Internal distribution code:

(A) [-] Publication in OJ
(B) [-] To Chairmen and Members
(C) [-] To Chairmen
(D) [X] No distribution

Datasheet for the decision of 16 April 2018

Case Number: T 0667/15 - 3.3.06

Application Number: 08706981.1

Publication Number: 2104559

IPC: B01J19/22, C08F2/01, B65G15/00

Language of the proceedings: EN

Title of invention:
Production of superabsorbent polymers on a continuous belt reactor

Patent Proprietor:
BASF SE

Opponent:
NIPPON SHOKUBAI KABUSHIKI KAISHA

Headword:
Metallic continuous support belt / BASF SE

Relevant legal provisions:
EPC Art. 54, 52(1), 56, 83
RPBA Art. 12, 13(1)

Keyword:
Admissibility of some English translations of Japanese documents filed in opposition and appeal proceedings (yes)
Admissibility of documents filed with the statement of grounds (yes) : reply to the reasoning of the decision under appeal
Admissibility of documents filed with the statement of grounds (no) : not more relevant than other documents filed before the Opposition Division
Sufficiency of disclosure (yes)
Novelty (yes)
Inventive step (yes)

Decisions cited:

Catchword:

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern

Boards of Appeal

Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0
Fax +49 (0)89 2399-4465

Case Number: T 0667/15 - 3.3.06

D E C I S I O N
of Technical Board of Appeal 3.3.06
of 16 April 2018

Appellant: (Opponent)	NIPPON SHOKUBAI KABUSHIKI KAISHA 1-1, Koraibashi, 4-chome, Chuo-ku Osaka-shi, Osaka-fu 541-0043 (JP)
Representative:	Hoffmann Eitle Patent- und Rechtsanwälte PartmbB Arabellastraße 30 81925 München (DE)
Respondent: (Patent Proprietor)	BASF SE Carl-Bosch-Strasse 38 67056 Ludwigshafen am Rhein (DE)
Representative:	BASF IP Association BASF SE G-FLP-C006 67056 Ludwigshafen (DE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 19 February 2015 rejecting the opposition filed against European patent No. 2104559 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chairman	P. Ammendola
Members:	L. Li Voti
	S. Fernández de Córdoba

Summary of Facts and Submissions

I. The appeal lies from the decision of the Opposition Division to reject the opposition against European patent no. 2 104 559.

II. Claim 1 as granted reads as follows:

"*1. A process for production of superabsorbent polymers on a continuous belt reactor, comprising*

i) a continuous polymerization belt (2) and
ii) at least one continuous support belt (3),

wherein the continuous polymerization belt i) (2) rests at least partly upon the upper surface of the at least one continuous support belt ii) (3) and the at least one continuous support belt ii) (3) is a metallic belt with a basis weight of at least 1 kg/m^2."

Dependent claims 2 to 17 concern particular embodiments of the process of claim 1.

III. The Opponent had opposed the patent invoking lack of novelty and inventive step (Article 100(a) EPC) and insufficiency of disclosure (Article 100(b) EPC).

The Opponent relied inter alia on the following evidence:

D1: EP 1 683 813 A2;
D6: EP 1 754 725 A2;
D9: EP 370 646 A2;
D11: DE 199 28 896 A1;
D17: JP 2005-162834 A and partial English translation thereof (D17a);

D19: US 4,604,411 A;
D23: US 5,261,527 A;
D28: JP 2005-36100 A and machine English translation thereof (D28a).

IV. In the decision under appeal rejecting the opposition the Opposition Division found in particular that the invention was sufficiently disclosed, that the claimed subject-matter was novel over documents D1, D6, D9, D17 and D19 and that it involved an inventive step over D10 in combination with various documents of the prior art or over the documents cited against novelty such as D1.

