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D E C I S I O N
of 28 January 2005

Case Number: T 0723/03 - 3.2.4

Application Number: 96914484.9

Publication Number: 1017452

IPC: A62C 3/07

Language of the proceedings: EN

Title of invention:
A fire extinguisher for closed spaces

Applicant:
Teknikbolaget AB

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 52(1), 54(1)(2), 113(1)

Keyword:
"Novelty (no)"
"Different embodiments disclosed in one prior document"
"Alternative features in an embodiment of the state of the art"

Decisions cited:
-

Catchword:
-

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Case Number: T 0723/03 - 3.2.4

D E C I S I O N
of the Technical Board of Appeal 3.2.4
of 28 January 2005

Appellant: Teknikbolaget AB
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 5 December 2002 refusing European application No. 96914484.9 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: M. Ceyte
Members: M. Poock
T. Bokor

Summary of Facts and Submissions

I. On 3 February 2003 the appellant (applicant) lodged an appeal against the decision of the examining division refusing European patent application No. 96 914 484 and paid the prescribed appeal fee. The statement of grounds of appeal was filed on 31 March 2003.

II. The examining division held that the subject-matter of claim 1 does not involve an inventive step having regard to the teaching of document WO-A-9 222 353 (D1).

It was specified that the subject-matter of claim 1 is distinguished from the fire extinguisher disclosed in figure 1 of D1 in that a piston is used to separate the chambers, instead of the membrane shown in figure 1.

The examining division referred to page 5, lines 20-23 to demonstrate that D1 indicates the use of a piston to drive the water out of the chamber. Consequently, it was concluded that it was obvious for the person skilled in the art to replace the membrane with the piston and use the pressurized gas to drive the piston. As a result of such combination the person skilled in the art would have arrived at the fire extinguisher according to claim 1.

III. In a communication annexed to the summons to oral proceedings the Board substantiated in detail why the subject-matter of claim 1 lacks novelty having regard to the disclosure of D1.

IV. Oral proceedings before the Board were held on 28 January 2005 without the presence of the duly

summoned appellant who had notified the Board beforehand of its intention not to attend the oral proceedings.

V. The application documents under consideration were filed with the letter of 26 September 2001. Claim 1 reads as follows:

"1. A fire extinguisher for closed spaces comprising a pressure container (2; 102; 201) having two chambers separated from each other by means of a displaceable wall (26; 126a, 126b; 226), of which chambers a first chamber (20; 120a, 126b; 220) contains an extinguishant liquid and is provided with a release valve (4; 204), and a second chamber (22; 122; 222) contains a pressurized driving gas for discharging the extinguishant liquid from said first chamber through the release valve by displacing the displaceable wall into the first chamber at a high pressure of in average 70 bar when the release valve is actuated, characterized in that at least one nozzle (6; 68, 70, 72; 76) is connected to the release valve for atomizing the extinguishant liquid supplied to the nozzle from the release valve at said high pressure in order to create a liquid fog filling the closed space, said liquid fog having a droplet size of 15-80µm, in that the displaceable wall is constituted by a piston (26; 126a, 126b) displaceable in the pressure container and in that the extinguishant liquid is constituted substantially by water."

VI. The appellant requested in writing that the decision under appeal be set aside and that the application be maintained or that the case be remitted back to the first instance for a decision on inventive step. Auxiliary, oral proceedings were requested.

VII. In support of these requests the appellant contested that the subject-matter of claim 1 does not involve an inventive step. In its view, according to page 5, lines 20-23 of D1, the piston is not intended to replace only the membrane but to replace the membrane and the gas space with the piston. The use of this information would result in a completely different technical solution, ie a structure having a piston but without the use of gas.

Reasons for the Decision

1. The appeal is admissible.

2. The subject-matter of claim 1 is not new.

2.1 D1 discloses a first embodiment of a fire extinguisher in figure 1 and on page 4, line 30 - page 5, line 19.

This extinguisher is for closed spaces (see page 4, lines 30-33) such as ship cabins and cabin corridors. It comprises a pressure container 2 having two chambers 6, 7 separated from each other by means of a displaceable wall 8, of which chambers a first chamber 6 contains an extinguishant liquid (see page 1, lines 18-27) and is provided with a release valve 5, and a second chamber 7 contains a pressurized driving

gas (see page 2, lines 28-32: about 110 bar) for discharging the extinguishant liquid from said first chamber 6 through the release valve 5 by displacing the displaceable wall 8 into the first chamber 6 at a high pressure when the release valve is actuated. This means that the driving gas pressure is sufficient to discharge the extinguishant at a high pressure.

