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**Datasheet for the decision  
of 15 April 2024**

**Case Number:** T 0241/22 - 3.2.03

**Application Number:** 14705343.3

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**IPC:** E03B7/04, F16L15/00,  
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F16L37/00

**Language of the proceedings:** EN

**Title of invention:**

PIPE CONNECTOR AND ARRANGEMENT WITH A PIPE CONNECTOR

**Patent Proprietor:**

Uponor Innovation AB

**Opponent:**

Viega Technology GmbH & Co. KG

**Headword:**

**Relevant legal provisions:**

EPC Art. 100(c), 100(b), 54(2), 56  
RPBA 2020 Art. 12(2)

**Keyword:**

Grounds for opposition - insufficiency of disclosure (no) -  
added subject-matter (no)  
Novelty - (yes) - main request (yes)  
Inventive step - (yes) - main request (yes)  
primary object of appeal proceedings to review decision -  
appeal case directed to arguments on which decision was based  
(yes) - appeal case directed to facts on which decision was  
based (yes)

**Decisions cited:**

G 0003/14

**Catchword:**



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Case Number: T 0241/22 - 3.2.03

**D E C I S I O N**  
**of Technical Board of Appeal 3.2.03**  
**of 15 April 2024**

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**Decision under appeal:** **Decision of the Opposition Division of the  
European Patent Office posted on 6 December 2021  
rejecting the opposition filed against European  
patent No. 2959200 pursuant to Article 101(2)  
EPC.**

**Composition of the Board:**

**Chairman** C. Herberhold  
**Members:** R. Baltanás y Jorge  
D. Prietzel-Funk

## Summary of Facts and Submissions

- I. European patent No. 2 959 200 B1 relates to a pipe connector and an arrangement with a pipe connector.
- II. An opposition was filed against the patent based on Articles 100(c) EPC, 100(b) EPC and 100(a) EPC in conjunction with Articles 54 EPC and 56 EPC.
- III. The present appeal is against the decision of the opposition division rejecting the opposition.
- IV. The decision reached by the opposition division was appealed by the opponent (the appellant).
- V. Requests

At the end of the oral proceedings the requests were as follows.

The appellant requested that the decision under appeal be set aside and that the European patent be revoked.

The patent proprietor (the respondent) requested that the appeal be dismissed or that the patent be maintained in amended form on the basis of one of auxiliary requests 1 to 14 filed with the reply to the statement setting out the grounds of appeal.

- VI. Claim 1 as granted (main request), including the numbering of its features as adopted in the contested decision, reads as follows (amended features compared to originally filed claim 1 are highlighted in bold):

- 1a** *Pipe connector (RVS) for an in-wall installation of a series-pipe system or a ring-pipe system,*
- 1b** ~~*comprising*~~ *consisting solely of a first connection (AS1), a second connection (AS2), and a third connection (AS3) and a U-shaped pipe section (UA), wherein*
- 1c** *- the pipe connector (RVS) is produced in one piece;*
- 1d** *- longitudinal axes (LA1, LA2, LA3) of the connections (AS1, AS2, AS3) are located substantially in a first plane (E1);*
- 1e** *- the first connection (AS1) and the second connection (AS2) are arranged on a common side in relation to a second plane (E2), the second plane (E2) being aligned perpendicular to the first plane (E1) and running through the longitudinal axis (LA3) of the third connection (AS3);*
- 1f** *- the third connection (AS3) has a thread,*
- 1g** *- ~~wherein~~ the first connection (AS1) and the second connection (AS2) are linked by means of a the U-shaped pipe section (UA), an elongated pipe section (LA) having the third connection (AS3) being formed from the U-shaped pipe section (UA);*
- 1h** *and the first connection (AS1) and the second connection (AS2) are spaced from one another in such a manner that the first connection (AS1) and the second connection (AS2) are accessible for connection of pipe lines by means of a tool, in particular a pressing tool (PW).*

VII. Prior art

The following documents have been cited, both in the statement setting out the grounds of appeal and during

the opposition proceedings, and are relevant to the present decision:

D2: US 4,371,991 A  
D3: US 3,872,521 A  
D4: DE 298 03 390 U1  
D5: Brochure "Intelligent, effektiv, eigensicher!  
Die Spülstation mit Viega Hygiene+ Funktion",  
Viega GmbH & Co. KG, DE 683 368-03/11-2976  
D6: US 880,156 A

The following documents relevant to the present decision were filed after the opposition period, admitted into the proceedings by the opposition division, and cited in the statement setting out the grounds of appeal:

D8: US 2004/0182451 A1  
D9: EP 2 053 298 A1

VIII. The appellant's arguments concerning the main request can be summarised as follows:

(a) Article 12(2) RPBA

The statement setting out the grounds of appeal satisfied the requirements of Article 12(2) RPBA since it explained which aspects of the contested decision were considered wrong and why they should be revised.

(b) Added subject-matter

Feature 1b ("*[pipe connector] consisting solely of a first connection, a second connection, a third connection and a U-shaped pipe section*") was clear and

unambiguous in itself, and it did not leave any room for interpretation concerning which elements formed the defined pipe connector, the list being exhaustive. However, the originally filed application did not disclose any pipe connector consisting solely of these four elements.

