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# Datasheet for the decision of 17 May 2021

**Case Number:** T 2597/16 - 3.2.05

**Application Number:** 10180635.4

**Publication Number:** 2301763

**IPC:** B44C5/06, A41G1/00, B29C47/88, B29C47/00

**Language of the proceedings:** EN

**Title of invention:**
Method for producing imitation branches and imitation branch

**Patent Proprietor:**
Solidor bvba

**Opponent:**
NMC S.A.

**Relevant legal provisions:**
EPC Art. 54(1), 54(2), 56, 83, 84, 114
RPBA 2020 Art. 13(2)

**Keyword:**
Late-filed objections - admitted (no)
Novelty (yes)
Inventive step (yes)

**Decisions cited:**
G 0009/91, G 0010/91, G 0003/14

Europäisches Patentamt
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**Case Number: T 2597/16 - 3.2.05**

# D E C I S I O N
# of Technical Board of Appeal 3.2.05
# of 17 May 2021

| | |
|---|---|
| **Appellant:** (Opponent) | NMC S.A.<br>Gert-Noël-Strasse<br>4731 Eynatten (BE) |
| **Representative:** | Office Freylinger<br>P.O. Box 48<br>8001 Strassen (LU) |
| **Respondent:** (Patent Proprietor) | Solidor bvba<br>Lauwbergstraat 124b<br>8930 Lauwe (BE) |
| **Representative:** | Ostyn, Frans<br>KOB NV<br>President Kennedypark 31 c<br>8500 Kortrijk (BE) |
| **Decision under appeal:** | **Interlocutory decision of the Opposition Division of the European Patent Office posted on 10 October 2016 concerning maintenance of the European Patent No. 2301763 in amended form.** |

**Composition of the Board:**

| | |
|---|---|
| **Chairman** | P. Lanz |
| **Members:** | B. Spitzer |
| | C. Brandt |

## Summary of Facts and Submissions

I. The opponent appealed against the interlocutory decision of the opposition division maintaining European patent No. 2 301 763 as amended according to the auxiliary request filed on 19 August 2016.

II. During the opposition proceedings, the grounds for opposition under Article 100(a) EPC in conjunction with Articles 54 and 56 EPC (lack of novelty and lack of inventive step) and Article 100(b) EPC were examined.

III. In agreement with both parties, oral proceedings before the board of appeal were held on 17 May 2021 as a video conference.

IV. *Requests*

The appellant (opponent) requested that the decision under appeal be set aside and that the patent be revoked.

The respondent (patent proprietor) requested that the decision under appeal be set aside and that the patent be maintained in amended form according to either the main request or auxiliary request 1, both filed by letter dated 13 May 2020.

V. The documents cited during the appeal proceedings include the following:

D1: US 3,664,790 B
D7: US 3,295,163 B
D8: DuPont™ Surlyn® Extrusion Guide Dec. 2003

VI. Claim 1 according to the main request reads as follows (feature designations added by the board in square brackets):

"Method for producing imitation branches (1), in which **[1.]** a polymer mass is melted under pressure, **[2.]** is then forced through an extruder head (2) and **[3.]** is drawn from said extruder head (2) in the form of an elongate plastic strand (3), **[4.]** which is subsequently cooled and is shortened to the desired length, characterized in that **[5.]** the plastic strand (3) is at least partly drawn through a moving cooling medium (4) during cooling, **[6.]** in which the plastic strand (3) is completely submerged in said cooling medium (4) for at least part of its path through the cooling medium (4), and **[7.]** in which during cooling, air and/or nitrogen bubbles are introduced into the cooling medium (4) **[i)]** which is provided in a cooling bath by **[b)]** aerating the cooling bath continuously by means of an aerating system (10) or **[c)]** by projecting liquid (water) droplets onto the surface of the cooling medium (4) by using one or more liquid-projecting device(s) (15) **[8.]** so that air and/or nitrogen bubbles are provided on at least a part of the outer surface of the plastic strand (3), **[9.]** which bubbles at irregular locations insulate the surface of the plastic strand (3) from the cooling medium (4), by which the plastic strand (3) on its outer surface is at least partially provided with irregular modifications (5) to the surface structure."

