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Datasheet for the decision of 21 June 2022

Case Number: T 2329/19 - 3.3.09

Application Number: 15732070.6

Publication Number: 3154354

IPC: A22C13/00, A23P30/20, A23L13/60

Language of the proceedings: EN

Title of invention:
CONTROLLED SAUSAGE MANUFACTURING PROCESS

Applicant:
Marel Townsend Further Processing B.V.

Headword:
Sausage Manufacturing Process/MAREL

Relevant legal provisions:
EPC Art. 56

Keyword:
Main request - amendments - allowable (yes) - inventive step (yes)

Decisions cited:

Catchword:

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern

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Case Number: T 2329/19 - 3.3.09

D E C I S I O N
of Technical Board of Appeal 3.3.09
of 21 June 2022

Appellant: (Applicant)	Marel Townsend Further Processing B.V. Handelstraat 3 5831 AV Boxmeer (NL)
Representative:	Patentwerk B.V. P.O. Box 1514 5200 BN 's-Hertogenbosch (NL)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 19 March 2019 refusing European patent application No. 15732070.6 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	A. Haderlein
Members:	A. Veronese
	E. Kossonakou

Summary of Facts and Submissions

I. The appeal was filed by the applicant against the examining division's decision refusing European patent application No. 15732070. The decision was based on a main request, filed under cover of a letter dated 23 March 2018, and an auxiliary request, filed under cover of a letter dated 7 February 2019.

II. Claim 1 of the main request read as follows:

"*1. Method for co-extruding an elongated food product comprising the following steps:*

a) providing a food dough;
b) providing a viscous gelling agent comprising collagen;
c) co-extruding a strand of food dough and an external layer of viscous gelling agent, wherein the viscous gelling agent at least partially encloses the strand of food dough; and
d) performing at least one subsequent processing step, wherein the collagen is in the helical and/or crystalline form,
characterised in that the method comprises the steps of:
i) measuring the product characteristics including the pH, salt concentration and/or salt type of the viscous gelling agent provided in step b);
ii) predicting the physical state transition point of the viscous gelling agent provided in step b) based on the product characteristics measured in step i); and
iii) controlling the physical state of the collagen in step d) by balancing the pH, salt concentration

and temperature to prevent conversion of the collagen into a collagen having a randomly coiled form."

III. In the decision under appeal, reference is made to the following documents:

D1: WO 93/12660 A1
D2: WO 2014/007630 A2
D3: WO 01/41576 A1
D5: E. Bianchi et al., 1967, Journal of Biological Chemistry, vol.242(7), pp. 1361-1369

IV. The examining division found that the subject-matter claimed in the main request and in the auxiliary request did not involve an inventive step over the teaching of D1 to D3 in combination with that of D5, and in particular it found that:

- any of D1 to D3, which related, in the same way as the claimed invention, to the preparation of a co-extruded food product comprising a collagen coating, could represent the closest prior art,

- the claimed method essentially differed from that in D1 to D3 in that the physical state of the collagen was controlled so that the conversion of collagen into a randomly coiled form was prevented,

- the working examples demonstrated that by varying the temperature and salt concentration the conversion could be prevented; however, it was not plausible that this resulted in an improvement in the quality of the product, e.g. its stickiness and smudginess,

- the problem was to provide a method for co-extruding a food product with a collagen-based coating which prevented the conversion of collagen into a randomly coiled form, and

- D5 taught that salt concentration, temperature and pH affected the stability of the different collagen forms; thus, the skilled person would have modified these parameters to prevent the conversion of collagen into its randomly coiled form.

Requests

V. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the main request or, alternatively, on the basis of one of auxiliary requests 1 to 3 as filed with the statement setting out the grounds of appeal.

Reasons for the Decision

Main request

1. *Amendments*

In its letter dated 18 March 2018, filed during the examination proceedings, the appellant provided the basis for the amendments to the main request. The examining division did not raise objections of added subject-matter against this request and the board does not see any reason to raise any either.

2. *Inventive step*

2.1 The claimed invention relates to a method for manufacturing an elongated food product coated with a

collagen-based casing layer. The method includes the co-extrusion of a food dough and an external casing layer made of a viscous gelling agent comprising collagen.

2.2 The examining division decided that any of D1 to D3 may represent the closest prior art. These documents disclose the preparation of co-extruded foods coated with a collagen gel. The board agrees that any of them can be used as a starting point for assessing inventive step. Furthermore, it agrees that the outcome of the assessment would be the same irrespective of which of these documents was selected as the starting point.

