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D E C I S I O N
of 30 November 1999

Case Number: T 0414/98 - 3.2.4

Application Number: 90313452.6

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Language of the proceedings: EN

Title of invention:
Treatment of poultry

Patentee:
The BOC Group plc

Opponent:
Bernard Matthews Plc
Stork PMT B.V.
Meyn Food Processing Technology B.V.

Headword:
-

Relevant legal provisions:
EPC Art. 54, 56, 123

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

Decisions cited:
G 0002/88, T 0450/89, T 0677/91, T 0511/92, T 0013/84,
T 0002/83, T 0005/81, T 0056/87

Catchword:
-



Case Number: T 0414/98 - 3.2.4

D E C I S I O N
of the Technical Board of Appeal 3.2.4
of 30 November 1999

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Decision under appeal: Interlocutory decision of the Opposition Division of the European Patent Office posted 10 February 1998 concerning maintenance of European patent No. 0 434 279 in amended form.

Composition of the Board:

Chairman: C. A. J. Andries
Members: R. E. Gryc
C. Holtz

Summary of Facts and Submissions

I. Appellants I and II (opponents I and III) lodged appeals and paid the appeal fees on 6 and 7 April 1998 respectively, against the interlocutory decision of the Opposition Division, dispatched on 10 February 1998, which maintained European patent No. 0 434 279 in amended form.

The written statements setting out the grounds of appeal were received at the EPO on 5 and 10 June 1998 respectively.

II. Three oppositions were filed against the patent as a whole and based on Article 100(a) EPC. The Opposition Division had held that the grounds for opposition cited in Article 100(a) EPC did not prejudice the maintenance of the patent in the amended version submitted at the oral proceedings before the first instance having regard in particular to the following documents:

D1: "Experimentation with In-line Carbon Dioxide Immobilization of Chickens Prior to Slaughter" by A. W. Kotula & al., Poultry Science, Vol. 40, No. 1, 1961, pages 213 to 216.

D2: "Carbon Dioxide Immobilization of Turkeys Before Slaughter", by E. E. Drewniak & al., US Department of Agriculture, February 1955, circular No. 958, pages 1 to 9.

D3: WO-A-88/07328.

D4: BE-A-898.816.

D5: US-A-3.230.577.

- D7: "The Influence of Humane Slaughter on the Tenderness of Turkey Meat", by T. L. Goodwin & al, Journal paper No. 1653 of the Purdue Agricultural Experiment station - 1960, pages 921 to 924.
- D8: "Physiological and behavioural responses of the domestic hen to hypoxia", by S. C. Woolley & al, Research in Veterinary Science, 1988, 45, pages 377 to 382.
- D9: "Variability in Tenderness due to Struggling", by J. W. Dodge & al, Journal paper No. 1469 of the Purdue Agricultural Experiment Station - 1960 , pages 672 to 677.
- D10: "Betäubung von Schlachttieren" by B. Von Hertrampf & al, Deutsche tierärztliche Wochenschrift, 86, 1979, pages 504 to 510.
- D11: "Euthanasia of Day-Old Male Chicks in the Poultry Industry" by Walter Jaksch, Journal for the Study of Animal Problems, 2(4), 1981, pages 203 to 213.
- D12: JP-A-02-31638.
- D13: JP-B-61-42539.
- D14: JP-A-62-282535.
- D16: "Untersuchungen zur Betäubung des Schlachtgeflügels mit Kohlendioxid", by W. Zeller & al, Fleischwirtsch., 68(10), 1988, pages 1308 to 1312.

D17: Rigor, Malsheid.

D20: "Recent Developments in the Slaughter of Poultry" by P. J. Kettlewell "Humane Slaughter of Animals for Food", in UFAW, Hertfordshire, England 1986, pages 26 to 32.

III. During the appeal proceedings, the following documents were additionally filed by the appellants:

D25: "Post-Mortem Glycolytic and Physical Changes in Turkey Breast Muscle", by Vanderstoep & al; Inst. Can. Food Sci. Technol J. Vol. 7 No. 2 (1974): pages 120 to 124.

D26: "Relationship between Chemical Properties and Tenderness of Poultry Muscle", by D. De Fremery; J. Agr. Food Chem., Vol. 14 No. 3, 1966, : pages 214 to 217.

