

I

The Paper B task has two main aspects: (a) to revise the claims to the extent considered necessary to overcome the objections raised against the claims originally filed and (b) to accompany the revised claims by a letter of response to the European Patent Office in which, according to the instructions to candidates, arguments in defence of the revised claims should be presented.

Since the examiners aim to test the candidates' skill in respect of both aspects, the task set has been carefully designed to ensure that approximately equal demands will be made in respect of both. As to claim revision, the amendments will need careful thought and some skill in drafting; and as to argument, what is expected is a fully argued case that the revised claims are (i) admissible, having regard to Article 123(2) EPC and (ii) adequate to meet patentability requirements, in particular in respect of both novelty and inventive step.

In marking this year's Paper B, equal weight has been given to claims and arguments.

Candidates should read the instructions carefully. For example, although in real life amended claims require a duly adapted description, the instructions to candidates for 1994 clearly stated that the description should not be adapted and hence any candidate who proposed amendments to the description simply wasted time since no points were available for this. Furthermore, the instructions required argument only in respect of the independent claim(s), so that time spent on unnecessary defence of dependent claims was also a waste of the candidate's time.

Part II of this report discusses the question of admissibility of amendments, having particular regard to the requirements of Article 123(2) of the Convention. This issue is treated first since it affects not only the amendment aspect but also the argument aspect: what is or is not admissible depends critically on the extent to which any questionably admissible amendment has been shown to be supported by the originally filed text.

Parts III and IV deal respectively with the amendments needed and the expected content of the argumentation on patentability.

Part V contains some general observations for the information of candidates.

II

As regards the issue of admissibility of amendments, the primary requirement is that the application as originally filed must provide support for any feature added to the main claim. If, in order to meet the requirements of novelty and inventive step, it appears necessary to incorporate a feature which is derived from the description and is there described in a quite specific form, then it may be inadmissible to propose a generalised version of that feature in terms so broad as to cover possible embodiments which were not disclosed. If however a concrete item, such as a lever for example, had been disclosed for a stated purpose, then it may well be appropriate to use a functional generalisation to means for the stated purpose.

Amendment by way of deletion of a feature from the main claim, i.e. claim broadening, can also offend against Article 123(2). In the present case, the application as first filed was expressly concerned with the need to isolate an inserted chip card from the slot through which it had been entered. There was no disclosed embodiment of the invention which lacked this feature and all the other features disclosed were presented in the context of an apparatus having the card-isolating function. Hence, amendment of Claim 1 by deletion of the isolating feature prima facie has the effect of bringing into the application the possibility of operating without that feature, hence giving rise to a possible objection based on Article 123(2). The point is of course arguable and hence candidates who deleted the isolating feature but sought in their arguments to show that it was admissible to do so were marked more favourably than those who simply deleted it without apparently considering Article 123(2).

III

Before discussing the possibilities for acceptable amendment, it is pointed out that there were three items of prior art to consider. These are: Document I; the known apparatus acknowledged in the first two paragraphs of Document II; and the improved apparatus disclosed by Document II itself, beginning at its third paragraph.

Claim 1 as filed lacks novelty in view of Document II. Moreover the European Patent Office communication presents objections to each of the dependent claims in terms which make it difficult if not impossible to arrive at a patentable claim by any combination of the original claims. It thus appears necessary to import into Claim 1 one or more features from the description. The principal differences between the invention and Document II are: (a) the particular manner in which the contacts (pins) of the apparatus are moved into contact with the corresponding contacts (pads) of the card and (b) the provision made in the invention, but not in Document II, for the contact pins to perform a limited displacement along the pad surface to clean the contacts.

In what follows, a solution based on distinction (a) will be referred to as the moving contact solution and on distinction (b) as the contact cleaning solution. It is however important to note that these are potentially independent solutions so that the revised Claim should embody one or the other of them: a main claim restricted to the combination of both of them does not provide the client with the broadest possible protection and hence was penalised in marking.

There is also a third possibility (c) associated with the "automatic operation" aspect already discussed as a possible solution to the Paper A task. Document II does of course arrange for automatic closure of the slot when a card arrives at the read/write position. However, in the invention, the sensor which detects arrival there is associated with circuitry providing a signal as to the validity of the inserted card (see page 9 of the application). Although there is no detailed description of how validity is assessed, there is clear teaching in general terms that card validity is determined, whereas neither Document I nor Document II provide any hint for such a function. The valid card sensing solution is therefore also accepted as a good solution.

