BESCHWERDEKAMMERN DES EUROPÄISCHEN PATENTAMTS

BOARDS OF APPEAL OF THE EUROPEAN PATENT OFFICE

CHAMBRES DE RECOURS DE L'OFFICE EUROPEEN DES BREVETS

A		B		C	X

File Number: T 46/91 - 3.2.3

Application No.: 81 301 641.7

Publication No.: 0 038 211

Title of invention: Insulated chimney pipes

Classification: E04F 17/02

D E C I S I O N
of 20 August 1992

Proprietor of the patent: Insulated Chimneys (Trim) Limited

Opponent: RMB-Handels AG

Headword:

EPC Art. 56

Keyword: "Inventive step (no)"

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number : T 46/91 - 3.2.3

D E C I S I O N
of the Technical Board of Appeal 3.2.3
of 20 August 1992

Appellant : (Opponent)
RMB-Handels AG
Bramenstrasse 10
CH-8184 Bachenbülach (CH)

Representative :
Blum, Rudolf Emil Ernst
c/o E. Blum & Co.
Patentanwälte VSP
Vorderberg 11
CH-8044 Zürich (CH)

Respondent : (Proprietor of the patent)
Insulated Chimneys (TRIM) Limited
Comsat House
1 Northbrook Road
Dublin 6 (IE)

Representative :
Rees, David Christopher
Kilburn & Strode
30 John Street
London WC1N 2DD (GB)

Decision under appeal :
Decision of Opposition Division of the European Patent Office dated 11 October 1990, issued on 16 November 1990, rejecting the opposition filed against European patent No. 0 038 211 pursuant to Article 102(2) EPC.

Composition of the Board :

Chairman : C.T. Wilson
Members : K.W. Stamm
L.C. Mancini

Summary of Facts and Submissions

I. European patent No. 38 211 was granted on 23 March 1988 with thirteen claims in response to the European patent application No. 81 301 641.7 filed on 14 April 1981.

II. Granted Claim 1 reads:

"1. An insulated chimney pipe for use with boilers, open fires or the like comprising an outer wall (14) within and spaced from which is an inner wall (16) and an end cap (22, 30) at each end of the chimney pipe, the end caps (22, 30) engaging the inner and outer walls (16, 14) and maintaining a predetermined spacing between them, characterised in that the inner wall (16) is of refractory one-piece modulated construction comprising bonded ceramic fibres."

III. A Notice of Opposition was filed against the European patent on 15 December 1988 requesting revocation of the patent since its subject-matter was not inventive. In particular the following documents were cited:

(1) GB-A-1 156 972 (document 15 of the contested decision)
(3) Fiberwall, Installation Manual (1/79)
(4) Fiberwall, Typical design & construction detail (8/77)
(5) GB-A-894 056
(6) GB-A-1 506 152;
(8) US-A-3 631 789
(12) Keramische Sonderwerkstoffe in der Industrie (3/06/69)

IV. In its decision of 11 October 1990, issued on 16 November 1990, the Opposition Division rejected the opposition

since the subject-matter of the claims involved an inventive step having regard to the cited documents.

V. The Appellant filed a Notice of Appeal and paid the appeal fee on 9 January 1991. The Statement of Grounds was filed on 15 March 1991, together with a further document

(17) Prospekt Ontop Gesellschaft für Rauch- und Abgastechnik mbH, "Schornstein-Rauch- u. Abgasanlagen aus Edelstahl"; 32 pages, dated 1988.

VI. In the Appellant's (Opponent) view, document (3) discloses the application of ceramic fibrous material for pipes having good thermal shock resistance and a low thermal conductivity. Document (8) teaches to use known ceramic material for the inner wall of a pipe section; it is, according to the Appellant, obvious therefore, to substitute ceramic fibrous material for the known inner wall of a chimney pipe section.

VII. The Respondent (Proprietor of the patent) argues as follows:

(a) It is not possible to substantiate the circumstances surrounding the relevant art in 1980 from a document (17) produced some eight years later.

(b) The patent is directed to "an insulated chimney pipe for use with boilers, open fireplaces or the like". This field is to be distinguished from applications of flue gas ducts for more consistent and optimised combustion processes associated with industrial plant. The technical conditions to be met by domestic applications are not to be compared directly with those of the mentioned industrial applications.

(c) The prior art must be viewed not only in terms of what combination of features could be made, but also whether it is fair to make the combination at all. There is nothing to move the chimney designer to look at document (3) for an answer to his problems.

(d) Document (5) is of considerable age which can be taken as a clear indication that the advantages of using moulded bonded ceramic fibres were far from apparent to the skilled person before the present invention was made. Document (5) is wholly silent on the subject of resistance to chemical attack which is essential for a chimney liner.

(e) It is not possible for the skilled person to recognise from the teachings of document (8) the advantages inherent in the prefabricated moulded ceramic fibre construction. As a piece of prior art it is more of a curiosity than a clear and unmistakable direction leading to the invention.

