

AMENDMENT AND RESPONSE
IN THE MECHANICAL ARTS

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Published in the Course Handbook for the Practicing Law
Institute's Patent Prosecution Workshop 2007

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AMENDMENT AND RESPONSE IN THE MECHANICAL ARTS

Brian I. Marcus¹

I. INTRODUCTION

It is generally not difficult to obtain some measure of patent protection on mechanical inventions. Absent an anticipation in the prior art, it is generally possible to include enough detailed structure and interrelation of elements to warrant an allowable claim. The real challenge instead lies in obtaining broad and meaningful patent protection for your client; to obtain at least one broad claim that rides right up to the boundary defined by the prior art, without crossing over, and without generating a large file history. This should in general be the goal of the patent practitioner.

Of course, in seeking patent protection on a client's invention, the first step for the practitioner is always to understand the client's objectives. Are they looking for a broad patent providing the maximum protection against encroachment in the marketplace? Or are they interested in obtaining quick and inexpensive allowance of a patent to be used for defensive purposes? In either instance, it is important for the practitioner to have a firm grasp on prosecution principles to ensure the client receives a level of protection commensurate with the art and their business strategies.

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II. AMENDMENT AND RESPONSE AFTER *FESTO*

Perhaps the biggest recent development in patent prosecution is the Supreme Court's opinion in *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co. Ltd.*, 535 U.S. 722 (2002). The Supreme Court vacated the Federal Circuit's earlier decision,² which had imposed an absolute bar against the application of the doctrine of equivalents when prosecution history estoppel exists. The Court largely returned to the pre-*Festo* "flexible bar" standard for the application of prosecution history estoppel. Namely, if a narrowing amendment is made during prosecution for a substantial reason related to patentability, the applicant bears the burden of rebutting the presumption that the applicant surrendered the subject matter encompassing the asserted equivalent.

A. COURSE OF ACTION FOR PRACTITIONERS

In light of the Court's decision in *Festo*, as well as other related predecessor decisions on prosecution history estoppel, practitioners need to understand how to minimize the potential effects of the prosecution on the issued patent in any subsequent litigation. The following are some practices that will, and will not, work in minimizing the likelihood of prosecution history estoppel.

1. Know the Prior Art

Perhaps the best weapon against the effects of *Festo* and related cases is to be familiar with the prior art. This offers the best chance for crafting broad claims which may be allowable without creating a record by having to amend or

² 234 F.3d 558 (Fed. Cir. 2000).

argue for allowance. At the very least, a filed application should include some narrow claims that are likely to issue over the prior art without amendment or comment.

2. Narrow Claims to Multiple Embodiments

Mechanical inventions are well suited to implementation by alternative embodiments. This being the case, instead of having a single broad generic claim covering all embodiments, the invention may be claimed in several different independent claims covering the different embodiments. As compared to a single generic claim, several individual claims are less likely to be rejected, but collectively provide the same scope of coverage as the generic claim would have.

Moreover, if any one of the independent claims is rejected and needs to be amended, the estoppel applying to that claim will not apply to the remaining claims (at least where the estoppel relates to a claim limitation not found in the other claims). *AbTox, Inc. v. Exitron Corp.*, 122 F.3d 1019 (Fed. Cir.), *modified on reh'g*, 131 F.3d 1009 (Fed. Cir. 1997).

3. File Multiple Applications

Another strategy is to claim the invention in multiple applications. Here, the practitioner can recite the invention in relatively narrow terms in the first application, obtain allowance with a relatively clean record, and then file a continuation application which claims the invention more broadly.

Potential drawbacks to this strategy are the added time and expense in obtaining multiple patents. Moreover, while unlikely, it is not clear that amendments/statements made in the later cases would not be used to limit the scope

of equivalents in the earlier case. *See, e.g., Al-Site Corp. v. VSI International, Inc.*, 174 F.3d 1308 (Fed. Cir. 1999) (finding no estoppel between related patents)

4. Argue, Don't Amend

Festo did not speak to argument-based estoppel, and it may be a better course of action to argue for allowance, before the examiner and on appeal if necessary, rather than amending the claims. It is unclear how successful this strategy will be. Arguments made in the file history will still create some level of estoppel and a limitation on the scope of equivalents. However, such arguments may not limit the scope of equivalents to the same degree as claim amendments.

5. Examiner Interview

Interviews with the examiner are generally helpful in advancing the prosecution of a case. After *Festo*, examiner interviews have the added benefit that statements made to the examiner during the interview to advance the claims do not necessarily get entered into the record.

6. Cancel and Add New Claim

Festo spoke to the issue of estoppel arising from amending claims. Some practitioners therefore suggested that the estoppel effects of *Festo* may be avoided by canceling a rejected claim, and adding a new claim incorporating the changes. This strategy exalts form over substance, and the Federal Circuit has indicated that this will not avoid the prosecutory estoppel bar. *See, Mycogen Plant Sci., Inc. v. Monsanto Co.*, 261 F.3d 1345 (Fed. Cir. 2001).

One thing is clear after *Festo* - if the effects of prosecution history estoppel are to be minimized, the time and cost of obtaining a patent will increase. Practitioners need to be more knowledgeable of the prior art, and need to be more diligent and thorough in crafting claims. And as practitioners need to be more hesitant to amend in overcoming a rejection, the length of prosecution will increase.

III. RESPONDING TO RESTRICTION REQUIREMENTS

Mechanical inventions are particularly susceptible to restriction requirements. They are often implemented in multiple embodiments. They often include subassemblies which require protection separate and apart from the overall assembly. And the invention may often be claimed as both an apparatus and a process. As set forth below, each of these situations can give rise to a requirement for restriction.

In general, restriction requirements are proper where: 1) the application recites two or more patentably distinct inventions, or 2) the application recites two or more patentably distinct species without an allowable generic claim encompassing the species. In responding to a restriction requirement, the practitioner must always elect claims to a particular invention or species, even where the practitioner intends to traverse the restriction requirement.

A. PRACTICAL CONSIDERATIONS

Unlike substantive claim rejections under §§112, 102 and 103, it may not be worth the practitioner's time and the associated cost to argue for the removal or reconsideration of a restriction requirement where the examiner has at least a colorable argument for the restriction. The withdrawal of

non-elected claims and their subsequent refiling in one or more divisional patent applications results in no loss of substantive rights. Moreover, instead of paying the practitioner's fees associated with forming and presenting argument against the restriction, which may or may not be successful, the client may be better off spending that money in simply pursuing the non-elected claims in a divisional application. However, in performing this balancing test, be sure to consider the PTO costs associated with the divisional over the life of the patent, including maintenance fees.

In the final analysis, while it may not be worthwhile to contest the close case, it is important for the practitioner to understand the bases for restriction requirements to ensure the examiner has met his or her burden.

B. TWO OR MORE INDEPENDENT AND DISTINCT INVENTIONS

“Two or more independent and distinct inventions may not be claimed in one national application. . .” 37 C.F.R. §1.141. Under the rule and subsequent interpretation, restriction to one of two or more claimed inventions is proper only if: 1) the claimed inventions are either “independent” or “distinct” from each other; and 2) there is a serious burden on the examiner if restriction is not required. M.P.E.P §803.

