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D E C I S I O N
of 23 April 2004

Case Number: T 0437/01 - 3.4.2

Application Number: 93902726.4

Publication Number: 0619881

IPC: G01N 27/26

Language of the proceedings: EN

Title of invention:
Electrophoresis gel container assemblies

Applicant:
CBM Intellectual Properties, Inc.

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step (no): could-would approach - skilled person - technical field"

Decisions cited:
T 0032/81, T 0424/90, T 0955/90

Catchword:
-

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Case Number: T 0437/01 - 3.4.2

D E C I S I O N
of the Technical Board of Appeal 3.4.2
of 23 April 2004

Appellant: CBM Intellectual Properties, Inc.
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Reno, Nevada 89503 (US)

Representative: W. P. Thompson & Co.
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 24 October 2000 refusing European application No. 93902726.4 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: A. G. Klein
Members: F. J. Narganes-Quijano
C. Rennie-Smith

Summary of Facts and Submissions

I. The appellant (applicant) has lodged an appeal against the decision of the examining division to refuse European patent application No. 93 902 726.4 (based on the International application No. PCT/US92/11175 published under International Publication No. WO 93/13410).

In its decision the examining division referred to the two following documents:

D1: US-A-3875045

D2: EP-A-0377747

and held that the subject matter of claim 1 then on file did not involve an inventive step (Articles 52(1) and 56 EPC) with regard to the disclosure of documents D1 and D2.

II. In its statement setting out the grounds of appeal the appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of an amended set of application documents submitted with the statement of grounds.

III. In a communication pursuant to Article 11(1) of the Rules of Procedure of the Boards of Appeal (RPBA), annexed to the summons to attend oral proceedings, the Board gave a preliminary assessment of the case and referred to the following document cited in the introductory part of the description of the application as published:

D5: US-A-3767560

In reply to the Board's communication the appellant submitted on 23 March 2004 a set of amended application documents as a main request and on 2 April 2004 additional sets of amended application documents as first to fourth auxiliary requests, each of the requests containing an amended claim 1.

Claim 1 according to the main request reads as follows:

"An electrophoresis gel container assembly for an electrophoresis gel, comprising

(i) a container (14) adapted to receive an electrophoresis gel comprising a generally planar bottom (22), a continuous side wall (26) projecting upward from said bottom (22) to a top; a flange (13) projecting distally from the top of said side wall;

(ii) a cover (11), adapted to contact said flange around its entire periphery;

(iii) a hydrated electrophoresis gel (25) within said container assembly; the materials of the container assembly being selected to provide low water vapor permeability,

characterised in that said cover (11) is coated with a heat-sealable release coating for sealing said cover to said flange and for allowing peelable release of said cover from said flange."

In the first auxiliary request claim 1 differs from the main request in that the closing phrase "and for allowing peelable release of said cover from said

flange" is replaced by "and in that more than one gel has been deposited in said container".

In the second auxiliary request claim 1 differs from the main request in that the phrase "characterised in that said cover (11) is coated" is replaced by "characterised in that said cover (11) is comprised of aluminium foil, and is coated".

In the third auxiliary request claim 1 differs from the main request in that the phrase "characterised in that said cover (11) is coated" is replaced by "characterised in that said cover (11) is comprised of aluminium foil, and is coated", and in that the phrase "and in that more than one gel has been deposited in said container" is introduced at the end of the claim.

In the fourth auxiliary request claim 1 differs from the main request in that the phrase "characterised in that said cover (11) is coated" is replaced by "characterised in that said cover (11) is comprised of aluminium foil, and is coated", and in that the phrase "and in that wells are provided in the gel for the insertion of samples" is introduced at the end of the claim.

IV. At the oral proceedings held on 23 April 2004 before the Board the appellant confirmed its request that the decision be set aside and that a patent be granted on the basis of the amended application documents according to one of the main and the first to fourth auxiliary requests, page 15 of the description according to each of the requests containing a further amendment submitted in the course of the oral

proceedings. At the end of the oral proceedings the Board gave its decision.