As regards novelty the Opposition Division stated in particular (reasons, 4.1-4.5) that "the process of claim 1 of the patent is novel... because the reactor comprises - in addition to the continuous polymerization belt - at least one continuous support belt upon whose upper surface the polymerization belt rests at least partly"; in fact, in the Division's view

- D1 discloses in figures 3 and 4 "a single belt, which is composed by several parties connected to each other, i.e. a pair of chain (70), a gauze (72) and a fluororesin sheet (74). The single parties of the belt are integral to and forms a belt as an entity...";

- In examples 3 and 8 of D6, a not pre-published document cited in virtue of Article 54(3) EPC, "the fluorinated adhesion tape containing glass fibers and the endless steel belt forms an integral entity, i.e. a single belt composed by several parties";

- In D9 (Figures 1 and 2; embodiments 2 and 7) "the lower belt (1B) cannot act and does not act as a support for the upper belt (1A)...D9 discloses a

process for production of superabsorbent polymers on a continuous belt reactor comprising two continuous polymerization belts" and not one having "at least one continuous support belt upon whose upper surface the polymerization belt rests at least partly";

- D17 discloses "a belt polymerizer (8) comprising an endless belt (9) having a surface coated with fluorocarbon resin [0055]...D17 discloses a single polymerization belt formed by several parties; a support belt is not present in D17";

- D19 discloses (example 4) "the use of stainless steel endless belt...the surface of which is covered with a polymer film".

V. The Appellant in its statement of grounds cited the following new documents:

D30: US 6,565,768 B1;
D31: US 3,967,720;
D32: US 4,267,921 A;
D33: HANDBOOK OF INDUSTRIAL DRYING by A.S. Mujumdar, second edition, volume 1, 1995, pages 525 to 528 and 535; and
D34: Modern Superabsorbent Polymer Technology, edited by F.L. Buchholz and A.T. Graham, 1998, pages v to x, 69 to 84 and 223 to 236.

The Appellant argued in its statement of grounds that the invention was not sufficiently disclosed and that the claimed subject-matter lacked novelty and inventive step.

VI. The Respondent rebutted in its reply all the Appellant's objections. Moreover it contested inter

alia the admissibility of D17a and D28a, filed before the Opposition Division.

VII. In a further letter dated 4 March 2016 the Appellant maintained its objections against the patentability of the claimed subject-matter and filed inter alia as document D17c a machine English translation of the entire respective Japanese document.

VIII. The parties were summoned to oral proceedings. In a communication in preparation for oral proceedings expressing the Board's provisional opinion on the points at issue, the Board stated inter alia:

- that D30, D33 and D34 did not appear to be admissible under Article 12(4) RPBA;
- that the Board was instead inclined to admit D31 and D32 into the proceedings;
- that D28a had been admitted by the Opposition Division in virtue of its power of discretion to admit late filed documents on the basis of their relevance;
- that the English translations of Japanese document D17 filed before the Opposition Division and during appeal appeared to be admissible;
- that the Board agreed with the conclusion of the Opposition Division that the invention was sufficiently disclosed;
- that the Board agreed with the reasoning given in the decision under appeal that the claimed subject-matter was novel over the cited prior art;
- that document D1 appeared to be the only cited document addressing all the technical problems identified in the patent in suit and it appeared to qualify as suitable closest prior art;
- that it should be discussed at the oral proceedings inter alia if it was obvious for the skilled person to

use a continuous support belt for conveying goods as known from the prior art (D11, D31, D32) in a process as disclosed in D1.

IX. In reply to the Board's communication the Respondent filed with letter of 16 February 2018 five sets of amended claims as first to fifth auxiliary requests.

X. With letter of 14 March 2018, the Appellant informed the Board that it "will neither attend nor be represented at the oral proceedings..."

XI. Oral proceedings were held before the Board as scheduled in the absence of the Appellant.

During oral proceedings the Board prompted inter alia a discussion on inventive step of the claimed subject-matter based on the combination of document D1 with documents D11, D23, D31 and/or D32.

XII. Requests

The Appellant requested in writing that the decision under appeal be set aside and that the patent be revoked.

