

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 13

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte GREGORY S. CONARY and ROLFE J. HARTLEY

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Appeal No. 95-5126  
Application No. 08/045,675<sup>1</sup>

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ON BRIEF

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Before GARRIS, PAK and OWENS, Administrative Patent Judges.

PAK, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal from the examiner's final rejection of claims 1 through 23, which are all of the claims pending in this application.

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<sup>1</sup> Application for patent filed April 9, 1993.

THE CLAIMED SUBJECT MATTER

Appellants state that "[t]he rejected claims do not stand or fall together; [c]laims 1, 14 and 22 are argued separately below." See Brief, page 7. Accordingly, for purposes of this appeal, we will focus on claims 1, 14 and 22, which are reproduced below:

1. A homogeneous, oil-soluble additive concentrate which comprises:

- a) a minor proportion of diluent oil;
- b) from 10 to 30% by weight based on the weight of said concentrate of an organic sulfur-containing antiwear and/or extreme pressure agent having a sulfur content of at least about 20% by weight based on the weight of said antiwear and/or extreme pressure agent;
- c) from 1 to 5% by weight based on the weight of said concentrate of an ashless dispersant;
- d) from 2 to 8% by weight based on the weight of said concentrate of a dimethyl ester of an aliphatic phosphonic acid in which the aliphatic group has an average in the range of about 12 to about 24 carbon atoms;
- e) from 10 to 30% by weight of a 3-hydrocarbyl-2,5-diketopyrrolidine in which the hydrocarbyl group is an alkyl or alkenyl group having an average in the range of about 12 to about 30 carbon atoms, the weight ratio of said diketopyrrolidine to said dimethyl ester being at least 3:1 and at least sufficient to render said concentrate homogeneous at temperatures at least as low as 12°C.

14. A gear lubricant composition which comprises a major amount of oil of lubricating viscosity containing at least the following components:

- b) from 1 to 10% by weight based on the weight of said lubricant composition of at least one organic sulfur-containing antiwear and/or extreme pressure agent having a sulfur content of at least about 20% by weight based on the weight of said antiwear and/or extreme pressure agent;
- c) from 0.2 to 5% by weight based on the weight of said lubricant composition of at least one ashless dispersant;
- d) from 0.02 to 1% by weight based on the weight of said lubricant composition of at least one dimethyl ester of an aliphatic phosphonic acid in which the aliphatic group has an average in the range of about 12 to about 24 carbon atoms; and
- e) from 0.06 to 4% by weight based on the weight of said lubricant composition of at least one 3-hydrocarbyl-2,5-diketopyrrolidine in which the hydrocarbyl group is an alkyl or alkenyl group having an average in the range of about 12 to about 30 carbon atoms.

22. The method of improving the low temperature solubility and compatibility of a dimethyl ester of an aliphatic phosphonic acid in which the aliphatic group has an average in the range of about 12 to about 24 carbon atoms in an additive concentrate that contains at least one organic sulfur antiwear and/or extreme pressure agent and a minor amount of diluent oil, which method comprises blending therewith at least one 3-hydrocarbyl-2,5-diketopyrrolidine in which the hydrocarbyl group is an alkyl or alkenyl group having an average in the range of about 12 to about 30 carbon atoms in an amount such that the weight ratio of said diketopyrrolidine to said dimethyl ester is at least 3:1.

PRIOR ART

Appeal No. 95-5126  
Application No. 08/045,675

The examiner relies upon the following prior art references as the evidence of obviousness:

|   |           |          |
|---|-----------|----------|
| Papay<br>1979   | 4,158,633 | June 19, |
| Barber et al. (Barber)<br>1992  | 5,126,064 | June 30, |
| Smalheer et al. (Smalheer), <u>Lubricant Additives</u> , The Lezius-Hill Co., pages 1-11, 1967. |           |          |

REJECTION

Claims 1 through 23 stand rejected under 35 U.S.C. § 103 as unpatentable over the combined teachings of Barber, Papay and Smalheer.

DISCUSSION

We have carefully reviewed the entire record, including all of the arguments advanced by the examiner and appellants in support of their respective positions. This review leads us to conclude that only the rejection of claims 14 through 21 is well-founded. Accordingly, we affirm the examiner's decision rejecting claims 14 through 21, but reverse the examiner's decision rejecting claims 1 through 13, 22 and 23. Our reasons for this determination follow.

