

PROFESSIONAL STANDARDS BOARD
2001 EXAMINATIONS
GROUP G - DRAFTING PATENT SPECIFICATIONS

GENERAL REPORT TO CANDIDATES

The Examination paper in this Topic Group followed the format adopted in recent years and contained two Questions, Question 1 (the “mechanical” Question) relating to a disposable razor and razor blade assembly, and Question 2 (the “chemical” Question) relating to a method for increasing the water content of a comminuted cheese product.

A total of 23 Candidates sat the examination, with 16 Candidates attempting Question 1, and 7 Candidates attempting Question 2. The overall Candidate pass rate was 65%.

Question 1

The inventive concept identified by the client in this Question, and which the Candidates were expected to address, was the provision of a razor blade assembly or cartridge having at least one flexible blade and a relatively rigid (or more resistant to bending) guard bar. The blade(s) and guard bar are relatively positioned to provide a predetermined blade edge exposure, with the blade(s) deflecting relative to the guard bar in response to increasing shaving forces applied to the cartridge in order to reduce the blade edge exposure.

All Candidates seemed to recognise this inventive concept, although it was reflected in their answers through a wide variety of descriptions and claim structures. Nevertheless, provided the approach adopted was fundamentally sound, and the answer showed that the Candidate understood the principles of specification drafting, a pass was awarded.

Those Candidates who adopted that approach were alert to the need for careful claim language, defining the actions of the blade(s) and guard bar in response to shaving forces, in order to distinguish from the prior art disclosures. The blades in the client’s current razor could clearly “deflect” in response to increased shaving forces, increasing the blade edge exposure. In the razor of Paper 4 the blade members, and cap and guard members, could all move independently of one another in response to shaving forces. That movement was both along the slots and by “rocking”, and could result in the blade edge exposure being altered. Although the cartridge of Paper 5 flexed in response to shaving forces, the intention of that cartridge was that the blade geometry be maintained or have only minimal variation. All of these alternative arrangements needed to be taken into account to ensure that the invention was not simply concerned with, for example, blade(s) which moved relative to a guard bar in order to alter blade edge exposure.

Definition of the relative flexibilities of the blade(s) and guard bar was best handled by reference to the blade(s) being more flexible, or the guard bar being less flexible. Language such as “the guard bar having greater resistance to bending than the blade(s)” taken from the Question was quite appropriate. It was clear from the Question that the guard bar construction was deliberately selected to be less flexible (or more resistant to bending or buckling) and reactive to the bending of the blade(s), and the Examiners expected to see some reference to that construction in Candidates’ identification of the inventive concept.

Several Candidates chose to define the guard bar in terms of it being flexible and/or the blade(s) having a bending resistance in order to alter the blade edge exposure. That was a poor choice, and indicated that the Candidates did not fully understand how the cartridge functioned in use. On some occurrences, the guard bar may not reactively bend at all. In contrast, the blade(s) were intentionally flexible. Taking that approach then made the subsidiary definitions of the various guard bar features for controlling bending or stiffness sit quite awkwardly with the main definition. However, provided it was clear from the answers given that the blades were more flexible, and flexing of the guard bar was a reaction to blade flexing, then the Candidates’ answers were not unduly penalised.

The Examiners expected Candidates to define the blade edge exposure as decreasing in response to increasing shaving forces, since that was the purpose of the relative flexibility of the blade(s) and guard bar. However, it was acceptable for Candidates to initially define that exposure, or the blade geometry, more broadly as being altered, provided there was a later reference to that alteration being a decrease in the blade exposure in response to increasing shaving forces.

Features which the Examiners considered suitable for subsidiary claims included details of the strategies for controlling buckling of the guard bar, and the mounting of the blade(s) at opposite ends as a “fixed beam”.

Where the main claim was directed to “a razor” or “a shaving unit”, the Examiners also expected a separate claim directed to a blade assembly or cartridge to ensure adequate protection for replacement blades. However, most Candidates tended to ignore that aspect, which was disappointing.

Many Candidates included in their main claims cartridge features that were quite unnecessary for the broad definition of the inventive concept. The feature most frequently targeted was “the cap member”. It simply was unnecessary for an adequate definition of the invention. Nevertheless, where in practice cartridges were likely to include such features, so that the claim limitation probably did not fatally jeopardise the client’s protection, the Candidates were not severely penalised.

The Candidates who failed to properly describe and define the inventive concept generally set out the relationship between the blade(s) and guard bar in very poor terms and/or defined the concept in quite unnecessarily narrow terms. Examples of those approaches included defining the guard bar as being “resiliently pivotable” or having “serrations”, or simply being “flexible” or “distortable”, sometimes with no reference to the relative flexibility of the blade(s).

A consideration of the subsidiary claims of unsuccessful Candidates revealed that they did not fully understand the scope of their main claims or the purpose of subsidiary claims. In some cases, the various guard bar features were treated only as cumulative, rather than as alternative features. In other cases, prior art features (for example, multiple blades with an interposed spacer) were given too much respect in the subsidiary claims.

The identification of the field of the invention and discussion of the prior art was generally satisfactory, whilst the preferred embodiment descriptions were acceptable. Typically, those answers providing the better claims also contained superior descriptions, indicating an overall higher level of understanding of the invention as well as better drafting skills.

