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**Datasheet for the decision
of 25 April 2023**

Case Number: T 2960/18 - 3.2.05

Application Number: 13167207.3

Publication Number: 2626180

IPC: B29B7/18, B29B7/24, B29B7/26

Language of the proceedings: EN

Title of invention:
Kneading rotor for closed kneading machine

Patent Proprietor:
Kabushiki Kaisha Kobe Seiko Sho

Opponent:
Harburg-Freudenberger Maschinenbau GmbH

Relevant legal provisions:
EPC Art. 54(1), 111(1)
RPBA 2020 Art. 11, 12(2)

Keyword:
Novelty (no)
Remittal (yes)

Decisions cited:
T 0451/88, T 1943/15, T 1966/16, T 0731/17, T 0395/18



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Case Number: T 2960/18 - 3.2.05

D E C I S I O N
of Technical Board of Appeal 3.2.05
of 25 April 2023

Appellant: Harburg-Freudenberger Maschinenbau GmbH
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Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
15 October 2018 concerning maintenance of the
European Patent No. 2626180 in amended form.**

Composition of the Board:

Chairman P. Lanz
Members: T. Vermeulen
T. Karamanli
B. Spitzer
A. Bacchin

Summary of Facts and Submissions

- I. The opponent lodged an appeal against the interlocutory decision of the opposition division finding that European patent No. 2 626 180 (hereinafter "the patent") as amended according to the main request filed with letter dated 18 April 2018 met the requirements of the European Patent Convention.
- II. The patent originates from European patent application No. 13167207.3, a divisional application of the earlier application 10764197.9, which led to European patent No. 2 409 822, the subject of parallel appeal case T 2962/18.
- III. The opposition had been filed against the patent as a whole on the basis of the grounds for opposition under Article 100(a) together with Article 54(1) EPC (lack of novelty) and Article 56 EPC (lack of inventive step), and under Article 100(b) EPC.
- IV. The opposition division considered, *inter alia*, document D1 (DE 28 36 940 C2). In the decision under appeal, it was held that document D1 was not novelty-destroying for the subject-matter of claim 1 according to the main request then on file.
- V. With its reply to the statement of grounds of appeal, the patent proprietor (respondent) filed seven auxiliary requests.
- VI. In its letter dated 13 February 2020, the appellant provided further arguments and raised an objection under Article 123(2) EPC against claim 1 of all auxiliary requests.

VII. Oral proceedings before the board were held on 25 April 2023.

VIII. 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 appeal be dismissed (main request) or, alternatively, that the decision under appeal be set aside and that the case be remitted to the department of first instance for further prosecution or that the patent be maintained as amended on the basis of the claims of one of auxiliary requests 1 to 7 filed with its reply to the statement of grounds of appeal.

IX. Claim 1 of the main request underlying the decision under appeal has the following wording (the feature numbering used by the opposition division appears in square brackets):

"1. [**a**] A kneading rotor (1, 5) of an intermeshing type [**b**] for use in a closed kneading machine (80) having a casing (70) inside which a chamber (70s) is provided, [**c**] comprising a rotor section (10) adapted to be provided in the chamber (70s), wherein; [*sic*] [**d**] the rotor section (10) has a rotor section main body (15) of a round cylindrical shape, and one long blade (20) and two short blades (30, 40) provided on a surface of the rotor section main body (15); [**e**] the two short blades (30, 40) are arranged in such a manner that, in a case where a pair of the rotor sections (10) are arranged mutually in parallel inside the chamber (70s) of the closed kneading machine (80) and are rotated in mutually opposite directions, the two short blades (30,

