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**D E C I S I O N**  
**of 3 June 1998**

**Case Number:** T 0365/96 - 3.2.4

**Application Number:** 88201585.2

**Publication Number:** 0300582

**IPC:** A01J 7/00

**Language of the proceedings:** EN

**Title of invention:**

An implement for and a method of milking an animal

**Patentee:**

MAASLAND N.V.

**Opponent:**

PROLION B.V.

**Headword:**

Milking/MAASLAND

**Relevant legal provisions:**

EPC Art. 54, 56

**Keyword:**

"Inventive step (yes)"

**Decisions cited:**

T 0271/84

**Catchword:**



Case Number: T 0365/96 - 3.2.4

**D E C I S I O N**  
of the Technical Board of Appeal 3.2.4  
of 3 June 1998

**Appellant:** PROLION B.V.  
(Opponent) Kromme Spieringweg 289B  
NL-2141 BS Vijfhuizen (NL)

**Representative:** Hoorweg, Petrus Nicolas  
Arnold & Siedsma  
Advocaten en Octrooigemachtigden  
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**Respondent:** MAASLAND N.V.  
(Proprietor of the patent) Weverskade 10  
NL-3155 PD Maasland (NL)

**Representative:** Mulder, Herman  
Octrooibureau Van der Lely N.V.  
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NL-3155 PD Maasland (NL)

**Decision under appeal:** Interlocutory decision of the Opposition Division  
of the European Patent Office posted  
28 February 1996 concerning maintenance of  
European patent No. 0 300 582 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. On 24 April 1996 the appellants (opponents) filed an appeal against the decision of the opposition division dispatched on 28 February 1996 to maintain European patent No. 0 300 582 in amended form. The appeal fee was paid simultaneously, and the statement of grounds of appeal was received on 25 June 1996.

II. With the statements of grounds of appeal the appellant introduced six new documents into the proceedings ie:

(D7) EP-A-0 270 165

(D8) EP-A-0 213 660

(D9) EP-A-0 232 568

(D10) US-A-4 010 714

(D11) NL-A-8 503 580

(D12) NL-A-8 502 434

Based on these documents the appellant essentially argued as follows: The subject-matter of claim 1 was not novel with respect to document D7 when considering the contents of documents D8 and D9 as incorporated therein (Article 54 EPC). Nor was this subject-matter inventive with respect to documents D8 and D10 (Article 56 EPC). Also the subject-matter of claim 27 was not novel with respect to the above indicated combination of documents D7 to D9. Further, the subject-matter of claim 27 was not inventive with respect to documents D10 and D11/D12.

III. In a communication dispatched 26 August 1997 the board

stated its provisional opinion that, on the basis of the newly introduced documents D7 to D12 and having respect to the arguments put forward by the appellants in the statement of grounds, the subject-matter of claims 1 and 27 seemed to be patentable.

IV. In their reply the appellants furthermore argued that the subject-matter of claim 27 was not inventive when considered by a skilled person in the light of document D8.

V. Oral proceedings were held on 3 June 1998. During these proceedings the respondents (proprietors) filed a new version of claim 27, the sole difference vis-à-vis the granted claim 27 being the substitution of the word '*whereafter*' by the word '*while*' (col. 18, line 27 of the patent). The respondents also filed an amended version of the patent description columns 5 and 6, the amendment amounting to the text from col. 5, line 40 ('in which...') to col. 6, line 10 (...thereunder') being substituted by the wording '*according to claim 27*'.

During the oral proceedings the appellants essentially argued that the subject-matter of claims 1 and 27 did not involve an inventive step in consideration of document D8 and the general knowledge of a skilled person.

The respondents contested the arguments of the appellants.

