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Datasheet for the decision of 30 July 2020

Case Number: T 1503/18 - 3.5.05

Application Number: 13175799.9

Publication Number: 2685357

IPC: G06F3/0354, G06F3/0488

Language of the proceedings: EN

Title of invention:
Input method and electronic device using pen input device

Applicant:
Samsung Electronics Co., Ltd.

Headword:
Electronic device using pen input device, determining tilt / Samsung

Relevant legal provisions:
EPC Art. 56, 123(2)
EPC R. 134(2), 134(4), 103(4)(c)
Notice from the EPO dated 1 May 2020 concerning the disruptions due to the COVID-19 outbreak (OJ EPO, 2020, A60)

Keyword:

Time limits - interruption in the delivery of mail
Amendments - extension beyond the content of the application as filed (yes)
Inventive step - effect not made credible within the whole scope of claim - obvious alternative - obvious combination of known features

Decisions cited:

Catchword:

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern

Boards of Appeal

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Case Number: T 1503/18 - 3.5.05

D E C I S I O N
of Technical Board of Appeal 3.5.05
of 30 July 2020

Appellant: (Applicant)	Samsung Electronics Co., Ltd. 129, Samsung-ro Yeongtong-gu Suwon-si Gyeonggi-do 443-742 (KR)
Representative:	Nederlandsch Octrooibureau P.O. Box 29720 2502 LS The Hague (NL)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 14 December 2017 refusing European patent application No. 13175799.9 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chair	A. Ritzka
Members:	N. H. Uhlmann
	E. Mille

Summary of Facts and Submissions

I. The appeal lies from the decision of the examining division to refuse European patent application No. 13175799.9.

II. The examining division made reference to the following documents:

D1 US 2010/182284
D2 US 2010/044121
D3 US 2005/057535

III. The examining division decided that the claims of the then main request and first to third auxiliary requests did not satisfy the requirements of Article 56 EPC.

IV. In its statement setting out the grounds of appeal, the appellant submitted a main request, which corresponds to the third auxiliary request underlying the contested decision, and a first auxiliary request.

V. The board arranged for oral proceedings to be held.

VI. In a communication in preparation for the oral proceedings pursuant to Article 15(1) RPBA 2020, the board set out its provisional view of the case. It considered that the requests on file did not meet the requirements of Articles 56, 84 and 123(2) EPC.

VII. By letter dated 11 May 2020, the appellant submitted arguments and filed amended auxiliary requests 1 to 3.

VIII. In a communication dated 26 May 2020, the board expressed its provisional view that all requests on file did not appear to meet the requirements of Articles 56 and 123(2) EPC.

IX. By letter dated 27 May 2020, the appellant withdrew its request for oral proceedings.

X. The oral proceedings were cancelled on 3 June 2020.

XI. 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 with the statement of grounds of appeal) or one of auxiliary requests 1 to 3 (filed with the appellant's submission of 11 May 2020).

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

"An input method for an electronic device and a pen input device, the method comprising:

detecting a contact point between the pen input device and the electronic device through a touch sensor unit;

generating contact information of the contact point, based on coordinates, size, shape, and pressure of the contact point, between the pen input device and the electronic device;

calculating status information of the pen input device, based on the contact information; and

controlling a display unit to vary expressive effects including at least one of thickness, density, and texture of a pen input, based on the status information,

wherein the status information includes tilt information of the pen input device, the tilt information being determined from at least the size and the shape of the contact point and stored reference information including status information of the pen input device corresponding to a specific size and a specific shape of a contact point,

wherein the tilt information refers to information indicating an amount of inclination of the pen input device with respect to a surface of a touch screen,

wherein the pen has at least one of:

a spherical shaped tip, a cylindrical body, and a conically shaped transition between the spherical tip and the cylindrical body; and

a conical, spherical, or ellipsoid tip with a flat end."

XIII. Claim 1 of auxiliary request 1 is based on claim 1 of the main request and specifies further that the touch sensor unit is "of a touch screen of the electronic device". Furthermore, in the first "wherein" clause, the term "from" is replaced by "by comparing", and in the last "wherein" clause, the term "at least" is removed.

XIV. Claim 1 of auxiliary request 2 is based on claim 1 of the main request and includes the following further wording: "and wherein the contact information includes both the size and shape of the contact point, the size increases as a function of the tilt of the pen input device, and the shape changes from generally circular at a generally upright position of the pen input device with respect to a surface of the electronic device to an oval shape as the tilt of the pen input device with respect to a touch surface of the electronic device increases".

