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D E C I S I O N
of 29 November 1999

Case Number: T 0262/98 - 3.2.4

Application Number: 90313451.8

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IPC: A22B 3/00

Language of the proceedings: EN

Title of invention:
Treatment of birds

Patentee:
The BOC Group plc

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

Headword:
-

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

Keyword:
"Novelty (yes)"
"Inventive step (no)"

Decisions cited:
T 0450/89, T 0677/91, T 0511/92, T 0013/84

Catchword:

-



Case Number: T 0262/98 - 3.2.4

D E C I S I O N
of the Technical Board of Appeal 3.2.4
of 29 November 1999

Appellant: The BOC Group plc
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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted 3 February 1998
revoking European patent No. 0 434 278 pursuant
to Article 102(1) EPC.**

Composition of the Board:

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

Summary of Facts and Submissions

- I. The appellant (patent proprietor) lodged an appeal, received at the EPO on 12 March 1998, against the Opposition Division's decision revoking European patent No. 0 434 278 dispatched on 3 February 1998.

The appeal fee was paid on 10 March 1998 and the written statement setting out the grounds of appeal was filed on 3 June 1998.

- II. Three oppositions were filed requesting revocation of the patent as a whole on the basis of Article 100(a) EPC.

The Opposition Division held that, having regard in particular to the following documents, lack of inventive step (Articles 100(a) and 56 EPC) of the subject-matter of Claim 1 prejudiced the maintenance of the patent:

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.

D7: "Recent Developments in the Slaughter of Poultry" by P. J. Kettlewell in "Humane Slaughter of Animals for Food", 1987, Universities Federation for Animal Welfare, Hertfordshire, England, pages 26 to 31.

D11: "Euthanasia of Day-Old Male Chicks in the Poultry Industry" by Walter Jaksch, Journal for the Study

of Animal Problems, 1981, pages 203 to 213.

D14: "Physiological and behavioural responses of the domestic hen to hypoxia", by S. C. Woolley and M. J. Gentle, Research in Veterinary Science, 1988, vol. 45, pages 377 to 382,

III. With his statement setting out the grounds of appeal, the appellant filed in addition the two following documents:

D18: "The Euthanasia of Dogs and Cats"- Canadian Veterinary Journal, 1978, vol. 19, pages 164 to 168 and

D19: "1986 Report of the AVMA Panel of Euthanasia"- AVMA Journal, vol. 188, No. 3, February 1986, pages 252 to 268,

and he emphasized that the problem addressed by the patent was to provide a method for slaughtering poultry which eliminates or reduces the stress associated with electrical stunning and also reduces the incidence of muscular haemorrhaging and broken bones in the carcasses.

According to the appellant, D7 did not disclose any experimental results and it was clear that no experiments had been performed so that the knowledge that the birds "lose consciousness" and "undergo convulsions after they lose consciousness" could not be gained from D7, but only from painstaking experimental investigation. The appellant contended moreover that it was not inevitable that the stunning atmosphere would

contain less than 2% by volume of oxygen and the absence of experimental results from D7 was also relevant in this respect.

The appellant was of the opinion that D7 disclosed down-grading of carcasses due to careless handling and not to bone damage as a result of electropletic convulsions and he contended that no experimental evidence was given by D7 in support of the contention that anoxia was humane.

According to the appellant, the criteria given in D7 for choosing the stunning gas cover a wide range of gases and argon does not clearly meet the criteria of having a density sufficiently different from that of air and also of being economic compared to nitrogen. The appellant contended that there was no clear evidence that the skilled person would have selected argon as stunning gas without a prior knowledge of the invention and that, in order to avoid continuous replenishment of argon to compensate for the loss, there would be a good reason to operate at as high an oxygene level as is consistent with the physiological criteria that need to be met.

