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**Datasheet for the decision
of 5 March 2009**

Case Number: T 0283/07 - 3.2.03

Application Number: 99115715.7

Publication Number: 0979908

IPC: E04B 9/28, E04B 9/26, E04B 9/24

Language of the proceedings: EN

Title of invention:
Ceiling panel

Patentee:
Armstrong World Industries, Inc.

Opponent:
Saint-Gobain Ecophon AB

Headword:
-

Relevant legal provisions:
EPC Art. 100(a), 56

Relevant legal provisions (EPC 1973):
-

Keyword:
"Inventive step (no) - reformulation of problem to provide an alternative solution - obvious to the skilled person"

Decisions cited:
-

Catchword:
-



Case Number: T 0283/07 - 3.2.03

D E C I S I O N
of the Technical Board of Appeal 3.2.03
of 5 March 2009

Appellant: Saint-Gobain Ecophon AB
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Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted
28 December 2006 concerning maintenance of
European patent No. 0979908 in amended form.

Composition of the Board:

Chairman: U. Krause
Members: G. Ashley
K. Garnett

Summary of Facts and Submissions

- I. European patent EP-B-0 979 908 concerns a panel for use in a suspended ceiling. Grant of the patent was opposed on the grounds of lack of novelty and lack of inventive step (Article 100(a) EPC). The Opposition Division concluded that the amended claim 1, filed during the oral proceedings, fulfilled the requirements of the EPC, and thus decided that the patent should be maintained on the basis of this claim and dependent claims 2 to 8 of the granted patent.

The above decision was posted by the Opposition Division on 28 December 2006. The Appellant (Opponent) filed notice of appeal on 16 February 2007, paying the appeal fee on the same day. A statement containing the grounds of appeal was filed on 7 May 2007. Oral proceedings were held on 5 March 2009.

II. Claims

Claim 1, filed during the oral proceedings before the opposition division, reads as follows:

"1. A panel (20) for use in a suspended ceiling(21) that has a panel supporting grid (22) formed of inverted T-section beams having flanges (28,29), which panel (20), when extending horizontally, has

- opposing active parallel edges (A,B), each of which has a profile different from the other,
- at least two opposing passive edges (C,D),
- a first kerf (33) in the profile of the one active edge (A) that has an upper and a lower surface

extending in a horizontal plane along the one active edge (A),

- a second kerf (35) in the profile of the other active edge (B) that has an upper surface (30) extending in a horizontal plane along the other active edge (B) above the level of the upper surface of the first kerf (33) in the profile of the one active edge (A) and a lower surface,
- a registration step (36) in the profile of the one active edge (A) that has a riser (34) extending in a vertical plane and a tread (39) extending in a horizontal plane along the one active edge (A) above the level of the upper surface of the first kerf (33) in the one active edge (A), the tread being at the same level as the upper surface (30) of the second kerf (35) in the other active edge (B),
- lower lips (40,41) on at least the active edges (A,B) of the panel (20) that conceal a portion of the grid (22),
- a wall (37,38) extending in a vertical plane on the passive edges (C,D) of the panel (20), and
- an upper lip (42) on the one active edge (A) having a lower surface formed by the tread (39) of the registration step (36), and an upper lip (43) on the other active edge (B) having a lower surface formed by the upper surface (30) of the second kerf (35), such lips (42,43) having lower surfaces (39,30) at the same level, when the panel (20) extends in a horizontal plane, that vertically support the panel (20) in the ceiling (21) by bearing upon the adjacent grid flanges (28,29),
- wherein the first and second kerfs (33,35) in the active edges (A,B) successively form hinge means with

the grid flange (28,29) to removably install the panel (20) in the ceiling (21), and

- wherein the first and second kerfs (33,35), upper lips (42,43), walls (37,38), and tread (39) and riser (34) of the registration step (36) form means to removably lock the panel (20) in the ceiling grid (22),
- the lower surface of the second kerf (35) in the other active edge (B) is at a higher level in the thickness of the panel (20) than the lower surface of the first kerf (33) in the one active edge (A), characterized in that
- the lower surface of the second kerf extends in a horizontal plane.

Dependent claims 2 to 7 of the granted patent concern preferred embodiments of the panel of claim 1.

Dependent claim 8 refers to a horizontal suspended ceiling having panels according to any of the claims 1 to 7.

III. Prior Art

The following documents are of relevance for this decision:

D1: Brochure "Focus Elite - the floating ceiling", published by Saint-Gobain Ecophon AB, October 1992.

