
Examiners' report - Paper A (Electricity/Mechanics)

1. General considerations

The inventor wants to achieve protection for his “egg shell breaker” which should consequently be the subject-matter of the independent claim. Another possible subject-matter is a cutter which is not limited to its use for eggs but is also suitable for other “objects” (e.g. nuts), as long as it is clearly expressed that the cutter breaks the outer shell of such objects.

Prior art egg shell breaker according to Fig. 1&2 (“punch-hammer system”) is able to provide a clean circumferential break of the egg shell due to the specific form of the punch or hole drill comprising an opening for receiving the egg and a cutting edge surrounding the opening for contacting the egg. The application of just the right impulse to the egg for breaking its shell depends however on the skills of the user.

Prior art egg shell breaker according to Fig. 3 (“guillotine”) enables the user to “automatically” impart a suitable impulse to the egg, i.e. an impulse sufficient to break the shell, by means of the frame which guides the blade. However, not only the shell, but also the entire top of the egg is inevitably cut off.

The egg shell breakers according to the invention (Fig. 4-8) provide a combination of the advantages of the prior art examples. One of them, as represented in Fig. 4, basically consists of two elements, i.e. a body which represents at the same time an impact means and a guide for the body / impact means, and is therefore hereinafter referred to as “two-part breaker”. The others, as represented in Fig. 5-8, basically consist of three elements, i.e. a body, a separate impact means and a guide for the impact means, and are therefore hereinafter referred to as “three-part breakers”.

The challenge of the paper consisted in drafting one independent claim covering both the “two-part breaker” and the “three-part breaker”. Most candidates directed their answer to such a solution which confers the broadest possible protection in a concise manner.

2. Independent claim

2.1 Preferred solution

The preferred independent device claim should comprise a combination of the following basic features, it being understood that the features could be expressed using different wording:

- (a) an egg shell breaker comprising
- (b) a cutting edge (51)
- (b1) that surrounds an opening for receiving an end portion of an egg
- (b2) such that the cutting edge contacts the egg shell along a substantially circumferential contact line,
- (c) an impact means (40, 57, 67)
- (d) a guide (43, 53, 63, 64)
- (d1) for guiding said impact means
- (d2) so as to impart an impulse via said cutting edge to the egg
- (d3) such that the egg shell is broken.

Instead of the impact means, the body could be claimed in combination with the guide (hereinafter referred to as "body-solution"). In this case the body should be limited by the feature "comprising the cutting edge", because this corresponds to the limitation "impact" in the preferred solution. Although claiming the impact means is preferred, because it is considered to be more meaningful and slightly less limiting, the body-solution has been treated as an equivalent solution.

Any solution should cover the breaker both in operation and at rest.

An additional method claim describing the normal use of an egg-shell breaker already claimed in a device claim was not expected.

Remarks regarding feature (a):

- a. The egg shell breaker could also be called "egg shell cutter", "opener" or "device / apparatus for breaking / cutting / opening (an) egg shell(s)".

"Cut" and „break“ were regarded as equivalent terms.

- b. Any reference to a "boiled" egg was not treated as an unnecessary limitation.

Remarks regarding feature (b):

- a. The features “surrounding cutting edge” and “circumferential contact line” or similar terms expressing the concept of a simultaneous surrounding contact between cutting edge and egg shell were considered to be essential for assuring novelty and inventive step with regard to prior art Fig. 3.
- b. If instead of “circumferential” other terms such as “ring-shaped” were used, this was not penalised as long as a serrated cutting edge was not excluded.

Remarks regarding feature (c):

As mentioned under item 1, above, the body could replace the impact means, but only if “*cooperating with*” is used for describing its relation to the guide. This is a very general term covering both the guiding of the body itself (Fig. 4) as well as the fixation of the guide onto the body (Fig. 5-8). It is mentioned in the client’s letter (see page 3, fourth paragraph).

Remarks regarding feature (d):

- a. This feature was considered to be important for establishing novelty with regard to prior art Fig. 1&2.

