Examiners' Report on Paper A/1998

General considerations

The client's letter of this year's paper A describes a battery connected to a charger. It is clear from the client's letter that the battery and the charger are two separate items. Furthermore the client's letter indicates that the client wishes to licence the invention to battery manufacturers and to charger manufacturers. It should therefore have occurred to the candidates that the battery and the charger must be protected independently to achieve the broadest scope of protection. Thus candidates were expected to draft at least two independent claims, one directed to the battery (hereafter referred to as the battery claim) and one directed to the charger (hereafter referred to as the charger claim). This is in line with Rule 29(2) EPC which provides that a European patent application may contain two independent claims in the same category where it is not appropriate to cover the subject-matter of the application by a single claim. A technical relationship in the sense of Rule 30(1) EPC exists between the battery and the charger, involving corresponding special technical features (the electrical component in the battery pack has a selected electrical characteristic which is detected by the charger) so that it was possible to draft independent battery and charger claims meeting the requirement of unity of invention.
In view of the time needed to draft two independent claims, and since the subject-matter of this year's paper A did not comprise a large number of features that could be placed in dependent claims, 28 marks, i.e. slightly more than half the total marks available for paper A, were devoted to the independent claims. 12 marks were available for dependent claims and 8 for the description.

Independent claims

Since both the battery and the charger are commercially significant, the 28 marks available for the independent claims have been equally divided between the battery claim and the charger claim. Candidates who failed to claim the two aspects of the invention were able to recover some marks if they proposed in a note to claim the omitted aspect of the invention in a separate application. Furthermore some credit was given to candidates who proposed in a note to claim independently, in a separate application, the manner of charging the battery responsive to the voltage on the cells thereof, which is described at the end of the client's letter.

The preferred manner of claiming was to have two independent claims, each setting out explicitly the features of the battery or of the charger. Further independent claims were not considered as essential for ensuring the broadest scope of protection and therefore did not attract marks.

Some candidates have used other manners of claiming the invention and in particular have relied on an independent claim directed to the combination of a battery and a charger (hereafter referred to as a system claim). A system claim was considered as a charger claim with the additional limitation that the charger is actually connected to a battery. Therefore enforcing a system claim against the manufacturer of a battery as such or the manufacturer of a charger as such could be problematic.

Scripts which included only one independent claim directed to the system did not achieve

the broadest scope of protection and thus lost a substantial number of marks.

Scripts presenting an independent battery claim (or sometimes an independent charger claim) along with an independent system claim also lost a significant number of marks since one of the aspects of the invention has not been claimed independently.

A number of candidates drafted independent battery and charger claims which relied on an independent system claim for defining the features of the battery and the charger (for example in the form "A battery having the features claimed in claim 1" and "A charger having the features claimed in claim 1" where claim 1 is an independent system claim). This manner of claiming does not explicitly set out the features of the claimed battery or charger and therefore is potentially open to discussion as to which features are actually included in the independent claim for the battery or charger respectively. A penalty was therefore applied to such claims. A further penalty was applied where the features of the battery and of the charger could not be clearly determined.

Battery claim

A battery claim drafted along the following lines attracted full marks:

> "A battery pack (1) comprising at least one rechargeable battery cell (14) and further comprising means for identifying the type of the battery cell, characterised in that the identifying means includes an electrical component (20) having a selected electrical characteristic which can be detected from outside the pack."

In particular, to establish novelty, the battery claim had to make clear that the battery pack includes an electrical component distinct from the battery cell or cells.

Some candidates provided battery claims which also lacked novelty over the prior art disclosed in D1 or in D2. For example such claims specified "non-mechanical" identifying means (lacking novelty over D2) or identifying means suitable for "automatic" identification (lacking novelty over D1).

A penalty was also applied to claims with unclear wording, for example a claim directed to a single battery pack and specifying that the electrical component has an electrical characteristic "which is different from that of other battery packs".

Marks were deducted for unnecessary limitations and for features which were claimed more narrowly than in the battery claim above. In particular, the following features were regarded as major unnecessary limitations when present in the independent battery claim:

- the independent battery claim being directed to a set of batteries;
- a reference to a resistor;
- specifying that the electrical component extends between a terminal of a cell and a further terminal, thereby excluding the possibility of providing two dedicated terminals for the electrical component;
- a reference to a plurality of cells.