Even if it were considered that feature 1g ("*an elongated pipe section having the third connection being formed from the U-shaped pipe section*") added a fifth element as a component of the defined pipe connector, the originally filed application only disclosed a pipe connector comprising these five elements in combination with other features which had been omitted in claim 1.

According to the third paragraph of the originally filed page 4 (general part of the description) and the second paragraph of the originally filed page 9 (relating to the particular embodiment of Figures 1 and 2), a pipe connector comprising the five elements listed in features 1b and 1g also involved an inner channel which had a substantially constant circular cross-section. This ensured a favourable flow profile which minimised pressure loss.

Further features of the particular embodiment of Figures 1 and 2 which had been omitted in granted claim 1 were the "reinforcing rib", the "pressing sleeve" and the "plastic ring".

Omitting these features resulted in granted claim 1 being an unallowable intermediate generalisation.

Moreover, Figures 1 and 2 could not provide a basis for feature 1c ("*the pipe connector is produced in one*

piece") either, since the particular embodiment of the figures disclosed a plastic ring being part of the pipe connector. This plastic ring could not be produced in one piece with the rest of the device.

(c) Sufficiency of disclosure

The contradiction between feature 1b ("*consisting solely of a first connection, a second connection, a third connection and a U-shaped pipe section*") and part of feature 1g ("*an elongated pipe section having the third connection being formed from the U-shaped pipe section*") would prevent the skilled person from reproducing the invention, since they could not implement both features simultaneously.

Similarly, the skilled person could not implement the features of claim 9 ("*wherein the first connection and/or the second connection further comprise a plastic ring, which surrounds the respective press sleeve at one end*"), since they were incompatible with feature 1b, which provided an exhaustive list of the parts of which the pipe connector consisted.

Moreover, the subject-matter of claim 9 ("*wherein the first connection and/or the second connection further comprise a plastic ring, which surrounds the respective press sleeve at one end*") was incompatible with feature 1c ("*the pipe connector is produced in one piece*") to such an extent that the skilled person would not be able to reproduce the invention.

Finally, the skilled person would not be able to reproduce the invention of claim 6 across its whole scope of protection. It was not feasible for the first connection and/or the second connection to **always** be



accessible for the connection of pipe lines by means of a tool when a consumer was connected to the third connection, since a consumer and its connections might have a geometry that did not allow access of a tool.

(d) Novelty

D9

D9 disclosed the whole of the subject-matter of claim 1, since the pipe connector shown in Figure 1 consisted solely of three connections and comprised a U-shaped pipe section.

The fact that the connections (2a) were arranged on the main pipe ("*Hauptverteilungsleitung 1a*") at a right angle did not affect the perception of the skilled person, who still recognised a U-shaped pipe section.

The "sealing plug" used to close the fourth connection of the pipe connector was not a supplementary element of the device but part of the elongated pipe section.

D2/D3

The contested patent did not define any minimum pressure to be withstood by the pipe connector. Granted claim 1 did not limit the suitability of the pipe connector to a fresh water distribution system but indicated merely "*for an in-wall installation of a series-pipe system or a ring-pipe system*". Thus, the devices disclosed in D2 or D3, which were suitable for use "*for an in-wall installation of a series-pipe system or a ring-pipe system*", had to be considered novelty-destroying.

Indeed, the materials and connectors (e.g. screw fittings) of the devices disclosed in D2 or D3 were suitable to resist the usual pressures arising in domestic use.

D8

D8 disclosed all the features of claim 1 and, in particular, a U-shaped pipe section linking a first and a second connection (features 1b and 1g) (see paragraphs [0078] and [0079] as well as Figures 13 and 14).

D4

D4 also anticipated the whole of the subject-matter of claim 1. The pipe portion (11) linking the first connection (10) and the second connection (8) in the pipe connector (1) of D4 (see Figures 1 and 4) was U-shaped within the meaning of claim 1 since the latter did not define the angle formed by such a shape.

(e) Inventive step

D9 as closest prior art

The skilled person would adapt the pipe connector of the embodiment shown in Figure 1 of D9 depending on the circumstances under which the device was to be used. It would be obvious to the skilled person to provide just three connections if this was required for a given use, since a use with the fourth connection (4) being closed by a sealing plug was already envisaged, and since omitting the superfluous connection and the sealing plug was obvious as a way of reducing costs and complexity.

The skilled person producing such a pipe connector comprising only three connections would further provide the pipe section with a U shape to optimise the flow between the connections. This was an obvious modification in view of the common general knowledge of the skilled person.

In this way, the skilled person would arrive at the object defined in claim 1 in an obvious manner.

D5 as closest prior art

The subject-matter of claim 1 was obvious starting from the pipe arrangement shown in the right-hand portion of the image on page 6. The image showed a U-shaped pipe and a pipe connector comprising three connections. It would be obvious to the skilled person to simplify the pipe connector by providing an element produced in one piece, thus arriving at the solution of claim 1. D5 disclosed examples of such pipe connectors produced in one piece, such as those mentioned in point 2 on page 4, where the advantages of this solution in terms of simplification were mentioned.

