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Datasheet for the decision of 27 June 2012

Case Number: T 1950/08 - 3.5.05

Application Number: 02764507.6

Publication Number: 1542156

IPC: G06F 3/033

Language of the proceedings: EN

Title of invention:
Electronic white board having electromagnetic sensing layer of conductor grid

Applicant:
Taiguen Technology (Shen_zhen) Co., Ltd.

Headword:
Electromagnetic sensing layer of conductor grid/TAIGUEN

Relevant legal provisions:
EPC Art. 56, 84, 106, 107, 108
RPBA Art. 15(3)

Keyword:
"Clarity - main and auxiliary request (no)"
"Inventive step - main and auxiliary request (no)"

Decisions cited:
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Catchword:
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Case Number: T 1950/08 - 3.5.05

D E C I S I O N
of the Technical Board of Appeal 3.5.05
of 27 June 2012

Appellant: (Applicant)
Taiguen Technology (Shen_zhen) Co., Ltd.
23, The third Indust. Park of xia village
Gongming, Baoan District
Shenzhen City 518106 (CN)

Representative:
Tomlinson, Edward James
Frohwitter
Patent- und Rechtsanwälte
Possartstrasse 20
D-81679 München (DE)

Decision under appeal:
Decision of the Examining Division of the European Patent Office posted 13 May 2008 refusing European patent application No. 02764507.6 pursuant to Article 97(2) EPC.

Composition of the Board:

Chair: A. Ritzka
Members: M. Höhn
F. Blumer

Summary of Facts and Submissions

I. This appeal is against the decision of the examining division, dispatched on 13 May 2008, refusing European patent application No. 02764507.6 on the ground of lack of inventive step (Article 56 EPC) in the light of the prior-art documents:

D1: EP 0 347 725 A2 and
D5: US 4 800 240.

II. The notice of appeal was received on 10 July 2008. The appeal fee was paid on the same day. The statement setting out the grounds of appeal was received on 12 September 2008. The appellant requested that the appealed decision be set aside and that a patent be granted on the basis of claims 1 to 10 according to the main request or on the basis of claims 1 to 22 according to the auxiliary request, both submitted with the statement setting out the grounds of appeal. Oral proceedings were requested on an auxiliary basis.

III. A summons to oral proceedings to be held on 15 June 2012, rescheduled for 27 June 2012, was issued on 19 March 2012. In an annex accompanying the summons the board expressed the preliminary opinion that for both requests the subject-matter of claim 1 *inter alia* did not appear to fulfil the requirements of Article 84 EPC and that the subject-matter of independent claim 1 did not appear to involve an inventive step (Article 56 EPC) in view of the disclosure of D1 in the light of the disclosures of D5, D6 (WO 00/33244 A2) and D7 (JP 411110135 A AJ (patent abstract)). D6 and D7 were introduced into the proceedings of the board's own

motion in accordance with Article 114(1) EPC. The board gave its reasons for the objections and explained that the appellant's arguments were not convincing.

IV. By letter dated 18 May 2012 the board was informed that the appellant's representative would not be attending the oral proceedings and that the request for oral proceedings was withdrawn. The appellant did not submit any comments on the objections raised in the annex accompanying the summons.

V. Independent claim 1 according to the main request reads as follows:

"1. An electronic whiteboard with a built-in electromagnetic induction layer (5) of wire lattice comprising: a writing input portion, a covering frame portion formed around the periphery of the writing input portion, and a control circuit (8); wherein the writing input portion has multiple layers and is enclosed in the frame; the writing input portion includes a surface writing layer (2), an underlayer (4) and an input induction layer (5) which is formed between the surface writing layer and the underlayer, and is connected to the control circuit (8) by its output, characterized in that the induction layer is a wire lattice winded and interlaced separately by wires (51,52) along the X and Y axes, which are entirely covered or coated by an insulating layer on the surface, the wires are insulated with each other at the crossing points, and a space formed within each lattice unit constitutes one induction cell (53) and wherein more than one induction layer (5,5') are overlaid together, the induction cells on each induction layer are

interlaced with one another, each induction layer is assembled from more than one piece with each piece comprising an electrical connection means (56,57) along the X or Y axis, each piece of the induction layer is connected by means of the electrical connection means, and said connection means (56,57) is one of a pin-type connection means, a flexible printed circuit means, a PIN-PIN connection means, a welding spot (VGA) thermal-melted connection means, an ultrasonic welding device, a solder-plate welding device, or a puncturing connection means."

Independent claim 1 according to the auxiliary request reads as follows:

"1. An electronic whiteboard with a built-in electromagnetic induction layer of wire lattice comprising: a writing input portion, a covering frame portion formed around the periphery of the writing input portion, and a control circuit; wherein the writing input portion has multiple layers and is enclosed in the frame; the writing input portion includes a surface writing layer, an underlayer and an input induction layer which is formed between the surface writing layer and the underlayer, and is connected to the control circuit by its output, characterized in that the induction layer is a wire lattice winded and interlaced separately by wires along the X and Y axes, the wires are insulated with each other at the crossing points, and an [sic] space formed within each lattice unit constitutes one induction cell, wherein the wires are entirely covered or coated by an insulating enamel layer on the surface and wherein more than one induction layer are overlaid together and the

induction cells on each induction layer are interlaced with one another and
characterized in that the intervals of induction cells on respective induction layers have different sizes."

