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Datasheet for the decision of 29 October 2009

Case Number: T 0198/08 - 3.2.03

Application Number: 02253503.3

Publication Number: 1262603

IPC: E02D 29/02

Language of the proceedings: EN

Title of invention:
Retaining wall construction

Applicant:
Futura Geosystems Ltd.

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 84, 54, 56
EPC R. 43(2)

Relevant legal provisions (EPC 1973):
EPC R. 29(2)

Keyword:
"Claims - number of independent claims"
"Novelty (yes)"
"Inventive step - alternative solution to the objective problem"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0198/08 - 3.2.03

D E C I S I O N
of the Technical Board of Appeal 3.2.03
of 29 October 2009

Appellant: Futura Geosystems Ltd.
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 25 July 2007 refusing European application No. 02253503.3 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: U. Krause
Members: G. Ashley
K. Garnett

Summary of Facts and Submissions

I. European patent application EP-A-1 262 603 concerns a retaining wall structure for an earthen works assembly and a method of building such a structure.

II. The Examining Division concluded that the application did not meet the requirements of Article 84 EPC in combination with Rule 29(2) EPC 1973, and hence decided to refuse the application. The Examining Division was also of the opinion that the subject-matter of claim 1 (as filed during the examination proceedings on 17 November 2005) was not novel, although lack of novelty was not cited as a ground of refusal in the decision.

III. The above decision was posted on 25 July 2007. Notice of appeal was filed by the Appellant (Applicant) on 14 September 2007, and the appeal fee was paid on 19 September 2007 A statement containing the grounds of appeal was filed on 22 November 2007.

IV. In accordance with Article 15(1) of the Rules of Procedure of the Boards of Appeal, the Board issued a preliminary opinion together with a summons to attend oral proceedings. Following several letters and phone calls, the Appellant filed, by facsimile dated 20 October 2009, a set of application documents (claims, description and drawings) according to a main request and two auxiliary requests. The Board was of the view that, in light of the submitted documents, the proceedings could continue without the need for oral proceedings to take place.

V. Requests

The main request of the Appellant is that a patent be granted on the basis of the following documents filed with the letter dated 20 October 2009, namely:

Claims 1 to 9;
Description pages 1 to 15;
Figures 1 to 9 (sheets 1/5 to 5/5).

Alternatively, the Appellant requests that a patent be granted on the basis of the documents submitted as the first and second auxiliary requests, also with the facsimile of 20 October 2009.

VI. Claim 1 of the main request reads as follows:

"1. A retaining wall structure (1) for an earthen works assembly (E) or the like comprising at least two facing panels (2b, 2b') connected together, in use, by at least one separately-formed stabilising element (3') that extends, in use, internally of the earthen works assembly (E) or the like to help define a build up of layers of earth fill (G) or other fill medium contained by said earthen works assembly (E) or the like, the stabilising element (3') engaging, or passing through, or being arranged to exert a holding force on, an outer face of at least one of said facing panels (2b, 2b'), said outer face, in use, being remote from, or facing away from, the earth fill (G) or the other fill medium contained by said earth works assembly (E) or the like, and characterized in that pivoting of one of said two facing panels (2b') is prevented or restrained relative to said other one of the facing panels (2b) and the

stabilising element (3') by said connection and in which said one facing panel (2b') is prevented/restrained from pivoting inwardly and outwardly of the earthen works assembly (E) or the like by said connection, so that the structure (1) is self-supporting with said one facing panel (2b') being connected tightly to the other facing panel (2b) and stabilising element (3') prior to backfilling of the earthen works assembly (E) and in which the stabilising element (3') has hooked ends (3d'), the arrangement being such that, in use, the stabilising element (3') passes through the panels (2b, 2b') and back inside the panels (2b, 2b') with a transverse member or part (3b') of the stabilising element (3') being arranged to act on the outer face of the panels (2b, 2b') and the hooked ends (3d') of the stabilising element (3') acting to provide a seat (S), to restrain or lock said one panel (2b') against inwardly pivoting relative to the stabilising element (3') and the other panel (2b) prior to the wall structure (1) being introduced into the earthen works assembly (E)."

