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**Datasheet for the decision
of 11 September 2009**

Case Number: T 0718/08 - 3.2.04

Application Number: 02757727.9

Publication Number: 1377159

IPC: A01K 15/02

Language of the proceedings: EN

Title of invention:

Products and methods for improving animal dental hygiene

Patentee:

SOCIETE DES PRODUITS NESTLÉ S.A.

Opponent:

Mars, Incorporated

Headword:

-

Relevant legal provisions:

EPC Art. 83, 100(b)

Relevant legal provisions (EPC 1973):

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Keyword:

"Insufficiently defined method for measuring a parameter"
"Sufficiency of disclosure - no (all requests)"

Decisions cited:

T 0890/02

Catchword:

-

Case Number: T 0718/08 - 3.2.04

DECISION
of the Technical Board of Appeal 3.2.04
of 11 September 2009

Appellant: SOCIETE DES PRODUITS NESTLÉ S.A.
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 21 February 2008
revoking European patent No. 1377159 pursuant
to Article 101(3)(b) EPC.

Composition of the Board:

Chairman: M. Ceyte
Members: A. de Vries
C. Heath

Summary of Facts and Submissions

I. On 3 April 2008 the Appellant (Proprietor) lodged an appeal against the Opposition Division's decision of 21 February 2008 to revoke European patent no. 1 377 159 and simultaneously paid the prescribed appeal fee. The grounds of appeal were filed on 25 June 2008.

Opposition was filed against the patent as a whole and based amongst other grounds on Article 100(b) EPC as the patent did not disclose the invention in a manner sufficiently clear and complete for it to be carried out by the person skilled in the art.

The Opposition Division held that this ground prejudiced maintenance of the patent, having regard in particular to the following evidence:

D2: Experimental Report - Penetrometry Studies

D11: Determination of Canine Teeth Angles, C.Norton

D12: Penetrometry Studies on Rask & Rancho Remade as 1999 Specifications, C.Norton e.a.

D2, D11 and D12 were commissioned by the Respondent-Opponent.

The following further documents and evidence also played a role in the appeal:

D19: C.Harvey: "Shape and Size of Teeth of Dogs and Cats-Relevance to Studies of Plaque and Calculus Accumulation", Journal of Veterinary Dentistry, Vol.19, No.4, December 2002

D20: Tables of Dog and Cat teeth dimensions drawn up by the Appellant-Proprietor from D19

D21: Declaration of Lisa Milella

II. The Appellant (Proprietor) requests that the decision under appeal be set aside and the patent be maintained on the basis of the main request, or, in the alternative, on the basis of auxiliary requests I to IV filed with the letter of 13 December 2007.

The Respondent (Opponent) requests that the appeal be dismissed.

III. Oral proceedings before the Board were duly held on 11 September 2009.

IV. The wording of the independent claims of the requests is as follows:

Main request

1. "A chewable product (40) capable of enhancing dental hygiene in a pet, comprising a continuous phase (44) and a discontinuous phase (46) characterised in that the phase proportions are such that a force of at least 100 Newtons is required to penetrate a surface of the product (40)."

11." A method for making a chewable product (40) for enhancing dental hygiene of a pet comprising the steps of: producing a chewable, edible product (40) that includes a continuous (44) and a discontinuous (46) phase; and selecting the relationship of the continuous (44) to discontinuous (46) phase so that the force

required to penetrate the product (40) is at least 100 Newtons, enabling the product (40), after an initial bite, to spring back to at least almost its original shape."

18." A method for reducing tartar on the teeth of a pet comprising the steps of:

producing a chewable, edible product (40) that includes a continuous (44) and a discontinuous (46) phase;
selecting the relationship of the continuous (44) to discontinuous (46) phase so that the force required to penetrate the product (40) is at least 100 Newtons and is greater than an anticipated bite force expected to be exerted by such pet during a normal biting event, and offering the product (40) to a pet to chew."

Auxiliary Request I

The independent claims essentially add to the corresponding claims of the main request the requirement that the two phases are in a proportion so that *the force required to penetrate the product is greater than expected to be exerted by such pet during a normal biting event* (emphasis added to indicate what has essentially changed or been added). Claim 1 additionally specifies that the product comprises a body.

