

File

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 18

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

MAILED

SEP. 29 1995

PAT. & T.M. OFFICE
BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte GRAEME MC ROBERT WALLACE
and
JAMES P. SIMMONDS

Appeal No. 93-3383
Application 07/632,355¹

ON BRIEF

Before TURNER, WEIFFENBACH and ELLIS, *Administrative Patent Judges*.

ELLIS, *Administrative Patent Judge*.

DECISION ON APPEAL

¹ Application for patent filed December 21, 1990.

Appeal No. 93-3383
Application 07/632,355

This is an appeal of the final rejection of claims 2 through 12 and 21 through 38, which are all the pending claims in the application.

Claims 21, 32, 35 and 37 are illustrative of the subject matter on appeal and are attached as an appendix to this decision.

The references relied on by the examiner are:

Romans	3,927,995	Dec. 23, 1975
Bonazza et al. (Bonazza)	4,247,300	Jan. 27, 1981

Blackshaw et al. (Blackshaw) (European Patent Application)	203,692	Dec. 3, 1986
---	---------	--------------

Zubarev et al. (Zubarev), "Lowering Carbon Deposition in Ship Diesels", Rybn. Khoz. (Moscow), Vol. 9, pages 52-54 (1977).

The claims stand rejected as follows:

I. Claims 2 through 9, 11, 12, 21, 27, 32, 33, 35, and 37 stand rejected under 35 U.S.C. § 103 as not patentable over the appellants' admission on p. 1 of the specification and Zubarev in view of Blackshaw (EPA 203,692) and Bonazza.

II. Claims 10, 22 through 26, 28 through 31, 34, 36 and 38 stand rejected under 35 U.S.C. § 103 as not patentable over the appellants' admission on p. 1 of the specification and Zubarev in view of Blackshaw (EPA 203,692) and Bonazza, in further view of Romans.

III. Claims 35 and 36 are newly rejected under 35 U.S.C. § 112, second paragraph for failing to particularly point out and

Appeal No. 93-3383
Application 07/632,355

distinctly claim the subject matter which the appellants regard as the invention.

We reverse.

Discussion

Rejections I and II

The present invention is directed to a heavy residual diesel fuel composition, methods of operating a marine or railroad diesel engine using said fuel composition, a marine vessel supplied with said fuel composition, and a method of fueling a marine or railroad diesel engine with the present heavy diesel fuel. The appellants have discovered that greater fuel economy and improved combustion efficiency can be achieved by adding at least one (i) cyclomatic manganese tricarbonyl (CMT), such as methylcyclopentadienyl manganese tricarbonyl, and (ii) ashless dispersant, such as an alkenyl succinimide which has at least one primary amine group capable of forming an imide group, to a heavy residual diesel fuel which is highly viscous (at least about 100 cSt at 50° C) and has a sulfur content of at least 1% by weight. The appellants disclose that the present fuel is especially useful for marine diesel engines.

In the initial rejection (Rejection I, *supra*), the examiner has concluded, on p. 4 of the Answer, that it would have been obvious to one of ordinary skill in the art

Appeal No. 93-3383
Application 07/632,355

to add the deposit reducing mixture of EPA '692 and the imidazoline detergent of Bonazza et al. to a "heavy" diesel oil comprising a smoke reducing and performance improving cyclopentadienyl manganese tricarbonyl compound (and operate a "marine vessel" diesel on said heavy diesel oil) as taught by Zubarev et al. Thus the purposes for the various additives are more than adequate to suggest their common usage in fuel oil compositions.

The examiner has argued that the decision in *In re Dillon*, 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1990) (in banc), cert. denied, 500 U.S. 409 (1991) supports his position. We disagree. The examiner has overlooked a critical distinction between the facts of the present case, and those of *Dillon*. In *Dillon*, the prior art taught a composition comprising the claimed hydrocarbon fuel and an additive which was structurally homologous to the claimed additive. That is, the claims were directed to a chemical composition comprising a hydrocarbon fuel containing tetra-orthoesters and a method of reducing particulate emissions during combustion. One reference cited by the examiner taught a composition comprising a hydrocarbon fuel and a tri-orthoester wherein the tri-orthoester was employed as a "dewatering" agent. A second reference taught the equivalence between tetra-orthoesters and tri-orthoesters; i.e., both were used as water scavengers in hydraulic fluids. The court found that there was a sufficiently close relationship between the tri-orthoesters and the tetra-orthoesters (see the cited Elliott and Howk references) in the fuel oil art to create an expectation that hydrocarbon fuel compositions containing tetra-esters would have similar properties, including water

Appeal No. 93-3383
Application 07/632,355

scavenging, to like compositions containing the tri-esters, and to provide the motivation to make such new compositions. *In re Dillon* at 1900.

