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**Datasheet for the decision
of 17 May 2011**

Case Number: T 1857/08 - 3.2.04

Application Number: 97202454.1

Publication Number: 0824857

IPC: A01J 5/017

Language of the proceedings: EN

Title of invention:

A method of automatically connecting teat cups to the teats of an animal to be milked

Patentee:

MAASLAND N.V.

Opponent:

DeLaval International AB

Headword:

Consecutive movements/MAASLAND

Relevant legal provisions:

EPC Art. 123(2), 54, 56

Relevant legal provisions (EPC 1973):

-

Keyword:

"Main request (added subject-matter)"

"Auxiliary request (novelty and inventive step: yes)"

Decisions cited:

T 0002/83

Catchword:

-



Case Number: T 1857/08 - 3.2.04

D E C I S I O N
of the Technical Board of Appeal 3.2.04
of 17 May 2011

Appellant I:
(Patent Proprietor)

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Appellant II:
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Decision under appeal:

Interlocutory decision of the Opposition
Division of the European Patent Office posted
29 July 2008 concerning maintenance of European
patent No. 0824857 in amended form.

Composition of the Board:

Chairman: M. Ceyte
Members: P. Petti
T. Bokor

Summary of Facts and Submissions

I. An opposition, based upon Article 100(a) EPC, was filed against the European patent No. 0 824 857. The opposition division by its interlocutory decision dated 29 July 2008 found that the patent in an amended version met the requirements of the EPC.

II. On 19 September 2008 the patent proprietor (hereinafter Appellant I) lodged an appeal against this decision and simultaneously paid the appeal fee. The grounds of appeal were received on 17 November 2008.

On 29 September 2008 the opponent (hereinafter Appellant II) lodged a further appeal against this decision. The appeal fee was paid on 26 September 2008. The grounds of appeal were received on 5 December 2008.

III. Oral proceedings before the board were held on 17 May 2011.

IV. Appellant I requested that the decision under appeal be set aside and the patent be maintained on the basis of claims 1 to 15 of the main request filed by letter dated 15 April 2011 or in the alternative on the basis of claims 1 to 15 held allowable by the opposition division and an adapted description, replacing columns 1 and 2 of the granted description with columns 1 and 2 filed during the oral proceedings before the board.

Claim 1 of the main request reads as follows:

"1. A method of automatically connecting a teat cup to a teat of an animal to be milked, in which method, after the position of a teat or at least part of a teat has been determined by means of a computer, the teat cup is moved so that the opening is located under the end of the teat and is subsequently moved in a vertical and horizontal direction, consecutively or simultaneously, to the point where the teat merges into the remaining part of the udder, until the teat cup has been connected to the teat, wherein the method comprises the step of establishing that the teat forms an angle relative to a vertical plane, and wherein the step of moving the teat cup so that its opening is located under the end of the teat is performed after the step of establishing that the teat forms an angle relative to the vertical plane, and wherein the subsequent movement of the teat cup in a vertical and in a horizontal direction is performed so as to move the teat cup to the point where the teat merges into the remaining part of the udder, **characterised in that** during the subsequent movement of the teat cup in a vertical and in a horizontal direction the teat cup maintains a vertical orientation."

Claim 1 of the auxiliary request reads as follows:

"1. A method of automatically connecting a teat cup to a teat of an animal to be milked, in which method, after the position of a teat or at least part of a teat has been determined by means of a computer, the teat

cup is moved so that the opening is located under the end of the teat and is subsequently moved in a vertical and horizontal direction, to the point where the teat merges into the remaining part of the udder, until the teat cup has been connected to the teat wherein the method comprises the step of establishing that the teat forms an angle relative to a vertical plane, and wherein the step of moving the teat cup so that its opening is located under the end of the teat is performed after the step of establishing that the teat forms an angle relative to the vertical plane, and wherein the subsequent movement of the teat cup in a vertical and in a horizontal direction is performed so as to move the teat cup to the point where the teat merges into the remaining part of the udder, characterised in that in the subsequent movement the teat cup is moved consecutively in a vertical and in a horizontal direction."

Claim 12 of the auxiliary request reads as follows:

"12. An implement comprising a milking robot (8) for automatically connecting teat cups (53; 54) to the teats of an animal, respectively disconnecting same therefrom, said implement comprising a computer and an animal identification system in which the position of the teat is recorded per animal, said implement being suitable for applying a method as claimed in any one of the claims 1 to 11, characterised in that

in the animal identification system the angle formed by a teat relative to a vertical plane is recorded per animal."