VI. Claim 1 on file reads as follows:

"An implement for milking an animal, for example a cow, which implement includes a milking parlour where the animal can be present in a substantially predetermined position and a robot arm (7) carrying teat cups (80) near its end, which robot arm (7) is provided with a substantially vertical first pivot pin (55) around which the end of the robot arm (7) is capable of pivoting in a substantially horizontal plane, which robot arm (7) is furthermore pivotable about a substantially vertical second pivot pin (46) which is located outside the milking parlour, or near the wall thereof, and approximately in the region of the animal's udder or still further to the rear, characterized in that the robot arm approaches the animal's udder substantially from the front side, whereby the first pivot pin can be positioned between the animal's legs, the end of the robot arm being movable relative to the milking parlour substantially in the longitudinal direction by changing its distance to said first pivot pin, the said robot arm (7) being connected via the second pivot pin (46) to a frame (6, 37) which is movable relative to the milking parlour in the longitudinal direction, while the implement is furthermore provided with means (86 to 91) for individually applying each teat cup (80) to a teat by means of a substantially upward movement of the relevant teat cup (80)."

VII. Claim 27 as now on file reads as follows:

"A method of milking an animal, for example a cow, whereby the animal is guided to the milking parlour and is recognized therein by means of an animal recognition system, whereafter a robot arm (7) assumes a previously determined starting position, characterised in that when the animal is present in the milking parlour the robot arm (7) is pivoted into the space under the animal's udder, the udder being approached from the frontside, while the robot arm (7) is simultaneously moved forwardly until a sensor device (5) comes to bear against the rear side of the animal, by means of which sensor device (5) the robot arm (7) can be moved such in the longitudinal direction that, when the animal moves in the longitudinal direction, the robot arm (7) is thereby maintained in approximately the same position thereunder, whereby a sensor (77) coupled to the robot arm (7) roughly establishes the presence and/or the position of one or more teats by scanning a horizontal disc-shaped portion of space or part thereof, and whereafter, when one or more teats are not detected in the desired manner, the robot arm (7) is adjusted to a higher or to a different position until one or more teats are detected in a desired position, whereafter, optionally after the robot arm (7) has been moved closer to the teats, the sensor (77) orients itself to the position of one teat, whereafter the relevant teat cup (80) is moved to under that teat, during which action the sensor (77) continues to detect the teat, whereafter in a known way, the teat cup (80) is moved upwardly and a vacuum is produced in the teat cup (80)."

VIII. **Requests**

The appellants' request is for the decision under appeal to be set aside and for the European patent No. 0 300 582 to be revoked.

The respondents' **main request** is for the decision under appeal to be set aside and for the patent to be maintained on the basis of the following documents:

Claims:            Claim 1 as maintained by the opposition division.

                    Claims 2 to 26, 28 and 29 as granted.

                    Claim 27 as filed during the oral proceedings.

Description:        Columns 1 and 2 as filed with letter dated 9 October 1997.

                    Columns 5 and 6 as filed during the oral proceedings.

                    Columns 3, 4 and 7 to 14 as granted.

Drawings:            Figures 1 to 9 as granted.

The respondents' **auxiliary request**, in case the board were to consider the newly introduced documents as relevant, is for the case be remitted to the first instance for further prosecution.

**Reasons for the decision**

1. The appeal is admissible.

2. *Preliminary remarks*

2.1 With respect to the newly filed documents D7 to D12 the board notes the following: Documents D7 and D9 are documents pursuant to Article 54(3) and (4) EPC, meaning that they are only relevant in considering novelty under Article 54 EPC. Documents D8 and D9 are both identified and explicitly referred to in document D7 (see col. 6, line 41). Documents D11 and 12 are the priority documents of documents D9 and D8, respectively.

2.2 The board further notes that in the statement of grounds of appeal the appellants did not rely on any of the previous documents on file, namely documents D1 to D6, but solely made explicit references to the above documents D7 to D12. Since also during the oral proceedings, the appellants did not refer to any of documents D1 to D6, the board sees no reason to further consider any of these documents.

