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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ALEKSANDR L. YUFA

Appeal 2011-003034
Reexamination Control 90/008,387
United States Patent 6,346,983 B1
Technology Center 3900

Before JAMESON LEE, KEVIN F. TURNER, and STEPHEN C. SIU, *Administrative Patent Judges*.

SIU, *Administrative Patent Judge.*

DECISION ON APPEAL Patent owner (Appellant), who is also the inventor, appeals under 35 U.S.C. §§ 134(b) and 306 from a final rejection of claims 1 and 3-8. We have jurisdiction under 35 U.S.C. §§ 134(b) and 306.

STATEMENT OF THE CASE

This proceeding arose from a request for *ex parte* reexamination filed by Kenneth L. Cage of McDermott Will & Emery, LLP of U.S. 6,346,983 B1 (‘983 patent) issued to Aleksandr L. Yufa on February 12, 2002.

Reexamination of claims 1-8 was requested. Claim 2 was cancelled. Claims 1 and 3-8 presently stand rejected.

An oral hearing before the USPTO panel listed above involving the '983 patent was conducted at the USPTO on February 2, 2011.

The '983 patent is directed to a system for counting and measuring airborne gas particles and/or liquid contamination (Abstract.).

Exemplary claim 1 on appeal reads as follows:

1. A method for counting and measuring particles illuminated by a light beam, providing two-way wireless communication between a data processing and control system and a remote particle detecting systems, said method comprising the steps of:

forming in said data processing and control system at least one of control signals, which provide a turning-on, turning off, and switching of modes of operation of said remote particle detecting system;

converting said control signals to the form for wireless transmission;

wireless transmitting of the converted control signals from said data processing and control system to said remote particle detecting system;

wireless receiving of the transmitted control signals by said remote particle detecting system;

converting the received control signals to the form for control of said remote particle detecting system;

sensing by a light detecting means of a particle detecting means of said remote particle detecting system a light created by an intersection of said light beam and said particles within a particle monitoring region and providing an output, which is effectively indicative of a size of said particles;

processing said output by a signal processing system of said remote particle detecting system;

forming in said signal processing system of said remote detecting system a data, containing an information about a quantity and said size of said particles;

converting said data, containing said information about said quantity and said size of said particles to the form for wireless transmission;

wireless transmitting of the converted data, containing said information about said quantity and said size of said particles, from said remote particle detecting system to said data processing and control system;

wireless receiving of the transmitted data, containing said information about said particle quantity and size, by said data processing and control system;

converting the received data, containing said information about said quantity and said size of said particles to the form for processing;

processing the converted data, containing said information about said quantity and said size of said particles, by said data processing and control system.

(App. Br. 311-312, Claims App'x.)

The Examiner listed and employed the following prior art references:

White	US 5,864,781	Jan. 26, 1999
Mikami	US JPO H4-12248	Jan. 16, 1992

Claims 6-8 are rejected under 35 U.S.C. § 112, 1st paragraph.

Claims 1, 3, and 4 are rejected under 35 U.S.C § 103(a) as being unpatentable over Mikami.

Claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Mikami and White.

ISSUES

Based on Appellant's arguments, we identify the following issues:

1) Did the Examiner err in rejecting claims 6-8 under 35 U.S.C. § 112, first paragraph?

2) Did the Examiner err in rejecting claims 1, 3 and 4 as being obvious over Mikami?

3) Did the Examiner err in rejecting claim 5 as being obvious over the combination of Mikami and White.

FINDINGS OF FACT

The following Findings of Facts (FF) are shown by a preponderance of the evidence.

1. Mikami discloses a "[p]ersonal computer 5 [that] issues a measurement command . . . to measurement equipment 2, collects and processes/ organizes the measurement data measured with measurement equipment 2, and outputs the measurement results to magnetic storage device 6" (p. 418, col. 1, ¶ 7), a "measurement system for [measuring] cleanliness in a clean room" that includes "measurement equipment" (p. 418, col. 1, ¶ 6, ll. 1-3), and that "signals are sent and received between measurement equipment positioned in the clean room and a personal computer installed outside the room through a radio communication device, and the measurement data obtained from the measurement equipment is processed and output by the personal computer" (p. 418, col. 1, ¶ 1).

