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Datasheet for the decision of 5 February 2019

Case Number: T 1514/15 - 3.2.04

Application Number: 08774490.0

Publication Number: 2166887

IPC: A24D3/02

Language of the proceedings: EN

Title of invention:
FILTER

Patent Proprietor:
British American Tobacco (Investments) Limited

Opponents:
JT International S.A.
Philip Morris Products S.A.

Headword:

Relevant legal provisions:
EPC Art. 83, 100(b)

Keyword:
Substantial procedural violation - (no)
Sufficiency of disclosure - (yes)
Remittal to the department of first instance - (yes)

Decisions cited:

Catchword:

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Beschwerdekammern

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Case Number: T 1514/15 - 3.2.04

D E C I S I O N
of Technical Board of Appeal 3.2.04
of 5 February 2019

Appellant: (Patent Proprietor)	British American Tobacco (Investments) Limited Globe House, 1 Water Street London WC2R 3LA (GB)
Representative:	D Young & Co LLP 120 Holborn London EC1N 2DY (GB)
Respondent: (Opponent 1)	JT International S.A. 1, Rue de la Gabelle 1211 Geneva 26 (CH)
Representative:	Isarpatent Patent- und Rechtsanwälte Behnisch Barth Charles Hassa Peckmann & Partner mbB Friedrichstrasse 31 80801 München (DE)
Respondent: (Opponent 2)	Philip Morris Products S.A. Quai Jeanrenaud 3 2000 Neuchâtel (CH)
Representative:	Morf, Jan Stefan Abitz & Partner Patentanwälte mbB Postfach 86 01 09 81628 München (DE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 28 May 2015 revoking European patent No. 2166887 pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chairman	A. de Vries
Members:	J. Wright
	T. Bokor

Summary of Facts and Submissions

I. The appellant-proprietor lodged an appeal, received 28 July 2015, against the decision of the Opposition Division posted on 28 May 2015 revoking European patent No. 2166887 pursuant to Article 101(3)(b) EPC. The appeal fee was paid at the same time. The statement setting out the grounds of appeal was filed on 7 October 2015.

II. Notices of opposition were filed by two opponents, covering all opposition grounds. The opposition division found that claim 1 as amended according to the main request met the requirements of Article 123(2) EPC, but that the invention according to all the requests was insufficiently disclosed. The opposition division therefore revoked the patent.

In the opposition proceedings, the following document, amongst others, was cited:

D1: WO03/082558 A1

III. Oral proceedings before the Board were duly held on 5 February 2019.

IV. The appellant-proprietor requests that the decision under appeal be set aside, and the patent be maintained in an amended form on the basis of the Main request, or alternatively one of the Auxiliary Requests 1A to 1E, 2A, 2B, 3, 4, and 6, where the main request and auxiliary requests 1A, 1B, 2A, 2B, 3, 4 were filed with letter dated 27 March 2015, auxiliary requests 1C to 1E were filed with letter dated 1 August 2017, and auxiliary Request 6 was filed with letter dated 20 May 2013 as auxiliary request 1, or in the alternative, as

auxiliary request 5, that the patent be maintained as granted.

The respondent-opponent I and respondent-opponent II both request that the appeal be dismissed.

V. The independent claims of the main request read as follows:

Claim 1: "A filter (1) for a cigarette or other smoking article comprising:
a porous filter rod (3) having a substantially cylindrical shape, wherein the porous filter rod comprises cellulose acetate tow, and
a cellulose acetate thread (4) formed from substantially uncrimped cellulose acetate filaments, the cellulose acetate thread extending along the filter substantially parallel to the central cylindrical axis of the filter rod (3),
wherein the porous filter rod (3) has a bulk density in the range 50-150 kg/m^3 and the cellulose acetate thread has a bulk density in the range 400-800 kg/m^3".

Claim 14: "A method of making a filter for a cigarette or other smoking article comprising
forming a cellulose acetate thread from substantially uncrimped cellulose acetate filaments; and
inserting the cellulose acetate thread into a porous filter rod having a substantially cylindrical shape, such that the cellulose acetate thread extends along the filter substantially parallel to the central cylindrical axis of the filter rod, wherein the porous filter rod comprises cellulose acetate tow,
wherein the porous filter rod has a bulk density in the range 50-150 kg/m^3 and the cellulose acetate thread has a bulk density in the range 400-800 kg/m^3".

