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**D E C I S I O N**  
**of 21 February 2002**

**Case Number:** T 1083/99 - 3.2.4

**Application Number:** 92203013.5

**Publication Number:** 0535754

**IPC:** A01J 7/00

**Language of the proceedings:** EN

**Title of invention:**

An implement for milking animals and a method of after-treating the teats of a milked animal

**Patentee:**

MAASLAND N.V.

**Opponent:**

DeLaval International AB

**Headword:**

After-treating/MAASLAND

**Relevant legal provisions:**

EPC Art. 54, 56, 100(a), 100(b)

**Keyword:**

"Sufficient disclosure (yes)"  
"Novelty (yes)"  
"Inventive step (yes)"

**Decisions cited:**

T 0409/91, T 0435/91, T 0694/92

**Catchword:**

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Case Number: T 1083/99 - 3.2.4

**D E C I S I O N**  
**of the Technical Board of Appeal 3.2.4**  
**of 21 February 2002**

**Appellant:** DeLaval International AB  
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**Decision under appeal:** Decision of the Opposition Division of the  
European Patent Office posted 18 October 1999  
rejecting the opposition filed against European  
patent No. 0 535 754 pursuant to Article 102(2)  
EPC.

**Composition of the Board:**

**Chairman:** C. A. J. Andries  
**Members:** P. Petti  
C. Holtz

## Summary of Facts and Submissions

- I. The European patent No. 535 754 results from the European patent application No. 92 203 013.5 filed on 1 October 1992 and claiming the priorities of the Dutch Patent applications NL-9101676 of 4 October 1991 and NL-9200258 of 13 February 1992.

The independent Claims 1 and 11 of the patent as granted read as follows:

- "1. An implement for milking animals, such as cows, automatically, comprising an automatically operable cleaning member (84) for the cleaning of the teats of an animal before milking, a milking robot (8) with an arm (45) for the connecting of teat cups (53; 54) to the teats of the animal and successively milking of the animal and disconnecting the teat cups (53; 54) from the teats of the animal, characterized in that the implement further comprises an automatically operable after-treating device (105) for after-treating the udder and/or the teats of a milked animal included in the robot arm (45).
11. A method of after-treating the teats of a milked animal in an implement for the automatic milking of animals, which implement includes a milking robot with an arm (45) for the connecting and disconnecting of the teat cups from the animal's teat and wherein after the animal has been milked, the teat cups are disconnected from the animal's teats and automatically an after-treating liquid is sprayed from said arm (45) against the udder and/or the teats."

II. An opposition filed against this patent, based upon Articles 100(a) and (b) EPC, was rejected by the decision of the opposition division dispatched on 18 October 1999.

The decision of the opposition division refers *inter alia* to an article entitled "*Robot cluster application tests are imminent*", in "*Dairy Exporter*", November 1983, page 5 (document D2), to an article entitled "*Back to the future*", in "*Dairy Farmer*", May 1986, pages 44, 46 and 47 (document D3), to an article entitled "*Parlour robot draws nearer*", in "*Farmers weekly*", July 10, 1987, page 36 (document D4), to a brochure of Alfa-Laval (Nr. 10257-E1, 1974), entitled "*Fight mastitis - it pays!*" (document D8), to an article by B. Gooding entitled "*Teat spraying automated*", in "*NZ Farmer*", July 8, 1976 (document D9) and to documents EP-A-323 444 (D5) and EP-A-207 572 (D6).

The documents EP-A-423 922 (D10), US-A-4 716 032 (D11), US-A-4 548 807 (D12) and the English translation of document PL-B-129 649 (D13), which were filed after the expiry of the opposition period, were not taken into consideration in the decision of the opposition division, having been considered as being irrelevant for the decision to be taken.

III. The opponent (hereinafter appellant) lodged an appeal against this decision on 17 December 1999 and paid the appeal fee on 21 December 1999. A statement setting out the grounds of appeal was received on 23 February 2000.

IV. With the statement setting out the grounds of appeal the appellant filed the new documents GB-A-2 192 351

(D14), US-A-4 561 592 (D15), US-A-4 498 414 (D16), US-A-4 484 120 (D17) and an article from the New York Times of 27 December 1981, entitled "*Japan looks to major gains in use of robots*" (document D18).

- V. In the statement setting out the grounds of appeal, the appellant argued that the priority date of the Dutch application No. 9101676 should not be accorded to the patent in suit.

With a communication dispatched on 11 February 2002 the board informed the parties that no document published between the claimed priority dates and the filing date of the patent in suit had been submitted by the appellant and that, therefore, the issue whether the patent in suit is entitled to the claimed priorities would be irrelevant for the findings of a decision in the present case.

- VI. Oral proceedings were held on 21 February 2002.

During the oral proceedings the respondent submitted amended claims upon which seven subsidiary requests were based.

- VII. With regard to Article 100(b) EPC, the appellant argued that the patent as granted does not describe the invention in a manner sufficiently clear and complete for it to be carried out over the full scope of the claims, and in particular over the full scope of Claim 1 in so far as it refers to the expression "after-treating device" without indicating the nature of the treatment. Moreover, the appellant argued that the patent does not provide sufficient disclosure to allow the invention to be carried out in so far as

Claim 1 requires that the robot arm is suitable for disconnecting the teat cups from the teats of the animal.

