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**D E C I S I O N
of 30 September 2003**

Case Number: T 0568/02 - 3.2.4

Application Number: 95930277.9

Publication Number: 0778738

IPC: A24B 3/18

Language of the proceedings: EN

Title of invention:

Method and apparatus for expanding tobacco

Patentee:

PHILIP MORRIS PRODUCTS INC.

Opponent:

British-American Tobacco (Germany) GmbH

Headword:

-

Relevant legal provisions:

EPC Art. 100(a), 100(b)

Keyword:

"Sufficiency of disclosure (yes)"

"Novelty (yes)"

"Inventive step (yes)"

Decisions cited:

T 0113/96, T 0782/92, T 0472/92, T 0381/87, T 0502/98

Catchword:

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Case Number: T 0568/02 - 3.2.4

D E C I S I O N
of the Technical Board of Appeal 3.2.4
of 30 September 2003

Appellant:
(Opponent)

British-American Tobacco
(Germany) GmbH
Alsterufer 4
D-20354 Hamburg (DE)

Representative:

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Respondent:
(Proprietor of the patent)

PHILIP MORRIS PRODUCTS INC.
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Representative:

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Decision under appeal:

**Decision of the Opposition Division of the
European Patent Office posted 3 April 2002
rejecting the opposition filed against European
patent No. 0778738 pursuant to Article 102(2)
EPC.**

Composition of the Board:

Chairman:

C. A. J. Andries

Members:

C. D. A. Scheibling

M.-B. Tardo-Dino

M. G. Hatherly

H. Preglau

Summary of Facts and Submissions

- I. By its decision dated 3 April 2002 the Opposition Division rejected the opposition. On 3 June 2002 the appellant (opponent) filed an appeal and paid the appeal fee simultaneously. The statement setting out the grounds of appeal was received on 5 August 2002.
- II. The patent was opposed on grounds based on Articles 100(a) EPC (54 and 56 EPC) and 100(b) EPC.
- III. Oral proceedings took place on 30 September 2003.

The appellant requested that the decision under appeal be set aside and that the patent be revoked.

The respondent (patentee) requested that the appeal be dismissed and that the patent be maintained as granted.

- IV. The following documents played a role in the appeal proceedings:

D4: Brochure "Tobacco processing machinery";
W. H. Dickinson Engineering Ltd

D5: Drawing KT-112-21MM-1000

D9: DE-C-37 10 677

D10: Article from World Tobacco; March 1969;
pages 96, 97; "Cutting redrying down to size"

D11: Advertisement from Bowen Ltd, in World Tobacco,
September 1971, page 33

D12, D12': Affidavits of Mr Buda and Annexes,
respectively dated 30 July 2002 (D12) and 23
July 2003 (D12'),

D13: Copy of a Licence Agreement between Brown &
Williamson Tobacco Corporation and W. H. Dickinson
Engineering LTD,

D14: Brochure "High Humidity Dryer"; Dickinson.

V. Claim 1 reads as follows:

"1. Apparatus for treating tobacco with gaseous medium
comprising a transport duct to which the tobacco and
the medium are fed, characterised in that the transport
duct is of obloid cross-section."

Claim 11 reads as follows:

"11. A tobacco drier tower according to any preceding
claim."

Claim 12 reads as follows:

"12. A tobacco expansion tower according to any of
claims 1 to 10."

Claim 15 reads as follows:

"15. A method of treating tobacco, comprising:
establishing a flow of heated gaseous medium;
feeding tobacco into the flow of heated gaseous medium;
dispersing the fed tobacco in the flow of heated
gaseous medium by directing the flow of heated gaseous

medium and the fed tobacco through an obloid transport duct; and
separating the tobacco from the gaseous medium downstream of the obloid transfer duct."

- VI. The appellant essentially argued that the subject-matter of the independent claims was not new or at least did not involve an inventive step in comparison with D9, D10, D12, D13, D4 or D14.

The respondent essentially argued that none of the cited prior art documents discloses the use of a duct with an obloid cross-section in an apparatus for treating tobacco and, consequently, that a skilled person could not be given any hint to implement it.

