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Datasheet for the decision of 8 June 2022

Case Number: T 0916/19 - 3.4.03

Application Number: 06749634.9

Publication Number: 1877246

IPC: H01L39/02, H01B12/06

Language of the proceedings: EN

Title of invention:
JOINED SUPERCONDUCTIVE ARTICLES

Patent Proprietor:
Superpower, Inc.

Opponent:
Siemens Aktiengesellschaft

Headword:

Relevant legal provisions:
EPC 1973 Art. 54, 56, 111(1)
EPC Art. 52(1), 101(3)(a), 123(2)

Keyword:

Amendments - intermediate generalisation - allowable (yes)
Novelty - new main request (yes)
Inventive step - new main request (yes)
Examination of the opposition - maintenance of the patent in amended form

Decisions cited:

Catchword:

Europäisches Patentamt
European Patent Office
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Beschwerdekammern

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Case Number: T 0916/19 - 3.4.03

D E C I S I O N
of Technical Board of Appeal 3.4.03
of 8 June 2022

Appellant: (Patent Proprietor)	Superpower, Inc. 450 Duane Avenue Schenectady, NY 12304 (US)
Representative:	Zimmermann & Partner Patentanwälte mbB Postfach 330 920 80069 München (DE)
Respondent: (Opponent)	Siemens Aktiengesellschaft Werner-von-Siemens-Straße 1 80333 München (DE)
Representative:	Siemens AG Postfach 22 16 34 80506 München (DE)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 31 January 2019 concerning maintenance of the European Patent No. 1877246 in amended form.**

Composition of the Board:

Chairman	T. Häusser
Members:	M. Stenger
	G. Decker

Summary of Facts and Submissions

I. The appeal concerns the interlocutory decision of the Opposition Division to maintain European patent no. EP 1 877 246 in amended form. In the contested decision, the Opposition Division set out that the main request and auxiliary requests 1 to 22 did not meet the requirements of Article 123(2) EPC. Auxiliary request 23 was found to comply with the requirements of the EPC.

II. The following documents are referred to:

D1: US 5 358 929 A (FUJIKAMI JUN [JP] ET AL) 25 October 1994
D2: JP 1 302676 A (FUJIKURA LTD) 6 December 1989
D2a: machine translation of JP 1 302676 A
D3: US 6 561 412 B2 (SUPERCONDUCTIVITY RES LAB [JP]) 13 May 2003
D4: JP 4 98773, 31 March 1992
D4a: machine translation of JP 4 98773
D5: US 2005/067184 A1 (JANG HYUN-MAN [KR]) 31 March 2005
D6: JP 2001 319750 A (FUJI KU RAL TD; CHUBU ELECTRIC POWER) 16 November 2001
D6a: machine translation of JP 2001 319750 A
D7: JP 2000 133067 A (FUJI KU RAL TD; CHUBU ELECTRIC POWER) 12 May 2000
D7a: machine translation of JP 2000 133067 A
D8: US 2005/016759 A 1 (MALOZEMOFF ALEXIS P [US] ET AL) 27 January 2005
D9: US 5 302 580 A (SHIMIZU HIDEKI [JP] ET AL) 12 April 1994

III. At the end of the oral proceedings before the Board, the appellant-patent proprietor (hereinafter: "proprietor") requested that the decision under appeal be set aside and the case be remitted to the opposition division with the order to maintain the European patent as amended in the following version:

Description:
Pages 1 to 18 received during the oral proceedings of 8 June 2022

Claims:
No. 1 to 12 of the main request, filed as auxiliary request 17 with the letter dated 12 October 2018

Drawings:
Figures 1 to 10 of the patent specification

IV. The respondent-opponent (hereinafter: "opponent") was not represented at the oral proceedings before the Board, as announced with a letter dated 29 March 2022. It had requested in its reply to the grounds of appeal that the appeal be dismissed.

