XThe opinion in support of the decision being entered today was ***not*** written for publication and is ***not*** binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SCOTT R. BRUNDAGE
and DAVID A. KOHLER

Appeal No. 2004-2025[1]
Application 10/120,498

ON BRIEF

Before WARREN, OWENS and PAK, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

Decision on Appeal

This is an appeal under 35 U.S.C. § 134 from the decision of the examiner finally rejecting claims 1 through 14, 18 through 32, and 36 through 47, all of the claims in the application.

Claims 1, 3, 26 and 44[2] illustrate appellants' invention of a method of blending unleaded gasolines, a blended gasoline composition so prepared and a gasoline composite, and are representative of the claims on appeal:

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[1] We simultaneously enter decisions in related appeals 2004-1774, in application 10/120,421, and 2004-1939, in application 10/120,497.
[2] Appealed claim 44 is copied as it stands of record.

1. A method of blending unleaded gasolines which are substantially free of ethers, which have an octane number of at least 90(R+M)/2, and which have a Reid vapor pressure of 7.00 or less, which method comprises

(a) blending some or all gasoline component streams from an oil refinery and keeping the blend substantially free of ether compounds, and with a sulfur content of less than 10 ppmw, and

(b) controlling the blending of the streams such that the blended unleaded gasoline is in compliance with a California Predictive Model.

3. The method of claim 1, wherein testing of the blended unleaded gasoline is conducted for compliance with the California Phase 2 or Phase 3 Predictive Model, and necessary adjustments in the blends based on results of the testing are made to maintain compliance with the California Phase 2 or Phase 3 Predictive Model.

26. A blended gasoline composition prepared by the method of Claim 1.

44. A gasoline composite which is substantially free of oxygenates, is in compliance with the California Predictive Model, and has an octane number of at least 90(R+M)/2, and a sulfur content of less than 10 ppmw sulfur.

The references relied on by the examiner are:

Jessup et al. (Jessup)	5,288,393	Feb. 22, 1994
Kaneko et al. (Kaneko)	5,401,280	Mar. 28, 1995

13 California Code of Regulations § 2262 *et seq.* (Phase 3 reformulated gasoline standards).[3]

The examiner has advanced the following grounds of rejection on appeal:

claims 1 through 14, 18 through 32, and 36 through 47 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Jessup in view of Kaneko and the Phase 3 reformulated gasoline standards (answer, pages 3-5); and

claims 1 through 14, 18 through 32, and 36 through 47 stand rejected as specified in the answer (pages 8) as unpatentable over certain claims in certain United States Patents, and provisional rejected as specified in the answer (pages 5-9) as unpatentable over certain claims in certain

[3] We do not find in the official file of this application a copy of 13 CCR §2262. *The California Reformulated Gasoline Phase 2 and Phase 3 Standards*, in effect as of the filing date of this application. We note that specification Table 1 tabulates the "Properties and Specifications for Phase 2 Reformulated gasoline" and that specification Table 2 tabulates the "Properties and Specifications for Phase 3 Reformulated gasoline," and the specification further explains the regulations (page 6, l. 3, to page 12, l. 23). There being no dispute in this respect, we consider the information in specification Table 1 as the Phase 2 reformulated gasoline standards, and the information in specification Table 2 as the Phase 3 reformulated gasoline standards.

applications under the judicially created doctrine of obviousness-type double patenting, the involved patents and applications also appearing in a listing in the brief (page, page 4).[4]

Appellants state that appealed claims 3 through 6 " do not stand or fall together" with the other appealed claims (brief, pages 3-4). Thus, we decide this appeal based on appealed claims 3 and 44 with respect to the ground of rejection under § 103(a), and on no particular claim with respect to the other grounds of rejection based on obviousness double patenting in view of appellants' position (*see* brief, pages 8-9). 37 CFR § 1.192(c)(7) (2003).

We affirm.

Rather than reiterate the respective positions advanced by the examiner and appellants, we refer to the answer and to the brief for a complete exposition thereof.

