Examiners' Report Paper B 2013 (Electricity/Mechanics)

1. General considerations

It is noted that any references in this text to the Guidelines for Examination at the European Patent Office refer to the version valid at the date of the examination.

1.1. Introduction

This year's paper relates to a closure for a beverage container. It has been known for many centuries that the maturing process of wine and whisky can be accelerated using sound waves (cf. description par. **[002]**).

The application concerns closures for beverage containers in combination with containers having their own air inlet (Fig. 1) and closures for bottles, as shown in Figs. 2 and 3. The basic idea behind the invention is to generate sound waves inside a beverage container using a vibrator unit. All the vibrator units in the description and drawings comprise piezoelectric vibrators.

1.2. Prior art

The communication cites two documents D1 and D2.

D1 discloses a closure for a bottle having a vibrating unit comprising two tuning forks. The purpose of the closure is to accelerate the maturing process of whisky by means of sound waves (par. **[001]**). The tuning fork of a closure can be made to vibrate at its resonance frequency, thereby accelerating the development of a specific flavour in the whisky. To accelerate the development of combinations of flavours, different closures must be used one after another (par. **[003])**.

D2 describes a technique and arrangement for removing yeast sediments during the maturing process in bottles of sparkling wine. The technique is referred to as "*micro-shaking*" (par. **[002]**). The arrangement for carrying out the technique uses a piezoelectric vibrator attached to the bottom of the bottle. The piezoelectric vibrator generates mechanical vibration waves, which propagate through the sparkling wine contained in the bottle (par. **[003])**. The closure of the bottle has a pressure sensor for sensing the pressure in the bottle (par. **[004])**.

1.3. The invention as presented in the application as filed

The invention as initially claimed concerns a closure for a beverage container having a vibrator unit for generating sound waves and means for conducting electrical signals to the vibrator unit. In the embodiments described in the description, piezoelectric vibrators are disclosed which have the advantage of being small and being able to expose a beverage to sound waves at different specific frequencies for promoting the generation of specific flavours (par. **[006]**).

1.4. The challenges of the paper

The main challenges of the paper were to:

a) Amend the client's draft claim set according to the wishes of the client to fulfil the requirements of the EPC.
b) Write a reasoned letter of reply
- explaining the basis for the amendments of the claims,
- arguing for clarity
c) Arguing that the subject matter of the amended independent claim is new and involves an inventive step in the light of the available prior art.
d) Requesting accelerated examination

1.5. The marking scheme

Answer papers are marked on a scale of 0 to 100 marks:

Appropriate amendments to the draft set of claims: Max. **30** marks, min. **0** mark. This year not the claim set as a whole, but the amendments carried out received the marks. However, from the marks awarded for the amendments, marks have been deducted for unnecessary limitations or non-compliance with Art. 123(2) EPC or 84 EPC etc. The overall number of marks **per claim** could not be negative.

For the argumentation max. **70** marks and min. **0** mark have been available. Unless otherwise stated, the individual marks referred to in the various sections of this document apply to the example set of claims.

Although the marking scheme is divided into separate sections such as the marks awarded for amendments to the claims and marks awarded for argumentation, the answer paper as a whole was considered and the scheme reflects this.

2. Example set of claims

In the example set of claim, which follows, the starting point taken is the client's set of draft claims.

1.

a. Closure (10, 20, 30) for a beverage container (1),

b. the closure being arranged for accelerating the maturing process of a beverage (2),

c. the closure comprising a body (3, 13, 23),

d. a vibrator unit (4) for generating sound waves (5) in the beverage (2), and

e. means for conducting electrical signals (8, 9) to the vibrator unit (4),

f. characterized in that the vibrator unit (4) comprises a~~n~~ piezoelectric ~~electro-mechanical~~ vibrator (41) for generating the sound waves at different frequencies.

2. Closure (10, 20, 30) according to claim 1, wherein the body (3, 13, 23) is made of wood, cork or a synthetic polymer.

~~3. Closure according to any previous claim, wherein the vibrator unit (4) comprises a piezoelectric vibrator.~~

3. ~~4.~~ Closure (20, 30) according to ~~claim 3~~ any previous claim, wherein the vibrator unit (4) comprisinges a vibrator plate (43) having a parabolic surface.