D27: "The Influence of Brine Chilling..." by Sams & Janky, Poultry Science, 65, 1986, pages 1316 to 1321.

D28: "Tenderness and Physical Characteristics..." by Thompson & al, Poultry Science, 66, 1987, pages 1158 to 1167.

D29: "Electric stimulus improves texture" by D. L. Fletcher, Broiler Industry, December 1987, page 28.

D30: "Tenderness of Hot-Boned Broiler Breast Fillets..." by Dawson & al, Poultry Science 67, 1988, pages 1545 to 1548.

D31: "Effect of Post-Mortem Electrical Stimulation..."
by G. W. Froning & al, Poultry Science 67, 1988,
pages 1536 to 1544.

D32: "The effect of cutting up procedures..." by
Uijttenboogaart & al, Hohenheimer
Geflügelsymposium at University Hohenheim in
Stuttgart, 1989, pages 99 to 106.

D33: US-A-4.517.207.

In his written statement setting out the grounds of appeal, appellant I contended that D20 disclosed explicitly and implicitly the main steps of the method of claim 1 and that the method of D20 using argon would cause the same physiological effects on the poultry as the claimed method, namely anoxic convulsions and pH drop, and would therefore represent the closest state of the art. According to appellant I, the features of bleeding, chilling and deboning which differentiated the claimed method from the closest state of the art were obvious steps in poultry slaughtering and, as such, the selection of a cut-up start time of less than four hours was not inventive if the meat was of unacceptable quality. In his opinion, in so far as it relates to young chickens claim 1 does not involve an inventive step having regard to the disclosure of D20 and D25 since D25 disclosed that the minimum chilling (aging) period for adequate tenderisation to occur in young chickens was two to four hours post-mortem.

Appellant I pointed out that, since the patent did not demonstrate that the method of claim 1 solved the problem underlying the invention also for larger poultry, the decision to debone within four hours was merely arbitrary. He also contended that the description of the patent did not provide a sufficient basis for supporting the assertion that the method of

claim 1 solves the stated problem of allowing deboning to take place at an earlier stage post-mortem because, according to the given examples, the carcasses were stored overnight before being deboned and by that stage, according to the teaching of D26, any differences which may have existed within four hours post-mortem would have been substantially eliminated.

According to appellant I claim 1 would also be obvious having regard to the disclosure of D20 in the context of the common general knowledge at the priority date because the skilled person who attempted to work the method of D20 would naturally try to optimise the process as a matter of his routine skill. Since the skilled person knew, for instance from D17, that deboning should not take place until post-mortem glycolysis was completed, he would follow the well established routine procedure consisting of monitoring the pH of the poultry muscle after slaughter in order to detect the end point of the post-mortem glycolysis. The determination of the minimum aging period by investigating the variation of tenderness with aging time would be thus routinely carried out by those skilled in the art without undue difficulty when adopting a treatment method for poultry of the kind disclosed by D20. Therefore, having regard to D20 in combination with the disclosure of either D7 or D9, the method of claim 1 was obvious.

The party as of right (opponent II) argued that the concept of tenderness of the meat was vague and that it depended on the specific purpose for which the meat was intended to be used. Considering that tenderness was neither an absolute nor a technical requirement but a commercial one, opponent II contended that the invention was nothing other than a selection of a particular period of time for a specific purpose, D33 disclosing a range between 2 and 36 hours depending on

the purpose and of the size of the slaughtered birds. Also opponent II contended that, when starting from the method of D27 which, in his opinion, comprised all the method steps described in claim 1 except the step of stunning with argon, the skilled person wishing to humanise the process would just have to replace electrical stunning by gas stunning according to the teaching of D20 to arrive at the invention.

Appellant II pointed out that since, for processing turkeys, D7 disclosed a shortest time period slightly in excess of 4 hours and since also D33 mentioned a time period of 2 to 36 hours from killing to segmentation, the skilled person would normally realise that for broilers having a much lower weight than turkeys, the chilling time could be shorter than 4 hours and even less than 2 hours.