If a very general term was used instead of “guide”, e.g. “means for determining an impulse”, the subject-matter of the claim risked lacking novelty with regard to prior art Fig. 1, because it is pointed out in the client’s letter (page 2, lines 6-9, page 3, lines 6-8), that the inventor himself could achieve this by means of his hammer-punch-system.

- b. Impulse is the force imparted at the moment of an impact. Being a force, impulse is a vector characterised by a direction and intensity. It is clear from the client’s letter that the determination or control of these two parameters is essential for the invention.

Any misunderstanding of the concept of impulse did not, however, have negative consequences for the candidates, as long as it could be at least implicitly derived that the direction and the intensity of the impact were determined; e.g. also the term “momentum” which is equivalent to the German term “Impuls” or even “force” was accepted.

The impulse is either directly applied to the egg (Fig. 4) or transmitted by the body to the egg (Fig. 5-8). Therefore, a good wording for covering both possibilities was considered to be “*imparted*”. The use of “*applied*”, “*transmitted*”, “*transferred*”, “*provided*”, “*created*” or “*(pre)determined*” did not, however, lead to a deduction of points.

2.2 Inferior solutions

- a. Inferior solutions may arise from attempts to avoid the challenge as mentioned above and then usually have draw-backs with regard to the scope of protection and/or to clarity. If so, they could not obtain the maximum number of available points. Two examples are:
 - Two independent claims or one independent claim containing an “or“-alternative
 - A „three-feature definition“ (body, impact means and guide) which is broadened later in a dependent claim to a two-feature definition (e.g. “*wherein the body and the impact means are integrally formed*”).
- b. In more serious cases, the independent claim(s) even excluded one embodiment, although it was clearly pointed out in the last paragraph of the client’s letter that the application should cover all aspects of the invention, including the embodiment of Fig. 4. These cases could therefore only attract at the most about half of the points available for the independent claim.
- c. A method or use claim as the only independent claim was clearly not appropriate as it is practically impossible to enforce.

2.3 Novelty / Inventive Step

As mentioned in the instructions for the candidates, the independent claim should have a good chance of being granted. That means that it should be clearly new and supportable by arguments in favour of the presence of an inventive step.

- a. Lack of novelty has always been considered to be a serious deficiency and can cause the loss of more than half of the marks available for the independent claim.

As mentioned above, the definition of the cutting edge and of the guide was considered to be of particular importance for an assessment of the novelty of the subject-matter of the independent claim with regard to the prior art examples of Fig. 3 and Figs. 1&2, respectively.

- b. Lack of inventive step can cause the loss of up to half of the available points.

2.4 Clarity

Clarity was an important issue for this paper since it was demanding to draft a claim which is broad enough to cover both the two-part breaker and the three-part breaker and at the same time is sufficiently understandable and clear.

- a. Frequent clarity problems were related to definitions by means of the result to be achieved.

Merely claiming the underlying problem, e.g. *“egg shell breaker comprising means for achieving a circumferential break of the egg shell and means for automatically applying always the same impulse to the egg”* was heavily penalised.

In less serious cases, such a general “means for”-definition represented the only claim feature which is new over one of the prior art examples.

- b. Another clarity problem was lack of essential features.

If the subject-matter of the independent claim was an “egg shell breaker” or “egg opener”, features necessary for ensuring that the shell is effectively broken were considered to be essential.

Only few points were deducted for these cases, since the subject-matter of such claims mostly involved an inventive step by solving some more or less “artificial” problem in a non-obvious manner (e.g. “to provide a device applying an (reproducible) impulse to an egg”). The consistent definition of the problem in the introductory part of the description was, however, double-checked.

2.5 Unnecessary limitations

Unnecessary limitations did not occur frequently in the candidates’ answers. In serious cases, however, where they led to the exclusion of one embodiment, this was treated as an inferior solution (see item 1.2, above).

2.6 Formal matters

An incorrect two-part form or the omission of reference signs resulted in a small deduction.