40) of one of the rotor sections (10) alternately repeat an approaching action and a separating action, in the direction of rotation of the rotor section (10), with respect to the long blade (20) of the other one of the rotor sections (10), [f] and in the state of approach, the long blade (20) of the other one of the rotor sections (10) is sandwiched between the two short blades (30, 40) of the one of the rotor sections (10) in the axial direction, and [g] the long blade (20) is arranged in such a manner that, in a case where a pair of the rotor sections (10) are arranged mutually in parallel inside the chamber (70s) of the closed kneading machine (80) and are rotated in mutually opposite directions, an end section (22) on the rearward side in the direction of rotation of the rotor section (10), of the long blade (20) of one of the rotor sections (10), and an end section (23) on the forward side in the direction of rotation of the rotor section (10), of the long blade (20) of the other one of the rotor sections (10), alternately repeat mutually an approaching action and a separating action, wherein [i] the length L4 of the long blade (20) in a direction of rotation of the rotor section (10) is greater than one half of the total length L5 of the rotor section main body (15) in the direction of rotation, [j] the ratio (L1/L2) between the length L1 of the long blade (20) in an axial direction of the rotor section (10) and the total length L2 of the rotor section main body (15) in the axial direction is equal to or greater than 0.6, and less than 1; and [k] the ratio (a/L2) between the distance a in the axial direction from one end of the long blade (20) to an end of the rotor section main body (15) and the total length L2 of the rotor section main body (15) in the axial direction is greater than 0, and equal to or less than 0.2, characterized in that [h] in the state of approach, the end section (23) on

the forward side and the end section (22) on the rearward side oppose each other in the direction of rotation of the rotor sections (10) on a line which links the respective central axes of the pair of rotor sections (10), in one cross-section perpendicular to the axial direction."

- X. The appellant's submissions may be summarised as follows.

Main request - novelty over document D1

In principle it could be assumed that long blades of rotors of the intermeshing type that were longer than half the circumference of the rotor section and that had a constant height along their entire length approached each other during rotation in opposite directions. Eventually, the long blades would oppose each other relative to the shortest connection between the respective rotor axes. Document D1 satisfied these conditions for the long blades 59 and 59' disclosed in the embodiment illustrated by Figures 8 to 10.

In Figure 9 the beginning 60a of the blade 59 and the end of the blade 59' could be seen. If the rotor sections 58 and 58' were turned a further 90° in the directions of rotation 21 and 22, respectively, the beginning 60a of the blade 59 and the end of the blade 59' would be in a state of approach. In this state the beginning 60a of the blade 59 would be on the left side of the rotor section 58 just before the line connecting the rotor axes, whereas the end of the blade 59' would be on the right side of the rotor section 58' already below that line. The ends of the long blades would thus oppose each other in the direction of rotation with respect to a line connecting the respective rotor axes.

Contrary to the opposition division's view, also feature **h** of claim 1 was thus disclosed by document D1.

The respondent's assertion that a collision between the blade tips would occur in the configuration of Figure 9 was incorrect. It was based on a measurement of dimensions in the drawings. However, precise dimensions could not be derived from schematic drawings in patent documents. The description of document D1 referred to intermeshing rotors. Intermeshing was reciprocal: if a long blade was sandwiched between two short blades of the other rotor, also the other long blade was sandwiched between the other two short blades. In view of the broad ranges of geometrical constraints in column 8, lines 18 to 22 of document D1, the disclosure of the drawings must be understood to extend beyond what was shown in Figure 9.

The selection of a small angle α and a small ratio a/L from among the values given in column 8, lines 18 to 22 of document D1 resulted in long blades with a length in a direction of rotation greater than one half the circumference of the rotor section main body. Accordingly, feature **h** was also disclosed in Figure 8 of document D1. Also here, the beginning of blade 59 and the end of blade 59' would enter in a state of approach in such a way that they opposed each other on a line which linked the respective central axes of the rotor sections in a cross-section perpendicular to the axial direction. Despite the fact that Figures 8 and 9 appeared to concern rotor sections with different rotation phases, the figure description in column 3, lines 26 to 30 of document D1 in combination with section lines IX-IX and VIII-VIII in Figures 8 and 9, respectively, confirmed that the figures were part of a single embodiment.

The respondent's reference to Figure 10 of document D1 did not take into account that this figure did not represent the long blades with a length in a direction of rotation greater than one half the circumference of the rotor section's main body. Moreover, unlike Figures 8 and 9 of document D1, the short blades only had an axial length 'a' in Figure 10.

Therefore, the subject-matter of claim 1 lacked novelty over document D1.

