Chapter 4

Method or Process Claims

§ 4:1 In General
Method, or process, claims are generally easier to write than mechanical claims. The reason for this is that method claims by their very nature do not require as much structural “connecting up” nor as many detailed statements of the mechanical cooperation of parts as do mechanical claims. Also, selecting the elements (steps) is easier, and there is less problem in giving the elements names, broad or narrow.

As to form, the body of a method claim is rarely much more difficult to write than a cookbook recipe:

Preheat an oven to 350°F; sift 1½ cups of sugar; sift 1 cup of cake flour; sift together the sugar and the flour; add ½ teaspoon of salt to the sifted sugar and flour; beat . . . eggs . . .; add the beaten eggs; . . .; bake in the preheated oven for 45 minutes.

As easy as pie (or angel cake)!

(Faber, Rel. #2, 6/16)
The words “method” and “process” are interchangeable in the patent law, although “process” is perhaps more frequently used in chemical cases, while “method” is more usual in mechanical and electrical cases. To provide uniformity, this statutory class is now called “process” in 35 U.S.C. § 100(b) and is defined therein to mean “process, art or method.”

Most of the general rules previously given apply also to method claims. They may be broad or narrow; may be chemical, mechanical, or electrical; and may have most of the other variations (for example, genus/species) found in mechanical claims. The terms in the claim must find support in the specification; reference numerals may be used; appropriate antecedents are necessary; logical order is also necessary; steps must be “tied” together; “whereby” clauses may be used. However, even if a drawing of the invention is part of the disclosure, the steps of the method need not be shown in the drawing, in contrast to elements of a product claim. It is not necessary to provide a flow diagram of the claimed steps in the drawings, although such a diagram might be helpful in some cases for making a process more easily understandable.

A very important rule to remember is that the “elements” of a method claim, instead of being structural parts, are, and must be, acts or manipulative steps that are performed upon an article, workpiece, or chemical substance. It is the transformation or reduction of the article, workpiece, or chemical substance to a different state or thing that is the essence of a method claim—and the key to its patentability. This is especially true when the claimed method includes no particular machine or apparatus.¹

There is no per se objection to claiming a single-step method,² except where a broad functional step is claimed, as noted in section 3:25. However, most claimed methods do involve combinations of steps, as is the case with machines and circuits. Of course, the claim must particularly point out and distinctly claim what the applicant regards as his invention (section 1:1), which is the basic requirement of 35 U.S.C. § 112 [see section 3:29.10].

In re Kuehl³ announced a liberal philosophy toward granting method or process claims of various kinds, even where the point of novelty appears to the examiner to reside in other statutory classes (new compound in that case), so long as the process is unobvious to

---

one of ordinary skill in the art. This was further defined in *In re Durden*.  

A claim may be valid even if it combines two statutory classes of invention, for example, method claims relying on their performance using particular apparatus.

A process claim may be patentable if an otherwise conventional process *uses* either a novel material or an old material whose use in the claimed process would have been unobvious. In either case, the test is whether the process is found to be unobvious. *Durden* held that use of a novel or unobvious starting material or producing a novel or unobvious end product was not enough. The process had to be unobvious to one of skill in the art. Thus a claim:

**A process for making a soap comprising mixing water with compound X.**

would be a patentable claim if compound X is as above. But a process claim for *making* a novel material using a conventional process and conventional materials is not patentable. Finally, *making* a known material but in an unobvious manner is a patentable process. Some aspect of the making, not of the result, must be novel.

There is a peculiar exception to process protection. Public Law 104-208 enacted in 1996 denies patent owners the right to enforce patents claiming medical or surgical procedures that do not involve patented pharmaceuticals or patented devices. One can claim the process in the usual way methods are claimed. But the claim is now without value, since it cannot be enforced in a court. The claimed process should include reference to a patented drug or to a patented device in one of the claim elements if the claim is to have hope for enforcement. But then the accused infringer must also have used the patented drug or device in performing the process accused of infringing.

**Summary**

*Method claims involve one or more acts or steps performed on an article, workpiece, or chemical substance to achieve some result*

---

8. *Id.*

(Faber, Rel. #2, 6/16)
in the useful or technical arts. The elements of a method claim must be steps or acts, expressed as verbal statements or phrases.

§ 4:2 Elements of Method Claims

Generally, the verbs in a method claim need not be phrased in any particular voice or tense as long as there is no ambiguity and the requirements of section 112 are met. Nevertheless, it must be remembered that the elements of a method claim are method steps, which should usually be verbal (gerundial) phrases, introduced by a gerund or verbal noun (the “-ing” form of a verb), such as (the gerunds are italicized):

(a) reciprocating the guide . . .
(b) punching a series of holes . . .
(c) impressing a signal . . .
(d) coating the sheet with an adhesive . . .
(e) heating the mixture to a temperature of . . .
(f) separating the alcohol from the aqueous solution . . .
(g) distilling the aqueous solution to separate the alcohol therefrom . . .
(h) fractionally crystallizing the aqueous solution to separate the alcohol therefrom . . .
(i) permitting the mixture to cool . . .

The three steps (“separating,” on the one hand, and “distilling” or “crystallizing,” on the other) illustrate, respectively, generic and two species method steps (see section 6:9).

One should be aware that as to the format of step (g), examiners sometimes express a preference for language similar to the following: “(g') separating the alcohol from the aqueous solution by distilling the solution. . . .” The argument favoring such wording is along these lines: “Regarding the phrase ‘distilling . . . to separate,’ [as in step (g)] one could distill the solution, yet never achieve alcohol separation. Such separation being the ultimate goal of the step, it [separation] should be more positively recited by being made the introductory gerund of the clause [“separating . . . by distilling,” as in step (g')] which sets forth the step.”

It is believed that this is fallacious reasoning. First, steps (g) and (g') may be seen to cover exactly the same territory logically and semantically. Second, an objection to the form of a step written as

step (g) ignores the expressly stated substantive limitation therein of “distilling . . . to separate.” This limitation requires that the distillation effect the separation. Third, an administrative preference for one or the other form of the step ignores the reasonable latitude permitted by decisions such as Lewin,\textsuperscript{11} cited at the beginning of this section. Fourth, seemingly ignored are the principles set forth in the next paragraph.\textsuperscript{12}

The choice of which word (gerund) to use for introducing a method step is similar to the choice of which word to use for describing elements in apparatus claims. Generally, one chooses the broadest word the prior art will allow. Thus, in step (g), “distilling” is narrower than step (f) “separating.” One may recite a generic or broad step, such as “separating,” that is really a function or result of a more specific act such as “distilling” or “crystallizing.” Moreover, it is permissible for a method step to recite some condition or property without reciting in the claim every step necessary to obtain or achieve that condition or property.\textsuperscript{13} For example, “distilling” alone in step (g) should be sufficient. There should usually be no need, in place of “distilling,” to recite “placing the aqueous solution in a (certain) container . . .”; “heating the solution to a (certain) temperature . . .”; “condensing the alcohol vapors . . .”; etc. Of course, the terms used must find some antecedent in the disclosure. Preferably, therefore, the word appearing in the claim can be found in the specification, where it will have also been defined or explained or how it relates to the subject of the invention will have been described. Often, the word used is itself so clear in its meaning, like “heating” or “separating,” that explanation of the word is not needed and its simple or mere mention by use of the precisely same word or a clearly equivalent word in the supporting specification is a sufficient antecedent. However, where the step or process procedure is not clear from the word used (for example, distilling in a particular context, like wine or petroleum, needs more explanation), the mere word “distilling” is not detailed enough, and its component parts, heating and separating, may also have to be recited.

\textsuperscript{11} Id.

\textsuperscript{12} If, however, the two formats, (g) and (g') truly are the same, one would usually be foolish to “fight” the examiner on the point. There are usually more important issues present, and a firm stand by the applicant on one particular format may not, in the words of Cicero, “render the audience [here, the examiner] benevolent” as to more substantive issues.

\textsuperscript{13} In re Roberts, 470 F.2d 1399, 176 U.S.P.Q. [BNA] 313 (C.C.P.A. 1973); In re Alul & McEwan, 175 U.S.P.Q. [BNA] 700 (C.C.P.A. 1972); In re Rainer, 134 U.S.P.Q. [BNA] 343 (C.C.P.A. 1962). Of course, either the specification must disclose, or a person skilled in the art must know, how to achieve the condition or property.
Pragmatically, the choice of what gerund to use is really of little moment as to the form of the claim. Moreover, 35 U.S.C. § 112 states (in the same paragraph sanctioning “means plus function” clauses) that:

An element in a claim for a [method] combination may be expressed as a . . . step for performing a specified function without the recital of . . . acts in support thereof, and such claim shall be construed to cover the corresponding . . . acts described in the specification and equivalents thereof.

Thus, the statute expressly sanctions the use of broad functional steps, such as “separating,” where the prior art permits, rather than the specific act, “distilling.” The interpretation of this language is similar to that described under “means claims” in section 3:29: the claim “shall be construed to cover the corresponding . . . acts described . . . and equivalents. . . .” Consequently, as with means clauses, the scope of protection afforded is exactly as broad as “the invention” disclosed in the specification, plus equivalents. Although “step of” clauses may be used whenever the prior art permits, their scope may be more restricted under applicable precedent than a clause with more specific language on the method step. For example, in {f} or {g} above, one could recite “the step of separating” or “performing a step separating” or other equivalent language which could be governed by section 112. Better now would be to use the actual recital of a process step, “separating” or perhaps “distilling to separate” or “distilling for separating.” The latter two phrases would now likely be governed by section 112, and might be restricted merely to the steps disclosed in the specification and their equivalents (see section 3:29).

The distinction between acts and steps is probably more academic than real, as very few, if any, cases focus on the difference in concept between a functional step and the act done to perform the step. As with “means claims,” such functional step clauses must be limited to claims to combinations. In concept, a single-step method claim is all right [see section 4:1] only when the step is an act.

The preamble of a method claim may be almost the same as that of a mechanical claim. Generically, the following preamble format is usually appropriate: “A method of [or process for] performing a specified act [or operation] on a particular article [or workpiece or chemical substance] which comprises: . . . .” Except for the words “a method” this format is identical to the format proposed in section 3:2 for apparatus claim preambles. Note that the workpiece is properly placed in the preamble, just as it is in the apparatus claims [see section 3:3]. In the broader claims, avoid describing the workpiece or article any more narrowly than the prior art requires, which would be an “unnecessary article limitation” in the words of the
Patent and Trademark Office comments on grading Agent’s Exam method claims. The preamble is not locked into a particular format, and can be shorter than the above suggestion, as the invention warrants.

Another similar preamble format ends with the transition words “which comprises the steps of: . . . .” The choice between these and equivalent forms is a matter of style. Equivalents of “comprises” are used: “includes,” “has.” The words “the steps of” or equivalents might not be used [see Example III in chapter 3].

