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**Datasheet for the decision
of 15 April 2015**

Case Number: T 2496/11 - 3.2.06

Application Number: 05103766.1

Publication Number: 1596044

IPC: F01N1/08, F01N3/28, F01N1/02

Language of the proceedings: EN

Title of invention:
Device for exhaust gas treatment

Patent Proprietor:
Scania CV AB

Opponent:
VOLVO TECHNOLOGY CORPORATION

Headword:

Relevant legal provisions:
EPC 1973 Art. 56, 99(1)

Keyword:
Inventive step - main request (no), auxiliary requests (no)

Decisions cited:

Catchword:



**Beschwerdekammern
Boards of Appeal
Chambres de recours**

European Patent Office
D-80298 MUNICH
GERMANY
Tel. +49 (0) 89 2399-0
Fax +49 (0) 89 2399-4465

Case Number: T 2496/11 - 3.2.06

**D E C I S I O N
of Technical Board of Appeal 3.2.06
of 15 April 2015**

Appellant: VOLVO TECHNOLOGY CORPORATION
(Opponent) Corporate Patents, 06820, M1.7
405 08 Göteborg (SE)

Representative: Kaufmann, Ursula Josefine
RPK Patentanwälte
Reinhardt, Pohlmann und Kaufmann
Partnerschaft mbB
Schottstraße 8
70192 Stuttgart (DE)

Appellant: Scania CV AB
(Patent Proprietor) 151 87 Södertälje (SE)

Representative: Thum, Bernhard
Wuesthoff & Wuesthoff
Patentanwälte PartG mbB
Schweigerstraße 2
81541 München (DE)

Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
7 October 2011 concerning maintenance of the
European Patent No. 1596044 in amended form.**

Composition of the Board:

Chairman T. Rosenblatt
Members: M. Hannam
W. Ungler

Summary of Facts and Submissions

- I. Mention of the grant of European patent No. 1 596 044 was given on 18 July 2007. An opposition was filed on 17 April 2008 together with an instruction to debit the representative's deposit account with the opposition fee. On 24 April 2008 a notice of insufficient deposit account funds was sent to the opponent with the account being put in funds by 26 April 2008 and the administrative fee being duly paid. Finally, the opposition division issued an interlocutory decision in which it found that European patent No. 1 596 044 in an amended form met the requirements of the EPC.
- II. Appeals were filed by both the proprietor and the opponent against this interlocutory decision of the opposition division.
- III. The appellant/proprietor (hereafter the 'proprietor') requested that the appealed decision be set aside and that the patent be maintained as granted, auxiliarily that it be maintained in the form maintained before the opposition division. The proprietor furthermore requested that the opposition be found inadmissible. The appellant/opponent (hereafter the 'opponent') requested that the appealed decision be set aside and that the patent be revoked.
- IV. The documents relevant to the present decision are:

D5 WO-A-90/14506, and
D6 GB-A-1 243 438.
- V. The Board issued a summons to oral proceedings including a communication containing its provisional opinion, in which it indicated *inter alia* that the

opposition fee appeared to have been paid in time and that the subject-matter of claim 1 of at least the main request appeared to lack an inventive step when starting from D5 and combining this with the teaching from D6.

- VI. With letter of 12 February 2015 the proprietor filed further auxiliary requests 2 and 3.
- VII. Oral proceedings were held before the Board on 15 April 2015, during which the proprietor withdrew auxiliary request 2.
- VIII. The appellant/proprietor requested that the decision under appeal be set aside and that the patent be maintained as granted, or according to a first auxiliary request corresponding to the request filed before the opposition division on 21 September 2011, or according to the third auxiliary request submitted with the letter dated 12 February 2015.

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

- IX. Claim 1 of the main request reads as follows:
"A device for exhaust gas treatment intended to be arranged in an exhaust system of a combustion engine, which device (1) comprises:
a casing (2) with an inlet aperture (3) for receiving exhaust gases and an outlet aperture (4) for the exhaust gases,
a passage (5) extending through the casing (2) for guiding the exhaust gases between the inlet aperture (3) and the outlet aperture (4),
means (6) arranged in the passage (5) for damping of

noise caused by the exhaust gases, and/or means (7) arranged in the passage (5) for cleaning the exhaust gases,