Although a wish of the poultry processors to carry out deboning as soon as possible had existed for a long time, as revealed by D27 to D31, hot boning was still inhibited commercially because it was acknowledged that it causes increased toughness. Therefore, hot boning called for new measures to obviate meat toughness and the skilled person would easily realise that the method of D20 would solve this problem.

Appellant II was also of the opinion that claim 1 described the effect being achieved rather than the method to make it possible which was already disclosed by D20 so that claim 1 could not be considered as inventive over a combination of D20 with anyone of the documents D27 to D32. Moreover, to determine the appropriate time of deboning when applying the atmosphere defined in D20 could not be considered per se as inventive since the skilled person would use the same routine testing procedures as used in D27 to D32.

In reply, the respondent (proprietor of the patent) disagreed with these arguments.

IV. Oral proceedings took place on 30 November 1999.

During the oral proceedings, the respondent (proprietor of the patent) presented amended claims 1 to 6 and a new page 2b of the description forming the basis for its request.

Appellant I considered that the closest state of the art also was disclosed by D33 which described that deboning poultries within a period of 2 hours after chilling was already known although the most common method was "age boning". Appellant I argued that D33 disclosed the common use in an industry where tenderness of the meat was not the most important parameter and that it was up to the skilled person to decide whether the issue should be "meat tenderness" or "processing time". He contended that, the skilled person wishing to humanize the killing method used in D33 would adopt the argon stunning method disclosed by D20 and would get the bonus effect of an increased tenderness in the meat.

The party as of right (opponent II) repeated the arguments brought forward in writing.

Appellant II contended mainly that the alleged invention was in fact the discovery that the method disclosed in D20 allows deboning within 4 hours after slaughtering without an increase in the meat toughness. He argued in particular that the unknown features of claim 1 did not contribute to the tenderness of the meat and that all the method steps which contributed to solve this problem were already known from D20. He also pointed out that the only difference between the method of claim 1 and that disclosed by D20 was the selection

of a short period of time between slaughter and deboning and that the skilled person was encouraged to search in this direction by the statement of D27 indicating that the industry was looking for immediate postchill boning.

The respondent replied that in the state of the art, and in particular in D20, there was no motivation to select deliberately the argon stunning process in preference to the usual other stunning methods. He contended that the skilled person would preferably choose the electrical stunning method which causes less struggling. He pointed out that, at the priority date, the acceleration of post-mortem glycolysis was known (for instance from D26) to increase toughness of the meat. The respondent argued also that the skilled person starting from D33 would normally select electrical stunning and not a gas stunning process.

- V. At the end of the oral proceedings, the appellants (opponents I and III) requested that the decision under appeal be set aside and that the European patent be revoked.

The respondent (patentee) requested that the decision under appeal be set aside and that the patent be maintained on the basis of claims 1 to 6 as submitted in the oral proceedings (sole request), and the description as maintained by the opposition division, except for page 2b which was amended and submitted in the oral proceedings.

- VI. Claim 1 reads as follows:

"A method of treating poultry comprising the steps of slaughtering poultry, bleeding the poultry immediately after slaughter, chilling the resulting carcasses, and deboning the chilled carcasses wherein immediately

prior to slaughter, the poultry are caused to undergo anoxic convulsions by being subjected to an atmosphere which comprises argon and air and which contains 2% or less by volume of oxygen for a sufficient period of time for the poultry to lose consciousness, whereby within 20 minutes after death, the pH of the pectoralis major muscle of the poultry has fallen to below 6, and the carcasses are deboned within four hours of slaughter."

Reasons for the Decision

1. *Admissibility of the appeal*

The appeal is admissible.

2. *Amendments to claim 1 (Article 123 EPC)*

The new claim 1 filed during the oral proceedings has been modified as follows in comparison with claim 1 as granted (see the specification: page 11):

- line 49: the wording: "bleeding the poultry immediately after slaughter" has been inserted between the words "poultry" and "chilling";

This method step was already disclosed in the application as originally filed, for instance in claim 8. Since, moreover, its addition into the claim reduces the protection conferred, no objection can be made as regards Article 123 EPC.

- the wordings: "dividing the chilled carcasses into portions or" and "or divided into portions" have been deleted respectively on line 50 and line 52.

