# INVENTION ANALYSIS AND CLAIMING:
# Assembling the Dependent Claims — Part I[1]

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The broad invention may have any number of features each worthy of a dependent fallback feature claim.[2] And a claim may also include any number of terms each worthy of being backstopped by a dependent definition claim.[3]

How are all these dependent claims to be arranged?

They can all be made to depend as peers from the parent claim. Or they could be strung out in a chain, each claim depending from the next. Mix-and-match combinations are also possible. However, the number of claims required to cover all the possibilities is usually prohibitive and so choices need to be made.

FIG. 1(a) depicts a claim family in which the broad invention is claimed in independent claim 1. A terminology definition X is recited in dependent claim 2. Fallback features A and B are recited in claims 3 and 4, respectively.[4] This is referred to as a claim chain because the claims are linked one to the next. Claim 4 depends from claim 3, which depends from claim 2, which depends from claim 1.

FIG. 1(b) depicts a claim family in which the same dependent claims are arranged as peers in a non-chained arrangement. Claims 5, 6 and 7 are identical to claims 2, 3 and 4, respectively, except that claims 5, 6 and 7 all depend from claim 1 instead of being dependent from one another.

The non-chained approach of FIG. 1(b) maximizes the possibility that a competitor's product will infringe at least one valid claim of the claim family. If claim 1 proves to be invalid, infringement occurs as long as the competitor's product includes any *one* of the limitations X, A and B in conjunction with the limitations of claim 1. For example, claim 6 is infringed as long as the competitor's product includes fallback feature A in conjunction with the limitations of claim 1. If the product also meets limitations X or B, then that many more claims are infringed.

The chained approach of FIG. 1(a), by contrast, does *not* maximize the possibility that a competitor's product will infringe at least one valid claim of the family. A competitor's product that does not meet termi-nology definition X will not infringe any of the dependent claims, even if that product includes features A or B, because claims 2, 3 and 4 each incorporate terminology definition X. If claim 1 were to be invalid in *this* situation, this family would contain *no* claim that is both valid and infringed.

The chained approach does have an advantage, however. It provides more robust protection against unforeseen prior art or indefiniteness. Claim 4, for example, encompasses not only its own limitations but those of claims 1 through 3 as well. With the non-chained approach of FIG. 1(b), by contrast, none of the dependent claims benefits from the potentially enhanced patentability afforded by the others.

If the total number of fallback features and terminology definitions is small, we can cover all bases with a reasonably small number of claims. In that case, the "chain-or-not-chain" (a/k/a the "wide-or-deep") problem goes away. For example, FIG. 2 shows that only seven dependent claims are required to cover all ways of combining any one or more of limitations X, A and B with the limitations of claim 1.

However, the number of possible combinations doubles for each additional claim. Accommodating all the combinations of four, five or six fallback feature claims and/or definition claims within a single claim family would require as many as 15, 31 and 63 dependent claims, respectively.[5] Moreover, it is usually desirable for the overall claim suite to include multiple claim families in order to a) define the broad invention in more than one way,[6] b) present the invention in various settings,[7] and c) employ various statutory claim types. The potential number of claims, and thus the "excess claims" fees, can quickly get out of hand.

The expense may be justified if the invention is important enough. In the typi-



**FIG 1(a)  Chained Claims**



**FIG 1(b)  Non-Chained Claims**



**FIG. 2**
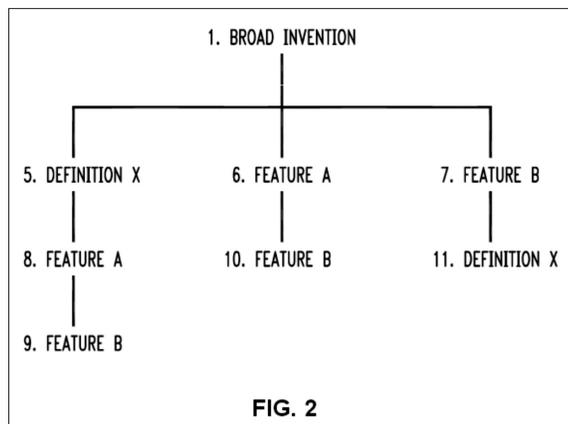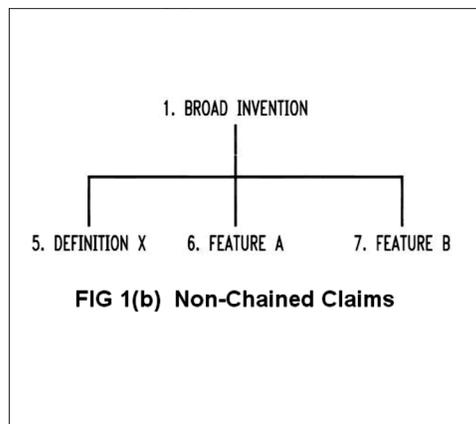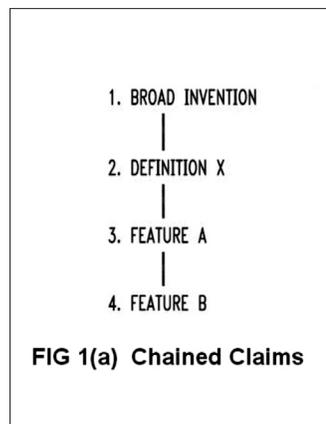
cal case, however, judicious choices need to be made to keep the claim count to a reasonable number.

Those choices should be made based primarily on the goals of the Planned Retreat;[8] if retreat to narrower claims becomes necessary, those claims should give up as little valuable intellectual property as possible while establishing a defensible position for what's left. A claim that does not further the Planned Retreat goals or serve some other purpose—such as reciting a terminology definition or serving as a maximized royalty based claim—is probably superfluous.

Inherent in the Planned Retreat philosophy are two competing considerations: Any word added to a claim has the potential to contract its scope and create an infringement loophole. But that very same contraction in scope may be needed to establish a position of patentability if claims that are broader are found to read on the prior art.

Those competing considerations, plus the consideration of keeping the claim count down to a manageable number—can be effectively balanced by following three guidelines:

Features independently imparting patentability to parent claim's subject matter should be recited in claims that are non-chained

Features imparting patentability to parent claim's subject matter in combination with one another—e.g. as the result of unexpected advantages arising from the combination of features—should be recited in claims that are chained

Features not imparting patentability to parent claim's subject matter in combination with one another are superfluous and, in the interest of minimizing the claim count, should not be recited in claims that are chained with one another

These guidelines are discussed in detail, with examples, in next month's column.

## ENDNOTES

1. Copyright © 2007, 2009 American Bar Association. Adapted with Permission. All Rights Reserved.

2. *Intellectual Property Today*, June, 2007.

3. *Intellectual Property Today*, May, 2008.

4. A particular claim may recite more than one fallback feature or terminology definition. For simplicity this discussion assumes that that is not the case.

5. The actual number would typically be somewhat smaller since certain dependent claim limitations only make sense when tied into others.

6. *Intellectual Property Today*, January, 2009.

7. *Intellectual Property Today*, October, 2007.

8. *Intellectual Property Today*, June, 2007.

**FILLER**

**BOX = 7.5"W x 6.25"H**