For the appellant, D7 was written from the standpoint of a design engineer and disclosed no expertise whatever in veterinary science so that it must be questioned whether slaughtering animals by immersion in an anoxic atmosphere was a humane method. He pointed out moreover that D18 concluded that the depression of the central nervous system and insensitivity to pain produced by immersion in an argon or nitrogen atmosphere must be questioned, that D19 stated that

other methods of euthanasia were preferable to nitrogen, that D11 reported that when chicks were euthanised with a mixture of nitrogen and carbon dioxide, they demonstrated intense excitement during the period they took to die and that D14 commented adversely on wing flapping and acknowledged that extensive wing flapping at death was likely to cause problems. According to the appellant, a person skilled in the art would not therefore have had a reasonable expectation of achieving humane slaughter by subjecting the poultry to anoxia and there was no suggestion in D7 that it could be achieved to reduce bone damage and muscle haemorrhaging due to electrical stunning. Moreover D7 gave no information to enable the skilled person to evaluate whether anoxic slaughter of the birds would result in improved carcass quality and contained no clear and unmistakable instructions to operate in an atmosphere that contained less than 2% by volume of oxygen.

Respondent I (opponent I) argued that if poultry were passed into an anoxic atmosphere they would inevitably undergo convulsions after they lose consciousness, and the bone damage would inevitably be less than in electrocuted birds. For respondent I the closest prior art was represented by D7 which disclosed killing poultry using an atmosphere as nearly oxygen-free as practically possible and although bleeding was not explicitly mentioned in D7, it was clearly suggested by the reference to "shackling". Respondent I was also of the opinion that the non-technical features of Claim 1 would arise automatically from carrying out the method of gaseous killing of poultry in accordance with D7 and that performance of killing of poultry in accordance

with D7 anticipated the method of the patent.

It was the first respondent's position that, starting from D1 as the closest prior art, a person skilled in the art wishing to reduce damage in poultry arising through rough handling at the time of shackling would try killing the poultry in their transport containers using an anoxic argon atmosphere as disclosed by D7 and would cut the poultry's necks to bleed them because that was the standard practice at the priority date. It was the first respondent's position that there was nothing inventive about simply discovering "bonus" effects.

Since D7 clearly and explicitly disclosed the use of argon and taught in practice to minimise the amount of air (and thus oxygen) in the system the first opponent could not see any material distinction between the method claimed in the patent and the disclosure of D7 in this respect.

Respondent I submitted also that the skilled person would not have had any difficulty in reducing the method of D7 to practice on the basis of the disclosure of D7 alone or, if necessary, as complemented by the disclosure of D1.

IV. Oral proceedings took place on 29 November 1999.

During the oral proceedings, the appellant (proprietor of the patent) presented amended Claims 1 to 3 as his sole request and explained that the stunning atmosphere in the chamber was permanently controlled and that no stratification between air and argon actually existed

because only a minor effect resulted from the difference between the respective densities of the two gases.

According to the appellant, two potential starting points could be seen in D7 and D14 and, if the skilled person started from D7, he would find only suggestions and no particular teaching about a specific stunning process. For the appellant, the teaching of D7 was very general, did not disprove the doubt that killing by anoxia could be not human and gave no real guidance for the choice of a specific stunning gas since, in D7, argon was cited solely as an example and not as a preferred stunning gas.

The appellant also pointed out that the statement in D18 that the level of depression of the central nervous system and insensitivity to pain of the animals being subjected to anoxia in a nitrogen chamber should be questioned. He was of the opinion that the method of killing by anoxia was not known as being humane before the invention was made. The appellant also referred to D14 and contended that it did not suggest using crates or an atmosphere containing less than 2% of oxygen and that it was acknowledged that, before being commercially used, the humaneness of any new methods should be unquestionable. According to the appellant, D14 suggested that flapping of the wings started prior to the birds losing consciousness and that there were two periods of wing flappings with the first flappings being non-reflex actions, so that one could not derive from this document that anoxia was a humane method of killing poultry.

Respondent 1 contended that D7 disclosed the closest prior art, that D14 did not state that the method was not humane and that the percentage of oxygen in the stunning atmosphere was not critical and could be more than 2% provided that the birds were immersed longer therein.

Respondent II contended that Claim 1 was not new over D7 or at least not inventive over a combination of D7 and D14.

Respondent III was of the opinion that the features of Claim 1 regarding anoxic "convulsions" and "bone damage" were established results and no technical features and should be disregarded. He contended that D7 was concerned with humane methods of killing and that it anticipated completely the subject-matter of Claim 1, the step of cutting the neck being suggested by the shackling step.

