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Subject: Comment on Berkheimer Guidance in response to 83 FR 17536

Comment on subject matter eligibility guidance in response to 83 FR 17536

Whether something is well-understood, routine, and conventional to a skilled artisan at the time of a patent application is a subject of opinion, not of historical fact. This reality is indicated by the text in Berkheimer: “The mere fact that something is disclosed in a piece of prior art, for example, does not mean it was well-understood, routine, and conventional.”

As to the guidance, this suggests that “judicial notice” will be generally inappropriate to resolve what is routine or conventional. For judicial notice to apply, a high degree of indisputability is the essential prerequisite.

Separately, as to guidance, the use of a 112 standard is inappropriate. The 112 standard requires disclosure of what is necessary to enable an invention, as described in the claims of that application. The proposed guidance would suggest that added claim elements, presumptively well-understood, would cause failure under 101, even though needed under 112 to fulfill enablement. This might seem to be in tension with Diehr, wherein arguably well-understood claim elements were combined with a computer and an empirical “law of nature” to improve an existing technological process and thus a patentable invention.

The recent Federal Circuit decision in **BSG Tech** offers additional guidance.

Lawrence Ebert

August 20, 2018

Background information

83 FR 17536 (April 20, 2018) states:

Examiners had been previously [before *Berkheimer*, 889 F.3d 1360] instructed to conclude that an element (or combination of elements) is well-understood, routine, conventional activity *only* when the examiner can readily conclude that the element(s) is widely prevalent or in common use in the relevant industry.

The *Berkheimer* memorandum now clarifies that such a conclusion must be based upon a factual determination that is supported as discussed in the memorandum. Additionally the *Berkheimer* memorandum now also specifies that the analysis for determining whether an element (or combination of elements) is widely prevalent or in common use is the same as the analysis under 35 U.S.C. 112(a) as to whether an element is so well-known that it need not be described in detail in the patent specification. The USPTO is now seeking public comment on its subject matter eligibility guidance, and particularly its guidance in the *Berkheimer* memorandum to the Patent Examining Corps.

The concept of using prevalence or common use in 101 matters was discussed in *Mayo v. Prometheus*, 566 U.S. 66 (2012) and further discussed in *Alice*:

Following the Supreme Court's affirmance of the Federal Circuit's holding in *Alice*^[2], courts determine whether the nature of otherwise ineligible subject matter is transformed into a patent-eligible application by reciting additional elements in the claim. The claimed subject matter is only patent-eligible if it adds an inventive concept beyond "well-understood, routine, conventional activity previously engaged in by researchers in the field."^[3] While subject matter eligibility is viewed as a matter of law, transformations of ineligible subject matter by additional claim elements involve questions of fact. [from Brinks, Wilson & Lione website]

Of relevance to the USPTO request for comment, one notes that factual findings by the USPTO are reviewed by the Court of Appeals for the Federal Circuit under a substantial evidence standard. [See for example *Merck*, 820 F.3d 432: In light of *In re Gartside*, this court consistently has reviewed all of the Board's factual findings, including those in IPRs, for substantial evidence.]

The dissent by Judge Reyna in *Berkheimer v. HP*, 890 F.3d 1369 (May 31, 2018) discussed the request for comments:

The reaction of the patent bar and intellectual property community underscores the exceptional importance of the questions presented by this court's recent decisions and their departure from precedent. On April 19, 2018, the USPTO issued a memorandum of changes in examination procedure in light of *Berkheimer*. USPTO, Memorandum on Changes in Examination Procedure Pertaining to Subject Matter Eligibility, Recent Subject Matter Eligibility Decision (*Berkheimer v. HP, Inc.*) (Apr. 19, 2018), available at <https://www.uspto.gov/sites/default/files/documents/memo-berkheimer-20180419.PDF>. The memorandum highlights that, for the first time, this court held that "whether something is well-understood, routine, and conventional to a skilled artisan at the time of the patent is a factual determination." *Id.* at 2 (citing *Berkheimer*, 881 F.3d at 1369). Accordingly, the memo "revises" the MPEP and changes USPTO examination procedure. *Id.* at 3-5. The memorandum provides that now "an examiner should conclude that an element (or combination of elements) represents well-understood, routine, conventional activity **only** when the examiner can readily conclude that the element(s) is widely prevalent or in common use in the relevant industry" in step two of the *Mayo/Alice* test. *Id.* at 3. The USPTO is also "seeking public comment on its subject matter eligibility guidance, and particularly its guidance in the *Berkheimer* memorandum to the Patent Examining Corps." Request for Comments on Determining Whether a Claim Element Is Well-Understood, Routine, Conventional for Purposes of Subject Matter Eligibility, 83 Fed. Reg. 17,536 (Apr. 20, 2018).