4. ~~5.~~ Closure according to any previous claim comprising an air channel (17).

5. ~~6.In~~ System of a bottle and the closure according to ~~any previous~~ claim 4, wherein the bottle (21) has a base (15) with an internal parabolic surface (16).

3. Expected amendments to the draft claim set

- The draft set of claims contains features, which result in a claim or claims, which are considered not to be consistent with the EPC. Marks have been awarded for making amendments to the draft claim set appropriate for bringing it into accordance with the EPC.

- **No marks were awarded for merely filing a claim provided by the client.**

- It is noted that full marks have been awarded for amendments that differ from those of the example claim set, provided their scope is comparable. This should be considered on a case-by-case basis. Marking of the dependent claims should be adapted correspondingly.

- Example

A closure comprising the features of claim 1 of the example claim set and instead of the piezoelectric vibrator a vibrator unit arranged to transform electrical signals into sound waves at different frequencies. This alternative solution is allowable, because it is compliant with Art. 56 and arguably is disclosed in the application documents as filed. However, arguments have to be provided that this combination of technical features is disclosed for all embodiments and that the vibrator plate (42, 43) is disclosed as optional for these embodiments.

- The following amendments were expected with respect to the draft claim set:
(Note: full marks for renumbering / deleting claims can be achieved by any self-consistent claim set)

3.1. Claim 1

Deleting “an electro-mechanical vibrator”. (**3 marks**)

Replacing it with “a piezoelectric vibrator (41)”. (**3 marks**)

A claim comprising in addition that the vibrator unit transforms the electrical signals into sound waves receives full marks because transforming electrical signals into sound waves is inherent for a piezoelectric vibrator.

3.2. Claim 2

no amendment expected. (0 marks)

3.3. Claim 3

Delete claim 3. (**1 mark**)

3.4. Claim 4 (new claim 3)

- Claim renumbered as claim 3 (see under claim 3). (**1 mark**)

- Amend the dependency (claim 1 or 2). (**1 mark**)

- Defining that the vibrator unit (4) (not the closure) comprises a vibrator plate (43) having a parabolic surface. (**3 marks**)

The wording for a clear claim is suggested in the client's letter.

3.5. New Claim 4

Keep new "Air Channel" claim as it is, but change number and keep dependency (dependent on any previous claims as suggested in the draft claim set). (**2 marks**)

- For merely stating, "claim as in the draft claim set", and not adjusting the claim number or dependency no marks were awarded.

- Adding that the air channel connects the interior with the exterior of the beverage container gives full marks without deduction.

- It is essential in order to comply with the requirements of Art. 123(2) EPC that in the system claim the closure comprises the air channel (see section 3.6). One way of claiming this is to keep from the draft claim set the dependent claim relating to the air channel and to make the new system claim dependent upon this claim.

3.6. Claim 5

1. Delete the unclear wording "in a bottle" and reformulate the claim as "a system comprising a bottle and a closure according to claim 4. (**6 marks**)
2. Amending the claim so that the "internal parabolic surface (16) is part of the base of the bottle, there being no basis for a bottle having an internal parabolic surface elsewhere. (**5 marks**)
3. Including an air channel in the closure claimed, there being only a support in the application as filed for a closure *having an air channel* in combination with a bottle, the base of which has an internal parabolic surface (see application par. **[010]**, **[011]**)**.** In the example claim set this is achieved by an appropriate back reference to the previous claim. (**5 marks**)

Examples:

Re 1) - If a system is not explicitly claimed, but a “bottle with/ comprising a closure”, this is considered to be equivalent to “a system comprising a bottle and a closure” and may attract full marks, if the requirements of Art. 123(2) EPC and Art. 84 EPC are fulfilled.
- No marks have been available for formulations relating to the use of the bottle or the closure, e.g. “bottle for (use with) a closure”.

