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Datasheet for the decision of 31 May 2012

Case Number: T 0169/10 - 3.2.04

Application Number: 96203152.2

Publication Number: 774204

IPC: A01J 5/017

Language of the proceedings: EN

Title of invention:
A constsruction including an implement for milking animals

Patentee:
MAASLAND N.V.

Opponent:
DeLaval International AB

Headword:
Pivotal movement/MAASLAND

Relevant legal provisions:
EPC Art. 56

Relevant legal provisions (EPC 1973):
-

Keyword:
"Inventive step: main request (no) - auxiliary requests (yes)"

Decisions cited:
-

Catchword:
-

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Case Number: T 0169/10 - 3.2.04

D E C I S I O N
of the Technical Board of Appeal 3.2.04
of 31 May 2012

Appellant: (Patent Proprietor)
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Decision under appeal:
Interlocutory decision of the Opposition Division of the European Patent Office posted 30 November 2009 concerning maintenance of European patent No. 774204 in amended form.

Composition of the Board:

Chairman: A. de Vries
Members: P. Petti
T. Bokor

Summary of Facts and Submissions

I. The opposition division in its interlocutory decision dated 30 November 2009 found that the European patent No. 774 204 in an amended version submitted by the patent proprietor during the oral proceedings on 9 November 2009 met the requirements of the EPC.

In a previous appeal proceedings (T 1384/07), the board had decided that the grounds for opposition under Articles 100(c), 100(b) and 100(a) with respect to novelty did not prejudice the maintenance of the patent and remitted the case to the opposition division for further prosecution.

The wording of claim 1 held allowable by the opposition division reads as follows:

"1. A construction including an implement for milking animals, provided with one or more milking robots (5), teat cups (6) and one or more milk boxes (1) each having a horizontal floor (17), each teat cup (6) being disposed on a carrier (32) of a milking robot arm in an inoperative position, while, when a relevant teat cup (6) is connected to a teat of an animal to be milked, the teat cup (6) is brought in a substantially vertical position by means of the carrier (32) in order to bring the teat cups back to their inoperative position the implement being provided with withdrawing members (54), by means of which respective teat cups (6) can be drawn towards the carrier (32), characterized in that in the inoperative position each teat cup (6) forms an angle with a vertical line, extending perpendicular on the horizontal floor (17)."

II. On 27 January 2010 the opponent (hereinafter appellant) lodged an appeal against this decision and paid the appeal fee on 29 January 2010. A statement setting out the grounds of appeal was received on 8 April 2010.

III. Oral proceedings before the board were held on 31 May 2012.

IV. The appellant requested that the decision under appeal be set aside and the patent be revoked.

V. The respondent (patent proprietor) requested the dismissal of the appeal, i.e. the maintenance of the patent in the version held allowable by the opposition division (main request). Alternatively, as an auxiliary request he requested that the decision under appeal be set aside and the patent be maintained in an amended form on the basis of claims 1 to 22 filed together with an adapted description during the oral proceedings on 31 May 2012.

The wording of claim 1 of the auxiliary request reads as follows:

"1. A construction including an implement for milking animals, provided with one or more milking robots (5), teat cups (6) and one or more milk boxes (1) each having a horizontal floor (17), each teat cup (6) being disposed on a carrier (32) of a milking robot arm in an inoperative position, while, when a relevant teat cup (6) is connected to a teat of an animal to be milked, the teat cup (6) is brought in a substantially vertical position by means of the carrier (32), in order to

bring the teat cups back to their inoperative position the implement being provided with withdrawing members (54), by means of which respective teat cups (6) can be drawn towards the carrier (32), **characterized in that** in the inoperative position each teat cup (6) forms an angle with a vertical line, extending perpendicular on the horizontal floor (17), and **in that** the carrier comprises four units (34) each carrying a teat cup (6), and the units (34) are provided with means (40), by means of which the units (34) are pivotable independently of each other about a horizontal pivot shaft (36)."

VI. The appellant submitted inter alia that the subject-matter of claim 1 of the main request did not involve an inventive step over EP-A-551 957 (D11) in combination with common general knowledge and that the subject-matter of claim 1 of the auxiliary request did not involve an inventive step over either D11 or D4 or D10.

