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D E C I S I O N
of 2 July 2003

Case Number: T 0568/99 - 3.2.3

Application Number: 86307161.9

Publication Number: 0219974

IPC: F25B 39/04, F28F 1/02

Language of the proceedings: EN

Title of invention:
Condenser with small hydraulic diameter flow path

Patentee:
MODINE MANUFACTURING Company

Opponents:
BEHR GmbH & Co.
VALEO THERMIQUE MOTEUR
SHOWA DENKO K.K.
ZEXEL Corpporation

Headword:
-

Relevant legal provisions:
EPC Art. 123(2)

Keyword:
"Range not disclosed originally"

Decisions cited:
G 0001/93, T 0145/87, T 0256/89, T 0398/92, T 0737/90, T 0169/83

Catchword:
-

Europäisches Patentamt | European Patent Office | Office européen des brevets

Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0568/99 - 3.2.3

D E C I S I O N
of the Technical Board of Appeal 3.2.3
of 2 July 2003

Appellant: (Proprietor of the patent)
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Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted 15 March 1999 revoking European patent No. 0219974 pursuant to Article 102(1) EPC.**

Composition of the Board:

Chairman: C. T. Wilson
Members: J. du Pouget de Nadaillac
M. K. S. Aúz Castro

Summary of Facts and Submissions

I. The appeal is directed against the decision posted on 15 March 1999 of an opposition division of the European Patent Office which decided that claim 1 as granted of the European patent EP-B-0 219 974 did not contravene Article 123(2) EPC, however revoked the patent for lack of inventive step of the subject-matter of said claim.

This claim has the following wording:

"An air cooled condenser suitable for use in a refrigeration or air conditioning system to condense a refrigerant vapour into a refrigerant liquid, the condenser comprising a pair of spaced headers (10,12) for receiving refrigerant vapour and collecting condensed refrigerant; and a plurality of tubes (20) extending in hydraulic parallel between said headers, each tube being in fluid communication with each said header and being elongate in transverse cross-section with the minor dimension of the cross-section aligned substantially perpendicular to the direction of air flow through the condenser, characterised in that each tube defines a plurality of discrete hydraulically parallel fluid flow paths, each said fluid flow path having a hydraulic diameter in the range of 0.381 to 1.778 mm (0.015 to 0.070 inches)."

II. The patent proprietor, hereinafter the appellant, filed the notice of appeal on 21 May 1999 and paid the appeal fee on the same date. The statement of grounds of appeal was received on 26 July 1999.

In answer to this statement, opponents 02 and 03, hereinafter respondents 02 and 03, filed submissions, challenging among other things the opposition division's decision that the upper limit of 1.778 mm (0.07 inches) is clearly and unambiguously derivable from the patent application as originally filed.

III. In a communication sent on 14 January 2001, the board of appeal expressed the provisional opinion that said upper limit was not derivable from the diagrams of Figure 3 of the patent application as filed, so that a revocation of the patent on the basis of Article 123(2) EPC could not be excluded.

This provisional opinion was contested by the appellant in a letter received on 23 July 2002. Submissions of respondents 03 and 01 were also received, respectively on 27 September and 6 November 2002.

IV. Summons to oral proceedings pursuant to Rule 71(1) EPC were sent to the parties on 11 February 2003.

V. By means of a letter received on 2 June 2003, the appellant submitted as subsidiary requests that:

1. in case, the Board of Appeal does not consider the upper limit of hydraulic diameter of 0.07 inches as being disclosed by Figure 3 of the patent application as filed (in contrast to T 398/92) and consequently intends to revoke the patent in suit, the following questions be submitted to the Enlarged Board of Appeal:

(a) What are the requirements under which values (numbers) may be derived from x-y-diagrams?

(b) Are these requirements fulfilled by Figure 3 of European Patent 0219 974 B1?

(c) What are the requirements to assume a contradiction between a continuous x-y-diagram and the description, which a person skilled in the art cannot resolve in a clear and unambiguous way?

(d) Are these requirements fulfilled by Figure 3 and the description of European Patent 0 219 974 B1?

2. in case, the Board of appeal does not consider the upper limit of hydraulic diameters of 0.07 inches as being disclosed by US 887,223 in the way of incorporation by reference into the patent application as filed and would decide to revoke the patent in suit, the following questions be submitted to the Enlarged Board of Appeal:

(a) What are the requirement for an incorporation by reference of a document?

