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D E C I S I O N
of 21 April 1999

Case Number: T 0541/97 - 3.2.4

Application Number: 94301089.2

Publication Number: 0612482

IPC: A24D 3/10

Language of the proceedings: EN

Title of invention:
Filter for smoking article comprising a water disintegrative paper

Applicant:
British American Tobacco (Investments) Limited

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 83, 84, 123(2)

Keyword:
"Insufficiently defined test for measuring an unusual parameter"
"Indefinite scope of claim"
"Added details of test - not a disclaimer but extension of subject-matter"

Decisions cited:
T 0094/82, G 0001/93

Headnote:

A test to measure a unusual parameter must be defined sufficiently to produce an acceptably accurate result.

Specifying, after the filing date, the device to be used in a test to measure an unusual parameter, and thus excluding the use of other devices, is not seen as a disclaimer in the accepted sense of the word but in this case as an extension of the subject-matter of the originally filed application.

If the value of an unusual parameter essential to the claimed invention cannot be sufficiently accurately measured then the scope of the claim is indefinite.

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Case Number: T 0541/97 - 3.2.4

D E C I S I O N
of the Technical Board of Appeal 3.2.4
of 21 April 1999

Appellant: British American Tobacco (Investments) Limited
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Representative: Walford, Margot Ruth
Patents Department
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 19 September 1996 refusing European patent application No. 94 301 089.2 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: C. A. J. Andries
Members: M. G. Hatherly
J. P. B. Seitz

Summary of Facts and Submissions

I. On 11 October 1996 the appellant (applicant) filed an appeal against the decision of the examining division dispatched on 19 September 1996 to refuse the European patent application No. 94 301 089.2 (publication No. 0 612 482). The appeal fee was paid on 11 October 1996 and the statement of grounds of appeal was received on 24 January 1997.

II. In its decision the examining division found that the parameter of the moisture disintegration index (MDI) used to define the invention could not be reliably determined. Accordingly the then current claims 1 to 6 were not clear (Article 84 EPC). Moreover the subject-matter of the then current claims 1 and 4 was not novel (Article 54 EPC) over the disclosures of US-A-3 033 209, US-A-2 999 503 and US-A-1 909 924.

III. During the examination and appeal proceedings the appellant submitted the following documents:

- Affidavit of Mr Paul David Case dated 18 October 1995 with the results of 16 MDI tests

- Declaration of Dr Philip Prescott dated 10 January 1997 analysing the tests of 18 October 1995 and adding the results and analyses of a further 40 MDI tests

- A declaration from each of Dr Peter James Branton, Mr Steven Coburn, Miss Debra Demeter Woods and Mr Paul André Bishop, each dated 23 November 1998 and each containing the results of 8 MDI tests

(i.e. 32 MDI tests in all) carried out on 2 November 1998

- A video cassette recorded on 2 November 1998 showing each of the above four operators carrying out two of the above tests, one with a squat cylinder and one with a tall cylinder

- A declaration from Mrs Aylsa Williams dated 23 November 1998 concerning the tests of 2 November 1998

- A second declaration of Dr Philip Prescott dated 25 November 1998 (the confirmation copy) analysing the results of the tests of 2 November 1998

- Letter from Mr M. Wootton of Bibby Sterilin Limited to Mr Bill Groves of Hampshire Glass dated 18 November 1998

- Letter from Mr G. Fletcher of Schott Glass Ltd to Mr Bill Groves of Hampshire Glass dated 18 November 1998 with a page showing low form measuring cylinders

- Letter from Mr Bill Groves of Hampshire (R&D) Glassware Ltd to Mrs A. Williams of British American Tobacco dated 24 November 1998

- Standard T404cm-92 of 1992 "Tensile breaking strength and elongation of paper and paperboard (using pendulum-type tester)", Technical Association for the Paper and Pulp Industry (TAPPI)

IV. Following a communication from the board and letters from the appellant, oral proceedings took place on 21 April 1999.

At the start of the oral proceedings the appellant filed a claim entitled "(NEW) MAIN REQUEST" and explained that this was the only claim of this request and that this request was the only request.

V. The present sole claim reads:

"A smoking article comprising a smoking material rod and a filter, said filter comprising as filtration material paper filtration material having a moisture disintegration index determined in accordance with the moisture disintegration index test method described herein, the measuring cylinder used in the test being of an overall height of 460 mm, characterised in that the moisture disintegration index of said paper filtration material does not exceed 10."