VI. The appellant-proprietor argued as follows:

There have been substantial procedural violations in first instance proceedings.

The invention is sufficiently disclosed. In particular, the skilled person knows how to measure the volume and weight of a thread before it is inserted into a cigarette filter, therefore they can calculate the bulk density of the thread. The bulk density does not change whether it is inside or outside the filter.

VII. The appellant-opponent I argued as follows:

The invention cannot be carried out because claim 1 defines the thread when it is inserted in the filter and under these conditions the thread is under tension and has a different bulk density to when it is outside the filter, and can not be reliably measured.

VIII. The appellant-opponent II argued as follows:

Bulk density is used for characterising powders but is the wrong parameter for characterising a thread. A thread should rather be characterised by its denier.

Claim 1 of the main request could be understood to define the bulk density of the cellulose acetate thread when it is in the filter. However, claim 14 of the main request, defines a method of making a filter using a thread having the same bulk density as defined in claim 1 but defines the bulk density of the thread before insertion. Likewise, the patent specification paragraphs [0029] and [0030], explain the bulk density of the filter rod as claimed, starting with the words

"[t]he cellulose acetate filaments used in filter rod 3..." which suggests bulk densities in the claims refer to the filter components *before* they are assembled. Therefore it is ambiguous whether or not the thread's bulk density as claimed is measured before or after insertion, so the skilled person cannot carry out the invention.

Reasons for the Decision

1. The appeal is admissible.

2. Background

The patent relates to filters for cigarettes (see published specification, paragraph [0001]). It is known to have a flavourant-carrying cotton thread extend along the filter rod (see specification, paragraph [0003]). However, smoke may discolour such a cotton thread (column 1, lines 30 to 34). The invention proposes (see specification, paragraph [0006] and all versions of claim 1) to solve this discolouring problem by making the thread from cellulose acetate filaments.

3. Substantial procedural violation

3.1 In a communication in preparation for the oral proceedings dated 3 September 2018, the Board gave its preliminary opinion (reproduced below) that no substantial procedural violation had taken place in first instance proceedings.

3.2 The relevant parts of the Board's summary of facts and the reasoning from section 2 of its communication is reproduced below:

"2. Alleged substantial procedural violations

...

2.1 The appellant-proprietor alleges that during the oral proceedings the opponent 2 was allowed to demonstrate that a CA thread removed from a filter unravelled (thus changed in density), whereas the proprietor was not permitted to perform a demonstration they hoped would show that the ends of most threads in a pack of filters was generally circular, only a few being flattened. This they argue would have countered the photographic evidence of opponent 2 (showing variations in cross-sectional shapes of threads in filters along their length, inter alia at the ends of the threads, letter of 27 March 2015).

The appellant also argues that the division directly relied on opponent II's demonstration in the decision (paragraph [0030]).

2.2 The Board notes that the minutes neither mention the demonstration of the opponent II nor the proprietor being stopped from carrying out a demonstration, nor did the appellant-proprietor request the minutes be corrected.
2.3 It appears not to be in dispute that opponent II's demonstration did indeed show fibres of the thread to spread out once the thread was removed from the filter (appeal grounds, page 12, first three lines). If indeed the decision were to have relied on this point (the Board does not consider this to be the case, cf. impugned decision, point 30), then the Board does not see how the outcome of the proceedings would have

changed had the proprietor been permitted to perform a different demonstration.

In particular, the division considered that the skilled person would not know when to measure the thread's density (before or after insertion in the filter rod or after removal and being spread out). In this respect, even had the appellant been allowed to show (as they allege they were not) that the ends of threads in filters were mainly round, though sometimes flat, in the inserted state, the Board does not see how this might have shed light on the question of when the claim defined to measure the thread's density.

2.4 Regarding the admittance of late filed evidence contained in opponent 2's letter of 27 March 2015 (photos), the division admitted this evidence as being prima facie relevant, which would appear to be procedurally correct. It might have been equitable to give the other party time to counter fresh evidence if they had needed it, but this has nothing to do with the question as to whether the admittance of the above photos was procedurally correct.

Although the decision confirms that the appellant submitted they had not had sufficient time for making counter experiments (grounds point [0022]), it also appears that, neither in the written proceedings before the oral proceedings, nor at the oral proceedings itself did the appellant request a postponement to carry out such experiments, nor is this alleged (decision point 23, cf. minutes points 6 to 8). In any case the argument that the cross-section of the thread varies along its length, which is essentially what the photographic evidence shows, was first made by opponent II in their notice of opposition of 4 October 2012 (see

section III c, starting page 4 "irregular shape of the thread"). Therefore, in the Board's view, the proprietor was aware of this argument from the beginning of the opposition proceedings and had time to provide experiments countering this argument.