V. Claim 1 of the sole request has the following wording (labeling added by the Board):

1) *A superconducting article, comprising:*
2) *a first superconductive segment (1a) having a nominal thickness t_{n1}, wherein the first superconductive segment comprises a first superconductive layer (14a), a first substrate (10a) and a first stabilizer layer (18a),*
3) *the first superconductive layer overlying the first substrate,*

4) *the first stabilizer layer overlying the first superconductive layer;*

5) *a second superconductive segment (1b) having a nominal thickness t_{n2}, wherein the second superconductive segment comprises a second superconductive layer (14b), a second substrate (10b) and a second stabilizer layer (18b),*

6) *the second superconductive layer overlying the second substrate,*

7) *the second stabilizer layer overlying the second superconductive layer;*

8) *a joint region (204) comprising a splice (206, 306) connecting the first and second superconductive segments together, the splice overlying portions of both the first and second superconductive segments along the joint region, the joint region having a thickness t_{jr}, wherein t_{jr} is not greater than at least one of $1.8t_{n1}$ and $1.8t_{n2}$,*

9) *wherein the first superconductive segment comprises a first segment end portion having a reduced thickness relative to the nominal thickness t_{n1} of the first superconductive segment, wherein the reduced thickness of the first segment end portion is achieved through an architectural change of the first stabilizer layer,*

10) *wherein the second superconductive segment comprises a second segment end portion having a reduced thickness relative to the nominal thickness t_{n2} of the second superconductive segment, wherein the reduced thickness of the second segment end portion is achieved through an architectural change of the second stabilizer layer,*

11) *wherein the joint region spans the first segment end portion and the second segment end portion,*

12) *wherein the splice overlies the first segment end portion and the second segment end portion; and*

13) *a bond layer (25, 35) bonding the splice to the first and second superconductive segments,*
14) *wherein the bond layer is provided between the splice and the first and second superconductive layers.*

VI. Arguments of the Opposition Division and of the opponent relevant to the present decision

The Opposition Division set out that the originally filed claim set did not disclose the features of original claims 1, 10 and 17 in combination and that feature 13) (labeled feature "H" in the contested decision) was only disclosed in the specific embodiment on page 7, lines 3 to 23 of the original description. Hence, as also argued by the respondent, the original claims alone (i.e., without the original description) could not serve as a basis for claim 1 in order to meet the requirements of Article 123(2) EPC (page 9, last paragraph of the contested decision; see also section A.2.a) of the opponent's reply to the grounds of appeal).

Concerning the original description, the specific embodiments disclosed therein all related to second-generation HTS tapes (see also the opponent's reply to the grounds of appeal, section A.1.). That is, the superconductive segments of the embodiments always had a specific layered structure consisting of the following stack: substrate - buffer layer - superconductive layer - capping layer - stabilizing layer. All the individual layers of that stack were inextricably linked to the other features of claim 1 since each of them contributed to the solution of the application's subjective problem of providing a superconductive article that enabled long distance current carrying capability, i.e. the transfer of

electrical power over distances of the order of 50 to 1000 miles as disclosed on page 8, lines 37 to 38 and page 10, lines 32 to 33 of the original description. Thus, not defining the complete stack in the independent claim constituted an unallowable intermediate generalisation (see in particular section II.) A) 2.1.2.1 of the contested decision).

More particularly and with respect to the 17th auxiliary request then on file (corresponding to the present sole request), the Opposition Division set out that claim 1 of that request did not define the buffer layer and the capping layer of the specific disclosed layered structure, thereby not meeting the requirements of Article 123(2) EPC (page 15, penultimate paragraph of the contested decision).

The Opposition Division further set out that the fact that the splice connecting the first and second superconducting segments defined in claim 1 did not comprise a superconductive layer was an unallowable intermediate generalisation in view of the specific embodiments disclosed in the application, as well, because the presence of the superconducting layer in the splice solved the application's subjective problem of electrically joining together two superconductive segments by helping to ensure low joint resistance. The presence of the superconducting layer in the splice was thus inextricably linked to the other features of the specific embodiments (section II.) A) 2.1.2.2 of the contested decision).

VII. Relevant arguments of the proprietor

The problem the invention aimed to solve was primarily to join/splice two superconducting segments together

such that the resulting spliced article was not too thick. This problem was solved by the architectural changes of the stabilizer layer as claimed. The buffer layer and the capping layer served entirely different purposes as explained in the patent. When starting from the originally filed claim set and trying to adapt original claim 1 such that it better defined the features enabling the low thickness of the spliced article, the skilled person would not even consider to additionally define features that were not functionally related to the thickness of the article.

Reasons for the Decision

1. The appeal is admissible.

2. First and second generation high-temperature superconducting tapes

The main difference between first generation (1G) high-temperature superconducting (HTS) tapes and second generation (2G) HTS tapes is the manner in which they are manufactured.
2G HTS tapes (sometimes called "coated conductors") are produced by deposition of an HTS layer on a template or substrate. In contrast thereto, 1G HTS tapes are produced using a powder-in-tube and deformation process, involving rolling and annealing of the tube containing the HTS powder, resulting in HTS filaments embedded in a matrix (normally made of silver). Therefore, 1G HTS tapes do not comprise a *substrate* in the sense of a substrate on which a superconducting layer is deposited or arranged, contrary to the finding of the Opposition Division (page 9, penultimate paragraph of the contested decision).