Remittal

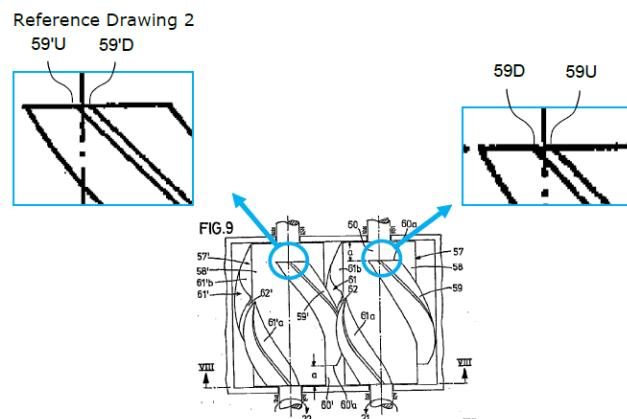
The board should decide on the compliance of the claims of all auxiliary requests with Articles 84 and 123(2) EPC before remitting the case to the opposition division for examination of novelty and inventive step. The claims of the auxiliary requests were amended by features taken from the description. The appellant had already identified objections under Article 123(2) EPC in the written proceedings. The respondent, however, had not given the proper basis for the amendments. Furthermore, the claims of the auxiliary requests manifestly violated Article 84 EPC. The auxiliary requests were therefore not allowable.

XI. The respondent's submissions were essentially as follows.

Main request - novelty over document D1

The opposition division was correct in its assessment that the subject-matter of claim 1 was novel over document D1 because feature **h** was not disclosed by this document.

The appellant's line of argument with regard to Figure 9 of document D1 was refuted. In the drawing of Figure 9, the respective end sections of the long blades were positioned on top of the rotors. They could therefore not oppose each other. Moreover, when rotating the rotors about 90° from the position of Figure 9 in the direction indicated by the arrows 21 and 22, the two end sections would collide. The drawing of Figure 9 only schematically showed the geometry of the rotor blades. It was not sufficiently precise to exactly show the details. For example, there was a clear phase difference between the ends of the short blades 61 and 61' shown at the lower end of Figure 9. But even if the drawing were precise enough to justify the appellant's view, the possibility of collision could not be denied. This was illustrated by the "Reference Drawing 2" reproduced below. The ends of the long blades 59 and 59' had portions 59D, 59U and 59'U, 59'D, respectively, extending at both sides of each of the upper points of the rotor sections. After rotating the rotors by 90° in the rotation direction, the portion 59D would come into



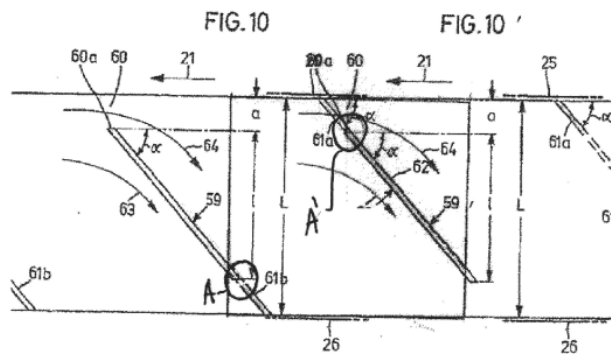
collision with the blade 59' and the portion 59'U would collide with the blade 59. Furthermore, the appellant failed to take account of the blade thickness. Even if there existed a positional difference between the tip of each long blade and the corresponding upper point of

the rotor section in Figure 9, this would be extremely small compared to the blade thickness. A collision could therefore not be avoided. This conclusion was not affected by the mention of an intermeshing state in the description of document D1 because this referred to the interaction of the long blades of one rotor with the short blades of the other rotor. In contrast, it was not explicitly disclosed that the end sections of the long blades intermeshed. Furthermore, it had to be considered that the long blades of Figure 9 clearly did not extend over more than half the circumference of the rotor section. This raised doubt for the direct and unambiguous disclosure of feature **i** in Figure 9.

Despite the cross-reference produced by section lines VIII-VIII and IX-IX, Figure 9 of document D1 was inconsistent with Figure 8 of document D1. Whereas Figure 9 showed the right and left rotors in the same rotational phase, this was not the case for Figure 8. When rotating the rotors of Figure 8 in the direction of the arrows 21 and 22, they could never arrive at a position corresponding to the one of Figure 9. Of the two drawings, Figure 8 made technical sense because there was no collision issue. In contrast, Figure 9 did not make technical sense. Its disclosure could thus not be used for the assessment of novelty. The skilled person trying to understand the disclosure of document D1 would conclude, based on what was shown in Figure 8, that there must be a phase shift of about 90° between the two long blades. With such a phase shift the constraint of feature **h** was not possible. When the long blade 59' was on the horizontal line IX-IX between the axes of the rotor sections, the long blade 59 had already left this plane downwards. Even if the dimensions of the blades were changed within the ranges disclosed in column 8, lines 18 to 22 of document D1,

there would not be a direct and unambiguous disclosure of feature **h** in Figure 8.