The high pressure is "in average 70 bar". According to page 4, lines 1-9 of the application, the wording "high pressure of in average 70 bar" means that the charging pressure prior to the activation of the release valve must amount to about 100 bar.

D1 discloses a two phase extinguishing process (see eg page 1, lines 18-27 and page 2, lines 19-35). The first phase is to extinguish or at least press down the fire with concentrated fog sprays. Then, in the second phase, the remaining heat has to be absorbed with a more evenly spread fog-like liquid spraying. The nozzles are arranged such that spread fog-like liquid formation occurs when the pressure in the accumulator has fallen to eg about 110 bar during discharge (see page 2, lines 28-34; page 3, lines 5-9).

This pressure identification of about 110 bar does, in the Board's view, also cover an approximate pressure of "about 100 bar" as required by claim 1.

Thus, D1 discloses a charging pressure of "about 100 bar" which, according to page 4, lines 1-9 of the application, has the effect that the discharge pressure is in average 70 bar.

At least one nozzle 1, 1a is connected to the release valve 5 for atomizing the extinguishant liquid supplied to the nozzle 1, 1a from the release valve 5 at said high pressure in order to create a liquid fog filling the closed space (as described on page 2, lines 10 ff with respect to the preferred embodiments of the invention).

The liquid fog has a droplet size of 15-80µm. It is clearly stated on page 4, lines 1-9 of the application, that a droplet size of this magnitude is achieved when the charging pressure prior to the activation of the release valve is about 100 bar which is in fact disclosed in D1 (see two paragraphs above; page 2, lines 28-34 and page 3, lines 5-9).

From page 2, lines 10-16 it results that the extinguishant liquid is constituted substantially by water.

2.2 In the embodiment shown in figure 1, the displaceable wall is constituted by a membrane 8. However, in the context of the description of this embodiment, it is stated (see page 5, lines 20-23):

> "Instead of a gas space and membrane, the accumulators can also utilize as driving power a mixture of water and nitrogen or they can be of the piston type, possibly provided with a drive spring."

2.2.1 In the Board's view "they" in this passage can only refer to "the accumulators" and not to "a gas space and membrane".

The latter reference would result in an accumulator not having a gas space at all, so that liquid under high pressure could not be accumulated. This would contradict the whole document, where accumulators are always mentioned as hydraulic accumulators (eg page 2, lines 12, 13; page 5, line 13) or high pressure hydraulic accumulators (eg page 4, line 34). Such accumulators can accumulate liquid under high pressure because the gas space is pressurized when the accumulator is charged.

Since such interpretation would contradict the whole application, it would be ruled out by the person skilled in the art.

Consequently, the Board does not share the appellant's view that this passage suggests to replace the membrane and the gas space with the piston.

2.2.2 This passage suggests to modify as follows the embodiment shown in figure 1:

(a) the accumulators can utilize a mixture of water and nitrogen as driving power instead of a gas space and membrane, or

(b) the accumulators can be made of the piston type or

(c) the accumulators can be made of the piston type and are provided with a drive spring.

Thus, D1 also discloses that the displaceable wall is constituted by a piston displaceable in the pressure container.

2.3 With each of these modifications a respective separate embodiment is created. Modification (b) results in an embodiment which is identical to the one shown in figure 1 except that the membrane type accumulator is substituted by an piston type accumulator. Therefore, an embodiment is disclosed in D1 which comprises all features of claim 1 and the same combination thereof so that the subject-matter of claim 1 forms part of the state of the art.

Consequently, the Board concludes that the requirements of Articles 52(1), 54(1) and (2) EPC are not met.

3. The appellant did not avail himself of the opportunity to challenge the Board's view expressed in the annex to the summons of oral proceedings in writing or by attending the oral proceedings. In the Board's view, the appellant has had sufficient opportunity to submit its comments in the sense of Article 113(1) EPC and there is no reason to delay the proceedings in order to offer the appellant another opportunity to comment.

4. Therefore, the request of the appellant that the decision under appeal be set aside and that the application be maintained cannot be allowed.

Likewise, the request that the case be remitted back to the first instance for a decision on inventive step cannot be allowed because the subject-matter of claim 1 is not new.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

G. Magouliotis M. Ceyte