

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference 4542 WO	FOR FURTHER ACTION	See item 4 below
International application No. PCT/US2015/015305	International filing date (<i>day/month/year</i>) 11 February 2015 (11.02.2015)	Priority date (<i>day/month/year</i>) 18 February 2014 (18.02.2014)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant UNITED STATES GYPSUM COMPANY		

1.	This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).																								
2.	This REPORT consists of a total of 7 sheets, including this cover sheet.																								
In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.																									
3.	This report contains indications relating to the following items: <table style="width: 100%;"> <tr> <td style="width: 5%; text-align: center;">☒</td> <td style="width: 25%;">Box No. I</td> <td style="width: 70%;">Basis of the report</td> </tr> <tr> <td style="text-align: center;">☐</td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td style="text-align: center;">☐</td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center;">☐</td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center;">☒</td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center;">☐</td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center;">☒</td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center;">☒</td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>	☒	Box No. I	Basis of the report	☐	Box No. II	Priority	☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	☐	Box No. IV	Lack of unity of invention	☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	☐	Box No. VI	Certain documents cited	☒	Box No. VII	Certain defects in the international application	☒	Box No. VIII	Certain observations on the international application
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4.	The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).																								

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 338 82 70	Date of issuance of this report 23 August 2016 (23.08.2016) Authorized officer Simin Baharlou e-mail: pt09.pct@wipo.int
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PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
see form PCT/ISA/220

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference see form PCT/ISA/220		FOR FURTHER ACTION See paragraph 2 below
International application No. PCT/US2015/015305	International filing date (day/month/year) 11.02.2015	Priority date (day/month/year) 18.02.2014
International Patent Classification (IPC) or both national classification and IPC INV. B28B19/00 B05C5/02		
Applicant UNITED STATES GYPSUM COMPANY		

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA:  European Patent Office P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Fax: +31 70 340 - 3016	Date of completion of this opinion see form PCT/ISA/210	Authorized Officer Orij, Jack Telephone No. +31 70 340-0
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Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of:
 - ☒ the international application in the language in which it was filed.
 - ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1 (b)).
2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))
3. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:
 - a. ☐ forming part of the international application as filed:
 - ☐ in the form of an Annex C/ST.25 text file.
 - ☐ on paper or in the form of an image file.
 - b. ☐ furnished together with the international application under PCT Rule 13ter.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.
 - c. ☐ furnished subsequent to the international filing date for the purposes of international search only:
 - ☐ in the form of an Annex C/ST.25 text file (Rule 13ter.1(a)).
 - ☐ on paper or in the form of an image file (Rule 13ter.1(b) and Administrative Instructions, Section 713).
4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	<u>5-13</u>
	No: Claims	<u>1-4, 14, 15</u>
Inventive step (IS)	Yes: Claims	<u>5-13</u>
	No: Claims	<u>1-4, 14, 15</u>
Industrial applicability (IA)	Yes: Claims	<u>1-15</u>
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

- 1 Reference is made to the following documents:
 - D1 US 2013/098268 A1 (LI ALFRED [US] ET AL) 25 April 2013 (2013-04-25) cited in the application
 - D2 US 2013/100759 A1 (WITTBOLD JAMES [US] ET AL) 25 April 2013 (2013-04-25) cited in the application
- 2 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of **independent claims 1 and 14** is not new in the sense of Article 33(2) PCT.
 - 2.1 Document D1 discloses (the references in parentheses applying to this document) a cementitious slurry mixing and dispensing system (100) comprising:
 - a mixer (102), the mixer (102) adapted to agitate water and a cementitious material to form aqueous cementitious slurry (§0057);
 - a discharge conduit (200, 104), the discharge conduit (200, 104) in fluid communication with the mixer (102), the discharge conduit (200, 104) made from a *resiliently flexible material [see Item VIII]*, the discharge conduit (200, 104) extending along a longitudinal axis (50, 75) and having a sidewall portion and an interior wall surface, the interior wall surface defining a slurry passage adapted to convey aqueous cementitious slurry therethrough (§0083-§0089; and
 - a pulser assembly (300), the pulser assembly (300) including a compression member (302, 304) and a drive mechanism (306), the compression member (302, 304) extending along the longitudinal axis (the compression members 302, 304 extend in both the machine direction and perpendicular thereto) and being reciprocally movable over a range of travel between a neutral position, in which the compression member (302, 304) contactingly engages the sidewall portion of the discharge conduit (200; see figures 9 and 10), and a compressed position, in which the compression member (302, 304) is in compressing engagement with the discharge conduit (200) such that a portion of the interior wall surface underlying the sidewall portion is flexed (the compression members 302, 304 compress the complete discharge conduit and therefore also the sidewall portions), the sidewall portion being more flexed when the compression member is in the compressed position than

when in the neutral position (§0090-§0091), and the drive mechanism (306) being adapted to reciprocally move the compression member (302, 304) over the range of travel between the neutral position and the compressed position (§0090-§0097; figures 7-13).

Document D2 also discloses all features of independent claim 1, see the corresponding passages cited in the international search report.

The subject-matter of claim **1** is therefore deprived from novelty (Article 33(2) PCT).

- 2.2 Document D1 discloses (the references in parentheses applying to this document) a method of preparing a cementitious product using a cementitious slurry mixing and dispensing system (100) according to any one of claims 1 to 13, the method comprising:
- discharging a flow of aqueous cementitious slurry from the mixer (102) into the discharge conduit (200, 104);
 - passing the flow of aqueous cementitious slurry through the slurry passage defined within the discharge conduit (200, 104);
 - periodically compressing, using the pulser assembly (300), the sidewall portion (the compression members 302, 304 compress the complete discharge conduit and therefore also the sidewall portions) of the discharge conduit (200) such that a portion of the interior wall surface underlying the sidewall portion is flexed (§0057-§0060, §0083-§0097; figures 7-13).

Document D2 also discloses all features of independent claim 14, see the corresponding passages cited in the international search report.

The subject-matter of claim **14** is therefore deprived from novelty (Article 33(2) PCT).

- 3 Dependent **claims 2-4 and 15** do not appear to contain any additional features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty.
- 3.1 Document D1 discloses a discharge outlet opening (110) which has a width-to-height ratio of about 4 or more, see §0126.
- 3.2 The topography of the contacting surface of the compression members of D1 is flat. Due to the flexibility of the discharge conduit (200) and the pressure of the material on the inside, part of the conduit can deform conform the shape of the compression member.
- 4 The subject-matter of claims **1-15** is considered as susceptible of industrial application (Article 33(4) PCT).

Re Item VII

Certain defects in the international application

- 1 Claim 3 comprises all the features of claim 2 and is therefore not appropriately formulated as a claim dependent on the latter (Rule 6.4 PCT).
- 2 When referring to prior art publications in the description, the wording "incorporated by reference herein" should be deleted. If it is essential that details of the prior art documents be incorporated in the present application, this may only be done under the conditions described in the Guidelines 4.26.

Re Item VIII

Certain observations on the international application

- 1 The relative terms "resiliently flexible material" used in claim 1 have no well-recognized meaning and leave the reader in doubt as to the meaning of the technical feature to which they refer, thereby rendering the definition of the subject-matter of said claim unclear, Article 6 PCT.