D2: Installation Guide "Focus Elite", published by Ecophon, November 1993

D4: US-A-3900997

IV. Submissions of the Parties

(a) Article 123(2) EPC

Granted claim 1 has been amended to include the feature that "the lower surface of the second kerf extends in a horizontal plane". The Appellant submits that this feature is not disclosed in the description as originally filed, as only the upper surface is described as extending in a horizontal plane; it is also not possible to derive unambiguously the feature from the figures. The Respondent argues that the figures clearly show the lower side of kerf extending horizontally, and given that paragraph [0027] explicitly states that the upper side extends in a horizontal plane, it is apparent that the lower side extends likewise.

V. Inventive Step (Articles 100(a) and 56 EPC)

(a) Appellant's Submission

The Appellant submits that the panel of claim 1 lacks an inventive step in light of the disclosure of D1/D2 alone or in combination with D4.

Documents D1 and D2 disclose ceiling panels that are part of the "Focus Elite" ceiling system, which was available to the public before the priority date of the contested patent. The system comprises panels for the central part of the ceiling and perimeter panels for the edge portions. The perimeter panels are considered to be the closest prior art because they have the same purpose (they can easily be installed and removed, but

whilst in position they are securely locked) and they have the most features in common with the claimed panels. In addition, they can typically make up 40% to 80% of the ceiling surface area; hence they are not of minor importance and will always be in the mind of the skilled person.

The panel of claim 1 differs from the perimeter panel of D1/D2 only in that the lower surface of the second kerf is horizontal, compared to the inclined orientation of D1/D2. However, no technical effect results from the change to a horizontal plane, since the operation for installing and removing the panel is the same and, once in place, the degree of play or tightness of fit is also the same. In support of this allegation, the Appellant demonstrated at the oral proceedings the installation of panels according to D1/D2 and claim 1.

Consequently, the objective problem is seen by the Appellant as providing an alternative design for the kerf. The Appellant then argued that it is well known to the skilled person to make a kerf using a rotating saw blade or grinding wheel, which would inevitably lead to a kerf having a lower edge extending in a horizontal plane. Alternatively, D4 discloses a kerf fulfilling the same function to that of D1/D2 and the patent, and which has horizontal upper and lower surfaces. Such a kerf can be also be cut on site using, for example, a portable grinding wheel, and hence can be applied to the perimeter panels of D1/D2. The claimed panel thus lacks inventive step in light of either the disclosure of D1/D2 alone or in combination with D4.

(b) Respondent's Submission

The Respondent argues that the invention according to claim 1 differs from that of D1/D2, not only in that the lower surface of the second kerf extends in a horizontal plane, but also in that a new technical result is achieved, namely that the panel is simple to install and is then held securely in place.

This is because the wedge-shaped kerf of D1/D2 cannot prevent movements in a combined vertical and horizontal direction to the extent that the kerf of claim 1 does. The reason for this is that the upper surface of the wedge-shaped kerf simply rests on the horizontal flange of the support and is not secured in the vertical direction by the sloping lower surface. Restriction of movement can only be achieved in D1/D2 when the edge of the support flange fits snugly into the wedge, but this requires precise cutting of the kerf. Given that the kerf of D1/D2 is cut on site with a hand tool, rather than in a factory, this is not possible; for example, the kerf surfaces will be uneven and the depth will be greater than is really necessary. In addition, D1/D2 does not provide the skilled person with any information concerning the magnitude of depth and height of the kerf, or how it should extend; consequently there is no indication as to how tight the fit with the support flange should be.

The conclusion is thus that the degree of play is far greater for a panel according to D1/D2 than for one according to claim 1, with the effect that the panel of the present invention is locked in place in a more

stable way. The technical result achieved by the claimed panel is that it provides a resistance to removal by random efforts of individuals without knowledge of the unlocking procedure, and also that the panel tends to remain in place during destructive events such as fire or seismic disturbances.

Although D4 shows a kerf in edge (B) having a lower surface extending horizontally, this is not in combination with the kerf arrangement defined for edge (A) in claim 1. As a result, the degree of vertical movement of the ceiling panel of claim 1 is reduced and there is no need for the specially shaped support beams required in D4.

In summary, D1/D2 provides no indication of the principal of the invention, in particular the vertical locking of the ceiling panels. None of the effects of the claimed ceiling panel can be derived either from D1/D2 or D4, and as such the panel of claim 1 has an inventive step.

VI. Requests

The Appellant requests that the decision be set aside and the patent be revoked.

The Respondent requests that the appeal be dismissed.

