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**D E C I S I O N**  
**of 3 May 2006**

**Case Number:** T 1313/04 - 3.2.01

**Application Number:** 01998503.5

**Publication Number:** 1355847

**IPC:** B68G 9/00

**Language of the proceedings:** EN

**Title of invention:**  
Separated pocket spring mattress

**Applicant:**  
Stjernfjädrar AB

**Opponent:**

-

**Headword:**

-

**Relevant legal provisions:**

EPC Art. 112(1)(a), 54, 56

**Keyword:**

"Main request - novelty (no)"

"1<sup>st</sup> auxiliary request - novelty (no)"

"Referral of question to the Enlarged Board of Appeal (no) -  
assessment of evidence"

"2<sup>nd</sup> auxiliary request - novelty (yes) - inventive step (yes)"

**Decisions cited:**

T 0204/83, T 0056/87, T 0857/91, T 0272/92, T 1111/96

**Catchword:**

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Case Number: T 1313/04 - 3.2.01

**D E C I S I O N**  
of the Technical Board of Appeal 3.2.01  
of 3 May 2006

**Appellant:** Stjernfjädrar AB  
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**Representative:** Lind, Urban Arvid Oskar  
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**Decision under appeal:** Decision of the Examining Division of the  
European Patent Office posted 17 May 2004  
refusing European application No. 01998503.5  
pursuant to Article 97(1) EPC.

**Composition of the Board:**

**Chairman:** S Crane  
**Members:** P. L. P. Weber  
G. Weiss

## Summary of Facts and Submissions

- I. The appeal is from the decision of the Examining Division posted 17 May 2004 to refuse European patent application 01998503.5 because of lack of novelty of the subject-matter of claim 1 over D1: EP-A-0089789.
- II. The notice of appeal was filed on the 18 June 2004, the fee paid on the same day, and the grounds of appeal filed on the 22 September 2004.
- III. The appellant requests the setting aside of the decision and the grant of a patent on the basis of the main request filed with letter of 3 April 2006 or in the alternative on the basis of the first auxiliary request filed with the same letter or on the basis of the second auxiliary request filed during the oral proceeding held on 3 May 2006.
- IV. The independent claims of each set read as follows:

### *Main request*

1. A spring mattress comprising a plurality of interconnected coil springs (1) enclosed in covers (2), c h a r a c t e r i s e d in that at least two springs that are located adjacent to one another are spaced apart by an interjacent separation distance (SA), said separation distance exceeding approximately 10% of the diameter of the largest one of the spiral turns of the adjacent springs.

16. A method of manufacturing a spring mattress comprising a plurality of interconnected coil springs

(1), which are enclosed in covers (2), comprising the steps of: enclosing the springs in a cover material; and interconnecting the springs with one another; c h a r a c t e r i s e d by interconnecting at least two springs located adjacent to one another in such a manner that an interjacent separation distance is formed between the springs, said separation distance exceeding approximately 10% of the diameter of the largest one of the spiral turns of springs located adjacent to one another.

*First auxiliary request*

1. A spring mattress comprising a plurality of interconnected coil springs (1) enclosed in covers (2), wherein the mattress comprises a plurality of springs (1) arranged in the strips (3) of the cover material, several strips of this kind being joined together, c h a r a c t e r i s e d in that in at least one of said strips (3) at least two springs (1) that are located adjacent to one another are spaced apart by an interjacent separation distance (SA), said separation distance exceeding 10% of the diameter of the largest one of the spiral turns of the adjacent springs (1).

15. A method of manufacturing a spring mattress comprising a plurality of interconnected coil springs (1), which are enclosed in covers (2), comprising the steps of: enclosing the springs (1) in a cover material; and interconnecting the springs (1) with one another, wherein the step of interconnecting the springs comprises arranging a plurality of springs in strips (3) made by the cover material, several such strips (3) being joined together;

c h a r a c t e r i s e d by interconnecting at least two springs (1) located adjacent to one another in a strip (3) in such a manner that an interjacent separation distance (SA) is formed between the springs (1), said separation distance (SA) exceeding 10% of the diameter of the largest one of the spiral turns of springs (1) located adjacent to one another.

