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D E C I S I O N
of 8 December 1999

Case Number: T 0848/97 - 3.2.4

Application Number: 90200422.5

Publication Number: 0385539

IPC: A01J 7/00

Language of the proceedings: EN

Title of invention:

A milking plant

Patentee:

Maasland N.V.

Opponent:

Alfa Laval Agri AB

Headword:

Milking/MAASLAND

Relevant legal provisions:

EPC Art. 56

Keyword:

"Inventive step (yes)"

Decisions cited:

T 0363/94, T 0002/83

Catchword:

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Boards of Appeal

Chambres de recours

Case Number: T 0848/97 - 3.2.4

D E C I S I O N
of the Technical Board of Appeal 3.2.4
of 8 December 1999

Appellant: Alfa Laval Agri AB
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Decision under appeal: Interlocutory decision of the Opposition Division
of the European Patent Office posted 23 June 1997
concerning maintenance of European patent
No. 0 385 539 in amended form.

Composition of the Board:

Chairman: C. A. J. Andries
Members: P. Petti
R. E. Teschemacher

1. Summary of Facts and Submissions

- I. An opposition was filed against the European patent No. 385 539, which resulted from European patent application No. 90 200 422.5.

The opposition division by its interlocutory decision dispatched on 23 June 1997 held that the patent and the invention to which it relates met the requirements of the EPC in an amended form based upon Claim 1 filed with the letter dated 31 May 1996 (hereinafter referred to as the present Claim 1), which reads as follows:

- "1. A milking plant for milking cows, which plant comprises teat cups (2) that are connectable to respective teats of a cow's udder, while the milk obtained from each udder quarter with the aid of the said teat cups (2) is conveyed through a separate line (3) to a milk measuring device (4), said milk measuring device (4) includes four milk meters (7), whose separate discharge lines (8) are coupled to a common discharge line (9) terminating in a milk cooling tank (6), characterized in that each milk meter (7) includes a milk receptacle (10) which is subjected to a partial vacuum, a measuring chamber (11) which can be connected to a partial vacuum whereby the milk flows from the milk receptacle (10) into the measuring chamber (11), and in that compressed air supply means are provided, connected to the measuring chamber (11) and the measuring chamber (11) is provided with a valve and an aperture (20) for supplying compressed air from the compressed air supply means, this compressed air operates the valve

which disconnects the measuring chamber (11) from the milk receptacle after this measuring chamber (11) has been filled with a defined quantity of milk, the milk is pumped by this compressed air from the measuring chamber (11) into the relevant separate discharge line (8) and from the separate discharge line (8) into the common discharge line (9)."

- II. In its decision, the opposition division considered that the amendments to the patent were directly derivable from the application as originally filed (see section 1) and that the subject-matter of the present Claim 1 involved an inventive step having regard *inter alia* to documents EP-A-134 836 (D3) and DD-A-41 115 (D4).
- III. The opponent (hereinafter referred to as the appellant) lodged an appeal against this decision on 7 August 1997 and simultaneously paid the appeal fee. The statement setting out the grounds of appeal was filed on 9 October 1997.
- IV. Oral proceedings were held on 8 December 1999.
- V. The appellant essentially argued that the subject-matter of the present Claim 1 did not involve an inventive step having regard to documents D3, D4 and US-A-1 281 146 (D10).

The proprietor of the patent (hereinafter referred to as the respondent) contested the arguments of the appellant essentially by arguing that none of the documents mentioned by the appellant referred to the

technical problem to be solved which relates to the development of a very accurate and compact milk measuring device.

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

The respondent requested that the appeal be dismissed.

Reasons for the Decision

1. The appeal is admissible.
2. *The claimed subject-matter and the amendments*
 - 2.1 The present Claim 1 and Claim 1 as granted both specify the features that "each milk meter (7) includes a milk receptacle (10) which **is** subjected to a partial vacuum, a measuring chamber which **can be connected** to a partial vacuum whereby the milk flows from the milk receptacle (10) into the measuring chamber (11)", that "the measuring chamber (11) is provided with a valve and an aperture (20) for supplying compressed air", that "this compressed air operates the valve which **disconnects** the measuring chamber (11) from the milk receptacle ..." and that "the milk is pumped **by this compressed air** from the measuring chamber (11) into the relevant separate discharge line (8)" (emphasis added, see column 10, lines 20 to 35).

These features implicitly define in a functional way the operating mode of the valve between the milk

receptacle and the measuring chamber, namely the fact that the valve can be shifted from a first position in which the measuring chamber is connected not only to the vacuum but also to the milk receptacle ("the milk flows from the milk receptacle (10) into the measuring chamber (11)") into a second position in which the measuring chamber is disconnected from the milk receptacle and from the vacuum and is connected to a source of compressed air ("the milk is pumped by this compressed air ...").