Alternatively, the skilled person would start from the pipe connector comprising three connections as shown on the left-hand side of the figure on page 4, which only differed from the device of claim 1 by virtue of feature 1f ("*the third connection has a thread*"). It was obvious to the skilled person to provide a thread on a connection, since this was a well-known option for fittings.

D6 as closest prior art

D6 disclosed all the features of claim 1 apart from feature 1f ("*the third connection has a thread*"). Again, it was obvious to the skilled person to provide a thread on a connection, since this was a well-known option.

IX. The respondent's arguments concerning the main request can be summarised as follows:

(a) Article 12(2) RPBA

The requirements of Article 12(2) RPBA were not fulfilled by the appellant's statement setting out the grounds of appeal since it was not specified therein which parts of the contested decision were wrong.

(b) Added subject-matter

The wording of claim 1 could be considered unfortunate but it did not give rise to an unallowable extension of subject-matter. The skilled person had to interpret the claim in order to arrive at a technically sensible meaning and, when doing this, they would consider what had already been disclosed in the originally filed application.

Originally filed Figures 1 and 2 provided a basis for feature 1b ("*consisting solely of*") to be interpreted to further consist of the five elements explicitly listed in feature 1g ("*an elongated pipe section having the third connection being formed from the U-shaped pipe section*").

Indeed, the "*inner channel with a substantially circular cross-section*" was presented only as an optional feature in the general part of the description

(originally filed page 4, third paragraph) and in the originally filed claim 4. Thus, a certain level of abstraction was allowable in this respect.

The same applied to the features "reinforcing rib", "pressing sleeve" and "plastic ring", which were originally disclosed as optional parts of elements defined in features 1b and 1g.

The objection with respect to the allegedly insufficient disclosure of feature 1c ("*produced in one piece*") in Figures 1 and 2 actually concerned Article 100(b) EPC or Article 84 EPC and not an unallowable extension of subject-matter.

(c) Sufficiency of disclosure

The appellant's objections were related more to clarity. The skilled person interpreting the claims in a way which made technical sense - whereby said skilled person was familiar with the teaching of the patent as a whole - would know how to reproduce the invention thereby defined.

(d) Novelty

D9

The device of D9 disclosed further elements than those defined in claim 1, thus differing from the object of the claim.

Moreover, the figures of D9 consistently disclosed a straight main pipe comprising several perpendicular outlets. The skilled person would not consider such a

construction to be a U-shaped pipe section within the meaning of claim 1.

D2/D3

The suitability defined in feature 1a ("*for an in-wall installation of a series-pipe system or a ring-pipe system*") implied structural features which could not be ignored.

"Series-pipe systems" or "ring-pipe systems" as they were used in systems distributing fresh water were not suitable for being used with consumers drain piping, not least on account of hygiene reasons. Thus, the devices shown in D2/D3 did not fall under the subject-matter claimed.

Likewise, the skilled person would not consider the traps for basins and sinks of D2 or D3 to be suitable pipe connectors for an in-wall installation of a series-pipe system or a ring-pipe system, which implied a fresh water distribution system working at a certain pressure.

D8

No U-shaped pipe section was disclosed in D8. Paragraphs [0078] and [0079] merely disclosed a U-shaped path but not a correspondingly shaped pipe section.

D4

No U-shaped pipe section was disclosed in D4, since the curved portion shown in Figure 4 thereof could not be considered to be a U-shaped pipe section.

(e) Inventive step

D9 as closest prior art

There was no incentive in D9 to carry out the amendments suggested by the appellant. The teaching of D9 related to a modular system which allowed the interconnection of the disclosed pipe connectors. In the absence of an incentive, the skilled person would not think about modifying D9 - contrary to its teaching - to produce devices which could not be combined. Moreover, the alleged modification of a U shape was not obvious, in view of the different flow pattern in the connectors.

D5 as closest prior art

The disclosure in the figure on page 6 could not be considered a suitable starting point since the only pipe connector disclosed was a T-shaped pipe connector. The appellant considered this pipe connector together with a part of the water supply system when formulating its objection and proposed to replace the whole of it with a pipe connector. The skilled person could only arrive at the invention from such a construction in this way by means of an *ex-post facto* approach.

The representation of the pipe connector in the figure on page 4 was merely schematic and its details were not to be inferred. In particular, it was not disclosed in the figure that this pipe connector was produced in one piece (feature 1c).

D6 as closest prior art

D6 related to a drain system for a sink. Therefore, it was not suitable "*for an in-wall installation of a series-pipe system or a ring-pipe system*" (feature 1a) as in the case of documents D2 and D3. The skilled person would not consider such a document - which is intended for a completely different purpose - as a starting point.

### **Reasons for the Decision**

1. Compliance of the statement of grounds with Article 12(2) RPBA

The respondent argued that the submissions of the appellant did not satisfy the requirements of Article 12(2) RPBA since it was not specified which parts of the contested decision were considered wrong.

