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D E C I S I O N
of 23 September 1998

Case Number: T 0533/96 - 3.2.4

Application Number: 89202372.2

Publication Number: 0360354

IPC: A01J 7/00

Language of the proceedings: EN

Title of invention:
An implement for milking an animal as well as a method of connecting teat cups to the teats of same

Patentee:
C. van der Lely N.V.

Opponents:
Prolion B.V./Manus AB

Headword:
Milking implement/VAN DER LELY

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

Keyword:
"Novelty (yes)"
"Inventive step (yes)"

Decisions cited:
-

Catchword:
-

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Case Number: T 0533/96 - 3.2.4

D E C I S I O N
of the Technical Board of Appeal 3.2.4
of 23 September 1998

Appellants: (Opponent)
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Decision under appeal: **Interlocutory decision of the Opposition Division of the European Patent Office posted 10 April 1996 concerning maintenance of European patent No. 0 360 354 in amended form.**

Composition of the Board:

Chairman: C. A. J. Andries
Members: P. Petti
J. P. B. Seitz

Summary of Facts and Submissions

I. An opposition based upon Article 100(a) EPC was filed against the European patent No. 360 354, which resulted from the European patent application No. 89 202 372.2 filed on 20 September 1989 and claiming the priority date of 21 September 1988. The opposition division, by its interlocutory decision dispatched on 10 April 1996, maintained the patent in an amended version based on the independent apparatus Claim 1 filed with the letter dated 25 January 1996 and the independent method Claim 30 filed during the oral proceedings on 28 February 1996.

Claim 1 filed with the letter dated 25 January 1996 reads as follows:

"1. An implement for milking an animal, e.g. a cow, which implement includes a robot arm (6) adapted to carry on its end portion (34) teat cups (45 to 48), and coupling means (50) for applying each teat cup to a relevant teat of the animal's udder, while furthermore there are provided sensor means (51) arranged on a movable member (43) provided on the robot arm end portion (34), with the aid of which sensor means (51) the position of the teats can be determined, as well as control means (56, 18, 22, 36, 40, 80 to 83) for conveying, on the basis of a teat position as determined by the sensor means (51), the robot arm (6) in such a position under the animal's udder that a teat cup (45 to 48) can be applied to the relevant teat characterized in that the movable member (43) is displaceable along the robot arm end portion (34) in

the longitudinal direction thereof relative to said teat cups (45 to 48) into at least two defined sensor active positions during the time that the teat cups (45 to 48) are still carried by the robot arm end portion (34)."

II. On 7 June 1996 the appellants (opponents) lodged an appeal against this decision and simultaneously paid the appeal fee. A statement setting out the grounds of appeal was received on 7 August 1996.

III. Oral proceedings were held on 23 September 1998.

During the oral proceedings the respondent (proprietor) filed an amended Claim 30 which reads as follows:

"30. A method of connecting teat cups to the teats of the udder an animal, e.g. a cow, in which method, with the aid of sensor means (51), the position of the teats is determined and a robot arm end (34) comprising teat cups (45 to 48) is moved by means of cylinders to such a position that the teat cups (45 to 48) can be connected to the teats by a substantially upward movement of the relevant teat cups, characterized in that the sensor means (51) are arranged on a member (43) provided on the robot arm end portion (34), and being movable relative to the robot arm end portion (34) and that in a first phase the movable member (43) is brought into a first position in which the sensor means (51) determine the position of a first pair of teats, after which the sensor means (51) are brought in a second position in which the sensor means (51) determine the position of a second pair of teats and the determined teat positions are compared, in a manner known per se, with data regarding the position of the

teats from an animal recognition data source, and in a second phase, with the aid of said sensor means (51), each of the teat cups is moved to a position wherein the teat cup can be connected to the relevant teat."

IV. With respect to the independent Claim 1, the appellants argued that this Claim was not entitled to the claimed priority and that its subject-matter was not novel having regard to the content of the document EP-A-209 202 (D7).

