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D E C I S I O N
of 20 January 2006

Case Number: T 0149/04 - 3.2.01

Application Number: 96305421.8

Publication Number: 0768476

IPC: F16F 9/02, F16F 9/48

Language of the proceedings: EN

Title of invention:
Gas spring

Patentee:
TRELLEBORG AB

Opponent:
Stabilus GmbH

Headword:
-

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step - (no) obvious combination of known features"

Decisions cited:
T 0938/91, T 0389/95, T 1027/03

Catchword:
-



Case Number: T 0149/04 - 3.2.01

D E C I S I O N
of the Technical Board of Appeal 3.2.01
of 20 January 2006

Appellant: Stabilus GmbH
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Respondent: TRELLEBORG AB
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Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted
1 December 2003 concerning maintenance of the
European patent No. 0768476 in amended form.

Composition of the Board:

Chairman: S. Crane
Members: J. Osborne
C. Heath

Summary of Facts and Submissions

I. The opponent's appeal is directed against the decision posted 1 December 2003 according to which, account being taken of the amendments made by the patent proprietor during the opposition proceedings, European patent No. 0 768 476 and the invention to which it relates were found to meet the requirements of the EPC.

II. The opposition division found that the subject-matter of amended claim involved an inventive step in the light of *inter alia* the following prior art:

D5: GB-A-1 528 820

D7: DE-U-74 34 100.

III. In the grounds of appeal an additional prior art document (D13) was mentioned for the first time. In a communication pursuant to Article 11(1) RPBA the board indicated its provisional opinion that D13 was no more relevant than the other prior art already in the file.

IV. During oral proceedings held 20 January 2006 the appellant requested that the decision be set aside and the patent revoked. The respondent requested that the appeal be dismissed.

V. Claim 1 according to the respondent's request reads:

"A gas compression spring for moving a member on a body from a first position corresponding to compression of the spring to a second position, comprising an arrangement of a piston (26) movable within cylinder

means (10), the piston (26) carrying a piston rod (18) slidably and sealingly extending outwardly of one end (16) of the cylinder means (10); the opposite end (14) of the cylinder means (10) and a point on the piston rod (18) where it extends from the cylinder means (10) being adapted for connection between the body and the said member; the interior (32,34) of the cylinder means (10) being filled with gas under pressure and the piston (26) dividing the interior of the cylinder means (10) into a first chamber (32) defined at least in part by the head of the piston (26) and a second chamber (34) through which the piston rod (18) extends; the first and second chambers (32,34) being interconnected by first gas flow means comprising two grooves (56A,56B) in the interior wall (58) of the cylinder means (10), each groove (56A,56B) extending along a respective predetermined part, only, of the length of the cylinder means (10) and being separated along the length of the cylinder means (10) by an ungrooved portion (58A) of the interior wall (58) of the cylinder means (10), the two grooves (56A, 56B) permitting limited flow of gas from the second chamber (34) to the first chamber (32) as the gas pressure moves the piston (26) over the said grooves (56A, 56B) and correspondingly moves the piston rod (18) from an inner piston rod position towards an outer piston rod position more outwardly of the cylinder means (10), whereby to move the member towards the second position, the said limited flow of gas not being permitted when the piston (26) is outside the said grooves (56A, 56B) over the ungrooved portion (58A) so that further movement of the piston rod (18) towards the outer piston rod position is stopped; and reverse flow means (28,30,64) permitting gas pressure transfer between the first and second chambers (32,34) when the

piston rod (18) is moved towards the inner piston rod position by an externally applied force; characterised in that second gas flow means (42;106) are provided and including a second restricted gas flow path (42,50;80,82,96) for controllably by-passing the piston (26) when the piston (26) is over the ungrooved portion (58A) and thus providing a by-pass path connecting the first and second chambers (32,34); and control means (44;102) operable from outside the cylinder means (10) for switching the second gas flow means (46;106) between a blocked condition in which gas flow through the second gas flow path (42,55;80,96) is blocked and an unblocked position in which gas flow is permitted through the second gas flow path (42,55;80,96) and allows the gas pressure to move the piston rod (18) towards the outer piston rod position when the piston (26) is over the ungrooved portion (58A)."