This is not persuasive since the statement setting out the grounds of appeal contains, for each ground of opposition, detailed arguments from the appellant, which are clearly aimed at justifying a revision of the contested decision (see pages 5 to 24 thereof). These arguments basically address the reasoning on which the decision was based and propose an alternative view for each of the contested points, thus satisfying the requirements of Article 12(2) RPBA.

2. Main request, extension of subject-matter - Article 100(c) EPC
  - 2.1 Feature 1b ("*consisting solely of a first connection, a second connection, a third connection and a U-shaped pipe section*")



### 2.1.1 Interpretation of the feature

Granted claim 1 was amended through the replacement of the word "comprising" by "consisting solely of" in feature 1b.

The amended granted feature 1b defines a pipe connector **consisting solely of** a first connection, a second connection, a third connection and a U-shaped pipe section (emphasis added).

The meaning of "consisting solely of" is clear and unambiguous, and it is fundamentally different from that of "comprising" since the pipe connector is now limited to the four elements listed in feature 1b, i.e. there is in principle nothing else.

The appellant argued that such a clear and unambiguous feature did not leave any room for interpretation of the same. This cannot be accepted, however, in view of the circumstances.

As the opposition division correctly identified, feature 1g defines a **further**, fifth element of the pipe connector, namely "an elongated pipe section having the third connection being formed from the U-shaped pipe section". Consequently there is a contradiction between features 1b and feature 1g, and this amounts to a lack of clarity (Article 84 EPC). However, lack of clarity is not a ground for opposition, but has to be "lived with" in further opposition (appeal) proceedings (G 3/14, point 55 of the reasons).

The skilled person interpreting claim 1 needs to reconcile these two contradictory features and would

conclude that the pipe connector must comprise all the elements listed in claim 1 irrespective of the wording "consisting solely of" used in feature 1b. This is confirmed by the patent specification, which the skilled person would consult if they were not able to overcome this contradiction through the wording of claim 1 alone (see paragraphs [0023] and [0024] of the opposed patent).

Nevertheless, the fact that feature 1g contradicts feature 1b does not imply that the clear and unambiguous wording "consisting solely of" can simply be ignored but only that the number of listed elements in feature 1b must be supplemented with the elongated pipe section of feature 1g. Reading the claim with a mind willing to understand, one thus arrives at the conclusion that the pipe connector of the invention must **consist solely of** the five elements defined in features 1b and 1g (a first connection, a second connection, a third connection, a U-shaped pipe section and an elongated pipe section having the third connection being formed from the U-shaped pipe section). It should be pointed out that the limitation defined in feature 1b does not only concern the number of connections - as argued by the respondent - but, instead, relates to **all the elements which form** the pipe connector.

Consequently, what has to be established is whether or not there is a basis for such an embodiment in the originally filed application.

#### 2.1.2 Original disclosure

The appellant correctly states that there is no explicit basis in the originally filed description for

the feature "consisting solely of". The description consistently discloses a pipe connector **comprising / having** these elements (see originally filed claim 1, page 1, lines 5 and 6, page 2, lines 18 to 20, page 3, lines 21 to 24, and page 7, lines 12 to 23). Therefore, the text of the description only discloses embodiments in which the construction of the pipe connector is not explicitly limited to the elements defined in granted claim 1.

The originally filed figures (see, in particular, Figures 1 and 2) disclose, however, a particular embodiment of a pipe connector consisting of a specific number of elements corresponding to those defined in features 1b and 1g.

The appellant did not consider the figures or the description to form a sufficient basis, in particular because the following components were not part of the claimed subject-matter (these being allegedly excluded by the wording "consisting solely of"): "inner channel with a substantially circular cross-section", "reinforcing rib", "pressing sleeve" and "plastic ring".

However, it is disclosed in the third paragraph of originally filed page 4 that an **inner channel with a substantially circular cross-section** can be provided "[a]ccording to a further advantageous embodiment of the invention". Thus, this feature is thereby disclosed as optional and not as an essential feature of the invention.

The originally filed claims confirm that the inner channel with a substantially circular cross-section is disclosed as an optional feature of the invention (see

originally filed independent claim 1 and dependent claim 4).

Thus, even if the description of the particular embodiment disclosed in Figures 1 and 2 mentions that "[t]he pipe connector RVS has an inner channel IK which has a substantially constant circular cross-section" (second paragraph of page 9), the level of abstraction by omission of this feature is justified within the context of the originally filed application as a whole. The skilled person considering the embodiment of Figures 1 and 2 understands that the shape of the inner channel section is not an essential feature inextricably linked to the particular construction shown there but, instead amounts to a mere possibility, in line with the general teaching provided.

Consequently, the omission of an inner channel having a substantially constant circular cross-section in claim 1 does not result in an unallowable extension of subject-matter.