2. Mikami discloses that "the number of dust particles in the clean room 1 is detected by measurement equipment 2 as measurement information and is output from the measurement equipment as a detection signal" (p. 418, col. 2, ll. 4-7).

ANALYSIS

Claims 6-8

Claim 6 was amended to recite a duration of a pulse "which is adequate to a baseline duration of the appropriate output of said light detecting means." The Examiner finds that "a baseline duration" as recited in claims 6-8 "does not have support in the disclosure" (Ans. 6). We agree.

Appellant argues that the Specification discloses a "detection means" that is "connected to a current-voltage conversion means" which is "connected to a voltage-pulse duration conversion means" (col. 7, ll. 57-63) and "signals . . . from the light detecting means . . . [that are converted] to the voltage value signals . . . and after the amplifying . . . they follow to the analog-digital form pulse duration conversion means" (col. 10, ll. 10-15). However, neither of these portions of the Specification relates to the claimed feature of "a baseline duration" or the adequacy of a duration of a "digital form pulse" to the "baseline duration" of an "appropriate output" of a light detecting means.

Appellant also argues that "[t]he drawing (Fig. 9) and description in the patent's claims, in combination absolutely fully describe the subject matter [under dispute]" (App. Br. 240). However, the Specification merely illustrates a series of waveforms (Fig. 9) without any indication of a "baseline duration" or adequacy (or inadequacy) of a duration of a pulse with the baseline duration (which is not disclosed or illustrated in the Specification). *See In re Wright*, 569 F.2d 1124, 1127 (CCPA 1977) ("Absent any written description in the specification of quantitative values, arguments based on measurement of a drawing are of little value.").

Thus, the Specification fails to convey that the inventor had possession of the claimed subject matter of a baseline duration to which a duration of a pulse is "adequate." In the absence of such a disclosure, we agree with the Examiner that the "baseline duration" and duration of the pulse "does not have support in the disclosure" (App. Br. 6) such that the disclosure of the application does not reasonably convey to the artisan that the inventor had possession of the claimed subject matter. *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563 (Fed. Cir. 1991).

Claims 7 and 8 depend from claim 6.

Based on the foregoing discussion, we find no error in the Examiner's rejection of claims 6-8.

Claim 1 – Obviousness over Mikami

Based on the record, we find no error in the Examiner's rejection of claim 1.

Appellant argues that Mikami discloses a personal computer that calculates a number of dust particles but fails to disclose or suggest a "remote unit" that determines a number of particles (App. Br. 23). Therefore, Appellant argues that Mikami fails to disclose or suggest "'processing said output by a signal processing system of said remote particle detecting system providing said measuring and said counting of said particles . . .'" (App. Br. 30) because, according to Appellant, claim 1 requires signal processing in "said remote detecting system . . . but not in a central station, as it is in . . . Mikami's system" (App. Br. 32). Based on this

assertion, Appellant argues that Mikami fails to disclose various recited steps that are dependent on processing of data at the remote unit (see, in general, App. Br. 31-111). For example, Appellant argues that "Mikami does not convert (modulate) the data, containing said information about said quantity and said size of said particles, to the form for wireless transmission" because "Yufa [the claimed invention] converts said data, containing the complete information about said quantity and said size of said particles to the form for wireless transmission . . . but not each detected analog signal, as it is in Mikami's system" (App. Br. 35-36).

As the Examiner points out, Mikami discloses in a first embodiment "a personal computer installed outside the room" and "a measurement means positioned inside a room which measures the cleanliness in the room," the "personal computer . . . [processing] the measurement data from said measurement means" (p. 417, col. 1), indicating that the personal computer of Mikami processes collected raw data to obtain particle measurement data (the raw data having been collected by a remote unit and wirelessly transmitted to the personal computer to be processed). Also as pointed out by the Examiner, Mikami discloses in a second embodiment "measurements performed by a measurement robot" in the clean room (p. 417, col. 2) indicating that the robot not only collects raw data but also processes the collected raw data itself to obtain particle measurement data.