Routine to whom?

The opinion of Judge Moore in denying en banc rehearing begins:

Berkheimer and *Aatrix* stand for the unremarkable proposition that whether a claim element or combination of elements would have been well-understood, routine, and conventional to a skilled artisan in the relevant field at a particular point in time is a question of fact. The Supreme Court has described historical facts as "a recital of external events." *Thompson v. Keohane*, 516 U.S. 99, 110, 116 S. Ct. 457, 133 L. Ed. 2d 383 (1995). In other words, facts relating to "who did what, when or where, how or

why." *U.S. Bank Nat'l Ass'n ex rel. CWCapital Asset Mgmt. LLC v. The Village at Lakeridge, LLC*, 138 S. Ct. 960, 966, 200 L. Ed. 2d 218 (2018).

BUT at 889 F.3d 1360, 1369 (CAFC 2018)

While patent eligibility is ultimately a question of law, the district court erred in concluding there are no underlying factual questions to the § 101 inquiry. *Id.* at 642. is a factual determination. Whether a particular technology is well-understood, routine, and conventional goes beyond what was simply known in the prior art. The mere fact that something is disclosed in a piece of prior art, for example, does not mean it was well-understood, routine, and conventional.

Footnote 1 of the Moore opinion states:

It has been suggested that contrary to these pronouncements by the Supreme Court, whether claim limitations involve well-understood, routine, and conventional activities should *not* be assessed from the perspective of a person of ordinary skill in the art. The alternative is unclear, the reasonable judge? Such a conclusion would be at odds with all patentability questions, which are assessed from the perspective of the ordinarily skilled artisan. It would be bizarre, indeed, if we assessed the question from the perspective of a jurist because for much of the technology we encounter, very little would be well-understood, routine, and conventional to the jurist.

The evolving interpretation of the Diehr case illustrates potential pitfalls with step 2 of the current 101 analysis as to “what” needs to be determined to be conventional.

The priority date for what became the Diehr patent is May 23, 1974. At this point, mini-computers such as the PDP-8 were well-established in both academic and industrial laboratories. They could be fitted with analog to digital converters, which ultimately could read, and input, signals from thermocouples, so that temperature readings from external experiments could be made available for rapid calculations.

The first claim of Diehr involved making temperature measurements with a thermocouple, and using these measurements to make calculations via the Arrhenius equation to predict a cure time:

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A method of operating a rubber-molding press for precision molded compounds with the aid of a digital computer, comprising:

- providing said computer with a data base for said press including at least, natural logarithm conversion data (ln), the activation energy constant (C) unique to each batch of said compound being molded, and a constant (x) dependent upon the geometry of the particular mold of the press,
- initiating an interval timer in said computer upon the closure of the press for monitoring the elapsed time of said closure,
- constantly determining the temperature (Z) of the mold at a location closely adjacent to the mold cavity in the press during molding,
- constantly providing the computer with the temperature (Z),
- repetitively calculating in the computer, at frequent intervals during each cure, the Arrhenius equation for reaction time during the cure, which is
$$\ln(v)=CZ+x$$
where v is the total required cure time,
- repetitively comparing in the computer at said frequent intervals during the cure each said calculation of the total required cure time calculated with the Arrhenius equation and said elapsed time, and
- opening the press automatically when a said comparison indicates equivalence

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Diehr's reply brief emphasized the importance of the rapid computer calculations: "Constant recalculations along with continuous determinations of the actual temperatures, is **the key feature here**, not the equation or the fact of calculation."

The use of minicomputers to take inputs from thermocouples and to perform

calculations thereon was well-understood, routine, and conventional to a skilled artisan at the time of the patent (May 1974). Assuming Diehr was the first person in the micro-world of the rubber-curing business to recognize the value of lab computers in performing calculations (which is not clear on the record), does the claim become eligible under 101 for performing a species of the type of work well-known in the larger area of materials science? As a general matter, can a worker in one field import well-understood, routine, and conventional techniques of measurement or computation from another field to make an abstract idea or law of nature otherwise not patentable, patentable?

