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**Datasheet for the decision  
of 29 October 2015**

**Case Number:** T 0303/13 - 3.3.05

**Application Number:** 04733842.1

**Publication Number:** 1626796

**IPC:** B01D53/26

**Language of the proceedings:** EN

**Title of invention:**  
Air dryer cartridge

**Patent Proprietor:**  
WABCO GmbH

**Opponent:**  
Knorr-Bremse  
Systeme für Nutzfahrzeuge GmbH

**Headword:**  
Cartridge/WABCO

**Relevant legal provisions:**  
EPC Art. 54(1), 54(2), 56, 123(2)  
RPBA Art. 13(1)

**Keyword:**

Novelty -

main, first, second and third auxiliary requests (no)

Amendments - fourth and fifth auxiliary requests -

added subject-matter in dependent claims (yes)

Admissibility of new requests filed with the grounds of appeal  
(yes)

Inventive step - sixth auxiliary request (yes)

Inventive step - non-obvious alternative

**Decisions cited:**

**Catchword:**



**Beschwerdekammern  
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Case Number: T 0303/13 - 3.3.05

**D E C I S I O N**  
**of Technical Board of Appeal 3.3.05**  
**of 29 October 2015**

**Appellant:**  
(Patent Proprietor)

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**Decision under appeal:**

**Decision of the Opposition Division of the  
European Patent Office posted on 18 December  
2012 revoking European patent No. 1626796  
pursuant to Article 101(3) (b) EPC.**

**Composition of the Board:**

**Chairman** G. Rath  
**Members:** J.-M. Schwaller  
P. Guntz

## Summary of Facts and Submissions

- I. The present appeal lies from the decision of the opposition division revoking European patent No. 1 626 796.
- II. In the contested decision, the opposition division held claim 1 as granted:

*"1. An air dryer desiccant cartridge (10,110) which is releasably attachable to an air dryer, the cartridge (10,110) comprising a base (212,112) having an inlet (20) and an outlet (18), and a casing (14) connected to the base (12,112) to define a cavity therebetween, a filter (38,154) and a desiccant (26,130) contained within the cavity, the filter (38,154) being arranged upstream of the desiccant (26,130) such that during normal operation fluid flow entering the cartridge (10,110) through the inlet (20) passes through the filter (38,154) and then on to the desiccant (26,130) before reaching the outlet (18), and during purging of the cartridge (10,110) purge flow entering the outlet (18) passes through the desiccant (26,130) before reaching the filter (18), characterised in that the cartridge (10, 110) includes a valve (168) operable to permit a portion of the purge flow to bypass the filter (18)."*

to lack novelty over the content of either of documents

D1: WO 01/52973 A1 or

D2: US 5 586 283.

- III. With its grounds of appeal dated 26 April 2013, the proprietor ("the appellant") contested the decision and

requested maintenance of the patent as granted (main request). It also filed seven amended sets of claims as first to seventh auxiliary requests.

Claim 1 of the first auxiliary request reads:

"1. An air dryer desiccant cartridge (10,110) which is releasably attachable to **the body of an air dryer apparatus**, the cartridge (10,110) comprising a base (212,112) having an inlet (20) and an outlet (18), and a casing (14) connected to the base (12,112) to define a cavity therebetween, a filter (38,154) and a desiccant (26,130) contained within the cavity, the filter (38,154) being arranged upstream of the desiccant (26,130) such that during normal operation fluid flow entering the cartridge (10,110) through the inlet (20) passes through the filter (38,154) and then on to the desiccant (26,130) before reaching the outlet (18), and during purging of the cartridge (10,110) purge flow entering the outlet (18) passes through the desiccant (26,130) before reaching the filter (18), characterised in that the cartridge (10, 110) includes a valve (168) operable to permit a portion of the purge flow to bypass the filter (18)."