2.3 With respect to the fact that the decision under appeal on its cover page is indicated to concern the rejection of the opposition under Article 102(2) EPC, the board wants to confirm, in agreement with the parties, that, due to its content, the decision has to be considered as an interlocutory decision under Article 102(3) EPC.

3. *Amendments*



3.1 The amendment to claim 27, see section V above, finds a basis in the originally filed description page 12, line 18 (col. 6, line 3 in the patent) and thus does not entail infringement of Article 123(2) EPC. The wording of the granted claim 27, when including the term 'whereafter', incurred lack of clarity, not only logically when read in the context of the claimed method step sequence, but also when read in conjunction with the associated portion of the description, see column 5, line 58 to column 6, line 10 and column 13, line 27 to column 14, line 22. It was apparent that the information given in the description was not in conformity with the wording of claim 27 and that a contradiction existed. In these circumstances, an amendment of a granted claim to remove such inconsistency does not contravene Article 123(3) EPC, see T 271/84 (OJ EPO 1987, 405).

3.2 The amendment to the description columns 5 and 6 merely amounts to substituting a specific listing of the individual features of claim 27 with a general reference to the subject-matter thereof. This does not infringe Article 123 EPC.

3.3 Also the amendments made before the opposition division were found to meet the requirements of Article 123 EPC. This was not contested by the appellants and the board therefore sees no reason to comment any further on this aspect.

4. *Novelty*

In the communication dated 26 August 1997 the board expressed the preliminary opinion that the newly introduced documents D7 to D12 were not prejudicial to the novelty of the claimed subject-matter. Since the appellants in their reply to this communication did not address the issue of novelty, the board sees no reason to reconsider its preliminary opinion in this respect.

Moreover, the alleged lack of novelty of each of claims 1 and 27 with respect to document D7, as raised by the appellants in the statement of grounds of appeal, was not pursued during the oral proceedings. Nor were any other objections against the novelty under Article 54 EPC of these claims voiced. Hence, the subject-matter of claims 1 and 27 is novel within the meaning of Article 54 EPC.

5. *Inventive step*

5.1 Claim 1 - the appellants' observations

The appellants were of the opinion that the figure 4 embodiment of document D8 represented the most pertinent prior art and essentially argued that the distinguishing features of disputed claim 1 over this prior disclosure amounted to no more than trivial or obvious features to a skilled person.

More specifically, the appellants stated that although the frontal approach as such was not explicitly mentioned in document D8, it was nonetheless implied to such an extent here as to be obvious to the skilled person. The rationale for this conclusion followed from the sheer **necessity** of employing precisely this approach since this would be the only viable way of easily accessing the udder and teats of a cow when making use of a robot operating from **one lateral side** of a milking parlour.

The appellants further argued that the robot according to D8 did include two vertical pivot pins; the first such pin being the one located at the distal end of the mobile member 5 in figure 4 and the second such 'pin' being the depending, cylindrical portion of the robot 27 to which the mobile member 5 was connected. Moreover, in the appellants' view, the first pin would always occupy a vertical position.

It was acknowledged by the appellants that document D8 did not disclose a movable frame, and that the figure 4 embodiment did not employ individual teat cup application. These differences were however seen as technical particularities whose inclusion merely represented the skilled person's choice between a number of obvious, technical alternatives the technical effects of these moreover being well-known.

The appellants also stated that in the practice the alleged problem of a cow kicking the teat cup carrying arm of a milking robot does not exist, and that

therefore the subject-matter of claim 1 does not even solve a (true) problem.