Reasons for the Decision

1. The appeal is admissible.
2. *Interpretation of the claims*
 - 2.1 Interpretations of the wording of a claim, even of a broad claim, should at least be such that the aims of the patent are met, i.e. that the problem to be solved is in fact solved. Interpretations of the wording of a claim which do not contribute anything to the solution, although according to the patent this wording should clearly do so, cannot reasonably be accepted by the Board.

2.2 It is clear from the description of the patent in suit that the problem to be solved by the invention is to avoid the transported tobacco concentrating along one wall (side) of a tower wherein tobacco is treated, instead of dispersing more uniformly amongst the tower gas. The consequence of this tendency (called "roping") is that the concentrated tobacco directly interacts with only a limited portion of the gas stream passing through the tower, so that heating (and thus treating) of the bulk of tobacco is less rapid or effective than expected (patent specification, column 2, lines 3 to 26).

Thus, in the meaning of the patent in suit, the term "transport duct" in the expression "transport duct of obloid cross-section" has to be interpreted as meaning a duct, which is not only part of the apparatus for treating tobacco but, in which at least an appreciable part of the treatment is performed and in which roping could occur, i.e. wherein the flow is directed in an upward direction.

The term "obloid" is defined in the description of the WO-A-96/05742, page 7, lines 4 to 14 and in the patent specification, column 4, lines 43 to 53. Said passages read "The term "obloid" as used throughout this specification herein includes generally those shapes shown in the drawing and further including such other forms considered to fall within the general understandings of any of the following terms: "oblong" (deviating from a circular form through elongation); "oblate" (flattened or depressed at the poles); "ellipsoidal" (the cross-section of a surface, all plane sections of which are ellipses); "oval" (a

rectangular form having rounded corners or rounded ends) or "elliptical" (relating to or shaped like an ellipse)."

Although the term "oblate" normally appears rather to apply to a three-dimensional closed volume than to a two-dimensional plane section and thus is not appropriate, the said passages nevertheless give a skilled person the indication that an obloid shape of the cross-section can be anything between rectangular and circular, provided that the opposing end pieces are rounded so that they do not comprise any sharp angle in order to avoid localized eddies (i.e. polygonal cross-section are excluded).

- 2.3 It has further to be observed that the feature according to which "the transport duct is of obloid cross-section" is presented in the description of the patent in suit as the feature which solves the problem due to the occurring in prior art ducts of the phenomenon called "roping".

It is therefore obvious for a person skilled in the art that not only a short section of the transport duct has to exhibit an obloid cross-section but that, in order to achieve the expected result, at least the major part of the transport duct should be of such a cross-section.

Thus, the expression "the transport duct is of obloid cross-section" means that the major part of the transport duct, in which an appreciable part of the treatment is performed and in which normally roping would be likely to occur, is of a cross-section between

rectangular and circular, comprising opposing end pieces which are rounded so that they do not comprise any sharp angle.

- 2.4 Furthermore, as already indicated above, said duct should be arranged in the apparatus in such a way that the flow during treatment is directed upwardly, so that the problem of roping could have occurred. Indeed, the respondent was not able to convincingly confirm or even to explain to the Board whether or not roping can also occur in a duct wherein the flow of gas and tobacco is directed in the downward direction, particularly in view of the influence of firstly the gravity of the tobacco and secondly the increased gas / tobacco flow speed (with respect to the speed in the treating towers) through the downward directed ducts connecting the proper treating towers and, whether or not the obloid cross-section of the duct in such a flow situation would also solve the problem of roping if it existed.

Furthermore, the explanations given for the existing problem (e. g. Figures 4a and 4b) and its solution (e. g. Figures 7 and 8) in the present patent were clearly linked to an upward gas / tobacco flow.

3. *Objection under Article 100(b) EPC*

This objection was based on the assertion that the term "obloid" has no precise meaning and that therefore a skilled person cannot carry out the invention since he does not know what an obloid cross-section is. However, as indicated in section 2.2 above, the patent specification gives clear examples of what kind of

cross-section shapes are meant and indicates which shapes can be considered to be obloid.

Therefore, the Board comes to the conclusion that the provisions of Article 100(b) EPC do not prejudice the maintenance of the patent in suit.

4. *Documents filed with the statement setting out the grounds of appeal*

The respondent requested that the documents D10 to D14 be disregarded as being late filed.

