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**D E C I S I O N**  
**of 17 November 2003**

**Case Number:** T 0121/01 - 3.2.4

**Application Number:** 92202244.7

**Publication Number:** 0511722

**IPC:** A01J 7/00

**Language of the proceedings:** EN

**Title of invention:**

A milking plant

**Patentee:**

MAASLAND N.V.

**Opponent:**

DeLaval International AB

**Headword:**

Circular line/MAASLAND

**Relevant legal provisions:**

EPC Art. 100(a)

**Keyword:**

"Inventive step (yes)"

**Decisions cited:**

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**Catchword:**

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Case Number: T 0121/01 - 3.2.4

**D E C I S I O N**  
of the Technical Board of Appeal 3.2.4  
of 17 November 2003

**Appellant:** DeLaval International AB  
(Opponent) P.O. Box 39  
S-147 21 Tumba (SE)

**Representative:** Hasselgren, Erik Joakim  
Kransell & Wennborg AB  
P.O. Box 27834  
Oxenstiernsgatan 31  
S-115 93 Stockholm (SE)

**Respondent:** MAASLAND N.V.  
(Proprietor of the patent) Weverskade 10  
NL-3155 PD Maasland (NL)

**Representative:** Corten, Maurice Jean F.M.  
Octrooibureau Van der Lely N.V.  
Weverskade 10  
NL-3155 PD Maasland (DE)

**Decision under appeal:** Interlocutory decision of the Opposition  
Division of the European Patent Office posted  
21 November 2000 concerning maintenance of  
European patent No. 0511722 in amended form.

**Composition of the Board:**

**Chairman:** C. A. J. Andries  
**Members:** P. Petti  
M. K. S. Aúz Castro

## Summary of Facts and Submissions

I. An opposition based on Articles 100(a) and (c) EPC was filed against the European patent EP-B-0 511 722 which derives from the divisional application No. 92 202 244.7 of the European patent application No. 90 200 422.5, published as EP-A-385 539. The opposition division, with the decision dispatched on 21 November 2000, maintained the patent in an amended version based upon the independent Claim 1 filed on 17 November 1998, which reads as follows:

"1. A milking plant for milking cows, with a circular line (5) to which the discharge line (9) of a milking machine is connected, a milk tank (6) included in said circular line (5) and a pump (64) for circulating the milk from the milk tank (6) therethrough, characterized in that the milking plant comprises one or more milking machines for automatically milking cows, each comprising a discharge line (9) connected to said circular line (5) and being provided with a milking robot for automatically connecting teat cups to the teats of a cow and with a milk measuring device (4), and in that the milk tank (6) is constituted by a milk cooling tank and in that the pump (64) is provided for keeping the milk in motion in the circular line preventing milk residues from settling in the circular line."

II. On 18 January 2001 the opponent (hereinafter appellant) lodged an appeal against this decision and simultaneously paid the appeal fee. A statement setting out the grounds of appeal was received on 10 March 2001.

III. Oral proceedings were held on 17 November 2003.

During the oral proceedings the appellant requested that the appealed decision be set aside and the patent be revoked.

The arguments of the appellant, who based his request only upon Article 100(a) EPC (with regard to inventive step), can be summarized as follows:

- (a) The subject-matter of Claim 1 comprises a first group of features which relate to the milk line system (i.e. to a part of the milking plant which comprises the circular line, the pump and the milk tank) and a second group of features which relate to the milking system (i.e. to a further part of the milking plant which comprises *inter alia* the milking machine (or machines) and a discharge line), without there being any relationship between these two groups of features.
- (b) The terms in the characterising portion of Claim 1 according to which "the pump is provided for keeping the milk in motion in the circular line" define a pump which is suitable for circulating the milk in the circular line.
- (c) The closest prior art is reflected by document GB-A-1 465 516 (D1) which explicitly describes all the features of the first group and implicitly discloses a milking machine and a discharge line.

- (d) Milking machines for automatically milking cows either belong to the general technical knowledge of the skilled person on the priority date of the opposed patent or are disclosed in document EP-A-91 892 (D2).
  
- (e) It would be obvious for a skilled person, when confronted with the technical problem of how to feed freshly milked milk into the circular line of the milking plant described in document D1, to arrive at the claimed subject-matter either on the basis of his general knowledge or in view of the teaching of document D2.

