

The 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 G. DEAN BARRETT and
JOHN A. CONKLING

Appeal 2007-1254
Application 10/352,542
Technology Center 1700

Decided: April 24, 2007

Before THOMAS A. WALTZ, CATHERINE Q. TIMM, and
LINDA M. GAUDETTE, *Administrative Patent Judges*.

WALTZ, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the Primary Examiner's final rejection of claims 30, 32-36, 40, 45, 82, 84-86, 89-94, and 106-108 (claims 96-102 were cancelled in an amendment after the Final Rejection; Br. 2).¹ The only other claims in this application are

¹ We refer to and cite from Appellants' Substitute Brief dated Oct. 6, 2006.

claims 1-7, 10-29, 37-39, 41-44, 46-81, 87-88, 103-105, and 109-117, which stand withdrawn from further consideration as directed to a non-elected invention (Br. 2; Final Office Action dated Jul. 6, 2005, page 2). We have jurisdiction pursuant to 35 U.S.C. § 6.

According to Appellants, the invention is directed to black powder substitutes free of corrosive sulfur compounds, where the propellant composition comprises a sulfur free deflagrating gas generating formulation including oxidizing and reducing agents, and a first ignition aid of sodium nitrobenzoate salt (Br. 3). Independent claim 30 and dependent claim 32 are illustrative of the invention and are reproduced below:

30. A propellant composition comprising a sulfur free deflagrating gas generating formulation including oxidizing and reducing agents selected from the group consisting of carbon, sugars, nitrate salts, perchlorate salts, benzoate salts, and mixtures thereof, and a first ignition aid of sodium nitrobenzoate salt.

32. The propellant composition as in Claim 30, said sulfur free deflagrating gas generating formulation including oxidizing and reducing agents selected from the group consisting of carbon, lactose, potassium nitrate, potassium perchlorate, sodium benzoate, and mixtures thereof.

The Examiner has relied on the following prior art reference as evidence of obviousness:

Pawlak

US 4,128,443

Dec. 5, 1978

ISSUES ON APPEAL

Claims 30, 32-36, 40, 45, 82, 84-86, 89-94, and 106-108 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Pawlak (Answer 4).²

Appellants contend that Pawlak does not mention the compound sodium nitrobenzoate, does not eliminate sulfur, teaches that ammonium salts are not equivalent to alkali metal salts (i.e., sodium, potassium, and lithium salts), and teaches the use of ammonium nitrobenzoate only as a fuel, not as the ignition aid as presently claimed (Br. 4-10).

The Examiner contends that Pawlak teaches a propellant gas-generating composition containing oxidizing agents and an organic carboxylic acid or oxidizable derivative thereof, specifically teaching that alkali metal or ammonium salts of this latter class of compounds may be used, while disclosing the compound ammonium m-nitrobenzoate (Answer 4-5).

Accordingly, the issue presented in this appeal is as follows: does the specific disclosure of ammonium m-nitrobenzoate as a fuel in the propellant composition of Pawlak, with a teaching that alkali metal salts can also be used, render obvious the ignition aid sodium nitrobenzoate salt in the claimed propellant composition?

We determine that the Examiner has established a *prima facie* case of obviousness in view of the reference evidence, which *prima facie* case has not been adequately rebutted by Appellants' arguments. Therefore, we

² We refer to and cite from the Examiner's Answer dated Nov. 24, 2006. We also note that the Examiner inadvertently included claims 8 and 9 in the rejection (Answer 4). However, claims 8-9 have been cancelled (Br. 2). Accordingly, we only consider the claims as listed above.

AFFIRM the sole ground of rejection in this appeal essentially for the reasons stated in the Answer, as well as those reasons set forth below.