In claim 1 as originally filed and also as granted, the method step of "dividing" was presented as an alternative to "deboning". Therefore, its deletion from the claim extends neither the subject-matter of the patent beyond the content of the application as filed nor the protection conferred.

- line 51: after the word "convulsions", the following wording has been incorporated in the text of the granted claim 1:

"by being subjected to an atmosphere which comprises argon and air and which contains 2% or less by volume of oxygen for a sufficient period of time for the poultry to lose consciousness, whereby within 20 minutes after death, the pH of the pectoralis major muscle of the poultry has fallen to below 6".

The method step of subjecting the poultry to an atmosphere comprising argon and air with a concentration of oxygen less than 2% by volume for a sufficient period of time for the poultry to lose consciousness is described in the application as originally filed, on page 2, lines 3 to 10 and the upper limit (2%) of the concentration of oxygen within the atmosphere is disclosed on page 6 of the application, line 3.

As regards the feature concerning the fall to below 6 of the pH 20 minutes after death, counterparts can be found, for instance, in the paragraph bridging pages 2 and 3 or in table 3, page 13 of the application as originally filed.

Therefore, the modifications of claim 1 comply with the requirements of Article 123 EPC and are allowable.

3. *Novelty (Article 54 EPC)*

According to established EPO Boards of Appeal case law, a very restrictive interpretation of disclosure has consistently been applied when examining novelty. In decision G 2/88, OJ EPO 1990, 93, the Enlarged Board of Appeal has emphasized (see the Reasons for the Decision, section 10.1) that under Article 54(2) EPC the question to be decided is: "what has been made available to the public", and is not: "what may have been inherent in what was made available". A claimed subject-matter would lack novelty only if a "clear and unmistakable teaching" of a combination of the claimed features could be found in a prior art disclosure (see for instance unpublished decisions T 450/89 (section 3.11), T 677/91 (section 1.2), and T 511/92 (section 2.2)).

In the present case, D20 describes explicitly (see page 27, the penultimate paragraph) solely the stunning and shackling steps of a humane method of treating poultry for food industry wherein, immediately prior to slaughter, the poultry are subjected to an atmosphere comprising argon and air for a sufficient period of time for the poultry to lose consciousness and, then, are extracted from the stunning gas and passed to a shackling point. Also, the birds being slaughtered for food industry, it is implicit that, after stunning and bleeding, the dead birds are defeathered and the resulting carcasses will be either chilled and deboned or deboned and chilled. No information however is given about the sequence of these last two method steps.

Moreover, D20 teaches neither that the stunning atmosphere should contain 2% or less of oxygen nor that deboning can take place within four hours of slaughter. Therefore, the method of claim 1 is new in comparison with the disclosure of D20. Since, moreover, none of

the other documents cited during the proceedings discloses a combination of all the features of claim 1, the subject-matter as set forth in claim 1 is new within the meaning of Article 54 EPC.

4. *The closest state of the art*

4.1 Considering the aim of the invention to provide a method enabling a reduction of the chilling period without adversely affecting meat tenderness, the Board concludes that among the three documents cited by the appellants and the party as of right as describing the closest state of the art, ^{ie} ~~in~~ D20, D27 and D33, the latter two are the most relevant since they are concerned with tenderness.

/ie.

4.2 D27 discloses the use of electrical stunning prior to slaughter and gives a comparative study of the results obtained as regards the meat quality when the resulting carcasses are respectively "hot boned", "chill boned" and "age boned".

The method of claim 1 differs from the "chill boned" treatment of D27 in particular in that, immediately prior to slaughter, instead of being electrically stunned, the poultry are caused to undergo anoxic convulsions by being subjected to an atmosphere which comprises argon and air and contains 2% or less by volume of oxygen until they lose consciousness and, within 20 minutes after death, the pH of the pectoralis major muscle of the poultry has fallen to below 6.

4.3 Also D33 describes a slaughtering process of birds and is concerned with meat quality. Therefore this known slaughtering process can also be considered as a starting point for assessing the inventive step of the subject-matter of claim 1. Contrary to D27, D33 does not specify the stunning method being used and is not

concerned with experiments but with an industrial method for removing the muscle parts from an advancing avian carcass within 30 minutes of death (hot boning) after the avian has been slaughtered, bled and defeathered, the removed warm muscle parts being preserved in particular by chilling.