V. The arguments submitted by the appellant in support of its requests can be summarized as follows:

The container assembly of the invention meets two opposite requirements, namely protecting the intrinsically fragile electrophoresis gel from mechanical damage during shipment and providing an easily openable container assembly arrangement. The container assembly disclosed in the closest prior art document D1 meets the first, but not the second, of these requirements. As regards the container assembly disclosed in document D2, this document relates to an entirely different technical field, i.e. to the foodstuff industry, where different problems arise; in addition, the main object addressed in this document is the provision of easy-to-open sealed packaging vessels capable of resisting a sterilisation treatment and a toasting process, and there is no indication in the document that the foodstuff container assemblies could be used with fragile materials such as electrophoresis gels requiring greater protection against mechanical damage. For this reason, the skilled person - who would not be a general packaging technician, but an expert in the field of electrophoresis gel packaging - confronted with the problem of endowing the container assembly of document D1 with a more easily openable arrangement would not have considered container assemblies for foodstuffs such as those disclosed in document D2. In addition, the remaining prior art does not suggest the replacement of the rigid cover of the container assembly of document D1 by a peelable cover as claimed

which, although relatively flexible, would still adequately protect, at least to some degree, the electrophoresis gel from physical damage.

With regard to the additional features of claim 1 according to the first to fourth auxiliary requests, the prior art fails to suggest the provision of more than one electrophoresis gel in a container assembly. In addition, document D2 refers to an aluminium foil sheet but the skilled person would not have considered the combination of document D1 and D2 for the same reasons as for the main request, and the sample insertion wells, although commonly included in prior art electrophoresis gels, render the gel still more fragile, thus requiring a higher degree of protection.

Reasons for the Decision

1. The appeal is admissible.

2. *Inventive step of claim 1 according to the main request*

2.1 In the decision under appeal the examining division identified document D1 as the closest prior art and held that the container assembly disclosed in that document is arranged to receive a hydrated electrophoresis gel and comprises a container having a substantially planar bottom, a continuous side wall projecting upward from the bottom to a top and a flange projecting distally from the top of the side wall, and a cover adapted to contact the flange around its entire periphery, the materials of the container assembly providing low water vapour permeability to the assembly

(Figures 1 to 5 and to column 2, line 39 to column 3, line 29). In the decision the examining division also held that the subject-matter of the then valid claim 1 differed from the disclosure of document D1 only in the features relating to the heat-sealable release coating applied to the cover for releasably sealing the cover to the flange and for allowing peelable release of the cover from the flange, and held that these distinguishing features were rendered obvious by the disclosure of document D2 relating to easily openable sealed package container assemblies constituted by a vessel and a peelable cover releasably heat-sealed to a flange of the vessel by means of a heat-sealing material (document D2, Figures 1 to 3, abstract, and page 7, line 2 to page 8, line 3 together with page 9, lines 6 to 10).

2.2 During the appeal proceedings the appellant has not disputed those findings of the examining division relating to the disclosure of documents D1 and D2 nor that the combination of documents D1 and D2 would result in the subject-matter of claim 1 of the present main request, which claim, apart from amendments of a purely formal nature, defines substantially the same subject-matter as the claim 1 considered in the decision under appeal. The appellant, however, has disputed the examining division's view that it was obvious to combine the disclosure of documents D1 and D2 and submitted that the skilled person would not have considered the combination of the disclosure of these two citations.

In view of the above, and after consideration of the disclosure of documents D1 and D2, the Board concurs

with the undisputed finding of the examining division that document D1 represents the closest prior art and that the application of the teaching of document D2 to the disclosure of document D1 would result in the subject-matter of claim 1 of the main request. Accordingly, as far as claim 1 of the main request is concerned, the sole issue to be decided is whether the combination of documents D1 and D2 was obvious within the meaning of Article 56 EPC, and more particularly whether the skilled person would, and not just could, have considered the combination of documents D1 and D2 so as to arrive at the claimed subject matter.