Opinion

Considering first the ground of rejection under § 103(a), in order to review the examiner's application of prior art to a claim, we must first interpret the claim terms must by giving them the broadest reasonable interpretation in light of the written description in the specification, including the drawings, as it would be interpreted by one of ordinary skill in this art. *See, e.g., In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997). *In re Zletz*, 893 F.2d 319**,** 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989). The plain language of appealed claim 44 specifies gasoline composites that are substantially free of oxygenates. There is no definition in the specification for the claim language "substantially free of oxygenates." However, the specification does specify that "ethers," which fall within the term "oxygenates (specification, e.g., page 2, ll. 8-10), can be present in an amount of less than 0.5 wt. % (*id.*, page 12, l. 27, to page 13, l. 1), and include methyl tertiary butyl ether (MTBE) (*id.*, e.g., page 2, ll. 13-14). The claimed gasoline composites of claim 44 further have an octane number falling within the range of at least 90(R+M)/2 and a sulfur content falling within the range of zero to less than 10 ppmw, and are in compliance with the California Predictive Model.[5]

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[4] Application 09/603,585 (answer, pages 7-8) is shown in the electronic records of the USPTO to now be abandoned, and accordingly, the ground of rejection based thereon is moot.

[5] Appellants explain that the California Predictive Model with respect to the Phase 2 and Phase 3 reformulated gasoline standards tabulated in specification Table 1 (*see above* note 3), showing "Flat Limit," "Averaging Limit" or "Average Limit" and "Cap Limit" on the amounts of regulated gasoline composite ingredients,

We note here that claim 44 and appealed claim 26 are product claims, the latter being a product-by-process claim dependent on claim 1 which is drawn to methods of blending unleaded gasoline. *See generally*, *In re Thorpe*, 777 F.2d 695, 697, 227 USPQ 964, 966 (Fed. Cir. 1985).

The plain language of claim 1 requires that the claimed method of blending unleaded gasolines comprises at least the steps of blending component streams from an oil refinery, keeping the blend substantially free of ether compounds, that is, an amount of less than 0.5 wt. % (specification, page 12, l. 27, to page 13, l. 1), keeping the sulfur content at less than 10 ppmw, and controlling the blending such that the blended unleaded gasoline is in compliance with a California Predictive Model. Appealed claim 3, dependent on claim 1, further limits that claim by the steps of adjusting the blends based on the results of testing to maintain compliance with the California Phase 2 or Phase 3 Predictive Model.

We have carefully reviewed the record on this appeal and based thereon find ourselves in agreement with supported position of the examiner that, *prima facie*, the claimed gasoline composites encompassed by appealed claim 44 and the claimed method of blending of appealed claim 3 would have been obvious over the combined teachings of Jessup, Kaneko and the Phase 3 reformulated gasoline standards[6] to one of ordinary skill in this art at the time the claimed invention was made. We add the following to the examiner's analysis.

> is designed to allow producers to comply with the Phase 2 or Phase 3 gasoline requirements by producing gasoline to specifications different from either the averaging or flat limit specifications set forth in the regulations. However, producers must demonstrate that the alternative Phase 2 or Phase 3 gasoline specifications will result in equivalent or lower emissions compared to Phase 2 or Phase 3, respectively, gasoline meeting either the flat or averaging limits as indicated by the Predictive Model. Further, the cap limits must be met for all gasoline formulations, even alternative formulations allowed under the California Predictive Model. When the Predictive Model is used, the eight parameters of Table 1 are limited to the cap limits. [Specification, page 10, l. 27, to page 11, l. 9.]

[6] The examiner cites the Phase 3 reformulated gasoline standards in the statement of the rejection but mentions both the Phase 2 and the Phase 3 reformulated gasoline standards in the discussion of the rejection. We consider here only the Phase 3 reformulated gasoline standards because this regulation is cited in the statement of the rejection. *Cf. In re Hoch*, 428 F.2d 1341, 1342 n.3, 166 USPQ 406, 407 n.3 (CCPA 1970)

With respect to the claimed gasoline composites of appealed claim 44, we find that Jessup would have disclosed gasoline composites which can be free of the oxygenate additive MTBE, and have an octane value which can be in the range of 87 and above (e.g., col. 4, ll. 60-62, and col. 5, ll. 3-5, cols. 7-8 and 11-12). We determine that one of ordinary skill in this art would have recognized that gasoline composites disclosed by Jessup can fall within the Phase 3 reformulated gasoline standards if the sulfur content was within the specified flat limit, average limit or cap limit ranges, that is, zero to the specified upper limit in ppmw, when using the California Predictive Model (*see above* note 5). We note that the averaging limit range for sulfur is zero to 15 ppmw.

