Examiners' Report - 2010 Paper B (Electricity/Mechanics)

1. General considerations

1.1. Introduction

This year's paper relates to bird feeders which are adapted to prevent animals other than birds, e.g. squirrels, from gaining access to food on a food tray. Such bird feeders can be hung on a string or mounted on a pole (see Figs. 1 and 2 of the application, respectively).

The application cites a document D3, which discloses bird feeders having a guard which is caused by a squirrel to rotate when a squirrel tries to cross the guard. The sudden rotation of the guard surprises the squirrel and causes it to slip or jump off the guard so that it cannot reach the food (application, Par. 2).

The applicant has observed a drawback with these bird feeders, namely that a squirrel can learn to cross the guard without causing it to rotate (application, Par. 3).

The application starts from the position that providing an electric motor to rotate the guard overcomes this drawback.

It is noted that references in this text beginning with "GL" are to the Guidelines for Examination in the European Patent Office of December 2007.

1.2. Cited Prior Art

The communication cites motorised bird feeders disclosed in D1 and D2 as being novelty-destroying against claims 1 to 3 and 5 to 9 as filed. D3 is cited in the application and mentioned in the communication.

D1 discloses a bird feeder which gives a garden owner good views of the birds when they are feeding. D1 discloses two items of prior art, namely a first bird feeder (hung type; Figure 1), referred to in the following as D1/1, and a second bird feeder (pole-mounted type; Figure 2), referred to in the following as D1/2. Regarding both D1/1 and D1/2 it is disclosed that an electric motor is activated to slowly rotate the feeding unit (food tray 105, 125) and the guard when a weight on the feeding unit exceeds a predetermined value, the value being chosen to be the weight of a bird. The structures of the bird feeders disclosed in D1 are such that this activation would also happen if the weight were to be applied to the guard.

D2 discloses a motorised bird feeder which automatically dispenses food from a food container onto the food tray when the weight on the food tray is below a predetermined value. D2 furthermore has a conical guard which rotates when the motor shaft rotates. The food tray does not rotate.

D3 discloses two items of prior art: a first bird feeder (hung type; Figs. 1 and 2) which is referred to in the following as D3/1, and a second bird feeder (pole-mounted type; Figs. 3 and 4) which is referred to in the following as D3/2.

1.3. The challenges of the Paper:

The main achievements of the invention are to provide a bird feeder that:
a) reliably prevents animals other than birds from gaining access to the food,
b) whilst still causing minimal disturbance to birds which are feeding (see client's letter).

The aspect a) is achieved by providing a weight sensor which reliably activates the electric motor to rotate the guard when a weight applied to the guard exceeds a predetermined value.
The aspect b) is achieved in that, as in the devices disclosed in D3, the guard is rotatable relative to the feeding unit.

The main challenges of the paper were to:

Draft an amended independent device claim providing protection for a bird feeder which is not restricted regarding any particular shapes of shield for protecting the food; the client expresses this wish in his letter.
Draft a claim whose subject matter includes the features necessary to render it new and inventive with respect to the available prior art. The subject matter of original claims 1 – 3, 5 – 9 is considered by the examiner (Par. 2-4 of communication) not to be new with respect to D1/1 and/or D1/2 and/or D2.
Draft the claim whilst also respecting the client's wish that its subject matter is not unnecessarily limited in its scope of protection regarding the weight sensor.
Draft a set of amended dependent claims, including (if appropriate) claims from the original application and a new claim based on original claim 4 but clarified to overcome the clarity objection in Par. 6 of the communication.
Write a reasoned letter of reply addressing the objections raised in the communication and arguing that the new claims meet the requirements of the EPC.

1.4. The marks scheme

Answer papers are marked on a scale of 0 to 100 marks.
For the claims: Max. 50 marks, min. 0 marks

36 marks are available for the independent device claim.
14 marks are available for the dependent claims.

For the argumentation: Max. 50 marks, min. 0 marks.

2. Claims (50 marks)

See Section 4 for an example set of amended claims.

2.1. Independent device claim (up to 36 marks)

Generally it is noted that the marks awarded for an independent claim reflect the degree to which the claim achieves protection for the applicant's invention in its broadest possible scope.

2.1.1. A single independent device claim was expected.

Example:

The following example independent claim meets the requirements of the EPC whilst providing maximum protection for the applicant's invention; full marks could also be obtained with different wording. The starting point for the claim is either of original claims 1 or 2. Amendments by addition are underlined; omitted features and an indication of the basis for the amendments in the original application are given in square brackets.