The interpretation of these features not only is clearly based on the wording of Claim 1 but is also consistent with the description (see column 4, line 53 to column 5, line 36) and the drawings (see Figure 3) of the patent. This interpretation has been confirmed unequivocally by the respondent.

- 2.1.1 In this respect, the appellant asserted that the present Claim 1 could not be interpreted as implicitly defining the operating mode of the valve because the features concerning the operating mode of the valve were specified in Claim 4 as granted. The appellant argued that the features of Claim 4 should be introduced into Claim 1.

The board cannot accept this argument because Claim 4, which is dependent on Claim 3, essentially relates to the switching element 17 which controls the valve associated with the measuring chamber of the milk meter. Moreover, Claims 3 and 4 refer to the valve with which the measuring chamber is provided as a valve rod (12), i.e. these claims define the valve functionally and structurally in a more specific way than the

present Claim 1 (or Claim 1 as granted). Therefore, the information content of these claims cannot prevent the above mentioned features in present Claim 1 (and in Claim 1 as granted) being interpreted as defining the valve associated with the measuring chamber at a higher generalisation level.

2.2 The amendments with respect to the granted patent only concern Claim 1 and column 1 of the description.

The present Claim 1 differs from Claim 1 as granted in that

- (a) the expression "compressed air supply means are provided, connected to the measuring chamber (11) and" has been added before the wording "the measuring chamber is provided with a valve..." (column 10, line 26), and
- (b) the expression "from the compressed air supply means" has been added after the wording "an aperture (20) for supplying compressed air" (see column 20, lines 27 and 28).

The description was amended in order to adapt it to the amended Claim 1.

The admissibility of these amendments with regard to Article 123 EPC was not challenged in the course of the appeal proceedings. The board sees no reasons for deviating from the finding of the opposition division (see section II above).

3. *The prior art*

3.1 Document D3 discloses a milking plant comprising teat cups connectable to the teats of a cow's udder, while the **milk obtained from the whole udder** with the aid of the teat cups is conveyed to a milk measuring device which includes **one milk meter** whose discharge line 6 is coupled to a milk transport line 7 which is also subjected to vacuum. This milk meter includes a milk receptacle 1 which is connected via the conduit 18 to a vacuum source, and a measuring chamber 3 which is connected (via aperture 4, milk receptacle 1 and conduit 18 as well as via discharge line 6) to a partial vacuum. The milk flows from the milk receptacle 1 into the measuring chamber 3. The measuring chamber 3 is provided with a valve 15 and an aperture 13a through which atmospheric air can be admitted into the measuring chamber, whereby the atmospheric air operates the valve 15 to close the aperture 4, disconnecting thereby the measuring chamber 3 from the milk receptacle 1 after the measuring chamber 3 has been filled with a defined quantity of milk. Due to the introduction of atmospheric air into the measuring chamber and with the support of the vacuum in the discharge line 6 which is connected to the milk transport line 7, the milk is transported from the measuring chamber 3 via discharge line 6 to the milk transport line 7.

This milking plant is not suitable for "quarter milking", i.e. for a milking process in which the milk yield per udder quarter is collected and measured.

Document D3 concerns the general problem of developing a milk measuring device provided with one milk meter and ensuring an exact measurement of the milk quantity.

3.2 According to the description of the patent (see column 1, lines 3 to 37), document D4 discloses a milking plant according to the preamble of Claim 1 as granted which is identical with the preamble of present Claim 1. In particular, this document describes a milk plant which is suitable for "quarter milking".

3.3 The milk plant referred to in document D10 is not described as being suitable for "quarter milking". This document describes a milk plant in which the milk obtained from the teats of the udder of the cow is delivered via a conduit 4 in a container having a first chamber 2 which is connectable to a vacuum source and a second chamber 8 which is also connectable to the vacuum source and is provided with a float 13. The milk is discharged from this container via a conduit 14 into a third chamber 16 which is also connectable to the vacuum source. At the bottom of the first chamber 2 there is a non return valve 7 opening into the second chamber 8 and at the bottom of the second chamber there is a second non return valve 11 opening into the conduit 14. The milk delivered through the conduit 4 into the first chamber 2 passes through the non return valve 7 into the second chamber 8. As the milk rises in the second chamber it lifts the float whereby atmospheric air is admitted into the second chamber causing the non return valve 7 to close and, the third chamber 16 being connected to the vacuum source, causing the second non return valve 11 to open, so that the milk is discharged from the second chamber 8 into the third chamber 16.

4. *Novelty*

The subject-matter of Claim 1 is novel. Novelty was not disputed.

5. *Inventive step*

5.1 The appellant asserted that the claimed subject-matter is only an aggregation of groups of features without there being a relationship of functional reciprocity between the groups of features. In this respect the appellant referred to the decision T 363/94.