In 2012, the Mayo court analyzed the Diehr decision in terms of all the steps. It "found the overall process patent eligible because of the way the additional steps of the process [besides the equation] integrated the equation into the process as a whole." Nothing "suggested that all these steps, or at least the combination of those steps, were in context obvious, already in use, or purely conventional."

Later, the Alice court gave a different explanation:

In *Diehr*, by contrast [with *Flook*], we held that a computer-implemented process for curing rubber was patent eligible, but not because it involved a computer. The claim employed a "well-known" mathematical equation, but it used that equation in a process designed to solve a technological problem in "conventional industry practice." The invention in *Diehr* used a "thermocouple" to record constant temperature measurements inside the rubber mold — something "the industry ha[d] not been able to obtain." The temperature measurements were then fed into a computer, which repeatedly recalculated the remaining cure time by using the mathematical equation. These additional steps, we recently explained, "transformed the process into an inventive application of the formula." *Mayo, supra*, at ____, 132 S.Ct., at 1299. In other words, the claims in *Diehr* were patent eligible because they improved an existing technological process, not because they were implemented on a computer.^[14]

**Judicial notice

The taking of judicial notice is governed by Federal Rule of Evidence 201. Rule 201(b) states:

The court may judicially notice a fact that is not subject to reasonable dispute because it:

(1) is generally known within the trial court's territorial jurisdiction; or

(2) can be accurately and readily determined from sources whose accuracy cannot reasonably be questioned.

The Advisory Notes observe: If particular facts are outside of reasonable controversy, this process is dispensed with as unnecessary. A high degree of indisputability is the essential prerequisite.

**As to 112

The need not to disclose well-known information is related to enablement and has been assessed relative to one of ordinary skill, not to prevalence or common use From

Koito Mfg. Co. v. Turn-Key-Tech, LLC, 381 F.3d 1142

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a patent applicant does not need to include in the specification that which is already known to and available to one of ordinary skill in the art. Paperless Accounting, Inc. v. Bay Area Rapid Transit Sys., 804 F.2d 659, 664 (Fed. Cir. 1986); In re Howarth, 654 F.2d 103, 105 (CCPA 1981) ("An inventor need not, however, explain every detail since he is speaking to those skilled in the art."); In re Lange, 644 F.2d 856, 863 (CCPA 1981). We thus have noted that "not every last detail is to be described, else patent specifications would turn into production specifications, which they were never intended to be." In re Gay, 50 C.C.P.A. 725, 309 F.2d 769, 774, 1962 Dec. Comm'r Pat. 737 (CCPA 1962).

But note that the limits non-disclosure of 112 pertain to enablement of the claims in a particular patent or application; from **Encyclopaedia Britannica, Inc. v. Alpine Elecs. of Am., Inc., 2008 U.S. Dist. LEXIS 111989** :

Britannica argues that a claim term **need not be described in detail in the patent specification**, as long "as the class of structures is identified by a person of ordinary skill in the art" Linear Tech. Corp. v. Impala Linear Corp., 379 F.3d 1311, 1322 (Fed. Cir. 2004). Britannica relies on extrinsic evidence, a declaration from Dr. Polish, to assert that the "accessing means" and "first retrieving means" were well known in the art, such that the '671 Patent's disclosure that these functions are performed itself constitutes a disclosure of a class of known algorithms. Dr. Polish asserts that "[c]omputers do not have magical powers to retrieve related information simply because an icon indicates that related information is available. A pathway (data indicating a way to access related information) provides the computer with the information that it needs to retrieve this information." See Ex. B, P10, to Pl.'s Resp. to Def.'s Mot. for Summ. J. (Doc. # 84). Furthermore, such use of links between information was well-known in 1989, the filing date of the '671 Patent, and such functionality could be accomplished by Apple's HyperCard program, for example. *Id.*

The Court finds that such a disclosure is insufficient to fulfill the requirements of section 112, paragraphs 2 and 6, because the specification must "disclose at least a minimal structure corresponding to the claimed means, regardless of whether one skilled in the art could understand the claim. [The patentee] cannot escape this requirement by claiming that such a structure is understood." Civix-DDI, LLC v. Microsoft Corp., 84 F. Supp. 2d 1132 (D. Colo. 2000); see Med. Instrumentation, 344 F.3d at 1211-17 ("It is important to determine whether one of skill in the art would understand the specification itself to disclose the structure, not simply whether that person would be capable of implementing that structure."); Default Proof, 412 F.3d at 1300 n.2 (Fed. Cir. 2005) ("[I]t is not proper to look to the knowledge of one skilled in the art apart from and unconnected to the disclosure of the patent . . ."); Touchcom, 427 F. Supp. 2d at 735-36 ("That one of skill in the art could create structure sufficient to perform a function is not the inquiry."); DE Techs., 428 F. Supp. 2d at 518 ("The ability of one skilled in the art to link software as a corresponding structure to the recited function is not sufficient to fulfill the **[*42]** algorithm requirement.").