- V. At the end of the oral proceedings, the appellant requested that the decision under appeal be set aside and that the patent be maintained on the basis of claims 1 to 3 as submitted in the oral proceedings.

The respondents requested that the appeal be dismissed.

- VI. Claim 1 reads as follows:

"A method of slaughtering poultry comprising the steps of passing the poultry packed in a crate suitable for the transport of poultry into a chamber having an oxygen-depleted atmosphere, keeping the poultry in the atmosphere for a sufficient period of time for the

poultry to lose consciousness and then to die as a result of anoxia, wherein the oxygen-depleted atmosphere is formed by mixing, and consists essentially of, argon and air and contains less than 2% by volume of oxygen, the poultry undergo convulsions after they lose consciousness, the necks of the poultry are cut upon their removal from the chamber, and the bone damage in the resulting carcasses is less than in comparable birds that have been subjected to electrical stunning."

Reasons for the Decision

1. Admissibility of the appeal.

The appeal is admissible.

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

The subject-matter of the new Claim 1 filed during the oral proceedings corresponds to the subject-matter of Claim 1 as granted (see the patent specification: page 14) with the addition of the subject-matter of Claim 2 as granted and also of the following findings:

- the poultry undergo convulsions after they lose consciousness, and
- the bone damage in the resulting carcasses is less than in comparable birds that have been subjected to electrical stunning.

In the application as filed initially, these statements

find a support in example 2, pages 8 and 9, and in example 5, pages 21 and 22 respectively. Since, moreover the scope of protection of the patent is restricted, the modifications comply with the requirements of Article 123 EPC and are allowable.

3. *Interpretation of Claim 1*

In the description of the application as originally filed, the term "chamber" is used for designating either an experimental box (see for instance examples 1 and 2, respectively page 5, line 4 and page 8, 4th paragraph) or a well (see example 4, page 17) and the chamber can have some extension and be associated with means for conveying continuously the crates through it (see page 3, last paragraph). Therefore, the word chamber should be interpreted as designating a space not necessarily hermetically closed but which would at least be confined.

As stated by the appellant during the oral proceedings the term "mixing" of Claim 1 should not be interpreted as meaning that an anoxic atmosphere is precomposed outside the chamber by mixing argon with air and then introduced into the chamber but that, argon being already inside the chamber, air was introduced by the crates and the poultry entering the chamber, the mixing with argon resulting from the movement of the containers inside the chamber.

It should also be pointed out that, although Claim 1 describes that the poultry die as a result of anoxia, this does not mean that the atmosphere used in the chamber is completely free of oxygen (anoxic), but that

the atmosphere can as claimed just be poor in oxygen content (hypoxic) since oxygen can be present in a concentration up to 2% by volume.

4. *Novelty (Article 54 EPC)*

According to established EPO Boards of Appeal case law, a very restrictive interpretation of disclosures in the state of the art has consistently been applied when examining novelty. 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).

Although D7 does not describe explicitly that air and argon were mixed in the chamber, at the priority date, it made it clear and unequivocal for the skilled person that, inside the chamber, the gases would be displaced due to the movements of the containers (see page 27, the last paragraph), and that a mixing in the meaning of Claim 1 (see section 3) would necessarily result from this activity.

As regards the step of cutting the neck of the poultry, although according to the present methods of slaughter of animals for food, this step is usually the next step after killing, it may be that, in certain circumstances (for instance according to some religious practices), cutting the neck does not take place after killing. Therefore, the step of cutting the neck of the poultry cannot be considered as implicitly derivable from D7 and can be seen as a difference between the subject-

matter of Claim 1 and the killing process using argon envisaged in D7. Other differences can be seen in that, according to the claimed method, the birds are not transported within any sort of container but in a specific one i.e. "a crate suitable for the transport of poultry" and in that a range to below 2% by volume of oxygen is required whereas D7 gave no specific instruction thereabout, even implicitly, because, for when killing by anoxia, the oxygen concentration needs not necessarily to be less than 2%.

Therefore, the method of Claim 1 distinguishes over the disclosure of D7 and is also new compared to the other cited documents, since none of these documents describes, in combination, all the features of Claim 1.