However, the filing of facts and evidence after the nine-month period to file an opposition might also be "in due time", if it occurred in accordance with the principle of procedural economy and, therefore, if the filing party had observed a fair degree of procedural vigilance (see T 502/98, section 1.5). The Board considers in the present case that the filing, with the statement setting out the grounds of appeal, of new documents in the framework of the existing case, in order to reinforce the line of attack already made before the first instance, is the normal behaviour of a losing party according to these principles. The Board therefore takes these documents into consideration to assess novelty and inventive step (see T 113/96, section 11, second paragraph).

5. *Novelty*

5.1 D9

The appellant considered that transition part 34 (see Figure 1) is a transport duct of obloid cross-section.

According to the interpretation given above in section 2, the said part is neither "obloid", since Figure 1 shows not rounded angles (if the outside shape can be considered) so that said cross-section is either of polygonal shape (wherein the angles between the sides of the polygon are not significantly rounded), nor does said part form a transport duct in the meaning of the patent in suit (it is a connecting piece / transition part), nor does an appreciable part of the treatment take place in this part 34.

Furthermore, it is stated in the description of D9, column 5, lines 10 to 13, that part 34 has a rectangular especially square cross-section, so that it can even be stated that the information disclosed in D9 with respect to said part 34 is not unequivocally clear.

Thus, D9 is not novelty destroying for the subject-matter of any of the independent claims of the patent in suit.

5.2 "Macon plant" (D12, annexes; D12'; as well as the minutes of the taking of evidence by hearing Mr Buda during the oral proceedings before the Opposition division on 28 January 2002):

- 5.2.1 The affidavits and the declarations of the witness Mr Buda (made during the opposition proceedings) establish that dryers were installed in a plant in Macon and that members of the public could have seen said dryers before the priority date of the patent in suit.
- 5.2.2 However, it is also clear from the affidavits / declarations of Mr Buda that the dryers were entirely insulated (D12'). The transport ducts were insulated with calcium silicate blocks cut in order to form segments, so that they could be fitted around the duct wall (D12). They were held in place by wires and a coat of canvas and mastic was applied (D12). Finally, they were covered with a thin flexible aluminium sheet (D12'). The connecting joints were insulated with flexible insulation blankets (D12').
- 5.2.3 This leads the Board to the conclusion that the duct itself was out of sight for a visitor and that the inner shape of the duct could not be deduced by an observer. As a matter of fact, by applying insulation blocks, a coat of canvas, mastic and an aluminium sheet or a flexible blanket to a duct, the outer shape of the insulated duct would exhibit rounded corners even if the cross-section of the duct itself were to be rectangular, because the thickness of the insulation layer wrapped around would inevitably smooth the angles, so that the outer shape of the duct can lead to no conclusion as to the inner shape of the duct.
- 5.2.4 The appellant referred to the fact that the insulation blankets were frequently removed for maintenance and repair and that the probability, that, during such a

maintenance period, visitors could have seen the shape of the inner duct without its insulation, was extremely high, particularly since the licence agreement (D13) indicated that potential customers had to be given reasonable access to the facilities of Brown & Williamson Tobacco Corporation (i.e. Macon plant).

With respect to the public in general, the appellant failed however to provide unequivocal evidence in this respect, so that this allegation is not proved (see T 782/92, last paragraph of section 2.2; T 472/92, OJ EPO 1998, 161, section 3.1).

In this respect, the Board can only observe that although the insulation was said to be frequently removed, no photograph of a duct with removed insulation, showing thereby unequivocally the cross-section of the installed duct, has been brought forward.

Furthermore, according to the Board, outside contractors working in the Macon plant cannot reasonably be considered as being part of the public, since confidentiality is, in such a case, implicit.

With respect to potential customers, it was not unequivocally clear for the Board which know-how was involved. Anyway, the US patents mentioned in the licence agreement (D13) clearly did not disclose obloid cross-sections, either for the treatment zone or for the ducts connecting these zones (see also section 5.5 below).

Additionally, a drawing bearing the document number KT-112-21MM-1000 (D5) concerning the dryer chamber and duct assembly was discussed as evidence for the cross-section of the transport ducts. However, this drawing is an internal document and thus not accessible to the public and therefore is not part of the state of the art according to Article 54(2) EPC.

5.2.5 Furthermore, there is no indication at all that an appreciable part of the treatment is performed in said ducts connecting the treatment towers and that within said ducts (wherein the flow is directed downwards) roping could occur.

