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## Letter to the Editor: E. Alan Uebler

David L. Applegate concludes in “*In re Bilski*: Business Method Patents Transformed?” (*Engage* 10, no. 1):

Abstract ideas, mental processes, fundamental truths, and general knowledge remain unpatentable. Inventions or discoveries that are new, nonobvious, useful, and meet the remaining statutory requirements are patentable so long as they are tied to a machine or result in a *physical* transformation of matter.

The *Bilski* majority has given us a test, [that is]... to be potentially patentable under 35 U.S.C. § 101, a “process” must involve either a “machine” or a “transformation” from one *physical* state to another. (Emphases added)

However, while Supreme Court and Federal Circuit jurisprudence require that patent claims directed to a “process” be tied to a “machine” or involve “transformation of an article to a different state or thing” in order to qualify as patentable subject matter under § 101, there is no requirement that such a transformation be “physical.” The assertion that a “physical transformation of matter” must be present overly restricts the Supreme Court mandate and adds to the already abundant confusion in the wake of *In re Bilski et al.*<sup>1</sup>

In *Gottshalk v. Benson*,<sup>2</sup> the Supreme Court set the standard by saying:

Transformation and reduction of an article “to a different state or thing” is the clue to the patentability of a process claim that does not include particular machines.<sup>3</sup>

after quoting with approval the earlier case of *Cochrane v. Deener*,<sup>4</sup> wherein the Court had said:

A process is a mode of treatment of certain materials to produce a given result. It is an act, or a series of acts, performed upon the subject-matter to be transformed and reduced to a different state or thing.<sup>5</sup>

*Benson* involved an algorithm, not tied to a particular machine. In essence, the *Benson* patentees claimed the algorithm, an abstract intellectual concept which was wholly preempted by the claim and therefore held to be not proper subject matter under § 101.

Creating confusion by asserting open-ended multiple negatives, the *Benson* Court went on to say:

It is argued that a process patent must either be tied to a particular machine or apparatus or must operate to change articles or materials to a “different state or thing.” We do not hold that no process patent could ever qualify if it did not meet the requirements of our prior precedents. It is said that the decision precludes a patent for any program servicing a computer. We do not so hold.<sup>6</sup>

Under the *Benson* rule, two, and only two, possible scenarios arise. All “process” claims, to satisfy § 101, must be divided into either (a) a claim which *does* include a particular machine, that is, where a particular machine is expressly set out, and which *does* present statutory subject matter without any doubt; or (b) a claim which *does not* include a particular machine, which necessitates further inquiry. Following the rule

of *Benson*, there are no other possibilities which will satisfy the Court’s precedents.

When no particular machine is involved, for a process claim to be patentable, a “transformation and reduction” of an “article” to a “different state or thing” is required, at the very least. Additional unanswered questions arise: What comprises an “article”? What constitutes “reduction”? What constitutes a “transformation” which will suffice?

As an aside, § 101 requires only that the process be “new and useful.” It does not define what is “new.” That is left to § 102, which provides a well-defined, unequivocal definition.

What is “useful” as required by § 101? Is it simply the extraction in the thermodynamic sense of useful work as in, for example, a perpetual motion machine, which would thereby be excluded from § 101 for failing such a test, this in addition to “phenomena of nature,” “abstract concepts,” and “natural laws”? Such a definition of “useful” would appear to satisfy all criteria when coupled with the added alternative “machine” requirement of *Benson*.

In 1981, nine years after *Benson*, the Supreme Court decided *Diamond v. Diehr*.<sup>7</sup> The *Diehr* claim was directed to a method of operating “a rubber-molding press” with the aid of a digital computer, more specifically, a process for iteratively controlling and operating a particular *machine*, i.e., a rubber-molding press. Therefore, without serious question, the *Diehr* process claim *is* statutory under the first prong of the *Benson* rule (above), that is, it includes a particular machine. Beyond that, the *Diehr* majority compounded the confusion by gratuitously citing the *Benson* rule, which requires *either* a “machine” or, when no machine is tied in, a “transformation,” and saying:

On the other hand, when a claim containing a mathematical formula implements or applies that formula in a structure or process which, when considered as a whole, is performing a function which the patent laws were designed to protect (*e.g.*, transforming or reducing an article to a different state or thing), then the claim satisfies the requirements of § 101.

This additional “transformation” recitation was not needed to find the *Diehr* “machine” claim statutory under § 101. *Diehr*’s process unquestionably also “transformed” an article (uncured rubber) to “a different state or thing” (cured rubber), *in addition* to being tied to a “machine,” thereby satisfying both prongs of the *Benson* requirements.