VII. The appellant's submissions can be summarised as follows.

*Objections under Articles 83 and 84 EPC and their admittance*

According to the appellant's statement of grounds of appeal, the claims as amended during the opposition proceedings lacked clarity. The term "imitation branches" was not clear as it had only an aesthetical meaning and no technical limitations. Further objections under Articles 83 and 84 EPC were raised during the oral proceedings. The granted claims did not contain an aerating system according to feature 7.i)b) or a liquid-projecting device according to feature 7.i)c). These features were not clear. An aerating system and a liquid-projecting device were mentioned in paragraph [0030] of the patent in suit and shown in Figures 2a and 2b without any further explanation or specification. Since they were not further defined in the patent specification, the invention was not disclosed in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art. With respect to clarity, decisions G 1/04 (OJ EPO 2006, 334), T 342/03, T 2091/11, T 630/14, T 1140/14 and T 1957/14 were cited to emphasise that the meaning of the essential features should be clear for the person skilled in the art from the wording of the claim alone. According to decisions T 165/84 and T 6/01, claims lacked clarity if the exact distinctions which delimited the scope of protection could not be learnt from them.

With respect to the late filing and admittance of these objections, no arguments were put forward. Instead, the

appellant argued that the board had to consider these objections *ex officio*, notably because these features contained unsearched subject-matter.

*Claim 1 of the main request - lack of novelty*

The subject-matter of claim 1 of the main request was not new with regard to document D8 and common general knowledge. Reference was made in particular to page 2, section V, page 11, right column, paragraph "Free extrusion", page 13, right column, chapter "Water Cooling" and page 16, left column, chapter "Cooling". Document D8 explicitly disclosed all the features except features 7.i)b) and 7.i)c), which would have been implicitly known. Any person, not only the skilled person, would have known to use a bubble stone in a fish tank, taken a shower or known the large fountain in Lake Geneva. Hence, an aerating system and a liquid-projecting device belonged to the state of the art and were known together with the teachings of document D8.

*Claim 1 of the main request - lack of inventive step*

The inventive-step attack was based on a combination of document D8 or document D1 with common general knowledge.

Document D8 was considered the closest prior art. It was not a normal prior-art document but presented common general knowledge. The distinguishing features were features 7.i)b) and 7.i)c). The technical effect of these features was the introduction of bubbles into the cooling medium. The objective technical problem was thus to find an alternative way of introducing air bubbles into the cooling medium. The objective technical problem was not related to enhancing the

natural appearance because in the patent in suit the natural appearance was achieved by the cooling medium. The presence of air bubbles was related to circular indentations (see paragraphs [0012], [0013] and [0028] (top of column 5) of the patent in suit, which corresponded to page 3, lines 5 to 18 and page 6, last three lines of the application as filed).
The solution would have been obvious. The two alternatives directed to an aerating device or a liquid-projecting device were - even in the patent in suit - acknowledged as belonging to common general knowledge because these two methods were only generally mentioned in paragraph [0030] and shown in Figures 2a and 2b of the patent in suit without any further explanation or specification. The patent in suit left open the type and size of such devices and its location in the cooling bath. Another reason why these features would have been obvious was that anyone, not only the skilled person, would have known how to create bubbles in a water tank. Reference was again made to bubble stones for fish tanks, fountains and showers. The result of such devices was clearly predictable (see T 149/93, T 249/88, T 1053/93, T 318/02 and T 1877/08).
To conclude, the skilled person not only could but certainly would have used such devices and arrived at the claimed invention. Furthermore, document D8 did not teach the avoidance of bubbles. It merely mentioned in a neutral language the effect of the presence of bubbles (see document D8, page 16, left column: "*Certain product defects can develop during cooling*.", the four bullets and page 19, Figure 15, section V).
Hence, document D8 disclosed all means for producing an imperfect surface. It did not matter whether these surface defects were disclosed as intentional or not. The relevant point was that document D8 disclosed the presence of air bubbles in quench water and their

effect. The rod produced under such conditions was an imperfect strand, and thus the subject-matter of claim 1 would have been obvious when starting from document D8.

