejection of claim 28.

Rejection II—Obviousness rejection of claims 2, 3, 7, 9, 10, 13–19, 21–25, 27, and 30–32

Dependent claims 2, 3, 7, 9, 10, and 13

Claims 2, 3, 7, 9, 10, and 13 depend from independent claims 1 and 8. As discussed above, we do not sustain the Examiner’s obviousness rejection of these independent claims. The Examiner does not rely on Henry to disclose anything that remedies the deficiency in the independent claims’ rejection. Thus, we also do not sustain the obviousness rejection of claims 2, 3, 7, 9, 10, and 13.

Independent claim 14 and its dependent claims 15–19, 21, and 30

Independent claim 14 recites the following:

14. A method for monitoring a physiological parameter, comprising:

receiving data representing a value of a physiological parameter over time with processing circuitry operatively connected to a display, the physiological parameter being

measured from a patient, the processing circuitry configured to perform the steps of:

drawing, on a trend screen on the display, a graphical representation of the value of the physiological parameter over a time period of about ten minutes or longer;

automatically marking in real time, on the trend screen, the graphical representation with an event marker disposed at a point of time at which a medically-related event associated with the measured physiological parameter occurred, the time corresponding to any of a start or an end of an out-of-limit condition of the measured physiological parameter, the time falling within the time period,

wherein the physiological parameter comprises intracranial pressure.

Appeal Br., Claims App. (emphasis added).

Based on our review of the record, Appellant does not persuade us that the Examiner's obviousness rejection of independent claim 14 is in error.

Appellant argues that the Examiner's "rejection is based on a mischaracterization of Henry and thus cannot be upheld because it fails to establish a *prima facie* case of obviousness." Appeal Br. 18. Specifically, according to Appellant, "while Henry discloses analyzing a monitored signal 'in real time,' there are *no* event markers (or anything else) automatically marked on a screen in real time." *Id.* Thus, according to Appellant, "Henry therefore fails to disclose automatically marking in real time, on a screen, a graphical representation with an event marker disposed at a point in time at which a medically-related event associated with a measured physiological parameter occurred." *Id.* at 19.

This argument is not persuasive, however, because the Examiner does not rely on Henry to disclose marking anything on a screen in real time.

Specifically, in support of claim 14's rejection, the Examiner explains that

the [E]xaminer is relying on Henry's teaching of a real-time analyzing means for analyzing collected data and identifying medically relevant events to improve and modify the Bray/Brauker/Griffiths/Tarassenko combination[,] such that the markers taught by Brauker and Tarassenko for marking medically relevant events can be placed automatically on the graphical display using Henry's real-time analyzer. Thus, although . . . Henry . . . in of itself doesn't mark a medically relevant event on a graphical representation until a later period of time, it still teaches the real-time analyzer function which automatically identifies medically relevant events which would work with the markers of the Bray/Brauker/Griffiths/Tarassenko combination in order to automatically mark the graphical representations of the current value and trend value screens to show the medically relevant events to the practitioner and/or user of the device.

Answer 19. *See* also Final Action 10 ("Tarassenko discloses integrating the signal which extends above the threshold value until it returns to a level below the threshold value. Henry teaches automatically marking relevant events in a measured signal. Thus it would have been obvious . . . to modify the Bray/Brauker/Griffiths/Tarassenko/Henry combination to automatically mark the time which the signal exceeds and returns from alarm condition above the threshold value as they are medically relevant events.").

Appellant also does not persuade us that the Examiner uses impermissible hindsight to combine the references upon which the rejection is based. Appeal Br. 21. According to Appellant, "[t]he Examiner's proposed combination of the references is . . . clearly based on impermissible hindsight *because no reference discloses* the claim's

automatic marking.” *Id.* (emphasis added). This is not persuasive of error, however, because the Examiner need not show that a single reference discloses the automatic marking as claimed. Here, the Examiner appropriately relies on a combination of references to teach the claimed automatic marking; and Appellant does not persuade us that the Examiner’s proposed combination fails to do so.

Thus, we sustain the Examiner’s obviousness rejection of independent claim 14. We also sustain the Examiner’s rejection of claims 15–19, 21, and 30 that depend from claim 14, and which Appellant does not argue separately.

Independent claim 22 and its dependent claims 23–25, 27, 31 and 32

Appellant argues that the rejection of independent claim 22 is in error for the same reasons that the rejection of independent claim 14 is in error. Appeal Br. 22. Thus, inasmuch as we sustain claim 14’s rejection, we also sustain the Examiner’s obviousness rejection of claim 22. Further, we sustain the obviousness rejection of claims 23–25, 27, 31 and 32 that depend from independent claim 22.

CONCLUSION

We REVERSE the Examiner’s obviousness rejections of claims 1–3, 6–13, 28, and 33.

We AFFIRM the Examiner’s obviousness rejection of claims 14–19, 21–25, 27, and 30–32.

In summary:

Claims Rejected	35 U.S.C. §	Basis/References	Affirmed	Reversed
1, 6, 8, 11, 12, 28, 33	103(a)	Bray, Brauker, Griffiths, Tarassenko		1, 6, 8, 11, 12, 28, 33
2, 3, 7, 9, 10, 13–19, 21–25, 27, 30–32	103(a)	Bray, Brauker, Griffiths, Tarassenko, Henry	14–19, 21–25, 27, 30–32	2, 3, 7, 9, 10, 13
Overall Outcome			14–19, 21–25, 27, 30–32	1–3, 6–13, 28, 33

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED IN PART