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Datasheet for the decision of 2 March 2010

Case Number: T 1602/08 - 3.2.06

Application Number: 01901139.4

Publication Number: 1259336

IPC: B21D 3/02

Language of the proceedings: EN

Title of invention:
A method and apparatus for reduction of embedded or inherent torsional strain in reinforcing steel or the like

Patentee:
Stema Engineering A/S

Opponent:
EVG Entwicklungs- u. Verwertungs-Gesellschaft m.b.H.

Headword:
-

Relevant legal provisions:
EPC Art. 56

Relevant legal provisions (EPC 1973):
-

Keyword:
"Inventive step (no)"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 1602/08 **-** 3.2.06

D E C I S I O N
of the Technical Board of Appeal 3.2.06
of 2 March 2010

Appellant: (Patent Proprietor)
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Decision under appeal:
Decision of the Opposition Division of the European Patent Office posted 18 June 2008 revoking European patent No. 1259336 pursuant to Article 102(1) EPC.

Composition of the Board:

Chairman: R. Menapace
Members: G. Pricolo
M. Harrison

Summary of Facts and Submissions

I. The appeal is from the decision of the Opposition Division posted on 18 June 2008 revoking European patent No. 1 259 336.

II. The Opposition Division considered that the subject-matter of the independent claims of the patent as granted lacked an inventive step over

D2 : DE-C-196 06 875.

The auxiliary request filed by the patentee during the oral proceedings was not admitted pursuant to Rule 116(1) EPC.

III. The appellant (patentee) filed an appeal, received at the EPO on 18 August 2008, against this decision and paid the appeal fee on the same day.

IV. With the statement setting out the grounds of appeal, received at the EPO on 28 October 2008, the appellant filed documents E1 ("Anti Twist test") and E2 (table of test results), and photographs E3 to E7, documenting experimental tests it had carried out. It requested that the patent be maintained as granted (main request) or in amended form according to the auxiliary request presented during the oral proceedings and not admitted by the Opposition Division.

V. In support of its requests, the appellant explained why, in its opinion, the claimed invention was not rendered obvious by a combination of

D1 : GB-A-570 029,

taken as the closest prior art, with D2, or with

D4 : Company folder "Witels Albert".

D1 related to a machine for straightening wires comprising two sets of straightening rollers arranged at right angles with respect to each other. Starting from D1, the skilled person would be faced with the problem of relieving torsional tensions in the wire. In accordance with the claimed invention, this problem was solved by providing a "*height adjustable roller arranged in between two fixed rollers in the same row and also arranged opposite a spacing between two fixed rollers in the opposite row*" (see page 3 of the grounds, 5th par.). D2 disclosed a wire straightener comprising a unit A having three rollers, wherein one of the rollers was adjustable in height and the two other rollers were arranged in fixed positions. The comparative tests according to E1 to E7 showed that the arrangement in D2 did not provide any relief of torsional tensions whilst the claimed arrangement did. Accordingly, even if the skilled person would have combined D1 and D2, he would not have obtained the technical effect that was achieved with the claimed invention. Also D4 did not disclose the claimed arrangement of rollers.

VI. In its reply to the statement of grounds of appeal, the respondent (opponent) submitted that the apparatus known from D1 was suitable for reducing embedded or inherent torsional strains in reinforcement steel, because each roll, thus also the intermediate roll in a

row of one of the sets, could be adjusted along its own axis. D1 disclosed a set comprising three rolls in each row, but claim 2 as granted was not limited to a set consisting of two rows having only two and three rolls, or pulleys, respectively. Moreover, claim 2 did not exclude pulleys other than the intermediate one from being axially adjustable. Therefore, the subject-matter of claim 2 was distinguished from the apparatus according to D1 only in that the cross-section of the grooves of the pulleys was trapezoidal. This was an obvious design option, which was moreover directly suggested by the disclosure in D1 according to which the groove was of a suitable shape or section for the work. Furthermore, the patent in suit did not mention that this feature provided any particular technical effect. Accordingly, the subject-matter of claim 2 as granted lacked an inventive step over D1.

The features added to claim 2 according to the auxiliary request did not introduce further distinctions over D1 and therefore its subject-matter likewise lacked an inventive step.

