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**D E C I S I O N**  
**of 6 December 2005**

**Case Number:** T 1196/04 - 3.2.04

**Application Number:** 01201978.2

**Publication Number:** 1262103

**IPC:** A22C 29/00

**Language of the proceedings:** EN

**Title of invention:**

A method of and an apparatus for sorting shellfish

**Applicant:**

Vilsund Muslinge Industri A/S

**Opponent:**

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**Headword:**

-

**Relevant legal provisions:**

EPC Art. 56

**Keyword:**

"Inventive step (no) "

**Decisions cited:**

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**Catchword:**

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Case Number: T 1196/04 - 3.2.04

**D E C I S I O N**  
of the Technical Board of Appeal 3.2.04  
of 6 December 2005

**Appellant:** Vilsund Muslinge Industri A/S  
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**Decision under appeal:** Decision of the Examining Division of the  
European Patent Office posted 5 April 2004  
refusing European application No. 01201978.2  
pursuant to Article 97(1) EPC.

**Composition of the Board:**

**Chairman:** M. Ceyte  
**Members:** C. Scheibling  
T. Bokor

## Summary of Facts and Submissions

- I. By its decision dated 5 April 2004 the Examining Division rejected the patent application. On 3 June 2004 the Appellant (applicant) filed an appeal and paid the appeal fee simultaneously. The statement setting out the grounds of appeal was filed on 4 August 2004.
- II. The Examining Division held that the subject-matter of independent claim 6 according to the main request lacked novelty with respect to D1: WO-A-99/53771; whereas the subject-matter of independent claim 6 according to the first and second auxiliary requests did not involve an inventive step when compared with D1.
- III. Oral proceedings before the Board took place on 6 December 2005.

The Appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the claims according to the main request or to one of the auxiliary requests 1 to 3 as filed with letter dated 4 August 2004 or according to one of the auxiliary requests 4 to 6 filed during the oral proceedings.

He mainly argued as follows:

A skilled person would not contemplate applying the technical teaching of D1 to sort shellfish from a batch of shellfish, because the "behaviour" of shellfish, which is able to roll down on an inclined sorting band, is too different from the "behaviour" of fish, which sticks to the sorting band. Furthermore, D1 does not disclose or suggest the claimed combination of the

specific range of speed values with the specific range of angle values. Thus, it would not be obvious for a skilled person to arrive at the claimed combination by applying the teaching of document D1. Therefore, the claimed subject-matter involves an inventive step.

IV. The independent claims according to the main request read as follows:

"1. A method of sorting shellfish from a batch or a flow of shellfish comprising shellfish of different species into separate fractions of shellfish characterized in that said method comprises the steps of

- transferring the shellfish (1) to an inclined surface (2a),
- exerting force on the shellfish (1a, 1b) on said surface in an at least partially upwardly inclined direction and at least partially parallel with the inclined surface,
- collecting the shellfish (1a, 1b) leaving said surface at or near an upper end and at or near a lower end of the surface."

"6. An apparatus for sorting shellfish from a batch or a flow of shellfish comprising shellfish of different species into separate fractions of shellfish, wherein the apparatus comprises

- an inclined surface (2a), said surface being inclined in an angle within the range of 5°- 35°,
- means for transferring shellfish (1) to the inclined surface,
- means for exerting force on the shellfish on said surface (2a) in an at least partially upwardly inclined

direction and at least partially parallel with the inclined surface, said force being produced by the surface or by a part of said surface, e.g. the surface of a conveyor belt (2, 12, 22) or similar transport means, being moved in an upwardly inclined direction at a speed within the range of 20 m/min - 100m/min, and - means (5, 28) for collecting the shellfish leaving said surface at or near an upper end and/or at or near a lower end of the surface."

The independent claims according to the first auxiliary request read as follows:

Claim 1 is identical with claim 1 according to the main request.

"6. An apparatus for sorting shellfish from a batch or a flow of shellfish comprising shellfish of different species into separate fractions of shellfish, wherein the apparatus comprises

- an inclined surface (2a), said surface being inclined in an angle within the range of 5°- 35°,
- means for transferring shellfish (1) to the inclined surface,
- means for exerting force on the shellfish on said surface (2a) in an at least partially upwardly inclined direction and at least partially parallel with the inclined surface, said force being produced by the surface, said surface being the surface of a conveyor belt (2, 12, 22), by means of drive means designed for moving said surface in an upwardly inclined direction at a speed within the range of 20 m/min - 100 m/min,

- means (5, 28) for collecting the shellfish leaving said surface at or near an upper end and/or at or near a lower end of the surface,  
and wherein  
the apparatus comprises at least two, for example two, three, four, five or six, conveyor belts (30, 31, 32, 33, 34, 35) arranged with inclined belt parts, wherein said conveyor belts are arranged consecutively, e.g. whereby shellfish (1b) leaving a first conveyor belt (2) are transferred to a second conveyor belt (12) etc."

