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D E C I S I O N
of 10 March 2003

Case Number: T 0559/99 - 3.3.5

Application Number: 92306161.8

Publication Number: 0528528

IPC: B01D 35/30

Language of the proceedings: EN

Title of invention:
Fuel filter retention system

Patentee:
STANADYNE AUTOMOTIVE CORP.

Opponent:
Robert Bosch GmbH

Headword:
Fuel filter/STANADYNE

Relevant legal provisions:
EPC Art. 114(2), 113(1), 104(1), 100(b), 54, 56

Keyword:
"Late filed document: not disregarded"
"Apportionment of costs: no, not equitable"
"Sufficiency of disclosure: yes - not affected by error in alternative drawing"
"Novelty: yes - drawing to be considered in the light of corresponding description"
"Inventive step: yes - non obvious combination of features"

Decisions cited:
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Catchword:
-

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Case Number: T 0559/99 - 3.3.5

D E C I S I O N
of the Technical Board of Appeal 3.3.5
of 10 March 2003

Appellant: (Opponent)
Robert Bosch GmbH
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Representative:
-

Respondent: (Proprietor of the patent)
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Decision under appeal:
Decision of the Opposition Division of the European Patent Office posted 25 March 1999 rejecting the opposition filed against European patent No. 0 528 528 pursuant to Article 102(2) EPC.

Composition of the Board:

Chairman: R. K. Spangenberg
Members: B. P. Czech
J. H. Van Moer

Summary of Facts and Submissions

I. The appeal is from the decision of the opposition division to reject the opposition against European patent 0 528 528. The independent claims 1 and 10 of the granted patent read as follows:

"1. A fuel filter assembly comprising a base (12) having a receptacle, a disposable cartridge (14) connectable to the base, at least a portion of the cartridge being receivable in the receptacle, the cartridge having a peripheral engagement shoulder (60), and a retainer collar (16) having a retainer portion (80) engageable against the shoulder characterized by:

the base comprising ramp means (90,92) defining a first spiral ramp at the exterior of the receptacle, and a stop (94) angularly spaced from said first ramp and defining a slot there between; and

the retainer collar comprising follower means (82, 84) having a catch (86,88) at one end thereof, said follower means being engageable with said ramp means so that as said collar means is angularly rotated said follower means rides said ramp means and said catch means moves into said slot for capture thereby to lock the cartridge to the base."

"10. A fuel filter assembly comprising a base (12) defining a receiving structure, a disposable cartridge (14) connectable to the base for housing a filter element, at least a portion of the cartridge being receivable in the structure, the cartridge having a peripheral first shoulder (60), and a retainer collar (16) having a second shoulder (80) engageable against

the first shoulder characterized by:

biasing means (100) for axially biasing the cartridge from the base when the cartridge is connected to the base;

the base comprising ramp means (90,92) at the exterior of the structure for forming a spiral ramp terminating in a first end; and

the retainer collar comprising an interior follower (82,84) terminating in a catch (86,88) said catch being slidably engageable against said first ramp as the collar is angularly rotated so that said interior follower rides said first ramp and said catch slides by said ramp end to thereby releasably lock said cartridge means to said base means."

II. In addition to the five prior art documents cited on the front page of the contested patent, the opponent had cited eight further documents, including the following:

D6: US-A-5 017 285

D7: DE-A-1 943 946

D8: GB-A-1 296 051 and

D13: US-A-3 502 221

In the contested decision the opposition division came to the conclusions

- that the subject-matter claimed was novel over the

disclosure of D8; and

- that the subject-matter of claims 1 and 10 was inventive over the combinations of D6 with D8, of D7 with D8, of D8 with D6, and combinations of D13 with the other documents.

III. In its statement of grounds of appeal, the appellant maintained that the subject-matter of claims 10 lacked novelty over D8, and, referring also to documents

D1: EP-A-221 675 and

D3: GB-A-656 209

cited in the patent, considered the claimed subject-matter to be obvious over combinations of D6 or D7 with D8, of D8 with D7, or of D7 with D13.