V. Appellant II requested that the decision under appeal be set aside and the patent be revoked.

VI. With respect to the main request, appellant I essentially submitted that the amendments to claim 1 contravened the requirements of Article 123(2) EPC in so far as the feature that the teat cup maintains a vertical orientation during its subsequent movement had no basis in the application as filed. In contrast thereto, appellant II submitted that column 1, lines 21 to 35, column 7, lines 30 to 39 and Figures 3 to 5 of the application as filed (EP-A-824 857) provide a basis for this feature.

With respect to the auxiliary request, appellant II submitted that the subject-matter of claim 1 lacked novelty over US-A-4 223 635 (D2) and did not involve step over EP-A-360 354 (D4) in combination with EP-A-661 517 (D1) or over D1 in combination with common general knowledge. Appellant I contested these arguments.

Reasons for the Decision

1. The appeals are admissible.
2. *Amendments (main request)*
 - 2.1 Claim 1 as granted has been amended in the opposition proceedings by adding the feature "during the subsequent movement of the teat cup in a vertical and in a horizontal direction the teat cup maintains a vertical orientation".
 - 2.1.1 This additional feature is not mentioned either in the claims or in the description of the patent application as filed.
 - 2.2 Appellant I essentially submitted that the additional feature does not infringe Article 123(2) EPC because
 - a) the description refers to a teat cup which is "moved so that its opening is located under the end of the teat and is subsequently moved in a vertical and in a horizontal direction, consecutively or simultaneously, to the point where the teat merges into the remaining part of the udder, until the teat cup has been connected to the teat" (see column 1, lines 27 to 32),
 - b) Figures 3 and 4 show a teat cup oriented in the vertical direction, which "after having been positioned such that its opening is located under the end of the teat 58, is connected ... exclusively by being moved upwards ..." (see column 7, lines 30 to 34), and

c) Figure 5 shows a teat cup which is connected to an oblique teat while maintaining a vertical orientation.

2.2.1 The board does not find these arguments convincing for the following reasons:

a') The passage in column 1, lines 21 to 35 recites the wording of claim 1 of the application as filed which neither refers to the orientation of the cup nor excludes that the movement of the teat cup from the position in which its opening is under the end of the teat to the point where the teat merges with the udder occurs without any tilting of the teat cup.

b') Figures 3 and 4 and the description thereof in column 7, lines 27 to 39 relate to a method in which the teat cup is connected in an usual manner, i.e. exclusively by being moved upwards, and thus cannot represent a basis for the claimed method in which the teat cup is connected by being moved in a vertical and in a horizontal direction.

c') In Figure 5, which "shows step by step how the teat cup is connected to an oblique teat in a correct manner according to the invention" (see column 3, lines 2 to 4), three successive positions of the teat cup during its "subsequent movement" are represented. Even if it were to be assumed that the teat cup is vertically oriented, it could not be clearly and unambiguously derived from this figure and its corresponding description

(column 7, line 40 to column 8, line 5) that the teat cup maintains a vertical orientation so as to exclude any tilting motion during its "subsequent movement". In this respect, it is observed that the application as filed does not describe any measure as to how angular or tilting movements of the teat cup can be restrained.

2.3 Thus, the added feature is not unambiguously derivable from the application as filed and thus constitutes added subject-matter (Article 123(2) EPC). Therefore, the main request of the appellant has to be rejected.

3. *Novelty (auxiliary request)*

3.1 D2 discloses (see particularly column 3, lines 32 to column 4, line 29) a method of automatically connecting a teat cup provided with an upper inclined supporting surface (28) to a teat of an animal to be milked, in which method, after the position of a teat or at least part of a teat has been determined by means of a computer, the teat cup is horizontally moved in the direction (A) against the teat until the teat lays on the upper inclined supporting surface (28) of the teat cup so as to form an angle relative to the vertical plane until its opening is located under the end of a teat (see Figure 3d). Subsequently the teat cup is horizontally moved in the opposite direction (B) and suction is supplied to the teat cup interior so that the teat cup sucks the teat down into it and the teat cup is moved in a vertical direction so as to be moved to the point where the teat merges into the remaining part of the udder, until the teat cup has been connected to the teat (see Figure 3e).

3.2 In this respect, appellant II submitted that the term "establishing" includes within its ambit "creating" or "bringing into existence". In the method of D2 there is undoubtedly a step of causing a teat to take an inclined orientation and hence a step of establishing that the teat forms an angle relative to a vertical plane.

