

Veröffentlichung im Amtsblatt	Ja/Nein
Publication in the Official Journal	Yes/No
Publication au Journal Officiel	Oui/Non

Aktenzeichen / Case Number / N^o du recours : T 133/88 - 3.2.1

Anmeldenummer / Filing No / N^o de la demande : 84 304 100.5

Veröffentlichungs-Nr. / Publication No / N^o de la publication : 0 129 437

Bezeichnung der Erfindung: Apparatus for dispensing liquids

Title of invention:

Titre de l'invention :

Klassifikation / Classification / Classement : B67D 1/08, B67D 3/00

ENTSCHEIDUNG / DECISION

vom / of / du 10 October 1990

Anmelder / Applicant / Demandeur : The Coca-Cola Company

Patentinhaber / Proprietor of the patent /

Titulaire du brevet :

Einsprechender / Opponent / Opposant :

Stichwort / Headword / Référence :

EPÜ / EPC / CBE Articles 52(1), 56 and 84 EPC

Schlagwort / Keyword / Mot clé : "Clarity (yes, after amendment)";
"Inventive step (yes)"

Leitsatz / Headnote / Sommaire



Case Number : T 133/88 - 3.2.1

D E C I S I O N
of the Technical Board of Appeal 3.2.1
of 10 October 1990

Appellant : The Coca-Cola Company
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Georgia 30313 (US)

Representative : Leale, Robin George et al
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Decision under appeal : Decision of Examining Division 088
of the European Patent Office dated
30 October 1987 refusing European
patent application No. 84 304 100.5
pursuant to Article 97(1) EPC

Composition of the Board :

Chairman : F. Gumbel
Members : S. Crane
W. Moser

Summary of Facts and Submissions

I. European patent application No. 84 304 100.5, filed on 18 June 1984, with priority being claimed from United States application No. 504 864, dated 16 June 1983, was refused by a Decision of the Examining Division dated 30 October 1987.

II. The reason given for the decision was that the valid independent Claim 1 then on file lacked clarity, contrary to Article 84 EPC. In this respect it was in particular pointed out that the flow rates referred to and compared in the claim were not inherent characteristics of the container being claimed and could not therefore be used to define it.

In a previous communication the Examining Division had objected to the subject-matter of original Claim 1 as lacking novelty with respect to US-A-1 524 347 and indicated that the features of original dependent Claims 2 to 5 added nothing of inventive significance to the subject-matter of Claim 1.

III. A Notice of Appeal was filed against this decision on 4 January 1988, the appeal fee being paid on the same day. The Statement of Grounds of Appeal was filed on 8 March 1988.

IV. The Board issued a communication pursuant to Article 110(2) EPC on 16 May 1990.

In this communication the Board set out in detail its preliminary view that Claim 1 forming the basis of the decision under appeal lacked clarity, essentially for the reasons given by the Examining Division.

- V. In response to this communication the Appellants filed on 22 August 1990 a new set of Claims 1 to 3, of which independent Claim 1 is worded as follows:

"A container for use in dispensing liquids with a controlled rate of flow, comprising:

a top end (20A) which is open to the atmosphere, and a bottom end (20B), the bottom end having a discharge opening (22) therein, and side walls connecting said top and bottom ends;

a flow rate control tube (30) having a top open end (30A) adjacent the top end of said container and a bottom end (30B) disposed at a predetermined distance above said discharge opening, said tube establishing atmospheric pressure at said bottom open end thereof; and

a diaphragm (24) extending between the bottom end of said flow rate control tube and said container side walls, the bottom end of said tube opening through said diaphragm to establish atmospheric pressure below said diaphragm, said flow rate control tube being supported within said container by said diaphragm and said diaphragm including weep hole means (26) through which the liquid being dispensed may pass,

characterised in that the said diaphragm slopes downwardly from the bottom end of the said flow rate control tube to the said container side walls, and the said weep holes means comprises a plurality of weep holes disposed adjacent said container side walls."

Dependent Claims 2 and 3 relate to preferred embodiments of the container according to Claim 1.

They argued that the offending references to relative flow rates had been replaced by concrete features of the container which ensured correct operation of the container and which could not be derived from the state of the art.

They accordingly requested the grant of a patent on the basis of these claims.

- VI. On 28 August 1990 the Rapporteur of the Board telephoned the Appellants to request that they file correspondingly revised pages of the description. These were received on 11 September 1990.

Reasons for the Decision

1. The appeal complies with Articles 106 to 108 and Rule 64 EPC and is therefore admissible.
2. Formal admissibility of the claims
 - 2.1 The references to relative flow rates objected to in the decision under appeal and in the communication of the Board of 16 May 1990 no longer appear in the new Claim 1. The container of this claim is defined solely by technical features of that container and the claim is accordingly no longer objectionable as lacking clarity in this respect.
 - 2.2 The new Claim 1 consists in essence of a combination of original Claims 1 to 3 and one feature of Claim 4. The only significant change is that the claim is now directed to a container for use in dispensing liquids with a controlled rate of flow whereas the original Claim 1 was directed to apparatus for dispensing liquids with a controlled rate of flow. This change is not objectionable since it is clear from the original application documents as a whole that these were directed to a container per se, this container being suitable for use in dispensing apparatus.