The Respondent requested that the appeal be dismissed or, in the alternative, that the patent be maintained on the basis of one of the sets of claims filed as first to fifth auxiliary request with letter of 16 February 2018.

XIII. The arguments submitted by the parties and of relevance for the decision can be summarised as follows:

The Appellant's case submitted in the statement of grounds and in the letter of 4 March 2016

(a) The English translations D17a and D28a of Japanese documents D17 and D28 are admissible.

(b) D30 to D34 should be admitted since they are prima facie relevant regarding the issues of lack of novelty and/or inventive step.

(c) The invention is not sufficiently disclosed since (statement of grounds, point 3, passage bridging pages 4 and 5) "the skilled person is faced with a lack of information on how to implement the belt polymerizer and in particular the feature of a polymerization belt when wanting to put the invention into practice" and (statement of grounds, page 5, second full paragraph) "the invention as defined in the claims cannot be performed by a person skilled in the art throughout the whole area claimed without undue burden, in particular not in the case of using the preferred belt material silicone...the opposed patent fails to provide any guidance in the form of examples on how to put the claimed invention into practice".

(d) The subject-matter of claim 1 as granted lacks novelty (point 4 and appendices 1 and 2) over D1 (example 2/figure 3), D6 (examples 3 and 8), D9 (Embodiment 7), D17 (example 1), D19 (Example 4 and Comparative Example 8) and D30 (example 2).

(e) The subject-matter of claim 1 as granted lacks inventive step (statement of grounds, point 5.1, point 5.2, page 18, second full paragraph and appendices 3 and 4; letter of 4 March 2016, point 4) over the combinations of D10 with various documents of the prior art, such as for example D11, D23, D31 or D32; alternatively, it lacks inventive step also taking D28 as closest prior art

or over the combinations of D1, D6, D17 or D30 with D11.

The Respondent's case presented in writing and at the oral proceedings

(a) The English translations D17a and D28a of the Japanese documents D17 and D28 are unclear and should not be admitted.
(b) The Appellant did not provide any evidence that the invention is not sufficiently disclosed and that it lacks novelty or inventive step.
(c) In particular, the description contains sufficient information enabling the skilled person to carry out the invention.
(d) The subject-matter of claim 1 as granted is novel over D1, D6, D17 and D30.
(e) The closest prior art is represented by D1/ex.2. The technical problem, seen in the light of the closest prior art, can be defined as the provision of a further process of the same kind as that of D1 and able to solve at the same extent the problems of effectively cooling the polymerization belt (dissipating heat of polymerization) and improving stability of the polymerization belt in terms of reduction of sagging compared to the use of idlers.
(f) The skilled person, faced with the technical problem posed, would have not considered any of documents D11, D23, D31 or D32, concerning very different technical fields and different technical problems.
(g) Moreover, D11, D31 and D32 did not disclose the use of continuous support belts made of metallic material.
(h) Therefore, it would not have been obvious for the skilled person to modify the embodiment of the

closest prior art by adding a continuous metallic support belt upon which the polymerization belt rests at least partly.

(i) The claimed subject-matter involves an inventive step also taking D10 as closest prior art.

(j) The subject-matter of claim 1 as granted thus involves an inventive step.

Reasons for the Decision

Admissibility of D17a/c and D28a

1. In its communication issued in preparation for oral proceedings (see points 8, 8.2 and 9.1) the Board had expressed its preliminary opinion that the English translations of Japanese documents D17 and D28, filed by the Appellant either before the Opposition Division (D17 and D28a) or during appeal (D17c) were admissible.

Since the Respondent did not reply to the Board's communication and did not contest the admissibility of these documents at the oral proceedings, the Board has no reason to depart from its preliminary opinion.

Therefore, for the Board the English translations of D17, filed as D17a/c and that of D28, filed as D28a, are admissible (Articles 12 or Article 13(1) RPBA).

