

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

Paper No. 24

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex Parte JOHANN G. SCHULZ and ENGELINA POROWSKI

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Appeal No. 1997-3337  
Application 08/189,899

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HEARD: November 28, 2000

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Before, WARREN, KRATZ and JEFFREY T. SMITH, Administrative Patent Judges.

JEFFREY T. SMITH, Administrative Patent Judge.

Decision on appeal under 35 U.S.C. § 134

Applicants appeal the decision of the Primary Examiner finally rejecting claims 1-5, 8-12, 14-17, 19, 22-28 and 30-32, all the claims in the application. We have jurisdiction under 35 U.S.C. § 134.<sup>1</sup>

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<sup>1</sup> Claims 6, 7, 13, 18, 20, 21 and 29 have been canceled by appellants in an after final amendment filed December 13, 1995. The after final amendment has been entered by the examiner. (Examiner Answer, page 1).

### BACKGROUND

The invention is drawn to an ignition promoter, a process for producing an ignition promoter and to a fuel containing the ignition promoter produced according to the process of the invention. The ignition promoter is said to be a nitro-ester compound produced by (1) heating a dispersion of a sugar in lower alcohol, e.g. methanol or ethanol, in the presence of an acid catalyst to form a first reaction product solution, (2) reacting the first reaction product with an oxirane to form a second reaction product, and (3) nitrating the second reaction product to produce a nitro-ester compound. (Specification page 5 line 16 to page 8, line 15). Representative claims 1, 17, 24 and 31 are reproduced below:

1. A process for preparing an ignition promoter comprising:  
forming a dispersion of a sugar in methanol or ethanol in the presence of an acid catalyst;  
heating said dispersion at a sufficient temperature to form a first reaction product solution;  
reacting said first reaction product with an oxirane to form a second reaction product;  
recovering the second reaction product;  
nitrating said recovered second reaction product to produce a nitro-ester compound; and  
recovering said nitro-ester compound.
  
17. An ignition promoter compound prepared by the process of:  
forming a dispersion of a sugar in a lower alcohol or lower ketone in the presence of an acid catalyst;

heating said dispersion to a temperature of about 50°C to 200°C to form a first reaction product solution;  
reacting said first reaction product with an oxirane to form a second reaction product;  
recovering said second reaction product;  
nitrating said recovered second reaction product to produce a nitro-ester compound; and  
recovering said nitro-ester compound.

24. A fuel for an internal combustion engine comprising at least one C<sub>1</sub>-C<sub>6</sub> alkyl alcohol; and an ignition promoter prepared by the process of:  
forming a dispersion of a sugar in a lower alcohol, lower ketone or mixture thereof in the presence of an acid catalyst;  
heating said dispersion at a sufficient temperature to form a first reaction product solution;  
reacting said first reaction product with an oxirane to form a second reaction product;  
recovering said second reaction product;  
nitrating said recovered second reaction product to produce a nitro-ester compound; and  
recovering said nitro-ester compound.
31. A process for preparing an ignition promoter comprising:  
forming a dispersion of a sugar in the presence of an acid catalyst in a polar medium selected from the group consisting of lower alcohols and lower ketones;  
heating said dispersion at a sufficient temperature to form a first reaction product solution;  
reacting said first reaction product solution with an oxirane to form a second reaction product;  
recovering the second reaction product;  
nitrating said recovered second reaction product to produce a nitro-ester compound; and  
recovering said nitro-ester compound.

As evidence of obviousness, the examiner relies on the following prior art:

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Muller et al. (Muller '027)	4,266,027	May 5, 1981
Muller et al.  (Muller '881)	4,448,881	May 15, 1984
Waniczek et al. 1984 (Waniczek)	4,465,028	August 14,

Stiff (Stiff)	EP 080314 European Patent Application	June 1, 1983
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The Merck Index: An Encyclopedia of Chemicals, Drugs, and  
Biologicals (550) (10th ed. 1983)

All of the claims on appeal stand rejected under 35  
U.S.C. § 103 as unpatentable over the combination of Stiff,  
Muller '027, Muller '881 and Waniczek. (Examiner's Answer,  
page 4). We reverse this rejection.

#### OPINION

Claims 1, 17, 24 and 31 are all the independent claims  
contained in this application. We have limited our  
consideration of the issues raised by this appeal as they  
apply to claims 1, 17, 24 and 31.

The Examiner finds the Stiff teaches the same or similar  
reaction process, nitro-ester compounds and fuel composition  
comprising the ester compound. (Examiner's answer, page 4,  
lines 14-15). The Examiner also acknowledges that Stiff does  
not indicate that the sugar is dissolved in a solvent in the

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presence of a catalyst and heating the solution. (Examiner's answer, page 4, lines 16-17).