A bird feeder comprising:

a feeding unit (2, 22) for holding bird food;

a guard (9, 29) comprising a shield (9a, 29a) having a [*cone/disc; Par. 12, 19*] shape for protecting the food, the guard (9, 29) being rotatable relative to the feeding unit (2, 22) [*claim 3*],

characterised in that the bird feeder further comprises an electric motor (13, 33) for rotating the guard (9, 29), and a weight sensor (12, 14; 32, 34) for sensing a weight applied to the guard (9, 29), the weight sensor (12, 14; 32, 34) being configured to activate the electric motor (13, 33) when the weight exceeds a predetermined value [*claim 5; Par. 20*].

Notes:
It is considered that a claim having the above wording but with the term "weight sensor" replaced by the term "means" would have the same scope of protection as the example independent claim. Similarly, a change of the originally disclosed terminology to "detector/detecting" or "measuring" would be accepted. However, in such cases an argument for this change would be expected when providing the basis for the amendments.

2.1.2. Important points to consider regarding claim 1.

a. **Novelty with respect to D1/1 and D1/2**

The feature of the example independent claim "the guard being rotatable relative to the feeding unit" makes the claim novel over D1/1 and D1/2. Both of these items of prior art have a guard which rotates together with the feeding unit (food tray).

b. **Novelty with respect to D2**

The feature of the example independent claim that the weight sensor is "for sensing a weight applied to the guard" makes the claim novel over D2. In D2 the weight sensor does not sense a weight applied to the guard; the weight sensor is for sensing a weight on the food tray.

c. **Novelty with respect to D3**

The feature of the example independent claim "electric motor" makes the claim novel over both embodiments of D3.

d. **Independent claim 1 lacking novelty (-24 marks)**

An independent claim whose subject matter lacked novelty loses 24 marks.

Example:

- A claim comprising the features of original claims 1 or 2 with the addition of a weight sensor for sensing a weight applied to the guard is not new with respect to D1/1 or D1/2. The weight sensor of the bird feeder disclosed in D1 inherently senses a weight applied to the guard.

2.1.3. Inferior solutions (up to 24 marks)

Inferior solutions are considered to be those solutions that do not have all the features of the example independent claim and, whilst being new and arguably inventive, they are less favourable for the applicant than the example solution since they offer a less favourable scope of protection and/or go against the applicant's wishes.

Examples:

- A claim (or claims) which defines the specific shape of the guard (cone, disc, or hemi-spherical) instead of "a shape (suitable) for protecting the food" is considered to be an inferior solution. This is because a more favourable scope of protection is afforded by the general term (8 marks per shape claimed are awarded up to a maximum of 24 marks, irrespective of whether the shapes are claimed in separate independent claims or as alternatives within a single independent claim).

- A claim relying on the feature "guard rotation speed of 30 - 35 revolutions per minute" and/or "predetermined weight of 250 g" for providing novelty and inventive step, for example:

A bird feeder comprising:
a feeding unit (2, 22) for holding bird food;
a guard (9, 29) comprising a shield (9a, 29a) having a shape for protecting the food, characterised in that the bird feeder further comprises an electric motor (13, 33) configured to rotate the guard (9, 29) at a speed of 30 - 35 revolutions per minute.

Such a claim would be new, this feature not being suggested in any of the prior art documents. However, the scope of protection achieved is very narrow (maximum 18 marks available).

- A claim corresponding to the example independent claim, but in which the weight sensor feature is replaced by a specific constructional feature, e.g. a washer, or a rod on which the guard is rotatably mounted. These features provide novelty over D2 but are known from D3. This claim is novel with respect to D1 because the guard rotates relative to the feeding unit. Compared to the bird feeder of D3, the only difference of the claimed subject matter is the provision of an electric motor.

Such a claim is considered to have a less favourable scope of protection than the example claim since it is limited by specific constructional details, which would be easy to design around (e.g. by omitting the washer) (maximum 18 marks available).

2.1.4. Claim lacking inventive step (-18 marks)

An independent claim whose subject matter is considered to lack inventive step loses 18 marks.

Examples:

- A claim corresponding to the example independent claim but in which the weight sensor feature is replaced by a motor speed controller.