Admissibility of documents D30 to D34

2. The Board, in its communication issued in preparation for oral proceedings (see points 10 to 10.2) had expressed its preliminary opinion

- that D30 was no more relevant than the other documents cited against the novelty of claim 1 (in fact, its cited example 2 concerns only a continuous polymerization belt having a polymeric layer as a cover: see 5.1-5.2, *infra*);
- that documents D33 and D34 did not add relevant essential information to some of the documents already cited before the Opposition Division;
- that the filing of D30, D33 and D34 could thus not be considered a reaction to the decision under appeal.

The Board remarks also that D30 is at first sight no more relevant than the other documents cited by the Appellant as possible starting points for the evaluation of inventive step.

2.1 Therefore and in the absence of response of the Appellant to the Board's communication, the Board has decided not to admit D30, D33 and D34 into the proceedings (Article 12(4) RPBA).

3. For the Board documents D31 and D32 were instead clearly filed as a reaction to the decision under appeal (reasons 5.4, 5.8) that the skilled person would have not combined the teaching of the closest prior art with e.g. D11 or D23.

3.1 The admissibility of these documents was also not contested by the Respondent.

3.2 Therefore, D31 and D32 were admitted by the Board into the proceedings (Article 12(4) RPBA).

Sufficiency of the disclosure

4. Claim 1 (full text under II, *supra*) concerns a process for the production of superabsorbent polymers on a continuous belt reactor, comprising a continuous polymerization belt and at least one continuous support belt, wherein the continuous polymerization belt rests at least partly upon the upper surface of the at least one continuous support belt and the at least one continuous support belt is a metallic belt with a specified basis weight.

4.1 The Board had already informed the parties in its communication in preparation for oral proceedings (see points 11 to 11.3) of its provisional opinion that it agreed with the decision of the Opposition Division (reasons, point 3) that the claimed invention was sufficiently disclosed.

4.1.1 In particular, as noted in its communication for the Board it is undisputed that processes for the production of superabsorbent polymers in a continuous belt reactor comprising a continuous polymerization belt were well known to the skilled person at the priority date of the patent in suit. Moreover, it is also undisputed that continuous metallic belts with a basis weight of at least 1 kg/m^2 were also known to the skilled person (see e.g. paragraph [0020] of the patent in suit).

4.1.2 Thus, also the step of resting, i.e. supporting (see page 3, lines 33-34 of the patent in suit), at least partly a known continuous polymerization belt on the upper surface of a known metallic belt did not present any technical difficulty for the skilled person and was also exemplified in the description (paragraphs [0013]-[0014], [0034]-[0037], figures 1 and 2).

4.1.3 Finally, even accepting arguendo the Appellant's statement that some of the embodiments specifically identified in the patent in suit and falling under the ambit of claim 1 at issue, like the use of a silicone rubber cover material on the continuous polymerization belt (paragraph [0031]), might jeopardize the achievement of some of the goals identified in the patent in suit, like the cooling of the formed polymer gel (paragraph [0016]), the claimed invention would have still to be considered as being sufficiently disclosed as the claimed process does not require **any particular effect** or **polymerization efficiency** to be achieved.

4.2 Therefore, for the Board, the skilled person would have found in the patent in suit sufficient information for implementing the belt polymerizer of the claimed process without undue burden throughout the whole area claimed when wanting to put the invention into practice.

4.3 The Appellant did not reply to the Board's communication. Therefore, the Board has no reason to depart from its preliminary opinion.

4.4 The Board thus concludes that the invention is sufficiently disclosed and complies with the requirements of Article 83 EPC.

Novelty

5. The Board had already informed the parties in its communication in preparation for oral proceedings (see points 12 to 12.2) of its provisional opinion that it agreed with the decision of the Opposition Division (reasons, point 4) that the claimed subject-matter was

novel over the cited prior art, i.e. D1, D6, D9, D17 and D19.

5.1 In particular, the Board had remarked that "the process of claim 1 involves the use of two separate continuous belts. Therefore, the continuous polymerization belt must be able by itself to support and transport the polymerized materials.