Claim 1 of the second auxiliary request reads:

"1. An air dryer desiccant cartridge (10,110) which is releasably attachable to an air dryer, the cartridge (10,110) comprising a base (212,112) having an inlet (20) and an outlet (18), and a casing (14) connected to the base (12,112) to define a cavity therebetween, a filter (38,154) and a desiccant (26,130) contained within the cavity, the filter (38,154) being arranged upstream of the desiccant (26,130) such that during normal operation fluid flow entering the cartridge

(10,110) through the inlet (20) passes through the filter (38,154) and then on to the desiccant (26,130) before reaching the outlet (18), and during purging of the cartridge (10,110) purge flow entering the outlet (18) passes through the desiccant (26,130) before reaching the filter (18), characterised in that the cartridge (10, 110) includes a valve (168) operable to permit a portion of the purge flow to bypass the filter (18), **characterized in that the cartridge (10) includes a base member (50,51) having an upper portion configured to receive the filter (38), and a lower portion adapted to rest against the base (12, 112), the lower portion further including a flow passage and a blocking means operable to open and close said flow passage defining said valve.**"

Claim 1 of the third auxiliary request corresponds to that of the second auxiliary request amended as follows: "An air dryer desiccant cartridge (10,110) which is releasably attachable to **the body of** an air dryer **apparatus, ...**"

Claims 1 and 7 of the fourth auxiliary request (consisting of 14 claims) read as follows:

"1. An air dryer desiccant cartridge (10,110) which is releasably attachable to an air dryer, the cartridge (10,110) comprising a base (212,112) having an inlet (20) and an outlet (18), and a casing (14) connected to the base (12,112) to define a cavity therebetween, a filter (38,154) and a desiccant (26,130) contained within the cavity, the filter (38,154) being arranged upstream of the desiccant (26,130) such that during normal operation fluid flow entering the cartridge (10,110) through the inlet (20) passes through the filter (38,154) and then on to the desiccant (26,130)

before reaching the outlet (18), and during purging of the cartridge (10,110) purge flow entering the outlet (18) passes through the desiccant (26,130) before reaching the filter (18), characterised in that the cartridge (10, 110) includes a valve (168) operable to permit a portion of the purge flow to bypass the filter (18), the cartridge (10) includes a base member (50,51) having an upper portion configured to receive the filter (38), and a lower portion adapted to rest against the base (12, 112), the lower portion further including a flow passage and a blocking means operable to open and close said flow passage defining said valve, **characterised in that the lower portion is provided with a plurality of flow passages, and the lower portion is provided with a plurality of feet (68) which, in use, rest against the base (12,112) of the desiccant cartridge (10,110), the flow passages being defined between said feet.**"

"7. An air dryer desiccant cartridge (10) as claimed in claim 6 wherein the filter (38) comprises a structural member (80) upon which there is mounted a filter material (78)."

Claim 1 of the fifth auxiliary request corresponds to that of the fourth auxiliary request amended as follows: "An air dryer desiccant cartridge (10,110) which is releasably attachable to **the body of** an air dryer **apparatus, ...**".

The sixth auxiliary request consists of five claims which correspond to claims 1 to 5 of the fourth auxiliary request, with claims 2 to 5 defining specific embodiments of independent claim 1.

IV. With its response dated 6 September 2013 to the grounds of appeal, the respondent raised issues under Articles 54, 56, 123(2) and 123(3) EPC. In particular with respect to the objections of lack of novelty and inventive step, it referred to the content of documents D1, D2 and

D3: EP 1 048 541 A1.

V. At the oral proceedings, which took place on 29 October 2015, the discussion focused on issues raised under Articles 54, 56 and 123(2) EPC. The respondent requested that auxiliary requests 4 to 7 be not admitted into the proceedings; they could have been filed during the opposition proceedings. The appellant filed an eighth and a ninth auxiliary request; the latter was not admitted into the proceedings.

VI. The appellant requested that the decision under appeal be set aside and that the patent be maintained as granted or, alternatively, that the patent be maintained on the basis of one of the auxiliary requests 1 to 9, as filed with the letter of 26 April 2013 (auxiliary requests 1 to 7) and during the oral proceedings of 29 October 2015 (auxiliary requests 8 and 9).

The respondent requested that the appeal be dismissed.

### **Reasons for the Decision**

1. Preliminary remarks

1.1 Auxiliary request 8

As regards this request, the appellant intended to



file a set of explanatory notes for the claimed subject-matter. Therefore the heading of the document was: "Informal clarifying amendments of claim 1."

