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Datasheet for the decision of 24 September 2009

Case Number: T 1853/06 - 3.2.05

Application Number: 96945004.8

Publication Number: 0810920

IPC: B29C 65/00

Language of the proceedings: EN

Title of invention:
Method for preparing foamed gypsum product

Patentee:
United States Gypsum Company

Opponent:
BPB plc

Headword:
-

Relevant legal provisions:
EPC Art. 54, 123, 114
RPBA Art. 13

Relevant legal provisions (EPC 1973):
-

Keyword:
"Novelty (main request, first and second auxiliary requests) - no"
"late filed request - (not admitted)"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 1853/06 - 3.2.05

D E C I S I O N
of the Technical Board of Appeal 3.2.05
of 24 September 2009

Appellant: (Patent Proprietor)
UNITED STATES GYPSUM COMPANY
125 South Franklin Street
Chicago,
Illinois 60606 (US)

Representative:
Johnson, Terence Leslie
Marks & Clerk LLP
90 Long Acre
London WC2E 9RA (GB)

Respondent: (Opponent)
BPB plc
Aldwych House
81 Aldwych
London WC2B 4HQ (GB)

Representative:
Naylor, Matthew
Mewburn Ellis LLP
33 Gutter Lane
London EC2V 8AS (GB)

Decision under appeal:
Decision of the Opposition Division of the European Patent Office posted 16 October 2006 revoking European patent No. 0810920 pursuant to Article 102(1) EPC 1973.

Composition of the Board:

Chairman: W. Zellhuber
Members: S. Bridge
C. Rennie-Smith

Summary of Facts and Submissions

I. The appellant (patentee) lodged an appeal against the decision of the Opposition Division revoking the European patent No. 0 810 920.

II. An opposition had been filed against the patent as a whole based on Article 100(a) EPC (lack of novelty, Article 54 EPC, and lack of inventive step, Article 56 EPC), Article 100(b) EPC and Article 100(c) EPC.

III. The Opposition Division held that the subject-matter of independent claims 1 respectively according to the main request and auxiliary requests 1 and 2 did not meet the requirements of Article 54 EPC and that the subject-matter of independent claim 1 according to auxiliary request 3 did not meet the requirements of Article 123(2) EPC.

IV. Oral proceedings were held before the Board of Appeal on 24 September 2009.

V. The appellant requested that the decision under appeal be set aside and the patent be maintained on the basis of the following documents:

1) main request - the patent as granted,
2) first and second auxiliary requests - claim 1 filed as first and second auxiliary requests respectively on 10 June 2005, or
3) third auxiliary request - claim 1 filed as fifth auxiliary request on 24 August 2009.

VI. The respondent (opponent) requested that the appeal be dismissed and that the third auxiliary request of the appellant be not admitted into the proceedings.

VII. Independent claim 1 of the patent as granted reads as follows - the numbering (i) to (xii) of the technical features of the claim having been added by the Board:

"1. A method of preparing a foamed gypsum board comprising, continuously and concurrently:

(i) inserting calcined gypsum and water into a mixing chamber (10) through one or more first inlets (20,22) of the mixing chamber (10);

(ii) agitating the contents of the mixing chamber (10) to form an aqueous dispersion of the calcined gypsum;

(iii) discharging the contents of the mixing chamber (10) through a discharge outlet (40);

(iv) depositing the discharged contents onto a moving cover sheet;

(v) applying a second cover sheet over the deposited contents; and

(vi) allowing the calcined gypsum to form set gypsum;

(vii) inserting an aqueous foam into the aqueous dispersion of the calcined gypsum, either

(viii) through a second inlet (30) of the mixing chamber (10) positioned such that the path of travel of the foam from the second inlet (30) to the discharge outlet (40) is shorter than the path of travel of the calcined gypsum from the one or more first inlets (20,22) to the discharge outlet (40) or

(ix) through an inlet (32) of a discharge conduit (42) connected to the discharge outlet (40),

(x) to agitate the foam less than the calcined gypsum is agitated,

(xi) to uniformly disperse the foam in the aqueous dispersion of the calcined gypsum, and

(xii) thereby to create voids uniformly dispersed in the set gypsum."