Auxiliary Request II

Vis-à-vis the corresponding claims of the main request the independent claims are now directed at enhancing dental hygiene in or reducing tartar on the teeth of a dog rather than a pet, while specifying that the force

of at least 100 Newtons is required *by the teeth of said dog* to penetrate the surface of the product. Claim 18 additionally specifies that that force *is also greater than expected to be exerted by such pet during a normal biting event.*

Auxiliary Request III

Vis-à-vis the corresponding claims of the main request the independent claims now specify that the force of at least 100 Newtons is required *by a cone-shaped penetrometry probe of 12mm* to fully penetrate the surface of the product. Claim 18 additionally specifies that that force *is also greater than expected to be exerted by such pet during a normal biting event.*

Auxiliary Request IV

The independent claims are as in auxiliary request II but add the feature that the product (with two phases) *has no gross occlusions.*

V. The Appellant argued as follows:

The description in its entirety provides sufficient information for the skilled person to determine the necessary detail of the penetration probe. It indicates a cone-shape and a length of 12mm, while specifying that it is a model tooth specially designed to simulate the biting action of a dog's teeth. The invention is aimed at cleaning premolars and molars in particular. D19 provides typical dimensions of such teeth. As the calculations in D20 show, the tooth having a height nearest 12mm has a width that, when the tooth is

modelled as a simple cone, gives a cone angle of about 40°. This is the value that the skilled person would infer from all the information available as the representative value for his specially designed model tooth.

Many of the probe cone angles used in the tests of D12 are not representative of the teeth in question. A 90° cone angle for example gives a width of 24mm for a height of 12mm, which is much larger than typical premolar or molar widths.

Additionally, the 15 values given in table 1 for the 5 specific examples, the composition and manufacture of which are described in detail in paragraphs [0081] to [0087], allows the skilled person to establish the cone angle unambiguously and without undue burden.

VI. The Respondent argued as follows:

The disclosure fails to provide full detail as to how penetration force, a characterizing parameter in the claim, is measured. D2 and D12 demonstrate that cone angle of the probe, which is missing in the patent, is critical to the measurement.

This information can also not be determined unambiguously by the skilled person from his background knowledge of teeth. As D11 demonstrates there is no single angle that is representative of dog teeth, even if only molars and premolars are considered. This is confirmed by D21.

Even the Appellant's own D19 and D20 show a wide spread of angles, from 30° to 50° within which measured penetration force still varies greatly. D19, in any case, is published after priority and is a narrow, 2D study, that is wholly inadequate for defining the complex geometry of teeth. The inference of 40° as cone angle is entirely arbitrary.

The examples provide insufficient information of the raw materials and the particular extrusion apparatus used, and of critical process parameters. These have an enormous influence on texture, as demonstrated by SME in table 1 of the reply to the appeal brief.

Reasons for the Decision

1. The appeal is admissible.
2. *Sufficiency of Disclosure*
 - 2.1 The invention is concerned with a chewable product for the dental care of pets comprising continuous and discontinuous phases, with claims to the product itself, its method of manufacture and its use in a method for reducing tartar. The main idea of the invention is to take into account the biting force of the pet in the design of the product (specification paragraph [0016]). To this end the independent claims require the phases to be in a proportion such that *a force of at least 100 N is required to penetrate the product's surface*. This is greater than the anticipated bite force of the pet (paragraph [0019]) ensuring optimum chewability and

improved cleaning action in particular of molars and premolars, (paragraphs [0009], [0054]).

2.2 The product (and its method of manufacture and use) is not defined directly in terms of composition, but is characterized rather in reference to a particular property, namely the minimum force required to penetrate the product. Where a product is so defined in terms of a parameter, the disclosure will normally also need to provide sufficient information as to how to reliably and objectively measure the value of the parameter in question (unless, for example, this is known to the skilled person from his common general knowledge). This requirement ensures not only that the claimed subject-matter is clearly and unambiguously defined, but also that the skilled person, using that information to supplement his common general knowledge, is able to reproduce the invention without undue burden. Without such information he or she would not be able to successfully carry out the invention, and the invention would be insufficiently disclosed. Cf. Case Law of the Boards of Appeal, 5th Edition, 2006 (CLBA), II.A.6.1, first paragraph, and the decisions cited therein.

2.3 Information regarding the method for measuring penetration force can be found in paragraphs [0059] and [0088]. These refer to a "specially constructed "model tooth"" (paragraph [0059], line 59) and an analysis system "designed to simulate the biting action of a dog's teeth"(paragraph [0088], lines 12 to 13). The teeth in question are the premolars and molars (paragraph [0009]). To this end the system, identified as a TA-XT2I Texture analyser from Rheo Ltd, uses "a specially designed cone-shaped penetrometry probe of

length 12mm" pushed into the product "at a rate of 2mm/s" (paragraph [0088], lines 13 to 14). The skilled person learns from these passages read in context that he is to use a cone-shaped probe of 12mm length as a model of a dog's tooth to simulate biting action under given conditions. The description, figures and claims however do not specify the particular cone angle of this specially designed probe. As stands to reason the penetration force depends significantly on this angle : a sharp cone (small angle) will penetrate the product with greater ease than a blunt one (large angle). This is borne out clearly by the results of the tests summarized in figures 3, 6 and 8 of D2 and the tables on page 14 of D12, which show a variation in the order of 1000 over the measurement range (10° to 140°). The fact that cone angle is critical to measurement of the penetration force is undisputed, as is the fact that the disclosure fails to expressly mention any value for the cone angle.