Notwithstanding the above, the Board observes that in document D1 the peripheral portion of the top of the side wall of the container assembly contacting the cover does not appear properly to be shaped to include a "flange projecting distally from the top of said side wall" as claimed (document D1, Figures 1 to 4 and column 2, lines 46 to 53). Nonetheless - as has also been noted by the examining division and not disputed by the appellant - document D2 for its part requires a flange projecting distally from the top of the side wall of the vessel and arranged to receive the cover as defined in present claim 1 (Figures 1-A and 1-B and page 6, line 13 to page 7, line 11) and consequently, regardless of whether document D1 discloses a flange as claimed, the combination of documents D1 and D2 would result in the claimed subject-matter, as has indeed been undisputed by the appellant during the appeal proceedings. Therefore, in view of the disclosure of document D2, the question of whether the side wall of the container of document D1 includes a flange as

claimed has no bearing on the case as put forward by the appellant.

2.3 "Could-would" approach

In the present case the objective assessment according to the problem-solution approach of whether the person skilled in the art would, and not just could, have considered the combination of documents D1 and D2 depends primarily on the technical problem that the claimed subject-matter solves in the light of the disclosure of document D1 and on whether the person skilled in the art, confronted with the problem so defined, would have considered the disclosure of document D2 as providing a solution to the problem. The assessment of the latter issue depends, for its part, on the definition of the relevant skilled person and on whether document D2 falls within the technical field or fields in which the skilled person would have conducted his search for a solution to the problem; and, if it does so fall, whether there is a recognisable pointer in document D2 towards a solution to the problem addressed in the light of the disclosure of document D1. Each of these issues is considered in the following.

2.3.1 The technical problem

It has been undisputed by the appellant that the technical effect resulting from the features distinguishing the claimed container assembly from the container assembly disclosed in document D1 and referred to in point 2.1 above is that the container assembly can be more easily opened by the user. This technical effect is supported by the disclosure of the

application (page 5, lines 22 to 30 together with page 10, lines 29 to 31 of the application as published) and is to be contrasted with the cumbersome opening operation of the container assembly disclosed in document D1 which involves the use of a pencil (column 3, lines 8 to 11).

The distinguishing features are also such that the vapour-proof characteristics of the container assembly are preserved (page 1, lines 29 to 31, and page 9, lines 18 to 27 of the application as published). As regards the protection of the gel against unwanted mechanical influences during storage and transport of the container assembly (page 1, lines 26 to 29 and page 9, lines 18 to 27 of the application as published), the appellant conceded during the oral proceedings that the replacement of the rigid cover of document D1 by a releasable peelable cover as claimed would not generally result in improved protection of the electrophoresis gels; nonetheless he contended that the peelable cover would still adequately protect the gel from mechanical damage during storage and transport of the container assembly (point V above).

In view of the above, the distinguishing features of the subject-matter of claim 1 solve the technical problem of making it easier for the user to open the electrophoresis gel container assembly disclosed in document D1, without however compromising the vapour-proof characteristics of the container assembly and without significant detriment to the protection of the gel from mechanical damage.

In the Board's view no inventive merit can be seen in the formulation of the problem itself. The Board also notes that no further technical effect other than those already identified above appears to be supported by the disclosure of the application relating to the flange and that for this reason the question of whether the container assembly of document D1 includes a flange as claimed (see last paragraph of point 2.2 above) has no influence on the formulation of the problem solved by the claimed subject-matter.

2.3.2 The relevant skilled person

The appellant has submitted that the appropriate skilled person is a person skilled in the design of container assemblies for electrophoresis gels. This definition, however, is exclusively based on the specific technical field of application of the invention and more particularly on the technical field indicated in the introductory clause of the claim and in the Board's view the appellant's definition is inappropriate and rather restrictive. According to the established case law (see for instance T 32/81, OJ EPO 1982, 225, points 4.2 and 4.4 of the reasons, and the other decisions cited in chapter I, section D.5.1.1 of "Case Law of the Boards of Appeal", EPO, 4th edition 2001) the objective assessment of whether the claimed solution involves an inventive step should rather be based on the knowledge and abilities of the specialist in that technical field in which the objective problem prompts the skilled person to seek a solution, irrespective of other definitions of the skilled person that might be suggested in the application. This applies in the present case in as much as the technical

