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 No. IPR2017-1011 Patent No. 7,964,034

PETITION FOR *INTER PARTES* REVIEW OF UNITED STATES PATENT NO. 7,964,034 PURSUANT TO 35 U.S.C. §§ 311–319, 37 C.F.R. § 42

Mail Stop PATENT BOARD Patent Trial and Appeal Board US Patent and Trademark Office PO Box 1450 Alexandria, Virginia 22313-1450

DOCKET

TABLE OF CONTENTS

 MANDATORY NOTICES UNDER 37 C.F.R § 42.8
GROUNDS FOR STANDING UNDER 37 C.F.R. § 42.104(a)2
PAYMENT OF FEES
OVERVIEW OF CHALLENGES AND RELIEF REQUESTED2
INTRODUCTION
TECHNICAL BACKGROUND OF THE '034 PATENT
PROSECUTION HISTORY OF THE '034 PATENT
CLAIM CONSTRUCTION
PRIOR ART REFERENCES15A.Graux15B.Satterthwaite16C.ASTM18D.Hjelmeland19
THERE IS A REASONABLE LIKELIHOOD THAT AT LEAST ONE CLAIM OF THE `034 PATENT IS UNPATENTABLE

В.	Mapping of Claim Elements25
	Claim 1a: A method for producing a set gypsum-containing
	product comprising;25
	Claim 1b: 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, and26
	Claim 1c: maintaining the mixture under conditions sufficient
	for the calcined gypsum to form an interlocking matrix of
	set gypsum,27
	Claim 1d: 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 $1/2$ 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,
	Claim 1e: 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
	Claim 2: The method of claim 1, wherein the concentration of
	the enhancing material in the mixture is from about 0.004
	to about 2.0 percent by weight, based on the weight of
	the calcined gypsum;
	Claim 4: The method of claim 1, wherein the calcined gypsum
	comprises one or more of: calcium sulfate anhydrite;
	calcium sulfate hemihydrate; or ions of calcium and
	sulfate;
	Claim 5: The method of claim 1, wherein the enhancing
	material comprises one or more of the following salts, or
	the anionic portions thereof: sodium trimetaphosphate
	and ammonium polyphosphate having 1000-3000
	repeating phosphate units;

ii

		Claim 7a: A method for producing a set gypsum-containing	
		product comprising:	6
		Claim 7b: forming a mixture of calcined gypsum, water, 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, and3	6
		Claim 7c: maintaining the mixture under conditions sufficient	
		for the calcined gypsum to form a set gypsum material,	7
		Claim 7d: 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 $1/2$ 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;	8
		Claim 8: The method of claim 7 wherein the set gypsum	
		material comprises an interlocking matrix of set gypsum;3	9
		Claim 9: The method of claim 7 wherein said mixture includes	
		an accelerator;	9
XII.	GROI	UND 2: OBVIOUSNESS OF CLAIMS 1, 2, 4, 5, AND 7-9 BY	
		TERTHWAITE IN VIEW OF ASTM C473-95 AND	
			0
	A.	Reasons for Combining Satterthwaite, ASTM C473-95, and	
		Hjelmeland4	0
	B.	Mapping of Claim Elements4	4
		Claim 1a: A method for producing a set gypsum-containing	
		product comprising;	4
		Claim 1b: 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-	
		rjr	

3000 repeating phosphate units, and acids, salts, or the
anionic portions thereof, and44
Claim 1c: maintaining the mixture under conditions sufficient
for the calcined gypsum to form an interlocking matrix of
set gypsum,
Claim 1d: 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 $1/2$ 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,
Claim 1e: 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
Claim 2: The method of claim 1, wherein the concentration of
the enhancing material in the mixture is from about 0.004
to about 2.0 percent by weight, based on the weight of
the calcined gypsum;
Claim 4: The method of claim 1, wherein the calcined gypsum
comprises one or more of: calcium sulfate anhydrite;
calcium sulfate hemihydrate; or ions of calcium and
sulfate;
Claim 5: The method of claim 1, wherein the enhancing
material comprises one or more of the following salts, or
the anionic portions thereof: sodium trimetaphosphate
and ammonium polyphosphate having 1000-3000
repeating phosphate units;
Claim 7a: A method for producing a set gypsum-containing
product comprising:
Claim 7b: forming a mixture of calcined gypsum, water, 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

DOCKET A L A R M



Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.