XV. Claim 1 of auxiliary request 3 is based on claim 1 of auxiliary request 2 and includes, furthermore, the same changes as set out in section XIII. above.

Reasons for the Decision

1. The present application pertains to a device and a method for providing user input via a pen. The inclination of the pen is calculated based on the shape and size of the contact area of the pen. Thickness and other parameters of the pen's input are controlled based on the inclination.

2. Document D1 discloses techniques for controlling parameters of the pen's input based on the inclination calculated by the pen.

Document D2 discloses techniques for providing input to a touch screen device, in which the position of a finger is determined in six degrees of freedom, based on the shape and size of a contact region.

Main request

3. Amendments

3.1 The features

(a) wherein the pen has at least one of:

a spherical shaped tip, a cylindrical body, and a conically shaped transition between the spherical tip and the cylindrical body; and

a conical, spherical, or ellipsoid tip with a flat end.

have been added to the independent claims.

3.2 The board notes that the present independent claims are based on the second embodiment in the description (page 9, line 26 to page 11, line 23 and page 13, line 34 to page 15, line 18). At the same time, the features (a) are based on a passage of the description (page 8,

lines 30 to 33) which clearly belongs to the description of the first embodiment. The original application documents do not comprise any indication that the features (a) are applicable to the second embodiment. Figure 7 does not disclose any conically shaped part.

The appellant argued that "it is clear from the description as filed that the tip shape described for Fig. 6 also applies to Fig. 7, see page 10, lines 2-11".

This argument is not convincing. Lines 10 and 11 on page 10 read:

"The relationship between tilt and contact point area and shape is similar or identical to that described earlier in connection with FIG. 6."

The relationship is explained on page 8, lines 16 to 29. The passage on page 8, lines 30 to 33, does not relate to the relationship described in connection with Figure 6. Moreover, features (a) cover also other shapes which are not disclosed in these figures: they do not depict any flat end or a conically shaped transition.

3.3 Claim 2 comprises the features (a) in combination with features stemming from original claim 7.

The board considers that the original application documents do not provide any basis for this combination. In particular, if a pen has a conical tip with flat end, the size of the contact point would not increase as a function of the tilt. Overall, the features from original claim 7 are only compatible with the first alternative of features (a).

The appellant submitted that the contact area may increase with pressure because the tip may be flexible, pointing to page 8, lines 30 to 34, and that the "touch screens may also bend to some extent depending on applied pressure". The direction in which the contact area would increase in such case depended on the tilt.

The board is not convinced, because claim 2 refers to tilt only, independently of any pressure or flexible tip or touch screen.

3.4 For these reasons, the claims as amended do not meet the requirements of Article 123(2) EPC. Consequently, the main request is not allowable.

4. Patentability

For the sake of completeness, the board sets out in the following its opinion on the patentability of the subject-matter of the independent claims.

4.1 The board considers that document D1 forms a suitable starting point for an inventive-step analysis.

4.2 The appellant argued that document D1 did not disclose the features (a) and noted that D1's "virtual marking implement" was the stylus which was used with the electronic tablet.

4.3 The board agrees with the latter statement.

4.4 D1 discloses a conical tip and a cylindrical body of the virtual marking implement (paragraph 44, Figures 4A to 4C). However, it does not disclose a spherical shaped tip or a tip with a flat end.

4.5 The appellant submitted that the shape of the pen as claimed allowed "the method of claim 1 to calculate the tilt information with much greater precision, from the size and shape of the contact area", and allowed "much

more refined determination of the tilt information compared to the rough distinction between three different positions of the faceted tip of the marker disclosed in D1".

The board holds that the shape of the pen does not lead to these effects. The precision depends on many details, which are not specified in claim 1. For example, if the tip of the pen is shaped like nearly half a sphere (see Figure 6 of the application in suit), it will be difficult, if not impossible, to distinguish between 0 and 20 degrees of tilt because the shape and the size of the contact area would be effectively the same.

Furthermore, document D1 discloses in paragraph 86 that much more than three values of tilt may be considered.

4.6 The application does not explain how the shapes of the tip as claimed are used for determining the tilt. Furthermore, the tip of the pen in Figure 7 and on page 10, lines 6 to 17, does not fall under the claim wording.

Moreover, D1 teaches that the virtual marking implement mimics the impressions made by the tips of the physical marking implement (paragraphs 44, 45).