VI. The appellant requested in writing that the decision under appeal be set aside and that a patent be granted on the basis of claims 1 to 10 according to the main request or on the basis of claims 1 to 22 according to the auxiliary request, both submitted with the statement setting out the grounds of appeal.

VII. Oral proceedings were held on 27 June 2012 in the absence of the appellant. After due deliberation on the basis of the written submissions, the board announced its decision.

Reasons for the Decision

1. Admissibility

The appeal complies with Articles 106 to 108 EPC (see Facts and Submissions, point II above). It is therefore admissible.

2. Non-attendance at oral proceedings

By letter dated 18 May 2012 the board was informed that the appellant's representative would not be attending the oral proceedings and that the request for oral proceedings was withdrawn. The board considered it expedient to maintain the date set for oral proceedings. Nobody attended on behalf of the appellant.

Article 15(3) RPBA stipulates that the board is not obliged to delay any step in the proceedings, including its decision, by reason only of the absence at the oral proceedings of any party duly summoned who may then be treated as relying only on its written case.

Hence, the board was in a position to announce a decision at the end of the oral proceedings.

Main request

3. Interpretation of claim 1

3.1 Clarity - Article 84 EPC

3.1.1 The expression "the induction cells on each induction layer are interlaced with one another" in claim 1 lacks

clarity. This expression defines that within each layer the induction antenna cells interlace each other. It is not clear how this feature might contribute to achieving the alleged effect of improving the accuracy of the whiteboard, so that the sensitivity is increased (see paragraph [0033] of the published application).

Claim 1 therefore lacks clarity under Article 84 EPC.

3.2 Claim 1 specifies *inter alia* that "the induction layer is a wire lattice winded and interlaced separately by wires (51, 52) along the X and Y axes, which are entirely covered or coated by an insulating layer on the surface…". Apparently, this feature is based on the disclosure corresponding to paragraphs [0013] and [0040] of the published application, which however does not provide further information for interpreting this feature, but only repeats the same wording.

While the board acknowledges that a wire coated by an insulating layer has the form according to figure B as submitted in the statement setting out the grounds of appeal (see page 3), the same is not necessarily the case for the alternative expression "entirely covered… by an insulating layer".

Firstly, if the applicant draws a distinction between "coated" and "covered" it can be assumed that there is a technical difference between the two alternatives. Otherwise the wording would only be redundant - which the board assumes was not the applicant's intention and what would give rise to another lack of clarity objection. Since "coated" is a clear technical term for

surrounding a wire, the term "covered" is considered to be intended to specify a technically different solution.

Secondly, the expression "covered… by an insulating layer" is much broader and, hence, in the board's opinion, merely specifies that the wires are entirely covered by e.g. an insulating membrane similar to what is shown in figure A as submitted in the statement setting out the grounds of appeal (see page 3). This point of view is supported by the additional feature of claim 1 specifying that "the wires are insulated with each other at the crossing points" which does not make sense for a coated wire, but apparently is necessary for an alternative solution with wires which are not totally surrounded by insulating material, i.e. which are merely "covered", and which effect is achieved by the arrangement according to figure A.

3.3 Since the appellant did not provide the board with arguments in this regard, the board has no reason to change its preliminary opinion, as expressed in the annex to the summons for oral proceedings, that the expression "wire lattice winded" also encompasses printed conducting structures of a wound shape on a substrate which form a grid or array and that an arrangement "in which a multiplicity of conductive wires are … held between two insulating films", as is disclosed in D1 (see e.g. column 22, line 5 onwards), falls under the wording of claim 1 according to the above-mentioned second alternative ("covered").

4. Inventive step - Article 56 EPC

Based on the interpretation given in point 3 above and

the analysis of D1 in point 2.1 of the decision under appeal, with which the board agrees, D1 taken as the closest prior art discloses all the features of claim 1 except for the following features:

(a) more than one induction layer are overlaid together and the induction cells on each induction layer are interlaced with one another;

(b) each induction layer is assembled from a plurality of pieces with each piece comprising an electrical connection means along the X or Y axis;

(c) the electrical connection means is one of a pin-type, a flexible printed circuit, a PIN-PIN connection, a welding spot (VGA) thermal-melted connection, an ultrasonic welding device, a solder-plate welding device or a puncturing connection.

With respect to the claimed alternative with coated wires and the discussion of the second alternative ("coated") under point 3 above, the following feature is considered a potential distinguishing feature:

(d) the induction layer is a wire lattice wound and interlaced separately by wires along the X and Y axes, which are entirely covered or coated by an insulating layer on the surface, the wires being insulated with each other at the crossing points.