VII. The respondent contested the appellant's arguments.

Reasons for the Decision

1. The appeal is admissible.

2. Main request (inventive step)

2.1 D11 discloses (see particularly column 3, line 49 to column 4, line 13; Figures 1 to 3) a construction including an implement for milking animals provided with a milking robot (5), teat cups (6) and a milking

box (1) having a horizontal floor, wherein each teat cup (6) is disposed on a carrier (33) of a milking robot arm. When a relevant teat cup is connected to the teat of an animal to be milked, the teat cup is brought by means of the carrier (33), from a first position in which the teat cup is inoperative and is held against a contacting member portion (35) of the carrier (33) by means of an on/off switchable electromagnet, to a second position in which the electromagnet is switched off so that the teat cup can be connected to the teat. In order to bring the teat cups back to their inoperative position the implement is provided with withdrawing members (53), by means of which the respective teat cups can be drawn towards the contacting member portion (35) of the carrier (33), see Figure 5.

In D11, the carrier (33) is pivotally connected - via a telescopic arm (29) and horizontal shaft (28) - to a holder (26) and, relative to the holder (26) is supported and activated by means of an adjusting cylinder (37) so that by the pivotal movement of the carrier (33) about the horizontal shaft (28) the teat cups can be moved upwardly and brought from a first position, in which they have a first orientation, to a second position, in which they have a second orientation, which is slightly different from the first orientation.

In this manner, the construction of D11 makes it possible to connect the teat cup to the teat of an animal to be milked by simply pivoting the carrier about a horizontal axis. It thus solves the problem which can be deduced from paragraphs [0003] and [0004]

of the patent specification, namely the problem of obtaining a construction for milking animals in which the teat cups can be connected quickly and efficiently to the teats of animals by means of a simple pivotal movement bringing the teat cups upwardly towards the teats.

Due to this pivotal movement, when the teat cups are connected to the teats, a slight change in their orientation occurs. However, D11 is silent as to whether the teat cups in said first (inoperative) position form an angle with a vertical line as well as whether in the second position they are substantially vertical.

Consequently the subject-matter of claim 1 differs from the construction of D11 in that

(a) in the inoperative position each teat cup *forms an angle with a vertical line* extending perpendicular to the horizontal floor, so that during the step of connecting the teat cup to the teat each teat cup is brought from said inoperative position to a *substantially vertical position*.

2.1.1 Since D11 does not give a specific teaching as to the orientations of the teat cups in the first (inoperative) position and in the second position, to which they are moved during the step of connecting, the distinguishing feature (a) solves the technical problem of putting into practice the teaching of D11 with regard to the step of connecting the teat cups to the teats.

2.1.2 It is well known that for the majority of dairy cows the teats hang down from the udder substantially vertically as well as that it is desirable to reduce as much as possible the misalignment between teat cup and teat when the teat cup approaches the teat for connection thereto. Therefore, it would be obvious for the skilled person on the basis of common general knowledge to arrange the carrier of D11 so that the teat cups, when they are in the second position, are substantially vertical. In this way, the skilled person would arrive - without exercising any inventive skill - at a construction in which each teat cup in the inoperative position forms an angle with a vertical line extending perpendicular to the horizontal floor and during the step of connecting is brought from said inoperative position to a substantially vertical position, i.e. to a construction falling within the terms of claim 1.

2.2 In this respect, the respondent submitted that Figure 2 of D11 represents the teat cups in their inoperative position and that the orientation of the slightly arched arrow on the left-hand side of Figure 1 indicates that the teat cup carrier (33) is pivoted upwardly starting from the position shown in Figure 2 in which it is parallel to the horizontal floor. In order for the teat cups to be connected to the teats they are brought from an inoperative position in which they are vertically oriented to a slightly inclined position. With the vertical inoperative position of the teat cups, the step of connecting the teat cups would already be efficient enough and no problem to be solved could be recognized in the implement of D11. Therefore,

the skilled person would have had no need to modify this known construction.

2.2.1 The board cannot accept this argument because Figure 2 of D11 is a schematic representation of a milking robot intended exclusively to illustrate its construction. No detailed information concerning the orientation of the teat cups during operation can therefore be deduced from it. Moreover, the slightly arched arrow in Figure 2 referred to by the respondent is double ended indicating a pivoting movement of the carrier in both directions, upwards and downwards. The orientation of the arrow arc in the plane of the drawing does not imply any information concerning the orientation of the teat cup.

