

## Examiners' Report on Paper B/1997

### 1. Background

- 1.1 The official communication cites two new documents, DII and DIII. DII discloses the concept of using a pivoted cam follower biased into contact with the cam by means of a spring. DIII discloses an arrangement in which the cam follower makes contact with the cam structure at two points, the arrangement being such as to make the provision of a spring unnecessary. However, the arrangement of DIII is complicated, owing to the fact that the cam follower is slidably mounted so as to ensure linear, as opposed to pivotal, motion. The arrangement makes it necessary to have two cams in order to keep the distance between the two points of contact between the cam and cam follower constant.
- 1.2 It is therefore necessary to restrict claim 1. The client's letter tells the candidate that the client is interested only in protection of the embodiments of the invention in which the cam follower comprises two wheels in contact with the cam, thus making it unnecessary to have a spring biasing the cam follower into contact with the cam.

### 2. Independent claim(s)

- 2.1 A good independent claim can thus be obtained by adding to claim 1 the features that the cam follower contacts the cam structure at two points combined with the further distinction that the cam follower is pivotally mounted. This combines the advantage over DIII of a simple mounting for the cam follower with the advantage over DII of not requiring a biasing spring.
- 2.2 A large number of candidates produced claims which were not limited to the cam follower being pivotally mounted, but were restricted to the points of contact of the cam follower with the cam structure being on one and the same cam. This was achieved either by the introduction of an explicit limitation to a single cam or by making it clear in the argumentation that the reference to, for example the cam surface, excluded the presence of more than one cam and hence more than one cam surface. This solution is not regarded as being as satisfactory as the one of paragraph 2.1 above. Starting from DIII, it is not sufficient merely to eliminate one of the cams - the cam follower will not now function. The only solution to this problem as far as the candidate is aware is to make the cam follower pivotable. The result is thus a claim which is not only limited to the features of the solution of paragraph 2.1, but is further limited to a single cam.
- 2.3 A number of candidates attempted alternative solutions. None of these was found to have any merit. One type of claim specified that the cam should have a desired number of lobes

so as to vary the frequency multiplication. This is, of course, unclear in the context of a claim directed to a shaver having a single cam and could only conceivably be claimed for a shaver in combination with a set of cams.

- 2.4 Some answers involved claims which are not new and read onto either DII, for example by specifying that the wheel is made of an elastic material or DIII, by specifying that the wheels are opposite one another and each prevents the other from losing contact with the cam. This, however, only applies to cases where neither the claim nor the argumentation makes it clear that only a single cam is present or that the cam follower makes contact with one and the same cam surface.
- 2.5 Other solutions exclude one or more embodiments for which the client wants protection. Examples of this include:
- (i) a claim which specifies that the arms of the cam follower are elastic;
  - (ii) that the cam has at least three lobes; and
  - (iii) that the arrangement is such that one point of contact of the follower with the cam is at the point of greatest diameter when the other is at the point of least diameter (this only applies to an elliptical cam and loses protection for the triangular and square cams).
- 2.6 Candidates were expected to argue against the examiner's objection under Article 84. Claim 1 does not specify the presence of a single phase synchronous motor, so that the argument in paragraph 3 of the communication does not apply to the invention as claimed. Disappointingly, most candidates meekly added this feature to claim 1. Other candidates did not introduce the feature but also failed to refer to this in their response.
- 2.7 The presence of unnecessary features in the independent claim was treated in a similar fashion to Paper A. The most frequent were a feature ensuring frequency multiplication, for example by specifying a multi-lobed cam, specifying the presence of three arms on the cam follower, the presence of wheels on the cam follower and that the motor is a single phase synchronous motor. It is not necessary to provide a separate lever arm for each portion of the cam follower in contact with the cam. Just as in Paper A, the candidate should ask himself why he is introducing a particular feature into the claim. Care is, however, necessary to ensure compliance with Article 123(2).
- 2.8 It is not necessary for the portions of the cam follower in contact with the cam to be in the form of wheels. It is clear that, functionally, the wheels are only present in order to provide

a frictionless contact with the cam surface and therefore could be omitted. Nearly all candidates, however, specified the presence of wheels and this certainly makes drafting more straightforward.

- 2.9 A number of candidates merely combined claims 1, 4 and 7 and thus specified not only the presence of wheels, but also the presence of three arms. It is not necessary for the cam follower to have three separate arms and a claim can be drafted which is silent as to where the wheels are mounted on the cam follower, thus not giving rise to any problems under Article 123(2). Such a claim is further vague as to the function and location of the wheel on the third arm and thus requires a certain amount of clarification.

### 3. **Dependent claims**

- 3.1 In the case of the preferred solution, claims 2, 3 and 8 to 10 may be retained, and claims 5 and 6, relating to the embodiment no longer covered by claim 1 should be deleted. Nearly all the candidates managed this. Candidates should also consider whether any new dependent claims should be introduced, and many candidates at least added claims directed to the alternative forms of cam.