2.5 In summary, the Board does not consider that there has been a substantial procedural violation".

3.3 Since the parties have presented no further arguments in this regard, the Board sees no reason to deviate from its preliminary opinion. Having considered the totality of the arguments once more, the Board holds that there has been no substantial procedural violation in first instance proceedings.

4. Sufficiency of disclosure, main request, claim 1

4.1 Article 83 EPC requires that the European patent application shall disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art. The impugned decision (see reasons, points 30 to 32) found that the patent as amended according to the main request did not meet the requirements of Article 100(b) EPC (the Board notes that for amended claims this should in fact be corresponding Article 83 EPC). The Board finds otherwise.

4.2 Claim 1 of the main request defines a filter for a cigarette comprising a porous filter rod and a cellulose acetate thread. The Board has no doubt that the skilled person would be able to make a filter rod as specified in the claim (cf. published patent specification, paragraphs [0027] to [0030]) and assemble a filter from the rod by inserting a cellulose

acetate thread, nor have the respondent-opponents argued differently.

Thus the question of whether the invention is disclosed in a manner that is sufficiently clear and complete for it to be carried out by the skilled person hinges on the skilled person being able to provide a cellulose acetate thread having a bulk density in the claimed range 400-800 kg/m3.

4.3 The Board acknowledges that "bulk density" appears to be an unusual way of characterising a thread. Bulk density usually characterises bodies of particulate materials, such as powders. In such a case it is the mass of many particles divided by the volume they occupy (particle volume and void volume between particles).

All parties agree that it is more usual to characterise a thread by its denier value (see Merriam Webster online: a unit of fineness for yarn equal to the fineness of a yarn weighing one gram for each 9000 meters and published patent specification, column 5, lines 48 to 49). It follows from the above definition that a thread's denier value characterises its intrinsic fineness (which can be related to its diameter or thickness based on known density). However, it appears to be inherent in the definition of the denier value that it is defined independently of further additives that might be subsequently added to the thread when used.

4.4 However unusual bulk density of a thread may be, the skilled person reads the claim with a mind willing to understand in order to arrive at a technically sensible interpretation that takes into account the whole

disclosure of the patent (see Case law of the Boards of Appeal, 8th edition 2016, CLBA, II.A.6.1).

4.4.1 The first thing the skilled person will note is that the bulk density in claim 1 has the units of kg/m^3, thus it is a mass divided by a volume. Furthermore, in the Board's view, whilst unusual, the skilled person will immediately realise that the concept of bulk density can in fact be applied to a thread just as to a powder in that a thread has a certain mass and it occupies a certain volume, which includes both the space occupied by the thread's fibres and the voids between them. Put differently, told the mass of a piece of thread and the total volume it occupies, just as for a powder, the Board holds that the skilled person would have no difficulty in calculating its bulk density (mass divided by the volume occupied).

Therefore, the skilled person understands the thread's bulk density defined in the claim to mean its mass divided by the total volume it occupies, including voids between fibres. Indeed it is not disputed that the bulk density can be calculated thus.

4.5 However, the impugned decision reasoned (see reasons, point 30), amongst other things, that the skilled person "doesn't know when to measure the bulk density [of the thread]: i.e. before of after insertion [of the thread into the rod]", so they cannot carry out the invention.

The appellant-proprietor has argued that this is not so because the bulk density of the thread is substantially constant, therefore it makes no difference whether the claim defines this parameter before or after the thread is inserted into the filter. The respondent-opponents

have argued that thread's bulk density varies greatly from before to after insertion.

4.6 In the Board's view, it may well be that the volume of the thread changes to some extent before and after insertion into the filter. However, in view of the fact that the uncrimped filaments of the thread are packed tighter than the surrounding tow (see patent specification, paragraph [0006]) and the thread is far denser than the tow (cf. claim 1), it appears unlikely that the thread will be significantly compacted by the surrounding tow. Nor does the Board find it convincing that the thread's volume changes significantly because it is under tension in the filter. This is because tension present during manufacturing is released when the filter rod is cut into segments (cf. column 8, lines 29 to 39) and cellulose acetate is anyway not particularly elastic (column 8, lines 23 to 26 and 35 to 39). This is all the more so if the amount of tension considered does not result in significant changes in thread length.

