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Datasheet for the decision of 1 July 2021

Case Number: T 2149/18 - 3.2.04

Application Number: 06075593.1

Publication Number: 1668980

IPC: A01J5/04, A01J7/00, A01J5/007, A01J5/017

Language of the proceedings: EN

Title of invention:
Method of milking an animal and device for this purpose

Patent Proprietor:
Lely Enterprises AG

Opponent:
DeLaval International AB

Headword:

Relevant legal provisions:
EPC Art. 53(c), 56

Keyword:
Exceptions to patentability - method for treatment by therapy - (no)
Inventive step - (yes)

Decisions cited:

Catchword:

Europäisches Patentamt
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Beschwerdekammern

Boards of Appeal

Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0
Fax +49 (0)89 2399-4465

Case Number: T 2149/18 - 3.2.04

D E C I S I O N
of Technical Board of Appeal 3.2.04
of 1 July 2021

Appellant: (Opponent)	DeLaval International AB P O Box 39 147 21 TUMBA (SE)
Representative:	Zacco GmbH Bayerstrasse 83 80335 München (DE)
Respondent: (Patent Proprietor)	Lely Enterprises AG Bützenweg 20 6300 Zug (CH)
Representative:	Octrooibureau Van der Lely N.V. Cornelis van der Lelylaan 1 3147 PB Maassluis (NL)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 18 July 2018 rejecting the opposition filed against European patent No. 1668980 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chairman	G. Martin Gonzalez
Members:	S. Hillebrand
	C. Almberg

Summary of Facts and Submissions

I. The appeal was filed by the appellant (opponent) against the decision of the opposition division to reject the opposition filed against the patent in suit.

II. The Opposition Division held that the subject-matter was not excluded from patentability and was also inventive having regard inter alia to the following evidence

D4 WO 01/19169 A1
D8 WO 00/18218 A1
D11 US 5,809,932

III. In preparation for oral proceedings the board issued a communication, dated 13 November 2020, setting out its provisional opinion on the relevant issues.

Oral proceedings before the Board were held by videoconference on 1 July 2021.

IV. The appellant-opponent requests that the appealed decision be set aside and that the patent be revoked.

The respondent-proprietor requests that the appeal be dismissed, i.e. that the patent be maintained as granted, or that the patent be maintained as amended according to auxiliary request 1 filed on 26 June 2017.

V. The independent claims according to the main request read as follows:

"1. A method of milking an animal by means of a milking device (1) provided with at least one teat cup (2)

having a pulsation space and a teat space, which teat space is connected to a vacuum source (10) via a milk tube (5a, 5b), the teat space and the milk tube (5a, 5b) forming a milking space, which method comprises successively a connection step, a milk-drawing step, a disconnection-preparing step and a disconnection step, a pulsating pulsation vacuum being present in the pulsation space and a milking vacuum being present in the teat space during the milk-drawing step, the milking vacuum being lowered in the disconnection-preparing step, characterized in that the disconnection step follows as soon as the vacuum level in the milking space has come below a threshold value in the disconnection-preparing step, said threshold value being adjustable per animal or per group of animals."

"**17.** A milking device (1) provided with a robot (14) for automatically connecting at least one teat cup (2) to a teat of an animal, which teat cup (2) comprises a teat space for containing a teat and a pulsation space for applying a milking motion by means of a pulsating pulsation vacuum, the teat space being connected via a milk tube (5a, 5b) to a vacuum source (10) for generating a milking vacuum, the teat space and the milk tube (5a, 5b) forming the milking space, with a drawing-away device (3) for drawing away the teat cup (2) from the animal, with a vacuum-lowering device for lowering the milking vacuum in the teat space, with a computer (11) for activating the drawing-away device (3) after the milking vacuum has been lowered, the milking space comprising a vacuum sensor (16) for measuring the vacuum level and emitting to the computer (11) a vacuum signal that is representative of the vacuum level, characterized in that the drawing-away device (3) is capable of being activated by the computer (11) when the vacuum level in the milking

space comes below a threshold value, said milking device (1) comprising an automatic animal recognition device (13) for emitting an animal recognition signal, and in that the threshold value is adjustable on the basis of the animal recognition signal."

VI. The appellant-opponent argues as follows:

The claimed method does not exclude the possibility of continuation of milking during the disconnection-preparing step. It thus includes the possibility to milk out the cow, i.e. stripping. Stripping is a known treatment of an animal suffering mastitis. The claim therefore includes a stripping therapeutic step. The subject matter of at least claim 1 constitutes subject matter that is excluded from patentability according to Article 53(c) EPC. Additionally, methods to alleviate pain and suffering also constitute methods of therapy prohibited by Article 53(c) EPC. The contested method can be used to reduce pain for sensitive animals such as those with mastitis - see specification paragraph [0025] - and would thus fall under the exclusion for therapeutic methods, Article 53(c) EPC, also for this reason.

