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**Datasheet for the decision
of 16 March 2022**

Case Number: T 0182/19 - 3.4.03

Application Number: 14158677.6

Publication Number: 2806409

IPC: G07F19/00, G07F7/10, G06F21/86,
G06F21/82, H01H13/702,
G06F21/83

Language of the proceedings: EN

Title of invention:
Encrypting PIN pad

Applicant:
NCR Corporation

Headword:

Relevant legal provisions:
RPBA 2020 Art. 13(2)
EPC Art. 123(2)

Keyword:
Amendment after summons - exceptional circumstances (yes)
Amendments - allowable (no) - added subject-matter (yes)

Decisions cited:

Catchword:



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Case Number: T 0182/19 - 3.4.03

D E C I S I O N
of Technical Board of Appeal 3.4.03
of 16 March 2022

Appellant: NCR Corporation
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Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on
27 September 2018 refusing European patent
application No. 14158677.6 pursuant to
Article 97(2) EPC.**

Composition of the Board:

Chairman G. Decker
Members: M. Stenger
M. Ley

Summary of Facts and Submissions

- I. The appeal concerns the decision of the Examining Division to refuse European application No. 14158677. In the contested decision it was concluded that the requirements of Article 123(2) EPC were not complied with. The Examining Division further indicated summarily that documents D1 to D8 all called into question at least inventive step of the claimed subject-matter and set out in more detail that the subject-matter of claim 1 of the sole request then on file was not inventive under Article 56 EPC in view of D1.
- II. It is referred to the following documents:
- D1: EP 0 836 161 A2
D2: US 7 270 275 B1
D4: US 2009/184850 A1
D5: US 2012/180140 A1
- III. With the statement of grounds of appeal, the appellant requested that the contested decision be set aside and that a European patent be granted on the basis of the claims submitted on 31 July 2018 in response to the summons to oral proceedings before the Examining Division. On an auxiliary basis, the appellant requested oral proceedings.
- IV. In a communication pursuant to Article 15(1) RPBA 2020, the Board set out *inter alia* its preliminary opinion that in the original application documents, a location of the bridge element layer between the EPP body and the electrode element layer required the use of a QTC bridge element layer. Therefore claim 1 then on file

contravened the requirements of Article 123(2) EPC. Furthermore, the Board was of the preliminary opinion that the subject-matter of claim 1 then on file was not new under Article 54 EPC compared to D4 and not inventive under Article 56 EPC in view of D2 or D5, combined with the common general knowledge of the skilled person, respectively.

V. With the letter dated 22 December 2021, the appellant submitted a new set of claims according to a sole request.

VI. With a letter dated 2 March 2022, the appellant indicated that it would not be attending the oral proceedings scheduled for 16 March 2022. Hence, the oral proceedings before the Board took place in the absence of the appellant.

VII. Claim 1 of the sole request has the following wording:

*An encrypting PIN pad (EPP) (100) comprising:
a keyboard body (102) for supporting a plurality of keys (105);
a first layer (206) comprising at least two spaced apart electrode elements (218 or 318);
and a second layer (220) located between the keyboard body (102) and the first layer (206) and comprising at least one bridge element (220) for electrically bridging a space (219 or 321) between the at least two electrode elements (218 or 318);
wherein the keyboard body (102) comprises at least one actuator member (222 or 322) extending inwardly from the keyboard body (102) towards the first layer (206) for applying a pressure to the first layer (206) such that, in a normal operating state, the at least one bridge element (220) electrically bridges the space*

(219 or 321) between the at least two electrode elements (218 or 318), and wherein the EPP (100) further comprises an encryption unit (182) for monitoring an electrical resistance across the at least two spaced apart electrode elements (218 or 318) to detect unauthorised movement of the keyboard body (102) away from the first layer (206) during a tamper event by determining a change in the electrical resistance across the at least two spaced apart electrode elements (218 or 318) relative to a predetermined threshold resistance determined as the resistance across the at least two spaced apart electrode elements (218 or 318) when the EPP (100) is in a normal state; characterised in that the second layer (220 or 450) comprises a composite layer, comprising electrically conductive particles combined with an elastomeric binder, to provide the at least one bridge element.

Reasons for the Decision

1. The appeal is admissible.
2. Admission of the sole request, Article 13(2) RPBA 2020
 - 2.1 The present set of claims according to the appellant's sole request was filed after notification of the summons to oral proceedings. Thus, it is, in principle, not to be taken into account unless there are exceptional circumstances which have been justified with cogent reasons by the appellant (Article 13(2) RPBA 2020).