New Claim 2 is directed to the remaining feature of original Claim 4 and new Claim 3 corresponds to original Claim 5.

There is therefore no objection to the new claims under Article 123(2) EPC.

3. State of the art

- 3.1 The closest state of the art is shown in US-A-1 524 347, on which the preamble of present Claim 1 is based.

The container shown in Figure 4 of this document comprises a flow rate control tube that extends upwardly from a planar diaphragm extending between the side walls of the container. An equalising chamber is thereby formed between the bottom end of the container and the diaphragm. The diaphragm has a single weep hole located in a central region thereof. As is the case with the container of the present application the flow rate control tube functions in the following way: At the start of a dispensing operation the fluid in the flow rate control tube drains out and permits atmospheric pressure to be established below the diaphragm. The head of fluid above the diaphragm is therefore isolated from the fluid below the diaphragm and cannot influence the dispensing flow rate. This stays therefore substantially constant as when in use the level of fluid in the container falls. The equalising chamber is designed to have a volume several times that of the volume of fluid dispensed in each dispensing operation.

- 3.2 A similar flow rate control principle is utilised in the container of DE-B-1 086 577, which differs however in several constructional aspects from the container defined in the preamble of present Claim 1.

In this prior art container the flow rate control tube extends through and is attached to the bottom end of the container and forms the discharge opening therein. The lower part of the tube is surrounded by an inverted cup-shaped member with which the bottom end of the container forms a discharge chamber. The cylindrical wall of the cup-shaped member has weep holes allowing fluid to enter the discharge chamber. The flow rate control tube has transverse holes therein allowing on commencement of the dispensing operation air from the tube to enter the discharge chamber and the fluid in the discharge chamber to pass to the discharge opening. The discharge chamber has a volume slightly larger than the volume of fluid dispensed in each dispensing operation.

4. **Novelty**

The container defined in Claim 1 is distinguished from the closest prior art disclosed in US-A-1 524 347 by the features of the characterising clause of the claim, that is that the diaphragm slopes downwardly from the bottom end of the flow rate control tube to the container side walls and that a plurality of weep holes are disposed in the diaphragm adjacent the container side walls.

The subject-matter of Claim 1 is therefore novel.

5. **Inventive step**

5.1 A problem may arise with the prior art arrangement of US-A-1 524 347 due to the fact that the cross-sectional area of the weep hole in the diaphragm is necessarily considerably less than the cross-sectional area of the discharge opening of the container in order to ensure that the flow rate control tube can drain fully and thereby function as intended. If this were not the case the refill

rate from the main chamber into the equalising chamber through the weep hole could be such as to prevent complete drainage of the flow rate control tube. The problem is that frequent repeated dispensing operations can, in view of the slow refill rate through the weep hole, lead to depletion of the fluid in the equalising chamber.

5.2 The invention sets out to solve this problem. It is apparent from the above that increasing the number of weep holes, thereby increasing the refill rate, cannot in itself provide a solution to the problem since this would lead to the flow rate control tube being put out of operation. Instead, the invention proposes combining the use of a plurality of weep holes with a diaphragm that slopes downwardly from the bottom of the flow rate control tube to the side walls of the container. This ensures that the bottom of the flow rate control tube is at the highest point of the diaphragm and accordingly that the flow rate control tube can drain completely even though the degree of emptying of the equalising chamber is quite small. In other words the refill flow rate through the plurality of weep holes can be chosen to be only slightly less than the discharge rate from the container in use and the danger of depletion of the equalising chamber by frequent repeated dispensing operations is substantially eliminated.

A further advantage of the container specified in Claim 1 is that the location of the weep holes adjacent the container side walls, i.e. at the bottom of the sloping diaphragm, permits substantially complete drainage of the main container space above the diaphragm before it is refilled, which is important from the point of view of hygiene.

5.3 Neither of the documents cited in the search report and referred to above provide any clue to the skilled man that

he could solve the identified technical problem in the manner specified in Claim 1. Nor could he be led to this solution by the application of his common general knowledge, the most immediately obvious solution to the problem being to choose the volume of the equalising chamber such that in practice the possibility of depletion would hardly exist.

The subject-matter of Claim 1 cannot therefore be derived in an obvious manner from the state of the art and accordingly constitutes a patentable invention (Articles 52(1) and 56 EPC).

Order

For these reasons, it is decided that:

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

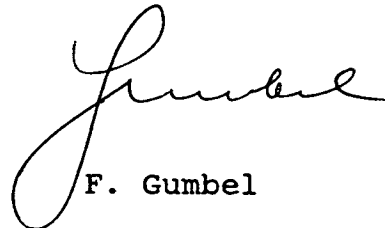
Claims: 1 to 3 filed on 22 August 1990,
 Description: pages 1 to 4 and 7 as originally filed
 pages 5, 6, 8 and 9 filed on
 11 September 1990,
 Drawings: sheet 1/1 as originally filed.

The Registrar:



S. Fabiani

The Chairman:



F. Gumbel

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