As the board did not accept such a formulation, the appellant renamed the document "Eighth auxiliary request".

#### 1.2 Auxiliary request 9

The ninth auxiliary request was filed at a very late stage of the proceedings. The appellant insisted on filing it since according to the explanations of its representative the thus claimed subject-matter was "exactly what the appellant wanted to have protected".

The representative informed the board that this request should be made the main request, if the board considered it to be admissible.

For the board, apart from being late-filed, this request contains features which diverge from those defined in the previous request. It follows that this request might raise new issues, which rendered it not prima facie allowable. Therefore, the board did not see any possibility to admit this request into the proceedings

(Articles 12(2) and 13(1) RPBA).

#### 1.3 Interpretation of claim 1 of the main request

Claim 1 as granted (main request) is directed to an air dryer cartridge, i.e. a physical entity. This means that features which have no limiting effect or only a partial limiting effect on the scope of protection of said physical entity - such as reference numbers, use

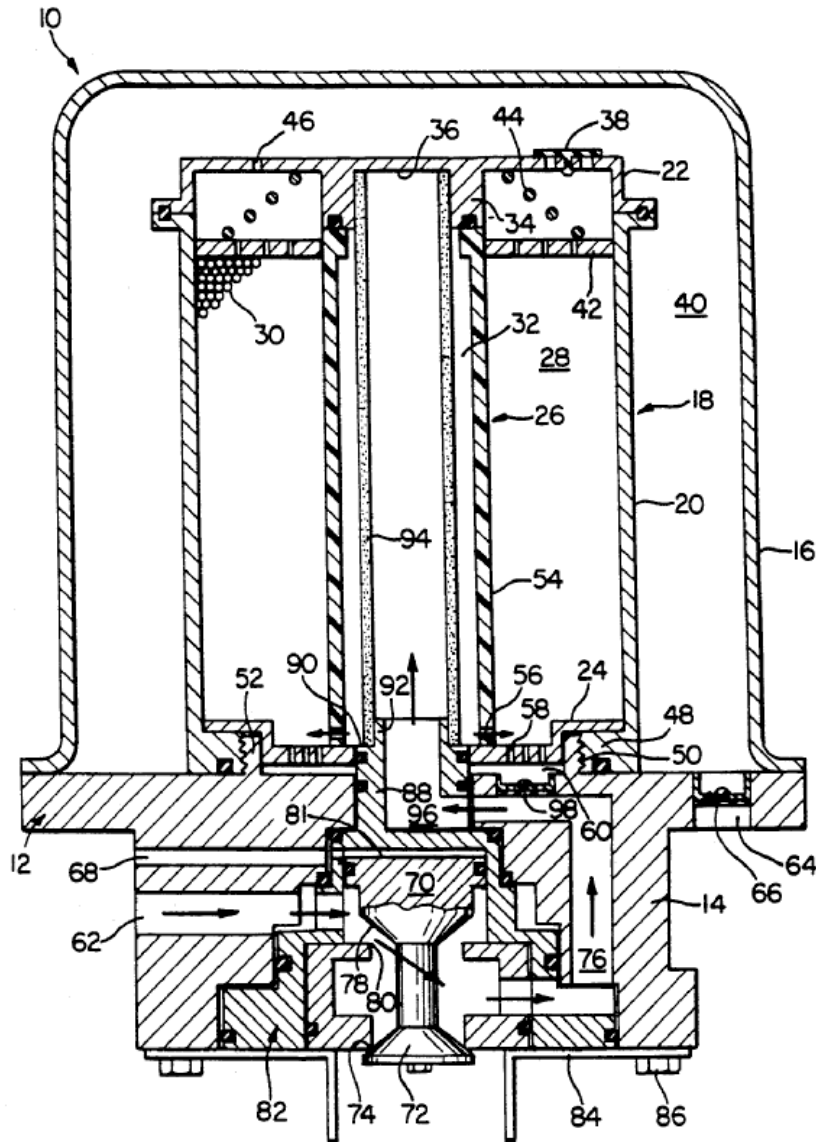
or process features - are to be entirely or partly disregarded for the assessment of the novelty of the claimed entity insofar as they do not invoke structural limitations of the claimed device.