Referring again to the take-up barrel of Example III (see section 3:29.21, above) a method claim relating thereto might read:

4. A method of collecting an advancing strand in a barrel, which comprises:

   (a) guiding the advancing strand into the barrel;

   (b) rotating the barrel so that the point of collection of the strand varies circularly with respect to the bottom of the barrel; and

   (c) reciprocating a guide point above the barrel so that the point of collection varies radially with respect to the bottom of the barrel.

Note the similarity in form to the apparatus claim in section 3:29. If the title of Claim 4 were changed to “Apparatus for . . . .” and the phrase “means for” were inserted before each step, one would have a proper apparatus claim (at least as to form). This is typical of most method claims: Add the words “means for” to transform a method step into an apparatus element. Similarly, where an apparatus element is expressed in “means for” fashion, deletion of that phrase usually results in a proper (as to form) method step. Thus, method and apparatus claims can be of comparable scope and equally broad or narrow. Where the practitioner elects to include both apparatus and method claims in a specification, it would not be unusual to have at least some of the two types of claims analogous, that is, the method steps in a method claim become “means for” clauses in the analogous apparatus claim. As is elsewhere recommended, where an invention permits, different classes of claims should be used to cover an invention. Where an apparatus accomplishes something in a series of operations, the series can be claimed in a series of steps in a method claim.

Further examples of method claims of many kinds are given in Appendix A.
Summary

The elements of a method claim are acts or steps, customarily phrased as gerunds ("heating"). They can be broad or narrow, depending on the prior art, and functional step clauses ("separating") can be used, corresponding to means clauses where the function performed, not the act used to do it, is the important thing. Single-step method claims are permitted where the step is an act, not a functional step.

§ 4:3 Order of Steps

The elements (steps) of a method claim must, of course, also be set forth in some logical order. The order of listing the elements in method claims is usually clearer than in mechanical claims. The elements of a method claim are typically recited in the sequence in which the steps are performed. If the claim does not expressly indicate that steps are performed simultaneously or in a different order than the sequence in which the elements appear, the reader of the claim will assume the steps are performed in the sequence of their appearance. The order of the steps is required “when the claim language, as a matter of logic or grammar, requires that the steps be performed in the order written, or the specification directly or implicitly requires” that order. But unless the sequence of steps is expressed in the claim, the sequence is not being claimed and another sequence may be either prior art to the claim or an infringement of the claim. If the nature of the method requires a sequence different than the order of the elements, then the reader will not read the claim in the usual way. (Of course, mechanical claims have their logical sequence of elements too, as noted above at section 3:21.)

In the method of Claim 4, all three steps (“guiding,” “rotating,” and “reciprocating”) occur simultaneously, each to accomplish its respective result and all to accomplish the intended result stated in the preamble so that, as written, either clause (b) or (c) could immediately follow step (a). It would be illogical to put step (a) last or in the middle.


Steps (b) and (c) each modify the activity described in step (a). If one step modifies what is being done in or what has been accomplished by another step, the step modified should precede the modifying step. While a reader familiar with Claim 4 herein and the disclosure in the specification supporting that claim would realize that steps (b) and (c) should be performed simultaneously, better claim form would be to tell the reader, by reciting at the beginning of element (c) “while rotating the barrel, . . .” or “simultaneously” or beginning element (b) with “simultaneously,” but finishing element (b) without the “,” so as to connect it with element (c) rather than element (a).

Quite often, the steps, or some of them, must be performed in a given sequence. In this event, expressions indicative of the order should be used, such as: “first,” “second,” “then,” “subsequently,” “after the embossing step,” “between steps (c) and (d),” etc. 17

Where all of the steps must be performed in a specific order, then all should be tied in chronologically, either by sequence words associated with the description of each step, as previously discussed, or by a preamble statement such as: “A method of _________________, comprising the following steps in the order named: . . .” or “. . . in the sequence set forth: . . .” These are useful ways of stating a necessary order of steps, particularly for claims with many steps.

Sometimes the description of a particular step inherently implies the order, as when a claimed step refers to the result of performing another claimed step. An example is: “[a] depositing a film of zinc on a substrate; (b) depositing a film of platinum on the zinc film.” In this case, the order need not be further expressly stated, because step (a)’s precedence in time over step (b) is required by the phrase “on the zinc film” in step (b). Step (b), therefore, cannot, within the wording of the claim, be performed until the zinc film is deposited by step (a).

If grammar, logic, specification, or prosecution history require sequential performance of the steps, then the claims will be so construed and limited. 20

Where the claim does not expressly state or necessarily imply the sequence of all or some steps, it would cover the steps performed in any order or simultaneously. 21 In Altiris, Inc. v. Symantec Corp., the

17. Note that use of the outline form of claim, with each step labeled with a number or letter, permits reference back to, for example, “step [c],” instead of to “the mixing step.”
18. E-Pass Techs., Inc. v. 3Com Corp., 473 F.3d 1213, 81 U.S.P.Q.2d (BNA) 1385 [Fed. Cir. 2007].
19. Id.
Federal Circuit looked at the preamble of the claim and at the specification and found no requirement for a specific sequence, even though the specification had a sequence in the preferred embodiment description. [For example, the patentability of the claim or the question of its infringement would not be determined by an unspecified sequence of the steps.] Then, as with the barrel take-up method, the order of description is a matter of logical convenience. However, where a required sequence of steps is not stated, it is conventional among practitioners, and logical to claim readers, to assume that steps are performed in the order of their appearance in the claim, unless the claim language indicates otherwise (rotating the barrel and reciprocating the guide point, and then only as to that step).

Summary

Where the steps, or some of them, must be performed in sequence, one after the other, the sequence should be described. Otherwise, the steps should be set out in any logical order in which they should be performed, but with no sequence precisely stated. As with all other limitations in any claim of any kind, make sure every word and every phrase is necessary in the broader claims. Consequently, do not expressly state the sequence unless it is important to the claim.

§ 4:4 Obvious Method Using Novel Starting Material or Producing Unobvious Product

It is possible to obtain a United States patent claim to a process, even though the general process steps are obvious, when the process uses a novel or unobvious starting material or is for producing an unobvious product.

In re Ochiai\(^{22}\) holds that the U.S. Patent and Trademark Office (PTO) had misinterpreted a prior Federal Circuit decision, In re Durden,\(^ {23}\) to establish a rule of per se obviousness, that an obvious chemical process can never be patentable even when it uses a novel starting material or produces an unobvious product. The Federal Circuit in Ochiai rejected the Patent Office argument that a process is obvious if prior art references disclose the same general process using “similar” starting materials.

Ochiai sought to patent a process for converting an acid into a cephem compound. Both the acid and cephem were subjects of other Ochiai patents. The examiner rejected the application claims on the

\(^{22}\) In re Ochiai, 71 F.3d 1565, 37 U.S.P.Q.2d (BNA) 1127 [Fed. Cir. 1995].  
\(^{23}\) In re Durden, 763 F.2d 1406, 226 U.S.P.Q. (BNA) 359 [Fed. Cir. 1985].
ground that they claimed conventional process and that the only
difference from the prior art was the selection of a slightly different
starting material to make a slightly different final product. The Board
of Patent Appeals and Interferences of the PTO affirmed the examiner
based on controlling prior decisions In re Larsen,24 In re Albertson,25
and In re Durden.26

The Patent Office took an expansive view of the 1985 Durden
decision. If a claimed process involved prior art steps and merely used
reactants which were “similar” to the prior art reactants, examiners
held such a process unpatentable based on Durden.

In re Pleuddemann27 was another case involving the so-called
Durden rule. The court held that the Durden case did not concern
patent claims covering a method of using a material, but only
concerned claims covering a method of making the material.

In 1995, Congress enacted 35 U.S.C. § 103(b), which allowed an
obvious biotechnical process of using or making an unobvious bio-
technical product to be patented so long as the claims to the obvious
process co-existed with valid claims to the unobvious product in the
same patent. This law is limited to biotechnology patents.

In Ochiai, the Federal Circuit reversed the examiner. It found that
the acid starting material was not known to the prior art and that a
person having no knowledge of the acid could hardly find it obvious to
make a product using this acid as a reactant. The court pointed out
that the test of obviousness is statutory and requires the comparison of
the claimed “subject matter as a whole” with the prior art. It pointed
out that this inquiry is highly fact specific, regardless of whether the
claimed invention is directed to a process of making, a process of
using, or some other process. The Federal Circuit found that the PTO
examiner had used Ochiai’s disclosure of the acid starting material in
his own application as if the acid was in the prior art and this was not
correct. The court also held that no prior decision had established a per
se rule of unpatentability and noted that its prior decision in Durden
had expressly cautioned “not to generalize or make rules for other
cases.”

The Patent Office argued that the courts’ prior decisions in Durden,
Pleuddemann, and other cases had been inconsistent. The Federal
Circuit rejected this argument and pointed out that all of the prior
decisions were based on fact-intensive comparisons of the claimed
processes with the prior art, as required by the patent statute.

   1990].

(Faber, Rel. #2, 6/16)
The Federal Circuit concluded by stating that when “any applicant properly presents and argues suitable method claims, they should be examined in light of all . . . relevant factors, free from any presumed controlling effect of Durden or any other precedent.” In other words, after considering what is being claimed, what exists in the prior art and the level of skill of those practicing in the art, the obviousness or nonobviousness of the method claimed should be determined.

Summary

Method claims to a known method starting with a novel or unobvious starting material or producing an unobvious product may be patentable if the subject matter of the claim as a whole is unobvious.

§ 4:5 Claims to Both Method and Apparatus; Method Is Function of Apparatus

Until 1968, there was a fundamental principle that, to be patentable, a method must be more than the “inherent function of the apparatus” that was disclosed to effect the method. As stated in the first Guidelines of Patentability memorandum:

A rejection on this ground is proper where the disclosed machine will inherently carry out the steps of the process set forth in the process claims regardless of whether an apparatus claim is allowed, unless it appears that the process claimed can be carried out by some machine which is not the functional equivalent . . . or by hand.

The Patent and Trademark Office instead now relies on Tarczy-Hornoch, cited in M.P.E.P. section 2173.05(v), which reads:

2173.05(v) Mere Function of Machine

Process or method claims are not subject to rejection by U.S. Patent and Trademark Office examiners under 35 U.S.C. 112, second paragraph, solely on the ground that they define the inherent function of a disclosed machine or apparatus. In re Tarczy-Hornoch, 397 F.2d 856, 158 USPQ 141 (CCPA 1968). The court in Tarczy-Hornoch held that a process claim, otherwise patentable, should not be rejected merely because the application of which it is part discloses apparatus which will inherently carry out the recited steps.