OPINION

We determine the following factual findings from the record in this appeal:

- (1) Pawlak discloses gas-forming deflagrating compositions comprising approximately 30-82.5 parts by weight of an oxygen-containing oxidizing agent such as inorganic nitrates, inorganic perchlorates, inorganic chlorates, or inorganic permanganates, approximately 14.5-45 parts by weight of an organic carboxylic acid or oxidizable derivative, and approximately 1.0 to 25.0 parts by weight of water (col. 1, ll. 5-8; col. 2, l. 30-col. 3, l. 21; Answer 4);
- (2) Pawlak teaches that “[w]e have found that a wide range of derivatives are useful for the purpose of our invention; for example, ammonium and metallic salts of said carboxylic acids, amides, esters...” (col. 3, l. 66-col. 4, l. 4);
- (3) Pawlak teaches that “[p]articularly preferred salts of said carboxylic acids are the ammonium and alkali metallic salts of aromatic carboxylic acids as above defined,” specifically listing ammonium m-nitrobenzoate as a useful fuel for the deflagrating compositions of the invention (col. 4, ll. 10-18); and
- (4) Pawlak teaches one embodiment where the above-described compositions are mixed with the normal ingredients and proportions of black powder (i.e., containing 10 parts of sulfur)

but exemplify many gas-generating deflagrating compositions without sulfur (col. 4, ll. 27-35; Examples 3-8 at col. 7, ll. 5-40).

“Even when obviousness is based on a single prior art reference, there must be a showing of a suggestion or motivation to modify the teachings of that reference.” *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1316-17 (Fed. Cir. 2000). An express suggestion to substitute one equivalent for another need not be present to render such a substitution obvious. *See In re Fout*, 675 F.2d 297, 301, 213 USPQ 532, 536 (CCPA 1982). “These terms merely set forth the intended use for, or a property inherent in, an otherwise old composition. As the board pointed out, such terms do not differentiate the claimed composition from those known to the prior art. [Citations omitted].” *In re Pearson*, 494 F.2d 1399, 1403, 181 USPQ 641, 644 (CCPA 1974).

Applying the preceding legal principles to the factual findings in the record of this appeal, we determine that the Examiner has established a *prima facie* case of obviousness in view of the reference evidence, which *prima facie* case has not been adequately rebutted by Appellants’ arguments. As shown by factual findings (1) and (4) listed above, we determine that Pawlak discloses a sulfur free deflagrating gas generating formulation including oxidizing and reducing agents within the scope of claims 30 or 32 on appeal, as well as teaching the inclusion of ammonium m-nitrobenzoate

salt in the deflagrating composition.³ Contrary to Appellants' arguments (Br. 6-8 and 10), we determine that Pawlak clearly teaches the equivalence of ammonium and alkali metal salts for the carboxylic acid derivative component, including esters such as benzoates (*see* factual findings (2) and (3) listed above). Accordingly, we determine that one of ordinary skill in this art, following the teachings of Pawlak, would have been led to the sodium m-nitrobenzoate salt as required by claims 30 or 32 on appeal. The denomination of the sodium nitrobenzoate salt as an "ignition aid" in claim 30 on appeal instead of a "fuel" as taught by Pawlak does not differentiate the claimed composition from that known in the prior art since these terms only refer to the intended use. (*See Pearson, supra;* Answer 6).

For the foregoing reasons and those stated in the Answer, we AFFIRM the rejection of claims 30, 32-36, 40, 45, 82, 84-86, 89-94, and 106-108 under § 103(a) over Pawlak.

The decision of the Examiner is affirmed.

³ Appellants state that claims 32 and 45 should be considered in this appeal but only present a specific argument for the separate patentability of claim 45 (Br. 4 and 10). With regard to this argument, we determine that the amount of nitrobenzoate salt recited in claim 45 overlaps with or varies by such a small amount (12% vs. 14 parts by weight) over Pawlak that one of ordinary skill in the art would have expected similar results and properties. *See Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 781, 227 USPQ 773, 779 (Fed. Cir. 1985).

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv) (2006).

AFFIRMED

tf/ls

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