Justice Stevens and the minority in *Diehr* muddied the waters further when they tried to inject a § 102 issue into the discussion of § 101 statutory subject matter requirements. The minority continued to ignore Judge Rich’s spoon-feeding of basic concepts of patent law principles which he had previously set out in *In re Bergy*.<sup>8</sup>

Prior to *Bilski*, then, in view of *Cochrane*, *Benson* and *Diehr*, the threshold question in deciding whether a “process” claim in a patent satisfies § 101 becomes: *Is the claim tied to a particular machine?* If the answer is “yes,” the issue is resolved, and the statute is satisfied under the first prong of *Benson* (the “machine” prong). If the answer is “no,” if no “machine” is involved, then until the Supreme Court advises us further as to what they “do so hold” (as opposed to their “We do not so hold” admonition of *Benson*) one must look to the second

prong of *Benson* and ask whether an “article” is “transformed and reduced” to “a different state or thing.” If it is, then the claim is directed to statutory subject matter and the § 101 requirement is met. If not, the claim is unpatentable.

In none of the currently controlling precedents is there a requirement that the “transformation,” when one is required, be a “physical” transformation. In the briefing leading to the Federal Circuit’s *AT&T* decision,<sup>9</sup> *Excel’s* counsel had argued strenuously that a “physical” transformation was necessary. The Court rejected the argument. In *Bilski* the Court specifically said:

Thus, the proper inquiry under § 101 is not whether the process claim recites sufficient “physical steps,” but rather whether the claim meets the machine-or-transformation test.<sup>10</sup>

Therefore, neither *Bilski* nor any other currently viable precedent requires that a process patent claim involve a machine or a transformation from one “physical” state to another in order to satisfy § 101. A transformation, including all that falls within the scope of that term, is all that the claim drafter must provide.

### CONCLUSION

A “process” claim in a patent satisfies the requirements of 35 USC § 101 if *and only if* (a) a “machine” is integral in the process, or, when no machine is involved, (b) the “process” involves “transforming and reducing” an “article” to “a different state or thing.” *Benson*, *Diehr*, *Bilski*.

Under (b), is *State Street* still viable? The answer must be “yes.” The claim in *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*<sup>11</sup> was directed to a “machine”, i.e., “A data processing system... comprising... computer processor means, ... storage means....” The first prong of *Benson* is satisfied and an issue of “transformation” does not need to be addressed. The “useful, concrete and tangible result” language of *State Street* would appear to be subsumed in *all* “machine” claims and appears redundant in *State Street*.

Currently, post-*Bilski*, nothing much appears to have changed. *Benson*, *Diehr* and *State Street* remain good law. No patents will be granted for scientific truths, abstract ideas or natural phenomena. “Process” claims will be granted when tied to a particular machine or, if not so tied, when the process operates to transform and reduce articles or materials to “a different state or thing,” provided the process also satisfies the novelty, nonobviousness and disclosure requirements of the patent laws. As is well-documented, the competent patent practitioner can almost always cast “process” claims into virtually equivalent-in-scope “machine” claims, making the current debate, as a practical matter, largely moot.<sup>12</sup>

This is not to say that questions do not remain or that the debate should end. For examples:

- What is the scope of the term “article” as a matter of law?
- What constitutes “reducing” as opposed to or in conjunction with “transforming,” a distinction not so far addressed?
- What is encompassed by the term “different state or thing,” specifically when dealing with bits and bytes?

When all else fails, should one look more closely at the statute? Section 101 expressly requires only that a claimed “process” be “useful” and “new,” nothing more. It would seem difficult indeed to conceive of a useful “process,” in the thermodynamic sense, in which nothing was “transformed,” but this remains to be articulated by the courts or addressed by Congress.