*Second auxiliary request*

1. A spring mattress comprising a plurality of interconnected coil springs (1) enclosed in covers (2), wherein the mattress comprises a plurality of springs arranged in the strips of the cover material, several strips of this kind being joined together, wherein the strips are joined together by the provision of means of attachment between the adjacent sides of said strips; and c h a r a c t e r i s e d in that in at least one of said strips at least two springs that are located adjacent to one another are spaced apart by an interjacent separation distance (SA), said separation distance exceeding 10% of the diameter of the largest one of the spiral turns of the adjacent springs, wherein the cover is made from a weldable material, said joining-together and separation distance being effected by welding.

15. A method of manufacturing a spring mattress comprising a plurality of interconnected coil springs (1), which are enclosed in covers (2), comprising the steps of: enclosing the springs in a cover material; and interconnecting the springs with one another, wherein the step of interconnecting the springs comprises arranging a plurality of springs in strips

made by the cover material, several such strips (3) being joined together; and joining the strips together by providing means of attachment between the adjacent sides of said strips; and c h a r a c t e r i s e d by interconnecting at least two springs located adjacent to one another in a strip in such a manner that an interjacent separation distance (SA) is formed between the springs, said separation distance (SA) exceeding 10% of the diameter of the largest one of the spiral turns of springs located adjacent to one another, and wherein the cover is made from a weldable material, said joining-together and separation distance being effected by welding.

V. Additional request:

If the Board of Appeal were to consider the feature of the separation distance exceeding approximately 10% of the diameter of the largest one of the spiral turns of the adjacent springs to be disclosed by D1, the appellant requests the referral to the Enlarged Board of Appeal of the following question:

"Established jurisprudence (see e.g. T 204/83; T 857/91; T 272/92; T 56/87 and T 1111/96) indicates that dimensions can not be derived solely from drawings in a patent document.

- 1) Is it, in spite of this established principle, possible to derive proportions between various parts in the drawings in a patent document?
- 2) If the question 1) cannot generally be answered with yes, does this answer depend on how close or

how far off the proportions in the prior art drawing are from the claimed subject-matter?

- 3) If the answer to the question 2) is also yes, how should this limit be established?"

VI. Three prior art documents are on file

D1 : EP-A-0089789

D2 : US-A-6131892

D3 : US-A-4485506

VII. The arguments of the appellant can be summarized as follows:

The Examining Division was wrong when deducing from the drawings of D1 the feature that two springs that are located adjacent to one another are spaced apart by an interjacent separation distance (SA), said separation distance exceeding approximately 10% of the diameter of the largest one of the spiral turns of the adjacent springs.

The content of D1 must be interpreted with the mind of skilled man of the time of the invention of D1. Before the development of the present invention it has been common practice in the art to assemble the pocketed springs in a mattress very close together by sewing, and the skilled man reader of D1 would have no reason to comprehend the apparently larger separation between two adjacent springs only shown in the drawings as anything else than a fairly small separation, any additional sewing being extremely costly. Thus, the skilled man reading D1 would not hereby envisage such a

comparatively large separation as 10% of the diameter of the largest spiral turns of the springs.

In addition the drawings only being diagrammatical, dimensions and even the relationship between different objects may not necessarily correspond to the true object illustrated. On the contrary, it is often advantageous to exaggerate certain objects and dimensions, and reduce or even remove others to highlight the important aspects to be described.

A number of decisions from the Board of Appeals have established that patent drawings are merely diagrammatic, and dimensions and dimensional relationships could not be obtained merely by measuring such a diagrammatic representation, see for instance T 0204/83, T 0857/91, T 0272/92, T 0056/87 or T 1111/96. Even if in D1 the drawings seem to indicate a certain separation between the springs within the same strip, no indication at all of such a separation, or the technical function that would be the result of such a separation, is provided in the written specification and in any case there is certainly no disclosure whatsoever of the separation being of any specific magnitude.

For the above reasons the subject-matter of claim 1 according to the main request and according to the auxiliary request must be considered to be new.



## Reasons for the Decision

1. The appeal complies with the requirements of Articles 106 to 108 and Rule 64 EPC it is therefore admissible.

### *Main request*

2. *Novelty*

- 2.1 The novelty of the subject-matter of claim 1 according to the main request has mainly been discussed in relation with D1.

D1 discloses a method of producing elastic articles suitable for use in the manufacture of mattresses or similar upholstered articles.

The elastic articles may be produced from a plurality of elongate strip elements each of which includes a series of pockets in which a spring is received.

