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D E C I S I O N
of 14 February 1994

Case Number: T 0711/92 - 3.2.4

Application Number: 89200293.2

Publication Number: 0328220

IPC: B65G 35/08

Language of the proceedings: EN

Title of invention:
Apparatus for transporting articles

Applicant:
Product Suppliers AG

Opponent:
-

Headword:
-

Relevant legal norms:
EPC Art. 56

Keyword:
"Inventive step (yes, after amendment)"

Decisions cited:
-

Catchword:
-

Case Number: T 0711/92 - 3.2.4

D E C I S I O N
of the Technical Board of Appeal 3.2.4
of 14 February 1994

Appellant: Product Suppliers AG
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Decision under appeal: **Decision of the Examining Division of the European Patent Office dispatched on 11 March 1992 refusing European patent application No. 89 200 293.2 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: C.A.J. Andries
Members: H.A. Berger
J.-P.B. Seitz

Summary of Facts and Submissions

I. The Appellant (Applicant) lodged an appeal, received on 15 May 1992, against the decision of the Examining Division, dispatched on 11 March 1992, to refuse the application No. 89 200 293.2, published under the publication No. 0 328 220. The fee for appeal was paid on 16 May 1992. The statement setting out the grounds of appeal was received on 24 June 1992.

II. The Examining Division had decided that the application did not meet the requirements of Articles 52(1) and 56 EPC, having regard to the following prior art documents:

D1: GB-A-1 490 878
D2: NL-A-7 811 982.

During examination proceedings also document:

D3: US-A-1 887 667

was cited.

III. In a communication the Board drew attention to the additional document:

D4: DE-A-1 925 889.

With the letter of 23 November 1993 the Appellant filed new Claims 1 and 2 and new pages of the description.

IV. Claim 1 reads as follows:

"Apparatus for transporting articles to perform a treatment thereon, comprising a closed track (1) including rectilinear track portions (1a;1b) containing carriers (2) for carrying the articles, the bottom surface of the carriers bearing on guides in the track and the track including guides for guiding the carriers along the side edges thereof, and drive means (3a;3b;3c;3d;) arranged to act on the respective rearmost ones of a plurality of series of successive carriers in trailing side to leading side contact for sliding the carriers stepwise over the carrier track, characterized in that the apparatus comprises a plurality of counter-pressure means (4) each of which during the advance of the successive series of carriers over their whole track of movement exerts a force opposite to the direction of movement on the foremost carrier of each of these series for keeping the carriers of this series in closed-up formation during this movement, the drive means and the counter-pressure means defining the exact position of the carriers for the treatment of the articles carried thereon."

V. The Appellant requests that the decision under appeal be set aside and a patent be granted on the basis of the following documents:

Claims: 1 and 2 filed with the letter of 23 November 1993;

Description: pages 1 to 5 filed with the letter of 23 November 1993,
pages 6 to 11 as originally filed,
with the amendments requested by telephone on 11 February 1994, to cancel

lines 20, 21 of page 6 ("The apparatus may include ... with a drive means.") and to replace "may be" by "are", in line 6 of page 10;

Drawings: sheets 1/2 and 2/2 as originally filed.

Reasons for the Decision

1. The appeal is admissible.

2. *Amendments*

2.1 The features of present Claim 1 which were not part of the original Claim 1 are disclosed in the originally filed application as follows:

- the performing of a treatment on the articles transported by the carriers is disclosed in originally filed Claim 10 and on page 10, lines 5 to 7;

- the presence of bottom and side guides for the carriers in the track is disclosed on page 8, lines 18 to 21;

- a plurality of series of successive carriers in trailing side to leading side contact is disclosed in originally filed Claim 7 and in Figure 1;

- a plurality of counter-pressure means exerting a force opposite to the direction of movement on the foremost carrier of each of the series for keeping

the carriers of this series in closed-up formation during this movement is disclosed in originally filed Claims 3 and 7, on page 4, lines 24 to page 5, line 1, and on page 7, lines 2 to 7;

- the drive means and the counter-pressure means defining the exact position of the carriers is disclosed on page 7, lines 14 to 25.

2.2 The features of Claim 2 are disclosed on page 9, line 7 to page 10, line 4 and in originally filed Claims 4 to 6.

2.3 The amendments in the description relate to adaptation to the newly filed claims and to the citation of the relevant prior art documents. These amendments do not give rise to any objection.

2.4 The application, therefore does not contravene Article 123(2) EPC.

3. *Novelty*

The Board ascertained during examination of the cited prior art documents that none of them discloses an apparatus with all the features stated in Claim 1 for transporting articles to perform a treatment thereon.

Document D4 cited in a communication of the Board describes a car parking device without the necessity of an exact positioning for treatment.

Novelty was not disputed in the decision of the first instance.