4.7 However, the Board considers that the mass of the thread may vary significantly depending on whether or not it incorporates a flavourant (see paragraph [0010], first sentence and granted claim 5) or a plasticiser (see paragraph [0013] and granted claim 10), and this may add considerable mass to the thread when it is in the filter and thus have a significant impact on its density. Therefore, the Board considers that it does make a difference whether the claim defines the bulk density of the thread in the assembled filter or before it is inserted, and possibly before it is treated by a flavourant or the like.

4.8 Turning again to claim 1, the respondent-opponent II follows the impugned decision in arguing that claim 1 is ambiguous because it does not specify whether the thread's bulk density (400-800Kg/m^3) is to be measured before of after its insertion into the filter. They reason that although claim 1 defines that the thread is comprised in the filter, which could point to the relevant bulk density of the thread's bulk density being in its assembled state, other parts of the patent point to the same bulk density range being defined when it is outside the filter. In particular, the independent method claim (cf. granted patent, claim 16, claim 14 as maintained) defines first forming the cellulose acetate thread, then inserting it. Thus the thread's bulk density (400-800Kg/m^3, just as in claim 1) given in the method claim must be interpreted as being the density value as the thread is formed and before it is inserted. Likewise, the respondent opponent II has argued that parts of the description (cf. published patent, paragraphs [0029] and [0030]) point to bulk density as in claim 1 being measured before the thread is inserted.

4.9 As already explained, the skilled person is intent on making technical sense of the claims. They read them by building up rather than tearing down, taking into account the whole disclosure of the patent (see CLBA, II.A.6.1). Faced with an ambiguity in the claim wording, the skilled person will therefore look to the entire specification, (description, drawings and claims), to interpret the feature in a technically meaningful way. By the same token (see CLBA II.C.2), where sufficiency of disclosure is concerned, this is determined by the totality of the disclosure of the patent; thus, the skilled person does not read features of the claims in isolation but will consider the

complete disclosure to provide them with the necessary detail.

4.10 The claimed bulk density range for the thread (and indeed for the porous filter rod) are first introduced in the summary of the invention (see published patent specification, paragraphs [0009] and [0019]) but, as in claim 1, without specifying the condition under which the bulk density is to be measured (before or after insertion of the thread into the filter).

The detailed description starts by describing the filter in general, with its cellulose acetate tow filter rod and cellulose acetate thread (paragraph [0026] with figure 1). Then (see paragraphs [0027] to [0030] with reference to figure 2) the structure of the filter rod tow material and how it is prepared is explained.

The description continues (see paragraph [0031] with reference to figure 1) by explaining the cellulose acetate thread in more detail, in particular its location in the assembled filter and that it imparts flavour to the cigarette.

4.11 The next section (see paragraph [0032] with reference to figure 3) explains how the cellulose acetate thread is formed from continuous filaments that are not crimped but wound or twisted in a regular pattern to produce an ordered structure. Thus, this can but be before the thread is inserted into the filter. The succeeding section (paragraphs [0032] to [0034] with figures 2 and 3) compares how the filaments are arranged in the tow (random and chaotic) and thread (aligned and ordered), and how filaments of each have different deniers (the thread filaments have a higher

denier). In the Board's view, since these paragraphs directly follow the explanation of how the two constituents of the filter are made, the skilled person reads them as comparing the structures of tow and thread as they are made, not once incorporated into the filter.

4.12 In the Board's view, it is with this mind-set (filter components before filter assembly) that the skilled person reads the ensuing paragraph, [0035]. Indeed this is confirmed by the description continuing on from there (see paragraph [0036]), leading the reader from the situation before assembly to after assembly with the opening words: "Note that after assembly of the filter...".

Turning back to paragraph [0035], it is here that the skilled person finds the explanation of the [bulk] density range of the cellulose acetate thread as claimed (400-800Kg/m^3). Knowing that the paragraph relates to the situation prior to filter assembly, the skilled person understands that the thread's density range given, which corresponds to that of claims 1 and 14 of the main request, must characterise the thread *before* its insertion into the filter rod.

