

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

Aktenzeichen / Case Number / N^o du recours : W 16/88 - 3.2.1

Anmeldenummer / Filing No / N^o de la demande : PCT/US 87/03132

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

Bezeichnung der Erfindung: Connecting apparatus

Title of invention:

Titre de l'invention :

Klassifikation / Classification / Classement : F16B 7/04

ENTSCHEIDUNG / DECISION

vom / of / du 23 September 1988

Anmelder / Applicant / Demandeur : Interlock Structures International Inc.

Patentinhaber / Proprietor of the patent /
Titulaire du brevet :

Einsprechender / Opponent / Opposant :

Stichwort / Headword / Référence :

EPÜ / EPC / CBE Rules 13.1; 13.4; 40.2.c PCT

Schlagwort / Keyword / Mot clé : Unity of invention a posteriori

Leitsatz / Headnote / Sommaire

Europäisches
Patentamt

Beschwerdekammern

European Patent
Office

Boards of Appeal

Office européen
des brevets

Chambres de recours



Case Number : W 16/88 - 3.2.1
International Application No PCT/US 87/03132

D E C I S I O N
of the Technical Board of Appeal 3.2.1
of 23 September 1988

Appellant : Interlock Structures International Inc.
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Subject of this decision: Protest according to Rule 40.2(c) of the Patent
Cooperation Treaty made by the applicants
against the invitation (payment of additional
fee) of the European Patent Office (branch at
The Hague) dated 25 November 1987

Composition of the Board:

Chairman : F. Gumbel
Members : F. Brösamle
F. Benussi

Summary of Facts and Submissions

- I. On 25 November 1987, the Applicant filed an international application PCT/US 87/03132.
- II. On 18 May 1988, the European Patent Office (EPO), acting as International Search Authority (ISA), issued an invitation to pay three additional search fees in accordance with Article 17(3)(a) and Rule 40.1 PCT, in view of the fact that it considered the above identified application as not complying with the requirements of unity of invention.

Four inventions (items 1 to 4) were set out:

1. Claims : 1-4 Interconnect apparatus with a unitary member including a U-shaped center portion.
2. Claim : 5 Interconnect apparatus with a unitary member foreseen with outwardly flared sections.
3. Claim : 6 Interconnect apparatus wherein the aligning means is a part of the second structural member.
4. Claims : 7-10, Interconnect apparatus wherein the
11 aligning means includes a separate hollow tubular member.

The reason given for this finding was that in the light of US-A-3 479 069 and US-A-4 037 859 the subject-matter of Claim 1 is not novel or does not involve an inventive step and that the problem underlying the invention stated in Claim 1 is not novel either.

The original single concept underlying Claim 1 and also covering the subject-matter of the dependent claims is

therefore not inventive and consequently not acceptable under Rule 13(1) PCT (lack of unity of invention a posteriori).

Claims 1 to 5 and 7 to 11 read as follows:

1. Interconnect apparatus, comprising:

first and second structural members having first and second end portions, respectively, said first and second structural members having first and second axes, respectively, said first and second end portions including first and second ringular surfaces, respectively, said first and second ringular surfaces facing generally away from one another, each of said first and second ringular surfaces forming angles no greater than 90 degrees with said first and second axes, respectively, in the axial direction away from the other of the ringular surfaces;

means for generally aligning the axes of said first and second structural members with respect to one another and for preventing significant radially directed movement of one of said first and second structural members with respect to the other;

means for clamping said first and second structural members together, said clamping means being formed as a unitary member having a generally U-shaped cross section with first and second walls on opposite sides for contacting said first and second ringular surfaces, respectively, said unitary member having a greatest width along a line passing generally through the aligned axes and having free ends unconnected from one another and spaced-apart a distance less than said

greatest width when said unitary member clamps said first and second structural members together.

