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Case Number: T 0282/10 - 3.2.04

Application Number: 02079016.8

Publication Number: 1300074

IPC: A01K5/02

Language of the proceedings: EN

Title of invention:
A device for automatically supplying a predetermined amount of feed to an animal in a predetermined period

Patent Proprietor:
Lely Enterprises AG

Opponent:
DeLaval International AB
Intellectual Property & Legal Support

Headword:

Relevant legal provisions:
EPC Art. 100(b), 100(a), 54, 56

Keyword:
insufficiency of disclosure - (no)
Novelty - (yes)
Inventive step - (yes)

Decisions cited:

Catchword:

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Case Number: T 0282/10 - 3.2.04

D E C I S I O N
of Technical Board of Appeal 3.2.04
of 12 July 2013

Appellant: (Opponent)	DeLaval International AB Intellectual Property & Legal Support P.O.Box 39 147 21 TUMBA (SE)
Representative:	Gray, Helen Mary ZACCO GmbH Bayerstrasse 83 80335 München (DE)
Respondent: (Patent Proprietor)	Lely Enterprises AG Bützenweg 20 6300 Zug (CH)
Representative:	Corten, Maurice Jean F.M. Octrooibureau Van der Lely N.V. Weverskade 110 3147 PA Maassluis (NL)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 1 December 2009 rejecting the opposition filed against European patent No. 1300074 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chairman: A. de Vries
Members: E. Frank
T. Bokor

Summary of Facts and Submissions

I. The appeal lies from the decision of the opposition division dated 12 October 2009 and posted on 1 December 2009, to reject the opposition against the European patent No. 1 300 074 pursuant to Article 101(2) EPC. The patent had been opposed on the grounds of Articles 100 (a) (novelty and inventive step) and 100(b) EPC.

II. The appellant (opponent) filed a notice of appeal on 9 February 2010, paying the appeal fee on the same day. The statement of grounds of appeal was submitted on 9 April 2010.

III. A communication pursuant to Article 15(1) RPBA was issued after a summons to attend oral proceedings, which were duly held on 12 July 2013. The following evidence has been considered for the purposes of the present decision:

D1 = David L. Bebb: "Mechanised Livestock Feeding", BSP Professional Books, 1990, Contents and pp. 181-184;
D4 = WO 96/05723;

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

The respondent (proprietor) requested that the appeal be dismissed.

V. The wording of claim 1 as granted reads as follows (feature numbering A to L, which had been adhered to by the parties, has now been added in brackets by the Board for further reference but does not form part of the claim's wording):

"[A]A device for automatically supplying a predetermined amount of at least one sort of feed (14) to an animal in a period having a predetermined length,

[B] the device being provided with a feeding parlour,

[C] with animal identification means (7, 51, 62, 87) for identifying an animal (24) present at the feeding parlour

[D] with a computer (8, 42) for controlling the device for automatically supplying the at least one sort of feed (14) to the feeding parlour,

[E] the computer (8, 42) being suitable for determining the sub-period between the last supply of feed (14) to an animal (24) and the momentary point of time when the animal (24) is identified by the animal identification means (7, 51, 62, 87) at the feeding parlour,

[F] the computer (8, 42) controlling the device in such a way that during the momentary visit of the animal (24) to the feeding parlour there is supplied a feed balance to the animal (24), the size of said feed balance depending on the determined sub-period,

[G] the computer (8, 42) controlling the device in such a way that the feed balance is supplied to the animal in feed portions,

characterized in that

[H] the computer (8, 42) is provided with a calculating device for making a division of the predetermined amount of sort of feed (14) by the predetermined period resulting in a sort-of-feed quotient

[I] in that the calculating device determines the product of the sub-period and the sort-of-feed quotient resulting in the feed balance,

[J] in that a feed portion has at least a minimum feed portion size,

[K] in that the calculating device of the computer calculates a feed portion size of the feed portions, and

[L] in that the computer (8, 42) is provided with a comparing device for comparing the calculated feed portion size with the minimum feed portion size, while, when the comparison result indicates that the calculated feed portion size is smaller than the minimum feed portion size, the computer (8, 42) controls the device in such a way that one minimum feed portion size is supplied to the animal."

VI. The appellant argued as follows:

The comparison in the last feature of claim 1 (cf. feature L) contradicted the requirement of a minimum feed portion size previously defined by claim 1 (cf. feature J). Moreover, claim 6 was contradictory to claim 7. Therefore, it was impossible for the skilled person to carry out claim 1 or the combination of claims 6 and 7.