It also questioned whether an assembly according to claim 10 would solve one of the technical problems mentioned in the patent. Moreover, it pointed out again that Figure 2 of the patent was inconsistent with other parts thereof.

IV. In its written reply, the respondent rejected the appellant's objections and considered that, under proper construction of the present claims and of the cited documents, the subject-matter of all claims as granted was novel and inventive over the cited prior art.

V. Following the summons to oral proceedings, the respondent filed three sets of amended claims as first to third auxiliary requests with its letter dated

10 February 2003. With the same letter, it also submitted further comments concerning novelty and inventive step over D6, D7 and D8, concerning Figure 2 of the patent and concerning the issue whether the assembly of claim 10 would solve all of the technical problems addressed in the patent.

VI. With a telefax dated 5 March 2003, the appellant filed the further documents

D14: JP-Y2-1-13524 and

D14T: a translation of D14 into English.

On the basis of D14/D14T, it objected to the novelty of the subject-matter of claims 1 and 10. It also argued that the claimed subject-matter according to all requests would lack an inventive step in view of a combination of documents D13 and D14.

VII. With its telefax dated 6 March 2003, the respondent asked that these last submissions be disregarded and requested an apportionment of costs.

VIII. Oral proceedings took place on 10 March 2003.

During these oral proceedings, the appellant indicated the circumstances that led to the late filing of D14/D14T. After having received the summons to oral proceedings on 30 December 2002, it made a further routine check for parallel patents. As a result, it became aware of the publication, on 20 October 2002, of a Japanese patent application of the respondent, corresponding to the patent in suit, and ordered a copy thereof. Two references were cited on this publication,

which were also ordered. One of them, namely D14, appeared to be very relevant and hence a translation was requested. The translation D14T was received by the appellant on 4 March 2003. The next day, copies of D14 and D14T were forwarded to the board and the respondent.

The representative of the respondent stated that it had received the appellants submissions on 6 March 2003. It indicated that D14 was only cited on the front page, but not during the examination, of the corresponding Japanese publication and was not available in English language databases. It also submitted that the relevance of D14 was questionable and that some of its contents were unclear. Moreover, it argued that if it had received a copy of D14 (in Japanese) earlier, ie before the translation was carried out, it would have been easier to deal with the objection based thereon.

Referring to Figure 2 and claims 1 and 10 of the patent, the appellant raised objections under Article 100(b) EPC. It objected to the novelty of claims 1 and 10 on the basis of D8 and D14. In the discussion of inventive step, it relied on the combinations of D14 with D6, D6 with D14, D6 with D8 and D7 with D8, and referred also to D1 and D3.

IX. The parties' further written and oral submissions, as far as they are relevant for the present decision, can be summarised as follows:

The appellant stated that it had a right to file available documents, and that no tactics or abuse lay behind the late filing of D14/D14T. The respondent considered the very late filing of the appellant's last

written submission including D14/D14T as an abuse of procedure. It requested the apportionment of costs in view of the additional costs incurred by these submissions being filed so late, ie by the need to have an urgent translation prepared and to review the contents of the submission at extremely short notice.

The appellant based its objections under Article 100(b) EPC on some alleged inconsistencies between Figure 2 and the other figures of the patent in suit, as well as on alleged contradictions between the wording of the claims and the disclosure of the drawings. The respondent acknowledged that there was an error in Figure 2 of the patent but that the information provided in the patent was sufficiently clear to the skilled person. It also considered the expressions used in the claims to describe the interaction between ramp and follower means to be clear and consistent with the description.

The parties did not agree on the meaning of the expressions ramp, follower, catch, and riding the ramp as used in the claims. The appellant considered that in view of the wording of the claims, both D8 and D14 showed all the features of present claims 1 and 10. Concerning D8, the respondent *inter alia* submitted that D8 did not show ramp means at the exterior of the filter base. Concerning D14, it *inter alia* submitted that D14 did not relate to disposable cartridges and neither disclosed a filter cartridge received in part within the filter base nor engaging shoulders of the retainer collar and the cartridge.