VIII. Answering a communication of the Board, the Respondent presents together with his letter dated 10 March 1992 a "First affidavit of Lawrence George Hadley", dated 2 March 1992. In his letter, the Respondent submits an amendment in order to clarify the chimney section nature of the invention: the first line of Claim 1 is suggested as follows: "A prefabricated insulated chimney pipe section ...". This amendment is regarded by the Board as forming an auxiliary request. (cf. IX below). The essential reasonings put forward by the Respondent are summarised as follows:

Respondent's letter dated 10 March 1992

(a) Document (8) is not to be regarded as teaching a prefabricated chimney pipe section but the assemblage of non-insulating tiles on site. This document is more of a detour out of any direct line to the present invention than a useful step on the way.

(b) Document (5) was eighteen years old at the priority date of the present invention. Linking a bonded ceramic fibre with a cast ceramic tile is not a natural association for the skilled person to make.

(c) Association of (8) and (5):

- The quality of heat insulation is not present in the material of document (5). Hence the skilled person's discouragement from looking at that document in the light of document (8).

- Even if the association between (8) and (5) was made, it is not enough to arrive at the invention.

- Document (8) offers no encouragement that sections of maximal length could be prefabricated.

(d) The generic term 'ceramic' is wholly inadequate for the skilled person to be able to identify fibrous bonded material from a lone teaching of a fired clay. There is inventive merit in picking bonded ceramic fibre from the plethora of ceramic materials with all their different characteristics.

(e) Why should the person skilled in the art, having contemplated document (8), be encouraged to seek out another form of ceramic material and why, having

decided to do this, should he arrive at the notion of using bonded ceramic fibres with no indication in document (8) that documents (5) and (6) will be in the direction in which to look? The present invention radically alters the approach taken to making chimney sections by exploiting the properties of bonded ceramic fibres. These are not taught in the prior art.

First Affidavit of Lawrence George Hadley

(a) Document (1) is agreed as presenting the features of the precharacterising portion of Claim 1.

(b) 'modulated' in the patent is a misspelling for 'moulded'.

(c) None of the cited art which relates specifically to insulated chimneys discloses an inner wall which is integral with the insulating material.

(d) The indication of 'ceramic material' in (8) is inadequate teaching to suggest the specific materials of (5) and (6). 'ceramic' covers a multitude of different materials having widely differing properties. (8) could be considered simply as a direct substitute for the metal liner in document (1).

(e) In the opposed patent the inner wall constitutes the insulation itself. Therefore, the amount of secondary insulation is reduced.

(f) It is not possible to arrive at the invention simply by substitution of the material of (5) and (6) for the ceramic tile of (8) without considerable research and a most necessary fundamental shift in thinking as to the purpose of the inner wall.

(g) In document (1) the seams are weak spots and cause problems of corrosion, in particular as regards the inner wall.

In document (8), it is inferable from the context of the specification that the material is resistant to chemical attack and is also able to withstand a certain amount of thermal shock. The construction is unstable.

According to document (5) a refractory or cementitious composition is disclosed that can be manipulated in a variety of ways, including casting. The composition includes ceramic fibres. The document teaches to cast a refractory material into cylindrical form; there is no teaching of using a moulded or cast liner to constitute both the insulation and the conduit at one and the same time.

Document (6) discloses a ceramic fibre mix comprising alumino-silicate refractory fibre and a refractory ceramic fibre. There is a reference on page 3 which indicates that the fibrous material may be used to form castable or mouldable materials. There is no specific indication of the applications in which the material could be used.

(h) Documents (8), (6) and (5) fail fundamentally in providing the essential link between document (8) and the fibrous refractory material disclosure. The tiling in (8) is not fibrous in nature and is not

refractory in the sense that it provides a significant amount of insulation at the same time as it defines the inner wall. It is not possible to take the necessary step to the material of documents (5) and (6) without a leap of the imagination.

IX. Further observations were filed on 11 May 1992 by the Appellant and on 25 June 1992, annexed by a "Supplementary Note by L.G. Hadley", dated 15th June 1992, by the Respondent.

The Appellant submits that

(a) Refractory insulating units made of bonded ceramic fibres would have been used as linings in ovens and chimneys prior to the priority date. Such statement would follow immediately from documents (3) and (12).

(b) From documents (3), (4) and (12) it were obvious to use the known material also for the inner lining of a chimney in order to influence favourably its thermal conductivity.

The Respondent alleges that

(c) Even without documents (3) and (12) at least four documents had to be combined and then there was failure to provide the crucial bonded ceramic fibrous nature of the inner lining of the invention. The problem is one of insulation. The invention advantageously makes the inner lining itself of insulated material. This is nowhere contemplated in the prior art.

(d) The combined thickness of the lining and fibrous insulation can be varied according to the application requirements but the form of construction covered by the patent application does not require an air space for cooling or for additional heat insulation.