The apparatus as set forth in Claim 1 is to be considered novel within the meaning of Article 54 EPC.

4. *Closest State of the Art*

The Board agrees with the Appellant (see new page 1 of the description of the application) and with the Examining Division to consider the apparatus disclosed in document D1 as the closest state of the art. Document D1 discloses an apparatus for transporting articles to perform a treatment thereon with all the features of the pre-characterising portion of Claim 1.

The carriers of this known apparatus are pushed forward by a respective horizontally-acting pushing means by a step equal to a dimension of a carrier. At every stepwise advance of each row, a shock-absorber and a pair of brakes operate to stop the carriers at accurately defined locations relative to machines for machining workpieces carried by the carriers.

The apparatus of Claim 1 of the application differs therefrom by the characterising features of this Claim 1.

5. *Problem and Solution*

5.1 In the apparatus of document D1, which is considered as the closest state of the art, only at the end of a stroke do the shock-absorber and the pairs of brakes operate to stop the carriers at accurately defined locations. In intermediary positions between the beginning and end of a forward step when the brakes and the shock-absorbers are out of action, then the

carriers are not accurately positioned with respect to the track.

5.2 With respect to document D1 the technical problem of the application to be solved consists of providing an apparatus in which no irregularities occur in the movements of the individual carriers of the series, when they are either advancing or stationary.

5.3 By counter-pressure means which exert a force opposite to the direction of movement on the foremost carrier keeping the carriers in closed-up formation during the movement, an exact position of the carriers is defined by the drive means and the counter-pressure means during movement or when they are stationary.

6. *Inventive Step*

6.1 The closest prior art document D1 gives no hint or encouragement to provide means for keeping the carriers in exact positions during movement of the series. Neither the brakes nor the shock-absorbers exert a force opposite to the direction of movement on the foremost carrier of each of the series during the advance of the successive series of carriers over their whole track of movement. The shock-absorbers arranged at apexes of the paths of movement of the series of successive carriers can only act as counter-pressure means at the end of a stroke of the drive means. These shock-absorbers co-operate with brakes to control the positioning of the carriers as they progress around the track (see Claim 5 of document D1). Since the brakes are driven through a control circuit which senses the arrival of a carrier at a predetermined position (see

page 3, lines 2 to 4 of document D1), they can only act at that position and not during the advance of the series over the whole track of movement. Indeed, with the brakes positioned at the track sides as shown in Figure 1 of document D1 it would be difficult to control the brake forces between two succeeding carriers during a moving step. The control of an exact brake force with regard to the drive force, however, would be necessary for the exact positioning of the carriers during their movement. There is nothing in document D1 which could lead to the provision of such control means.

6.2 It is true that document D2 discloses an apparatus for transporting articles, comprising a track system including rectilinear track portions containing carriers for carrying the articles, drive means arranged to act on the rearmost ones of a series of successive carriers for sliding the carriers stepwise over the carrier track and counter-pressure means which, during the advance of the series of carriers, exert a force opposite to the direction of movement on the foremost carrier for keeping the carriers of the series together during the movement. The track system however is divided in an upper and a lower linear track connected by lifting devices. The particular arrangement of the drive means in combination with counter-pressure means are only provided in the upper track. Forces of spring loaded buffers at the leading and trailing sides of the carriers must be overcome if the carriers are to be kept by means of the buffers at an exact longitudinal position during the movement. The exact positioning by the drive means and counter-pressure means for treatment purposes is not

disclosed in this document D2. On the contrary, external clamps are provided alongside the upper track at the required locations which are capable of maintaining the carriers fixed when needed. The exact positioning for the treatment, therefore is attained by these clamps.

The combination of the features of documents D1 and D2 may result in an apparatus in which the exact positioning for the treatment of the articles would be attained by fixing the carriers between side clamps and not by the drive means and the counter pressure means according to Claim 1. It would also not result in an apparatus which allows an exact positioning during the movement of the carriers according to Claim 1 of the application. The idea of an exact positioning during the movement of the series by both the drive force and the counterforce is neither disclosed in document D1 nor in document D2.

6.3 Documents D3 and D4 disclose means for parking cars in garages which could not lead to an apparatus for transporting articles for a treatment thereon, in which an exact positioning of the articles during movement is necessary.

6.4 Thus, the apparatus as set forth in Claim 1 involves an inventive step within the meaning of Article 56 EPC.

7. The apparatus of Claim 1 is, therefore, patentable within the meaning of Article 52 EPC, so that a patent may be granted based on this allowable Claim 1, dependent Claim 2, which concerns a preferred

embodiment of the apparatus according to Claim 1, the modified description and the drawings.

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 grant a European patent on the basis of the documents as defined in above section V.

The Registrar: The Chairman:

N. Maslin C. Andries