CLAIMS 14 THROUGH 21

Appeal No. 95-5126  
Application No. 08/045,675

As evidence of obviousness of the subject matter defined by independent claim 14, the examiner primarily relies on the Barber and the Papay references. The Barber reference is directed to a gear lubricant composition. See column 1, lines 4-6. The gear lubricant composition comprises (a) up to a major amount of a lubricant (see column 1, lines 51 and column 2, line 38 to column 3, line 12); (b) 1 to 20 % by weight of at least one organic sulfur-containing antiwear and/or extreme pressure agent having a sulfur content of at least 20% by weight based on the weight of the antiwear and/or extreme pressure agent (see column 1, lines 51-53 and column 3, lines 13-34); 0.25 to 15%, desirably 0.05 to 1.5%, by weight of at least one succinimide derivative friction modifier corresponding to the claimed 3-hydrocarbyl-2,5-diketopyrrolidine (compare Barber, column 1, lines 54-65 and column 6, lines 26 to 65, with appellants' specification, page 9); (d) at least one ashless dispersant (compare Barber, column 5 with appellants' specification, pages 6-9); and (e) at least one additional friction modifier, such as alkyl or alkenyl phosphonate (see Barber, column 6, lines 15-19). The

Appeal No. 95-5126  
Application No. 08/045,675

Barber reference at its examples employs about 0.24 to 0.32% by weight of dimethyl octadecyl phosphonate friction modifier (DMOP). See columns 7 and 8.

The Barber reference primarily differs from the subject matter of claim 14 in that it does not specify a dimethyl ester of an aliphatic phosphonic acid as its alkyl or alkenyl phosphonate. However, as acknowledged by appellants at page 15 of the Brief, "at column 6, lines 15-18 [of the Barber reference,] there is a broad suggestion to additionally incorporate alkyl or alkenyl phosphonates, which generally include the phosphonates of [the] Papay [reference,] along with many other additives." Appellants also acknowledge at page 15 of the Brief that the Barber reference teaches at its examples (column 7, lines 20 to column 8, line 18) employing, as a friction reducing means, dimethyl octadecyl phosphonate (DMOP) which according to appellant is the claimed dimethyl ester of an aliphatic phosphonic acid. The Papay reference also teaches that dimethyl octadecyl phosphonate (DMOP) is the most preferred friction reducer. See column 1, lines 67-68. According to the Papay reference, this type of a friction reducer has been used in gear oil. See column 1, lines 28-31.

Appeal No. 95-5126  
Application No. 08/045,675

Given the above teachings, we agree with the examiner that it would have been obvious to employ dimethyl octadecyl phosphonate (DMOP) as the alkyl or alkenyl phosphonate of Barber's gear lubricant composition with the reasonable expectation of imparting an additional friction reducing means. See also Merck & Co. v. Biocraft Labs., 874 F.2d 804, 807, 10 USPQ2d 1843, 1846 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989); In re Susi, 440 F.2d 442, 444, 169 USPQ 423, 425 (CCPA 1971); In re Petering, 301 F.2d 676, 681, 133 USPQ 275, 280 (CCPA 1962).

Appeal No. 95-5126  
Application No. 08/045,675

Appellants do not argue that the amount of the lubricant or the ashless dispersant recited in claim 14 would not have been suggested by the applied prior art. See also In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936-37 (Fed. Cir. 1990); In re Boesch, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980). Rather, appellants take the position that the Barber reference teaches away from using dimethyl octadecyl phosphonate (DMOP) or the like as the additional friction reducing means for Barber's gear lubricant composition. See Brief, pages 15 and 16. In support of their position, appellants refer to the examples at columns 7 and 8 of the Barber reference. Id. We do not subscribe to appellants' position.

