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**Datasheet for the decision
of 14 April 2011**

Case Number: T 1458/08 - 3.5.05
Application Number: 02017320.9
Publication Number: 1286250
IPC: G06F 3/033
Language of the proceedings: EN

Title of invention:

Input apparatus for performing input operation corresponding to indication marks and coordinate input operation on the same operational plane

Applicant:

ALPS ELECTRIC CO., LTD.

Headword:

Input apparatus/ALPS ELECTRIC

Relevant legal provisions:

EPC Art. 52(1), 54, 56, 84, 123(2)
RPBA Art. 13(3)

Relevant legal provisions (EPC 1973):

EPC Art. 106, 107, 108

Keyword:

"Clarity and support by the description - (yes, after amendment)"
"Extension of subject-matter - (no, after amendment)"
"Novelty and inventive step - (yes, after amendment)"
"Remittal to first instance - (yes)"

Decisions cited:

J 0010/07

Catchword:

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Case Number: T 1458/08 - 3.5.05

D E C I S I O N
of the Technical Board of Appeal 3.5.05
of 14 April 2011

Appellant:

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Representative:

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Decision under appeal:

Decision of the Examining Division of the
European Patent Office posted 11 March 2008
refusing European application No. 02017320.9
pursuant to Article 97(1) EPC 1973.

Composition of the Board:

Chair: A. Ritzka
Members: P. Corcoran
P. Schmitz

Summary of Facts and Submissions

- I. This is an appeal against the decision of the examining division to refuse the European patent application No. 02 017 320.9, publication No. EP 1 286 250, which was announced in oral proceedings held on 15 January 2008 with the written reasons being dispatched on 11 March 2008.
- II. The application is the parent of the divisional European application No. 04 027 682.6, publication No. EP 1 513 055, which is the subject of the co-pending appeal case T 1696/07.
- III. The decision under appeal was based on a sole request comprising claims 1 to 6 as filed during the oral proceedings before the examining division. According to the decision, the subject-matter of claim 1 of the request lacked an inventive step in the light of the following prior art document:
- D6: EP 1 081 922 A.
- IV. Notice of appeal was received at the EPO on 21 May 2008 with the appeal fee being paid on the same date. A statement setting out the grounds of appeal was received at the EPO on 11 July 2008. With the statement setting out the grounds of appeal the appellant filed a new main request and three auxiliary requests.
- V. In a communication accompanying a summons to oral proceedings to be held on 14 April 2011 in the matter of the present appeal and the co-pending appeal case T 1696/07, the board gave its preliminary opinion that none of the appellant's requests were allowable.

- VI. The board's communication made reference, *inter alia*, to the following additional prior art documents which were cited in the European Search report of D6:
- D9: US 5 666 113 A;
D10: US 5 917 906 A.
- VII. The communication contained objections against claim 1 of the main request under Articles 84 and 123(2) EPC and the opinion was expressed that, insofar as the subject-matter of the claim could be understood, it lacked an inventive step in the light of the disclosure of D6 which was considered to represent the closest prior art. Similar objections were raised against the auxiliary requests.
- VIII. With a letter of reply dated 11 March 2011 and received at the EPO on the same date, the appellant filed a new main request consisting of claims 1 to 6 to replace the requests previously on file.
- IX. With a letter dated 13 April 2011 and received at the EPO by telefax after office hours on the same date the appellant filed an amended version of the main request, consisting of claims 1 to 5. According to the appellant, the claims had been amended in order to reflect the wording of the original disclosure as closely as possible and some features had been reworded using the wording of the original disclosure.
- X. At the oral proceedings before the board held as scheduled on 14 April 2011, the appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the main request

filed during the oral proceedings. This request consists of a single claim, i.e. claim 1, which is identical to claim 1 of the request submitted with the letter of 13 April 2011.