1. Independent Inventions

The term "independent" means that there is no disclosed relationship between the two or more subjects disclosed in the application. That is, they are unconnected in design, operation, or effect. M.P.E.P. §802.01. It is rare that this forms the basis of a restriction requirement as two completely unconnected inventions are generally not recited in a single application.

2. Distinct Inventions

When two or more inventions are related, then restriction is proper only if they are also distinct from each other. M.P.E.P. §802.01 defines “distinct” as two inventions which are patentable over each other and which have separate utility, *i.e.*, the inventions as claimed “are capable of separate manufacture, use, or sale.”

As a practical matter, it is not recommended to traverse a restriction requirement by arguing that the recited subjects are not patentably distinct from each other. Should the subjects end up as claims in different patents, then the practitioner is on record as having stated that one or more of the patents are invalid over the other(s). This could have dire consequences in any subsequent litigation involving the patents. The better practice is to traverse the restriction requirement on the criteria set forth below.

For the mechanical arts, a restriction based on related but distinct inventions most often arises in one of the following contexts: 1) a combination and subcombination thereof; 2) process and apparatus for its practice; and 3) process and product made thereby. In each of these examples, restriction is only proper if the examiner presents evidence that the related inventions have separate utility. That is, the inventions as claimed are capable of separate manufacture, use, or sale.

a. Combination and Subcombination

To support a restriction requirement between a first group of claims drawn to a combination and a second group of claims drawn to a subcombination or element of the combination, two-way distinctness must be shown. That is, it must be shown that: 1) the combination as claimed does not depend on the particulars of the subcombination for patentability; and 2) the subcombination can be shown to

have utility either by itself or in other and different relations. M.P.E.P. §806.05(c).

With respect to whether the combination relies on the subcombination for patentability, the inventions will not be distinct, and the restriction is not proper, if the practitioner can show that the combination claim requires the features recited in the subcombination/element claim for patentability. This is generally done by reference to the specific language in the respective combination and subcombination/element claims.

With respect to whether the subcombination has separate utility, the inventions will not be distinct, and the restriction is not proper, if the practitioner can show that the subcombination is not manufactured, used or sold separate from the combination. In this regard, the examiner has the burden of setting forth viable examples supporting separate utility. If the practitioner can show that the examiner's examples are not viable or are otherwise unreasonable, the restriction requirement should be withdrawn.

b. Process and Apparatus for its Practice

To show that two related inventions are distinct so as to support a restriction requirement between a first group of claims drawn to a process and a second group of claims drawn to an apparatus for its practice, the examiner must show that either: 1) the process as claimed can be practiced by another materially different apparatus or by hand; or 2) the apparatus as claimed can be used to practice another and materially different process. M.P.E.P. §806.05(e). Unlike combination/subcombination restrictions, only one-way distinctiveness is required in this context to support the requirement.

The examiner is required to set forth a viable example supporting the restriction requirement. The practitioner

should be able to traverse the restriction requirement by showing that the example is not viable or is unreasonable. In particular, if the practitioner can give evidence that the stated difference between the process and apparatus is not material, the restriction requirement should be withdrawn.

c. Process of Making and Product Made

To show that two related inventions are distinct so as to support a restriction requirement between a group of claims drawn to a process and a second group of claims drawn to a product made by that process, the examiner must show that either: 1) the process as claimed is not an obvious process of making the product and the process as claimed can be used to make other and different products; or 2) that the product as claimed can be made by another and materially different process. M.P.E.P. §806.05(f). Again, only one-way distinctiveness is required here.

Initially, the examiner bears no burden of supporting a restriction in this context with examples. However, if the practitioner is successful in showing that the process cannot be used to make other products and that the product cannot be made by other processes, the burden shifts to the examiner to provide viable examples in support of the restriction requirement.

It is noted that product-by-process claims are considered product claims and can be restricted over claims reciting the process by itself.

3. Burden on the Examiner

Even if the examiner has successfully shown that the claimed inventions are distinct, the examiner must also demonstrate that there would be a serious burden if the restriction were not required. Without such a separate and

additional showing, a restriction requirement is improper. The examiner can make a *prima facie* showing of serious burden by demonstrating that the related inventions: (1) are separately classified; (2) where they are classified together, have a separate status in the art; or (3) require a different field of search. M.P.E.P. §808.02.

The examiner need not cite specific examples to show the burden. However, the practitioner can rebut the examiner's *prima facie* case by submitting appropriate evidence and arguments. Such evidence may include patents where like groups of claims were not separately searched, reference to the PTO Manual of Patent Classification showing the inventions to be classified together, and/or evidence from the inventor or other fact witness showing that the inventions do not have a separate status in the art.

C. RESTRICTION REQUIREMENT BASED ON DIFFERENT SPECIES

Mechanical inventions may often be implemented in alternative embodiments, each of which may be considered a separate species. If claims directed to the respective species are patentably distinct from each other, the applicant will be required to elect a single patentably distinct species for the application unless there is an allowable generic claim that encompasses each of the patentably distinct species. 37 C.F.R. §1.141.

This type of restriction differs from a restriction based on independent and distinct inventions, discussed above, at least in that the restriction is not drawn to specific claims; it is drawn to specific embodiments, or species. In practice, the applicant is required to elect a species, and also set forth all claims that read on that species. All claims that do not read on that species are withdrawn from the application.

Upon allowance of a generic claim encompassing the non-elected species claims, the restriction requirement is withdrawn and the non-elected species claims are reviewed for patentability. The most successful strategy for overcoming restriction requirements to multiple species is therefore to argue for allowance of a generic claim. As above, applicant should not argue that the species are not patentably distinct from each other as a basis of traversing the restriction.

It is common in mechanical inventions that a single subassembly is used in a plurality of different assemblies. For example, a particular gear train may be used in both an audio tape drive and a turntable. Such a subassembly is not considered generic to the assemblies in which it is used. M.P.E.P. §806.04(c). As such, allowance of a claim to a generic subassembly does not vitiate a restriction requirement to claims directed to the alternative assemblies.

IV. RESPONDING TO DOUBLE PATENTING REJECTIONS

Double patenting prevents one person or entity from obtaining more than one patent on the same invention or obvious modifications of the invention. There are two categories of double patenting: statutory double patenting (often referred to as same invention-type double patenting) and non-statutory double patenting (often referred to as obviousness-type double patenting).

A double patenting rejection may be raised in an application over a prior issued patent having a common inventor, common inventive entity or common assignee. It may also be raised between two or more pending applications having a common inventor, inventive entity or assignee. A double patenting rejection is never proper, however, over a cited patent or application, where the rejected claims were

divided out of the cited patent/application as a result of a restriction requirement.

In the case of two or more applications alleged to claim the same inventions or obvious modifications, the PTO issues a “provisional” double patenting rejection in each application if to do so would not violate the confidential status of the applications (*i.e.*, if the applications are commonly owned). When one of the applications is ready to issue except for the provisional double patenting rejection, the rejection is removed and that application issues as a patent. The provisional nature of the double patenting rejection in the one or more other applications is then removed and the normal double patenting rejection issues.

