

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 23

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MICHAEL MASCHKE,
THOMAS BISHOP, BENGT HERMANRUD,
WOLFGANG SCHOLZ,
and CLIFFORD MARK KELLY

Appeal No. 1997-0915
Application 08/369,853¹

ON BRIEF

Before URYNOWICZ, THOMAS, and BARRETT, Administrative Patent Judges.

BARRETT, Administrative Patent Judge.

DECISION ON APPEAL

¹ Application for patent filed January 6, 1995, entitled "Transportable Modular Patient Monitor With Data Acquisition Modules," which is a continuation of Application 07/989,415, filed December 11, 1992, now abandoned.

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This is a decision on appeal under 35 U.S.C. § 134 from the final rejection of claims 1-5, 7-13, and 15-27.

We affirm-in-part.

BACKGROUND

The disclosed invention is directed to a patient monitoring apparatus as may be understood from claim 1 reproduced below.

1. Patient monitoring apparatus for displaying, on a display device, medical data processed by a monitor and collected from a patient during a patient monitoring mode of operation using a plurality of sensors, the apparatus adapted for use in a system which includes a plurality of sensors, the apparatus comprising:

a portable monitor, enclosed in a first housing, for receiving and processing patient data during said patient monitoring and developing therefrom signals suitable for causing display of the patient data on a display device during said patient monitoring;

a data acquisition cartridge, enclosed in a second housing, coupled for communicating with a selected one of the plurality of sensors, the data acquisition cartridge adapted for collecting patient data from a selected sensor, for conditioning the collected patient data and for transmitting the conditioned data to said portable monitor for processing therein during said patient monitoring; and

an independently positionable, self contained data acquisition pod, enclosed in a third housing, coupled for communicating with a selected one of the plurality of sensors, the data acquisition pod adapted for collecting further patient data from a further selected sensor, for conditioning the further patient data and for

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transmitting the conditioned further patient data to said portable monitor for processing therein during said patient monitoring; and wherein

said first housing includes first coupling means for detachably coupling to said second housing, which first coupling means co-locates the data acquisition cartridge with the portable monitor during said patient monitoring, and the first housing includes second coupling means for detachably coupling to said third housing for receiving said patient data transmitted from said data acquisition pod to said portable monitor, which second coupling means allows said data acquisition pod to be independently positionable, self-contained, and not co-located with the portable monitor during said patient monitoring.

The Examiner relies on the following prior art:

Policastro et al. (Policastro)	5,012,411	April 30,
1991		
Sasaki et al. (Sasaki)	5,227,988	July 13, 1993
		(filed September 2, 1992)

Claims 1-5, 7-13, and 15-27 stand rejected under 35 U.S.C. § 103 as being unpatentable over the combination of Policastro and Sasaki.

We refer to the first Office action (Paper No. 13), the Final Rejection (Paper No. 18) (pages referred to as "FR__") and the Examiner's Answer (Paper No. 22) (pages referred to as "EA__") for a statement of the Examiner's rejection and to the Appeal Brief (Paper No. 21) (pages referred to as "Br__") for a statement of Appellants' arguments thereagainst.

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OPINION

We follow Appellants' grouping of claims (Br5-6).

Claims 1-5, 7-13, 17, 19, 20, 22, 23, 25, and 26

Appellants argue that neither Policastro nor Sasaki discloses or suggests "an independently positionable, self contained data acquisition pod . . . not co-located with the portable monitor during said patient monitoring" as recited in claim 1. Appellants do not argue the other limitations of claim 1 and do not challenge the conclusion that it would have been obvious to make, say, the blood pressure detector in Policastro as a detachable module co-located with the apparatus in view of the teachings of a detachable sensor unit 7 in Sasaki. We address only the argued data acquisition pod limitation. See 37 CFR § 1.192(c)(8)(iv) (1995).

