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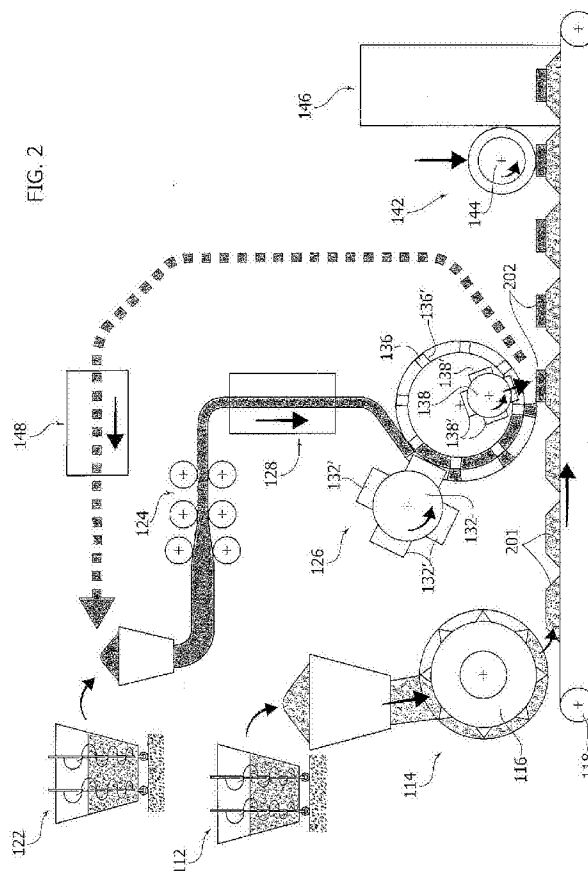
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Industrial process for manufacturing biscuits.

57

Described herein, is an industrial process for manufacturing biscuits (200) provided with an outer surface on which one or more marks are obtained that are designed to constitute a given representation. The process envisages use of a first biscuit dough to form a main biscuit body (201) and use of a second biscuit dough or a plurality of further biscuit doughs for making one or more auxiliary bodies (202A, 202B, 202C) designed to identify said marks. The auxiliary bodies are applied on the main biscuit body according to a mutual arrangement that is such as to reproduce the above representation.

FIG. 2



"Industrial process for manufacturing biscuits"

Field of the invention and prior art

5 The present invention relates to the field of industrial production of biscuits and, in particular, of biscuits bearing on an outer surface thereof a given representation.

10 It is in fact known in this field to provide on biscuits already formed, before or after baking, representations of various types using food inks in order to increase the attractiveness of the product to the consumer, above all for products specifically aimed at children.

15 Figure 5 illustrates by way of example a known process for manufacturing biscuits of the type referred to above. The apparatus for implementation of this process envisages a forming station 12, equipped with a forming machine of a rotary type, which is supplied by a hopper 14 containing the dough of the biscuit. A
20 conveyor belt 16 is pre-arranged for receiving the forms of the biscuit 101 obtained in the station 12 and supplying them up to an oven 18 for baking the biscuits. Between the oven 18 and the forming station 12 the apparatus envisages a decoration station 22 that
25 is provided with a food-ink-delivery head for creating on the top surface of the forms the graphic representations 102 envisaged.

30 The present applicant has noted that this known solution is afflicted by a series of drawbacks and disadvantages.

In the first place, the present applicant has

verified that there is an objective limit as regards the clarity of the images that it is possible to obtain, basically due to the surface structure of the biscuit, which is in fact irregular and porous so that
5 on the one hand the ink tends to be in part absorbed, losing its gloss and on the other hand it is very difficult to create images that will have precise and sharp contours.

In addition to the foregoing, the amount of ink
10 that it is possible to use on each biscuit is in any case limited to specific doses in order to prevent interference with the organoleptic properties of the biscuit and in particular with its taste. Finally, the need for a production of an industrial type, i.e., in
15 large volumes, clearly accentuates these problems.

It is on the other hand known in this field to decorate the top surface of the biscuit by impressing desired forms on the outer surface of the dough, when this is still in the plastic state, using various
20 techniques, for example using a mould shaped in low relief, or else using a rotary system with rotomoulding technology provided with figures in low relief, or else via punching. This technique evidently does not allow formation of decorations of a colour different from
25 that of the biscuit.

In view of the foregoing, known industrial processes for manufacturing biscuits of the type in question have up to now produced far from satisfactory results, and in fact the diffusion of these biscuits on
30 the market is today rather limited.

Object and summary of the invention

The object of the present invention is now to overcome the aforesaid drawbacks using a process for producing biscuits having the characteristics specified in Claim 1. The present invention moreover relates to a
5 biscuit according to Claims 12 and 13.

The claims form an integral part of the technical teaching provided herein in relation to the invention.

Brief description of the drawings and detailed
10 description of the invention

Further characteristics and advantages of the invention will emerge clearly from the ensuing description with reference to the annexed drawings, which are provided purely by way of non-limiting
15 example and in which:

- Figure 1 illustrates an example of biscuit obtained with the process described herein;
- Figure 2 is a schematic illustration of an embodiment of the process described herein;
- 20 - Figure 3 represents a detail of the apparatus illustrated in Figure 2;
- Figure 4 illustrates a series of examples of biscuits obtained using the process described herein; and
- Figure 5 is a schematic illustration of a process for
25 producing biscuits according to the known art.

In the ensuing description, various specific details are illustrated aimed at enabling an in-depth understanding of the embodiments. The embodiments may be obtained without one or more of the specific
30 details, or with other methods, components, or materials, etc. In other cases, known structures,

materials, or operations are not shown or described in detail so that various aspects of the embodiment will not be obscured.

The references used herein are only provided for
5 convenience and hence do not define the sphere of protection or the scope of the embodiments.

As mentioned above, the process described herein regards an industrial process for manufacturing biscuits that have a given representation on an outer
10 surface thereof.

In this description, by the term "representation" is meant a graphic representation constituted by one or more marks. The marks in question may be geometrical shapes, numbers, fancy shapes, symbols, patterns,
15 representations of objects, animals, etc. Furthermore, the marks in question may be combined together to represent as a whole a given subject or else may be combined together in an altogether random way. In any case, the set of the marks defined on the surface of
20 the biscuit constitute the "representation" mentioned.