As indicated by appellants, we recognize that the examples show that blend 3 containing 0.32 % by weight of dimethyl octadecyl phosphonate exhibits no reduction in noise level over the whole aural range as compared to blend 1, whereas blend 2 containing 0.5% by weight of a preferred succinimide derivative friction modifier which corresponds to the claimed 3-hydrocarbyl-2, 5-diketopyrrolidine shows the

Appeal No. 95-5126  
Application No. 08/045,675

reduction in noise level compared to blend 1. See Brief, pages 15 and 16 in conjunction with Barber, columns 7 and 8. However, we also note that, by using a small amount of dimethyl octadecyl phosphonate, blend 3 imparts the same result as blend 1 even though it uses a less amount of additives than that required by blend 1 (difference of 0.6 % by weight of additive package A). See Barber, columns 7 and 8. Moreover, when more additives (additive package A) are used together with a small amount (0.24 % by weight) of dimethyl octadecyl phosphonate, the reduction in noise level is similar to blend 6 containing a succinimide derivative friction modifier (which corresponds to the claimed 3-hydrocarbyl-2, 5-diketopyrrolidine) over the whole aural range, except over 2 kilohertz range. Id. These different results in the examples comport with the teachings of the Barber reference, which designate the succinimide derivative as the main friction reducing means and the alkyl or alkenyl phosphonate (inclusive of DMOP) as an additional friction reducing means. See the examples at columns 7 and 8 together with column 6, lines 15-19. Thus, it is our conclusion that the Barber and the Papay references as a whole would have led

Appeal No. 95-5126  
Application No. 08/045,675

a person having ordinary skill in the art to utilize both a succinimide derivative and an alkyl or alkenyl phosphonate, such as DMOP, in Barber's composition with the reasonable expectation of reducing the friction as indicated supra.

As a rebuttal to the prima facie case of obviousness regarding the subject matter of claim 14, appellants rely on a showing reported at page 17, lines 25-26, of the specification. Specifically, appellants argue (Brief, page 16):

Additional evidence of nonobviousness of the claimed combination of components in claims 14-21 is provided in the results reported in the specification at page 17 line 25-36. A comparative test between a composition of the invention and the best competitive proprietary premium gear additive package on the market at time of filing was run under the same conditions using the Big Wheel/Little Wheel test developed by General Motors. The lubricant of the invention ran 8569 miles before failure due to chattering. In contrast, the commercial additive ran only 4056 miles until failure due to chattering. This test is recognized by those skilled in the art as the GM Limited Slip Axle Test procedure (R-4A1-4) and is an important commercial performance test, with a severe test of limited slip axle performance from continuous engagement of the limited slip clutch pack due to differential wheel rpms from the different size tires utilized on the axle.

Appeal No. 95-5126  
Application No. 08/045,675

It appears that appellants are taking the position that the showing establishes that the claimed subject matter imparts unexpected results.

Upon making a factual inquiry into this showing, we are of the view that appellants have not met their burden of establishing unexpected results. See In re Geisler, 116 F.3d 1465, 1469-70, 43 USPQ2d 1362, 1365 (Fed. Cir. 1997); In re Klosak, 455 F.2d 1077, 1080, 173 USPQ 14, 16 (CCPA 1972). In the first place, we observe that appellants have not compared the claimed subject matter with the closest prior art. See In re Baxter Travenol Labs, 952 F.2d 388, 392, 21 USPQ2d 1281, 1285 (Fed. Cir. 1991); In re De Blauwe, 736 F.2d 699, 705, 222 USPQ 191, 196 (Fed. Cir. 1984). For the reason indicated supra, we determine that the composition described in the Barber reference is much closer to the claimed composition than that compared in the specification. In the second place, we note that the showing is not commensurate in scope with the degree of protection sought by claim 14 on appeal. See In re Kulling, 897 F.2d 1147, 1149, 14 USPQ2d 1056, 1058 (Fed. Cir. 1990); In re Grasselli, 713 F.2d 731, 743, 218 USPQ 769, 778 (Fed. Cir. 1983). While the showing is

Appeal No. 95-5126  
Application No. 08/045,675

limited to combining various specific ingredients to form a gear lubricant composition (see specification examples 1 and 2 at pages 15 and 16 together with example 12 at page 17 referred to by appellant), claim 14 is not so limited. Claim 14 not only specifically includes a myriad of compounds which are materially different from the specific compounds employed in the example referred to by appellant, but also does not require the presence of various specific ingredients required by appellant in the example. We find no evidence, and appellants have not offered any, that the result based on a single formulation can be reasonably extrapolated to support the claimed plethora of formulations containing materially different compounds.

According to appellants, the above showing also establishes that the subject matter of claim 14 is a commercial success. See Brief, page 17. On this record, however, appellants do not provide sufficient information upon which the examiner could conclude that the claimed subject matter is commercially successful. There is nothing in the record to show the market demand for appellants' gear lubricant composition; the growth of the market share

Appeal No. 95-5126  
Application No. 08/045,675

regarding appellants' gear lubricant composition; and the extent of profitability resulting from the sale of appellants' gear lubricant composition. Appellants simply fail to meet their burden of establishing commercial success.