This claim is novel with respect to D1 because the guard rotates relative to the feeding unit, novel with respect to D3 due to the motor, and novel with respect to D2 and D3 due to the motor speed controller. Starting from D2, the skilled person would routinely adapt the motor controller so that it comprises a speed control function if it is desired to set an appropriate motor speed (see also D1, Par. 10).

- A claim corresponding to the example independent claim but in which the weight sensor feature is replaced the feature that the motor is configured to "rapidly" accelerate the guard.

This claim is novel with respect to D1 because the guard rotates relative to the feeding unit, novel with respect to D3 due to the motor, and novel with respect to D2 and D3 due to the motor being configured to "rapidly" accelerate the guard. Starting from D2, it would appear obvious to use an electric motor which can rapidly accelerate, e.g. in order to dispense food more quickly. It is furthermore noted that the term "rapidly" is a relative term which per se renders the scope of the claim unclear; this is a separate consideration (see under clarity).

2.1.5. Unnecessary limitations

Unnecessary limitations are considered to be features which restrict the scope of the independent claim and are additional to those features which are necessary for defining new and inventive subject matter.

a. **Major Unnecessary limitations (-18 marks each)**

Independent claims which are according to the example independent claim but which are further limited to either the first or second preferred embodiment, or one or more specific arrangements thereof, are considered to have major unnecessary limitations.

Examples:

- A claim which excludes either of the hung or pole-mounted types of bird feeder described in the application.

- A claim which limits the weight sensor to the spring and switch (e.g. comprising the features of original claim 5).

This restriction excludes alternative weight sensors which the application describes as being suitable for use in the bird feeders (Par. 20) and which the applicant wishes to protect (see client's letter).

- A claim having all the features of the example solution and which is further limited by any one of the following features:

- washer
- value of predetermined weight
- speed of rotation of guard
- food container
- motor speed controller
- gear wheel

b. **Minor Unnecessary limitations (-6 marks each)**

Examples:

An independent claim having all the features of the example solution and which is further limited by any one of the following features:

- transmission per se
- "only" the guard moves

c. **Features not considered to be limiting (no mark deduction)**

Where the scope of protection is not considered to be further limited by an additional feature, then no marks are deducted.

Example:

- food tray

2.1.6. Lack of Clarity (Up to -24 marks)

Examples:

- Merely claiming a desired effect as the characterising feature, e.g. merely adding a feature such as "arranged so that a squirrel is reliably caused to slip or jump off the shield" to original claim 1 (or 2), is considered to be very unclear, see GL C-III 4.10 (-24 marks).

- An independent claim which differs from the example independent claim in that it is ambiguous whether or not the following two features are linked:
  sensing the weight on the guard; and
  activation of the electric motor (-12 marks).

- A claim comprising an unclear relative term, e.g. "the electric motor when activated causes the guard to accelerate rapidly" is considered to be unclear (GL C-III, 4.6) (-4 marks). It is noted that such a claim may in any case lack inventive step (see Section 2.1.4).

Other minor issues of lack of clarity lose 4 marks per feature.

2.1.7. Amendments not supported by the application as originally filed (Art. 1 EPC)

a. **Amendments Falling Under Art. 123(2) / 123(3) Trap (-24 marks).**

Any independent claim which includes subject matter having no basis in the original disclosure of the application and which could not be deleted in post grant proceedings without broadening the scope of the claim is considered in this section.

Examples:

- The guard comprises activating means.

- Activation occurs *only* when a *specific predetermined* weight is applied to the shield (not over an open-ended range of weight values).

b. **Other Amendments Falling Under Art. 123(2) EPC (-12 marks)**

Any independent claim having subject matter that extends beyond that of the application as originally filed, but which could be made compliant with Art. 123(2) EPC in post grant proceedings before the EPO without offending against Art. 123(3) EPC, is considered in this section.

Examples:

- An independent claim lacking the feature "shield" and/or "for protecting the food".

- A claim according to the example claim claiming a shield but not specifying that the shield has a shape that is suitable for protecting the food (see application Pars. 12, 19).
The scope of the claim includes shields for protecting the food by means other than their shape, for which there is no basis in the original application. For example a shield having a flashing light for protecting the food by scaring away animals would fall under the scope of such a claim.

- A claim according to the example independent claim wherein the feature "the weight sensor being configured to activate the electric motor when the weight exceeds a predetermined value" is incomplete, e.g. because it is replaced by one of the following features:
  - the weight sensor being configured to activate the electric motor,
  - the motor being activated when a weight applied to the guard exceeds a predetermined value.