With reference to Figure 1, this illustrates by way of example a biscuit 200 obtained using the process described herein and in particular illustrates the top surface of said biscuit on which a representation 202
25 is obtained. This is constituted by a series of marks 202A, 202B, and 202C, which together reproduce the face of a cartoon character or the like.

Figure 4 illustrates further examples of representations that may be provided on the surface of
30 the biscuit.

With reference to the process described herein,

this is characterized in that it comprises the following steps:

- preparing, in a kneading station, a first dough for biscuits;
- 5 - forming, in a forming station, a biscuit body using said first dough, said biscuit body having a surface that is designed to constitute the outer surface on which the aforesaid representation will be obtained;
- 10 - preparing, in a kneading station, a second dough for biscuits;
- forming, in a forming station, a number of auxiliary bodies, using said second dough, which are designed to identify the different marks that will come
- 15 to form the representation;
- applying, on said outer surface of said biscuit body, said auxiliary bodies, according to a mutual arrangement that is such as to reproduce said representation; and
- 20 - baking, in a baking station, said biscuit body together with said auxiliary bodies applied thereon.

The process described herein hence envisages creating the desired representation without using ink, as in known processes, but using auxiliary bodies

25 obtained from a further biscuit dough, which are appropriately shaped and applied on the surface of the biscuit to reproduce the desired representation.

It should now be noted that by "dough for biscuits" is meant a generic dough conventionally

30 understood by a person skilled in the sector as being suitable for producing biscuits.

Generally, a dough for biscuits comprises water (5-25 wt%), flour (30-80 wt%), leavening agents (0.1-6 wt%), sugar and/or other sweetening substances (5-35 wt%), for example glucose syrup, and, finally,
5 butter or else vegetable fat (5-40 wt%). To these typical basic ingredients there may then be added further components, such as cocoa, hazelnuts, etc.

In various preferred embodiments, the dough for making the main body of the biscuit and the dough for
10 making the aforementioned auxiliary bodies, are different, in particular as regards their colouring, in order to distinguish as much as possible the different bodies and in particular bring out their simultaneous presence. Preferably, one of the two doughs may
15 comprise one or more additional ingredients, for example powdered cocoa, malt, caramel, etc., to impart a colouring different from the typical biscuit colour.

To start with, it should now be noted that doughs for biscuits may be divided into doughs for dry
20 biscuits and doughs for biscuits of a shortbread type. The former have, as compared to the latter, a lower percentage of fats, which are responsible for onset of mechanisms that tend to inhibit formation of cross-linking of gluten. These doughs are hence characterized
25 by having a more developed structure of the gluten, and for this reason they thus have an elastic, cohesive, consistency and above all they are not friable.

In this regard, in various preferred embodiments of the process described herein, the dough used for
30 making the aforesaid auxiliary bodies is specifically a dough for dry biscuits, i.e., an elastic dough, whereas

the dough for making the main biscuit body is a dough for biscuits of the shortbread type.

By way of example, the two types of dough may be distinguished as follows: for 100 kg of flour

5 - the dough for dry biscuits contains from 5 to 12 kg of fats and from 14 to 40 kg of water; whereas

 - the dough for biscuits of the shortbread type contains from 15 to 25 kg of fats and from 14 to 18 kg of water.

10 In any case, the choice of the doughs referred to above, even though it constitutes the preferred one for the reasons that will emerge clearly from what follows, is not at all binding for implementation of the process described herein, and in fact it is possible to
15 envisage also other combinations, such as:

 - a dough for dry biscuits both for the main body and for the auxiliary bodies;

 - a dough for biscuits of the shortbread type both for the main body and for the auxiliary bodies; or

20 - a dough for dry biscuits for the main body, and a dough for biscuits of the shortbread type for the auxiliary bodies.

 With reference now to Figure 2, this represents an embodiment of the process described herein and of the
25 corresponding apparatus for its implementation.

 The apparatus in question envisages two different lines of preparation and treatment of dough: a first one that is designed for making the main body of the biscuit, and a second one that is, instead, designed
30 for making the auxiliary bodies.

 Starting from the first line, this envisages a

station 112 that is equipped with one or more kneading machines for preparation of the dough. As will become evident hereinafter, the dough is a typical one of a shortbread type.

5 After a possible resting period, the dough is fed to a forming station 114, which is provided with a rotary machine for moulding the biscuits. This machine may clearly be of any conventional type for producing biscuits. For the aspects that are of interest herein,
10 it should only be noted, with reference to the figure, that this machine envisages a rotating roller 116, on the outer surface of which a plurality of cavities are obtained, pre-arranged for constituting respective moulds for the formation of the individual biscuits.

15 The individual forms obtained constitute the aforesaid main bodies of the biscuits. These, designated by the reference number 201, are fed on a conveyor belt 118.

 The second line of the apparatus also envisages a
20 station for preparation of the dough (designated by the reference number 122) provided with one or more kneading machines. The dough used on this second line, which is designed for making the auxiliary bodies of the biscuit, is a typical elastic dough for the
25 production of dry biscuits.

 This second line envisages a rolling station 124, which is designed to feed the dough along the line in the form of a thin and continuous sheet, up to a forming station 126 set downstream, where the auxiliary
30 bodies are obtained. Preferably, provided between the rolling station 124 and the forming station 126 is a

cooling station 128 designed to lower the temperature of the dough so as to render it stiffer. In various preferred embodiments, this station is provided for bringing the temperature of the dough to a value of
5 between 0°C and 15°C.

With reference now to the forming station 126, this carries out the dual function of forming the individual auxiliary bodies that will come to constitute the marks of the representation of the
10 biscuit and moreover that of applying these bodies on the top surface of the bodies 201 that advance along the conveyor belt 118.

In the embodiment illustrated by way of example in Figure 2, this station is in particular equipped with a
15 machine provided with two counter-rotating rollers 132, 136, fed between which is the continuous sheet of dough. The roller 132 has on its outer surface a plurality of shaped reliefs 132', provided with one or more cutting edges, which are pre-arranged for co-
20 operating with shaped seats 136', having a corresponding shape obtained on the outer surface of the roller 136. Preferably, the seats 136' have a configuration of shaped apertures in communication with the inside of roller 136, for the reasons that will
25 become evident in the following.

During synchronised rotation of the rollers 132 and 136, the reliefs 132' act on the sheet of dough, punching therefrom individual portions that are received in the seats 136' of the roller 136 and will
30 come to constitute the auxiliary bodies mentioned previously.