A double patenting rejection is made only over the claims of the first-to-issue patent. The disclosure of the patent is not to be used as prior art in making the rejection. *General Foods Corp. v. Studiengesellschaft Köhle*, 972 F.2d 1272, 1280-81 (Fed. Cir. 1992). The patent disclosure is relevant, but only as a tool for interpreting the scope of the patent claims. If an examiner uses the patent disclosure as a basis for a double patenting rejection, the practitioner should traverse the rejection on these grounds.

A. SAME INVENTION-TYPE DOUBLE PATENTING

The prohibition against patenting the same invention more than once has its origins in 35 U.S.C. §101, which states that an inventor may obtain “a patent” on an invention. The test currently used for same invention-type double patenting is “whether one of the claims being compared could be literally infringed without literally infringing the other. If it could be, the claims do not define identically the same invention.” *In re Vogel*, 422 F.2d 438, 441 (C.C.P.A. 1970).

This test requires the respective claims to be substantively identical. “If there be any substantive difference, and not merely a difference in language, then the inventions are not the same no matter how small or how obvious those differences may be.” *In re White*, 405 F.2d 904, 906 (C.C.P.A. 1969).

Therefore, upon receipt of a same invention-type double patenting rejection, any substantive difference in the claimed elements between the rejected and cited claims can be used to overcome the rejection. As explained hereinafter, the ability to overcome a same invention-type, as compared to an obviousness-type, double patenting rejection may be significant in that obviousness-type double patenting rejections may be overcome with terminal disclaimers, where same invention-type rejections cannot. *See Sec. IV.C, infra*.

It is also noteworthy that two patents cannot be considered the same invention, and no same invention-type double patenting rejection is proper, when the respective patents have claims directed to different classes of subject matter, such as composition of matter on the one hand and process on the other. *Studiengesellschaft Köhle v. Northern Petrochemical Company*, 784 F.2d 351 (Fed. Cir.), *cert dismissed*, 478 U.S. 1028 (1986). This is particularly relevant to mechanical inventions, which are well suited to being claimed in different classes of subject matter.

B. OBVIOUSNESS-TYPE DOUBLE PATENTING

Obviousness-type double patenting is a judicially created doctrine ground in public policy that prevents the extension of a patent term through obvious variants of the originally claimed invention. In determining whether the claims of the later application are obvious variants, the analysis is substantially the same as that under §103. *In re*

Braat, 937 F.2d. 589, 592-93 (Fed. Cir. 1991). The criteria under §103 are discussed at *Sec. VIII, infra*, but in general, the test is whether it would have been obvious to modify the issued patent claim, or combine the issued patent claim with a teaching from the art, to arrive at the newly claimed invention.

It is important to note that, in performing this obviousness analysis, it is the issued patent claim itself, and not the disclosure of the issued patent in general, that may be used by the examiner as a basis for comparison in an obviousness-type double patenting rejection. *In re Bartfeld*, 925 F.2d 1450, 1453 (Fed. Cir. 1991). Use of the patent disclosure in an obviousness-type double patenting rejection for anything other than an aid in interpreting the issued claim is grounds for traversal.

In responding to an obviousness-type double patenting rejection, the practitioner's first strategy should be an attempt at traversing the rejection if possible. If the examiner has used the disclosure of the issued patent as part of the grounds for rejection, the rejection should be withdrawn. Alternatively, if there is no teaching or suggestion to modify or combine the issued claim as under the principles of §103, this also should be grounds for withdrawal of the rejection. A further strategy available to obviate provisional double patenting rejections against commonly owned applications by different inventive entities is to combine the two applications into a single application (this works for both same invention-type and obviousness-type double patenting rejections). If none of the above strategies are available, the practitioner can overcome the obviousness-type double patenting rejection by filing a terminal disclaimer, explained in the following section.

C. TERMINAL DISCLAIMER

1. Used To Overcome Obviousness-Type, Not Same Invention-Type, Double Patenting

Obviousness-type double patenting rejections may be overcome by the filing of a properly executed terminal disclaimer pursuant to 35 U.S.C. §253. A terminal disclaimer provides that the application will expire concurrently with the issued patent, and further provides that the issued patent and application shall at all times be owned by the same person or entity. Because of the common ownership requirement, terminal disclaimers are not acceptable to overcome obviousness-type double patenting rejections where the cited patent and application are by common inventive entities but are not commonly owned.

A terminal disclaimer addresses the two public policy concerns behind obviousness-type double patenting rejections: 1) preventing improper extension of a patent monopoly through obvious variants, and 2) preventing a double jeopardy situation whereby a defendant may be sued by multiple patent owners as a result of each owning a separate patent for substantially the same invention.

Terminal disclaimers may be used to overcome only obviousness-type double patenting rejections. They may not be used to overcome same invention-type double patenting rejections. As such, the distinction between same invention-type and obviousness-type double patenting is critical. Upon receipt of a proper same invention-type rejection, the only option is to cancel the rejected claims. Conversely, a proper obviousness-type rejection may be overcome upon filing of the terminal disclaimer.

As indicated above, the practitioner should opt to file a terminal disclaimer only if other grounds of traversal are

not reasonable or viable. After the GATT Uruguay Round Agreement³ imposed the 20 year from filing patent term, the impact of terminal disclaimers on patent term has somewhat lessened. While not always the case, an invention subject to a double patenting rejection is often in the same chain of continuations as the cited patent and would expire on the same date as the cited patent even without the terminal disclaimer.

However, as previously noted, mechanical inventions often disclose multiple embodiments for implementing the invention. If the patent owner is involved in a licensing program for its patents, it may want to obtain separate patents on alternative embodiments and license the different embodiments separately. This strategy is foreclosed if the terminal disclaimer is filed to overcome the double patenting rejection.

The filing of a terminal disclaimer is not considered an admission of obviousness and does not carry any estoppel effects. *Quad Environmental Technologies Corp. v. Union Sanitary District*, 946 F.2d 870 (Fed. Cir. 1991). Thus, if a terminal disclaimer is filed, applicant is still free to argue non-obviousness of the claims over the disclosure of the cited patent in any subsequent litigation, should the patent become prior art as a result of a prior publication, sale, use, etc. under 35 U.S.C. §102.

Terminal disclaimers can be executed by the practitioner on behalf of the inventive entity or assignee. However, as substantive rights are given up with the filing of the terminal disclaimer, it is better practice to have the terminal disclaimer executed by the applicant or officer of the assignee.

³ Pub. L. 103-465, 108 Stat. 4809 (Dec. 8, 1994)

2. Time For Filing Terminal Disclaimer

An applicant may wish review of its non-obviousness arguments in traversing an obviousness-type double patenting rejection by the Board of Patent Appeals and Interferences, and the question arises as to when a terminal disclaimer can and should be filed. M.P.E.P. §1490 indicates that conditional disclaimers (*e.g.*, where applicant indicates it will file the disclaimer if other rejections removed) are not allowed. Therefore, unless the terminal disclaimer is filed before the appeal, it may not be entered after an unsuccessful appeal before the Board or to the courts. The applicant must refile the application as a continuation and file the terminal disclaimer in the new application. *See, In re Jursich*, 410 F.2d 803 (C.C.P.A. 1969) (Court upheld PTO Board of Appeals refusal to consider terminal disclaimer after Board affirmed double patenting rejection).