5.2 Claim 1 - the respondents' observations

The respondents refuted the above argumentation of the appellants and maintained that document EP-A-0 188 303 (D2) represented the closest prior art - as also recognised in the patent. It was acknowledged that the frontal approach could be considered the normal one when the aim was to upset the animal as little as possible. The true problem at issue here was the final fine adjustment necessary to carry out teat cup application in a reliable and efficient manner (this also involving avoiding inadvertent contact with the legs of an animal). With the solution according to document D8 any adjustment of the teat cup carrier to locate a given cup immediately below a teat would necessitate movement of the **whole** robot arm 5. By making only the distal end of the robot arm according to disputed claim 1 movable relative to the milking parlour substantially in the longitudinal direction by means of the ability to change its distance to said first pivot pin is obtained that longitudinal adjustment only involves movement of **a part** of the robot arm and (substantially) only in one direction. This movement pattern is much easier to control and carry out than the composite movement implied by document D8.

5.3 Claim 1 - the board's observations

5.3.1 Concerning the closest prior art, the board sees no reason to consider the figure 4 embodiment of document D8 as more relevant than the figure 6/7 embodiment of document D2. Although a number of features of disputed claim 1 might be seen as implied by said embodiment of document D8 such features have not been explicitly disclosed and thus cannot be said to have been fairly suggested. More particularly, the board does not share the opinion of the appellants that the alleged first pivot pin equivalent of document D8 (figure 4) at the distal end of the arm 5 remains vertical at all times. Indeed, in figure 2 the mobile member or arm 5 (which is the same arm as shown in figure 4) is clearly indicated by arrows to be rotatable about its longitudinal axis and movable up and down in a vertical plane, see also page 4, lines 5 and 6. A vertical pivot pin at the end of the robot arm 5 is however neither described, nor unequivocally clearly shown on the drawings. Due to the apparent lack of freedom of movement of this alleged pivot pin equivalent **in relation to** arm 5, combined with the use of horizontal pivot pins (see figure 1), implementation of any of these indicated movements would therefore be bound to result in a non-vertical orientation of said alleged first pivot pin equivalent of arm 5. In the opinion of the board document D8 thus does not disclose a device with **two** vertical pivot pins in the meaning of the disputed subject-matter.

5.3.2 Document D8 discloses an implement for milking a cow, which implement includes a milking parlour where the animal can be present in a substantially predetermined

position and a robot arm 5 carrying teat cups 1 near its end (figure 4), which robot arm is provided with a first, horizontal pivot pin around which the robot arm is capable of pivoting, which robot arm is furthermore pivotable about a second, substantially vertical pivot pin which is located outside the milking parlour (figure 1) and in the longitudinal direction approximately in the region of the animal's udder, the robot arm being suitable for approaching the animal's udder substantially from the front side.

5.3.3 The subject-matter of claim 1 differs from the milking implement according to document D8 *inter alia* in that

- (a) - the end of the robot arm is movable relative to the milking parlour substantially in the longitudinal direction by changing its distance to a first, vertical pivot which is positionable between the animal's legs, and
- (b) - the robot arm is connected via said second, vertical pivot pin to a frame which is movable relative to the milking parlour in the longitudinal direction.

5.3.4 As to the movable frame (according to the above feature b) and its inclusion in disputed claim 1 the following is noted. It is clear from claim 1 that the robot arm is connected to the movable frame. It is also clear from the description of the patent, col. 13, lines 27-38, where also the linking of the sensor device 5 to the frame is mentioned, what purpose this

linkage serves; it sees to that "...the robot arm 7 always remains in approximately the same position relative to the animal." The additional feature of employing a movable frame to which the robot arm is attached hence results in more than a mere additional effect. More specifically, it is **due to this feature** that the stated object of minimising the risk of a cow kicking the robot arm is attained (col. 1, lines 19-23 and 37-38). When the robot arm follows a frame that again follows any lengthwise movement of the cow this results in a minimisation of the **overall risk** of such contact due to the fact that the (preselected) distance between the transverse portion of the robot arm and the cow's legs (front **or** hind) **remains constant** when the cow moves. That this distance can be maintained constant, ie can be **maximised** at all times, follows directly from the ability of the end of the robot arm to move longitudinally with respect to the first pivot pin, because adjustment with respect to the udder involves no movement of the lateral portion of the robot arm with respect to the frame. Thus, also the above-mentioned feature (a) contributes to minimising the risk of a cow inadvertently kicking the milking implement.