Granted claim 1 lacks an inventive step starting from D4 in combination with common general knowledge, D8 or D11. While claim 1 uses the language, "the disconnection step follows as soon as the vacuum level in the milking space has come below a threshold value ... " it is clear from claim 6 that there may be a predetermined delay after the desired value is reached before the disconnection step is executed. Thus this feature of claim 1 is also anticipated by D4, see page 7, line 13 to page 8, line 13 and figure 2. The only differentiating feature that the threshold value

is adjustable per animal or per group of animals is obvious in the light of the teachings of D4 combined with common general knowledge, D8 or D11.

As regards claim 17, while D4 fails to explicitly mention a milking robot, the disclosed system and method is clearly applicable to full automatic milking. D11 teaches a milking robot. Applying the vacuum regulation as taught in D4 to the automatic system of D11 would thus inevitably lead to the device of claim 17. Thus granted claim 17 lacks inventive step.

VII. The respondent-proprietor argues as follows:

There is no stripping step in the claimed method. It can thus neither be any therapy step based on that stripping. There is also not, in the method of the granted claim, an alleviation of existing pain or discomfort, but only prevention of causing it while milking. The subject-matter of claim 1 is thus not a therapeutic method and does not fall under the exclusion of Article 53(c) EPC.

In respect of inventive step, claim 1, also in the light of dependent claim 6, requires that the disconnection step is triggered upon the vacuum level in the milking space coming below a threshold value. This is not anticipated by the D4 disclosure. The threshold value is moreover, according to contested claim 1, adjustable per animal or group of animals. These differences allowing the milking procedure to finish as swiftly as possible while preventing pain and discomfort. There is no implicit or implied teaching in the available prior art of the coming below a threshold level being the trigger to disconnect the teat cup.

Granted claim 1 is therefore inventive. Claim 17 is also inventive for similar reasons.

Reasons for the Decision

1. The appeal is admissible

2. Background

The invention is concerned with a method of milking an animal and corresponding device, see patent specification paragraph [0001]. In known methods, the teat cup take-off may include reducing the vacuum level in the teat receiving space. Even before the milking vacuum has been removed completely, a drawing force is exerted on the teat cup. In some cases the drawing force may be very high, which is experienced as unpleasant by the animal, see paragraph [0002]. The invention aims at providing an animal friendly method of milking animals. In the claimed method and device the disconnection step follows as soon as the vacuum level in the milking space has come below a threshold value, the threshold value being adjustable per animal or per group of animals, see claims 1 and 17. This makes it possible to set the threshold value at a lower vacuum level for sensitive animals, so that the teat cup is drawn from the teat with less force, see paragraph [0003].

3. Main request - Patentability, Article 53(c) EPC.

3.1 The appellant-opponent contests the conclusions of the opposition division, see section 11 of the impugned decision, that the granted claims and the patent in suit as a whole do not relate to subject-matter that

falls under the exceptions mentioned in Article 53(c) EPC.

3.2 In this regard, the board set out its preliminary opinion in its written communication as follows:

"4. Patentability, Article 53(c) EPC - Main request

4.1 The contested claim 1 is directed to a method of milking an animal, which as such is not a therapeutic method.

4.2 The appellant-opponent submits that the claimed method contains a stripping step, which can be used as a therapeutic treatment for mastitis. They submit that the claim does not exclude the possibility of continuation of milking during the disconnection-preparing step and therefore includes a stripping therapeutic step. Stripping is however not claimed. According to the appellant-opponent, stripping is "the continuation of milking until all milk is removed", see statement of grounds, page 2/7, paragraph 5. A continuation of milking until all milk is removed is not a claimed feature. Nor can complete milk removal be inferred as implicit from the mere possibility that a continuation of milking may be possible. Moreover, it is also not suggested by the description. The Board is therefore unable to identify any therapeutic step for the treatment of mastitis.

4.3 Therefore claim 1 is directed merely at an improved milking method that avoids causing pain or illness, and not at a method for treating by therapy an existing condition or pain.

The appellant-opponent submits in this respect that methods to alleviate pain and suffering also constitute methods of therapy prohibited by Article 53(c) EPC. According to the appellant-opponent, the contested method can be used to reduce pain for sensitive animals such as those with mastitis - see specification paragraph [0025] - and would thus fall under the exclusion for therapeutic methods. They cite in this respect T144/83, T81/84 and T24/91 - also in Case Law of the Boards of Appeal, 9th edition 2019 (CLBA), I.B. 4.4.1 and I.B.4.4.1.a).