Specifically, and with particular reference to the biscuit illustrated in Figure 1, which is characterized by the series of auxiliary bodies 202A, 202B and 202C, the roller 132 is equipped, on its outer surface, with
5 a corresponding series of reliefs 132'A, 132'B, 132'C, and likewise the roller 136 is provided with a corresponding series of cavities 136'A, 136'B, 136'C (see Figure 3). This series is repeated at regular intervals all around the outer surfaces of the
10 respective rollers.

The reliefs and cavities in question reproduce exactly the forms of the marks that constitute the desired representation and are set according to a mutual arrangement that reproduces this representation.

15 In operation, the various series of reliefs 132'A, 132'B, 132'C of the roller 132 cut and separate from the sheet of dough simultaneously all the auxiliary bodies 202A, 202B, 202C envisaged for a single biscuit, which are received in the corresponding cavities 136'A,
20 136'B, 136'C of the roller 136.

These bodies are then applied on the individual body 201 via a further rotating roller 138, which is contained within the roller 136 and is in turn provided with shaped reliefs 138'. The latter, as a result of
25 rotation of the roller 138, synchronised with that of the roller 136, engage the seats 136' of the roller 136 from the inner side, and push out from the seats the respective bodies 202A, 202B, 202C, which come to rest on the underlying bodies 201.

30 As may be seen in Figure 4, when they come out of the forming station 126, the bodies 201 with the

auxiliary bodies applied thereon hence reproduce the complete representation 202 on their top surface.

On the other hand, as may be seen in the figure, the sheet of dough that comes out from the forming station 126, which is all perforated as a result of the punching operation described, is sent back to the rolling station 124 passing through a station 148 that is pre-arranged for heating the dough so as to facilitate its recovery.

In the light of the foregoing, it may be noted that the process described hence envisages producing all the auxiliary bodies of the biscuit in one and the same forming operation and directly in the same mutual arrangement as that with which these bodies are to be applied on the biscuit body. This enables, on the one hand, the advantage of simplifying the process of production and, on the other hand, of guaranteeing that these bodies will be correctly positioned on the biscuit. It should once again be noted that, with respect to the embodiment illustrated in the figure, the forming station 126 may also envisage means designed to perform the same functions as the rollers 132, 136, and 138 but that, instead of being driven according to a rotary movement, are driven according to a reciprocating movement of translation.

Continuing now with the further steps of the process, after the auxiliary bodies have been applied on the bodies 201, the biscuits thus formed are carried by the conveyor belt 118 to a station 142 that carries out the function of pressing the auxiliary bodies 202A, 202B and 202C against the body 201 so as to reinforce

mutual connection thereof. In various embodiments, as in the one illustrated, this station envisages a pressure roller 144, which turns at a rate controlled on the basis of the rate of feed of the biscuits and
5 acts on each biscuit precisely so as to press the auxiliary bodies 202A, 202B and 202C against the body 201. This roller may be of any one known type conventionally used for handling and treating doughs. Preferably, this roller has an outer coating made of
10 soft plastic material, for example rubber, to prevent damage to the biscuits that have just been formed.

Finally, the apparatus envisages a final station 146 constituted by an oven for baking the biscuits.

For proper operation of the apparatus described
15 above, it is clear that this must have appropriate control means that guarantee a perfect synchronisation between the various devices referred to in order for the auxiliary bodies to be properly formed and then be arranged on the bodies 201 in the desired mutual
20 configuration. The apparatus may, for example, envisage electric motors provided with encoders for each of the rollers described above, and a control unit designed to verify the various signals coming from the encoders, to guarantee synchronism between the rollers.

25 The apparatus may moreover envisage one or more video cameras, located downstream of the station 114, which read the position of the biscuits, and the control unit controls the driving motors of the rollers on the basis of the data detected by the video cameras,
30 in order to synchronise the speed of the rollers with the rate of advance of the conveyor belt carrying the

biscuits.

Once again for this purpose, it is also possible to provide further sensors, for example torque sensors. In any case, these aspects may be implemented according
5 to the conventional techniques commonly used in the field of industrial automation, and consequently they will not be illustrated in greater detail.

In the light of the foregoing, it may be now noted that the use of an elastic dough for dry biscuits, for
10 making the auxiliary bodies, is preferable on account of its elastic mechanical characteristics, which render it less subject to deformations and/or breaking, so that the dough is better suited to being handled in the ways referred to above. In this connection, it should
15 be noted that it is in particular the transfer of the auxiliary bodies onto the main biscuit bodies that constitute a critical step of the process, during which it is important to guarantee that the auxiliary bodies remain intact and maintain the same shape with which
20 they have been made.

It should moreover be noted that the process described herein may envisage numerous variants with respect to the solution illustrated above. In this connection, it should be noted, in particular, that the
25 process described herein may envisage applying the auxiliary bodies in a station distinct from the one in which they are formed. In this case, the auxiliary bodies may, for example, be formed and then arranged on a conveyor belt, which supplies them to a further
30 station, where they are finally picked up from the conveyor belt and applied on the biscuit bodies. This

station may envisage automatic handling devices, for example robots of a pick-and-place type equipped with pneumatic pick-up members.

5 It should moreover be noted that alternative embodiments may envisage providing the auxiliary bodies on different lines of the apparatus, that can treat types of dough different as regards composition and/or colour. In various embodiments, the auxiliary bodies may be made in a number of colours.

10 The auxiliary bodies produced on the various lines can then be combined together in a decoration station set at the intersection of these lines, which is provided with automatic handling means of the type referred to above.

15 In these cases, it is also possible to vary the combinations of the auxiliary bodies on the individual main bodies practically instantaneously, for example from one lot of biscuits to another, by selecting the auxiliary bodies that are to be picked up.

20 Finally, the stations for forming the biscuits themselves may vary from the ones illustrated above, taking in any case into account that, in general, for dry doughs forming machines of a punching type are preferable, whereas for shortbread doughs forming
25 machines using moulds are preferable.

In various embodiments, the station for forming the auxiliary bodies may envisage a hollow roller, provided on its outer surface with shaped through openings, and containing inside the dough to be
30 dispensed, which through the aforementioned openings is dispensed on the main biscuit bodies. This roller may

be provided inside with a scraper member that is designed to operate on the inner surface of the roller in such way that the portions of dough dispensed will have a thickness equal to the height of the above
5 openings. These portions constitute the auxiliary bodies. In this case, the dough used is preferably a dough for biscuits of the shortbread type.