The Federal Circuit has left no doubt that Tarczy-Hornoch is controlling law.30

The inherent function was of the disclosed apparatus, whether or not it was claimed at all and, if claimed, whether or not the apparatus itself was unobvious and patentable. In Tarczy-Hornoch, the method was unpatentable, although the disclosed device used therein was not.

In any event, the previous Claim 2 (section 3:29.19) would easily satisfy even the old rule, because the strand could be manually guided, the barrel could obviously be turned by hand, the guide could be similarly reciprocated, any two steps could be manual, or all three steps could be.

Summary

Method claims cannot be rejected as merely drawn to the inherent function of a machine. Where possible, detach the method from the machine so far as possible and try to define novelty in the steps performed.

§ 4:6 Apparatus Limitations

Of necessity, there will be product or apparatus limitations in a method claim. The method is usually performed upon, acts in conjunction with or is performed by the product, apparatus or composition of matter.31 A method claim can be limited to performance on a particular type of apparatus,32 with the claim reciting relevant elements of that apparatus, but the claim need not be so limited. In Collaboration Properties, Inc. v. Tandberg ASA, the method of videoconferencing was claimed as being performed using particular conferencing hardware, software, and devices. This is analogous to reciting the functions performed by the various elements of an apparatus (as in the article shaker example claim) which frequently appear in a product or apparatus claim. Thus, the apparatus elements in a method claim are not recited without somewhere describing the cooperation between the apparatus element and the method being claimed. An apparatus element that is not recited in the claim as participating with the method, and usually with an element in the method, should not be recited.


(Faber, Rel. #2, 6/16) 4–13
A claim that is in two statutory classes, a product and a method, is indefinite and invalid.\textsuperscript{33} See section 3:24.

Although there is no per se objection to including structural (mechanical, electrical, or both) apparatus limitations in the elements (steps) of method claims, when the steps are properly phrased in method language, the use of such limitations should be avoided insofar as possible for at least two reasons.

First, apparatus limitations will often unduly limit the claim.\textsuperscript{34} If a method step can be performed by hand and without a cooperating apparatus, avoid reciting the apparatus, at least in the earlier of the claims. If the practitioner nonetheless wants to claim the non-cooperating apparatus element, save it for a following dependent claim. Second, and more important, the “black letter” law is that the patentability of a method claim cannot be predicated solely on the structure of a mechanism used in practicing the method.\textsuperscript{35} Obviously, a structure associated with a claimed method will be selected because the structure is of some aid to performance of the method, and such structure and its mode of cooperation may be claimed. But patentability of the method claim will still turn on the method steps, perhaps performed with the cooperating apparatus, and patentability of a method claim will not turn on the presence of an apparatus that is not associated with a method element.\textsuperscript{36} Accordingly, there is usually no point in including the structure except where the method necessarily involves manipulation of apparatus. There is no objection to including composition-of-matter or chemical limitations in method claims, and in fact these are frequently relied on for patentability, as noted in section 4:7.

See In re Kuehl,\textsuperscript{37} where the claim was to an old method of cracking gasoline, so far as the steps were concerned, using a new catalyst.\textsuperscript{38}

\begin{flushleft}

\textsuperscript{34} See Collaboration Props., 81 U.S.P.Q.2d (BNA) 1530.

\textsuperscript{35} See Ex parte Dammers, 155 U.S.P.Q. (BNA) 284 (B.P.A.I. 1961), which nevertheless points out that structural apparatus limitations are not per se objectionable, and, to the extent necessary to carry out the claimed method, are permissible in a method claim.

\textsuperscript{36} In re Brouwer, 175 F.2d 564 (C.C.P.A. 1949). Where piercing a hole in a resilient washer with a needle was patentable in part because the hole in the washer closed after withdrawal of the needle, cleaned dirt from the needle upon insertion and injected lubricant from the needle upon its removal.


\textsuperscript{38} See In re Schneider, 481 F.2d 1350, 179 U.S.P.Q. (BNA) 46 (C.C.P.A. 1973).
\end{flushleft}
In dependent method claims (section 2:9), avoid adding only apparatus limitations. Limitations added in dependent method claims are preferably phrased as method steps, except where further defining compositions of matter or chemicals (section 6:1). Thus, it would be poor form to depend a claim from the take-up method in Claim 4 setting forth: “A method . . . as recited in claim 4, further comprising a turntable. . . .” One example of proper form along this line would be: “A method . . . as recited in claim 4, wherein the step of rotating the barrel includes mounting the barrel on a turntable and rotating the turntable.”

Note that this is primarily a matter of form, not substance. Although the claim drafter is entitled to include the turntable in the claim, there is no good reason to do so in a broad claim, because it is not essential to the method. Thus, Claim 4 might have included:

*rotating a turntable on which the barrel is mounted . . .*

*reciprocating a strand guide positioned above the barrel . . .*

Note the form (inferential) for bringing in apparatus limitations, where they are used, such as “rotating a turntable. . . .”

As in apparatus claims (section 3:14), antecedents are important. Support for “the guide” must have been provided in a previous clause of the claim (in the clause above). However, because the claim is to a method that is a series of steps, the product or apparatus or composition, etc., with which a method step is practiced may be inferentially claimed in that step. Therefore, that product, etc., may have been introduced as the object (“a guide”) on which a previous step was performed, usually in the middle of a clause, and that product, etc., should not have been made the subject of a clause.

See also section 6:7 on new use claims, for method claims where the novelty resides in a new use for an old material.

**Summary**

*Avoid apparatus limitations (machine or circuit) in method claims if the apparatus element does not cooperate with the method (or at least one of the method claim elements) or when reciting an apparatus limitation recite that cooperation with the method. When necessary, bring them into the claim inferentially, that is, “rotating a turntable.” There is no problem with chemical or materials limitations; they can be relied on for patentability, and frequently are, in “new use” claims, such as killing insects by exposing them to DDT.*
§ 4:7 Chemical Processes

An example of a chemical process claim follows:

5. A process for treating a surface of a polyethylene article to increase its receptivity to printing ink, which comprises:

   exposing the surface of the article to a saturated solution of sodium dichromate in concentrated sulfuric acid.

As previously noted in section 4:1, there is no objection to a single-step method. Claim 5 illustrates the rare case of a claim that is not to a combination.

With chemical processes, it is proper to include a dependent process claim adding only details of the materials used. For example, if Claim 5 had recited “an acid,” a dependent claim could cover: “A process . . . as recited in Claim 5, wherein the acid is sulfuric acid.”

It is standard in chemical process cases that the process may distinguish by the compositions recited, as well as the actual manipulative step, which is often trivial per se. In the example of Claim 5, the manipulative step “exposing” an article to a reagent is of course prehistoric; the sole novelty resides in the composition of the reagent. Eminent logically, it is considered that exposing to reagent X is not the same step as exposing to reagent Y.39

Where the process can be practiced, or used, with more than one related material or chemical, Markush phraseology may be used under the rules set out in section 6:2. Also, alternative expressions [A or B—section 3:16] may sometimes be permitted in describing different chemical substances that can be used in the process. In Ex parte Pantzer and Feier,40 during prosecution, Claim 16 was rejected under 35 U.S.C. § 112, without the citation of any references. Claim 16 recited a method of dyeing fibers wherein the dye used to prepare the dyeing solution was defined as the product of the reaction of “one or both of [A'] and [B'] with [C] under [certain] alkaline conditions.” Other claims used the phrase “one or more of.” Claim 1, from which all of the claims ultimately depended, recited A and B, certain amino phenols, of which A’ and B’ were species. Claim 1 was not limited to only one of A or B, because it called for a method that “comprises” dispersing A and B in an aqueous medium. The board reversed the rejection, holding that the phrases “one or both” and “one

39. See also section 6:7 [on new use claims].
or more” were not so broad as to be indefinite and did not encompass “an infinite number,” etc.

Chemical processes can be to methods of making chemical compounds (new or old); methods of using chemicals, as in Claim 5 above or such as killing insects or treating baldness; or any other process or subject having industrial utility.

A typical method of use claim:

5A. The method of treating baldness, which comprises applying to the scalp an aqueous solution of sodium chloride having a concentration of 30–40 percent by weight of sodium chloride.

A typical claim to a method of making a chemical compound:

5B. The method of manufacturing sodium hydroxide, which comprises electrolyzing an aqueous solution of sodium chloride at a current density sufficient to decompose the sodium chloride into elemental chlorine and sodium, the sodium reacting with the water present in the solution to form sodium hydroxide and hydrogen gas.

Note this process is one of the oldest, and still most common, ways to make sodium hydroxide, as well as chlorine and hydrogen gas. Since the circuit parameters would not be critical, they can be stated broadly (section 3:25).

The Federal Circuit has held in In re Ochiai44 that the patentee/applicant may premise patentability of a chemical process claim on the use of a novel and unobvious starting material or on the novel and unobvious product obtained by the process.45 The process may be new or novel and also unobvious due to the choice of either starting material or final product. An obviousness determination for the claim as a whole is required.46

In re Kuehl,47 a predecessor of In re Ochiai, held that patentability of a process can reside in the use of a novel and unobvious material in

42. Salt water.
43. This avoids reading on ocean bathing.
46. See section 4:1. Other examples of chemical process claims are given in Appendix A, cases 13, 18, 20, 21, and 24.
the process, though the single process step (section 4:1), contacting X with catalyst Y, is notoriously old per se. In Kuehl, one of the claims in question read:

A hydrocarbon conversion process which comprises contacting a hydrocarbon charge under catalytic cracking conditions with the composition of claim 6.

Claim 6, a composition of matter claim to a group of new zeolites, had been allowed. The court held it would be unobvious to crack gasoline with the new zeolite, even though cracking with other, generally similar, zeolites was very well known in the prior art and would have been obvious after one knew about applicant’s new zeolite. However, the court held that to one of ordinary skill in the art, selection of the particular zeolite for cracking hydrocarbons would not have been obvious. The Federal Circuit in In re Durden affirmed and distinguished In re Kuehl. In Durden, use of the novel starting material would have been obvious, while in Kuehl, use of the novel starting material would not have been obvious. Guidance in drafting a particular claim is difficult to obtain from these precedents. Since the claim drafter cannot know for certain that the process will be found nonobvious, try to also protect the novel starting material and, if applicable, the final product. The patentee is entitled to both types of claim when one invents (a) a new compound and (b) an unobvious process for using that compound.

Summary

Chemical process claims are the same as other method claims as to claim-drafting techniques. Often the novelty is in the chemicals used, not the act itself (treating, exposing). Use of a novel and unobvious starting material and/or producing a novel and unobvious end product is enough to make a process unobvious.

§ 4:8 Electrical Methods

As an example of electrical method, consider the following claim which covers the use of the Wheatstone Bridge shown in Example V in section 3:30, above, to measure an unknown resistance.