We agree with the Examiner that the combination of the known feature of a computer wirelessly receiving data from a remote unit to generate particle measurement data (Mikami's first embodiment) with another known feature of a remote unit performing the actual processing of

raw data to generate particle measurement data (Mikami's second embodiment) would have resulted in no more than the expected and predictable result of a system in which a computer wirelessly receives data from the remote unit (first embodiment) in which the data wirelessly received from the remote unit is particle measurement data generated by the remote unit by processing collected raw data (a known function of the remote unit as demonstrated by Mikami's second embodiment). "[W]hen a patent 'simply arranges old elements with each performing the same function it had been known to perform' and yields no more than one would expect from such an arrangement, the combination is obvious." *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 417 (citing *Sakraida v. AG Pro, Inc.*, 425 U.S. 273, 282 (1976)).

Appellant argues that modification of the Mikami system "would change the principle of operation of the prior art invention" (App. Br. 52-53) because "Mikami's remote units have to be located close to each other" while "[i]n contrast, the . . . wirelessly communicating remote particle detecting units may be placed far away [from] each other" (App. Br. 52). We disagree with Appellant because we do not find any significant change in operation of Mikami's system of a computer outside a location processing particle data received from a remote measuring system inside the location by including Mikami's second system in which the remote measuring system receives and processes the particle data. We also disagree with Appellant that the spacing of remote particle detecting units would be significantly affected by processing data in a remote unit. Even assuming that the spacing requirements of remote particle detecting units of Mikami would be affected

by modifying the Mikami system, we disagree that modifying the spacing requirements of remote units would change the operation of the Mikami system since the system would still perform the same particle measurements.

Appellant argues that the modification of the Mikami "teach[es] away from their combination" (App. Br. 65-66) because of "the deficiency of the portable particle measuring and counting devices . . . brought and operated in the clean rooms by operator" and because remote units are "very rare in the U.S.A." (App. Br. 65).

"'A reference may be said to teach away when a person of ordinary skill, upon [examining] the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.'" *Para-Ordnance Mfg., Inc. v. SGS Importers Int'l, Inc.* 73 F.3d 1085, 1090 (Fed. Cir. 1995) (quoting *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994)).

Although in Mikami's first embodiment, a computer wirelessly receives raw data from a remote unit, Appellant has not identified any warning that would discourage an artisan from processing the raw data at the remote unit to obtain particle measurement data (Mikami's second embodiment), then transmitting the particle measurement data from the remote unit to the computer. We are therefore not persuaded that Mikami's embodiments "teach away" from each other.

"The prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution

claimed . . . ." *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004). Thus, we do not find Appellant's arguments to be persuasive.

Appellant argues that Mikami fails to disclose or suggest counting particles (App. Br. 10) or "'measuring particles'" (App. Br. 18). We note that claim 1 recites a method for counting and measuring particles in the preamble. In addition, we find no recitation of "counting" particles in the body of claim 1. Nor has Appellant pointed out such a recitation in the body of the claim. Since "[t]he preamble of a claim does not limit the scope of the claim when it merely states a purpose or intended use of the invention" *In re Paulsen*, 30 F.3d 1475, 1479 (Fed. Cir. 1994), we are not persuaded by Appellant's argument.

Even assuming that the recitation of "counting" particles in the preamble of claim 1 limits the scope of the claim, we agree with the Examiner that Mikami discloses counting (and measuring) particles. Appellant does not indicate an explicit definition of the term "counting" in the Specification. As such, we adopt a plain and customary meaning of the term in light of the Specification to include determining or detecting a number. We agree with the Examiner (Ans. 21) that there is no difference between determining or detecting a number and "counting." Nor do we find any differences between "measuring" particles and "detecting a number" of particles since both actions entail determining a quantity of particles.