Even when taking into account Figure 10 and the description of the embodiment, it was clear that feature **h** was not disclosed. In the following overlay development view of the rotor sections 57 and 57', the long blade 59' was shown to lie in the gap between the



short blades 61a and 61b. It was clear that the end section of the blade 59 on the rearward side (enclosed by the circle A) could never be opposed to the end section of the blade 59' on the forward side (enclosed by the circle A') in the rotational direction.

Regarding the argument that claim 1 was directed to a single rotor, the rotor was required to have blade geometries that must be adapted to fulfil the requirement of feature **h**. Once a rotor had been adapted accordingly, there was not much play in terms of its relative position compared to a second rotor.

Remittal

It was requested that the case be remitted to the opposition division for further prosecution without prior examination by the board as to whether the claims of the auxiliary requests met the requirements of

Articles 84 and 123(2) EPC. The appellant had not substantiated its objections under Article 123(2) EPC.

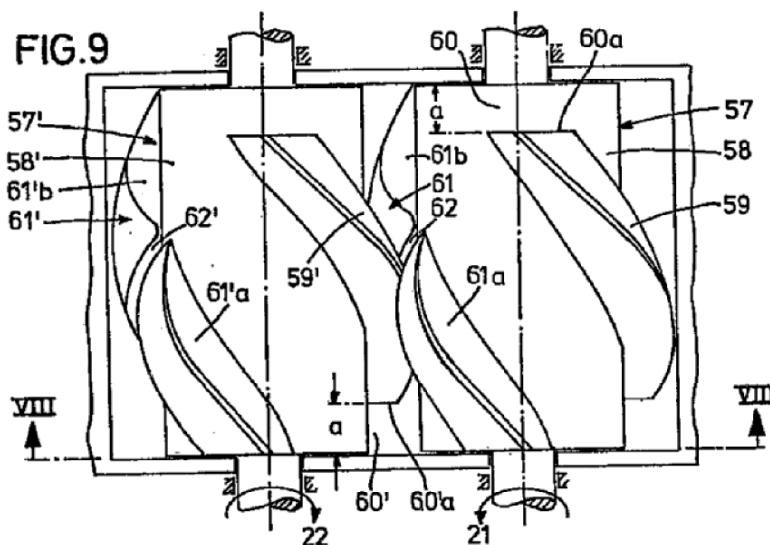
Reasons for the Decision

Main request - novelty over document D1

1. In the decision under appeal, it was held that document D1 disclosed a kneading rotor with features **a** to **g** and **i** to **k** of claim 1 of the main request (see point VI on pages 11 and 12). The opposition division cited Figure 8, Figure 9 and column 8, lines 8 to 22 as the relevant parts of document D1, noting that Figure 8 "*refers to the same embodiment as fig.9 and fig.10*". The geometrical constraints of features **i**, **j** and **k** were derived from the ratios $L/D = 1.35$ and $l/L = 0.70$ and the angle $\alpha = 30^\circ$ selected from the ranges disclosed in column 8, lines 18 to 22 of document D1. Feature **h**, however, was not held to be disclosed by the embodiment of Figures 8 to 10 of document D1.
2. The appellant objects to that conclusion and argues in particular with respect to Figure 9 of document D1 that it also disclosed feature **h** so that the subject-matter of claim 1 of the main request underlying the contested decision lacks novelty pursuant to Article 54(1) and (2) EPC.
3. Feature **h** imposes a requirement on the end sections of the long blades defined in feature **g**. They must "*oppose each other in the direction of rotation of the rotor sections (10) on a line which links the respective central axes of the pair of rotor sections (10), in one cross-section perpendicular to the axial direction*". This is understood by the board as referring to the relative arrangement of the end sections along a line

perpendicular to the line connecting the central axes of the rotors. Support for this interpretation is found in paragraphs [0061], [0062], [0065], [0069] and [0112] ("in other words, in a direction [...] perpendicular to the [...] line") and in Figure 18 of the patent.