problem formulated above is not specific to container assemblies for electrophoresis gels but pertains, by its very nature, to the more general field of transport and storage container assemblies. Accordingly, the appropriate skilled person is someone skilled in that technical field. Alternatively, even if the appellant's submission that the appropriate skilled person is a designer of container assemblies for electrophoresis gels were to be accepted, then according to the established case law (see T 424/90, not published in OJ EPO, point 1.3 of the reasons) this skilled person would then be expected to consult the person skilled in the technical field to which the problem pertains, i.e. in the more general field of storage and transport container assemblies. The assessment of the case should then be based on both skilled persons as a team, thereby taking into account the knowledge and the ability of the person skilled in the more general field.

The Board therefore concludes that the relevant skilled person to be considered in the assessment of the issues addressed in point 2.3 above is the person skilled in the general technical field of storage and transport container assemblies.

The Board notes that this conclusion also results from the historical developments in the field of manufacture of electrophoresis gels acknowledged in the passage on page 1, lines 11 to 25 of the application as published according to which such gels were traditionally made and cast by the laboratories themselves but, when volume grew, prefabricated and standardized gels were industrially manufactured and supplied to the laboratories. Thus, when such gels are produced on an

industrial scale, the problems that arise are those of packaging, storing and transporting articles having, if not the same, at least similar physical characteristics as the electrophoresis gels, and it is the specialist in solving these problems who constitutes the appropriate skilled person.

2.3.3 Document D2

The person skilled in the general field of storage and transport container assemblies, confronted with the problem of making it easier for the user to open the electrophoresis gel container assembly disclosed in document D1, would then look for solutions proposed in the field of storage and transport container assemblies. As the problem relates to the opening arrangement of the container assembly *per se*, the skilled person would not in the Board's view confine his search to container assemblies specifically designed for electrophoresis gels, but would also consider within the general field of storage and transport container assemblies other specific technical fields in which the same problem, or one similar to it, arises (see T 955/90, not published in OJ EPO, point 1.3 of the reasons), i.e. he would also consider storage and transport container assemblies designed for other products and articles having, if not the same, at least similar characteristics as electrophoresis gels and meeting the vapour-proof and protection requirements necessary for electrophoresis gel container assemblies (point 2.3.1 above).

Document D2 discloses easily openable sealed package container assemblies comprising a vessel and a peelable

lid cover realeasably heat-sealed to a flange of the vessel by means of a heat-sealing material applied on the cover (see abstract and Figure 1 together with page 7, line 2 to page 8, line 3 and pages 9, lines 2 to 10). The Board does not dispute the appellant's submission that document D2 is specifically directed to container assemblies for foodstuffs such as macaroni gratin (page 21, lines 31 and 32) and seasoned tuna flake (page 26, lines 11 to 17). However, the Board cannot accept that the problems arising with such container assemblies are different from those arising with container assemblies specifically designed for electrophoresis gels to the extent that document D2 would not have fallen within the specific technical fields referred to in the previous paragraph and which the skilled person would have included in his search for solutions to the problem posed. On the contrary, the characteristics of foodstuff are, as far as they are pertinent to the characteristics of the container assemblies, at least similar to those of electrophoresis gels, and the appellant's submissions that electrophoresis gels are more fragile and require a higher protection against mechanical damage are not reflected in the features of the claimed container assembly and would at the most imply stricter requirements in the handling of electrophoresis gel container assemblies as compared with the handling of container assemblies for foodstuffs.

Consequently, document D2 clearly falls within the specific technical fields which the skilled person working in the general field of storage and transport containers assemblies would consult in his search for solutions to the problem that he intends to solve and,

since in the assessment of inventive step the notional skilled person is presumed to be aware of, and to have direct access to the documents pertinent to his relevant area of technology (Article 54(2) EPC), he must be presumed to find document D2 in his search for a solution to the problem posed.