2.3 The claimed method differs from that described in D1 to D3 at least in that some steps are carried out in which certain characteristics of the viscous gelling agent, namely the pH, temperature, salt concentration and salt type, are measured and then balanced to ensure that the collagen remains in its helical and crystalline state and does not convert into a randomly coiled form.

2.4 The application teaches that the properties of the collagen-based casing material may irreversibly change during manufacture, resulting in a casing having undesired properties. Furthermore, it teaches that the physical state of the collagen determines the properties of the casing; if the collagen is in its helical or crystalline form, the casing has a smooth, attractive-looking and stable surface, but if it is in a randomly coiled form, it has a sticky, inconsistent and smudgy surface; see page 2, lines 16 to 23 and page 4 lines 1 to 11 and 20 to 26 of the description of the patent application.

2.5 The passage bridging pages 2 and 3 of the description teaches that the method according to the invention enables the manufacturer to control the physical state of the collagen by changing the process settings and to obtain food products of acceptable quality. Furthermore, it teaches that the risk of the characteristics of the product unexpectedly changing during the processing steps, resulting in it being rejected, is reduced.

2.6 The examining division acknowledged that the working examples described on page 5 and in figures 1 to 4 of the application demonstrate that the transition between the crystalline, helical and randomly coiled forms of collagen can be modulated by varying the salt concentration, temperature and pH. These results are confirmed by D5, which is a scientific article demonstrating that the stability of the different collagen forms and the transition between them can be influenced by modulating these parameters.

2.7 The examining division argued, however, that "it has not been rendered sufficiently plausible or shown that these phase transitions affect the relevant properties of the resulting coated co-extruded elongated food products, such as stickiness and smudginess".

2.8 The board does not agree with this finding. It is undisputed that the application does not contain experimental evidence demonstrating that the physical state of collagen affects the properties of the casing of an extruded food product; however, the examining division has not provided any evidence or put forward any technical reason to support its argument.

2.9 In the absence of any technical reason to cast doubt on the concept underlying the claimed invention, the board considers it plausible that, by preventing the conversion of collagen into its randomly coiled form, the risk of unexpected changes to the casing structure which may result in the food products being rejected can be reduced.

2.10 For this reason the underlying technical problem cannot be formulated, as proposed by the examining division, as that of providing "a method for co-extruding an elongated food product with a collagen-based coating, allowing prevention of the conversion of collagen into a collagen having a randomly coiled form".

2.11 Formulating the problem in this way ignores the effect of controlling the physical form of the collagen. Furthermore, it contains a direct pointer to the claimed solution. According to the established case law, the technical problem addressed by an invention has to be formulated in such a way that it does not contain pointers to the solution or partially anticipate the solution, since including part of the solution in the statement of the problem necessarily results in an ex post facto view of inventive step when the state of the art is assessed in terms of that problem; see the Case Law of the Boards of Appeal, 9th edition, chapter I.D.4.3.1.

2.12 The underlying problem should instead be formulated as that of providing a method for producing an extruded food product comprising a collagen-based casing, this method reducing the risk of irreversible changes to the casing properties, resulting in an unacceptable sticky, inconsistent and smudgy surface and in product rejection.

2.13 D1 to D3 and D5 do not hint in any way at minimising this risk by controlling the physical state of collagen and preventing its conversion into its randomly coiled form. D1 to D3 do not even mention the different collagen forms. D5 investigates the influence of pH, temperature and salt concentration on the stability of the helical, crystalline and randomly coiled collagen forms; however, it does not mention any influence of these forms on the properties of a collagen-based material, let alone the casing of an extruded food product.

2.14 Accordingly, the board concludes that, starting from any of D1 to D3, the skilled person would not have been prompted to arrive at the claimed solution by the cited documents. Therefore, the subject-matter of claim 1 and of its dependent claims, which are more limited in scope, involves an inventive step.

2.15 In light of this conclusion there is no need for the board to consider the auxiliary requests.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the examining division with the order to grant a patent on the basis of claims 1 to 8 of the main request filed under cover of a letter dated 23 March 2018, a description adapted to these claims, and figures 1 to 4 as originally filed.

The Registrar: The Chairman:

A. Nielsen-Hannerup A. Haderlein

Decision electronically authenticated