Independent claims according to the second auxiliary request:

Claim 1 is identical with claim 1 according to the main request.

Claim 6 differs from claim 6 according to the main request in that the conveyor belt speed range has been narrowed down to 25 m/min - 60 m/min.

Independent claims according to the third auxiliary request:

The third auxiliary request only comprises method claims 1 to 5 which are identical with claims 1 to 5 according to the main request.

Claim 1 according to the fourth auxiliary request reads as follows:

"1. A method of sorting shellfish from a batch or a flow of shellfish comprising shellfish of different

species into separate fractions of shellfish, said method comprising the steps of

- transferring the shellfish (1) to an inclined surface (2a), said surface being inclined in an angle within the range of 5°- 35°,
- exerting force on the shellfish (1a, 1b) on said surface in an at least partially upwardly inclined direction and at least partially parallel with the inclined surface, said force being produced by the surface the surface being the surface of a conveyor belt (2, 12, 22) or similar transport means, being moved in an upwardly inclined direction at a speed within the range of 20 m/min - 100m/min, and
- collecting the shellfish (1a, 1b) leaving said surface at or near an upper end and at or near a lower end of the surface."

The sole claim according to the fifth auxiliary request reads as follows:

"1. Use of an apparatus for sorting shellfish from a batch or a flow of shellfish comprising shellfish of different species into separate fractions of shellfish, wherein the apparatus comprises

- an inclined surface (2a), said surface being inclined in an angle within the range of 5°- 35°,
- means for transferring shellfish (1) to the inclined surface,
- means for exerting force on the shellfish on said surface (2a) in an at least partially upwardly inclined direction and at least partially parallel with the inclined surface, said force being produced by the surface or by a part of said surface, said surface being the surface of a conveyor belt (2, 12, 22) or

similar transport means, being moved in an upwardly inclined direction at a speed within the range of 20 m/min - 100 m/min, and

- means (5, 28) for collecting the shellfish leaving said surface at or near an upper end and/or at or near a lower end of the surface."

The sole claim according to the sixth auxiliary request reads as follows:

"1. Use of an apparatus for sorting shellfish from a batch or a flow of shellfish comprising shellfish of different species into separate fractions of shellfish, wherein the apparatus comprises

- an inclined surface (2a), said surface being inclined in an angle within the range of 5°- 35°,
- means for transferring shellfish (1) to the inclined surface,
- means for exerting force on the shellfish on said surface (2a) in an at least partially upwardly inclined direction and at least partially parallel with the inclined surface, said force being produced by the surface or by a part of said surface, said surface being the surface of a conveyor belt (2, 12, 22) or similar transport means, being moved in an upwardly inclined direction at a speed within the range of 25 m/min - 60 m/min, and
- means (5, 28) for collecting the shellfish leaving said surface at or near an upper end and/or at or near a lower end of the surface."

## Reasons for the Decision

1. The appeal is admissible.

2. *Amended claims 1*

2.1 Claim 1 according to the main request or to one of the first to the third auxiliary requests:

These claims differ from claim 1 as originally filed by the addition of "from a batch or a flow of shellfish comprising shellfish of different species into separate fractions of shellfish".

This feature is disclosed in the description as originally filed page 1, lines 15 to 18 and page 2, lines 13 to 16.

Furthermore, the expression "upper end and/or at or near" reads now "upper end and at or near". This amendment results in a clear limitation.

2.2 Claim 1 according to the fourth auxiliary request

This claim differs from claim 1 according to the main request by the addition of features of claims 2 and 3 as originally filed. Moreover the wording "... by the surface or by a part of said surface, e.g. the surface of a conveyor belt ..." has been modified to read "... by the surface the surface being the surface of a conveyor belt ..." These amendments result in a limitation of the claimed subject-matter.