48. This section was prepared by Bryan W. Sheffield and John L. Landis.
6. A method of measuring the electrical resistance of an unknown resistor \( R_x \), which comprises:

connecting the unknown resistor \( R_x \) between terminals (A) and (D) of a four-terminal electrical network (A, B, C, D), said network including a first known resistor \( R_1 \) between terminals (A) and (B), a second known resistor \( R_2 \) between terminals (B) and (C), and a third known resistor \( R_3 \) between terminals (C) and (D), at least one of said known resistors being a variable resistor;

impressing a potential across terminals (A) and (C) of said network;

detecting the voltage developed across terminals (B) and (D) of said network as a result of said impressed potential; and

varying the resistance of at least one of said known resistors until the voltage detected across terminals (B) and (D) falls to zero, whereby the resistance of the unknown resistor \( R_x \) is determined from the equation:

\[
R_x = \frac{R_1 R_3}{R_2}
\]

Claim 6A is another example of an electrical method claim and covers use of the crystal radio illustrated in Example IV [see section 3:30, above].

6A. A method of demodulating a radio frequency carrier wave priorly modulated with an audio frequency signal, which comprises:

applying said modulated carrier wave to a resonant L-C circuit;

adjusting the resonant frequency of said L-C circuit until it equals the frequency of said carrier wave;

rectifying the voltage developed across said resonant L-C circuit to recover said audio frequency signal;

49. Note the proper “whereby” clause [section 3:26], since this function indubitably follows from the previously recited steps. “Whereby” clauses can be used as well in method claims as in apparatus claims.
passing said rectified voltage through a transducer to render said audio frequency signal audible; and
filtering out the radio frequency components present in said rectified voltage to prevent same from entering said transducer.

**Summary**

Electrical methods present no special problems so far as claim drafting techniques are concerned. The only difference from mechanical methods is that the steps, or some of them, are electrical rather than mechanical. Typical steps or acts are “amplifying,” “charging,” “connecting,” “impressing a potential,” “detecting,” “rectifying,” “sensing,” etc. The acts (amplifying) need not be doable by a human being; circuit components do nicely.

---

§ 4:9  **Bilski and Computer-Implemented Methods and Business Methods**

On June 28, 2010, the U.S. Supreme Court issued a unanimous decision, affirming the decision of the Federal Circuit, which in turn had affirmed the rejection of process claims in a U.S. patent application to Bilski. The majority and two concurrences. The Court affirmed a decision and opinion in *In re Bilski* that was issued October 30, 2008, by an en banc panel of the Federal Circuit. The opinions of the Supreme Court concerned the patentability of patent claims directed to a business method. The Court limited its decision and opinions to the specific case before it. The opinions provide guidance as to the test that is to be performed to determine whether a patent claim to a business method is a statutory process claim under 35 U.S.C. § 101 or whether the method claim is nonstatutory because it protected only an abstract idea. (The Court defined three categories of methods that are not statutory, namely laws of nature, natural phenomena, and, relevant to the Bilski case, abstract ideas.) The Supreme Court held that the Bilski patent application method claims claimed an abstract idea, rather than a statutory process, and so it affirmed the Federal Circuit affirmance of the rejection of the application claims.

---

The Federal Circuit had in their opinion stated that the below-discussed “machine-or-transformation” test, properly applied, is the governing test for determining patent eligibility of a process under section 101. The Federal Circuit did not limit the use of that test to business methods and therefore announced that the machine-or-transformation test is the only test for determining if any process is under section 101, thereby overruling, eliminating, or modifying previous tests. The Supreme Court opinion effectively overruled the Federal Circuit's test, while affirming the Federal Circuit's rejection of the application claims, by stating that the test for patent eligibility of a business method patent claim is not restricted to the machine-or-transformation test. The Supreme Court recommended that other tests be created by the courts or by Congress.

Following *Bilski v. Kappos*, the principal test is whether a business method claim protects only an abstract idea. An idea that is “abstract” in this test is not yet defined. Meanwhile, the machine-or-transformation test was endorsed by the Supreme Court, so that one should see whether a business method claim satisfies that test. The machine-or-transformation test was not held inappropriate or inapplicable, but was held to be nonexclusive.

The opinion of the Court mentioned, without endorsing, several tests that had preceded *Bilski v. Kappos*, including those in *Gottschalk v. Benson*, *Parker v. Flook*, and *Diamond v. Diehr*. The Court mentioned—while neither endorsing nor discarding—the standard that had preceded the Federal Circuit decision in *In re Bilski*, namely the test in *State Street Bank & Trust v. Signature Financial Group, Inc.*, that the claimed method produce a “useful, concrete and tangible result.”

The Federal Circuit decision and opinion in *In re Bilski* overruled much of that court’s previous jurisprudence related to business methods or processes and computer-implemented processes, including computer software. The court’s test for patent eligibility was:

A claimed process is surely patent-eligible under [35 U.S.C.] § 101 if: [1] it is tied to a particular machine or apparatus, or [2] it transforms a particular article into a different state or thing.

52. After *Bilski*, the Federal Circuit does not limit only to business methods the determination of whether a method claim is statutory by use of the “machine” test. In SiRF Tech., Inc. v. Int'l Trade Comm'n, 601 F.3d 1319, 94 U.S.P.Q.2d [BNA] 1607 [Fed. Cir. 2010], the court found that the presence of a GPS receiver in a method claim made the claim statutory.


But the Federal Circuit test was too limited: “[The] machine-or-transformation test, properly applied, is the governing test for determining patent eligibility of a process under § 101.” Much of the jurisprudence and tests previously applied to determine patent eligibility of processes was eliminated or modified.

Following the Supreme Court decision, the Patent and Trademark Office issued interim guidelines for examination by examiners of business method patent claims. It is expected that the PTO will issue more formal guidelines. Those interim guidelines instruct the examiners to continue using the previous machine-or-transformation test for determining patentability of business method claims, and state that such a claim might be rejected if it does not satisfy the test, but that if the applicant provides prima facie evidence that the test is satisfied, then the burden shifts to the examiner to show why the business method claim does not satisfy the test. Sections of the M.P.E.P. that did not provide for the Bilski test will likely be modified, including sections 2106(IV), 2106.01, and 2106.02. Before the Supreme Court decision, the guidelines were being used to address both method and product claims, although Bilski concerns only method claims.

The Bilski machine-or-transformation test was applied to applications being examined.  

The Supreme Court decision should not affect decisions by the Patent and Trademark Office or the courts based on an application of the machine-or-transformation test. That test was not discredited. Rather, the Supreme Court encourages the development of other tests of whether a method claim is nonstatutory as claiming an abstract idea.

The Bilski test applies to process claims and does not with certainty apply to product or apparatus claims, until the Federal Circuit rules otherwise. Meanwhile, some district court decisions have applied the Bilski test to apparatus claims.  

A so-called Beauregard claim is to an apparatus, rather than to a method. Following a Federal Circuit remand to the Board of Patent Appeals and Interferences, the Patent and Trademark Office had not rejected apparatus-type claims as found in Beauregard. As stated in M.P.E.P. section 2106.01(I):

When a computer program is recited in conjunction with a physical structure, such as a computer memory, USPTO personnel should treat the claim as a product claim.

Some decisions of the Board of Patent Appeals and Interferences mentioned below now appear to extend the Bilski test to apparatus claims. Further, there may be an issue as to whether a claim is an apparatus claim at all.\textsuperscript{60}

Although the Bilski patent claims in issue concerned a business method using software, the test stated by the Federal Circuit in \textit{In re Bilski} concerns any process or method, whether or not a computer or software is involved in the method. The Supreme Court decision was narrowly limited to Bilski’s business method claims. Based on precedent, subsequent court decisions may extend the holding in \textit{Bilski v. Kappos} to claims to other types of processes or, as the Federal Circuit had done, to any process claim. The author believes that at least the machine-or-transformation test, and possibly other tests yet to be accepted by courts, should have the scope to cover all processes. In the author’s opinion, a process that does not satisfy at least the machine-or-transformation test, and possibly other tests which may be developed, is not statutory because without satisfying an applicable test, it is claiming an abstract idea, law of nature, or natural phenomenon.

The Federal Circuit’s analysis in \textit{Bilski} repeated that a patentable process cannot claim a fundamental principle, such as a law of nature, a natural phenomenon, or an abstract idea, although the application of a fundamental principle to a structure or process may be patent-eligible.

A claimed process that involves a fundamental principle or algorithm, but uses a particular machine or apparatus, would not preempt uses of the principle that do not also use the machine or apparatus as claimed.\textsuperscript{61} Also, using a fundamental principle in a claimed process that transforms an article into a specified different state would not preempt the use of the principle, either for transforming another article or for transforming the same article in a different manner.

Previous tests for a statutory method under section 101 were overruled as inadequate by the Federal Circuit. They include the Freeman-Walter-Abele tests,\textsuperscript{62} the “useful, concrete, and tangible result” test of State Street Bank,\textsuperscript{63} and AT\&T Corp. v. Excel Communications, Inc.,\textsuperscript{64} the test of \textit{In re Comiskey},\textsuperscript{65} and “the technological

\textsuperscript{65} In re Comiskey, 499 F.3d 1365, 84 U.S.P.Q.2d [BNA] 1670 [Fed. Cir. 2007].
arts” test. The Supreme Court modified this slightly, in that the opinion said that the Court did not endorse, but also did not overrule, the useful, concrete and tangible result test of *State Street Bank*. The court did not decide whether a standard computer programmed to perform the claimed method steps qualifies as a “specific machine” for purpose of software and business method patents, but left that decision to future cases.

A useful transformation of data or anything nonphysical is not sufficient. The transformation must affect something in the physical world. With respect to the transformation requirement, although the Federal Circuit opinion gave examples, they were not sufficiently clear factually to be applied to a new fact situation. The court did indicate that “adding a data-gathering step to an algorithm is insufficient to convert that algorithm into a patent-eligible process.” Post-solution activity that is insignificant will not transform an unpatentable principle into a patentable process.

The *Bilski* case concerned a commodities hedging process. The claimed process did not transform any object to a different state or thing. Manipulation of public or private legal obligations, relationships, or risks in business transactions did not meet the transformation test because they were not physical objects or substances, but were representative of physical objects or substances. Transformation of a relationship between parties involved in the transaction was insufficient.

The Federal Circuit held that the machine-or-transformation standard is the sole test for statutory subject matter under section 101, and other tests in prior jurisprudence are no longer to be used. The court relied upon *Gottschalk v. Benson* to support that position. The Supreme Court encouraged development of other tests, and did not exclude tests in prior jurisprudence.

Because there will be an issue as to whether any claim to a business method or any process claim satisfies the machine-or-transformation test, if that is the test that the practitioner is attempting to satisfy by the form of a method claim, the author recommends that the claim include limitations within the claim that demonstrate the connection of at least some of the steps to a machine or to a transformation.