Document D1 was an equally suitable starting point. It disclosed the production of imitation branches, i.e. the production of elongated plastic strands that had an irregular surface. In document D1, no circular depressions were formed. Different defects on the surface were enumerated in document D8, on page 16, left column and in Figure 15 on page 19, section V. Document D8 presented the common general knowledge in the field of extrusion of plastic strands which the skilled person would have taken into account. From document D8, it was known that the presence of air bubbles resulted in surface defects. Hence, plastic strands with irregular surface defects created by the presence of air bubbles in the cooling bath had been available before the priority date of the patent in suit.

Thus, the objective technical problem was to find an alternative way of creating bubbles in the water bath. The means to create bubbles were generally known. The invention arbitrarily chose three different ways of creating bubbles, two of which had been kept in the current main request (see page 7, lines 6 to 11 of the application as filed or paragraph [0030] of the patent in suit). The use of well-known means for creating a well-known effect would have been obvious in view of documents D7 or D8. For the same reasons as mentioned above for document D8 as a suitable starting point, the method of claim 1 of the main request did not involve an inventive step.

Considering the decision of the opposition division, the objective technical problem was not to provide a method by which more realistic imitation branches could be manufactured (see Reasons of the decision, section 5.2). This formulation of the objective technical problem was based on the assumption that more circular depressed defects made the plastic strand look more like a natural branch. A more natural impression was considered an aesthetical effect and hence a non-technical effect which did not contribute to inventive activity (see T 641/00, T 209/91, T619/02 and T 336/07).

The conclusion of the opposition division that the addition of bubbles into the cooling medium was not encouraged or suggested anywhere in the prior art (see Reasons of the decision, section 5.2) was not correct since there was no basis in the application as filed for a larger number of bubbles creating a more realistic branch appearance. The skilled person would have known that the required surface defects could easily be created with bubbles in the cooling bath. Devices for the creation of bubbles were well known.

Therefore, the subject-matter of claim 1 of the main request was obvious in view of the prior art.

VIII. The respondent essentially argued as follows.

*Non-admittance of objections under Articles 84 and 83 EPC*

The main request had been filed with a letter dated 13 May 2020, well before the date of the oral proceedings. Features 7.i)b) and 7.i)c) had already been present in the auxiliary request filed during the

opposition proceedings. Thus, the new objections raised during the oral proceedings before the board were late-filed and should not be admitted. Besides, these features were clear and disclosed in, for example, Figures 2a and 2b of the patent in suit.

*Main request - novelty*

The subject-matter of claim 1 of the main request was new vis-à-vis document D8. Document D8 did not show feature 7.i)b) and 7.i)c), neither explicitly nor implicitly. There was no disclosure of an aerating system for aerating the cooling bath or a liquid-projecting device projecting liquid (water) droplets onto the surface of the cooling medium according to claim 1. Document D8 was an extrusion guide presenting the common general knowledge in this field. However, the introduction of bubbles with the means according to features 7.i)b) and 7.i)c) was not mentioned.

*Main request - inventive step*

The subject-matter of claim 1 of the main request involved an inventive step starting from document D8 or document D1.

Document D8 was not considered a suitable starting point because it was not related to the production of imitation branches or imperfect plastic stands. It taught the contrary (see document D8, page 19, Figure 15: Troubleshooting Guide), i.e. the avoidance of surface defects. Thus, the skilled person would not have consulted document D8 without hindsight knowledge of the current invention.

Even if document D8 were considered a suitable starting

point, it did not disclose an aeration system or a liquid-projecting device according to features 7.i)b) and 7.i)c). The objective technical problem was how to achieve a more natural surface impression (see paragraph [0028] of the patent in suit). As document D8 did not propose the introduction of bubbles into the cooling medium, the skilled person would not have been motivated to intentionally introduce additional bubbles into the cooling medium. The teaching of document D8 went in a different direction.