2.3 Claim 1 according to the fifth and sixth auxiliary requests

2.3.1 Claim 1 of the fifth auxiliary request relates to the use of an apparatus, which differs from the apparatus according to claim 6 as originally filed by the addition of the following features:

- (a) from a batch or a flow of shellfish comprising shellfish of different species into separate fractions of shellfish,
- (b) said surface being inclined in an angle within the range of 5°- 35°,
- (c) said force being produced by the surface or by a part of said surface, said surface being the surface of a conveyor belt (2, 12, 22) or similar transport means, being moved in an upwardly inclined direction at a speed within the range of 20 m/min - 100m/min.

Feature (a) is disclosed in the description as originally filed, see section 2.1 above.

Features (b) and (c) are respectively disclosed in claims 7 and 8 as originally filed.

2.3.2 In claim 1 according to the sixth auxiliary request the speed range has been narrowed down to 25 m/min to 60 m/min. This range is disclosed in the description as originally filed in the table of page 14.

2.4 Thus, amended claims 1 of all the requests meet the requirements of Article 123(2) EPC.

3. *Novelty*

Claims 1 of all the requests differ from that known from D1 in that they are directed to sorting shellfish from a batch or a flow of shellfish comprising shellfish of different species into separate fractions of shellfish. This functional process feature is not disclosed in D1. Therefore, the subject-matter of claim 1 according to all the requests is novel with respect to D1.

4. *Inventive step*

4.1 Claim 1 according to the main request or to one of the first to third auxiliary requests

4.1.1 The method of claim 1 according to these requests differs from that of D1 solely in that it is "for sorting shellfish from a batch or a flow of shellfish comprising shellfish of different species into separate fractions of shellfish". As a consequence, shellfish is collected at both ends of the inclined surface.

4.1.2 From D1, page 1, lines 6 to 9 it is clear that the method disclosed therein aims to separate particular (unspecified) objects and that these objects can (in particular) be shellfish such as shrimps mixed with other small fish species.

4.1.3 Moreover, page 3, lines 20, 21 and 25, 26, it is indicated "The inclination ( $\beta$ ) of the conveyor band is greater than the reference surface affinity inclination for shrimps, but less than the reference surface affinity inclination for fish species to be out-

separated", and that the reference surface affinity inclination "can be altered by altering the upward movement of the surface as well as the surface characteristic of the band". The reference surface affinity inclination is defined as the inclination at which objects slide down that particular surface taking into account the speed as well as the surface characteristics of the band (page 3, lines 23 to 26).

4.1.4 The Appellant argued that the method according to D1 is based on the fact that the fishes to be sorted out do not have a hard shell. However, it is clear from section 4.1.3 above, that the method disclosed in D1 does not rely on the fact whether the objects have a hard shell or not, but solely on their ability to remain on a given surface when said surface is inclined and exerts a force on the object in an at least partially upwardly inclined direction.

4.1.5 The Appellant further argued that a skilled person would not contemplate using the method according to D1 for sorting shellfish from a batch of shellfish.

However, there is no evidence in support of such an allegation. The technical field (fishing) where the method disclosed in D1 is to be implemented is the same and moreover the "objects" which are to be separated from the mixture of objects are shellfish too (shrimps). Thus, there is no information in D1 that could deter a skilled person from using this method and there exists no reason why a skilled person faced with the problem of separating shellfish from a batch of shellfish should not at least try to use the method of D1 for separating shellfish from other objects.

4.1.6 The Appellant also argued that the claimed sorting process relies on a rolling action whereas the sorting process of D1 relies on a sliding action.

This point of view cannot be shared either. Both processes are based on the ability of objects to remain on (to stick to) a surface up to a certain degree of inclination and transportation speed, the ability to stick to said surface being different from one type of object to another. Once inclination and speed are such that the objects are unable to remain stationary relative to the surface, whether they slide or roll is solely determined by their shape and not due to the claimed features of the method of sorting itself. Therefore, no difference can be seen in the way the sorting of objects is performed.

Furthermore, the claimed methods or uses do not imply a rolling action, since they are not limited to a specific type of shellfish having the ability to roll on an inclined surface, because shrimps or oysters, which are shellfish too, are not specially predisposed to roll on an inclined surface. Moreover, said claims do not comprise any feature specifying that the shellfish is to be sorted out by rolling. The feature "exerting force on the shellfish on said surface etc." clearly includes the effect disclosed in D1, i.e. that some objects will have a higher tendency to stick to the surface of the conveyor band than other types of objects. In other words, the wording of the claims also includes embodiments which are clearly obvious in the light of D1.

4.1.7 Consequently, the subject-matter of claim 1 according to the main request or to one of the first to third auxiliary request does not involve an inventive step.