It is noted that such an overall minimisation of the risk of contact between a cow's leg and the milking device is not possible with the solution disclosed in document D8. Due to the fixed position of the robot proper, the distance between the straight robot arm and **either** the front **or** the hind leg of the cow **varies** as the cow moves back and forth in the parlour. Such

movement may therefore bring the arm critically close to a leg and thus increase the risk of a collision therewith.

- 5.3.5 On the issue of the different movement patterns relied upon by the devices of disputed claim 1 and document D8, respectively, when seeking to compensate for or follow movement of the cow during teat cup application, the board does not agree with the appellants that these patterns are comparable.

Due to the stationary position of the robot according to D8, this robot moreover representing the ultimate center of rotation of arm 5, any **lengthwise** adjustment of the distal end of arm 5 (to follow the movement of the cow) would have to be a **composite movement** involving not only rotation of the arm about an assumed vertical pivot axis on said robot proper but also adjustment of the arm's effective length (possibly via rotation about one or more horizontal axes). Such adjustment is likely to be more difficult to carry out sufficiently swiftly and precisely than the adjustment movement relied on by the device according to claim 1. As indicated above adjustment of the disputed implement not only involves movement of less mass, it also involves a less complex movement pattern.

- 5.3.6 Having regard to the above comments a skilled person would not be guided by the prior art as represented by document D8 towards the solution of claim 1. Also document D11 cannot be seen as guiding a skilled person towards this solution.



5.4 Claim 27 - the appellants' observations

The appellants also considered document D8 as being the closest prior art in relation to disputed claim 27. In the appellants' opinion the only difference of essence between disputed claims 1 and 27 - except for claim 27 being a method claim - resided in the now explicitly mentioned presence of the sensor device 5. This sensor 5 is stated to come '*to bear*' against the rear of the animal and assists in governing the robot arm 7 so as to maintain it in approximately the same position under the cow. The appellants argued that such a mechanical sensor was no more than a technical equivalent of the contact-less sensor of document D8; in both cases the sensor had decisive influence on the robot arm's positioning under the animal, and in both cases the aim was to maintain the robot arm in a constant position under the cow.

Concerning the other sensor explicitly mentioned in claim 27, ie the sensor 77, this was seen by the appellants as clearly anticipated by the detector member 19 (see figure 2) of document D8. In the appellants' opinion, both sensors served to scan a part of space with a view to establishing the position of a teat and governing a teat cup to and around the same for subsequent application thereto.

5.5 Claim 27 - the respondents observations

The respondents contested the appellants' above view

and explained that the sensor 77 according to disputed claim 27 entailed the ability to perform a true **search** for a teat whereas this could not be the case with the sensor of document D8; here the sensor device 9 would only be able to **confirm** the (expected) presence of a teat **within** the detector ring 19. According to the respondents the robot arm of their invention with the sensor 77 is first positioned (centrally) below the animal, on the front side of the udder and at an appropriate height, ie at the height **level** where the teats are expected to be located based on previously stored data for the animal in question. If, against expectation, no teat is detected here then the arm with the sensor is moved to a '*higher or a different position until one or more teats are detected*' in the words of claim 27. Hence, a true search is carried out. In the respondents' understanding this work pattern was totally different from the one of document D8.

The respondents also pointed to another difference between the operating schemes of the invention and document D8. It was noted that whereas the two detector or sensor systems according to their claimed invention work **simultaneously** and thus supplement each other this is not the case with the two sensor systems of document D8 where the teat cup application step involves only one of the sensor systems **at a time**.