a pipe connection (8) which has an outlet aperture (10) and an inlet aperture (9) which is connected or connectable to the casing's outlet aperture (4), which pipe connection (8) is fastened or fastenable to the casing (2) and settable in various rotational positions relative to the casing (2) in order to regulate the direction of the pipe connection's outlet aperture (10) relative to the casing (2), and

a clamping means (15) for clamping the pipe connection (8) firmly to the casing (2), the clamping means (15) taking the form of a clamp ring arranged to engage with the pipe connection (8) externally about a flange (16) extending round the pipe connection's inlet aperture (9),

characterized in that the device (1) comprises an exhaust gas cleaning unit (13) fitted detachably inside the casing (2) and insertable in the casing via the casing's outlet aperture (4), and

that the clamping means (15) is arranged to clamp the pipe connection (8) firmly to the casing (2) by clamping the flange (16) of the pipe connection and a flange (20) of the casing firmly to a corresponding flange (17) of the exhaust gas cleaning unit."

Claim 1 of auxiliary request 1 reads as follows:

"A device for exhaust gas treatment intended to be arranged in an exhaust system of a combustion engine, which device (1) comprises:

a casing (2) with an inlet aperture (3) for receiving exhaust gases and an outlet aperture (4) for the exhaust gases,

a passage (5) extending through the casing (2) between its inlet aperture (3) and its outlet aperture (4) for

guiding the exhaust gases between the inlet aperture (3) and the outlet aperture (4), means (6) for damping of noise caused by the exhaust gases, and means (7) for cleaning the exhaust gases, both arranged in the passage (5) between the inlet aperture (3) and the outlet aperture (4) of the casing (2), a pipe connection (8) which has an outlet aperture (10) and an inlet aperture (9) which is connected or connectable to the casing's outlet aperture (4), which pipe connection (8) is fastened or fastenable to the casing (2) and settable in various rotational positions relative to the casing (2) in order to regulate the direction of the pipe connection's outlet aperture (10) relative to the casing (2), and a clamping means (15) for clamping the pipe connection (8) firmly to the casing (2), the clamping means (15) taking the form of a clamp ring arranged to engage with the pipe connection (8) externally about a flange (16) extending round the pipe connection's inlet aperture (9), characterized in that the device (1) comprises an exhaust gas cleaning unit (13) fitted detachably inside the casing (2) within the passage (5) and insertable in the casing via the casing's outlet aperture (4), that the clamping means (15) is arranged to clamp the pipe connection (8) firmly to the casing (2) by clamping the flange (16) of the pipe connection and a flange (20) of the casing firmly to a corresponding flange (17) of the exhaust gas cleaning unit, and that the casing (2) is substantially cylindrical and that the casing's outlet aperture (4) is arranged in an endwall (23a) of the casing, whereby the pipe connection (8) when fastened to the casing (2) is arranged to protrude from this endwall (23a)."

Claim 1 of auxiliary request 3 reads as per the preamble of claim 1 of auxiliary request 1, with the characterising portion amended as follows:

"characterized in that the device (1) comprises an exhaust gas cleaning unit (13) fitted detachably inside the casing (2) within the passage (5) and insertable in the casing via the casing's outlet aperture (4), that the clamping means (15) is arranged to clamp the pipe connection (8) firmly to the casing (2) by clamping the flange (16) of the pipe connection and a flange (20) of the casing firmly to a corresponding flange (17) of the exhaust gas cleaning unit, that the casing (2) is substantially cylindrical and that the casing's outlet aperture (4) is arranged in an endwall (23a) of the casing, whereby the pipe connection (8) when fastened to the casing (2) is arranged to protrude from this endwall (23a), that the pipe connection (8) has a contact surface (11) intended to engage with a corresponding contact surface (12) of the exhaust gas cleaning unit (13) arranged in the casing, said contact surfaces (11, 12) being so designed that the pipe connection (8) is rotatable relative to the casing (2) when the contact surfaces (11, 12) are in mutual engagement, that said contact surfaces (11, 12) are rotationally symmetrical, and that the pipe connection's flange (16) is arranged to engage via its outside with the clamp ring (15) and via its inside to engage with the corresponding flange (17) of the exhaust gas cleaning unit (13) arranged in the casing."

X. The proprietor's arguments may be summarised as follows:

Admissibility of the opposition

The opposition fee was not paid in time with the consequence that the opposition was not admissible. The term for filing the opposition expired on 18 April 2008. On 17 April 2008, by facsimile, the opponent had filed its opposition requesting that the fee be debited from its deposit account. At this time, however, insufficient funds had been available in the deposit account to cover the opposition fee. Since the opposition fee had not been paid in time, according to Article 99(1) EPC, the notice of opposition should have been deemed not to have been filed.