The court concluded that it would have been obvious to one of ordinary skill in the art to make the claimed hydrocarbon fuel composition since there was an expectation that it would have properties similar to the prior art hydrocarbon fuel composition.

The present claims are directed to a heavy diesel fuel having a specified viscosity and sulfur content comprising at least one CMT and at least one ashless detergent. In contrast to *Dillon*, not one of the references cited by the examiner teaches, or suggests, the addition of a CMT and an ashless dispersant, or structural and functional equivalents thereof, to a *heavy diesel fuel having the claimed characteristics*. Rather, Zubarev teaches the addition of CMT alone, or in conjunction with another fuel additive (Ts8), to a lighter weight fuel (viscosity at 20° C of 11.84 cSt). Blackshaw teaches the addition of a mixture comprising a cyclic amide and polyphenol, sulphurised polyphenol or hindered phenol, to any fuel oil, but that his additives are disclosed as being especially useful for distillate fuel oils having a boiling point between 150° C and 400° C. See col. 9, lines 46-56. Blackshaw does teach that when the additive combination is added to diesel fuel it has several advantages including, *inter alia*, decreased fuel consumption. See col. 10,

Appeal No. 93-3383
Application 07/632,355

lines 36-44. Bonazza teaches the addition of an ashless detergent to hydrocarbon fuels for internal combustion engines (e.g., gasoline) to reduce deposits and increase fuel economy. See col. 1, lines 5-41. However, Zubarev, Blackshaw, and Bonazza do not teach or suggest the use of their additives in heavy diesel fuels as required by the present claims. In fact, the examiner has proffered no evidence as to what properties the claimed additives (i.e., CMTs and ashless detergents), or structural equivalents thereof, exhibit when they are added to the type of heavy diesel fuel described by the claims. Therefore, we find that the examiner has failed to establish that those skilled in the art would have been motivated to make the present compositions.

The examiner has urged that p. 1 of the specification, which acknowledges that heavy diesel fuels which are relatively viscous and non-volatile and which often contain relatively high contents of sulfur exist, constitutes evidence that heavy diesel fuels with the claimed viscosity (at least 100 cSt at 50° C) and sulfur content (at least 1% by weight) are well known in the art. Even if we assume, *arguendo*, that the examiner is correct, this teaching alone is not sufficient to render a composition comprising any fuel additive and said diesel fuel, *prima facie* obvious. What is missing from the present record is a teaching,

Appeal No. 93-3383
Application 07/632,355

or suggestion, to add at least one CMT and an ashless dispersant to the type of heavy diesel fuel recited in the claims.

It is well established that the examiner has the initial burden of demonstrating that the teachings of the cited prior art would have suggested to those of ordinary skill they should make the claimed composition, and that such persons would have a reasonable expectation of success. *In re O'Farrell*, 853 F.2d 894, 7 USPQ2d 1673 (Fed. Cir. 1988). This suggestion must be in the prior art, and not in the applicant's disclosure. *In re Dow Chemical Co.*, 837 F.2d 4691, 5 USPQ2d 1529 ((Fed. Cir. 1988). In the case before us, the examiner has failed to provide reasons, based on the applied prior art or on the basis of knowledge generally available to one of ordinary skill in the art, for combining the present additives with the claimed heavy diesel fuel. Thus, on these facts, we are constrained to agree with the appellants' arguments and reverse the present rejection.

In response, the appellants have offered as evidence of an unexpected result the improved fuel economy achieved when the present additives are mixed with the claimed heavy diesel fuel. However, since on these facts, the examiner failed to make a *prima facie* case of obviousness, the burden did not shift to the appellants to make such a showing. Accordingly, it is not necessary for us to consider the merits of the appellants' rebuttal evidence.

Appeal No. 93-3383
Application 07/632,355

Turning to the rejection of claims 10, 22 through 26, 28 through 31, 34, 36, and 38 (Rejection II, *supra*), we find that the examiner has cited Romans as demonstrating "equivalence between the amine substituted imidazoline of Bonazza et al." and the claimed hydroxyethyl-substituted imidazolines. See the Answer pp. 4-5. It is the examiner's position that because the compounds taught by Romans and Bonazza share structural similarities and are both used as fuel additives, it is reasonable to expect that they would have similar properties. He concludes that it would have been obvious to one skilled in the art that the hydroxy-substituted imidazoline taught by Romans could be used interchangeably with the amine-substituted imidazoline of Bonazza. We disagree with the examiner's analysis. Romans merely teaches the synergistic effect of adding hydroxy-substituted imidazolines and alkylphenol ethoxylates to diesel fuel to prevent corrosion on metallic surfaces. Romans does not teach the use of hydroxy-substituted imidazolines in conjunction with CMT, or in the type of heavy diesel fuel set forth in the claims. As discussed *supra*, the examiner has failed in the first instance to establish that the present invention is *prima facie* obvious over the teachings of the specification, Blackshaw, and Bonazza. Therefore, it is clear that we cannot sustain the present rejection since it ultimately depends on these references. Since the Romans' patent does not teach or