4. Figure 9 of document D1, reproduced below, is a plan view of a pair of intermeshing kneading rotors each with a long blade 59, 59' and a pair of shorter blades 61a, 61b, 61'a, 61'b. The arrow 21 indicates that the rotor 57 shown on the right-hand side rotates in the counterclockwise direction. The axial end section 60a of the blade 59 situated near the top of the rotor 57 thus lies "on the forward side" in the direction of rotation. Conversely, the second rotor 57' rotates in a clockwise direction so that the forward side of the



long blade 59' is formed by the axial end section 60'a. The rearward end section of the long blade 59' then lies at the opposite axial end roughly at the same axial position as the end section 60a of the long blade 59.

5. In the rotor configuration of Figure 9, the long blade 59' of the rotor 57' is sandwiched between the short blades 61a, 61b of the rotor 57 as required by feature

f. Given that the end sections on the forward side of blade 59 and on the rearward side of blade 59' are both situated near the top of the respective rotors, the respondent is correct when arguing that they do not oppose each other as meant in feature **h**. However, Figure 9 merely offers a momentary glimpse of the intermeshing rotors. The drawing leaves no doubt that, upon further rotation in the direction of arrows 21 and 22, the end sections will approach each other in accordance with feature **g**. Up until the point where the rotors have moved through an angle of 90° , the distance between the forward end section of the blade 59 and the rearward end section of the blade 59' gradually reduces. As a result, after a quarter-turn the upstream flank of the lagging blade 59 must lie sufficiently close to the downstream flank of blade 59' so that they oppose each other along a line perpendicular to the line connecting the central axes of the rotors. It follows that Figure 9 of document D1 also discloses feature **h**.

6. The respondent's case is that the ends of the long blades will collide when the rotors move from the arrangement of Figure 9 in the direction of arrows 21 and 22. This conclusion follows from a detailed analysis of the blade tip position in the drawing (see Reference Drawing 2 reproduced in point XI. above as part of the respondent's submissions). In the board's view, it is based on the false premise that the drawing of Figure 9 provides the exact position, thickness and shape of the rotor blades. Drawings used in patent documents are mostly schematic representations. Even if a drawing in a patent document reveals the complete structure of a device to a high degree of detail, it generally is not to scale. Unlike a construction drawing, such a drawing can therefore not be used to

derive dimensions or proportions left unmentioned in the description or the claims (see T 451/88, Reasons 2.3 and T 1943/15, Reasons 4.3). As a consequence, any attempt to establish that the ends of the long blades of Figure 9 of document D1 come into collision only by measuring the relative position of the blade tips is bound to fail and therefore is not convincing. The same applies to similar assertions based on blade thickness derived from the drawing. It is unreasonable to conclude from the thickness of the long blades as apparent from the drawing alone that the end sections would come into contact even if the blade tips were to assume different positions on the rotor sections. In sum, the respondent has not brought any cogent reasons in support of the assumption that the long blades collide and that Figure 9 lacks technical sense.

7. In a further line of argument, the respondent objected to Figure 9 of document D1 for the reason that it was inconsistent with Figure 8 of document D1. The board concurs with the respondent that the rotor configuration of Figure 8 does not correspond to that of Figure 9. It seems that the different rotational phases of the blades cannot be explained solely by the remark in column 3, lines 26 to 30 that the blades of Figures 8 and 9 are each rotated 180° around their longitudinal axis in relation to each other ("wobei in Fig. 8 und 9 die Schaufeln jeweils um 180° um ihre Längsachse gegeneinander verdreht sind"). However, that in itself is not sufficient for concluding that Figure 8 is technically correct and Figure 9 is not. In a case like the current one where the teaching of a prior-art document hinges on dimensions described in terms of relatively broad ranges, the drawings only give a selective representation of the disclosure. It stands to reason that a different selection of the dimensions

from the ranges in column 8, lines 18 to 22 of document D1 will result in configurations with blades placed at different rotational phases. The corollary of this is that the respondent's reliance on the dimensions, proportions and angles of Figure 10 of document D1 to show the overlay of the rotor sections is not convincing (see the overlay development view reproduced in point XI. above as part of the respondent's submissions).