Furthermore, claim 3 of the patent described what the determination of the feed balance in claim 1 (cf. features H and I) was actually about: there was no calculation performed by claim 1's computer, but rather it was implicit that stored information was retrieved from a lookup table. Thus, since D1 on page 183 also described a rolling memory which ensured that an animal received food in proportion to the time since its last visit, e.g., if the animal arrived after two or three hours, the determination of the feed balance according to features H and I of claim 1 was explicitly disclosed by D1. Moreover, the calculation of the feed portion size in claim 1 (cf. feature K) did not say how it had to be calculated. Since on page 183 of D1 it was stated

that the delivery rate was adjusted so that the dispensing matched the eating speed of the cow, a modification of D1's unit size, i.e. the calculation of a portion size such as in claim 1, was implicitly disclosed. Finally, every mechanised dispensing system had to have a minimum portion size, i.e. a lower limit. Thus, a comparison according to the last feature of claim 1 (cf. feature L) necessarily had to be carried out by D1's system, due to implicit specifications of the feeder shown in figure 5.16 on page 184 of D1. Thus, claim 1 lacked novelty over D1.

As to inventive step, based on his common general knowledge and starting from D1, the skilled person would simply replace the rolling memory of D1 by a system which calculated the mathematical relationship described in D1 on page 183, thus to determine the proportion of a daily ration, i.e. the feed balance over a sub-period as defined by claim 1 (cf. features H and I). Moreover, the skilled person would also know that he had to calculate a feed portion size (cf. feature K of claim 1) according to the eating speed of different cows, when adopting the solution suggested on page 183 of D1, when the feed rate is adjusted, e.g., by means of a trickle feed facility. Finally, as stated, there will be always an inherent mechanical constraint at the feeder, and thus a minimum feed portion size is implicitly required in D1. The skilled person would further know that there were only two equivalent possibilities to circumvent constraints: either to prevent calculation of a feed portion being too small for the feeder, or to provide a minimum feed portion size as defined by claim 1 (cf. feature L). Thus, the subject-matter of claim 1 was obvious in the light of D1 and common general knowledge. Moreover, document D4 described on page 3 that, in particular

when teat cups were not connected properly, the feeding period, i.e. the feed balance over a sub-period, was automatically adjusted, and also fodder could be provided more rapidly to the relevant animal. Since not only the feed rate but also the amount of feed was adjusted by means of a metering device, see figures 2 and 3 of D4, the feed portion size inevitably had to be calculated such as in claim 1 of the patent (cf. feature K). Finally, also in D4 a minimum feed portion size was implicitly required for the fodder delivered by the blade wheel and grinder of figures 2 and 3 and, thus, the comparison according to the last feature of claim 1 (cf. feature L) was implicitly disclosed by D4. Therefore, the subject-matter of claim 1 was also obvious for the skilled person in the light of D1 and D4, since D4 in any case suggested the calculation of a feed portion size. Thus, claim 1 did not involve an inventive step.

VII. The respondent argued as follows:

From the wording of claim 1 and also from the description it was clear that the calculated feed portion size may be smaller than the minimum feed portion size (cf. features J and L). As regards claims 6 and 7, it was very well possible to combine these claims.

Moreover, claim 3 of the patent was a dependent claim and described an embodiment, which could not overrule a calculation of the feed balance invariably required by claim 1 in the first place (cf. features H and I). No calculation of a food proportion such as in features H and I of claim 1 was thus disclosed on page 183 of D1. Furthermore, D1 provided no clear teaching about determining of a unit size, only the delivery rate was

mentioned. Thus, also no calculation of a feed portion size such as in claim 1 (cf. feature K) was derivable from D1. Finally, in contrast to the last feature of claim 1 (cf. feature L), no active comparison of a calculated feed portion size with a minimum feed portion size took place in D1, and D1's computer also did not control D1's system accordingly. Therefore, claim 1 was novel over D1.

As for inventive step, firstly no calculating device for making a division and product resulting in a feed balance as defined by features H and I of claim 1 was shown or hinted at either in D1 or D4. Moreover, D1 did not suggest the calculation of a feed portion size at all. D4 consistently described a uniform feed distribution over respective feeding periods, i.e., also D4's computer did not calculate a feed portion size as required by claim 1 (cf. feature K). It was further stressed that the comparing device of claim 1 (cf. feature L) did not serve to discourage an animal, since there was always a minimum feed portion supplied, see patent, par. [0011]. This problem was not addressed by D1 or D4, because they taught distributing of uniform feed portions, but not more than an animal was entitled to get such as in claim 1 (cf. feature L), if the portion was too small. Since also no technical limitation as to mechanical constraints of the feeders could be derived from D1 or D4 by the skilled person, neither D1 nor D4 contained any information such that the skilled person would arrive at the determination of a minimum feed portion size, much less at a calculating device which compared a calculated feed portion size with the latter, to thus control the feeder accordingly. Even assuming that there was any technical limitation to D1's or D4's feeder, the computer then at most would not feed at all, but no minimum size as

required by the last feature of claim 1 (cf. feature L). Therefore, the subject-matter of claim 1 was not obvious for the skilled person in the light of D1, or D1 and D4. Hence, claim 1 was inventive.

