

The opinion in support of the decision being entered today
is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOSEPH H. LYONS

Appeal 2007-1570
Application 10/646,720
Technology Center 2800

Decided: July 31, 2007

Before JAMES D. THOMAS, JOSEPH L. DIXON, and
ST. JOHN COURTENAY III, *Administrative Patent Judges*.

COURTENAY, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 19-25 and 39-52. We have jurisdiction under 35 U.S.C. § 6(b). An oral hearing on this appeal was conducted on July 10, 2007.

We AFFIRM.

THE INVENTION

The disclosed invention relates generally to an apparatus and method for detecting very small distances, and, more particularly, to proximity sensing with gas flow (Specification 1).

Independent claims 19, 39, and 46 are illustrative:

19. A method, comprising:

using first and second probes each having a respective elongated nozzle;

scanning the first probe over a reference surface to produce successive reference values, such that a size of an opening of the elongated nozzle allows for an entire area of the reference surface adjacent the first probe during the scanning to be measured by substantially eliminating low sensitivity areas;

scanning the second probe over a measured surface to produce successive measured values, such that a size of an opening of the elongated nozzle allows for an entire area of the measured surface adjacent the second probe during the scanning to be measured by substantially eliminating low sensitivity areas; and

determining a topography of the measured surface based on a difference between respective ones of the successive measured values and respective ones of the successive reference values.

39. A system, comprising:

means for directing a gas stream into a reference channel and a measurement channel;

means for evenly restricting gas flow through the reference channel and the measurement channel;

probes located at adjacent ends of the reference channel and the measurement channel and having an elongated nozzle orifice; and

means for sensing a mass of gas flow between the reference channel and the measurement channel.

46. A gas gauge proximity sensor that is provided with a gas supply during operation, comprising:

a dividing portion that divides the supplied gas into a reference channel and a measurement channel;

flow restrictors placed in the reference channel and measurement channel;

probes respectively coupled to adjacent ends of the reference channel and the measurement channel, the probes including elongated nozzle orifices; and

a mass flow sensor coupled between the reference and measurement channels that senses the mass of gas flow therebetween.

THE REFERENCES

Applicant's Admitted Prior Art (APPA), "Background of the Invention," (Specification 1-3).

Zumbach	US 3,948,082	Apr. 6, 1976
Carreras	US 4,604,892	Aug. 12, 1986
Barada	US 4,953,388	Sep. 4, 1990
Nemeth	US 5,317,898	Jun. 7, 1994

THE REJECTIONS

Claims 19-24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the teachings of Barada in view of Carraras.

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Claims 39-52 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the teachings of Barada in view of Carraras.

Claims 19-24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the teachings of Barada in view of Zumbach.

Claims 39-52 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the teachings of Barada in view of Zumbach.

Claim 25 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over the teachings of Barada in view of Carraras, and further in view of Nemeth.

Claim 25 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over the teachings of Barada in view of Zumbach, and further in view of Nemeth.

Rather than repeat the arguments of Appellant or the Examiner, we make reference to the Briefs and the Answer for the respective details thereof.

Motivation

Appellant argues there is no motivation to combine Barada with Carraras or Zumbach because: (1) Carraras and Zumbach are non analogous art to the claimed invention, (2) the Examiner has relied upon impermissible hindsight, (3) the applied references do not solve the same problem presented by the inventor, and (4), the combinations proffered by the Examiner would make Barada unsatisfactory for its intended purpose and/or change Barada's principle of operation (Br. 15-20). Appellant concludes the Examiner has failed to establish a prima facie case of obviousness (Br. 20).

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Regarding Appellant's first argument that Carraras and Zumbach are non analogous art to the claimed invention, we note that in *KSR Int'l Co. v. Teleflex Inc.*, the Supreme Court recently stated:

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, *either in the same field or a different one*. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill [emphasis added].

KSR Int'l Co. v. Teleflex Inc., 127 S. Ct. 1727, 1740, 82 USPQ2d 1385, 1396 (2007).

Here, we agree with the Examiner that the expanded coverage area of the variant elongated or rectangular nozzles of Carraras and Zumbach would have been recognized by a person of ordinary skill in the art as an improvement over the conventional nozzle orifices taught by Barada, given the limited surface area covered by Barada's conventional nozzle orifice.¹

With respect to the issue of hindsight, in *KSR* the U.S. Supreme Court reaffirmed that "[a] factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex*

¹ Carraras teaches that jets 6 and 7 each have rectangular (i.e., elongated) sections (col. 4, ll. 57-58). Zumbach teaches an elongated nozzle (col. 8, ll. 49-51, i.e., sensing slit 34 extending longitudinally in air gap 31).