Appeal No. 93-3383
Application 07/632,355

suggest the addition of hydroxy-substituted imidazoline, or a structural and functional equivalent thereof, in conjunction with CMT and an ashless dispersant to the type of heavy diesel fuel described in the claims, it fails to remedy the deficiencies of the primary references. Again, we find that the examiner has not established through the use of factual evidence or sound scientific reasoning, that the claimed limitations would have been obvious to one of ordinary skill in the art at the time the present application was filed.

Rejections I and II are reversed.

Rejection III

Turning to the rejection of claims 35 and 36 under 35 U.S.C. § 112, second paragraph as vague and indefinite, we find that the examiner has confused several concepts. For example, the examiner contends that "the 'invention' referred to in the second paragraph of 35 U.S.C. § 112 is subject to the requirements of 35 U.S.C. § 101...". We find this rejection to be untenable. If it is the examiner's position that the claims do not meet the statutory requirements of § 101, then a rejection should be made under that statute, and not under § 112. Thus, since this portion of the rejection is not directed to the lack of clarity or indefiniteness of the claim language, it is improper and cannot be sustained.

Appeal No. 93-3383
Application 07/632,355

Also, before us is the examiner's argument that the claims fail to particularly point out and distinctly claim the present invention because they are directed to both an article of manufacture and a composition of matter. Here, we do not agree with the examiner's interpretation of the claim language. It is completely acceptable for claims to recite functionally-interrelated elements. Moreover, we observe that the present claims merely recite a combination in the well-known "Jepson" format, See *Ex parte Jepson*, 1917 C.D. 62, 243 O.G. 525 (Ass't Comm'r. Pat. 1917). In this case, the claims are directed to an old combination; i.e., a fuel in combination with a marine vessel, wherein the improvement to the combination is the present fuel composition. Therefore, contrary to the examiner's assertion, the claims are not "ambiguous" or unclear within the meaning of § 112, second paragraph.

Rejection III is reversed.

The decision of the examiner is reversed.

NEW GROUND OF REJECTION

Under the authority of 37 C.F.R. § 1.196(b), we make the following new ground of rejection.

Claims 32 through 34, 37 and 38 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the appellants regard as the invention.

Appeal No. 93-3383
Application 07/632,355

Claims 32 through 34, 37 and 38 are vague, indefinite and incomplete since they fail to recite any positive steps in the claimed methods. Claims 32 and 37 merely recite a method of using the present heavy fuel composition without delineating any steps. Therefore, it is unclear what methods the appellants intend, or how the uses are to be practiced or performed. It is well established that the claims need not recite all of the operating details, however, method claims must recite at least one positive step in order to "set out and circumscribe a particular area with a reasonable degree of precision and particularity," *In re Moore*, 58 CCPA 1042, 439 F.2d 1232, 169 USPQ 236 (1971), and to make it clear what subject matter the claims encompass, *In re Hammock*, 57 CCPA 1225, 1230, 427 F.2d 1378, 1382, 166 USPQ 204, 208 (1970). Accordingly, we find that the claims are vague and indefinite since there is no indication as to which method(s) of "operating" or method(s) of "fueling"

Appeal No. 93-3383
Application 07/632,355

the appellants intend, or how one is to use the present fuel composition in these methods.

Any request for reconsideration or modification of this decision by the Board of Patent Appeals and Interferences based upon the same record must be filed within one month from the date of the decision. 37 CFR § 1.197. Should appellants elect to have further prosecution before the examiner in response to the new rejection under 37 CFR § 1.196(b) by way of amendment or showing of facts, or both, not previously of record, a shortened statutory period for making such response is hereby set to expire two months from the date of this decision.

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

REVERSED 37 CFR § 1.196(b)

Vincent D. Turner
VINCENT D. TURNER)
Administrative Patent Judge)
Cameron Weiffenbach
CAMERON WEIFFENBACH)
Administrative Patent Judge)
Joan Ellis
JOAN ELLIS)
Administrative Patent Judge)

) BOARD OF PATENT
) APPEALS AND
) INTERFERENCES

APPENDIX

21. A heavy diesel fuel composition comprising (i) a major amount of a heavy residual diesel fuel having a viscosity of at least about 100 cSt at 50°C and a sulfur content of at least about 1% by weight, (ii) at least one cyclomatic manganese tricarbonyl and (iii) at least one ashless dispersant, (ii) and (iii) being present in said fuel in amounts and proportions such that said fuel composition exhibits an improved fuel economy as compared to the same fuel composition not containing said ashless dispersant.