There are of course other possible distinctions from Document II, and solutions based on them are briefly referred to below, but none of them are considered as good as solutions (a), (b) and (c) above.

A claim to the moving contact solution should comprise the subject matter of original claim 5 (possible generalised somewhat - see below), characterised by features drawn from page 5 of the description as to the way in which the contact member is displaced during movement of the transport means so that contact with the card is made in a manner distinguished from both the internal prior art of Document II (where the pins scrape the plastic laminate of the card) and the principal disclosure of Document II (where contact is made with the card contacts by an arrangement totally independent of the card transport).

The description on page 5 and elsewhere refers to a contact member (20) equipped with pins (21) and it is clear that the movement of the pins toward the card is effected by movement of the contact member (20). There is thus arguable basis in the description for mentioning only the contact member and not the pins in the revised claim. Furthermore, although the original Claim 5 was appendant to Claim 3 and hence included the carriage, the fact that the transport means takes the form of a carriage is at least arguably irrelevant to the solution of requiring the transport means to bring the contact member successively closer to the plane of the card during its transport towards the read/write position. Candidates could thus validly omit the carriage or the pins or both from the main claim, but if they did so were expected to justify the omission by brief argumentation along the foregoing lines. However, candidates whose claim included these elements were not penalised for leaving them in.

As to the characterising part of a claim to the moving contact solution, any wording which expressed the essential functional requirement clearly, without going beyond the explicit or implicit teaching of the relevant part of the description on page 5 of the application, was accepted: it is not possible to prescribe any single "correct" wording. The task was not however easy since candidates had to steer a course between making it too general and functional, with risk of transgressing against Article 123(2), or making it too specific and hence over-restricting the client's protection. In the latter respect, points were deducted for superfluous features such as the ramps (24).

One final point concerning the moving contact solution is that the reference in original Claim 5 to the contact pins being "urged" against contact pads of the card is not in itself sufficient to specify the manner in which the contacts are moved. The second paragraph on page 5 of the description refers to the pins being equipped at their roots with springs whose stated function is to urge the pins toward the card. It would thus be possible to have pins which are urged toward the card, whilst still scraping against the laminate of the card in the manner known from the internal prior art of Document II. Hence mere combination of original claims 1, 2, 3 and 5 is not adequate to define the moving contact solution.

The contact cleaning solution can in principle be claimed by using the original Claim 1 for its first part, with the characterising part in wording based on the disclosure on page 6 of the description of the application, according to which means are provided to cause a limited relative movement between the contact pins and the contact pads of the card. It has to be made clear that this movement is one in which each pin remains in contact with its corresponding pad, preferably specifying that it is a sliding movement. Since, in the arrangement described in the principal disclosure of Document II, no such movement takes place, such wording is in itself adequate to distinguish from the Document II apparatus as such. However, in the prior art acknowledged in the first two paragraphs of Document II, it is clear that the pins which slide over the laminate of the card also slide over its contact pads. Hence a claim which merely states that the contact pins slide over the contact pads (not excluding the possibility that

they also slide over the laminate) may be found to lack novelty against the internal prior art of Document II and hence is an inadequate solution. That difficulty could of course be overcome by restricting the claim to the case where the contact pins are not brought into contact with the contact pads until the card reaches substantially its read/write position. The particular features by which the invention ensures this are however the features of the moving contact solution discussed above, and the object of claiming the contact cleaning solution independently is defeated if one in fact combines the two solutions.

Of course the arrangement including the recess (16) and the protrusion (27) is totally distinct from anything to be found in either Document I or Document II and hence a main claim which included these elements of the described construction met the requirements of both novelty and inventive step, but at the expense of unduly limiting the client's protection, with the consequent loss of marks for the candidate. However, the second sentence on page 6 of the description clearly states the effect obtained as a result of interengagement of the protrusion and the recess. Furthermore, the next sentence specifies another result, namely that each contact pin slides only on its corresponding contact pad, a clear distinction from the internal prior art of Document II. There thus exist phrases on page 6 which can be written more or less verbatim into Claim 1 to construct a claim in functional terms not restricted by incorporation of particular means.

In this case also the examiners do not present any particular wording as being the only or correct formulation. Any claim in functional terms for which the description on page 6 provides sufficient support, and which avoids both undue restriction on the one hand and arguable anticipation by the internal prior art of Document II on the other hand, was accepted as a good solution.