8. In the current case, claim 1 of the main request defines a single kneading rotor instead of a set of two intermeshing rotors. It may be true that a kneading rotor adapted according to the requirements of claim 1 does not leave much play in terms of the relative position it can take compared to a second, unclaimed rotor. However, claim 1 does not specify the distance between the claimed and the unclaimed rotors. Nor does it follow from any of features **e**, **f**, **g** and **h** formulated in terms of the relationship between two rotor sections that the kneading rotor would only be adapted to operate at a specific distance to a second rotor. In the board's view, each of the kneading rotors disclosed in Figure 9 of document D1 would be adapted to satisfy the opposing arrangement of feature **h** if the end section of its long blade were in a state of approach with the end section of the long blade of another, unclaimed rotor with a similar rotor section.
9. In view of the above, it is concluded that the subject-matter of claim 1 according to the main request underlying the contested decision lacks novelty over document D1 (Article 54(1) and (2) EPC).

Main request - conclusion

10. As the main request is not allowable, the decision under appeal must be set aside.

Remittal

11. The respondent requested that the case be remitted to the department of first instance for further prosecution without any prior examination of the auxiliary requests by the board. The appellant agreed with a remittal on the condition that the board first decided on the compliance of the claims of all auxiliary requests with Articles 123(2) and 84 EPC.
12. Under Article 111(1), second sentence, EPC, the board of appeal may either exercise any power within the competence of the department which was responsible for the decision appealed or remit the case to that department for further prosecution. Furthermore, under Article 11 RPBA 2020, which applies in the case at hand according to the transitional provisions of Article 25 RPBA 2020, the board will not remit a case to the department whose decision was appealed for further prosecution, unless special reasons present themselves for doing so.
13. The appropriateness of remittal to the department of first instance and the existence of special reasons within the meaning of Article 11 RPBA 2020 are matters for discretionary decision by the board, which assesses each case on its merits. Even if under established case law there is no absolute right to have every issue decided upon by two instances, the primary function of the appeal proceedings is to review the decision under appeal in a judicial manner (Article 12(2) RPBA 2020).

14. In the current case, the board came to the conclusion that the main request is not allowable so the decision under appeal must be set aside. The board is therefore faced with the choice of either examining the allowability of the respondent's pending auxiliary requests in order or remitting the case to the opposition division for further prosecution.
15. The respondent filed auxiliary requests 1 to 7 with its reply to the statement of grounds of appeal. These seven auxiliary requests correspond to auxiliary requests 1 to 7 filed with the letter dated 18 April 2018 in preparation for the oral proceedings held before the opposition division.
16. Since the opposition division held the higher-ranking main request presented before it allowable, it did not have to decide on auxiliary request 1 or any of the further auxiliary requests 2 to 7 then on file.
17. A decision of the board on the compliance of the claims of auxiliary request 1 with Articles 123(2) and 84 EPC, as requested by the appellant, would entail a complete examination of issues which played no role in the appeal proceedings for the main request and which were not dealt with by the opposition division either. A full or partial examination of auxiliary request 1, for which no decision was taken by the opposition division, before remitting the case to the opposition division would go against the primary object of the appeal proceedings to review the decision under appeal in a judicial manner as set out in Article 12(2) RPBA 2020 (see also decisions T 1966/16, T 731/17 and T 395/18).

18. Furthermore, a decision by the board on whether the claims of auxiliary requests 2 to 7 fulfil the requirements of Articles 123(2) and 84 EPC before remitting the case to the opposition division would essentially disregard the order of the auxiliary requests. By its very nature, an auxiliary request is a request for amendment that is contingent upon higher-ranking (main and/or auxiliary) requests being held inadmissible or unallowable. As no examination of the claims of auxiliary request 1 has taken place yet, a decision on whether the claims of auxiliary requests 2 to 7 fulfil the requirements of Articles 123(2) and 84 EPC is not appropriate in the current case before a remittal of the case to the opposition division.
19. In view of the above, the board judges that there are special reasons within the meaning of Article 11 RPBA 2020 justifying a remittal of the case to the opposition division without any prior examination of auxiliary requests 1 to 7 by the board.
20. Against this background, the board exercises its discretion under Article 111(1), second sentence, EPC, taking into account the provision of Article 11 RPBA 2020, and considers it appropriate to remit the case to the opposition division for further prosecution.

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 for further prosecution.

The Registrar:

The Chairman:



N. Schneider

P. Lanz

Decision electronically authenticated