(b) In particular: Need the document incorporated by reference be accessible by the Examining Division of the European Patent Office at the date of filing of the patent application, or is it sufficient to be accessible at the date of filing the request for examination or at any later date?

(c) In particular: Need the document incorporated by reference be accessible to the public as of the date of publication of the patent application in any specific way?

(d) Further to (c): Is it sufficient that an interested member of the public can obtain a copy of the document incorporated by reference on request from a person or entity being in possession of such copy, or must the document be accessible in any specific way, e.g. through a library?

The following documents were joined to the letter:

– a technical expert opinion of Prof. Dr Hans Müller-Steinhagen;

– a legal statement of Dr Peter Dihm, regarding German Case Law;

In addition, the following document was sent by fax on 25 June 2003:

– a legal opinion of Prof. Dr Dr Joseph Straus, Max Planck- Institute for Intellectual Property, Competition and Tax law, Munich.

VI. By letters respectively received on 6 May, 10 and 30 June 2003, respondents 03, 02 and 01 replied, respondents 01 and 03 filing the following documents:

– a technical opinion of Prof. Dr Mayinger

– a paper of Prof. Dr Dr J. Straus in GRUR Int. 1995, pages 103 to 112.

VII. Oral proceedings took place on 2 July 2003. Although duly summoned, respondent 04 was not present or represented. Pursuant to Rule 71(2) EPC, the proceedings were continued without him.

During theses proceedings, the appellant filed a further subsidiary question to be referred to the Enlarged Board of appeal and submitted two amended claims 1 as auxiliary requests I and II. In these claims, the sole amendment concerns the upper limit which is given as being 1.727 mm (0.068 inches) in the first auxiliary request and 1.651 mm (0.065 inches) in the second.

The subsidiary question to the Enlarged Board is the following:

"If graphs, which relate to the same parameter and which represent ranges of this parameter, end at different upper values of this parameter, under which circumstances must the deviation of these different upper values be considered for the question of disclosure?"

VIII. The arguments of the parties concerning the disclosure or not of the upper limit of 0.07 inch can be summarised as follows:

(A) From the appellant:

The patent application as originally filed mentions a range of about 0.015 to 0.040 inches for the hydraulic diameters, but it does not mean that the present invention works in this range only. In the description,

this range is preferred, since it provides an advantageous and substantially increased heat transfer, as shown by the peaks of the curves A in Figure 3. However, this figure on its left side, which is headed the "INVENTION", clearly shows that the invention also works in the range above 0.04 inches, in which an increased heat transfer over the prior art is still obtained. The inventive effects are therefore not limited to the given range of hydraulic diameters and a broader range is therefore allowable. Indeed, in the whole application as filed and in particular in Figure 3, no limits for such a range are expressly given or shown, but there is no obligation to do so, since it is not the purpose of the description and drawings to give the limits of the protection to be sought. Only the granted claims have to define the extent of protection and, thus, its numerical limits when necessary. It also cannot be argued such a broadening is prejudicial to the interest or legal security of the public, since the abstract of the patent application as originally filed mentions this upper limit of 0.07 inches.

Figure 3 is a graphical representation in Cartesian coordinates, so that the same rules as in the decision T 398/92 and T 145/87 should apply. When values are disclosed in a figure as forming part of an invention, why should it not be possible to deduce therefrom a range? In Figure 3, not only clear values are disclosed, but also the values which provide a better heat transfer. Regarding the curves disclosed as forming part of the "Invention" in this figure, the skilled person sees that, if condensers according to the curves A provide an improved heat transfer from

about 0.015 inches to about 0.05 inches, another set of curves, namely the curves B, extend from about 0.04 inches to a middle point between the values 0.06 and 0.08 inches marked on the X-axis, that is to about 0.07 inches. The two pass condenser corresponding to these curves is also advantageous, so that these curves B cannot be ignored. It is therefore logical to choose this value of 0.07 inches as the upper limit for the invention. Of course, due to the nature of the invention, the influence of parameters such as the car speed and the kind of fan which is used and the fact that hydraulic diameters are determined with a variance of up to 10%, slight deviations cannot be avoided, so that there is a certain arbitrary aspect in the choice of this value, but nevertheless, the differences do not exceed a few thousandth of an inch and are therefore acceptable.