---


As this is a process claim, and the preamble of a process claim may recite an object, which performs a method or cooperates in its performance, the machine may be included in the claim as an element recited in the preamble of the claim. As an alternative, since a method claim will usually have several method elements or steps, where possible, a step should be tied to some aspect of the machine, for example, “burning the substrate in a furnace” or alternatively “using a furnace for burning the substrate.” The preamble of such a claim may have recited “A method of producing an image using a furnace, comprising.”

In a method claim that causes a transformation of something into a different state, at least some of the included claim elements may cause or be part of the transformation of something from one state to another. The author again recommends that the transformation be recited in the preamble of such a method claim, and/or that the transformative effect of any or all steps in the method be recited within the respective claim elements, as these claimed effects would demonstrate that the claim is directed to transformation. For example, a claim element may read “producing the image by eliminating the substrate on which the image had been supported.” That claim element is not tied to a machine or machine element, but does, within the claim element, describe the transformation.

As other tests for determining the presence of statutory subject matter under section 101 are developed, satisfaction of an accepted test may be incorporated in elements of a claim written to the method.

In addition to or instead of including the machine-or-transformation features in the preamble or the body of a method claim, the practitioner may instead sufficiently describe them in the specification of the application that one reading the specification and claims together will clearly see satisfaction of the machine-or-transformation test. However, each process claim in a patent must satisfy a test for determining if it is statutory. Not reciting the machine and/or the transformation in the claim may cause a court or a patent examiner to hold that a test for patent-eligible subject matter has been failed. But if the satisfaction of the test is in the text of the claim, it is more likely to be held to be a claim to statutory subject matter. Not including those machine or transformation elements within a claim will make it necessary later to go through an extra step of proof and gives a judge and/or jury, who is ruling on whether a claim is statutory under section 101, an opportunity to find that the particular claim does not satisfy the machine-or-transformation test.

Transformations of data may be patent-eligible, but only of data that represents something physical or tangible. By representing a physical or tangible object, the data is a particular article for purposes of the machine or transformation test. Thus, in In re Bilski, the court...
distinguished two claims in *In re Abele*. One claim in *Abele* recited a process of graphically displaying variances of data from average values without specifying how or from where the data was obtained or what it represented. The *Bilski* court said that that *Abele* claim did not satisfy the machine or transformation test. The second, dependent claim in *Abele* was directed to the same process, but characterized the data as “x-ray attenuation data produced in a two dimensional field by a computed tomography scanner.” In the Federal Circuit’s view, this anchored the data to the structure of bones, organs, and body tissue, not because it transformed a physical object, but because it transformed electronic data that represented a physical object, not a public or private legal obligation, or relationship, or business risk or other abstraction. Transforming information or data is not sufficient, but if the data represents a physical object as in a contested claim in *Abele*, that should satisfy the transformation test. Simply placing instructions on a computer-readable medium, wherein the instructions are designed to perform manipulation of ideas, should not convert that method into statutory subject matter just because it is performed on a computer.

Others believe that placing the process for performance on a computer may be performing the method by a machine. This author currently believes that placing the method for performance on a special-purpose computer or on a general-purpose computer programmed to perform a process will not convert that to a machine or change the steps to transformation as required in the *Bilski* decision. At present, it appears that any business method or method directed to the financial services industry, while it arguably is not merely software on a disk but can be viewed as financial engineering, nonetheless will be found not to satisfy either the machine test or the transformation test.

*Diamond v. Chakrabarty* held that section 101 allows a patent on “anything under the sun that is made by man.” The decision in *Bilski v. Kappos* appears to have eliminated a large class of things made by man from those things that fall under section 101. Excluded, therefore, is any method performed entirely by human action, if *Bilski* is read broadly. However, methods performed at least partially by a machine are statutory subject matter. The use of a machine should be expressly described in the claim and may not be implicit.

Although an independent or parent claim may not pass a *Bilski* test, if the dependent claim satisfies the test, it is statutory.

Case precedents will establish *Bilski* tests and will also guide the practitioner on how to satisfy the *Bilski* test. Some precedents include

---

one in which real estate transactions and exchanges were not statutory under In re Bilski\textsuperscript{72} and one in which adding a human-implemented step was not statutory.\textsuperscript{73} Generic computer components were insufficient to satisfy the “machine” test of In re Bilski.\textsuperscript{74}

At this time, a practitioner might draw a claim “that is tied to a particular machine or apparatus” by tying the process to a known apparatus, a special-purpose computer programmed for that process or a general-purpose computer programmed with particular software related to that process or a computer readable storage medium directed to that process. This author believes that the possibility of tying it either to a special-purpose computer or to a specially programmed general-purpose computer will eventually be held not to fall within section 101. In CyberSource Corp. v. Retail Decisions, Inc.,\textsuperscript{75} the court found that neither prong of the Bilski test was satisfied. Manipulation of credit card numbers was not transformation of the numbers or of the credit cards, that is, an article was not transformed. “Over the Internet” did not tie the claimed process to a particular machine, and the Internet is not a “machine”—or, if it is a machine, then the claim is to extra-solution activity.

It has been suggested that claim drafting of claim elements that identify functional steps that are performed by something are more likely to be accepted than claim elements just reciting the steps without claiming what is performing them. Possibly adding the words “on the computer” after reciting each step might pass the “particular machine” test, but it might not. Performance of a step by an object other than a computer is likely to improve the chance the claim will be found to be statutory under section 101.

The Bilski decision did not concern apparatus claims. One cannot fairly predict whether an apparatus claim will be accepted if it describes a computer program or software that is operable to achieve a particular objective, especially if the objective is one that does not produce a tangible, physical result but is a manipulation of information or numbers or an algorithm.

As advice for writing product and apparatus claims now, which claims will have to survive the life of the eventually issued patent, it is suggested that the tests not excluded by Bilski v. Kappos be used when product

\begin{thebibliography}{99}


\bibitem{king} King Pharm., Inc. v. Eon Labs., Inc., 593 F. Supp. 2d 501 [E.D.N.Y. 2009].


\end{thebibliography}
claims that might be alleged to preempt abstract ideas or algorithms might be prepared or considered. The form of a claim, whether written as a process or an apparatus claim, may not eventually make a claim fall within section 101. For example, in *Ex parte Mitchell,* the Board said:

> We see no reason why a “computer readable medium” containing “instructions” for otherwise ineligible method should be treated any differently from the non-statutory method recited in instant [method] claim 1. Although a “computer readable medium” may nominally fall within the statutory class of “manufacture,” claim 10 would effectively pre-empt the abstract idea represented by instant claim 1.

*Ex parte Cornea-Hasegan* found that limiting a claim to computer-readable media was a field-of-use limitation insufficient to render an ineligible product claim patent-eligible under section 101.

*Ex parte Koo* found neither transformation of an article to a different state nor a particular machine to perform the steps and therefore found the claimed process to be seeking to patent abstract ideas. “System” in the preamble of the claim could be a software system that implements the claim elements solely in software or algorithms.

This section of this text is bound to be modified as jurisprudence develops under the *Bilski* test.

§ 4:10 Claims to a Computer Program or Software-Related Invention

On October 30, 2008, the Federal Circuit in its en banc decision and opinion in *In re Bilski* completely changed the law governing patenting of business methods. The Supreme Court modified that, as described above in section 4:9. The Federal Circuit has ruled that a method or apparatus claim including use of software to achieve a real-world result is not a claim to an abstract idea, which would be nonstatutory under section 101 of the statute. The court did not define an abstract idea. But the court did find that the claims and invention presented “functional and palpable applications in the field of computer technology,” relating to “halftone rendering of gray scale.

---

images in which a digital data processor is utilized . . . to accomplish the halftone rendering.” The claimed methods incorporated algorithms and formulas that controlled the method. Although they were a significant part of the claimed combination, they did not cause the claim to be a claim to an abstract idea. Quoting the Supreme Court’s opinion in *Diamond v. Diehr,* the Federal Circuit said that “inventions incorporating and relying upon even ‘a well known mathematical equation’ do not lose eligibility because ‘several steps of the process [use that] mathematical equation.’”

The district court in *Research Corp. Techs., Inc.* had held a device claim subject to *In re Bilski* because the patented claim recited software that compared numbers to produce a value, and the potential for use of the software on a machine, as contrasted with performing the claimed steps on paper or in one’s mind, is not necessarily use on a machine. Other claims in the same patent to methods passed the *Bilski* test’s transformation prong because the method transforms specific data and provides a visual depiction; here, a gray scale image is transformed into dot profiles. The Federal Circuit agreed. Also, the court said that use of the word “device” in a claim is not synonymous with “machine.”

In another case, the district court held that a *Beauregard* claim—that is, a claim that cites a computer-readable medium in the preamble—is not exempt from *In re Bilski.* The Federal Circuit affirmed that decision. A claim to a process that may be performed entirely in the mind does not satisfy *Bilski,* as it is not a transformation nor does it require a particular machine. In addition, a *Beauregard* claim that claims a computer or a computer-readable medium containing program instructions to perform a method that does not satisfy the *Bilski* test is not valid, because it claims no more than a medium containing instructions to perform a method that does not satisfy the *Bilski* test. This calls into question all *Beauregard* claims based on a method that does not satisfy *Bilski.* The *Bilski* opinion and its effect on method claims is discussed above in section 4:9. Statements in this section and in section 4:11 that contradict the holding in *Bilski* should be ignored.

---

81. *Id.* at 869 (quoting *Diamond v. Diehr,* 450 U.S. 175, 185 [1981]).
It would seem apparent that if a claim recites a method as a computerized method, then the claim is not satisfied or infringed if the claimed procedure was performed manually by the accused infringer, without using a computer.\footnote{Lincoln Nat’l Life Ins. Co. v. Transamerica Life Ins. Co., 609 F.3d 1364, 95 U.S.P.Q.2d [BNA] 1654 [Fed. Cir. 2010] [in this case, the final step in the claim may be performed manually, so that the accused party would not perform that method].}

In \textit{CyberSource Corp. v. Retail Decisions, Inc.},\footnote{\textit{CyberSource Corp.}, 654 F.3d 1366, 99 U.S.P.Q.2d [BNA] 1690.} the Federal Circuit found the method claim for verifying the validity of a credit card transaction nonstatutory under the \textit{Bilski} test. Use of a computer to execute an algorithm that can be performed entirely in the human mind or on paper is not statutory.

