Claim Interpretation – Product by Process

Virtual Instructor Led Training (VILT) HOPS

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Objective

You will become more familiar with the following:

• Overview of claim interpretation
• Review and discuss examples of how a product by process limitation can limit a claim
Claim Interpretation

Clarity of claim terms in granted patents is improved when the interpretation of claim terms is explained in Office actions

– Early explanation of the Examiner’s interpretation will allow the Applicant to clarify the meaning of a term, amend the claim, and/or provide a more effective response to any rejections, thus, leading to more efficient prosecution

– The prosecution record will provide a map for the public to understand the boundaries of the patent protection

– The Patent Trial and Appeal Board (PTAB) and courts will be informed as to what the Examiner and the Applicant understood the claims to mean
From an Examiner’s Point of View

If the claims are correctly **analyzed** in a first Office Action, the next Office action should result in:

- Less rework (no credit) needed in future Office actions; and

- The second, subsequent Office action is more likely to be a Final Office action or an allowance.
From an Examiner’s Point of View (cont.)

Detailed and correct **claim interpretation** in an Office action will benefit the Examiner.

Applicant will understand the issues and respond appropriately by:

- Persuasively arguing against the position of the Office Action
- Amending/narrowing the claims to place the application in condition for allowance
- Abandoning the application
From Applicant’s Point of View

Applicant benefits from detailed and correct claim interpretation in an Office action because it:

– Reduces guesswork in responding to the Office action
– Provides public notice as to how the claim was interpreted during examination
– Clearly sets forth the protection afforded the Applicant
– Provides a clear file history to prevent or reduce unnecessary litigation, interferences, reissues, and reexaminations, *inter partes* reviews, supplemental examinations, and post-grant reviews
Claim Interpretation (cont.)

• Claim terms are given their plain meaning unless it is inconsistent with the specification

• Claims must be interpreted in light of the specification without reading limitations from the specification into the claims

See: MPEP 2111.01
Claim Interpretation (cont.)

Broadest **Reasonable** Interpretation (BRI) is always used to interpret claims under examination

- BRI does not mean broadest *possible* interpretation
- The interpretation of a term must be consistent with the specification and how the term is commonly used in the art (*MPEP 2111*)
Claim Interpretation (cont.)

Also, every word in a claim **must** be considered in judging the patentability of that claim against the prior art:

- No limitation, functional or otherwise, can be ignored

See: MPEP 2143.03
Product-by-Process
Product-by-Process Claims/Limitations

A product-by-process claim is a claim where an article or at least one element of an article is claimed by reciting the process of making the article or the element of the article-

- A product-by-process claim can be in either independent or dependent form
- Claiming the article and then referring back to a previously presented claim reciting a method of making the article is an acceptable way to present a product by process claim *MPEP 2173.05(f)*
Product-by-Process Claims/Limitations

Can be in either independent or dependent form

- A claim having a preamble that recites a product and only recites process steps for making the product in the body of the claim; or
- A claim having a preamble that recites a product with the body of the claim reciting elements of the product but also reciting at least one process step for making a claimed element

See: *MPEP 2113*
Product-by-Process Claims/Limitations (cont.)

• Patentability of Product-by-Process claims:
  – Is based on the product itself
  – Does not depend on its method of production only the structure implied by the steps

• Once a product appearing to be substantially identical is found and a 35 USC 102/103 rejection made, burden shifts to the Applicant to show an unobvious difference
  – The use of 35 USC 102/103 rejections for product-by-process claims has been approved by the courts
Product-by-Process Claims/Limitations (cont.)

How to examine Product-by-Process Claims:
1. Determine what structure is implied by the process step
2. Determine if the prior art reasonably appears to be either identical with or only slightly different than the claimed product, the claim should be rejected under 35 USC 102/103 and
3. Advise the Applicant that the claim is being construed as a product-by-process claim

See: MPEP 2113
Examples
Example 1: Claim

The claim reads:

1. A material which is essentially free of x metal made by a process comprising the steps of:
   mixing y and z in water to form an aqueous solution without the addition of x metal; and
   heating the aqueous solution to form the material.
Example 1: Questions and Answers

Q1: What does this claim require?
   The claim requires a material which is essentially free of x metal.

Q2: How do the process steps affect the claimed material?
   They affect the claimed material to the extent that it must be essentially free of x metal.
Example 1: Prior Art

The prior art reference discloses a material which is essentially free of x metal made by the process comprising the steps of:

- mixing an x metal compound, y, and z in water to form an aqueous solution;
- heating the aqueous solution to form a material containing x metal;
- removing the x metal from the material by ion exchange.
Example 1: Questions and Answers (cont.)

Q3: Should the Examiner reject the claim using the reference?

Yes
Example 1: Discussion

First, the Examiner should explain that the claim is a product by process claim. Therefore, the product covered by the claim is not expressly limited by the process steps set forth in the claim. The product maybe limited by elements that can be implied from the steps.

