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# Datasheet for the decision of 6 December 2024

**Case Number:** T 0799/23 - 3.2.05

**Application Number:** 14772312.6

**Publication Number:** 3194829

**IPC:** F16L37/092

**Language of the proceedings:** EN

**Title of invention:**
Tube connector

**Patent Proprietor:**
Kongsberg Automotive As

**Opponents:**
Voss Automotive GmbH
Camozzi Automation S.p.A.

**Relevant legal provisions:**
EPC Art. 56, 83, 123(2)
RPBA 2020 Art. 13(1), 13(2)

**Keyword:**

Main request - sufficient disclosure (yes)
Main request - added subject-matter (no)
Main request - inventive step (yes)
Late-filed document and inventive step objections - admittance (no)

Europäisches Patentamt
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**Chambres de recours**

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0

**Case Number: T 0799/23 - 3.2.05**

# D E C I S I O N
# of Technical Board of Appeal 3.2.05
# of 6 December 2024

| | |
|---|---|
| **Appellant:** (Opponent 1) | Voss Automotive GmbH<br>Leiersmühle 2-6<br>51688 Wipperfürth (DE) |
| **Representative:** | Dr. Solf & Zapf<br>Patent- und Rechtsanwalts PartG mbB<br>Schlossbleiche 20<br>42103 Wuppertal (DE) |
| **Respondent:** (Patent Proprietor) | Kongsberg Automotive As<br>Dymyrgata 48<br>3601 Kongsberg (NO) |
| **Representative:** | Uexküll & Stolberg<br>Partnerschaft von<br>Patent- und Rechtsanwälten mbB<br>Beselerstraße 4<br>22607 Hamburg (DE) |
| **Party as of right:** (Opponent 2) | Camozzi Automation S.p.A.<br>Via Eritrea 20/I<br>25126 Brescia (IT) |
| **Representative:** | Gualeni, Nadia<br>Jacobacci & Partners S.p.A.<br>Piazza della Vittoria, 11<br>25122 Brescia (IT) |
| **Decision under appeal:** | **Interlocutory decision of the Opposition Division of the European Patent Office posted on 2 March 2023 concerning maintenance of the European Patent No. 3194829 in amended form.** |

**Composition of the Board:**

| | |
|---|---|
| **Chairman** | P. Lanz |
| **Members:** | B. Spitzer |
| | F. Blumer |

## Summary of Facts and Submissions

I. Opponent 1's appeal is against the interlocutory decision of the opposition division finding that European patent No. 3 194 829 as amended according to auxiliary request 2 meets the requirements of the EPC.

II. The patent proprietor (respondent) filed a reply. Opponent 1 (appellant) filed a rejoinder on 30 April 2024, as did the respondent on 28 May 2024. Further submissions were filed by the respondent on 8 and 29 October 2024 and by the appellant on 6 September 2024 and 30 November 2024.

III. With a letter dated 31 October 2024, opponent 2 announced that it would not attend the oral proceedings.

IV. On 6 December 2024, oral proceedings before the board were held by videoconference.

V. The following documents are cited in this decision:

D1: US 5,551,735;
D2: WO 2014/000911 A1;
D5: DE 86 60 033.8 U1;
D7: WO 2007/025966 A1;
D10: WO 2010/082222 A1 and
D23: DE 10 2012 108 791 A1.

VI. The appellant (opponent 1) requested that the decision under appeal be set aside and that the European patent be revoked. It also requested that the respondent's auxiliary request 2 shall not be admitted. It further requested to admit document D23 and the inventive step

objections starting from documents D2 or D23 in combination with documents D5 or D7 filed with its letter dated 6 September 2024. As an auxiliary measure, it requested to remit the case to the opposition division.

The respondent (patent proprietor) requested that the appeal be dismissed, or, alternatively, that the decision under appeal be set aside and that the patent be maintained as amended on the basis of the claims of one of auxiliary requests 1 and 2 filed with its reply to the statement of grounds of appeal. It also requested that document D23 and the inventive step objections starting from documents D2 or D23 in combination with documents D5 or D7 filed with the appellant's letter dated 6 September 2024 not be admitted into the proceedings. The respondent finally requested that the appellant's arguments submitted with its letter of 29 November 2024 not be admitted into the appeal proceedings.

Opponent 2, which is a party to the appeal proceedings as of right under Article 107, second sentence, EPC, did not file any requests in the appeal proceedings.