With respect to the **reinforcing rib**, according to the originally filed page 7, lines 23 to 26, this is something which the elongated pipe section "has", i.e. the reinforcing rib is part of the elongated pipe section defined in claim 1 as granted. Generalising in relation to this particular aspect of the elongated pipe section (i.e. claiming the elongated pipe section without the reinforcing rib) is a level of abstraction that has already been added to claim 1 as filed, which included the elongated pipe section without the rib.

As far as the **pressing sleeve** is concerned, claim 8 as originally filed defines the supporting sleeve and the

press sleeve as part of the first and second connections ("the first and/or second connection further **comprise**..."). Likewise, claim 9 as originally filed defines the **plastic ring** as part of the first and/or second connection. The same wording is used in dependent claims 8 and 9 as granted.

When considering granted claim 1 in combination with granted claims 8 and 9, it follows that claim 1 does not exclude the presence of a supporting sleeve, a press sleeve and a plastic ring as defined in these dependent claims. The elements thereby defined are actually **optional sub-components of** the first and second connections defined in claim 1. Thus, no contradiction arises between granted claims 1, 8 and 9.

Furthermore, since the originally filed application discloses a pipe connector comprising the five elements defined in granted claim 1 (see originally filed claim 1), and since the press sleeve and the plastic ring were originally disclosed as being optional components of the first and second connections (see originally filed claims 8 and 9), omitting these parts in granted claim 1 does not result in an unallowable extension of subject-matter.

Indeed, not explicitly defining these elements - which are part of the first and second connections already claimed - in claim 1 as granted might be an intermediate generalisation going beyond the detailed disclosure. This subject-matter is allowable, however, in view of the fact that such generalisation was already present in claim 1 as originally filed (which claims the first and second connections without the supporting sleeve, the press sleeve and the plastic ring).

The argument put forward by the appellant concerning an alleged lack of basis, in Figures 1 and 2, for the feature **"plastic ring" in granted claim 9** in combination with **feature 1c** of claim 1 ("*the pipe connector is produced in one piece*") cannot be accepted, since the skilled person would not consider an interpretation of these features which meant that the plastic ring has to be produced in one piece together with the piping of the pipe connector. Such an interpretation would contradict the common general knowledge of the skilled person, who is aware that it is impossible to combine such materials in a single piece as defined in feature 1c. The skilled person would apply their common general knowledge to interpret the combining of the two features, and would conclude that the plastic ring cannot be part of the piping, which is produced in one piece according to feature 1c (see point 3.2 below).

### 2.1.3 Conclusion

In view of the above it must be concluded that, while claim 1 is tainted by a lack of clarity, Article 100(c) EPC does not prejudice maintenance of the patent as granted if the subject-matter is considered according to a proper claim construction.

## 3. Main request, sufficiency of disclosure - Article 100(b) EPC

### 3.1 Contradiction between feature 1b and feature 1g or claim 9

The appellant argues that the contradiction between feature 1b ("*consisting solely of a first connection, a*

*second connection, a third connection and a U-shaped pipe section") and part of feature 1g ("an elongated pipe section having the third connection being formed from the U-shaped pipe section") would prevent the skilled person from reproducing the invention since they could not implement both features simultaneously. Similarly, the skilled person could not implement the features of claim 9 ("wherein the first connection and/or the second connection further comprise a plastic ring, which surrounds the respective press sleeve at one end") since a further element was incompatible with feature 1b.*

This is not persuasive.

As explained in point 2.1.1 above, the skilled person realising the presence of the contradiction between feature 1b and feature 1g would construct the claim in a way which makes technical sense (see above). Thus, they would not encounter any difficulty in producing a pipe connector according to this interpretation, in particular since the patent specification discloses an embodiment which teaches the skilled person how to do this (see, e.g., Figures 1 and 2).

Concerning claim 9, the skilled person is aware that the plastic ring is a sub-component of the first and/or second connection (see first sentence of paragraph [0025] of the patent specification, and Figures 1 and 2).

### 3.2 Contradiction between feature 1c and claim 9

The appellant argued that the subject-matter of claim 9 "wherein the first connection and/or the second connection further comprise a plastic ring, which

surrounds the respective press sleeve at one end" was incompatible with feature 1c ("the pipe connector is produced in one piece") to such an extent that the skilled person would not be able to reproduce the invention.

However, this is more a clarity issue related to the contradiction between the wording "in one piece" and the definition of further elements, which are disclosed as separate parts (see plastic ring KR in Figure 1 and the one-piece pipe construction of Figure 2).

The skilled person striving to put into practice the subject-matter claimed would understand - also in the light of the description and figures, if necessary - that the portion of the pipe connector which must be produced in one piece is the piping (see Figure 2), whereas the plastic rings defined in claim 9 - which are mounted on this piping; see paragraph [0025] of the patent specification - are separate parts. Since the patent specification discloses such an embodiment (see Figures 1 and 2 as well as paragraph [0025]), no particular difficulty would arise for the skilled person to reproduce this embodiment.

### 3.3 Reproducibility across the whole scope of claim 6

The appellant further argued that the skilled person would not be able to reproduce the invention of claim 6 across its whole scope of protection. It was not feasible for the first connection and/or the second connection to **always** be accessible for the connection of pipe lines by means of a tool when a consumer was connected to the third connection since a consumer and its connections could have a geometry that did not allow access of a tool.