4.1 D1 discloses that a multiplicity of conductive wires are, at predetermined intervals, held between two insulating films and the conductive wires thus held are connected to each other so as to correspond to the

positions of the x- and y-direction loop coils (see column 22, line 5 onwards). It is considered to be implicitly disclosed that for forming such loop coils, the wires are insulated with each other at the crossing points. This disclosure implies feature (d) according to the second claimed alternative ("covered", see point 3 above).

4.2 With respect to distinguishing feature (a) the board agrees with the examining division's arguments, presented in point 2.3 of the decision under appeal, that feature (a) is obvious in the light of D5.

The objective technical problem underlying feature (a) is considered to be to increase the sensitivity of the input induction layer.

A solution to this problem according to feature (a) is obvious in the light of the disclosure of D5, in particular figure 1 and the following passage:

"To reduce this displacement length … and increase the sensitivity of the device, the two conductors 1 and 1' and the two conductors 2 and 2' connected in series are superimposed, being staggered by a half a pitch…" (see column 2, line 44 onwards).

Feature (a) is therefore considered to be obvious in the light of a combination of D1 and D5.

4.3 When combining the teachings of D1 and D5 in an obvious way the skilled person arrives at a solution which involves distinguishing feature (b) as a bonus effect without the need of inventive skills. D5 discloses (see

e.g. figure 1) that each induction layer is composed of a plurality of pieces 1 and 2 or 1' and 2' respectively.

4.4 The formulation that involves the term "pieces" in claim 1 is very general and, hence, can be interpreted broadly. The antenna element in x direction forms a first piece and the antenna element in y direction forms a second piece which both have corresponding electrical connection means (see the open ends of the electrical conductors). The type of electrical connection means according to the list given in feature (c) is considered to be notorious common general knowledge which the skilled person would choose according to his needs as an obvious design choice. There are no specific technical obstacles to be overcome or advantages disclosed in the application which would require an inventive activity in order to come up with a specific one of the connection means.

4.5 The board does not see an interaction or synergy caused by distinguishing features (a), (b) and (c) which could be the basis for an inventive technical contribution. Features (a), (b) and (c) are therefore considered to be merely aggregated features.

The subject-matter of claim 1 is therefore obvious with regard to a combination of D1 and D5 (Article 56 EPC).

5. Alternatively, D6 also renders distinguishing feature (b) obvious if interpreted in a different way.

5.1 For the sake of completeness, the board notes that D6 also discloses a large induction layer area consisting of a plurality of pieces of induction cells (see e.g.

figure 7b and corresponding text of the description). In the board's view, D6 therefore renders obvious the principle of forming a large induction layer area (which is considered to be the underlying technical problem) by tiling and interconnecting a plurality of pieces of induction layers.

5.2 The subject-matter of claim 1 is therefore considered to lack an inventive step also in the light of D1 combined with D5 and D6 (Article 56 EPC).

6. But even when considering the claimed alternative with coated wires or when considering the second alternative ("covered") in the same way, feature (d) therefore being regarded as a distinguishing feature with regard to D1, such a measure was obvious. The board regards it as common general knowledge of the skilled person to use fully insulated wires, such as coated wires, in particular enamelled wires, for the purpose of improved insulation, which is considered to be the technical problem underlying this feature. This common general knowledge is exemplified by D7 which discloses that it was known that sensor wires 7 are embedded into insulating layer 5 and thereby surrounded by insulating material (see abstract and figure, in particular elements 5 and 7).

6.1 Since the problem of an improved insulation is not considered to be directly linked to the problem of improving the accuracy of the sensor or to the problem of forming a large induction layer area, the board does not see an interaction or synergy caused by feature (d) and the other distinguishing features (a), (b) and (c) which could be the basis for an inventive technical

contribution. Said features are therefore considered to be merely aggregated obvious solutions of independent technical aspects.

Auxiliary request

7. With respect to the disclosure of D1, the subject-matter of claim 1 of this request is distinguished by features (a) and (d) with the additional limitation that the insulation layer is an enamel layer, as well as the further feature (e) that the intervals of induction cells on respective induction layers have different sizes.

8. Clarity - Article 84 EPC

8.1 The objections in point 3 above notwithstanding, the additional feature (e) is considered also to lack clarity for reasons similar to those set out in point 3.1 above.

8.2 The added feature of claim 1 that "the intervals of induction cells on respective induction layers have different sizes" is considered to lack clarity. This expression defines that within each layer the intervals between the induction antenna cells are different. It is not clear how this feature might contribute to achieving the alleged effect that precision increases (see paragraph [0016] of the published application).

Claim 1 therefore lacks clarity under Article 84 EPC.

9. Inventive step - Article 56 EPC

9.1 D5 also discloses that the two induction layers are staggered by half a pitch (see column 2, line 48) and thereby renders obvious that the interval sizes are different according to feature (e). The reasoning in point 4.2 above therefore still applies.

9.2 The use of an insulating enamel layer is considered to be obvious for the same reasons as those given in section 6 above.

9.3 The subject-matter of claim 1 of this request is therefore also obvious in view of D1 combined with D5 and the skilled person's common general knowledge.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chair:

K. Götz A. Ritzka