The Examiner states (FR7-8); see also EA13-14):

Although it is noted that Sasaki's sensor coupling sensor, when attached, appears to be co-located with the monitoring apparatus in fig. 1 of Sasaki, it is respectfully submitted that Sasaki also teaches the use of cables (15, 19) and connectors (13, 14) to attach his sensor unit to external sensors (16, 17, 18) in such a manner that the external devices are independently positionable, self-contained, and not co-located with the portable monitoring apparatus (Sasaki; col. 4, lines 39-48 and figs. 2B-2D). One having ordinary skill in the art at the time of the invention would have found it obvious to utilize the above teachings of Sasaki with

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the system disclosed by Policastro with the motivation of providing flexibility to [a] user in terms of how to attach various types and/or combinations of sensors (e.g, [sic] both external and co-located) to a central portable monitoring device, thereby collecting a variety of intended digital data And although elements 7, 8, and 9 of Sasaki refer specifically to a sensor unit, and not to a data collection pod, per se, it is respectfully submitted that it is [sic, was] well known in the art that sensors can come in at least two types; namely, with a processing device or without a processing device (see Policastro; col. 5, lines 53-57). Thus, a sensor processing device is considered to be functionally equivalent to Applicant's data collection pod.

See also EA13 (referring to Policastro, col. 5, lines 53-57):

"Thus, a sensor with a processing device is considered to be functionally equivalent to Applicant's data collection pod in that the processing device associated with the sensor inherently collects and processes data obtained through the sensor."

Appellants argue (Br14):

The Examiner has failed to distinguish between "external sensors" as described by Sasaki and a data acquisition pod as specified by claim 1. Applicant does not claim independently positionable, non co-located sensors. Applicant's claim 1 requires a data acquisition pod for collecting patient data from a sensor, conditioning the patient data, and transmitting the conditioned patient data to the portable monitor, wherein the pod is "independently positionable, self-contained, and not co-located with the portable monitor during said patient monitoring."

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As to the argument that a sensor with a processing device is "functionally equivalent to"² a "data acquisition pod," Appellants argue (Br18):

However, a sensor which includes a processing device does not meet the requirements of claim 1, which requires "a data acquisition pod **for collecting patient data from a sensor, conditioning** the patient data, and **transmitting** the conditioned patient data to the portable monitor, wherein **the pod is independently positionable and self-contained**["]. A sensor processing device included in a sensor is not independently positionable, because the sensor must have a specified spatial relationship to the patient to sense the data.

The issue is whether the "sensors including a processing device" referred to in Policastro at column 5, lines 53-57, taken together with the teachings of external sensors in Sasaki constitute or would have made obvious the claimed "data acquisition pod." The question is: What limitations in claim 1 distinguish the "sensors" in Policastro and Sasaki from the claimed "data acquisition pod"? Before beginning, we find that one of ordinary skill in the art would have known that the term "sensor" can refer to the actual sensor element as well as to the assembly containing the sensor and would

² We do not favor the Examiner's use of the phrase "functionally equivalent to" because it seems to imply that only the function is given any weight.

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have recognized that "sensor," as used in Policastro and Sasaki, refers to the assembly of a housing, the actual sensor element (for sensing pressure, heat, light, vibration, etc.), and whatever circuitry and wiring is needed to connect the sensor element to the sensor lead 30 in Policastro or the cable 15 in figure 2B of Sasaki.

In our opinion, the only limitation that might distinguish an external sensor from the claimed data acquisition pod is the limitation that the pod is adapted "for conditioning the further patient data." The term "conditioning" is very broad because it does not specify any particular kind of conditioning and can be interpreted to read on conversion of the sensor output to the appropriate electrical form for transmission in the external sensors of Sasaki. However, Policastro discloses that the external sensor can include a "processing device" which one skilled in the art would have broadly interpreted as a device for "conditioning" data. It would have been obvious to condition sensor data in the external sensor of Sasaki in light of the teachings in Policastro.

