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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ROBERT L. HATCH

Appeal 2013-002149
Application 11/437,006
Technology Center 1700

Before BRADLEY R. GARRIS, ROMULO H. DELMENDO, and
GEORGE C. BEST, *Administrative Patent Judges*.

DELMENDO, *Administrative Patent Judge*

DECISION ON APPEAL

The named inventor (hereinafter “the Appellant”)¹ seeks our review under 35 U.S.C. § 134(a) of a final rejection of claims 1-20. We have jurisdiction under 35 U.S.C. § 6(b). We reverse.

STATEMENT OF THE CASE

The current application is for a reissue of U.S. Patent 6,736,913 B1 (“’913 Patent”), which issued May 18, 2004 from Application 10/000,244, which was filed October 18, 2001 and claims priority to Provisional Application 60/244,193, filed October 31, 2000.

Representative claim 1 is reproduced below (with double bracketed and underlined texts indicating deletions and insertions, respectively, relative to the original ’913 Patent):

1. A method for processing an explosive composition, comprising:

mixing a binder system comprising at least one liquid polymeric binder and at least one processing oil selected from the group consisting of naphthenic oil and paraffinic oil;

adding solid energetic ingredients into the binder system, the solid energetic ingredients comprising 2,4,6, 8,10,12-hexanitro-2,4,6, 8,10,12-hexaazatetracyclo [5.5.0.0.^{5,9}0^{3,11}] - dodecane (CL-20); [[and]]

mixing the binder system and the solid energetic ingredients at a temperature within a range of from about room temperature to about 65°C to form a free-flowing suspension in which the solid energetic ingredients are homogeneously mixed and coated with the binder [[system, the solid energetic ingredients comprising at least 30% by weight of the explosive composition.]]system; and

¹ The Appellant identifies the real party in interest as “Alliant Techsystems, Inc.” Appeal Brief filed February 29, 2012 (“App. Br.”) at 2.

casting the free-flowing suspension.

App. Br. 33 (Claims App'x.).

The Examiner rejected the claims as follows:

- I. Claims 1-20 under 35 U.S.C. § 112, ¶ 2, as indefinite; and
- II. Claims 1-20 under 35 U.S.C. § 103(a) as unpatentable over McDevitt,² Minekawa,³ and Warren.⁴

Examiner's Answer entered September 10, 2012 ("Ans.") 4-9.

DISCUSSION

I. *Indefiniteness*

All three independent claims, namely claims 1, 6, and 20, recite the same disputed limitation. Therefore, we limit our discussion to claim 1.

The Examiner asserted that claims 1-20 are indefinite because "[t]he term 'free-flowing' is used by the claim[s] to mean a thick mixture while the accepted meaning is a lower viscosity mixture" and "the specification does not clearly redefine the term." Ans. 4-5. According to the Examiner, "[t]he viscosity claimed and disclosed is that of a very thick mixture, approximately the consistency of peanut butter" and it is inappropriate to "refer to a mixture of this type of viscosity as 'free flowing' when in reality it is not." *Id.* at 7.

The Appellant counters that the Examiner has misinterpreted the disputed claim limitation and the Specification describes methods that produce explosive compositions that are in fact "free-flowing." App. Br. 6. The Appellant maintains that one skilled in the relevant art would

² U.S. Patent 3,834,957 issued September 10, 1974.

³ U.S. Patent 3,449,179 issued June 10, 1969.

⁴ U.S. Patent 6,168,677 B1 issued January 2, 2001.

understand the meaning of the disputed claim limitation based on the description in the Specification. *Id.* at 8.

Thus, the issue arising from these contentions is:

Did the Appellant demonstrate reversible error in the Examiner's conclusion that one skilled in the relevant art would not be able to ascertain the scope of the disputed claim limitation?

We agree with the Appellant that the Examiner's rejection is not well founded. "The legal standard for definiteness is whether a claim reasonably apprises those of skill in the art of its scope." *In re Warmerdam*, 33 F.3d 1354, 1361 (Fed. Cir. 1994). In applying this standard, the written description of the current Specification, not extrinsic evidence, is the most relevant evidence that must be considered. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005). Furthermore, our reviewing court has repeatedly cautioned that "it would be unreasonable for the PTO to ignore any interpretive guidance afforded by the applicant's written description." *See, e.g., In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997).

In this case, the '913 Patent Specification enlightens one skilled in the relevant art as to the meaning of the term "free-flowing" as follows:

Unlike conventional plasticizers, when CL-20 is mixed in a binder plasticized with a sufficient amount of processing oils, the resulting explosive *composition has a sufficiently low viscosity to allow for homogenous mixing of the solid ingredients in the plasticized binder and to establish, prior to curing of the composition, a relatively free-flowing suspension that can be cast into a desired configuration without the formation of air pockets.*

Col. 2, l. 66 to col. 3, l. 6 (italics added). Furthermore, the '913 Patent Specification informs one skilled in the relevant art that "the present invention produces cast explosives without the need to rely on solvents and

high-shear mixing equipment” and that the “[m]ixing is generally performed in a temperature range of about room temperature to about 65°C.” Col. 3, ll. 14-16, 48-51.

Consistent with the other limitations recited in claim 1, these disclosures in the written description reasonably apprise one skilled in the relevant art that the term “free-flowing suspension” was intended to encompass a suspension that has a sufficiently low viscosity so as to allow homogeneous mixing without the need for solvents or high-shear mixing and casting without the formation of air pockets. Therefore, we conclude that one skilled in the relevant art would have understood the scope of the disputed claim limitation when read in light of the Specification.