However, in at least one case, during the appeal of the double patenting rejection to the Board, the appellant offered to “execute and file a terminal disclaimer in order to prevent the charge of extending the patent monopoly” in the event the appeal was unsuccessful. The Board affirmed the double patenting rejection, but agreed to allow the application once the terminal disclaimer was filed. No continuation application was necessary. *Ex parte Fertig*, 155 U.S.P.Q. 475 (Bd. Pat. App. 1967). This strategy was expressly approved in *In re Jentoft*, 392 F.2d 633, 639 (C.C.P.A. 1968).

V. RESPONDING TO SECTION 112, FIRST PARAGRAPH, REJECTIONS

Under 35 U.S.C. §112, first paragraph, a practitioner is required to set forth in a patent application a full disclosure of an invention and how to make and use the invention.

§112, first paragraph, has been interpreted to include three separate requirements for the disclosure of the patent application: 1) the enablement requirement; 2) the written description requirement; and 3) the best mode requirement.

A. THE ENABLEMENT REQUIREMENT

The purpose of the enablement provision of §112 is to ensure that the inventor provides sufficient disclosure in the specification to allow one of skill in the relevant art to make and use the invention, without undue experimentation, relying on the patent specification and the knowledge in the art at the time the specification was filed. *See, e.g., Scripps Clinic Research Foundation v. Genentech, Inc.*, 927 F.2d 1565 (Fed. Cir. 1991).

1. Undue Experimentation

Enablement is not precluded because some experimentation is necessary to determine how to make and use the invention. The question is whether the necessary experimentation is unduly extensive. While this is a subjective test, the Federal Circuit in *In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1988) outlined a series of factors which may be used to determine whether experimentation is unduly extensive. The factors include:

- 1) the breadth of the claims;
- 2) the nature of the invention;
- 3) the level of predictability;
- 4) the amount of direction provided by the inventor in the application;
- 5) the existence of working examples; and
- 6) the quantity of experimentation needed relative to the content of the disclosure.

The disclosure must be enabling of the invention as claimed. Broad claims require more disclosure than narrow claims. Thus, for example, where a claim term reads on several different compositions, and only some of them are disclosed in the specification, the disclosure may be considered non-enabling. *See, Graver Tank & Mfg. Co. v. Linde Air Products*, 336 U.S. 271 (1949), *rehearing granted*, 337 U.S. 910 (1949), *modified*, 339 U.S. 605 (1950), *rehearing denied*, 340 U.S. 845 (1950).

However, in the mechanical arts, the operation and composition of inventions are generally considered predictable under the third above-enumerated *Wands* factor, and as such, broad generic claims in mechanical inventions are generally considered to be enabled by disclosure of a single or relatively few embodiments. *Spectra-Physics, Inc. v. Coherent, Inc.*, 827 F.2d 1524, 1533 n.5 (Fed. Cir.), *cert. denied*, 484 U.S. 954 (1987). The rationale was explained in *In re Fisher*, 427 F.2d 833 (C.C.P.A. 1970):

In cases involving predictable factors, such as mechanical or electrical elements, a single embodiment provides broad enablement in the sense that, once imagined, other embodiments can be made without difficulty and their performance characteristics predicted by resort to known scientific laws. In cases involving unpredictable factors, such as most chemical reactions and physiological activity, the scope of enablement obviously varies inversely with the degree of unpredictability of the factors involved.

Fisher, 427 F.2d at 839. Quoted by, *Cedarapids, Inc. ex rel. El-Jay Div. v. Nordberg, Inc.*, 1997 U.S. App. LEXIS 21157 (Fed. Cir. Aug. 11, 1997).

2. Knowledge in the Art

A patent specification need not disclose, and preferably omits, what is well known in the art. *Spectra-Physics, Inc.*, 827 F.2d at 1533 n.5. However, special attention must be paid to the inventive features of the invention in the specification. By definition, the novel aspects of the invention cannot come from a general knowledge in the art. They must be fully disclosed and enabling in the application. *Genentech, Inc. v Novo Nordisk*, 108 F.3d 1361 (Fed. Cir. 1997).

3. Enabling At Time of Filing

The specification must be enabling at the time the application is filed, and information that is developed after the filing date cannot be used to establish that an insufficient disclosure is enabling. *In re Glass*, 492 F.2d 1228, 1232 (C.C.P.A. 1974). However, under certain narrow circumstances, later issued patents and publications may be used to show the state of the art at the time of filing. *In re Koller*, 613 F.2d 819, 824 (C.C.P.A. 1980). Moreover, extraneous patents and publications may be incorporated by reference if identified in a filed application. Though not fully disclosed in the application, if publicly available at the time of filing, such extraneous materials are considered part of the disclosure as if included in the specification.

The literature also discusses the possibility that a disclosure which is enabling at the time of filing can subsequently become “unenabling,” but no case has been identified where this formed the basis of a rejection under §112. This discussion most frequently arises in the context of trademarks and brand names used in applications. The argument is that if a product covered by a trademark or brand name changes or ceases to be available, the disclosure including that trademark/brand name may no longer be

enabling. Care should be exercised when using such identifications within the disclosure.

As a final point, enablement rejections are potentially among the most damaging rejection that can be received. A failure to successfully traverse a §112 rejection based on lack of enablement results in loss of the application filing date. In the event the statutory bar date has passed, the loss of filing date under these circumstances would result in permanent loss of proprietary rights in the invention.

B. THE WRITTEN DESCRIPTION REQUIREMENT

The written description requirement of §112 ensures that the scope of the invention recited in the claims does not exceed the scope of the invention known to the inventor at the time the original application was filed. *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555 (Fed. Cir. 1991). This requirement is separate and distinct from the enablement requirement. Enablement speaks to how the claimed invention is described, where the written description requirement looks to what the inventor knew at the time of filing. The test is whether one of ordinary skill in the art would clearly recognize upon reading the disclosure that, at the time of filing, the inventor possessed, or invented, what is claimed. *In re Gosteli*, 872 F.2d 1008, 1012 (Fed. Cir. 1989).

Claims filed with the original application constitute their own description and as such are not rejected on written description grounds. *In re Koller*, 613 F.2d 819, 823-24 (C.C.P.A. 1980). A rejection under this section instead issues when an examiner believes a later-added claim is not adequately supported by the written description as filed. It may also arise in an application where the applicant seeks to claim priority of an earlier filed patent application or provisional patent application, but the examiner feels that the

claims in the instant application are not adequately supported by the written description in the priority application.