The test referred to in the above claim is set out in lines 13 to 19 of page 2 of the European patent application EP-A-0 612 482 (lines 1 to 15 of page 4 of the description filed with the letter of 19 October 1995) as follows:

"According to a proposed test for paper disintegration, a sample piece of the paper of an area of 500 cm^2 is placed in 250 ml of water in a one litre laboratory measuring cylinder. The mouth of the cylinder is sealed, following which the paper sample is subjected to mechanical agitation by virtue of the fact that the cylinder is inverted and then restored to its initial

orientation. The paper sample is then observed. This invertion/restoration operation is repeated until it is observed that the paper sample has disintegrated to such an extent that all of the remaining pieces of paper are of an area of 1 cm^2 or less. The number of invertion/restoration operations that have been necessary to bring about this result is recorded as being a moisture disintegration index."

VI. During the appeal proceedings the appellant argued that the MDI test was disclosed in a manner sufficiently clear and complete for a skilled person in the art to carry it out and to produce reliable, reproducible and accurate results.

VII. The appellant requests that the decision under appeal be set aside and the application be remitted to the examining division for further prosecution, on the basis of the following documents:

- The sole claim filed at the oral proceedings of 21 April 1999

- Description pages 1 to 10 filed with the letter of 19 October 1995

Reasons for the Decision

1. *The parameter "moisture disintegration index"*

1.1 The whole of the characterising portion of the sole claim reads "the moisture disintegration index of said paper filtration material does not exceed 10."

Thus the only way to distinguish the claimed smoking article from its conventional counterparts is to measure the moisture disintegration index (MDI) of its paper filtration material (paper) and see whether it exceeds 10.

1.2 If a product is to be characterised by a parameter then this parameter must be able to be clearly and reliably determined either by indications in the description or by objective procedures which are usual in the art (see T 94/82, OJ EPO 1984, 75).

1.3 Ways of measuring well known parameters, temperature for example, are usually well known so that it is not normally necessary to explain in a patent application how such parameters are to be measured.

2. *MDI - a known parameter?*

2.1 It will now be examined whether the parameter MDI was a well known or even a known parameter at the priority and/or filing date.

2.2 The last paragraph of page 2 of the appellant's letter of 19 October 1995 stated that "The test for obtaining the MDI of a paper was also known in the paper industry before the priority date of the application. We obtained details of the test from PIRA, therefore, any skilled man would have been able to obtain the MDI value of the conventional paper filtration materials available at the priority date of the present application using this test."

2.3 The second paragraph of page 3 of the examining

division's decision stated that the applicant had provided no evidence to support this statement. The board pointed out in its communication of 23 July 1998 that if the appellant were to file such evidence and if this evidence were to show that the test had been sufficiently defined at the priority date then the examining division's objections would be overcome and the appeal would succeed. The board added that alternatively the applicant might file other evidence such as a reference book to show the public availability of the test at that time.

2.4 In the third paragraph of page 4 of the letter of 26 November 1998 the appellant stated that it "was given the details of the test in writing from PIRA International, a research association for the paper industry, and was informed that the test was well known within the paper industry."

2.5 During the oral proceedings the appellant stated that it thought that the test was carried out as part of quality control by a certain paper manufacturing company but asking this company had not produced the required information. It might be that this company's test was not in the public domain.

2.6 It is clear from the above that the appellant was well aware of the importance of providing evidence that the parameter MDI was known but has been unable to do so. The board has only the appellant's statements and not even for example a copy of "the details of the test in writing" that the appellant received from PIRA International or a copy from PIRA International of "the details of the test in writing" that it passed to the

appellant.

2.7 In the third paragraph of page 4 of the letter of 26 November 1998 the appellant stated that "the test is a very simple test and it appears from our investigations that because it is such a simple test there is no generally available written record regarding how the test is conducted."

The board considers that whether the test is simple or not is not the point. The point is whether the test was publicly known at the priority and/or filing date.

2.8 In the absence of evidence of the earlier public availability of the MDI test, the board can only proceed on the basis of the information in the originally filed patent application (which corresponds approximately to that in the priority document).