VII. Claim 1 of auxiliary request 2 underlying the decision under appeal (main request in these proceedings) has the following wording (with the parties' feature designations in square brackets):

"**[F1]** A tube connector (1) for attachment to a tube (7) of a pressurized fluid system, **[F2]** wherein the tube connector (1) comprises **[F2.1]** a housing (3), **[F2.2]** a main sealing element (9), **[F2.3]** a gripping element (11) and **[F2.4]** a cone element (13),
**[F3]** wherein the housing (3) comprises a receptacle (5)

for receiving a tube (7), **[F4]** wherein the receptacle (5) is delimited by an insertion end (21) from which a tube (7) can be inserted into the receptacle (5) and an abutment end (23) delimiting the maximum insertion of a tube (7) into the housing (3),
**[F5]** wherein the main sealing element (9) is provided for preventing a fluid from flowing out of a pressurized fluid system at a connection of a tube (7) and the tube connector (1),
**[F6]** wherein the gripping element (11) comprises **[F6.1]** a passage (12) for receiving a tube (7), **[F6.2]** is arranged in the receptacle (5) and **[F6.3]** comprises a gripping edge (25) for engaging with an outer surface (24) of a tube (7) received in the passage (12) of the gripping element (11),
**[F7]** wherein the cone element (13) is arranged in the receptacle (5) for delimiting a movement of the gripping element (11) towards the insertion end (21),
**[F8]** wherein the tube connector (1) further comprises an integrated release element (15) arranged at least partially in the receptacle (5) and movable along a direction pointing from the insertion end (21) to the abutment end (23), **[F9]** wherein the release element (15) comprises **[F9.1]** a passage (36) for a tube (7), **[F9.2]** a tubular part (31) and **[F9.3]** an environmental sealing element (35),
**[F10]** wherein a release edge (37) of the tubular part (31) is adapted for engaging with the gripping element (11) and moving the gripping element (11), such that the gripping element (11) releases the tube (7) inserted into the passage (12) of the gripping element (11), and
**[F11]** wherein the environmental sealing element (35) provides a sealing of the receptacle (5) from an environment,
characterized in

**[F12]** that the environmental sealing element (35) is adapted for sealing the release element (15) **[F12.1]** towards an inner surface (19) of the housing (3) and **[F12.2]** towards an outer surface (24) of the tube (7) inserted into the passage (36) of the release element (15),
**[F13]** that the environmental sealing element (35) is formed in one piece and from a first plastic material,
**[F14]** that the integrated release element (15) comprises a top part (33) providing an actuation surface for pushing the release element (15) towards the abutment end (23),
**[F15]** that the top part (33) and the tubular part (31) are formed in one piece and from a second plastic material, **[F16]** wherein the first plastic material differs from the second plastic material and
**[F17]** that the tubular part (31) and the top part (33) are connected by at least four evenly distributed bridge parts (46), wherein the bridge parts (46) are formed from the second plastic material and gaps (44) between the bridge elements (46) are filled with the first plastic material."

Dependent claim 4 of auxiliary request 2 underlying the decision under appeal (now the main request) has the following wording:

"4. A tube connector (1) according to claim 2 or 3, wherein the first protrusion (41), the second protrusion (43) and/or the third protrusion (45) are adapted to provide a direct load path from the cone element (13) via the environmental sealing element (35) to the inner surface (19) of the housing (3)."

VIII. The parties' arguments relevant to this decision can be summarised as follows.

(a) Main request - claim 4 - sufficiency of disclosure (Article 83 EPC)

(i) Appellant

Claim 4 of the main request was not sufficiently disclosed. Since the three protrusions 41, 43 and 45 mentioned in claim 4 of the main request were combined with "and/or", the direct load path would need to be achievable either with each protrusion individually ("or" combination) or with all protrusions together ("and" combination) for the subject-matter of the claim to be workable. However, neither the "or" nor the "and" alternative was feasible. Contrary to the opposition division's view, paragraphs [0054] and [0055] of the patent did not clearly explain how a single protrusion, as required by claim 4 of the main request (which corresponded to claim 8 as granted), could be designed to alone provide a direct load path from the cone element via the environmental sealing element to the inner surface of the housing.

Considering the three protrusions 41, 43 and 45 of claim 4 of the main request, protrusion 41 was an inwardly extending protrusion of the release element, and protrusions 43 and 45 were both outwardly extending protrusions of the cone element. Since there was no direct contact between the protrusions 43 and 45, they could not contribute to a direct load path. In addition, there was no protrusion contacting the inner surface of the housing. Consequently, these three protrusions could not provide a load path from the cone element via the environmental sealing element to the

inner surface of the housing.

Even if the reference signs in claim 4 of the main request were disregarded, the subject-matter of claim 4 of the main request, which depends on claim 2 of the main request, could not be carried out. To establish a direct load path from the cone element via the environmental sealing element to the inner surface, the third protrusion would necessarily have to contact the inner surface of the housing. This, however, was in contradiction to the subject-matter of claim 2 of the main request. It was not feasible that the third protrusion contacted the inner surface of the housing and at the same time there were the two protrusions according to claim 2 of the main request for delimiting the maximum movement of the release edge.