Instead, document D1 was considered the closest prior art because it disclosed the production of imitation branches. The subject-matter of claim 1 of the main request differed from document D1 in features 7.i)b) and 7.i)c). Since documents D7 and D8 taught the avoidance of air bubbles, the skilled person would not have considered these documents without hindsight knowledge of the invention. Document D7 was from a different field and concerned the production of electrical conductor wires; it did not relate to imitation branches. Document D8 was an extrusion guide which taught the avoidance of air bubbles in the cooling bath (see page 16, left column and page 19, Figure 15: Troubleshooting Guide).

For these reasons, the subject-matter of claim 1 of the main request was not rendered obvious by the prior art.

## Reasons for the Decision

1. Clarity

1.1 In the statement of grounds of appeal, the appellant argued that the claims had been amended during the opposition proceedings and thus had to meet the

requirements of Article 84 EPC. However, the term "imitation branches" in claim 1 was not clear as it had only an aesthetical meaning and did not imply any technical limitations.

The board notes that the terminology "imitation branches" does not originate from a post-grant claim amendment but formed part of claim 1 as granted. According to decision G 3/14 (OJ EPO 2015, A102), for the purposes of Article 101(3) EPC, the claims of the patent may be examined for compliance with the requirements of Article 84 EPC only when, and then only to the extent that, the amendment introduces non-compliance with Article 84 EPC. In view of these limitations, the clarity of the terminology "imitation branches" cannot be examined in these appeal proceedings.

2. Admittance of objections under Articles 84 and 83 EPC raised during oral proceedings before the board

2.1 The admittance of the objections under Articles 84 and 83 EPC with respect to the terms "aerating system" and "liquid-projecting device" according to features 7.i)b) and 7.i)c), first raised during the oral proceedings on appeal, is governed by Article 13(2) RPBA 2020, which has the following wording:

"*Any amendment to a party's appeal case made after the expiry of a period specified by the Board in a communication under Rule 100, paragraph 2, EPC or, where such a communication is not issued, after notification of a summons to oral proceedings shall, in principle, not be taken into account unless there are exceptional circumstances, which have been justified*

*with cogent reasons by the party concerned.*"

2.2 Features 7.i)b) and 7.i)c) were part of the auxiliary request filed on 19 August 2016, on the basis of which the patent was maintained in amended form in the opposition proceedings. During those proceedings, the opponent withdrew the objection under Article 83 EPC (see section 2.2 of the minutes of the oral proceedings). No objections based on Article 84 EPC were raised at the opposition stage or in the statement of grounds of appeal with respect to features 7.i)b) and 7.i)c). Thus, the objections in respect of these features constitute an amendment to the appellant's case. The appellant could and should have raised these objections during the opposition proceedings or in its statement of grounds of appeal at the latest. No exceptional circumstances or cogent reasons for not doing so were pleaded by the appellant. In applying the principles of Article 13(2) RPBA 2020 to the case at hand, the board exercised its discretion and decided not to admit the new objections into the appeal proceedings.

2.3 Regarding the appellant's assertion that these objections had to be examined *ex officio*, the board points to the judicial character of contentious appeal proceedings as explained in Case Law of the Boards of Appeal of the European Patent Office, 9th edition, 2019, V.A.1.1 and V.A.4.2.1. In this context, the board especially refers to the fact that *inter partes* appeal proceedings primarily serve the right of a party who lost during opposition proceedings to have the first-instance decision judicially reviewed. Such proceedings are by their very nature less investigative than administrative proceedings. Although Article 114(1) EPC formally also covers the appeal procedure, this

provision generally applies in a more restrictive manner in *inter partes* appeal proceedings than in opposition proceedings (see G 9/91 (OJ EPO 1993, 408) and G 10/91 (OJ EPO 1993, 420)).