IV. During the oral proceedings, the proprietor of the patent (hereinafter respondent) requested that the appeal be dismissed.

The respondent contested the arguments of the appellant essentially by arguing as follows:

- (a) The feature in the characterising portion of Claim 1 according to which "the pump is provided for keeping the milk in motion in the circular line preventing milk residues from settling in the circular line" defines a pump by means of which the milk contained in the milk tank is continuously (i.e. all the time) circulated from the tank through the circular line in order to prevent milking residues from settling in the circular line.

- (b) The cooling plant described in document D1 is not provided with the above mentioned feature in so far as it refers to a milk tank included in a circular line provided with a pump which does not circulate the milk from the tank through the circular line when freshly milked milk is fed into the tank.

### **Reasons for the decision**

1. The appeal is admissible.
2. *The claimed subject-matter*
  - 2.1 Claim 1 is directed to a milking plant for milking cows having the following features:
    - (A) the milking plant is provided with a circular line (5);
    - (E) the milking plant comprises a milking machine;
    - (E1) the milking machine comprises a discharge line (9)
    - (EA) the discharge line (9) is connected to the circular line;
    - (B) the milking plant is provided with a milk tank (6);
    - (BA) the milk tank is included in the circular line (5);
    - (C) the milking plant is provided with a pump (64);
    - (CA) the pump is suitable for circulating the milk from the milk tank through the circular line;
    - (E') the milking plant comprises one or more milking machines for automatically milking cows;

- (E'1) each milking machine for automatically milking cows comprises a discharge line (9);
- (E'A) the discharge line (9) of each milking machine for automatically milking cows is connected to the circular line (5);
- (E2) each milking machine for automatically milking cows is provided with a milking robot;
- (E21) the milking robot is suitable for automatically connecting teat cups to the teats of a cow;
- (E3) each milking machine for automatically milking cows is provided with a milk measuring device (4);
- (B1) the milk tank is constituted by a milk cooling tank;
- (CA1) the pump is provided for keeping the milk in motion in the circular line preventing milk residues from settling in the circular line.

2.2 Features A, B, BA, B1, C, CA and CA1 define the milk plant with respect to a first sub-unit which comprises the circular line, the pump and the milk tank, while features E, E1, E', E'1, E2, E21 and E3 define the milking plant with respect to a second sub-unit which comprises the milking machine (or machines) and a discharge line. Features EA and E'A relate to the connection between these sub-units of the milking plant.

2.3 Features E, E1, EA, E', E'1 and E'A have to be read in conjunction with each other. The "discharge line" of the milking machine (or of each of the milking machines) referred to in features E'1 and E'A is the same as the discharge line of the milking machine referred to in features E1 and EA.

According to features E', E'1 and E'A, the milking machine is (or the milking machines are) suitable "for **automatically milking** cows" (emphasis added). In other words, these features further specify the milking machine referred to in features E and E1 and make it clear that the transport of the freshly milked milk from the teat cups to the circular line is automatically controlled.

2.4 According to features E2 and E21, each milking machine is "provided with a milking robot for **automatically connecting teat cups** to the teats of a cow" (emphasis added). These features make it clear that the teat cups are automatically (i.e. without human intervention) connected to the teats by means of the milking robot.

2.5 According to features C and CA, a pump is included in the circular line, this pump being suitable for circulating the milk from the tank through the circular line. These features make it clear not only that the pump is arranged in the circular line but also that the pump is controlled so as to allow the milk to circulate from the tank through the circular line itself. It has to be noted that feature CA is included in the pre-characterising portion of Claim 1.

2.6 Feature CA1 refers to the pump as being "provided for keeping the milk in motion in the circular line" and makes it clear that the milk is kept in motion in order to prevent milk residues from settling in the circular line.



It is clear from the description (see particularly column 4, lines 21 to 42) and from the drawings (see Figures 2 and 3) of the patent that the freshly milked milk is discharged by means of compressed air from the measuring chamber 11 of a milk measuring device via the discharge lines 8 and 9 into the circular line 5 to the milk cooling tank 6, without there being any indication of an inter-relationship between the discharging of the freshly milked milk into the milk cooling tank and the circulation of the milk contained in the milk cooling tank.