Examples of claims which the Examiners considered to be acceptable, although not ideal, in this Question are as follows:

- A. A shaving assembly including a blade cartridge having a housing with a cap member and a guard member, at least one blade member arranged between the cap member and the guard member; the cap member, the guard member and the at least one blade member being configured so that they are bendable in response to shaving forces exceeding a predetermined level, and having differential bending resistances so that the blade geometry alters under said shaving forces in a manner to substantially reduce the risk of cuts or nicks to skin of a user.
- B. The assembly according to claim A, wherein the at least one blade member and the cap member are formed in a unitary arrangement and having a bending resistance which is less than the corresponding bending resistance of the guard member.
- C. The assembly according to claim A or B, wherein the differential bending resistances are arranged so that at least the cap member of the housing deflects with corresponding contraction of the longitudinal dimension of the housing, and thereby causing the guard member to buckle in a direction to reduce the blade edge exposure.

- A razor blade assembly including: a blade housing having an upper cap and a lower guide bar; a blade unit arranged between said cap and said guide bar, said blade unit including at least one blade; said guide bar having a bending stiffness greater than the combined bending stiffness of said blade unit and said cap; wherein, when said blade housing is subjected to a shaving force in use, said cap and said blade unit deflect downwardly in response to said force, said deflection causes a resultant contraction of said blade housing and said contraction causes said guide bar to buckle upwardly, thereby reducing the exposure of the blade edge.
- A shaving unit including: a support assembly; a blade assembly supported by said support assembly and having: a first skin engaging element; and blade means adjacent said first skin engaging element; and a second skin engaging element integrally formed with a support section, said support section being adjacent said blade assembly and being supported by said support assembly, wherein said blade assembly is disposed, in use of said unit, rearwardly of said second skin engaging element, and wherein said blade assembly has a resistance to bending induced by shaving forces which is less than a corresponding bending resistance of said second skin engaging element, whereby blade span is reduced in reaction to said shaving forces.

Question 2

The chemical Question put forward clear problems the client was addressing, namely the burning of mozzarella cheese on the top of pizzas, and handling problems associated with frozen mozzarella cheese.

The client's inventive concept for solving these problems was to increase the water content of the cheese, by forming a shower of frozen ice particles on the surface of the grated cheese which is frozen in a freezing chamber.

Candidates had to grapple with how best to claim the client's process.

The question paper set out that simply spraying water into a freezing chamber did not give the product of the invention, or indeed a workable process. Thus, it should have been fairly clear to Candidates that the process claimed needed to be (i) workable, and (ii) give a product that the client wanted to make, and of course reflect the client's invention.

One approach to defining a broad process claim which was acceptable was to have a functional type process claim where moisture was defined as being sprayed into the freezing chamber so that it formed a shower of ice particles which coated the grated cheese as it passaged through a freezing chamber to give a free flowing frozen product.

Another acceptable approach was to define spraying of water into a cryogenic gas stream so as to produce ice particles which coated grated cheese being frozen in a freezing chamber.

The broadest process claim needed to include some "structural" aspects in which the reaction takes place. Hence claim 1 of the Candidates' papers should have referred to at least a freezing chamber or freezing apparatus. The broadest claim should have referred to moisture or water being introduced into the freezing chamber. The product being frozen should have been referred to either as grated cheese or particulate cheese, or even grated or particulate mozzarella cheese.

The increase in moisture content of about 1 to 4% w/w could have been included in claim 1, as it was arguably an essential feature of the client's invention. Having said this, the inclusion of the water increase could have been included in a subsidiary claim without penalty.

It was emphasised to Candidates in the question paper that the apparatus used in the process was not of itself important, and that various freezing chambers could be used. Notwithstanding this, a number of Candidates presented elaborate apparatus claims which were not central to the invention.

A surprising number of Candidates failed to claim a preferable aspect of the invention which related to use of a blend of cheddar cheese and mozzarella cheese when used in the process.

A number of Candidates presented claims which did not define the invention, or defined it in such abstract terms as to lack any "structural aspect" such as a reactor for the reaction/process to take place in, or the addition of moisture.

In the claim section of the paper the Examiners are looking for a clear claim 1 which defines the invention in its broadest aspect, and two or three good subsidiary claims which provide fall back features, and deal with preferable aspects of the invention.

Candidates generally did a good job on dealing with the prior art references. At first instance, the Leprino patent may have seemed quite relevant. However, it added an aqueous carrier containing flavour additives to already frozen cheese granules in a separate reactor. Indeed, the client set out as much in the question paper.

Those Candidates who identified the invention and claimed it in a clear and consistent manner had little trouble in preparing a description.

Examples of claims which the Examiners considered to be acceptable, although not ideal, for this Question are as follows:

- A. A method for increasing the hydration of a frozen comminuted cheese product, the method including the steps of:
 - injecting a cryogenic fluid into a freezing chamber to form a gas stream,
 - contacting a spray of water with the gas stream, and
 - contacting a comminuted cheese product with the gas streamwherein the water spray upon contacting the gas stream forms a shower of discrete ice particles that adhere to the cheese.
 - B. A method according to claim A wherein the water is sprayed substantially transversely across the gas stream using an injection lance.
 - C. A method according to any one of claims A or B wherein the ice particles adhering to the cheese product account for about 1% to about 4% (w/w) of total water content of the cheese product.
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- A one-step process of producing a free-flowing comminuted cheese product including,
 - freezing a cheese product in a freezing chamber, and
 - isolating the frozen cheese product, whereinwater is sprayed into the cryogenic stream in the freezing chamber such that the final frozen cheese product has an increased moisture level of between 1 to 4% w/a when compared with the unfrozen cheese product.