With respect to Article 100(a) EPC, the appellant argued that the subject-matter of Claim 11 of the patent as granted is not novel with regard to each of documents D13 and D2 to D5 and that the subject-matter of Claim 1 is not novel with regard to document D5.

The appellant also argued that the claimed subject-matter, if it were to be considered as being novel, would not involve an inventive step. With regard to Claim 1, the appellant argued that the skilled person starting from the prior art known from Document D5 would arrive in an obvious way at the claimed subject-matter by combining the prior art known from document D5 either with the teaching of each of documents D13, D6, D14, D2, D3 and D4 or with his (her) general knowledge. With regard to Claim 11, the appellant argued that the skilled person would arrive at the claimed subject-matter not only starting from the method known from document D5 having regard to the information content of each of documents D2, D3, D4, D8, D9, D13 and D14 but also starting from document D13 having regard to document D5.

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

As a main request the respondent requested that the appeal be dismissed. Auxiliarily, the respondent requested that the documents D10 to D18 should not be admitted into the appeal proceedings or that the case be remitted to the first instance for further

prosecution if any of the documents D14 to D18 were to preclude the maintenance of the patent as granted. Furthermore, the respondent requested the maintenance of the patent on the basis of the claims of one of the seven subsidiary requests filed during the oral proceedings.

### **Reasons for the Decision**

1. The appeal is admissible.
  
2. *The subject-matter of Claims 1 and 11 of the patent as granted*
  - 2.1 Claim 1 is directed to an implement for milking animals, such as cows, automatically, comprising the following features:
    - (A) the implement comprises a cleaning member,
      - (A1) the cleaning member is automatically operable,
      - (A2) the cleaning member is suitable for cleaning the teats of an animal,
        - (A21) the cleaning member is suitable for being operated before milking;
    - (B) the implement comprises a milking robot,
      - (B1) the robot is provided with an arm,
        - (B11) the arm is suitable for connecting teat cups to the teats of the animal,

- (B12) the arm is suitable for successive milking of the animal,
- (B13) the arm is suitable for disconnecting the teat cups from the teats of the animal;
- (C) the implement comprises an after-treating device which is suitable for after-treating the udder and/or the teats of a milked animal,
- (C1) the after-treating device is automatically operable,
- (C2) the after-treating device is included in the robot arm.

2.1.1 Claim 1 refers to an "automatically operable after-treating device (105) for after-treating the udder and/or the teats" (features C and C1) and to an "automatically operable cleaning member (84) for the cleaning of the teats of an animal before milking" (features A, A1, A2 and A21).

It is clear from the wording of Claim 1 that the "after-treating device" is distinguished from the "cleaning member". In other words, the cleaning member and the after-treating device are to be understood as being two separate physical entities, each performing its own function and each having its own structure. The first entity (the cleaning member) is suitable for being operated before milking, while the second one (after-treating device) is suitable for being operated after milking. In these respects, it has to be noted that - according to Claim 1 - both entities are "automatically operable" and are parts of an implement



for automatically milking animals. Thus, each entity has to be understood not only as being suitable for achieving the respective purpose structurally and functionally but also as being operated in accordance to a predetermined program permitting each entity to perform its respective function at the due time.

- 2.1.2 The expression "after-treating device" does not explicitly indicate the kind of the treatment. However, it is clear to a person skilled in the art that the treatment is at least in relationship to the normal daily milking procedure of the animal, because for example at the end of the milking the teat ducts are still open and it has to be prevented that dirt particles enter the teat ducts.

The introductory part of the description of the patent refers to an "after-treating" device (see column 1, lines 21 to 23) and makes it clear that by means of this device "an after-treating liquid can be sprayed against the udder of the animal". Moreover, the remaining parts of the description refer systematically to a device including a spraying nozzle spraying a liquid against the udder in order to disinfect it and/or the teats. Thus, it is clear that the treatment is linked to the end of the normal milking procedure and that it involves the obviously known treatments which normally occur after milking.

This expression also has a well recognised meaning in the technical field of milking systems. Document D13 refers for example to known methods of post-milking disinfecting the teats consisting either in immersing the teats in a solution of a disinfectant or in spraying a disinfectant on the teats (see page 2, 1st

paragraph). Moreover, according to document D8 the teats can be dipped in or sprayed with a disinfectant after milking.

It has to be noted that according to the respondent the purpose of the treatment is to disinfect and/or protect the teats after milking and can be performed either by spraying a liquid or by dipping or wiping the teats or by applying a jelly to the udder.

- 2.1.3 Features B1 to B13 and C2 refer to a robot arm. The robot arm has to be construed as being a structural element of a milking robot, ie being a part of the robot which supports a device which is attached or linked to the arm and which has to be brought to a specific place, where the device has to fulfill its purpose. This structural element is not only suitable for connecting and disconnecting the teat cups to the teats but is also provided with the teat cups since it is defined as being suitable "for milking the animal" (see feature B12). In other words, the robot arm brings the teat cups to their working position, so that connecting, milking and disconnecting can take place.