Therefore, in the Board's understanding, a construct comprising a polymeric tape or layer bonded onto a continuous polymerization belt does not represent two separate continuous belts but it represents rather a continuous polymerization belt having a polymeric tape or layer as a cover as disclosed in paragraph [0031] of the patent in suit.

The cited documents of the prior art disclosing this type of construct cannot thus be considered to destroy the novelty of claim 1 at issue."

5.2 The Board agrees thus with the differences between the claimed subject-matter and the disclosures of the prior art documents D1, D6, D9, D17 and D19 identified in the decision under appeal (see IV, *supra*).

5.3 The Appellant did not reply to the Board's communication. Therefore, the Board has no reason to depart from its preliminary opinion.

5.4 The Board thus concludes that the claimed subject-matter is novel over the cited prior art and complies with the requirements of Articles 52(1) and 54 EPC.

6. Inventive step

6.1 The invention

The present invention concerns a process for production of superabsorbent polymers on a continuous belt reactor, wherein the continuous polymerization belt rests at least partly upon the upper surface of at least one continuous support belt (paragraph [0001] and claim 1, full wording of the claim under II, *supra*).

6.2 The description of the patent states that "*It is an object of the present invention to provide an improved process for production of superabsorbent polymers on a continuous belt reactor*" (paragraph [0011]).

6.3 As regards the alleged improvement obtained by means of the claimed process the description states
- that "*The polymerization is an exothermic reaction. The formed polymer gel must be cooled to prevent overheating.*" (paragraph [0015]) and "*the cooling of the formed hydrogel can be improved by the at least one continuous support belt ii)*" (paragraph [0016]); and
- that "*the supported continuous polymerization belt i) shows a reduced sagging compared to the prior art continuous belt reactors using idlers as support means*" (paragraph [0032]);
- that "*the necessary tension of the continuous polymerization belt i) can be reduced. Thus,... [it] has a highly improved serviceable life*" (paragraph [0033]).

7. Closest prior art

7.1 As already indicated in its communication (point 13.2, lines 3 to 6), for the Board, document D1 is the only document addressing all these technical problems.
In fact, D1 recognises

- that "in the static polymerization carried out by using the reaction device provided with a continuously conveyable endless belt... it is necessary to always keep the rear side of the contact portion cooled" (paragraph [0006], page 2, lines 40-45) and
- that "In the reaction device provided with a continuously conveyable endless belt, it is preferable to use as the contact portion a flexible material such as a film or a sheet... However, in this case, a driving tension at the time of conveyance is entirely exerted to the film or the sheet, so that the film or the sheet may be broken. Thus, it is difficult to carry out continuous production for an extended period of time. Moreover, also when a larger device is provided in consideration for the productivity (particularly, when the device is enlarged in a longitudinal direction), this raises a problem in terms of durability of the film or the sheet. Thus, it is desired to solve these problems in order to improve the productivity" (paragraph [0009]).

Moreover, as accepted by the Respondent during oral proceedings with regard to the embodiment of example 2/ figures 3 and 4 of this document (in the following **D1/ ex.2**), i.e. a process for the production of superabsorbent polymers wherein the continuous polymerization belt consists of a pair of chains 70 respectively positioned left and right and connected to each other by a stainless gauze 72 coated with a fluororesin sheet 74 (page 11, lines 52-53 and figure 4 of D1), it would have been clear to the skilled person that in this known process
- **polymerization heat is effectively dissipated**,
- **support idlers are not needed for the polymerization belt**, **which does not show** (under appropriate tension) **sagging** and,

- **the entire driving tension** is **distributed** onto the chains thus **increasing** the durability of the fluororesin sheet coated on the stainless gauze and **the serviceable life of the polymerization belt** (see also page 4, lines 11-19 and page 8, lines 18-23 of D1).

For the Board, thus the embodiment D1/ex.2, in view of the similarities with the process of claim 1 at issue and of the technical problems solved, is a very suitable starting point for the evaluation of inventive step.