In addition, protrusion 47, being part of the environmental sealing element and thus made of elastic material, could not - due to its elasticity - contribute to a load path.

In summary, the necessary arrangement and material of the protrusions to provide a direct load path were not disclosed.

(ii) Respondent

Article 83 EPC referred to the patent as a whole and not only to the claims. The skilled person would exclude any non-workable embodiment. There was sufficient guidance in the patent on how to implement a load path between the cone element and the inner surface of the housing.

Paragraph [0054] of the granted patent explicitly

described the load path in relation to the first protrusion of the environmental sealing element: *"The protrusion 47 also facilitates a local and, thus, direct load transfer of radial forces created by a pressurized fluid in a tube 7 in the tube connector 1."*

Paragraph [0055] described the load path with regard to the first and second protrusions (41 and 43) of the top part (33) and the cone element (13): *"The protrusions 41, 43 provide an advantageous load path as described in the preceding paragraph for transferring radial loads of a tube 7 onto the environmental sealing 35."*

Based on this disclosure, the skilled person would understand how to design the protrusions to provide a load path from the cone element to the inner surface of the housing. The effect of these features was to improve the sealing between the tube and the housing during periods of high fluid pressure.

Dependent claim 2 related to the delimiting of an axial movement and not to the transfer of radial forces.

(b) Main request - amendments to the description (Article 123(2) EPC) and admittance of the appellant's supporting arguments filed with the letter dated 29 November 2024

(i) Appellant

The arguments in the letter dated 29 November 2024 were not new. Rather, these arguments represented a refinement of arguments already on file. The drawings were provided to clarify the arguments presented earlier.

The description of the European patent was amended in such a way that it contained subject-matter which extended beyond the content of the application as filed. The sealing between a tube and the housing in the second paragraph on page 8 of the description as filed was amended to a sealing between a tube and the inner surface of the housing. Due to this amendment, the sealing element only sealed against "the inner surface of the housing" without any reference to the release element. However, there was only disclosure in the original application documents for a sealing between a tube and the inner surface of the housing achieved via a release element. A direct sealing between a tube and the inner surface of the housing was not disclosed but was now included in the description.

(ii) Respondent

The appellant's new arguments made in the context of Article 123(2) EPC and filed with its letter of 29 November 2024, including the new drawings on pages 7 and 8 of this letter, should, in accordance with Article 13(2) RPBA, not be admitted into the appeal proceedings as they were late filed and no exceptional circumstances had been claimed.

In any case, the requirements of Article 123(2) EPC were fulfilled. There was no added subject-matter. According to the originally filed disclosure, there was a sealing between a tube and the housing. The amendment "inner surface of the housing" was merely a clarification that could be inferred from the whole disclosure of the patent. In addition, the beginning of the second paragraph on page 8 of the description as filed referred to the integrated release element. Therefore, there was no disclosure of the sealing

element sealing against the housing or - as amended - to the inner surface of the housing without reference to the release element.

(c) Main request - inventive step (Article 56 EPC) and admittance of the appellant's supporting arguments filed with the letter dated 29 November 2024

(i) Appellant

The arguments filed with the letter dated 29 November 2024 did not represent an amendment to the case. The reference to the first embodiment of document D10 was made solely to clarify the whole disclosure of document D10. The starting point for the discussion of lack of inventive step of the subject-matter of claim 1 of the main request was still the second embodiment of document D10. The additional argument objected to by the respondent addressed the radial elasticity in document D10, which had been the subject of the respondent's letter dated 7 November 2023 (see this letter, page 9, fourth paragraph).

The subject-matter of claim 1 of the main request did not involve an inventive step over the second embodiment of document D10, as shown in Figures 6 to 10, in combination with document D5.

Starting from document D10, the person skilled in the art would have considered document D5 for several reasons. Both documents were from the same field, namely fittings for braking systems, and in both documents the prevention of dirt entering the fitting was a prevailing requirement (see document D10, paragraphs [0004] and [0060]; document D5, page 2, second paragraph to page 3, first paragraph). The

object of document D10 was to facilitate easy manufacturing (see document D10, paragraph [0005]), which was solved by both embodiments in document D10. The fitting of the first embodiment of document D10 was similar to that disclosed in document D5. Therefore, also the fitting disclosed in document D5 was easy to manufacture. In addition, document D5 disclosed a one-piece construction of the release element and the sealing ring. Fewer parts to manufacture contributed directly to easier manufacturing (see document D5, page 5, first and last paragraphs).