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post reasoning.” *KSR*, 127 S. Ct. at 1742, 82 USPQ2d at 1397. *See also Graham v. John Deere Co.*, 383 U.S. 1, 36, 148 USPQ 459, 474 (1966). Nevertheless, in *KSR* the Supreme Court also qualified the issue of hindsight by stating that “[r]igid preventative rules that deny factfinders recourse to common sense, however, are neither necessary under our case law nor consistent with it.” *KSR*, 127 S. Ct. at 1742-43, 82 USPQ2d at 1397.

Here, we do not agree with Appellant’s assertion that the Examiner has impermissibly relied upon hindsight in formulating the rejection. After carefully considering all of the evidence before us, we find the Examiner has pointed to specific portions of Carraras, Zumbach, and Nemeth, respectively, as providing motivation that reasonably supports the legal conclusion of obviousness (*see* Answer 4, 5, and 6).

Regarding Appellant’s third argument that the applied references do not solve the same problem presented by the inventor, we note the Supreme Court stated in *KSR* that any need or problem known in the field and addressed by the patent can provide a reason for combining the elements in the manner claimed, as follows:

The flaws in the Federal Circuit's analysis relate mostly to its narrow conception of the obviousness inquiry consequent in its application of the TSM test. *The Circuit first erred in holding that courts and patent examiners should look only to the problem the patentee was trying to solve. Under the correct analysis, any need or problem known in the field and addressed by the patent can provide a reason for combining the elements in the manner claimed* [emphasis added].

KSR, 127 S. Ct. at 1732, 82 USPQ2d at 1389-90.

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We further disagree with Appellant's fourth argument that the combinations proffered by the Examiner would make Barada unsatisfactory for its intended purpose and/or change Barada's principle of operation. In particular, we note that the Examiner has merely relied on Carraras and Zumbach for their respective teachings and/or suggestions of elongated or rectangular nozzles (*see* Answer 3-5; *see also* footnote 1 *supra*). We find the Examiner's proffered combinations would have enhanced Barada by providing additional measurement capabilities (e.g., over a surface area or topology).

Thus, when we take account of the inferences and creative steps that a person of ordinary skill in the art would have employed, we conclude the Examiner has articulated an adequate reasoning with a rational underpinning that reasonably supports the legal conclusion of obviousness.

Independent claim 19 (elements)

We consider the Examiner's rejection of independent claim 19 as being unpatentable over Barada in view of Carraras as well as the Examiner's rejection of claim 19 as being unpatentable over Barada in view of Zumbach.

Appellant merely asserts the following language of claim 19 is not taught nor suggested by the applied references:

scanning the first probe over a reference surface to produce successive reference values, such that a size of an opening of the elongated nozzle allows for an entire area of the reference surface adjacent the first probe during the scanning to be measured by substantially eliminating low sensitivity areas;

scanning the second probe over a measured surface to produce successive measured values, such that a size of an opening of the elongated nozzle allows for an entire area of the measured surface adjacent the second probe during the scanning to be measured by substantially eliminating low sensitivity areas;

(Br. 13-14; *see also* claim 19).

In response, we find Appellant has failed to comply with the requirements of 37 C.F.R. § 1.111(b) by merely reciting the language of the claim and asserting that such language is not taught by the reference(s). We further note that a statement which merely points out what a claim recites will not be considered an argument for separate patentability of the claim. *See* 37 C.F.R. § 41.37(c)(1)(vii). Nevertheless, we agree with the Examiner that the cited references teach and/or suggest the argued claim limitations.

Regarding eliminating low sensitivity areas, we note the Examiner has pointed out that Appellant discloses this advantage flows from either matching the orifice footprint to the surface features or to the elongated dimensions of the nozzles (Answer 3; Specification ¶¶ 48, 23). We note that Carraras teaches a jet (i.e., an orifice) having a shape homothetic to that of the deposit to be measured (col. 4, ll. 6-8). Carraras specifically teaches jets 6 and 7 each have rectangular (i.e., elongated) sections (col. 4, ll. 57-58). We further note that Zumbach teaches an elongated nozzle (col. 8, ll. 49-51, i.e., “sensing slit 34 extending longitudinally in the air gap 31, this sensing aperture being connected to a differential pressure meter as shown at 72 in FIGS. 7 and 8.”). We find that successively scanning a measurement surface to cover an entire area (i.e., a topology) is merely a predictable variation well within the level of knowledge of a person of ordinary skill. We have

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fully addressed the issue of motivation *supra*. Therefore, we do not find Appellant's argument persuasive, and we find that Appellant has not shown error in the Examiner's prima facie case of obviousness. Accordingly, we sustain the Examiner's rejection of independent claim 19 as being unpatentable over Barada in view of Carraras and also as being unpatentable over Barada in view of Zumbach for essentially the same reasons set forth in the Answer (*see* Answer 3-5).