Additionally, the board observes that its obligations under Article 114(1) EPC are further limited under Article 114(2) EPC where facts and evidence are submitted late.

The above principles enshrined in the EPC and further developed by the case law of the boards of appeal form the basis of and are reflected in the provisions of Articles 12 and 13 RPBA 2020 governing the admittance of belatedly submitted facts, evidence and objections at the appeal stage.

Thus, Article 114(1) EPC cannot be interpreted as obliging a board to examine of its own motion late-filed objections which it did not admit under Article 13(2) RPBA 2020 (see section 2.2 above).

2.4 Regarding the appellant's allegation that features 7.i)b) and 7.i)c) constitute "unsearched subject-matter", the board observes that in opposition appeal proceedings the board does not carry out supplementary searches for prior art. Rather, in view of the contentious nature of these proceedings, it is up to the opponent to submit the evidence necessary to support its case for revocation of the patent.

3. Claim 1 of the main request - novelty

3.1 According to the boards' established case law, a prior-art document anticipates the novelty of claimed subject-matter if the latter is directly and

unambiguously derivable from that document, including any features implicit to a person skilled in the art.

3.2 Document D8 is an extrusion guide for a resin "DuPont™ Surlyn®".

Document D8 does not refer to a method for producing imitation branches. However, the method it describes is generally used for small diameter tubing and rods (page 2, section V, page 11, right column, chapter "Free extrusion"). The term "imitation branches" is further defined in feature 9 of claim 1 of the patent in suit thus:"*the plastic strand (3) on its outer surface is at least partially provided with irregular modifications to the surface structure*". Such modifications are disclosed in document D8 (page 16, left column: "*Cooling of extruded products deserves special consideration because this process step, most frequently, is the limiting factor in production rate*", and later on it reads: "*Depressed, circular defects can be formed by air bubbles attaching themselves to the extruded product as it travels through the quench tank*"). Although in document D8 these modifications present an undesired effect, there is a disclosure of irregular modifications to the surface structure of the extruded strand, which can thus be considered an imitation branch.

Document D8 discloses an extrusion process (page 11, right column) (features 1 to 6) and the step of water-cooling the extruded strand in a quench tank having one or two water inlets and drains (page 13, right column, chapter "Water Cooling": "*Typical quench tanks have one or two water inlets and drains*.") (feature i)). Feature 7 is equally known from document D8 as it deals with the (undesired) effects of air bubbles introduced into

the cooling water and attaching themselves to the extruded product as it travels through the quench tank.

With respect to the introduction of bubbles into the cooling medium, claim 1 of the main request is restricted to alternatives b) and c). In alternative b), bubbles are introduced by aerating the cooling bath continuously by means of an aerating system, whereas in alternative c) this is achieved by projecting liquid (water) droplets onto the surface of the cooling medium by using one or more liquid-projecting devices (features 7.i)b) and 7.i)c)). While aerating systems and liquid-projecting devices are generally known *per se*, these alternatives are not disclosed in document D8. The question concerning a lack of novelty with regard to document D8 is not whether separate elements of the claim are *per se* known but whether they are disclosed in combination in the context of the disclosure of document D8.

As this is not the case, the subject-matter of claim 1 of the main request is new vis-à-vis document D8 (Article 54(1) and (2) EPC).

4. Claim 1 of the main request - inventive step

In deciding whether the claimed subject-matter fulfils the requirements of Article 56 EPC, the problem-solution approach is applied. The appellant disputed inventive step starting from either document D8 or document D1 as the closest prior art.

4.1 Starting from document D8

4.1.1 Document D8 is an extrusion guide for a resin "DuPont™ Surlyn®" which deals with, *inter alia*, the extrusion of

rods (see page 2, right column, section V). Document D8 aims at avoiding the production of strands with surface defects caused by air bubbles in the cooling water (see page 16, left column, "Cooling" and page 19, Figure 15, section V).

Since document D8 is from a related field and has a plurality of features in common with the claimed subject-matter (see section 3.2 above), it is a suitable starting point for assessing inventive step.