With respect to the independent Claim 30 the appellants argued that its subject-matter did not involve an inventive step having regard to documents D7 and EP-A-300 582 (D5).

The respondent contested the arguments of the appellant.

V. The appellants requested that the decision under appeal be set aside and the patent be revoked.

As a main request the respondent requested that the decision under appeal be set aside and the patent be maintained on the basis of the following documents:

Claims: 1 to 29 as maintained by the Opposition Division.

30 as filed during the present oral proceedings.

Description: page 2 (columns 1 and 2) as maintained by the Opposition Division, pages 3 and 5 to 9 (columns 3, 4 and 7 to 16) as granted, page 4 (columns 5 and 6 as filed with letters dated 1 September 1998).

Figures: 1 to 11 as granted.

The respondent also filed two subsidiary requests.

Reasons for the Decision

1. The appeal is admissible.

2. *Amendments (main request)*

2.1 The amendments to the present Claim 1 (with respect to Claim 1 of the patent as granted) consist of the addition of the feature that "the movable member is **displaceable along the robot arm end portion (34) in the longitudinal direction thereof**".

This feature, which substantially corresponds to the feature specified in the dependent Claim 3 of the patent as granted as well as of the application as originally filed, when read together with the feature that "the movable member is provided on the robot arm end portion" indicates that the (whole) movable member has a translatory movement. In other words, the term "movable member" does not encompass a pivotable member whose different points do not have the same movements in the longitudinal direction and whose pivot does not move at all in the longitudinal direction. This interpretation, which was brought forward by the respondent during the oral proceedings, is in line with the amended introductory part of the description of the patent (see column 2, lines 10 to 23) - as far as the passages relating to the pivotable arrangement of movable member were excised from the description of the

patent as granted - and with the detailed description of the patent and of the application as originally filed which only describes a movable member slidable, as a whole, along the robot arm end portion.

2.2 The amendments to the present Claim 30 with respect to Claim 31 of the patent as granted consist of the addition of the features that "the sensor means **are arranged on a member provided on the robot arm end portion (34) and being movable relative to the robot arm end portion**" and "in a first phase **the movable member is brought into a first position** in which the sensor means determine the position of a **first** pair of teats, **after which the sensor means are brought in a second position** in which the sensor means determine the position of a second pair of teats". These features can be derived from the description of the application as filed, in particular from a passage on page 2, lines 33 to 37, read in combination with a passage on page 12, lines 21 to 33.

2.3 The amendments to the dependent claims and the description only concern their adaptation to the amended independent claims.

2.4 The objections raised by the appellants with respect to Article 123(2) EPC related to a previous version of Claim 30. The amended documents on which the respondent based its main request, were no longer objected to by the appellants with respect to Article 123 EPC during the oral proceedings.

In any case, these amended documents do not contravene the requirements of Article 123(2) and (3) EPC.

3. *The priority right of the patent under appeal*

3.1 During the opposition proceedings the issue of the priority right was examined because of document D5 which was published between the claimed priority date and the filing date of the present patent.

In the decision under appeal the opposition division held that the claimed priority date of 21 September 1988 was valid for Claim 1 but not for Claim 30.

3.2 In an annex to the summons to attend oral proceedings, the board communicated to the parties that, with regard to this issue, it shared the view expressed by the opposition division in the decision under appeal.

3.3 During the appeal proceedings the respondent did not challenge these findings with respect to the priority right of the present Claim 30.

Therefore, as far as this issue concerns the present Claim 30, the board sees no reason for deviating from its preliminary opinion. Thus, document D5 will be considered as prior art according to Article 54(2) EPC with respect to the present Claim 30.