1. Broadening Claims

Under this requirement, it may still be possible to add broader claims than are expressly disclosed in the original application. The test is whether the broader subject matter would have occurred to one of ordinary skill as being known to the inventor upon reading the application as filed, even if not expressly disclosed. *In re Smythe*, 480 F.2d 1376, 1384 (C.C.P.A. 1973). This is particularly relevant to mechanical inventions, where alternatives, though not expressly disclosed, could readily be seen by one of ordinary skill to be within the possession of the inventor at the time of filing due to the predictability of mechanical inventions. *Spectra-Physics, Inc.*, 827 F.2d at 1533.

2. Narrowing Claims

The issue of whether claims are supported by the original disclosure arises not only when broadened claims are added, but also when attempt is made to narrow claims. Courts have refused claims on written description grounds which sought to add a structural limitation that was not supported in the original disclosure, even though the added limitation was a minor and obvious mechanical modification of that which was disclosed. *See, e.g., Martin v. Mayer*, 823 F.2d 500 (Fed. Cir. 1987); *Ex parte Ohshiro*, 14 U.S.P.Q.2d 1750, 1752 (Bd. Pat. App. & Int’f 1989) (though an obvious modification, the added limitation was not considered a reasonable alternative within the knowledge of the inventor at the time of filing).

Similarly, §112 written description has also been the grounds for rejecting claims seeking to add a narrowing limitation of an undisclosed subgenus where only the broad

genus was originally disclosed. *See, e.g., Fujikawa v. Wattanasin*, 93 F.3d 1559, 1571 (Fed. Cir. 1996).

Claims seeking to add recitation of particular ranges have also been rejected on these grounds where the claimed ranges were not originally disclosed. *See, e.g., In re Wertheim*, 541 F.2d 257, 263-64 (C.C.P.A. 1976), *appeal after remand*, 646 F.2d 527 (C.C.P.A. 1981) (original disclosure of a range of “25% - 60%” did not support the addition of a claim reciting a range of “at least 35%”).

In order to minimize the likelihood of a rejection under §112, written description, it is recommended that, where possible, only terms from the disclosure as filed be used in the claims to define the invention.

C. BEST MODE REQUIREMENT

U.S. intellectual property laws allow inventors to alternatively protect their invention by a patent or by trade secret, but not both. Therefore, if inventors seek a patent on the invention, they must disclose the best mode they are aware of at the time of filing for practicing the invention. They are not permitted to obtain a patent by disclosing less preferred modes of practicing the invention while keeping the best mode secret. *Wahl Instruments, Inc. v. Acvious*, 950 F.2d 1575, 1579 (Fed. Cir. 1991).

The requirement must be met as of the filing date. There is no obligation to update the best mode in an application after filing should the inventor subsequently develop or discover a better mode of practicing the invention. *Spectra-Physics, Inc. v. Coherent, Inc.*, 827 F.2d 1524, 1535 (Fed. Cir.), *cert. denied*, 484 U.S. 954 (1987).

The standard for a best mode determination is subjective. The inventor is not required to disclose the

absolute best mode, only the best mode he or she is aware of when filing. *Transco Prods. Inc. v. Performance Contracting, Inc.*, 38 F.3d 551, 558 (Fed. Cir. 1994), *cert. denied*, 115 S. Ct. 1102 (1995).

The best mode requirement rarely forms the basis of a rejection in *ex parte* proceedings before the Patent Office. Examiners assume that the best mode of practicing the invention is disclosed unless there is evidence to the contrary. In a subsequent patent litigation, in order to invalidate a patent under the best mode requirement, an accused infringer must show by clear and convincing evidence that: 1) the inventor knew of a best mode of practicing the invention, and 2) the inventor concealed the best mode by not disclosing it in the specification. *Minco, Inc. v. Combustion Engineering, Inc.*, 95 F.3d 1109 (Fed. Cir. 1996).

VI. RESPONDING TO SECTION 112, SECOND PARAGRAPH, REJECTIONS

Where the first paragraph of 35 U.S.C. §112 relates to the disclosure in a patent application, the second paragraph of §112 is concerned with the claims. It has two separate requirements: 1) that the claims of an application “particularly point out and distinctly claim” the invention; and 2) that applicant include claims setting forth “the subject matter which applicant regards as his invention.”

A. SUBJECT MATTER REGARDED AS THE INVENTION

The latter requirement of §112, second paragraph, is rarely an issue in mechanical cases, as the claims are presumed to be for what the applicant regards as the invention. *In re Miller*, 441 F.2d 689, 692 (C.C.P.A. 1971). A rejection on these grounds would generally arise only

where applicant has made statements somewhere other than the filed application that the invention is different than what is claimed.

B. PARTICULARLY POINT OUT AND DISTINCTLY CLAIM THE INVENTION

Rejections under §112, second paragraph, are much more commonly based on a failure of the applicant to “particularly point out and distinctly claim” the invention in terms that clearly inform the public of a patent’s boundaries. The purpose behind this requirement was reiterated by the Supreme Court in *Markman v. Westview Instruments, Inc.*, 517 U.S. 370 (1996), *affirming*, 52 F.3d 967 (Fed. Cir. 1995) (*en banc*):

[If the limits of a patent claim are not clear and definite], a ‘zone of uncertainty which enterprise and experimentation may enter only at the risk of infringement claims would discourage invention only a little less than unequivocal foreclosure of the field, . . . and ‘[t]he public [would] be deprived of rights supposed to belong to it, without being clearly told what it is that limits these rights.’

Markman 517 U.S. at 390 (quotations omitted).

1. Maximum Precision Not Required

While there is no bright-line test for definiteness, the Federal Circuit has laid down a framework:

The test for definiteness is whether one skilled in the art would understand the bounds of the claim when read in light of the specification. . . . If the claims read in light of the

specification reasonably apprise those skilled in the art of the scope of the invention, §112 demands no more. . . . The degree of precision necessary for adequate claims is a function of the nature of the subject matter.

Miles Laboratories, Inc. v. Shandon Inc., 997 F.2d 870 (Fed. Cir. 1993), *cert. denied*, 510 U.S. 1100 (1994).

The last line of the above quote implies that mechanical inventions may be claimed using less precision than other types of inventions due to their predictability and adherence to known scientific principles. At least one Federal Circuit decision has stated that where claim language “is as precise as the subject matter permits, the courts can demand no more.” *See, Shatterproof Glass Corp. v. Libbey-Owens Ford Co.*, 758 F.2d 613 (Fed. Cir.), *cert. dismissed*, 474 U.S. 976 (1985).

However, while it may be true that the courts “can demand no more” than maximum precision, the Federal Circuit and commentary have subsequently confirmed that maximum precision is also not a requirement under §112, second paragraph. *See, PPG Indus. V. Guardian Indus. Corp.*, 156 F.3d 1351 (Fed. Cir. 1998) (“Claims are often drafted using terminology that is not as precise or specific as it might be); 3 D. Chisum, Chisum on Patents, §8.03[3][c], n. 27, 2001 Cum. Supp. (2001). Thus, it appears that predictable mechanical inventions may be properly claimed using less precision than other types of inventions.