4.1.2 The parties agree that the subject-matter of claim 1 of the main request differs from document D8 in features 7.i)b) and 7.i)c). Document D8 deals with air bubbles in the cooling water. However, it is silent on how these air bubbles are introduced into the cooling medium. More importantly, it does not disclose that air or nitrogen bubbles are deliberately introduced into the quench tank.

The technical effect of these distinguishing features is to enhance the natural appearance of the plastic strand. This is mentioned in paragraph [0028] of the patent in suit. According to this paragraph, an advantageous effect of the invention is the presence of air and/or nitrogen bubbles during the cooling process. As a result, "*circular indentations, oval indentations, indentations with a blown centre and/or bubbles are formed in the surface of the plastic strand (3).Such indentations enhance the natural appearance and can be compared to so-called knots or shots which are present in natural branches*" (see paragraph [0027] of the patent in suit).

4.1.3 According to established case law, the objective technical problem has to be formulated based on the

technical effect of those features distinguishing the claim from the prior art. The formulation of the problem should be as specific as possible without containing elements or pointers to the solution. Such a definition of the problem often starts from the problem described in the patent in suit (see Case Law of the Boards of Appeal of the European Patent Office, 9th edition, 2019, I.D.4.3.).

Applying these principles to the case at hand, the objective technical problem is to provide a method for producing plastic strands with an enhanced natural impression. The latter is contributed to by the air and/or nitrogen bubbles in the cooling bath (see section 4.1.2 above).

4.1.4 The appellant pointed out that it was not the presence of bubbles but the cooling bath which contributed to an enhancement of the natural impression. However, the passages cited by the appellant (paragraphs [0008], [0012], [0013] and [0028] of the patent in suit) all refer to bubbles present in the cooling bath which cause the indentations and, thus, enhance the natural impression. Since some bubbles are inevitably present in the cooling bath (see document D8, page 16, left column, second bullet), the objective technical problem suggested by the appellant was to find an alternative way of introducing bubbles into the cooling bath. As this includes part of the solution offered by the patent in suit, such a statement of the problem would result in an *ex post facto* view when the state of the art is assessed in terms of this problem.

4.1.5 As stated above, document D8 does not disclose intentionally introducing air bubbles into a quench tank to modify the surface of the extruded strand.

Rather, it explicitly teaches away from producing a strand having such surface modifications. The skilled person would thus not have been prompted by document D8 to increase the number of surface defects to enhance the natural impression of the extruded strand. Document D8 teaches that the presence of bubbles in the cooling medium is considered a problem and, accordingly, should be avoided. Page 16, left column emphasises that *"[c]ooling of extruded products deserves special consideration because this process step, most frequently, is the limiting factor in production rate"* and enumerates certain product defects: *"Depressed, circular defects can be formed by air bubbles attaching themselves to the extruded product as it travels through the quench tank. The air bubbles 'insulate' the product surface and slows the cooling rate".* Moreover, "*[t]he slow cooling permits more shrinkage and a subsequent depression (sink) in the surface*". In Figure 15 of document D8, a troubleshooting guide for avoiding defective products is disclosed. In section V of this figure, surface defects, which might be caused by air bubbles in the quench tank, are mentioned as a problem (see point B). To remedy such defects, improved quench water circulation is proposed (see right column of Figure 15). To conclude, document D8 would have taught the skilled person how to remedy the problem of surface defects but not to introduce more of them. As the proposed solution goes against the very essence of the teaching in document D8, this document cannot render the claimed solution obvious.

4.1.6 The appellant argued that aerating systems and liquid-projecting devices were well known and had a well-known effect. This is not disputed. But the relevant question is whether the skilled person would have used such a device to introduce air bubbles into the cooling medium

of a quench tank for producing imitation branches. As set out in section 4.1.5 above, this is not the case for the extrusion method known from document D8.

