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D E C I S I O N
of 23 October 1996

Case Number: T 0815/95 - 3.2.4

Application Number: 89200101.7

Publication Number: 0325333

IPC: B65G 21/20

Language of the proceedings: EN

Title of invention:
Improved chain conveyor

Patentee:
REGINA SUD S.p.A.

Opponent:
M.C.C. Nederland B.V.

Headword:
-

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step (yes)"

Decisions cited:
T 0002/83; T 0056/87; T 0005/81

Catchword:
-



Case Number: T 0815/95 - 3.2.4

D E C I S I O N
of the Technical Board of Appeal 3.2.4
of 23 October 1996

Appellant: M.C.C. Nederland B.V.
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Representative: Faraggiana, Vittorio, Dr. Ing.
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 23 August 1995
rejecting the opposition filed against European
patent No.0 325 333 pursuant to Article 102(2)
EPC.

Composition of the Board:

Chairman: C. A. J. Andries
Members: R. E. Gryc
M. Lewenton

Summary of Facts of Submissions

- I. The appellant (opponent) lodged an appeal, received on 26 September 1995, against the decision of the Opposition Division, dispatched on 23 August 1995 on the rejection of the opposition against the patent No EP 0 325 333.

The appeal fee was paid on 26 September 1995 and statement setting out the grounds of appeal was received on 21 December 1995.

Opposition was filed against the patent as a whole and based on lack of inventive step (Article 100(a) EPC) of the subject-matter of Claim 1 in view of the following prior art documents:

D1: GB-A-2 037 690
D2: EP-A-0 159 074
D3: GB-A-2 182 296
D4: GB-A-1 456 124 and
D5: JP-U-56-173517

- II. The opposition division held that the grounds for opposition did not prejudice the maintenance of the patent unamended and the opposition was rejected.
- III. In his statement setting out the grounds of appeal, the appellant repeated the argumentation already given during the opposition proceedings.

In particular, he argued that D1, D2 and D3 relate to chain conveyors of the same type as the one described in the opposed patent and that, since D2 and D3

disclose already two of the four possibilities to insert magnets in the legs of a U-shaped guide body, no inventive step can be seen in the choice of one of the two remaining solutions.

He contended also that the solution described in the opposed patent does not bring any advantage and that there was no real technical problem to solve but only a juridical one.

Therefore, the appellant was of the opinion that the subject-matter of Claim 1 is obvious either in view of the combined teachings of D1 and D2 or D3 or in view of the teachings of D3 and D5 or the disclosures of D1 or D5 and D4 taken in combination.

- IV. In reply the respondent (patentee) alleged that none of the cited documents describe or even suggest a chain conveyor similar to the one according to the invention and that any reasoning trying to consider as obvious the combination of the teachings of the cited documents in order to arrive at the claimed solution is an ex post-facto reasoning.

The respondent contended also that according to the invention a single element (i.e. each closure element) fulfills the double function of completing the seat of the magnets and forming an antifriction replaceable lateral wall.

- V. Oral proceedings took place on 23 October 1996.

At the beginning of the oral proceedings, the respondent gave additional explanations about features of Claim 1 which were considered to be not clear enough

for assessing the patentability of the claimed subject-matter. The respondent filed a modified set of four claims and an amended description as basis for a single request.

Starting from the state of the art disclosed in D2 which he considered to be the closest to the chain conveyor according to the invention, the appellant contended that such type of conveyor being used in particular in the food industry, it is usual to house the magnets in hollows and to close the openings used for their introduction.

The appellant furthermore considered that the invention differs from said prior art only by a new orientation of the openings and pointed out that D2 and D3 disclosed already two among the four possible directions. He took therefore the view that, to arrive at the invention, the skilled person has only to make an obvious choice between the two possible orientations left.

The appellant was also of the opinion that the solution according to the invention was not so good as the one disclosed in D2 and that a skilled person would not be inclined to modify the guide body of D2 in this direction.

The respondent stressed again the importance of the double function played by the closures elements which offer the possibility of using wear-resistant material only along the short portions of the guide submitted to the most damaging stress and permit to change the worn part of the walls of the central channel more easily and thus more frequently.