Concerning the obviousness of the subject-matter of the claims according to the main request, the appellant,

referring to the introductory part of the contested patent, *inter alia* argued that both conventional threaded and bayonet-type couplings were known in the art, and that a combination of the two systems was near at hand to the skilled person. Adopting different approaches, ie starting from the disclosures of different documents as closest prior art and combining them with the disclosures of other documents, it argued that in view of the technical problem to be solved by the contested patent, the incorporation of some features shown in the respective other documents into the respective assemblies of the closest prior art required no inventive skills. The appellant argued that the combinations of documents relied upon were based on hindsight considerations. Even if the documents were to be combined, the skilled person had no incentive to adopt the particular combination of features as claimed. Even if combined, the teachings of the cited documents did not, or at least not necessarily, lead to assemblies having all the features required by the claims.

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

The respondent requested that the appeal be dismissed and the patent be maintained as granted (main request), or, in the alternative, on the basis of the auxiliary sets of claims filed as first to third auxiliary requests with letter dated 10 February 2003, taken in their numerical order. It also requested an apportionment of costs.

Reasons for the Decision

1. *Late filing of document D14*

1.1 As will appear from the following, the relevance of document D14 was *prima facie* sufficiently high to potentially represent an obstacle to the maintenance of the patent in suit. Hence the board decided not to disregard the document pursuant to Article 114(2) EPC, despite its belated submission.

1.2 The respondent has not requested a postponement of the oral proceedings. The figures of D14 and the contents of D14T were extensively discussed during the oral proceedings. The appellant was thus obviously sufficiently prepared to discuss the objections raised by the appellant on the basis of these documents. Hence, the board is also satisfied that the respondent has had sufficient opportunity to present its comments concerning D14, as required by Article 113(2) EPC.

2. *Apportionment of costs*

2.1 According to Article 104(1) EPC, each party to the proceedings shall meet the costs he has incurred unless a decision of the board, for reasons of equity, orders a different apportionment of costs incurred during taking of evidence or in oral proceedings.

2.2 The board understands the request for apportionment of costs as submitted by the respondent as follows:
A different apportionment is requested in the sense that at least some of the costs incurred by the respondent due to the filing of D14 should be borne by the appellant. The reason given is that this would be equitable due to the fact that the appellant has abused its procedural right to file documents since D14 was

filed just a few days before oral proceedings.

2.3 However, the board can only note that the respondent has not produced evidence implying a legal obligation for the appellant to file D14 earlier than a few days before the oral proceedings. In the absence of any identified legal principle or provision in this respect, no conditions are imposed on the parties as to the way in which they have to conduct their procedure. Hence the appellant was free to file documents when it considered it appropriate.

2.4 The board accepts that the filing of D14/D14T is to be considered as a taking of evidence in the sense of Article 117(c) EPC, ie as the production of a document. In the present case, the appellant has explained why D14 and D14T were only filed a few days before the oral proceedings. These explanations were not contested by the respondent and their plausibility is also accepted by the board. The board cannot see that in the present case the conduct of the appellant was not in keeping with the care required or that the appellant has abused a procedural right. Hence, the board does not consider it equitable to order a different apportionment of costs as foreseen by Article 104(1) EPC.

3. *Sufficiency of the disclosure*

3.1 The objections under Article 100(b) EPC raised by the appellant during the oral proceedings fail for the following reasons:

3.2 It is common ground that the retainer collar as shown in Figure 2 cannot work in combination with the filter base shown in Figure 3. Figure 2 shows a single ramp

shaped follower terminating in a catch and a shoulder, see column 5, lines 23 to 34. Further according to the description, column 5, line 35 to column 6, line 2, two of such ramp shaped followers are supposed to cooperate with ramps on the filter base shown in Figure 3 in the way shown in Figures 4a to 4c. Figure 2 is thus not in accordance with Figures 3 and 4 and the corresponding description text. In view of the description of Figures 2 ,3 and 4, the board takes the view that the direction and number of the ramp means shown in Figure 2 are obviously wrong. The board is, however, of the opinion that despite the said errors, the schematic view of Figure 2 provides some useful information concerning the shape and the arrangement of the shoulder, ramp and catch elements of the retainer collar. Moreover, the errors in Figure 2 do not render the disclosure of the invention as claimed so obscure that it cannot be carried out. The board is convinced that, on the contrary, the person skilled in the art will understand from the claims and from Figures 2, 3 and 4 and the corresponding description, that in the particular embodiment described, the ramp-shaped followers of the retainer collar will have to be two in number and will have to have the direction indicated in Figures 4a to 4c.