However those cases refer to methods for treating an existing condition, pain or risk. They are methods for loss of excess body weight, relief of menstrual discomfort and removal of myopia, hyperopia or astigmatism symptoms. The claimed method, in contrast, is merely directed at milking the animal without causing further pain, suffering or risk increase, not alleviating or treating the existing one. It is thus not a method for treatment by therapy in the sense of Article 53(c) EPC.

4.4 The Board is therefore of the opinion that the subject-matter of claim 1 is not excluded from patentability, as also held by the Opposition Division, see section 11.1 of the impugned decision."

3.3 At the oral proceedings before the board the appellant-opponent merely referred to their written submissions, refraining from further comment. Absent any further submissions from the appellant-opponent the board sees no reason to change its point of view. It thus holds that the claimed subject-matter is not excluded from patentability, Article 53(c) EPC.

4. Main request - Inventive step.

4.1 The characterising features of granted claim 1 require inter-alia that the teat cup disconnection step follows as soon as the vacuum level in the milking space has come below a threshold value. The scope of this feature is in dispute, in particular in the light of dependent claim 6.

According to well established principles of claim interpretation, the skilled person reads the claims with normal readings skills, giving terms their usual meaning, in context and in the light of the description and drawings in order to arrive at a technically sensible reading of the claim that takes into account the whole disclosure. When considering a claim, the skilled person should rule out interpretations which are illogical or which do not make technical sense, see CLBA, II.A.6.1.

4.2 The skilled person would thus understand the expression "as soon as" of claim 1 in its usual sense as "immediately at or shortly after the time that" (see Merriam-Webster). This is a method step feature. The claimed feature that the disconnection step follows as soon as the vacuum level in the milking space has come below a threshold value therefore requires that the teat cup disconnection is triggered when it is determined that the vacuum level has reached the threshold value.

Claim 6 is dependent on claim 1. It defines a particular embodiment of that method claim. The skilled person when reading claim 6, as dependent on claim 1, with synthetical propensity would thus try to make technical sense of the combined features of claim 1 and

claim 6. The skilled person would rule out interpretations of the features of the dependent claim that are in contradiction with claim 1 as illogical. Claim 6 further requires that the disconnection step follows after the vacuum level has come below the threshold value longer than a predetermined time. It is known to the skilled person, an engineer involved in the design and development of milking devices with knowledge of the physical processes within the teat cup and the evolution of their different parameters, that the evolution of the vacuum level value within the teat cup during depressurization has different lowering speeds for different teat sizes and is moreover also subject to minor fluctuations and glitches. In this context the event that a certain vacuum level threshold has been reached is only reliably determined after that level is so for a predetermined time. The skilled person would thus readily understand that the subject-matter of claim 6 defines that predetermined time needed to reliably ensure that the vacuum level threshold is achieved. The disconnection step is being triggered by this event, as is required by claim 6 due to its dependency on claim 1.

4.3 It is not in dispute that D4 is a suitable starting point for the assessment of inventive step of claim 1. This document describes a method for milking an animal with vacuum regulating means and milk flow monitoring means. The method includes reducing the vacuum to a third vacuum level, below the full milking vacuum level, when the milk flow rate falls to a take-off threshold, see D4 figure 2 and page 3, line 20 to page 4, line 2. As is described in page 7, line 19 to page 8, line 7, this third vacuum level is preferably between 15 to 25 KPa and is selected to enable all milk in the teat cup to be drawn, in combination with the

pulsation vacuum. This vacuum is held through two further time periods, "a low vacuum period LV which enables the vacuum in the conduit to fall to the desired level", and a sweep period SW, for ensuring that all remaining milk is swept into the collecting tank. On elapse of SW, the vacuum and pulsation is shut off, after which the cup can be removed.

Since the last milking step at the lower third vacuum level is the one previous to vacuum shut off and cup removal, it can be considered as part of a disconnection-preparing step. D4 however does not disclose a disconnection step that follows as soon as the vacuum level has come below the third vacuum level value described in D4. The system in D4 reaches the third, low, vacuum level on elapse of period LV. This is the only determination in the method of D4 of the vacuum in the teat cup coming below that level. As described in D4 the period LV enables the vacuum in the conduit to fall to the desired level. Thus in the board's view any period necessary for reliably determining that the vacuum level is achieved, as in claim 6 of the contested patent, is included in LV. This however does not trigger any disconnection step. Once this vacuum level is achieved a further period SW follows. This is to ensure that all remaining milk is swept into the collecting tank before any disconnection step can take place. On elapse of SW the vacuum and pulsation is first shut off and the teat cup can be removed thereafter, without further detail or indication of the vacuum level when that disconnection step may take place after the shut off.