Re 3) - Up to 5 marks have been given here for claiming the air-channel in a bottle as negative feature: “the closure not having an air-channel in the case that the container comprises its own air-inlet”. However, marks for unclear, un-concise or not originally disclosed wording may have been deducted (see below).
- Up to 5 marks have also been available if the air-channel is only claimed in the system claim and reference is made in the system claim to all previous claims.
- Up to 5 marks have also been available if claim 1 comprises an air-channel. However, 3 marks were to be deducted for unnecessary limitation for claim 1 (see section 4.1.1).

4. Claims differing from the example claims

4.1. Where an independent claim (claim 1) of an answer paper differs from that of the example solution and results in a claim which is considered to be inappropriate for protecting the client’s invention, e.g. because it does not give the client the broadest possible protection for their invention, marks are deducted.

4.1.1 For an independent claim of an answer paper having one or more additional features that are considered to limit the claim unnecessarily, then **3 marks** per unnecessarily limiting feature have been deducted from the total marks awarded for the claims.

Examples:

- Claim 1 according to the example claim set, with the additional feature that the vibrator unit (4) comprises a (flat or parabolic) vibrator plate (- 3 marks).
- Restoring the air channel or restrictions for the frequency range in the system claim (- **3 marks**).

4.1.2 For a dependent claim of an answer paper having one or more additional features that are considered to limit the claim unnecessarily, then **2 marks** per unnecessarily limiting feature per claim have been deducted from the total marks awarded for the claims.

Examples:

- Any claim according to the example solution, wherein the claim is unnecessarily limited by a further feature of an air channel, or further restrictions for the parabolic surface or frequency range (- **2 marks**).
- Adding to the system claim that the parabolic surface is arranged such that the sound waves are focused towards a focal point or similar expressions (- **2 marks**), because in paragraph **[003]** a general basis for the system claim is provided.
- The description provides in par. **[003]** a general basis for a system of a bottle and a closure according to any of the original claims ("The invention also includes a system comprising closures as defined in the claims in combination with a bottle comprising a base having an internal parabolic surface.") Therefore, for a system claim comprising technical features of original claims 2-4**, 2 marks** have been deducted per additional feature, e.g. parabolic vibrator plate, closure made of cork, wood or synthetic polymer.

4.2 Claim sets which have been amended so that they differ from the client's draft set of claims, but which result in claims which do not fulfil the requirements of the EPC, for example because they result in an unclear claim, have not received full marks for the amendments.

4.2.1 For an independent claim of an answer paper not fulfilling the requirements of the EPC, for example due to lack of inventive step, added subject matter or lack of clarity, up to **3 marks per issue** have been deducted from the total marks awarded for the claims.

Examples:

- The feature (generating sound waves) at different frequencies is removed. This claim not only infringes Art. 123(2) EPC, but is arguably also not inventive over the combination of D1 and D2, because D2 provides a teaching of using a piezoelectric vibrator for generating sound at a specific frequency.
- The air-channel is claimed as a "negative" feature: "the closure has no air-channel in the case that the container has its own air-inlet". Here reference is made to a container, which is not explicitly claimed in claim 1, thus rendering the claim unclear.
- The same is valid for claiming "the closure or the beverage container comprising an air channel". Here also reference is made to the container, which is not explicitly claimed in claim 1.

4.2.2 For a dependent claim of an answer paper not fulfilling the requirements of the EPC, for example due to added subject matter or lack of clarity, then **2 marks per issue** have been deducted from the total marks awarded for the claims.

4.3 Formal matters (up to -2 marks)

For an answer paper having an independent claim according to the example solution it is considered appropriate to use the two-part form.

Example:

- For missing or very incomplete reference signs in the claims, **1 mark** was lost.
- An independent claim having a one-part form, or a two-part form of claim which is not consistent with any single prior art disclosure, lost **1 mark** from the total marks awarded for the amendments (see also last point in the examiner's communication).
- It is noted here that the metallic bar of the tuning fork in D1 is a means (suitable) for conducting electrical signals to the vibrator unit. Therefore, the single characterizing technical feature in claim 1 of the example claim set is that the vibrator unit (4) comprises a piezoelectric vibrator (41) for generating the sound waves at different frequencies.