3.3 It can be gathered from Figures 4a to 4c that when followers of the type depicted are to be used, the catches (86) and (88) engage the ramps (90) and (92) during rotation of the collar, whilst the ramp shaped follower means (82) and (84) do not touch the ramps (90) and (92). Whether these figures are to be considered in accordance with the language used to describe the interaction of ramps, followers, and catches in claims 1 and 10 depends on the meaning given

to the terms used therein, eg the terms follower, catch, riding, and engaging, and is possibly a matter of clarity. In case these terms turn out not to be clear enough, their meaning has to be construed in the light of the description. Lack of clarity is not, however, a ground for opposition. On the other hand, the appellant has not shown that a skilled person would not have been able to manufacture fuel filter assemblies falling under the terms of the claims.

4. *Novelty*

4.1 Document D14 discloses a fuel filter assembly comprising a filter base (6), a cartridge comprising a filter case (2) and a filter element (5), and a case socket (4) for attaching or removing the filter case by a bayonet-type snap-engagement mechanism. See Figures 2 and 3 of D14 and the entire page 1 of D14T. In the board's view, the entire cartridge described in D14 is as disposable as any other article of manufacture, although the case thereof is supposed to be re-used when the filter element is replaced. No particular constructional limitation of the cartridge is implied by the term disposable as used in the present claims. As can be gathered from Figures 2 and 3 of D14 and page 4, second and third paragraphs of D14T, the case of the cartridge has a peripheral outwardly extending shoulder (15), and the case socket is a cylindrical (ie annular) part and has a central opening (11) for inserting the case of the cartridge. A coil spring (12) is provided between and engages the shoulder of the case and an inwardly extending, peripheral portion, ie a retainer portion or second shoulder in the sense of the present claims 1 and 10, at the lower end of the case socket. Figures 2 and 3 of D14 and page 4, first

and second paragraphs of D14T disclose that the case socket comprises two inwardly extending levers (9), the respective end-portions of which engage corresponding inclined, and hence spiral lever guiding grooves (10) with enlarged end zones on the outside of the filter base. The latter means form the bayonet-type snap-engagement mechanism for attaching and locking the filter case to the filter base.

On the other hand, the board cannot identify a part of the base which could be considered to define a receptacle or a receiving structure, **in** which at least a portion of the cartridge would be receivable, as required by independent claims 1 and 10 of the contested patent, respectively. From the paragraph bridging pages 3 and 4 of the translation, and from the cross-section represented in Figure 3 of D14, the board gathers that, on the contrary, the positioning guide parts (7) and (8) of the base are to be received within the filter case and the filter element. Upon being questioned by the board during the oral proceedings, the appellant has not provided any specific convincing argument based on a particular reading of the present claims or of D14, which could support its opposite view. Moreover, since the coil spring (12) is not an integral part of the case socket or the filter case, the board considers that D14 does not disclose an engagement in the usual sense of the term, ie involving a direct contact, of the said shoulder of the filter case and said second shoulder or retainer portion of the case socket. The board cannot, therefore, accept the appellant's view that embodiments comprising an interposed helical spring were encompassed by the claims because the functions to be performed by the shoulder of the case and the second shoulder or

retainer portion of the case socket were similar to the ones of the assemblies of present claims 1 and 10. The latter argument is not relevant in the examination of novelty. Considering the differences identified here above, D14 does not disclose the subject-matter of present claims 1 and 10.