The assembling of the plurality of elongate strip elements is done by placing them in side-by-side configuration, adhering a respective flexible layer to the upper and lower ends of the assembled elements to hold them together, and dividing the assembled elements transverse to said elongate direction to produce the elastic articles. The elastic resilience and/or the transverse separation of the elements is such that the elastic resilience varies across the article transverse of the elongate direction with the lowest yielding quality towards the centre of the article.

This document thus clearly discloses a spring mattress comprising a plurality of interconnected coil springs enclosed in covers as required by claim 1.

## 2.2 Interpretation of the drawings of D1

In the drawings of D1, figures 2 to 8 schematically show several embodiments of mattresses manufactured according to the invention disclosed there and figures 1, 9 to 13 show more specifically the structure and the manufacturing of the elastic articles.

In figure 1 and figures 9 to 13, one or several elongate strip elements, each of which includes a series of pockets in which a spring is received, are shown and in each of these strip elements each individual pocket (and thus spring) is separated from the preceding one and from the following one by a clearly visible and significant distance.

The Board shares the opinion expressed in T 0204/83 (OJ EPO 1985, 310, see in particular point 4 of the reasons) that the drawings of a published application or patent form a part of the disclosure of that publication, and that even in the absence of any clarifying description in the written part of the publication the skilled man may recognise additional features in the drawings, this being especially the case when a feature is systematically included in a number of figures.

In the present case the feature of a distance being present between two successive pockets or springs of a strip is shown in figure 1 and figures 9 to 13.

Similarly the order of magnitude of the relation between the diameter of the spring and the separation distance between two successive springs is the same in all drawings and the distance between two successive springs clearly exceeds 10% of the diameter of the spring.

In the board's judgment there is no particular reason why the draftsman of the drawings of D1 would have shown a distance between two successive springs of a strip and hardly any distance between the springs of two adjacent strips, if this was not intended to correspond to reality. The invention of D1 does not concern the distance between the springs in a particular strip so that there does not seem to be any plausible reason why the draftsman would have arbitrarily exaggerated this distance on the drawings.

Additionally the presence of a separating distance between two successive springs of a strip is not in contradiction with the teaching of the document as a whole since the presence of this distance in the longitudinal direction of the strip does not have any influence on the transverse positioning of the strips or on the transverse variation of the elastic resilience when several strips are adjacent to one another.

In addition the sentence in the description on page 6, lines 14 to 16 that the springs in each strip element possess the same characteristics of elasticity, dimensioning and separation (emphasis added) can be seen as confirming that some separation is meant to be there, so that the skilled man has no reason to think

that the draftsman had the intention of representing something different from reality when drawing the figures.

For these reasons the Board judges that the skilled man cannot have any doubts as to there being a separation distance between two successive springs of a strip and that this distance exceeds 10% of the largest one of the spiral turns of the adjacent springs.

For the above reasons, claim 1 according to the main request does not meet the requirements of Article 52(1) EPC, because its subject-matter is not new in the sense of Article 54(1) and (2) EPC.

- 2.3 The appellant argued that neither dimensions nor proportions can be taken from diagrammatic drawings. While the Board agrees with the former decisions cited by the appellant that normally no precise dimensions and consequently no precise proportions can be taken from diagrammatic drawings, it has to be assessed in each specific case whether additional information can be taken from the drawings and this does not mean that the proportions shown in the drawings are completely divorced of reality and of no significance.

In the present case the accuracy required by the wording of the claim is low. The claim only requires that the separation distance should exceed approximately 10% of the diameter of the largest one of the spiral turns. Such a definition is neither very precise nor very limiting, so that when as in the present case the distance shown in the drawings is in the order of magnitude of at least half the diameter of

the shown springs, it clearly falls into the open ended range of more than 10%. The present wording of the feature does not require the disclosure of a precise figure in the drawings, it simply requires that the distance shown falls within the very large open ended range of more than 10%.

On top of that in all of the figures 1, 9 to 13 the general dimensional proportions of mattresses or of industrial machinery (figure 13) are respected so that there is no reason to suspect the distance shown between the springs as being shown too large by accident.

- 2.4 The appellant further argued that at the time of the invention of D1, the main technique used for closing the pockets containing the springs was a sewing technique, which is mentioned on page 4 of D1, and that using this technique the skilled man would always try to reduce the sewing length to avoid unnecessary costs. The skilled man reading D1 at the time of its publication would therefore understand the distance shown between two successive springs as being exaggeratedly and incorrectly large, because the skilled man would not have used a separation distance necessitating several longitudinally separated sewing seams.

The Board cannot agree with this argument.