Charger claim

A charger claim drafted along the following lines attracted full marks:

> "A battery charger (4) having means (54) for providing a charging current in accordance with a selected charging programme to a battery pack (1) comprising at least one rechargeable cell connectable to the charger, characterised in that the charger comprises means (44, 46, 50) for detecting an electrical characteristic of an electrical component (20) of the battery pack provided in addition to the at least one cell of the battery pack, and means (56, 58) for selecting a charging programme depending on the detected electrical characteristic."

Such a claim was considered as specifying a charger per se (not the combination of a charger and a battery). The same marks were awarded to candidates who achieved an equivalent result more concisely by referring to the battery claim ("A battery charger for charging a battery pack as defined in claim ...").

The examiners were aware that it was possible to generalise the invention presented in the client's letter and draft a more general claim, for example a claim directed to a device for identifying the type of a battery without any reference to charging the battery. However it was considered that, in view of the client's letter, this could not be expected from the candidates. Candidates who drafted such more general claims were neither penalised nor rewarded.

A charger claim which merely refers to "automatically selecting a charging programme", without referring to the detection of the electrical characteristic or to the fact that the charger can execute a plurality of different charging programmes was considered to lack novelty over D1 which automatically either selects a charging programme or does not attempt to charge the battery.

A charger claim which refers to "automatically selecting one of a plurality of charging programmes" without referring to the detection of the electrical characteristic was considered to be novel but to lack an inventive step, since it is only distinguished over D2 by the feature that the selection is "automatic", which was felt to be a routine wish of the skilled person and furthermore appears to be suggested by D1.

Marks were deducted for unnecessary limitations and for features which were claimed more narrowly than in the charger claim above. In particular the following features were regarded as major unnecessary limitations when present in the independent charger claim:

- a resistor receiving a constant voltage;
- an analog-digital converter;
- a microprocessor;
- a regulator;
- a switch.

Unclear wording was also penalised in accordance with the seriousness of the defect.

Dependent claims

Useful features of the battery pack which attracted marks if included in dependent cla are the following:

- the nature of the electrical component, i.e. resistor, capacitor or integrated circuit;
- the provision of suitable terminals for the electrical component, either having one dedicated terminal and sharing one terminal with the battery cells or having two dedicated terminals;
- a set of battery packs having electrical components with differing characteristics.

Useful features of the charger which attracted marks if included in dependent claims are the following:

- features of the detecting means which supplies an interrogation signal to the electrical component and receives a response signal from it, in particular a resistor having one end connected to a constant voltage and the other end suitable for connection to the electrical component, thereby forming a voltage divider therewith;
  the detecting means comprising an analog-to-digital converter for detecting the electrical characteristic;
- the provision of a microprocessor for selecting the charging programme;
- means for influencing the course of the selected charging programme in response to the voltage on the cells of the battery pack, in particular comprising a switch for connecting a charging terminal to the input of the analog-to-digital converter;
- the combination of the charger and the battery pack.

In order to earn good marks, the dependent claims had to provide good fall back positions by claiming the features separately and, where appropriate, broadly defining the preferred features.

Some marks were deducted for incorrect appendencies, bad claim structure and the presence of an excessive number of trivial claims.

Description

Candidates were expected to acknowledge properly the relevant disclosure of the prior art.

Candidates were also expected to present the problem to be solved by the invention (in particular for the above battery and charger claims the problem was to allow easy and automatic identification of different battery packs having identical housings) and the solution to it. Marks were deducted for stating a problem or a solution which is not consistent with the subject-matter of the independent claims.

In view of the instructions given to candidates, references to dependent claims have been ignored when marking the description.

EXAMINATION COMMITTEE I Candidate No. .....

Paper A (Electricity/Mechanics) Schedule of marks

Category	Maximum possible	Marks awarded		Revision of marks / grade (if any)	
		Exr	Exr	Exr	Exr .....
Independent claims	24				
Dependent claims	14				
Description	10				
Total	48				
Corresponding Grade					

Translation of marks into grades

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

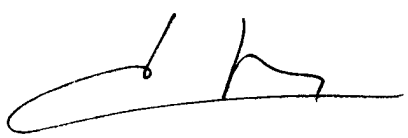
Marking by further examiners if appropriate

	Independent claims	Dependent claims	Description	Total	Grade
Examiner					
Examiner					

Remarks (which must be given if both the following requirements are fulfilled:
(a) the grades awarded by the two individual examiners before their discussion differ by two grades or more;
(b) the marks awarded by at least one of the two individual examiners have been changed during their discussion.)
If marks are revised, a brief explanation should be given.

Sub-Committee for Electricity/Mechanics agrees on _____ marks and grade _____

Grade recommended to Board _____



L. Combeau - Chairman of Examination Committee I