4.2 The filter assemblies described in D8 disclose almost all of the features of claims 1 and 10 of the patent in suit, see Figures 1 to 4. More particularly, considering the broadest technically sensible meaning that can be given to the expressions used in these claims, the board can accept the appellant's view that the sealing ring (25) acts as a means for axially biasing the cartridge from the base, the inclining surfaces (30) are spiral ramps, the lugs (29) are followers riding the ramps, and the end-portions of the lugs actually in contact with the ramps are catches locking the cartridge to the base when they are rotated and move onto the declining surfaces (30). With respect to novelty over D8, it was particularly in dispute whether this document, by virtue of its Figure 2, disclosed ramp means at the **exterior** of the cartridge-receiving rim (11) of the filter head portion (10). On page 2, lines 13 to 20 of D8, it is stated that "the openings constituting the other parts of the bayonet coupling are shown in Figure 2 as though they extended through rim 11, but in practice these will not be seen from the exterior of the assembly because they extend only part way into rim 11 from its radially innerface". In the board's view, this passage of the description clearly and unambiguously modifies the purely visual information transported by the drawing by explaining that Figure 2 is a kind of cut-away drawing, which has been adopted to better show some features otherwise

hidden by the outer wall of the rim, namely the inclining and declining surfaces (30) and the lugs (29). The board holds that at least this sentence constitutes an integral part of the information transported by Figure 2, and may not be ignored when assessing the disclosure of the latter. Whether a skilled person would realise, as alleged by the appellant, that the provision and use of an article manufactured according to the said cut-away view would be possible and even advantageous, despite the statement in the description, is not of relevance in the assessment of novelty. The board thus concludes that D8 does not disclose a ramp or ramp means at the **exterior** of the cartridge receiving rim portion, as required by present claims 1 and 10.

4.3 The board is also convinced that none of the other documents cited during the opposition and appeal proceedings discloses assemblies which could take away the novelty of the claimed subject-matter. Since this was not disputed no reasons need to be given concerning this finding.

4.4 Hence, the subject-matter of claims 1 and 10, and, consequently, of dependent claims 2 to 9 and 11 to 15 of the patent as granted is found to be novel.

5. *Inventive step*

5.1 Closest prior art

The board concurs with the parties in that D6 can be considered to represent the closest prior art for the purpose of assessing inventive step. D6 undisputedly relates to fuel filter assemblies comprising, like the

assemblies according to claims 1 and 10 of the patent in suit, a filter base receiving a part of a disposable filter cartridge in its interior, and a retainer collar for releasably locking the disposable cartridge to the base means. According to D6, the three components of this assembly are releasably locked together by means of threads on the interior of the collar and the outside of the filter base, and by means of the engagement of two corresponding peripheral shoulders on the retainer collar and the filter cartridge, respectively. See eg Figures 1, 2 and 8 of D6. As acknowledged by the appellant during the oral proceedings, "a thread could be a ramp". The board thus shares the view of the appellant and considers that the threads on the filter base and the retainer collar as disclosed in D6 represent, respectively and in the language of the present claims, a spiral ramp or ramp means arranged at the exterior of a receiving structure or receptacle defined by the filter base, and a follower means riding the ramp or ramp means upon angular rotation and releasably locking the cartridge to the base. However, D6 does not disclose features that could be considered as "slot", "stop" or "catch" in the sense of present claims 1 and 10.

5.2 Technical problem

5.2.1 According to the patent in suit, column 1, lines 41 to 56, conventional threaded couplings as described eg in D6 can introduce uneven loading between different fuel filter assemblies as well as within a given fuel filter depending upon the degree of tightening or torque applied to the retainer collar. In addition, the threads are subject to exposure to various fluids and particulate matter which may seriously jeopardize the

integrity and efficiency of the threaded engagement. In the field, it is often problematic to ascertain the proper torque or tightening technique that should be applied to properly secure the cartridge to the base. Improper loading can affect the sealing integrity of the fuel filter system and the structural integrity of the cartridge, thereby jeopardizing the effectiveness of the fuel filter and/or diminishing the useful life of the fuel filter. By reference to D1 and D3, the patent acknowledges that bayonet-type couplings also belong to the prior art in the field of filters.