The Board notes that the patent specification mentions, as submitted by the opponent, in paragraph [0006] of the description that 2G HTS tapes generally, i.e. normally, include

- a flexible substrate that provides mechanical support,
- at least one buffer layer overlying the substrate,
- an HTS layer overlying the buffer film, and
- an electrical stabilizer layer overlying the superconductor layer, typically formed of at least a noble metal.

The Board further notes that a 2G HTS tape further comprises normally, but not necessarily, an additional (mechanical and electrical) stabilizer layer overlying the electrical stabilizer layer, normally formed of a non-noble metal, as in the specific embodiments of the opposed patent.

3. The aim of the invention

The patent indicates that 1G HTS tapes do not represent a commercially viable product (paragraph [0005]). Generally, the opposed patent aims at contributing to the provision of commercially viable 2G HTS tapes, methods for forming the same, and power components utilizing such superconducting tapes (paragraphs [0006] and [0008]). The patent strives particularly at providing a superconducting article with a low joint profile (see the section "Disclosure of Invention" on pages 2 and 3 and page 9, lines 20 to 27 of the published application).

To achieve that aim, a superconducting article is provided that comprises two (joint) superconductive

segments each comprising a *substrate*. Therefore, the claimed superconducting article cannot be a 1G HTS tape. However, the claimed superconducting article does not necessarily have to be a complete 2G HTS tape with all the layers generally or normally present in such a tape, either. The Board notes that claim 1 as originally filed does not define any layer at all.

4. Article 123(2) EPC

4.1 Buffer layer and capping layer

The Board concurs with the Opposition Division that the specific layered structure of the superconductive segments consisting of the stack substrate - buffer layer - superconductive layer - capping layer - stabilizing layer and corresponding to what is normally found in a 2G HTS tape, is present in all specific embodiments of the opposed patent. The Board also accepts the view of the Opposition Division that the claims as originally filed alone do not provide a sufficient basis for present claim 1. Present claim 1 thus represents an intermediate generalisation between, on the one hand, claims 1 and 10 as originally filed in combination, and the specific embodiments disclosed in the description (corresponding to standard 2G HTS tapes) on the other.

The relevant question for deciding if an amendment is allowable with respect to Article 123(2) EPC is whether it is within the limits of what a skilled person would derive directly and unambiguously, using common general knowledge, from the original application documents. In other words, the skilled person may not be presented with new technical information after the amendment (see *Case Law of the Boards of Appeal*, 9th edition 2019,

section II.E.1.3.1). This applies also to intermediate generalisations.

In the present case, the description of the specific layered structure of the superconductive segments in the published application states, for each individual one of its five layers, the individual purpose or function it serves within the stack of layers.
In particular, the purpose of the substrate is to provide mechanical support (page 2, lines 5 to 6 of the original description) and a surface for subsequent deposition of the layers of the stack. The purpose of the buffer layer is to enable subsequent formation of a superconductive layer having desirable crystallographic orientation for superior superconducting properties (page 4, line 11 to page 5, line 6, in particular page 4, lines 14 to 17). The function of the superconductive layer is, of course, to provide superconducting properties to the article (page 5, lines 7 to 19). The capping layer and the stabilizer layer both serve the purpose of providing a low resistance interface and electrical stabilization to prevent superconductor burnout (page 5, lines 20 to 24). The capping layer has the additional purpose of preventing unwanted interaction between the stabilizer layer and the superconductive layer; it is generally thin for cost reasons (page 5, lines 24 to 30). The stabilizer layer is designed such that it functions as a protection/shunt layer to enhance stability against harsh environmental conditions and superconductivity quench (page 5, lines 35 to 36).

That is, although each of these layers certainly contributes to providing a superconducting article that enables long distance current carrying capability as set out by the Opposition Division, each of the layers

has a different, individual function therein, as submitted by the proprietor and as also noted by the Opposition Division (see paragraph bridging pages 10 and 11 of the contested decision).

Knowing the particular functions of each individual layer from the original application documents, the person skilled in the art would also have directly and unambiguously derived therefrom the consequences of one or more of these individual layers not being present in the stack.