As to the other limitations of the "data acquisition pod," we find that the external sensors in Policastro and Sasaki are: (1) "independently positionable" with respect to the housing containing the rest of the portable apparatus because the sensor lead is flexible to permit such positioning; (2) "self contained" in that they are complete in themselves; (3) enclosed in a "housing" of some kind; (4) "coupled for communicating with a selected one of the plurality of sensors" because they contain a sensor (note that no particular kind of coupling or distance between the pod and the sensor is specified); (5) "adapted for collecting further patient data from a further selected sensor" because the sensor is intended to collect patient data (e.g., Policastro measures "signals pertaining to other cardiovascular system data or intracranial processes" (col. 5, lines 52-53)); (6) "for conditioning the further patient data" as explained in the preceding paragraph; (7) "for transmitting the conditioned further patient data to said portable monitor for processing therein during said patient monitoring" because data is transmitted to the apparatus in Policastro and the sensor unit 7 in Sasaki; and (8) "not co-located with the

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portable monitor during said patient monitoring" because the sensor lead permits separation between the external sensor and the main apparatus (note that no particular distance is recited). Sasaki discloses "coupling means for detachably coupling" the external sensor 16 to the sensor unit 7 and it would have been obvious to use detachable coupling for the leads 30 in Policastro in view of the teachings of Sasaki.

Appellants' arguments do not explain why the external sensors in Policastro and Sasaki cannot be the claimed "data acquisition pod," that is, Appellants do not identify what specific claim limitation is not met. The difference in terminology between "sensor" and "data acquisition pod" is not determinative. Appellants' argument that "[a] sensor processing device included in a sensor is not independently positionable, because the sensor must have a specified spatial relationship to the patient to sense the data" (Br18) is not understood. The processing device provides the "conditioning." The external sensor assemblies in Policastro and Sasaki (which correspond to the data acquisition pod) are "independently positionable" relative to the data processor of

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the main apparatus because the sensors are connected by leads.

Appellants argue that Policastro describes the apparatus as self-contained and Sasaki describes the apparatus as a single unit, which teaches away from such a pod (Br10-12). The fact that Policastro describes an "apparatus which is portable, self-contained and microprocessor controlled" (emphasis added) (col. 1, lines 10-11) does not teach away from the claimed subject matter because Appellants' apparatus could be similarly broadly described. Policastro teaches a sensor including a processing device that is connected to the main apparatus with a sensor lead, and therefore teaches a sensor apparatus that is not co-located with the main apparatus.

We do not accept the Examiner's reasoning that "it has broadly [been] held by the courts that merely making elements separable is obvious" (FR6) because this seems to apply a per se rule and there are no per se rules of obviousness. Moreover, we agree with Appellants that the data acquisition pod limitations involve more than making elements separable. However, the rejection is supported by the references.

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For the reasons stated above, the rejection of claim 1 and its dependent claims 2-5, 7-13, 17, 19, 20, 22, 23, 25, and 26 is sustained.

Claims 15, 16, and 21

Claim 15 recites that the data acquisition pod includes means for generating a digital data signal from a plurality of sensor data. Appellants argue that Policastro and Sasaki only teach configurations in which the analog-to-digital converter for converting the signal into a digital form is within the portable monitor (Br21-22).

The Examiner notes that Sasaki teaches interposing an A/D sensor relay between the sensor unit 7 and the coupling section 2 of apparatus 1 and "the data is sent directly to a host computer, so that more elaborate performance of data collection and analysis is achieved" (col. 7, lines 29-31). The Examiner concludes that this would have suggested to one of ordinary skill in the art "a device separate from the main monitoring apparatus that receives data signals of patient physiological parameters from a sensor or a plurality of sensors, converts the data signals into digital form, and transmits the digital data elsewhere for further processing

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and analysis" (EA19) and "[i]t is readily apparent that such a device reads on the 'data acquisition pod' claimed in claim 15" (EA19).