XI. Claim 1, being the sole claim of the appellant's request, reads as follows:

"Input apparatus (1) comprising:

a flat input device (4) of a capacitive type which generates an input signal and includes an X-direction detection electrode and a Y-direction detection electrode, both of which are formed of Ag (silver) paste, and are disposed such that they oppose each other in a matrix pattern with a resin sheet therebetween;

an indicator sheet (7) laminated and fixed on a surface of the flat input device (4), the indicator sheet (7) having a plurality of indication marks (8);

a tactile-feel-generating unit (6) disposed behind the input device (4) which generates a reaction force when one of the indication marks is pushed, the tactile-feel-generating unit (6) comprising a base (9) and inversion plates (10) arranged on the base (9) placed at positions corresponding to the indication marks (8) and configured to be inverted by a pushing force so that a reaction force is produced by the inversion plate (10), when a desired indication mark (8) is pushed from above by a user's finger and the input device (4) and the indicator sheet (7) are deformed and bent inward;

a control unit (21) which generates an operation signal on the basis of an input signal received from the input device (4),

wherein the control unit (21) is configured to switch between two different input modes and to set a coordinate input mode, when the position at which a user's finger touches the indicator sheet (7) on the input device (4) is moved before a predetermined time interval elapses; wherein, in the coordinate input mode, coordinate data corresponding to the movement of the user's finger and an operation signal on the basis of the coordinate data are generated; and to set a [sic] indication-mark input mode, when one of the indication marks (8) is pushed for a predetermined time interval; wherein, in the indication-mark input mode, an input signal corresponding to an item represented by the indication mark (8) and an operation signal on the basis of the input signal are generated."

XII. During oral proceedings before the board, the admissibility of the appellant's request was discussed in view of the lateness of its filing. The board decided to exercise its discretion to admit the request into the proceedings and observed that, in view of the amendments to claim 1, D9 and D10 now appeared to be more relevant with respect to the question of inventive step.

XIII. In response to the board's observations, the appellant made submissions in relation to D9 and D10.

With respect to D9, it was submitted *inter alia* that the flat input device disclosed in said document was rigid and not capable of being flexibly deformed as would be required by the claimed invention.

With respect to D10, it was submitted *inter alia* that the input apparatus disclosed in said document had a substantially different construction from the claimed invention and that the operation of the tactile-feel-generating unit of D10 was significantly different from that of the claimed invention. The appellant referred in particular to col.5 1.23-29 of D10 in which it was disclosed that, in a key-entry mode, a depression contact force was transmitted via a snap dome to the touchpad surface.

XIV. At the end of the oral proceedings the chair announced the board's decision.

Reasons for the Decision

1. *Admissibility of the appeal*

1.1 The appeal complies with the provisions of Articles 106 to 108 EPC 1973 which are applicable according to J 0010/07, point 1 (cf. Facts and Submissions, item IV. above) and is therefore admissible.

2. *Admissibility of late-filed request*

2.1 Due to the late filing of the appellant's request, the board considered the question of its admissibility during the oral proceedings.

2.2 Taking into account the appellant's submissions to the effect that the amendments to the sole claim 1 were intended to clarify the essential technical features of

the matter for which protection was sought and that the claim had been amended in order to reflect the wording of the original disclosure as closely as possible (cf. Facts and Submissions, item IX. above), the board found that said amendments constituted a *bona fide* attempt to address the objections raised under Articles 84 and 123(2) EPC in its communication. Furthermore, the amendments resulted in a definition of the claimed invention which was clearly distinguished from the prior art of D6 and were thus found by the board to further address the inventive step objections raised in its communication.

2.3 The board also found that the amendments did not raise issues which could not be dealt with without adjournment of the oral proceedings (cf. Article 13(3) RPBA).

2.4 In view of the foregoing, the board decided to exercise its discretion to admit the late-filed request into the proceedings.

3. *Article 84 EPC*

3.1 In the board's judgement, the definition of the matter for which protection is sought according to claim 1 is clear.

3.2 The specification of an input apparatus comprising a flat input device of a capacitive type as recited in claim 1 is supported by paragraphs [0023] to [0025] of the description as published.

3.3 The further features of the claim are likewise supported by the description.

An indicator sheet as claimed is disclosed in [0027] and a tactile-feel-generating unit as claimed is disclosed in [0029] and [0030].

A control unit which generates an operation signal on the basis of an input signal received from the input device and which is configured to switch between two different input modes as claimed is disclosed in [0031] and [0032]. The setting of a coordinate input mode and an indication-mark input mode as claimed is disclosed in [0032] and [0033].