For instance, they would have derived from the original description that if the buffer layer was left out in a stack of layers according to the specific embodiments, the superconductive layer of the resulting superconducting article would have a lower crystallographic quality, leading to inferior superconductive properties. In a similar manner, they would have derived from the original description that if the capping layer was left out in a stack of layers according to the specific embodiments, there would be an increased interaction between the superconductive layer and the stabilizer layer, leading to quicker deterioration of the superconductive layer.

In addition, they would also have derived from the original description that leaving out the buffer layer would have no effect on the interaction between the superconductive layer and the stabilizer layer, and that leaving out the capping layer would have no effect on the crystallographic quality of the superconductive layer.

Furthermore, according to the original application documents, providing a superconducting article that

enables long distance current carrying capability as referred to by the Opposition Division is only one of a plurality of possible applications of a superconducting article with a low joint profile (other applications being, e.g., transformers and generators, see Figures 8 and 9). Meanwhile, as mentioned above and submitted by the proprietor, providing a superconducting article with a low joint profile is the problem the original application primarily strives to solve. The profile of the joint region is kept low by architectural changes of the stabilizer layer. The buffer layer and the capping layer, on the other hand, do not contribute to the solution of that problem (although their presence increases the *overall* thickness of the superconducting article, also outside the joint region). Therefore, the skilled person would not consider these layers at all when, starting from claim 1 as originally filed (which is not directed at a complete 2G HTS tape as set out above), trying to define in more detail the features leading to a low profile joint region, as set out by the proprietor.

To summarise, each of the layers constituting the stack of layers of the superconductive segments of the specific embodiments has a particular function that is explicitly disclosed in the original application. The skilled person would therefore have directly and unambiguously derived the consequences of a missing buffer layer or a missing capping layer from the original application. In addition, neither the buffer layer nor the capping layer contributes to the solution of the problem primarily addressed by the original application.
In view of the above, the buffer layer and the capping layer cannot be seen as being inextricably linked to

the other features of claim 1, contrary to the view of the Opposition Division.

Hence, the person skilled in the art faced with present claim 1 (which, compared to the specific embodiments of the original application, does not comprise a buffer layer and a capping layer) would not derive therefrom any additional technically relevant information with respect to the application as originally filed.

It follows from the above that the omission of the buffer layer and the capping layer in present claim 1 with respect to the specific embodiments of the original application does not contravene the requirements of Article 123(2) EPC.

4.2 Splice

The Board accepts that in all the specific embodiments of the application as originally filed, the splice incorporates a superconductive layer. The Board also acknowledges that the superconductive layer in the splice helps to ensure low joint resistance, as set out by the Opposition Division. However, a superconductive layer in the splice is not required for electrically joining the two superconductive segments, contrary to the view of the Opposition Division. Instead, a conductive layer with appropriate dimensions and contacts would suffice for that purpose.

In any case, in the original application documents it is clearly stated that the splice *generally*, i.e. *normally*, incorporates a superconductive layer because this helps to ensure a desirably low joint resistance (page 7, lines 30 to 31 of the published application). The skilled person would directly and unambiguously

derive from that passage that the incorporation of a superconductive layer in the splice, although leading to a certain advantage and being therefore desirable, is optional.

The incorporation of a superconductive layer in the splice is therefore not inextricably linked to the other features of the specific embodiments, contrary to the opinion of the Opposition Division. Its omission in claim 1 of the present request therefore does not contravene the requirements of Article 123(2) EPC.

4.3 Further comments regarding Article 123(2) EPC

For completeness' sake, the Board notes that features 9) to 12) correspond to feature G1' as referred to in the contested decision (see page 18 of the decision). Thus, the objections raised by the Opposition Division in section II.) A) 2.1.2.3 of the contested decision for claim 1 of the then main request relating to the mutual arrangement of the joint region, the splice, the bond layer and the first and second superconductive segments are overcome by present claim 1, as acknowledged in the contested decision (decision, section II.) A) 3.2).

Furthermore, present claims 2 and 3, as opposed to claims 2 and 3 as granted, both explicitly define that the splice comprises a superconductive layer. Therefore, the ambiguity concerning the use of the definite article in the expression "the superconductive layer" mentioned in section II.) A) 2.2.2 of the contested decision is not present in claims 2 and 3 of the now sole request.