4.1.7 By referring to T 149/93, T 249/88, T 1053/93, T 318/02 and T 1877/08, the appellant argued that the solution was obvious because there was a reasonable expectation of success when using an aerating device or a liquid-projecting device; i.e. a well-known device produces a well-known technical effect.

Here again, it is not disputed that the devices according to features 7.i)b) and 7.i)c) are as such well known and have a well-known effect. However, their use in the cooling bath of an extrusion line for producing imitation branches is not rendered obvious by the evidence on file. The objective technical problem (see section 4.1.3 above) is to provide a method for producing plastic strands with an enhanced natural impression. The solution to this problem is the intentional introduction of air bubbles into the cooling medium via an aerating system or a liquid-projecting device. The argument that aerating and liquid-projecting devices were generally known does not alter the fact that there is nothing in the cited prior art which would have pointed the skilled person to the intentional introduction of additional air bubbles into the cooling medium of an extrusion line to create surface defects on the extruded strand.

4.1.8 Finally, the appellant argued that the enhancement of the natural impression was a non-technical effect. Non-technical effects could not contribute to inventive step. The board points out that the enhancement of the natural impression is not part of claim 1. Distinguishing features 7.i)b) and 7.i)c) are technical

features. They relate to an aerating system which aerates the cooling bath or, alternatively, a liquid-projecting device which projects liquid droplets onto the surface of the cooling medium. Thus, the principles established in Case Law of the Boards of Appeal of the European Patent Office, 9th edition, 2019, I.D.9.1.2 and I.D.9.1.5 (see T 641/00, T 209/91, T619/02, T 336/07 and T 641/00) with respect to a mix of technical and non-technical features are not applicable.

4.2 Starting from document D1

4.2.1 Document D1 is concerned (see column 1, lines 25 to 29 and lines 38 to 43) with the production of imitation branches by extrusion of a plastic strand (features 1 to 4). For cooling, a water trough is disclosed (see column 4, line 60) (features 5, 6, i). Document D1 proposes using polymers having different colours and varying the haul-off speed to give the extruded plastic strand a more natural appearance or to provide irregular modifications to the surface. Thus, document D1 is from the same technical field as the claimed invention and is considered a suitable starting point for assessing inventive step.

4.2.2 The parties agree that the subject-matter of claim 1 of the main request differs from document D1 in that air and/or nitrogen bubbles are introduced into the cooling medium by aerating the cooling bath continuously using an aerating system or by projecting liquid (water) droplets onto the surface of the cooling medium using one or more liquid-projecting devices (features 7.i)b) and 7.i)c)). For the technical effect of these features, see section 4.1.2 above.

4.2.3 Applying the principles as set out in section 4.1.3 above, the objective technical problem is to find an alternative method for producing imitation branches.

4.2.4 Document D1 is silent regarding the presence of air bubbles in the water trough. The common general knowledge as presented in document D8 (see section 4.1.5 above) and confirmed in document D7 (see column 1, lines 47 to 65) teaches the contrary, namely the avoidance of air bubbles. Although it was known that air bubbles in the quench tank result in surface modifications, this was not used to intentionally introduce air bubbles to produce surface modifications of imitation branches, as discussed in section 4.1.5 above. Therefore, the skilled person would not have changed the process known from document D1.

4.3 Consequently, the subject-matter of claim 1 of the main request involves an inventive step starting from the teaching of document D8 or document D1 (Article 56 EPC).

5. Conclusion

Taking into consideration the amendments made by the respondent, the patent and the invention to which it relates meet the requirements of the EPC. The patent can thus be maintained as amended according to the main request.

**Order**

**For these reasons it is decided that:**

1. The decision under appeal is set aside.

2. The case is remitted to the department of first instance with the order to maintain the patent in amended form on the basis of the following documents:

   a) claims 1 to 7 according to the main request filed with the letter dated 13 May 2020

   b) pages 1 to 9 of the description according to the main request filed during the oral proceedings

   c) Figures 1a to 2b of the patent specification

The Registrar: The Chairman:

N. Schneider P. Lanz

Decision electronically authenticated