In the present case, this concerns the reference numbers - which do not have any limiting effect at all - and the functional/process features: "air dryer", "releasably attachable to an air dryer", "during normal operation fluid flow entering the cartridge through the inlet passes through the filter and then on to the desiccant before reaching the outlet and during purging of the cartridge purge flow entering the outlet passes through the desiccant before reaching the filter", "operable to permit a portion of the purge flow to by pass the filter", which limit the scope of protection of claim 1 to the extent that the claimed subject-matter is to be construed as follows:

**A cartridge suitable for being attached to an air dryer, the cartridge comprising a base having an inlet and an outlet, a casing connected to the base and defining a cavity therebetween, a filter located upstream of a desiccant, the filter and the desiccant being contained within the cavity and being serially connected so as to allow a fluid to flow therethrough in both directions, the cartridge further including a valve permitting a portion of a fluid flowing from the desiccant to the inlet to bypass the filter.**

2. Main request - Novelty
- 2.1 As D2 was held to be novelty-destroying, the question arises whether the air-dryer disclosed in this document, in particular in its embodiment illustrated in the figure reproduced below, anticipates the

subject-matter of claim 1 of the main request construed as in point 1.3 above.



In claim 1 of D2 the air-dryer is defined as comprising a housing (reference 12 in the above figure) having a supply port (62) and a delivery port (64), said housing defining a flow path between the supply and the delivery ports, a desiccant canister (18) in said flow path for removing moisture entrained in said compressed air, an oil filter (94) in said flow path between the supply port and said desiccant canister for removing oil entrained in said compressed air, said housing

further including a control port (68), a purge port (74) and a purge valve (70) responsive to the fluid pressure level at the control port to close said supply port and to communicate said flow path to said purge port for causing backflow of air through said flow path through said desiccant canister to said purge port during purging of the canister, said flow path including a passage (60) bypassing said oil filter, and a check valve (98) in said bypass passage preventing communication through the bypass passage when compressed air flows from said supply port to the delivery port but permitting communication through said bypass passage during purging of the desiccant.

As indicated at column 2, line 65 to column 3, lines 6, the purge valve (70) is housed within a removable module (82) which is retained within the base (14) by a retaining member (84), itself secured to the base by fasteners (86). The module (82) which mounts the oil filter (94) can be removed from the base (14) by removing the fasteners (86) and the retaining plate (84), thus permitting easy replacement of the oil filter.

D2 does not disclose literally that the device (10) is releasably attached to an air dryer. The device can however be detached for instance from the compressed air braking system of heavy vehicles (column 1, line 5 to 7). So the characteristic of being "releasably attached" is implicit from the device illustrated above; otherwise the fasteners (86), the retaining plate (84) and the module (82) could not be removed to permit replacement of the oil filter.

2.2 The appellant argued that the device illustrated in the above figure was not a cartridge in the sense of the

contested patent.

The board does not accept this argument because the device (10) has the form of a cartridge and is clearly detachable, in particular from the air braking system of a vehicle. The appellant's argument that the valve (70) does not split the purge flow in the manner described in paragraph [0007] of the patent is also not accepted because, first of all, this limitation is not defined in the claim, and secondly, there is no doubt that the flow will be split between the bypass passage (60) and the opening (56) as a consequence of the opening of the valve (70); and even if only a minor portion of the flow passes through the filter, it is definitively split in the sense of paragraph [0007] of the contested patent.

- 2.3 It follows from the above considerations that D2 (see in particular the figure) discloses the claimed subject-matter as construed in point 1.3 above, namely a *"cartridge (10) suitable for being attached to an air dryer"*, said cartridge *"comprising a base (14) having an inlet (62) and an outlet (64), and a casing (16) connected to the base and defining a cavity therebetween, a filter (94) located upstream a desiccant (28), the filter and the desiccant being contained within the cavity and being serially connected so as to allow a fluid to flow therethrough in both directions, the cartridge further including a valve (70) permitting a portion of a fluid flowing from the desiccant to the inlet"* to flow through the openings (58) and the valve (98), and so *"to bypass the filter (94)"*.

