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D E C I S I O N
of 9 March 1999

Case Number: T 0524/98 - 3.2.4

Application Number: 90300750.8

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Language of the proceedings: EN

Title of invention:
Improvements to smoking articles

Patentee:
Imperial Tobacco Limited

Opponent:
British-American Tobacco (Investments) Limited

Headword:
-

Relevant legal provisions:
EPC Art. 54, 56, 83, 100(b)

Keyword:
"Sufficient disclosure (yes)"
"Novelty (yes)"
"Inventive step (yes)"

Decisions cited:
T 0292/85

Catchword:
-



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Boards of Appeal

Chambres de recours

Case Number: T 0524/98 - 3.2.4

D E C I S I O N
of the Technical Board of Appeal 3.2.4
of 9 March 1999

Appellant: British-American Tobacco (Investments)
(Opponent) Limited
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Representative: Walford, Margot Ruth
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Respondent: Imperial Tobacco Limited
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Representative: Marles Alan David
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Decision under appeal: Decision of the Opposition Division of the European Patent Office posted 26 March 1998 rejecting the opposition filed against European patent No. 0 380 324 pursuant to Article 102(2) EPC.

Composition of the Board:

Chairman: C. A. J. Andries
Members: R. E. Gryc
J. C. M. De Preter

Summary of Facts and Submissions

- I. The appellant (opponent) lodged an appeal, received at the EPO on 22 May 1998 against the decision of the Opposition Division, dispatched on 26 March 1998, on the rejection of the opposition against the European patent EP-B-380 324.

The appeal fee was paid simultaneously and the statement setting out the grounds of appeal was received at the EPO on 5 August 1998.

- II. The opposition was filed against the patent as a whole on the ground that it did not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art (Article 100(b) EPC).

During the oral proceedings before the first instance the opponent further introduced a new ground of opposition under Article 100(a) EPC i.e. lack of inventive step in view of document US-A-4 219 031 (D1) cited in the search report.

- III. With the written statement setting out the grounds of appeal, the appellant filed an affidavit by two of its employees who made experimentations in order to determine some of the parameters which constrain the operation of the combustion source claimed in the patent in suit and whether any alternative smoking material can be used as a combustion source in place of carbon.

The appellant pointed out that, in the four embodiments of the patent specification as well as in the 22 examples disclosed in Table 1, carbon or carbonised material appeared to be an essential integer of the combustion source and no other high conductivity or high heat capacity material was exemplified. It was thus of the opinion that the invention is not described sufficiently clearly and completely enough to allow even a skilled man to put the invention into practice with anything other than a carbon, or carbon-containing, rod or sheath material and that many of the materials referred to by the respondent (patentee) were actually alternative to cut tobacco leaf and not necessarily "combustion sources" per se.

The appellant argued that, according to the Affidavit and the results of the experimentations made, a relatively high amount of carbon appeared to be required in the rod embodiments in order for the invention to work and that, when substances were different from carbon or activated carbon, the skilled reader was not assured of success and had to try such substances without any guidance on the compositions and/or other materials required because none was given in the specification. In particular, it was found that none of the embodiments produced allowed the extinguished tobacco to be re-ignited for more than 2 puffs and no cigarettes smoked through to completion. Therefore, according to the appellant, the speculative nature of the claims given the actual disclosure of the patent specification appeared from the Affidavit.

The appellant argued also that even some of the materials known to be alternative smoking materials

suggested by the respondent have shown to be ineffective as combustion sources and that finding new materials in new compositions requires inventive ingenuity. Therefore, in its opinion, the claim of the patent in suit should be construed in a narrower way than the purely functional claim literally reads.

The appellant considered further that the smoking article described in D1 was very similar to the smoking articles described in the patent in suit, although it does not have a portion which extinguishes and which is re-ignited. The appellant was thus of the opinion that, given the close similarity of D1, the structural differences in the make-up of the articles according to the invention which cause the tobacco to extinguish should be recited in Claim 1 in order to prevent that it covers all possible ways of achieving the aim of the invention whereas the description exemplifies only two embodiments and a narrow compositional range for the rod or sheath in those embodiments.

IV. Oral proceedings took place on 9 March 1999.

The appellant emphasized that, in the patent in suit, it is not disclosed that the core of the smoking articles could be made of cut tobacco leaves but only of carbon, activated carbon or partly carbonised cellulosic material.