The other objections raised by the Opposition Division in sections II.) A) 2.2.2 and II.) A) 2.2.3 of the contested decision concern the omission of the superconductive layer in the splice as well as the omission of the buffer layer and the capping layer in the splice, as compared to the specific embodiments of the original application, respectively.
The omission of the superconductive layer in the splice is discussed above (see section 4.2). The omission of the buffer layer and of the capping layer is discussed above with respect to the omission of these layers in the superconductive segments (see section 4.1). The same arguments apply to the omission of the buffer layer and of the capping layer in the splice and need not be repeated here.

4.4 Conclusion with respect to Article 123(2) EPC

It follows from the above that the objections under Article 123(2) EPC of the Opposition Division and the opponent with respect to unallowable intermediate generalisations are not convincing.

Instead, the features of claim 1 of the present request have a basis in the original application as follows. Features 1) to 8) correspond to claims 1 and 10 as originally filed in combination. Features 9) to 12) have a basis on page 8, lines 1 to 30 (see, e.g. line 23 "the joint region 504 spanning segment end portions 522 and 524 has a thickness t_{jr}") and page 6, lines 30 to 31 ("A splice 206 is provided spanning the joint region 204 to provide electrical and mechanical connectivity between the segments") of the original description. Features 13) and 14) have a basis on page 7, lines 3 and 16 to 17 defining that the splice is bonded to the first and second segments.

Present claims 2 to 12 correspond to original claims 2 to 7, 11 to 13, 15, 18 and 19.

The patent specification has been adapted to the claims of the present sole request without extending beyond the application as filed.

Hence, the requirements of Article 123(2) EPC are met.

5. Novelty and inventive step

5.1 The Opposition Division, in agreement with the opponent, considered document D4 to represent the closest prior art with respect to the then 23rd auxiliary request. The proprietor did not object.

Since D4 is directed to the same purpose as the contested patent of forming superconducting articles by connecting superconducting segments with a splice such that the joint regions have a low profile (see D4a, page 2, last sentence of the first paragraph), and since D4 has the most relevant features in common with present claim 1, the Board sees no reason to deviate from this choice.

5.2 In the wording of claim 1, D4 discloses (text references referring to D4a, reference numbers referring to Figure 1 of D4; see Figure 1 of D4 also for the mutual arrangement of the various claimed elements):

1) A superconducting article 1 (*superconducting cables* with *connecting portion*, page 1, first paragraph), comprising:

2) a first superconductive segment (*superconducting cable 2*, see page 3, second paragraph) having a nominal thickness t_{n1}, wherein the first superconductive segment (*superconducting cable 2*) comprises a first superconductive layer (*superconducting layer 15*), a first substrate (*copper pipe 11*) and a first stabilizer layer (*conductive metal layer 14*),

3) the first superconductive layer *15* overlying the first substrate *11*,

4) the first stabilizer layer *14* overlying the first superconductive layer *15*;

5) a second superconductive segment (*superconducting cable 3*, see page 3, second paragraph) having a nominal thickness t_{n2}, wherein the second superconductive segment (*superconducting cable 3*) comprises a second superconductive layer (*superconducting layer 25*), a second substrate (*copper pipe 21*) and a second stabilizer layer (*conductive metal layer 24*),

6) the second superconductive layer *25* overlying the second substrate *21*,

7) the second stabilizer layer *24* overlying the second superconductive layer *25*;

8) a joint region (between *silver brazings 8* and *9*, see page 3, second paragraph) comprising a splice (*joining member 4*) connecting the first and second superconductive segments *2, 3* together, the splice *4* overlying portions of both the first and second superconductive segments *2, 3* along the joint region, the joint region having a thickness t_{jr}, wherein t_{jr} is not greater than at least one of $1.8t_{n1}$ and $1.8t_{n2}$ (t_{jr} being equal to both t_{n1} and t_{n2}),

9') wherein the first superconductive segment *2* comprises a first segment end portion having a reduced thickness relative to the nominal thickness t_{n1} of the first superconductive segment *2* (the part of cable 2 that overlies the joining member 4),

10') wherein the second superconductive segment *3* comprises a second segment end portion having a reduced thickness relative to the nominal thickness t_{n2} of the second superconductive segment *3* (the part of cable 3 that overlies the joining member 4),
11) wherein the joint region spans the first segment end portion and the second segment end portion,
12) wherein the splice overlies the first segment end portion and the second segment end portion (in the sense that there is an overlap); and
13) a bond layer (*soldering layer*, not represented in Figure 1, see page 4, first paragraph, last sentence) bonding the splice *4* to the first and second superconductive segments *2, 3*,
14) wherein the bond layer is provided between the splice and the first and second superconductive layers (page 4, first paragraph, last sentence).