Reasons for the Decision

1. The appeal is admissible.

2. *Sufficiency of disclosure*

In the oral proceedings before the Board, the appellant did not further pursue the issue of insufficiency anymore and referred to its arguments in writing. Those arguments consistently refer to the contradictory nature of features within claim 1, or between claims 6 and 7, also in the light of the specification. Thus, it was argued to be contradictory that a minimum feed portion size was firstly required by claim 1 (cf. feature J), which feed portion size could then be calculated to be smaller than that minimum, when it was compared in the final comparison step with the previously required minimum feed portion (cf. feature L of claim 1). Moreover, claim 6 of the patent required a blocking period and was therefore in contradiction with subsequent claim 7, which defined how an animal could have received first one minimum feed portion size.

The Board holds that these arguments in fact relate to clarity of the claims, Article 84 EPC, which is not a ground for opposition and cannot therefore be considered in relation to granted claims. No argument has been put forward why this lack of clarity might prevent the skilled person from successfully carrying out the invention, nor is this evident from the arguments themselves. Indeed the opposition had already

addressed the issue in its decision, see reasons 2, and held that the skilled person could overcome any such perceived contradictions and that therefore the invention as defined in claim 1 met the requirements of sufficiency of disclosure, Article 100(b) EPC. The Board has no reason to take a different view.

3. *Novelty*

3.1 Document D1 concerns an automated feed supply for feed stations. During 24 hours, an allocated feed ration of an individually identified cow, i.e. its daily allowance, is spread over a number of equal periods by means of a computer control unit (see D1, page 182, lines 18 to 20). This corresponds in claim 1 of the patent to a period having a predetermined length in which a predetermined amount of feed is automatically supplied by a computer and distributed over predetermined sub-periods, cf. features A to E of claim 1.

3.2 Moreover, a rolling memory of D1's control unit ensures that a cow receives food at every visit to the feed station, but only in proportion since her last visit. This is designed for a regular intake of concentrate over a 24-hour period. Thus, a feed balance, such as in claim 1 is also supplied, cf. feature F of claim 1 (see D1, page 183, lines 13 to 15). How that proportion of the daily feed ration is calculated, i.e. the determination of the size of that feed balance, is described in D1 by way of example: The day is divided up into 6-hour periods, that is, four equal sub-periods are determined beforehand (see D1, page 182, lines 18 to 20). In the first 6-hour period up to a quarter of the daily entitlement is available, a third of the remainder in the next 6-hour period, half the rest in

the third period and the remainder in the last (see D1, page 183, lines 17-19). Thus, a quarter of the daily allowance forms the feed balance per sub-period, if the cow did not leave any feed after each 6-hour period (cf. the impugned decision, page 7, point 2, last sentence).

3.3 In the patent's claim 3 embodiment a computer memory may also be provided, which then can store correspondence tables containing the size of the feed balance per sub-period, to thus determine in a simple manner the feed balance belonging to a determined sub-period, cf. patent, par. [0006]. The Board shares the view of the respondent that this use of tables is a possible way for the calculating device of claim 1 to calculate the size of the feed balance by carrying out the programmed division and product as required by features H and I of claim 1. Indeed, in this manner the memory capacity of the computer can remain limited, see patent, paragraph [0007]. The Board thus sees no contradiction between claims 1 and 3.

By contrast, D1 merely states on page 183, lines 13 to 15, that the rolling memory enables the cow to receive a certain feed balance over a sub-period, see point 3.2 above. Thus, the skilled person would at best recognize from D1 that the size of the feed balance might be retrieved from a lookup table. Contrary to the appellant's view, this statement, however, does not represent a direct and unambiguous disclosure that D1's computer always calculates a division and product as defined by features H and I of claim 1, to initially arrive at the size of the feed balance.

3.4 D1 further describes that, having automatically checked whether an identified cow still has entitlement to the

daily feed allocation, D1's device may then dispense a unit of feed to the manger (see D1, page 182, lines 13 to 15). That is, throughout D1 the allocated ration, or a proportion thereof (see D1, page 182, lines 18 to 20), is supplied to the animal in feed units, in the same manner as the feed balance of claim 1 of the patent is finally received by the cow in feed portions, cf. feature G of claim 1.