2.1.8. Formal matters (up to -4 marks)

It is considered appropriate to use the two-part form of claim, thus an independent claim having a one-part form, or a two-part form of claim which is not consistent with any of the prior art documents, loses 2 marks. For missing or incomplete reference signs in the claims, up to 2 marks are lost.

2.2. Dependent claims (14 marks available)

2.2.1. General Remarks

See Section 4 for an example set of dependent claims. Marks are available in this section for the feature content of the dependent claims per se and a logical claim structure.

2.2.2. Maintaining Appropriate Original Dependent Claims (2 marks)

It is expected to retain any appropriate dependent claims from the originally filed claims.

Example: For an answer paper having the independent claim of the example solution:

Dependent claims based on original claim 5 (insofar as the weight sensor is further specified as being a switch and a spring), and original claims 6 - 9 would be appropriate as claims dependent on the example independent claim 1 (2 marks).

2.2.3. Including the optional shapes of the shield in a dependent claim or claims (3 marks)

Since specific shapes of the shield are not claimed in the example independent claim, it is appropriate to claim these shapes in a new dependent claim or claims (max. 3 marks).

Example:

The bird feeder according to claim 1, wherein the shield has a cone, disc, or hemi-spherical shape.

2.2.4. Clear rotation speed claim (3 marks)

An objection was made by the examiner in point 6 of the communication that the original claim 4 lacked clarity under Art. 84 EPC. It is therefore expected that a clear claim to the feature of the rotation speed be included to replace the original claim 4.

Example:

The bird feeder according to any previous claim, wherein the guard is rotatable at a speed of 30 to 35 revolutions per minute.

2.2.5. Predetermined weight value of 250g (3 marks)

For the example solution claim, a weight exceeding a predetermined value is introduced into the characterising part of the claim. It is considered that an appropriate fall back claim for the applicant would therefore be a claim specifying the only weight value disclosed in the application.

Example:

- The bird feeder according to any previous claim, wherein the predetermined value of the weight is 250 g (3 marks).

2.2.6. Other dependent claims offering a useful fallback (up to 3 marks)

Up to 3 marks in total are available for one or more additional dependent claims which offer a useful fall-back position or positions, provided the total of 14 marks for the dependent claims is not exceeded.

Example:

- For an answer paper having an independent claim to a bird feeder which was not new with respect to D1 because the feature that the guard is rotatable relative to the feeding unit was missing, then a dependent claim to this feature would be an important fall back position for the applicant (3 marks).

2.2.6 Other dependent claims not offering a useful fallback (no marks awarded)

Marks are not awarded for dependent claims which are considered not to offer a useful fallback.

Examples:

- washer
- transmission features

2.2.7 Structure (up to 3 marks)

A dependent claim set structured that gives the applicant appropriate fall-back positions, with correct back-references, receives 3 marks for the structure.

3. Argumentation (50 marks available)

3.1. General remark

In this section, answer papers should identify all amendments made in the claims and indicate their basis in the application as filed. Further, they should set out arguments in support of the patentability of the independent claims. Answer papers are expected to contain appropriate arguments in response to all the points raised in the official communication.

It is noted that the following explanations and examples generally relate to the example claim set.

3.2. Source of amendment for the purposes of Art. 123(2) EPC (14 marks)

An indication of the basis for the amendments made in all the claims is expected. It is expected that the amendments made are identified and their basis indicated by referring to the relevant positions of the original application documents, where appropriate with brief explanations.

For answer papers having a claim set that differs from the example claim set, the basis and explanations expected may differ from those given below.

3.2.1. Independent Claim (9 marks)

9 marks are available for indicating and explaining a basis for the independent claim.

Example:

Claim 1 as amended comprises the subject matter of originally filed claims 1 and 2 with the following amendments:

The specific shape of the shield, namely "cone shaped" or "disc shaped" has been removed and replaced with the feature that the shield has "a shape for" protecting the food. Basis for this amendment is found in Pars. 12, 19 of the description, where it is stated that the shield of both embodiments may have any (other) shape which is suitable for protecting the food (2 marks).
This generalisation does not violate Art. 123(2) EPC because: (a) the shape of the shield being cone or disc shaped is not explained as being essential; (b) it is not indispensable for the function of the invention, since other shapes suitable for protecting the food are considered in the application and (c) its removal requires no modification of the other features (see GL C-VI 5.3.10) (2 marks).