Dependent claims 20-24

We further note that Appellant has not presented any substantive arguments directed separately to the patentability of dependent claims 20-24. In the absence of a separate argument with respect to the dependent claims, those claims stand or fall with the representative independent claim. *See In re Young*, 927 F.2d 588, 590, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991). *See also* 37 C.F.R. § 41.37(c)(1)(vii)(2004). Therefore, we will sustain the Examiner's rejection of claims 20-24 as being unpatentable over Barada in view of Carraras and also as being unpatentable over Barada in view of Zumbach for the same reasons discussed *supra* with respect to independent claim 19.

Independent claims 39 and 46 (elements)

We consider next the Examiner's rejection of independent claims 39 and 46 as being unpatentable over Barada in view of Carraras as well as the Examiner's rejection of claim 39 and 46 as being unpatentable over Barada in view of Zumbach.

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Appellant asserts that none of the applied references teach or suggest the following limitations of claims 39 and 46, respectively:

probes located at adjacent ends of the reference channel and the measurement channel and having an elongated nozzle orifice;
(claim 39).

probes respectively coupled to adjacent ends of the reference channel and the measurement channel, the probes including elongated nozzle orifices;
(claim 46).

We again find Appellant has failed to comply with the requirements of 37 C.F.R. § 1.111(b) by merely reciting the language of the claim and asserting that such language is not taught by the reference. Nevertheless, we find Barada teaches probes located at (i.e., respectively coupled to) adjacent ends of the reference channel and the measurement channel, as claimed. *See* Barada, Fig. 1, reference probe 60 and measurement probe 58. We further agree with the Examiner that Carraras and Zumbach each teaches and/or suggests a rectangular or elongated nozzle orifice as set forth in the rejection and discussed *supra* (*see* Answer 3-5; *see also* footnote 1 *supra*). We have fully addressed the issue of motivation *supra*. We again note that a statement which merely points out what a claim recites will not be considered an argument for separate patentability of the claim. *See* 37 C.F.R. § 41.37(c)(1)(vii). Therefore, we do not find Appellant's argument persuasive, and we find that Appellant has not shown error in the Examiner's prima facie case of obviousness. Accordingly, we sustain the Examiner's rejection of independent claims 39 and 46 as being unpatentable over Barada in view of Carraras and also as being unpatentable over Barada

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in view of Zumbach for the same reasons set forth in the Examiner's rejections (*see* Answer 3-5).

Dependent claims 40-45 and 47-52

We note that Appellant has not presented any substantive arguments directed separately to the patentability of dependent claims 40-45 and 47-52. In the absence of a separate argument with respect to the dependent claims, those claims stand or fall with the representative independent claim. *See In re Young*, 927 F.2d at 590, 18 USPQ2d at 1091. *See also* 37 C.F.R. § 41.37(c)(1)(vii)(2004). Therefore, we will sustain the Examiner's rejection of these claims as being unpatentable over Barada in view of Carraras and also as being unpatentable over Barada in view of Zumbach for the same reasons discussed *supra* with respect to independent claims 39 and 46.

Dependent claim 25

Lastly, we consider the Examiner's rejection of dependent claim 25 as being unpatentable over Barada in view of Carraras and Nemeth as well as the Examiner's rejection of claim 25 as being unpatentable over Barada in view of Zumbach and Nemeth.

Appellant argues that Nemeth does not remedy the deficiencies of Barada, Carraras, and Zumbach, taken alone or in combination (Br. 20). We find no deficiencies with Barada, Carraras, and Zumbach, as discussed *supra*. Therefore, we conclude the Examiner has met the burden of presenting a *prima facie* case of obviousness with respect to dependent claim

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25. Accordingly, we will sustain the Examiner's rejection of dependent claim 25 as being unpatentable over Barada in view of Carraras and Nemeth and also as being unpatentable over Barada in view of Zumbach and Nemeth for the same reasons set forth in the Answer (*see* Answer 5-7).

DECISION

We have sustained the Examiner's rejection of all claims on appeal. Therefore, the decision of the Examiner rejecting claims 19-25 and 39-52 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.
1100 NEW YORK AVE., N.W.
WASHINGTON DC 20005