This interpretation is consistent with the description and the drawings of the patent which refer to a robot arm construction 31 and to a robot arm 46 which is provided with the teat cups, the robot arm having a carrier plane "on which the teat cups 53 rest" (column 7, lines 53 and 54), the teat cups being connected to the teats by means of computer-controlled operating cylinders which control the movement of said robot arm (see particularly column 6, lines 8 to 22 as well as Figures 1, 2 and 7). In this respect, it has to be understood that the teat cups are disconnected by

means of the same computer-controlled operating cylinders controlling the robot arm movement which are also operated for connecting them.

- 2.1.4 According to feature C2, the "after-treating device" is "included in the robot arm" (emphasis added).

The expression "included in the robot arm" has to be construed having regard to the description and drawings of the patent.

According to Figure 7 and to the description of the patent (column 7, lines 51 to 57) the spraying nozzle 108, which is an essential element of the after-treating device in so far as it ensures the spraying (ie the treatment after milking), is arranged within the robot arm 45. In other words, feature C2 defines an after-treating device whose essential component is integrated in the structure of the robot arm.

- 2.1.5 According to feature C1 the after-treating device is "automatically operable". This feature has to be construed in the context of the remaining features of Claim 1, in particular of the heading of the claim which refers to an automatic milking implement and of features A1, B and B1 which define a robotic system. Thus, this feature has to be understood as defining a fully automatic operation of the after-treating device.

This interpretation is also consistent with the description of the patent (column 1, lines 41 to 43 and column 8, lines 8 to 34) which refers to an after-milking treatment made without the intermediary of man.

2.2 Claim 11 is directed to a method of after-treating the teats of a milked animal in an implement for automatic milking of animals,

(B) the implement comprising a milking robot,

(B1) the robot being provided with an arm,

(B11) the arm being suitable for connecting teat cups to the teats of the animal,

(B13) the arm being suitable for disconnecting the teat cups from the teats of the animal;

wherein after the animal has been milked

(D) the teat cups are disconnected from the animal's teats,

(E) an after-treating liquid is automatically sprayed against the udder and/or the teats,

(E1) the after-treating liquid is sprayed from the robot arm.

2.2.1 Claim 11, has to be understood as defining a method of after-treating the teats of a milked animal, the method not only comprising the method steps D, E and E1 but also the use of an implement for the automatic milking of animals which is provided with features B, B1, B11 and B13.

2.2.2 According to feature E1, the after-treating liquid is "sprayed from the arm" (emphasis added). Also this feature has to be construed having regard to the

description and drawings of the patent.

Having regard to the comments in the section 2.1.4 above, the means for spraying the after-treating liquid are arranged within the structure of the robot arm. Thus, this feature has to be construed as defining the spraying of a liquid which is performed directly from the arm.

This interpretation is also consistent with the part of the description of the patent describing the operation of the after-treating device (column 8, lines 8 to 34), which part makes it clear that the robot arm as a part of a robotic system has a guiding function for the performance of the spraying.

2.2.3 With respect to the expression "automatically sprayed" in feature E, it has to be noted that the heading of Claim 11 defines the use of an automatic milking implement and refers to a milking robot. Thus, this feature has to be understood as defining a fully automatic after-milking treatment.

3. *Concerning the priority dates of the patent in suit*

With the communication dispatched on 11 February 2002 the board expressed the opinion that this issue is not relevant for the findings of a decision in the present case (see section V above). The appellant did not reply to this opinion. Therefore, there is no need to deal with this objection of the appellant once again.

4. *Article 100(b) EPC*

4.1 The description of the patent (see column 7, line 21 to

column 8, line 34) refers to an after-treating device and describes a single embodiment according to which the after-treating device comprises *inter alia* a sprayer incorporated in the structure of the robot arm, the sprayer being suitable for spraying a liquid against the udder of the animal. Thus, the description of the patent provides sufficient information to put into practice the invention as claimed in Claim 1 in so far as it relates to an after-milking spraying device.

It has to be understood that the term "after-treating device" represents a generalisation of what is disclosed in this part of the description of the patent. Moreover, having regard to the comments in section 2.1.2 above, the expression "after-treating device" has a well recognised meaning in the technical field of milking systems.

- 4.1.1 The appellant argued that the description of a single embodiment, which relates to a spraying device, is not sufficient to enable the invention defined in Claim 1 to be put into practice over the full scope of Claim 1 which covers all kinds of after-treating devices. In this respects the appellant asserted that the after-treating device can also be a device for applying an antiseptic cream or a device for treating a damaged teat by surgery and that the patent does not teach either how to apply a cream or how to surgically repair a damaged teat.

The board does not accept the argument that the term "after-treating device" can also cover a device for performing a surgical treatment of a damaged teat, because a surgical treatment of a teat has no link with the daily milking routine procedures (see the comments

in section 2.1.2 above). In this respect, the respondent explicitly stated during the oral proceedings that a surgical treatment of the teats is not covered by Claim 1. As to a treatment consisting in the application of a cream, the board does not exclude that Claim 1 can also cover a device for applying a cream after milking. However, these issues are not decisive in order to decide whether the opposition ground specified in Article 100(b) EPC prejudices the maintenance of the patent.

