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D E C I S I O N
of 24 January 1997

Case Number: T 0139/96 - 3.2.4

Application Number: 90200392.0

Publication Number: 0421496

IPC: A47C 27/06

Language of the proceedings: EN

Title of invention:
Innerspring construction for mattresses, cushions and the like and process for manufacturing said construction

Patentee:
B'LINEA

Opponent:
Toledo Fjederindlaeg A/S
CAUVAL INDUSTRIES

Headword:
-

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step: no clear disclosure in the closest state of the art"

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

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0139/96 - 3.2.4

D E C I S I O N
of the Technical Board of Appeal 3.2.4
of 24 January 1997

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Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted 12 December 1995 rejecting the oppositions filed against European patent No. 0 421 496 pursuant to Article 102(2) EPC.**

Composition of the Board:

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

Summary of Facts and Submissions

I. The appellant (opponent 02) lodged an appeal, received on 9 February 1996, against the decision of the Opposition Division, dispatched on 12 December 1995 on the rejection of the oppositions against the European patent Nr. 0 421 496.

The appeal fee was paid on 9 February 1996 and the statement setting out the grounds of appeal was received on 15 April 1996.

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

E1: US-A-4 578 834 corresponding to EP-A-0 154 076
E2: EP-A-0 155 158
E3: Technical data sheet of "Bostik 4252 adhesive" issued August 1985 (INFO 4252/IN4) and
E5: JP-U-62-129960.

II. In his statement setting out the grounds of appeal, the appellant repeated his argumentation already given during the opposition proceedings and based on documents E1, E3 and E5. He contended that, when considered in its entirety, the technical teaching in E1 anticipates totally the subject-matter of Claim 1. The appellant pointed out in particular that E1 teaches to interconnect the strings of coils by lines of adhesive along the tangential lines of intersection between each coil and the coil in the adjoining row and that, for more labour intensive operations, adhesive can be applied in a continuous strip, the firmness of the innerspring construction being influenced by the lengths of the adhesive lines. According to the

appellant, the skilled person should necessarily conclude that in order to get a more rigid innerspring construction the lines of adhesive should be in the form of continuous strips parallel to the axes of the springs. The appellant was therefore of the opinion that the subject-matter of Claim 1 was anticipated by the teaching of E1 and that, if novelty were nevertheless to be acknowledged, the subject-matter of Claim 1 would not be inventive in view of a combination of the teachings of E1 and E5.

In reply, the respondent (patentee) referred to the problem to be solved and contended that the solutions taught in the prior art are all based on the use of discrete adhesive lines to connect the pockets of adjacent strings so that axial deformations of the springs would not be impeded. He contested also that E1 teaches to apply adhesive in a continuous strip parallel to the axes of the springs.

III. Oral proceedings took place on 24 January 1997.

On behalf of the party as of right, according to Article 107 EPC (opponent 01) nobody was present, although duly summoned. In accordance with the provisions of Rule 71(2) EPC the proceedings were continued without that party.

Explanations about terms and expressions of Claim 1 which were considered to be not clear enough for assessing the patentability of the claimed subject-matter were required from the respondent at the beginning of the oral proceedings.

Starting from the state of the art disclosed in E1 which the appellant considered to be the closest to the invention, it was contended that with regard to the method used for small operations described in E1, column 3, from lines 23 to 38, the subject-matter of Claim 1 lacks novelty or at least lacks inventive step.

In reply the respondent again referred to the problem to be solved and argued that none of the cited documents teaches to take advantage of the flexibility of the adhesive in order to improve attachment between the adjoining strings and at the same time make sure that deformation along the contact surfaces of the adjacent jackets remains possible.

The respondent also filed a new set of modified claims to be considered auxiliarily.

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

As a main request the respondent requested that the appeal be dismissed and, auxiliarily, that the decision under appeal be set aside and the patent be maintained on the basis of claims 1 to 11 filed during the oral proceedings.

V. The wording of Claim 1 as granted (main request) reads as follows:

"An innerspring construction for mattresses, cushions and the like comprising strings of jackets (2) encasing separate coil springs (3) which are arranged in parallel fashion according to their longitudinal axes, the jackets being manufactured from oblong strips of cover (4) which have been adhered by means of an adhesive (16), such that the separate coil springs (3) are arranged with their longitudinal axis in transverse

fashion on the longitudinal axis of the strips of cover, the coil springs being put in said close-fitting jackets, characterized in that said adhesive consists of a flexible coating spread continuously over the main part of the contact surface between at least certain adjacent jackets (3) of adjoining strips of cover (4), in such a way that deformation remains possible along the longitudinal axis of the coil springs and along the contact surfaces of said adjacent jackets."

