No. 08-964

In The
Supreme Court of the United States

BERNARD L. BILSKI and RAND A. WARSAW,

Petitioners,

v.

JOHN DOLL, ACTING UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND ACTING DIRECTOR, PATENT AND TRADEMARK OFFICE,

Respondent.

On Writ Of Certiorari To The United States Court Of Appeals For The Federal Circuit

BRIEF OF AMICUS CURIAE RAYMOND C. MEIERS IN SUPPORT OF NEITHER PARTY

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QUESTIONS PRESENTED

1. Whether the Federal Circuit erred by holding that a "process" must be tied to a particular machine or apparatus, or transform a particular article into a different state or thing ("machine-or-transformation" test), to be eligible for patenting under 35 U.S.C. § 101, despite this Court's precedent declining to limit the broad statutory grant of patent eligibility for "any" new and useful process beyond excluding patents for "laws of nature, physical phenomena, and abstract ideas."

2. Whether the Federal Circuit's "machine-or-transformation" test for patent eligibility, which effectively forecloses meaningful patent protection to many business methods, contradicts the clear Congressional intent that patents protect "method[s] of doing or conducting business." 35 U.S.C. § 273.

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STATEMENT OF INTEREST OF AMICUS CURIAE[1]

Raymond C. Meiers is an attorney in private practice who has been interested in the field of patentable subject matter for over ten years. He has not been paid for this brief. It represents his concern for the advancement of patent law. He holds a Bachelor of Science in Mechanical Engineering from the University of Toledo and a Juris Doctor from the University of Cincinnati. He has no business or personal relationship with the Petitioners or the Respondent and does respectfully submit this brief as a true *amicus curiae*.

SUMMARY OF ARGUMENT

Precedent provides a contemporary and robust framework for distinguishing between patentable and the unpatentable subject matter. It is not necessary to turn to narrowly-focused and rigid tests like the machine test or the transformation test. Similarly, it is not necessary to turn to subjective standards like "technology" or "mental processes." Further, § 101 need not be viewed as some quaint but ineffectual

[1] Under Supreme Court Rule 37.6, I state that no part of this brief was authored by counsel for any party, and no person or entity made a monetary contribution to the preparation or submission of the brief. The brief is filed with the consent of the parties, copies of the consent letters having been filed with the Clerk.

provision of Title 35, such that the other provisions of Title 35 are capable of filtering subject matter not worthy of a patent.

The framework provided by precedent, when fully appreciated and properly applied, will function to isolate unpatentable subject matter in conformance with legislative intent. As set forth in greater detail below, precedent reveals that patentable subject matter is defined by a tripartite system. The three elements of the system are manifestations of nature, invention, and useful result. The invention applies manifestations of nature and achieves a useful result. Each element must be present and distinct from the other elements, but the three elements must have a contextual relationship with one another. The Court has provided guidance for assessing each element individually and for verifying the necessary relationship among the elements.

It is submitted that the application of the tripartite system reveals that the claims at issue in the present matter fail to define patentable subject matter. Specifically, the claims are not based on manifestations of nature, demonstrated by the fact that the claims will not produce the only useful result implied by the application. The claims purport to provide a system by which a party practicing the claims will achieve a profit from counterbalancing two series of commercial transactions. Recognizing that patent claims must achieve the useful result that is alleged, the present claims implicitly assert a foolproof method for making a profit in a risk

management market. No readily appreciated law of economics indicates that such a method is possible and no such law is set forth in the application. Patents are not granted for claimed subject matter that merely attempts to achieve a useful result.

ARGUMENT

1. THE FRAMEWORK FOR IDENTIFYING PATENTABLE SUBJECT MATTER

A. The Fundamentals: Manifestations of Nature and Abstract Ideas are not Patentable

It is beyond dispute that manifestations of nature are not patentable. A claim to the exclusive use of a power of nature itself on the ground that the patentee was the first to discover that it could be employed to a useful result cannot be sustained. *Tilghman v. Proctor*, 102 U.S. 707, 726-7 (1880). Similarly, abstract ideas are not patentable. An idea may be a good one, but an idea is not patentable. *Rubber-Tip Pencil Company v. Howard*, 87 U.S. 498, 507 (1874).

Building on these fundamentals, subsequent decisions by the Court provide a robust framework for the analysis of claimed subject matter under § 101. The starting point for revealing this framework is to focus on the fundamentals. Specifically, the definitions of "manifestations of nature" and "abstract ideas" must be examined. In addition, the basis for their exclusion from patentable subject matter must

be appreciated. Understanding the meaning and context of these terms under § 101 is critical and should not be assumed. As stated by Justice Frankfurter:

> It only confuses the issue, however, to introduce such terms as "the work of nature" and the "laws of nature." For these are vague and malleable terms infected with too much ambiguity and equivocation. Everything that happens may be deemed "the work of nature," and any patentable composite exemplifies in its properties "the laws of nature." Arguments drawn from such terms for ascertaining patentability could fairly be employed to challenge almost every patent. *Funk Brothers Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 134-5 (1948) (Frankfurter, F. concurring).