2.3 Therefore, the main request has to be rejected because of lack of inventive step (Article 56 EPC) of the subject-matter of claim 1.

3. Auxiliary request (amendments)

3.1 Claim 1 of this request is the combination of the features specified in granted claims 2, 4 and 13 of the patent as granted, wherein the reference sign "(55)" in granted claim 4 has been amended to "(40)" in order to correct an obvious error (Rule 139 EPC). The dependent claims 2 to 22 have been renumbered and their references to previous claims have been correspondingly amended. The amendments to the description only concern its adaptation the claims.

3.2 No objections under Articles 100(c) and 123 EPC have been raised with respect to these amendments. The board

is satisfied that the requirements of these Articles are met.

4. Auxiliary request (inventive step)

4.1 D11 represents the closest prior art also for claim 1 of the auxiliary request, whose subject-matter differs from the construction of D11 not only by the above mentioned feature (a) but also in that

(b) the carrier comprises four units (34) each carrying a teat cup (6) and the units (34) are provided with means, by means of which the units (34) are pivotable independently of each other about a horizontal pivot shaft (36).

4.2 It can be understood from the patent specification (paragraphs [0006] and [0019]) that this feature enables to connect each teat cup individually by a simple pivoting movement of the respective unit. This allow for more flexible and simpler attachment of the teat cups as compared to moving the teat cups as a whole, connecting one, then moving the carrier with the remaining teat cups to connect the next teat cup and so forth as would be necessary in D11.

Thus, the objective problem to be solved by feature (b) may be seen in providing a construction for milking animals in which the teat cups can be connected to the teats in a more flexible and simpler way.

4.3 None of the prior art cited discloses this particular measure which allows each teat cup to be connected to a respective teat individually and independently of the

others, nor does the board considers it to be a common general knowledge. The documents cited by the appellant, D4 and D10 and D12 do show teat cups that travel upwardly independently of each other, but there travel is translational rather than pivotal. Nor would the teaching of these documents either in combination with D11 or using common general knowledge lead in obvious manner to the claimed arrangement as set out below.

4.4 The appellant submitted the following arguments:

(i) In claim 1, the independent pivotal movements of the units, as defined by distinguishing feature (b), has no functional relationship to the movement of the carrier (32) by which a teat cup - when it is connected to a teat - is brought from an inoperative inclined position to a substantially vertical position, as defined in the previous part of the claim.

Starting from the construction of D11, in which the teat cups are firmly maintained in an inoperative position against a contacting member portion (33) of the carrier (33), the skilled person would be confronted with the problem of providing a construction in which the teat cups may move relative to the carrier with a certain degree of freedom even when they are in the inoperative position.

In order to solve this problem, the skilled person would consider document D4 (Figure 2) which discloses a construction in which the teat cup carrier (41) comprises a plurality of teat cup

carrying units (46) which are each pivotable, independently of each other, about a horizontal pivot shaft (47), each unit being held against the bottom side of the carrier (41) by means of a spring (48) and thus falling within the terms of feature b). The combination of D11 with D4 would lead the skilled person to the claimed subject-matter.

(ii) Alternatively, he would look toward D12 (column 2, lines 8 to 12; column 9, lines 7 to 9 and 23 to 27; Figures 3, 5 and 6) which discloses a robot arm comprising four units, each unit being provided with a teat cup holder (59) which is pivotally mounted on the robot arm by means of parallel linkages (58), wherein each teat cup - in order to be connected to a teat - is moved up by means of a stepping motor (71). The skilled person wishing to solve the objective problem referred to in section 4.2 above would apply the teaching of D12 to the construction of D11 and arrive at the claimed subject-matter without exercising any inventive skill.

(iii) Finally, he would also find a solution in D10 (see column 8, lines 7 to 27; Figure 9), which teaches to provide a robot arm with four teat cup units ("carriers" 76), each unit carrying a teat cup and sliding in a guide means (86), wherein the teat cups - in order to be individually connected to the teats - can be moved upwardly - independently of each other by means of a rod (87). Although in D10 the movement of a teat cup when it is connected to the relevant teat is purely

translational, the skilled person would have no prejudice with respect to pivotal movements of the teat cup, in so far as in D10 each teat cup is pivotally mounted to the respective unit (76) by means of a pin (112). Thus, the skilled person confronted with the objective problem referred to in section 4.2 above would consider D10, apply to the construction of D11 the general teaching of arranging four units which are movable independently of each as suggested by D10 and adapt this teaching to the construction of D11 so as to arrive at units which are pivotable about a horizontal axis.

