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D E C I S I O N
of 17 April 1998

Case Number: T 1059/97 - 3.2.4

Application Number: 92110149.9

Publication Number: 0519401

IPC: B65G 47/32

Language of the proceedings: EN

Title of invention:
Device for equally-spaced in-line transportation of randomly arranged incoming products

Applicant:
G. D. Societa' per Azioni

Opponent:
-

Headword:
Conveyors/G. D. SOCIETA' PER AZIONI

Relevant legal provisions:
EPC Art. 56
EPC. R. 67

Keyword:
"Inventive step (yes - after amendments)"
"Substantial procedural violation (no)"

Decisions cited:
T 0367/91

Catchword:

-

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Case Number: T 1059/97 - 3.2.4

D E C I S I O N
of the Technical Board of Appeal 3.2.4
of 17 April 1998

Appellant: G. D. Societa' per Azioni
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 20 May 1997 refusing European patent application No. 92 110 149.9 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: C. A. J. Andries
Members: P. Petti
J. P. B. Seitz

Summary of Facts and Submissions

I. The European patent application No. 92 110 149.9 was refused by a decision of the examining division dispatched on 20 May 1997.

The reason the examining division gave for the refusal was that the subject-matter of the independent Claim 1 did not involve an inventive step within the meaning of Article 56 EPC.

II. The appellant lodged an appeal against this decision on 15 July 1997 and paid the appeal fee on 16 July 1997. The statement setting out the grounds of appeal was filed on 24 September 1997.

III. In response to a communication of the board, the appellant filed with the letter dated 24 March 1998 amended Claims 1 to 5 on the basis of which the grant of a patent was requested.

Independent Claim 1 reads as follows:

"A device (1) for equally-spaced in-line transportation of randomly arranged incoming products (2), said device (1) comprising a first conveyor (3) for transporting said products (2) successively and in a randomly arranged manner along a first substantially horizontal path (4); a second conveyor (5) for transporting said products (2) continuously and in an equally-spaced manner along a second substantially horizontal path (6) substantially aligned with said first path (4);

transfer means (7) located at the output end of said first path (4) for feeding said products (2), at a given rate, from an output end of said first conveyor (3) to an input end of said second conveyor (5); first drive means (28) for driving said second conveyor (5) and said transfer means (7) at constant speeds; braking means (9) located along said first path (4); and second drive means (29) for continuously driving said braking means (9) so as to slow down the products (2) being transported along said first path (4) to form an orderly line (10) of products (2) for supply to said transfer means (7); said transfer means (7) comprising two lobed wheels (25) each having a number of equally-spaced lobes (27), said lobed wheels (25) being located on either side of said first path (4) and rotating continuously about respective axes in opposite directions both at the same constant speed, with the lobes (27) of one wheel (25) moving in phase with the lobes (27) of the other wheel (25), and synchronously with said second conveyor (5); said second drive means (29) being provided with control means (19) for controlling the speed of said braking means (9) so that said braking means (9) are driven synchronously with said second conveyor (5) and said lobed wheels (25)."

IV. The appellant requested that the impugned decision be set aside and a patent be granted on the basis of the following documents:

- Claims 1 to 5 as filed with the letter dated 24 March 1998;

- Description: pages 1 and 4 to 6 as originally

filed; pages 2, 3, and 3bis as filed with the letter dated 24 March 1998;

- Drawings: Sheet 1/1 (Figures 1 and 2) as originally filed.

The appellant also requested the reimbursement of the appeal fee.

Reasons for the Decision

1. The appeal is admissible.

2. Amendments

2.1 Claim 1 differs from Claim 1 of the application as originally filed (see English translation) in that (see particularly the parts in bold prints)

(a) first and second paths are defined as being "**substantially horizontal**";

(b) the feature "transfer means ... for transporting said products ... from said first conveyor to said second conveyor" has been changed to "transfer means ... for **feeding** said products ... from **an output end of** said first conveyor to **an input end** of said second conveyor";

(c) the feature that "[the device comprises] **first drive means for driving the second conveyor and the transfer means at constant speeds**" has been

added;

(d) the feature "drive means for so operating said brake means as to form an orderly line of products for supply to said transfer means" has been changed to "**second** drive means for **continuously driving** said braking means **so as to slow down the products being transported along said first path** to form an orderly line of products for supply to said transfer means";