A similar concern was expressed in *Le Roy v. Tatham*, 55 U.S. 156 (1852). "The word principle is used by elementary writers on patent subjects, and sometimes in adjudications of courts, with such a want of precision in its application, as to mislead." *Id.* at 174. By reexamining these terms, first applied to claimed subject matter over one hundred and fifty years ago, the nature of patentable subject matter begins to come into focus.

i. Manifestations of Nature

Manifestations of nature are defined by several different categories. A manifestation of nature is found in phenomena of nature, such as the quality of

bacteria. *Funk Bros.*, 333 U.S. at 130. Natural phenomena may not be definable by equations or objectively measurable, but can be observed by humans. Manifestations of nature also include "laws" of nature, wherein natural phenomena can be defined by incontrovertible equations. The Arrhenius equation is one example of a law of nature. *Diamond v. Diehr*, 450 U.S. 175, 177 n.2 (1981). Phenomena like the heat of the sun, electricity, and the qualities of metals can also be defined by laws of nature. *Funk Bros.*, 333 U.S. at 130. An algorithm or mathematical formula is like a law of nature. *Parker v. Flook*, 437 U.S. 584, 589 (1978).

Manifestations of nature possess two traits relevant to patentable subject matter. First, they arise without the assistance of humans. Thus, "they cannot be invented at all." *In re Bilski*, 545 F.3d 943, 1013 (Fed. Cir. 2008) (Rader, J., dissenting). They are "free to all men and reserved exclusively to none" and "part of the storehouse of men." *Funk Bros.*, 333 U.S. at 281. For this reason, manifestations of nature themselves cannot be patented. A second trait common to manifestations of nature is that they are dependable. They define reliable building blocks and tools that can be applied in an invention to repeatedly achieve a useful result.

ii. Abstract Ideas

An "idea" is any conception existing in the mind as a result of mental understanding, awareness, or

activity. Random House Webster's Unabridged Dictionary 949 (2d ed. 1997). An idea is a thought, conception, notion, groundless supposition, or fantasy. *Id.* The adjective "abstract" connotes thought apart from concrete realities, specific objects, or actual instances. *Id.* at 8. The term abstract also refers to expressing a quality or characteristic apart from any specific object or instance.

An "abstract idea" is theoretical, not applied or practical. In terms of patentable subject matter, an abstract idea is a hoped-for result. An abstract idea is thus the antithesis of a useful result that is required of patentable subject matter. "A principle in the abstract is a fundamental truth or a ***motive*** and cannot be patented." *Le Roy*, 55 U.S. at 175 (emphasis added). An invention[2] converts a hoped-for result into a useful result. Patents are not granted as "a reward for the search, but compensation for its successful conclusion." *Brenner v. Manson*, 383 U.S. 519, 536 (1966). Thus, if the purported result of claimed

[2] The term "invention" has a common meaning and a more particular meaning in patent law. Subject matter may be developed or envisioned that is viewed as useful and new. In common usage, such subject matter is referred to as an invention. However, the requirements set forth in Title 35 of the United States Code determine whether such subject matter is truly an invention. As used herein, "invention" strictly refers to subject matter that conforms to § 101 and presumes conformance with the other provisions of Title 35. Subject matter that purports to be an invention but has not been confirmed as thus is referred to as "claimed subject matter."

subject matter is not in fact useful, the claimed subject matter is directed to an abstract idea.

iii. The cooperative relationship between Manifestations of Nature and Abstract Ideas

Like manifestations of nature, abstract ideas are relevant to patentable subject matter in more than one way. In a negative sense, both manifestations of nature and abstract ideas are categories excluded from patentable subject matter. They thus define boundaries around patentable subject matter. In a positive sense, manifestations of nature and abstract ideas place claimed subject matter in context and confirm its status as an invention. It is this interdependent relationship that is the basis of a framework of analysis for claimed subject matter.

B. The Model of Patentable Subject Matter Revealed by Precedent

Precedent can be harmonized on the principle that patentable subject matter is defined by a tripartite system in which ***manifestations of nature*** are applied by ***human-created invention*** to achieve a ***useful result***:

"He who discovers a hitherto unknown phenomenon of nature has no claim to a monopoly of it which the law recognizes. If there is to be invention from such a discovery, it must come from the application of the law of nature to a new and useful

end." *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972) (quoting *Funk Bros.*, 333 U.S. at 130).