4.4 Solutions not based on the client's draft claim set

4.4.1 The client provides a draft claim set that he proposes for filing subject to any necessary amendments for fulfilling the requirements of the EPC, whilst giving him the broadest possible protection. Answer papers which have claim sets not based on the draft claim set are not considered to be in the interest of the client and such claims may therefore receive less marks or no marks.

4.4.2 For additional dependent claims, no marks have been available because it was the explicit request of the client not to add new, i.e. further dependent claims. However, new dependent claims are not considered as new if they claim the originally claimed subject matter or subject matter claimed in the client's draft claim set in a different way.

Example

For "new" claims serving only for handling the dependency of the system claim with respect to the "air channel" no marks have been deducted, e.g. the system is first claimed for a beverage container and then in a further claim the container is specified as a bottle.

4.4.3 For amendments to the description no marks have been available.

5. Letter of reply to the EPO (up to 70 marks available)

5.1. General remark

- It is noted that the examples for sections of a letter of reply given in the following are, unless otherwise stated, appropriate for the example claim set. For an answer paper having a different claim set, the letter of reply may differ and the answer paper is considered accordingly.

- **No marks** have been available for
a letter to the client
a letter to the marker

- All the necessary information should be contained in the letter of reply to the examining division. Justification for replacing “electro-mechanical” with “piezoelectr is not expected to be discussed in a letter of reply to the EPO and no marks have been foreseen for that.

5.2. Request of accelerated examination (3 marks)

The client requests “We would like the European Patent Office to accelerate the examination of this application. If this is possible, please take all necessary steps in your letter of reply to ensure this happens“. Therefore it was expected that candidates request accelerated examination in their letter of Reply. 3 marks have been given for a clear statement that accelerated examination is requested. The 3 marks are also available, if merely the PACE program is mentioned or reference is made to the publication in the EPO official journal or to the Guidelines (EPO official journal 2010, page 352, Guidelines E-VII, 3.2).

5.3. Source of amendment showing Art. 123(2) EPC compliance (23 marks)

The amendments made in the claims are to be identified and a basis for them in the application as filed is to be indicated. Brief explanations may be necessary.

5.3.1. Claim 1 (11 marks)

11 marks have been available for indicating and explaining a basis for claim 1. For the example claim 1, these marks have been awarded according to the following scheme:

2 marks for appropriately stating the claims /parts of the description /drawings used as a basis for the claim;

9 marks for explaining the basis for deleting the feature “an air channel” found in original claim 1.

Example:

a) New claim 1 is based on original claims 1 and 3 with the removal of the feature “an air channel” (**2 marks**).

b) The removal of the feature “an air channel” found in original claim 1 does not violate Art. 123(2) EPC for the following reasons (Guidelines H-V, 3.1):

Using the three point “essentiality test”, it is clear that the skilled person would directly and unambiguously recognise that:

(i) The feature is not explained as being essential (**1 mark**); in the description par. **[011]** it is explained that it is only essential for closures to have an air inlet when used with beverage containers having no air inlet. However closures according to the invention can be used with a container having its own air inlet as shown in Fig. 1. Therefore it is not essential for a closure according to the invention to have an air inlet. (**2 marks**)

(ii) The feature is not as such indispensible for carrying out the invention (**1 m**
because the invention can be carried out using a closure with no air inlet in conjunction with a beverage container having its own air inlet. (**2 marks**)

(iii) The removal of the feature requires no real modification of the other features to compensate for the change (**1 mark**). Since a closure is claimed for the broadest scope of protection and not the entire system with the container, the remaining features of the closure are independent of the "air inlet" feature and are unchanged by the removal of this feature. The closure of the embodiment according to Fig. 1 does not have an air channel (**2 marks**).

5.3.2 Claim 2 (1 mark)

1 mark has been available for indicating and explaining a basis for claim 2, i.e. for stating that the claim has the same wording as original claim 2; an additional mark has been available for arguing that the additional features of claim 1 (i.e. the piezoelectric vibrator) is also originally disclosed in conjunction with the features of claim 2.