The Examiner’s argument that the suspension recited in claim 1 is not “free flowing” is contradicted by the ’913 Patent Specification. As pointed out by the Appellant, the ’913 Patent Specification provides details on the actual preparation of a homogenous mixture and subsequent casting of the mixture. App. Br. 6; Spec. col. 6, l. 25 to col. 8, l. 32. These examples provide unrebutted evidence that the suspensions recited in the claims are in fact “free-flowing,” as that term is properly construed in light of the Specification.

For these reasons, we cannot uphold the Examiner’s indefiniteness rejection.

II. Obviousness

The Examiner found that McDevitt describes a “method substantially as claimed including homogeneous mixing of a binder system including polymers of butadiene with nitramine particles (HMX) that also includes

cure catalyst and curative,” where the mixture is subsequently cast. Ans. 5. The Examiner further found that Minekawa teaches the use of naphthenic oil in explosive compositions to improve processing and molding. *Id.* Additionally, the Examiner found that Warren teaches that “it is known to use CL-20 in place of HMX and RDX.” *Id.* Based on these teachings, the Examiner concluded that a person of ordinary skill in the art would have found the claimed subject matter obvious. *Id.* at 5-6. Regarding the Appellant’s rebuttal evidence, the Examiner stated that: (1) the showing is not commensurate in scope with the claims; (2) the evidence has not been shown to be unexpected; and (3) the evidence has not been shown to be a comparison of the claimed invention against the closest prior art. *Id.* at 9.

The Appellant argues that the prior art references do not teach all the claim limitations and the Examiner did not articulate a sufficient reason for combining the references. App. Br. 12-21. In addition, the Appellant contends that the proffered evidence establishes unexpected results. App. Br. 21-30; *see also* Reply Brief filed November 8, 2012 at 6-9.

Thus, a dispositive issue is:

Did the Appellant show that the Examiner erred in finding that the rebuttal evidence does not include unexpected results?

We agree with the Appellant on this issue as well. Our reasons follow.

McDevitt describes a method for producing composite propellants including: mixing an oxidant component, which is a mixture of HMX (cyclotetramethylenetetranitroamine) and potassium perchlorate, with a binder mixture and n-hexane; removing n-hexane; and then either casting or extruding the propellant mixture. Col. 2, l. 15 to col. 3, l. 38.

The Examiner appears to acknowledge that McDevitt differs from the subject matter recited in independent claims 1, 6, and 20 in that the reference does not describe the use of (1) naphthenic or paraffinic oil and (2) CL-20. Ans. 5.

To account for difference (1), the Examiner relied on Minekawa. *Id.* Minekawa teaches that it is desirable to use a suitable amount of naphthenic, aromatic, or paraffinic hydrocarbon when the explosive composition is kneaded or worked by compression- or roll-molding at a relatively low temperature. Col. 4, l. 72 to col. 5, l. 2.

To account for difference (2), the Examiner relied on Warren. Ans. 5. Warren teaches that “CL-20 . . . can be used for either RDX or HMX [as oxidizers] and not change overall ballistic properties, significantly.” Col. 3, l. 66 to col. 4, l. 7.

Even assuming that the Examiner articulated a sufficient reason to combine the references in the manner claimed, we find that the Examiner’s evaluation of the rebuttal evidence constituted prejudicial error. The Declaration of Robert L. Hatch (inventor) executed October 17, 2011 (Appendix B) includes a direct comparison of an explosive composition according to the claimed invention against the closest prior art. Specifically, the Declaration includes an analysis of Table 4 of the ’913 Patent Specification, which shows that the Appellant’s explosive composition including CL-20 had a significantly low viscosity of only 2.4 kp (Example 9), whereas a composition based on HMX and RDX had viscosities of 29 kp and 12 kp, respectively. ¶¶ 10-12. The Appellant declared that these results were unexpected. ¶ 13. Thus, contrary to the Examiner’s findings, the proffered evidence includes a direct comparison of the claimed invention

against the closest prior art and demonstrates that the results would have been unexpected.

While the Examiner argues that the claims do not recite specific viscosity values, binding precedent forbids such an approach. *In re Merchant*, 575 F.2d 865, 869 (CCPA 1978) (“We are aware of no law requiring that unexpected results relied upon for patentability be recited in the claims.”). Rather, it is sufficient that the claim recites an element, which is not in the closest prior art, that causes the unexpected result. *In re Kao*, 639 F.3d 1057, 1068 (Fed. Cir. 2011).

The Examiner’s argument that the showing is not commensurate in scope with the claims because the claims do not recite the amounts of ingredients is also unpersuasive. As argued by the Appellant, the Examiner failed to explain why the amounts for the components of a given explosive composition would have any effect on the unexpected result obtained by using CL-20 relative to HMX. Ans. 9; Reply Br. 8.

For these reasons, we cannot uphold the Examiner’s obviousness rejection.

SUMMARY

The Examiner’s rejection under 35 U.S.C. § 112, ¶ 2, of claims 1-20 as indefinite is reversed.

The Examiner’s rejection under 35 U.S.C. § 103(a) of claims 1-20 as unpatentable over McDevitt, Minekawa, and Warren is reversed.

REVERSED

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