Moreover, according to the portion of the description of the patent which refers to the Figure 2 (see column 7, lines 29 to 51), the pump has two operation modes. In the first operation mode, the pump is operated at relatively low speed from the tank through the circular line in order to keep the milk in motion in the circular line, while in the second operation mode the pump is operated at relatively high speed in order to circulate a rinsing fluid in the circular line when the tank and the circular line have to be rinsed (This information can also be derived from a sentence in the introductory portion of the description of the patent, according to which "as the milk ... only must be kept in motion, the pump may operate at two speeds, the milk being circulated at a relatively low speed ..."; see column 1, lines 53 to 57). Thus, the description of the patent refers to a pump which is operated to keep the milk in motion in the circular line to prevent milk residues from settling without defining any interruption of this first operating mode of the pump. In other words, the pump is operated each time when milk is or milk residues can be present in the circular

line, i.e. all the time except when the milk cooling tank and the circular line are rinsed.

Thus, feature CA1 in Claim 1 read in conjunction with the description and the drawings of the patent means that the pump is operated to keep the milk in motion in the circular line not only independently of the feeding of freshly milked milk into the milk cooling tank but also all the time when milk is present in the circular line.

This interpretation of feature CA1 is also consistent with the statements of the respondent according to which the pump referred in feature CA1 is operated in such a way that the milk is **continuously** circulated from the tank through the circular line (see the above section IV, point (a)).

This interpretation is also consistent with a passage in the description of the parent application as filed (EP-A-385 539, column 6, lines 30 to 38) according to which, because the pump keeps the milk in motion from the milk cooling tank through the circular line, there is no need for an additional means for keeping the milk in motion inside the milk tank itself.

2.6.1 In these respects the appellant essentially argued as follows:

- Since Claim 1 is directed to an apparatus, the terms in feature CA1 according to which "the pump is provided for keeping the milk in motion in the circular line" only define a pump which is suitable for keeping the milk in motion in the

circular line, i.e. suitable for circulating the milk through the circular line, without defining how or when the pump is operated.

2.6.2 The board cannot accept this argument for the following reasons:

- Feature CA1 which is contained in the characterising portion of Claim 1 defines the pump as being "provided for keeping the milk in motion ..." while feature CA, which is contained in the pre-characterising portion of the claim, refers to a pump suitable "for circulating the milk ...". Therefore, it has to be understood from Claim 1 that feature CA1 further specifies the pump with respect to feature CA.
- Feature CA1 refers to the operating mode of the pump and thus implicitly defines a pump (associated with a control means or an operating means) which is capable (due to its control or operating means) of being operated for keeping the milk in motion in the circular line. Therefore, feature CA1 defines (in a functional way) the pump as being provided with control means ensuring that the milk is kept in motion so as to prevent milk residues from settling in the circular line all the time when settling may occur.

### 3. *The prior art*

3.1 Document D1 discloses a **milk cooling plant** having the following features:

- the milk cooling plant is provided with a circular line which is constituted by the inner duct of a heat exchanger 3, a milk delivery outlet duct 4, an immersion pipe 5 which is connected to a storage tank 6, the connecting socket 9 of the storage tank 6, the suction pipe 12 of a pump 13 and the delivery pipe 14 of the pump 13;
- a milk inlet line , i.e. the "milk inlet duct 1", is connected to the circular line,
- the milk cooling plant is provided with a milk tank, i.e. the storage tank 6,
- the milk tank 6 is included in the circular line,
- the milk cooling plant is provided with the pump 13,
- the pump 13 is suitable for circulating the milk from the milk tank through the circular line,
- the heat exchanger 3 is included in the circular line.

Moreover, document D1 concerns a method of and a plant for cooling **freshly milked** milk. Due to the terms "freshly milked milk" and to the presence of the "milk inlet duct 1", it can be assumed that the milk cooling plant disclosed in document D1 is part of a **milking plant** comprising a plurality of milking means from which the "freshly milked milk" is conveyed to the "milk inlet duct 1".

It is clear from this document (see page 3, lines 29 to 49) that freshly milked milk is fed from the inlet duct 1 to the heat exchanger 3, is cooled during a first cooling stage to substantially 15°C in the heat exchanger and is collected in the milk tank 6 and that, if the fresh milk supply to the inlet duct 1 is interrupted, the pump 13 will start to operate so that a second cooling stage is initiated during which the milk contained in the milk tank is circulated in the circular line until the milk temperature in the milk tank drops to substantially 4°C. In other words, the pump 13 pumps the milk through the circular line for cooling purposes when no freshly milked milk is fed to the milk tank.