Therefore, the method of claim 1 differs from the hot boning method of D33 in that prior to slaughter, the poultry are stunned by argon so that, within 20 minutes after death, the pH of the pectoralis major muscle of the poultry has fallen to below 6, and in that chilling the carcasses takes place after bleeding and prior to deboning.

5. *Problems and solution*

5.1 When considering the state of the art disclosed by D27 ("chill boned" alternative) as the starting point and taking into account the above-mentioned differences between said prior art and the subject-matter of claim 1, the Board sees the problem as objectively determined (see in particular decision T 13/84, OJ EPO 1986, 253) as being to humanise stunning and, simultaneously, to treat the birds prior to slaughtering in such a manner that the carcasses can be deboned within four hours of slaughter without an increase in the toughness of the resulting meat.

5.2 If the starting point is the state of the art disclosed in D33, the Board sees the objective problem as being to choose a human stunning method and to provide an alternative to the hot deboning processing with acceptable processing time and toughness of the resulting meat.

The Board is satisfied that, in both cases, the method claimed in claim 1 solves the above-mentioned problems.

6. *Inventive step (Article 56 EPC)*

6.1 It is recalled that the questions to be answered regarding the inventive step are not only whether the skilled person, starting from the state of the art closest to the invention and examining the prior art in the light of his general common knowledge, would be provided with enough information that he could arrive at the solution claimed in claim 1, but also whether, in the prior art, he would find hints or clues leading him to modify said closest state of the art in a way leading to the claimed invention in expectation of the improvement he was searching for (see decision T 2/83, OJ EPO 1984, 265).

Moreover, it should be borne in mind that the technical disclosure in a prior art document should be considered in its entirety and that it is not justified arbitrarily to isolate parts of such document from their context in order to derive therefrom technical information which would differ from the integral teaching of the document (see decision T 56/87, OJ EPO 1990, 188).

6.2. The result reported in D27 (see page 1316, end of the left-hand column) regarding an aging of 3 to 6 hours prior to deboning comes from previous experimental researches and neither from the industrial practice in the food industry nor from the study which is the subject-matter of D27. On the contrary this document does not adopt a definite position as regards the specific duration and the specific beginning of the aging period. Indeed, D27 teaches clearly (for instance on page 1318, right-hand column, 2nd complete paragraph) and shows on table 2 that increasing the interval from slaughter to time of boning decreases significantly the pH of the breast muscle and that age-boned fillets are significantly more tender as the

fillets which are harvested at earlier times. Also, the conclusion of the study described in D27 (page 1320, last paragraph) was that boning time produced the greatest effect on tenderness and that tenderness was improved as the period of time between slaughter and boning increased.

Therefore, if the skilled person starting from D27 were to consider the technical disclosure of this document in its entirety, as he should do, and if he did not isolate arbitrarily indications from their context (see decision T 56/87), he would be incited to adopt an aging period much longer than the minimum time of aging reported as prior art in D27 (3 to 6 hours after death), his choice being supported by the teaching of several other prior disclosures, in particular D7 (see the summary on page 923: tenderness improves as aging time increases), D17 (premature deboning may have a disadvantageous effect upon tenderness; see 4th paragraph on page 3 of the English translation), and D28 (to harvest meat immediately after chilling causes unacceptably increased toughness - see page 1158, the 2nd and 3rd sentences of the introduction).

- 6.3 However, assuming that, against the general teaching of the abovementioned documents, the skilled person starting from the chilled boned method of D27 would prefer shortening the boning time instead of ensuring meat tenderness, and assuming also that he would desire to replace electrical stunning used in D27 by a more humane killing method, the skilled person should normally consult not solely D20 but also all the other cited documents concerned with said methods i.e. D1 to D5, D7 and D8, D10 to D14, D16.