X. The Appellant requests to set the contested decision aside and to revoke the patent. He requests auxiliarily oral proceedings.

The Respondent requests to dismiss the Appeal and to maintain the patent unamended. He requests auxiliarily maintenance of the patent with the first four words of Claim 1 amended as follows: "A prefabricated insulated chimney pipe section" (see above under VIII).

Reasons for the Decision

1. The Appeal is admissible.

2. Amendment

The proposed clarification in Claim 1 (cf. above under VIII.) is of no necessity since, in accordance with Article 69(1) EPC, the claim is to be interpreted in the light of the description. The term "section" is used on page 4, lines 1 to 3. The term "prefabricated" appears to be necessarily implied by the expression "moulded" (forming the real meaning of "modulated") in the given technical situation. Both terms appear also to be covered by the considerations of the problem to be solved (see para. 4). The wording of Claim 1 is, therefore, to be interpreted as including the proposed amendment and consequently the auxiliary request in substance is identical with the main request.

3. Novelty

None of the cited documents describes a chimney having all the features of granted Claim 1. The novelty of its subject-matter is, therefore, not questioned.

4. Closest prior art, problem and solution

Document (1) is regarded as closest to the invention. The problem to be solved according to the description is accepted as the objective problem, viz. to provide a prefabricated chimney pipe section which exhibits a long service life, high mechanical stability and low thermal conductivity and in particular which is not liable to ultimate destruction by the corrosive chemicals commonly present in chimneys or by thermal shock. Document (1) presents a prefabricated construction the inner wall of which is to be made of expensive material (stainless steel) in order to avoid corrosion, the inner wall cooperating with a layer of insulation. The suggested solution replaces such an inner wall made of stainless steel by the use of bonded ceramic fibres and provides also to a certain extent the function of the insulation wall. The posed problem is evidently solved.

5. Inventive step

5.1 The skilled person who starts from document (1) is aware of the advantages of prefabrication and the disadvantages of the metallic inner wall. Document (8) teaches to use ceramic tile for an inner wall of another type of chimney construction, not enabling prefabrication, however avoiding the fundamental problem of the metallic inner walls, i.e. corrosion. It is clear that document (8) would not present the solution looked for. Therefore, the skilled person would not yet finish his investigation of

the prior art. But he would also not forget that he is interested in prefabricated chimney sections and that an advantageous constructional material not being exposed to corrosion problems is presented by ceramic tiles.

5.2 With such a state of information, however, the skilled person -being interested in appropriate materials like ceramic but adequate for pipe sections - would be expected to closely study the teaching of document (5). He would find there the recommendation to use ceramic fibrous material, in particular for casting sections of pipes (page 2: "Example 1. Castable Compositions Based on Fibrous Aluminium Silicate and Colloidal Silica."; page 3: "Example 3. Coated fire brick"; page 8: "Example 7. Particular Castings from Castable Compositions").

Since the skilled person looks for chimney pipe sections and the possibilities provided by ceramic inner lining he would hardly be expected to ignore the information given in document (5) in relation to what he is looking for: ceramic material enabling the production of prefabricated sections. Special mentioning is made of properties which belong to compositions of fibrous ceramic which he must be highly interested in: "... and the ceramic castings provide resistance to flame erosion at elevated temperatures and thermal shock resistance as well as excellent insulating properties" (page 8, lines 52 to 56). He knows also - since he is supposed to know document (8) - that ceramic as such is a substitute for stainless-steel inner walls.

The skilled person will thus recognise here the characteristics of compositions of bonded ceramic fibres used for prefabricated pipe sections. He will be expected to conclude directly that prefabricated pipe sections made of bonded ceramic fibres would appear to present

interesting possibilities for the construction of the inner wall of chimneys. The skilled person is taught that the material he is interested in for replacing the former metallic liner has also "excellent insulating properties". He is thus challenged to make use of that combination of material qualities.

5.3 The Board is of the opinion that the teaching given by document (5) following the knowledge the skilled person may be assumed to have acquired from documents (1) and (8) would present in an obvious way the solution to the posed problem, i.e. providing a (prefabricated) chimney pipe section made of bonded ceramic fibres as defined in contested Claim 1.

5.4 Further advantageous effects (such as the reduction of a secondary insulating wall or the integration of the respective functions of the inner and the insulating walls in one wall) cannot justify the assumption of an inventive step since such effects are to be regarded as technically necessary favourable consequences of an already obvious idea.

6. The subject-matter of Claim 1 is, therefore, not patentable having regard to Articles 52(1) and 56 EPC. Dependent Claims 2 to 13 are directed to preferred embodiments of the product of Claim 1 and do not add patentable subject-matter.

Order

For these reasons, it is decided that:

1. The contested decision is set aside.

2. The patent is revoked.

The Registrar: The Chairman:

N. Maslin C.T. Wilson

29.9.92

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