VII. In a communication accompanying the summons to oral proceedings pursuant to Article 15(1) of the Rules of Procedure of the Boards of Appeal, the Board pointed out that although D1 did not disclose that the axial displacement of the rolls was carried out for reducing torsional stresses of the reinforcement steel, claim 2 of the patent in suit should be read as being directed to an apparatus *suitable for* use in the reduction of embedded or inherent torsional strains. Therefore, in agreement with the submissions of the respondent, it appeared that the subject-matter of claim 2 differed

from the apparatus disclosed by D1 only in that the cross section of the grooves was trapezoidal. This feature, as explained by the Opposition Division in the decision under appeal, did not appear to support inventive step.

VIII. With letter dated 2 February 2010 the appellant filed a typed and corrected version of the claims according to the auxiliary request. It did not submit further arguments concerning inventive step.

IX. Oral proceedings, at the end of which the decision of the Board was announced, took place on 2 March 2010.

The appellant did not appear at the oral proceedings, as announced in its letter dated 23 February 2010. In accordance with Rule 115(2) EPC, the proceedings were continued without the appellant. In its written submissions, it requested that the decision under appeal be set aside and that the patent be maintained as granted or that the patent be maintained in an amended form based on the claims of the auxiliary request filed with the letter of 2 February 2010.

The respondent requested that the appeal be dismissed.

X. The independent claims relevant to the present decision read as follows:

Claim 2 as granted (in the text according to the Examining Division's decision to grant a patent):

"Apparatus for use in the reduction of embedded or inherent torsional strains in reinforcement steel (2)

being guided in between a set consisting of two rows of straightening means having two straightening means in the first row for being pressed against one side of the reinforcement steel (2), and three straightening means in the second row of the set for being pressed against the diametrally opposite side of the reinforcement steel (2) and having grooves in the straightening means for receiving and guiding the reinforcement steel (2), said straightening means in the set being arranged at mutual distances and in such a way that the reinforcement steel (2) is forced to pass them in a straight line, and one of the straightening means in one row of the set is arranged just opposite a spacing between the straightening means in the other row of the set, wherein said straightening means consist of straightening pulleys with peripheral grooves characterized in that the cross section of the grooves is trapezoidal, and that the intermediate pulley (5T) in the row of the three straightening pulleys (5, 5T and 5D) in the set is arranged opposite the spacing between the two straightening pulleys (4, 4D) in the oppotite row of pulleys in the set and is displaceable along its axis (7) and is adapted to be locked into its displaced position."

(Note: the claim contains a clerical error since the term "oppotite" should obviously read "opposite").

Claim 2 according to the auxiliary request:

"Apparatus for use in the reduction of embedded or inherent torsional strains in reinforcement steel (2) being guided in between a set consisting of two rows of straightening means having two straightening means in

the first row for being pressed against one side of the reinforcement steel (2), and three straightening means in the second row of the set for being pressed against the diametrally opposite side of the reinforcement steel (2) and having grooves in the straightening means for receiving and guiding the reinforcement steel (2), said straightening means in the set being arranged at mutual distances and in such a way that the reinforcement steel (2) is forced to pass them in a straight line, and one of the straightening means in one row of the set is arranged just opposite a spacing between the straightening means in the other row of the set, wherein said straightening means consist of straightening pulleys with peripheral grooves, characterized in that the cross section of the grooves is trapezoidal, and that the intermediate pulley (5T) in the row of the three straightening pulleys (5, 5T and 5D) in the set is arranged opposite the spacing between the two straightening pulleys (4, 4D) in the opposite row of pulleys in the set and is displaceable along its axis (7) and is adapted to be locked into its displaced position after its displacement for the formation of a curved path for the reinforcement steel (2) passage between the two closest straightening pulleys in the opposite row of straightening pulleys in the set, which lie in the same plane as the two other pulleys in the row of three straightening pulleys."