Appellant argues that Mikami fails to disclose or suggest "<u>forming in said signal processing system of said remote particle detecting system a data, containing an information about a quantity and said size of said particles</u>" (App. Br. 11), "converting said <u>data, containing said information about said</u>

quantity and said size of said particles to the form for wireless transmission" (App. Br. 12), "wireless transmitting of the converted data, containing said information about said quantity and said size of said particles" (App. Br. 12), "wireless receiving of the transmitted data, containing said information about said quantity and said size of said particles, by said data processing and control system" (App. Br. 13), and "converting the received data, containing said information about said quantity and said size of said particles to the form for processing" (App. Br. 14), but fails to indicate any differences between Mikami's measurement system that measures and counts particles and generates a corresponding signal that is transmitted wirelessly to a computer (i.e., control system) that controls the measurement system wirelessly (FF 1-2) and the disputed limitations recited in claim 1.

Appellant also argues that Mikami fails to disclose or suggest "measuring particles" (App. Br. 18) but fails to demonstrate any differences between Mikami's disclosure of counting a number of particles and "measuring particles." We agree with the Examiner that it would at least have been obvious to one of ordinary skill in the art, given the disclosure by Mikami of "measuring" a number of particles to have utilized an apparatus to measure particles at least as a matter of common sense.

Appellant argues that while Mikami discloses a "starting" and "ending" period, Mikami supposedly fails to disclose or suggest "the 'turn-on' and 'turn-off' operations" (App. Br. 19). We disagree with Appellant for reasons set forth by the Examiner (Ans. 22). Mikami discloses a "personal computer" located remote from and controlling a measurement system that measures particles in a clean room. It would at least have been

obvious to one of ordinary skill in the art, given that a personal computer controls a measurement system that has a start and end time, to turn the measurement system on or off as needed by a device (i.e., the personal computer) that is known to "control" the measurement system. This is particularly true since doing so would have entailed no more than common sense in operating a system to perform known functions in known and predictable ways.

Appellant argues that Mikami fails to disclose or suggest "wireless transmission" (App. Br. 20) but fails to indicate any differences between Mikami's disclosure of transmitting FM radio signals and the claimed feature of "wireless transmission." We therefore agree with the Examiner (Ans. 22) that Mikami discloses or at least suggests this feature.

Appellant argues that Mikami fails to disclose or suggest an "output" (App. Br. 22-23). We disagree with Appellant's argument for reasons set forth by the Examiner (Ans. 23-24). Appellant fails to indicate any differences between the "output" of Mikami and the output as recited in claim 1.

Therefore, we find that the Examiner did not err in rejecting claim 1.

Claim 3 – Obviousness over Mikami

Based on the record, we find no error in the Examiner's rejection of claim 3.

Appellant argues that "Mikami's disclosure . . . is related not to a signal processing system of the remote unit" (App. Br. 118) because

"Mikami's [system relates] to his personal computer 5 located at the central (main) unit" (App. Br. 118) and therefore, according to Appellant, Mikami fails to discloses various recited steps that are dependent on processing of data at the remote unit (see, e.g., App. Br. 145-146). Appellant also argues that modifying the Mikami system "would change the principle of operation of the prior art invention" (App. Br. 127); and that "the references teach away from their combination" (App. Br. 151). For at least the reasons set forth above, we agree with the Examiner that it would have been obvious to one of ordinary skill in the art, given the combined teachings of Mikami.

Appellant argues that Mikami fails to disclose "'corresponding to multiple detecting systems'" (App. Br. 112). We agree with the Examiner for reasons set forth by the Examiner. Also, Appellant states that "Mikami discloses '. . . multiple pieces of measurement equipment . . .'" (App. Br. 112-113) which indicates that Mikami discloses a plurality of (or multiple) remote particle detecting systems as recited in claim 3.

Appellant argues that "Mikami's system is not efficient in comparison with the Yufa's apparatus" (App. Br. 114); that "Yufa's system . . . will need only 3hr 42min for all 10 remote detecting systems instead of 37 hours by Mikami's system" (App. Br. 116); and that "Yufa's apparatus (claim 3) provides the successful operation of the 9 (none) remote units, if the processing means . . . in 1 (one) remote unit will be out of order" (App. Br. 117); and that "Mikami includes additional element/structure (eliminated in the Yufa' apparatus" (App. Br. 121). We are not persuaded by Appellant's arguments because claim 3 does not require any specific level of efficiency, any specific length of time to process data, any specific number of

successfully operating units if one remote unit is out of order, or the explicit lack of any specific structure of Mikami.