"While a scientific truth, or the mathematical expression of it, is not patentable invention, a novel and useful structure created with the aid of knowledge of scientific truth may be." *Mackay Radio & Telegraph Co. v. Radio Corp. of America*, 306 U.S. 86, 94 (1939).

"The chemical principle or scientific fact upon which . . . [the invention] is founded is, that the elements of neutral fat require to be severally united with an atomic equivalent of water in order to separate from each other and become free. This chemical was not discovered by Tilghman. He only claims to have invented a particular mode of bringing about the desired chemical union between the fatty elements and water." *Tilghman v. Proctor*, 102 U.S. at 729.

"A patent will be good, though the subject of the patent consists in the discovery of a great, general, and most comprehensive principle in science or law of nature, if that principle is by the specification applied to any special purpose, so as thereby to effectuate a practical result and benefit not previously attained." *Le Roy*, 55 U.S. at 175 (quoting *Househill Company v. Neilson*, Webster's Patent Cases, 683).

The quoted passages demonstrate that an invention does not exist in a vacuum. Its presence is confirmed only by reference to the manifestations of nature that are applied and to the useful results that

are achieved. Confirming the existence of each of these three elements and verifying a relationship among them is the basis for a framework of § 101 analysis.

C. The Implicit Application of the Tripartite System in Precedent

i. Useful results must be obtained

In *Brenner*, the patent applicant pursued claims to a process for making steroids. The process is disclosed in U.S. Pat. No. 2,908,693, hereafter the '693 patent.[3] The applicant's claims were found unpatentable by the Court for failing to disclose any utility for the compound produced by the process. *Brenner*, 383 U.S. at 536. The process at issue involved the application of manifestations of nature (the materials that were subject to the process). The claimed process successfully achieved a specific end (a compound). However, the claimed subject matter was not an invention because the specific end was not useful.

Brenner does not stand for the position that an invention achieves a result that is universally useful. A patent on a vehicle brake system would likely not be useful to a maker of packaging but would still be

[3] The '693 patent issued to Ringold and Rosenkranz. Manson sought an interference with Ringold and Rosenkranz and the claims considered by the Court were the interference claims, identical to the claims in the '693 patent.

valid. A patented drug is not effective for all patients. However, the requirement of usefulness under § 101 applies to all inventions and, therefore, usefulness must have some global definition across the fields of inventive endeavor. In *Brenner*, the Court rejected the proposition that usefulness under § 101 simply requires that the claim subject not be harmful as suggested by Justice Story. *Brenner*, 383 U.S. at 532-3, n.20.

It is submitted that usefulness under § 101 requires objective verification. Claimed subject matter should be rejected under § 101 for failing to achieve a useful result that can be objectively verified, rather than applying the cryptic label "abstract idea." For example, the practice of the invention will save labor, effectuate more rapid oil-spill control, reduce cost, increase production, reduce the frequency of failure, increase wealth, improve nutritional value, alleviate symptoms, or affect some other measurable quality. The useful result must be verifiable even to those who choose not to practice the invention.

It is conceded that when claimed subject matter appears vulnerable to invalidity under § 101 that the claimed subject matter may also be vulnerable under § 102, § 103, and § 112 of Title 35. However, that is not a legitimate basis for casting § 101 as a pseudo-requirement of patentability. The result in *Brenner* demonstrates that the other requirements of Title 35, § 102, § 103, and § 112, will not always filter unpatentable subject matter. The claims at issue in

Brenner were identical to the claims of the '693 patent. The issuance of the '693 patent demonstrates that the claims conformed to § 102, § 103, and § 112. However, these same claims did not produce a useful result for the patent applicant in *Brenner*. The *Brenner* case does not make clear why the useful result asserted by the applicants of the '693 patent were not also applicable to the claims at issue.

ii. Manifestations of Nature must be applied

In *Mackay*, the claimed subject matter was directed to a structure for an antenna.[4] A formula recited in the claims at issue defined a mathematical relationship between the angle of the wires of the antenna, their length, and the length of wave propagated. *Mackay*, 306 U.S. at 98. The useful result achieved by the claimed subject matter was "the best directional radio propagation by the V type antenna." *Id.* at 101. The Court found that the formula was "applicable only to antenna wires which are multiples of half wavelengths long." *Id.* at 98.