Claim 1 furthermore includes the features of original claim 3, namely the guard being rotatable relative to the feeding unit. (1 mark)

The features of original claim 5 (1 mark) have been added with the following amendments:
The features "a switch and spring" have been replaced by the term "weight sensor for sensing a weight applied to the guard". The basis for the more general term is found in the description, see Par. 20, where in a general statement referring to both of the preferred embodiments, it is stated that "the spring and the switch act as a weight sensor", and furthermore "instead of a switch and spring, any other conventional weight sensor for sensing a weight applied to the guard could be used." (2 marks)
Furthermore, the “predetermined condition” referred to in original claim 5 has been replaced by the term "a weight applied to the guard exceeding a predetermined value". The basis for this amendment is also found in the description, see Par. 20. (1 mark)

3.2.2. Dependent Claims (5 marks)

A total of 5 marks are available for justifying a basis for the dependent claims:

Dependent claims 5 to 9 of the example set correspond to original dependent claims 5 (in part) and 6 to 9 (up to 2 marks).

Claim 2 of the example set (various shapes of the shield) is based on original claims 1 and 2 and Pars. 12 and 19 (1 mark).

For indicating the basis for further dependent claims, up to 2 marks are available, e.g. a claim specifying the speed of rotation is based on Par. 11 (1 mark); a claim specifying the value of weight is based on Par. 11 (1 mark).

3.3. Clarity of speed of rotation claim (max. 2 marks)

In Par. 6 of the official communication a clarity objection (Art. 84 EPC) was raised against claim 4, in that the subject matter was being defined as a result to be achieved. Answer papers are expected to respond to this objection in the letter of reply. For stating that the clarity objection has been overcome and briefly explaining why this is the case, 2 marks are available.

3.4. Novelty of the Independent Device Claim (6 marks)

It is considered sufficient to mention one feature of the independent claim that is not disclosed in each item of prior art. Although a lack of novelty objection was not raised with regard to D3 in the communication, a novelty argument is expected if the scope of the original independent claims has been broadened, e.g. by generalising the shape of the shield. In cases where it is not immediately evident that the identified feature is not present, explanations are expected.

For statements regarding the novelty, up to 3 marks are available for D1, up to 2 marks for D2, and 1 mark for D3.

Example:

Novelty over D1

D1 does not disclose a bird feeder having a guard which is rotatable relative to a feeding unit (1 mark).
In D1/1 the guard 109 and the feeding unit (food tray 105) are both fixed to the motor shaft 115 and cannot rotate relative to each other (Par. 2) (1 mark).
In D1/2 the guard 129 is fixed to the feeding unit (food tray 125), which does not allow rotation of the guard relative to the feeding unit (Par. 5) (1 mark).
Therefore the invention defined by amended claim 1 is novel over D1/1 and D1/2.

Novelty over D2

D2 does not disclose a weight sensor which senses a weight applied to the guard (209) of the bird feeder. (1 mark)
The bird feeder according to D2 comprises a spring 214 and a switch 212, which components can be considered together to provide a weight sensor (Par. 5, Fig. 1). However, this weight sensor can only sense a weight applied to the food tray (205), not to the guard (209). A weight applied to the guard of D2 would have no effect on the components of the weight sensor. (1 mark)
Consequently, the invention defined by amended claim 1 is novel over D2.

Novelty over D3

Neither of the bird feeders disclosed in D3 comprises an electric motor (1 mark).
Therefore the invention defined by amended claim 1 is novel over D3.

3.5. Inventive Step Argumentation for the expected claim (28 marks)

It is appropriate to provide arguments which are structured to follow the problem solution approach (see GL C-IV, 11.7).

3.5.1. Identifying the closest prior art (8 marks)

In selecting the closest prior art, the first consideration is that it should be directed to a similar purpose or effect as the invention or at least belong to the same or a closely related technical field as the claimed invention, see GL C-IV, 11.7.1.

a. **Stating the closest prior art (max. 3 marks)**

For stating an item of prior art as being the closest prior art in a consistent manner with the two-part form of the independent claim, up to 3 marks are available.

For the example independent claim, D3 is considered to represent the closest prior art; for a statement to this effect, up to 3 marks are available.
The bird feeders of D1 and D2 are considered to be less relevant. For a statement identifying either or both embodiments of D1, up to 2 marks are available; for identifying D2,1 mark is available.