The objection raised by the appellant concerns the broadness of the claim. The expression "after-treating device" is open to a general interpretation and the broadness of this expression was objected to by the appellant in conjunction with reproducibility of the disclosure. It has to be noted that generally the disclosure must be reproducible without undue burden.

In a case concerning an opposition against a granted patent, the relevant burden of proof for such an allegation is carried by the opponent/appellant. In the present case, no evidence has been submitted by the appellant allowing a conclusion to be reached that a skilled person cannot reproduce without undue burden a normal after-treating device as defined in Claim 1 over its whole scope.

- 4.1.2 In the statement of the appeal grounds, the appellant referred to the decisions T 409/91, T 435/91 and T 694/92 and asserted that these decisions endorse the principle that the disclosure must be sufficient to enable the invention to be put into practice over the full scope of the claims.

The invention referred to in the decision T 409/91, as claimed in Claim 1 of the related patent, concerned a class of fuel oil compositions characterised by a common feature, ie by the presence of wax crystals under a certain size under certain conditions. The case of T 409/91 was "comparable to cases where a group of chemical compounds is claimed, and not all of the claimed compounds can be prepared by the methods disclosed in the description", whereby the description of the application discloses "only one possibility of obtaining the desired particle sizes" (see sections 3.4 and 3.5). Moreover, according to this decision, the appellant (applicant) admitted during the oral proceedings "that he was not aware of any common general knowledge which might have enabled the skilled person to find further ways for obtaining fuel oils having the claimed particle size" (see section 3.4).

The invention referred to in the decision T 435/91 also concerned a chemical composition characterised in the claims by a compound, ie an additive, defined only by its function, ie by the result to be achieved, whereby the description only referred to specific compounds ("hydrotopes") as producing the desired result. According to this decision, the patent proprietor "had admitted during the oral proceedings that it was not possible to identify, on the basis of the information contained in the patent specification and taking account of the common general knowledge, other compounds than those specifically mentioned, ie 'hydrotopes', which could reasonably be expected to bring about the desired effect" (see section 2.2.1).

The invention referred to in the decision T 694/92, as claimed in Claim 1 of the main request, concerned a



method for genetically modifying a plant cell comprising the steps of "inserting a plant gene comprising a plant promoter and a plant structural gene into T-DNA" and "transferring the T-DNA/plant gene combination into a plant cell, such that expression of the protein encoded by said plant structural gene is detectable in said plant cell" (see section III; emphasis added). In other words, the method defined by this claim was characterised by an effect to be achieved. According to this decision, the patent specification "did not make it plausible that the same effect would be obtained routinely in any plant cell by operating in an analogous manner with any combination of any plant structural gene with any plant promoter" and "the feature 'such that...' in claim 1 is seen as being not more than an invitation to perform a research programme in order to find the combinations which, if successful, are stated by the claim to fall under its scope", whereby later publications showed "that the transfer of foreign DNA via T-DNA into some classes of plants, eg monocotyledonous plants, as well as the expression of the transferred gene under its own signals, were largely empirical and thus involved a large amount of trial and error with a high risk of failure" (see section 18).

Thus, in these three decisions, the respective boards, on the basis of the available evidence or on the basis of assertions of the applicant or of the proprietor of the patent, could establish that the skilled person, on the basis of the disclosure of the patent, could not reproduce the claimed invention without undue burden over its whole scope.

Having regard to the above comments, the decisions

mentioned by the appellant are not comparable with the present case in which no evidence supporting the allegations of an insufficient disclosure is available.

Therefore, in the present case, a decision with regard to this issue must be taken to the detriment of the appellant who carries the burden of proof.

- 4.2 The appellant also argued that the description of the patent does not sufficiently disclose how the teat cups are disconnected from the teats (see section VII, 1st paragraph, 2nd sentence).

The board cannot accept this argument of the appellant because the description of the patent contains a clear disclosure of how the teat cups are applied to the teats (see particularly column 6, lines 8 to 22) and the skilled person reading the patent will immediately realize that the same means for connecting the teat cups to the teats can be used to disconnect them from the teats.

- 4.3 Therefore, the opposition ground referred to in Article 100(b) EPC does not prejudice the maintenance of the patent in suit.

5. *Concerning the evidence submitted by the appellant*

- 5.1 Documents D10 to D13 were not admitted into the proceedings by the opposition division.

With respect to documents D10 to D12, the board shares the opinion of the first instance according to which these documents are not relevant. In any case, their introduction into the proceedings would not lead to a

different decision with respect to the main request of the respondent, since they do not provide the board with information which was not already present. Therefore, these documents are not admitted into the proceedings.

- 5.2 Documents D14 to D18 were filed with the statements setting out the grounds of appeal.