We notice the well known fact that one of ordinary skill in this art would have desired to reduce the amount of sulfur in gasoline composites for a variety of reasons known in the art. Indeed, Kaneko would have disclosed that in similar gasoline composites to those of Jessup, the sulfur content is preferably below 30 ppmw, and more preferably under 20 ppmw, and illustrates gasoline composites that contain 2, 3 and 4 ppm sulfur (col. 3, ll. 16-19; col. 8, Tables 2-4). We find that Kaneko's preferred sulfur range under 20 ppmw is the range of the flat limit and encompasses the range of the average limit of the Phase 3 reformulated gasoline standards, while the upper limit of 50 ppmw sulfur does fall within the cap limit range. However, the illustrated sulfur contents fall within the bottom of the range of the average limit of sulfur.

Based on this substantial evidence, we find that, *prima facie*, one of ordinary skill in this art would have prepared gasoline composites by routinely following the teachings of Jessup using the California Predictive Model and the requirements of the Phase 3 reformulated gasoline standards, and thus would have reasonably prepared such composites having a sulfur content across the range of the average limit of the Phase 3 reformulated gasoline standards, including the lower end of that range as shown by Kaneko, that is, below 10 ppmw. *See In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) ("[W]here general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.").

Accordingly, we determine that, *prima facie*, one of ordinary skill in this art one of ordinary skill in the art routinely following the combined teachings of Jessup, Kaneko and the Phase 3 reformulated gasoline standards would have arrived at the claimed gasoline composites

encompassed by appealed claim 44, including each and every limitation thereof, without recourse to appellants' disclosure. *See, e.g., Pro-Mold & Tool Co. v. Great lakes Plastics Inc.*, 75 F.3d 1568, 1573, 37 USPQ 1626, 1629-30 (Fed. Cir. 1996) ("In this case, the reason to combine [the references] arose from the very nature of the subject matter involved, the size of the card intended to be enclosed."); *In re Gorman*, 933 F.2d 982, 986-87, 18 USPQ2d 1885, 1888-89 (Fed. Cir. 1991) ("The extent to which such suggestion [to select elements of various teachings in order to form the claimed invention] must be explicit in, or may be fairly inferred from, the references, is decided on the facts of each case, in light of the prior art and its relationship to the applicant's invention."); *In re Dow Chem. Co.*, 837 F.2d 469, 473, 5 USPQ2d 1529, 1531 (Fed. Cir. 1988) ("The consistent criterion for determination of obviousness is whether the prior art would have suggested to one of ordinary skill in the art that [the claimed] process should be carried out and would have a reasonable likelihood of success, viewed in light of the prior art. [Citations omitted] Both the suggestion and the expectation of success must be founded in the prior art, not in the applicant's disclosure."); *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981)("The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art."); *see also In re O'Farrell*, 853 F.2d 894, 903-04, 7 USPQ2d 1673, 1680-81 (Fed. Cir. 1988) ("Obviousness does not require absolute predictability of success. . . . There is always at least a possibility of unexpected results, that would then provide an objective basis for showing the invention, although apparently obvious, was in law nonobvious. [Citations omitted.] For obviousness under § 103, all that is required is a reasonable expectation of success. [Citations omitted.]").

With respect to the claimed method of blending unleaded gasolines encompassed by appealed claim 3, we find that Jessup would have disclosed that the unleaded gasoline fuels disclosed therein are prepared by blending stocks and additives in a refinery "so as to produce unleaded gasolines of specified Reid Vapor Pressure, olefins content, etc.," that is, having the properties disclosed in the teachings of the reference (e.g., col. 3, ll. 26-39). We further find that Kaneko also would have disclosed that the gasoline fuels disclosed therein are prepared by