The person skilled in the art would not have been prevented by the radially elastic clamping arms 12 in document D5 from considering this document since the gripping teeth 171 in the second embodiment of document D10 were inherently radially elastic as well. In addition, the radial elasticity of the clamping arms 12 of document D5 was only a further advantageous effect. The main effect highlighted in document D5 was the one-piece construction (see document D5, paragraph bridging pages 5 and 6).

Documents D10 and D5 did not disclose conflicting concepts. The fittings according to document D5 and according to the second embodiment of document D10 were both based on the same principle, i.e. radial clamping of the tube, and both comprised a gripping ring and a counter ring.

For these reasons, the person skilled in the art would have combined the teachings of document D10 and D5. In searching for a further simplification of the manufacturing process, the person skilled in the art would have transferred the one-piece construction of the sealing ring to the second embodiment of

document D10. It was not correct that a combination of the fittings of documents D10 and D5 would lack a release edge according to feature F10 since both the clamping arms 12 of document D5 and the gripping teeth 171 of document D10 were elastic and acted as a release edge.

The subject-matter of claim 1 of the main request was also not inventive starting from document D1 in combination with document D5. The same arguments applied *mutatis mutandis*. It was obvious for the skilled person that the sealing element could be either a separate element or a one-piece construction with the release element.

(ii) Respondent

The appellant's new arguments on Article 56 EPC filed with its letter of 29 November 2024, including the reference to the first embodiment of document D10 and the radial elasticity of the teeth 171 in document D10, should, in accordance with Article 13(2) RPBA, not be admitted into the appeal proceedings since they were late filed and no exceptional circumstances had been claimed.

The subject-matter of claim 1 of the main request involved an inventive step starting from document D10.

There was no motivation for the person skilled in the art to combine the teachings of documents D10 and D5. Document D5 was not concerned with the simplification of the manufacturing process. The effect of the one-piece construction of the sealing ring in document D5 was mentioned only for improved radial elasticity (see document D5, paragraph bridging pages 5 and 6). Even if

the teachings of these documents were combined, the person skilled in the art would not have arrived at the claimed invention without an *ex post facto* analysis. In document D5, the radial elasticity of the clamping arms was needed to release the gripping teeth 9 by sliding on the conical surface. In contrast, in document D10, the gripping teeth 171 would not function if they were radially elastic. To release the lock ring, the gripping teeth 171 had to push and widen the lock ring. Therefore, the gripping teeth inherently had to have a certain rigidity. If the skilled person combined the teachings of document D10 and D5, feature F10 of claim 1 of the main request would have been missing.

Starting from document D1, the person skilled in the art would not have considered document D5 for the same reasons as mentioned for document D10 as the closest prior art. Even if they did combine document D1 with document D5, feature F10 would still have been missing since in Document D1 the release element 73 had to be rigid to function properly.

(d) Admittance of document D23 and new inventive-step objections starting from documents D2 or D23

(i) Appellant

The late filing of document D23 and the new inventive-step objections starting from document D2 or D23, each combined with either document D5 or document D7, were triggered by a cease-and-desist letter sent by the respondent to a company affiliated to the appellant in which the claims of the patent were interpreted differently than they had been in the proceedings before the EPO. These inventive-step objections were *prima facie* relevant and should be admitted. Since a

cone element was defined as having a conical shape, contrary to the respondent's allegations in these appeal proceedings, the insert element 64 of document D2 and the insert element 52 of document D23 disclosed a cone element.

For these reasons, the late submission was justified and should be admitted into the proceedings.

(ii) Respondent

A cease-and-desist letter was irrelevant to these appeal proceedings. Document D23 and the new inventive-step objections starting from document D2 or D23 were late filed and should not be admitted into the proceedings because they were *prima facie* not relevant. In particular, documents D2 and D23 did not disclose a cone element according to feature F7 but insert elements with lead-in chamfers.

## Reasons for the Decision

1. Main request - claim 4 - sufficiency of disclosure (Article 83 EPC)

1.1 The board concurs with the opposition division's conclusion that the invention is sufficiently disclosed with regard to the subject-matter of claim 4 of the main request (corresponding to claim 8 as granted) (see decision under appeal, Reasons, point 20).

1.2 Article 83 EPC stipulates that the application must disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art. The claimed subject-matter must be

sufficiently disclosed in the patent document as a whole, including examples, and taking into account the skilled person's common general knowledge. At least one way of enabling the person skilled in the art to carry out the claimed invention must be disclosed, but this is sufficient only if it allows the claimed invention to be performed without undue burden in the whole range claimed (see Case Law of the Boards of Appeal of the European Patent Office, 10th edn., July 2022 (Case Law), II.C.1.).