While the Board agrees that a state of the art document has to be read having the general technical knowledge of a skilled man working in this particular field at the period of time of the invention of the document in

mind, the Board cannot agree with the appellant that while doing so the skilled man would implicitly read the cheapest technical solution into it.

On the contrary the skilled man will try to understand technical content of the document and assess this content with an open mind and only when there are technical inconsistencies or contradictions will he try to make out what could have been meant.

As already stated above in the judgment of the Board in the present case the skilled man had no reason to question the presence of a separation distance between two successive springs. Furthermore even if the sewing length is one factor in the total costs, these costs have to be put in balance with the savings raised by using fewer springs. It is also known to the skilled man that the costs are not the only factor to be considered when appraising a technical solution to be used since a more expensive technical solution but which is well accepted by the customers may be preferable to a cheap solution.

A skilled man at the time of the invention of D1 would be well aware of the nature of such a cost balancing exercise and would thus not have focused solely on the additional sewing costs such a separation distance between the springs might have raised.

## 2.5 First auxiliary request

Claim 1 according to the first auxiliary request additionally comprises the following features:

- i) the mattress comprises a plurality of springs arranged in strips of the cover material, several strips of this kind being joined together
- ii) the separation distance between the springs is between two springs of at least one of said strips
- iii) the separation distance exceeds 10% of the diameter of the largest one of the spiral turns of the adjacent springs (not approximately 10% as in the former request).

These features are clearly anticipated by D1 as well.

Feature i) can in particular be seen in Figure 1 of D1 and in the corresponding part of the description on page 6 lines 9 to 16.

Feature ii) can also be seen in any of the figures 1, 9 to 13 showing the strips and is also confirmed on page 6 lines 14 to 16 where it is mentioned that "the springs in each strip element possess the same characteristics of elasticity, dimensioning and separation."

Concerning feature iii), the distance shown in D1 is not at an order of magnitude close to and slightly below 10%, in which case it might have been questionable whether the precise figure of 10% would have been disclosed, but is far above 10% so that the additional accuracy of the figure given in the claim for the starting point of the open ended range does not change the fact that it is anticipated by the order of magnitude of the value disclosed in D1.

Accordingly claim 1 according to the first auxiliary request does not meet the requirements of Article 52(1) EPC, because its subject-matter is not new in the sense of Article 54(1) and (2) EPC.

3. *Referral to the Enlarged Board of Appeal*

The appellant requested the questions under point V above to be put to the Enlarged Board of Appeal if the Board were to come to the conclusion that the separation distance of more than 10% of the largest spiral turn of the spring is considered to be disclosed by the drawings of D1.

As mentioned in Article 112(1) EPC, in order to ensure uniform application of the law, or if an important point of law arises, the Board of Appeal shall, during proceedings on a case and either of its own motion or following a request from a party to the appeal, refer any question to the Enlarged Board of Appeal if it considers that a decision is required for the above purposes.

Hence, following a request from a party it lies within the power of the Board to decide whether a decision of the Enlarged Board is required for ensuring uniform application of the law or for clarifying an important point of law.

In the present case the main question the appellant wishes to refer to the Enlarged Board is whether it is possible, in spite of the established principle that dimensions cannot be derived solely from drawings in a



patent document, to derive proportions between various parts in the drawings in a patent document.

First of all it seems that there is some misunderstanding on the part of the appellant of the decisions cited in this context (T 0204/83, T 0857/91, T 0272/92, T 0056/87, T 1111/96).

None of these decisions indicates that dimensions can never be derived solely from drawings in a patent. On the contrary they leave no doubt that the drawings are part of the disclosure of a patent document and that at least when the drawings are engineering drawings dimensions can undoubtedly be taken from them.

The case law cited by the appellant has established some criteria to be taken into consideration when the drawings are diagrammatical or schematic drawings.