Of course, without prejudice to the principle of the invention, the details of construction and the
10 embodiments may vary, even significantly, from what has been illustrated herein purely by way of non-limiting example, without thereby departing from the scope of the invention, as this is defined in the annexed claims. With reference to the biscuit body 201, it may
15 be noted that it may be obtained with a multilayered structure in which the various layers are obtained with different biscuit doughs and may also have different colours.

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REVENDEICATIONS

1. Procédé industriel destiné à la fabrication de biscuits (200) dotés d'une surface externe sur laquelle une ou plusieurs marques sont obtenues, qui sont conçues pour constituer une représentation donnée (202) ;
- 5 ledit procédé étant caractérisé en ce qu'il comprend les étapes suivantes :
- préparer, dans un poste de pétrissage (112), une première pâte à biscuits ;
 - 10 - façonner, dans un poste de façonnage (114), un corps de biscuit (201) à l'aide de ladite première pâte, ledit corps de biscuit ayant une surface qui est conçue pour constituer ladite surface externe ;
 - préparer, dans un poste de pétrissage (122), une deuxième pâte à biscuits ;
 - 15 - façonner, dans un poste de façonnage (126), un ou plusieurs corps auxiliaires (202A, 202B, 202C) à l'aide de ladite deuxième pâte, qui sont conçus pour identifier lesdites marques ;
 - appliquer, sur ladite surface dudit corps de biscuit, lesdits corps auxiliaires (202A, 202B, 202C) selon un agencement mutuel qui est destiné à reproduire ladite représentation (202) ; et
 - 20 - cuire, dans un poste de cuisson, ledit corps de biscuit (201) conjointement avec lesdits corps auxiliaires (202A, 202B, 202C) appliqués sur celui-ci.
- 25
2. Procédé selon la revendication 1, dans lequel ladite étape de façonnage desdits corps auxiliaires envisage de prévoir lesdits corps auxiliaires (202A, 202B, 202C) en une seule et même opération de façonnage et directement dans le même agencement mutuel que celui avec lequel lesdits corps seront
- 30 appliqués sur ledit corps de biscuit (201).

3. Procédé selon l'une quelconque des revendications précédentes, dans lequel ladite étape de façonnage dudit corps de biscuit est mise en œuvre dans un premier poste de façonnage (114), tandis que ladite étape de façonnage desdits corps auxiliaires est mise en œuvre dans un deuxième poste de
5 façonnage (126).

4. Procédé selon la revendication 3, dans lequel ladite étape de façonnage desdits corps auxiliaires et ladite étape d'application desdits corps sur ledit corps de biscuit sont toutes deux mises en œuvre dans le deuxième poste de
10 façonnage (126).

5. Procédé selon la revendication 3, dans lequel :

ladite deuxième pâte, une fois préparée, est soumise à une opération de laminage pour façonner une couche continue de pâte, dans laquelle :

15 ledit deuxième poste de façonnage (126) est équipé d'une machine dotée de rouleaux à contre-rotation (132, 136) entre lesquels est acheminée ladite couche continue de pâte, dans lequel :

ladite machine découpe dans ladite couche de pâte des portions individuelles qui viennent constituer lesdits corps auxiliaires (202A, 202B, 202C)
20 et applique lesdites portions sur ledit corps de biscuit (201).

6. Procédé selon la revendication 5, dans lequel ladite machine comprend :
un premier rouleau (132) qui a sur sa surface externe une pluralité de reliefs formés (132'), dotés d'un ou plusieurs bords de découpe ; et

25 un deuxième rouleau (136), qui a sur sa surface externe des logements formés (136') ayant des formes correspondant à celles desdits reliefs,

dans lequel lesdits premier et deuxième rouleaux (132, 136) sont préagencés pour coopérer de telle sorte que pendant une rotation desdits rouleaux (132, 136), les reliefs (132') agissent sur ladite couche de pâte en
30 découpant dans celle-ci lesdites portions de pâte, qui sont reçues dans lesdits logements (136') dudit deuxième rouleau (136).

7. Procédé selon la revendication 6, dans lequel ladite machine comprend un rouleau rotatif (138) supplémentaire, qui est contenu à l'intérieur dudit deuxième rouleau (136) et est à son tour doté de reliefs formés (138') pour venir en prise avec lesdits logements (136'), depuis le côté interne dudit
5 deuxième rouleau, et pour pousser lesdites parties vers l'extérieur.

8. Procédé selon l'une quelconque des revendications précédentes, dans lequel ladite première pâte est une pâte à biscuits secs.

10 9. Procédé selon l'une quelconque des revendications précédentes, dans lequel ladite première pâte est une pâte à biscuits du type sablé.

10. Procédé selon l'une quelconque des revendications précédentes, qui envisage :

- 15
- de préparer une pluralité de pâtes de couleurs différentes ;
 - de façonner lesdits corps auxiliaires à l'aide de ladite pluralité de pâtes de couleurs différentes ; et
 - d'appliquer lesdits corps auxiliaires de couleurs différentes façonnés sur ladite surface dudit corps de biscuit.

20

11. Procédé selon la revendication 10, qui envisage d'utiliser des postes de pétrissage et des postes de façonnage qui sont différents pour des pâtes de couleurs différentes.

25 12. Biscuit (200) obtenu à l'aide d'un procédé selon l'une quelconque des revendications précédentes.

13. Biscuit du type comprenant un corps de biscuit (201) ayant une surface externe sur laquelle une ou plusieurs marques sont obtenues qui sont conçues
30 pour constituer une représentation donnée (202),

ledit biscuit étant caractérisé en ce que ledit corps de biscuit (201) est obtenu à partir d'une première pâte à biscuits et en ce qu'il comprend un ou

plusieurs corps auxiliaires (202A, 202B, 202C) conçus pour identifier lesdites marques, qui sont obtenues à partir d'une deuxième pâte à biscuits ou à partir d'une pluralité de pâtes à biscuits supplémentaires et sont agencées sur ladite surface externe de manière à constituer ladite représentation (202).