According to the appellant, the functional language of claim 1 outlines the effect to be achieved, not how to achieve the effect in structural terms, therefore, the disclosure of the patent in suit does not clearly and completely enough describe the invention and the

technical contribution made by the disclosure is greatly exceeded by the scope of the granted Claim 1. Appellant therefore requested for a narrow interpretation of the claims of the patent.

The appellant contended that the puffing regime of the Affidavit (120 seconds between two consecutive puffs) belongs to the routine testing conditions whereas, according to the respondent, a 60 seconds puff cycle should be the normal standard used on the smoking machines of the industry.

The respondent (patentee) recalled that the technical contribution made by the invention to the art consisted in the general concept of combining in a smoking article means for extinguishing the smoking material between puffs and means for reigniting said material during puffs. The respondent contended that if, in the experimentation process referred to in the Affidavit, a less than 120 seconds puff cycle had been used, a much greater number of puffs could have been achieved with the different combustion materials tested. According to the respondent, the results stated in the Affidavit demonstrated that combustion sources other than carbon or carbonised materials worked at least under the conditions claimed in Claim 1.

The respondent explained that the aim of the invention being to reduce side stream smoke and carbon rods having a clean burning combustion, the use of carbon or of carbonised materials as combustion sources has been considered and therefore described in the patent in suit as the best way to conduct the invention. However, the Affidavit has shown that the invention can also be

carried out with combustion sources other than carbon sources provided that all the required parameters were combined.

At the end of the oral proceedings, the appellant requested that the decision under appeal be set aside and that the patent be revoked in its entirety.

The respondent requested that the appeal be dismissed.

V. Claim 1 of the granted patent reads as follows:

"A smoking article incorporating smoking material the combustion products of which are inhaled by the smoker by puffing, said smoking article being adapted to extinguish the smoking material between puffs, and a combustion source incorporated in the smoking article and adapted to reignite the smoking material during puffs thereby causing the smoking material to combust."

Reasons for the Decision

1. Admissibility of the appeal.

The appeal is admissible.

2. *Interpretation of Claim 1*

In the light of the description, the term "adapted" used in the following phrase:

"smoking article....adapted to extinguish the smoking

material between puffs" (see the patent specification: page 15, line 36), should be interpreted as signifying that the different parameters of the components of the smoking article which can influence free smouldering of the smoking material, such as the combustion properties of the wrapper or sheath which encloses the smoking material (for example its combustibility, oxygen diffusivity, thermal conductivity etc...), or the properties of the smoking material itself (for example its composition, density, compacity etc...) are specifically chosen such that, without assistance of an additional ignition source, the smoking material is incapable of regenerating a fully burning coal with a single standard puff (see the specification: for example page 2, lines 40 to 43; page 3, lines 11 to 38 and page 4, lines 14 to 43).

Furthermore, the term "adapted" used in the following phrase:

"a combustion source.....adapted to reignite the smoking material during puffs" (see the patent specification: page 15, lines 37 and 38),

should be interpreted as signifying that the different characteristics of the combustion source which can influence the reignition of the smoking material, such as for example the material of the rod or its dimensions (see the specification: for example from page 3, line 44 to page 4, line 9 and from page 5, line 45 to page 6, line 6) are specifically chosen such that the source will continue to provide heat for a sufficiently long period of time to enable the smoker to regenerate combustion in the tobacco rod upon

puffing at the next occasion (see the specification: page 6, lines 32 to 34).

Therefore, the subject-matter of Claim 1 should be interpreted as being a combination of characteristics of the different components of the cigarette (see for example the specification: page 4, line 46; page 6, lines 31, 32 and page 7, lines 6 to 8) in order to prevent unassisted smouldering in air and to provide reignition during puffing.

3. *Disclosure of the invention (Article 100(b) EPC)*

It results from the comparison between the disclosure of the application as originally filed and the cited prior art that the technical contribution made by the invention to the art consists in the concept of quenching the combustion of the smoking material between puffs and reigniting said smoking material at the instigation of puffing (see the application as originally filed: for example page 1, first paragraph; page 5, lines 3 to 7; page 37, lines 8 to 11 or page 40, lines 11 to 17).

In order that the patent insures an effectual protection to said general idea, and provided that at least one way of obtaining the results is clearly indicated in the patent enabling the skilled person to carry out the invention, the concept of the invention can be claimed in Claim 1 in a functional way in order to embrace variants of components which are equally suitable to achieve the same effects in a manner which could not have been envisaged without the invention (see Decision T 292/85, OJ EPO 1989, 275). In the

present case, the opposed patent describes the best way of carrying out the invention by using preferably carbon or carbonised material as a combustion source and the affidavit filed with the appellant's statement of 5 August 1998 acknowledges that such a combustion source allows the invention to work, that the corresponding smoking articles have the standard properties of a conventional cigarette and that they fulfil the criteria of Claim 1 under the smoking regime selected to conduct the experiments.