Main request

D5 failed to disclose the exhaust gas cleaning unit being fitted detachably inside the casing; 'inside' was to be interpreted as 'completely within' rather than just 'partially in', as was the case for the cleaning unit of D5. D5 also clearly comprised two essentially identical housing halves, rather than the claimed casing in combination with a pipe connection. This reading of D5 had been confirmed by the Swedish Board of Appeal decision dated 29 February 2012. D5 thus furthermore failed to disclose a passage extending through the casing between the inlet and the outlet apertures.

The opponent's arguments regarding a lack of inventive step were based on a clear hindsight benefit of knowing the claimed invention, which thus did not provide a valid basis for the interpretation of D5. Furthermore, when considering the presence of an inventive step, it was necessary to consider the advantages given in the patent whereby these advantages had also to be realised through the combination of prior art documents depriving the claim of an inventive step. In the present case this thus implied that no disassembly of the exhaust gas treatment device from the truck was

required in order to change/clean the cleaning unit. D5 was clearly directed to achieving gas tightness of the filter unit which could only be achieved through axial retaining elements (rivets or screws/bolts) securing the flanges 12, 13. The clamp ring known from D6 provided only a radial securing force on two flanges and so would not be appropriate for achieving gas tightness in D5 which would be required to contain the not insignificant exhaust pressures. If the clamp ring of D6 were able to provide an axial clamping force, this would be evident from the document. The clamp ring of D6 thus did not present guidance to the skilled person of how to modify the device known from D5 in order to reach the subject-matter of claim 1 whilst solving the objective problem of providing an alternative fixing means.

Even if the clamp ring from D6 were used to secure the flanges 12, 13 of D5, the bolt holes in the flanges would remain presenting an unnecessarily complex flange arrangement, this dissuading the skilled person from making such a modification.

Auxiliary request 1

The feature of claim 1 'arranged in an endwall' was not known from D5. D5 specifically disclosed endwalls 10, 11 such that the interpretation of internal surfaces of the device presenting a further endwall was not supported by the disclosure of D5. The claim differentiated between the flange of the casing and the endwall, such that these features could not be considered as comprised one within the other.

The features added to the preamble of the claim more clearly identified that the exhaust gas cleaning unit was fitted fully inside the casing. The claim now also included both means for damping of noise and means for cleaning the exhaust gases, the former not being

present in D5. An inventive step was thus to be recognised when starting from D5 and combining with the teaching from D6.

Auxiliary request 3

The references to the inside and outside of the pipe connection's flange were to be interpreted as the radial inside and the radial outside of the flange, as was clear from the use of the terms inside and outside throughout the patent. In D5, the pipe connection's flange inside surface did not engage with the corresponding flange of the exhaust gas cleaning unit; at best it engaged the annular seal 41. As a consequence the subject-matter of claim 1 involved an inventive step when starting from D5 and combining with the teaching of D6.

XI. The respondent's arguments may be summarised as follows:

Main request

D5 disclosed all features of claim 1 save for the clamp means being a clamp ring. The filter insert of D5 was at least partially inside the casing, thus disclosing this feature of claim 1. The upper housing half 3 of D5 corresponded to the claimed pipe connection, such that also this feature was known from D5. As regards the alleged axial tightening requirement for the flanges in D5, this was not specified in the document such that the clamp ring known from D6 would provide sufficient axial force to the flanges when appropriately specified by the skilled person. Faced with the problem of providing alternative fixing means, the skilled person would reach the subject-matter of claim 1 without exercising an inventive step when starting from D5 and combining this with the clamp ring known from D6.

Auxiliary request 1

No restriction was placed on how the endwall of the casing was configured in claim 1; the upper surface of the lower casing 2 of D5 thus presented an endwall which read on to this feature of claim 1. An overlap of the endwall and the flange was possible; it was even possible, according to the wording of claim 1, for either one to be comprised in the other. The subject-matter of claim 1 thus lacked an inventive step for the same reasons as for the main request.

Auxiliary request 3

The subject-matter of claim 1 lacked an inventive step for the same reasons as the previous requests. The pipe connection's flange having an inside and outside was not restricted to the radial interpretation suggested by the proprietor, rather an inside face of a flange indicated that face directed towards the mating flange. The seal 41 of D5 could not be considered to hinder engagement between the two flanges 13 and 25.

