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D E C I S I O N
of 14 March 2006

Case Number: T 0502/04 - 3.2.04

Application Number: 91203326.3

Publication Number: 0479397

IPC: A01J 7/00

Language of the proceedings: EN

Title of invention:
An implement for milking an animal

Patentee:
MAASLAND N.V.

Opponent:
Alfa Laval AB

Headword:
-

Relevant legal provisions:
EPC Art. 100(a)

Keyword:
"Inventive step (no)"

Decisions cited:
T 0217/00, T 0231/97

Catchword:
-



Case Number: T 0502/04 - 3.2.04

D E C I S I O N
of the Technical Board of Appeal 3.2.04
of 14 March 2006

Appellant:
(Opponent)

Alfa Laval AB
Hans Stahles väg
S-147 80 Tumba (SE)

Representative:

Lerwill, John
A.A. Thornton & Co.
235 High Holborn
London WC1V 7LE (GB)

Respondent:
(Proprietor of the patent)

MAASLAND N.V.
Weverskade 10
NL-3155 PD Maasland (NL)

Representative:

Corten, Maurice Jean F.M.
Octrooibureau Van der Lely N.V.
Weverskade 110
NL-3147 PA Maassluis (NL)

Decision under appeal:

Interlocutory decision of the Opposition
Division of the European Patent Office posted
30 January 2004 concerning maintenance of
European patent No. 0479397 in amended form.

Composition of the Board:

Chairman: M. Ceyte
Members: C. Scheibling
T. Bokor

Summary of Facts and Submissions

I. In its interlocutory decision posted 30 January 2004, the Opposition Division found that, taking into consideration the amendments according to the auxiliary request made by the patent proprietor, the European patent and the invention to which it relates met the requirements of the EPC.

On 8 April 2004 the Appellant (opponent) filed an appeal and paid the appeal fee simultaneously. The statement setting out the grounds of appeal was received on 9 June 2004.

II. The patent was opposed on the grounds based on Article 100(a) (54 and 56) and 100(b) and (c) EPC. The ground for opposition based on Article 100(c) EPC was dealt with in decision T 217/00 according to which the case was remitted to the first instance for further prosecution.

III. The following documents played a role in the present proceedings:

D1: EP-A-0 306 579

D2: "Pneumatics for Robot Control", Third Symposium
"Automation in Dairying", Wateringen (NL), 9 to
11 September 1987.

D3: EP-A-0 300 582

D12: EP-A-0 209 202

IV. Claim 1 as accepted by the Opposition Division reads as follows:

"1. An implement for milking an animal, such as a cow, comprising a robot arm (6) carrying four teat cups (45 to 48) at the end of the robot arm (6) and coupling means (50) for applying each teat cup to a relevant teat of the animal, while there are further provided sensor means (51), with the aid of which the position of the teats can be determined, as well as control means (36, 40) comprising servo-pneumatic positioning elements constituted by a pneumatic cylinder with associated control electronics, which control means (36, 40) are suitable for conveying, on the basis of the teat position as determined by the sensor means (51), the robot arm end portion (34) carrying said teat cups (45 to 48) in such a position under the animal's udder that a teat cup (45 to 48) can be applied to the relevant teat, characterized in that the sensor means (51) are constituted by a laser sensor, the transmitter beam of which being able to perform a scanning movement in order to subsequently determine the position of the teats."

V. Oral proceedings before the Board took place on 14 March 2006. During these oral proceedings the Appellant withdrew his objection based on Article 100(b) EPC.

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

He mainly argued as follows: The implement for milking animals according to claim 1 differs from that of D3 in

that it comprises servo-pneumatic positioning elements and a laser sensor. However, D3 also suggests the use of servo-control means, D2 discloses servo-pneumatic positioning elements and D12 discloses servo-controlled positioning elements. Moreover, it is common knowledge that servo-control means increase the speed and the accuracy of positioning means and that laser sensors are capable of accurate determination of the position of objects. Furthermore, D3 teaches the need of a sensor with low beam divergence and D1 indicates that laser sensors are reliable. Thus, the use of known servo-pneumatic positioning means together with a known laser sensor does not go beyond the normal progress of technology but merely follows logically from the prior art and therefore, does not involve an inventive step.