*Looking back at Diehr

From RESPONDENTS' (Diehr et al.) BRIEF ON THE MERITS:

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Part of claim 1:

1. A method of operating a rubber-molding press for precision molded compounds with the aid of a digital computer, comprising:

providing said computer with a data base for said press including at least,

natural logarithm conversion data (\ln), the activation energy constant (C) unique to each batch of said compound being molded, and a constant (x) dependent upon the geometry of the particular mold of the press, initiating an interval timer in said computer upon the closure of the press for monitoring the elapsed time of said closure, constantly determining the temperature (Z) of the mold at a location closely adjacent to the mold cavity in the press during molding,

constantly providing the computer with the temperature (Z),

repetitively calculating in the computer, at frequent intervals during each cure, the Arrhenius equation for reaction time during the cure, which is (...)

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Gould et al. were concerned with certain tire curing situations allowing the insertion of a thermocouple probe directly into a tire undergoing cure in the press. Apparently Gould et al. felt that in the cure of articles of the size and relative crudeness of tires, the deformities of the tires caused by insertion of the thermocouple was offset by a claimed increased accuracy of temperature readings. The Gould method is entirely unworkable in curing "precision molded compounds" which are the workpieces of the method of the present invention, and applicants' claims exclude Gould's use of a probe that projects into the article, calling for "constantly determining the temperature (Z) of the mold at a location closely adjacent to mold cavity."

Gould is further distinguished in that Gould relied on an analog computer to calculate cure in terms of "cure units," each cure unit being defined as the cure obtained at a given temperature for one minute (Gould, claim 1). The present invention provides a much more accurate calculation of cure time by repeatedly recalculating the Arrhenius equation "at frequent intervals during each cure" (See applicants' claim 1). As is well known in the art, modern computers are able to calculate a program cycle of the types specified by Fig. 3 of the present invention in an amount of time typically in the order of one second (See applicants' claim 6). Thus, the present invention further patentably distinguishes over Gould. See appendix herein, pp. A-11, A-12.

The Examiner's Final Rejection in this Case

The patent examiner finally rejected the invention on the sole ground that it was drawn to nonstatutory subject matter under 35 U.S.C. 101. n12 In his earlier rejections he had contended that those steps in the Diehr and Lutton claims that are "carried out by the computer under control of a stored program" are nonstatutory under *Gottschalk v. Benson*, 409 U.S. 63 (1972). n13 He contended throughout the prosecution that the "physical" steps in the process were conventional. n14 Diehr and Lutton did not agree with that nor with his overall conclusion and appealed.

The Board based its conclusions regarding conventionality of the claims on three faulty premises: (1) dissecting the claims to look for novelty in particular steps, rather than viewing each claim as a whole, (2) confusing a thermocouple with a thermostat and construing the statement in the specification that thermostats had been used to hold molding temperatures within a certain range to mean constantly determining the exact temperature, a novel feature not conceded to be old and in fact not old, and (3) failing to note that repetitive recalculation at very short intervals is also new. Constant recalculations along with continuous determinations of the actual temperatures, is the key feature here, not the equation or the fact of calculation.

The claims of the present invention, as amended, are thought to define patentable subject matter and will now be considered. Claim 1 is expressly directed to "precision

molded compounds" which cannot be distorted by, e.g., the Gould et al. method, which calls for insertion of the thermocouple into the compound. "Repetitive" computer calculations and "repetitive" comparisons synchronized with the calculations are now expressly claimed in claim 1. As now claimed, the applicants' method provides a very efficient control for the press, far more efficient than either the analog routine of Gould or the complex routine of Smith.

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****From USPTO July 2015 Update Appendix 1: Examples

(related to Diamond v. Diehr)

By themselves, these limitations are recited at a high level of generality and perform the basic functions of a computer that are well-understood, routine and conventional (e.g., accessing a database to receive and store data, and performing mathematical operations on a computer).