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**Datasheet for the decision
of 14 January 2010**

Case Number: T 0136/09 - 3.2.04

Application Number: 01931465.7

Publication Number: 1284604

IPC: A22C 25/16

Language of the proceedings: EN

Title of invention:

Improved method for the manufacture of raw fish products

Patentee:

Salmon Brands AS

Opponents:

Trio Fish Processing Machinery
Pan Fish
Fjord Seafood
Marine Harvest International
Asociacion de la Industria del Salmon de Chile AG

Headword:

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Relevant legal provisions:

EPC Art. 52(1), 56

Relevant legal provisions (EPC 1973):

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Keyword:

"Inventive step (no) (all requests)"

Decisions cited:

-

Catchword:

-



Case Number: T 0136/09 - 3.2.04

DECISION
of the Technical Board of Appeal 3.2.04
of 14 January 2010

Appellant I: Trio Fish Processing Machinery
(Opponent 01) PO Box 38 - Forus
NO-4064 Stavanger (NO)

Representative: Smart, Peter John
Beck Greener
Fulwood House
12 Fulwood Place
London
WC1V 6HR (GB)

Party to the proceedings: Pan Fish
(Opponent 02) Maskinvelen 32, PO Box 342 - Forus
NO-4067 Stavanger (NO)

Representative: Smart, Peter John
Beck Greener
Fulwood House
12 Fulwood Place
London
WC1V 6HR (GB)

Party to the proceedings: Fjord Seafood
(Opponent 03) Beddingen 8
NO-0250 Oslo (NO)

Representative: Smart, Peter John
Beck Greener
Fulwood House
12 Fulwood Place
London
WC1V 6HR (GB)

Appellant II: Marine Harvest International
(Opponent 04) P.C. Hooftlaan 3
NL-3818 HG Amersfoort (NL)

Representative: Smart, Peter John
Beck Greener
Fulwood House
12 Fulwood Place
London
WC1V 6HR (GB)

Appellant III: Asociacion de la Industria del Salmon de Chile
(Opponent 05) AG
Felix de Amesti 124, 6th Floor
Las Condes, Santiago (CL)

Representative: Smart, Peter John
Beck Greener
Fulwood House
12 Fulwood Place
London
WC1V 6HR (GB)

Appellant IV: Salmon Brands AS
(Patent Proprietor) Øklandsvågen
NO-5430 Bremnes (NO)

Representative: Dalkiaer, Mikkel
Plougmann & Vingtoft A/S
Sundkrogsgade 9
P.O. Box 831
DK-2100 Copenhagen Ø

Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted
4 November 2008 concerning maintenance of
European patent No. 1284604 in amended form.

Composition of the Board:

Chairman: M. Ceyte
Members: A. de Vries
T. Bokor

Summary of Facts and Submissions

I. Opponents 01, 04 and 05 as well as the Proprietor lodged appeals against the interlocutory decision of the Opposition Division posted 4 November 2008 on the amended form in which the Patent No. 1 284 604 can be maintained.

The appeals of Opponents 01 and 04 (Appellants I and II respectively) were received 29 December 2008 together with payment of the appeal fee. Respective statements setting out the grounds followed 3 March 2009.

The appeal of Opponent 05 (Appellant III) was received 2 January 2009 together with the appeal fee, the statement of grounds following 3 March 2009.

The Proprietor (Appellant IV) filed his appeal 9 January 2009 together with the payment of the appeal fee. The statement setting out the grounds was received 16 March 2009.

II. Oppositions were filed against the patent as a whole and based in particular on Article 100(a) together with Articles 52(1), 54 and 56 EPC for lack of novelty and inventive step.