FIG. 1

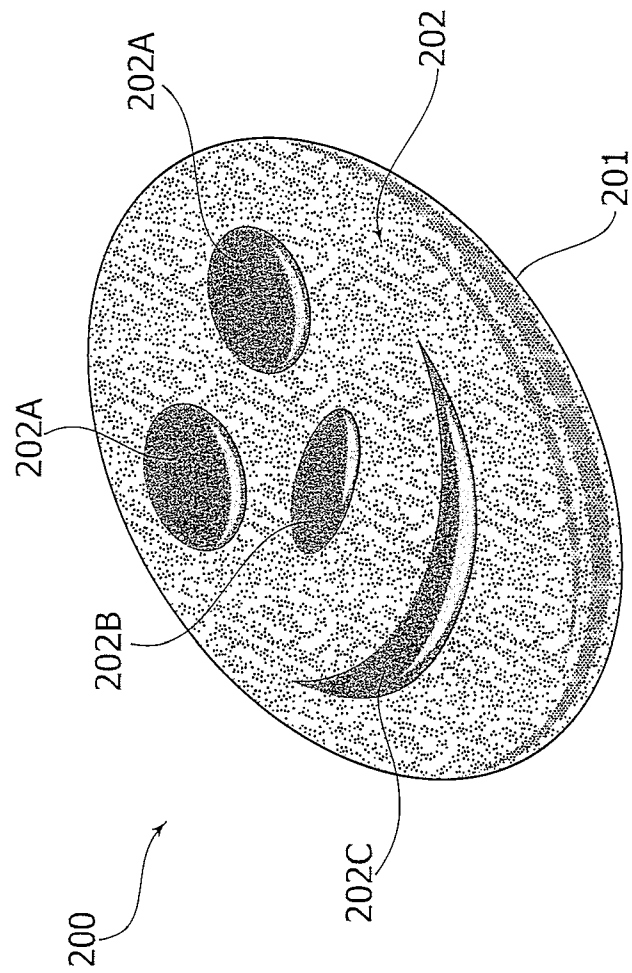


FIG. 2

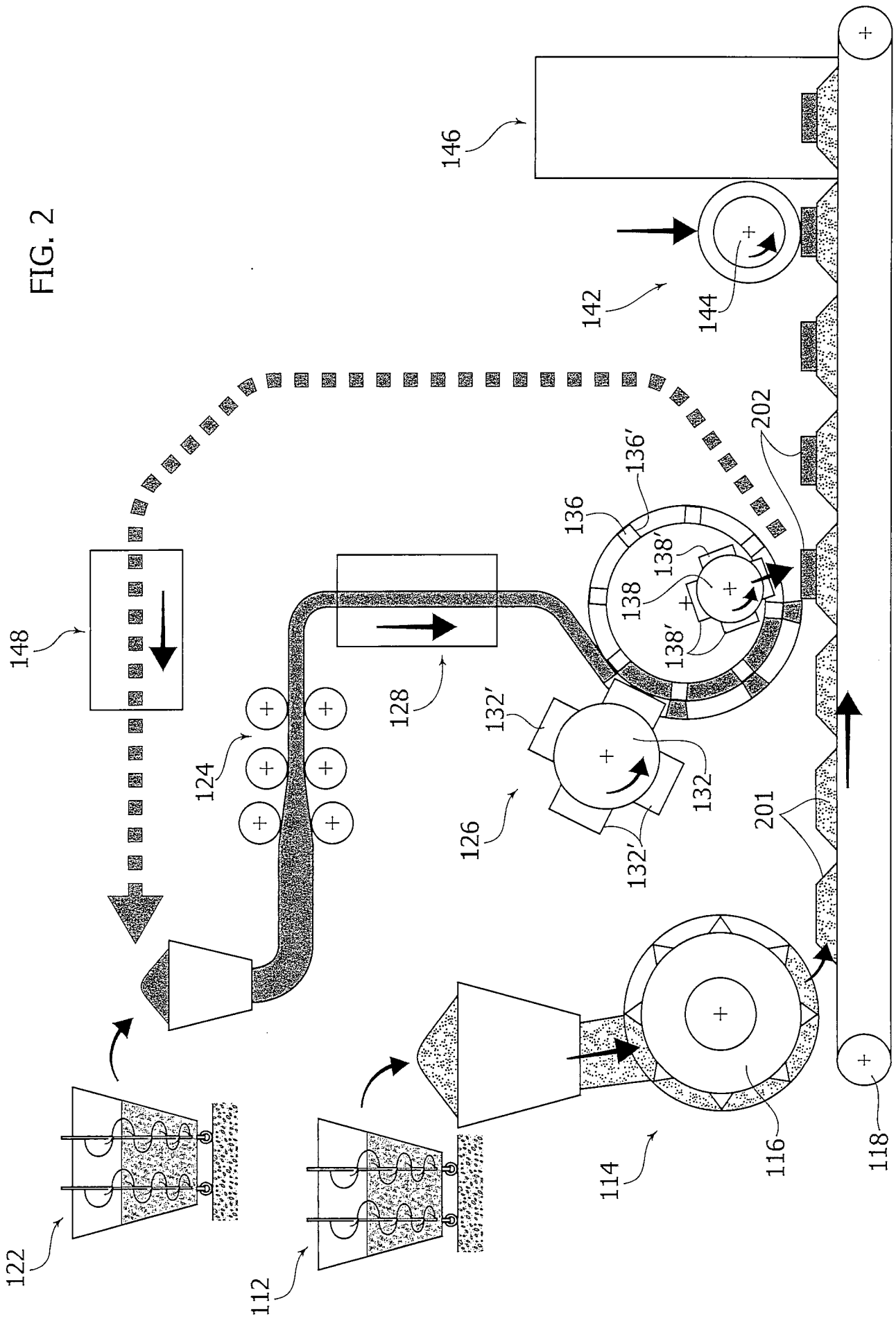


FIG. 3

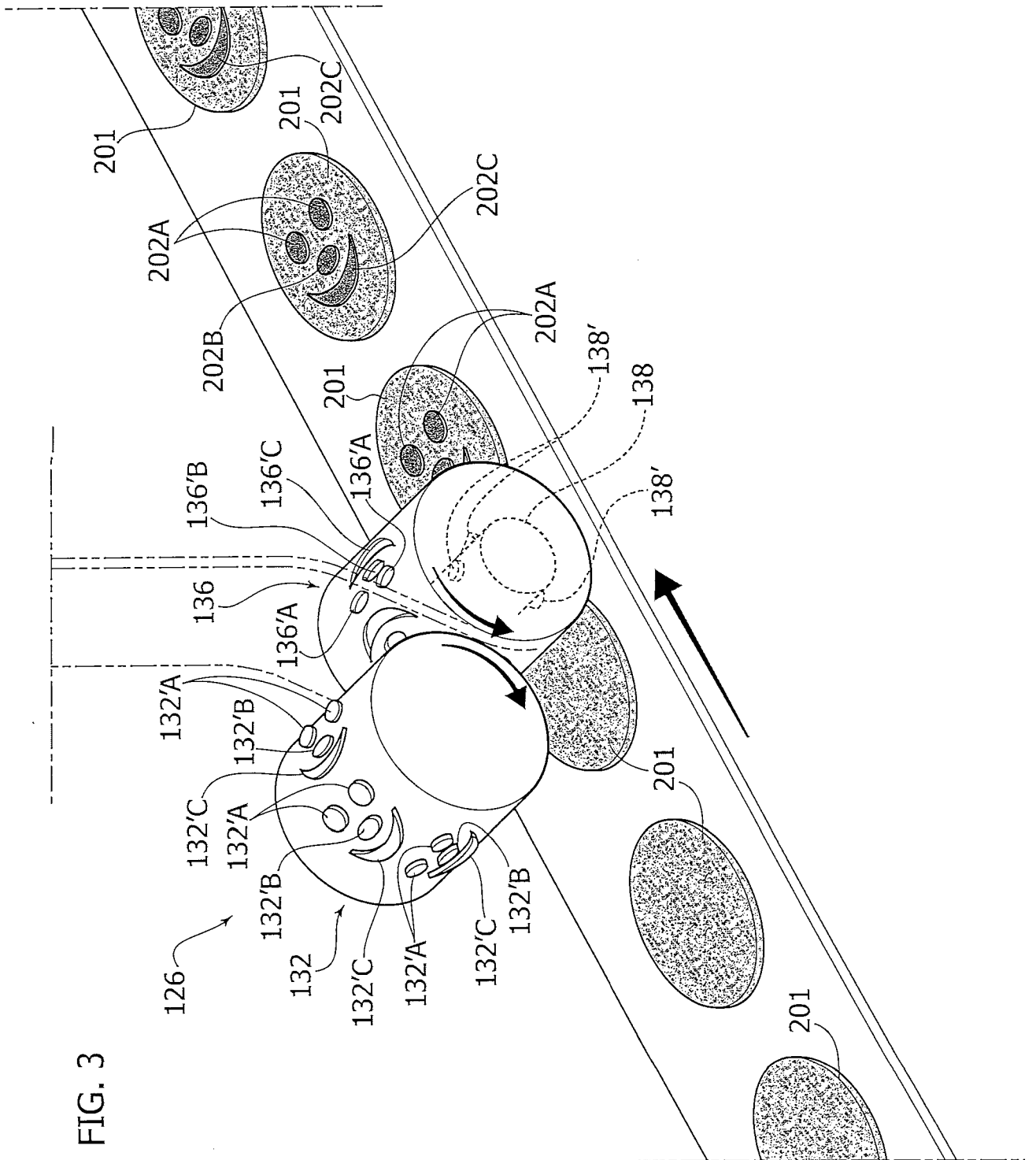


FIG. 4

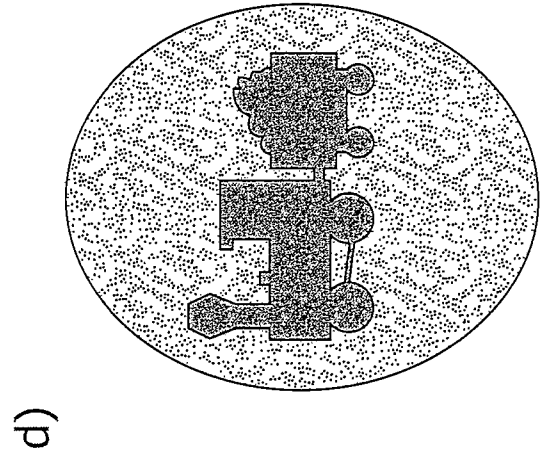
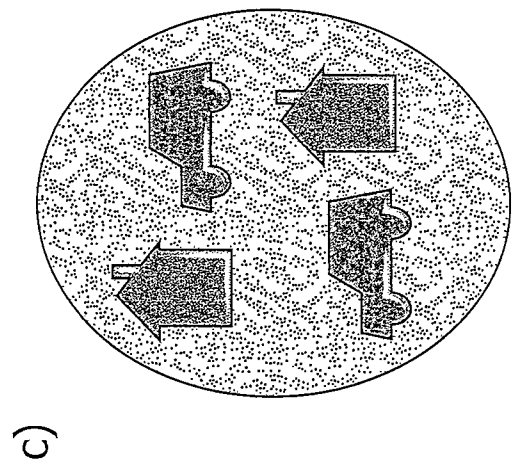
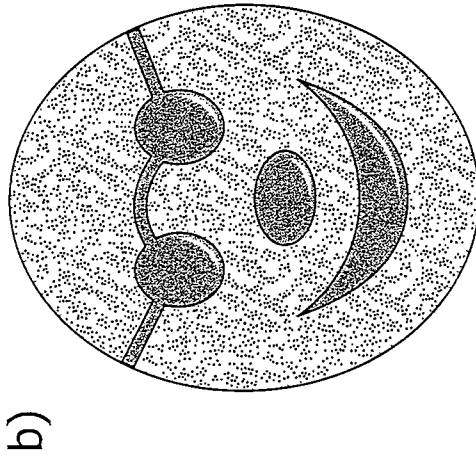
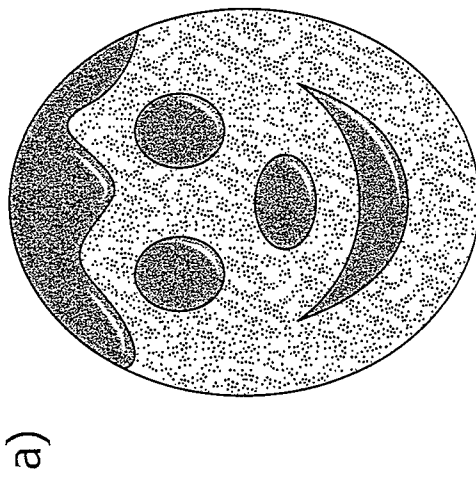
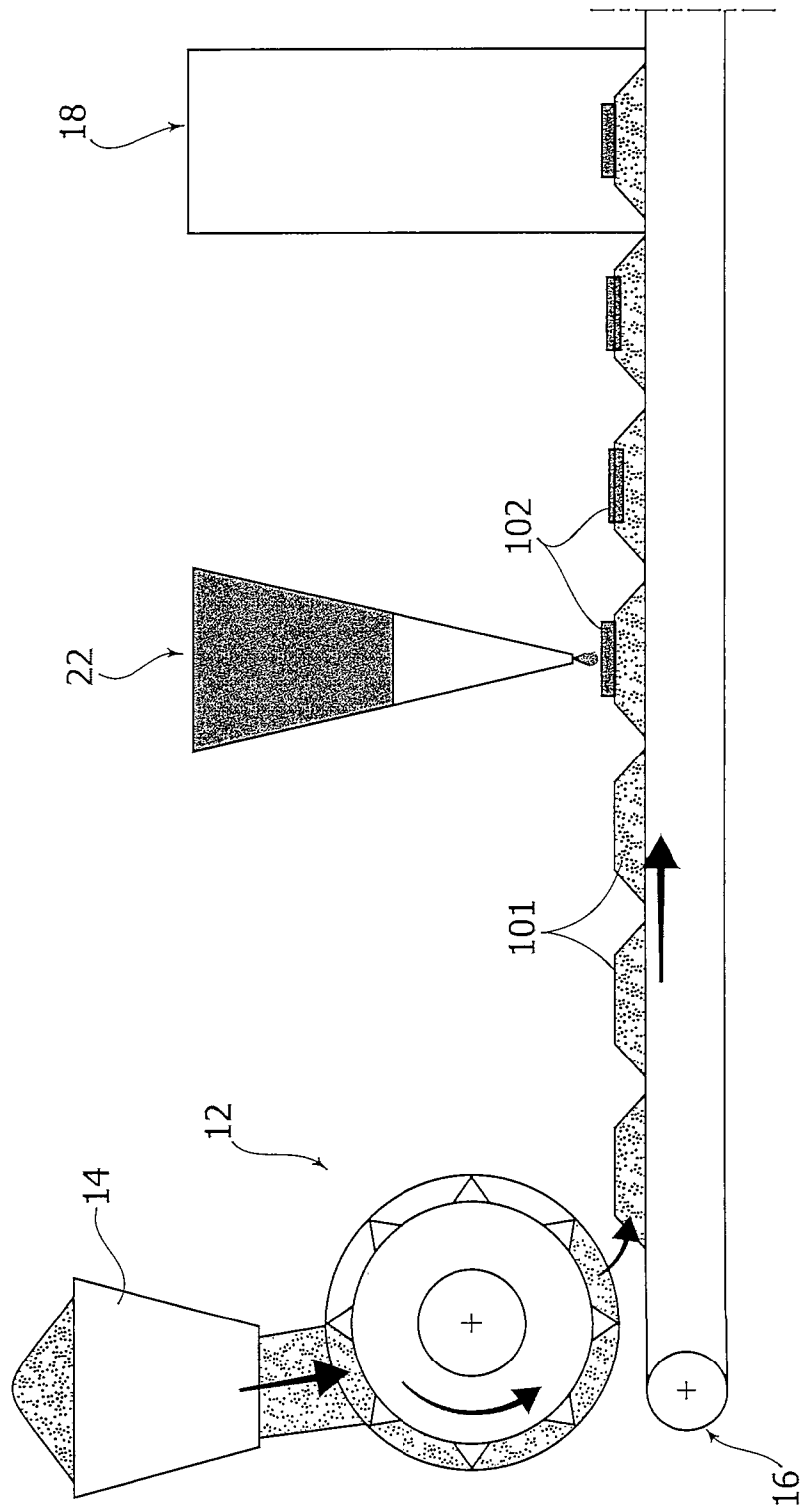


FIG. 5



ABSTRACT

Described herein is an industrial process for manufacturing biscuits (200) provided with an outer surface on which one or more marks are obtained that
5 are designed to constitute a given representation.

The process envisages use of a first biscuit dough to form a main biscuit body (201) and use of a second biscuit dough or a plurality of further biscuit doughs for making one or more auxiliary bodies (202A, 202B,
10 202C) designed to identify said marks. The auxiliary bodies are applied on the main biscuit body according to a mutual arrangement that is such as to reproduce the above representation.

(Figure 2)



SEARCH REPORT
in accordance with Article 35.1 a)
of the Luxembourg law on patents
dated 20 July 1992

LO 1512
LU 93325

