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Datasheet for the decision of 17 December 2008

Case Number: T 0767/07 - 3.2.07

Application Number: 94202656.8

Publication Number: 0642894

IPC: B26D 3/28

Language of the proceedings: EN

Title of invention:
Three dimensional surface shaping of synthetic foam pads by continuous rotary process

Patentee:
FOAMEX L.P.

Opponent:
Fecken-Kirfel GmbH & Co. Maschinenfabrik

Headword:
-

Relevant legal provisions:
EPC Art. 56

Relevant legal provisions (EPC 1973):
-

Keyword:
"Inventive step (yes)"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0767/07 - 3.2.07

D E C I S I O N
of the Technical Board of Appeal 3.2.07
of 17 December 2008

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Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted 9 March 2007 revoking European patent No. 0642894 pursuant to Article 102(1) EPC.**

Composition of the Board:

Chairman: H. Meinders
Members: K. Poalas
E. Dufrasne

Summary of Facts and Submissions

I. The appellant (patent proprietor) lodged an appeal against the decision of the Opposition Division revoking European patent No. 0 642 894.

II. Opposition had been filed against the patent as a whole based on Article 100(a) EPC on the grounds of lack of novelty (Article 54 EPC) and lack of inventive step (Article 56 EPC).

III. The Opposition Division found that the subject-matter of claim 1 according to the main and first to ninth auxiliary requests and the subject-matter of claim 4 according to the main request were not novel. The Opposition Division found further that the subject-matter of claim 4 according to the first, second, fourth, fifth, seventh, and eighth auxiliary requests did not involve an inventive step.

IV. Oral proceedings before the Board of Appeal took place on 17 December 2008, at the end of which:

(a) the appellant requested that the decision under appeal be set aside and that the patent be maintained on the basis of claim 1 of the second auxiliary request filed during the oral proceedings and of claims 2 and 3 as granted,

(b) the respondent (opponent) requested that the appeal be dismissed.

V. Independent claim 1 of the second auxiliary request filed during the oral proceedings reads as follows:

"A method for making an article of synthetic foam having a three—dimensionally shaped surface with raised portions separated by depressions, comprising the steps of:
providing a slab (20) of synthetic foam having a planar surface (17);
providing a die (12) having a continuous rotary die surface (24) with raised die portions (28) defining an imaginary outer cylindrical surface and corresponding to desired raised portions (40) on the shaped surface (38) and die depressions (30) corresponding to desired depressions (50) on the shaped surface;
pressing said planar surface (17) by means of a pressure roller (14) against said die (12) with sufficient force to extrude portions (25) of said slab (20) into said die depressions and thereby to urge said slab of synthetic foam against a cutting edge (34), characterized in that,
said pressure roller (14) has a substantially smooth cylindrical surface,
that the planar surface (17) is pressed against the die (12) to extrude portions (25) of said slab (20) into said die depressions (30), in direct contact with said die surface (24);
that said cutting edge (34) is positioned in tangential relationship with said imaginary outer cylindrical surface just beyond a point of minimum spacing between said imaginary outer cylindrical surface and said pressure roller (14) for cutting away only said portions (25) extruded into said die depressions (30) from said slab (20) to make a shaped foam surface which closely conforms to the geometry of the die surface (24); and

that the slab (20) advances against the cutting edge (34) which is positioned in a cutting plane tangent to the imaginary outer cylindrical surface, so as to slice through the advancing foam slab (20) and to cut away those portions (25) of foam extruded into the die depressions (30) between the raised die portions (28), while sparing the foam portions (27) compressed by the raised die portions".

VI. The documents of the opposition proceedings relevant for the present decision are the following:

El: DE-C-268 978;
E3: Leaflet with the heading "FECKEN-KIRFEL, Profile Cutting Machine (Convoluter) D11", reference number FK 1991.500.10.88.

VII. The appellant argued essentially as follows:

Inventive step - Article 56 EPC

E1 is directed to an apparatus for embossing or calendering felt, whereas the apparatus of E3 is used for producing either two identical halves of a **shaped** foam sheet by conveying it with a pair of identical convoluting rollers against a cutting knife in a middle position between the pair of rollers, or two identical **flat** felt sheets with the same arrangement of rollers and knife, however, with smooth or knurled rollers. Since E1 and the above mentioned first embodiment of E3 are used for different purposes, the skilled person would not combine the teachings of these documents with each other.

Even if the skilled person would have tried to combine said teachings with each other he would not be able to derive from these documents which part or parts of the method known from one document has or have to be combined with which part or parts of the method known from the other one.

A teaching or even a hint to replace the lower profiled roller b in the apparatus of E1 by the lower convoluting roller shown in the first figure on page 2 of E3 or to replace the upper convoluting roller shown in the first figure on page 2 of E3 by the smooth upper roller d of the apparatus of E1, and in both cases to position **at the same time** the knife's cutting edge in tangential relationship with the imaginary outer cylindrical surface of the lower (convoluting) roller shown in the first figure on page 2 of E3 can be found neither in E1 nor in E3.