The Opposition Division held that the grounds for opposition mentioned in Article 100 EPC did not prejudice the maintenance of the patent as amended according to a second auxiliary request having regard to the following documents among others:

D1: WO-A-98/09529

- D4: "Wild Salmon Fights back", Fishing News International, March 1999, page 20
- D6: J. Wyman, "The Great Pinbone Race", Pacific Fishing, November 1999, 52-58
- D12: "En Busca de la Eficiencia", Aquanoticias, Year 12, No. 53, Chile, February/March 2000, & English Translation
- D15: N.K.Sørensen e.a.: "Influence of early processing (pre-rigor) on fish quality", Seafood from Producer to Consumer, Integrated Approach to Quality, Elseviers Science BV, 1997, 253-263
- D17: U.B. Anderson e.a. "Fillet gaping in farmed Atlantic Salmon (*Salmo Salar*)", Norwegian Journal of Agricultural Sciences 8, 1994, 165-179
- D20: WO-A-97/01958

III. During the appeal proceedings the Board considered the following further documents:

- D24: P.O. Skjervold e.a.: "Pre-mortal Chilling of farmed Salmon", Conference Proceedings, Refrigeration and Aquaculture, International Institute of Refrigeration, Paris, March 20-22, 1996, 167-173
- D28: T.Gjedrem ed. "Fiskeoppdrett", Oslo, 1993, 308-310 & English translation

IV. The Appellants I to III request that the decision under appeal be set aside and the patent be revoked in its entirety.

The Appellant IV requests that the decision under appeal be set aside and the patent be maintained as granted, or, in the alternative, that the patent be maintained in amended form on the basis of claims in

accordance with one of auxiliary requests 1 to 14 filed with the letter of 15 October 2009.

Opponents 02 and 03, both party to the appeal proceedings as of right (Article 107 EPC, second sentence), did not make submissions or file requests.

V. Oral proceedings were duly held on 14 January 2010.

VI. The wording of claim 1 of the requests is as follows :

Main Request, Auxiliary Requests 5, 10

"A method of preparing a raw fish meat product comprising the steps of i) providing a fish, ii) at least partially separating fish meat parts from the main skeletal parts of said fish and iii) substantially removing pin-bones from said fish meat parts pre rigor, to obtain the raw fish meat product."

Auxiliary Requests 1, 6, 11

"A method of preparing a raw fish meat product comprising the steps of i) providing a fish, ii) at least partially separating fish meat parts from the main skeletal parts of said fish and iii) substantially removing pin-bones from said fish meat parts pre rigor, to obtain the raw fish meat product, *wherein the provided fish is kept under conditions that delay the onset of rigor.*"

(Emphasis added by the Board indicates the changes with respect to claim 1 of the main request.)

Auxiliary Requests 2, 7, 12

"A method of preparing a raw fish meat product comprising the steps of i) providing a fish, ii) at least partially separating fish meat parts from the main skeletal parts of said fish and iii) substantially removing pin-bones from said fish meat parts pre rigor, to obtain the raw fish meat product, *wherein the period from slaughter until the onset of rigor is extended by keeping the fish at a temperature below about 10°C before slaughter.*"

(Added emphasis again indicates the changes with respect to claim 1 of the main request.)

Auxiliary Requests 3, 8, 13

"A method of preparing a raw fish meat product comprising the steps of i) providing a fish, ii) at least partially separating fish meat parts from the main skeletal parts of said fish and iii) substantially removing pin-bones from said fish meat parts pre rigor, to obtain the raw fish meat product, *wherein the pin bones are removed from the raw fish parts within 7 hours after slaughter of the fish.*"

(As above added emphasis indicates the changes with respect to claim 1 of the main request.)

Auxiliary Requests 4, 9, 14

"A method of preparing a raw fish meat product comprising the steps of i) providing a fish, ii) at least partially separating fish meat parts from the

main skeletal parts of said fish and iii) substantially removing pin-bones from said fish meat parts pre rigor, to obtain the raw fish meat product, *wherein the pin-bones and/or the meat areas containing the pinbones which are to be removed, are detected by direct and/or in-direct methods.*"

(Emphasis again added to indicate what has changed with respect to claim 1 of the main request.)