Moreover, reference is made in the description of the patent application to a US patent application with the serial number 887,223 (US patent 4 688 311). The content of this document is to be incorporated in the application of the patent in suit, see in this respect the Guidelines and T 737/90. In this document, the range of about 0.15 to 0.07 inches is disclosed for the hydraulic diameters of the flow paths of identical condenser tubes, as shown by Figure 2 of this document which corresponds to Figure 2 of the patent in suit. There is no reason to exclude this teaching of the US document, which confirms the teaching of Figure 3.

If the board reaches a negative decision on the here concerned disclosure of a value by a figure, then a discrepancy will appear, not only between decisions of

different organs of the EPO in the present case, but also between such a decision and the decision T 398/92, so that there is a need to have a clear answer on such an issue, in particular when the curves do not end on the same vertical line. The reason for the second list of questions to the enlarged board would be an inconsistency between the decision of the board on the content of the referenced US document, the Guidelines and the decision T 737/90. Moreover, in the USA, the documents are now available to the public.

Claim 1 according to the two auxiliary requests is admissible, since it was already indicated in the submission filed on 2 June 2003 that other values of the curves A and B could be used, in particular the value 0.65. Thus, the respondents cannot be surprised by these requests. Moreover, the requests are a logical consequence of the questions put forward by the board during the discussion on the main request. It is therefore not an abuse of procedure, it is only a rational way for the appellant to solve the problem by trying to agree on another value. The facts and the documents are the same, so that it can be quickly decided on these requests.

(B) From the Opponents

In the patent application as filed, at least 6 references to the upper limit of the hydraulic diameter range being 0.04 inches can be found, in contrast therewith no mention of 0.07 inches, even not in Figure 3, which in the description is only said - just like Figures 4 to 6 - to show advantages of the invention. Thus, as far as the upper limit is

concerned, there is no need for the skilled person to consider Figure 3, and in particular to consider it preferably to the Figures 4 to 6. Moreover, in this Figure 3 the curves A and B peter out at both ends with no clear cut off and they were generated by computer, based on quite approximate calculations, so that these curves can only show tendencies or "predicted performance" as acknowledged by the description itself, and not real values. In the description it is indicated that the curves were confirmed by actual tests, but which values of these curves were confirmed is not disclosed. Regarding the example of Table 1 of the description which mentions an hydraulic diameter of 0.030 inches for the present invention and 0.078 inches for the prior art, the skilled person was not incited to take into account the left ends of the curves A and B, all the more as these ends do not show a significant performance over the prior art. Furthermore, a comparison between Figures 3 and 4, which according to the headline of Table 1 refer to the same prior art condenser, shows that the prior art curves on the right side of Figure 3 were positioned too low, so that after correction the hydraulic diameters according to the left ends of the curves A and B offer no advance over the prior art. In view of all these inconsistencies and ambiguous informations of the figures, the skilled person has all reason to rely on the *expressis verbis* given range, which excludes the range 0.04 to 0.07 inches. The claimed range of up to 0,07 inches is incompatible with the patent application as originally filed and its introduction in Claim 1 created a legal insecurity.

The US application, which is identified in the patent application, was not available to the examiner of the EPO on the date of filing the patent application and has only been published after the publication date of said application of the patent in suit, so that at least on this last date it was not available to the public. Moreover, the mere object of this citation was to disclose a manufacturing method of the tubes according to the invention, and nothing more.

The first list of questions to the Enlarged board is of technical aspect and does not concern a point of law. T 398/92 is moreover not comparable, since it concerns a feature which was restricting the scope of the invention. The lines in the figures were also all ending on a single vertical line. The answer for the second list of questions has already been given, see in this respect the paper of Prof. Dr Dr Straus in GRUR Int. 1995.

Both claims 1 according to the auxiliary requests are not admissible, being filed too late. The board had expressed its negative opinion one and a half years ago. Moreover, it is quite clear that, if the patent is revoked for lack of disclosure of the upper limit 0,07 inch, the same will occur with the other new values. If the requests were admitted, why not others with different arbitrarily chosen values?.