The court went further to hold that a so-called \textit{Beauregard} claim reciting “A computer readable medium containing instructions for detecting fraud in a credit card transaction . . . wherein execution of the program instructions by one or more processors of a computer system causes the one or more processors to carry out the steps of . . .” is nonstatutory as failing to recite patent-eligible subject matter, because it did not satisfy the machine-or-transformation test in \textit{Bilski} and constituted unpatentable mental processes or abstract ideas. The mere manipulation or reorganization of data does not satisfy the transformation prong of the \textit{Bilski} test.

Although the claim was in a \textit{Beauregard} format, it was treated as a method claim for patent eligibility. If one claims linkage to a machine, the machine must play a significant part in permitting the claimed method to be performed. The court distinguished programming a general-purpose computer to perform an algorithm, which creates a new machine, a special-purpose computer. That is not enough for patent eligibility. This changes the way computer software claims have been written since 1995.\footnote{In re \textit{Beauregard}, 53 F.3d 1583, 35 U.S.P.Q.2d [BNA] 1383 [Fed. Cir. 1995].}

example of patent eligibility when a computer is required to perform the claimed method steps, which in that case involved calculating a position of a GPS receiver. The court also cited Research Corp. Technologies, Inc. v. Microsoft Corp., finding statutory a “method for rendering a halftone image of a digital image by comparing the digital image against a blue noise mask,” again some transformative and physical result of the method. The pre-1998 tests for the presence of patentable subject matter under section 101 in a computer program, formerly applied by of the Federal Circuit and the district courts, have been made unnecessary by the Federal Circuit in the State Street Bank case (see section 4:11) and in In re Bilski. So long as the apparatus or method is transformative in some manner—so long as it accomplishes something other than merely appropriating an algorithm, or several algorithms combined into a claim, or manipulating numbers, or so long as, for a method, it is tied to a particular machine or apparatus—the elements in means-plus-function form, or the steps for performing a function, provide statutory subject matter under section 101, and the patentability of such claims is to be judged under sections 101, 103, and 112.

A computer program or software-related invention is an apparatus or process that employs a computer or that is configured or operable for employing a computer as an operative component of the device or process. In particular, it relates to an invention in computer software, the program that drives the computer to perform a series of steps. The invention lies in the series of steps, not in the program itself. A computer-related invention can be a useful process or machine and a patentable invention that is in a statutory class under 35 U.S.C. § 101. Computer-related inventions often include a series of steps. When those steps result in the solution of a problem, or there is a procedure, process, or rule for the solution of a problem in a finite number of steps, that is, an algorithm. A computer program must include an algorithm for operation, the algorithm it includes must be described in the specification if it is to be claimed, and that algorithm should be claimed. That was absent in Dealertrack and present in Ultramercial. Thus, a

statement of a step-by-step procedure for solving a problem is an algorithm,\textsuperscript{95} and one for solving a mathematical problem, which might be or include a mathematical formula, is a mathematical algorithm. An algorithm need not include a mathematical formula.\textsuperscript{96} The computer software or program represents and stores information for the user application, but is not tangibly embodied on a computer-readable medium, unless it is so claimed to be. If the program is not recorded on such a medium, it is not a statutory claim product or there is no statutory method using the program.\textsuperscript{97} Therefore, claim the program on the computer-readable medium.

It has become customary in patent applications to refer to the storage of a computer program in a “memory,” either a “volatile memory,” from which the program is erased when power is removed and the computer shuts down, or a “nonvolatile memory,” which is not erased when power is removed and the computer shuts down. Operating instructions for another apparatus for a repeated operation would typically be stored on a nonvolatile memory.\textsuperscript{98} These terms for a memory are well known in the relevant art.

If a special-purpose-computer–implemented means-plus-function claim or claim element recites several identifiable functions and the specification discloses an algorithm for performing fewer than all the functions, the specification is treated as if it discloses no algorithm, and adequacy of disclosure is analyzed on that basis.\textsuperscript{99}

If the claimed function can be achieved by a general-purpose computer without special programming, then no algorithm need be disclosed for performing the function.\textsuperscript{100} If special programming of the general-purpose computer is required, then the algorithm that the computer or microprocessor performs to accomplish the function must be disclosed in the specification or else the claim is nonstatutory under section 101.\textsuperscript{101}

Courts have excluded certain subject matter areas from patent protection under section 101, including principles or laws of nature, abstract ideas and mathematical expressions of scientific truths. See

\begin{footnotes}
\item[95.] Typhoon Touch Techs. v. Dell, Inc., 659 F.3d 1376, 100 U.S.P.Q.2d (BNA) 1690 (Fed. Cir. 2012).
\item[96.] Id.
\item[97.] Ex parte Uceda-Sosa, 90 U.S.P.Q.2d (BNA) 1625 (B.P.A.I. 2008) (nonprecedential).
\item[100.] Ergo Licensing, LLC v. CareFusion 303, Inc., 673 F.3d 1361, 102 U.S.P.Q.2d (BNA) 1122 (Fed. Cir. 2012).
\item[101.] Triton Tech. of Tex., LLC v. Nintendo of Am., Inc., 753 F.3d 1375, 111 U.S.P.Q.2d (BNA) 1396 (Fed. Cir. 2014).
\end{footnotes}
Gottschalk v. Benson\(^{102}\) and Diamond v. Diehr,\(^{103}\) which stated that an “algorithm, or mathematical formula, is like a law of nature, which cannot be the subject of a patent.”\(^{104}\) As many computer-related inventions, and particular computer programs and software, employ mathematical principles and mental thought processes, it became necessary to define how such programs and software could be protected when they constituted an invention.

Although there had been doubt as to the patentability of a computer-related invention that included an algorithm, that doubt had been dispelled through a long series of decisions by the U.S. Supreme Court, the U.S. Court of Customs and Patent Appeals and its successor, the U.S. Court of Appeals for the Federal Circuit, by the district courts and by the Patent Office Board of Interferences and Appeals. However, in view of the decision in Bilski and its progeny in the courts and in the Patent and Trademark Office, patentability of computer-related and computer-implemented inventions under section 101 has been limited and is likely to be further limited as more patentability and validity decisions are rendered. For example, a patent claim tied to a deed, contract, or real property did not make a claim statutory under section 101. In Fort Properties,\(^{105}\) the claims dealt with deeds for real property and one claim required a computer to generate a plurality of deed shares. The claim was to an investment tool and the court held it was therefore to an abstract idea. The claim limitation to a computer required “using a computer,” and the court held that was too broad and general to impose a meaningful limit on claim scope. The court held that the computer in the claim was not specially programmed, but was no more than a general-purpose computer to be programmed in some unspecified manner. It performed insignificant post-solution activity. Instead, the use of the machine, the computer, must play a significant part in permitting the claimed method to be performed. A process claim to an abstract idea is not changed by performing the process by a computer or by claiming that the process is embodied on a computer-readable medium.\(^{106}\) Contrast that with Ultramercial LLC,\(^{107}\) wherein

---

the claim required intricate and complex computer programming and therefore not insignificant post-solution activity.

This section and the preceding section explain how claims to a computer-related invention might be written. The Patent and Trademark Office established guidelines in 1995 to instruct examiners how to examine applications drawn to “computer-implemented inventions.” The examiner’s guidelines have been modified through August 2001 in M.P.E.P. section 2106 and are instructive for writing claims for computer-implemented inventions. Before writing such a claim, reading M.P.E.P. section 2106 is recommended.

M.P.E.P. section 2106 (II)(C) requires the examiner to correlate each claim element to a relevant portion of the written description. Each element of the claim must have antecedent support in the specification. Further, elements of such an invention may be defined in the means-plus-function format.

Different classes of claims may be written on such inventions. A computer or other programmable apparatus whose actions are directed by a computer program or other software is a “machine.”

Consider a computer-readable storage medium and a specific physical configuration of the substrate of that medium that represents data, for example, the program where that storage medium causes the computer to operate in a specific and predefined manner. The composite of these two elements is a storage medium with a particular physical structure and function, for example, it will impart the functionality that is represented by the data onto the computer. That is an “article of manufacture.”

A “process” is a series of steps that is performed on or with the aid of a computer. A claim that defines a computer-implemented process but which is neither cast as an element of a computer-readable memory or implemented on a computer should be classified as a process. For example, a claim that is cast as “a computer program” but which recites specific steps to be implemented on or to be performed using a computer is classified as a process. On the other hand, a claim to a “computer program” that does not define the invention in terms of steps is not a process. A “process” requires reciting at least one physical element that would place the invention in one of the two product categories, machine or article of manufacture (II)(C)(iii)). That element might be unnecessary in view of State Street Bank, so long as the process steps together are transformative.

The guidelines also identify claims that would be nonstatutory. In light of the State Street Bank and Bilski decisions, this list should be shortened. These include:
(1) a compilation or arrangement of data, independent of any physical element;

(2) a known machine-readable storage medium which is coded with creative or artistic expression, because they represent the expression of the program and are literary creations;

(3) a “data structure” independent of a physical element, that is, not implemented on a physical component of a computer, such as a memory, because it is necessary to render the component capable of causing a computer to operate in a particular manner (not correct under *State Street Bank*); or

(4) a process that merely manipulates abstract ideas or concepts; an example of this is a series of steps for solving a mathematical problem, that is, a mathematical algorithm.

A claim to a method consisting solely of steps necessary to converting one set of numbers to another set of numbers would be nonstatutory if it is not transformative or is not tied to a particular machine or apparatus.

The claim must be written in recognizable English language. Computer program code, in either source or object format, cannot be included in the claim as a limitation. A claim which attempts to define elements using computer program code, rather than English language description of actual functional steps which are to be performed, will be rejected under 35 U.S.C. § 112. If there is no other way to define a claim element except by reference to code, then code should be used. This is analogous to situations where special trademarks, coined names, etc. (sections 6:3 through 6:6 hereof) are used for elements not claimable using normal English language. But then the specification should make clear the terms or code used in a claim element.

Nonstatutory subject matter, that is, abstract ideas, laws of nature, or natural phenomena, does not become statutory merely through claiming it in a different manner.

The Federal Circuit in *State Street Bank* has swept away the former requirement that a claim to a computer apparatus or process be subjected to a two-part test. Under that test, the claim was first tested to see whether it appropriated an algorithm. Next, if a mathematical algorithm was found, the claim as a whole was further analyzed to determine whether the algorithm was applied in any manner to physical elements or process steps, and if it was so applied, the claim was under section 101.108 One determined if there was any significant

---

pre- or post-algorithm solution activity, that is, whether the invention involved [as the district court in *State Street Bank* put it] the transformation or conversion of subject matter that is representative of or that constitutes physical activities or objects.  

The district court in *State Street Bank* held that the claim in suit was directed to a nonstatutory computer-implemented invention because it compiled, processed, and stored business data, and that changing one set of numbers into another set of numbers without more is insufficient for patent protection. It is the mere solution of a mathematical algorithm.  