VII. Appellants I to III argued as follows :

Claim 1 as granted is directed at the general idea of removing pinbones from fish at an earlier stage in the light of a recognized demand for fresher pinboneless products. Even if novel over D1 or D6, this idea is obvious in the light of D12, D15 or D20 among others. These teach processing pre-rigor to avoid handling during rigor. Removing the pinbones - per se well-known as illustrated by D1 or D6 - as part of pre-rigor processing in order to meet known demand for pinboneless fillets is then trivial.

There is also no evidence - in particular not in the patent - that pre-rigor pinbone removal results in improved odour, texture or gaping.

Turning to auxiliary requests 1, 6 and 11, delaying the onset of rigor (insofar as clear) is a commonplace and thus obvious measure in the fishing industry, see D12, D15 and D20 among others. More specifically, they disclose chilling at temperatures below the 10°C of claim 1 of the auxiliary requests 2, 7 and 12.

If the pinbones are to be removed pre-rigor it is inevitable that they will then be removed within 7 hours of slaughter (auxiliary requests 3, 8 and 13). The patent also fails to disclose any problem addressed by this feature.

Finally, direct and/or indirect detection (auxiliary requests 4, 9 and 14) is unclear and can include visual detection as performed in conventional manual plucking out of the pinbones.

VIII. The Appellant IV (Proprietor) argued as follows :

D1 and D6 cannot refer to pre-rigor removal as they concern wild salmon fishing, where onset of rigor precludes any processing. Even if they might express a desire to remove pinbones before the post rigor period, it at best discloses in-rigor removal.

D15 is directed at early processing and distribution and so represents the closest prior art for assessing inventive step. The difference of pre-rigor pinbone removal results in improved textural and sensorial qualities of the products compared to post-rigor or in-rigor removal, as borne out by the examples. The underlying problem is providing an improved product which is available to the consumer at an earlier stage.

None of the prior art describes the claimed solution, none show the advantages of pre-rigor bone removal. There is also no incentive to combine D15's teaching with any of this prior art. The machine of D1 and D6 is concerned with different problems - competing with cheap manual labour - and specific to wild salmon, not

farm salmon as in D15. Even if the skilled person *could* combine the teachings, this is not what he *would* do.

Similar arguments apply to delaying onset, e.g. by chilling, which may be a common measure, but only in farmed salmon. The significant differences with fishing and processing wild salmon (as in D1 or D6) precludes any obvious combination with the teaching of D15.

Seven hours as upper value has been found by the inventors to provide optimal results, and is not known from the prior art.

Finally, detecting the pinbones before removal limits yield loss, by e.g. allowing knife position to be adapted. The automatic location of fish in D4 refers to their correct positioning, but does not imply any adaptation of the cutting process.

Reasons for the Decision

1. All four appeals are admissible.
2. *Background*

The granted patent is basically directed at the idea of removing pinbones from a filleted fish *pre-rigor*. Pinbones - the bones projecting from the spine on the dorsal side of the fish, the side opposite the ribs - are firmly bonded before and during rigor and are normally removed after rigor is resolved, when they become easier to remove, see specification

paragraph [0004]. Removing them at an earlier stage shortens processing time, so that fillets can be supplied to the consumer sooner in a fresher state, specification paragraph [0008].

3. *Main Request, Auxiliary Requests 5, 10*

3.1 Pre-rigor processing of fish is well-known in the fishing industry, in particular in the context of live harvested fish, see any of D12, D15 or D20.

3.1.1 According to page 6 of the English translation of D12, third paragraph (page 45 of the original, centre column, second complete paragraph : "para obtener un producto de alta calidad el procesamiento se haga antes del rigor "mortis") processing before rigor ensures high quality of the end product. Processing includes filleting of the fish - translation page 6, final paragraph -, which are live harvested and transported to the processing plants in cages on "well-boats", translation page 6, fourth and fifth paragraphs.

