

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

Aktenzeichen / Case Number / N° du recours : T 778/89 - 3.2.2

Anmeldenummer / Filing No / N° de la demande : 84 901 212.5

Veröffentlichungs-Nr. / Publication No / N° de la publication : 138 900

Bezeichnung der Erfindung: Prefabricated die plates and die plate system,  
Title of invention: particularly for cavity dies  
Titre de l'invention :

Klassifikation / Classification / Classement : B29C 1/00 B29D 27/04  
B29F 1/022 B29M 5/00

### ENTSCHEIDUNG / DECISION

vom / of / du 20 September 1990

Anmelder / Applicant / Demandeur : Központi Váltó-És Hitelbank RT.,  
Innovációs Alap

Patentinhaber / Proprietor of the patent /  
Titulaire du brevet :

Einsprechender / Opponent / Opposant :

Stichwort / Headword / Référence :

EPU / EPC / CBE Article 56

Schlagwort / Keyword / Mot clé : "Inventive step (yes)"

Leitsatz / Headnote / Sommaire

Europäisches  
Patentamt  
Beschwerdekammern

European Patent  
Office  
Boards of Appeal

Office européen  
des brevets  
Chambres de recours



Case Number : T 778/89 - 3.2.2

D E C I S I O N  
of the Technical Board of Appeal 3.2.2  
of 20 September 1990

Appellant : Központi Váltó-És Hitelbank RT.,  
Innovációs Alap  
Szabadság ter 5-6  
H-1054 Budapest

Representative : Prechtel, Jörg  
Patentanwälte  
H. Weickmann, Dr. K. Fincke  
F.A. Weickmann, B. Huber  
Dr. H. Liska, Dr. J. Prechtel  
Möhlstrasse 22  
Postfach 860 820  
D-8000 München 86

Decision under appeal : Decision of Examining Division 093  
of the European Patent Office  
dated 13 June 1989, dispatched on  
14 August 1989, refusing European  
patent application No. 84 901 212.5  
pursuant to Article 97(1) EPC

Composition of the Board :

Chairman : H. Seidenschwarz  
Members : J. Du Pouget de Nadaillac  
C. Holtz

## Summary of Facts and Submissions

- I. European patent application No. 84 901 212.5, filed on 23 March 1984 as international application No. PCT/HU 84/00019 and published under the number 0 138 900, was refused by a decision of the Examining Division 093 on 14 August 1989. The decision was based on Claims 1 to 4 filed during the oral proceedings.
- II. The reason given for the refusal was that the subject-matter of Claims 1 to 4 did not involve an inventive step in the light of the prior art disclosed in the documents:
- (D1) Kl. Stoeckhert "Werkzeugbau für die Kunststoff-Verarbeitung", Carl Hauser Verlag München Wien 1979, pages 429 and 430; and
- (D3) H. Gastrow "Der Spritzgiess-Werkzeugbau in 100 Beispielen", published by Kl. Stoeckhert, Carl Hauser Verlag München Wien 1982, page 113, Example 36.
- III. The Appellant filed a Notice of Appeal against this decision on 10 October 1989, paying the appropriate fee simultaneously. The Statement of Grounds was submitted on 15 December 1989.
- IV. The Board has referred to document
- (D4) "Plastics Engineering Handbook" of the Society of the Plastics Industry, Inc.; fourth edition 1976; edited by Joe Trados; Van Nostrand Reinhold Company New York; Chapters 6 (pages 131 to 155) and 22 (pages 606, 607, 609).

V. Oral proceedings took place on 20 September 1990. The Appellant then presented a new set of Claims 1 to 4 and a new description. He requested that the decision under appeal be set aside and that a patent be granted on the basis of these new claims and description as well as on the basis of the drawings as originally filed. Furthermore, he defined the problem to be solved with respect to the closest art as disclosed in document D1.

VI. Claim 1 reads as follows:

"A prefabricated standardized die plate system for assembling of dies comprising holding plates (21, 27), forming plates (37) and insert plates (10, 15) for material distribution and ejection, said holding plates (21, 27) being provided with prefabricated holes (25, 26, 34, 36) for connecting elements, which holes (25, 26, 34, 36) are predetermined in dimension, number and geometrical arrangement of the holes, characterized in

- that each forming plate (37) is provided with a group of holes (39) for fitting receiving of various cavity and/or core die inserts,
- that each insert plate (10, 15) is provided with a group of holes (13, 17, 19, 20) for fitted receiving of various inserts comprising material nozzle system and/or material distributor hole system and/or hot runner system and/or ejector system,
- that all said groups of holes are predetermined in dimension, number and geometrical arrangement of the holes, and

- that said holding plates (21, 27), forming plates (37) and insert plates (10, 15) are moulded parts with all holes formed by the moulding."