5.6 Claim 27 - the board's observations

5.6.1 Document D8 discloses a method of milking a cow, wherein the animal is guided to a milking parlour and recognised therein by means of an animal recognition system; wherein a robot arm 5 is pivoted into the space under the animal's udder to assume a previously determined starting position; wherein a first sensor device 13 detects the rear of the cow and assists in moving the robot arm such in the longitudinal direction that the robot arm is maintained in approximately the same position under the animal; wherein a second sensor 19 (figure 2) coupled to the end of the robot arm 5 roughly establishes the presence of one teat by scanning a horizontal disc-shaped portion of space or part thereof, and wherein said second sensor 19 orients itself to the position of said one teat, whereafter a teat cup 7 is moved to directly under that teat, during which action the sensor 19 continues to detect the teat, and the teat cup is moved upwardly and a vacuum is produced in the teat cup.

5.6.2 The subject-matter of claim 27 differs from the method according to document D8 *inter alia* in that

- (a1) - the udder is not approached from the frontside in the sense of the patent in suit,
- (b1) - no movable frame is present, meaning that the robot arm is not simultaneously moved forward (ie with the frame) until a mechanical sensor

comes to physically bear against the rear of the animal,

- (c1) - no search in the normal sense of this term is carried out, meaning that none of the method steps relating to such search is disclosed, ie when a teat is not detected the robot arm is not adjusted to a higher or to a different position until one or more teats are detected, if need be after the robot arm has been moved closer to the teats.

5.6.3 In document D8 (the embodiment depicted in figure 2) the robot arm 5 with the sensor ring 19 is brought to a position where a teat is **expected** to be located within said ring 19. This part of the procedure takes place under the continuous control of the sensors 13 detecting the rear of the animal, see page 7, lines 22-24. When the presence of a teat has been confirmed the input signals controlling the arm's movements are **shifted** from those of the sensors 13 to those of the detector ring 19. These signals are thereafter in charge of the fine adjustment of the arm's movements to position the teat cup **centrally** below the teat and subsequently to move the teat cup upwards for attachment to the teat, see page 7, line 24 to page 8, line 5. During this phase the arm follows the teats movements as detected solely by detector ring 19, see page 7, lines 26-29. The board notes, that whereas the above stated methodology is more or less directly confirmed by the description page 2, lines 29-34; page 3, lines 19-21; page 4, lines 21-31

and page 5, line 23 of document D8, this document remains wholly silent on how to proceed in case the presence of a teat within ring 19 is **not** confirmed. In the absence of further information in this essential respect, it may even be assumed that such failure would lead to an interruption of the teat cup application procedure and a (time-consuming) re-initiation of the same. In any circumstances, the board finds no hint in document D8 to the effect that a search in the sense of the disputed method should or could be carried out in case the expected presence of a teat is not confirmed.

5.6.4 Having regard to these differences the skilled person would not on the basis of his average knowledge in combination with the disclosure of document D8 be guided towards the solution of claim 27.

5.7 The board notes that during the oral proceedings the appellants did not pursue their previously advanced arguments for lack of inventive step of claim 27 due to the combination of documents D8 and D10. This is taken to indicate that the appellants now consider this possibility as less relevant vis-à-vis claim 27. Since this corresponds to the opinion of the board it sees no reason to comment further on this aspect.

## 6. *Conclusion*

In conclusion, and based on all of the above, the board finds that each of disputed claims 1 and 27 as now on file meets the requirements of Articles 54 and 56 EPC.

**Order**

**For these reasons it is decided:**

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 (first part: Column 14, lines 44 to 58  
                  as filed with letter dated 9 October  
                  1997; second part: Column 15, lines 1 to  
                  15 as granted).  
                  2 to 26, 28 and 29 as granted.  
                  27 as filed during the oral proceedings.

Description:      Columns 1 and 2 as filed with letter  
                  dated 9 October 1997.  
                  Columns 3, 4 and 7 to 14 as granted.  
                  Columns 5 and 6 as filed during the oral  
                  proceedings.

Drawings:         Figures 1 to 9 as granted.

The Registrar:

The Chairman:

N. Maslin

C. Andries