D15 is a research paper investigating the influence of quality of pre-rigor processing, see title. The abstract sets out how processing is often delayed till after rigor mortis, but that with intermediate storage of live fish and aquaculture (fish farming), early processing should be investigated. Page 254, section 1.2, third paragraph, then cites pre-rigor filleting of saithe as practised in Norway as an example, where (prior to slaughter) the fish are often kept alive in pens.

Finally, D20 is generally concerned with extending the keeping quality and improving product quality in processed fish, see opening paragraph, page 1. It recognizes that handling of fish after rigor mortis has set in is damaging to fish quality and must be avoided, page 3, lines 10 to 11. It proposes various measures to delay onset, page 9, lines 8 to 13. Handling comprises all manipulation up to and including packing, page 3, lines 11 to 14, and thus also gutting/filleting, cf. page 2, line 11 to 13. Here also, fish is live harvested from sea-cages (used in farming) or well-boats (fishing), see claim 1, first characterizing feature.

3.1.2 None of the above prior art includes any reference to pinbone removal. The specific requirement of pinbone removal pre-rigor thus constitutes the sole difference of claim 1 as granted over this prior art. This feature ensures that before packing the processed product is pinbone free without compromising its high quality or freshness. The technical problem can be formulated accordingly as how to provide a pinbone free fish product of high quality.

3.1.3 The demand for pinbone-less, high quality fish products is well-known. This fact is undisputed, as is the fact that various means and methods are known for their removal. Examples are offered in D1 or D6, which each mention traditional techniques such a hand picking with pliers or hand held pluckers, or hand cutting (D1, page 1, line 8 onwards; D6, page 54, left column, second paragraph), as well as an alternative automated system, termed a "total bone removal system", which performs both filleting and pinbone removal (D1,

abstract; D6, page 57, paragraph bridging the left-hand and centre columns).

For the skilled person, a fisheries engineer with knowledge of existing pinbone removal techniques such as in D1 or D6 and who is intent on producing a high quality, pinbone free product, it is immediately obvious to try and carry out such known pinbone removal as part of pre-rigor processing.

Which particular method of pinbone removal the skilled person chooses naturally depends on the specific circumstances - for example, the time available before rigor (which in turn depends on the type of fish, pre-slaughter conditions etc) or cost and availability of a large workforce to carry out manual pinbone removal on an industrial scale. D1 or D6, which offer mechanization of filleting and pinbone removal in a single step using a single machine, are particularly appealing, also because they themselves are explicitly concerned with early processing (D1, page 2, lines 11 to 14; D6, page 55, left-hand column, fifth and sixth paragraphs). Manual removal, however, is by no means excluded, if time and labour resources allow. Either way, pre-rigor pinbone removal as in granted claim 1, lacks an inventive step.

- 3.2 The Board adds that it reaches the same conclusion starting from the Wadsworth machine of D1 or D6 as closest prior art. That machine is specifically designed for pinbone removal (and filleting) of wild salmon at a much earlier stage - namely at sea and prior to packaging and transport - than is possible with conventional manual removal (see for example, D1,

third and fourth paragraphs of page 1 carried on onto page 2 and page 3, lines 24 to 26; D6, page 55, fifth and sixth paragraphs). D6, in particular, in stating that "wild salmon pinbones cannot be pulled - they will break off - before a fish has gone through rigor" implies an underlying desire to do so before the particular point in time at which rigor is over. The alternative approach used in D1 and D6 removes an important constraint of hand pulling.

Though neither document mentions using the machine pre-rigor, it is obvious in view of the central concern of freshness in the fishing industry that the skilled person will want to use the Wadsworth machine for optimum benefit, that is at the earliest possible stage. A large body of evidence - D12, D15, D20 above - recommends that this should be pre-rigor to avoid handling during rigor. In the light of this teaching the skilled person will thus preferably use the Wadsworth machine pre-rigor, thus again arriving at the subject-matter of granted claim 1 without an inventive step.