5.2.6 Thus, the alleged public prior use (Macon plant) is not novelty destroying for the subject-matter of the independent claims.

5.3 BAT Air Dryers: D10 and D11

These documents (the article and the advertisement) do not refer to the shape of the ducts and the photographs shown therein do not even conclusively reveal the outer shape of the ducts. In D10 the ducts are said to be provided with insulation (D10: page 97, column 3, second paragraph, first sentence) and a skilled person would expect the air dryer of D11 to be likewise insulated. Thus, as indicated in section 5.2.3 above, even if it had been possible to deduce the outer shape of the ducts from the photographs, said outer shape would not be relevant for determining the inner shape of the ducts, because the inner shape of the ducts cannot be deduced solely from said outer shape. Furthermore, there is no indication that an appreciable

part of the treatment is performed in said ducts and that within said ducts roping could really occur.

Also an alleged public prior use of air-drying units based on these two brochures cannot be accepted by the Board.

A general statement that such units are in operation in parts of Latin America cannot be upheld by the Board as being a piece of evidence that makes unequivocally clear what, where, when and how these units were made available to the public.

Thus, neither D10 nor D11 are novelty destroying for the subject-matter of any of the independent claims of the patent in suit.

5.4 Brochures: D4 and D14

It is clear for a skilled person that the ducts of the dryer shown in the brochures are provided with an insulation layer. As indicated above with respect to D10 and D11, the drawings shown in D4 and D14 do not give any information about the inner shape of the duct concealed behind the insulation layer. Furthermore, here again there is no indication that an appreciable part of the treatment is performed in said ducts and that said ducts could be subject to roping.

Thus, neither D4 nor D14 are novelty destroying for the subject-matter of any of the independent claims of the patent in suit.

5.5 Licence agreement: D13

D13 refers to a license agreement which provides for "allowing reasonable access to B & W facilities including said process by potential customers of DE".

However, the same agreement specifically refers to apparatuses and processes described and claimed in US patents 4,167,191 and 4,301,819. In these documents, the inner cross-section of the ducts disclosed therein is rectangular and not obloid (see US-A-4 301 819, figure 2).

Thus, the agreement concerns dryers comprising ducts with a rectangular inner cross-section.

The appellant argued that said agreement provides for reasonable access to the facilities (i.e. the Macon plant which was at that time the only plant using the licensed equipment, see letter of the appellant dated 30 July 2003, page 12, fifth paragraph) by potential customers, he also argued that the possibility to have access to the plant was enough to disclose the ducts of the dryer, especially considering T 381/87 (OJ EP0, 1990, 213).

However, even if it were considered that D13 could form a basis for the assumption that there was a possibility for some persons (potential customers) to get access to the Macon plant, it is doubtful whether a potential customer (who is also a potential competitor) is a member of the public not bound to confidentiality (see the minutes of the taking of evidence by hearing of Mr Buda, page 9, second paragraph of the answer to

"Asked about the tours in the plant", where he stated that no confidentiality was requested for general visitors but for competitors there were more restrictions). Furthermore, even if the ducts would have had the alleged obloid cross-section, it is not unequivocally clear for the Board whether or not this information would have been part of know-how falling under the licence agreement or whether it would have been part of know-how being kept secret for competitors. No information in this respect was available.

Moreover, as explained in section 5.2 above, the information which would have been available for a visitor at Macon plant was not sufficient to assess the internal cross-section of the duct which was out of sight for a visitor and which could not be deduced from the outer shape of the duct by an observer. That potential customers, visiting the Macon plant, would have been provided with further information in addition to what could have been seen, has not been alleged and cannot be proven since no such visit ever did take place.

With respect to the decision in case T 381/87, the Board is of the opinion that the present case cannot be compared with the situation of a document available in a library whose contents are directly accessible. Indeed, if a library can be considered as a public place where everybody can request to read the available documents, the facilities of Macon plant cannot be compared to such an environment. The Macon plant is not a public place where, first of all, the public can walk in and can request to be shown know-how regardless of

it being publicly available or not and where, secondly, certainly not all installations (or know-how) have to be disclosed to the public on request.

Thus, D13 is not novelty destroying for the subject-matter of any of the independent claims of the patent in suit.