blending stocks and desired additives in a refinery to obtain the desired properties in the fuel (e.g., col. 5, ll. 20-53). One of ordinary skill in the art would have readily recognized that the Phase 3 reformulated gasoline standards provide limitations on the properties of the gasoline fuels that are blended in refineries. Accordingly, we determined that, *prima facie*, one of ordinary skill in this art routinely following the combined teachings of Jessup, Kaneko and the Phase 3 reformulated gasoline standards would have blended gasoline stocks and desired additives of Jessup as taught by Jessup and Kaneko following the script of the Phase 3 reformulated gasoline standards in the California Phase 3 Predictive Model, in the reasonable expectation of arriving at blended unleaded gasoline complying with the Phase 3 reformulated gasoline standards, including gasolines which fall within the average limit range for sulfur content, including the lower end of that limit as taught by Kaneko. Indeed, we find that one of ordinary skill in this art routinely following basic industrial product quality control concepts in order to assure that the gasoline complies with the California Phase 3 Predictive Model, would have further routinely tested the product of the blending operation during and after the batch of unleaded gasoline is prepared.

Accordingly, we determine that, *prima facie*, one of ordinary skill in this art one of ordinary skill in the art routinely following the combined teachings of Jessup, Kaneko and the Phase 3 reformulated gasoline standards would have arrived at the claimed method of blending unleaded gasolines encompassed by appealed claim 3, including each and every limitation thereof, without recourse to appellants' disclosure. *See Dow Chem.*, 837 F.2d at 473, 5 USPQ2d at 1531-32.

Accordingly, since a *prima facie* case of obviousness has been established over the applied prior art by the examiner, we have again evaluated all of the evidence of obviousness and nonobviousness based on the record as a whole, giving due consideration to the weight of appellants' arguments in the brief. *See generally*, *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); *In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984).

Appellants argue that NO_x emission reduction in the claimed gasoline composites "is achieved particularly due to the <u>control of sulfur</u> to extremely low levels, a concept foreign to the prior art, as discussed on page 13 of the present specification," because "the blending can be

controlled so that the gasoline product contains less than 10 ppmw sulfur," thus offering "low emissions in a substantially oxygen free gasoline" (brief, paragraph bridging pages 4-5, emphasis in original, and page 7). Appellants contend, in this respect, that Jessup does not disclose or suggest "the control of sulfur in order to obtain such a gasoline or the advantages attendant therewith" (*id.*, page 5). Appellants further argue that the required presence of MTBE in the reduced NO_x emission gasoline of Kaneko distinguishes the claimed gasoline composites over this reference, because, in appellants' view, this "suggests that the presence of an oxygenate is an important consideration for reduction of emissions of NO_x," thus teaching away from the claimed invention which "permits one to achieve reductions in NO_x while being substantially oxygenate free" (*id.*, pages 5-6). Appellants submit that while Kaneko discloses the preferred range of less than 20 ppmw, one of ordinary skill in the art would economically "push the amount of sulfur" to the extent of the disclosed 50 ppmw at which point damage to the exhaust gas cleaner is still avoided (*see* Kaneko, col. 3, ll. 19-21), which "motivation actually directs one away from" the claimed invention (*id.*, page 6).

We cannot subscribe to appellants' positions. We fail to find in the disclosure on page 13 of the written description in the specification any specific connection between reduced NO_x emissions of the claimed gasoline composite and the 10 ppmw sulfur contained therein, and indeed, we fail to find any specific connection with any disclosed amount of sulfur in this respect, as it is stated that the gasoline composites preferably contain "low" sulfur content, which "is most preferred" to be less than 30 ppm, "most preferably less than 10 ppm" (e.g., page 13, ll. 1-6). Furthermore, Jessup discloses that

> [f]or gasoline fuels in which one desires that emissions of NO_x be minimized or reduced, the *principal factor influencing such emissions is Reid Vapor pressure*. NO_x emissions decease as the Reid Vapor Pressure is decreased . . . even more preferably below 7.0 psi (0.48 atm). Of *secondary importance* with respect to NO_x emissions are the 10% D-86 Distillation Point and olefin content. [Col. 2, ll. 21-29; emphasis supplied.]

We note here that the thus disclosed Reid vapor pressure corresponds to the Reid vapor pressure range specified in appealed claims 1, 3 and 26.