1.3 Paragraph [0054] of the patent describes a load path between the cone element and the inner surface of the housing in general: "*In other words, the cone element 13 and the collar 39 provide a load path onto the environmental sealing 35 towards the inner surface 19 of the housing 3.*"

This demonstrates that due to the tight sealing, there is always a load path. Paragraph [0054] discloses an embodiment with one protrusion: "*The environmental sealing 35 comprises a projection or protrusion 47 for sealing engagement with the inner surface 19. The protrusion 47 also facilitates a local and, thus, direct load transfer of radial forces created by a pressurized fluid in a tube 7 in the tube connector 1.*"

Paragraph [0055] of the patent discloses an embodiment with two protrusions: "*Furthermore, the protrusions 41, 43 provide an advantageous load path as described in the preceding paragraph for transferring radial loads of a tube 7 onto the environmental sealing 35.*"

Therefore, the board agrees with the respondent that there is sufficient disclosure in the patent to carry out the invention with one or several protrusions as

claimed in claim 4 of the main request.

1.4 The appellant's argument that there was a contradiction between claims 2 and 4 of the main request and that, hence, claim 4 of the main request was not workable, did not convince the board for the following reasons. First, reference signs do not limit the scope of the claim (see Case Law, II.A.2.4.). Second, even if there were no protrusion contacting the inner surface of the housing, there was still a load path as described in paragraph [0054] of the patent. Third, the person skilled in the art would have known how to arrange the protrusions to delimit a maximum movement of the release edge in a direction away from the abutment end according to claim 2 of the main request and at the same time to provide a direct load path according to claim 4 of the main request.

1.5 Furthermore, the board does not agree with the appellant's assertion that the material of the protrusions was required for the provision of a load path or that a load path could not be carried out with an elastic material. The person skilled in the art knows that load can be transferred via the cone element, the release element and the environmental sealing element, irrespective of whether the material is elastic.

2. Main request - amendments to the description (Article 123(2) EPC)

2.1 Arguments in the appellant's letter dated 29 November 2024 in the context of unallowable amendments

The respondent requested, in its letter dated

29 November 2024, that the appellant's new and late-filed arguments made in the context of unallowable amendments not be admitted in accordance with Article 13(2) RPBA.

The board did not consider the arguments presented in the appellant's letter dated 29 November 2024 to be new. The drawings provided by the appellant in this letter and the appellant's arguments were merely intended to illustrate its previous submission that the amendment of the description resulted in a disclosure of a direct seal between a tube and the inner surface of the housing without reference to the release element. Therefore, the arguments made in the context of unallowable amendments in its letter dated 29 November 2024 were taken into account.

2.2 The board arrives at the same conclusion as the opposition division that the requirements of Article 123(2) EPC are fulfilled (see decision under appeal, Reasons, points 23 to 25).

2.3 The appellant argued that the amendments made to the description as filed on page 8, second paragraph, during examination proceedings resulted in the environmental sealing element now directly sealing between the outer surface of the tube and an inner surface of the housing, rather than solely sealing the release element against the outer surface of the tube and an inner surface of the housing. The appellant's arguments are unconvincing.

2.4 The amendment to the second paragraph on page 8 of the description as filed is as follows (see paragraph [0023] of the patent specification):

"*The integrated release element further comprises an environmental sealing element or, in short, environmental sealing that provides a sealing of the receptacle from the environment. Hence, the environmental sealing element advantageously prevents that dirt or grease or other particles can enter the receptacle and reduce the performance of the tube connector. To this end the environmental sealing element ~~preferably~~ provides according to the present invention a sealing between a tube that has been inserted into the tube connector and the inner surface of the housing of the tube connector. ~~If a sealing connection exists between the housing and the cone element, it may also be sufficient if the environmental sealing element provides a tight sealing between a tube inserted into the tube connector and the cone element.~~*"

2.5 As is apparent from the above-cited passage, the application as filed already disclosed that the environmental sealing element provides a sealing between a tube inserted into the tube connector and the housing of the tube connector, without referring to the release element in this sentence. Additionally, the release element, which further comprises an environmental sealing element, is mentioned at the beginning of the paragraph cited above. Therefore, before and after the amendment, the sealing is disclosed with reference to the release element. The clarification that the sealing is to the inner surface of the housing and not only to the housing does not alter anything with regard to the presence of the release element.

3. Main request - inventive step (Article 56 EPC)

3.1 Inventive step of the subject-matter of claim 1 of the main request starting from document D10

3.1.1 Arguments in the appellant's letter dated 29 November 2024 made in the context of document D10

The respondent requested that the appellant's new and late-filed arguments on lack of inventive step starting from document D10, made in its letter dated 29 November 2024, not be admitted in accordance with Article 13(2) RPBA.