2. Patentee Is His or Her Own Lexicographer

Within the framework of the above test for definiteness under §112, second paragraph, it is noted that a patent applicant can be his or her own lexicographer. Inventors can define their invention in any terms they choose

as long as the terms are understood from the disclosure or prosecution history and the terms are not contrary to their common usage. *Spectrum Int'l, Inc. v. Sterilite Corp.*, 164 F.3d 1372 (Fed. Cir. 1998).

3. Breadth is Not Indefiniteness

It is also impermissible to reject a claim under §112, second paragraph, simply because the claim is broadly worded. An applicant is permitted to claim an invention as broadly as the prior art will permit, and, if the claim is clear and definite as set forth, it is improper to reject the claim under 35 U.S.C. §112, second paragraph, merely because the language used to claim the invention is broad. *In re Miller*, 441 F.2d 689, 693 (C.C.P.A. 1971).

4. Use of Qualitative and Relative Terms

There is no prohibition under §112, second paragraph from using qualitative or relative terms, such as “about,” “substantially,” “essentially,” to qualify claimed elements. The test is whether one of average skill in the art, either from reading the written description, prosecution history or from a knowledge of the art in general, would understand the meaning of the term and could ascribe general upper and lower limits. *Amgen, Inc. v. Chugai Pharmaceutical Co., Ltd.*, 927 F.2d 1200, 1217-18 (Fed. Cir. 1991); *Andrew Corp. v. Gabriel Electronics*, 847 F.2d 819, 821 (Fed. Cir. 1988).

Whether a relative term may be considered clear and definite is determined on a case-by-case basis, and there are ample cases on both sides. For relative terms held clear and definite, *see, e.g., Modine Mfg. Co. v. U.S. Int'l Trade Comm'n*, 75 F.3d 1545 (Fed. Cir. 1996) (“relatively small” hydraulic diameter not indefinite); *Rosemount, Inc. v. Beckman Instruments, Inc.*, 727 F.2d 1540 (Fed. Cir. 1984) (“close proximity” not indefinite). For relative terms held

indefinite, *see, e.g., Semmler v. American Honda Motor Co.*, 990 F. Supp. 967, 975 (S.D. Ohio 1997), *aff'd*, 178 F.3d 1308 (Fed. Cir. 1998) (unpublished) (fuel supply controller providing “considerable fuel saving” is indefinite);

5. Antecedent Basis

A common rejection under §112, second paragraph, is one for lack of antecedent basis. Generally, a claim term must be defined before it may be referred to using “the” or “said” before the element. While such rejections have been easily cured in the past, in view of *Festo* and related cases, such amendments could have considerable consequences. *See Sec. II, supra.*

VII. RESPONDING TO SECTION 102 NOVELTY REJECTIONS

A. STANDARDS OF NOVELTY

Turning now to prior art rejections, patents are only granted on new, or novel, inventions. 35 U.S.C. §§102(a), 102(e) and 102(g) define what is not considered a novel invention with respect to patentability. These sections in general say an invention is not novel if it was known, used, patented, described or made by another prior to applicant’s invention thereof.

In addition to the above sections defining novel inventions, 35 U.S.C. §§102(b), 102(c) and 102(d) also set forth “statutory bars” to patentability. Under these sections, an invention may be novel and patentable at the time of conception by the inventor, but patent rights are subsequently lost, or barred, as a result of certain enumerated acts by the inventor or others prior to the date on which the inventor files an application for patent.

A prior art patent, publication or event is for the same “invention,” as that word is used in §102, and therefore anticipating, if the prior art patent, publication or event discloses each and every limitation found in the claims, either expressly or inherently. *Rockwell Intern. Corp. v. U.S.*, 147 F.3d 1358, 1363 (Fed. Cir. 1998); *Electro Med. Sys. S.A. v. Cooper Life Sciences*, 34 F.3d 1048, 1052 (Fed. Cir. 1994). Each claim limitation must be found in a single prior art reference; references cannot be combined under §102. *Apple Computer, Inc. v. Articulate Systems, Inc.*, 234 F.3d 14, 20 (Fed. Cir. 2000). Omission of any claimed element, no matter how insubstantial, is grounds for traversing a rejection based on §102. *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542 (Fed. Cir. 1983).

B. INHERENCY

Occasionally, an examiner will issue a rejection under §102 over a reference which is alleged to inherently, but not expressly, show an element of the claimed invention. Where a reference is alleged to inherently disclose a claim element, the missing element must necessarily be present in the cited reference and that it be so recognized by those of skill in the art. It is not enough that the missing element is possibly or probably present. *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999).

C. ENABLEMENT

The principles of enablement discussed above also apply to a prior art reference. That is, a reference must enable one of skill in the art to make the anticipating subject matter, thus placing the disclosed subject matter in the possession of the public. *Scripps Clinic & Research Fdn. v. Genentech, Inc.*, 927 F.2d 1565, 1576 (Fed. Cir. 1991). If a cited reference is

not enabling of anticipating subject matter, that subject matter cannot be used as a basis for a §102 rejection.

VIII. RESPONDING TO SECTION 103 OBVIOUSNESS REJECTIONS

In addition to being novel, a patentable invention must also be non-obvious under 35 U.S.C. §103. In order sustain a rejection of a claim under §103, an examiner must make a factual showing that the claimed invention as a whole would have been obvious to one of ordinary skill in the art to which the subject matter pertains at the time of the invention.

A. *PRIMA FACIE* OBVIOUSNESS

The initial burden is on the Examiner to present a *prima facie* case of obviousness, *i.e.*, a reasoned argument as to why an invention is obvious. As stated by the Federal Circuit:

The term ‘*prima facie* case’ refers only to the initial examination step. . . [T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability. If that burden is met, the burden of coming forward with evidence or argument shifts to the applicant. . . . After evidence or argument is submitted by the applicant in response, patentability is determined on the totality of the record, by a preponderance of evidence with due consideration to persuasiveness of argument.

In re Oetiker, 977 F.2d 1443, 1445 (Fed. Cir. 1992).

The examiner establishes a *prima facie* case of obviousness by presenting evidence showing that a person of

average skill in the art would have known to combine and/or modify the prior art references to make the claimed invention. *In re Fritch*, 972 F.2d 1260, 1265 (Fed. Cir. 1992). Once the examiner presents a *prima facie* case of obviousness, applicant must rebut that case with: 1) argument that the *prima facie* case is improperly made out; and/or 2) objective evidence supporting non-obviousness (37 C.F.R. §1.132 Declaration). *In re Fritch*, 972 F.2d at 1265.

B. THE *GRAHAM* FACTORS

An obviousness analysis always begins with *Graham v. John Deere*, 383 U.S. 1, 17 (1966), which requires three factual determinations in evaluating whether a claimed invention is obvious over the prior art:

- 1) the scope and content of the prior art;
- 2) the differences between the prior art and the claims at issue;
- 3) the level of ordinary skill in the pertinent art.