(e) the feature that "[each lobed wheel has] **a number of equally-spaced lobes**" has been added;

(f) the feature "[the lobed wheels rotate] ... in time with both each other and said conveyor" has been changed to "[the lobed wheels rotate] ... **both at the same constant speed, with the lobes of one wheel moving in phase with the lobes of the other wheel, and synchronously with said second conveyor**";

(g) the feature "said drive means being provided with control means for transporting the products in said line in time with said lobed wheels" has been changed to "said **second** drive means being provided with control means for **controlling the speed of said braking means so that said braking means are driven synchronously with said second conveyor and** said lobed wheels".

The amendments according to items (a) and (b) can be unequivocally derived from the drawings of the

application as filed. The amendments according to items (c) to (g) can be derived from the following passages of the description of the application as filed (see the English translation):

- page 6, lines 22 to 24, for the amendment c),

- page 4, lines 16 to 22 and page 6, lines 25 to 28, for the amendments (d) and (g),

- page 5, line 26 to page 6, line 9, for the amendments (e) and (f).

2.2 The amendments to the dependent Claims 2 to 5 are not of substantial character.

2.3 The amendments of the description consist essentially in its adaptation to the amended claims and in the citation of the documents DE-A-2 204 635 and DE-U-8 518 948.

2.4 The board is satisfied that these amendments do not contravene Article 123(2) EPC.

3. *The prior art*

3.1 Document DE-A-2 204 635 (D1) discloses - by referring to Figures 1 to 3 - a device for transportation of products, said device comprising a first, discontinuously driven conveyor 1, 3 for transporting an orderly line of products along a first vertical path; a second discontinuously driven conveyor 5, 6 for transporting said products along a second vertical path; a rotating means 9 located between the input end of the second conveyor and the output end of the first conveyor, said rotating device being suitable for stopping one product of said orderly line when supplied from the first conveyor and for releasing it so that the product can be taken over by the second conveyor; first drive means 11 for discontinuously driving said second conveyor and said rotating means; second drive means for discontinuously driving said first conveyor for supply to said rotating means; wherein said first path and second path are substantially aligned, the rotating means comprises two lobed wheels located on either side of the second path and rotating discontinuously about respective axes in opposite directions both at the same speed, in phase with each other and synchronously with said second conveyor, said first and second drive means being provided with control means for controlling the step movements of the first and second conveyors so that when the first conveyor moves for a step the second conveyor does not move and vice versa.

3.2 Document DE-A-2 514 792 (D2) discloses (see particularly the Figure) a device for equally-spaced in-line transportation of randomly arranged incoming products 9, said device comprising a first conveyor 10,

15 for transporting said products successively and in a randomly arranged manner along a first horizontal path; a second conveyor 11, 18 for transporting said products continuously and in equally-spaced manner along a second horizontal path; an intermediate conveying system located between said first and second conveyors for transferring said products, at a given rate, from said first to said second conveyor, first driving means for driving said second conveyor at a constant speed (for instance 45,7 m/min); wherein said first and second paths are aligned, said intermediate conveying device comprising a braking station 12, an accelerating station 13 and a regulating station 14, the braking station being suitable for slowing down the products to reduce the distance between them, the accelerating station being suitable for accelerating the products to an intermediate speed (for instance 26,6 m/min), the regulating station - which comprises further conveyors driven at the same speed as the second conveyor (for instance 45,7 m/min) - being suitable for synchronizing the movement of the products with the movement of the second conveyor.

3.3 Document DE-U-8 518 948 (D3) discloses a device for equally-spaced in-line transportation of randomly arranged incoming products, said device comprising a first conveyor 12 for transporting said product successively and in a randomly arranged manner along a first substantially horizontal path; a second conveyor 38 for transporting said products continuously and in equally-spaced manner along a second substantially horizontal path substantially aligned with said first path; a transfer section (which is formed by the

overlapping ends of the first and second conveyor) for transferring the products, at a given rate, from the first to the second conveyor; first drive means 48 for continuously driving said second conveyor at a constant speed, braking means 56 located along said first path; and second drive means 66 for discontinuously driving said braking means, said braking means being suitable for stopping the products and for forming an orderly line of products for supply to said transfer section; wherein said second drive means 66 are provided with control means 64, 74, 46 for controlling the movement of the said braking means so that said braking means is discontinuously driven synchronously with said second conveyor.