In the board's view and as stated by the appellant, the reference to the first embodiment of document D10 was made by the appellant to further explain the disclosure of document D10. The argument on the radial elasticity had already been addressed by the respondent in paragraph 4 on page 9 of its letter dated 7 November 2023. As such, the argument on the radial elasticity of the gripping teeth 171 in document D10 was considered a further refinement of an argument previously on file. Therefore, these arguments did not constitute an amendment to the appellant's case, and the question of admittance did not arise. The arguments on inventive step starting from document D10 in the appellant's letter dated 29 November 2024 were considered.

3.1.2 The parties agree that the subject-matter of claim 1 of the main request differs from document D10 in features F15, F16 and F17. The technical effect of these features, in particular the top and tubular parts of the release element and its sealing element being

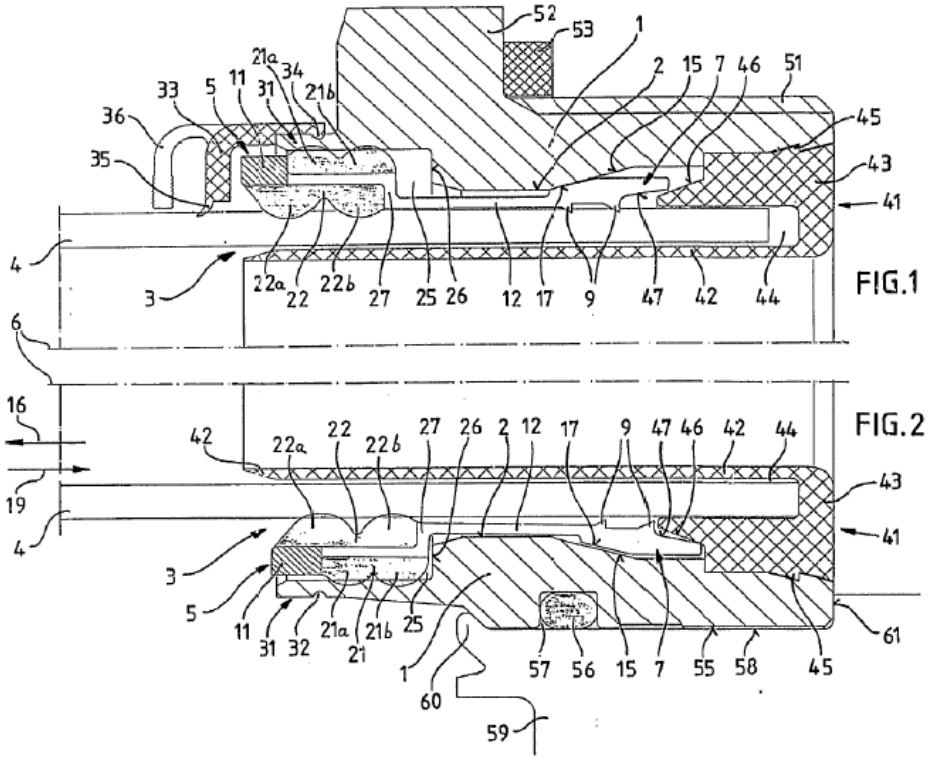
formed in one piece, is the simplification of the manufacturing process. Both parties acknowledge that the objective technical problem is to simplify the manufacturing process of the sealing element of the release element (see also decision under appeal, Reasons, points 61 and 48).

3.1.3 The board agrees with the respondent and the opposition division (see decision under appeal, Reasons, points 51, 52 and 62) that the person skilled in the art would not have considered document D5 in seeking a solution to the objective technical problem for the following reasons.

First, document D5 does not address the simplification of the manufacturing process for the sealing element of the release component. While document D5 does mention the one-piece construction of the sealing element for improved radial elasticity (see document D5, page 5, line 25 to page 6, line 5), it does not focus on simplifying manufacturing.

Second, the design concepts of documents D10 and D5 are incompatible. The person skilled in the art would have recognised that the one-piece construction of the release element and sealing element in document D5 is incompatible with the design shown in Figures 6 to 10 of document D10. Specifically, in document D5, the clamping arms 12, which function as the release element, must be radially elastic to slide on the conical surface and release the gripping teeth 9 (see document D5, Figures 1 and 2). The vulcanisation of the sealing rings 21, 22 onto the carrier ring 11 and their connection through the slits between the clamping arms 12 are directly linked to the radial elasticity of the clamping arms 12 (see document D5, page 5, lines 25 to

page 6, line 5, Figures 1 and 2).