3.1.1 The appellant, referring to a passage of the description of document D1 according to which the second cooling stage can be re-started independently of the milk temperature in the milk tank so as to avoid sedimentation in the milk tank (see page 2, lines 48 56), argued that this document clearly discloses a milking plant in which a pump "is provided for keeping the milk in motion in the circular line preventing milk residues from settling in the circular line" and which is, therefore, provided with feature CA1.

Having regard to the comments in sections 2.5 and 2.6 above, the board cannot accept this argument. In this respect, it has to be noted that the passage referred to by the appellant, even if it includes the possibility of operating the pump for purposes other than cooling purposes, does not disclose a pump with a control means which can operate the pump independently

of the feeding of freshly milked milk into the milk cooling tank (i.e. even during the milking process) and all the times when milk is present in the circular line.

- 3.2 Document EP-A-91 892 (D2) describes three embodiments of a milking plant for milking cows comprising more milking units 7 (two milking units according to Figure 1, six according to Figures 2 and 3 and twelve according to Figure 4), each carrying a milking means 6 for automatically milking cows, and a milking robot 8 (common to all milking means 6) for automatically connecting the teat cups of each milking means 6 to the teats of a cow.

Moreover, in the description of document D2 (page 9, lines 20 to 24) it is indicated that means for automatic recording the milk quantity may be provided.

Having regard to the sentence on page 9, lines 6 to 8 , according to which "it is also possible to have one robot serve one stall", it can be assumed that this document discloses a milking plant for milking cows having the following features:

- the milking plant comprises one or more milking machines for automatically milking cows,
- each milking machine is provided with a milking robot,
- the milking robot is suitable for automatically connecting teat cups to the teats of a cow, and

- a milk recording device is provided.

4. *Inventive step*

4.1 Both parties considered document D1 as reflecting the closest prior art. This document does not contain any information concerning the type of milking machine employed for milking the cows. It is however clear that document D1 (see page 1, lines 42 to 48) relates to a milking plant in which the cows are milked twice a day, wherein at other times the milking circuit of the plant remains unused.

Having regard to the comments in section 3.1 above, the pump included in the circular line of the milking plant disclosed in document D1 is controlled in such a way that it cannot circulate the milk contained in the milk tank through the circular line when freshly milked milk is fed to the milk tank (see claim 1 of document D1). In other words, the circulation of the milk contained in the tank depends on whether (or not) freshly milked milk is discharged into the milking tank.

Having regard to the comments in section 2.6 above, feature CA1 has to be interpreted as defining a pump which is controlled so as to "keep in motion" the milk contained in the circular line, i.e. to permit a circulation of this milk which is independent of whether freshly milked milk is fed to the milk tank and which occurs all the times when milk is present in the circular line.

4.2 Therefore, the claimed subject-matter differs from the prior art disclosed in document D1 on the one hand by a group of features relating to the first sub-unit of the milking plant, i.e. by features E', E'1, E2, E21 and E3, and on the other hand by feature CA1.

The above mentioned features relating to the first sub-unit of the milking plant contribute to the solution of a first problem consisting in the increase of the automation level of the plant in so far as a milking plant is provided in which the teat cups are automatically connected to the teats of the cows and the transport of the milked milk is automatically controlled.

Feature CA1, which refers to the result to be obtained ("preventing milk residues from settling in the circular line"), contributes to the solution of a second problem. Since this feature can neither be derived from document D2 nor be considered as forming part of the general knowledge of the skilled person, the combination of the content of document D1 with either the content of document D2 or the general knowledge of the skilled person would not lead to the claimed subject-matter.

4.2.1 The argumentations submitted by the appellant in these respects (see section III above) cannot be accepted since they are based upon the assumption that feature CA1 is known from document D1.

4.3 Thus, having regard to the prior art referred to by the appellant, the subject-matter of Claim 1 is not obvious to a person skilled in the art.



5. Therefore, the ground for opposition mentioned in Article 100(a) EPC does not prejudice the maintenance of the patent as maintained by the opposition division.

## **Order**

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

The appeal is dismissed.

The Registrar:

The Chairman:

G. Magouliotis

C. Andries