The Examiner applies Muller '027 and '881 for the teaching the heating of an aqueous slurry containing sugar in the presence of an acid catalyst. (Examiner's answer, sentence bridging pages 4 and 5). The Examiner finds that Waniczek discloses ketones and alcohols are conventional solubilizers for nitrated sugar ether reaction products. (Examiner's answer, page 5, lines 5-8). From these findings the Examiner concludes:

Having the prior art before him it would have been obvious to the artisan in the art with the Muller references teachings to have prepared the sugar of Stiff as an aqueous sugar solution prior to reacting with the oxirane because the sugar solutions are conventional forms of the sugar for a further reaction process. Also, it is conventional known in the chemical art to prepare reaction compounds with conventional solvents, water, or Waniczek's alcohol or ketone for ease of reactions and to remove heat during reactions. The heating temperatures and pressures claimed by appellant fall within room temperatures and are rendered prima facie obvious with Stiff elevated temperatures, pressures above atmospheric, and the mild reaction conditions set forth at the top of page 3 of its specification. (Examiner's answer, page 5, lines 10-22).

The Examiner has not presented convincing evidence or reasoning, nor pointed to evidence in the cited references

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that one of ordinary skill in the art would be motivated to heat a dispersion of sugar, a lower alcohol or lower ketone in the presence of an acid catalyst to produce a first reaction product as required by claims 1 and 31. Muller '027 and '881 relate to a process for producing a starch containing material suitable for fermentation. On this record, there is no evidence that the sugars described in Muller '027 and '881 would be suitable for use as an intermediate compound in the process of Stiff. Further, we have not been directed to the advantages which would be obtained or the suitability of using the sugar compounds of Muller '027 and '881 in the process of Stiff. The mere fact that the prior art could be modified would not have made the modification obvious unless the prior art suggested the desirability of the modification. **In re Gordon**, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984); **In re Laskowski**, 871 F.2d 115, 117, 10 USPQ2d 1397, 1398 (Fed. Cir. 1989).

Claims 17 is drawn to an ignition promoter compound prepared by a specific process. Claim 24 is drawn to a fuel composition which contains an ignition promoter compound prepared by a specific process. It is a well known

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proposition that process steps in a product claim are limiting to the extent they further define the structure of the claim. **In re Thorpe**, 777 F.2d 695, 697, 227 USPQ 964, 965-966 (Fed. Cir. 1985). Thus, the ignition promoter required by claims 17 and 24 can be formed by a process which is not the same as the process stated in the claims. The appellants urge the ignition promoter of claim 17 and contained in the fuel composition of claim 24 is not the same as the ignition promoter of Stiff or obvious over the combination of Stiff, Muller '027, Muller '881 and Waniczek. (Brief, paragraph bridging pages 18 and 19, and page 20, first full paragraph). As stated above, we do not believe it is obvious to modify the prior art as suggested by the Examiner to form a nitro-ester compound. The Examiner has not asserted that the ignition promoter described by Stiff is the same as the ignition promoter of claim 17 and contained in the fuel composition of claim 24. We acknowledge that Stiff describes nitrate compounds containing sugar derivatives which function as an ignition promoter and fuel compositions containing these nitrate compounds. (Stiff, page 2, lines 5-11, page 4, lines 8-18, and page 9, lines 10-13). However, we have not been directed to a basis to believe the ignition promoter described

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by Stiff is the same as the ignition promoter of claim 17 and contained in the fuel composition of claim 24.

For the foregoing reasons and those stated in the Brief, we determine that the examiner's conclusion of obviousness is not supported by facts. "Where the legal conclusion [of obviousness] is not supported by facts it cannot stand." **In re Warner**, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967). Accordingly, the examiner's rejection of claims 1-5, 8-12, 14-17, 19, 22-28 and 30-32 under 35 U.S.C. § 103 as unpatentable over the combination of Stiff, Muller '027, Muller '881 and Waniczek is reversed.

#### **OTHER ISSUES**

Appellants have also sought review of the Examiner's objection to the introduction of new matter to the specification under 35 U.S.C. § 132. (Brief, page 6). The Board does not have jurisdiction to hear or decide issues pertaining to objections to the specification under 35 U.S.C. § 132. See 37 C.F.R. § 1.191.

**REVERSED**

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CHARLES F. WARREN )  
Administrative Patent Judge )  
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PETER F. KRATZ )APPEALS  
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