Since Claim 1 just claims that the combustion source be "adapted to reignite the smoking material during puffs" and does not require additionally that the cigarettes incorporating said combustion sources should present the properties of a "conventional" cigarette, in particular that they should smoke to completion and provide a minimal number of puffs acceptable to the user, in order to embody the invention, the skilled person has only to search for such "adapted" sources among known combustion sources by running routine experimentation involving trial and error, and any smoking article just adapted to extinguish its smoking material between (at least two) puffs and to reignite (at least one time) the smoking material during (the at least two) puffs fulfils the criteria of Claim 1.

According to the Affidavit, it seems that this is the case for some experimented tobacco substitutes such as "pectin" and "maize".

In the context of the invention, the embodiments which incorporated carbon fuel rods were preferred since they have the properties of a conventional cigarette (see

the patent: page 4, lines 57 to 58). However, the embodiments which do not have the standard properties of a conventional cigarette are not excluded from the protection (see in particular the patent: page 3, lines 37 to 38), provided that they comprise means for extinguishing the smoking material between puffs combined with a combustion source to reignite the smoking material during puffs.

Therefore, the Board is convinced that the invention can be performed without undue burden by the skilled person who, in the light of his general common knowledge, follows the teaching of the patent completed with the results of a routine trial and error experimentation. Consequently, the Board considers that, in the patent in suit, the invention is sufficiently disclosed in the meaning of Articles 83 and 100(b) EPC.

4. *Novelty (Article 54 EPC)*

When examining novelty it should be borne in mind that a claimed subject-matter would lack novelty only if it were derivable as a whole directly and unambiguously from one document. Although, in its written statement setting out the grounds of appeal, the appellant considered that the smoking article described in D1 was very similar to the smoking articles described in the patent in suit, it acknowledged that the known cigarette was not adapted to extinguish the smoking material between puffs and to reignite it as claimed in Claim 1.

Since, moreover, novelty has not been disputed by the

appellant during the oral proceedings, there is no need for further detailed substantiation.

5. *Closest state of the art*

D1, which describes a smoking article having structural similitudes with the article according to Claim 1 such as a combustion source incorporated in the smoking material, appears to disclose the state of the art closest to the invention.

The smoking article according to Claim 1 differs from said prior state of the art in that the properties of its components have been chosen so that the smoking material cannot sustain free smouldering between two consecutive puffs and that the characteristics of the combustion source incorporated in the smoking material have also been specifically chosen such that, between two puffs, it will continue to provide heat for a sufficiently long period of time to enable the smoker to regenerate combustion in the tobacco rod upon puffing.

6. *Problem to be solved*

When taking into account the aforementioned differences (see section 5 above, second paragraph), the problem as determined objectively appears to be to minimise sidestream emissions and tobacco consumption of the smoking article according to D1. The Board is satisfied that the combined effects resulting from the choice of the different parameters of the components of the smoking article bring effectively a solution to said problem.

7. *Inventive step (Article 56 EPC)*

In D1 the problem to be solved consists mainly to improve carbon-substitute smoking products in order to reach equality in smoking experience between said products and conventional smoking products (see for example D1: column 1, lines 15 to 21 and column 2, lines 15 to 18) whereas the problem considered in the patent in suit concerns mainly to reduce sidestream emissions and tobacco consumption.

Moreover, the description of D1 concentrates on the production of carbonised cores to be incorporated in the smoking article without concern about the wrapper or sheath which encloses the smoking material or about the smoking material itself and the eventuality that the cigarette could extinguish between two puffs is even not envisaged. Consequently, there is a priori no reason for the skilled person starting from the smoking article of D1 for choosing and arranging its components so that the smoking material be incapable of supporting free smoulder in the absence of puffing, let alone that the carbon core of the article according to D1 insures reignition of the smoking material during puffing.

Since, moreover, inventive step has even not been disputed by the appellant during the proceedings before the Board, a further detailed substantiation is not necessary.

For the foregoing reasons, the Board considers that to improve the smoking article of D1 according to Claim 1 does not follow plainly and logically from the disclosure of D1 even when it is seen in the light of

the general common knowledge in the art.

8. The reasons stated by the appellant therefore did not prejudice the maintenance of the patent as granted.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

N. Maslin

C. Andries