When the claim of an answer paper differs from the example independent claim, the choice of closest prior art may be different from the above and receive marks accordingly. This is decided on a case-by-case basis.

b. **Arguments justifying the choice of closest prior art (5 marks)**

Irrespective of whether D1, D2 or D3 has been chosen as the closest prior art, 5 marks are available for arguments justifying the choice of closest prior art. To achieve full marks, an assessment should be made taking into account all three prior art documents, whereby their relevance to the invention is compared.

Example:
D3 is considered to be the closest prior art since it is a prior art bird feeder which is directed to the similar purpose as the present invention, namely preventing animals from gaining access to the food. Moreover, this is achieved by similar means. As is the case for the invention, the guard of the bird feeder starts rotating relative to the feeding unit when a squirrel attempts to cross the shield, the sudden rotation providing a surprise effect to cause the squirrel to slip or jump off the guard. (3 marks).

The bird feeders described in D1 and D2 have a considerably different purpose.
D1 discloses bird feeders having a guard which comprises a shield for protecting the food from climbing animals. However in the bird feeders of D1, the guard slowly rotates together with the feeding unit, the aim being to give a garden owner good views of the birds whilst not disturbing birds on the feeding unit (Pars. 1, 10) (1 mark).
The purpose of D2 is to provide a bird feeder which automatically dispenses fresh food onto the food tray. D2 discloses a bird feeder having a guard for protecting against rain. Although the guard rotates, the rotation serves to provide an indication that the food container is empty (1 mark).

3.5.2. Derivation of the problem (8 marks)

a. Identifying the distinguishing features between the claim and the closest prior art. (2 marks)

b. Stating the technical effects or the advantages of this difference. (4 marks)

c. Deriving and stating a problem which is solved by this technical effect. (2 marks)

Example:

The distinguishing features between claim 1 and D3 are:

i. the bird feeder comprises an electric motor for rotating the guard; and

ii. a weight sensor for sensing a weight applied to the guard,

iii. the weight sensor being configured to activate the electric motor when the weight exceeds a predetermined value.

The electric motor assures reliable rotation of the guard, the weight sensor automatically initiating the rotation as soon as a weight exceeding a predetermined value is applied to the guard. A squirrel cannot learn to cross the shield without causing the guard to start to rotate and will thus always be surprised by the sudden rotation.

Therefore, the problem to be solved can be considered as providing a bird feeder which effectively prevents animals other than birds from gaining access to the food. It is noted in this regard that the application as originally filed points towards this objective technical problem (Par. 3).

3.5.3. Arguments in support of inventive step (12 marks)

Arguments should support the features of the independent claim, and they should be convincing and well structured. In order to obtain full marks in this section, arguments which answered the following questions should be presented:

- Would the skilled person arrive at the subject matter of the claim by considering the teaching of the closest prior art on its own?
- Would the skilled person consider combining the teaching of the closest prior art with that of other prior art documents in order to solve the objective technical problem?
- If the skilled person were to combine the closest prior art with other items of prior art, would he/she arrive at the subject matter of the claim?

The following example arguments are for D3 as the closest prior art. Note that where D1 or D2 has been chosen as the starting point, the arguments may be structured differently and other arguments might apply.

Example:

Considering D3 on its own (2 marks)

There is no hint in D3 as to how the objective problem could be solved.

If faced with this problem, the skilled person would consider modifying aspects of design, such as the size and shape of a shield, or the nature of the surface of the shield, to make a squirrel slip more effectively.
However, there is nothing in the teaching of D3 which would suggest to the skilled person to provide an electric motor and/or of a weight sensor to activate the electric motor upon application of a predefined weight on the guard.

Considering D3 in combination with D1 (5 marks)

The arguments in the following are made with D3/1 as the closest prior art. It is noted that the arguments starting from D3/2 as the closest prior art would be analogous and are not repeated.

In order to solve the objective problem the skilled person would not consider combining D3/1 with the teaching of D1. Although D1 does mention that a shield protects food from climbing animals, there is no indication as to how such protection could be made more effective. D1 discloses bird feeders which aim to provide a good view of the birds. For this purpose, the food trays 105, 125 of D1/1 and D1/2 rotate at a slow speed which is obviously not suitable for effectively preventing animals from crossing the guard. The slow acceleration disclosed in D1 means that a bird landing on the bird feeder is not surprised by a sudden rotation. D1 therefore does not hint at the idea that the rotation of a guard would prevent animals from accessing the food.