The subject-matter of claim 1 as granted is thus not novel, and said claim therefore is not allowable under Article 54(1) and (2) EPC.

3. First auxiliary request - Novelty

Claim 1 of this request differs from claim 1 of the main request in that the cartridge is defined to be releasably attachable "*to **the body of an air dryer apparatus***".

As explained before (see 2.1, last paragraph; 2.2, first paragraph) the cartridge (10) illustrated in the figure of D2 is releasably attachable to an air dryer. For the board, since an air dryer inevitably has a "body", it also inevitably follows that the cartridge (10) must be "releasably attachable to the body of an air dryer".

The appellant did not provide any argument as to why the cartridge (10) would not be releasably attachable to such a body.

It follows from the above considerations, and for the same reasons as those indicated in points 2.1 to 2.3 above, that claim 1 of this request does not meet the requirements of Article 54(1) and (2) EPC.

4. Second auxiliary request - Novelty

- 4.1 Claim 1 of this request differs from claim 1 of the first auxiliary request in that the cartridge further includes "*a base member having an upper portion configured to receive the filter, and a lower portion adapted to rest against the base, the lower portion further including a flow passage and a blocking means*

*operable to open and close said flow passage defining said valve."*

4.2 For the board, these features are disclosed in D2, with the *"base member having an upper portion configured to receive the filter"* being the extension (92) and with the *"lower portion adapted to rest against the base"* being the lower part of the module (82) which is clearly adapted to rest against the base (14) and which further includes *"a flow passage (76) and a blocking means (70, 72) operable to open and close said flow passage defining said valve"*.

4.3 It follows from the above considerations, and for the reasons indicated in points 2.1 to 2.3 above, that claim 1 of this request does not meet the requirements of Article 54(1) and (2) EPC.

5. Third auxiliary request - Novelty

The amendment to claim 1 of this request is the same as in claim 1 of the first auxiliary request. The same reasoning therefore applies, with the consequence that also claim 1 of this request does not meet the requirements of Article 54(1) and (2) EPC.

6. Admissibility of auxiliary requests 4 to 7

Auxiliary requests 4 to 7 were filed with the grounds of appeal.

For the board, although these requests could have been filed during the opposition proceedings - as argued by the respondent - they are not late-filed because, the patent having been revoked, their filing with the grounds of appeal can be regarded as an attempt to

overcome the objections of the department of first instance. The respondent having furthermore had sufficient time for analysing the amendments underlying said request and for filing a response, the board sees no reason to exercise its discretion under Article 12(4) RPBA not to admit these requests into the proceedings.

7. Fourth and fifth auxiliary requests - Amendments

7.1 For the board, the subject-matter of dependent claims 7, 8 and 9 of these requests has no basis in the application as filed, because the reference number (80) is described at page 7, lines 6 to 8 as being "*a perforated sleeve 80*" which "*acts as **a load bearing member** which, in use, transmits the force applied to the filter 38 by the spring 54, washer 55, lid 52 and cup 16 to the seat member 50*", whereas nowhere in the application as filed is the feature "*annular structural member*" defined as being a "*load bearing member*", let alone a "*perforated sleeve*".

7.2 The board does not accept the appellant's argument that a basis for this feature was to be found in the following passage at page 3, lines 12 to 17: "*In such an embodiment the filter may comprise a structural member upon which there is mounted a filter material. Alternatively the filter material may be mounted on more than one structural member. In a preferred embodiment the filter is cylindrical comprising an annular structural member upon which there is carried a correspondingly annular filter material arrangement. Preferably the structural member is provided radially inwardly of the filter material.*"



For the board, the above passage does not directly and unambiguously disclose that the "*structural member*" can be "*a load bearing member*", let alone the "*perforated sleeve (80)*".

7.3 It follows that the subject-matter of claim 1 of these requests extends beyond the content of the application as filed, contrary to Article 123(2) EPC.

8. Sixth auxiliary request - Amendments

Claim 1 of this request corresponds to the combination of claims 1, 19, 27 and 29 of the application as filed. Dependent claims 2 to 5 correspond to claims 20 to 23 of the application as filed, respectively.