4.4.1 The board is unconvinced by these arguments for the following reasons:

(i) It is true that the wording of feature (b) does not explicitly refer to the pivotal movement performed by the carrier as defined in the previous part of the claim. However, it is clear from the description that nothing else is ever meant other than that the independent movement of the four units and the change in orientation from the operative to the inoperative position are one and the same.

According to the description of the patent (paragraphs [0006] and [0019]), feature (b) enables to connect the teat cups individually. Thus, the independent pivotal movements of the units defined by feature (b) have to be considered as being related to the movement by means of which the teat cups are connected to the teats. The

patent specification does not contain any information which might support the interpretation suggested by the appellant.

Nor can the technical problem referred to by the appellant, consisting in providing a construction in which the teat cups may move relative to the carrier with a certain degree of freedom even when they are in the inoperative position, be derived from the patent specification. The sole problem that the description associates with the independent pivoting is that mentioned above in reference to specification paragraphs [0006] and [0019]. According to established case law this is the problem from which the formulation of the objective technical problem on which the problem-solution approach is based should start. In conclusion, the added feature of independent pivoting must be understood in this context of allowing individual attachment of each teat cup and the associated problem as formulated above. Inventive step is then to be assessed from this point of view.

D4 discloses a carrier (41) comprising a plurality of units (34) which may pivot individually and independently around a horizontal shaft (47). However, this pivotal movement of the units (34) offers a limited amount of positional freedom (angular rotation in a fixed position) to each teat cup, but all teat cups are moved into operative position as a whole and must be connected in a manner similar to that in D11. The skilled person would not apply this teaching to

the construction of D11 because the pivotal movement of the units in D4 is not related to the movement the teat cups have to perform to be connected to the teat and thus not linked to the objective problem to be solved referred to in paragraph 4.2 above.

(ii) In D12 the double-armed linkage for independent movement of each teat cup is such as to produce a translational movement of a teat cup from inoperative to the operative position, so that its angle of orientation does not change. Nor is it a pivotal movement properly speaking. Thus, even if the skilled person were to combine D11 with D12, he would not arrive at the claimed subject-matter.

(iii) In D10 (see column 8, lines Figure 9), each teat cup (80) is supported by a teat cup carrier (76) sliding in a guide means (86), wherein the teat cups - in order to be individually connected to the teats - can be moved upwardly independently of each other by means of a rod (87). Here also the upward movement of each carrier (76) is purely translational rather than pivotal so that straightforward combination would not lead to the claimed independent pivoting.

Moreover, the mechanisms for providing upward travel in D11 and D10 are so different as to preclude straightforward combination. In D11 the teat cups are all supported on a carrier member 33 at a right angle to a rigid support arm 31, and the entire L shaped structure pivots upwardly about the horizontal shaft 28 (see Figures 1 and

2). In D10 a similar L shaped configuration formed of portions 53 and 54 at a right angle to each other cannot move vertically (Figures 4 and 5) and upward travel is afforded only by the sliding movement within the guide 86 at the end of portion 54 (Figures 7 and 8). The different loci of upward travel, at opposite ends of a corresponding L shaped structure, means that D11 and D10 represent designs that are alternative to each other, and which for that reason the skilled person would not normally combine as a matter of obviousness. Indeed, to arrive at the claimed subject-matter from the two teachings, he would need to abstract or isolate from its respective specific structural context on the one hand the idea of independent upward travel from D11 (where upward travel is at one end of the L structure), and on the other the idea of upward travel using a pivot from D10 (located at opposite end). The board considers this level of abstraction to go beyond the skills of the skilled person in the present case.

4.5 The appellant also submitted that the skilled person would arrive at the subject-matter of claim 1 in an obvious way starting either from D4 or from D10.