### Reasons for the Decision

1. The appeal is admissible.
2. Amendments
  - 2.1 The present Claim 1 is supported by the combination of the originally filed Claims 1, 8, 10, 12 to 14 and by the description as originally filed (page 5, line 28 to page 6, line 9; page 6, line 37 to page 7, line 1; page 9, lines 11 to 15; page 10, lines 25 to 31; page 11, lines 1 to 9).
  - 2.2 Claims 2 to 4 are also supported by the original description (page 4, line 33 to page 5, line 1 and page 1, lines 1 to 6).
  - 2.3 The amendments in the description relate, apart from the correction of obvious errors, to an adaptation of the description to the present claims, the object of the invention and the indication of the closest prior art. These amendments do not give rise to any objections.
  - 2.4 The application, therefore, complies with Article 123(2) EPC.
3. Novelty

After examination of all documents cited in the international search report as well as those referred to during the examination and appeal procedure, the Board is satisfied that none of them discloses a prefabricated

standardised die plate system having all the features defined in Claim 1. Since this has never been disputed, there is no need for further detailed substantiation of this matter.

Therefore, the subject-matter as set forth in Claim 1 is novel in the sense of Article 54 EPC.

4. Closest state of the art, problem and solution

According to the precharacterising portion of Claim 1, the subject-matter of this claim relates to a prefabricated die plate system. In the view of the Board, as well as of the applicant, document D1 must be considered as the closest prior art to said subject-matter. This document discloses modular elements for die plate systems, wherein the individual elements are prefabricated and standardised with respect to the outer dimensions. According to one of the systems, namely the K-Standards (K-Normalien), the standardisation comprises only bores serving for receiving guide bolts, guide bushes and centering sleeves, which bores are predetermined in dimension, number and geometrical arrangement. This permits the user to combine the different plates according to different requirements and to assemble them easily (cf. section 2.2). However, the bores which are necessary for fitted receiving of various inserts as cavity dies, core dies, material nozzle systems, material distributor hole system, hot runner system and ejector system, have to be added in accordance with each of said different requirements to the different plates by a laborious, expensive operation.

The technical problem to be solved by the invention is, therefore, to provide a die plate system with a higher degree of prefabrication and reduced manufacturing costs.

According to the teaching of Claim 1, this problem is solved by using all plates of the die plate system as mould parts and by also providing each forming plate as well as each insert plate with a pattern of holes, which are suitable for the fitted receiving of the respective inserts and which can be formed at the same time with the manufacture of the plates. This permits the application of high-precision casting, which results in the advantage that a wide range of materials can be used for a programmable and economical mass production of die plates.

5. Inventive step

5.1 Document D1 clearly indicates that only the modular elements according to the "K-Standards" have bores for guiding elements and screws. Furthermore, this document does not contain any reference that the modular standardised elements are moulded parts. Therefore, document D1 does not give any hint to the person skilled in the art to solve the aforementioned technical problem by also providing the forming plates and insert plates with the holes necessary for various inserts, which holes are formed simultaneously with the moulding of the plates.

5.2 Example 36 on page 113 of Document D3 shows a die plate system for manufacturing of test tubes by injection moulding.

The bore for receiving core inserts (1, 2, 3, 4) extends from the actual forming plate to the left, movable holding plate (cf. Abb. 3.3/20). The bore in the forming plate has, therefore, an enlargement in the form of a flange at the parting line between the forming plate and the holding plate. This is necessary for the sealing of two core inserts (Formnesteinsatz 3 and 4) with respect to each other and to the plates. Besides the bores in the plates

for receiving guiding bolts (21), particular bores for receiving auxiliary guiding bolts (14), a pulling pin (18) and a stop pin (19) are provided in said plates. These bores are especially adapted to the functions of the different bolts.

According to the description of Example 36 (cf. page 112), the die plate system is designed to meet the very special requirements of test tubes due to their length. That means that the dimension, number and geometrical arrangement of the bores depends solely on the predetermined use. Therefore, the known die plate system cannot be regarded as a prefabricated, standardised die plate system within the meaning of the prior art as disclosed in document D1. Furthermore, said description of Example 36 does not contain any hint to the kind of manufacturing process of the plates.

Since document D3 does not contain any suggestion for providing groups of holes predetermined in dimension, number and general arrangement in the plates of a die plate system, or for forming these holes together with the plates by moulding, the person skilled in the art would not be led to combine the teachings of the aforementioned documents.

- 5.3 Document D4 concerns the designing of moulds for injection moulding and the manufacturing methods for injection moulds. According to pages 131 (right column, last paragraph), 132 (left column) and 607 (paragraph: Casting), injection moulds can be manufactured by casting. Further details with respect to holes in the different plates, which holes are suitable for fitted receiving of various inserts, are not mentioned in the description of the various moulds and their component parts.

This document and the other documents cited in the search report and referred to during the examining procedure likewise give no hint of the subject-matter of Claim 1. Their teaching could not, therefore, either alone or in combination with the teachings of the documents discussed in the foregoing paragraphs, lead the person skilled in the art to a prefabricated, standardised die plate system as specified in Claim 1.

- 5.5 In view of the above, the subject-matter of Claim 1 involves an inventive step within the meaning of Article 56 EPC.
6. Consequently, Claim 1 and the Claims 2 to 4, which are directed to a particular embodiment of the subject-matter of Claim 1, are allowable.

#### 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 the patent on the basis of the following documents:

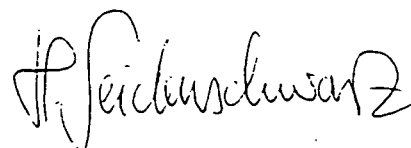
Claims 1 to 4 and description as filed during the oral proceedings and drawings as originally filed.

The Registrar:



S. Fabiani

The Chairman:



H. Seidenschwarz