In addition to these factors, *Graham* indicated that where other objective evidence of non-obviousness is present, it must also be considered. These objective factors include:

- a) commercial success
- b) long-felt need
- c) failure of others
- d) copying by others
- e) licensing
- f) skepticism of experts

C. SCOPE AND CONTENT OF THE PRIOR ART

With respect to the first of the *Graham* factors, if a reference qualifies as prior art under §102, it can be used as

prior art under §103. Even if a reference is not enabling, it can still be used for all that it teaches or suggests. *Beckman Instruments v. LBK Produkter AB*, 892 F.2d 1547, 1551 (Fed. Cir. 1989).

1. Analogous and Non-analogous Art

Only references from arts analogous to that of the claimed invention may comprise prior art to the invention. A reference will be analogous art if: 1) it is from the same field of endeavor as the claimed invention; or 2) it is from a different field of endeavor, but the reference is reasonably pertinent to the particular problem solved by the inventor. *In re Oetiker*, 977 F.2d 1443, 1446-47 (Fed. Cir. 1992); *In re Clay*, 966 F.2d 656, 658-89 (Fed. Cir. 1992).

D. DIFFERENCES BETWEEN THE PRIOR ART AND THE CLAIMS AT ISSUE

1. Claimed Invention As a Whole

The question under the second *Graham* factor is not whether the differences between the prior art and claimed invention are obvious, but rather whether the claimed invention as a whole would have been obvious. *Jones v. Hardy*, 727 F.2d 1524, 1529 (Fed. Cir. 1984). It is not only the differences in structure that are considered, but any property of the claimed invention as a whole can support a finding of non-obviousness. *Schenck v. Nortron Corp.*, 713 F.2d 782, 785 (Fed. Cir. 1983).

For example, discovery of a source/cause of a problem can result in the invention as a whole being non-obvious even though the solution may be obvious once the source/cause was found. *In re Dillon*, 892 F.2d 1554, 1562 (Fed. Cir. 1989); *In re Spinnoble*, 405 F.2d 578, 585 (C.C.P.A. 1969).

Advantages can also be considered in determining whether the invention as a whole would have been patentable over the prior art. *Preemption Devices v. Minn. Min. & Mfg. Co.*, 732 F.2d 903, 906 (Fed. Cir. 1984).

2. Prior Art As a Whole

The prior art must also be considered as a whole. *W.L. Gore & Associates, Inc. v Garlock, Inc.*, 721 F.2d 1540, 1550 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). "It is impermissible within the framework of section 103 to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art." *Application of Wesslau*, 353 F.2d 238, 241 (C.C.P.A. 1965); *Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve*, 796 F.2d 443, 448 (Fed. Cir. 1986), *cert. denied*, 484 U.S. 823 (1987).

E. LEVEL OF ORDINARY SKILL IN THE ART

With respect to the third of the *Graham* factors, "the level of one of ordinary skill in the art is a prism or lens through which a judge or jury views the prior art and the claimed invention." *Al-Site Corp. v. VSI Intern., Inc.*, 174 F.3d 1308, 1324 (Fed. Cir. 1999). It is a tool to maintain objectivity; it focuses the mind of the decision maker away from what would seem obvious to them. *Kloster Speedsteel AB v. Crucible Inc.*, 793 F.2d 1565, 1574 (Fed. Cir. 1986).

Factors used to determine the level of ordinary skill include:

- 1) the type of problems encountered in the art;
- 2) prior art solutions to those problems;
- 3) the rapidity with which improvements are made;
- 3) the sophistication of the technology;
- 4) the educational level of those active in the field.

Custom Accessories, Inc. v. Jeffrey-Allan Industries, Inc., 807 F.2d 955, 962-63 (Fed. Cir. 1986).

F. APPLYING THE *GRAHAM* FACTORS

Once the examiner has identified the prior art, has made a determination of the differences and knows the level of average skill in the art, how does he or she get from there to an obviousness determination? At least criteria must be met.

1) there must have been a *suggestion or motivation* in the cited references or art in general to modify or combine cited the references at the time of the invention;

2) the modification or combination must teach *all* of the claim limitations.

1. *KSR v. Teleflex* - A Change in the Teaching, Suggestion or Motivation to Modify or Combine Standard

Most inventions are combinations or modifications of old elements. Prior to the Supreme Court decision in *KSR v. Teleflex*, 550 U. S. ____ (2007), the test for whether prior art references may be combined or modified to render an invention obvious was whether there was some teaching, suggestion or motivation found in the art to make the combination or modification. *In re Dance*, 160 F.3d 1339, 1343 (Fed. Cir. 1998); *Heidelberger Druckmaschinen v. Hantscho Commercial*, 21 F.3d 1068, 1072 (Fed. Cir. 1994); *In re Geiger*, 815 F.2d 686, 688 (Fed. Cir. 1987); *Lindemann Maschinenfabrik v. Am Hoist and Derrick*, 730 F.2d 1452, 1462 (Fed. Cir. 1984). “It is insufficient to establish obviousness that the separate elements of the invention existed in the prior art, absent some teaching or suggestion, in the prior art, to combine the elements.” *Arkie Lures, Inc. v. Gene Larew Tackle, Inc.*, 119 F.3d 953, 957 (Fed. Cir. 1997).

However, in perhaps the most significant and far-reaching patent ruling since passage of the 1952 Patent Act, the Supreme Court recently decided *KSR v. Teleflex* in which the Court made it more difficult to obtain a patent based on non-obviousness considerations. While not expressly discarding the teaching, suggestion, motivation (“TSM”) methodology, the Court stated:

The obviousness analysis cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation, or by overemphasis on the importance of published articles and the explicit content of issued patents. The diversity of inventive pursuits and of modern technology counsels against limiting the analysis in this way. (Slip Op. at 15)

The Court appeared to favor instead a more common sense marketplace approach. The Court stated:

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, §103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill... – a court must ask whether the improvement is more than the predictable use of prior art

elements according to their established functions. (Slip Op. at 13).

The Court continued:

Often, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis should be made explicit. As our precedents make clear, however, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ. (Slip Op. at 14).

Thus, instead of requiring that a specific teaching, suggestion or motivation be found in the art, “any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.” (Slip Op. at 16).

Prior to *KSR*, there had to be a *reasonable expectation of success* before a combination or modification to the art was made; “obvious to try” a combination/modification, without such a reasonable expectation of success, was not sufficient

to support the obviousness of a claimed invention. *KSR* appears to have abolished this standard.

While it will be a long time before the methodology set forth in *KSR* is further defined and interpreted through lower court precedent, it is clear that a much lower threshold for combining/modifying references is now the standard.

On May 3, 2007, after the *KSR* decision, the Patent Office released a memo to the directors of each of the Patent Office technology centers in which it stated that, in formulating a rejection under 35 U.S.C. §103(a) based upon a combination of prior art elements, it remains necessary to identify the reason why a person of ordinary skill in the art would have combined the prior art elements in the manner claimed. Accordingly, failure to provide such a reason remains a ground for traversing a rejection.

a. Impermissible Hindsight

The suggestion or motivation can only come from the art which existed at a time just prior to the invention and cannot come from the invention itself. “Care must be taken to avoid hindsight reconstruction by using ‘the patent in suit as a guide through the maze of prior art references, combining the right references in the right way so as to achieve the result of the claims in suit.’” *Grain Processing Corp. v. American Maize-Products Corp.*, 840 F.2d 902, 907 (Fed. Cir. 1988), quoting *Orthopedic Equip. Co. v. U.S.*, 702 F.2d 1005, 1012 (Fed. Cir. 1983); *See also, In re Zurko*, 111 F.3d 887 (Fed. Cir. 1997), *reversed on other grounds*, 527 U.S. 150 (1999). This requirement was summed up by the author Milton in the seventeenth century, “the invention all admired, and each how he to be the inventor missed; so easy it seemed, once found, which yet unfound most would have thought, impossible!” Milton’s *Paradise Lost: Part IV*, L. 478-501 (1674).

