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D E C I S I O N
of 4 February 1999

Case Number: T 0873/95 - 3.2.3

Application Number: 91460019.2

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IPC: E04D 3/36

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Title of invention:
Double roofing roof structure

Applicant:
Gantan Beauty Industries Co., Ltd

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step - obvious combination of known features"

Decisions cited:
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Catchword:
-

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Case Number: T 0873/95 - 3.2.3

D E C I S I O N
of the Technical Board of Appeal 3.2.3
of 4 February 1999

Appellant: Gantan Beauty Industries Co., Ltd
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Decision under appeal: **Decision of the Examining Division 2.3.03.107. of the European Patent Office posted 14 June 1995 refusing European patent application No. 91 460 019.2 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: C. T. Wilson
Members: F. Brösamle
J.-P. Seitz

Summary of Facts and Submissions

I. The appellant (applicant) lodged an appeal on 7 August 1995 against the decision of the examining decision of 14 June 1995 to refuse European application No. 91 460 019.2, paying the appeal fee in due time. The statement of grounds of appeal was filed on 13 October 1995.

The examining decision decided that the application did not meet the requirements of Article 54 EPC and even when amended of Article 56 EPC having regard to the following documents:

(A) JP-A-60-215963 and

(B) DE-A-3 526 080.

II. The appellant requests to set aside the impugned decision and to grant a patent on the basis of claims 1 to 19 (**main request**) or on the basis of claim 1A (**auxiliary request**) filed with letter of 25 February 1997 in response to the board's communication of 4 September 1996 in which the board gave its provisional opinion on documents (A), (B) and

(C) US-A-4 651 493.

III. The independent claim according to the above main- and auxiliary request reads as follows:

(a) main request (claim 1)

"1. A double roofing structure comprising a water-proof drain plate (14) set directly or not on at least a building structural member (11), a plurality of rafters (19) disposed over the drain

plate (14), each rafter (19) being supported by a trapezoidal cross-section shape holding element (16), said holding element (16) being secured to a fixing member (17, 17a, 18) which is connected to the building structural member (11) through the drain plate (14), a roof member (23) placed and fixed on the rafters (19), a spacing layer (22) being provided between the drain plate (14) and the roof member (23) and communicating with an opening (27) at an eave, characterised in that the part of the drain plate (14) that is disposed below a rafter is made continuous and is forming a projection (14c) which has a trapezoidal cross-section shape closely fitting to the underside of the central part of the holding element (16)."

(b) auxiliary request (claim 1A)

"1. A double roofing structure comprising a water-proof drain plate (14) set directly or not on at least a building structural member (11), a plurality of rafters (19) disposed over the drain plate (14), each rafter (19) being supported by a trapezoidal cross-section shape holding element (16), said holding element (16) being secured to a fixing member (17, 17a, 18) which is connected to the building structural member (11) through the drain plate (14), a roof member (23) placed and fixed on the rafters (19), a spacing layer (22) being provided between the drain plate (14) and the roof member (23) and communicating with an opening (27) at an eave, characterised in that the part of the drain plate (14) that is disposed

below a rafter is made continuous and is forming a projection (14c) which has a trapezoidal cross-section shape closely fitting to the underside of the central part of the holding element (16), a recess (14d) being provided on the projection (14c) for passing part (17) of the fixing member (17, 17a, 18) through it."

IV. The arguments of the appellant in support of the above requests can be summarized as follows:

- claim 1 is cast in a two-part form starting from (B) as the nearest prior art document; since claim 1 differs from (B) by three features its subject-matter is novel;

- the subject-matter of claim 1 is also inventive in the light of the prior art documents (A), (B) and (C);

- document (C) discloses an inner and outer lining with trapezoidal projections without, however, disclosing their function or linking them to the brackets for fixing; it is not justified to derive from the known liners that they are water- and windproof and solve the object of the present invention;

- document (A) discloses no double roofing structure and its holding elements disclosed in Figure 6 do not connect the trapezoidal plates "5,5" to the building structural member; in combination with the known holding element there is no question of a rain water- and windproof construction and the

corrugations of the sheets "5,5" serve the purpose of stiffening of the sheets during handling and when mounted on the building; a skilled person would therefore not consider (A) when confronted with a solution of the object of the invention;

- the claimed drain plate "14" is particularly designed to be impervious and its projection is arranged below any rafter which is held by the holding element "16" and is closely fitting to the central part of this holding element whereby the complete fixing member "25" is not intended for manipulation purposes but only for securing the rafter to a building structural member;

- for the above reasons the impugned decision should be set aside and the patent granted either on the basis of claim 1 or claim 1A in combination with dependent claims 2 to 19 also submitted with letter of 25 February 1997.

Reasons for the Decision

1. The appeal is admissible.

Main request

2. *Amendments*

2.1 Claim 1 differs slightly from the features laid down in originally filed claim 1 since "backing" now reads "building structural member (11)". Since in column 2, lines 1 to 20 of EP-A1-0 481 905 the backing is clearly

defined, see also Figures 1/2 and 18, 19, 20, 22, 24, 25, 28 to 30 of EP-A1-0 481 905, it is immediately clear that the backing is a "building" structural member (11) as now claimed.

2.2 The trapezoidal cross-section shape of the holding element "16" and the drain plate "14" can be seen from column 13, lines 25 to 29, and from a couple of figures according to EP-A1-0 481 905.

2.3 Claim 1 is therefore not open to an objection under Article 123(2) EPC.

3. *Novelty*

None of the documents (A), (B) and (C) discloses all features of claim 1 so that the double roofing structure thereof is novel within the meaning of Article 54 EPC.