The claimed material appears to be the same as the prior art reference material since both are “essentially free of x metal.” Regardless of whether the x metal is excluded from the aqueous solution, as in the claim, or removed after heating the aqueous solution, as in the prior art reference, the product itself appears to be the same.

The claim should be rejected under 35 USC 102/103 by the prior art reference. The burden then shifts to the Applicant to show an unobvious difference between the two products.
Example 1: Discussion (*cont.*)

The court upheld the rejection because the Applicant had not come forward with any evidence that the prior art was not essentially free of x metal.

Therefore, the claimed invention was not a new and unobvious product.

See: *MPEP 2113*
Example 2:

Claim

Claim 1. A flat insole for use in a shoe, the flat insole being of foam material not molded under heat or pressure and comprising a toe portion, a sole portion and a heel portion; wherein. . . after engagement in the shoe said slanted sides form arcuate edges against the shoe projecting up from the upperside of the flat insole.
Example 2: Prior Art

The prior art discloses a flat foam insole having all of the claimed structural features. The reference is silent as to how the insole is manufactured.

Q1: Should claim 1 be rejected under 35 USC 102/103 by the prior art?

Yes
Example 2: Discussion

The prior art insole appears to be identical to the claimed insole.

The product-by-process limitation, “not molded under heat or pressure,” would not be expected to impart distinctive structural characteristics to the insole.
Example 2:  
Discussion (cont.)

Applicant could overcome the anticipation rejection by providing **evidence** that the product by-process limitation, “not molded under heat or pressure,” imparts a distinctive structural characteristic to the claimed insole.

**However, a statement or argument by the Attorney is not factual evidence.** Evidence must be presented to show that the process imparts a distinctive structural characteristic.
Example 2: Discussion (cont.)

Of course, even if evidence is provided to overcome anticipation, one would still need to assess whether “not molded under heat or pressure” would have been an obvious method to make a foam insole.
Example 3: Claim

1. A dental appliance comprising a molded polymeric base for placement and fitting to a patient’s upper or lower dentition, the molded polymeric base including an abradable overlayer formed by fitting the molded polymeric base to the upper or lower dentition, the overlayer being a different colour to the polymeric base whereby use of the appliance by a patient indicates the degree of grinding by the patient by abrasion of the overlayer.
Example 3: Question and Answer

Q1: How much patentable weight must be given to the limitation regarding the process of making the appliance (i.e., applying an abradable overlayer to the base “formed by fitting the molded polymeric base to the upper or lower dentition”)?

None

Because the claim is a product by process claim, the Examiner MUST address these limitations in a rejection and explain why these limitations are not given patentable weight.
Example 3: The Prior Art A
Q2: Could the claim be rejected using Prior Art A?

Yes

Prior Art A shows a molded plastic base of one color and an overlayer of a different color.

Prior Art A does not specify how the overlayer is formed; however, the claim recitation regarding “formed by fitting...” does not appear to change the structure of the end product. Therefore, the Prior Art A product teaches the claimed dental appliance.
Example 3: The Prior Art B
Example 3: Question and Answer (cont.)

Q3: Could the claim be rejected using Prior Art B?

Yes

Prior Art A shows a molded plastic base of one color and an overlayer of a different color.

Similar to Prior Art A, Prior Art B does not specify how the overlayer is applied; however, the claim recitation regarding “formed by fitting...” does not appear to change the structure of the end product. Therefore, the Prior Art B product teaches the claimed dental appliance.
Example 4: Device for Closing and for Connecting to External Conduits

Monobloc 1 of cast stainless steel (dark part of Fig 1, and entire Fig 2)
Example 4: Claim

1. Device for closing and for connecting to external conduits of a reservoir of cryogenic fluid, the device comprising a monobloc subassembly of cast stainless steel, said cast subassembly defining at least two channels for the passage of fluid, *said subassembly being made by lost wax casting*. 
Example 4: Question and Answer

Q1: In order to anticipate this claim, must a reference teach a stainless steel subassembly made by lost wax casting?

No

This is a “product by process” limitation. If one finds the product/structure of a “closing device” that appears to be identical or substantially similar to that claimed, the burden shifts to Applicant to come forward with evidence establishing that the claimed process steps impart distinctive structural characteristics to the claimed product resulting in an unobvious difference between the claimed product (made by “lost wax casting”) and the prior art product.
Example 4: Prior Art

A reference X, teaches a cryogenic fluid container with a “monobloc” closing device made of stainless steel with two or three channels for connection to external conduits.
Example 4:
Question and Answer (cont.)

Q2: Is a rejection under 35 USC 102/103 over X alone proper?

Yes

The product/structure of the closing device appears to be substantially identical to that claimed, the burden shifts to Applicant to come forward with evidence establishing that the claimed process steps impart distinctive structural characteristics to the claimed product resulting in an unobvious difference between the claimed product (made by “lost wax casting”) and the prior art product.
Example 5:
Claim

1. An unilayer flexible textile performance fabric comprising a base fabric having a predetermined design of a pattern continuously formed therein by a step of manipulating and chain-stitching on a programmed knitting machine into said base fabric at least one dissimilar high performance fiber into said base fabric in the same layer with a preselected single needle wherein said step of manipulating is computer controlled and a unilayer is formed.
Example 5: Questions and Answers

Q1: Is the claim limited by the recited step of chain stitching?