In the Board's opinion, the first two sentences of paragraph [0035] confirm this understanding because they explain that the thread's total denier *implies* the claimed [bulk] density: "The total denier of the thread is.... this implies a higher density for the CA thread of approximately 400-800 kg/m^3". As already explained, the thread's denier is a measure of its intrinsic weight per length (fineness), so denier value does not change when, for example, the thread is treated with a flavourant or a plasticiser (cf. published patent

specification, paragraphs [0010], [0013], [0017], [0023]). Since this denier value *implies* the (claimed) density range, the density range must likewise be based on the weight of thread without such (flavourant and/or plasticiser) treatment. Thus here, the skilled person finds confirmation that the thread's [bulk] density range given in paragraph [0035] (as in the independent claims 400-800 kg/m^3) is as measured *before* any treatments and its insertion into the filter rod.

4.13 For all these reasons the Board considers that the skilled person interprets claim 1 as defining the bulk density of the thread *before* any treatment and *before* its insertion into the filter rod to assemble the filter.

4.14 With this interpretation in mind, in order to carry out the invention, the skilled person must merely be able to provide a suitable [untreated, pre-filter-assembly] cellulose acetate thread having a bulk density in the claimed range.

Therefore, the appellant-opponents' arguments that the skilled person would not be able to measure the thread's bulk density once it was treated with flavourant and/or plasticiser and/or inserted into the filter, are moot. By the same token, the consideration that the thread may unravel and distort once isolated from an assembled filter (so have a different density compared to its inserted state), also plays no role in the skilled person's ability to carry out the invention.

4.15 In the Board's view, the skilled person would have no difficulty in making or choosing a suitable thread.

4.15.1 The description gives details of how to make the thread (see published patent specification, paragraphs [0032] to [0035] again). It tells the skilled person what denier the individual cellulose acetate filaments must have and the thread's total denier. Therefore the skilled person knows what filament and how many of them to use. The description also explains what structure the thread should have with filaments being uncrimped, aligned and generally twisted, for example with 100 to 200 turns per metre.

4.15.2 The Board holds that such a thread would normally be cylindrical (cf. published patent specification, figures 1 and 4). Therefore, the skilled person can readily measuring its diameter d.

In this regard, the Board notes that the thread has many more filaments than the three representative ones shown in figure 3 of the patent specification. For example (see paragraphs [0034] and [0035]), for a thread made of filaments having a denier of 7 and a total denier of 1000 to 5000, there must be between about 140 and about 700 filaments in a thread. Thus, the Board holds that, in contrast its depiction in figure 3, the thread, with its well over 100 aligned, regularly twisted filaments, will have a substantially constant diameter along its length.

Indeed, thread-diameter would appear to be a known way of characterising cellulose acetate threads for cigarette filters (see for example D1, abstract, page 7, lines 3 to 5 and page 8, lines 1 to 5).

4.15.3 Once the thread diameter d is known, the skilled person can easily apply their general knowledge to calculate the volume V of a (cylindrical) length l of thread

($V = l(\pi d^2/4)$. Evidently, the skilled person is also able to weigh a piece of thread of length l and divide the weight by the volume V to calculate the thread's bulk density.

4.16 For the above reasons, the Board holds that the invention of claim 1 is sufficiently disclosed.

5. Sufficiency of disclosure, main request, claim 14

The method claim 14 defines the same bulk density for the thread as claim 1. For the same reasons as apply to claim 1, the Board holds that the invention according to claim 14 is sufficiently disclosed.

6. Remittal

6.1 The impugned decision only considered the opposition grounds of added subject matter, Article 100(c) with 123(2) EPC (see sections 15 to 20) and sufficiency of disclosure, Article 100(b) with 83 EPC. In appeal, the opposition division's finding that the patent as amended according to the main request does not add subject matter, Article 123(2) EPC, has not been challenged. On the other hand, the Board has found that the invention as claimed according to the main request is sufficiently disclosed, Article 83 EPC. Therefore, the Board finds the patent as amended according to the main request to meet these requirements of the EPC. Therefore, the Board need not examine the appellant-proprietor's auxiliary requests in these respects.

6.2 The opposition division did not examine the remaining opposition grounds of novelty and inventive step, Article 100(a) with Articles 54 and 56 EPC.

6.3 In the present case, the Board considers it appropriate to exercise its discretion under Article 111(1) EPC by remitting the case to the department of first instance for further prosecution, also in view of the declared agreement of all parties. This will allow for a first instance consideration of the remaining opposition grounds.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the opposition division for further prosecution.

The Registrar: The Chairman:

G. Magouliotis A. de Vries

Decision electronically authenticated