5.3.3 Claim 3 (1 mark)

1 mark has been available for indicating and explaining a basis for claim 3, i.e for stating that the claim is based on original claim 4, and that the claim is merely renumbered and the dependencies appropriately changed. The amendment is further supported by par. **[009]**.

Note: Under "clarity" (see section 6) up to 3 marks have been given for citing the basis for the clarification, i.e. in par. **[009]**, where it is made clear that the *vibrator unit* comprises the (parabolic) vibrator plate.

5.3.4 Claim 4 (3 marks)

3 marks have been available for indicating and explaining a basis for claim 4, i.e. for explaining that the air channel was included in original claim 1 (**1 mark**) and that, since the respective original claims which form the basis for new claims 2 and 3 both referred to original claim 1 (**1 mark**), no subject matter is added (**1 mark**).

5.3.5 Claim 5 (7 marks)

7 marks have been available for indicating and explaining a basis for claim 5:

- 2 marks have been available for explaining the basis for "a system comprising a closure according to … and a bottle …". Namely from par. **[003]** the invention is stated as including a system comprising closures as defined in the (original) claims and a bottle comprising a base having an internal parabolic surface.

- 2 marks have been available for indicating that a basis for "a base (15) with an internal parabolic surface (16)" can be found in par. **[010]** or **[003]**. There is no basis for a bottle having an internal parabolic surface elsewhere.

- 3 marks have been available for justifying that the system claim does not cons a change to unsearched subject matter. In the original claim set, no system claim was present, nor was a claim to the combination of a bottle and closure present. It is therefore considered appropriate for answer papers to contain reasoning justifying that the claim should have been searched and that the system claim combines with the claims as originally filed to form a single general inventive concept with the claims as originally filed, therefore the requirements of Rule 137(5) EPC and Art. 82 EPC have been met.

Example:

Par. **[003]** of the description states that the invention includes a system comprising closures as defined in the claims in combination with a bottle comprising a base having an internal parabolic surface. Therefore the search examiner should have considered this to be part of the invention and the claim should have been searched. In addition, the system claim combines with the claims as originally filed to form a single general inventive concept with the claims as originally filed, therefore the requirements of Rule 137(5) EPC and Art. 82 EPC have been met.

Particularly in embodiment 3, par. **[009],** the unclear wording "in a bottle, a closure according to the third embodiment of the invention…" is an indication that a closure according to the third embodiment of the invention was presented as being "in a bottle" and therefore it would be expected that this should have been searched as a part of this embodiment. (**3 marks)**

6. Art. 84 EPC (up to 3 marks)

The examiner objected to original claim 4 because of a lack of support in the description (see communication, point 4). Answer papers should have included a response to this point. This may have been presented in combination with an argument for justifying the basis for the amendment.

Example:

Original claim 4, i.e. present claim 3 of the example claim set, has been amended to claim that the vibrator plate having a parabolic surface is part of the vibrator unit (**1 mark**). This is supported by the description, par. **[009]** (**1 mark**); therefore the objection under point 4 of the communication is overcome (**1 mark**).

7. Novelty of the independent claim (up to 4 marks)

It was sufficient to mention a single feature which renders claim 1 novel with respect to D1 and D2.

Examples:

(1) Claim 1 is novel with respect to D1 because D1 does not disclose a piezoelectric vibrator. (**2 marks**)

(2) D2 does not disclose that the closure comprises the piezoelectric vibrator. (**2 marks**).

8. Inventive step argumentation for the independent claim (up to 37 mar

It was appropriate to provide arguments which are structured to follow the problem solution approach (see Guidelines G-VII, 5).

8.1. Identifying the closest prior art (7 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.

8.1.1 Stating the closest prior art (1 mark)

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, **1 mark** has been available.

For the example independent claim, D1 is considered to represent the closest prior art, since it addresses the same purpose as that of the invention; for a clear statement to this effect, **1 mark** has been available.

For a statement identifying D2 as closest prior art, no marks have been awarded.