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 97/25871 A1 (GROUPE DANONE SA [FR]; CISAMOLO CLAUDIO [IT]; NORESE GIANNI [IT]; BOGL) 24 July 1997 (1997-07-24) * pages 1-3; claims 1-21; figures * * page 8, line 28 - page 12, line 8 * * page 13, lines 32-33 * * page 14, line 27 - page 15, line 8 * -----	1-13	INV. A21C11/00 A21D13/11
X	Anonymous: "Schwarz - Weiß Gebäck (Rezept mit Bild) von chiara Chefkoch.de", 3 May 2016 (2016-05-03), pages 1-4, XP055374474, Retrieved from the Internet: URL:https://web.archive.org/web/20160503001702/http://www.chefkoch.de/rezepte/1164101222530793/Schwarz-Weiss-Gebaeck.html [retrieved on 2017-05-19] * the whole document *	13	
A	US 3 689 280 A (WERNER FRANK CHARLES) 5 September 1972 (1972-09-05) * columns 2-4; figure 2 *	1-13	TECHNICAL FIELDS SEARCHED (IPC) A21C A21D A23G
A	EP 1 872 666 A1 (KRAFT FOODS HOLDINGS INC [US]) 2 January 2008 (2008-01-02) * paragraphs [0062], [0080]; figure 4 *	1-13	
A	WO 94/28727 A1 (GEN MILLS INC [US]) 22 December 1994 (1994-12-22) * claim 17; figures *	1-13	
The present search report has been drawn up for all claims			
Date of completion of the search		Examiner	
29 May 2017		Muller, Isabelle	
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

**ANNEX TO THE SEARCH REPORT
ON LUXEMBOURG PATENT APPLICATION NO.**

LO 1512
LU 93325

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

29-05-2017