Documents D15 to D18 relate to the common general knowledge in the field of industrial robots. These documents are not relevant because the board has no doubts that it is known in this particular technical field firstly to provide a spraying device (in particular for spraying paint) on a robot arm and secondly to move the robot arm in such a manner that the spraying device is brought to a specific place where it has to fulfill its purpose. In any case, the introduction of these documents into the proceedings would not lead to a different decision with respect to the main request of the respondent. Therefore, these documents are not admitted into the proceedings.

- 5.3 Document D5 discloses an implement for milking animals, automatically, comprising a milking machine provided with a support 26 (consisting of a piston rod provided at its free end with an U-shaped element), a milking cluster 18 (provided with teat cups 29) and an automatically operable cleaning means (in the form of a bowl-shaped basin 31); the support 26 being suitable for connecting the milking cluster to the udder of the animal, for successively milking of the animal and for disconnecting the milking cluster from the udder of the animal; the milking cluster 18 and the cleaning means being integral parts of each other (see Claim 1) and

being mounted on the U-shaped element of the support 26 (by means of an horizontal hinge pin 30). According to column 5, lines 25 to 28, the cleaning means (ie the bowl-shaped basin) is suitable for performing a treatment of the udder, the treatment consisting in spraying a liquid against the udder "for washing, rinsing, disinfecting or otherwise cleaning the udder". Moreover, according to column 5, lines 33 to 39, a computer can control the device, the control relating to "connecting and disconnecting of the cluster, rinsing, cleaning or disinfecting the udder, ... etc".

This document is silent as to the time when the treatment of the udder is performed. In any case, the document does not indicate that the treatment has to be performed after milking. In this respect it has to be noted that a treatment of the udder (in order to either clean or disinfect or wash or rinse it) is an usual operation to be performed before milking and that a post-milking treatment without pre-milking treatment has no technical sense. Therefore, in the absence of any information as to the time when the treatment is performed, it has to be assumed that the document D5 relates to a pre-milking treatment of the udder.

- 5.4 Document D2 does not clearly disclose any practical, directly usable implement for milking animals. This document, which dates from November 1983, refers to the practical testing of a robot cluster application which was not yet carried out but was expected to take place in the future according to some declarations of the firm Ardco. The document also describes some general functions which could have been "achieved in the near future", *inter alia* the cleaning of the udder, the application of the cluster, the removal of the cluster,

the post-milking inspection, and particularly the udder spraying.

Document D2 refers to a "robot cluster application system for milking sheds" (see page 5, left-hand column, lines 1 to 3) and to udder spraying as a post-milking operation. Moreover, having regard to the text on the top-left part of the drawing, it can be assumed that document D2 discloses "an advanced robot arm which places teat cups on cows automatically". However, it cannot unequivocally be derived from this document that the post-milking spraying is carried out by using the same robot arm which connects the teat cups to the teats.

- 5.5 Document D3 refers to the developments of milking robots in May 1986 and describes the operations which could be performed by milking robots. It is understood that this document is based upon an interview with Mike Street, electronics engineer searching on milking robots. In particular, it is mentioned on the first page (see right-hand column) that an "automatic milking unit ... in sequence would wash, and prepare the udder, attach the cluster, milk, remove the cluster, disinfect and release the cow".

This document does not disclose a specific device and does not make it clear that a robot has to be provided with a cleaning device and with an after-treating device which is included in the robot arm of the milking robot. It has to be noted that document D3 refers to a "stall unit, complete with dedicated micro-computer and robotic arms" (see right-hand column, emphasis added) without making it clear that the post-milking disinfecting operation is carried out by the

same robotic arm which attaches the cluster.

- 5.6 Document D4 also refers to an interview with research leader Mike Street and describes the developments of an automatic milking unit. This document refers to "a robotic arm that will do the washing, disinfecting and milking operation". However, it does not make it clear that the disinfecting operation is made after the milking operation.
- 5.7 Document D13 discloses an automatic apparatus for individual removal of the teat cups when the milking process has been completed.

This apparatus comprises an assembly (25) controlling four teat cups, wherein the assembly, which is suitable for disconnecting the teat cups from the teats of the animal, includes a disinfecting (ie an after-treating) device for disinfecting the teats of a milked animal, the spraying operation being carried out automatically after milking.

It can be assumed that document D13 implicitly discloses a method of after-treating the teats of a milked animal in an implement for milking animals, the implement including a milking unit, a robot being provided with a support assembly which is suitable for disconnecting the teat cups from the teats of the animal, wherein after the animal has been milked the teat cups are disconnected from the animal's teats and an after-treating liquid is automatically sprayed against the teats from the support assembly.

- 5.8 Document D6 discloses an implement for milking animals, such as cows, automatically, comprising a milking robot

provided with a support 32 slidable along a guide rod 31 which is mounted to a flap 6, the support being suitable for connecting of teat cups to the teats of the animal, successively milking the animal and disconnecting the teat cups from the teats of the animal. Moreover, each teat cup is associated to a cleaning device 16 which is automatically operable and suitable for cleaning the teats of an animal before milking.

According to the passage on page 13 of document D6, after the milking operation has been completed the support 31 is moved downwardly along the guide rod 31 (to disconnect the teat cups from the teats), so that the flap 31 can be swivelled, "after which the animal can leave the milking parlour".