Overall, the skilled person would use the tip shapes of the physical marking implement (D1, Figures 1 to 3, 5 to 7 and 9) as alternative shapes for the virtual marking implement and arrive at the shapes as claimed. In this regard, D1, in the background section (paragraph 3), explains that the user may select a different virtual marking implement.

4.7 For these reasons, the features (a) do not contribute towards inventive step.

4.8 The board notes that the pen disclosed in document D1 measures the tilt, which is then used by the device to generate an impression profile (paragraph 78), i.e. it is an active pen. Hence, the subject-matter of claim 1 is further distinguished from the disclosure of D1 in that, as claimed, the tilt information is determined from the size and the shape of the contact point.

4.9 The technical effect of this distinguishing feature is that a less complex, passive pen can be used.

4.10 The objective technical problem to be solved is how to modify the method disclosed in document D1 in order to be able to use a passive pen.

4.11 Document D2 discloses techniques for providing input to a touch screen device, in which the position of a finger, which is an electrically passive element, is determined in six degrees of freedom, based on the shape and size of a contact region. Hence, the skilled person would take this document into consideration.

4.12 D2 discloses the calculation of roll angles and pitch, or tilt, angles (Figures 2 and 8, paragraphs 79, 96 and 116). These angles anticipate the tilt information as claimed. Furthermore, this calculation is based on the shape and size of a contact area (paragraphs 100 and 116 and Figures 15A to 15C) and on comparing them with pre-stored fingerprint images (paragraphs 134 to 136). The skilled person would recognise that these features would obliviate the need for an active pen and make it possible to use passive pens. The use of a finger in D2 would not preclude them from considering this teaching, because a finger is as electrically passive as a passive pen. The application in suit (paragraph bridging pages 5 and 6) confirms that a user's finger and a simple stylus pen can be used interchangeably. Hence, the skilled person would be motivated to adapt

the method of D1 accordingly and arrive at the subject-matter of claim 1.

4.13 The appellant did not dispute that document D1 discloses all other features of claim 1.

4.14 Consequently, the subject-matter of claim 1 does not involve an inventive step.

Auxiliary request 1

5. The claims as amended do not meet the requirements of Article 123(2) EPC, for the same reasons as given above in section 3. Thus, auxiliary request 1 is not allowable.

The observations set out in section 4. above apply, *mutatis mutandis*, to the subject-matter of claim 1 of auxiliary request 1.

Auxiliary request 2

6. Claim 1 of this request corresponds to claim 2 of the main request. Hence, the claims as amended do not meet the requirements of Article 123(2) EPC, for the same reasons as given above in section 3., and auxiliary request 2 is not allowable.

7. The board is of the opinion that the subject-matter of claim 1 does not involve an inventive step, in view of the reasons set out above in section 4. Furthermore, document D2 clearly discloses that the contact information includes both the size and the shape of the contact point, see for example Figures 15A to 15C.

Additionally, Figures 1A and 1B in D1 illustrate that the shape is generally circular at the upright position of the pen (Figure 1A) and changes to an oval shape with increased size when the pen is tilted more (Figure 1B).

Auxiliary request 3

8. Claim 1 of this request corresponds to claim 2 of auxiliary request 1. Hence, the claims as amended do not meet the requirements of Article 123(2) EPC, for the same reasons as given above in section 3., and auxiliary request 3 is not allowable.

9. The board is of the opinion that the subject-matter of claim 1 does not involve an inventive step, in view of the reasons set out above in section 7.

Partial reimbursement of the appeal fee

10. By letter dated 27 May 2020, the appellant withdrew its request for oral proceedings.

10.1 No oral proceedings took place.

10.2 The request for oral proceedings was actually not withdrawn within one month of notification of the communication issued by the board of appeal in preparation for the oral proceedings. However, in view of the Notice from the European Patent Office dated 1 May 2020 concerning the disruptions due to the COVID-19 outbreak (Official Journal EPO, 2020, A60) and Rule 134(2) and (4) EPC, the board holds that the conditions for reimbursement of 25% of the appeal fee stipulated in Rule 103(4)(c) EPC are fulfilled.

Order

For these reasons it is decided that:

The appeal is dismissed.

The appeal fee is reimbursed at 25% pursuant to Rule 103(4)(c) EPC.

The Registrar: The Chair:

A. Chavinier-Tomsic A. Ritzka

Decision electronically authenticated