VIII. Independent claim 1 according to the first auxiliary request differs from claim 1 according to the main request in that feature (viii) is replaced by:

"(viii) through a second inlet (30) to the mixing chamber (10) proximate a peripheral wall (18) of the mixing chamber (10) and positioned such that the path of travel of the foam from the second inlet (30) to the discharge outlet (40) is shorter than the path of travel of the calcined gypsum from the one or more first inlets (20, 22) to the discharge outlet (40), or"

IX. Independent claim 1 according to the second auxiliary request differs from claim 1 according to the main request in that feature (viii) is replaced by:

"(viii) through a second inlet (30) of the mixing chamber (10) positioned adjacent the point of discharge of the slurry from the mixer such that the path of travel of the foam from the second inlet (30) to the discharge outlet (40) is shorter than the path of travel of the calcined gypsum from the one or more first inlets (20, 22) to the discharge outlet (40), or"

X. Independent claim 1 according to the third auxiliary request reads as follows:

"1. Apparatus in which foamed gypsum board is formable continuously and concurrently, comprising:

(i) a mixing chamber (10) having a peripheral wall (18) and having respective inlets (20) and (22) for admitting calcined gypsum and water into the chamber;

(ii) an agitator (50) in the mixing chamber (10) for agitating calcined gypsum and water in the mixing chamber (10);

(iii) a discharge outlet (40) of the mixing chamber (10) for discharging contents of the mixing chamber (10);

(iv) a further inlet (30), (32) for inserting aqueous foam into the aqueous dispersion, the further inlet (30), (32) being positioned adjacent the discharge outlet (40) such that the path of travel of the aqueous foam from the further inlet (30), (32) to the discharge outlet (40) is shorter than the path of travel of the calcined gypsum from the inlet (22) to the discharge outlet whereby

(v) to agitate the aqueous foam less than the calcined gypsum is agitated;

(vi) to uniformly disperse the foam In the aqueous dispersion of the calcined gypsum, and

(vii) thereby to create voids uniformly dispersed in the set gypsum."

XI. The present decision refers to published patent application EP-A-0 634 255 as document D9.

XII. The arguments of the appellant in the written and oral proceedings can be summarised as follows:

Features (ix) to (xii) of claim 1 (main request, first and second auxiliary requests) describe a second alternative of the method according to the present invention in which the aqueous foam is added through an inlet of a discharge conduit. These features have to be interpreted in terms of the description which repeatedly states that the invention seeks to avoid the complexity of two mixing chambers (B1-publication, paragraph [0011], especially, column 3, lines 16 to 20; column 4, lines 56 to column 5, line 1, column 6, lines 40 to 44).

The second alternative of the method according to the invention resides in the manner and means of mixing the aqueous foam into the calcined gypsum slurry and is based on the surprising effect that inserting the foam directly into the discharge conduit creates enough mixing action to uniformly disperse the foam throughout the gypsum slurry being conveyed by the discharge conduit (B1-publication, paragraph [0027] and column 6, lines 4 to 8).

The term "discharge conduit" should therefore be understood in terms of its dictionary definition of "a pipe or channel for carrying a fluid" (e.g. Collins English Dictionary, second edition, 1986) and cannot be read onto the second, powered mixing chamber 14 of the apparatus disclosed in document D9 as this would be contrary both to the normal meanings of the terms "discharge conduit" and "mixing chamber" and the manner in which these terms are used in the patent in suit.

Therefore, the subject-matter of the second alternative contained in respective claims 1 of the main request and the first and second auxiliary requests is new (Article 54 EPC).

A change of claim category from a method claim to an apparatus claim which merely transposes the method features of granted method claim 1 into the corresponding apparatus features should be considered allowable under Articles 123(2) and (3) EPC. The third auxiliary request should therefore be considered prima facie relevant to the resolution of the outstanding issues and, in consequence, be admitted into the proceedings.

XIII. The arguments of the respondent in the written and oral proceedings can be summarised as follows:

According to features (ix) to (xii) of claim 1 (main request, first and second auxiliary requests) the "discharge conduit" also provides mixing of the aqueous foam into the aqueous dispersion of the calcined gypsum and thereby has a function of "mixing" which is additional to that of the dictionary definition of a "conduit".

The second mixing chamber 14 shown in figures 1 and 3 of document D9 has an inlet 122 connected to the discharge outlet of the first mixing chamber 12, an outlet 44 and performs the function of conveying the material from the inlet to the outlet.
The second mixing chamber 14 also performs the function of blending the foam with the slurry under conditions

of low shear to produce a foamed slurry (document D9, column 3, lines 19 to 24).
Therefore, the second mixing chamber 14 disclosed in document D9 performs all the functions of a "discharge conduit" as set out in claim 1 of each of the main and first and second auxiliary requests whose subject-matter is, in consequence, not new.

The scope of apparatus claim 1 according to the third auxiliary request also includes the apparatus when not used according to the method of claim 1 as granted, thereby increasing the scope of protection contrary to Article 123(3) EPC. In consequence, the third auxiliary request is prima facie not allowable and should therefore not be admitted into the proceedings.

