

Candidate's Answer Paper
(Examination Paper B - Electricity/Mechanics)

New Set of Claims

1. A chip card reading/writing apparatus comprising a housing (2, 3) with a slot (1) for the inserting of a chip card (C) into the housing,
 - a movable carriage (10) for receiving a chip card (C) inserted into the slot (1) and transporting the chip card (C) to the reading/writing position,
 - contact means (20) arranged to be urged against an inserted chip card (C) when the chip card (C) is in the reading/writing position, characterised in that the apparatus comprises means (24) for raising the contact means (20) towards a chip card (C) during movement of the carriage (10) in the direction of the chip card (C).
2. A chip card reading/writing apparatus according to claim 1, characterised in that the raising means (24) comprise an inclined ramp.
3. An apparatus according to claim 1 or 2, characterised in that the contact means (20) comprise pins (21) each one being vertically movable and being provided with a spring for making good contact with contact pads of an inserted chip card (C) in the reading/writing position.
4. An apparatus according to claim 1, 2 or 3, characterised in that the carriage (10) comprises a recess (16) and the contact means (20) comprise a protrusion (27), or vice versa, for the engaging of the protrusion (27) into the recess (16).
5. An apparatus according to claims 3 and 4, characterised in that the dimensions of the protrusion (27) and the recess (16) are such that each pin (21) slides only on its corresponding contact pad during their relative movement.
6. An apparatus according to one of the preceding claims, characterised in that the apparatus comprises a closure member (4) which permits, in its open position, insertion of a chip card (C) into the housing (2, 3) and, in its closed position, prevents access from outside the housing (2, 3) to an inserted chip card (C).
7. An apparatus according to claim 6, characterised in that the closure member (4), in its closed position, isolates an inserted chip card (C) from the slot (1).
8. An apparatus according to claim 7, characterised in that it comprises a spring (43) which is loaded by the movement of the carriage (10) during insertion of a chip card (C), the spring (43) bringing to closure member (4) to its closed position after the carriage (10) has brought the chip card (C) to the reading/writing position.
9. An apparatus according to claim 8, characterised in that it comprises a solenoid (48) for releasing the spring (43) after the carriage (10) has brought a chip card to the reading/writing position.
10. An apparatus according to claims 6, 7, 8 or 9, characterised in that it comprises means (44) for locking the closure member (4) in its closed position.

11. An apparatus according to one of the preceding claims, characterised in that the carriage (10) is provided with means (13) for damping a chip card (C) thereon during transport.
12. An apparatus according to one of the preceding claims, characterised in that a spring (33) is provided to bias the carriage (10) towards the slot (1).
13. An apparatus as claimed in claim 6, 7, 8, 9 or 10, characterised in that it comprises a sensor (7) for detecting the closed position of the closure member (4).
14. A telephone characterised in that it comprises a chip card reading/writing apparatus according to any one of claims 1 to 13.

Note: In claims 3 to 13, "a chip card reading/writing apparatus" has been abbreviated to "apparatus".

Answer to the communication

In answer to the communication, a new set of 14 claims is submitted in triplicate replacing claims 1-11 as originally filed. The new set of 14 claims is considered to be patentable for the following reasons, in particular in view of Document II which is considered to be the most relevant prior art:

New claim 1 discloses a chip card reading/writing apparatus comprising a housing with a slot, a movable carriage, contact means and raising means. The housing with a slot is disclosed in original claim 1, the movable carriage is disclosed in original claim 3, the contact means are disclosed on page 5 lines 5-20 of the description and the raising means are disclosed on page 5 lines 17-20. So, all features of new claim 1 are disclosed in the application as filed.

Document II discloses a chip card reading/writing apparatus comprising a housing with a slot, a movable carriage and contact means, which contact means are moved towards an inserted chip card after this chip card has reached the operating position. Document III does not disclose raising means which move the contact means towards a chip card during movement of the carriage. Therefore, new claim 1 is novel in view of Document II (Art. 52(1), 54(1)(2) EPC).

In Document II, a solenoid is used to move the contact means towards an inserted chip card. Such a solenoid has disadvantages, like that it has to be controlled, it can fail and it is expensive. Further, it is electrical-dependent (power supply for the solenoid could fail inside the housing). The problem to be solved is how to make contact without using a solenoid.

This problem is solved by introducing the raising means which transform the horizontal movement of the carriage into a vertical movement for the contact means, for example a rope coupled to the carriage and to the contact means, which rope causes the contact means to drop when the carriage is moved towards to back of the housing, or for example an inclined ramp which causes the contact means to go up when the carriage is moved towards the back of the housing.

There is no indication in Document II pointing towards this solution. Document II mentions the importance of low power consumption, but does not indicate that one of the solenoids may be deleted. Only of the other solenoid it is mentioned that to save energy it could be replaced by one not having two end positions.

Therefore, new claim 1 is inventive in view of Document II (Art. 56 EPC).

A person skilled in the art, trying to solve the above mentioned problem, could have found Document I, but it would not have given him any indication for solving the problem. Obviously, document II has more features in common with the invention than document I, therefore document II is most relevant.

It is observed that old claim 1 discloses a closure member. This feature has been deleted in new claim 1. However, all features of new claim 1 are disclosed in the application, and to a person skilled in the art it will be clear that there is no relationship between the way the contact means make contact to the card and the presence of the closure member. Therefore, according to the applicant there is no Art. 123(2) EPC extending beyond content application as filed.

New claim 2 discloses an inclined ramp which is disclosed on page 5 lines 17-20 of the application.

New claim 3 discloses vertically movable pins each provided with a spring for better electrical contacts. This is disclosed on page 5 lines 5-15.

New claim 4 discloses the recess and the protrusion for cleaning contacts, improving contacts, increasing reliability, avoiding accumulation of dirt, which all is disclosed on page 6 first paragraph. Another advantage is a more robust lock.

New claim 5 discloses dimensions of the protrusion and the recess, see previous paragraph.

New claim 6 discloses the closure member of the preamble of old Claim 1, for preventing access, and new claim 7 discloses the closure member of the characterising part of old claim 1 for better prevention.

New claim 8 is equal to old claim 7.

New claim 9 is equal to old claim 8.

New claim 10 is equal to old claim 10.

New claim 11 is equal to old claim 4.

New claim 12 is equal to old claim 6.

New claim 13 is equal to old claim 9.

New claim 14 is equal to old claim 11.

New claims 2-14 depend upon the novel and inventive new claim 1, and therefore new claims 2-14 are novel Art. 54(1)(2) EPC and inventive Art. 56 EPC.

According to Art. 52(1) EPC all new claims are patentable.

Applicant reserves the right to file a divisional in respect of any matter regardless of whether it has been deleted by virtue of any amendment resulting from this response.

Applicant requests oral proceedings should the Examiner wish to reject this application.

The Prof Repr

encl: new set of 14 claims in triplicate.

Note:

Filing of divisional application is proposed, main claim should be directed to a chip card reading/writing apparatus comprising

- a housing with a slot
- a closure member

characterised by the locking means for locking the closure member. This "claim" is not complete, and should be correctly distinguished from Doc II before filing the divisional.

The problem to be solved is a better closing of the closure member, the solution is the locking means. (The closure member may be for isolating an inserted card from the slot, not necessarily). Under Art. 82 EPC, R. 30 EPC this cannot be inserted in the present application.