In reversing the district court, the Federal Circuit stated that claim 1 of the patent in *State Street Bank* concerned a machine and was proper statutory subject matter under section 101. The court agreed that certain mathematical algorithms, standing alone, would fall into the category of unpatentable abstract ideas until and unless the algorithms were reduced to some type of practical application, that is, a useful, concrete, and tangible result. However, an algorithm can be patentable if it is applied in a useful way. The court extended its holdings of previous cases:

> Today, we hold that the transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation, because it produces “a useful, concrete and tangible result”—a final share price momentarily fixed for recording and reporting purposes. . . .

The court rejected the two-part test that had been followed in practice. The court continued by stating that after *Diamond v. Diehr* and *In re Alappat*, the mere fact that a claimed invention involves inputting numbers, calculating numbers, outputting and storing numbers, in and of itself, would not render it nonstatutory subject matter, unless, of course, its operation does not produce a useful, concrete, and tangible result. *Bilski v. Kappos* replaced this test for process claims.

Those portions of the Guidelines in the M.P.E.P, which state that converting one set of numbers into another set of numbers does not

110. *Id*.
111. *Id*.
112. 47 U.S.P.Q.2d (BNA) at 1600–01.
113. *Id. at 1601*.
114. *Id*.
116. *In re Alappat*, 33 F.3d 1526 (Fed. Cir. 1994).
manipulate appropriate subject matter and thus cannot constitute a statutory process, were held to be incorrect practice.

The *State Street Bank* decision removed the requirement for physical transformation. *Bilski* reinstated that requirement for method claims, along with the alternative test of whether the method is tied to a particular machine or apparatus. Physical transformation is merely one example of how a mathematical algorithm may bring about a useful application. Even a transformation of numbers with practical result appears to fall within section 101, based upon the holding of and the fact pattern of the *State Street Bank* case. It is necessary, however, that the claimed product or process produce some transformation—not a mere manipulation of numbers, but some transformation in something, even if it be data only.

Decisions following on *State Street Bank* will further explain its scope and limits. At present, however, if an invention in connection with computer software is stated either as a machine with a series of means for performing a function limitations or as a process as a series of manipulative steps, and if the machine or process transforms something into something else, so long as the claimed software or process is transformative in some manner or is a process tied to a particular machine or apparatus, it will be statutory subject matter under section 101.

The court in *AT&T* focused its inquiry on “whether the mathematical algorithm is applied in a practical manner to produce a useful result.” The court criticized some of the earlier decisions because the panels of the court did not look to see if a practical result had been obtained.

A good example of a computer software claim for a product, stated in means-plus-function language, is claim 1 of U.S. Patent 5,193,056 in the *State Street Bank* case:

1. A data processing system for managing a financial services configuration of a portfolio established as a partnership, each partner being one of a plurality of funds, comprising:
   
   (a) computer processor means [a personal computer including a CPU] for processing data;

   (b) storage means [a data disk] for storing data on a storage medium;

---

118. Id.
119. Id., 50 U.S.P.Q.2d at 1453.
120. Bracketed material is the court’s explanation of the claim.
(c) first means [an arithmetic circuit configured to prepare the data disk to magnetically store selected data] for initializing the storage medium;

(d) second means [an arithmetic logic circuit configured to retrieve information from a specific file, calculate incremental increases or decreases based on specific input, allocate the results on a percentage basis, and store the output in a separate file] for processing data regarding assets in the portfolio and each of the funds from a previous day and data regarding increases or decreases in each of the fund’s assets and for allocating the percentage share that each fund holds in the portfolio;

(e) third means [an arithmetic logic circuit configured to retrieve information from a specific file, calculate incremental increases and decreases based on specific input, allocate the results on a percentage basis and store the output in a separate file] for processing data regarding daily incremental income, expenses, and net realized gain or loss for the portfolio and for allocating such data among each fund;

(f) fourth means [an arithmetic logic circuit configured to retrieve information from a specific file, calculate incremental increases and decreases based on specific input, allocate the results on a percentage basis and store the output in a separate file] for processing data regarding daily net unrealized gain or loss for the portfolio and for allocating such data among each fund; and

(g) fifth means [an arithmetic logic circuit configured to retrieve information from specific files, calculate that information on an aggregate basis and store the output in a separate file] for processing data regarding aggregate year-end income, expenses, and capital gain or loss for the portfolio and each of the funds.

The patent claim is generally directed to a data processing system for implementing an investment arrangement. A hub party is an administrator and an accounting agent for several mutual funds, which are the spokes. In the patented hub-and-spoke system, mutual funds pooled their assets in an investment portfolio. The patented system provided means for daily allocation of assets for the spokes that invested in the mutual fund hub.

In the opinion of this author, the court in State Street Bank has interpreted the law to avoid the need for elements (a) and (b) of this
claim. Apparatus (a system) starting with element (c) meets the transformative criterion of *State Street Bank*.

These claims are likely to be treated as invoking 35 U.S.C. § 112(f), since they claim “means,” plus the function it performs, not recognized structures. In *Isogon Corp. v. Amdahl Corp.*, the court found claim terms which used a descriptive noun followed by a function in a patent claim to software to be under section 112(f), even though “means” was not expressly recited. Those terms were “event detector for detecting,” “collector for obtaining,” “recorder for recording,” and “correlator for correlating.” One should expect that the usually used means-plus-function style claim limitations will be interpreted under that statute (see section 3:29.7). The disclosure in the specification will govern. It should be sufficient to teach one skilled in the art what the claimed elements are. Then the claim will not be indefinite under 35 U.S.C. § 112(b).

For a means-plus-function claim element in a claim to a computer-implemented invention to not be indefinite under 35 U.S.C. § 112(b), the specification must disclose enough structure corresponding to the claimed means. To be able to use a means-plus-function claim element for a computer-implemented invention, the specification must disclose the software, particularly the algorithm for performing the function claimed for that means-plus-function element, and particularly the algorithm that transforms a general-purpose processor into a special-purpose computer programmed to perform the disclosed function.

A “black box” disclosure of a claimed “monitoring means” was a sufficient showing to support a means-plus-function “monitoring means” claim element because one skilled in the art can deduce the corresponding structure from the elements described in the specification.\textsuperscript{129} The algorithm disclosed in the specification need not be a mathematical algorithm, as shown in examples above. A description in the specification of a series of steps, such as detecting or comparing and acting upon occurrence or appearance to perform another step [if . . . , then] is an adequate disclosure of the algorithm in the claim to sustain the validity of the claim.\textsuperscript{130} No code need be disclosed and there is no need for disclosing the detail or specificity of a program. A person skilled in the art would understand how to implement the claimed function. The disclosure of the algorithm may be in any form that discloses how it is practiced, such as a mathematical formula, prose, lines of code, or even a flowchart.\textsuperscript{131} But a flowchart must disclose how to achieve a result, that is, the steps to be performed; a flowchart describing results obtained is insufficient.\textsuperscript{132}

Another example of a claim that would be statutory now, in the opinion of this author, is the process claim previously held nonstatutory by the Federal Circuit in \textit{In re Schrader.}\textsuperscript{133} The court had found that the claim failed the now discarded two-part test for patentability.

\begin{thebibliography}{99}
\bibitem{130} \textit{Typhoon Touch Techs.}, 659 F.3d 1376, 1385, 100 U.S.P.Q.2d (BNA) 1690 (algorithm is a “step-by-step procedure for solving a problem or accomplishing some end” and can be disclosed “in any understandable terms including as a mathematical formula, in prose, or as a flow chart, or in any other manner”) [citations and internal quotation marks omitted].
\bibitem{132} \textit{In re Aoyama}, 656 F.3d 1293, 99 U.S.P.Q.2d (BNA) 1936 [Fed. Cir. 2011].
\bibitem{133} \textit{In re Schrader}, 22 F.3d 290 [Fed. Cir. 1994] (“A method of competitively bidding on a plurality of items comprising the steps of identifying a plurality of related items in a record, offering said plurality of items to a plurality of potential bidders, receiving bids from said bidders for both individual ones of said items and a plurality of groups of said items, each of said groups including one or more of said items, said items and groups being any number of all of said individual ones and all of the possible combinations of said items, entering said bids in said record, indexing each of said bids to one of said individual ones or said groups of said items, and assembling a completion of all said bids on said items and groups, said completion identifying a bid for all of said items at a prevailing total price, identifying in said record all of said bids corresponding to said prevailing total price.”).
of an algorithm. But the claim is transformative and statutory according to the holding of State Street Bank.

**Summary**

A claim to a computer program or software, either as a series of means for performing function elements or as a number of method steps, is patentable under section 101, so long as the program or the method is transformative of something, in some manner—that is, it accomplishes something other than merely appropriating an algorithm or manipulating numbers or, if it is a method claim, it is tied to a particular machine or apparatus.

§ 4:11 Business Methods

Although there had been no statutory prohibition against patent claims directed to business methods, until the U.S. Court of Appeals for the Federal Circuit ruled that patent claims to business methods are within the statutory classes of invention under 35 U.S.C. § 101 and could be patented, in State Street Bank & Trust Co. v. Signature Financial Group, Inc., claims to business methods were rejected as nonstatutory. In State Street Bank, the court held that a process will receive statutory protection “if it is limited to a practical application of the abstract idea or mathematical algorithm in the technological arts [that is, involves some species of physical transformation of input data].” The physical transformation need not produce a physical product. In a business method, it may simply involve the manipulation of data and information according to an algorithm entirely within a computer or the like apparatus.

After the State Street Bank decision, the issue of whether an invention is patentable was whether it transforms intangible or tangible material to produce a practical or useful result. A system or process that transforms information itself produces a practical and useful result. Only an abstract idea that lacks any useful transformation remains unpatentable. After the decision in In re Bilski, the test includes an alternative, whether the method is tied to a particular machine or apparatus.

To further dispel doubt as to the patentability of a business method, the Federal Circuit in AT&T Corp. v. Excel Communications, Inc.
pointed out that the inquiry is whether a useful, concrete, and tangible result is obtained, rather than a physical act being performed. In the AT&T case, the invention related to the generation of information in an electronic record for long-distance telephone calls to permit differential billing treatment of subscribers. Prior to the State Street Bank decision, the district court in AT&T had granted summary judgment of invalidity under 35 U.S.C. § 101, holding that the method claims implicitly recited a mathematical algorithm. Following the State Street Bank decision, the Federal Circuit on appeal held that the claims, which were directed to a method for generating a particular data field in an electronic record, were not invalid under section 101 and that business method claims are patentable. Any method claims must now satisfy the Bilski test.

