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Aktenzeichen / Case Number / N^o du recours : T 74/82
Anmeldenummer / Filing No / N^o de la demande : 79 302 408.4
Veröffentlichungs-Nr. / Publication No / N^o de la publication : 0 013 473

Bezeichnung der Erfindung: Cartridge end-closure
Title of invention:
Titre de l'invention :

Klassifikation / Classification / Classement :
F 42 B 3/00
B 65 D 39/00

ENTSCHEIDUNG / DECISION

vom / of / du 19 February 1986

Anmelder / Applicant / Demandeur : IMPERIAL CHEMICAL INDUSTRIES LIMITED

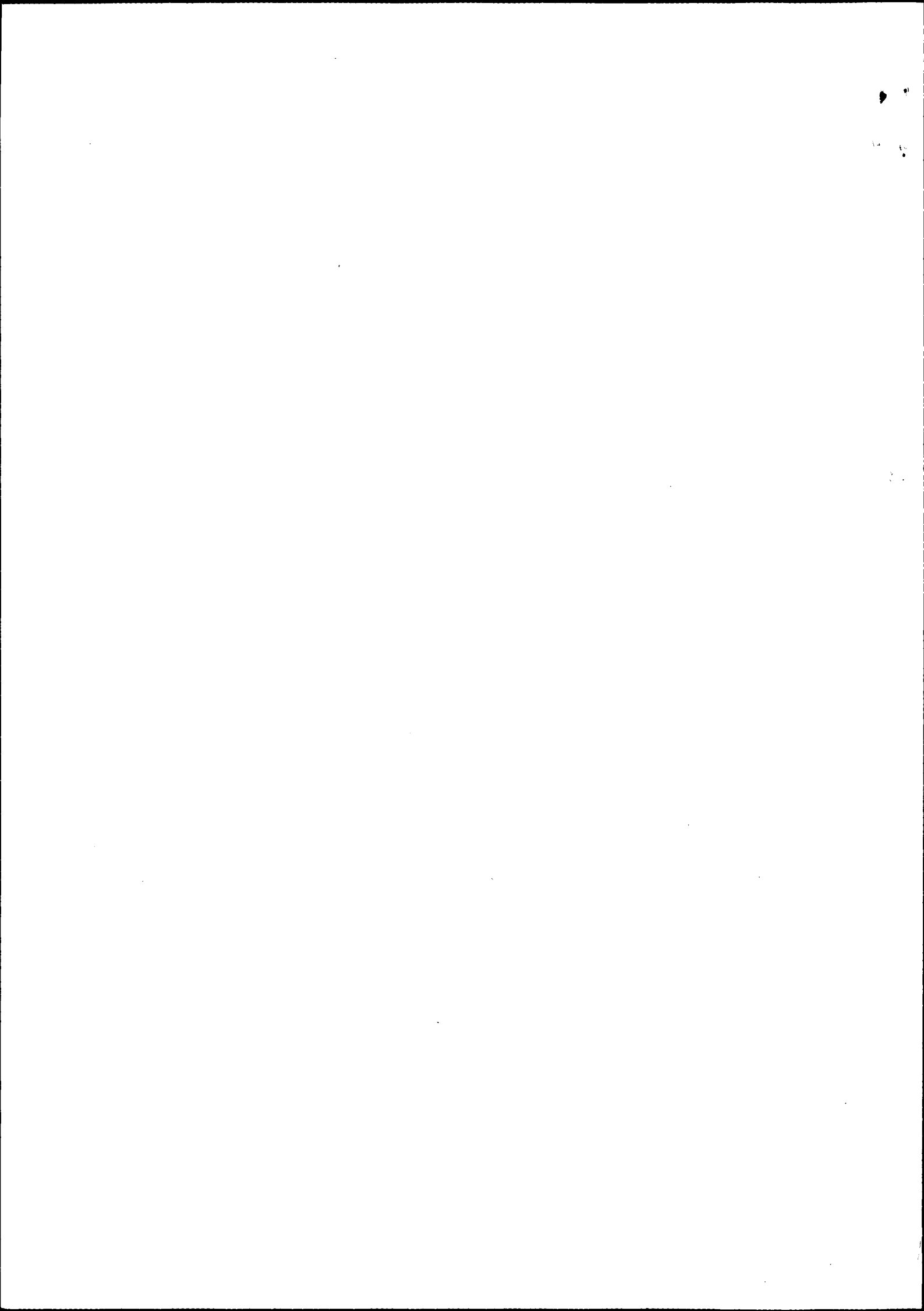
Patentinhaber / Proprietor of the patent /
Titulaire du brevet :