IX. The appellant requested that the decision under appeal be set aside and that the patent be maintained as granted, by way of auxiliary request, that the questions formulated in its, the appellant's, letter of 2 June 2003, pages 2 and 3, as well as the question

filed in the oral proceedings be referred to the Enlarged Board of Appeal, by way of further auxiliary request, that the patent be maintained on the basis of claim 1 according to auxiliary request I or II, both filed in the oral proceedings.

The respondents requested that the appeal be dismissed.

Reasons for the Decision

1. The appeal is admissible.

2. Since, in the patent application as originally filed the hydraulic diameters were expressed in "inches", this unit is used in the present decision without added conversion to SI units.

According to Article 85, the abstract shall merely serve as technical information and should not be taken into account for any other purpose. Therefore, the fact that the upper limit of 0,07 inches was mentioned in the abstract of the patent application is irrelevant for the present case.

3. It is not disputed that, in the course of proceedings, a feature which can be clearly and unambiguously derived from a drawing can be used to define the subject-matter for which protection is sought. In the course of the examination proceedings, this can result in a broadening of a numerical range *expressis verbis* given in the original disclosure without necessarily contradicting said disclosure and without offending

against Article 123(2) EPC; it depends on the circumstances of each case.

4. In the decision under appeal, the first instance held that, since the curves B in Figure 3 are "higher" than the prior art curves at least up to a value of 0.07 inches, the skilled person would conclude that the invention, as far as heat exchanger cores corresponding to the curves B are concerned, should extend up to 0.07 inches.

5. In the application as originally filed of the patent in suit, after an introduction setting out the problems which occur in condensers employed in air conditioning or refrigeration systems, a summary of the invention is presented on page 2, which provides the information that each of the fluid flow paths defined in the condenser tube has a hydraulic diameter in the range of about 0.015 to 0.040 inches. The same information is given in the detailed description of the preferred embodiment of the invention, page 7, first lines, immediately followed by the indication that "a hydraulic diameter of 0.035 inches optimizes ultimate heat transfer efficiency and ease of construction". Then, on page 9, the last sentence relating to Figure 3 has the following wording:

"As can be appreciated from Figure 3, heat transfer is advantageously and substantially increased in the range of hydraulic diameters of about 0.015 inches to about 0.040 inches through the use of the invention with some variance depending upon air flow". As seen, here, the range is given in connection with the disclosure of Figure 3.

Finally, this range is also given in each of the three independent claims 1, 4 and 9, as originally filed. Thus, in six passages of the patent application as originally filed, the range of 0,015 to 0,040 inches is given *expressis verbis*, and there is no suggestion that other limits could be considered or envisaged, in particular the claimed upper limit of 0.07 inches when in Table 1 of the description an hydraulic diameter of 0.07871 inches for the prior art is given.

6. As support for the claimed upper limit of 0.07 inches, the appellant essentially relies on the disclosure of Figure 3 and, in particular, on the curves B of this figure. Figure 3 is one of four figures, namely Figures 3 to 6, which are all in Cartesian coordinates, these figures - according to the description - aiming at showing a number of advantages of the invention. In Figure 3, the heat transfer rate (Y-axis) is plotted against the hydraulic diameter (X-axis) at air flows varying from 450 to 3200 standard cubic feet per minute ("SCFM" in abbreviated form). The abscissa axis is divided by pairs from 0.00 to 0.18 inches. The left part of Figure 3, which is headed "INVENTION", shows two sets of graphs, namely.

– a first set of four graphs A in plain lines, one above the other, for four different air flows, said graphs extending from the area between 0 and 0.02 inches to the area between 0.06 and 0.08 inches and presenting rather pronounced apices at about 0.02 inches; and

– a second set of four graphs B in broken lines for the same air flows, however with their left ends in the area around 0.04 inches and their right ends between 0.06 and 0.08 inches, as are the right ends of the curves A; these graphs B are a bit domed or flat with their higher points near 0.04 inches and they each lie respectively above the right parts of the graphs A.

The right side of Figure 3, which is separated from the left side by a blank part, concerns the "PRIOR ART", namely condenser cores previously produced by the applicant, and it shows four rather horizontal curves in dashed lines for the same different air flows.