The appellant also asserted that the claimed subject-matter neither represents a clear innovation nor results in technical effects which are not predictable. The subject-matter therefore does not involve any inventive step. In this respect the appellant essentially argued as follows:

The skilled person would start from the milk plant described in document D3. The claimed subject-matter differs from this known plant substantially in that it is suitable for "quarter milking" and in that the milk is pumped by compressed air.

"Quarter milking" however is only a standard technique which is known from *inter alia* document D4 and represents a normal development with automatic milking devices. The use of this known technique is only a possible choice for the skilled person who would immediately realize that the milk measuring device of the milk plant according to document D3 can also be used in a "quarter milking" plant.

The use of compressed air for the transport of the milk

represents an obvious alternative which is also well known. In this respect the appellant referred to document D10 which refers to compressed air as an alternative to vacuum (page 3, lines 9 to 13) and which teaches the use of a valve (i.e. the non return valve 7) arranged in the aperture between a first chamber and a second chamber, which valve, when vacuum is applied to the second chamber, leaves the aperture open and, when atmospheric pressure is applied to the second chamber, is caused to close the aperture.

5.2 With regard to the relationship between the groups of features specified in the present Claim 1, the following has to be observed:

(i) The combination of features specified in present Claim 1 permits the milk yield per udder quarter to be exactly measured. This result is obtained not only due to the **specific structure** of the **four milk meters** of the milk plant according to Claim 1 but also due to the use of **compressed air**. Indeed, when the defined quantity of milk has been established in the measurement chamber, the valve provided between the milk receptacle and the measuring chamber - due to the use of compressed air - closes very rapidly (see description of the patent, column 5, lines 29 to 31), so that the **accuracy of the measurement** will be increased due to the fact that no further milk will flow from the milk receptacle into the measuring chamber, i.e. that there is an accurate filling of the milk measuring chamber.

(ii) Moreover - as the respondent argued during the

oral proceedings - the use of compressed air permits the milk to be **pumped** from the measuring chamber into the discharge line **more quickly**. This makes it possible to provide the milk meter with a smaller buffer space (i.e. with a smaller milk receptacle) so that the **compactness** of a milk measuring device comprising **four milk meters** can be improved.

Having regard to these observations, the board cannot accept the appellant's argument that there is no functional reciprocity between the different groups of features.

- 5.2.1 The appellant asserted that the improvement in the accuracy of the measurement did not result from the features mentioned in the present Claim 1 but from those specified in Claim 7 as granted and argued that the features of Claim 7 should be introduced into Claim 1.

The board cannot accept this argument either, because Claim 1 contains the features allowing the accuracy of the measurement to be obtained in so far as it specifies that **a defined quantity of milk** is measured in the measuring chamber and that the valve is closed **by the compressed air**. Claim 7 essentially relates to the control signal supplied by the level sensor when a defined quantity of milk has been established and thus defines the operating mode of the milk meter in a more specific way than the present Claim 1.

- 5.3 It has also to be considered that none of the documents cited by the appellant suggests that the use of

compressed air can improve the accuracy of the measurement or the compactness of the milk measuring device.

The fact that the use of compressed air for the transport of milk is a well known technique is not relevant for the assessment of inventive step in the present case. In other words, it is not important whether the skilled person **could** have used compressed air for operating the valve and for emptying the measuring chamber of the milk meter according to document D3 but whether he **would** have done so in expectation of the advantages actually achieved (see for instance T 2/83 (OJ EPO 1984, 265)).

5.3.1 Having regard to the observations above, the arguments and the evidence submitted by the appellant during the written phase of the proceedings in order to prove that it is known to use compressed air for transportation of milk are not relevant.

5.4 It has also to be considered that in the milk plant described in document D10 the non return valve 7 is closed by admitting **atmospheric air** in the second chamber 8. The sentence referred to by the appellant (see page 3, lines 9 to 13), according to which "... the invention is not limited in its use as a milk releaser as it may be used with equal advantages in similarly dealing with other liquids by the aid of vacuum or compressed air", does not unequivocally suggest that **compressed air** can be used **instead of atmospheric air** for controlling a non return valve.

5.5 Moreover, it is clear from the description of the

document D10 that the milk is transported from the second chamber to the third chamber also due to the fact that the third chamber is connected to the vacuum.

In this context, it has to be noted that also document D3 relates to a milking plant in which the milk is transported from the measuring chamber to the milk line due to the vacuum existing in the milk line 7. The same applies for the milking plant according to document D4.

Therefore, even if the skilled person were to combine documents D3, D4 and D10, he would, in order to arrive at the claimed subject-matter, still have to modify the plant of document D3 in such a way as to make it possible that the milk is transported by compressed air only. This would have to be done without finding a suggestion in this direction in any of these documents.

- 5.6 Having regard to the observations above, the skilled person - on the basis of the information content of documents D3, D4 and D10 - would not arrive in an obvious way at the solution according to present Claim 1.
6. The patent can therefore be maintained on the basis of the version maintained by the opposition division in its interlocutory decision.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

G. Magouliotis

C. Andries