Reasons for the Decision

1. Admissibility of the opposition
 - 1.1 The period of 9 months from the publication of the notice of grant for filing an opposition prescribed by Article 99(1) EPC 1973 expired on 18 April 2008. The notice of opposition was filed on 17 April 2008 together with an instruction to debit the deposit account with the opposition fee. The account was, however, insufficiently funded. In accordance with the arrangements for deposit accounts (ADA), points 6.4 and

6.5 (Supplement to OJ EPO No. 10/2007) the Office sent a notice informing the opponent that the deposit account did not contain sufficient funds to cover the fee on 24 April 2008. The account was sufficiently replenished by 26 April 2008, thus within the one month time limit set in the Office's notice. Hence, the opposition fee and the additionally required administrative fee (cf. ADA, points 6.5 and 6.6) could be duly debited.

1.2 As a consequence thereof and in accordance with ADA, point 6.5, the date on which the debit order was received, corresponding to the date on which the notice of opposition underlying the present appeal was received, is 'considered to be' the date on which payment was made, i.e. the 17 April 2008. Therefore the opposition is deemed to be filed within the period prescribed in Article 99(1) EPC 1973. It was not argued, and the Board on its own motion could also not see, that any other requirement for the admissibility of the opposition was not met. The opposition is thus admissible.

2. Main request

2.1 The subject-matter of claim 1 does not involve an inventive step (Article 56 EPC 1973).

2.2 D5 discloses the following features of claim 1, the reference signs in parentheses referring to D5:
- a device for exhaust gas treatment intended to be arranged in an exhaust system of a combustion engine (see page 1, lines 7 to 9), which device comprises:
- a casing (2) with an inlet aperture (4) for receiving exhaust gases and an outlet aperture (aperture at upper surface of casing as depicted in Fig. 3, into which the

filter insert fits) for the exhaust gases,
- a passage (from inlet aperture 4 to outlet aperture - see Fig. 3) extending through the casing (2) for guiding the exhaust gases between the inlet aperture (4) and the outlet aperture,
- means (16) arranged in the passage for cleaning the exhaust gases,
- a pipe connection (3) which has an outlet aperture (7) and an inlet aperture (aperture of pipe connection mating with outlet aperture of casing) which is connected or connectable to the casing's outlet aperture, which pipe connection (3) is fastened or fastenable (via flanges 12, 13) to the casing (2) and settable in various rotational positions relative to the casing (2) in order to regulate the direction of the pipe connection's outlet aperture (7) relative to the casing (2; see Fig. 3), and
- a clamping means (screws or rivets; see page 5, lines 13 to 17) for clamping the pipe connection (3) firmly to the casing (2),
- the device comprises an exhaust gas cleaning unit (16) fitted detachably inside the casing (2) and insertable in the casing via the casing's outlet aperture (see Fig. 3), and
- that the clamping means (screws or rivets) is arranged to clamp the pipe connection (3) firmly to the casing (2) by clamping the flange (13) of the pipe connection and a flange (12) of the casing (2) firmly to a corresponding flange (25) of the exhaust gas cleaning unit (see page 4, line 28 to page 5, line 17).

2.2.1 The subject-matter of claim 1 thus differs from the device known from D5 in that the clamping means takes the form of a clamp ring arranged to engage with the pipe connection externally about a flange extending

round the pipe connection's inlet aperture.

- 2.2.2 Based on this differentiating feature over D5, the objective technical problem to be solved may be regarded as to provide an alternative clamping arrangement for the flanges.
- 2.2.3 D6 discloses a similar exhaust gas treatment device for internal combustion engines. It comprises, similarly to the device known from D5, two housing halves which are connected to each other via respective circular flanges. The flanges are secured by an encircling clamp or clamping ring 30, (see particularly Fig. 12 and page 3, lines 89 to 97). The device of D6 may also comprise a circular filter mesh enclosing catalyst material clamped around its periphery between the two flanges of the housing halves (page 4, lines 38 to 58). It would be obvious for the skilled person, starting from the exhaust gas treatment device known from D5 and faced with the technical problem to provide an alternative clamping arrangement, to substitute the clamping arrangement in D5 with the clamping ring known from D6 and thereby reach the subject-matter of claim 1 without involving an inventive step.
- 2.3 The proprietor's argument that D5 disclosed solely two housing halves, rather than a single casing and a pipe connection, is not convincing. The claimed pipe connection is further defined in the claim as having an inlet and outlet aperture, the inlet aperture being connectable to the casing's outlet aperture and the pipe connection being settable in various rotational positions relative to the casing. All these attributes are realised by the housing half 3 of D5. The proprietor's contention that two housing halves cannot reasonably anticipate the claimed casing and pipe

