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Paper 12
Entered: October 3, 2017

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NEW NGC, INC. dba NATIONAL GYPSUM COMPANY,
Petitioner,

v.

UNITED STATES GYPSUM COMPANY,
Patent Owner.

Case IPR2017-01011
Patent 7,964,034 B2

Before RAE LYNN P. GUEST, JON B. TORNQUIST, and JEFFREY W. ABRAHAM, *Administrative Patent Judges.*

TORNQUIST, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

New NGC, Incorporated dba National Gypsum Company ("Petitioner") filed a corrected Petition (Paper 7, "Pet.") requesting *inter partes* review of claims 1, 2, 4, 5, and 7–9 of U.S. Patent No. 7,964,034 B2 (Ex. 1029, "the '034 patent"). United States Gypsum Company ("Patent Owner") filed a Preliminary Response to the Petition (Paper 8, "Prelim.

Resp.”). Subsequently, Petitioner filed a Reply to the Preliminary Response (Paper 10), to which Patent Owner filed a Sur-reply (Paper 11).

We have authority to determine whether to institute an *inter partes* review. 35 U.S.C. § 314; 37 C.F.R. § 42.4(a). The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted “unless the Director determines . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.”

After considering the Petition, Preliminary Response, Reply, and Sur-reply, we determine that Petitioner has not demonstrated a reasonable likelihood of prevailing with respect to the challenged claims. Accordingly, we do not institute *inter partes* review.

A. Related Proceedings

The parties inform us that the ’034 patent is currently at issue in *United States Gypsum Co. v. New NGC, Inc.*, Case No. 1:17-cv-00130 (D. Del. Feb. 6, 2017). Pet. 1; Paper 4, 2. In addition, related U.S. Patent Nos. 6,632,550 B1 and 7,425,236 B2 are at issue in IPR2017-01086 and IPR2017-01088, respectively. Pet. 1.

B. The ’034 Patent

The ’034 patent discloses a method and composition for preparing set gypsum-containing products having increased resistance to permanent deformation (e.g., sag resistance). Ex. 1029, 1:23–31.

The ’034 patent explains that most gypsum-containing products are prepared by forming a mixture of calcined gypsum (calcium sulfate hemihydrate and/or calcium sulfate anhydrite) and water, casting the mixture into a desired shape, and allowing the mixture to harden to form set gypsum.

Id. at 2:6–11. During this process, the calcined gypsum is rehydrated with water, forming an interlocking matrix of set gypsum crystals (calcium sulfate dihydrate) and imparting strength to the gypsum-containing product. *Id.* at 2:10–19. Although the matrix of gypsum crystals increases the strength of the gypsum-containing product, the '034 patent posits that existing gypsum-containing products could still benefit if the strength of their component set gypsum crystal structures were increased. *Id.* at 2:20–23.

To increase the strength, dimensional stability, and resistance to permanent deformation of set gypsum-containing products, the '034 patent discloses mixing calcium sulfate material, water, and an appropriate amount of one or more enhancing materials. *Id.* at 1:28–37. In a preferred embodiment, the enhancing material is in the form of trimetaphosphate ions derived from sodium trimetaphosphate (STMP). *Id.* at 4:14–26. According to the '034 patent, it was found that the set gypsum-containing products incorporating this compound were "unexpectedly found to have increased strength, resistance to permanent deformation (e.g., sag resistance), and dimensional stability, compared with set gypsum formed from a mixture containing no trimetaphosphate ion." *Id.* at 4:32–38. It was also "unexpectedly found that trimetaphosphate ion . . . does not retard the rate of the formation of set gypsum from calcined gypsum," and, in fact, actually accelerates the rate of rehydration. *Id.* at 4:40–46. According to the '034 patent, this is "especially surprising" because most "phosphoric or phosphate materials retard the rate of formation of set gypsum and decrease the strength of the gypsum formed." *Id.* at 4:46–51.

C. Illustrative Claim

Claim 1 is illustrative of the challenged claims and is reproduced below:

> 1. A method for producing a set gypsum-containing product comprising forming a mixture of calcined gypsum, water, an accelerator, and one or more enhancing materials chosen from the group consisting of: sodium trimetaphosphate, tetrapotassium pyrophosphate, tetrasodium pyrophosphate, aluminum trimetaphosphate, sodium acid pyrophosphate, ammonium polyphosphate having 1000-3000 repeating phosphate units, and acids, salts, or the anionic portions thereof, and
>
> maintaining the mixture under conditions sufficient for the calcined gypsum to form an interlocking matrix of set gypsum,
>
> the enhancing material or materials having been included in the mixture in an amount such that the set gypsum-containing product has greater resistance to permanent deformation than it would have if the enhancing material had not been included in the mixture, such that when the mixture is cast in the form of ½ inch gypsum board, said board has a sag resistance, as determined according to ASTM C473-95, of less than about 0.1 inch per two foot length of said board,
>
> the accelerator having been included in an amount such that the set gypsum-containing product has greater strength than it would have if the accelerator had not been included in the mixture.

Ex. 1029, 31:23–46.

D. The Asserted Grounds of Unpatentability

Petitioner contends claims 1, 2, 4, 5, and 7–9 of the '034 patent are unpatentable based on the following grounds (Pet. 2):[1]

[1] Petitioner also relies on a declaration from Mr. Gerry Harlos (Ex. 1001).

References	Basis	Claims Challenged
Graux,[2] ASTM C473-95,[3] and Hjelmeland[4]	§ 103	1, 2, 4, 5, and 7–9
Satterthwaite,[5] ASTM C473-95, and Hjelmeland	§ 103	1, 2, 4, 5, and 7–9

Petitioner contends that Graux is prior art to the '034 patent under 35 U.S.C. § 102(e), Satterthwaite and ASTM C473-95 are prior art under § 102(b), and Hjelmeland is prior art under § 102(e) and/or § 102(a).[6] Pet. 15–19; Reply 1.

II. ANALYSIS

A. Claim Construction

In an *inter partes* review, "[a] claim in an unexpired patent shall be given its broadest reasonable construction in light of the specification of the patent in which it appears." 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016) (upholding the use of the broadest reasonable interpretation standard). Claims of a patent that will expire within 18 months from the Notice of Filing Date, however, are construed using "a district court-type claim construction approach," provided a motion under 37 C.F.R. § 42.20 is filed within 30 days from the

[2] U.S. Patent No. 5,932,001, issued Aug. 3, 1999 (Ex. 1006).
[3] *Standard Test Methods for Physical Testing of Gypsum Board Products and Gypsum Lath*, AMERICAN SOCIETY FOR TESTING AND MATERIALS 1–11 (1995) (EX. 1009).
[4] U.S. Patent No. 5,980,628, issued Nov. 9, 1999 (Ex. 1008).
[5] U.S. Patent No. 3,234,037, issued Feb. 8, 1966 (Ex. 1007).
[6] We authorized the filing of the Reply and Sur-reply to allow the parties to address the prior art status of Hjelmeland. Because we deny the Petition on different grounds, we decline to address the prior art status of Hjelmeland in this Decision.

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