While we agree that Sasaki teaches that the A/D converter can be detachable from the main housing, it does not teach putting the A/D converter into the external sensor or multiplexing (or otherwise combining) plural signals. The Examiner's interpretation of the apparatus in Sasaki as the data acquisition pod requires in inconsistent with the interpretation that the apparatus is the claimed "portable monitor" and the external sensors are the data acquisition pod. Moreover, there is no teaching that Sasaki combines plural signals as claimed. For these reasons, we conclude that the Examiner has failed to establish a prima facie case of obviousness. The rejection of claims 15, 16, and 21 is reversed.

Claims 18 and 24

Claim 18 recites means for configuring the display for either a cardiac output measurement or blood oxygen saturation levels in response to first and second control signals from the data acquisition pod. According to Appellants (Br24):

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"The invention of claim 18 allows the operator to control the configuration of the display 104 for the cardiac output measurement and wedge procedures from a remote position (the position of pod 150) that is independent of the position of monitor 102." Claim 18 is similar, but displays waveforms representing blood pressure or pulmonary artery wedge pressure in response to the control signals.

The Examiner responds that "Appellants have not invented cardiac output measurements or wedge procedures or the display thereof, per se" (EA20). We agree. However, Appellants claim more than just the display of certain measurements.

The Examiner states that Policastro's teaching of time division multiplexing of signals "clearly suggests the transmission and reception of at least two different control data signals (i.e., a first and second signal)" (EA21). We disagree. As we understand Policastro, the time division multiplexed signals are data signals, not control signals that cause a measurement to be displayed. As far as can be determined, the user selects the signal(s) to be displayed at the interface. We do not find a teaching or suggestion of

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control signals to cause a measurement to be displayed in either Policastro or Sasaki.

The Examiner further states that Appellants have ignored the level of ordinary skill in the art and that "utilizing multiple data control signals to configure the peripheral devices of a computer system (e.g., display devices) are all techniques and concepts that are well-known within the computer communications and display art" (EA22). This is not the kind of fact that lends itself to the taking of Official Notice. "Assertions of technical facts in areas of esoteric technology must always be supported by citation to some reference work recognized as standard in the pertinent art." See In re Ahlert, 424 F.2d 1088, 1091, 165 USPQ 418, 420 (CCPA 1970); accord In re Pardo, 684 F.2d 912, 917, 214 USPQ 673, 677 (CCPA 1982). See also In re Eynde, 480 F.2d 1364, 1370, 178 USPQ 470, 474 (CCPA 1973) (court will not take judicial notice of the state of the art). Official Notice is intended for facts which are common knowledge or capable of unquestionable demonstration. See In re Knapp-Monarch Co., 296 F.2d 230, 232, 132 USPQ 6, 8 (CCPA 1961). See also In re Cofer, 354 F.2d 664, 668, 148 USPQ 268, 271-72 (CCPA

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1966). Assuming, arguendo, that control signals were well known, the Examiner has not shown that sending control signals from the data acquisition pod (sensor), as claimed, was known.

For the reasons stated above, the Examiner has failed to establish a prima facie case of obviousness. The rejection of claims 18 and 24 is reversed.

Claim 27

Claim 27 recites replacement of data in the portable monitor memory with data stored in a remote display memory if the data stored in the portable monitor memory are older than the data in the remote display memory and transmitting data stored in the portable monitor memory to the remote display memory if the data stored in the remote display memory are older than the data stored in the portable monitor memory. We find no teaching or suggestion of these limitations in either Policastro or Sasaki and we find the Examiner's rationale unpersuasive. The Examiner has failed to establish a prima facie case of obviousness. The rejection of claim 27 is reversed.

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CONCLUSION

The rejection of claims 1-5, 7-13, 17, 19, 20, 22, 23, 25, and 26 is sustained.

The rejection of claims 15, 16, 18, 21, 24, and 27 is reversed.

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

AFFIRMED-IN-PART

STANLEY M. URYNOWICZ, JR.)	
Administrative Patent Judge)	
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JAMES D. THOMAS)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS
)	AND
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