

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 26

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte THOMAS G. ARCHIBALD
and GERALD E. MANSER

Appeal No. 95-3340
Application 07/939,172¹

ON BRIEF

Before RONALD H. SMITH, DOWNEY and HANLON, Administrative Patent Judges.

DOWNEY, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the final rejection of claims 1-5. Claims 6-10, still pending in the application, stand withdrawn from consideration by the examiner.

¹ Application for patent filed September 2, 1992.

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The claims are directed to neopentyl difluoroamino compounds said to be useful as plasticizers and oxidizers in energetic formulations such as propellants, explosives, gasifiers and the like. Appellants indicate that they have found that by placing the difluoroamino group on a neopentyl carbon (i.e. a primary carbon directly bonded to a quaternary carbon), the available compounds have remarkable stability and low impact sensitivity. See page 2, SUMMARY OF THE INVENTION. Claim 1 is illustrative of the subject matter on appeal and reads as follows²:

1. A compound having the formula

in which either:

R¹, R² and R³ are members independently selected from the group consisting of H, lower alkyl, NF₂, ONO₂, NO₂, N₃ and N(R⁴)NO₂ where R⁴ is H or a lower alkyl;

² In the brief, claim 1 misidentifies R¹, R², R³, and R⁴ as R¹¹, R¹², R¹³ and R¹⁴, respectively.

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or:

R^1 and R^2 are combined as a single divalent radical which is a member selected from the group consisting of - $N(NO_2)$ - and - $N(NO_2)-CH_2-N(NO_2)-$; and

R^3 is a member selected from the group consisting of NF_2 , ONO_2 , NO_2 and N_3 .

All the claims stand or fall together. 37 C.F.R.

§ 1.192(c). (See Brief, page 4). Hence, we direct our attention to claim 1 with respect to the rejections.

The references relied upon by the examiner are:

Rohrback et al. (Rohrback)	3,729,501	Apr. 24, 1973
Goldstein et al. (Goldstein)	4,118,414	Oct. 3, 1978

Hafner et al. (Hafner), J. Am. Chem. Soc., Vol. 79, No. 14, pp. 3783-86 (1957).

Wenker, J. Am. Chem. Soc., Vol. 57, No. 6, pp. 1079-80 (1935).

Grakauskas et al. (Grakauskas), J. Org. Chem., Vol. 35, No. 5, pp. 1545-49 (1970).

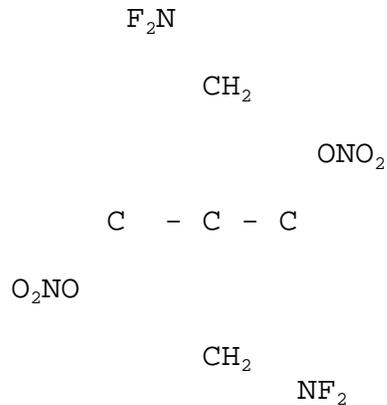
Claims 1-5 stand rejected under 35 U.S.C. § 103 as unpatentable over Rohrback. Claims 1-5 also stand rejected under 35 U.S.C. § 103 as unpatentable over Rohrback in view of Hafner, Wenker, Grakauskas and Goldstein. We reverse both rejections.

Opinion

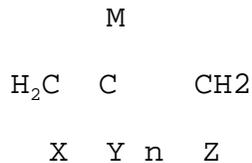
The examiner indicates that claims 1-5 have only been examined to the extent that they read on the elected species,

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namely the compound 2,3-bis(difluoroaminomethyl)-1,3-propanediol,
 dinitrate which compound has the following formula:



Rohrback discloses genus of compounds, useful as
 explosives or as ingredients in propellant compositions, having
 the following formula:

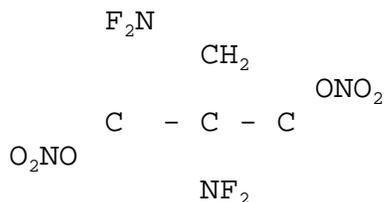


where n is an integer from 1 to 10, and
 preferably from 1 to 4, M is selected
 from the group consisting of H and CH₂-

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NF₂, and X, Y, and Z are selected from the group consisting of NF₂, NO₂ and ONO₂, with the proviso that the number of NF₂ groups is at least equal to n, but at least one NO₂ or ONO₂ group is present.

