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Paper 8
Entered: October 6, 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 IPR2017-01350
Patent 6,342,284 B1

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 Petition (Paper 2, "Pet.") requesting *inter partes* review of claims 1–7, 10–15, 18, 22, 26, 29, 32–34, and 40 of U.S. Patent No. 6,342,284 B1 (Ex. 1003, "the '284 patent"). United States Gypsum Company ("Patent Owner") filed a Preliminary Response to the Petition (Paper 7, "Prelim. Resp.").

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 and Preliminary Response, 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 '284 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, 1. In addition, the parties indicate that related patents are at issue in IPR2017–01011 (US 7,964,034), IPR2017-01086 (US 6,632,550), IPR2017–01088 (US 7,425,236), IPR2017–1351 (US 7,758,980), IPR2017–01352 (US 8,142,914), and IPR2017–01353 (US 8,500,904). Pet. 1; Paper 4, 1.

B. The '284 Patent

The '284 patent discloses a method and composition for preparing set gypsum-containing products having increased resistance to permanent deformation (e.g., sag resistance). Ex. 1003, 1:17–20.

The '284 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 1:62–1:67. 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 structure of the gypsum-containing product. *Id.* at 1:65–2:8. Although the matrix of gypsum crystals increases the strength of the gypsum-containing product, the '284 patent posits that existing gypsum-containing products could still benefit if the strength of their component set gypsum crystal structures were increased. *Id.* at 2:9–12.

To increase the strength, dimensional stability, and resistance to permanent deformation of set gypsum-containing products, the '284 patent discloses mixing calcium sulfate material, water, and an appropriate amount of one or more enhancing materials. *Id.* at 1:17–20. In a preferred embodiment, the enhancing material is in the form of trimetaphosphate ions derived from sodium trimetaphosphate (STMP). *Id.* at 4:25–34. According to the '284 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 4:35–41. 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 4:42–48. According to the '284 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 4:48–54.

C. Illustrative Claim

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

> 1. A composition comprising a mixture of: a calcium sulfate material, water, a pregelatinized starch and one or more enhancing materials selected from the group consisting of:
>
> condensed phosphoric acids, each of which comprises 2 or more phosphoric acid units; and salts or ions of condensed phosphates, each of which comprises 2 or more phosphate units,
>
> wherein when said composition 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.

Ex. 1003, 31:50–59 (line breaks added for readability).

D. The Asserted Grounds of Unpatentability

Petitioner contends claims 1–7, 10–15, 18, 22, 26, 29, 32–34, and 40 of the '284 patent are unpatentable based on the following grounds (Pet. 2–3):[1]

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

References	Basis	Claims Challenged
Graux,[2] ASTM C473-95,[3] Hjelmeland,[4] Sucech,[5] Baig,[6] and Summerfield[7]	§ 103	1–7, 10–15, 18, 22, 26, 29, 32–34, and 40
Satterthwaite,[8] ASTM C473-95, Hjelmeland, Sucech, Baig, and Summerfield	§ 103	1–7, 10–15, 18, 22, 26, 29, 32–34, and 40

Petitioner contends that Sucech is prior art to the '284 patent under 35 U.S.C. § 102(a), Graux and Hjelmeland are prior art under at least § 102(e), and Satterthwaite, ASTM C473-95, Baig, and Summerfield are prior art under § 102(b). Pet. 13–20. Patent Owner contests the prior art status of Hjelmeland; however, in view of our determination that institution is not warranted on other grounds, we need not reach this issue.[9] Prelim. Resp. 16–17.

[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, 1995 (EX. 1009).
[4] U.S. Patent No. 5,980,628, issued Nov. 9, 1999 (Ex. 1008).
[5] U.S. Patent No. 5,643,510, issued July 1, 1997 (Ex. 1036).
[6] U.S. Patent No. 5,320,677, issued June 14, 1994 (Ex. 1024).
[7] U.S. Patent No. 2,985,219, issued May 23, 1961 (Ex. 1017).
[8] U.S. Patent No. 3,234,037, issued Feb. 8, 1966 (Ex. 1007).
[9] On September 25, 2017, Petitioner requested authorization to file a reply addressing the prior art status of Hjelmeland. We took that request under advisement. In view of our denial of the Petition on other grounds, we deem Petitioner's request moot.

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