3. *The test for determining MDI*

3.1 In view of section 2.8 above and returning to section 1.2 above, the test for determining the MDI must be a test that produces reliable and comparable results, otherwise it will not be known whether a particular smoking article falls within the scope of the sole claim. The test to measure this unusual parameter MDI must be sufficiently defined to produce an acceptably accurate result, to an extent that any skilled person carrying it out will produce essentially the same result for a particular paper filtration material, i.e. whether its MDI exceeds 10 or not. Otherwise one skilled person might try to arrive at a MDI for a particular paper filtration material falling

in the claimed range by carrying out the test in one way whereas another skilled person would be carrying out the test for the same paper filtration material in another way in order to arrive at the opposite result.

3.2 It was stated in paragraph 2 of page 2 of the letter of 19 October 1995 that the conventional paper filtration material Myria has an MDI of 15. One of the forty January 1997 tests of the Bowater Scott paper used in the invention gave an MDI of 8 as did two of the November 1998 tests (using squat cylinders). Thus the values for the prior art and for the invention are not very far on either side of the dividing line of 10 and the MDI test must be accurate enough to be able to decide reliably if the MDI of a paper filtration material which is more moisture disintegrative than Bowater Scott but less moisture disintegrative than Myria exceeds 10 or not.

3.3 It would not be enough to show that, with the information **now** on file, the test is **now** sufficiently defined, the test must already have been sufficiently and publicly defined beforehand, in the priority document and/or the patent application and/or as common knowledge for a person skilled in the art.

4. *Conditions for the MDI test*

Lines 13 to 19 of page 2 of EP-A-0 612 482 lay down various conditions for the MDI test e.g. the size of the paper and the volume of the water. The board considers that changing various other conditions which have not been set out in the original application will change the result of the MDI test for a particular

paper. The board will restrict itself to commenting on the container and the operator.

5. *The container and Article 123(2) EPC*

5.1 While the application specifies a one litre laboratory measuring cylinder it does not specify the height to diameter ratio of this cylinder. The November 1998 tests gave a mean MDI value of 4.750 when using a tall one litre laboratory measuring cylinder and 6.500 when using a squat one litre laboratory measuring cylinder, this being confirmed by Dr Prescott's declaration of 25 November 1998.

Since the difference between these mean values is 36.8% it is plainly important to use the correct cylinder if one wishes to arrive at the correct MDI.

5.2 The letter from Mr Groves states that "there is little possibility that in early 1994, someone being asked to use a 1 litre measuring cylinder would have had access to a squat form type." The appellant concludes in the middle paragraph on page 3 of its letter of 26 November 1998 that "such so-called squat 1-litre measuring cylinder would not have been readily available to the public early in 1994. Therefore, a person skilled in the art at the time of the filing date of the present application would only have had the tall cylinder available to them. The heights of such tall cylinders typically range from 435-46O mm, with the diameter thereof ranging accordingly. Thus, with only tall 1-litre measuring cylinders any differences in MDI values would have been negligible."

5.3 In order to fix which cylinder is to be used in the MDI test the present claim refers to "the measuring cylinder used in the test being of an overall height of 460 mm" (the test set out in the description specifies that this shall be a one litre laboratory measuring cylinder). While agreeing that the overall height of the measuring cylinder was not disclosed in the originally filed application, the appellant showed the board in the oral proceedings a copy of the Standard BS604 : 1982, ISO 4788-1980 "Specification for Graduated glass measuring cylinders" which gives various dimensions of such cylinders including a height of 460 mm for a one litre cylinder.

5.4 However the statement in the middle paragraph on page 3 of the appellant's letter of 26 November 1998 that "such so-called squat 1-litre measuring cylinder would not have been readily available to the public early in 1994" does not rule out their existence at this time. The board considers that both squat and tall one litre measuring cylinder existed at this time even if they then could not be purchased off-the-shelf in the United Kingdom. Moreover, as agreed by the appellant, even with tall cylinders the heights and diameters vary (see the above section 5.2).

5.5 Therefore the board finds that the specified one litre laboratory measuring cylinder of an overall height of 460 mm is only one of the types of one litre laboratory measuring cylinders publicly available at the filing date.

5.6 Consequently, specifying in the present sole claim that the one litre laboratory measuring cylinder used in the

test must have an overall height of 460 mm gives the skilled person information which he did not already know on the filing date and which was not unambiguously implicit on the filing date, contrary to Article 123(2) EPC.