We also find no support in the record for appellants' arguments that reduced NO_x emissions shown in Kaneko are connected to the presence of MTBE in the gasoline composite

thereof. Indeed, Kaneko discloses that a "serious problem is *that MTBE tends to increase nitrogen oxides* (NO_x) in exhaust gas" (col. 1, ll. 53-55; emphasis supplied), and further discloses Reid vapor pressures (col. 2, ll. 57-60) falling within the ranges shown by Jessup, which encompass the Reid vapor pressure range specified in appealed claims 1, 3 and 26.

Thus, appellants' unsupported arguments are of little persuasion. *See In re Lindner*, 457 F.2d 506, 508, 173 USPQ 356, 358 (CCPA 1972). Indeed, contrary to these and similar arguments, we are of the opinion that the interest of a refiner in complying with such regulations as the Phase 3 reformulated gasoline standards and in reducing the amount of sulfur for reasons known in the art would have lead this person to low amounts of sulfur falling within the average limit range for sulfur specified in the Phase 3 regulations. As we discussed above, Kaneko discloses a preference for under 20 ppmw sulfur and illustrates gasoline composites with 2, 3 and 4 ppmw sulfur.

Appellants further submit that the California Phase 3 Regulations cannot be applied with regard to, among others, claim 44 because this claim finds "support in U.S. Serial No. 09/266,901, the filing date of which precedes the publication of the CARB Phase 3 Gasoline Regulations" (brief, page 8). In this respect, appellants allege that "[t]he present application is a continuation of U.S. Serial No. 09/603,900, which is in turn a continuation-in-part of U.S. Serial No. 09/266,901," which latter application is submitted to specifically disclose "the need and desire to be free of ethers such as MTBE, and that such can be accomplished by controlling the amount of sulfur to less than 10 ppm" (*id.*).

We cannot consider appellants' contention because there is no paper in the official file of the present application, and indeed, no information in the electronic records of the USPTO, which establishes that parent application 09/603,900 is in fact a continuation-in-part of application 09/266,901. Furthermore, appellants have not established that the Phase 3 reformulated gasoline standards of 13 CCR §2262 were not disclosed in public notices prior to the date of "publication" of the regulations, that is, the date that this section of the code was added to 13 CCR §2262.

Finally, we are not convinced by appellants' contention (brief, page 8) that the Phase 3 reformulated gasoline standards would not have suggested controlling sulfur to less than 10 ppmw because, as we have stated above, one of ordinary skill in this art, armed with the

knowledge in the art that low sulfur content is desirable as shown by Kaneko, routinely following the Phase 3 reformulated gasoline standards would have reasonably prepared gasoline composites having a sulfur content at the low end of the average limit of the Phase 3 reformulated gasoline standards.

Accordingly, based on our consideration of the totality of the record before us, we have weighed the evidence of obviousness found in the combined teachings of Jessup, Kaneko and the Phase 3 reformulated gasoline standards with appellants' countervailing evidence of and argument for nonobviousness and conclude that the claimed invention encompassed by appealed claims 1 through 14, 18 through 32, and 36 through 47 would have been obvious as a matter of law under 35 U.S.C. § 103(a).

We summarily affirm the grounds of rejection collectively encompassing all of appealed claims 1 through 14, 18 through 32, and 36 through 47 under the judicially created doctrine of obviousness-type double patenting because appellants have stated the intention to file "such Terminal Disclaimers as are needed . . . once allowable subject ,matter is deemed to exist in the subject application" (brief, page 8).

The examiner's decision is affirmed.

Other Issues

We decline to exercise our authority under 37 CFR § 1.196(b) (2003) and enter on the record a new ground of rejection based on the Phase 2 reformulated gasoline standards which are encompassed by appealed claim 1 and claims dependent thereon (*see above* n. 6), leaving it to the examiner to make factual findings therefrom along with any other applicable prior art developed by the examiner, in the event of further prosecution of the appealed claims before the examiner subsequent to the disposition of this appeal.

We observe that appealed claim 44 of this application is a duplicate of appealed claim 44 in application 10/120,421. We suggest that in the event of further prosecution of appealed claim 44 before the examiner subsequent to the disposition of this appeal, the examiner should consider whether these applications comply with 35 U.S.C. § 101.

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

AFFIRMED

CHUNG K. PAK Administrative Patent Judge	)))))	
CHARLES F. WARREN Administrative Patent Judge	)))))	BOARD OF PATENT APPEALS AND INTERFERENCES
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