6. *Closest prior art*

The appellant considered that the closest prior art is a dryer as installed at Macon plant or as described in D4 / D14.

The Board considers US-A-4 366 825, disclosed in both the originally filed application as well as in the granted patent and used therein to explain the problem to be solved, to be the closest prior art document, because it discloses a similar duct wherein (an appreciable part of) the treatment is performed and roping is likely to occur.

The apparatus for treating tobacco according to claim 1 of the patent in suit differs from the apparatus known from the Macon plant or from D4 or D14 or from US-A-4 366 825 in that:

the transport duct is of obloid cross-section.

The problem to be solved by the invention is to avoid roping in a transport duct in which an appreciable part of the treatment is performed and in which roping can occur.

This problem is solved by using a transport duct of obloid cross-section. This point has not been disputed.

7. *Inventive step*

- 7.1 The appellant argued that even if a skilled person could not deduce the inner shape of the duct, due to the presence of an insulation layer, he would have been led to shape the internal cross-section of the duct in accordance with the outer shape, since it was obvious for a skilled person that an obloid cross-section avoids roping in a duct.

As evidence for this knowledge, the appellant referred to the minutes of the taking of evidence by hearing of Mr Buda, where Mr Buda declared with respect to the different shapes of ducts "They must be easy to clean and be designed to minimise the build-up of tobacco, therefore we try to avoid sharp corners. From our experience the build-up of tobacco was connected to the air flow characteristics of the dryer" (see minutes, page 8, last section to page 9, line 1).

- 7.2 The Board cannot agree with the appellant. Mr Buda did not refer to the phenomenon of roping, but to a build-up of tobacco. A build-up of tobacco is a static phenomenon which results in clogging, whereas roping is a dynamic phenomenon which results in the tobacco being concentrated along one wall of the duct, forming a "rope" but remaining in movement. Therefore, this statement cannot be a basis for asserting that it was general knowledge that roping can be avoided by providing the duct with an obloid cross-section.

Furthermore, there is no single indication in the revealed state of the art that roping can be avoided by providing the transport duct with an obloid cross-section.

7.3 Moreover, the invention of the patent in suit applies to a transport duct in which an appreciable part of the treatment is performed and in which roping could occur (see section 2.4, above). There is however no indication that, in a dryer as installed at the Macon plant or in a dryer according to D4 / D14, an appreciable part of the treatment is performed in the transport ducts, since treatment is mainly effected in the towers or floatation chambers, nor is there an indication that the vertically disposed ducts of said installations could be subject to roping, since the flow of the mix of tobacco and gaseous medium is not only directed downwardly (influence of gravity on the tobacco), but also taking place at an increased flow speed (due to the clear difference in diameter of the treating towers on the one hand and the connecting ducts between these towers on the other hand) and since there is furthermore no indication that roping can occur within a vertical duct, wherein the flow is directed downwardly.

7.4 Since there is no proof that the problem of the invention does exist in vertically installed transport ducts where the flow is in a downward direction, as the ducts of the Macon plant dryer or of the dryers according to D4 / D14, a skilled person would have no reason to modify the cross-section of the ducts of such dryers in order to prevent a problem which does not occur in such ducts.

As a matter of fact, the point is not whether a skilled person could arrive at the invention by modifying the prior art, but whether, in expectation of the advantages achieved, he would have done so because of prompting by the prior art.

For the same reasons (see section 7.3 above), starting from a dryer as disclosed in US-A-4 301 819 (dryer licensed in D13) would lead to the same conclusion.

- 7.5 From US-A-4 366 825 there is known a tobacco available apparatus comprising a duct with a circular cross-section wherein the flow is in an upward direction and in which duct the treatment takes place.

However, there is no single indication in the available state of the art that an obloid cross-section could solve the problems linked with the appearance of roping within such a duct.

Therefore, it cannot be obvious for a skilled person to replace a duct having a circular cross-section by a duct having an obloid cross-section in the corresponding tobacco treating apparatus, since there is no reason for a skilled person to do so.

- 7.6 Therefore, the subject matter of claim 1 of the patent in suit involves an inventive step. The same arguments and reasoning apply *mutatis mutandis* to the other independent claims, which all involve the use of a transport duct of obloid cross-section to avoid roping.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

G. Magouliotis

C. Andries