5.7 While agreeing that the overall height of the measuring cylinder was not disclosed in the originally filed application, the appellant sees specifying the measuring cylinder as a disclaimer, i.e. that all other measuring cylinders are not to be used, which increases the certainty for the third party.

5.7.1 The appellant cited G 1/93 (OJ EPO 1994, 541). This decision concerns the so-called Article 123(2) and (3) EPC trap in opposition proceedings. Where a feature was unjustifiably added to a claim before grant it may be impossible to remove it after grant without extending the scope of protection. It was found in the decision G 1/93 that if the feature at issue did not provide a technical contribution to the subject-matter of the claimed invention but merely limited the protection conferred by the patent as granted by excluding protection for part of the subject-matter of the claimed invention as covered by the application as filed, than the added feature would not contravene Article 123(2) EPC.

5.7.2 In the present case the effect of changing the type of one litre measuring cylinder by the amendment relating to the overall height is to change the value of MDI measured with it, see section 5.1 above. The MDI of a particular paper filtration material may exceed or not exceed 10 depending on which type of one litre

measuring cylinder is used. Thus the type of cylinder plays an essential role in determining the scope of protection and is not merely incidental (as might be the case for example for the chemical composition of the glass from which the cylinder is made).

5.7.3 Specifying the type of cylinder to disclaim the use of all other cylinders is not a disclaimer in the accepted sense. It does not exclude protection for part of the subject-matter otherwise covered by the claim (as might be the case for example if a value of 8 for the MDI were excluded). It does not make the subject-matter of the claim novel over some cited prior art disclosure. It does not even limit the claim to one out of a list of previously disclosed alternatives, instead it chooses something which had never before been specifically mentioned. A competitor who had measured its product using a squat cylinder and found that its MDI fell above the claimed upper limit might now find that the newly defined test produced an MDI falling below said limit. Thus the legal security for third parties is not increased by the amendment, on the contrary the amendment, which provides a technical contribution to the subject-matter of the claimed invention, would give an unwarranted advantage to the appellant which is contrary to the purpose of Article 123(2) EPC as explained in G 1/93. Moreover the present proceedings are pre-grant proceedings and there can be no justification for adding a feature which can already be seen as unallowable.

5.7.4 Thus, specifying, after the filing date, the device to be used in this test to measure the unusual parameter MDI, and thus excluding the use of other devices, is

not seen as a disclaimer in the accepted sense of the word but in this case as an extension of the subject-matter of the originally filed application.

5.7.5 The board does not need to examine the statement in

Singer: The European Patent Convention, Revised English (1995) Edition by Raph Lunzer, Sweet & Maxwell, London, 1995, page 735, first paragraph

that "A disclaimer can also be used ... to cure lack of reproducibility" since this statement is purely a comment and not part of a decision. In any case the comment seems to be referring to the exclusion from protection of a part of an area where it is not possible to (reliably) carry out the invention. The present case is not of this nature.

5.8 Accordingly the claim contravenes Article 123(2) EPC.

6. Since this claim is the only claim on file the appeal must be dismissed for contravention of Article 123(2) EPC. However the board has also examined what would be the outcome if the objectionable feature were not present in the claim.

7. It has already been stated in section 5.1 that the November 1998 tests gave a mean MDI value for a particular paper filtration material of 4.750 when using a tall one litre laboratory measuring cylinder and 6.500 when using a squat one litre laboratory measuring cylinder. The lower result seems to be because the water and paper filtration material fall further on each inversion and restoration, thus being

subject to more mechanical agitation on each inversion and restoration with the tall cylinder than with the squat cylinder. It is also emphasised that the values of 4.750 and 6.500 are values which have already been averaged from the results obtained from various operators so that in fact the differences can even be greater if a single operator takes a tall measuring cylinder and vigorously inverts it while another single operator takes a squat measuring cylinder and gently and slowly inverts it.

Thus in the absence of the objectionable feature of the type of one litre measuring cylinder the test is insufficiently defined. Even if the test were perfectly reproducible for each type of cylinder, the skilled person would not know which type of cylinder was the correct one and so would not know what was the correct MDI for the paper filtration material he was measuring.