Starting from D12 the differentiating features would be the use of pneumatic cylinders in the servo-control mechanism and of a laser sensor. As already explained, the choice of a laser sensor is an obvious one, and there are only three possible positioning elements, electro-mechanical actuators, hydraulic cylinders or pneumatic cylinders. Since the number of possible options is limited, selecting one rather than another cannot involve an inventive step, all the more it is known from D2 and D3 that it is advantageous to use pneumatic positioning elements, which are flexible due to the compressibility of air, and can avoid hurting the animal or breaking the positioning system, should the animal kick at the robot arm. Accordingly, the subject-matter of claim 1 does not involve an inventive step.

The Respondent (patentee) countered the Appellant's arguments and mainly argued as follows:

D3 does not suggest servo-pneumatic positioning means but open looped control means and thus, teaches away from the invention. D2 does not disclose a servo-pneumatic system either. Even if admittedly, both, servo-pneumatic positioning means and laser sensors were per se known at the priority date of the patent in suit, the invention is to be seen in the combination of both, which provides a synergistic effect, increasing speed, reliability and accuracy of the milking implement.

None of the cited documents gives a hint to use in combination servo-pneumatic positioning means and a laser sensor. Consequently, the subject-matter of claim 1 involves an inventive step.

The Respondent requested that the appeal be dismissed.

Reasons for the Decision

1. The appeal is admissible.
2. *Novelty*

Novelty was not at stake during these proceedings. The Board is satisfied that subject-matter of claim 1 is novel with respect to the cited prior art documents.

3. *Inventive step*

3.1 Claim 1 as accepted by the Opposition Division was held not to be entitled to the claimed priority date of 21 September 1988 and to have an effective date of 20 September 1989 (see decision of the Opposition Division, point IV). These findings have not been contested by the Proprietor (Respondent) and thus, all documents published prior to 20 September 1989 are treated as belonging to the state of the art according to Article 54(2) EPC.

3.2 It is not in dispute that D3 represents the closest prior art document.

3.3 D3 discloses an implement for milking an animal, such as a cow, comprising a robot arm (7) carrying four teat cups (column 7, lines 52 to 57) at the end of the robot arm (7) and coupling means for applying each teat cup to a relevant teat of the animal, while there are further provided sensor means (75), with the aid of which the position of the teats can be determined, as well-as control means (column 5, lines 26 to 39) comprising pneumatic positioning elements constituted by a pneumatic cylinder with associated control electronics, which control means are suitable for conveying, on the basis of the teat position as determined by the sensor means (75), the robot arm end portion carrying said teat cups (80) in such a position under the animal's udder that a teat cup (80) can be applied to the relevant teat. The sensor means is an ultrasonic sensor, the transmitter beam of which being able to perform a scanning movement (column 14, lines 1, 2, 14 to 20).

Thus, the implement according to claim 1 of the patent in suit differs from that according to D3 in that:

- the pneumatic positioning element is a servo-pneumatic positioning element, i.e. the control is a servo-control or closed loop control,
- the sensor is a laser sensor.

3.4 The problem solved by the patent in suit can be seen in improving the accuracy, reliability and efficiency of the system.

The Respondent argued that the problem to be solved is also to improve the speed of the system. He referred in this respect to column 1, lines 19 to 34 of the patent in suit.

This point of view cannot be shared by the Board.

The effective problem has to be determined on the basis of the distinguishing features. On the one hand, the use of a closed loop control with respect to an open loop control cannot improve the speed of the system, because it still uses the same pneumatic valves and cylinders, so that these elements cannot speed up the system; on the other hand the saving of time due to the fact that a laser beam has a faster wave propagation speed than an ultrasonic beam is negligible with respect to the time needed by the pneumatic system to respond (to build up pressure). Therefore, the mere use of a laser sensor cannot significantly improve the

speed of the system, but owing to its low beam diversion its accuracy, reliability and efficiency.