However, claim 6 does not specify that any pipe connector defined therein must be suitable to provide this function **for any possible consumer**.

The skilled person knows how to provide a pipe connector according to claim 6, wherein the dimensions of the pipe connector are such that the defined capability - i.e. accessibility of a tool - is achieved **for the particular consumer** envisaged by the skilled person in a particular case, such as in the situation illustrated in Figure 5 of the patent. This is what is defined in claim 6 if the claim is read with a mind willing to understand.

Thus, no hindrance for the skilled person reproducing the invention can be seen in this case either.

### 3.4 Conclusion

In view of the above, the ground for opposition related to Article 100(b) EPC does not prejudice the maintenance of the patent as granted.

## 4. Main request, novelty - Article 54(2) EPC

### 4.1 D9

The embodiment of Figure 1 of D9 shows a pipe connector suitable for an in-wall installation of a series-pipe system or a ring-pipe system (feature 1a). In one embodiment of D9, a sealing plug (10) can be connected to the pipe connector (see paragraph [0017] and Figure 4). According to Figure 1, the pipe connector thus actually comprises four connections, even if one (connection 4) can - when in use - be closed by the

sealing plug (see Figure 4). The longitudinal axis of the pipe connector is located in a first plane (feature 1d) (see Figure 1). A first connection and a second connection of D9 (2a) are arranged on a common side in relation to a second plane, the second plane being aligned perpendicular to the first plane and running through the longitudinal axis of the third/fourth connection (3, 4) (feature 1e), this third/fourth connection having a thread (feature 1f) (see Figure 1). The first connection and the second connection (2a) are spaced apart from each other in such a manner that they are accessible for connection of pipe lines by means of a tool (feature 1h). Indeed the connections (2a) are intended for connection of further pipes, which is usually carried out by means of a tool.

The appellant argued that the wording "consisting solely of" was to be interpreted as "comprising" and, accordingly, the pipe connector of D9 comprised a first connection (2a), a second connection (2a), a third connection (3, 4) and a U-shaped pipe section (formed by a section of the main pipe portion (1a) and the pipe portions leading to the connections (2a)). Furthermore, the first connection (2a) and the second connection (2a) were linked by means of this U-shaped pipe section. The pipe connector further comprised an elongated pipe section having the third connection (3, 4) and being formed from the U-shaped pipe section.

This is not persuasive.

Firstly, according to the interpretation explained in point 2.1.1 above, claim 1 defines a pipe connector consisting solely of the five elements defined in features 1b and 1g (a first connection, a second connection, a third connection, a U-shaped pipe section

and an elongated pipe section having the third connection being formed from the U-shaped pipe section). As discussed above, the pipe connector in D9 comprises four connections, and thus an additional element, which is contrary to the definition in claim 1.

Secondly, the skilled person would not understand a straight pipe portion (such as the main pipe portion (1a) in D9) on which two outlets (2a) are provided at specific intermediate points as a "U-shaped pipe section" within the meaning of claim 1, even if the connector could be produced in one piece (see D9, paragraph [0018]). Thus, features 1b and 1g are not disclosed in D9. In this respect, the Board agrees with the opposition division that features 1b and 1g define a U-shaped **pipe section** which must be perceived as such by the skilled person when looking at the pipe connector. The reference by the appellant to the technical field of metallic profiles - where a U-shaped profile is known to have its legs at a right angle to its central part - is not relevant. The expression "U-shaped pipe section" within the context of the invention - i.e. in the technical field of piping systems for water distribution - implies that a **curved** shape corresponding to the curved part of the letter "U" must be recognisable, this curved shape implying favourable flow properties well-known to the skilled person in this technical field.

Thus, the features "consisting **solely** of" (feature 1b) and "U-shaped pipe section" (features 1b and 1g) are not anticipated by D9.

4.2 D2/D3

The appellant argued that granted claim 1 did not require suitability for fresh water distribution but merely for the pipe connector to be used in a series-pipe system or a ring-pipe system, which could be intended for a different purpose.

This is not convincing.

The wording "in-wall installation of a series-pipe system or a ring-pipe system" (feature 1a) is a well-known concept in water **supply** systems, which is used for the specific aim of avoiding hygiene problems due to stagnating water (see paragraphs [0003] and [0004] of the patent specification). It would defy any logic for the skilled person to think of a series-pipe system or a ring-pipe system for drainage purposes, since there is no apparent technical reason for such an arrangement. Actually, this would result in drainage water being guided around a circuit, which is contrary to basic hygiene considerations.

Consequently, there is no doubt that the pipe connector of claim 1 must be suitable for use in water supply systems as defined in feature 1a.

The pipe connector shown in Figure 2 of D2 is a typical trap for waste water, i.e. a pipe connector which is not designed to withstand the usual pressures in domestic water **supply** systems, either by itself or by means of its connections. The skilled person would not regard such a pipe connector as suitable for use in an in-wall installation of a series-pipe system or a ring-pipe system as defined in feature 1a, this being due to

the fact that it is adapted for a completely different use.