Method claim 10 as granted (main request) reads as follows:

"A method for manufacturing an innerspring construction as defined in claim 1, characterised in that in a first stage, adhesive forming a flexible coating is spread continuously over the main part of the contact surface between at least certain adjacent jackets (3) of adjoining strips of cover (4) in such a way that deformation remains possible along the longitudinal axis of the coil springs and along the contact surfaces of said adjacent jackets, and, in a second stage, the tangential side of two strips of cover (4) encasing springs (3) are joined according to said contact surfaces, repeating this cycle until an innerspring construction of desired size and relative arrangement of adjoining strips of cover is obtained."

Reasons for the Decision

1. Admissibility of the appeal.

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

2. *Respondent's main request:*

2.1 Interpretation of independent claims 1 and 10:

2.1.1 In column 6, line 22 and column 7, lines 12, 13 of the European patent specification, the expression: "flexible coating" does not necessarily mean that the coating is "elastic". It should be interpreted in the light of the description as meaning that the spread layer of adhesive does not rigidify after cooling or drying, but remains "pliable" or "plastic" so that deformation of the adhered covers remains possible at contact surface level (see the patent specification: column 3, lines 4 to 6).

2.1.2 In view of the description, the expression "spread continuously" (column 6, line 22 and column 7, line 13) should be interpreted as meaning implicitly that the adhesive is not dispersed on selected areas of the contact surface of the adjacent jackets but is spread so as to form a sole sticky area as large as possible (see the specification: column 5, lines 21, 22) covering most of the contact surface (see the specification column 1, lines 53 to 55, column 3, lines 7, 8 and column 4, lines 20, 21).

2.1.3 Also the expression: "over the main part of the contact surface" (column 6, lines 22 and 23 and column 7, lines 13, 14) should not be interpreted as limiting the sticky area to the main part of the contact surface but as defining the minimum area to be glued. According to the description, it is clear that the adhesive may cover the whole contact surface (see column 1, lines 53, 54 and column 3, lines 10, 11) and even may be spread round the contact surface (see column 3, lines 43 to 47 as well as 35 to 42; column 5, lines 10 to 12 and 21, 22 of the specification).

2.2 Novelty (Article 54 EPC).

2.2.1 E1 teaches that the adhesive should be preferably applied as a series of dots or strips (see E1: column 2, lines 2 to 4) and that, for smaller operations, it may be applied in a continuous strip (see E1: column 3, lines 23 to 28). In the description of E1, it is also stated that the adhesive can be applied to selected portions or areas of the strings of pockets defining a connecting line between each pair of adhered pockets. However no indication is given with regard to the extension of the glued area compared to the whole contact surface between the adjacent pockets.

Therefore, the characteristic of claim 1 concerning the spreading of the adhesive "over the main part of the contact surface" interpreted according to above section 2.1.3 is not disclosed in E1. For novelty purposes the features must be disclosed in a prior art document in a clear and unmistakable manner so that they can be directly and unambiguously derived by a person skilled in the art. This is not the case here in E1.

2.2.2 The same feature is disclosed neither in E2 which teaches to apply hot melt as a series of horizontal lines (see E2: page 6, lines 24, 25 and page 8, lines 23 to 25 and Figure 2) nor in E5 the Figures 3 to 7 of which show strips of adhesive covering only small portions of the contact surface between the jackets.

2.2.3 Therefore, in comparison with the state of the art disclosed in the available prior documents, the subject-matter of claim 1 as well as of claim 10 appears to be new in the meaning of Article 54 EPC.

2.3 The closest state of the art.

The innerspring construction and the manufacturing method according to the invention and the innerspring construction of E1 manufactured on a small scale (see E1: column 2, lines 10 to 15 and column 3, lines 23 to 38) belong to the same technical field. These two embodiments have in common not only all the features claimed in the preamble of Claim 1 but also the use of an adhesive providing flexible bonds (see E1: column 3, lines 47 to 52 - "Bostik 4252" and E3: section "Description", second line), which is spread continuously on the contact surface between certain adjacent jackets.

Among all the states of the art disclosed in the different available prior documents, the innerspring construction manufactured on a small scale disclosed in E1 appears to be the state of the art closest to the invention.

2.4 Problem and solution.

The Board sees the problem as objectively determined when starting from said closest state of the art described in E1 as being to increase attachment between adjacent strips of pocketed springs without to impede deformation along the longitudinal axis of the coil springs and along the contact surfaces of the adjacent jackets housing the springs (see the patent specification: column 1, lines 21 to 31 and 43 to 52; column 2, lines 28 to 30).

The Board is satisfied that the implementation of the measures claimed in claim 1 or claim 10 brings a solution to the above-mentioned problem, particularly due to the combination of the kind of the adhesive and its spreading continuously over the main part of the contact surface between adjacent jackets.

2.5 Inventive step.

2.5.1 The questions to be answered as regards the inventive step in relation to the modification of the innerspring construction for mattresses of E1 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 innerspring construction according to E1 in expectation of the result he was seeking (see decision T 2/83, OJ EPO 1984, 265).