Reasons for the Decision

1. The appeal is admissible.

2. It is convenient to consider first the issue of inventive step.
3. Inventive Step (Article 56 EPC)
 - 3.1 It is apparent that none of the cited documents disclose all the features of claim 1 and that novelty is not in issue.
 - 3.2 The contested patent addresses the problem of providing a ceiling panel that can easily be installed and removed, and that is stably locked in the ceiling (see paragraph [0013]).
 - 3.3 Documents D1 and D2 describe a similar suspending ceiling system, marketed under the name "Focus Elite". D1 is a brochure describing the system and D2 is a guide for its installation. The documents are dated October 1992 and November 1993 respectively, and it has not been doubted that the ceiling system of D1/D2 and the documents were in the public domain before the priority date of the contested patent (12 August 1998).
 - 3.4 The "Focus Elite" system comprises a grid formed from inverted T-section beams, which supports ceiling panels. Two types of panel are described, centre panels of a standard size, and perimeter panels that are cut on site to the required size. There has been some discussion by the parties and the Opposition Division as to which of these panels could be considered as the closest prior art. The Appellant argues that, on the basis of purpose and number of features in common, the perimeter panels should be taken as the closest prior art. Claim 1 is directed to a panel for general use in

a suspended ceiling without specifying the use any further. Since both the centre and perimeter panels of D1/D2 are for use in suspended ceilings, it would be reasonable to analyse inventive step in light of either panel, so the choice of the perimeter panel as the starting point is indeed appropriate.

3.5 The perimeter panel of D1/D2 discloses all the features of the preamble of claim 1, but shows the lower surface of the second kerf to be oblique, whereas that of the panel of claim 1 is defined as being in a horizontal plane.

3.6 The panels of claim 1 and D1/D2 are installed and removed from below the ceiling using the same technique as used in the contested patent. To install a perimeter panel according to D1/D2, an inclined panel is slid onto the flange of the support by means of the kerf in the edge equivalent to (A) in the contested patent. The opposite side, edge (B), containing the "V-shaped" kerf, is then raised and slid horizontally onto the support, allowing edge (A) to drop such that the panel lies in the horizontal plane of the ceiling. To remove a panel, edge (A) is raised, and the panel is slid horizontally into the kerf cut into edge (A), which allows opposing edge (B) to fall from the support and the panel to be removed. Both the panels of claim 1 and of D1/D2 thus provide a solution to the problem of easy installation from below.

3.7 Starting from the perimeter panel of D1/D2 the problem to be solved could be seen as how to lock the panel more securely in place. According to the Respondent this is achieved when the lower surface of the second

kerf in edge (B) extends in a horizontal plane, thereby providing a double locking of the panels in both the horizontal and vertical directions.

3.8 However, the Board is not convinced by the Respondent's submission, because, once a panel is in position, the locking effect of the panel of claim 1 and the perimeter panel of D1/D2 is in practice the same. In the case of both types of panel, horizontal movement is prevented by the riser on edge (A), and the end of the kerf in edge (B). Vertical movement on edge (B) is restricted by the lower surface of the second kerf, irrespective of whether it is flat or sloping. The Respondent argues that this only occurs when the support flange fits snugly into the wedge-shaped kerf, but it is apparent from the figures of the contested patent and D1/D2, and from the demonstration given by the Appellant at the oral proceedings, that the amount of play for a panel according to the disputed patent and one according to D1/D2 maybe the same. The degree of locking may thus also be the same, and the posed problem is solved by the prior art arrangement of D1/D2.

3.9 Starting from D1/D2, the objective problem must therefore be reformulated to be the provision of an alternative shaped groove. The question posed is, would it be an obvious choice for the skilled person to replace the kerf in the perimeter panel of D1/D2 with one in which the lower surface extends in a horizontal plane?

The perimeter panels of D1/D2 are cut to size on site according to need, and consequently the kerf on edge (B) must also be cut on site rather than in the factory. It

is for this reason that it has an oblique lower surface, as this makes it easier to cut out using a simple tool having two inclined knife blades. If the sides of the kerf are parallel, then this is more difficult, as the waste material remains attached at the base. However, it is well known generally to cut a kerf using a rotating tool, such as a grinding wheel, having the same width as that of the kerf. Portable grinding wheels are commonplace, and although they usually require electrical power, they can easily be used on site. Cutting a kerf in the perimeter panels of D1/D2, whereby the lower surface extends in a horizontal plane, is thus within the common knowledge of the skilled person, and is an obvious alternative to the kerf shown for the perimeter panels of D1/D2.

3.10 For these reasons the subject-matter of claim 1 lacks an inventive step.

4. Added Subject-Matter (Article 123(2) EPC)

In light of the conclusion reached regarding inventive step, it is unnecessary to consider the matter of added subject-matter.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:

A. Counillon

U. Krause