5.2.2 The technical problem to be solved can be seen in the provision of alternative fuel filter assemblies which overcome some of the problems associated with the coupling systems of the prior art fuel filter assemblies. More particularly, the alternative assemblies to be provided should ensure that the proper loading is applied and that the filter is locked in position, see column 2, lines 18 to 24 of the contested patent.

5.3 The solution

5.3.1 According to claim 1, a stop defining a slot is arranged at the end of a spiral ramp on the exterior filter base, and a catch foreseen at the end of the corresponding follower of the retainer collar moves into said slot to effect the locking of the cartridge to the base. According to claim 10, means are provided for biasing the cartridge from the filter base, and a catch is foreseen at the end of the follower. Upon rotation of the retainer collar, said catch rides the corresponding ramp on the filter base and moves past the end of this ramp to lock the cartridge to the base.

5.3.2 The board finds it plausible, and it was not disputed, that the solution according to claim 1 effectively solves the stated technical problem. It also was undisputed that with the solution according to claim 10 the filter can be locked in position. Moreover, in contrast with the appellant's view, the board considers that the combination of appropriate biasing means and a catch can also ensure that a suitable torque is applied, since the sliding of the catch by the ramp end can be noticed, and applying further torque would not be technically sensible.

5.4 Non-obviousness of the solution

5.4.1 Combination of D6 with D14

According to D14, when the filter element (5) needs to be replaced, the assembly is opened, the filter element is taken out of the filter case (2) for disposal, and a new filter element is joined to the filter case, see D14T, page 3, second and fourth paragraphs, page 4, third paragraph, and page 5, lines 3 to 7 and lines 23 to 26. D14 emphasises that the filter case is not to be discarded each time the filter element is replaced, in contrast with prior art assemblies wherein the entire cartridge, ie both the case and the filter element, are to be discarded upon servicing, see D14T, page 3, first paragraph and page 5, last sentence of the second paragraph. D14 thus relates to fuel filter assemblies conceived to be serviced in a different way. Therefore, the board is of the opinion that a skilled person, trying to improve fuel filter assemblies for disposable cartridges, would not necessarily consider D14 at all. Assuming for the sake of argument that the skilled person would nevertheless consider this document when

trying to solve the stated technical problem, it would be confronted with the instruction to arrange a part of the filter base within the cartridge, as opposed to the relative arrangement proposed by D6. Moreover, apart from the more general references to a snap-engagement and bayonet mechanism in the claims of D14 (see D14T) the only arrangement described in more detail is the one shown in Figures 2 and 3. In this arrangement, a helical spring (12) is arranged between the respective shoulders or retainer portions of the case socket (4) and the filter case (2), which do not, therefore, engage each other. It can be gathered from these drawings that said spring is necessary for biasing the bayonet-closure and for sealing the filter case to the filter base (6) by means of the O-ring (13). It is immediately apparent from the drawings of D14 and from page 5, lines 7 to 11 of D14T that in the locked position the spring provides the pressure required for establishing the seal between the case and the base by means of the said O-ring. Moreover, in the board's view, it is also clear from the drawings that the case socket is to be rotated clock-wise (seen from below in axial direction) to make the levers (9) axially snap into the enlarged zone at the end of the grooves (10), ie into a locked position, whereby it is spring (12) that provides the necessary pull. A different arrangement of the bayonet-biasing spring and a direct engagement of the said shoulders is not suggested by D14. D14 does not contain an indication that spring (12) was, as alleged by the appellant, superfluous in view of the presence of O-ring (13), which was to be considered as a biasing means in the sense of present

claim 10. It is, however, far from being clear whether, without special precautions, the sealing O-ring of D14 could at the same time perform the required locking and sealing functions in the absence of a spring.

Hence, even if the skilled person were to consider D14 at all, it had no reason to consider omitting or modifying the provision of the spring (12) as shown in D14, and would moreover be confronted with the incompatible teachings of D6 and D14 in terms of the relative arrangement of the filter base and the filter cartridge. The board therefore concludes that, without hindsight considerations, a combination of D6 with D14 could not lead the skilled person to the subject-matter of present claims 1 and 10 in an obvious manner.