6. *Novelty (main request)*

6.1 During the oral proceedings the appellant argued that the subject-matter of Claim 1 is not novel with respect to document D5 and that the subject-matter of Claim 11 is not novel with respect to each of documents D13, D2, D3, D4 and D5.

During the written phase of the proceedings the appellant contested the novelty of the subject-matter of Claims 1 and 11 also with respect to each of document D2, D3, D4, D5 and D6.

6.1.1 Since document D5 (see section 5.3 above) does not disclose an after-milking treatment of the udder, at least feature C (in Claim 1) and feature E (in Claim 11) cannot be derived from this document.

6.1.2 Having regard to the comments in section 5.7 above, document D13 does not disclose either a method comprising the use of a robot arm for connecting the teat cups or an implement connecting automatically the teat cups to the teats (feature B11 in Claims 1 and 11).

6.1.3 Having regard to the comments in section 5.4 above, neither feature C2 (in Claim 1) nor feature E1 (in Claim 11) can be derived from document D2.

The appellant's argument that the skilled person reading document D2 will immediately recognise that the spraying is carried out by using the same robot arm referred to in the text of the drawing cannot be accepted, because document D2 does not contain any indication for this interpretation. It has to be noted that this document refers not only to the post-milking spraying but also to other functions to be achieved by a robotic system. Among these functions there is for instance the identification of the animal which can easily be made by using a transponder which has no link with the robot arm whatsoever.

6.1.4 Having regard to the comments in section 5.5 above, document D3 does not disclose features C2 (Claim 1) and E1 (Claim 11).

6.1.5 Having regard to the comments in section 5.6 above, document D4 does not disclose an after-milking treatment of the teats (feature C in Claim 1 and feature E in Claim 11).

The appellant's argument that the skilled person would immediately recognize that a disinfecting operation as



referred to in the second column (from the left) of document D4 can only be understood as a post-milking treatment cannot be accepted. In this respect, it has to be noted that document D4 does not suggest this interpretation and that the prior art indicates that disinfecting can be carried out both before and after milking (see for instance document D8, last sheet, which suggests the use of the same sanitizer (Dipal 1) for the "post-milking teat dip" and for the "pre-milking udder wash").

6.1.6 Having regard to the comments in section 5.8, document D6 does not disclose any post-milking treatment of the udder.

6.2 Therefore, the subject-matter of Claims 1 and 11 is novel (Article 54 EPC) with respect to the cited prior art.

7. *Inventive step (Claim 1 as granted)*

7.1 The closest prior art with respect to Claim 1 is the implement disclosed in document D5.

Document D5 discloses all the features of the pre-characterising portion of Claim 1. With regard to the comparative analysis of document D5 relative to Claim 1, it has to be noted that the meanings of the expressions "milking machine" and "support for connecting ... and for disconnecting the milking cluster" referred to in section 5.3 above have to be considered as being identical respectively with the meanings of the expressions "milking robot" and of "robot arm" as specified in Claim 1.

7.1.1 With respect to document D5, the appellant asserted that the bowl-shaped basin 31 is an integral part of the arm structure 26. In other words, the appellant argued that the support 26 (consisting of the piston rod and the U-shaped element) and the bowl-shaped basin 31 constitute a structural unity, which is identical with the robot arm according to Claim 1. This argument is clearly based upon an *ex-post facto* interpretation of the prior art, because document D5 makes it clear that there is a structural unity comprising the bowl-shaped basin 31 and the milking cluster 18 (see Claim 1) and that this structural unity is supported by the support 26 which only comprises the piston rod and the U-shaped element. Therefore, the board cannot accept this interpretation of document D5. Furthermore, solely the support 26 corresponds - due to its function and its structure - to an equivalent for the robot arm. Indeed, the support 26 is not only supporting the working elements (ie the milking cluster and the cleaning means) but is also moving these working elements towards the place where they fulfill their functions (milking and cleaning, respectively).

7.2 Having regard to the comments in section 5.3 above, the subject-matter of Claim 1 differs from the closest prior art by features C, C1 and C2.

Feature C and C1 result in providing an automatic milking implement which is capable of automatically performing an after-milking treatment of the teats and/or the udder of the animal. Therefore, a first technical problem to be solved is to improve the automatic milking implement known from document D5 with regard to hygiene without the intermediary of man.

Feature C2, which relates to how the after-treating device is arranged with respect to the implement, results in providing a milking robot which is particularly compact. Therefore, a second problem is to improve the compactness of the implement.

- 7.3 With respect to features C and C1, it has to be noted that many prior art documents (see the above sections 5.4, 5.5 and 5.7) indicate the need for a post-milking treatment of the udder or teats and suggest the use of an after-treating device in an automatic milking system.

In particular, document D3 suggests that the disinfecting operation has to be carried out automatically after milking. Furthermore document D14 (page 2, lines 118 to 122) suggests the use of a sprayer which is a part of an automatic milking arrangement and which is controlled to spray the teats before and/or after milking. Moreover, document D13 indicates the need of post-milking teat disinfection (see page 2, 1st paragraph) and suggests the arrangement of four post-milking disinfection sub-assemblies on the support of a milking cluster whose teat cups can be automatically removed from the teats of the milked animal (see Figures), each disinfecting sub-assembly comprising a sprayer, the spraying operation of the disinfecting sub-assemblies being operated automatically after milking.