Independent claim 6 of the main request relates to a method, as follows:

"6. A method of building a retaining wall structure (1) for an earthen works assembly (E) or the like, said method comprising connecting at least two facing panels (2b, 2b') together by at least one separately formed stabilising element (3') extending internally of the earthen works assembly (E) or the like to help define a build up of layers of earth fill (G) or other fill medium contained by said earthen works assembly (E) or the like, the stabilising element (3') engaging or

passing through or exerting a holding force on an outer face of at least one of said facing panels (2b, 2b'), said outer face being remote from, or facing away from, the earth fill (G) or the other fill medium contained by said earth works assembly (E) or the like, and characterized by pivoting of one of said two panels (2b') being prevented or restrained relative to said other one of the facing panels (2b) and the stabilising element (3') by said connection and preventing/restraining said one facing panel (2b') from pivoting inwardly and outwardly of the earthen works assembly (E) or the like by said connection, so that the structure (1) is self-supporting with said one facing panel (2b') being connected tightly to the other facing panel (2b) and the stabilising element (3') prior to backfilling of the earthen works assembly (E) and in which the stabilising element (3') has hooked ends (3d') and comprising arranging the stabilising element (3') to pass through the panels (2b, 2b') and back inside the panels (2b, 2b') with a transverse member or part (3b') of the stabilising element (3') being arranged to act on the outer face of the panels (2b, 2b') and the hooked ends (3d') of the stabilising element (3') acting to provide a seat (S) restraining or locking said one panel (2b') against inward pivoting relative to the stabilising element (3') and the other panel (2b) prior to the wall structure (1) being introduced into the earthen works assembly (E)."

Dependent claims 2 to 5 and 7 to 9 relate to preferred embodiments of retaining wall structure and method of claims 1 and 6 respectively. (Regarding the numbering of the claims, claim 9 immediately follows on from claim 7, hence there is no claim 8).

VII. Prior Art

The following documents were referred to during the examination proceedings:

D1: US-A-6 086 288
D2: US-A-5 622 455
D3: EP-A-1 054 110

VIII. Submissions of the Appellant

(a) Novelty

The Appellant submits that none of the documents D1, D2 or D3 shows an arrangement in which the stabilising element connection to the panels *per se* restrains pivotal movement, and that, unlike the prior art structures, the claimed structure is self-supporting prior to backfilling of the earthen works assembly.

Concerning D1, it is only the movement of the parts during backfilling that enables the various components that form the connecting system of D1 to engage one another, thereby preventing relative movement between the components and rendering the structure stable.

D2 discloses a stabilising member that has looped ends which are pushed through the reinforcing bats of the upper panel and retained there by a handle-bar connector; an aim of the invention is to avoid purpose-made fasteners such as the handle bar connector of D2, since such fasteners are expensive and involve difficulty and time in attachment. The Appellant also

argues that the connection disclosed in D2 allows for a vertical range of movement between the wall panels prior to backfilling.

Document D3 shows an arrangement in which there is no prevention of pivoting of the facing panels (or meshes) relative to one another by the connection of the stabilising element prior to backfilling. The stabilising element of D3 merely loosely connects the front mesh to the back mesh prior to infill.

(b) Inventive Step

The Appellant submits that the retaining wall structure of claim 1 is advantageous over prior art structures in that the need for temporary support for the facing panels during assembly is obviated; thus, safety is also improved during construction.

Reasons for the Decision

1. The appeal is admissible.

2. Article 84 EPC in combination with Rule 29(2) EPC 1973 (Rule 43(2) EPC 2000)

The set of claims before the Examining Division contained seven independent claims, six of which were directed to a product. The Examining Division considered that this gave rise to a lack of clarity (Article 84 EPC) and did not comply with Rule 29(2) EPC 1973, which limits the number of independent claims. Since none of the exceptions set out in (a) to (c) of

Rule 29(2) EPC 1973 applied, the decision was taken to refuse the application.

The present set of claims contains independent product claim 1 directed to a retaining wall structure, together with dependent claims 2 to 4 which describe preferred embodiments of the structure of claim 1. Claim 5 concerns a reinforced works assembly that includes a plurality of retaining wall structures as claimed in claims 1 to 4. Independent claim 6, together with dependent claims 7 to 8, concern a method of building a retaining wall structure. Given that the claims now contain only one independent claim per category, the objection of the Examining Division no longer applies, and the requirements of Article 84 EPC and Rule 29(2) EPC 1973 (Rule 43(2) EPC 2000) are met.

The Main Request

3. Article 123(2) EPC

The claims of the main request are based on the embodiment shown in Figures 7 and 8 of the application as originally filed (published as EP-A1-1 262 603), as described in paragraphs [0009], [0011], [0030] and [0031] of the published application. The subject-matter of these claims thus meets the requirements of Article 123(2) EPC.

4. Novelty (Article 54 EPC)

4.1 Document D1

D1 discloses a retaining wall structure for an earthen works assembly comprising two facing panels (222a and 222b) that are connected together by a stabilising element (anchor mesh 224b). It can be seen from Figures 18 and 19 that the stabilising element has hooked ends, which pass through the facing panels and engage a transverse bar (locking pin 240). According to the description of D1 (column 11, line 44 to column 12, line 24), the structure is locked during filling by movement of earth against the panels.