3.4 In view of the foregoing, the board is satisfied that the definition of the matter for which protection is sought according to claim 1 is supported by the description.

3.5 The board therefore concludes that claim 1 complies with the requirements of Article 84 EPC in respect of clarity and support by the description.

4. *Article 123(2) EPC*

4.1 In view of the fact that the passages of the description providing support for the claimed subject-matter are to be found in the application documents as originally filed, the board further concludes that the requirements of Article 123(2) EPC are complied with.

5. *Novelty*

5.1 Claim 1 is directed towards an input apparatus which comprises a flat input device of a capacitive type as specified at the beginning of the claim. The claim further specifies that the input apparatus comprises an indicator sheet laminated and fixed on a surface of the flat input device, a tactile-feel-generating unit and a control unit which generates an operation signal on the basis of an input signal received from the input device and which is configured to switch between two different input modes, *viz.* a coordinate input mode and an indication-mark input mode.

5.2 According to claim 1, the tactile-feel-generating unit is disposed behind the input device and comprises a base and inversion plates arranged on the base placed at positions corresponding to the indication marks and configured to be inverted by a pushing force so that a reaction force is generated when one of the indication marks is pushed. In particular, a reaction force is produced by the inversion plate, when a desired indication mark is pushed from above by a user's finger and the input device and the indicator sheet are deformed and bent inward.

5.3 D6, which was referred to in the board's communication, was considered to be the closest prior art to the subject-matter of the claims on file at that time (cf. Facts and Submissions, item VII. above). During the oral proceedings, the board expressed the opinion that, having regard to the amendments submitted by the appellant, the prior art documents D9 and D10 appeared to be more relevant to claim 1 of the present request.

The other prior art documents which were cited during the examination and appeal proceedings are more remote from the claimed invention and consequently do not require further consideration for the purposes of the present decision.

5.4 Each of the aforementioned documents, i.e. D6, D9 and D10, discloses an input apparatus which provides similar functionality to that of the claimed invention, at least insofar as it is capable of being operated in two different input modes.

5.5 However, none of said documents discloses an input apparatus having all of the features of claim 1. The most significant differences between the disclosures of said documents and the subject-matter of claim 1 relevant to the present decision are noted below.

5.6 The input apparatus disclosed in D6 has a two-layered structure comprising a flat input device ("touch panel switch 37") and a second input device ("membrane switch with tactile feedback 38") which is disposed on a lower surface of the flat input device (cf. D6: col.10 l.2-7). This is in contrast to the input apparatus specified in claim 1 which comprises a single input device, viz. a flat input device of a capacitive type.

5.7 The input apparatus disclosed in D9 does not comprise a tactile-feel-generating unit as specified in claim 1.

5.8 The input apparatus disclosed in D10 comprises a tactile-feel-generating unit in the form of an array of snap domes which are used to provide a user with tactile affirmation of the selection of an indication

mark or "key entry surface" in the terminology of D10 (cf. D10: col.2 l.10-12). However, the tactile-feel-generating unit of D10 differs from the tactile-feel-generating unit of claim 1 in terms of its location relative to the flat input device and in terms of its overall functionality.

More specifically, the tactile-feel-generating unit of D10 is located between the indicator sheet, i.e. the "entry pad 50", and the flat input device, i.e. the "touch pad surface 21" (cf. D10: Fig. 1). Thus, in D10 the flat input device is disposed behind the tactile-feel-generating unit rather than *vice versa* as specified in claim 1. In addition to providing tactile feedback to the user, the tactile-feel-generating unit of D10 has the further function of transmitting a depression contact force to the flat input device in response to a user's selection of an indication mark (cf. D10: col.2 l.10-12; col.5 l.23-29).

5.9 Any additional differences which may exist between the disclosures of the aforementioned documents and the subject-matter of claim 1 do not require further consideration for the purposes of the present decision. The differences noted under 5.6 to 5.8 above suffice to establish that the subject-matter of said claim is novel with respect to said documents.

6. *Inventive step*

6.1 In the board's judgement, none of the documents D6, D9 or D10, taken either individually or in combination with any other available prior art would lead the

skilled person to the claimed invention in an obvious manner.