The affect of the *KSR* on the application of hindsight is unclear, but it would appear that hindsight reconstruction of the invention from the prior art is still impermissible.

b. Teaching Away

Where the prior art leads away from a particular combination or modification, this is strong evidence of non-obviousness. *Monarch Knitting Machinery v. Sulzer Morat GmbH*, 139 F.3d 877, 882 (Fed. Cir. 1998); *In re Geisler*, 116 F.3d 1465, 1471 (Fed. Cir. 1997); *Kloster Steedsteel AB v. Crucible Inc.*, 793 F.2d 1565, 1573 (Fed. Cir. 1986).

2. All Claim Limitations Must Be Taught

Even if there was some suggestion or motivation to make the combination or modification with a reasonable expectation of success, the combination or modification cannot render the claimed invention obvious if the combination or modification does not teach a claim limitation. All claim limitations are significant, and must be given weight and effect vis-a-vis the patentability of the claims. *Application of Saether*, 492 F.2d 849, 852 (C.C.P.A. 1974). If even a single claim limitation is not taught or suggested by the prior art, then that claim cannot be obvious over the prior art. *Application of Glass*, 472 F.2d 1388, 1392 (C.C.P.A. 1973).

3. Preparing a Response Under the Obviousness Criteria

While *KSR* has made it more difficult to argue that it is inappropriate to combine/modify references, in preparing a response to an Office action, the practitioner should initially make sure that the Examiner has met his or her burden in setting forth a reasonable grounds for the combination or

modification. Where such grounds are not provided, the practitioner should point this out and traverse the rejection on these grounds.

Following any such argument, the practitioner should next explain why, even if the combination or modification is made, the result still does not teach the invention as claimed (because one or more elements are not taught by the combination/modification). A sentence such as the following is commonly used to transition into this section, “[e]ven assuming the references are combined/modified as suggested by the examiner, the combination/modification still does not teach the claimed invention. . .”

Practitioners should be careful not to argue general inventive features of the invention. Only those features appearing in a particular claim can serve as a basis for non-obviousness.

G. OBJECTIVE EVIDENCE OF NON-OBVIOUSNESS

Even where an examiner’s §103 analysis is correct, the obviousness rejection may be overcome with objective evidence of non-obviousness. The following types of evidence, when present, will tend to support non-obviousness and must be considered: 1) unexpected results; 2) commercial success; 3) long-felt need; 4) failure of others; 5) copying by others; 6) licensing; and 7) skepticism of experts. *Graham v. John Deere*, 383 U.S. 1, 17 (1966); *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1538 (Fed. Cir. 1983). The weight to be afforded such evidence will vary on a case-by-case basis.

Objective evidence of non-obviousness needs to be submitted in a declaration under 37 C.F.R. §1.132 by an

inventor or other fact witness. Such evidence is not given factual weight when presented solely by an attorney in a response to an Office action. *In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997).

H. *DICKINSON V. ZURKO*

In *Dickinson v. Zurko*, 527 U.S. 150, (1999), the Court found that the Federal Circuit can only overturn PTO factual finds where the PTO acted in an “arbitrary and capricious” manner, instead of the less stringent “clearly erroneous” standard. Thus, after the decision, the Federal Circuit must pay more deference to fact finding by the PTO.

It can be argued that the *Zurko* decision essentially forces prosecuting attorneys and agents to provide all possible factual evidence during prosecution by a declaration under 37 C.F.R. §1.132. As indicated above, statements by attorneys on the record are generally not accorded weight as fact evidence (as distinguished from legal arguments). In the past, where the PTO record included factual statements by attorneys, even if the statements were not given factual weight, this defect could be cured in the Federal Circuit appeal with inventor testimony or other fact witnesses. However, the *Zurko* opinion appears to have closed down that avenue. Therefore, if any factual evidence is to be considered on appeal in the Federal Circuit, that factual evidence has to be created by an inventor or other fact witness during the prosecution in the PTO.

Such evidence includes: 1) scope and content of the prior art; 2) differences between the prior art and the claimed invention; 3) the level of average skill in the art; and 4) objective evidence of non-obviousness.

I. SWEARING BEHIND REFERENCES

The presumptive filing date of a U.S. patent application is the date on which it is filed in the U.S. Patent and Trademark Office. However, under certain circumstances, it may be possible to provide a declaration under 37 C.F.R. §1.131 showing that the actual invention date was earlier than that, thus allowing the applicant to “swear behind” a cited reference and remove it as a prior art reference.

Declarations under 37 C.F.R. §1.131 may only be used to predate a cited reference where the reference is:

1) A foreign patent or publication with a publication date less than 1 year earlier than the filing date of the invention with the U.S. Patent and Trademark Office; or

2) A U.S. patent with an issue date less than 1 year earlier than the filing date of the invention with the U.S. Patent and Trademark Office, and the application does not recite the same invention claimed in the U.S. patent reference.

Applicant must also be able to show in the declaration:

1) the invention was completed prior to the effective date of the reference; and 2) the invention was diligently reduced to practice (as by filing it in a patent application) from the date of completion.

It is noted that if non-obviousness arguments exist for overcoming a §103 rejection, such arguments should be made rather than filing a §1.131 declaration. The presumption of validity which attaches to references considered during the prosecution does not attach to references that are overcome by §1.131 declarations. Therefore, should the patent owner be unable to rely on the earlier filing date in any litigation (§1.131 declarations are not binding in judicial proceedings), the owner must establish

patentability over the cited reference and no presumption of validity attaches to the reference.

IX. CLOSING COMMENTS

In preparing responses to Office actions, the goal is to obtain allowed claims which serve the client's objectives and which are obtained with as clean a prosecution record as possible. For broad claims, make sure each limitation is necessary for overcoming the prior art. Also put yourself in the role of a competitor and ask how hard would it be to design around a given claim. Try to avoid the use of a single, common limitation throughout the claims.

Be familiar with the marketplace for your client's invention. Mechanical inventions often include assemblies, and subassemblies that are potentially manufactured separately from the assemblies. If this is the case, make sure that the application includes claims directed to manufacturers of both the assemblies and the subassemblies.

Remember that prosecution estoppel can be very damaging in litigation. Never characterize or summarize claim language in the response. When referring to claim language in the remarks section, quote directly from the claims. Similarly, avoid characterizing the cited references. Where possible, quote directly from the reference. Always remember that every word used in a response can potentially limit the scope of the invention in any subsequent litigation.