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WO 9725871	A1	24-07-1997	AU 1314797 A	11-08-1997
			EP 0874552 A1	04-11-1998
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			AT 466487 T	15-05-2010
			AU 2007202915 A1	17-01-2008
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			CA 2592693 A1	30-12-2007
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			EP 1872666 A1	02-01-2008
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			JP 5242953 B2	24-07-2013
			JP 2008011858 A	24-01-2008
			KR 20080002682 A	04-01-2008
			NO 334041 B1	25-11-2013
			NZ 556121 A	31-05-2009
			PT 1872666 E	26-07-2010
			UA 93493 C2	25-02-2011
			US 2008003340 A1	03-01-2008
			ZA 200705199 B	30-04-2008

WO 9428727	A1	22-12-1994	AU 4631293 A	03-01-1995
			WO 9428727 A1	22-12-1994



WRITTEN OPINION

File No. LO1512	Filing date (day/month/year) 28.11.2016	Priority date (day/month/year)	Application No. LU93325
International Patent Classification (IPC) INV. A21C11/00 A21D13/11			
Applicant SOREMARTEC			

This report contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the application
- ☐ Box No. VIII Certain observations on the application

Form LU237A (Cover Sheet) (January 2007)	Examiner Muller, Isabelle
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WRITTEN OPINION

Application No.