Einsprechender / Opponent / Opposant :

Stichwort / Headword / Référence :

EPÜ / EPC / CBE Article 56 "Inventive Step"

Leitsatz / Headnote / Sommaire



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Case Number: T 74 / 82

DECISION
of the Technical Board of Appeal 3.2.1
of 19 February 1986

Appellant: IMPERIAL CHEMICAL INDUSTRIES LIMITED

Representative: Reid, Thomas James et al,
Imperial Chemical Industries Limited
Legal Department: Patents
Thames House
North Millbank
London SW1P 4QG (GB)

Decision under appeal: Decision of Examining Division ⁰⁸²
Office dated 07.01.1982 of the European Patent
application No 79 302 408.4 refusing European patent
EPC pursuant to Article 97(1)

Composition of the Board:

Chairman: M. Huttner
C. Maus
Member: C. Wilson
Member: P. Ford
F. Benussi

Summary of Facts and Submissions

I. European patent application No. 79 302 408.4, filed on 1 November 1979, published under publication number 0 013 473 and claiming the priority of a previous application of 15 January 1979, was refused by the decision of the Examining Division 082 dated 7 January 1982.

The decision was based on the original claims with an amendment of Claim 1 as requested in the letter dated 10 April 1981.

II. In the decision, the Examining Division stated that the subject-matter of Claim 1 did not involve an inventive step. In support of its view the Examining Division cited US patent specifications No. 2 345 887 and 3 952 656 and French publication No. 2 254 486 and held that the skilled person would arrive, applying the resilient closures according to US patent specification No. 3 952 656 and French publication No. 2 254 486 to a cartridge disclosed in US patent specification No. 2 345 887, at a tubular blasting cartridge according to Claim 1.

III. On 8 March 1982, the Appellants lodged an appeal against the decision requesting that the decision under appeal should be set aside in toto and paying the fee for appeal simultaneously. The Statement of Grounds was submitted on 27 April 1982.

IV. During the procedure before the Board of Appeal, the Appellants substituted new Claims 1 to 7 received on 12 October 1985 for the claims on which the decision was based. At the same time, they submitted new pages 1 and 3 of the description having already submitted amended pages 2 and 4 on 26 October 1982.

New Claim 1 reads as follows:

"A tubular blasting cartridge case (12) closed at least at one end by a transverse closure disc (11) made from synthetic plastics material and having an uncompressed diameter greater than the internal diameter of the tubular case characterised in that the closure disc (11) is made from resilient closed-cell foamed plastics material which is foamed by blowing with inert gas, the dimensions of said closure disc being such that the disc resilience causes sufficient outward radial pressure against the case (12) that the case is sealed against the ingress of ambient water".

The Appellants were of the opinion that there was no teaching in any of the cited documents pertinent to indicate that a closure disc of resilient closed-cell foamed synthetic plastics material would satisfy the requirements of not unduly interfering with the communication of detonation between cartridges and not increasing the risk of igniting firedamp in the vicinity of the explosion. Consequently, the cartridge case according to Claim 1 would involve an inventive step.

V. For the original claims and description reference is made to publication No. 0 013 473.

Reasons for the Decision

1. The appeal complies with Articles 106 to 108 and Rule 64 EPC and is, therefore, admissible.

2. The Appellants derived the preamble of Claim 1 from the tubular blasting cartridge case disclosed in US patent specification No. 2 345 887. According to the findings of the Board this cartridge is the closest prior art and those features of the subject-matter of Claim 1 which, in combination, are part of this prior art, are mentioned in preamble.

Hence, Claim 1 is so far not open to objection.

3. It follows from the foregoing that the Board, having examined the documents cited in the search report, has come to the conclusion that the subject-matter of Claim 1 is not disclosed in any one of these documents.

It is, therefore, novel having regard to the cited prior art.