Thus, having regard to either document D3 or document D14 or document D13, it would be obvious for the skilled person - when confronted with the first technical problem to be solved - to provide the milking implement according to document D5 with an

automatically operated after-treating device as defined in features C and C1. Therefore, these features do not contribute to the inventive step of the claimed solution.

7.4 With respect to feature C2, it has to be noted that none of the documents cited by the appellant suggests that the after-treating device is included in the robot arm (ie in the same robot arm which connects the teats cups to the teats), holds them during milking and disconnects them from the teats (see sections 2.1.3 and 2.1.4 above).

7.4.1 It has to be noted that document D13 refers to an apparatus for automatic individual removal of the teat cups (the teat cups being manually fitted on the teats by the herdsman) and discloses an after-treating device consisting of four post-milking disinfection sub-assemblies mounted on the support of a milking cluster (assembly 25) to which the teat cups are connected by means of milk pipes. The support of the milking cluster (assembly 25) does not perform the functions of a robot arm. Indeed, the assembly 25 is rather the working device which has to be brought either by the herdsman or by a robot arm to the place where this working device has to fulfill its function. Each of the four sub-assemblies of the assembly 25 comprises a sprayer 24 mounted on an adjustable pipe 43, the four pipes 43 being connected to a common collector externally mounted on the support of the milking cluster, the collector being connected to a disinfectant supply line provided with a control valve 47. Even if the skilled person reading document D13 were to consider the support of the milking cluster as being equivalent to a robot arm, he (or she) would not derive from this

document either the information that the after-treating device is included in the structure of the robot arm or the teaching that the disinfecting liquid is sprayed directly from the support of the milking cluster. Therefore, the application of the teaching of this document to the implement known from document D5 would not result in an implement provided with feature C2.

7.4.2 Having regard to the comments in section 5.8 above, document D6 does not disclose either a post-milking treatment or a cleaning device included in a robot arm. Thus, the content of documents D5 and D6 would not lead the skilled person to the subject-matter of Claim 1.

With respect to the combination of these documents, the appellant relied upon a different interpretation of document D5 by arguing as follows:

- (i) The skilled person would immediately realize that the bowl-shaped basin of the implement known from D5 can be used for after-milking and that this basin as a part of the robot arm carrying the teat cups is provided with nozzles which are included in it.
- (ii) The subject-matter of Claim 1 would differ therefrom by features A, A1, A2 and A21 which concern the separate pre-milking cleaning member.
- (iii) In order to solve a problem relating to hygiene of the teats before milking, the skilled person would turn to document D6 which suggests features A to A21, apply these features to the implement known from D5 (considered as being

already provided with an after-treating device) and arrive at the claimed subject-matter.

The board cannot accept these arguments because - having regard to the comments in section 5.3 above (2nd paragraph) - they are based upon an non-realistic interpretation of document D5.

- 7.4.3 Document D14 discloses features C and C1 but not feature C2. It is clear from this document that the spraying device - as is normally the case - is mounted at the end and on the arm which will bring the spraying device to the location where it fulfills its function. According to the passage on page 2, lines 122 to 124, "the sprayer can be swung into place on an arm ...". However, the arm referred to in this passage is not described as being a robot arm carrying already teat cups or as including the sprayer within it.

With respect to feature C2, the appellant argued that the skilled person would immediately think to use the same arm which carries the teat cups. This argument is also based on an *ex-post facto* interpretation of the document, because this document only refers to an "automatic milking arrangement" without referring to a robot arm carrying the teat cups.

- 7.4.4 According to the appellant, it is common general knowledge in the field of industrial robots to provide a liquid spraying device on a robot arm and it would be obvious for the skilled person to provide the implement known from document D5 with a spraying device as defined by feature C2.

It can be accepted that robot arms provided with a

device for spraying a liquid are generally known. However, this does not mean that a spraying device included in a robot arm which also performs other functions is generally known.

Furthermore, the skilled person when confronted with the problem of arranging an after-treating spraying device on the robot arm, would not be compulsorily led to feature C2. It is clear from the available prior art that other solutions are possible, e.g. to use separate nozzles mounted on the floor of the milkroom (see document D9) or to use nozzles mounted on (and not in) a support (see document D13).

7.5 Having regard to the comments in sections 5.4, 5.5 and 5.6 above, documents D2, D3, D4 are less relevant than documents D13 and D14. None of these documents suggests feature C2.

7.6 In the written phase of the proceedings the appellant also argued that the subject-matter of Claim 1 would be obvious using the disclosure of each of documents D2, D3, D4 and D6 but did not refer any longer to these arguments during the oral proceedings.

Having regard to the comments in section 7.4 above, these arguments are not relevant for the findings of the present decision.

7.7 Therefore, it would not be obvious for a skilled person starting from the prior art known from document D5 to arrive at the subject-matter of Claim 1.