From D11 he would learn the different methods for humane killing of animals (euthanasia) that were currently in use in the poultry industry and which can successfully replace the electrical stunning step of the method of D27. In particular, he would learn that decapitation, oxygen withdrawal by decompression and gas stunning with carbon dioxide and fumigation in closed systems were the preferred methods for killing small animals and, from D20, he would also learn that outright electrical kill prior to shackling was recommended by the British Veterinary Association and various welfare organizations as opposed to a stun, (see page 27, lines 3 and 4). When considering only gas stunning, the skilled person would also remark that the stunning gases most commonly cited in the cited documents and used in the industry were carbon dioxide (see D1, D2, D4, D5, D7, D10 to D14 and D16) and nitrogen (see D3, D5, D8 and D11), far ahead before argon (only D5 and D20). If the skilled person limits his choice to the humane methods of killing by anoxia, the skilled person would consult more particularly D20 and would learn that the gas to be selected should either be inert or have some anaesthetic or analgesic properties, that several gases such as helium, nitrogen, carbon dioxide, nitrous oxide and among them argon could be used and that, at the stage of the research work, no specific choice could be recommended. Moreover, in D20, argon and helium were solely mentioned as examples of gases having a density very different from that of air, i.e. respectively more and less dense than air, and the use of argon appeared as having not been experimented but solely envisaged as a possible alternative among other ones to the already investigated use of carbon dioxide.

Therefore if, as assumed previously, the skilled person starting from the method of D27 had wanted to replace electrical stunning by a humane slaughtering method, he would have a priori no particular reason, firstly, to prefer gas stunning to the other recommended methods like decapitation, decompression or outright electrical kill and, secondly, to choose argon as a stunning gas in preference to carbon dioxide or nitrogen which had already been experimented with and were commonly used in the food industry contrary to argon and which are also more economic. Moreover, since argon has not been experimented with, the skilled person could not have been aware that, with this specific stunning gas, post-mortem glycolysis of the broilers would be accelerated and the pH at 20 minutes of the resulting meat would be lower than with carbon dioxide.

More generally, the skilled person would not have any reason to select more particularly some specific parts of the general teaching of D27 and of D20 and to combine them without any particular hint or clue. Moreover, even if he did it, he would not get any hint about the role played by the stunning gas in the resulting quality of the meat and he could not thus imagine that, contrary to the general teaching of D27, deboning could take place within 4 hours of slaughter without a detrimental effect on the tenderness of the resulting meat.

For the aforementioned reasons, the way leading to the invention when starting from D27 cannot be considered as an obvious way.

6.4 If the starting point is the state of the art disclosed in D33, the same reasoning as for D27 can be made as regards the choice of anoxia as the suitable humane killing method and argon as the preferred stunning gas. Moreover since, in D33, the method of chilling prior to boning was presented as disadvantageous in that it "results in costly energy loss" (see D33: column 1, lines 41 to 45) and since "hot boning" was preferred in that "a more tender and juicy product may be obtained and processing the avian carcass is less costly and time consuming than current methods" (see D33: column 1, lines 59 to 62), the skilled person starting from the method of D33 would not be inclined to abandon "hot boning" in favour of "chill boning" because such a change would be, without any particular ground, in complete contradiction with the integral teaching of the document deliberately chosen as the starting point.

Therefore, even if the humane method of killing with argon according to D20 could be adopted in D33 as the stunning method before bleeding the birds, the Board is convinced that it is highly unlikely that the skilled person would, without an imperative ground, go in the opposite direction of the teaching of D33.

Therefore the way to be followed to arrive at the method claimed in claim 1 when starting from D33 cannot be considered as obvious.

6.5 Regarding D20, it is observed that this document is not concerned with tenderness of dead carcasses but with humane processing of alive birds and it is recalled that, when assessing inventive step, an interpretation of the prior art documents as influenced by the problem solved by the invention while the problem was neither mentioned nor even suggested must be avoided, such an approach being merely the result of an a posteriori analysis (see decision T 5/81, OJ EPO 1982, 249).