2. The apparatus in accordance with Claim 1 wherein said unitary member includes end portions terminating at one end with said free ends and at another end with a center portion, said center portion being U-shaped for resiliency and extending away from said ringular surfaces and said end portions.
3. The apparatus in accordance with Claim 2 including means for making said resilient center portion rigid.
4. The apparatus in accordance with Claim 3 wherein said rigid making means includes a rivet.
5. The apparatus in accordance with Claim 1 wherein said first and second walls of said unitary member include sections near said free ends which are flared outwardly from said first and second ringular surfaces, said unitary member having a connecting wall between said first and second walls of said U-shaped cross section, said connecting wall also being flared near said free ends, whereby said flared sections strengthen said unitary member at the free ends of said unitary member.
7. The apparatus in accordance with claim 1 wherein said first and second end portions of said first and second structural members are tubular having first inner diameters, said first and second end portions having first and second ends, and wherein said aligning means includes a hollow tubular member having a wall and a flange-like portion extending radially outwardly from said wall, said wall having a second outer diameter slightly smaller than the first inner diameters of said

first and second structural members, said wall of said tubular member fitting within said first and second tubular end portions of said first and second structural members with said flange-like portion fitting between said first and second flared end portions.

8. The apparatus in accordance with Claim 1, wherein said first and second structural members are hollow and are each one of a plurality of interconnected spaced-apart tubular members of first and second truss members, respectively.
9. The apparatus in accordance with Claim 1 wherein said first structural member is a node of a space frame, said node being hollow and having a plurality of faces, said first end portion extending away from one of said faces, said second structural member also being hollow.
10. The apparatus in accordance with Claim 1 wherein said first and second structural members are both hollow tubes.
11. A method for interconnecting adjacent ends of first and second hollow structural members together, said first and second structural members having first and second end portions with first and second ends flared outwardly, respectively, said method comprising the steps of:

aligning said first and second structural members by installing a hollow tubular member partially in each of said first and second end portions, said tubular member having a wall and a flange-like portion extending radially outwardly from said wall, said wall of said

tubular member fitting within said first and second end portions and said flange-like portion fitting between said first and second flared ends; and

fitting a resilient clip about at least a portion of said first and second flared ends of said aligned first and second structural members and said flange-like member of said tubular member.

III. On 4 July 1988 the Applicant paid two additional search fees for Claim 5 (item 2) and for Claims 7-10 and 11 (item 4) under protest (Rule 40.2(c) PCT) arguing that it is inappropriate for the Searching Authority to conduct examination and secondly contends that the subject-matter of Claim 1 is novel in view of US-A-3 479 069 and 4 037 859. It is further contended that even if the subject-matter of Claim 1 were not novel all of Claims 1 to 11 would relate to the same inventive concept and on appropriate amendment of Claim 1 would depend from and relate to Claim 1 in a fashion similar to the relationship presently pending. A requirement for payment of three additional search fees would be unreasonable.

The Applicant requests that the requirement to pay additional search fees should be lifted until Chapter II - examination, and if this should not be possible that the amount of additional search fees be reduced.

Reasons for the Decision

1. The protest complies with Rule 40.2(c) PCT and is therefore admissible.

2. The invitation for additional search fees specified the reasons for the finding of lack of unity of invention and therefore complied with Rule 40.1 PCT.
3. According to Rule 13(1) PCT the international patent application shall relate to one invention only or to a group of inventions so linked as to form a single general inventive concept.
4. The ISA in the present case has considered that Claim 1 falls in the light of US-A-3 479 069 and US-4 037 859 so that the international application, a posteriori, falls apart into four different parts as listed above (items 1 to 4). The Applicant contends that items 1, 2 and 4 are covered by one single inventive concept.

Since the Applicant did not pay for item 3, that is Claim 6, this item can be disconsidered in the following.

5. From US-A-3 479 069, see Fig. 1 to 3 in particular, an interconnect apparatus (10) is known, comprising:

first (12) and second (14) structural members having first (20) and second (22) end portions, respectively, said first and second structural members having first and second axes, respectively, said first and second end portions including first and second ringular surfaces, respectively, said first and second ringular surfaces facing generally away from one another, each of said first and second ringular surfaces forming angles no greater than 90 degrees with said first and second axes, respectively, in the axial direction away from the other of the ringular surfaces;

means for generally aligning (24, 26) the axes of said first and second structural members with respect to one

another and for preventing significant radially directed movement of one of said first and second structural members with respect to the other;

means for clamping (32) said first and second structural members together, said clamping means being formed as a unitary member having a generally U-shaped cross section (Fig. 2) with first (52) and second (54) walls on opposite sides for contacting said first and second ringular surfaces, respectively, said unitary member having a greatest width along a line passing generally through the aligned axes and having free ends (38, 40) unconnected from one another and spaced-apart a distance less than said greatest width when said unitary member clamps said first and second structural members together (Fig. 3).