The same applies to D3 (see Figures 1 and 2).

Consequently, the subject-matter of claim 1 differs from each of D2 and D3 at least on account of feature 1a.

#### 4.3 D8

Contrary to what is defined in features 1b and 1g in combination (see point 2.1.1 above), the pipe connector (190) of D8 does not consist solely of a first connection, a second connection, a third connection, a U-shaped pipe section and an elongated pipe section having the third connection being formed from the U-shaped pipe section. The reason for this is that pipe connector (190) is also formed by a valve (202). Feature 1b is not, therefore, disclosed in D8 already for this reason alone.

Moreover, D8 does not disclose any **pipe section** (not simply a flow direction) that the skilled person would consider to be U-shaped. It should be pointed out in this context that D8 refers to a "U-shaped [flow] **path**" rather than to a U-shaped pipe section as claimed (see paragraph [0078]). The skilled person looking at pipe connector (190) would understand that it comprises a straight pipe section, in which two outlets are provided. This is quite different from a "U-shaped pipe section" linking a first and a second connection. Consequently, features 1b and 1g are not disclosed in D8.

The appellant argued that the pipe connector (190) was produced in one piece with the divider (206) since the hatching was identical for both elements.

This is not persuasive, in view of Figure 14 - where both elements are separated by a solid line - and the first sentence of paragraph [0079], which hints at a separate construction. Furthermore, valve (202) defining part of the piping of the pipe connector cannot be produced in one piece with the rest of the piping (see point 3.2 above). Thus, feature 1c is not disclosed in D8 either.

In view of the above, the subject-matter of claim 1 is novel over D8.

#### 4.4 D4

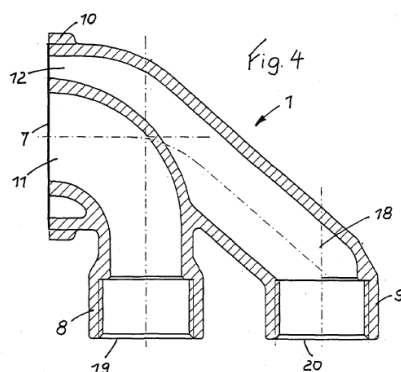
The appellant argued that the pipe portion (11) linking the first connection (10) and the second connection (8) in the pipe connector (1) of D4 (see Figures 1 and 4) was to be regarded as U-shaped within the meaning of claim 1 since the latter did not define an angle formed by such shape.

This is not persuasive.

The skilled person knows the usual meaning of the expression "U-shaped", i.e. a shape which resembles the letter U in the Latin alphabet.

This is not the case for the pipe portion (11) in D4. Figure 4 of D4 (reproduced below) shows the pipe portion (11) as a short curve of approximately 90 degrees linking the first connection (10) and the

second connection (8). Such a shape does not qualify as "U-shaped".



Therefore, the subject-matter of claim 1 differs from D4 at least on account of the feature "U-shaped pipe section" (features 1b and 1g).

#### 4.5 Conclusion

The subject-matter of claim 1 is novel (Article 54(2) EPC).

#### 5. Main request, inventive step - Article 56 EPC

##### 5.1 D9 as closest prior art

5.1.1 The appellant argued that the skilled person would undertake two consecutive modifications of the pipe connector corresponding to the embodiment of Figure 1 of D9. In particular, D9 already provided that the fourth connection 4 could be sealed by means of a sealing plug (see Figure 4) if only three connections (3 and 2a) were needed.

In a first step, in the context of a specific use of the pipe connector of D9 requiring just three connections, the skilled person would address the problem of simplifying the device and reducing costs by

modifying the design to comprise just three connections and thus to omit the fourth connection completely.

In a second step, the skilled person would address the problem of optimising the flow between the connections, wherein providing a U-shaped pipe section would be an obvious well-known solution for the skilled person.

5.1.2 The arguments of the appellant are not convincing, for the following reasons.

Firstly, the two problems defined by the appellant are interrelated and cannot be analysed separately. The argumentation of the appellant implies that the skilled person would not consider the problem of improving flow properties until they have considered a particular use for the pipe connector, and successfully overcome the subsequent problem of simplifying the connector and reducing costs in view of this use. Thus, the skilled person would have to undertake a number of consecutive, interrelated steps in order to arrive at a device within the scope of claim 1. This can only be considered obvious on the basis of having knowledge of the invention and applying an *ex-post facto* approach.

Actually, even the first modification addressing the problem of simplifying the pipe connector or reducing costs would not be contemplated by the skilled person if considering D9 alone. The aim of this document is to provide a **modular** system which allows flexibility in use of the pipe connectors. The latter can be connected to one another or limited by means of sealing plugs in order to provide the desired configuration (see paragraph [0005] as well as column 2, lines 16 to 24). Modifying the pipe connector of D9 to make it only suitable for a single application - i.e. comprising



only three connections by removing the second connection (4) on the main distributing pipe (1a) in Figure 1 - would be contrary to the explicit general teaching of this document. The skilled person would not proceed with such a modification without a clear incentive for it.