In this context it has been established that dimensions obtained merely by measuring a diagrammatic representation in a document do not form part of the disclosure: in T 0204/83 it has been decided that it cannot be taken from the single schematic figure of a Venturi tube that the cylindrical portion of the Venturi tube has a height greater than  $0.5d$  and less than  $0.66d$ . In the same decision however it is clearly stated as acceptable (see point 4 of the reasons) that when a feature is systematically included in a number of drawings a person skilled in the art will see it as an important item of technical information, even if the illustration is unaccompanied by a verbal description or numerical information. In T 0056/87 it has been decided that when the information in the diagrammatic

drawings is in contradiction with the teaching of the patent as a whole, this information cannot be considered to be disclosed. In T 0857/91 (see point 3.2) it has been confirmed that a schematic representation can be considered to be an exact representation of an object, but that this has to be assessed carefully, a draftsman possibly having a wide range of aims when drafting an object in a schematic representation. T 0272/92 and T 1111/96 confirm the principles laid down in T 0204/83 and respectively conclude that when analysing the content of a drawing one should be careful not to read into it a feature only because one knows the invention one is looking for and that if it can be concluded from some details of a drawing that it is not scale-true then no precise dimension should be deduced from it.

The present decision thus is not in contradiction with the established case law, nor is the established case law in contradiction with the present Board's own understanding of the principles laid down in the EPC.

The interpretation of the drawings is a matter which is quite case specific since the situation can be very different from one particular case to another. In each particular set of circumstances the drawings are different, the kind of information to be taken from the drawings is different, the information corroborating the content of the drawings might be very different.

It is clearly established case law and accepted by the appellant that the drawings belong to the disclosure of a written piece of prior art.

The question brought forward by the appellant can only be a matter of appreciation and judgment in each specific case, just like interpreting a written paragraph or a succession of paragraphs to make out their signification in the context of a specific disclosure. It concerns the assessment of evidence, a matter which does not lend itself to questions of a general legal nature.

Such appreciation and judgment necessary in each specific case is made in application of the principle of free evaluation of evidence prevailing under the EPC and is consequently not an important point of law to be clarified by a referral to the Enlarged Board of Appeal.

For all these reasons, the present Board does not consider it appropriate to refer the question of the appellant to the Enlarged Board of Appeal.

4. *Second auxiliary request*

4.1 Novelty

The subject-matter of claim 1 according to the second auxiliary request is new over D1 since it has the additional feature that the strips are joined together by the provision of means of attachment between the adjacent sides of said strips and that the cover is made from a weldable material, said joining-together and separation distance being effected by welding.

The subject-matter of claim 1 is also new over D2 or D3.

None of these two documents shows a mattress made by juxtaposing rows of springs in covers arranged in strips and wherein two successive springs in a strip are separated by a distance of more than 10% of the largest spiral turn of the adjacent springs.

#### 4.2 Inventive step

The Board agrees with the appellant that the closest prior art is the mattress accepted to be known and referred to on page 1 of the application documents.

The present mattress differs from this prior art by the differentiating features forming the characterising portion the Claim 1.

The effect of these features is to be able to manufacture mattresses in a cheaper way by saving some springs in each manufactured mattress by keeping a mattress of comparable level of comfort as the prior art one and by using a cost saving connecting technique.

The objective problem solved can thus be considered to be to achieve a mattress that is cheaper and/or easier to manufacture while at the same time offering comfort at comparable level to the one offered by prior art pocket spring mattresses.

None of the prior art documents cited in the search report suggest the solution according to claim 1.

D1 leads away from the invention in that it suggests to close the pockets by sewing and to interconnect the spring pockets of the different strips in a continuous manner by feeding the strips between a superior layer and inferior layer to which the spring covers are connected by gluing, see figures 10 and 13 and description page 4 line 21 to page 6 line 7. Additionally at least in some embodiments it is suggested to separate the different strips in the transverse direction.

D2 and D3 are concerned with so different constructions that they cannot suggest the present solution.

D2 discloses a mattress with groups of 4 springs placed in rows to form the mattress and D3 discloses a completely different way of manufacturing a mattress by placing the springs between two sheets which are sealed together around the springs to form the pockets and which pockets are maintained in their axial position by stabilizers in the form of polyurethane foam layers having a plurality of holes corresponding to the arrangement of the spring pockets.

The method claimed in claim 15 is a method of manufacturing the new and inventive mattress according to claim 1 so that there is no need to further examine this claim with regard to novelty and inventive step.

4.3 The description of the application has been adapted to the new set of claims.

4.4 The application documents according to the second auxiliary request thus fulfil the requirements of the EPC for a patent to be granted.

## **Order**

### **For these reasons it is decided that:**

1. The decision under appeal is set aside
2. The case is remitted to the department of the first instance with the order to grant a patent in the following version:
  - claims 1 to 19 and amended description according to the second auxiliary request submitted at the oral proceedings;
  - drawings as originally filed.

The Registrar:

The Chairman:

A. Vottner

S. Crane