Therefore, we find that the Examiner did not err in rejecting claim 3.

Claim 4 – Obviousness over Mikami

Based on the record, we find no error in the Examiner's rejection of claim 4.

Appellant argues that Mikami fails to disclose or suggest "Yufa's 'tubular means coupling said detection means and an environment assaying control means of said particle detecting means'" (App. Br. 199). The Specification discloses that an "environmental assaying control means" passes an "air or liquid (water) sample [via] the tubular means 37 . . . to the detection means 40" (col. 9, ll. 46-52) and that "particles are detected by . . . the detection means 40" (col. 9, ll. 54-56). The Specification also depicts each of the environmental assaying control means, the detection means, and the tubular means as box structures (Fig. 6).

Claim 4 recites a "tubular means" coupling a detection means with an environment assaying control means. Based on the Specification, a "detection means" is any structure that can be depicted by a box (as illustrated in Fig. 6 of the Specification) that detects particles, an environmental assaying control means is any structure that can be depicted by a box (as illustrated in Fig. 6 of the Specification) that sends a sample to the detection means, and a "tubular means" is any structure that can be depicted as a box (as illustrated in Fig. 6 of the Specification) that connects

the environmental assaying control means with the detection means (col. 9, ll. 46-56; Fig. 6).

We agree with the Examiner that Mikami discloses a "detection means" (e.g., a photomultiplier 11 in which "scattered light from microparticles in the air is detected" – p. 419, col. 1, l. 7-8) that is depicted as a box (Fig. 3), an "environment assaying control means" (e.g., laser beam 8 from laser tube in which "laser beam 8 is irradiated from a direction orthogonal to the sample air" – pg. 419, ll. 4-5) that is depicted as a box (Fig. 3), and a "tubular means" (e.g., "optical system 9" through which a sample is passed from the "environmental assaying control means to the "detection means" – Fig. 3) and is also depicted as a box (Fig. 3). Therefore, we agree with the Examiner that Mikami discloses these features.

Claim 5 – Obviousness over Mikami and White

Based on the record, we find no error in the Examiner's rejection of claim 5.

Appellant argues that "[t]he White device does not include the conversion system . . . and wireless communicating remote particle detecting systems" (App. Br. 210). The Examiner relies on Mikami for this teaching. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986).

Appellant also argues that the "combination of Mikami and White **would not be physically operative**" (App. Br. 211) but does not cite

specific reasons why the combination of Mikami and White would supposedly be inoperative. As described above, Mikami discloses a system that includes a sensor in a remote device that detects and processes particle information. White discloses a sensor that "is manufactured with a unique ID code" (Abstract). The combination of Mikami and White would have resulted, for example, in assigning an identification code (White) to the sensor of Mikami. We disagree with Appellant that merely assigning an identification code to the sensor of Mikami would have resulted in the sensor becoming inoperative.

Appellant also argues that "**it would have <u>not</u> been <u>obvious</u>** to one having ordinary skill in the art . . . to modify Mikami" (App. Br. 216). We disagree with Appellant because combining the known system of particle detection using a sensor of Mikami with the known system of assigning identification codes to sensors of White would have entailed no more than merely combining known systems performing their known functions to achieve a predictable result of sensors with identification codes that perform particle detection. "[W]hen a patent 'simply arranges old elements with each performing the same function it had been known to perform' and yields no more than one would expect from such an arrangement, the combination is obvious." *KSR Int'l Co.*, 550 U.S. at 417 (citing *Sakraida v. AG Pro, Inc.*, 425 U.S. 273, 282 (1976)).

Therefore, the Examiner did not err in rejecting claim 5.

CONCLUSION

The Examiner did not err in rejecting claims 6-8 as failing to comply with the enablement requirement, claims 1, 3 and 4 as being obvious over Mikami, or claim 5 as being obvious over the combination of Mikami and White.

DECISION

The Examiner's decision to reject appealed claims 1 and 3-8 is affirmed.

Requests for extensions of time in this ex parte reexamination proceeding are governed by 37 C.F.R. § 1.550(c). *See* 37 C.F.R. § 41.50(f).

AFFIRMED

rvb

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