Moreover, it should be kept in mind that 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 and that it is not justified arbitrarily to isolate parts of such document from their context in order to derive therefrom a technical information, which would be distinct from or even in contradiction with the integral teaching of the document (see decision T 56/87, OJ EPO 1990, 188).

It should also be kept in mind that the assessment of inventive step must consider solely the limited teaching of the prior documents. An interpretation of

the documents as influenced by the problem solved by the invention while the problem was neither mentioned or even suggested must be avoided, such an approach being merely the result of an a posteriori analysis (see decision T 05/81, OJ EPO 1982, 249).

2.5.2 The teaching of the closest state of the art as disclosed in E1, i.e. the innerspring construction manufactured on a small scale (see section 2.3 above), has thus to be examined strictly, only in the context of the integral teaching of E1 and without any interpretation not clearly supported by the content of the document.

In E1, with regard to the adhesive deposits, the following expressions are used:

- "lines of adhesive" (see in particular E1: column 1, lines 57 and 68; column 2, line 64 and column 3, line 6) or "adhesive lines" (see E1: column 3, lines 29, 30 and 36, 37 and column 6, lines 6, 7, 14 and 17);

- "series of dots or strips" (see in particular E1: column 2, line 3 and column 3, lines 9, 10 or 29);

- "continuous" or "discontinuous strip" (see E1: column 3, lines 26, 27), and

- "series of elongate lines 28a" (see E1: column 5, line 28).

According to the description and the drawings of E1, it appears that the expressions "lines of adhesive" or "adhesive lines" refer to rows of adhesive deposits, said rows constituting the connecting line between each pair of adhered pockets and being defined either by the

"series of dots or strips" (see E1: from column 1, line 67 to column 2, line 4 and Figure 3) or by the "series of elongate lines" (see E1: column 5, lines 27 to 34 and Figure 6).

In E1, only these rows of adhesive deposits are explicitly described as being parallel to the axes of the springs (see E1: column 2, lines 65, 66) and clearly represented as such on the Figures 3 and 6 whereas each elongated line extends across (perpendicular to) the row (see E1: Figure 6). Regarding the "continuous strip" referred to in E1 (see column 3, lines 25 to 31), there is no clear indication about the direction it extends and no representation at all in the drawings, particularly in Figure 3 which represents a possibility of a configuration applied during a small-scale production (see column 3, lines 55 to 62).

Since moreover, in the context of the teaching of E1, the adhesive lines and the adhesive deposits are only described, represented and claimed as being "discrete" (see E1: in particular Figures 3, 6 and 7 and column 6, lines 6, 18, 20, 23 and 65), it cannot be proved without any doubt that, with regard to the method of manufacturing the innerspring construction for smaller operations, E1 teaches to apply a strip of adhesive continuously along the contact surface of the adjacent pockets i.e. parallel to the axes of the springs.

The Board considers that, on the contrary, the skilled person would get from E1 an indication to spread adhesive continuously only in a direction transverse to the orientation of the elongate contact surfaces so that the adhesive lines remain discrete. Since, moreover, E1 teaches that securing the adjacent pockets with longer adhesive lines increases firmness (see E1: column 2, lines 4 to 7 and column 3, lines 29 to 38),

the skilled person who does not wish to impede compressibility along the axis of the springs would not be inclined to multiply the adhesive deposits along the length of the contact surface so far as to cover the main part of said surface with a continuous layer of adhesive.

2.5.3 The teachings of E2 and E5 would confirm the teaching of E1 with regard to the way of spreading adhesive on the contact surface between adjacent pockets and the skilled person would not find clues to modify the teaching of E1 in the direction of the invention in expectation of the result he was seeking, since these available prior art documents provide no suggestion at all towards either the teaching according to the invention or the advantages obtained thereby.

2.5.4 Moreover, it should be pointed out that the factors taken into consideration in E1 regarding the choice of the adhesive are "odorless" when dry, "compatibility" with the glued fabric and "sufficient but not excessive time" before setting (see E1: column 3, lines 39 to 47 and column 5, lines 4 to 9) and that the "flexibility of the bond" is not cited and even not suggested. Consequently, the Board cannot see a reason why, starting from the teaching of E1, the skilled person should have selected an adhesive owing to its flexibility and why he should have envisaged to cover without interruption a substantial part of the contact surface with such a flexible adhesive coating.

2.5.5 For the foregoing reasons, the Board is convinced that to modify the innerspring construction and the manufacturing method known from E1 according to the teaching of Claims 1 and 10 does not follow plainly and logically either from the prior art or from the general knowledge of a skilled person and therefore implies an inventive step within the meaning of Article 56 EPC.

2.6 Conclusion:

The European patent EP-B-421 496 can therefore be maintained unamended.

3. *Respondent's auxiliary request:*

Since the Board has acknowledged the main request as allowable, there is no need to consider the respondent's auxiliary request.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

N. Maslin C. Andries