Possibility (c) mentioned above, i.e. the valid card sensing solution, has one merit not shared by the solutions so far discussed, namely it falls clearly within the originally disclosed general objective of increasing security. The second sentence of the second paragraph on page 9 of the description of the application provides the whole of the disclosure pertinent to this solution, but the extent to which one can generalise from that disclosure needs careful thought. In particular, a claim characterised only by the provision of means for testing validity would be open to attack for lack of inventive step on the basis that it is common general knowledge that systems for checking card validity are known (or at least highly likely to be known) per se. Thus an acceptable claim to this solution would need to incorporate most or all of the relevant sentence, e.g. specifying that automatic slot closure occurs in response to the provision of two signals, one responsive to arrival of the card at the read/write position and one confirming that the card is a valid one.

Other possible solutions are considered less good and accordingly were marked with fewer points. Two possibilities are mentioned below.

Claims based on the use of springs in the invention to do what Document II does with solenoids is one such possibility. However, the second paragraph on page 3 of Document II mentions the possibility of replacing the first solenoid (19) by a spring and hence it is not possible to base a claim on the fact that the closure member is moved by the force of a spring. On the other hand, the features of original claim 7 could be imported into the main claim, with the added restriction that the second spring is considerably weaker than the first. This is expressly disclosed on page 7 of the description and the prior art, which does not disclose using a pair of springs in this way, provides no possible

basis for attacking the invention's requirement as to the relative strengths of the two springs. Thus a prima facie patentable claim to the two-spring arrangement is possible, but this offers a very limited scope of protection and the previously discussed solutions are much to be preferred to this one.

The remaining possibility is the closure member latching solution. However, Document II indicates in the third paragraph on page 2 that the first solenoid (19) is effective to lock the closure member (16) in its closed or open position. Therefore any solution concerning locking of the closure member needs to be restricted to the particular mechanical latching arrangements disclosed on pages 7 and 8 of the description of the application. This would necessarily lead to a claim of very limited scope and is therefore considered a weak option, of substantially less merit than solutions (a), (b) and (c) discussed above.

Candidates who made one of the above solutions the subject of the main claim and also indicated in a note that they would file, or discuss with the client the possibility of filing, divisional application(s) in respect of one or two of the other solutions were given due credit for this. However, no great weight was given to this aspect of the candidates' responses since it was not a case where division was imperatively necessary. In this connection attention is drawn to the comments in the report on Paper A in respect of the need to file separate applications.

Candidates should have proposed amendments to the dependent claims. Any of the original dependent claims which had been taken wholly or partly into the main claim should have been deleted or modified. It was however considered a mistake to delete any dependent claim other than those which had been incorporated in the main claim. Candidates were also expected to propose additional dependent claims directed to (i) preferred embodiments of the solution chosen for the revised main claim and (ii) the broad features of the other solutions discussed above. For example if Claim 1 was to the moving contact solution in broad terms, there should be a subclaim to the use of the ramps and also a subclaim to the use of contact cleaning in combination with the moving contacts. Even if the contact cleaning solution per se had been proposed as the subject of a divisional application, it would be of importance to ensure that the combination is expressly protected in the application.

It is however emphasised that success or failure in the claim redrafting aspect depends mainly on what is proposed for the main claim. The necessity to decide what constitutes the best solution from Claim 1, both in concept and in formulation, is the most difficult, the most time consuming and of course the most important aspect of the claim redrafting aspect of the test. Hence candidates should not spend an undue amount of time on detailed revision of the dependent claims and thereby risk having insufficient time left to construct the required argumentation properly. More marks can be gained from a good argument than are likely to be lost if the subsidiary claims are not perfectly dealt with.

IV

The detailed content of the arguments will obviously depend on which of the possible solutions is chosen for Claim 1 and many of the points which need to be made in each case will be apparent from the above discussion of the particular features of the various solutions. This section is largely concerned with general requirements which apply whatever solution was proposed for claim 1.

A first and most important general point is that arguments in respect of patentability should be specifically addressed to the subject matter which has actually been claimed. There is no point in establishing that this or that feature of the described apparatus is new, or has advantages indicative of inventive step, if the feature in question has not in fact been brought into clear expression in the claim itself.

As to the structure of the argumentation, it should be logical and systematic, preferably set out in the following sequence:

1. Stating what amendments have been made, indicating from what part of the application they derive support (e.g. original claim x or the description at line y of page z). If any of the amendments are of dubious admissibility, for such reasons as have already been discussed above in respect of Article 123(2), then the reason for believing that they do not offend against that article should be briefly stated.
2. Establishing that the claim contains at least one feature of distinction from each of the prior art disclosures on record. It is not however sufficient merely to state that none of the documents cited disclose the combination of features now claimed. Such a statement may well be true but it does not constitute argument: it merely expresses a condition which has to be fulfilled in order to satisfy Article 52(1) in respect of being new if it "does not form part of the state of the art".