3.4 During the written proceedings, the appellants challenged the finding of the opposition division with respect to the priority date of Claim 1. The appellants pointed out that the independent Claim 1 of the priority document (NL-A-8802332) only related to sensor means carried by a **slide** near the end of the robot arm and argued that the expression "movable member displaceable along the robot arm end portion in the longitudinal direction", as defined in the present Claim 1, unduly broadened the term "slide" because this expression could also cover a movable member pivotally connected to the robot arm end portion.

Having regard to the comments in the above section 2.1, this argument of the appellants does not appear to be relevant.

In any case, since the appellants during the oral proceedings no longer based their arguments against Claim 1 upon document D5, the board sees no reason to decide this issue.

4. *Claim 30 (main request)*

4.1 The subject-matter of Claim 30 defines a method of connecting teat cups to the teats of the udder of an animal which method is essentially based on the idea of associating to each pair of teats a defined sensor position, from which the sensor means can start the searching procedure (scanning) for each teat of the corresponding pair of teats. This idea is reflected by the feature that

(a) in a first phase, the movable member (with the sensor means) is brought into **a first position in which the sensor means determine the position of a first pair of teats**, after which the sensor means are brought into **a second position in which the sensor means determine the position of a second pair of teats**.

This feature - read in the context of Claim 30 and in particular with the feature that the movable member is provided on the robot arm portion carrying the teat cups and is movable relative to this robot arm end portion - implies that the robot arm is firstly brought into **a starting position under the animal**. In this starting position, the movable member is in its first position and the sensor means are at a certain distance from the first pair of teats. The searching procedure

for the teats of the first pair starts from this first position of the movable member. When the position of each teat of the first pair has been determined, the movable member is brought into its second position. The searching procedure for the teats of the second pair starts from this second position of the movable member.

4.2 Document D7, which was considered by the appellants as representing the closest prior art with respect to Claim 30, discloses a method of connecting teat cups 1 to 4 to the teats of the udder of an animal, in which method the position of the teats is determined with the aid of sensor means 12 and a robot arm end portion (carrier 9) comprising teat cups 1 to 4 is moved to such a position that the teat cups can be connected to the teat by an upward movement. The sensor means 12 can be considered as being arranged on a movable member provided on the robot arm end portion 9 and movable relative to this portion, i.e. pivotable in the directions X and Y. In order to connect the teat cups to the teats of the udder, the robot arm end portion (carrier 9) is brought into **a starting position under the udder of the animal**. Then, the pivotable sensor means 12, which can assume a plurality of scanning positions under the udder of the animal, scans a spatial region under the udder of the animal in a pre-determined sequence so as to determine the position of all teats of the udder. Subsequently, each of the teats cups is moved to a position wherein the teat cups can be connected to the teats by means of the upward movements of the teat cups.

4.2.1 Thus, the subject-matter of Claim 30 is distinguished from the method according to document D7 not only by the above mentioned feature (a) but also by the following features:

(b) the determined positions of the teats **are compared with data regarding the position of the teats from an animal recognition data source**;

(c) the robot arm end is moved **by means of cylinders**.

4.2.2 With respect to features (b) and (c) the appellants argued that these features are known from document D5 and that their incorporation in the method according to document D7 would be obvious for the skilled person.

With respect to feature (a) the appellants asserted that this feature is implicitly disclosed in document D7. The appellants argued that the sensor 12, when scanning the region under the udder of the animal, would firstly detect a first pair of teats and then a second one. When detecting first and second pairs of teats the pivotable member carrying the sensor 12 would be in two different angular positions (relative to the direction x).

Thus, the subject-matter of Claim 30 would be distinguished from the method according to document D7 only by features (b) and (c) without involving any inventive step.

The board cannot accept this argument of the appellants because it is based on an ex post facto analysis of document D7. This document does not teach the idea of associating to each pair of teats a defined sensor position from which the sensor means can start the scanning procedure for the teats of the relevant pair. In the system according to document D7 the sensor 12 is brought in a position from which starts the scanning procedure for all teats of the udder.

4.3 Having regard to the above comments, feature a) constitutes an essential difference between the claimed subject-matter and the prior art according to document D7.