8. *Inventive step (Claim 11 as granted)*

8.1 Document D5 also discloses a method of automatically milking cows using an implement provided with features B, B1, B11 and B13, the method comprising the method-feature D. The method according to Claim 11 differs from this prior art in that it concerns a method of after-treating the teats of a milked animal according to features E and E1.

8.1.1 Feature E results in using an automatic milking implement which is capable of performing an after-milking spraying treatment of the teats and/or the udder of the animal. Therefore, a first technical problem to be solved is to improve the milking method according to document D5 with regard to hygiene without the intermediary of man.

Feature E1 relates to the spatial relationship between the robot arm and the teats of the animal during spraying and results in providing the possibility of using a milking robot which is particularly compact. Therefore, a second problem is to improve the compactness of the implement used when the method is carried out.

8.1.2 Having regard to the comments in section 7.3 above, it would be obvious for the skilled person to modify the method according to document D5 so as to arrive at a method of after-treating the teats of a animal in which after the animal has been milked an after-treating liquid is sprayed as defined by feature E. Thus, this feature does not contribute to the inventive step of the claimed solution.

8.1.3 Having regard to the comments in sections 7.4.1 to 7.4.4, none of the cited documents discloses feature E1



or suggests the idea of arranging a spraying means in such a way that the after-treating liquid is sprayed directly from the support 26 of the milking implement according to document D5.

8.1.4 Starting from document D5, the appellant essentially argued as follows:

- (i) In the implement according to document D5, the sprayers for spraying a cleaning liquid against the udder are included in the bowl-shaped basin 31, this basin being an integral part of the support, so that the cleaning liquid is directly sprayed from the arm (ie from the support) carrying the teat cups.
- (ii) The subject-matter of Claim 11 would be distinguished by the prior art method known from document D5 only by feature E, this feature being obvious having regard to document D13 or D14.

The board cannot accept this argument because it is based upon an *ex-post facto* interpretation of document D5 with regard to the support carrying the teat cups (see the comments in section 7.1.1 above).

8.2 Starting from document D13, the appellant essentially argued as follows:

- (i) The skilled person would derive from document D13 a general teaching of a method of after-treating the teats of a milked animal comprising all the method-features of Claim 11, ie features D, E and E1. This known method would also be

based upon the use of an apparatus provided with a milking cluster which is suitable for disconnecting the teat cups from the teats of the animal (feature B13).

(ii) The method according to Claim 11 would differ from this prior art only in that it is based upon the use of a milking robot provided with an arm which is suitable for connecting the teat cups to the teats of the animal (features B, B1 and B11).

(iii) The technical problem to be solved would consist in adapting this general method to a method involving the automatic application of the teat cups. In order to solve this problem, the skilled person would turn to document D5 which discloses a robot arm which is suitable for connecting teat cups to the teats of an animal and in which spraying nozzles are incorporated in the robot arm structure so that a cleaning liquid is automatically sprayed from the robot arm against the udder of the animal. Thus, it would be obvious for the skilled person to arrive at the method according to Claim 11.

The board cannot accept this argument for the following reasons:

(i) Document D13 explicitly discloses a specific apparatus for automatically disconnecting the teat cups from the teats of the animal (see section 5.7 above) provided with an assembly for spraying an after-treating liquid against the teats. This document implicitly discloses a

method of after-treating the teats of a milked animal which is based upon the use of said specific apparatus. Thus, the skilled person starting from document D13 has to perform a first step in order to realize that document D13 discloses a general method which can be applied in different circumstances.

- (ii) According to document D13, the sprayers 24 are mounted on adjustable pipes 43. It is understood from this document that the pipes - when the teat cups are manually put onto the teats of the animal - have to be manually adjusted in a particular position in order to adapt them to the position of the teats. In other words, the after-milking treatment is not completely automatic as defined in Claim 11 (see section 2.2.3 above).
- (iii) Having regard to the comments in sections 2.2.2, 7.4.1 and 8.1.3 above, neither document D13 nor document D5 discloses an apparatus in which the after-treating liquid is sprayed directly from the robot arm. Thus, even if the skilled person were to combine these disclosures, he (she) would not arrive at the claimed subject-matter.

8.3 Therefore, it would not be obvious for a skilled person starting from the prior art known from document D5 or from document D13 to arrive at the subject-matter of Claim 11.

8.4 In the written phase of the proceedings the appellant also argued that the subject-matter of Claim 11 would be obvious using the disclosure of each of documents

D2, D3, D4 and D6 but did not refer any longer to these arguments during the oral proceedings. Having regard to the comments in section 8.1.3 above, these arguments are not relevant for the finding of the present decision.

9. Having regard to the cited prior art, the subject-matter of Claims 1 and 11 is not obvious to a person skilled in the art.
10. Therefore, the opposition grounds according to Article 100(a) EPC do not prejudice the maintenance of the patent unamended.
11. Since the patent can be maintained as granted, there is no need to deal with the subsidiary requests of the respondent.

## **Order**

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

The appeal is dismissed.

The Registrar:

The Chairman:

G. Magouliotis

C. Andries