4.2 Claim 1 according to the fourth auxiliary request

4.2.1 From D1 (page 1, lines 6 to 9; page 3, line 15 to page 4, line 7; claims 3, 7) there is known a method for sorting shellfish, which is suitable for sorting shellfish from a batch or a flow of shellfish comprising shellfish of different species into separate fractions of shellfish (see section 4.1.5 above), wherein the method comprises the steps of

- transferring the shellfish to an inclined surface (3), said surface being inclined in an angle within the range of 15°- 60°,
- exerting force on the shellfish on said surface in an at least partially upwardly inclined direction and at least partially parallel with the inclined surface, said force being produced by the surface (2) said surface being the surface of a conveyor belt being moved in an upwardly inclined direction, and
- collecting the shellfish leaving said surface at or near an upper end and at or near a lower end of the surface (10, 12).

4.2.2 In D1 the surface is inclined in an angle within the range of 15° to 60° (most preferred 30° to 40°) whereas according to claim 1 the angle is within the range of 5° to 35°. Since the specifically mentioned end point, i.e. 15°, of the known range as well as that of the preferred range, i.e. 30°, fall within the claimed range of 15° to 35° they destroy, on their own, the novelty of the claimed range.

4.2.3 Thus, the subject-matter of claim 1 differs from that of D1 in that:

- said conveyor belt is moved at a speed within the range of 20 m/min - 100 m/min.

4.2.4 In his statement setting out the grounds of appeal, on page 7, the Appellant submitted examples of known conveyor belt speeds used in the shellfish industry. Three of the given examples relate to sorting bands, the other three not. In the three examples relating to sorting bands, the speed of the band is respectively 17 m/min, 22 m/min and 120 m/min. Thus, the speed of known conveyor belts used for sorting shellfish is within the range of 17 m/min to 120 m/min. Consequently, the claimed range of 20 m/min to 100 m/min appears merely to correspond to the normal operating condition for a sorting conveyor belt in the shellfish industry.

4.2.5 Accordingly, the subject-matter of claim 1 according to the fourth auxiliary request does not involve an inventive step.

4.3 Claim 1 according to the fifth and sixth auxiliary requests

4.3.1 From D1 (page 1, lines 6 to 9; page 3, line 15 to page 4, line 7; claims 3, 7) it is known to use an apparatus for sorting shellfish, which is suitable for sorting shellfish from a batch or a flow of shellfish comprising shellfish of different species into separate fractions of shellfish (see section 4.1.5 above), wherein the apparatus comprises

- an inclined surface (3), said surface being inclined in an angle within the range of 15°- 60°,
- means for transferring shellfish (6) to the inclined surface,
- means for exerting force on the shellfish on said surface in an at least partially upwardly inclined direction and at least partially parallel with the inclined surface, said force being produced by the surface or by a part of said surface (2) said surface being the surface of a conveyor belt, and
- means (10, 12) for collecting the shellfish leaving said surface at or near an upper end and at or near a lower end of the surface.

4.3.2 As indicated in section 4.2.2 above, the lower values of the two ranges of angle values disclosed in D1, that is 15° and 30° fall within the claimed range of 5° to 35° and thus destroy its novelty.

4.3.3 Thus, the subject-matter of claim 1 differs from that of D1 in that said conveyor belt is moved at a speed within the range of 20 m/min - 100 m/min.

However, as indicated in section 4.2.4 above the claimed range of 20 m/min - 100 m/min appears merely to correspond to the normal operating condition for a sorting conveyor belt in the shellfish industry.

4.3.4 Consequently, the use of an apparatus according to claim 1 of the fifth auxiliary request does not involve an inventive step.

4.3.5 Claim 1 of the sixth auxiliary request differs from claim 1 of the fifth auxiliary request in that the

claimed speed range of the conveyor belt has been restricted to 25 m/min to 60 m/min.

However, there is no indication in the application that the sub-range of 25 m/min to 60 m/min provides any particular technical effect with respect to the larger range of 20 m/min - 100 m/min. Therefore, no inventive skill can be seen in selecting a narrower range within the normal operating range in the technical field of sorting shellfish.

- 4.3.6 Consequently, the claimed use according to claim 1 of the sixth auxiliary request does not involve an inventive step.
5. All the requests comprise a method claim 1 or a sole use claim, which does not involve an inventive step. All the requests must therefore fail.

## **Order**

**For these reasons it is decided that:**

The appeal is dismissed.

The Registrar:

The Chairman:

G. Magouliotis

M. Ceyte