7.2 As regards the other documents cited by the Appellant as possible closest prior arts, the Board remarks

- that **D6** is a document published 21 February 2007, after the priority date of the present application (16 January 2007), the validity of which was not contested. Therefore, it is not prior art under Article 54(2) EPC and cannot be used in the evaluation of inventive step (see decision under appeal, page 13, first paragraph);

- that **D10** deals (paragraphs [0007] and [0008]) with the provision of "a method for the production of a shaped hydrogel of absorbent resin intended to afford an absorbent resin of uniform quality...which exhibits high absorption capacity, little water-soluble content and little residual monomer and enjoys high productivity" and addresses in this context also the problem of controlling the heat of polymerization (paragraphs [0031] and [0050]); however, the problems of reduced sagging compared to prior art continuous belt reactors using idlers as support means and of the tension exerted on the continuous polymerization belt are not dealt with;

- that **D17** concerns (paragraph [0006] of D17c) the provision of a method of continuously manufacturing a water-absorbing resin which is more efficient in terms of economy, productivity and suppression of clogging of the feed line;

- that **D28** concerns (D28a, Abstract on page 1:PROBLEM TO BE SOLVED and paragraph [0010] on page 4) a method for producing a high-quality water-absorbing resin at low cost.

7.3 Therefore, for the Board, D10, D17 and D28 are less suitable starting points for the evaluation of inventive step.

7.4 The Board thus takes D1/ex.2 as closest prior art.

8. The technical problem effectively solved

8.1 Since the closest prior art (D1/Ex.2) had already provided a process for production of superabsorbent polymers on a continuous belt reactor that solved all the technical problems addressed in the patent in suit, the Respondent formulated during oral proceedings the technical problem posed as the provision of a further process of this kind and able to solve at the same extent the problems of effectively cooling the polymerization belt (dissipating heat of polymerization) and improving stability of the polymerization belt in terms of reduction of sagging compared to the use of idlers.

8.2 In the Board's view, the technical problem posed above cannot be considered to have been solved by the subject-matter of claim 1 at the same extent as the process of D1/ex.2. In fact, claim 1 at issue does not

specify which proportion of the continuous polymerization belt should rest on the at least one continuous support belt. Therefore, in the absence of any indication of the localization and length of the at least one support belt with respect to the polymerization belt, claim 1 encompasses embodiments according to which the main polymerization belt is only partially supported by the continuous support belt. For such embodiments, at variance with the closest prior art, some idlers (or other means of support) will still be necessary. Moreover, in such a case the contact of the metallic support belt with the polymerization belt might not be sufficient for dissipating the heat of polymerization at an acceptable degree as in the embodiment of the closest prior art.

8.3 However, it is plausible that for whatever portion of the polymerization belt actually supported by the support belt, the sagging of such portion is reduced more than when the same portion is supported by idlers. Moreover, any possible, even minimal, polymerization heat still present in the region of support is necessarily dissipated by the metallic support belt in contact with the polymerization belt. The Board is thus convinced that the claimed process solves instead the less ambitious technical problem of providing a further process for production of superabsorbent polymers on a continuous belt reactor able, **at least partially**, to dissipate heat of polymerization and to improve stability of the polymerization belt in terms of reduction of sagging compared to the use of idlers.

8.4 The Respondent also agreed during oral proceedings with this reformulation of the technical problem.

9. Non-obviousness of the solution

9.1 It remains thus to be decided if, for the skilled person, starting from the closest prior art represented by D1/ex.2, and faced with the technical problem posed, would have been obvious to modify the known embodiment of D1 so that the polymerization belt rests at least in part upon at least one continuous metallic support belt of given density.

9.2 In the Board's view, it would be immediately apparent to the skilled person that the physical stability of the polymerization belt of D1/ex.2 is conferred by the pair of chains 70 present on both sides of the stainless gauze 72 on which the entire sufficient driving tension to avoid sagging is distributed (see 7.1, *supra*).

As indicated in the description of D1 (page 4, line 10) this kind of construct can be, for example, "an endless chain conveyor used to carry baggage in an airport".