LU93325

Box No. I Basis of the opinion

1. This opinion has been established on the basis of the latest set of claims filed before the start of the search.
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ on paper
 - ☐ in electronic form
 - c. time of filing/furnishing:
 - ☐ contained in the application as filed.
 - ☐ filed together with the application in electronic form.
 - ☐ furnished subsequently.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

Box No. V Reasoned statement with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty	Yes: Claims	5-7, 9-11
	No: Claims	1-4, 8, 12, 13
Inventive step	Yes: Claims	
	No: Claims	1-13
Industrial applicability	Yes: Claims	1-13
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Reference is made to the following documents:

- D1 WO 97/25871 A1 (GROUPE DANONE SA [FR]; CISAMOLO CLAUDIO [IT]; NORESE GIANNI [IT]; BOGL) 24 July 1997 (1997-07-24)
- D2 Anonymous: "Schwarz - Weiß Gebäck (Rezept mit Bild) von chiara | Chefkoch.de", 3 May 2016 (2016-05-03), pages 1-4, XP055374474, Retrieved from the Internet: URL: <https://web.archive.org/web/20160503001702/http://www.chefkoch.de/rezepte/1164101222530793/Schwarz-Weiss-Gebaeck.html> [retrieved on 2017-05-19]
- D3 US 3 689 280 A (WERNER FRANK CHARLES) 5 September 1972 (1972-09-05)
- D4 EP 1 872 666 A1 (KRAFT FOODS HOLDINGS INC [US]) 2 January 2008 (2008-01-02)
- D5 WO 94/28727 A1 (GEN MILLS INC [US]) 22 December 1994 (1994-12-22)

2. The present application does not meet the criteria of patentability, because the subject-matter of claims 1-4, 8, 12 and 13 is not new.

2.1 Claims 1-4 and 8 directed to a process of manufacture:

D1 discloses a first laminated dough product comprising a base dough for biscuits for example and on its surface a second auxiliary dough of different composition such as of different colour, form and/or perfume and in the shape of geometric forms or fantasy forms; the biscuits can be dry biscuits (see page 11-12). In manufacture, the doughs are made separately, kneading being inherent for making biscuit dough, then the body is formed on which separately made auxiliary bodies are deposited, joined, whereafter the raw product is directed to an oven (see passages as referred to in the search report).

As a consequence, the subject-matter of the independent claim 1 as well as the dependent claims 2-4 and 8 is anticipated by D1.

2.2 Claims 12 and 13 directed to a biscuit:

The biscuits made in D1 are novelty destroying for the subject-matter of present claims 12 and 13.

In addition, the biscuits defined in claims 12 and 13 are anticipated by the recipe disclosed in D2, see list of ingredients and description of preparation on page 1 in combination with the second comment of the publisher of the recipe (chiara) on page 2, that cocoa is necessary for the dark dough.

3. The subject-matter of the dependent claims 5-7 and 9-11, in combination with the technical features of the claims to which these claims refer, meet the requirement of novelty since the combination of technical features is not disclosed in any of the cited documents D1-D5.

4. The present application does not meet the criteria of patentability, because the subject-matter of claims 5-7 and 9-11 however is considered not to involve an inventive step.

D1 is regarded as being the prior art closest to the subject-matter of all of these claims, since teaching an industrial process for making biscuits from different doughs, made in separate steps, wherein a first laminated dough serves as basis on which a second dough of different composition is deposited in a manner to form a representation of geometric forms, letters or numbers or fantasy representations.

The subject-matter of the claims 5-7 differs from D1 in that the second dough is made in a machine with counter-rotating rollers that punches from a sheet of dough individual portions and is therefore new.

Claim 9 differs in that D1 is silent about shortbread type biscuits.

Claim 10 differs in the definition of a plurality of doughs of different colour from which auxiliary bodies are made and applied to the biscuit surface. D1 only discloses one second dough for making geometric or fantasy forms on a first biscuit dough.

From the present application documents, no new and non-obvious technical effect has been linked to afore-described differing technical features. At present, the problem to be solved by the present invention may therefore be regarded as lying in the provision of an alternative process to D1 only.

The solution proposed in all afore-mentioned claims cannot be considered as involving an inventive step for the following reasons:

Claim 9:

D1 teaches manufacture of dry biscuits. Shortbread type biscuits is one of a limited choice of dry biscuits in the bakery field. The choice of a dough for making shortbread type biscuit when applying the process of D1 is thus considered straight forward to a skilled man in the bakery field.

Claim 10:

Decoration of confectionery or bakery articles by means of different colours is already known since long. It does thus not appear to be inventive for a skilled man to select besides a second dough for making geometric or fantasy forms as taught in D1 a further dough of other colour for instance to make representations with multiple colour.

Claims 5-7:

Industrial manufacture of biscuits/cookies by use of counter rotating rolls is already common procedure in the art. D3 for example describes manufacture of multi-coloured cookies including separate dough manufacture and the forming of the coloured doughs in a moulding process by using counter rotating rollers.

D4 discloses biscuit manufacture by dividing a continuous dough sheet by means of counter-rotating rollers. D5 likewise refers to other common means such as counter-rotating rollers and cutters in industrial biscuit manufacturing (see for all documents passages as referred to in the search report).

The use of counter-rotating rollers is thus well known in the bakery industry. The exchange of extrusion of the second dough for making the representations as taught in D1 by other common machinery such as counter-rotating rollers combined with moulding or punching can thus not be considered as involving an inventive step.

5. The subject-matter of claims 1-13 is applicable in the bakery industry.