An ideal argument in respect of novelty should read somewhat as follows: "Whereas Document I, at line x on page y, teaches to perform function A by means B, the presently claimed apparatus differs in that the corresponding function A1 is performed by means C." Of course it is not always necessary to go into that degree of detail and sometimes a reference to what is shown in the drawings may well suffice to show that the prior art apparatus is indeed different from the claimed one. The point to bear in mind is that the candidate has to establish that the claimed matter is novel: it is not sufficient merely to assert that it is. Moreover, a feature which distinguishes the invention from one state of the art disclosure may not necessarily distinguish from another, so that it may be necessary to establish at least one distinction (not necessarily the same one) from each state of the art on record. Having done that, it is appropriate to identify which state of the art is considered the closest, giving reasons if this is not self-evident.

3. Demonstrating inventive step by showing that the features by which the invention is distinguished from the closest state of the art are not obvious. A favoured way of presenting the argument is in the form of the problem/solution approach, requiring identification of the problem which is solved by the provision of the features by which the main claim is distinguished from the closest state of the art. Having identified the relevant problem, it is appropriate to discuss first whether that problem is a known or obvious problem and secondly what the skilled person would be likely to do to solve the problem once it is recognised. Relevant to these considerations are the teachings of the prior art, which include not only the closest state of the art but also the other prior art on record. In some cases, it may be possible to show that there is nothing in the state of the art which would provoke the skilled person to think of the problem but more usually the problem will be a known or obvious one, in which case it has to be established that the state of the art disclosures would not provoke the reader to try to solve it in the way claimed. An argument which is particularly telling in this respect is to show that the state of the art disclosures would in fact lead the reader away

from the invention. For example, if the claim is to the contact cleaning solution and specifically requires the contact pins to slide on the pads when at the read/write position, then the unambiguous statement on page 3 of Document II that such sliding movement is avoided could be used to support an argument that this part of Document II "teaches away" from the claimed invention.

The examiners regard the establishment of inventive step as the most important part of the argumentation task and the points awarded are strongly weighted towards that aspect. Using the problem/solution approach is to be preferred but the essential requirement is to demonstrate inventiveness positively and any line of argument which does this convincingly is potentially capable of obtaining high marks.

V

It follows from the above that a candidate's best approach to Paper B is first to seek for the various possible distinctions from the state of the art cited, then to explore the various options for amendment to establish which seems the best overall concept of solution - with perhaps a note of other possible solutions, especially any which it might be desirable to pursue in a divisional. Then the wording of the claim should be carefully considered, having regard on the one hand to the need to keep the claim as broad as possible and on the other to avoid offence against Article 123(2). The consequences for the dependent claims should also receive attention but should not be allowed to take up so much time that the construction of the arguments has to be done too hurriedly. Care should be taken to draft the arguments in strict accord with what is actually claimed. In case it should be found that the first draft of the claim and the argument are not consistent with each other, it is wise so to plan one's work as to leave sufficient time to do a final check and, if necessary, modify the wording of the claim or of the argument.

EXAMINATION COMMITTEE I

Candidate No.

Paper B Schedule of marks

Category	Maximum possible	Marks awarded by first examiners		Revision of marks / grade (if any) or marking of further examiners (if appropriate)	
		Exr	Exr	Exr	Exr
Claims	24				
Argumentation	24				
Total	48				
Corresponding Grade					

Translation of marks into grades

	Grade
0 - 11	7
12 - 17	6
18 - 23	5
24 - 29	4
30 - 35	3
36 - 41	2
42 - 48	1

Remarks by examiners which must be given if both the following requirements are fulfilled:

- (a) the grades awarded by the two first examiners before their discussion differ by two grades or more;
- (b) the marks awarded by at least one of the two first examiners have been changed during their discussion.

If marks are revised, brief explanation should be given.

Sub-Committee for Electricity/Mechanics or Chemistry

- Sub-Committee agrees on _____ marks and grade _____
- Sub-Committee does not agree on a grade

Remarks by Sub-Committee which must be given where the Sub-Committee does not agree on a grade

Grade recommended to Board by Committee I _____

Remarks by Committee I

_____ Date

_____ Signature of Chairman of Committee I