Even were we to conclude that appellants' unsupported assertion is sufficient to establish commercial success, we do not believe that the required nexus is established between the showing in the specification and the claimed invention. See Stratoflex Inc. v. Aeroquip corp., supra, at 713 F.2d 1539, 218 USPQ 879 and Cable Electric Products, Inc. v. Genmark, Inc., 770 F.2d 1015, 1026-27, 226 USPQ 881, 887-88 (Fed. Cir. 1985). In this regard, we find nothing in the specification to indicate that the gear lubricant formulation referred to therein corresponds to the claimed invention for the reasons indicated supra. It must be emphasized that commercial success must be due to **claimed** features, and not due to unclaimed features (i.e., the evidence of commercial success must be commensurate in scope with the claims which the evidence is offered to support).

Appeal No. 95-5126  
Application No. 08/045,675

Joy Technologies Inc. v. Manbeck, 751 F.Supp. 225, 231, 17 USPQ2d 1257, 1260-61 (D.D.C. 1990), aff'd, 959 F.2d 226, 22 USPQ2d 1153, 1156 (Fed. Cir. 1992). Here again appellants fail to meet their burden of demonstrating the requisite nexus.

Having considered all of the evidence of record, we conclude that, on balance, the evidence of obviousness regarding the subject matter of claim 14 outweighs the evidence of nonobviousness proffered by appellants. Accordingly, we affirm the examiner's decision rejecting claims 14 through 21 under 35 U.S.C. § 103.

CLAIMS 1 THROUGH 13, 22 AND 23

Claims 1 through 13, 22 and 23, however, are on a different footing. These claims require, inter alia, that the weight ratio of a 3-hydrocarbyl-2, 5-diketopyrrolidine to a dimethyl ester of an aliphatic phosphonic acid be at least 3:1. See claims 1 and 22. This ratio is said to render the claimed composition homogeneous at a very low winter-like temperature. See claims

Appeal No. 95-5126  
Application No. 08/045,675

1 and 22 in conjunction with specification, pages 1 and 2. The applied prior art, however, does not recognize the importance of employing the claimed weight ratio of a 3-hydrocarbyl-2, 5-diketopyrrolidine to a dimethyl ester of an aliphatic phosphonic acid. The applied prior art is simply devoid of any suggestion, much less appellant's suggestion, for employing the claimed weight ratio of a 3-hydrocarbyl-2, 5-diketopyrrolidine to a dimethyl ester of an aliphatic phosphonic acid. Accordingly, we reverse the examiner's decision rejecting claims 1 through 13, 22 and 23 under 35 U.S.C. § 103.

#### CONCLUSION

In summary, we conclude that

- (1) the § 103 rejection of claims 14 through 21 is sustained; and
  - (2) the § 103 rejection of claims 1 through 13, 22 and 23 is not sustained.
- Accordingly, the decision of the examiner is affirmed-in-part.

Appeal No. 95-5126  
Application No. 08/045,675

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

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|-----------------------------|---|-----------------|
| BRADLEY R. GARRIS           | ) |                 |
| Administrative Patent Judge | ) |                 |
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|                             | ) | BOARD OF PATENT |
| CHUNG K. PAK                | ) | APPEALS         |
| Administrative Patent Judge | ) | AND             |
|                             | ) | INTERFERENCES   |
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|                             | ) |                 |
| TERRY J. OWENS              | ) |                 |
| Administrative Patent Judge | ) |                 |

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Appeal No. 95-5126  
Application No. 08/045,675

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Appeal No. 95-5126  
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Judge PAK

Judge OWENS

Judge GARRIS

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Typed: 14 Oct

98

DECISION: AFFIRMED-IN-

PART

Send Reference(s): Yes No  
or Translation(s)

Panel Change: Yes No

3-Person Conf. Yes No

Remanded: Yes No

Brief or Heard

Group Art Unit: 1111

Index Sheet-2901 Rejection(s): \_\_\_\_\_

Acts 2: \_\_\_\_\_

Palm: \_\_\_\_\_

Mailed: Updated Monthly Disk (FOIA): \_\_\_\_\_

Appeal No. 95-5126  
Application No. 08/045,675

Updated Monthly Report: \_\_\_\_