The examiner has taken the position that one of ordinary skill in the art would select n as 1, M as -CH₂NF₂, X and Z as -ONO₂, and Y as -NF₂ in the Rohrbach formula and arrive at the following formula



This compound (hereinafter referred to as the proffered compound) differs from that claimed in that the claimed compound, a quaternary compound, has a -CH₂- group between the central carbon and the NF₂ whereas the proffered compound, a tertiary compound, has no such alkylene group, the NF₂ group is directly bonded to the central carbon. The examiner takes two positions with

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respective to this difference, first is that the claimed compound is a homolog of the proffered compound and second that the claimed compound is so structurally similar to the proffered compound that one of ordinary skill in the art would have been motivated to make the claimed compound and to expect it to possess the same properties as the Rohrback compounds. The examiner relies upon the secondary references in combination with Rohrback to provide a method of making the claimed compound.

As stated by the court in In re Jones, 958 F.2d 347, 349-350, 21 USPQ2d 1941, 1943 (Fed. Cir. 1992):

The question of "structural similarity" in chemical patent cases has generated a body of patent law unto itself. [footnote omitted] Particular types or categories of structural similarity without more have, in past cases, given rise to prima facie obviousness; see e.g., In re Dillon, 919 F.2d 688, 692-94, 16 USPQ2d 1897, 1900-02 (Fed. Cir. 1990) (tri-orthoesters and tetra-orthoesters), cert. denied, _____ U.S. _____, 111 S.Ct. 1682 (1991); In re May, 574 F.2d 1082, 197 USPQ 601 (CCPA 1978) (stereoisomers); In re Wilder, 563 F.2d 457, 195 USPQ 426 (CCPA 1977)(adjacent homologs and structural isomers); In re Hoch, 428 F.2d 1341, 166 USPQ 406 (CCPA 1970)(acid and ethyl ester).

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None of these structurally similar types are involved here. Moreover, generalization should be avoided insofar as specific chemical structures are alleged to be prima facie obvious in view of one another. In re Grabiak, 769 F.2d 729, 732, 226 USPQ 870, 872 (Fed. Cir. 1985). Note also the court's comment in the decision of In re Rosselet, 347 F.2d 847, 851, 146 USPQ 183, 186 (CCPA 1965) that "We do not herein hold, impliedly or otherwise, that any compound differing from the prior art solely by a hydroxy or methyl group is deemed prima facie obvious in view of that art..." Thus the obviousness of chemical compounds must be decided on a case by case basis.

On the basis of the record before us, we cannot sustain the examiner's position and conclusion that the claimed compound and the proffered compound of Rohrback are so closely related in structure as to render the claimed compound prima facie obvious. There are two leaps made by the examiner which are unsupported by evidence. The first is that one of ordinary skill in the art would have made the selections proposed by the examiner for n, M, X, Y and Z. Cf. Merck Co., Inc. v. Biocraft Laboratories, Inc. 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir. 1989); and In re Susi,

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440 F.2d 442, 169 USPQ 423 (CCPA 1971) with In re Baird, F.3d 380, 29 USPQ2d 1550 (Fed. Cir. 1994); and In re Jones, supra. Second, even assuming arguendo that one of ordinary skill would have made the selections proposed by the examiner, the proffered compound differs from the claimed compound by the positioning of a -CH₂- group between the central carbon and NF₂ group attached to the central carbon. And on this record, the examiner has provided no evidence that one of ordinary skill in the art of explosives and/or propellants, after making the proposed selections, would have then been motivated to modify the proffered compound from a tertiary compound to a quaternary compound to arrive at the claimed compound. In re Grabiak, 769 F.2d at 732, 226 USPQ at 872. (There must be adequate support in the prior art for the change in structure as proposed by the

examiner in order to complete the PTO's prima facie case and shift the burden of going forward to the applicant).

Accordingly, we are constrained to reverse the examiner's rejections based on Rohrback alone or in combination with the secondary references.

REVERSED

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RONALD H. SMITH
Administrative Patent Judge

MARY F. DOWNEY
Administrative Patent Judge

ADRIENE LEPIANE HANLON
Administrative Patent Judge

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