According to D1, units of feed may be set between 0 and 1 kg, and the daily amount dispensed per cow can range from 1 to 99 units. A trickle feed facility or a delay of 1.5 minutes is organised between each unit of feed delivered, thus to provide a delivery rate of 100 to 150 g/min so that dispensing matches the eating speed of the cow (see D1, page 183, lines 6 to 13). The feed unit size and delivery rate of the daily allowance thus are, in fact, defined by the user in D1. Any other unambiguous information as to how the control over the "amount and rate of feed dispensing" might be varied "from make to make" is not disclosed. There is, therefore, no explicit or implicit calculation of a feed unit size derivable from D1 for the skilled person. This is contrary to feature K of claim 1, where the feed portion size is indeed calculated, to thus automatically adjust the feed portions to the animal identified at the feeding parlour. For example, the feed portion size may be 5 % of the previously calculated feed balance, cf. patent, par. [0010].

3.5 The appellant argued that the feed dispenser shown in D1 (see page 184, figure 5.16) is subject to mechanical constraints that produce a minimum size of a feed unit. However, no handbooks or any other documentation have been presented by the appellant to substantiate this argument. Moreover, in the Board's view, even if in D1

a minimum feed unit might result from feeder constraints, it is still nowhere derivable from D1, that such a minimum feed portion size is firstly compared by D1's control unit with a calculated feed portion size of the feed balance, let alone that, based on this comparison, D1's computer then controls the feeder. Therefore, the Board shares the respondent's view that a comparing device and computer control according to feature L of claim 1 is not directly and unambiguously disclosed by document D1.

3.6 In summary, the device of claim 1 at least differs from D1's system in that a division and product according to features H and I are made by the computer to determine the feed balance, and that a feed portion size is calculated, see feature K, which in turn is compared with a minimum feed portion size, to thus ultimately control the supply of feed based on that comparison, see feature L.

3.7 As novelty is only disputed with respect to D1, the Board concludes that the subject-matter of claim 1 meets the requirements of Articles 100(a) and 54 EPC.

4. *Inventive Step*

4.1 It is common ground that document D1 forms the closest prior art. The subject-matter of claim 1 differs from D1's disclosure at least by the features identified in section 3.6 above, i.e. features H ,I, K and L.

4.2 According to the patent, features H,I,K, and L enable a feed allowance to be automatically supplied to an animal as a feed balance, which depends on the sub-period which has elapsed since the last feeding of the animal. This makes it possible for the animal to obtain

a continuous supply of feed in an efficient manner, see patent, paragraph [0003]. In particular, since also the feed portion size of the feed balance is calculated by the computer, the feed portion size can be adjusted per animal and possibly depending on the prevailing circumstances, see patent, par. [0010]. In order not to discourage an animal from coming to the feeding parlour, the comparing device of the computer compares the calculated feed portion size with a minimum feed portion size, and controls the device such that there is always supplied a minimum feed portion to the animal. In other words, the animal is fed more than it is entitled to, if the calculated feed portion size is smaller than the minimum feed portion size, see patent, paragraph [0011].

The associated objective technical problem underlying these distinguishing features vis-à-vis D1 can then be formulated as follows: how to make feeding in a device such as that of D1 take place efficiently and without discouraging an animal from coming to the feeding parlour.

4.3 Although in D1 the daily amount of feed is dispensed in proportion to the last visit of the cow, i.e. a feed balance is determined, D1 appears to suggest the following operation: a unit of feed, i.e. a feed portion, is dispensed to the manger and subtracted from the total allocation. The process is repeated after a relatively short time until the cow either vacates the feeder or has received its due amount for that period (see D1, page 182, lines 13 to 20). It is suggested to divide the day into equal periods, i.e. sub-periods beforehand, e.g., into (four) 6-hour periods. However, after the cow has received fodder in the first 6-hour period, and assuming that the cow has eaten everything,

the determination of D1's feed proportion for each consecutive sub-period is nevertheless always based on the remainder of feed, see point 3.2 of this decision above. As opposed to this, the feed balance in feature I of claim 1 is invariably based on the predetermined amount of feed, e.g., the daily ration, which forms the numerator of the sort-of-feed quotient in feature H of claim 1. The Board adds that the sub-period for calculation of the feed balance in claim 1 is not divided in equal periods beforehand as taught by D1. Rather, the sub-period referred to in feature I depends on the period between the last supply of feed and the actual point of time when the animal is identified and, thus, is always variable (cf. the impugned decision on page 9, first paragraph).