The subject-matter of Claim 1 is therefore not novel, Article 33(2) PCT, and the claim falls.

6. According to the above analysis of the claims (see II of the decision), since Claim 1 falls, there is no single general inventive concept linking the subject-matters of the three sets of claims (items 1, 2 and 4).

A closer study of the subject-matters of the claims according to the above items shows that this analysis is only partly correct. The various sets of claims are directed to two independent parts of the interconnecting apparatus:

- (a) one part is directed to an interconnecting apparatus with a unitary member for clamping the first and second structural members together, see Claims 2 to 4 and Claim 5;

(b) another part is directed to an interconnecting apparatus of a different construction vis-à-vis that one of Claims 1 to 5 in that both structural members are tubular and are aligned by a hollow tubular member with a flange-like center portion and adjacent end portions fitting in the ends of the structural members to be connected, see Claims 7 to 11 (and not only 7 to 10 as set out by the Applicant in his letter of protest).

6.1 Starting from the nearest prior art documents

US-A-3 479 069 or US-A-4 037 859 the object to be solved by Claims 2 to 4 and 5 is obviously to improve the unitary member connecting the structural parts in several aspects as for instance its resiliency and its way to be handled respectively to be clipped over the structural members to be connected.

As a consequence the Board is of the opinion that Claims 2 to 4 and Claim 5 are linked by one general inventive concept as they solve one object only so that the objection raised by the ISA towards items 1) and 2) is not to be maintained.

6.2 The object to be solved by the subject-matter of Claims 7 to 11 when starting from the nearest available prior art, which is again represented by the above cited documents, could be to improve the aligning means for connecting tubular structural members with end flanges and yet maintain a hollow passageway through which materials, substances or the like may be directed to pass without the necessity to provide an axial extension on one of the structural members for aligning the counterpart.

- 6.3 The comparison of the object underlying the subject-matter of Claims 2 to 4 and Claim 5 with the object underlying Claims 7 to 11 makes it obvious that these objects and, as a consequence, their solutions are not covered by one and the same general inventive concept so that they refer to two inventions, that is items 1 and 2 on the one hand and item 4 on the other hand.
7. It follows that the invitation to pay two additional search fees for items 2 and 4, respectively, is not justified as item 1 and item 2 relate to one invention only. One additional search fee for item 4 is in the Board's view, however, justified and can therefore not be refunded.
8. Concerning the points raised by the Applicant in his letter of protest the following is to be observed:
- (a) According to Article 154(3) EPC the Boards of Appeal are competent for deciding on a protest made by the Applicant against one or more additional search fees charged by the ISA under the provisions of Article 17(3a) PCT. For deciding the question of unity or non-unity of invention the ISA as well as the Board have to conduct substantive examination, to decide on the question of unity/non-unity of invention, i.e. whether there is a single general inventive concept as required by Rule 13(1) PCT, so that this question cannot be reserved to Chapter II -proceedings.
- (b) As set out above the subject-matter of Claim 1 lacks novelty so that the Applicant's argument coming to the opposite result is not supported by the facts.
- (c) This is also true for the question of a common inventive concept a posteriori, i.e. if Claim 1 falls (see points 6 to 6.3 above).

- (d) A possibility for amendment of claims, in particular the independent claims, is not foreseen in the stage of search before the ISA so that the Board cannot accept Applicant's argument based on that consideration.

Order

For these reasons, it is decided that:

1. The reimbursement of one additional search fee (item 2) is ordered.
2. The protest concerning the second additional fee is dismissed.

The Registrar:

S. Fabiani

The Chairman:

F. Gumbel