Reasons for the Decision

1. The appeal is admissible.

2. *Main request - claim 2 as granted*

2.1 The text of the claims of the patent as published includes a number of errors and differs from the authentic text of the patent, namely the text according to the decision of the Examining Division's decision to grant a patent (the text attached to the communication under Rule 51(4) EPC 1973). The latter (see point X above) is the text taken into consideration in the present decision. It is noted that, as regards claim 2, the published version erroneously includes the wording "in that the cross section of the groove is trapezoidal and in that" in the preamble (col. 5, lines 49, 50). This wording is not present in the preamble of claim 2 according to the decision to grant. The feature that the cross section of the groove is trapezoidal is anyway recited in the characterizing portion of claim 2. Accordingly, although claim 2 as published formally differs from claim 2 as granted by the Examining Division, its subject-matter is substantially the same.

2.2 D1 discloses an apparatus for straightening reinforcement steel (see page 2, lines 12, 13) being guided (see Figs. 1 and 2) in between a set, for instance the set on the right hand-side of Fig. 1, consisting of two rows (11 and 17) of straightening means, namely rolls 11 and 17.

Claim 2 recites: "a set consisting of two rows of straightening means having two straightening means in the first row [...] and three straightening means in the second row". This wording is limitative as regards the number of rows in a set (the set *consists of* two rows, i.e. it comprises two rows only), not, however,

as regards the number of straightening means in each row. The term "having" implies that other straightening means may be present in addition to the two in the first row and the three in the second row. This, in fact, corresponds to the appellant's own understanding of claim 2, since the experimental tests filed with the statement of grounds of appeal, which allegedly support the benefits of the claimed invention (see point V above), were performed by the appellant on an apparatus comprising two rows of, respectively, five and four rolls (see the picture of E1). Therefore, since the set of straightening means on the right hand-side of Fig. 1 of D1 consists of two rows of three rolls, D1 discloses the feature of claim 2 that the set consisting of two rows of straightening means has two straightening means in the first row for being pressed against one side of the reinforcement steel, and three straightening means in the second row of the set for being pressed against the diametrally opposite side of the reinforcement steel.

Furthermore, D1 discloses that the straightening means have grooves (see page 3, l. 45-51) for receiving and guiding the reinforcement steel, that the straightening means in the set are arranged at mutual distances and in such a way that the reinforcement steel is forced to pass them in a straight line (see page 2, lines 12 to 22), and that one of the straightening means in one row of the set is arranged just opposite a spacing between the straightening means in the other row of the set (see Fig. 1 and page 2, lines 34 to 41), wherein said straightening means consist of straightening pulleys with peripheral grooves (see p. 3, l. 45-51; in the present context the term "pulley"

recited in claim 2 and the term "roll" mentioned in D1 have the same technical meaning), and wherein the intermediate pulley in the row of the three straightening pulleys (17) in the set is arranged opposite the spacing between the two straightening pulleys (11) in the opposite row of pulleys in the set.

Since each roll 17 can be moved parallel to its own axis (see page 3, l. 52-55) and locked into position by means of a locking device (see page 3, l. 55-58), D1 also discloses that said intermediate pulley is displaceable along its axis and is adapted to be locked into its displaced position. In this respect it is noted that nothing requires that claim 2 be read restrictively in the sense that it requires only the intermediate pulley to be displaceable along its axis.

Finally, claim 2 recites that the apparatus is "for use in the reduction of embedded or inherent torsional strains in reinforcement steel". For establishing which features of claim 2 are known from D1, it must be assessed whether this indication of the intended use implies technical features that are necessary for performing the intended function, which are not present in the apparatus according to D1. In other words, it must be assessed whether the apparatus of D1 *is suitable* for use in the reduction of embedded or inherent torsional strains in reinforcement steel.

According to the patent in suit (see in particular par. [0024]), the reduction of embedded or inherent torsional strains in reinforcement steel is obtained by displacing the intermediate pulley in the row of three pulleys, whereby the reinforcement steel is exposed to

bending and torsional influences. This functionality is given in the apparatus according to D1; since each roll 17 can be moved parallel to its own axis (see page 3, l. 52-55) and locked into position by means of a locking device (see page 3, l. 55-58), it is possible to displace the intermediate roll of one row with respect to the other rolls, thereby exposing the reinforcement steel to bending and torsional influences. Moreover, since the amount of the displacement is adjustable, it can be chosen such as to generate bending and torsional influences that effectively reduce embedded or inherent torsional strains. Accordingly, the apparatus according to D1 is suitable for use in the reduction of embedded or inherent torsional strains in reinforcement steel.