- 3.5 As admitted by the Respondent, laser sensors were known in the technical field of milking implements, at the priority date of the patent in suit (see for example D1, column 11, lines 27 to 29). Furthermore, it was common knowledge at this date, that laser sensors were more accurate and had a lower beam diversion than ultrasonic sensors. Therefore, the use of laser sensors to improve accuracy was an obvious alternative for a skilled person.

Furthermore, although D3 does not explicitly disclose servo-control means, it is stated column 5, lines 34 to 39 "This control means may be fitted with hydraulic and/or pneumatic operating cylinders which steer the robot arm directly to the desired location or impart a given movement thereto until there is detected that a desired location has been reached".

The Respondent argued that this passage solely indicates that when the desired position is reached the movement is halted but there is no control of whether or not the desired position is overrun.

This point of view cannot be shared as the quoted passage indicates that it "is detected that a desired location has been reached", which implies feedback information concerning said position.

Therefore, this passage suggests a skilled person using a closed loop control system, i.e. a servo-control system.

Moreover, the use of servo-pneumatic positioning elements in the technical field of milking robots was known from D2 as acknowledged in description of the patent in suit. That a servo-control system is more accurate, more effective and more reliable than an open loop control system, where no position feedback is performed, was also of general knowledge at the priority date of the patent in suit. Therefore, the choice of servo-pneumatic positioning system to achieve the corresponding effects does not involve an inventive step.

The Respondent argued that D2 does not disclose servo-pneumatic positioning elements.

This cannot be accepted by the Board.

According to the case law each claim should be read giving the words the meaning and scope which they normally have in the relevant art, unless in particular cases the description gives the words a special meaning, by explicit definition or otherwise.

In the present case, the meaning of the expression "servo-pneumatic positioning element" can solely be inferred from the introductory portion of the patent in suit, column 1, lines 3 to 18 which states the following "The present invention relates to an implement for milking an animal, such as a cow, comprising a robot arm ... as well as control means comprising servo-pneumatic positioning elements for ... Such an implement is known from the article "Pneumatics for robot control ..."

The quoted article is D2. Thus, in the meaning of the patent in suit, the expression "servo-pneumatic positioning element" designates a positioning element as disclosed in D2.

- 3.6 Finally the Respondent argued that the invention lies in the combination of the servo-pneumatic positioning elements with a laser detector and that this combination provides a synergistic effect, improving the speed of the system.

However, as shown in section 3.4 above, the above combination cannot improve the speed of the system. Furthermore, there was no prejudice against this combination of features and the effect obtained does not go beyond the sum of the effects obtained by each group of features taken singly. It is also observed that the claimed laser sensor and the servo-pneumatic positioning elements which are part of the control means are separate organs performing quite different functions, wherein the sensing function and the positioning function are not interdependent, i.e. do not mutually influence each other although this organs contribute to an increase in the accuracy and efficiency of the system.

Therefore no combinative effect can be advanced in support of inventive step.

In any event as has been already stated, the choice of a laser sensor is an obvious one and the choice of servo-pneumatic positioning elements is also an obvious one, so that even if there might be an additional

effect (which is not admitted) it would not make the invention as claimed non-obvious. An unexpected bonus effect does not confer inventiveness on an obvious solution; see decision T 231/97.

- 3.7 The Appellant also referred to the possibility of starting from D12. In this case the differentiating features would have been the choice of pneumatic cylinders in a servo-control mechanism and a laser sensor.

However, as demonstrated above, both the use of pneumatic cylinders and of laser sensors detectors was known in the technical field of milking implements, at the priority date of the patent in suit. Moreover, D2 (page 303, section "4. Performance", third paragraph) refers to the shock absorbing qualities of pneumatics and D3 (column 12, line 57 to column 13, line 5) indicates that pneumatic means can deflect when kicked by an animal. Thus, D2 and D3 suggest that pneumatic means may improve the reliability of the system.

- 3.8 Consequently, it was obvious for a skilled person seeking to increase the accuracy, reliability and efficiency of the milking implement, to provide a milking implement according to D3 with a laser sensor and a servo-control or to provide a milking implement according to D12 with a laser sensor and pneumatic positioning elements.
- Accordingly, the subject-matter of amended claim 1 as accepted by the Opposition Division in its decision does not involve an inventive step.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:

G. Magouliotis

M. Ceyte