Yes

Chain stitching inherently confers certain structural properties/characteristics to the base fabric.
Example 5: Questions and Answers (cont.)

Q2: Does “by a step of manipulating and chain-stitching on a programmed knitting machine” limit the claim?

No

Determination of patentability is based solely on the defined product limitations (i.e., a unilayer flexible textile product formed from a chain-stitched base fabric having a dissimilar fiber pattern seamlessly formed therein).
Example 5:
Questions and Answers (cont.)

Q3: Does “with a preselected single needle wherein said step of manipulating is computer controlled” limit the claim?

No

The claimed invention is not limited by the programmed knitting machine recitation or the computer controlled recitation since these recitations do not impart distinctive structural characteristics to the final product (“unilayer flexible textile performance fabric”).
Example 6: Cutting Tool with a Synthetic Diamond Layer

Synthetic Diamond Layer 2
1. Cutting tool with a synthetic diamond layer (2) having a cutting edge (5) on the synthetic diamond layer, said synthetic diamond layer having a thickness of 1 to 500 Tm, wherein the cutting edge has a profile of decreasing layer thickness, wherein said profile is formed by dry-chemical etching.
Example 6: Questions and Answers

Q1: In order to anticipate the claim must a reference disclose forming the profile by dry-chemical etching?

No

Absent convincing evidence that the claimed process results in a different structure, a reference which otherwise meets the claim limitations should be applied
Example 6: The Prior Art: Diamond Cutting Tool

- Vapor deposited diamond layer 11, thickness of about 100 μm;
- Diamond/metal or ceramic composite layer 12;
- Metal or ceramic layer 13; and
- Cutting edge 22 obtained by laser working
Example 6: Questions and Answers (cont.)

Q2: Does the prior art reference anticipate the claim?

Yes

The prior art diamond cutting tool teaches a cutting edge member having a profile of decreasing layer thickness of about 100 Tm. Although the prior art cutting edge profile is made by a different process, the end products of both the prior art and the claimed invention are substantially identical.
Example 7: Claim

An Applicant discloses an electrode that is identical to a prior art electrode but produced by a new process. The application includes the following claim:

Claim. An electrode including:
...a first and second section formed by electro-etching.
Example 7: Prior Art

The prior art shows an electrode including a first and second section formed by welding.

–See arrow in Fig.
Example 7: Questions and Answers

Q1: Is the claim limited by the step of being “formed by electro-etching?”

No

Where the claimed and prior art products are identical or substantially identical in structure or composition, a prima facie case of either anticipation or obviousness can be established even though the products are produced by a different process (electro-etching in the claim vs. welding in the prior art).
Example 7: Questions and Answers (cont.)

Q2: If Applicant provides evidence showing that the electro-etching step results in an unobvious structural difference, should the rejection over the prior art be maintained?

No

If Applicant responds with evidence showing that the process of electro-etching imparts distinctive structural characteristics, different from that of the prior art, the rejection must be withdrawn as the prior art does not meet the structural limitations required by the claim.
Example 8: Claims

1. A process for producing a SMAD-interacting protein comprising:
   conducting a two-hybrid screening assay wherein SMAD C-domain fused to a DNA-binding domain is used as bait and a vertebrate cDNA library is used as prey.

2. SMAD-interacting protein produced by the process of Claim 1.
Example 8: Prior Art

- Zhang *et al.* teach hMAD-4 interacts with hMAD-3 where hMAD4 is a SMAD-interacting protein because it interacts with hMAD-3. The reverse is also true, that is, hMAD-3 is a SMAD-interacting protein because it interacts with hMAD-4.

- Laguna *et al.* teach that SMAD-4 (DPC4) forms a complex with SMAD-1 and with SMAD-2 and is essential for SMAD-1 and SMAD-2 function. Therefore, SMAD-4 is a SMAD-interacting protein because it interacts with SMAD-1 and SMAD-2. The reverse is also true, that is, SMAD-1 and SMAD-2 are SMAD-interacting proteins because they interact with SMAD-4.

- Chen *et al.* teach that XMAD2 (SMAD-2) forms a complex with forkhead activin signal transducer-1 (FAST-1). Therefore, FAST-1 is a SMAD-interacting protein because it interacts with SMAD-2.”
Example 8: Question and Answer

Q1: Given the Zhang, Laguna, and Chen references, would the Examiner make a rejection over claim 2?

Yes

Claim 2 requires the polypeptide be a SMAD-interacting protein; thus, each of the references are applicable
Remember ...

Product-by-Process claims/limitations are **NOT limited to the manipulations of the recited steps, only the structure implied by the steps.**
Summary

You should now better understand how a product by process limitation can limit the scope of a claim.
Questions?

Please send your questions to
STEPPQUESTIONS@USPTO.GOV

Thank You!

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