8. *The operator*

8.1 Moreover the board does not find that the test is reproducible to an acceptable degree of accuracy even for each type of cylinder but considers that different operators will produce different values of MDI for the same paper filtration material when using the same cylinder.

8.2 The board considers that the speed of inversion and restoration may vary from operator to operator (for example vigorous movement as opposed to gentle movement) and also that the decision of when all the remaining pieces of paper pieces are of an area of 1 cm^2 will be taken at different times by them.

8.3 The bottom of page 2 of Dr Prescott's declaration of 25 November 1998 analysing the results of the November 1998 tests states that "the different operators did not significantly affect the MDI values". The board points out however that, while the means for the operators for all their tests, i.e. for both cylinders, vary between 5.250 and 6.125, their mean MDI values for only the tall cylinder tests vary proportionally much more, from 3.75 to 5.5.

8.4 The board also points out that while the November 1998 tests were set up to demonstrate that operators working independently produced similar results, each was given identical equipment and produced thereafter declarations which were for the most part word for word identical, even where they diverged from the teaching of the patent application (which says "until it is **observed** that" and "paper ... is placed ... in **water**" whereas each declaration says "until I **estimated** that" and "I then placed the paper into the **measuring cylinder**").

8.5 The board can accept that the skilled person would repeat the MDI test on each particular paper filtration material since paper has variable properties from one sample to the next and that he might statistically analyse his results to arrive at what he considers the

true value of MDI for the paper filtration material that he is testing.

On the one hand it seems from the November 1998 tests that each operator is achieving reproducible results for himself, e.g. one operator measured 4, 3, 4 and 4. On the other hand each operator's reproducible results differed from those of the other operators, e.g. another operator measured 5, 6, 6 and 5.

Averaging results might be acceptable when everything has been done to reduce the sources of error and essentially the variability is due to the paper itself. However here the average value for one operator was 3.75 and for another operator 5.5 showing that they were working in different ways. With such large differences between operators working under identical conditions, averaging their results to even out these different working methods does not seem to be acceptable since the resultant value of MDI would depend on how many of one type of operator there were compared to another type of operator.

Moreover any indication that the test is subject to operator variation is absent from the originally filed application.

8.6 The October 1995 tests and the January 1997 tests were carried out with the same bobbin of Bowater Scott paper and Dr Prescott gave this paper MDI values of 95% confidence interval of 5.3 ± 2.75 and 95% confidence interval of 5.625 ± 0.278 respectively. The November 1998 tests were carried out with a different bobbin of nominally the same paper and according to Dr Prescott

gave a mean MDI value when using the tall cylinder of 4.750 with standard deviation 0.1840.

The differences between these already averaged values of the three series of tests as well as the large spread for individual results from 4 to 8 under the consistent conditions of the January 1997 tests point away from the test method being suitable to determine the MDI value of a paper filtration material to an acceptable degree of accuracy.

8.7 Furthermore the decision of when to stop the inversion/restoration movements, which is indicated in the described test as taking place when it is observed that all remaining pieces of paper are of an area of 1 cm^2 or less, is not unequivocally clear. As indicated by the four test operators in the November 1998 tests, they estimated that the paper was disintegrated as specified but there was no certainty that this was the case. Simply by deciding to continue after 5 inversions and restorations makes the MDI value differ by 20%, and after 10 inversions and restorations (the claimed limit) by 10%. A cautious operator would tend to higher values so that no unequivocally clear moment is reached at which the operator is forced to stop.

9. *Article 83 EPC*

The board therefore finds that the application does not disclose a method for measuring the MDI of a paper filtration material in a sufficiently accurate way. The skilled person would need to know how to do this in order to arrive at the invention which involves a paper filtration material whose MDI does not exceed 10.

Thus, contrary to Article 83 EPC, the application does not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.

10. *Article 84 EPC*

If the value of an unusual parameter essential to the claimed invention cannot be sufficiently accurately measured then the scope of the claim is indefinite. This is here the case, since, if the MDI of a paper filtration material could not be measured at the date of filing, then it could not be known if the smoking article comprising it fell within the scope of the claims.

Thus Article 84 EPC is not satisfied.

11. *Conclusion*

Thus the patent application contravenes Articles 83, 84 and 123(2) EPC and cannot proceed to grant.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

N. Maslin C. Andries