5.3 The subject-matter of claim 1 thus differs from D4 in that

9'') the reduced thickness of the first segment end portion is achieved through an architectural change of the first stabilizer layer,
and in that
10'') the reduced thickness of the second segment end portion is achieved through an architectural change of the second stabilizer layer.

The subject-matter of present claim 1 is therefore new under Article 54 EPC 1973 over D4.

The Board notes that claim 1 of the present request does not comprise the capping layer and the buffer layer that were part of the subject-matter of claim 1 of auxiliary request 23 on which the contested decision

is based. Taking that into account, the distinguishing features 9'') and 10'') correspond to the distinguishing features identified by the Opposition Division (see section II.) A) 5.4.3 of the contested decision, in particular page 23, penultimate paragraph).

5.4 The technical effect of distinguishing features 9'') and 10'') is that the profile of the joint region is kept low. That is, the same technical effect as in D4 is achieved in a different manner.

The objective technical problem may then be formulated as how to find an alternative solution for a joint superconducting article with a low profile joint region.

5.5 In accordance with what the Opposition Division set out, D4 teaches that the profile of a joint region electrically connecting two superconducting cables can be reduced by replacing the splice/normal conductor pipe 54 arranged around the outer conductor/stabilizer layer as shown in Figure 2 of D4 by a splice/joining member 4 arranged inside the pipe element as shown in Figure 1, which involves an architectural change of the pipe element, i.e. the substrate.
Thus, D4 teaches away from arranging the splice at the outside, i.e. the stabilizer layer, of the superconducting article. Therefore, the skilled person, starting from D4, would not consider modifying the embodiment shown in Figure 1 of D4 by architectural changes of the (outer) stabilizer layers 14, 24, as would be required by features 9'') and 10''), and would thus not arrive at the subject-matter of claim 1 without an inventive step under Article 56 EPC 1973.

5.6 Other available documents

D1 discloses a so-called first generation HTS tape and therefore does not disclose a substrate. The skilled person would thus not combine D4 with the teaching of D1.

D2 discloses only one embodiment with layered superconductive segments. Therein, parts of the superconducting layers 2, 4 are removed and superconductor powder is sprayed into the gap (Figures 1 to 3). No architectural change of a stabilizer layer is disclosed in D2 for that embodiment. Therefore, even if the skilled person, starting from D4, considered D2, they would not be taught to make architectural changes of stabilizer layers.

D3 discloses joining of oxide superconducting bulk crystals, without substrates (see e.g. Figures 7 and 8). The skilled person would thus not combine D4 with the teaching of D3.

D5 discloses a splice 40 which is, similar to what is disclosed in D4, arranged on the inside of a superconducting article (see Figures 2 and 3). Therefore, if the skilled person, starting from D4, considered D5, they would not be taught to make architectural changes of (outer) stabilizer layers.

D6 discloses removal of the end parts of the superconducting layer 23 of two superconducting articles to be joined (see e.g. Figure 3). The skilled person is thus not taught to make architectural changes of stabilizer layers.

D7 discloses a splice in the embodiment shown in Figure 3. This splice increases, however, the thickness of the joint region and the stabilizer layer 28 does not achieve a reduced thickness of the end portions of cables 20 by an architectural change.

D8 does not disclose features 9'') and 10''), either. D9 discloses a lap joint and no splice/stabilizer layers with the properties defined in claim 1.

Thus, even if the skilled person starting from D4 had taken documents D1 to D3 and D5 to D9 into account, they would not have arrived at the subject-matter of claim 1 of the present request without the exercise of an inventive step under Article 56 EPC 1973.

6. It follows from the above that the patent as amended by the proprietor according to the sole present request meets the requirements of the EPC. It is thus to be maintained under Article 101(3)(a) EPC and Article 111(1) EPC 1973.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the opposition division with the order to maintain the European patent as amended in the following version:

Description:
Pages 1 to 18 received during the oral proceedings of 8 June 2022

Claims:
No. 1 to 12 of the main request, filed as auxiliary request 17 with the letter dated 12 October 2018

Drawings:
Figures 1 to 10 of the patent specification

The Registrar: The Chairman:

S. Sánchez Chiquero T. Häusser

Decision electronically authenticated