4. *Novelty*

The subject-matter of independent Claim 1 is novel with respect to each of the documents cited above.

5. *The closest prior art*

Document D3 is considered as being the closest prior art.

Document D1 relates to the problem of imparting a constant pitch to a succession of articles transported along a **vertical** path. The content of this document is not closer than that of document D3, particularly because the claimed subject-matter relates the problem of imparting a constant pitch to a succession of articles arranged randomly and transported along a **horizontal** path. Document D2 is clearly less relevant than document D3.

6. *Problem and solution*

6.1 The subject-matter of Claim 1 differs from the prior art according to document D3 substantially in that

(i) **a transfer means is located at the output end of the first conveyor** for **feeding** the products from an output end of the first conveyor to the input end of the second conveyor, **said transfer means comprising two lobed wheels each having a number of equally-spaced lobes, said lobed wheels being located on either side of the first path and rotating continuously about respective axes in opposite directions both at the same constant speed, with the lobes of one wheel moving in phase with the lobes of the other wheel, and synchronously with said second conveyor;**

(ii) the first drive means is also suitable **for driving said transfer means;**

(iii) the second drive means are suitable **for continuously driving** the braking means and the

control means are suitable for controlling the speed of the braking means so that the braking means are driven (continuously) synchronously with the second conveyor **and said lobed wheels**.

6.2 These distinguishing features result in the increase of the processing speed of the machine. Furthermore, damage of the products can be avoided in so far as the products are continuously braked without being stopped.

Thus, the problem to be solved is to provide a device by which the products can be processed at high speeds and equally spaced not only with substantially no variation in the travelling direction or the position of the products with respect to the travelling direction but also with a reduction of the possibility of damaging the products.

The board is satisfied that this problem is solved by the combination of features specified in Claim 1.

7. *Inventive step*

The distinguishing features (i) to (iii) mentioned in the above section 6.1 are not suggested by the available prior art.

Document D1 only shows a rotating means 9 comprising two wheels which can be considered as lobed wheels, each having a number of equally-spaced lobes, said wheels being located on either side of the first path and rotating about respective axes in opposite directions both at the same constant speed, with the

lobes of one wheel moving in phase with the lobes of the other wheel. However, these wheels, which are driven discontinuously, cannot be considered as being a transfer means for **feeding** the products from an output end of the first conveyor to the input end of the second conveyor but rather are a separating means acting as a stop for each individual product which is transported essentially by gravity.

Thus, having regard to the prior art mentioned above, a skilled person would not be led towards the subject-matter of Claim 1 by the available prior art. The subject-matter of Claim 1 meets, therefore, the requirements of Article 56 EPC.

8. Therefore, a patent can be granted on the basis of the independent Claim 1 and of dependent Claims 2 to 5, which concern particular embodiments of the invention defined in Claim 1.

9. *The request for reimbursement of the appeal fee*

The appellant supported this request essentially by arguing that the examining division did not analyse in a correct way document D1 when comparing its content with the claimed subject-matter.

In a communication dated 14 January 1998, the board - referring to the decision T 367/91 - expressed the provisional opinion that an error in the comparative analysis of a prior art document with respect to the claimed subject-matter cannot be regarded as a procedural violation and thus does not provide a basis

for ordering the reimbursement of the appeal fee according to Rule 67 EPC.

The appellant did not present any further arguments with respect to the provisional opinion of the board, so that the board sees no reason for changing its opinion with respect to this issue. Therefore, the request for reimbursement of the appeal fee has to be refused.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the examining division with the order to grant a patent on the basis of the following documents:

   - Claims 1 to 5 as filed with the letter dated 24 March 1998;

   - Description: pages 1 and 4 to 6 as originally filed; pages 2, 3, and 3bis as filed with the letter dated 24 March 1998;

   - Drawings: Sheet 1/1 (Figures 1 and 2) as originally filed.

3. The request for reimbursement of the appeal fee is

refused.

The Registrar: The Chairman:

N. Maslin C. Andries