connection is based purely on the specific expressions used in D5 to describe the various device parts. The specific expressions used in the prior art are, however, irrelevant in dictating whether a feature defined in a claim is anticipated by the prior art; of sole importance is whether a feature in the prior art comprises all the structural and functional features defined by a feature of the challenged claim. In the present case, this requirement is clearly met, with the housing half 3 of D5 having an inlet and outlet aperture, the inlet aperture being connectable to the other housing half's outlet aperture and the housing half 3 being settable in various rotational positions relative to the other housing half 2, which are exactly those features defined in claim 1 for the pipe connection as mentioned above. The same holds for the second housing half 2 which comprises all the features of the casing defined in the claim. This finding is also not changed by the Swedish Board of Appeal decision SE0401230, concerning the national Swedish patent which had been granted on the Swedish application claimed as priority by the present European patent. Besides being in no way binding on the Boards of Appeal of the EPO, the decision does not contain reasons why the Swedish Patent Appeal Board judged that the skilled person would not describe the one housing half as a casing and the other as a pipe connection but instead would perceive the device as two housing halves each with a pipe connection.

The proprietor's further contention that no passage as defined in claim 1 was to be found in D5 is also not persuasive. When interpreting the housing half 2 of D5 as the claimed casing, the claimed feature 'a passage extending through the casing for guiding the exhaust gases between the inlet aperture and the outlet

aperture' is clearly disclosed through the internal volume of the casing 2 extending from the inlet aperture 4 to the outlet aperture of the casing 2, as depicted in Fig. 3.

- 2.4 The proprietor's argument that D5 additionally failed to disclose a gas cleaning unit being fitted detachably 'inside' the casing is not convincing. With claim 1 providing no guidance as to how the word 'inside' is to be interpreted, it must be given a broad interpretation covering not only the proprietor's desired interpretation of 'fully within' but also that of 'partially within'. In Fig. 3 of D5 it is clear that the filter insert 16 is at least partially contained within the casing 2, the lower portion of the filter insert depicted in Fig. 3 being enclosed within the casing. It thus follows that D5 discloses an exhaust gas cleaning unit fitted detachably inside the casing.

In this respect, the different interpretations of the extension of the casing 2 of D5 in the vertical direction in Fig. 3 is of no consequence. Whether the casing 2 is considered to extend to a conical uppermost surface or alternatively considered to extend only to a level of the mating flanges 12 and 13, the filter insert 16 of D5 is still clearly, in the wording of claim 1, fitted detachably 'inside' the casing.

- 2.5 The proprietor's argument that the problem given in the patent must be addressed by any prior art documents taken into account for the examination of inventive step in the claims of the patent is not accepted. The problem stated in the description as being addressed by the invention may be completely different to the objective problem to be solved formulated in view of those features differentiating the claim from the

closest prior art document. Thus, in the present case, the proprietor's contention of filter replacement without removal of the casing from a truck to be of importance is not reflected by any features in the present claim 1. Rather, the differentiating feature of claim 1 with respect to D5 relates solely to a clamp ring providing the clamping force on the flanges. The objective problem thus relates to providing an alternative clamping arrangement and it is this problem which must be solved by the combination of prior art documents.

- 2.6 The proprietor's argument regarding a clamp ring not providing the required axial clamping force on the mating flanges was not convincing. Whilst a requirement for gas tightness can be recognised in D5 (see particularly page 2, lines 10 to 28), neither the degree of gas tightness nor the pressure the casing is required to withstand is indicated in D5. The pressures in excess of 50 bar suggested by the proprietor to be experienced by such an exhaust treatment device in use also have no basis in the cited prior art. Moreover, and contrary to the proprietor's argument that the device of D6 would not require any tight sealing, also in this prior art device the skilled person would appreciate that a certain gas tightness has to be achieved between the flanges secured by the clamping ring, particularly in the case where a mesh filter enclosing a catalyst material is clamped between the flanges of the housing halves (c.f. D6, page 4, lines 38 to 58). The Board holds that the skilled person selecting a suitable clamping ring would thus not only provide radial clamping forces to the mating flanges but, through selection of an appropriate size and cross-section of the clamping ring itself, would also provide a degree of axial clamping force between the

mating flanges by way of the two annular edges of the clamping ring acting on the outside faces of the respective flange. A clamping ring as known from D6 would thus clearly present a suitable substitute for the screwed/riveted fixings of the two mating flanges of D5 and the amount of modification required to employ the clamping ring of D6 on the device of D5 does not exceed normal design considerations of the skilled person (i.e. the choice of material, shape and dimensions of the clamping ring).