- 3.3 Whether starting from D12, D15 or D20 on the one hand, or D1 or D6 on the other, the Board is unconvinced that a combination is precluded by disparate fishing techniques. D12, D15 and D20 are by no means specific to farmed fish (aquaculture) as is clear from these documents' mention of the use of well-boats (D12, page 6, fifth paragraph of the English translation; D20, claim 1, first characterizing feature) or intermediate storage of live fish (mentioned as alternative to aquaculture in D15, abstract, first paragraph) used in the transport of live, sea harvested wild salmon.

3.4 Similarly, no compelling evidence has been provided that pre-rigor removal was generally perceived to be deleterious to quality and the skilled person was thus prejudiced against such action. On the contrary, D12, D15 and D20, favouring pre-rigor handling in general, lead the skilled person to expect an improvement in quality, as confirmed by the examples of the present specification. Such a positive bias is also evident from textbook D28, see page 4, final sentence of the English translation, which indicates better storage properties the longer it takes for rigor to set in. It is exactly this expectation that provides the skilled person's motivation for including pinbone removal in pre-rigor processing and thus reflects on what he *would* do, rather than what he *could* do.

3.5 The Board concludes that the method of claim 1 of the main request and auxiliary requests 5 and 10 lacks an inventive step.

4. Auxiliary Requests 1, 2, 6, 7, 11 and 12

4.1 D15, page 261, in the first paragraph of section 4 headed "Discussion", as well as D20, page 9, lines 8 to 13, explicitly describe chilling or temperature reduction of live fish pre-slaughter in order to delay onset of rigor. The same measure can also be inferred from D12, see the English translation, page 6, fifth paragraph, where live fish, once discharged is "slept with a loss of temperature than can reach 10°C". This measure for prolonging the duration of the pre-rigor period, in which processing should be carried out, is thus already known. Consequently, starting from D12,

D15 or D20 the further feature of delaying onset adds nothing new, let alone inventive to claim 1 (auxiliary requests 1, 6 and 11).

- 4.2 Where neither D12 or D15 specifically mention pre-slaughter chilling temperature for delaying onset, D20, see e.g. page 4, lines 31 to 33, gives a value of 1°C, which is in the range "below about 10°C" claimed in claim 1 of auxiliary requests 2, 7 and 12. This feature thus also fails to render the method of claim 1 of auxiliary requests 2, 7 and 12 inventive.

5. Auxiliary requests 3, 8, 13

The technical significance of the maximum value of 7 hours from slaughter for pinbone removal is unclear from the patent. In the sole relevant passage, specification paragraph [0035], it appears merely as an intermediate value among a list of fourteen possible values with no explanation or emphasis. As its technical meaning is not apparent the Board can but conclude that the choice of this value is arbitrary and devoid of any inventive insight. In as far as it might quantify the duration of the pre-rigor period - and is thus specific to various otherwise unidentified conditions - it then appears commensurate with values derivable from the literature, see e.g. D17, table 2, entries E2 and E3, or D28, table 1. In that case it represents the result of routine optimization. In either case the method of claim 1 of these requests lacks inventive step.

6. Auxiliary Requests 4, 9, 14

Detection of the pinbones by all-inclusive "direct and/or indirect methods" also covers detection by visual inspection, as would be necessary in manual pulling of pinbones described in D1 or D6. It also embraces detection "based on morphological information of the fish species", specification paragraph [0026], line 50, which must underlie the aligning of jig and carriage of the (filleting and) pinbone removal machine of D1 to exact locations on the fish, page 4, last sentence of the first complete paragraph. In any case some form of detection will be necessary, as is immediately apparent to the skilled person, to effectively remove all pinbones. Consequently, the addition of this feature also fails to render the method of claim 1 of auxiliary requests 4, 9 and 14 inventive over the prior art.

7. In conclusion the Board finds that the subject-matter of claim 1 according to the main request or any of auxiliary requests 1 to 14 does not meet the requirements of Article 52(1) together with Article 56 EPC.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar

The Chairman

G. Magouliotis

M. Ceyte