Figures 1 and 2 of document D5

In contrast, in document D10, the release element relies on the rigidity of the cylindrical main body 170 and gripping teeth 171, not on their radial elasticity (see document D10, Figure 7). The cylindrical main body 170 in document D10 is designed as a rigid part that moves longitudinally along the pipe and includes gripping teeth 171. During forward movement, the gripping teeth 171 engage with the conical inner surface 152 of the lock ring 150, causing the ring to widen, thus allowing the pipe to be removed (see document D10, Figure 7).

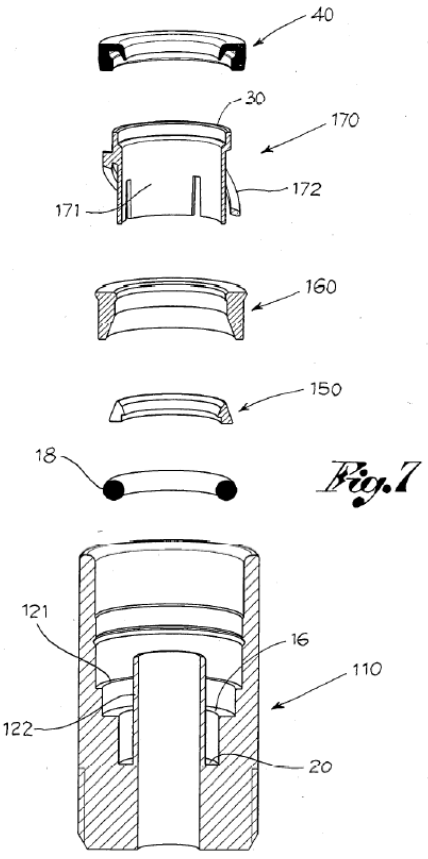



Figure 7 of document D10

3.1.4 The board is not convinced by the appellant's arguments that the skilled person would have taken document D5 into account as the improved radial elasticity in document D5 was considered a secondary advantage rather than the primary effect of the one-piece construction (see document D5, page 5, lines 25 to page 6, line 5). Additionally, the appellant's argument that the radial elasticity in document D5 was unrelated to the one-piece construction is not persuasive.

The board agrees with the respondent that the radial elasticity of the clamping arms in document D5 is directly related to the one-piece construction as the sealing rings are vulcanised onto the support ring and increase the radial elasticity (see D5, page 5, lines

34 to page 6, line 5).

3.1.5 The board shares the respondent's view that even if documents D10 and D5 were combined, the skilled person would not have arrived at the claimed invention. For the following reasons, the board reaches the same conclusion as the opposition division (see decision under appeal, Reasons, point 63) that the subject-matter of claim 1 of the main request is not rendered obvious by a combination of documents D10 and D5.

If the person skilled in the art had replaced the gripper element 124 in document D10, which includes the cylindrical main body 170, and the protection element 40 with the one-piece clamping element 5 from document D5 comprising clamping arms 12 with slits and sealing rings 21, 22 protruding through theses slits, the release element would not have comprised a release edge for engaging the gripping element and moving it to release the tube (feature F10 of claim 1 of the main request).

3.1.6 The appellant's selective combination of features from documents D10 and D5, including the use of the slits in the cylindrical body 170 in document D10 to mould the protection element 40 to the cylindrical main body 170, i.e. to join the environmental sealing with the release element and thus simplifying the manufacturing process, represents an *ex post facto* approach. As established case law holds (see Case Law, I.D.6), inventive step must not be assessed using hindsight knowledge. The skilled person would not have arrived at the claimed invention by selectively combining the documents in the manner proposed by the appellant as this disregards the fundamental differences in the designs of the release elements in documents D5 and D10 and goes beyond what

the skilled person would have objectively inferred from the prior art without the benefit of hindsight knowledge of the invention.

3.2 Inventive step of the subject-matter of claim 1 of the main request starting from document D1

3.2.1 The parties agree that the subject-matter of claim 1 of the main request differs from document D1 in features F13, F15, F16 and F17 (see decision under appeal, Reasons, point 45). The objective technical problem remains the simplification of the manufacturing process.

3.2.2 Similar to document D10, document D1 discloses a different concept for the release element compared to that of document D5 (see point 3.1.3). In document D1, the releasing member 73 is separate from the clamping member 20 (see document D1, Figure 19). The releasing member 73 is designed as a rigid part with a leading end 73b which enters between the first inclined surface 22a of the first claw 22 of the clamping member 20 and the outer peripheral surface of the tube upon translational movement of the releasing member to release the clamping member from the tube. Thus, while in document D1 no radial deformation of the releasing member 73 is required to function properly, the release member in document D5 depends on the elasticity of the clamping arms.