3.2.1 The board is unable to follow such a reasoning:

- The interpretation of the terms of a claim must be made by the skilled person, not by a philologist. Terms in the claims must therefore be construed as they would be by the skilled person in view of the overall content of the specification, according to the idea behind the invention, having regard to the problem and solution as derived from the patent (German Federal Court of Justice, OJ 2001, 259 and Visser, *"The annotated European Patent Convention"*, Veldhoven, 18th Edition, Art. 69(1)).
- In the present case the claimed invention addresses the specific problem of how to successfully connect a teat cup to a teat when its position deviates from the vertical (see paragraphs [0002] and [0003] of the patent specification). This problem is solved by the claimed method which includes the step of establishing or determining that the teat forms an angle relative to the vertical plane. The idea behind the invention is thus to determine the angle of inclination of the teat so as to move the teat cup horizontally and vertically in order to

follow the inclined teat axis and to facilitate the attachment of the teat cup to the inclined teat. D2 does not at all address this technical problem and does not provide the same solution: the method disclosed therein aims at connecting a teat cup to a teat when the teat has an approximatively vertical position. There is thus no reason whatsoever to establish the angle of inclination of the teat. Therefore, there is no disclosure or suggestion in D2 of determining the angle of inclination of the teat.

3.3 For the foregoing reasons, the subject-matter of claim 1 of the main request is novel over D2.

4. *Inventive step (auxiliary request)*

4.1 D4 discloses a method of automatically connecting a teat cup to a teat of an animal to be milked in which method, after the position of a teat or at least part of a teat has been determined by means of a computer, the teat cup is moved so that its opening is located under the end of a teat and is subsequently moved in a vertical direction to the point where the teat merges into the remaining part of the udder, until the teat cup has been connected to the teat. When a teat deviates from the vertical plan, the above method may lead to problems. For instance, a teat may come folded into the teat cup or may be introduced therein insufficiently far (see patent specification, paragraph [0002]).

4.1.1 The subject-matter of claim 1 differs from this prior art method essentially in that

- a) the method comprises the step of establishing that the teat forms an angle relative to a vertical plane, before the teat cup is moved so that its opening is located under the end of a teat,
- b) in the subsequent movement (of the teat cup to the point where the teat merges into the remaining part of the udder) the teat cup is moved consecutively in a vertical and in a horizontal direction.

These distinguishing features provide the advantages that a teat cup can be successfully connected to an inclined teat and that the control of the teat cup movement can be simplified. Therefore, starting from D4 as closest prior art, the technical problem to be solved is to avoid the above mentioned disadvantages or at least to reduce their extent, while using relatively simple means for implementing the method of attachment of the teat cups.

4.1.2 In order to solve this technical problem the skilled would consider document D1 in so far as it addresses in essence the same technical problem (see column 2, lines 13 to 21).

4.1.3 D1 discloses (see particularly Figures 2 and 3; column 6, lines 37 to 43; column 1, lines 20 to 38) a method of automatically connecting a teat cup to a teat of an animal to be milked, in which the teat cup is moved so that its opening is located under the end of a teat, the method comprising the following subsequent steps:

- i) determining the position of a teat or at least part of a teat by means of a computer and establishing that that the teat forms an angle relative to a vertical plane (before the teat cup is moved so that its opening is located under the end of a teat),
- ii) orienting the teat cup so that its axis is aligned with the inclined teat axis, and
- iii) moving the inclined teat cup linearly along the inclined axis.

Therefore, if the skilled person - in order to solve the above mentioned technical problem - were to combine document D1 and D4, he would not have arrived at a method in which the teat cup is moved **consecutively** in a vertical and in a horizontal direction along the inclined teat axis.

4.1.4 In this respect, appellant II essentially submitted the following arguments:

- In D4 the teat cups are connected to the teats by means of a robot arm which carries four vertically oriented teat cups, wherein it is not technically possible to change the vertical orientation of the teat cups. In that case the skilled person in its attempt to correctly connect the teat cup to an oblique teat would have no choice but to move the teat cup simultaneously or consecutively in the vertical and horizontal directions.

- In D1, when a teat is inclined the teat cup will be moved simultaneously horizontally and vertically in order to follow the inclined teat axis. If it were thought desirable to produce essentially the same result (that is movement along an inclined axis) without having to provide for simultaneous movement of the teat cup in the vertical and horizontal directions, it would have been within the capability and competence of the skilled person to arrange for the robot arm to move the teat cup in increments with successive steps of movement in the vertical and horizontal directions. The patent in suit confirms that a series of small alternate steps of movement in a vertical and a horizontal direction will produce essentially the same effect as a smooth continuous more or less flowing movement (paragraph [0017]).