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### Endnotes

- 1 \_\_\_ F.3d \_\_\_, 88 U.S.P.Q. 2d 1385 (Fed. Cir. 2008).
- 2 409 U.S. 63, 93 S.Ct. 253, 1972 U.S. LEXIS 129, 175 USPQ 673 (1972).
- 3 *Id.* at 70.
- 4 94 US 780 (1876).
- 5 *Id.* at 787-88.
- 6 *Supra* note 2, at 71.
- 7 450 U.S. 175, 101 S.Ct. 1048, 1981 U.S. LEXIS 73, 209 USPQ 1 (1981).
- 8 569 F.2d 952, 960, 201 USPQ 352, 360 (CCPA 1979). The first door which must be opened on the difficult path to patentability is § 101.... The person approaching that door is an inventor, whether his invention is patentable or not....Being an inventor or having an invention, however, is no guarantee of opening even the first door. What kind of invention or discovery is it? In dealing with the question of kind, as distinguished from the qualitative conditions which make the invention patentable, § 101 is broad and general; its language is: “any process, machine, manufacture, or composition of matter, or any improvement thereof.” Section 100(b) further expands “process” to include “art or method, and a new use of a known process, machine, manufacture, composition of matter, or material.” If the invention, as the inventor defines it in his claims (pursuant to § 112, second paragraph), falls into any one of the named categories, he is allowed to pass through to the second door, which is § 102; “novelty and loss of right to patent” is the sign on it. Notwithstanding the words “new and useful” in § 101, the invention is *not examined under the* [§ 101] *statute for novelty because that is not the statutory scheme of things* or the long-established administrative practice. The Committee Reports accompanying the 1952 Act inform us that Congress intended statutory subject matter to “include anything under the sun that is made by man.” (Emphasis added.)
- 9 *AT&T Corp. v. Excel Communications, Inc.* 172 F.3d 1352 (Fed. Cir. 1999).
- 10 *Supra* note 1, at 23.
- 11 149 F.3d 1368 (Fed Cir. 1998).
- 12 See Richard H. Stern, *Tales from the Algorithm War: Benson to Iwahashi: It’s Deja Vu All over Again*, 18 A.I.P.L.A. Q.J., 371, 377-78 (1991).

### Response: David L. Applegate

I am pleased to see that someone has read my recent article, “*In re Bilski: Business Method Patents Transformed?*” (*Engage* 10, no. 1) with enough care to offer a response; the title of this publication is, after all, *Engage*. I am equally pleased to have this opportunity for rebuttal.

In his commentary above, E. Alan Uebler takes issue with my conclusion that “The *Bilski* majority has given us a test... that is easy enough to state, but perhaps difficult to apply:

unless and until *Bilski* is reversed, overruled, or clarified, to be potentially patentable under 35 U.S.C. § 101, a ‘process’ must involve either a ‘machine’ or a ‘transformation’ from one physical state to another.”<sup>1</sup> It is clearly my use of the word “physical” in connection with “transformation” that provoked Professor Uebler’s response, but that juxtaposition was *Bilski*’s, not mine.

“[W]hile U.S. Supreme Court and Federal Circuit jurisprudence require that patent claims directed to a ‘process’ be tied to a ‘machine’ or involve ‘transformation of an article to a different state or thing’ in order to qualify as patentable subject matter under § 101.” Mr. Uebler concedes this point, but asserts that “there is no requirement that such a transformation be ‘physical.’” Thus, he continues, “[t]he assertion that a ‘physical transformation of matter’ must be present overly restricts the Supreme Court mandate and adds to the already abundant confusion in the wake of *In re Bilski et al.*”

To the extent Mr. Uebler means to argue that *Bilski* is—strictly speaking—not “controlling precedent” concerning patentability under § 101, I take no issue, never having asserted otherwise. My conclusion explicitly recognized that the Supreme Court or the Congress—not the Federal Circuit—is the final arbiter of patentable subject matter under 35 U.S.C. § 101 by acknowledging that the Federal Circuit may be “reversed [or] overruled,” or even that it might “clarify” its own position.<sup>2</sup> Indeed, Mr. Uebler agrees that “[i]t would seem difficult indeed to conceive of a useful “process,” in the thermodynamic sense, in which nothing was ‘transformed,’ but [that] this remains to be articulated by the courts or addressed by Congress.”<sup>3</sup> The point of my article, however, was neither what the Supreme Court nor the Congress says on the subject, but rather how *Bilski* has interpreted the statute passed by Congress in view of applicable Supreme Court precedent.

To the extent that Mr. Uebler argues that my conclusion overstates *Bilski*’s holding, I agree with him that the “transformation” *Bilski* requires need not be “physical”—as opposed to, say, “chemical”—but *Bilski* explicitly requires on its face something more than “purported transformations or manipulations simply of... legal obligations or relationships, business risks or other such abstractions.”<sup>4</sup> The reason such “transformations or manipulations” of “abstractions” are “ineligible” for patent protection, in *Bilski*’s words, is because those abstractions “are not *physical* objects or substances, and they are not representative of *physical* objects or substances.”<sup>5</sup> Thus, *Bilski* continued, “claim 1 [of the *Bilski*] application does not involve the transformation of any *physical* object or substance, or an electronic signal representative of any *physical* object or substance.”<sup>6</sup> I therefore reiterate my view that, until reversed, overruled, or “clarified,” *Bilski* says that §101 requires transformation and reduction to a “different state or thing” in some “physical”—as opposed to “metaphysical” or “abstract”—sense for a process claim that does not involve the use of a machine. There is simply no other way to read *Bilski*.