The respondent having not raised any objection under Article 123(2) EPC and the board being satisfied that the amended claims have their basis in the application as filed, the claims of this request are held not to extend beyond the content of the application as filed.

The requirements of Article 123(2) EPC are thus fulfilled.

9. Sixth auxiliary request - Novelty

9.1 Claim 1 of this request differs from claim 1 of the second auxiliary request in that the lower portion of the base member is provided with "*a plurality of flow passages*" and "*a plurality of feet (68) which, in use, rest against the base (12,112) of the desiccant cartridge (10,110), the flow passages being defined between said feet.*"

9.2 The respondent argued that the lower portion of the base member (92, 90, 88, 82) of the device illustrated in the figure in D2 comprised an inlet and an outlet, i.e. "*a plurality of flow passages*", and that the sealing gaskets in the lower portion of the module (82) would be seen as the "*plurality of feet*".

9.3 The board does not accept this argument because, as shown by the figure, the sealing gaskets are not protruding, and so they cannot be considered "*a plurality of feet*", as required by claim 1 of the request at issue.

It follows therefrom that claim 1 at issue and, by the same token claims 2 to 5, which depend thereon, do not lack novelty, as alleged by the respondent.

10. Sixth auxiliary request - Inventive step

10.1 Invention

The invention relates to a vehicle air dryer desiccant cartridge

10.2 Closest prior art

The board concurs with the respondent that document D2 is the most suitable starting point to assess the inventive step of the claimed subject-matter as it discloses subject-matter conceived for the same purpose and has the most relevant technical features in common (see also point 2.1 above).

10.3 Problem

According to the contested patent, the problem was the

provision of an improved air dryer which seeks to prevent the transmission of oil therethrough (paragraph [0003]).

#### 10.4 Solution

As a solution to this problem, the contested patent proposes the air dryer cartridge according to claim 1 at issue, which is in particular characterised in that it comprises a filter arranged upstream of the desiccant, the cartridge further including a valve operable to permit a portion of the purge flow to bypass the filter, and the cartridge including a base member the lower portion of which is provided with a plurality of flow passages defined between a plurality of feet which, in use, rest against the base of the desiccant cartridge.

#### 10.5 Success of the solution

In the absence of evidence that the cartridge presently claimed achieves an improvement over the one in D2, the technical problem has to be reformulated as the provision of an alternative air dryer cartridge.

This problem is indeed solved.

#### 10.6 Obviousness

Next, it has to be determined whether the proposed solution was obvious for a skilled person in the light of the state of the art.

For the board, the proposed solution is not obvious, since none of the documents in the proceedings discloses or even points towards the claimed solution.

The respondent argued that the skilled person using his common general knowledge would replace the sealing gaskets by larger ones. The sealing gaskets thus constituted the "plurality of feet" between which were located the "plurality of passages".

The board does not accept this argument, because the respondent's distortion of the sealing function of the gaskets to artificially meet the specific function of a feature recited in the claim (here the "plurality of feet") is clearly based on hindsight knowledge of the invention.

In the board's view, it follows from the above considerations that neither the available prior art nor the common general knowledge of the skilled person renders the claimed device obvious.

Therefore, the subject-matter of claim 1, and by the same token that of dependent claims 2 to 5, which include all the features of claim 1, involves an inventive step within the meaning of Article 56 EPC.

11. Conclusion and remark

As the respondent has not succeeded in showing that the set of claims of this request does not meet the requirements of the EPC, the patent can be maintained in amended form.

Care should be taken when amending the description. In particular, the embodiments no longer covered by the claims should be deleted; reference is hereby made to the second sentence of paragraph [0044] and to the device according to figure 9 of the contested patent, considered by the appellant to be outside the scope of

the claims.

## Order

### For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the opposition division with the order to maintain the patent in amended form on the basis of claims 1 to 5 of auxiliary request 6, filed with the letter dated 26 April 2013, and the description and figures to be adapted.

The Registrar:

The Chairman:



C. Vodz

G. Rath

Decision electronically authenticated