2.7 The proprietor's further argument that through substitution of the screws/rivets with a clamping ring the bolt holes in the flanges would present an unnecessarily complex flange arrangement, this was also not a convincing reason not to combine D5 and D6. The skilled person would clearly understand that the bolt holes in the flanges are only required when the two flanges are joined with screws/rivets and would thus omit this element of the flanges when using a clamping ring to join the flanges, without having to exercise inventive activity.

2.8 It thus follows from the above that the subject-matter of claim 1 lacks an inventive step (Article 56 EPC 1973) when starting from D5 with the desire to solve the objective technical problem and combining this with the teaching from D6. The main request is thus not allowable.

3. Auxiliary request 1

3.1 The subject-matter of claim 1 of this request also does not involve an inventive step (Article 56 EPC 1973).

3.2 The following features in quotation marks, added by the Board, have been amended in the present claim 1 compared to claim 1 of the main request with the aim of further differentiating the nature of the claimed passage:

- a passage (5) extending through the casing (2) 'between its inlet aperture (3) and its outlet aperture (4)';
- means for damping of noise caused by the exhaust gases 'and/or' means (7) for cleaning the exhaust gases 'both arranged in the passage (5) between the inlet aperture (3) and the outlet aperture (4) of the casing (2)'; and
- the device (1) comprises an exhaust gas cleaning unit (13) fitted detachably inside the casing (2) 'within the passage (5)'.

These features added to claim 1 fail to differentiate the nature of the claimed passage (5) to the extent required to enable the expression 'an exhaust gas cleaning unit fitted detachably inside the casing within the passage' to be interpreted as the exhaust gas cleaning unit being fitted entirely inside the casing. Thus D5 still anticipates this feature of claim 1 by way of the filter insert (16) which is partially inside the casing (2).

As regards the requirement for both noise damping and exhaust gas cleaning means in claim 1, the latter is anticipated by the filter insert 16 of D5. The Board also considers the passage extending from the gas inlet aperture 4 to the outlet aperture of the casing 2 of D5 to perform noise damping, for example due to the change in diameter between the inlet aperture and outlet aperture. In this respect it is noted that claim 1 defines no degree of noise damping achieved by the

noise damping means, such that even a minimal noise damping, doubtless achieved by the above referenced change in diameter, would meet the claimed nominal noise damping.

3.2.1 The further features from claim 6 as granted added to the end of the characterising portion of claim 1 also fail to differentiate claim 1 from D5. The casing 2 of D5 may be seen as a discrete, stand-alone entity to which the pipe connection 3, as a further entity, is fitted. From this it is clear that the conical end surface of the casing 2 lying beneath conical section 24 in Fig. 3 may be regarded as an endwall of the casing 2, in which the outlet aperture of the casing is arranged. Alternatively, but with the same outcome, taking the proprietor's interpretation that the upper surface of the casing 2 of D5 is represented by the horizontal line indicated at the level of the interface of the mating flanges 12 and 13, this may also be regarded as an endwall of the casing 2, in which the outlet aperture of the casing is arranged. For both interpretations, therefore, D5 discloses an outlet aperture of a casing arranged in an endwall of the casing, from which the pipe connection 3 protrudes.

3.2.2 The subject-matter of claim 1 thus differs from D5 through precisely the same features as did the subject-matter of claim 1 of the main request. For the same reasons, therefore, as were presented under points 2.2.1 to 2.6 for the main request, the subject-matter of claim 1 of this request does not involve an inventive step (Article 56 EPC 1973).