2.2 However, as submitted by the appellant, the Board had raised objections for the first time in the communication pursuant to Article 15(1) RPBA 2020. More specifically, it had raised a novelty objection based on D4 and detailed inventive step objections based on D2 and D5. In the contested decision, the only detailed inventive step objection was based on D1.

2.3 Since the amendments in the present set of claims according to the appellant's sole request address objections raised for the first time in the Board's communication, the Board accepts that there are exceptional circumstances within the meaning of Article 13(2) RPBA 2020. Exercising its discretion under this provision, the Board admits the set of claims filed with the letter dated 22 December 2021 into the proceedings.

3. Added subject-matter, Article 123(2) EPC

3.1 According to present claim 1, the second layer comprising at least one bridge element is located between the keyboard body and the first layer comprising at least two spaced apart electrode elements.

3.2 This claimed arrangement of the keyboard body, the second and the first layer is not defined in the claims as originally filed. A possible basis therefor under Article 123(2) EPC can thus only be found in the description and the figures of the originally filed application.

3.3 In the example illustrated in figure 4 of the application, the layer 206 which comprises the bridge elements 420 is *not* located *between* the keyboard body

102 and the layer 450 comprising the spaced apart electrode elements 418. Instead, it is located *beneath* layer 450. Thus, the argument of the appellant submitted in section 5. of the statement of grounds of appeal that claim 1 specifies (solely) features that are common to what is shown in figures 2, 3 and 4 is incorrect.

Furthermore, the example shown in figure 5 of the application does not comprise different electrode element and bridge element layers. Instead, switches 580 are used.

The examples shown in figures 4 and 5 thus do not correspond to and therefore do not provide a basis under Article 123(2) EPC for the claimed arrangement.

3.4 The embodiments shown in figures 2 and 3 (keyboard body 102, second/bridge element layer 220, first/electrode element layer 206), on the other hand, correspond to the claimed arrangement of the keyboard body and the first and second layers.

3.5 However, in both these embodiments, the second/bridge element layer 220 is a QTC layer, i.e., is made of QTC material, see page 12, lines 12 to 20 of the application as originally filed. That is, the application does not explicitly disclose any embodiment without the second/bridge element layer being a QTC layer where the latter is located between the keyboard body and the electrode element layer. Furthermore, in these embodiments, it is the ability of QTC material to smoothly change from an electrical insulator to a metal-like conductor when placed under pressure between the (actuator 222 of the) keyboard body 102 and the spaced apart electrodes 218 of the first/electrode

element layer (see application as filed, page 12, line 16 to page 13, line 2) that is used to detect a tamper of the encrypting PIN pad EPP (see page 13, lines 4 to 31).

Hence, there is a clearly recognisable functional and structural relationship between the location of the second/bridge element layer between the keyboard body and the first/electrode element layer on the one hand and the second/bridge element layer being a QTC layer on the other.

- 3.6 Therefore, there is no basis in the original application for the particular location of the bridge element layer claimed without this layer being a QTC layer. Rather, the absence of the QTC layer in claim 1 constitutes an intermediate generalisation (see Case Law of the Boards of Appeal, 9th edition 2019, section II.E.1.9., in particular the fourth paragraph).

Thus, claim 1 of the sole request does not comply with the requirements of Article 123(2) EPC, as set out in the Board's communication pursuant to Article 15(1) RPBA 2020 and in accordance with the conclusion of the Examining Division.

4. The Board notes that claim 1 as presently on file now defines that

- the second layer (220 or 450) comprises a composite layer, comprising electrically conductive particles combined with an elastomeric binder, to provide the at least one bridge element.

- 4.1 The Board is aware that QTC layers generally comprise composite layers comprising electrically conductive

particles combined with an elastomeric binder. Hence, the introduction of the feature relating to the composite layer might be seen as an attempt of the appellant to overcome the objection under Article 123(2) EPC raised in the Board's communication under Article 15(1) RPBA 2020.

4.2 However, for such a composite layer to exhibit the QTC ability mentioned above, further requirements have to be met, for example with respect to the material of the binder, the concentration and size of the electrically conductive particles and the average distance between two of them. In other words, a composite layer as defined in claim 1 does not necessarily comprise QTC material and does not necessarily exhibit the corresponding ability.

5. To summarise, claim 1 of the sole request does not comply with the requirements of Article 123(2) EPC. Therefore, the appeal must fail, and it is not necessary to discuss the further objections raised in the Board's communication under Article 15(1) RPBA 2020.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



S. Sánchez Chiquero

G. Decker

Decision electronically authenticated