VI. The appellant requested that the decision under appeal be set aside and the European patent be revoked.

The respondent requested that the decision under appeal be set aside and a patent be maintained on the basis of the description and Claims 1 to 4 filed during the oral proceedings together with the drawings as granted.

VII. The wording of Claim 1 as filed during the oral proceedings reads as follows:

"Chain conveyor comprising a link chain (15) having flat elements (16), made of ferromagnetic material which are joined centrally by articulation members (17), and a guide (10) having a two-flat-face upper profile (13), on which faces the flat elements (16) of the chain (15) slide proximal to the magnets housed in the guide, provision being made between the said two flat faces for a central channel (14) in which the central articulating members (17) of the chain slide, and on the sides of which there rest complementary projections of the chain for the purpose of guiding this laterally, characterized in that the guide is provided with hollows (18) housing the magnets (19), the hollows being only open on the side facing the central channel (14) of the guide in which are fixed closure elements (20) which constitute at least the sides of the said central channel"

Reasons for the Decision

1. *Admission of the Appeal*

After examination the appeal has been found to be admissible with regard to Article 106 to 108 and Rule 64 EPC.

2. *Modifications*

2.1 Claim 1:

In Claim 1 as filed at the oral proceedings the expression: "two flat faces" replaces the term "surface" of Claim 1 as granted (see column 3, line 29 of the patent specification).

This expression has an antecedent in the preamble of Claim 1 (see column 3, line 25) and it removes the ambiguity about the word "surface" of the former version.

A clerical error has been corrected by replacing the term "for" (see line 30) by the term "of".

The following sentence: "... the guide seats (18) holding the magnets (19) are open..." (see column 3, lines 33 and 34) has been replaced by: "...the guide is provided with hollows (18) housing the magnets (19), the hollows being only open...".

This modification specifies the structure of the guide and makes clear that it encloses each of the magnets apart from one side, where there is a sole opening i.e. the side facing the central channel.

These structural features are described in the patent application as originally filed (see page 3, lines 19 to 26) and clearly shown in Figures 2 and 4.

2.2 *Description*

The description has solely been adapted to the new wording of Claim 1, so that no other interpretations can be made anymore with respect to the opening provided in the hollows.

2.3 Therefore these modifications do not contravene Article 123(2) EPC and since they restrict the protection conferred by the opposed patent no objection can also be raised under Article 123(3) EPC.

3. *Novelty of the subject-matter of Claim 1.*

The board is satisfied that none of the available citations discloses a chain conveyor comprising in combination all the features described in Claim 1 as filed during the oral proceedings.

Since this has not been disputed by the appellant, there is no need for further detailed substantiation and the subject-matter as set forth in Claim 1 is to be considered as novel within the meaning of Article 54 EPC.

4. *The closest state of the art*

4.1 Neither D1, nor D4, nor D5 discloses conveyors having guides in the meaning of the invention i.e. solid guides provided with a two flat face upper profile and hollows having only one opening for housing the magnets.

D3 describes a conveyor comprising a guide the hollows of which are not closed by closure elements.

D2 appears thus to be the only cited document disclosing a conveyor comprising a solid guide corresponding to the above mentioned definition (cf. above section 2.1).

4.2 Therefore, the Board considers that D2 discloses the state of the art closest to the subject-matter of Claim 1 which differs mainly in that:

- the hollows are open on the side facing the central channel of the guide and,
- the closure elements constitute the sides of said channel in which they are fixed.

5. *Problem and solution*

5.1 The Board sees the problem as objectively determined when starting from the chain conveyor of D2 as being to improve the structure of such a conveyor so that the lateral sides of portions of the central channel which are subjected to a high degree of wear can be reinforced and/or replaced economically (see column 2, lines 36 to 43).

5.2 The Board is satisfied that the implementation of the measures claimed in Claim 1 brings a solution to the above-mentioned problem.

6. *Inventive step*

6.1 The questions to be answered as regards the inventive step in relation to the modification of the conveyor of D2 are whether the state of the art seen in the light of the general common knowledge of the skilled person

would provide him with enough information about the essential means of the invention and whether, in the state of the art, he would find clues to applying this teaching to the device according to D2 in expectation of the result he was seeking (see decision T 2/83, OJ EPO 1984, 265).