Therefore, based on his common general knowledge the skilled person, who intends to replace the rolling memory of D1 by an implemented calculation of a proportion of the ration over a number of time periods, i.e. to calculate the feed-balance for each sub-period more efficiently, would not program the computer hardware of D1 such that he would arrive at an implemented function as defined by features H and I of claim 1 of the patent.

4.4 Nor is there any suggestion in D1 that might prompt the skilled person to provide a calculating device which, when a cow is identified, will calculate a feed unit size of the feed units, since this has to be set in advance for a daily amount by the user in D1, and the daily entitlement then is uniformly dispensed to match the eating speed of the cow. This is irrespective of whether the cow visits the feeding parlour more frequently or not. Thus, merely based on his ordinary technical knowledge, the skilled person would not have

arrived at a calculated feed portion size of the feed portions of the feed balance as required by feature K of claim 1.

Furthermore, the problem of discouraging an animal from coming to the manger if the feed unit is too small, is nowhere addressed in D1. The Board is unconvinced that the skilled person might recognize from figure 5.16 on page 184 of D1 that a feed portion will have a minimum feed portion size due to alleged mechanical constraints that are otherwise undocumented. However, even if the Board accepts for the sake of argument that the skilled person realises that mechanic constraints of the feeder require a minimum unit size to be determined by D1's processor, the skilled person would still not arrive at feature L of claim 1: the calculating device of claim 1 requires to compare such a minimum feed portion size with a previously calculated feed portion size, but not with a unit of feed having been pre-set by the user (cf. the impugned decision on page 9, third paragraph).

Finally, as argued by the respondent, the computer control of the device according to feature L would not be a straightforward solution for the skilled person, since the feed dispensing could also be simply stopped (i.e. withheld) in case of a portion being too small to be securely dispensed by the feeder.

4.5 The Appellant also cites document D4, which (see abstract) provides an implement to control a quantity of fodder to be distributed to milking animals, such as cows. The feeding period is approximately equal to the anticipated milking period of the relevant animal. Thus, the predetermined quantity of fodder per 24 hours' period is supplied to the animal during a plurality of feeding periods (see D4, page 4, lines 33

to 36), i.e. a feed balance of claim 1 is provided over a sub-period. It is common ground that there is no suggestion in D4 regarding the calculation of the feed balance, cf. features H and I of claim 1 of the patent.

4.6 The Board agrees with the appellant's view that, due to unwanted time delays, e.g. because an animal has kicked off a teat cup, the feeding period can be adjusted in D4 (see page 3, lines 9 to 20). However, throughout D4, the skilled person is taught to distribute the quantity of fodder uniformly across the feeding period (see D4; page 2, lines 7 to 15; page 3, lines 20 to 26, and page 8, lines 36 to 38). That is, whereas the feeding period is adjustable, the size of the food portions of the thus adjusted feed balance is always uniform in D4, and a continuous metering of the fodder invariably takes place (see D4, page 10, lines 5 to 10). This is also true when the animal receives the remaining quantity of fodder more rapidly, in the event the feeding period has been adapted (see D4, page 3, lines 2 to 8). Consequently, no calculation of a feed portion size of a feed portion as required by feature K of claim 1 is derivable from or hinted at by D4 for the skilled person (cf. the impugned decision on page 9, second paragraph).

Moreover, the problem of animals that are discouraged by too small feed portions is nowhere addressed by D4 either. As for the alleged dispensing problems of D4's feeder as advanced by the appellant, it is reiterated that also in D4 the skilled person would at first have to recognize from figure 2 of D4 that the blade wheel 29, computer-controlled metering slide 30, and rotatable knives 34, respectively, of the metering device 21 is prone to mechanical constraints that might impose a minimum feed size. Even if that were the case,

he would not arrive at feature L of claim 1, see point 4.4 above.

4.7 In summary, starting from D1, the skilled person faced with the problem of both efficiently supplying feed but not discouraging an animal from coming to the feeding station, would not get any motivation to implement functions, either based only on his ordinary common technical knowledge or taking into account any suggestions from the disclosure of D4 as previously discussed under sections 4.3 to 4.6 of this decision, such that he would arrive at a computerized device for automatically feeding an animal as required by the features H,I, K and L of the characterising part of claim 1.

4.8 The Board concludes, therefore, that the subject-matter of claim 1 also involves an inventive step, Articles 100(a) and 56 EPC.

5. In the light of the above, the Board confirms the appealed decision's finding that none of the opposition grounds prejudice the maintenance of the patent as granted.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

G. Magouliotis A. de Vries

Decision electronically authenticated