8.1.2 Arguments justifying the choice of closest prior art (6 marks)

Discussing D1 (**3 marks**), discussing D2 (**3 marks**).

Example for the example independent claim:

Closest prior art is D1. (**1 mark**). The *"micro-shaking"* arrangement of D2 is for the purpose of removing sediments from bottles of sparkling wine. It does not mention the problem of maturing alcoholic beverages. Furthermore, in D2 the vibrator unit is not comprised in the closure. Furthermore the effect of the mechanical vibrations generated in D2 at a frequency of 0.1 kHz, Par. **[003]** would have only a minimal effect of increasing the maturing process (see D1, par. **[003]**). Sound argumentation not comprising all the aforementioned arguments could also achieve all **3 marks**.

D1 discloses an arrangement for accelerating the maturing process of an alcoholic beverage by subjecting the beverage to mechanical vibrations. Since this is the underlying purpose of the invention, D1 is the closest of the available prior art (**3 Marks**).

8.2. Formulation of the objective technical problem (10 marks)

The next stage is to establish in an objective way the technical problem to be solved. This requires the steps of:

(1) identifying, in terms of features, the difference between the claimed invention and the closest prior art, i.e. the distinguishing features of the claimed invention (**1 mark**);
(2) stating the technical effects or the advantages of the difference (**7 marks**); and
(3) formulating a problem which is solved by these technical effects (**2 marks**).

Example:

The subject matter of claim 1 differs from D1 by the features of the characterising portion that the vibrator unit (4) comprises a piezoelectric vibrator (41) for generating the sound waves at different frequencies (**1 mark**).

The **technical effect** of this difference is that sound of any frequency can be applied at any one time. Depending on the frequency of the electric input signal, piezoelectric vibrators generate sound at different frequencies. The socket can be a standard audio socket. Therefore, any sound generator may be used for producing the electric input signal. The vibrator can be integrated into the closure used for commercialization. Therefore, an additional advantage of the proposed solution is that sound can be applied both by the producer and the consumer. The piezoelectric vibrator therefore overcomes the disadvantages of a mechanical vibrator as disclosed in D1 (i.e. only one frequency can be applied at the time, forks have to be replaced by another closure after the sound treatment). In D1 an external excitation unit (loudspeaker) is needed. Therefore, only the producer can perform sound treatments. Convincing argumentations not comprising all the aforementioned effects could also achieve full **7 marks**.

Citing the advantages provided by the client in his letter attracted **3 marks** ("The invention has the advantage that a single closure can generate sound waves at different frequencies. Therefore different specific flavours can be selectively developed in an alcoholic beverage using a single closure").

The **objective technical problem** may therefore be formulated as:

Providing a beverage closure for accelerating the maturing process of a beverage which is capable of promoting specific different flavours. (**2 marks**).

Marks could be redistributed accordingly between the formulation of the effect/advantages of the invention and the formulation of the problem as long as they have been consistent overall.

8.3 Arguments in support of inventive step (20 marks)

Arguments should support the features of the independent claim. They should be convincing and well structured. In order to obtain full marks in this section, arguments which fully answer the question as to why the skilled person, knowing the teaching of the prior art as a whole, would not arrive at the claimed subject matter had to be presented. Such arguments can be structured to consider the following aspects:

- 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 teaching of the closest prior art with other items of prior art, would they arrive at the subject matter of the claim?

Example:

Considering D1 on its own (5 marks)

A person skilled in the art does not find any hint in D1 alone for the solution according to the invention. On the contrary, D1 suggests only mechanical solutions to the objective problem, which are different to those of the invention. D1 shows a very voluminous loudspeaker. The statement “The loudspeaker 110 comprises an electro-mechanical vibrator, for example an electromagnetic coil vibrator“ leads away from integrating such a voluminous electro-mechanical vibrator into a small closure. The only example given for an electro-mechanical vibrator is an electro-magnetic coil vibrator. This leads away from a piezoelectric vibrator. Therefore, there is no incentive or teaching provided which could point the skilled person to replace the mechanical vibrator by a piezoelectric vibrator.