Therefore, the skilled person, looking for alternative means able to provide support and physical stability to the polymerization belt superior to that achievable by using idlers, would have looked for possible alternatives disclosed in the prior art, not limiting himself to the technical field of polymerization belts but also including that of conveyor belts used for the transport of goods and similar to those used for carrying baggages in an airport.

For the Board, D11, D31 and D32 are representative of prior art in such a technical field and have to be considered.

9.3 In this respect, the Board agrees, for the sake of argument in the Appellant's favour, that it would have been directly apparent to the skilled person that the problem of sagging, caused by the weight of the transported goods, was a well known problem in the technical field of continuous conveyor belts for the transport of goods and that one of the solutions amply described in the prior art, such as D11, D31 and D32, was the use of a continuous support belt instead of idlers.

9.4 However, the Board also remarks that the prior art in question does not disclose in this respect the use of support belts made entirely of metallic material.

9.4.1 In fact, D11 (column 1, line 60 to column 2, line 11; column 3, lines 49-62; claims) **does not specify the material** of which the additional continuous belt used to support the transport belt is made of; D31 discloses the use of support belts made of a flexible material such as **rubber**, reinforced with metal netting embedded along its neutral axis (column 4, lines 19-22) and D32 discloses (column 3, lines 23-35) belt structures made of an **elastomeric material** having a plurality of cords, which may be also metallic.

9.4.2 Therefore, for the Board, even though it is undisputed that metallic continuous belts were known per se (4.2, *supra*), these documents do not contain any pointer that would have prompted the skilled person to envisage the use of a continuous metallic belt instead of the type of belts disclosed, for example in D32, as an alternative for providing physical stability and support (avoid sagging) to the stainless gauze 72 (polymerization belt) of D1/ex.2 instead of or in

addition to (if the driving tension is reduced) the pair of chains 70 used in the closest prior art.

9.4.3 The Board has also considered **D23**, which discloses (claim 1, figures 1 and 5) a tandem belt conveyor system wherein the main belt and the support belt are both made of metal. However, this document concerns the technical field of mass transport of articles **through ovens** (column 1, lines 4-7 and 10-13), which cannot be considered a technical field wherein the used conveyor belts are similar to those used for carrying baggages in an airport.

The Board remarks also that D23 deals in particular with the technical problem of overcoming drawbacks associated with tandem belt conveyors of the prior art, specifically, to avoid production of metal fines and providing smooth running, flat surface for transfer of articles and in particular can bodies standing on end (column 1, lines 56-62) as occurring for example in constructs of the prior art using a roller bed to support the main flat wire belt (column 26-28). In fact, the primary conveyor belt exemplified in D23 is a flat wire belt (column 3, line 17 and claim 2) which is manifestly not a belt suitable for use as polymerization belt (see decision under appeal, reasons, 5.8).

Therefore, for the Board, the skilled person, looking for a solution to the technical problem posed, would not have considered the teaching of D23, belonging to a technical field very remote from that of carrying baggages in an airport.

9.5 In the Board's view, the skilled person, in the absence of any pointer in the relevant prior art concerning

polymerization belts or the transport of goods by continuous belt conveyors, to the use of a continuous metallic support belt for improving the stability of a continuous belt in terms of reduction of sagging compared to the use of idlers, could have modified the embodiment of D1/Ex.2 and arrived at the claimed subject-matter only with the use of hindsight.

9.6 The Board remarks, for the sake of completeness, that even starting from the document more extensively discussed by the Appellant in writing, i.e. D10, as closest prior art, it would not have been obvious to the skilled person for similar reasons (9.3-9.5, *supra*) to arrive at the claimed subject-matter. The Board agrees in this respect with the conclusions of the decision under appeal (reasons, point 5.3).

9.7 The Board thus concludes that the subject-matter of claim 1 (and that of the dependent claims 2 to 17) involves an inventive step (Articles 52(1) and 56 EPC).

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

D. Magliano P. Ammendola

Decision electronically authenticated