It is certainly true, as Mr. Uebler asserts, that in *Diamond v. Diehr*<sup>7</sup> the majority had no business going beyond the “machine” requirement—because that had already been met—to invoke the “transformation” prong of *Gottschalk v. Benson*.<sup>8</sup>

But that is the Supreme Court’s fault, neither *Bilski*’s nor mine. And as Mr. Uebler also acknowledges, *Diehr* came nine years after *Benson*, which had already decided that “[t]ransformation and reduction of an article ‘to a different state or thing’ is the clue [not merely “a” clue] to the patentability of a process claim that does not include particular machines.”<sup>9</sup> It is the Supreme Court’s language in *Benson* on which *Bilski* ultimately relied for its own holding, and that I emphasized in my article.

In half a dozen places, usually citing Supreme Court authority, *Bilski* explicitly refers to “transforming or reducing an article to a different state or thing” or “transformation and reduction of an article to a different state or thing” as critical to patentability of a process that is not tied to use of a machine.<sup>10</sup> In roughly a dozen more, *Bilski* therefore reiterates that one determines the patentability of a process under § 101 by the “machine-or-transformation” test.<sup>11</sup> If a process patent does not involve the use of a machine, therefore, *Bilski* requires a transformation to a different state or thing, involving a *physical* object or substance.

Mr. Uebler, meanwhile, does not go quite far enough in saying that to satisfy § 101 under *Benson*, a process claim must either “include a particular machine” or “necessitate[] further inquiry.”<sup>12</sup> Under *Benson* and *Bilski*, the necessary further inquiry is precisely whether the process “transforms a particular article into a different state or thing.”<sup>13</sup>

In the end, Mr. Uebler correctly points out that *Bilski* leaves many unanswered questions, including the meaning of “a different state or thing” when dealing with “bits and bytes.”<sup>14</sup> Perhaps the Supreme Court, having agreed on June 1, 2009, to accept *Bilski*’s petition for certiorari in *Bilski v. Doll*, No. 08-964, will answer some of those questions. In the meantime, I thank Mr. Uebler both for his insights and for affording me the opportunity to clarify my own comments.

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## Endnotes

- 1 10 ENGAGE: J. FEDERALIST SOC’Y PRACTICE GROUPS 1, 69 (2009).
- 2 *Id.*
- 3 *Id.* at 101.
- 4 *In re Bilski*, 88 U.S.P.Q.2d at 1398.
- 5 *Id.* (emphasis added).
- 6 *Id.* (emphasis added).
- 7 450 U.S. 175, 101 S.Ct. 1048, 1981 LEXIS 73, 209 USPQ 1 (1981).
- 8 409 U.S. 63, 93 S.Ct. 253, 1972 U.S. LEXIS 129, 175 USPQ 673 (1972).
- 9 409 U.S. at 70 (emphasis added).
- 10 *See, e.g.*, 88 U.S.P.Q.2d at 1392, col. 1; 1392, col. 2; 1392, n. 12; and 1398.
- 11 *See id.* at 1391, n.8; 1392, col. 1-2; 1393; 1394; 1395; 1396; 1397; 1398.
- 12 *Supra* note 1, at 89.
- 13 *Bilski* at 88 U.S.P.Q. 1391, citing *Benson*, 409 U.S. at 70 (“Transformation and reduction of an article ‘to a different state or thing’ is the clue to the

patentability of a process claim that does not include particular machines.”); *Diehr*, 450 U.S. at 192 (use of mathematical formula in process “transforming or reducing an article to a different state or thing” constitutes patent-eligible subject matter); *Flook*, 437 U.S. at 589 n.9 (“An argument can be made [that the Supreme] Court has only recognized a process as within the statutory definition when it either was tied to a particular apparatus or operated to change materials to a ‘different state or thing’”); and *Cochrane v. Deener*, 94 U.S. 780, 788 (1876) (“A process is... an act, or a series of acts, performed upon the subject-matter to be transformed and reduced to a different state or thing.”).

14 *Supra* note 1, at 90.

