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**A Less Abstract Analysis: Emerging Through *Alice*'s
Patent Subject Matter Eligibility Two-Step Looking
Glass Test in Step 2A**

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After nearly three decades of silence, the Supreme Court's decisions in *Mayo* and *Alice* swung the § 101 pendulum to the extreme limit of patent subject matter ineligibility. This shift in section 101 law hit the areas of business methods, software implemented inventions, isolated DNA and personalized medicine the hardest. Six years later, the pendulum is swinging in the opposite pro-patent patent eligibility direction as the Federal circuit has placed a greater emphasis on *Step 2A* of the *Mayo-Alice* Test finding more claims patent eligible at that step.

I. Trilogy of Subject Matter Eligibility

Section 101 provides that “[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor”.¹ In interpreting the contours of § 101 for subject matter eligibility, the three foundational Supreme Court cases pre-*Mayo-Alice* are 1. *Gottschalk v. Benson*, 2. *Parker v. Flook*, and 3. *Diamond v. Diehr*.

a. *Gottschalk v. Benson*

In 1972, the Supreme Court applied the “Mental Steps Doctrine” and preemption test for determining § 101 eligibility of computer implemented processes in *Gottschalk v. Benson*.² In this case, Gary Benson and Arthur Tabbot had filed for a patent on a procedure for transforming numbers from base 10 binary coded decimal into base 2 “binary” numbers more quickly and efficiently. After their patent application claims were rejected by the examiner and Board of Patent Appeals and Interferences under section 101, the Court of Customs and Patent Appeals reversed the Board's decision and remanded the application to the Patent Office for further processing. The Solicitor General then challenged the decision in the Supreme Court through a granted petition for certiorari, where the CCPA's decision was reversed, concluding that the claims on appeal were unpatentable for lack of patent subject matter eligibility. Representative claim 8 reads as follows:

The method of converting signals from binary coded decimal form into binary which comprises the steps of:

¹ 35 U.S. Code § 101.

² 409 U.S. 63 (1972).

- (1) storing the binary coded decimal signals in a reentrant shift register,*
- (2) shifting the signals to the right by at least three places, until there is a binary '1' in the second position of said register,*
- (3) masking out said binary '1' in said second position of said register,*
- (4) adding a binary '1' to the first position of said register,*
- (5) shifting the signals to the left by two positions,*
- (6) shifting the signals to the right by at least three positions in preparation for a succeeding binary '1' in the second position of said register.³*

The Court found these claims not to pass muster under § 101 because they merely described and would preempt a method that can be (and previously had been) done in a series of mental steps or by hand using paper and pencil. As the Court explains, “The conversion of BCD numerals to pure binary numerals can be done mentally through use of the foregoing table. The method sought to be patented varies the ordinary arithmetic steps a human would use by changing the order of the steps, changing the symbolism for writing the multiplier used in some steps, and by taking subtotals after each successive operation using generic computer elements. The mathematical procedures can be carried out in existing computers long in use, no new machinery being necessary.”⁴ Even further, the Court found that “[t]he mathematical formula involved here has no substantial practical application except in connection with a digital computer, which means that if the judgment below is affirmed, the patent would wholly pre-empt the mathematical formula and in practical effect would be a patent on the algorithm itself.”⁵

Without any new step, new machinery, or practical application, the Court explained that “the ‘process’ claim is so abstract and sweeping as to cover both known and unknown uses of BCD to pure binary conversion.”⁶ The sweeping abstract nature of the claim therefore led the Court to find the claims unpatentable as a ‘mental process’ and one of the “basic tools of scientific and technological work,” along with natural phenomena and intellectual concepts.⁷

The Court stopped short of saying that claims like these should not be patentable, stating only that they were not currently patentable, and in so doing, they called on Congress to address the matter. “If these programs are to be patentable,⁶ considerable problems are raised which only committees of Congress can manage, for broad powers of investigation are needed, including hearings which canvass the wide variety of views which those operating in this field entertain. The technological problems tendered in the many briefs before us⁷ indicate to us that considered action by the Congress is needed.”⁸

³ *Gottschalk* at 73-74.

⁴ *Gottschalk* at 67.

⁵ *Gottschalk* at 72-73.

⁶ *Gottschalk* at 68.

⁷ *Gottschalk* at 67.

⁸ *Gottschalk* at 73.

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