D1/1 discloses that the guard 109 is provided to protect the food on the food tray from rain and climbing animals (Par. 2), and furthermore that a weight sensor is provided which would sense the weight applied to the guard and cause the activation of an electric motor to rotate the guard. However, even if the teaching of D1 and D3 were to be combined, the skilled person would not obtain a bird feeder according to the independent claim.
Even if the skilled person had the idea to take the weight sensor 116 and the motor 113 and incorporate them in D3 to solve the above-mentioned problem, he would have to transfer the complete rotating mechanism of D1 including a guard being (directly or indirectly) fixed to the food tray. Such a combination would, however, not result in the bird feeder of claim 1 having a guard rotating relatively to the feeding unit. In order to realise this feature, further modifications would be necessary which are not obvious without foreknowledge of the present invention (GL C-IV, 11.9.2). Thus the subject matter of claim 1 involves an inventive step in view of D3 and D1.

Considering D3 in combination with D2 (5 marks)

In order to solve the objective problem the skilled person would not consider D2. Although D2 discloses a shield, the purpose of the shield is to protect food against rain (Par. 2). The above-mentioned problem is not addressed in D2. D2 has as its aim the provision of a bird feeder which automatically dispenses fresh food onto the food tray and indicates when the food container needs to be refilled. The indication is done by providing continuous rotation of the guard (relative to the food tray). There is thus no hint for the skilled person that such an automatic relative rotation would prevent squirrels gaining access to the food on the food tray.

Even when considering D2, a person skilled in the art could not obviously obtain the subject-matter of claim 1 from a combination of D3/1 and D2.
D2 discloses a bird feeder having a switching unit 216 comprising a spring 214 and a switch 212, which components can be considered together to provide a weight sensor (Par. 5, Fig. 1). However, a weight applied to the guard of D2 would have no direct effect on the components of this weight sensor which thus cannot sense the weight applied to the guard (209). Rather, it senses whether the amount of food on the food tray is less than a predetermined value. Consequently, a combination of D3 and D2 would not directly result in the subject-matter of claim 1.

In summary, none of the prior art documents taken alone or in combination would result in a bird feeder having the features of claim 1 of the example solution, therefore the claim involves an inventive step.

4. Example set of claims

1. A bird feeder (1,21) comprising:

a feeding unit (2,22) for holding bird food;

a guard (9,29) comprising a shield (9a,29a) having a shape for protecting the food, the guard (9,29) being rotatable relative to the feeding unit (2,22),

characterised in that the bird feeder further comprises:

an electric motor (13,33) for rotating the guard (9,29), and a weight sensor (12,14; 32,34) for sensing a weight applied to the guard (9,29), the weight sensor (12,14; 32,34) being configured to activate the electric motor (13,33) when the weight exceeds a predetermined value.

2. The bird feeder (1,21) according to claim 1 wherein the shield (9a,29a) has a cone shape, a disc shape, or a hemi-spherical shape.

3. The bird feeder (1,21) according to either of claims 1 or 2, wherein the predetermined weight is 250g.

4. The bird feeder (1,21) according to any previous claim, wherein the guard (9, 29) is rotatable at a speed of 30 – 35 revolutions per minute.

5. The bird feeder (1,21) according to any previous claim, wherein the weight sensor comprises a switch (12, 32) and a spring (14, 34).

6. The bird feeder (1,21) according to any previous claim, comprising a motor speed controller for adjusting the guard rotation speed.

7. The bird feeder (1,21) according to any previous claim wherein the feeding unit (2) comprises a food container (3).

8. The bird feeder (1) according to any previous claim, further comprising a ring (10) for suspending the bird feeder.

9. The bird feeder (1,21) according to any one of claims 1 to 7 further having means for fixing the bird feeder to a pole.

EXAMINATION COMMITTEE I

Candidate No.

Paper B (Electricity/Mechanics) 2010 - Marking Sheet

Category		Maximum possible	Marks awarded	
			Marker	Marker
Claims	Independent	36		
	Dependent	14		
Arguments	Basis for Amendments	14		
	Clarity	2		
	Novelty	6		
	Inventive Step	28		
Total		**100**		

Examination Committee I agrees on ..... marks and recommends the following grade to the Examination Board:

☐ PASS (50-100)

☐ COMPENSABLE FAIL (45-49)

☐ FAIL (0-44)

02 July 2010

Chairman of Examination Committee I