Also, attention is drawn to the fact that the effects resulting from the immersion of the birds into the argon atmosphere (i.e. the anoxic convulsions of the birds and the fall of the pH to below 6 within 20 minutes after death) were not described in this document and that there is no evidence that a stunning method using argon has actually been put into practice before the priority date and not only "envisaged" as stated in D20. Therefore, there is no proof that, at the priority date, the skilled person had the possibility to be aware of the effects caused not only by anoxia in general but also by argon in particular. Also, it has not been proven that the skilled person could have been aware of the relationship between argon and the drop of the pH of the birds to below 6 within 20 minutes after death. Consequently, the Board has doubts that, by reading D20 alone, the skilled person was, at the priority date, in position to derive all the features of claim 1, let alone a link between argon, earlier deboning and meat tenderness, particularly, since these last two features (earlier deboning and meat tenderness) were even not mentioned in D20 although "poor bleed out" and "flesh discoloration" were cited in relation with electrical killing (see D20: page 27, lines 3 to 6).

Also by combining the teaching of D20 with the teaching of the other documents concerned with the problem of meat tenderness discussed by the opponents during appeal proceedings such as D7, D9, D25, D26 and D28 to D32, the skilled person would not arrive at the invention for the following reasons:

- D7 did not even envisage the use of argon as stunning gas but described using carbon dioxide and an aging period of at least 4 hours was experienced. Moreover, it was summarised that tenderness improved as aging time increased.

- D9 acknowledged that from the previous studies, one may conclude that a relationship between the activity of the birds just prior to and during slaughter and tenderness either does or does not exist and a correlation was established during the experiments by using a tranquillizer (Tysine) but anoxia was even not envisaged let alone gas stunning with argon.

- D25 reported a chilling period of 2 to 4 hours post-mortem for adequate tenderness in young chickens and substantially longer periods for older chickens and turkeys but no information about the used slaughtering method was given, and, from the description of the experiments, it appears that no immobilisation of the birds was made before cutting the necks. Therefore no correlation can be established between the teaching of this document and D20.

- In D26, the experiments were conducted with anaesthetized or electrically stunned or freely struggling chickens (Table IV) and gas stunning was even not suggested. Moreover, in the conclusions, it was concluded that an acceleration of post-mortem glycolysis increases the toughness of fully aged meat and that the elimination or inhibition of post-mortem glycolysis eliminates the need for aging to achieve tenderness. These conclusions would thus not encourage the skilled person to subject the poultry to an anoxic atmosphere so that they undergo convulsions causing an accelerate post-mortem glycolysis.

- D28, D29 and D31 did not establish a correlation between specific slaughtering methods and tenderness of the resulting carcasses but between tenderness and post-mortem electrical stimulation

on fillets harvested from hot, chilled and aged carcasses. In these documents, the skilled person would not find any incentive for combining the teaching of each of them with the teaching of D20 and even if these teachings were combined, the resulting combination would not give the invention.

- In D30, the broilers were electrically stunned and after bleeding, the carcasses were hot boned and the harvested fillets were chilled in two different chilling media (water and brine). Therefore, no correlation was made between tenderness of the harvested fillets and the stunning method (electrocution) but between tenderness and two chilling treatments. Here also, the skilled person would not find any hint for combining the teachings of D30 and D20.

- D32 is concerned with the influence of the way of cutting up the carcasses of broilers on tenderness of the meat and not with the way of treating poultry prior to slaughter. In D32, it is stated that hot boning "can cause irreversible quality deterioration of the meat", that "tenderness is improved greatly by a post mortem delay of several hours before boning" and that "usually boning of poultry should be done after an aging period of at least 4 hours". Then it is concluded that, as long as there is no solution to the problem of increased toughness of pre-rigor boned and cut up broilers, the only possible method of cutting up a broiler in a pre-rigor phase is to leave all muscles attached to the bones while cutting up the carcass. Consequently, in D32, the skilled person would find a hint neither to combine the teachings of this document with that of D20 nor to debone carcasses within four hours of slaughter.

6.6 For the foregoing reasons, the Board considers that to improve the method of treating poultry disclosed in either D20, D27 or D33 in order to arrive at the teaching of claim 1 does not follow plainly and logically from the cited prior art and that the reasons given by the appellants and the party as of right do not prejudice the maintenance of the patent in its amended version submitted by the respondent at the oral proceedings as its sole request.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance with the order to maintain the patent in the following version:

Claims: 1 to 6 as submitted in the oral proceedings.

Description: As maintained by the first instance, except for amended page 2b, submitted in the oral proceedings.

The Registrar:



G. Magouliotis

The Chairman:



C. Andries