5.4.2 Combination of D14 with D6

In view of the fact that D14 emphasises the importance of re-using the case of the filter cartridge, the board cannot follow the approach of the appellant, according to which D14 was to be considered as the closest prior art. During the oral proceedings, the appellant has argued that starting from D14 and confronted with a customer wishing to have an assembly with disposable cartridges being at the same time constructed to require less material, the skilled person would turn to D6 and would obviously adopt the shoulder-to-shoulder engagement and the arrangement of a disposable cartridge within the filter base as shown in this document, thereby arriving at the claimed subject-matter. The board does not accept this argument, since it considers that if a client merely wished to have such an assembly, it would be satisfied by the assembly of D6, and would not invite the skilled person to

radically re-design the assembly of D14. However, by analogy with the approach based on a combination of D6 with D14, the board holds that even if a skilled person would for some reason envisage to combine the teachings of D14 and D6, it would not, without hindsight considerations, arrive at an assembly as claimed in an obvious manner.

5.4.3 Combination of D6 with D8

Whereas D6 discloses a conventional threaded retainer collar system for connecting the filter cartridge to the filter base, D8 discloses a locking mechanism that is, in the broadest sense, a combination of a kind of thread segment (see spiral inclining planes 29) for axially connecting the parts of the filter assembly and of a bayonet mechanism, involving a retainer clip, for locking them together. It is common ground that the replacement of a threaded coupling by a bayonet coupling as disclosed eg in documents D1 and D3, which were both acknowledged in the contested patent, could be considered as a normal consideration of a skilled person. However, in the board's view, the fact that both coupling systems and their respective known properties were acknowledged in the description of the patent does not necessarily mean that it was also a conventional consideration to combine two particular systems of these two kinds. In the board's view the combination of a teaching relating to a conventional threaded coupling (D6) with the teaching of a very specific combined coupling system, which also comprises a kind of thread, as well as a bayonet-locking (D8), would be even less conventional. Therefore, the board shares the view expressed by the opposition division in the contested decision, reasons 2.2.1, that while D8

could be considered by the skilled person as disclosing an alternative filter assembly overcoming problems associated with couplings as described in D6, a skilled person would not be incited to somehow combine the different collar and base closure systems of D6 and D8 to thereby arrive at the claimed fuel filter assemblies in an obvious manner. Moreover, since the board considers that the feature of ramp means at the exterior of the receiving structure or the receptacle of the filter base cannot, as alleged by the appellant, be derived from D8, a combination of D6 and D8 would not lead to fuel filter assemblies as claimed.

5.4.4 Like D6, D7 relates to three-component liquid filter assemblies, comprising a filter base, a filter cartridge and a retainer collar locking the cartridge to the base. A inner shoulder of the collar engages an outer shoulder of the cartridge, see eg Figures 1 and 2. However, similarly to D6, D7 proposes the use of a threaded collar interacting with threads on the outside of the filter base. D7 does not, in the board's view, disclose more than D6 in terms of the features of claims 1 and 10 of the patent in suit. Since this was not disputed, the combinations of D7 with D8 or D14 cannot, for the same reasons as indicated with regard to combinations based on D6, lead to the claimed subject-matter in an obvious matter either.

5.4.5 Combination of D8 with D14

The appellant has not specifically and explicitly invoked a combination of the teachings of D8 and D14. During the oral proceedings it has, nevertheless, indicated in the context of its attack based on the combination of D6 with D14, that "what was missing