3.3 The proprietor's argument that an internal surface of the device of D5 could not possibly be interpreted as an endwall was not persuasive. Whilst indeed endwalls

10, 11 of the device of D5 are explicitly disclosed (Page 3, lines 16 to 20), these are the endwalls of the complete exhaust gas treatment device. Yet the reference to an endwall in claim 1 relates to an endwall of the casing, such that an interpretation of an internal surface of the device to be an endwall of the casing 2 is perfectly reasonable when considering the casing alone, as is indeed claimed.

3.4 As regards the proprietor's argument that the endwall and the flange were separately claimed and so could not be anticipated by the same features in D5, this is not convincing. Claim 1 does not define any feature which would exclude that the endwall of the casing is comprised on the casing's flange.

3.5 Since the subject-matter of claim 1 of auxiliary request 1 does not involve an inventive step (Article 56 EPC 1973), this request is not allowable.

4. Auxiliary request 3

4.1 The subject-matter of claim 1 of this request also does not involve an inventive step (Article 56 EPC 1973).

4.2 D5 also discloses the following further features added to claim 1 of this request (the reference signs in parentheses referring to D5):
- the pipe connection (3) has a contact surface (on flange 13) intended to engage with a corresponding contact surface (on flange section 25) of the exhaust gas cleaning unit (16) arranged in the casing (2), said contact surfaces (13, 25) being so designed that the pipe connection (3) is rotatable (a cylindrical element, so can be rotated into essentially any orientation) relative to the casing (2) when the

contact surfaces (13, 25) are in mutual engagement,
- said contact surfaces (13, 25) are rotationally symmetrical.

D5 also discloses that the pipe connection's flange (13) is arranged to engage via its inside (inside face of the flange) with a corresponding flange (25; see Fig. 3) of the exhaust gas cleaning unit (16) arranged in the casing (2).

The subject-matter of claim 1 thus differs from D5 in that:

- the clamping means takes the form of a clamp ring arranged to engage with the pipe connection externally about a flange extending round the pipe connection's inlet aperture; and
- the pipe connection's flange is arranged to engage via its outside with the clamp ring.

4.2.1 Based on these differentiating features over D5, the objective technical problem to be solved may still be regarded as to provide an alternative clamping arrangement for the flanges.

4.2.2 As found for the main request (see point 2.2.3 above), in solving this problem, the skilled person would refer to D6 which discloses a band clamp type of clamping ring for securing two flange faces together (see particularly Fig. 12 and page 3, lines 89 to 97) in an exhaust gas treatment device. In relation to the adoption of such a clamping ring, the feature concerning 'the outside of the pipe connection's flange engaging with the clamp ring' holds true for any flange pair secured by way of a clamping ring, such that this feature is also met simply through the adoption of the clamping ring of D6 in the device of D5.

It thus follows that it would be obvious for the skilled person, starting from the exhaust gas treatment device known from D5 and faced with the technical problem of wishing to provide an alternative clamping arrangement, to modify the clamping arrangement in D5 with the band clamping ring known from D6 in order to thereby reach the subject-matter of claim 1 without involving an inventive step. (Article 56 EPC 1973).

4.3 The proprietor's contention that the inside and outside of the pipe connection's flange were to be interpreted as the radial inside and the radial outside of the flange is not persuasive. No further specification of how the terms 'inside' and 'outside' are to be interpreted are to be found in the claim, which is the sole location from which such a restrictive interpretation could be accepted. These expressions are thus to be interpreted broadly with the consequence that radial restrictions to the inside and outside of the flange are not followed. The inside of the pipe connection's flange 13 is thus regarded to be the face mating with the flange 25 of the filter insert 16, the outside of the flange 13 being the side opposite to the inside, in Figure 3 facing upwards, which would come into contact with one of the annular edges of the clamping ring.

4.4 The proprietor's argument that the inside of the pipe connection's flange in D5 does not engage the flange of the exhaust gas cleaning unit due to the presence of annular seal 41 is not persuasive. Firstly, a seal or gasket is essentially always present between two mating flanges, yet can not be considered to hinder an engagement between the two flanges. Furthermore, the wording is for the inside of the pipe connection's

flange 'to engage with the corresponding flange of the exhaust gas cleaning unit', the expression 'engage' being so broad as to permit a seal to be located between the two flange faces and for them still to be engaged.

- 4.5 Therefore, as for the main request and auxiliary request 1, the subject-matter of claim 1 of auxiliary request 3 does not involve an inventive step (Article 56 EPC 1973) so that auxiliary request 3 is also not allowable.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:



M. H. A. Patin

T. Rosenblatt

Decision electronically authenticated