VI. The appellant's arguments in the statement of grounds of appeal may be summarised as follows:

D13 encourages the skilled person to modify a gas spring having a plain bore and a valve permitting the piston to be blocked in any position by adding features such as are disclosed in D5. Similarly he would be encouraged by D13 to combine features of gas springs from D5 and D7.

VII. The appellant's arguments after the Board had indicated its provisional opinion regarding the relevance of D13 were essentially as follows:

Claim 1 is correctly delimited with respect to D5. According to the acknowledgement of prior art in D5 a

gas spring having a manually operable valve to permit selective locking at any position along its travel suffers the disadvantage of high cost. Such a gas spring is known from D7. The invention of D5 overcame the problem of high cost by deleting the manually operated valve and providing a pre-determined, intermediate stop position. Travel beyond the stop position was possible by applying a force. The subject-matter of present claim 1 solves the problem of needing to apply that force by introducing a valve. However, that feature is acknowledged by D5 as already having been known. It follows that the subject-matter of present claim 1 does not involve an inventive step.

VIII. The respondent argued essentially as follows:

D13 which is first mentioned in the grounds of appeal is no more relevant than other prior art documents already in the proceedings and therefore should be disregarded. The argumentation presented in the grounds of appeal relies wholly on D13. It follows that when D13 is disregarded the grounds of appeal are without substance and the appeal should be dismissed for this reason.

If inventive step nevertheless is to be considered its correct assessment requires the application of the problem/solution approach. The solution offered by D5 is simpler than that presently claimed and offers an alternative to a piston capable of uninterrupted movement, thereby solving a problem different from that addressed by the subject-matter of present claim 1. Moreover, the problem solved by the subject-matter of present claim 1 is different from that which would be

solved by D7. Whereas D7 permits locking the piston rod in any position the present solution solves the problem of releasing it from a locked position to enable movement to another free position. The appellant's approach is based on hindsight and the subject-matter of present claim 1 does involve an inventive step.

Reasons for the Decision

1. D13 was cited for the first time in the statement of grounds of appeal. Since the board finds D13 less relevant than other prior art already cited in the procedure it exercises its discretion to disregard it. The respondent argues that in the absence of D13 from the procedure the grounds of appeal lack substance and that the appeal therefore must be dismissed.
 - 1.1 In the impugned decision the opposition division acknowledged that all features of present claim 1 are known from a combination of D5 and D7. However, it found that the combination would not render obvious the subject-matter of the claim because the problem which it considered to be solved was not addressed in D7. In response to that decision the appellant cited D13 in the statement of grounds of appeal and argued that it would lead to a combination of D5 and D7 (paragraph bridging pages 5 and 6).
 - 1.2 In the statement of grounds of appeal it was argued that the subject-matter of the contested claim was the obvious result of a combination of D5 and D7. Whereas the appellant used D13 as the source of encouragement for the combination of D5 with D7, in the board's view

D5 already provided an equivalent teaching by acknowledging the provision of a selective locking function in a gas spring. It follows that the additional citation of D13 did not influence the matter of a combination of D5 and D7 and that even after disregarding reference to D13 the matter of a combination of D5 and D7 is still present in the grounds of appeal. The board therefore finds that its action in disregarding D13 does not render the grounds of appeal devoid of substance. This finding is consistent with the procedure followed in the case T 938/91 (not published in OJ EPO) in which the appellant's submission relied on prior art first cited in the statement of grounds of appeal to provide a link between prior art documents cited during the opposition procedure. The board disregarded the freshly cited prior art and, albeit without explicitly considering whether the grounds of appeal lacked substance, proceeded to consider the case on the basis of the prior art already considered during the opposition procedure.

1.3 The board is aware of the decisions T 389/95 and T 1027/03 (both not published in OJ EPO) in which the respective boards did find that grounds of appeal lacked substance after the newly filed evidence was disregarded. However, in both of those cases the appeal was an entirely fresh case in as far as it relied only on evidence first mentioned in the statement of grounds of appeal.