The structure of claim 1 differs from that of D1 in that the hooked ends of the stabilising element act to provide a seat that restrains or locks one panel against pivoting relative to the other panel and the stabilising element prior to the introduction of the wall structure into the earthen works assembly.

4.2 Document D2

D2 discloses a retaining wall structure comprising facing panels (26, 28) connected to a stabilising element (22). D2 teaches the use of handle bar connectors (72) to lock the panels and stabilising element together (see Figures 10 and 10A and column 7, lines 7 to 66).

The Appellant alleges that the claimed invention avoids the use of separate, purpose-made fasteners, such as the handle bar connector of D2. However, the present

application (page 14, lines 9 to 13 and 22) makes it clear that the transverse rod (3b') can be a separately formed element, which is inserted into the wall structure after the stabilising element (3') has been positioned over the lower facing panel (2b). Hence the transverse rod (3b') can be considered to be a separate fastener, which has a shape appropriate for the purpose of fastening the assembly, and consequently this feature does not give rise to a distinction over the disclosure of D2.

It is clear from Figure 9 of D2 that the stabilising element (22) shown in Figures 10 and 10A has hooked ends (referred to in D2 as looped ends (66) and (64)), which are bent back around handle bar connectors (72) thereby restricting movement of the wall panels.

However, D2, as in the case of D1, fails to disclose that the hooked ends form a seat that restrains or locks one panel against pivoting inwardly.

4.3 Document D3

D3 discloses a retaining wall in which the facing panel is in the form of a mesh mat (7) attached by clamping nuts (12) to rods or spacers (8). D3 fails to disclose *inter alia* a stabilising element provided with hooked ends.

4.4 Summary

The subject-matter of claim 1 is thus novel with respect to D1, D2 and D3.

5. Inventive Step (Article 56 EPC)

5.1 Document D1 discloses a system for connecting retaining wall panels, and hence provides a suitable starting point for the assessment of inventive step.

5.2 Starting from the wall structure shown in Figures 18 and 19 of D1, the objective problem to be solved must be formulated without providing any hint of the solution, hence in this case it is expressed simply as the improvement of the structure.

5.3 The solution provided by the structure of the present application is to ensure that the hooked ends of the stabilising element are not fully bent back, as in the embodiment shown in Figures 18 and 19 of D1. This means that the hooked ends provide a seat to restrain the upper panel from pivoting, as shown in Figure 8 of the application, and as defined in claim 1 of the main request. The effect is that the wall structure is self-supporting prior to backfilling the earthen works assembly. This has the advantage that there is no need for additional temporary support for the facing panels during assembly of the earthen works, and that safety is also improved during construction.

5.4 The teaching of D1 is that prior to backfilling, the retaining wall structure is loose, but during back filling the fill material moves the wall panels to take up the slack and stabilise the structure. It is therefore clear that the solution to the objective problem cannot be derived from D1 alone.

5.5 However, contrary to the submission of the Appellant, document D2 discloses a retaining wall structure that is stable prior to backfilling. The stabilising element (22) of D2 is made up of tension arms (60, 62) joined by means of cross bars (68). According to D2 (column 7, lines 57 to 66) the tension arms retain the stabilising element tightly against the front face of facing panels 26, and the handle bar connector ensures that these components remain locked together (see also column 10, lines 12 to 17). Figure 10a indicates that when panels (26) are joined via a stabilising element (22) in tension, the whole structure is stable without the need for backfilling the earthen works. Figure 11 shows the elevation of a panel (26) into a vertical position where it is locked.

The solution suggested by D2 is, however, different to that provided by the wall structure of claim 1. The panels and stabilising element of D2 are held together by handle-bar shaped connectors (72) that cooperate with the hooked ends (64, 66) of the stabilising element (22). However, there is no indication in D2 that the hooked ends form a seat that restrains or locks one panel against pivoting inwardly relative to the other panel and the stabilising element. Hence, the claimed subject-matter cannot be derived from D2.

5.6 According to document D3, the mesh facing panels are attached by clamping nuts (12) to rods or spacers (8). Therefore D3 provides no hint of the claimed structure.

5.7 Since none of the cited documents gives an indication of a retaining wall structure, as defined in claim 1, that is stable prior to backfilling, the claimed subject-matter has an inventive step.

5.8 The above conclusion also applies to independent claim 6, which concerns a method of building a retaining wall structure for an earthen works assembly. Dependent claims 2 to 5 and 7 to 9 likewise have an inventive step.

6. Auxiliary Requests

Given that the main request of the Appellant can be allowed, there is no reason to consider the auxiliary requests.

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 main request filed with the letter of 20 October 2009, consisting of:
   (a) Claims 1 to 9;
   (b) Description pages 1 to 15; and
   (c) Figures 1 to 9 (sheets 1/5 to 5/5).

The Registrar: The Chairman:

A. Counillon U. Krause