This feature results in avoiding or minimizing the risk that during the detection procedure of the teats a teat of the second pair is obscured by the teats of the first pair when the robot arm does not approach the udder of the animal from the lower side (for instance by an approach from the front side). Moreover, this feature allows the position of the teats of each pairs to be measured under the same circumstances, with the same accuracy and with the same data processing method.

4.3.1 Document D5 discloses (see particularly column 17, lines 42 to 51; Figure 1 and 2) a method of connecting teat cups to the teats of the udder of an animal in which, with the aid of sensor means 75, the position of the teats is determined and a robot arm end portion carrying two teat cups 80 is moved by means of a cylinder 64 to such a position that the teat cups 80 can be connected to the teats by a substantially upward movement of the relevant teat cup, the sensor means 75 being arranged on the robot arm end portion. In a first phase of this method, the robot arm end portion is brought into a first position in which the sensor means 75 determine the position of the front teats, which position corresponds to the data known of the relevant animal. In a second phase, with the aid of the same sensor means, each of the two teat cups is moved to a position whereat the teat cup can be connected to the relevant teat.

As far as the remaining teats are concerned, document D5 suggests either "to provide the end of the robot arm 7 with four teat cup carriers which are operable in the above-described manner" or to apply the remaining teat cups "from a different direction, e.g. from the rear side".

Thus, document D5 neither suggests associating to each pair of teats a defined sensor position, from which the sensor means can start the searching procedure (scanning) for each teat of the corresponding pair of teats nor discloses feature (a).

4.4 Therefore, the arguments brought forward by the appellants do not permit the subject-matter of Claim 30 to be considered as being obvious.

4.5 Having regard to the above comments, the board finds that the subject-matter of the independent Claim 30 involves an inventive step as required by Article 56 EPC.

5. *Claim 1 (main request)*

5.1 During the oral proceedings the appellants only challenged the novelty of the subject-matter of Claim 1 with respect to document D7.

The appellants asserted that document D7 discloses an implement for milking an animal provided not only with the features specified in the pre-characterising portion of Claim 1 but also with the characterising features. In particular the appellants pointed out that in the implement according to document D7 the sensor means 12 are arranged on a movable member pivotable in the directions X and Y and argued that this pivotable member can be considered as "displaceable along the

robot arm end portion in the longitudinal direction thereof relative to the teat cups into at least two defined sensor active positions during the time that the teat cups are still carried by the robot arm end portion".

The board cannot accept this argument of the appellants because it is based on an incorrect interpretation of the expression "displaceable in the longitudinal direction of the robot arm end portion", as specified in Claim 1. Having regard to the comments in the above section 2.1, it has to be considered that the movable member defined in Claim 1 has, as a whole, a translatory movement along the robot arm end portion. This distinguishes the claimed subject-matter from the implement disclosed in document D7, in which the "movable member" is pivotally connected to the robot arm portion. Therefore, the subject-matter of Claim 1 is novel.

5.2 During the oral proceedings the inventive step of the subject-matter of Claim 1 was not challenged by the appellants. In any case, with respect to this issue, the board sees no reasons for deviating from the decision under appeal.

6. Therefore the patent can be maintained on the basis of the independent Claims 1 and 30 and of dependent Claims 2 to 29, which concern particular embodiments of the invention defined in Claim 1.

7. Since the patent can therefore be maintained according to main request of the respondent, the respondent's subsidiary requests does not need to be considered.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

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

Claims: 1 to 29 as maintained by the Opposition Division.

30 as filed during the present oral proceedings.

Description: page 2 (columns 1 and 2) as maintained by the Opposition Division, pages 3 and 5 to 9 (columns 3, 4 and 7 to 16) as granted, page 4 (columns 5 and 6 as filed with letters dated 1 September 1998).

Figures: 1 to 11 as granted.

The Registrar: The Chairman:

N. Maslin C. Andries