The Patent Office has issued a “White Paper” on business method patents, which attempts to place them in historical context and provides patenting statistics. The White Paper notes that business method patents are now classified by the Patent Office in U.S. inventions subject matter classification class 705 (although one finds those patents also classified in other classes). That class includes a collection of over twenty financial and management data processing areas including insurance, securities trading, healthcare management, reservation systems, postage metering systems, and certain general enterprise functions such as electronic shopping, auction systems, and business cryptography. Groupings of patents include identifying the potential customers of a business and determining their need for its products and services; informing customers that the business exists and trying to get them to buy its products and services; exchanging money and credit related to a business transaction; and tracking resources, money, and products. These are the typical types of business methods. Numerous other business methods in use or to be developed may be claimed.

Since business methods have been held patentable, the number of filings for them has increased. The White Paper indicates that for fiscal year 1999, they represented only about 1% of the total patent applications filed, and that 2,658 applications filed were classified in class 705. Nearly 600 such patents were issued in that year. An increase in the number of filings and the patents granted is expected due to the continuing growth and development in electronic commerce. Not only are electronic and data processing hardware and software now claimed, but the business method performed with them is claimed as well.

The prevalence of method claims that relate to some data storage and manipulation apparatus results from e-commerce, because e-commerce inventions are typically directed to systems or methods that use a computer and/or software. But not every patentable business method is directed to e-commerce and not every business method involves computers.

A business method should be claimed like any other method, in a series of method steps. The rules and practices for method claiming apply to methods of doing business. Expanding on what appears to be claimable, any method involving several steps that brings about a practical result, or that is tied to a particular machine or apparatus, would appear to be able to satisfy the requirements of title 35 of the U.S. Code.

From a claim-drafting viewpoint, it is possible also to claim some business methods using an apparatus claim for apparatus that performs the method. The claim elements may most likely be stated as means for performing particular functions. This would be especially the case where the apparatus inputs certain information or materials in order that the process be performed and/or outputs certain information or materials following performance of the process. This is analogous to computer-related or computer-implemented inventions discussed in section 4:10. The Federal Circuit in *State Street Bank*138 said that machine claims having “means” clauses are viewed as process claims if there is no supporting structure in the written description that corresponds to the claimed “means” elements. The court found claim 1 to be to a machine, with the terms “computer processor means” and “first means for initializing the storage medium.”

Even a method of preparing a patent application is covered by a patent, as illustrated by U.S. Patent 6,049,811. Its broadest method claim recites:

10. A method by computer for drafting a patent application having at least sections including claims, a summary of the invention, an abstract of the disclosure, and a detailed description of a preferred embodiment of the invention, said method comprising the steps of:

   requesting and storing primary elements (PE) of the invention that define the invention apart from prior technology before drafting the claims;

---

drafting the claims before drafting the summary of the invention, abstract, and the detailed description of a preferred embodiment of the invention; and

drafting the sections in a predetermined order prohibiting jumping ahead to draft a latter section.

This claim covers preparation of a conventional patent application using a computer and then recites a series of steps. In the opinion of this author, these are standard steps and standard sequencing of steps performed in preparing an application. They differ in that some part of the method is performed using a computer. Dependent method claims of the patent indicate that the computer, rather than the person, is performing some steps. Presumably, every practitioner has prepared patent applications using the claimed steps in the claimed sequence. But if we now perform the known steps using a computer that causes the practitioner or the computer to perform the claimed steps in the particular manner claimed, the patent claim would reach them. However, if the steps may be performed conventionally, or if the steps are conventional, merely adding “modern electronics” to an otherwise unpatentable invention or series of algorithms or steps still creates a prima facie case of obviousness under 35 U.S.C. § 103. In other words, the claim may be statutory subject matter under section 101, but unpatentable or invalid as obvious to one of skill in the art.

Preparing a patent application is not “business” because it does not involve a monetary or business transaction. Nonetheless, in this author’s opinion, the patent falls with the broad method-of-doing-business category.

As is typically found in many business method patents, this patent also includes machine claims. These are at present useful, since Bilski does not rule on whether machine claims are statutory subject matter. The first machine claim in the patent for drafting a patent application is quoted below. The machine claims may be machine analogs to the method elements of the method claim, and vice versa:

1. A machine for drafting a patent application having at least sections including claims, a summary of the invention, an abstract of the disclosure, and a detailed description of a preferred embodiment of the invention, said machine comprising:

one or more input devices, one or more output devices, and a computer with memory for receiving and storing

data from the input devices, transmitting data to the output
devices, and storing program steps for program control and
manipulating data in memory;

the computer, through input and output devices, requests
and stores primary elements (PE) of the invention that
define the invention apart from prior technology before
the claims are drafted;

the claims are drafted before the summary of the invention,
abstract, and the detailed description of a preferred embodi-
ment of the invention is drafted; and

the computer requires drafting the sections in a predetermined
order prohibiting jumping ahead to draft a latter section.

Yet another example of a method that appears to be a computer-
accomplished series of steps that one could otherwise perform manually,
and that possibly were performed manually before the patent was granted,
is claimed in U.S. Patent 4,890,228, which provides a loan to a taxpayer
based upon his or her anticipated tax refund. The claim is quoted below:

7. A method of operating at least one programmable electron-
ic data processing machine comprising the programmed
steps of:

(a) receiving inputted tax preparer data, tax return data
and loan application data;

(b) creating electronic tax return data files from said tax
return data;

(c) creating deposit/loan account files related to said tax
return data and said loan application data at an
unauthorized financial institution;

(d) transmitting said electronic tax return data files to at
least one tax collecting authority;

(e) processing said tax return data files and said deposit/
loan account files and authorizing payment by said
authorized financial institution from said deposit/loan
account files of a tax refund loan amount based on
said tax return data prior to completion of tax return
processing and refund payment by said tax collecting
authority; and

(f) authorizing receipt by said authorized financial institu-
tion of tax refund electronic fund transfers, based on said
tax return data, from said tax collecting authority.
A patent practitioner or a tax specialist might say that a process or apparatus that performs the steps that the practitioner regularly performs in his or her practice should not be protected by grant of a business method patent. One frequently hears such a comment from business people confronted with a business method patent claim, which includes claims often tied to a computer or other machinery in the claim, and which accomplishes, via computer, a process that had previously been done without reliance upon a computer. Nonetheless, such a claim is statutory and its validity must be determined under sections of the Patent Act other than section 101, namely section 102 for anticipation or section 103 for obviousness, as well as section 112.

In an interesting essay on the patenting of business methods, James Gleick correctly points out that business method patent claims are possibly too expansive in scope. He illustrates his point by citing U.S. Patent 5,965,809, issued in 1999, which is entitled “Method of Bra Size Determination” and involves a measuring step followed by a fabrication step, and U.S. Patent 5,453,036, issued in 1995, for a “Method of Exercising a Cat” using a laser. One must look to the prior art for restrictions on the scope of claims in those patents. Unless the claims are anticipated or obvious in view of the prior art, they are valid as much as claims to any other invention.

Amazon.com acquired a high-profile method-of-doing-business patent on its “one click” system for ordering goods, U.S. Patent 5,960,411. The claims of this patent were interpreted in Amazon.com, Inc. v. Barnesandnoble.com, Inc. Claim 1 of the patent is a method claim with a series of steps, tied to some electronic means. Again, the patent has product claims that are analogs of the method, and vice versa. The independent method claim and the independent product claim of the patent are reproduced:

1. A method of placing an order for an item comprising:
   under control of a client system, displaying information identifying the item; and
   in response to only a single action being performed, sending a request to order the item along with an identifier of a purchaser of the item to a server system;
   under control of a single-action ordering component of the server system;

receiving the request;
retrieving additional information previously stored for the purchaser identified by the identifier in the received request; and
generating an order to purchase the requested item for the purchaser identified by the identifier in the received request using the retrieved additional information; and
fulfilling the generated order to complete purchase of the item whereby the item is ordered without using a shopping cart ordering model.

6. A client system for ordering an item comprising:
an identifier that identifies a customer;
a display component for displaying information identifying the item;
a single-action ordering component that in response to performance of only a single action, sends a request to a server system to order the identified item, the request including the identifier so that the server system can locate additional information needed to complete the order and so that the server system can fulfill the generated order to complete purchase of the item; and
a shopping cart ordering component that in response to performance of an add-to-shopping-cart action, sends a request to the server system to add the item to a shopping cart.

A method of doing business does not require inclusion of a computer, or a server, or the like apparatus in the method claim. To be statutory subject matter under In re Bilski, the claim must be transformative or it must be tied to a particular machine or apparatus. As this hypothetical method is not tied to any machine, the method must be transformative to be a statutory claim. The method may include a series of steps that without the computer, or server or apparatus, would be a set of novel and unobvious steps. A hypothetical claim that is not tied to an apparatus, data processor, computer, server, etc., might read:

A method for performing a financial transaction comprising:

obtaining information concerning the financial transaction from several sources;
comparing and sorting the information according to an algorithm;
selecting displayable information that has been sorted according to the algorithm;
displaying the selected displayable information; and
making a financial transaction based upon the displayable information displayed.

As written above, the claim would be unpatentable under sections 102 and 103. It is provided as one form to show how a method of doing business claim might be written without reference to any apparatus. Depending upon the type of financial transaction being performed, the information gathered, the algorithm, and the criteria of the algorithm for selecting information, the claim could be novel, unobvious, and patentable under sections 102, 103, and 112.

That method should, where possible, also be claimed in a product claim—among other reasons, to avoid rejection or invalidity under the holding of In re Bilski. A product analog claim to the method claimed above might be:

**Apparatus for performing a financial transaction comprising:**

- means for storing inputted information from several sources concerning the financial transaction;
- means for comparing and sorting the information according to an algorithm consisting of . . . ;
- means for selecting displayable information that has been sorted according to the algorithm;
- means for displaying the selected displayable information; and
- means for making the financial transaction based upon the displayable information displayed.

For nearly every business method, the various classes and types of claims should be considered for use.

When the practitioner drafts claims on a business method invention, the claims can include the method itself, a system or apparatus employing the method, signal claims, data structure claims, program claims directed to the software program and even claims to the graphical user interface. Claim each novel aspect of the business method, which means that the method may be claimed in various ways, for example, directed to novelties in the information gathering, the information assembly or sorting and selecting, and the information presentation. There may be different approaches, like different groups of steps, available to perform the method. All of these
approaches may be claimed in separate independent claims if the
approaches are to an extent mutually exclusive, that is, at least one
step is not generically used in all approaches, or may be claimed in
dependent claims, if appropriate. Try to include elements that satisfy
the In re Bilski tests for the claim to be statutory subject matter—that
is, the claimed method, as well as any claimed product, is either
transformative or is tied to a particular machine or apparatus.

Many new business enterprises in any field involve some novel
activity when the developer seeks to differentiate the business from
competitors or existing business models. Each such activity may be a
patentable business method, if it avoids sections 102 and 103 of the

**Summary**

*Business methods are patentable as are any other methods. Also consider claiming the method, but using apparatus claims.*