4.5.1 In this respect, it is observed that documents D4 and D10 are less relevant than D11 because none of them - as explained below - relates to teat cups which can be connected to the teats by simply pivoting the teat cup carrier about a horizontal axis and the constructions according to these documents do not solve the problem deductible from paragraphs [0003] and [0004] of the patent specification as granted.

4.5.2 In any case, even if the skilled person were to consider these documents as starting points, he would not arrive at the claimed subject-matter without exercising an inventive skill:

i) Starting from D4:

D4 (see e.g. Figures 2 and 3) discloses a construction including an implement for milking animals, provided with a milking robot, teat cups (45) and a milking box having a horizontal floor, wherein the teat cups are disposed on a carrier (41) of a milking robot arm in an inoperative position. The carrier (41) comprises a nose-shaped cast iron member (76) provided with four curved planes of contact (79) and four units (46) each provided with a conical seat. Each teat cup (45) in its inoperative position is supported by the conical seat of its respective unit (46) and bears against the respective curved plane of contact (79). When a relevant teat cup has to be connected to the teat of an animal to be milked, the teat cup is moved upwardly - in a substantially vertical direction - by means of magnets (80) relative to the respective curved plane of contact (79) and thereby looses the contact with the conical seat of the respective unit (46), *without there being any change in the orientation of the teat cup*. The units (46) are pivotable independently of each other about a horizontal pivot shaft (47), each unit being held against the bottom side of the carrier (41) by means of a spring (48). However, the possibility the units (46) have of pivoting around the shaft (47) is not related to the *purely translational* movement the teat cup has to perform to be connected to the teat.

The board does not find convincing the appellant's argument that the claimed subject-matter lacks an inventive step in view of the combination of D4 with D12, because D12 also concerns a construction in which each teat cup is connected to the teat by a *purely translational* movement of the unit carrying the teat cup and thus the combination of D4 with D12 would not lead to the subject-matter of claim 1 according to which the teat cups are connected to the teats by a *pivotal* movement.

ii) Starting from D10:

D10 (see Figures 7 and 9) discloses a construction for milking animals including an implement for milking animals, provided with a milking robot, teat cups (80) and a milking box having a horizontal floor, wherein each teat cup (80) is disposed on a carrier (7) of a milking robot arm, the carrier comprising a plurality of units (76), each carrying a teat cup in a substantially vertical position. Each unit (76) can slide in a guide means (86) and be moved upwardly by means of a pivoting rod (87), so that the teat cup carried by the unit can perform a *translational movement* from a first (inoperative) position to a second position in which it can be connected to the teat of the animal, wherein the teat cup carryings units (76) are moveable independently of each other. Each teat cup is associated with a withdrawing member (81), by means of which the teat cup can be drawn against the respective unit (76).

The subject-matter of claim 1 differs therefrom in that the units are *pivotable* independently of each other *about a horizontal pivot shaft* and in that in the inoperative position each teat cup *forms an angle with a vertical line* extending perpendicular to the horizontal floor.

In this respect, the appellant essentially submitted that the skilled person on the basis of either common general knowledge or D12 or D11 would modify the teat cup construction of D10 so as to connect each unit (76) rigidly to the pivoting rod (87) and arrive at the claimed subject-matter without exercising any inventive skill.

The board is unconvinced by this line of argumentation. Firstly there is no document that teaches that the *individual* upward movement of a teat cup can also be achieved using a pivot. Furthermore, the skilled person has no clear motivation to modify the arrangement of unit 76 sliding within guide 86. The resultant vertical translation already provides ideal vertical alignment of teat cup leading up to and during connection. Finally, no evidence has been put forward that the measure of arranging a plurality of independently pivotable teat cup carrying units might form part of common general knowledge.

4.6 In the light of the above the board concludes that the subject-matter of claim 1 of the auxiliary request is not obvious to a person skilled in the art and thus involves an inventive step (Article 56 EPC). The patent can be maintained in amended form according to the auxiliary request of the respondent.

Order

For these reasons it is decided that:

The decision under appeal is set aside.

The case is remitted to the first instance with the order to maintain the patent as amended in the following version:

Description: columns 1-2 as filed during the oral proceedings,
columns 3-7 of the patent specification.

Claims: 1-22 as filed during the oral proceedings.

Drawings: Figures 1-6 of the patent specification.

The Registrar: The Chairman:

G. Magouliotis A. de Vries