VIII. The respondent argued essentially as follows:

Inventive step - Article 56 EPC

Page 3 of E3 informs the skilled person that both synthetic foam and felt can be cut by the "profile cutter (convoluter) D 11". This information implies a general teaching that synthetic foam cutting machines and the corresponding methods can also be applied for cutting felt and vice-versa. As a consequence the skilled person would consider the structural characteristics of the cutting machine of E1 and of the cutting machine of E3 to be interchangeable.

Thus, the skilled person starting from the method known from E3 and seeking to achieve precise control of the three-dimensionally shaped surface of the synthetic foam would replace the upper convoluting roller of E3 by the smooth upper roller d known from E1 and would position the knife also according to E1, ie with its cutting edge in tangential relationship with the imaginary outer cylindrical surface of the (lower) roller having the depressions, cutting thereby only the foam portions extruded into these die depressions, without applying an inventive activity.

Starting from E1 the person skilled in the art would define as problem to be solved the improvement of the method known from E1 so that synthetic foam having a three-dimensionally shaped surface with protrusions separated from each other may be produced with the apparatus of E1. According to column 1, lines 1 to 4 of E1 different materials may be treated with the proposed cutting method.

Furthermore, the information on page 3 of E3 that the "profile cutter (convoluter) D 11" can be used for cutting both felt and synthetic foam, teaches the skilled person that the previously described method for cutting synthetic foam into two shaped foam sheets is also applicable to felt and vice-versa. Accordingly, the skilled person would use the method known from E1 for cutting synthetic foam in the same manner as felt, without exercising any inventive activity.

In addition to that it is derivable from pages 1 and 2 of E3 that for providing an article of synthetic foam with a three—dimensionally shaped surface with raised

portions separated by depressions die rollers with corresponding raised portions separated by depressions as shown in the first figure of page 2 of E3 have to be used. Following this teaching of E3 the skilled person would replace the lower roller b of the apparatus of E1 by the lower roller shown in the first figure of page 2 of E3 without applying any inventive skills.

Reasons for the Decision

Inventive step - Article 56 EPC

1. E3 discloses a profile cutting machine (convoluter) for convoluting flexible polyurethane foam, open cellular PVC foam, or bonded foam, see paragraph next to heading "Use" on page 1 of E3. For this purpose, foam material is deformed by a pair of convoluting rollers in front of a knife positioned in a middle position, see the first figure on page 2 of E3. As a result, two profiled halves of a foam slab are produced.

The Board considers therefore that the method steps according to the preamble of claim 1, together with the method step of the characterising portion of said claim, which states that the planar surface of the slab is pressed against the die to extrude portions of said slab into the die depressions, in direct contact with the die surface, are known from this embodiment of E3.

This fact was not disputed by the respondent.

2. Thus, the method as claimed in claim 1 distinguishes itself over this method in that the pressure roller has

a substantially smooth cylindrical surface and in that the cutting edge is positioned in tangential relationship with the imaginary outer cylindrical surface of the die roller just beyond a point of minimum spacing between said imaginary outer cylindrical surface and said pressure roller, for cutting away only those portions from the slab which are extruded into the depressions of the die roller to make a shaped foam surface which closely conforms to the geometry of the die surface. Further, the slab advances against the cutting edge which is positioned in a cutting plane tangent to the imaginary outer cylindrical surface, so as to slice through the advancing foam slab and to cut away those portions of foam extruded into the die depressions between the raised die portions, while sparing the foam portions compressed by the raised die portions.

These differentiating features enable the production of a shaped foam surface closely conforming to the geometry of the depressions in the die surface, allowing thereby a better and more precise control of the shape of the three-dimensionally shaped surface of the article.

3. Accordingly, starting from this method as known from pages 1 and 2 of E3 as representing the closest prior art, the problem to be solved is to achieve a better and more precise control over the resulting three-dimensionally shaped surface of the article.

4. The Board, considering the question whether it was obvious for the skilled person starting from this method known from E3 to take into consideration the

teaching of E1 as a solution to this problem, as it was argued by the respondent, comes to the following conclusion.

4.1 Even accepting that the second embodiment as presented on page 3 of E3, in which the machine can also be used to split felt, leads the skilled person to the teaching of E1, the Board cannot see how the modification - according to this teaching - of the method of the first embodiment of E3 could result in the method of claim 1, for the following reasons.