in D8 can be seen in D14". Therefore, the board wishes to indicate that it is convinced that the combination of D8 with D14 cannot lead to the claimed assemblies in an obvious manner either for the following reasons. Firstly, the board is of the opinion that a skilled person, starting from the assembly of D8 and being unsatisfied with the complexity of the manufacture and use of the positioning and locking clip (26), ie confronted with the technical problem as referred to in contested decision, reasons 2.2.3, would not necessarily consider D14 at all, since the latter, in contrast with D8, relates to cartridges with a case intended to be re-used and does not show an arrangement of the cartridge within the filter base. Even assuming, for the sake of argument, that the skilled person would consider D14 despite these somewhat incompatible teachings, the board is of the opinion that it would, without knowledge of the claimed invention, rather adopt the coupling construction of D14 altogether. For this purpose, a substantial re-design of the rim (11), the upper part of the filter unit (17), the sealing arrangement (25) and the clip (26) as shown in D8 would be a pre-requisite. Moreover, the assembly of D8 provided with the coupling mechanism of D14 would thus comprise an outer retainer collar having a shoulder interacting with a shoulder of the cartridge housing by means of a interposed helical spring, thereby excluding an engagement of the two parts. For these reasons, the board concludes that, without hindsight considerations, a combination of D8 with D14 could not lead the skilled person to the subject-matter of present claims 1 and 10.

5.4.6 Combination of D8 with D7

The objection based on this combination was presented in writing, but not repeated during the oral proceedings. The board is of the opinion that a skilled person, starting from the assembly of D8 and being unsatisfied with the complexity of the manufacture and use of the positioning and locking clip (26), would not, without the benefit of hindsight, be incited by D7, a document dealing with a conventional threaded coupling, to modify the construction of D8 in a way leading to the claimed assemblies. More particularly, in order to arrive at the claimed assemblies, the skilled person would have to adopt one of the features of the coupling disclosed in D7, ie the arrangement of the ramp means on the outside of the filter base, whilst disregarding the other features thereof. The adoption of this particular feature would, however, necessitate a substantial re-design of the rim (11), the upper part of the filter unit (17) and the clip (26) as shown in D8, whilst maintaining the coupling and positioning functions of the clip. Hence, the board is convinced that a combination of D8 with D7 does not lead the skilled person to the claimed assemblies in an obvious manner.

5.4.7 During the oral proceedings, the appellant has not repeated and further substantiated its earlier written objections based on the combinations of D7 with D13 and of D14 with D13. The board has nevertheless considered D13. From D13, it is immediately apparent that the filter units disclosed therein comprise a strainer as a filtering element and are intended to be used in connection with sprayers. Filtering of fuel is not mentioned. The assemblies of D13 do not comprise a retainer collar rotatable relative to the filter base. Rather, the filter base is coupled to the filter

housing by means of a bayonet-type closure comprising elements that can be considered as ramp and follower means. The ramps are, however, not spiralling (like a thread) and biasing means are not provided. The interlocking of the two parts occurs upon operation of the device, by means of the pressure of the filtered fluid.

Assuming, for the sake of argument, that the skilled person trying to improve the locking of the cartridge in the arrangement of D7 would consider D13 at all, despite the very different use and construction of the devices disclosed therein, the board is not convinced that the skilled person would, without knowledge of the claimed invention, be inspired by D13 to take all the steps necessary to transform the conventional threaded coupling of D7 into the specific spiralling bayonet type closure according to claim 1 or claim 10.

Starting from D14 and looking for an alternative construction of the filter assembly disclosed therein, the board cannot see why the skilled person would turn to D13 at all, despite the very different use and construction of the devices disclosed therein. Assuming it did, the board holds that in view of the different and incompatible sealing mechanisms relied upon in D14 and D13, D13 could not, without the benefit of hindsight, incite a skilled person to envisage the modifications of the assembly of D14 required to arrive at the claimed assembly.

5.4.8 The appellant did not specifically rely on any of the other documents cited during the opposition proceedings, taken alone or in combination. The board is also convinced that these documents are of lesser

relevance than the ones discussed here above. Since this was not disputed, no reasons need to be given for this finding.

5.5 In summary, the board is not convinced that any of the combinations of documents relied upon by the appellant leads in an obvious manner to the claimed assemblies. The subject-matter of claims 1 and 10, and, consequently, of claims 2 to 9 and 11 to 15, is thus found to be based on an inventive step.

Order

For these reasons it is decided that:

1. The appeal is dismissed.

2. The request for apportionment of costs is rejected.

The Registrar: The Chairman:

U. Bultmann R. Spangenberg