According to the description, the curves A and B were generated by computer, based on a heat transfer model for two condenser cores having the same face area and being made according to the present invention, several common constructional specifications of these cores being given in the description. The core according to the curves B differs from that of the curves A only by the fact that the length of the flow path in each tube was doubled, i.e. the number of tubes was halved and the tube length doubled. In the description, it is also mentioned that various points on the curves A and B have been confirmed by actual tests, however without further details.

7. An examination of the curves shows the following:

The value 0.07 inches neither appears on the abscissa axis of Figure 3, nor is suggested by a particular point or mark on any graphical representation of this

figure. The right ends of the curves A and B, which according to the appellant, disclose this value, do not end on a clear single vertical line; they all peter out more or less in the median area between the two values 0,06 and 0,08 inches of the x-axis. Moreover, at least three curves A have their right ends at a level which is lower than that of the corresponding prior art curves, so that at least in the range from 0.06 to 0.08 inches the condenser core according to these curves A is not shown to be advantageous.

8. According to the description, the object of Figure 3 is to show the relationship between the heat transfer rate and the hydraulic diameters of the refrigerant flow paths. In the documents as originally filed there is no indication or suggestion that this figure is supposed to disclose any ranges or limits of the invention. The fact that the left part of Figure 3 is headed "Invention" does not necessarily imply that the **full** curves in this left part are to be considered as belonging to the invention or even completely disclose the invention, all the more as the right ends of certain curves A are well under the corresponding curves of the prior art as seen above, so that apparently they do not belong to the invention. The heading "invention" is here only used to distinguish the graphs concerning the invention form those of the prior art. Where the invention begins and finishes is not disclosed in Figure 3. How much the heat transfer rate has to be improved so that the present invention could be considered as showing advantageous effects over the prior art is also not specified. Moreover, in the absence of any information on the curves ends, the person skilled in the art has no reason to think that

these ends are of importance and he may think that in fact the curves are open-ended or were arbitrarily ended by the drawer. This seems to be confirmed by the fact that, considering only the right ends of the curves B, these ends - as said above - are not on a single vertical line, although they are still above the prior art curves. This is not the indication of a limit. Some right ends of the curves B are even substantially above the corresponding prior art curves and could have been prolongated on the right, while still showing advantages over the prior art. Since the object of Figure 3 was merely to show advantages of the invention, it has to be expected that the object of the graphs was to show the most interesting parts and not necessarily the whole invention; the description by stipulating the range of about 0.015 inches to about 0.040 inches in connection with Figure 3, see also the hydraulic diameter of 0.030 inches given in Table 1, contributes to support this assessment. When graphs, which are merely intended to show advantages of an invention, show that said invention could be performed beyond the ends of the drawn graphs, the person skilled in the art cannot assume on the sole basis of these graphs that said ends represent limits of the invention. Thus, it cannot be recognised that the curves A and B represent ranges of hydraulic diameters according to the invention and that the right ends of these curves must unmistakably represent the upper limits of the present invention.

Already for this reason, the impugned decision, to which Prof. Dr Dr Joseph Strauß in his legal opinion essentially referred, is to be set aside.

9. Supposing that, nevertheless, taking into account the fact that the curves B extend from about 0.04 inches to the median region between 0.06 and 0.08 inches and thus disclose that the invention can be performed above the upper limit of 0.04 inches expressely given in the original documents, the skilled person looks for the determination of an exact broader range, he receives from Figure 3 no clear indication as to how he can fix an upper limit value. According to the patentee, "all hydraulic diameters are disclosed as part of the invention, for which at least one of the eight curves shows an advantage in heat transfer over the prior art" and "the patentee may choose any value for the lower and upper limits of the claimed hydraulic diameter range for which at least one of the graphs shows advantageous heat transfer over the prior art" (submission dated 2 June 2003, page 18, first lines and lines 12 to 15). Regarding the opinions or statements filed by the appellant, it can be seen that the technical (Prof. Dr H. Müller-Steinhagen) and legal (Dr P. Dihm) experts differ on the determination of the upper limit of the curves A, which they respectively found to be 0.05 or 0.04 inches. Extrapolating the curves B, values about 0.08 inches could form part of the invention, so that it is not understood for which reason the invention, as far as condenser cores according to the curves B are concerned, shall only extend up to 0.07 inches. Moreover, considering the curves as disclosed, the appellant by claiming different values, namely 0.07, 0.068 and 0.065 inches, for said upper limit in the main and auxiliary requests, show that arbitrary values can be chosen, so that there is in fact, in the patent application as filed, no

clear and unambiguous disclosure of an upper limit for the hydraulic diameters.