2. The present case relates to gas springs such as are used in conjunction with, for instance, the horizontally hinged rear door on a hatchback car. Such

gas springs comprise a cylinder containing a piston having a piston rod passing out of the cylinder through a gas-tight seal. Pressurised gas within the cylinder acts on differential surface areas of the piston and drives the piston rod outwardly as gas transfers from one side of the piston to the other. Movement of the piston within the cylinder is controllable by regulating the transfer of gas past or through the piston.

3. It is agreed between the parties that the closest prior art is known from D5 and that this discloses the features of the preamble of present claim 1.

3.1 D5 acknowledges conventional prior art gas springs having a plain cylinder bore and providing no means of blocking extension. It also acknowledges the existence of, although cites no evidence for, prior art gas springs having a plain cylinder bore and a manually operable valve in the piston (hereafter "manually operable gas spring"). When the valve is held open the gas is able to flow through it and the spring can extend. According to D5 this arrangement suffered from high cost and the difficulty of accessing the valve operating mechanism under certain conditions.

3.2 One solution proposed in D5 is to provide the cylinder bore with longitudinal grooves except in an intermediate portion where the bore is plain. Whilst the piston is adjacent the grooved portions extension of the spring is possible due to transfer of gas through the grooves from one side of the piston to the other. When the piston is adjacent the plain portion of the bore gas transfer is prevented and the spring is

blocked in the extension direction. By applying a sufficient load in order to compress the gas on one side of the piston it can be moved past the plain bore portion whereupon gas transfer again takes place, permitting the spring to extend. The arrangement provides for lower cost at the expense of the possibility to choose the blocking position.

4. The subject-matter of present claim 1 differs from that of D5 by the features in the characterising portion. These have the effect that when the piston is adjacent the ungrooved portion of the bore the second gas flow means may be opened to permit gas to pass through, thereby allowing the spring to extend and the piston to reach the subsequent grooved portion of the bore without the need to compress the gas. The corresponding problem to be solved, as set out in the patent specification (column 1, lines 47 to 53), is to permit extension movement of the piston rod beyond the ungrooved bore portion without the need to apply force to compress the gas.

- 4.1 As already indicated in 3.1 above D5 acknowledges a gas spring having a plain bore and in which extension is controllable by a manually operated valve whereby extension is possible only when the valve is open. The respondent accepts that such a manually operable gas spring is disclosed for example in D7 and has the features of the characterising portion of present claim 1, whereby the valve corresponds to the presently claimed second gas flow means. In the gas spring according to D7 the valve member is at all times subject to the pressure of the gas on one side and atmospheric pressure on the other side with the result

that the valve is normally closed and the spring normally blocked.

4.2 The gas spring according to D5 in the condition with the piston adjacent the intermediate, plain bore portion corresponds to the D7 gas spring in its normal, blocked condition; in both springs compression of the gas permits limited movement of the piston. The only interaction between the plain and grooved bore portions of the gas spring according to D5 is that the former is sufficiently short to limit the compression of the gas necessary before the piston reaches the latter in order to permit a by-pass for the gas. The skilled person therefore would readily appreciate that the manually operable valve acknowledged by D5 and known from D7 would operate in the same way if used in the gas spring according to D5 when the piston is adjacent the plain bore portion. It follows that if he were to consider that avoiding the need to apply force to unblock the gas spring according to D5 outweighs a higher cost he would simply introduce a manually operable valve as known from D7. In so doing he would arrive at the subject-matter of claim 1 without the need to exercise inventive activity.

4.3 The respondent argues that D7 provides for blocking the piston rod whereas the solution according to the present patent relates to the problem of releasing it from such a blocked position. The board cannot agree with this argument because, as explained under 4.1 above, the valve of the gas spring of D7 is normally closed and its operation releases the spring from the blocked condition to allow its extension.

4.4 On the basis of the foregoing the board comes to the conclusion that the subject-matter of claim 1 does not involve an inventive step.

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:

A. Vottner

S. Crane