- 2.4 The Appellant argues that the missing cone angle can be inferred from the probe's stated function as model dog tooth, and the fact that the product is aimed mainly at better cleaning of molars and premolars. This would instruct the skilled person, using his background knowledge of premolar and molar dimensions as reflected in D19 and condensed in D20, to choose that tooth having the same height as the probe, and, equating its width to the diameter of the conical probe's base, to so arrive at the value of its cone angle.

2.5 This line of reasoning is unconvincing. It assumes firstly a particular correlation between conical shape of the model and actual teeth size and shape, in this case buccal (cheek-side) height and width, for which the Board is unable to find any basis in the patent. It is also decidedly not part of the skilled person's common general knowledge to simply equate height and base diameter of a conical model tooth to buccal height and width of a given tooth. Premolars and molars have complex non-conical shapes that vary from tooth to tooth, as the photographs 105 to 110 and 405 to 411 of D11 (boxer premolars/molars taken from different angles), or also figure 1 (top) or figure 3 of D19 (side views of beagle teeth) clearly illustrate. Such a variety of complex shapes does not lend itself to simple modelling. Thus, even if a simple cone model is adopted, it is neither immediately apparent nor obvious how to determine the cone shape and size from the wide variety of actual teeth shapes and sizes, let alone that its dimensions should be based on buccal width and height of a single tooth.

The Board can also not subscribe to the further underlying assumption that the information provided in D19 belongs to common general knowledge. D19 is a scientific paper, published in a specialist journal, the Journal of Veterinary Dentistry, in 2002, two years after priority, which presents the results of a study of buccal (cheek side) surface dimensions of beagle teeth in comparison to those of cats and humans. The narrow scope of this study, its select readership (veterinary dentists), not to mention the fact that it was made public after priority, can but lead to the conclusion that D19 and the information therein does

not belong to the skilled person's common knowledge. That person is a pet food engineer specializing in dental care products, whose background knowledge of animal teeth will have been drawn from dictionaries and encyclopaedias, and textbooks and handbooks on the subject (cf. T 890/02 (OJ EPO 2005, 97) cited in CLBA, I.C.1.5, first paragraph).

2.6 In the Board's view the skilled person is much more likely to try and find the missing cone angle amongst actual teeth angles. If his background knowledge as defined above offers a particular value (or very limited range of values) that he would immediately consider both as suitable and representative than the invention can be regarded as sufficiently disclosed. The photographs of D11 and declaration D19, however, show that no such particular value, or even a very narrow range of values, exists. As noted, the subject teeth, premolars and molars have various highly complex shapes. The different angle views in photographs 105 to 110 and 405 to 411 of D11, for example, show the premolar/molar surfaces of a boxer to have a varying number of rounded projections with different angles depending on the point of view (front or side). Thus even for premolars/molars the angles are spread widely, between say 30° to 140°, and there is no single value that is prevalent. This observation is confirmed by expert declaration D21, see section 5.3, which also mentions angle variation between breeds (section 4.2, 4.3).

At best a range can be identified where observed angles occur more frequently. D21 in section 5.3 gives some examples. The Appellant has previously suggested

30° to 90°, or an even narrower range, 30° to 50° (see the table in D20). In these progressively narrower ranges variation is still by a factor of 3 to 4 and 1.6 to 1.8 respectively (cf. D2, figures 6,8; D12, page 14, Rancho). This is still to an extent so as to preclude reliable measurement of the penetration force.

- 2.7 As for reverse-engineering the cone angle from table 3 and the specific examples described in the preceding paragraphs, the Board is of the firm conviction that this would place an undue burden on the skilled person.

Firstly, various factors and parameters of the manufacturing process that influence the material properties are left open in the patent. Besides duration of the various stages, this includes the nature and quality of the raw materials, the particular extruder used as well as the specific mechanical energy (SME) applied during extrusion. Table 1 on page 8 of the Respondent's submission of 14 November 2008, for example, demonstrates the significance of SME for penetration force.

Secondly, the extent of testing required to unambiguously determine which cone angle was used to produce the table values would far exceed routine experimental work. For each composition it would require producing a multitude of samples for different process parameters and subjecting each to flexion tests and repeated measurements of penetration force with different cone angles until the table values are returned.

2.8 In the light of the above the Board concludes that the skilled person is unable to determine the missing cone angle on the basis of the patent and his common general knowledge. Failing a specific value of the cone angle he will be unable to reliably measure penetration force and thus reproduce the claimed invention. The invention according to the claims of the main request is thus insufficiently disclosed (Articles 83, 100(b) EPC).

2.9 The specific value of the penetration force is central to the invention as it attempts to give expression to the underlying qualitative idea (see above) in objectively verifiable terms. As it fails herein, the invention is inherently deficient and any attempt to formulate the invention more precisely must fail. The auxiliary requests are thus also not allowable for the above reason.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar

The Chairman

G. Magouliotis

M. Ceyte