As regards the statements in Claim 1 concerning the convulsions of the poultry and the bone damage, the Board considers that they are not technical method steps but just results due to the putting into practice of the method, such results giving no technical information about the method itself.

5. *The closest state of the art*

The Board considers that the method of killing the birds by anoxia using argon described in D7 represents the closest state of the art.

In comparison with this closest state of the art, the method claimed in Claim 1 differs in that the poultry are packed and transported in a crate, in that the oxygen concentration in the killing atmosphere is maintained less than 2% by volume and in that the neck

of the poultry is cut after killing.

6. *Problems and solution*

When considering said closest state of the art as the starting point and when taking into account the above-mentioned differences, the problem may be described as modifying the system envisaged in D7 into an effective and reliable industrial method. The Board is satisfied that Claim 1 solves said problem.

7. *Inventive step (Article 56 EPC)*

- 7.1 During the proceedings, the appellant contended in particular that, at the priority date, D7 did not dispell the doubt that killing by anoxia could be an inhumane method. The board cannot agree with this contention because the study reported in D7 concerned the recent developments in the slaughter of poultry at the end of 1986 and clearly presented the method of killing by anoxia as a humane alternative to electrical stunning or killing (see for instance page 27, the section headed "Gaseous killing of poultry", second line). Moreover, a still more recent study published in 1988 (see D14), investigating whether anoxic killing was a suitable alternative method for use in the slaughter industry, confirmed in its final discussion (see D14: page 381, left column) that "anoxic killing appears to be a humane procedure".

Regarding the other publications cited by the appellant (D11 and D18) which expressed some doubt concerning killing by anoxia, it should be pointed out that they reported the results of studies much older (1981 for

D11 and 1978 for D18) than the recent developments reported by D7 (1986), that D18 was concerned with the euthanasia of dogs and cats and not with killing food animals such as poultry and that the Universities Federation of Animal Welfare (UFAW) which in 1981 had still not approved the method of killing by *hypoxia* (see D11: page 206, 4th paragraph), five years later published the study of the Institute of Engineering Research (see D7) recommending *anoxia* as a humane method for killing birds. Therefore the Board considers that, at the priority date, the most recent state of the art would not have dissuaded the skilled person from using a method of killing by hypoxia, but on the contrary, would have drawn the attention of the skilled person to hypoxia and more particularly, to the system using argon envisaged in D7 (see page 27, second paragraph).

- 7.2 Starting from the method of killing by hypoxia, the skilled person who wants to develop the system envisaged in D7 into an even more effective and reliable industrial method would in particular monitor the concentration of oxygen in the atmosphere and lower this concentration as much as possible to insure that the birds would be killed and would not recover after being raised from the anoxic atmosphere.

Consequently, to maintain an oxygen content near zero in the killing atmosphere would be the expected route for the skilled person to take. This would not go beyond his normal capability. No inventive step can thus be found in the arbitrary choice of the upper limit of 2% by volume of oxygen, at least not as long as the period of exposure of the poultry to the oxygen-

depleted atmosphere is not determined.

As far as the step of cutting the neck of poultry is concerned, the Board considers that it does not involve an inventive step for the following reasons. The general object of D7 being "humane slaughter of animals for food", the skilled person would logically consider the step of killing poultry with argon as being only the starting step of a much more complete processing for slaughtering birds comprising the subsequent conventional steps of bleeding, defeathering, chilling etc...which were common steps not described in the study because they were not affected by the research. The indication in D7 that, in the process using argon, the dead birds are passed to a shackling point after being raised from the gas (see page 27, the penultimate paragraph), would suggest to the skilled person that, in a complete process, cutting the neck of the poultry would be the next routine step after killing. Therefore, this method step does not involve an inventive step either.

As regards the use of crates as specific containers for transporting the poultry, such a means for transportation was already known in D7 itself, in the same technical field and for the same purpose (see D7: page 29, end of the 3rd paragraph). Therefore, to use crates also does not involve the exercise of any skill or ability beyond that to be expected of the person skilled in the art.

- 7.3 For the foregoing reasons, the Board considers that to improve the method of slaughtering poultry disclosed in D7 in order to arrive at the teaching of Claim 1

follows plainly and logically from the cited prior art.
The appeal therefore cannot be allowed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

G. Magouliotis

C. Andries