Reasons for the Decision

1. Novelty of claim 1 according to the main request and first and second auxiliary requests

Features (ix) to (xii) of claim 1 respectively according to the main request and the first and second auxiliary requests are identical and describe a second alternative in which the aqueous foam is added through an inlet of a discharge conduit.

"The essential difference in the method of this invention from methods of the prior art […], resides in the manner and means of mixing the aqueous foam into the calcined gypsum slurry" (B1-publication, paragraph [0027], second sentence).

Claim 1 (main request and the first and second auxiliary requests), which defines the matter for which protection is sought (Article 84 EPC), uses the term "discharge conduit" without providing any further technical features of the "discharge conduit" as such.

Instead features (x) to (xii) of claim 1 (main request and the first and second auxiliary requests) indicate that the goal to be achieved when inserting the aqueous foam through an inlet (32) of the discharge conduit is to agitate the foam less than the calcined gypsum is agitated, uniformly disperse the foam in the aqueous dispersion of the calcined gypsum and thereby create voids uniformly dispersed in the set gypsum.

The description (paragraph [0037], B1-publication) states that the "discharge conduit 42 is provided to convey the gypsum slurry to a point where it will be cast into molds (sic) or onto a moving surface to set and dry". The description therefore gives the expression "discharge conduit" a definition in terms of a function ("to convey the gypsum slurry") rather than in terms of a particular structure.

In consequence, the term a "discharge conduit" as used in claim 1 includes within its scope any structure which is suitable for carrying out the function of "conveying the gypsum slurry" while ensuring that uniformly dispersed voids are created when agitating the foam less than the calcined gypsum.

Although the description repeatedly states the desirability of avoiding the complexity of multiple, powered mixing chambers, the term "discharge conduit"

as used in claim 1 according to the main request and the first and second auxiliary requests does not necessarily preclude the presence of a mixing rotor within the discharge conduit.

Similarly, the reference to "a mixing chamber" and subsequently to "the mixing chamber", as used in claim 1 respectively according to the main request and the first and second auxiliary requests, does not necessarily preclude the presence of additional mixing chambers.

Document D9 (column 3, lines 12 to 24, column 5, lines 16 to 29, figures 1 and 3) discloses a method of preparing a foamed gypsum board comprising, continuously and concurrently:

(i) inserting calcined gypsum and water into a first mixing chamber 12 through one or more first inlets 18 and 20 of the mixing chamber 12;
(ii) agitating, by means of rotor 16, the contents of the mixing chamber 12 to form an aqueous dispersion of the calcined gypsum;
(iii) discharging the contents of the mixing chamber 12 through a discharge outlet 122;
(iv) depositing the contents onto a moving cover sheet 32;
(v) applying a second cover sheet 36 over the deposited contents; and
(vi) allowing the calcined gypsum to form set gypsum;
(vii) inserting an aqueous foam into the aqueous dispersion of the calcined gypsum
(ix) through an inlet 22 of a second mixing chamber 14 connected to the discharge outlet 122,

(x) to agitate the foam less than the calcined gypsum is agitated,

(xi) to uniformly disperse the foam in the aqueous dispersion of the calcined gypsum, and

(xii) thereby to create voids uniformly dispersed in the set gypsum.

The second mixing chamber 14 shown in figures 1 and 3 of document D9 with inlet 122 connected to the discharge outlet of the first mixing chamber 12 and outlet 44 performs the function of conveying the gypsum slurry from the inlet to the outlet while also blending the foam with the slurry under conditions of low shear by means of a mixing rotor 16' to produce a foamed slurry with uniform distribution of the incorporated air and minimal separation of air into significant voids (document D9, column 3, lines 12 to 24, column 5, lines 24 to 29).

Therefore, even though the second mixing chamber 14 contains a mixing rotor 16', it performs all the functions of a "discharge conduit" as set out in claims 1 according to the main request and the first and second auxiliary requests.

In consequence, the subject-matter of claims 1 according to the main request and the first and second auxiliary requests is not new in view of the disclosure of document D9 (Article 54 EPC).

2. Admissibility of the third auxiliary request

Claim 1 according to the third auxiliary request concerns an apparatus whereas claim 1 as granted

concerned a method. The scope of such an apparatus claim 1 also includes the apparatus when not used according to the method of claim 1 as granted, thereby increasing the scope of protection, contrary to Article 123(3) EPC.
In consequence, the third auxiliary request is prima facie not allowable.

Furthermore, the appellant did not provide any reasons for the late filing of this third auxiliary request.

The Board therefore exercises its discretion not to admit the third auxiliary request into the proceedings (Article 114(2) EPC and Article 13(1) RPBA).

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

D. Meyfarth W. Zellhuber