2.3.4 Combination of documents D1 and D2

In the course of his search the skilled person would then have come across document D2 and even just the title of document D2 ("Easily openable sealed package container") would have drawn his attention to the disclosed arrangement providing an improved ease in the opening of the container. The skilled person would therefore have readily recognised in the disclosure of document D2 a technical measure providing a solution to the problem that he intends to solve and since the pertinent structural and functional features of the container assembly of document D2 preserve the requirements of document D1 relating to the vapour-proof and the gel protection characteristics, he would have considered applying the corresponding teaching to the container assembly disclosed in document D1 in order to solve the problem posed.

The Board also notes that there appears to be no technical difficulty in the application of the teaching of document D2 to the disclosure of document D1. In addition, the skilled person would be aware that the replacement of the rigid cover of the container assembly of document D1 by a peelable and therefore relatively flexible cover as disclosed in document D2 may reduce protection of the gel from mechanical damage

during transport and storage of the gel; however, this potential drawback resulting from the measures taught in document D2 would not have dissuaded the skilled person from considering the combination of documents D1 and D2 and, in view of the improvements in the ease of opening the container assembly resulting from such measures, the skilled person would have accepted this drawback in accordance with the circumstances - as the present inventors have done without adopting any countermeasure to mitigate it (see second paragraph of point 2.3.1).

As regards the appellant's submission that document D2 requires that the container assemblies resist a retort sterilization treatment (page 2, lines 20 to 28, and page 19, lines 23 to 27) or a toasting or cooking process (page 5, lines 16 to 18 and page 11, lines 3 to 6), these requirements are not detrimental to the incorporation of the measures relating to the opening arrangement in container assemblies for electrophoresis gels and therefore would not, in the Board's view, deter the skilled person from contemplating the application of the teaching of document D2 relating to the improvement in the ease of opening of the container assembly to the problem that he intends to solve.

2.3.5 Therefore, in the Board's view the skilled person working in the general field of transport and storage container assemblies not just could, as submitted by the appellant, but would have considered document D2 as teaching a solution to the problem and in addition would have considered the application of the teaching of document D2 to the disclosure of document D1 in order to solve the problem posed. As a result, the

skilled person would have arrived at the claimed subject-matter without the exercise of an inventive step.

2.4 Having regard to the above, the appellant's submission that the skilled person would not have considered the combination of documents D1 and D2 fails to convince the Board. Since no other reason was advanced by the appellant against the rationale underlying the decision and since the Board does not see any reason to depart from the examining division's conclusion that the subject-matter of claim 1 of the main request results from the obvious combination of documents D1 and D2, the main request of the appellant is not allowable.

3. *Inventive step of claim 1 according to the first to fourth auxiliary requests*

As pointed out by the Board during the oral proceedings, the additional features specified in claim 1 according to the first to fourth auxiliary requests (see point III above) correspond to conventional measures well known in the art. In particular, the additional features relating to the sample insertion wells in the gel (fourth auxiliary request) and to the provision of the cover in the form of an aluminium foil (second, third and fourth auxiliary requests) have already been employed for the same purpose in document D1 (column 3, lines 18 to 29) and in document D2 (page 18, lines 20 and 21 together with page 17, lines 1 to 3), respectively. Consequently, these features do not involve an inventive step with regard to the obvious application of the teaching of document D2 to the disclosure of the closest prior art document D1 as

concluded in point 2.3.5 above. As regards the deposit of more than one gel within the container (first and third auxiliary requests), contrary to the appellant's submissions this feature corresponds to a common measure well-known in the art, as exemplified in Figure 10 of document D5 where a plurality of gels is arranged in a stacked form as specified in the application (page 14, lines 6 to 9 of the application as published). Furthermore, this feature does not appear to add anything to the remaining claimed features relating to the primary aspect of improving the opening operation of the container assembly, nor does it appear to result in any additional technical effect other than those that can be readily contemplated in advance.

In view of the above, the Board cannot see an inventive step in the subject-matter of claim 1 of the first to fourth auxiliary requests.

4. For the above reasons the Board concludes that the subject-matter of claim 1 according to each of the main and the first to fourth auxiliary requests does not involve an inventive step within the meaning of Article 56 EPC. Consequently, none of the requests of the appellant is allowable and the appeal must be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

P. Martorana A. G. Klein