FIG.19

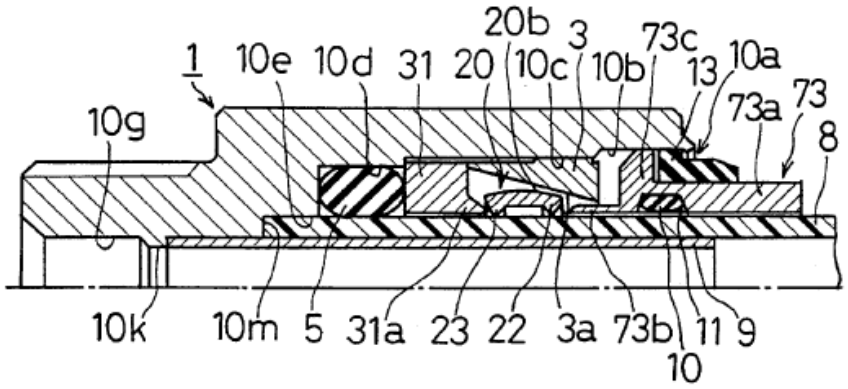



Figure 19 of document D1

3.2.3 Consequently, as to whether the person skilled in the art looking for a solution to the above-mentioned objective technical problem would have combined document D1 with document D5, the board's considerations made with document D10 as the starting point for assessing inventive step apply *mutatis mutandis* (see point 3.1.3). If the person skilled in the art nonetheless combined the two documents, they would not have arrived at the claimed invention for the same reasons as set out above for document D10 as the starting point for assessing inventive step (see point 3.1.5).

3.3 In light of the above, the board arrives at the conclusion that the subject-matter of claim 1 of the main request involves an inventive step starting from documents D1 and D10.

4. Admittance of document D23 and new inventive-step objections

4.1 Document D23 and the inventive-step objections starting from document D2 or D23 were filed with the appellant's

letter dated 6 September 2024 and are, therefore, considered late filed. The filing of document D23 and these inventive-step objections represents an amendment to the appellant's appeal case, the admittance of which is subject to the board exercising its discretion in accordance with Article 13(1) RPBA.

4.2 Under this provision, the board exercises its discretion in view of, *inter alia*, the state of the proceedings and whether the amendment is detrimental to procedural economy. The *prima facie* relevance of late-filed objections can also be taken into account when the admittance of such objections is considered.

4.3 The appellant justified the late filing of document D23 and these inventive-step objections as a reaction to a cease-and-desist letter sent by the respondent to a company affiliated with the appellant in which the claims of the patent were interpreted differently than in the proceedings before the EPO. Therefore, document D23 and the inventive-step objections starting from document D23 or D2 were *prima facie* relevant.

4.4 The board decided not to admit document D23 and the inventive-step objections starting from document D23 or D2. As argued by the respondent, documents D2 and D23 are not *prima facie* relevant for the evaluation of inventive step of the subject-matter of claim 1. In particular, feature F7 of claim 1 of the main request is not disclosed in either of these documents. The insert element 64 of document D2 or the insert element 52 of document D23 is not considered to be a cone element according to feature F7 (see document D2, Figure 1, 2a; see document D23, Figure 1). The fact that these insert elements are equipped with lead-in chamfers does not make them cone elements as in

feature F7. The newly filed inventive-step objections starting from document D23 or D2 are therefore less relevant than the (unsuccessful) inventive-step objections already on file.

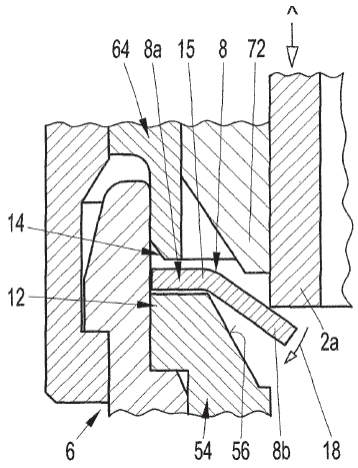
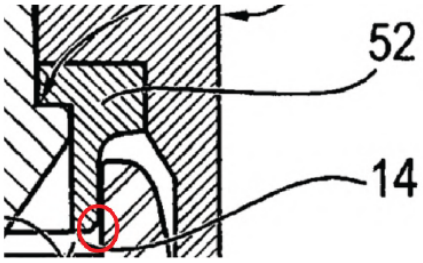



Figure 2a of document D2




Section from Figure 1 of document D23 with markings by the appellant

4.5 For this reason alone, document D23 and the inventive-step objections starting from document D2 or document D23 are not admitted under Article 13(1) RPBA.

5. Conclusion

The appellant has not established that the patent as amended according to the main request, and the invention to which it relates, fail to meet the

requirements of the EPC. The appeal therefore has to be dismissed.

## Order

## For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

N. Schneider P. Lanz

Decision electronically authenticated