32. In a method of operating a marine or railroad diesel engine on a heavy diesel fuel, the improvement wherein said heavy diesel fuel comprises (i) a major amount of a heavy residual diesel fuel having a viscosity of at least about 100 cSt at 50°C and a sulfur content of at least about 1% by weight, (ii) at least one cyclomatic manganese tricarbonyl and (iii) at least one ashless dispersant, (ii) and (iii) being present in said fuel in amounts and proportions such that the operation of said engine with said fuel composition results in improved fuel economy as compared to the same type of operation of the same engine on the same fuel composition not containing said ashless dispersant.

35. In a marine vessel having a main marine diesel engine for providing power for propelling said vessel and an auxiliary diesel engine for operation auxiliary equipment of said vessel, each of said engines having its own supply of diesel fuel, the improvement wherein the fuel supplied to said main marine diesel engine comprises:

(i) a major amount of a heavy residual diesel fuel having a viscosity of at least about 100 cSt at 50°C and a sulfur content of at least about 1% by weight,

(ii) at least one cyclomatic manganese tricarbonyl, and

(iii) at least one ashless dispersant,

(ii) and (iii) being present in said fuel (i) in amounts and proportions such that the operation of said main diesel engine with said fuel composition results in improved fuel economy as compared to the same type of operation of said main diesel engine with the same fuel composition not containing said ashless dispersant; and wherein the fuel supplied to said auxiliary diesel engine comprises:

(iv) a major amount of a heavy diesel fuel having a viscosity and a sulfur content lower than fuel (i),

(v) at least one cyclomatic manganese tricarbonyl, and

Appeal No. 93-3383
Application 07/632,355

(vi) at least one ashless dispersant,
(v) and (vi) being present in said fuel (iv) in amounts and proportions such that the same type of operation of said auxiliary diesel engine with said fuel composition results in improved fuel economy as compared to the same type of operation of said auxiliary diesel engine with the same fuel composition not containing said ashless dispersant.

37. In a method of fueling a marine or railroad diesel engine with a heavy diesel fuel, the improvement wherein said heavy diesel fuel comprises (i) a major amount of a heavy residual diesel fuel having a viscosity of at least about 100 cSt at 50°C and a sulfur content of at least about 1% by weight, (ii) at least one cyclo-matic manganese tricarbonyl and (iii) at least one ashless dispersant, (ii) and (iii) being present in said fuel in amounts and proportions such that in the operation of said diesel engine said fuel composition exhibits an improved fuel economy as compared to the same fuel composition not containing said ashless dispersant.

Appeal No. 93-3383
Application 07/632,355

Philip M. Pippenger
Patent & Trademark Division
451 Florida Boulevard
Baton Rouge, LA 70801

MAILED

Full

DEC 20 1994

Paper No. 15

PATENT OFFICE
BOARD OF PATENT APPEALS
AND INTERFERENCES
UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte GRAEME MCROBERT WALLACE and JAMES P. SIMMONDS

Appeal No. 93-3383
Application 07/632,355¹

ORDER REMANDING TO EXAMINER

On April 8, 1993, an Examiner's Answer was entered including a new ground of rejection (Paper No. 11). On May 27, 1993, the applicant filed a Reply Brief (Paper No. 12) in response to the new ground of rejection. The Examiner acknowledged the Reply Brief in a communication entered June 2, 1993 (Paper No. 13). The communication indicated that no further response was necessary. The Manual of Patent Examining Procedure states in Section 1208.04 that:

" If the reply brief was filed in response to a new ground of rejection in the examiner's answer, the examiner must issue a supplemental answer indicating whether the new ground of rejection has been overcome, and, if it has not, explaining why not."

¹ Application for patent filed December 21, 1990.

Appeal No. 93-3383
Application 07/632,355

The communication entered June 2, 1993 (Paper No. 13) does not comply with Section 1208.04 of the Manual of Patent Examining Procedure.

Accordingly, it is

ORDERED that the application is remanded to the Examiner for appropriate explanation to applicant as to why the Reply Brief did not overcome the new ground of rejection and for such further action as may be appropriate.

The application, by virtue of its "special" status, requires immediate action. See Manual of Patent Examining Procedure, § 708.01(d). It is important that the Board of Patent Appeals and Interferences be informed promptly of any action affecting the appeal.

BOARD OF PATENT APPEALS
AND INTERFERENCES

By:


MERRELL C. CASHION, JR.
Program and Resource Administrator

cc: Philip M. Pippenger
Patent & Trademark Division
451 Florida Boulevard
Baton Rouge, LA 70801