Even the second proposed modification would not be obvious to the skilled person. The pipe connector of D9 is used to receive a flow into the main distributing pipe (1a) from connection 3, which is then divided between the pipe connections (2a) ("Abzweigleitungsanschlüsse 2a"; see column 4, lines 28 to 31, and Figure 1, reproduced below).

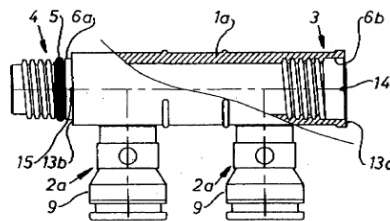


FIG. 1

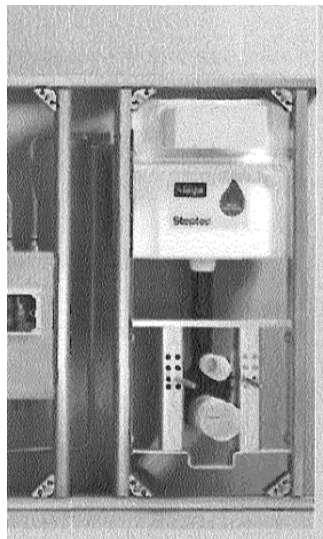
Thus, there is no flow from one of the branch pipe connections (2a) to the other, for which a U-shaped pipe portion connecting both branch pipe connections (2a) could possibly improve the flow properties of the pipe connector by reducing the pressure loss.

5.1.3 In view of the above, the subject-matter of claim 1 does not follow in an obvious manner when combining D9 with the common general knowledge of the skilled person.

5.2 D5 as closest prior art

5.2.1 Image on page 6

The appellant raised an objection based on the pipe arrangement shown in the right-hand portion of the image on page 6, reproduced below. The image showed a horizontal pipe entering a water tank of a toilet. This horizontal pipe was the continuation of a vertical pipe coming from a different device, bending 90° to the right and joining a T-shaped pipe connector in the horizontal direction. A further vertical pipe was connected to the horizontal pipe entering the tank shortly before the tank. This last connection was carried out through the T-shaped pipe connector.

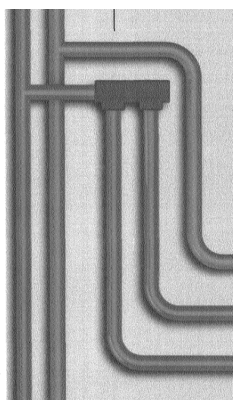


This cannot be a suitable starting point for assessing inventive step since it merely shows a T-shaped pipe connector. In order to arrive at the invention the skilled person would have to consider implementing a pipe connector replacing the whole arrangement formed by the T-shaped pipe connector, the bent pipe coming from the other device as well as the vertical pipe.

In the absence of any pointer or evidence of common general knowledge such reasoning is fatally flawed due to a hindsight approach.

5.2.2 Image on page 4

The appellant argued that a pipe connector comprising three connections was shown on the left-hand side of the figure on page 4, reproduced below.



Even if it could be acknowledged that the skilled person understands an element such as a pipe connector, the figure on page 4 is so schematic that few details apart from the number of connections can be ascertained from it. The figure does not show any U-shaped connection between the first and second connections (i.e. those connected to the vertical pipes) (see explanations concerning the meaning of this feature in point 4.1 above; see also the discussion concerning the feature "U-shaped pipe section" in point 4.3 above, which is applicable here). An elongated pipe section having the third connection is not shown in this pipe connector either. Instead, the third connection (i.e. the one connected to the horizontal pipe to the left of the pipe connector) is arranged directly on the horizontal straight pipe portion of the pipe connector.

Thus, the number of distinguishing features is greater than the one single feature considered by the appellant in its analysis (1f: "*the third connection has a thread*") and the objection already fails, for this reason alone.

### 5.3 D6 as closest prior art

Document D6 relates to a trap for basins and sinks, similarly to D2 and D3.

Consequently, the pipe connector of Figure 3 of D6 is not suitable for use in an in-wall installation of a series-pipe system or a ring-pipe system (feature 1a) (see point 4.2 above).

Since the purpose of the pipe connector of D6 is unrelated to that of the pipe connector of claim 1, D6 is not a suitable starting point to assess inventive step.

In any case, the Board sees no explanation as to why or how the skilled person would modify a trap for basins and sinks in order to render it suitable for use in an in-wall installation of a series-pipe system or a ring-pipe system (i.e. in a water **supply** system). Already for this reason alone, the objection must fail.

### 5.4 Conclusion

In view of the above, none of the objections raised can cast doubt on the inventiveness of the subject-matter of claim 1 (Article 56 EPC).

6. Since none of the grounds for opposition that have been raised prejudices the maintenance of the patent as granted, the appeal cannot succeed.

## Order

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

The appeal is dismissed.

The Registrar:

The Chairman:



C. Spira

C. Herberhold

Decision electronically authenticated