4. On the question of whether or not the prior art could suggest the cartridge case according to Claim 1 the following should be observed:

- 4.1 In the cartridge case according to US patent specification No. 2 345 887 the closure disc in sealing relationship with the case is composed of a solid synthetic plastics. The Appellants have found that, in a standard firedamp ignition test, such solid plastic discs significantly increased the likelihood of firedamp ignition.

- 4.2 The object underlying the subject-matter of Claim 1 is, therefore, to provide a closure disc which protects the explosive composition from ambient water without increasing the risk of igniting firedamp in the vicinity of the explosion and without forfeiting the ability to avoid an undue interference with the communication of detonation between cartridges.

4.3 The Board cannot adopt the opinion of the Examining Division that the closure disc according to Claim 1 proposed as solution of foregoing problem was obvious having regard to US patent specification No. 3 952 656 and French publication No. 2 254 486.

4.3.1 It is correct that US patent specification No. 3 952 656 discloses a closure for filling a borehole for blasting which is fabricated from a resilient foamed plastics material and whose dimensions are such that its resilience causes sufficient outward radial pressure against the hole that the hole is sealed against any leakage. Having regard to this purpose, the conclusion of the Examining Division seems to be correct that the foamed plastics material is a closed-cell foamed material. However, no agent for blowing the synthetic plastics material is mentioned in the document nor does it give any hint to an interrelation between the agent to be used for blowing and the risk of firedamp ignition at the blasting. It should also be noted that when blasting by means of blasting explosives filling completely a borehole stemmed by a sealing device the problem of the communication of detonation which appears between blasting cartridges is not present.

US patent specification No. 3 952 656 could, therefore, not suggest the idea to solve the problem according to paragraph 4.2 arising in a blasting cartridge of the type disclosed in US patent specification No. 2 345 887 by replacing the solid plastics material, constituting the disc, by a closed-cell foamed synthetic plastics material foamed by blowing with inert gas.

- 4.3.2 French publication No. 2 254 486 concerns a closure particularly for bottles, which consists of foamed closed-cell synthetic plastics material. The cells are closed for the purpose of preventing oxygen from diffusing through the closure. Hence, the teaching of this document does not come closer to the subject-matter of Claim 1 than the teaching of US patent specification No. 3 952 656.
- 4.4 The utilisation of inert gas as blowing-means for producing a foamed material is not novel per se (cf. French publication No. 2 001 030). According to this document the foamed material is used for filling boreholes for the purpose of expelling a mixture of methane and air perhaps present in the hole. The inert gas is, however, provided only as an alternative for the air forming the blowing-means for producing the foamed material. Hence, it is not intended to influence the risk of firedamp ignition by replacing the air in the cells by an inert gas. This follows also from the fact that besides inert gas in addition several other gases are mentioned as substitute for the air. With regard to this purpose this document could not suggest the idea that inert gas used as blowing agent for a closed-cell foamed plastics material forming the disc for a blasting cartridge case is appropriate for preventing an increase of the risk of igniting firedamp in the vicinity of the explosion.
- 4.6 Among other documents cited in the search report only French patent specification 1 458 434 concerns a cartridge case whose closure is composed of synthetic plastics material. However, according to this document a thermoplastics is preferred as the plastics material. Consequently, these documents are further from the case according to Claim 1 than the publications discussed in the foregoing paragraphs. Their teachings could, therefore, neither per se nor in combination with the teachings of the other documents draw the skilled person's attention to the subject-matter of Claim 1.

4.7 From the foregoing it follows that the blasting cartridge case according to this claim involves an inventive step within the meaning of Article 56 EPC.

~~4. Claim 1 is, therefore, allowable (Article 52 EPC).~~

6. Dependent Claims 2 to 6 and Claim 7 concern particular embodiments of the invention according to Claim 1 and a particular explosive composition to be encased in a tubular cartridge case according to any one of Claims 1 to 6 and thus are likewise allowable.

7. The description is adapted to the wording of the allowable claims and presents more clearly the state of the art from which the invention starts. Consequently, the amendments are not open to objection.

Order

For these reasons,

it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance with the order to grant a European patent on the basis of the following documents:

Claims 1 to 7, received on 12 October 1985;
description, pages 1 and 3, received on 12 October 1985;
description, pages 2 and 4, received on 26 October 1982;
original drawings.

The Registrar

B A Norman

00468

The Chairman

M Huttner