However, neither D4 nor D1 discloses or suggests the feature of moving the teat cup consecutively (as opposed to simultaneously) in a vertical and in a horizontal direction in the process of applying a teat cup onto an inclined teat. Furthermore, it cannot be derived from D4 that it is technically impossible to modify the arrangement of the teat cups so that they can be inclined with respect to a vertical plane.

- 4.1.5 Appellant I further submitted that the claimed solution would inevitably be obvious to the skilled person since it is generally known that a linear movement can be approximated by a series of small consecutive movements in two orthogonal directions.

However, the proper question is not whether the skilled person could have arrived at the invention by replacing the simultaneous movements in vertical and horizontal directions by consecutive movements but whether he would have done so in the expectation of solving the technical problem addressed to (see e.g. decision T 2/83, OJ EPO 1984, 265). In this respect the board is unable to find in D1, D4 or in the alleged common general knowledge of the skilled person any hint at moving the teat cup consecutively in horizontal and vertical directions in the hope of solving the objective technical problem of how to successfully connect a teat cup to an inclined teat, while using simple means for implementing the method of attachment of the teat cups (as submitted by appellant I, the consecutive movement of the teat cup can simplify the control of the motors used for moving the teat cup).

4.1.6 Thus, the skilled person starting from D4 and combining this prior art with D1 would not have arrived at the claimed subject-matter.

4.2 The claimed subject-matter differs from the method of automatically connecting a teat cup to a teat of an animal known from D1 by the feature of the subsequent movement of the teat cup comprising the teat cup being moved consecutively in a vertical and in a horizontal direction.

The method of D1 solves the problem of correctly connecting a teat cup to an inclined teat essentially by orienting the teat cup so that its axis is aligned with the inclined teat axis, and subsequently moving the inclined teat cup linearly along the inclined axis.

4.2.1 In this respect, appellant II submitted that starting from the method of D1 it would have been obvious for the skilled person - seeking for an alternative solution to the problem of correctly connecting the teat cup to an inclined teat - to move the teat cup in increments with consecutive successive movements components in the vertical and horizontal directions.

4.2.2 The board does not find this argument convincing for the following reasons:

- As has been explained, the consecutive movements of the teat cup in a vertical and in a horizontal direction provide an additional advantage with respect to the simultaneous movement. Thus, starting from D1, the technical problem to be solved may be seen in seeking an alternative to the known method of connecting a teat cup to an inclined teat, while allowing a simple implementation of this method of attachment.
- There is no disclosure or suggestion in D1 of moving the teat cup with successive or consecutive steps of movement in the vertical and horizontal directions. Moreover, there is no evidence proving that it is generally known that a linear movement can be approximated by a series of small consecutive movements in two orthogonal directions and that such consecutive movements result in simplifying the control of the motors responsible for the movements. As already stated, the question to be answered is not whether the skilled person could have replaced the linear movement of the

teat cup along the inclined axis of the teat by successive or consecutive steps of movement in the vertical and horizontal directions but whether he would have done so because the prior art incited him to do so in the hope of solving the objective problem. In this respect, the board is unable to find in D1 or in the common general knowledge of the skilled person any hint at moving the teat cup consecutively in horizontal and vertical directions along the inclined teat axis.

- 4.3 Claim 12 of the auxiliary request is directed to an implement suitable for applying the method as claimed in claim 1 and thus for moving the teat cup consecutively in a vertical and in a horizontal direction from the position in which its opening is located under the end of the teat to the point where the teat merges into the remaining part of the udder.

Neither D4 nor D1 discloses or suggests means for performing the consecutive movements of the teat cup in applying the method according to claim 1. Thus, the above considerations relating to method claim 1 also apply to apparatus claim 12.

- 4.4 Therefore, the claimed subject-matter involves an inventive step (Article 56 EPC).

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the department of first instance with the order to maintain the patent in an amended form on the basis of the following documents:

Description: columns 1 and 2 filed during the oral proceedings before the board, columns 3 to 7 of the patent specification.

Claims: 1 to 15 filed during the oral proceedings before the opposition division and held allowable by the opposition division.

Drawings: Figures 1 to 5 of the patent specification.

The Registrar:

The Chairman:

G. Magouliotis

M. Ceyte