- 6.2 As noted in 5.6 above with respect to D6, the input apparatus disclosed therein has a two-layered structure comprising a flat input device and a second input device ("membrane switch"). The second input device which is used to receive input relating to the indication mark input mode comprises a combination of switching functionality for generating an indication mark signal and tactile feedback functionality to provide the user with tactile confirmation of the indication mark selection.

In order to arrive at the subject-matter of claim 1 starting from D6, the skilled person would *inter alia* have to replace the second input device with a device providing only tactile feedback functionality (i.e. corresponding to the tactile-feel-generating unit of claim 1) whilst at the same time migrating the switching functionality formerly resident in the second input device to the flat input device.

In the board's judgement, the aforementioned modifications to the input apparatus of D6 cannot be derived in an obvious manner either from D6 itself or from any of the other available prior art documents.

- 6.3 As noted in 5.7 above with respect to D9, the input apparatus disclosed therein does not comprise a tactile-feel-generating unit.

In order to arrive at the subject-matter of claim 1 starting from D9, the skilled person would *inter alia*

have to incorporate a tactile-feel-generating unit into the input apparatus of said document and to dispose this unit behind the flat input device.

D9 neither discloses nor suggests the provision of tactile feedback in response to the selection of an indication mark (i.e. in the context of the "keypad control" mode using the terminology of D9). Hence, D9 itself contains no hint or suggestion to incorporate a tactile-feel-generating unit into the disclosed input apparatus.

The board further notes in this regard that even if it were to be considered an obvious desideratum to incorporate a tactile-feel-generating unit into the input apparatus of D9, it would not be obvious to dispose such a unit behind the flat input device of said document.

The claimed invention relies on a flat input device which is capable of being deformed and bent inwards in order to activate the inversion plates of the underlying tactile-feel-generating unit. However, according to D9, the flat input device of the preferred embodiment is a capacitive touchpad comprising a transparent glass substrate (cf. D9: col.3 l.39-41). This implies or at least suggests that said device is substantially rigid and thus incapable of being deformed and bent inward as specified in claim 1. Hence, in the board's judgement, the flat input device of D9 is inherently unsuitable for combination with a tactile-feel-generating unit in the manner required by claim 1.

6.4 As noted in 5.8 above with respect to D10, said document discloses a tactile-feel-generating unit which is disposed between the indicator sheet and the flat input device rather than being disposed behind the flat input device as specified in claim 1.

In order to arrive at the subject-matter of claim 1 starting from D10, the skilled person would *inter alia* have to reposition the tactile-feel-generating unit behind the flat input device.

There is, however, no identifiable disclosure in D10, whether explicit or implicit, which would indicate that the flat input device of said document satisfies a necessary prerequisite for such a repositioning of the tactile-feel-generating unit, *viz.* that said flat input device is capable of being deformed and bent inward.

Furthermore, disposing the tactile-feel-generating unit behind the flat input device as required by claim 1 would mean that said unit would no longer be capable of transmitting a depression contact force to the tactile-feel-generating unit in response to a user's selection of an indication mark. The board judges that such a repositioning of the tactile-feel-generating unit would be in contradiction to the teaching of D10 according to which the tactile-feel-generating unit has the dual function of providing tactile feedback and transmitting a depression contact force to the flat input device. In the board's judgement, the aforementioned modification to the input apparatus of D10 cannot be derived in an obvious manner either from D10 itself or from any of the other available prior art documents.

6.5 The board therefore concludes that the skilled person would not arrive at the claimed invention in an obvious manner starting from any of D6, D9 or D10. In view of the foregoing, the subject-matter of claim 1 is found to involve an inventive step.

7. *Concluding remarks*

7.1 For the reasons detailed above, the board finds that claim 1 which is the sole claim of appellant's request satisfies the requirements of the EPC.

7.2 The description includes further embodiments which are not covered by claim 1, for example, the embodiments relating to the flat input device of the pressure-sensitive (i.e. resistive) type (cf. [0026] and [0052]).

7.3 Since the description has not yet been adapted, the case is to be remitted to the examining division for the purpose of bringing the description into conformity with claim 1.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the department of first instance with the order to grant a patent on the basis of claim 1 submitted during the oral proceedings before the board and a description yet to be adapted.

The Registrar:

The Chair:

K. Götz

A. Ritzka