4.2 E1 discloses a method for embossing (patterning) felt by using a pair of rollers b and d and a knife 12. The lower die roller b is provided with cavities a and the upper pressure roller d has a substantially smooth surface. The upper roller d presses the felt onto the die roller b and part of the felt material enters thereby into said cavities, said parts 20 being afterwards cut off by the knife. The positions of said cavities in the die roller b correspond therefore to the positions of the cut off portions in the resulting felt sheet, see figures 1, 2 and 3. In figure 1 of El it can be seen that the cut off portions 20 in the surface of the felt are isolated from each other by the uncut, ie remaining single (raised) portion 21. Correspondingly, the die roller b has **only one raised die portion**.

4.3 It is established case law that the technical disclosure in a prior art document should be considered in its entirety, as it would be done by the skilled person and that it is not justified arbitralily to isolate parts from such a document from their context

(see case law of the Boards of Appeal, 5th edition 2006, I.D.8.3). For the present case this means that the teaching of E1 is to use the rollers b and d **in combination**.

4.4 A modification of the method known from E3 on the basis of the teaching of E1 would therefore mean that the pair of convoluting rollers used in the method of the first embodiment of E3 is replaced by the pair of rollers b and d of E1. Since, as stated under point 4.2 above, the lower roller b of E1 has **only one raised die portion**, the method of the first embodiment of E3 when modified in terms of the teaching of E1 would lack the method step of providing the die roller with **raised die portions** (plural).

For the respondent's argument that the skilled person seeking to solve the problem mentioned under point 3 above would be led by the teaching of E1 to replace only the upper convoluting roller by the smooth upper pressure roller d of E1 no support can be found in E1, nor in E3.

4.5 Accordingly, a modification of the method known from the first embodiment of E3 according to the teaching of E1 cannot result in the method according to claim 1.

5. The respondent argued in a second argumentation line, starting from E1 as closest prior art, that the method according to claim 1 differs from the method known from E1 only in that synthetic foam is treated and in that the lower die roller has multiple raised die portions. The skilled person derives from page 3 of E3 that the "profile cutter (convoluter) D 11" is able to cut not

only foam but also felt and he derives further from page 2 of E3 that the use of convoluting rollers allows the production of synthetic foam having a three-dimensionally shaped surface with a plurality of raised portions. Thus, the skilled person seeking to improve the method known from E1 so that with it one could produce synthetic foam having a three-dimensionally shaped surface with raised portions separated by depressions, would be led by the teaching of E3 to replace only the lower roller b by the lower convoluting roller shown in the first figure on page 2 of E3 and to treat with such a converted machine synthetic foam. By doing so he would not need to exercise an inventive activity.

5.1 The Board is also not persuaded by this line of argumentation, for the following reasons:

5.2 Even following the respondent's argumentation in so far as that the skilled person would be incited, on the basis of the information present on page 3 of E3, to use the method known from E1 for treating synthetic foam, the Board cannot accept that E3 teaches the skilled person to replace the lower roller b of the machine known from E1 by the lower convoluting roller shown in the first figure on page 2, (which is the first embodiment of E3), but maintaining the upper roller d unmodified.

5.3 As already explained in point 4.3 above, in discussing a disclosure, one should not isolate features from their context. This also applies when considering the teaching of E3. According to the general teaching of E3 and as it is also shown in the figures, the "machine

D11" described in E3 can be used for splitting a slab of foam or felt into two halves.

When this machine is used to produce a profiled product **a pair of two profiled (convoluting) rollers** is used. When said machine is used as a simple splitting machine **a pair of smooth feed rollers** or **a pair of knurled feed rollers** is used. This means that for profile cutting E3 teaches that always **a pair of profiled (convoluting) rollers** has to be used.

The application of this teaching to the method known from E1 therefore would at most result in the use of a pair of conveying rollers with the same surface characteristics, however not the use of two rollers having different surface characteristics as required by claim 1, namely one with a substantially smooth surface and one with a plurality of raised die portions.

5.4 For the above mentioned reasons the Board finds that the skilled person starting from the method known from E1 and even taking account of the teaching of E3 will not achieve the method according to claim 1 of the second auxiliary request.

5.5 Finally, the respondent argued that the skilled person would wish to adopt the method known from E1 to a foam slab and at the same time adapt the machine so that the resulting foam would have a three-dimensionally shaped surface with raised portions separated by depressions. However, in particular for the latter, the respondent has not submitted any further supporting evidence or convincing arguments. In the absence of such, this argument is therefore to be treated as an *ex post facto*

reasoning, which is possible only with knowledge of the invention.

5.6 As a result, the Board concludes that the subject-matter of claim 1 according to the second auxiliary request involves an inventive step in the sense of Article 56 EPC.

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 first instance with the order to maintain the patent on the basis of the following:

- description: columns 1 to 10, filed during the oral proceedings;
- claim 1 filed as second auxiliary request during the oral proceedings;
- claim 2 and 3 as granted;
- figures 1 to 10 of the patent as granted.

The Registrar: The Chairman:

G. Nachtigall H. Meinders