2.3 From the above it follows that D1 discloses all the features of claim 2 of the patent as granted except the feature that the cross section of the grooves is trapezoidal.

2.4 Apart from the implicit disclosure that pulleys having trapezoidal grooves are suitable for guiding reinforcement steel, the patent in suit is silent about any technical effects that are the result of this feature.

Accordingly, the objective technical problem solved by the distinguishing feature is to suitably guide reinforcement steel.

2.5 D1 discloses (see page 2, lines 23 to 25) that it is usual in practice to employ rolls with circumferential grooves of suitable section or shape for the work. This

disclosure clearly implies that, for suitably guiding the work, it is necessary to select a suitable section or shape for the grooves of the pulleys. Therefore, in order to solve the above-mentioned technical problem, the skilled person would consider the provision of a suitable cross-section for the grooves. As pointed out by the Opposition Division in the decision under appeal (see point 5.4), a trapezoidal cross-section is indeed "*a mere design option, which is applied by the skilled person according to the shape of the material to be treated*". In fact, a trapezoidal cross-section (or V-section) is generally used in pulleys as it allows guiding work of circular (such as tubes or rods mentioned in D1 on page 2, l. 13) or other cross-sectional shape, and even work of different dimensions such as rods of varying diameter. Therefore, the skilled person would regard it as obvious to solve the above-mentioned problem by providing the grooves of the rolls of the apparatus of D1 with a trapezoidal cross-section.

2.6 As a consequence, the subject-matter of claim 2 as granted does not involve an inventive step (Article 56 EPC).

2.7 With the experimental tests documented by E1 to E7 filed with the statement of grounds of appeal, the appellant intended to show that the effect of reducing torsional strains in reinforcement steel, designated as an "anti twist" effect in E1, is not achieved when the pulley which is displaced along its axis is the last in a row, but only when an intermediate pulley is displaced (according to E1, the "anti twist" effect is obtained when the second pulley from the right in the

lower row of four pulleys shown in the photograph is displaced along its axis). Irrespective of whether the experimental tests provide convincing evidence in this respect, it is noted that this aspect plays no role in the assessment of inventive step of the subject-matter of claim 2. As a matter of fact, D1, as explained above, discloses an apparatus which is suitable for achieving the intended "anti twist" effect (the effect being achieved when, in use, one of the intermediate pulleys is displaced with respect to the other pulleys), and the only distinguishing feature, namely the grooves having a trapezoidal cross-section, is unrelated to the "anti twist" effect.

2.8 Since the main request fails due to the subject matter of claim 2 not being inventive, it is not necessary, in the present decision, to deal with the independent method claim 1 or with any other claim of the request.

3. *Auxiliary request*

3.1 Claim 2 of the auxiliary request is identical to claim 2 according to the auxiliary request filed at the oral proceedings before the Opposition Division and re-submitted by the appellant with its statement of grounds of appeal, apart from the corrections consisting in deleting the term "in that" in column 5, line 50, and replacing the term "oppotite" by "opposite" in column 6, line 7.

3.2 Apart from these corrections that are irrelevant to the substance of the claimed subject-matter, claim 2 according to the auxiliary request differs from claim 2 as granted by requiring that the intermediate pulley is

adapted to be locked into its displaced position a*fter its displacement for the formation of a curved path for the reinforcement steel (2) passage between the two closest straightening pulleys in the opposite row of straightening pulleys in the set, which lie in the same plane as the two other pulleys in the row of three straightening pulleys* (the text added to claim 2 as granted is in italics).

3.3 Since, as explained above, in the apparatus according to D1 each roll 17 can be moved parallel to its own axis (see page 3, l. 52-55) and locked into position by means of a locking device (see page 3, l. 55-58), whereby it is possible to displace only the intermediate roll of a row, the known apparatus also allows the formation of a curved path for the reinforcement steel in accordance with the above wording of claim 2. Therefore, the subject-matter of claim 2 of the auxiliary request differs from the apparatus according to D1 by the same feature as claim 2 as granted. As a consequence, the subject-matter of claim 2 of the auxiliary request is obvious (Article 56 EPC) for the same reasons as set out for the subject-matter of claim 2 as granted.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

M. Patin R. Menapace