Moreover, the technical teaching in a prior art document should be considered in its entirety, as it would be done by a person skilled in the art (see decision T 56/87, OJ EPO 1990, 188) and when examining for inventive step, the state of the art must be assessed from the point of view of said skilled person, i.e. an excessively abstract approach removed from his practical thinking must be avoided, such an approach being merely the result of an a posteriori analysis (see decision T 05/81, OJ EPO 1982, 249).

- 6.2 The conveyor disclosed in D2 comprises a solid guide in the meaning of the invention (see Section 4 above). Such a guide confers rigidity to the track and constitutes thus an essential part of the known conveyor that the skilled person could not ignore.

Comparatively the track of the chain conveyors disclosed in D1 and D5 is defined only by two separate rails lodging the magnets (see Figures 2 of D1 and D5) and, in D5, the problem of wear of the side surfaces of a central channel apparently has not so much importance because the disclosed conveyor has no curves in the horizontal plane. Consequently, the skilled person had a priori no particular reason to refer to the conveyors known from D1 or D5. Nevertheless, if he had done, then he could not contemplate to modify the orientation of openings made in a guide of the type shown in D2 because such a guide is not even suggested in any one of these two documents.

A person skilled in the art would however find in D1 and D5 the teaching of locating between the chain and support (rails or magnets) an additional plastic element referred to as 12 in D1 and 7 in D5 apparently in order to reduce wear, this element being even located on the side surfaces of the central channel. The use of this teaching in combination with the one of D2 would however not allow to obtain the claimed construction. Indeed it would prompt the skilled person to introduce also in the structure known from D2 an additional plastic element between the guide body and the chain.

D3 discloses a chain conveyor having a solid guide comprising hollows for housing magnets but the openings of the hollows are oriented upwards and they are not closed by any closure elements. Since the magnets are not confined in their housings this conveyor has the disadvantage that it is not suitable for use in the food industry contrary to the conveyor of D2. In order to improve the conveyor of D2 the skilled person has thus a priori no reason for consulting D3 and even if had done, he would not find in this document any teaching or even a hint in the direction of the solution claimed in Claim 1.

D4 does not concern a chain but a belt conveyor, the belt of which having no central projections for the purpose of guiding the same. Therefore there is no problem of wear on the sides of the central channel due to the sliding of the belt and since this known conveyor does not comprise a guide in the meaning of the invention with hollows housing the magnets, also the teaching of D3 could not lead the skilled person to the solution of Claim 1.

6.3 The appellant has argued that there were only four possible directions for the orientation of the openings of the hollows housing the magnets and since two of them are already known from D2 and D3, it would not be inventive to choose a specific one among the remaining two.

The Board cannot agree with this opinion because there are many more possible directions than only four of them and also because the skilled person would normally be reluctant to adopt an orientation different as the downwards direction chosen in D2 since it appears to provide the best protection against dirt for the magnets in particular by liquids in the beverage industry.

Furthermore it should not be forgotten that due to the different orientation adopted according to the invention, the material of the closure elements is becoming more important and can be adapted to the wear taking place on the sides of the central channel. The teaching of the present patent therefore not only simplifies the guide construction by the fact that a single element (i.e. the closure element) fulfills the double function of confining the magnets and also forming a wear resistant and easily replaceable lateral wall, but also allows to use high quality material only for said closure elements instead of for the entire guide body (see the opposed patent specification: column 2, lines 36 to 43). The available prior art documents provide no suggestion towards such a teaching, or the advantages obtained thereby.

6.4 For the foregoing reasons, the Board is convinced that to improve the conveyor known from D2 according to the teaching of Claim 1 does not follow plainly and logically neither from the prior art nor from the general knowledge of a skilled person and implies an inventive step within the meaning of Article 56 EPC.

7. Consequently, the opposed European patent can be maintained in its modified version as requested by the respondent.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance with the order to maintain the patent in the following version:

Claims: Claims 1 to 4 as filed during the oral proceedings.

Description: Columns 1 to 3 as filed during the oral proceedings.

Drawings: Figures 1 to 5 as granted.

The Registrar:



N. Maslin

The Chairman:



C. Andries