Considering D1 in combination with D2 (15 marks)

D2 teaches a piezoelectric vibrator for generating sound *waves at one single frequency (*0.1 kHz). A pure juxtaposition of features would therefore not result in a closure according to claim 1. In addition, for several reasons the combination of technical features of D1 and D2 is not obvious: D1 and D2 do not give any motivation for such a combination. D2 teaches using a piezoelectric vibrator of a size, which cannot be integrated into a closure, i.e. the vibrator disclosed in D2 has dimensions of several centimetres. D2 explicitly teaches away from using the piezoelectric vibrator for frequencies in the sound range necessary for accelerating the maturing process, i.e. frequencies other than 0.1 kHz. However, in D1, last paragraph, it is stated that frequencies above 1 kHz are necessary for accelerating the maturing process. D2 teaches that the piezoelectric vibrators are glued on the exterior of the bottle. D2 teaches furthermore to use the piezoelectric vibrators only in combination with a pressure sensor, i.e. with pressure control. This pressure control is stated to be necessary for avoiding explosion of the bottle. In addition, D2 teaches positioning the piezoelectric vibrators remote from the closure in order not to disturb the measurements of said pressure sensor. These statements teach all further away from integrating piezoelectric vibrators into a *closure*.

Thus there is no incentive for the skilled person to use a vibrator as disclosed in D2 to adapt the system of D1, since the purpose is different and the method is different, as well as the location of the vibrators.

If the skilled person in spite of the above-mentioned reasons intended to combine the teaching of D1 with the teaching of D2, he would not place the piezoelectric vibrators into the closure, but he would place them at the exterior of the bottle close to the bottle bottom in view of the size of the piezoelectric vibrators. The skilled person would furthermore use the piezoelectric vibrators in combination with a pressure sensor in the closure and also for this reason place the piezoelectric vibrators remote from the closure. This teaches away from integrating a piezoelectric vibrator into the closure.

Would the skilled person use the teachings of D1, he would minimise the number of changes in the apparatus of D2 in order to generate sound in the bottle. He would therefore just reprogram the control unit such that mechanical waves at higher sonic

frequencies are generated by the piezoelectric vibrators for accelerating the mat
process of the beverage in the bottle.

By combining the teachings of D1 and D2 the skilled person would therefore not arrive at the combination of technical features of present claim 1.

All the other claims are dependent on claim 1 and therefore also relate to inventive subject matter.

It is concluded that the invention defined in claim 1 involves an inventive step.
It was not expected that candidates provided all the above-listed arguments. With a convincing reasoning comprising many of the above-listed arguments full marks could be achieved. On the other hand the above-listed arguments are not exhaustive and other convincing arguments could attract marks.

9. Example set of claims

1.

   a. Closure (10, 20, 30) for a beverage container (1),

   b. the closure being arranged for accelerating the maturing process of a beverage (2),

   c. the closure comprising a body (3, 13, 23),

   d. a vibrator unit (4) for generating sound waves (5) in the beverage (2),

   e. and means for conducting electrical signals (8, 9) to the vibrator unit (4),

   f. characterized in that the vibrator unit (4) comprises a piezoelectric vibrator (41) for generating the sound waves at different frequencies.

2. Closure according to claim 1, wherein the body (3, 13, 23) is made of wood, cork or a synthetic polymer.

3. Closure according to any previous claim, wherein the vibrator unit comprises a vibrator plate (43) having a parabolic surface.

4. Closure according to any previous claim comprising an air channel.

5. System of a bottle and the closure according claim 4, wherein the bottle (21) has a base (15) with an internal parabolic surface (16).

EXAMINATION COMMITTEE I

Candidate No. _____

Paper B (Electricity/Mechanics) 2013 - Marking Sheet

Category		Maximum possible	Marks awarded	
Claims		30		
Arguments	Request accelerated examination	3		
	Basis for Amendments	23		
	Clarity	3		
	Novelty	4		
	Inventive Step	37		
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)

27 June 2013

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Chairman of Examination Committee I