### 4. **Argumentation**

- 4.1 As was the case last year, most candidates seem to have read the past examiner's reports and produced argumentation which is divided into the sub-sections as set out below. It is surprising, however, that some candidates still lose marks by omitting any discussion, however brief of, for example, the sources of amendment.
- 4.1.1 a discussion of the **sources of amendment and issues arising under Article 123(2)** including the basis for and identification of amendments and the basis for and justification of any generalised expressions in the claims, including the dependent claims, under Article 123(2).
- 4.1.2 **arguments against the examiner's objection under Article 84.** As stated above, most candidates failed to argue this point. Some credit, at least, was given to candidates who mentioned in their response that the amendments which had been made were such as to overcome this objection.
- 4.1.3 **arguments concerning novelty** over all the available prior art documents. Some candidates appeared to think it sufficient to argue novelty only in respect of the closest

prior art document. Novelty over the disclosure of each document is established by identifying a feature of the claim which is absent from that document. Thus, for example, a statement to the effect that the appliance of DII only has a single point of contact with the cam surface is satisfactory.

**4.1.4 arguments concerning inventive step.** These are sub-divided as set out below.

- (i) Identification of the closest prior art.** Either DII or DIII could be regarded as the most relevant document for the preferred solution, although DIII is the better starting point for a claim limited to the cam follower making contact with the same cam at two points. A large number of candidates did not give any reasons for their choice of one of these two documents. This can be merely that one or other document has more features in common with claim 1. Alternatively, it can be argued that the mode of operation of one of the prior art devices is more similar to that of the device according to the invention. A surprising number of candidates suggested that the closest prior art was that which deals with the same problem as the present invention. Since, however, the problem is defined with respect to the closest prior art, this argumentation is difficult to follow.
- (ii) Definition of a problem associated with the closest prior art** relevant to the distinguishing features of the independent claim. In the case of DII, the problems associated with the use of a biasing spring are set out in the client's letter. In the case of DIII, the problems lie in the somewhat complicated drive mechanism. In the case of a main claim restricted to a pivotable cam follower, attention can be drawn to the slidable mounting arrangement for the cam follower of DIII which is unlikely to perform satisfactorily in use. In the case of a claim restricted to the use of a single cam, the candidate may suggest that the omission of a cam simplifies construction or enables a slimmer housing to be used. A number of poor candidates relied on extremely vague statements of problem which could be used in the papers of any year. Other problems were formulated which were not solved by the features of the device as claimed in the independent claim.
- (iii) Arguments as to why the prior art does not lead to the invention as claimed.**

It is sufficient to argue that, starting from either DII or DIII, there is no incentive to arrive at the claimed solution. Whilst it is appreciated that the essence of the problem and solution approach involves, as the first step, the identification of the closest prior art, in the present case it is not possible to argue that DII is more relevant than DIII or vice versa, the examiners are of the opinion that, in the case of this year's exercise, both documents are more or less equally relevant and that,

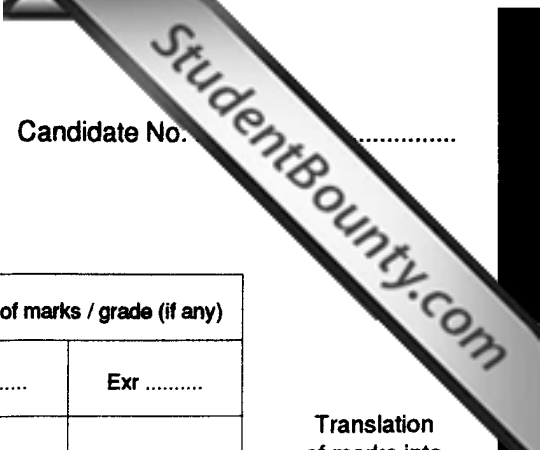
particularly in the case of candidates who did not attempt to argue that one other document is more relevant, it is appropriate to expect arguments starting from either document.

When starting from DII, the claim is distinguished by the provision of a second point of contact with the cam surface for maintaining contact of the cam follower with the cam surface. The advantages of not having a biasing spring are indicated in the clients letter. Although DIII appears to offer a solution to the problems involved with the spring and set screw as suggested by the examiner in his communication, DIII does not, in fact, deal with this problem. Even if the idea of having two points of contact between the cam follower and cam so as to maintain contact between the two components is imported into DII, it is not clear how such a device is to function. The inventive step of using a pivoted cam follower which makes contact with the cam at two points is not suggested.

When starting from DIII, the claim is distinguished by the cam follower being pivotable. It is not clear from a reading of the prior art, including DII, that a "two wheeled" cam follower as known from DIII could be pivotably mounted, thus avoiding the complicated and potentially unreliable slidable mounting of DII.

**EXAMINATION COMMITTEE I**

Candidate No. ....



**Paper B (Electricity/Mechanics) Schedule of marks**

Category	Maximum possible	Marks awarded		Revision of marks / grade (if any)	
		Exr .....	Exr .....	Exr .....	Exr .....
Claims	24				
Argumentation	24				
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

	Claims	Argumentation	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 \_\_\_\_\_

The Hague, 4 September 1997

J. Combeau - Chairman of Examination Committee I