4.4 The claimed method differs therefore from that of D4 in that the disconnection step follows as soon as the vacuum level in the milking space has come below a

threshold value, where said threshold value is adjustable.

The vacuum level can thus be adjusted so that the drawing force exerted on the teat due to the still present vacuum in the teat cup is not experienced as unpleasant by the animal. Thus discomfort can be prevented, while allowing the milking procedure to finish as swiftly as possible. The associated objective technical problem can be formulated as how to improve the take-off procedure while preventing discomfort.

4.5 The board is not convinced by the submissions of the appellant-opponent that the skilled person, seeking to improve the take-off procedure of D4, would modify it to provide the disconnection step as soon as the vacuum level in the milking space has come below the third vacuum level, that is on elapse of the time LV. Indeed although the low vacuum level milking period LV plus SW is described in D4 as the last milking period and thus so related to the cup take-off, it is yet taught and described as a milking period. As such its main purpose is to collect milk, the second period SW ensuring precisely that all remaining milk is swept into the collecting tank. The board therefore holds that the skilled person would not consider, as a matter of obviousness, to modify the low vacuum milking period so that milk is lost by performing the disconnection step as soon as the third vacuum level is achieved. At best, the skilled person starting from D4 and drawing on common general knowledge would have further improved the vacuum and pulsation shut off and subsequent teat cup removal sequence after the second period SW has elapsed as a matter of obviousness. There is however no suggestion or teaching in D4 or from common general

knowledge of a vacuum threshold level triggering the disconnection step for improving that sequence.

4.6 Otherwise D4 teaches on page 2, lines 8-10 together with page 8, lines 15-18 the use of further vacuum levels in order to prevent damage to the teats and over-milking of the animal, while effecting the milking in as rapid and efficient a manner as possible. These can only be understood in the context of D4 as further milking levels and thus also as in the case of the third vacuum level discussed above with the two LV and SW vacuum periods. For the same reasons as explained above for the the third vacuum level milking period, the skilled person would not have arrived at the claimed subject-matter as a matter of obviousness by applying the taught further milking levels.

4.7 Document D11 does not teach or suggest a disconnection step that follows as soon as the vacuum level in the milking space is below a threshold value. Document D11 teaches the use of a vacuum sensor in the teat space for the purpose of ascertaining the pressure in the milking space. This teaching is in the context of ensuring that a certain vacuum level is achieved so that it can safely be assumed that the cup is connected, see abstract and column 4, lines 11-34. Thus a combination of the teachings of D4 with D11, whether obvious or not, may lead to the use of a sensor in the method of D4 for more reliably ascertaining that the third vacuum level has been achieved and that the end of period LV has been reached. It would however not obviously lead to the claimed method, in which the disconnection step follows as soon as this vacuum level determination has taken place, since there is no teaching suggesting this.

4.8 D8 has also been cited by the appellant-opponent. This document is concerned with optimizing milking for individual cows. It is directed to improved methods for automatically detecting the end of milk cycle to accommodate the unique characteristics of individual cows, see page 10, lines 7-12 and lines 18-21. On page 12, lines 9-18 a number of considerations are mentioned, such as: cow or cow udder quarter milking histories; milking time of day; weather conditions; feed conditions; cow lactation cycles; cow breeding cycles; number of daily milkings; milking parlor throughput goals; cow and cow herd health; milking vacuum control; and any additional factors that affect milking rate and animal health within the dairy, that can be used to determine when to detach a milker unit from a particular cow. There is however no specific suggestion or teaching to provide a disconnection step as soon as the vacuum level in the milking space has come below a threshold value. Therefore the combination of teachings of D4 and D11 would also not have lead the skilled person in an obvious manner to the claimed subject-matter.

4.9 The board therefore concludes that granted claim 1 involves an inventive step.

Apparatus claim 17 is directed to a milking device that implements all method steps recited in claim 1. The board thus holds that claim 17 also involves an inventive step for similar reasons.

5. As the appellant's arguments against the findings in the opposition division's decision fail to convince, the board upholds the opposition division's decision.

Order

For these reasons it is decided that:

The appeal is dismissed

The Registrar: The Chair:

G. Magouliotis G. Martin Gonzalez

Decision electronically authenticated