A two-part claim starting either from Fig. 1&2 or from Fig. 3 as closest prior art was accepted.

2.7 Separate applications

Separate applications were not considered to be appropriate.

3. Dependent claims

Candidates are reminded that the dependent claims should provide good fallback positions. This year, it was apparent that it was difficult to provide good fallback positions without a suitably structured set of dependent claims.

Maximum points were only awarded if the dependent claims

- covered all embodiments according to Fig. 4-8 and the modified embodiments indicated in the description (additional spring in Fig. 4 and 5, ball in Fig. 6-8 instead of impact rod);
- were correct with regard to their back references; and
- were sufficiently clear.

Candidates who made impossible or inappropriate combinations of features within a dependent claim did not receive full credit for those features, particularly where this resulted in an unnecessarily limited fallback position.

The following features of the different embodiments were expected to be covered by dependent claims:

- a. Features present only in embodiment Fig. 4:
 - . impact means (40) provided with cutting edge (body-solution: body is the impact means)
- b. Features present in embodiments Fig. 4 and 5:
 - . shaft (43, 53) as guide
- c. Features present in embodiments Fig. 5 and 6-8:
 - . separate body (50, 60) provided with cutting edge (body-solution: separate impact means (57, 67))
 - .. shape of the body (50, 60)
 - .. impact surface (62)
 - . ball (57) as impact means
- d. Features present only in embodiment Fig. 6-8
 - . two parallel rails (63) and slider (64) as guide
 - .. actuating rod (66)
 - ... knob (68)
 - ... end (67) of rod (66) as impact means
- e. Features present in all embodiments Fig. 4, 5 and 6-8
 - . source of impulse (gravity and/or spring force)
 - . stopper member (45, 55, 65)
 - .. spring (69) between stopper member and impact means
 - . circular or continuous cutting edge (51)
 - . serrated or saw-like cutting edge (51) (awarded with a bonus point).

4. Description

4.1 Acknowledgement of the prior art

The aspects of either Fig. 1 or Fig. 3 which were relevant to the independent claim were expected to be identified.

In the case of a one-part form of the independent claim, the aspects of both prior art examples according to Fig. 1 and 3 which were relevant to the independent claim were expected to be identified.

4.2 Presentation of the problem and its solution

Candidates were expected to disclose the invention in such terms that the technical problem and its solution could be understood.

The closest prior art should be identified consistently with the preamble of the independent claim.

An explanation of how the problem derives from this prior art (e.g. by mentioning the disadvantages of the prior art or the effects achieved by the differing features of the invention) and of how the differing features of the invention contribute to solving the problem was expected. Marks were lost when the statement of the problem or of the solution was not consistent with the independent claim.

When starting from Fig. 1 or Fig. 3 as closest prior art, the problem could be defined as: “improving the egg shell breaker according to Fig. 1 so that it is easier to handle” or “improving the egg shell breaker according to Fig. 3 so that the yolk does not run out / the end portion of the egg is not completely cut off in use”.

An acceptable problem for a one-part claim is for instance: “to provide an egg shell breaker which is capable of achieving a clean circumferential cut of the egg shell and which is easy to handle”.

General statements like “the problem to be solved is to improve the known apparatus” or “to avoid the disadvantages of the state of the art” did not attract any points, unless the improvements or disadvantages referred to could clearly be derived from the foregoing discussion of the prior art.

EXAMINATION COMMITTEE I

Candidate No.

Paper A (Electricity/Mechanics) 2004 - Schedule of marks

Category	Maximum possible	Marks awarded	
		Marker	Marker
Independent claims	50		
Dependent claims	38		
Description	12		
Total	100		

Sub-Committee for Electricity/Mechanics agrees onmarks and recommends the following grade to the Examination Board:

☐ PASS
(50-100)

☐ FAIL
(0-49)
COMPENSABLE FAIL
(45-49, in case the candidate sits
the examination for the first time)

The Hague, 27 August 2004

Chairman of Examination Committee I