10. It follows from the foregoing that the criterion "heat exchanger better than the prior art" used by the appellant for supporting the disclosure of an upper limit in Figure 3, is in fact not relevant. In the absence of any other disclosed criterion, it can only be deduced that, since the teaching of the present invention essentially concerns the use of small hydraulic diameters, an essential object of claim 1 is to define a range of said small diameters which is different from those already used prior to the filing date of the present application, that is to say said range should be under the lower limit of about 0.09 inches shown by the prior art curves of Figure 3. It is therefore a mere question of the choice of the upper limit of said range, as long as the present invention with said hydraulical diameter limit can show an advantage over the prior art. Being a mere question of choice, then a contradiction is to be seen between the now claimed value 0.07 inches and the originally disclosed upper limit of 0.04 inches, so that the upper limit not only is not clearly and unambiguously derivable from Figure 3, but it also does not comply with the conditions set out in T 169/83 (OJ 1985,193), to which the board adheres. Moreover, the new limit clearly makes a technical contribution to the subject-matter of claim 1, so that the criterion set out in the decision G 1/93 (OJ 1994, 541) also applies.

For all these reasons claim 1 according to the main request infringes Article 123(2) EPC.

11. Contrary to the opinion expressed by Prof. Dr Dr Joseph Strauß in his legal opinion, the board in its previous decision T 669/93, which mainly dealt with the valid priority of a claim containing the originally disclosed range of 0.015 to 0.04 inch, did not take position on the claims of another request filed at this time and containing the range of 0.015 to 0.07 inch, since its decision was to send the case back to the first instance in order to examine the allowability of said claims. The mere fact that the board also drew the attention of the first instance to the possible need of a supplementary search is not to be considered as an implicit acceptance of these claims. The board had no reason at that time to examine in detail either the claims or the true actual disclosure of the patent in suit.

12. According to Article 112(1) EPC only questions concerning important points of law or concerning a uniform application of the law are to be referred to the Enlarged Board. The first set of questions to the Enlarged Board of Appeal, to which the subsidiary question filed during the oral proceedings is to be joined, does not concern such issues, since they all relate to the interpretation of a figure which comprises graphs. The interpretation of such a figure is of technical aspect, and not of legal aspect. Already for this reason, the corresponding request of the appellant is to be rejected.

Moreover, contrary to the appellant's view, the situations are not the same between the present case and the cases with which the decisions T 256/89 and T 145/87 had to deal. In case T 256/89 the new

introduced features were derivable for the preferred embodiment of the invention and from real experimental values which were identified by points on the curves. The end points of the curves in particular, which were used to define percentages, were clearly disclosed as being real experimental values. In T 145/87, the graph, which represented a mathematical equation, also comprised identified points, which were used to determine two constants of the formula. Thus, the circumstances are not comparable and it cannot be concluded that a discrepancy exists between the present decision and the two above cited decisions.

13. A reference to the U.S. application 887,223 indeed appears in the description as filed of the patent in suit, however only as a disclosure for the method of making the tubes according to the present invention, and not as a disclosure of said invention; it is clearly specified in the patent application as filed that only the details of the means for forming the tubes are incorporated by reference, and nothing more. Thus, contrary to the appellant's opinion, this document cannot be used as support for the claimed upper limit value.

Moreover, said U.S. application was not available at least at the date of publication of the patent application, so that, being not made available to the public as required by Article 54(2) EPC, it cannot be taken into account. This is in line with the Guidelines, C-II, 4.18 and the case law of the boards of appeals, see T 737/90 (not published), as acknowledged by Prof. Dr Dr Strauss in GRUR Inter. 1995, pages 103 to 112.

14. Under these circumstances, the second set of questions to the Enlarged Board is irrelevant for the present case and, further, already at least partly answered (questions (a) to (c)).

15. The reasons set out above for the main request would obviously apply to the claims 1 according to the auxiliary requests, so that these requests filed at the ultimate stage of the proceedings are clearly not admissible (Article 114(2) EPC).

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

A. Counillon C. T. Wilson