4. *Inventive step*

4.1 Nearest prior art document is (B). As can be seen from Figure 4 in particular the drain plates "14, 14" have angles "14a, 14a" which are set at a distance from one another.

4.2 Water in the space "22" of (B) under abnormal circumstances like strong wind in combination with heavy rain falls can therefore flow between these angles and enter into the building to be protected.

4.3 According to EP-A1-0 481 905 the object of the invention has to be seen to provide a double roofing roof structure in which the aforesaid problems are overcome and a superior rain water preventing function is attained to enable a positive prevention of water

leakage or leakage of rain water as well as snow melting water to be carried out even under abnormal weather conditions such as typhoon or storm and the like.

4.4 This object is solved with the features laid down in claim 1, namely that the drain plate "14" that is disposed under a rafter "19" is made continuous and is forming a projection which has a trapezoidal cross-section shape closely fitting to the underside of the central part of the holding element "16".

4.5 It can be seen that in this double roofing structure water even under abnormal weather conditions cannot pass the continuous drain plates "14" since openings, gaps or holes are eliminated. Water can therefore not enter into the building to be protected.

4.6 It has to be assessed whether or not the double roofing structure according to claim 1 is based on an inventive step within the meaning of Article 56 EPC:

4.6.1 In the known double roof structure according to (B), see Figure 4 for instance, the drain plates "14, 14" are **dis**continuous, see reference signs "14a, 14a", under the adjacent rafter "19", see above remark 4.2.

4.6.2. From Figures 1 and 2 of (C) a double roofing structure can be seen which is **made tight** so that water existent in the space "6" cannot penetrate the inner lining "4" which is **made continuous** and fixed to a building structural member/backing by means not shown in detail in the drawings of (C).

4.6.3 Even if the construction of a double roofing structure known from (C) is in some respects different from claim 1 it is, however, obvious to a skilled person that water existent in the space or cavity between the

outer and inner layers "1,1" and "4,4" respectively cannot enter into the building to be protected, not even under abnormal weather conditions. It follows that a skilled person is clearly taught by a double roofing structure known from (C) how water can be prevented from entering a building i.e. the problem to be solved by the claimed invention and its general solution are comprised in the prior art of double roofing structures.

4.6.4 What remains to be done is to find a way in which the inner lining or drain plate can be fixed to the building structural member or backing.

4.6.5 From (A) which does not relate to a double roofing structure a skilled person is, however, aware that adjacent plates "5,5" can be joined together by overlapping trapezoidal protrusions "6,6" closely fitting to the underside of the central part of the holding part "16", see in particular Figure 6 of (A).

4.6.6 It is obvious that the way in which a lining is made continuous and in which it is fixed to a building structural member or backing has nothing to do with the structure of the roofing be it a double or a single roofing structure. A skilled person would therefore also consider roofing structures in a slightly different technical field, as from document (A), since there the necessity to prevent access of water to the building also exists.

4.6.7 Under these circumstances claim 1 does not define inventive subject-matter since a combination of (B) and (C) or (A) leads to the double roofing structure without inventive endeavour.

4.6.8 Claim 1 is therefore not allowable for reasons of Article 56 EPC.

5. Appellant's counterarguments raised with letter of 25 February 1997 are not supported by the facts and not convincing for the following reasons:

5.1 A skilled person would derive from (C) that the continuous inner and outer linings are a means for making a roof construction **tight** even under abnormal weather conditions since it is obvious that the construction laid down in (B) has been improved in respect of avoiding access of any water to the building to be protected. Whether or not (C) mentions the existence of heavy winds it has to be observed that the roof construction according to (C) is suitable even for abnormal weather conditions and that the object to be solved by the invention is already and completely solved by the known construction.

5.2 Since, in (C) no attention is drawn to the kind of holding of the inner (and outer) corrugated liner for a skilled person confronted with the object to be solved by the invention it is a must to consider prior art constructions in this respect. From the nearest prior art document (B) it can be seen that the drain plates are fixed in the region **below the rafter** to the building structural member.

5.3 What remains to be done by a skilled person is the adaption of the cross-section of the continuous drain plate, namely trapezoidal, to the cross-section of the central part of the holding element which has also a trapezoidal form.

5.4 Even if (A) differs from some structural features prescribed in claim 1 a skilled person could and would derive from (A) the possibility of how a holding element "16" can be adapted to a trapezoidal plate "5,5" in order to fasten the latter to a building structural member, see in particular Figure 6 of (A).

5.5 It must be assumed that the same technical features as set out above achieve the same technical features in (A) and in present claim 1, namely achieving a **positively waterproof construction**. In this respect it is irrelevant that the corrugations of the known plates "5,5" may be used for stiffening purposes since this possible extra effect does not make the known construction unsuitable for the solution of the object to be solved by the invention.

5.6 This is also true for appellant's argument that the known fixing member is also used for manipulation purposes since it is not excluded thereby that a continuous plate is suitable to positively prevent penetration of water.

Auxiliary request

6. Claim 1A is also not open to an objection under Article 123(2) EPC, see above remark 2.

7. Claim 1A differs from claim 1 of the main request by its additional feature in the characterising clause, namely that recesses "14d" are provided on the projection "14c" for passing part "17" of the fixing member "17, 17a, 18" through it.

In this respect reference has to be made to (A), see Figure 6 in particular and reference signs "5, 6, 17, 19, 23", so that claim 1A does not add anything inventive to the non allowable claim 1 of the main request. Claim 1A is therefore also not allowable, Article 56 EPC.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

N. Maslin C. T. Wilson