In background, a prior patent had covered antenna wires which were multiples of half wavelengths long, thus conforming to the formula. The claims at issue in *Mackay* were added to an application pending when the suit between the

[4] Claims 15 and 16 of U.S. Pat. No. 1,974,387 were at issue.

parties began. *Id.* at 100. These claims were added to that application in order to cover the competitor's products that did not infringe the prior patent. The claims covered antenna wires that were intermediate of multiples of half wavelengths. The formula upon which the claims were based did not apply to these wires. *Id.*

The Court found the claims invalid, stating the claimed subject matter was based on "***no scientific law applicable*** to wire lengths which are intermediate of multiples of half wave lengths." *Id.* at 98 (emphasis added). The claims effectively cancelled "from the application the statement of ***the scientific law defining the invention***." *Id.* at 100 (emphasis added). As a result, the "best directional radio propagation" could not be derived from the claimed subject matter. *Id.* at 101.

The result in *Mackay* demonstrates why an invention must be based on manifestations of nature: these building blocks, selected and applied by the invention, will, in fact, produce the useful result that is alleged. Patentable subject matter must "produce precisely the [useful] result" alleged. *O'Reilly v. Morse*, 56 U.S. 62, 119 (1853).

Some argue that claimed subject matter must be directed to "technology." It is submitted that a better inquiry is whether the claim is predicated on manifestations of nature. If the patentability of the claim under § 101 is in question, an applicant can objectively address the issue by verifying the

particular manifestations of nature that are applied by the claimed subject matter. Proving whether or not the claim is directed to "technology" is wholly subjective. Also, the definition of "technology" is backward-looking and may fail to encompass emerging fields of inventive endeavor.

iii. A human-caused invention must be defined between the manifestations of nature that are applied and the useful results that are achieved

The holding of *Brenner* supports the position that patentable subject matter involves the achievement of a useful result. If the claimed subject matter does not achieve a useful result, it is directed to an abstract idea. The holding of *Mackay* supports the position that patentable subject matter also involves the application of manifestations of nature. If the claimed subject matter is not based on predictable and reliable manifestations of nature, the result produced by the claimed subject matter cannot be predictably achieved and is therefore not useful.

Brenner and *Mackay* address opposite ends of the tripartite system of patentable subject matter. The invention element of the system lies between. The invention element of the tripartite system can be viewed metaphorically as a ladder. The foot of the ladder rests on the foundation provided by the current progress of science and the useful arts. The ladder extends to what was previously only a

desirable outcome or abstract idea. The existence of the ladder converts the abstract idea into a useful result. The rungs of the ladder are applied manifestations of nature. One or more humans establish the rails of the ladder which harness and order the manifestations of nature. Invention lies in the selection of manifestations of nature to apply, as well as the order and operating environment in which those manifestations are applied.

The model of an invention as a ladder is consistent with precedent and helpful. The ladder model reflects the concern that an invention is human-caused and not naturally occurring. The ladder model also conveys that the useful result is not readily achievable. Section 101 has been and must continue to be interpreted to require that the ladder to the useful result is more than just one rung.

The *O'Reilly* case represents a relatively straightforward analysis. The eighth claim of Morse's U.S. Pat. No. Re117, hereafter the Re117 patent, read:

> 8. I do not propose to limit myself to the specific machinery, or parts of machinery, described in the foregoing specifications and claims; the essence of my invention being the use of the motive power of the electric or galvanic current, which I call electro-magnetism, however developed, for making or printing intelligible characters, letters, or signs, at any distances, being a new

> application of that power, of which I claim to be the first inventor or discovered.

The useful result of making or printing intelligible characters, letters, or signs, at any distances was achievable by applying the manifestation of nature of electro-magnetism. Other manifestations of nature were also applied; the specification of the Re117 patent describes human-caused steps and structures required to achieve the printing of intelligible characters at a distance. Claims 1-7 of the Re117 patent were focused on the embodiments set forth in the specification and thereby defined an invention between the manifestations of nature applied by Morse and the useful result.[5]

Claim 8 expressly departed from any limitation in the specification. In claim 8, Morse made no pretense of establishing a human-caused invention between the manifestation of nature and the useful result. The claims were found invalid. The Court noted that the written description of the Re117 patent did not support claim 8. *O'Reilly*, 56 U.S. at 119-20. However, the Court also supported the finding of invalidity on the lack of usefulness. The Court stated that "Morse has not discovered . . . that electric or galvanic current will ***always*** print at a distance, no

[5] Current standards for claim drafting and interpretation are different than the standards applied to the Morse claims. However, a cursory review of claims 1-7 of Re117 make it clear that those claims were intended to include limitations set forth in the specification.

matter what may be the form of the machinery or mechanical contrivances through which it passes." *O'Reilly*, 56 U.S. at 117 (emphasis added).

In *The Telephone Cases*, 126 U.S. 1 (1888), the holding of *O'Reilly* was distinguished. Claim 5 of Bell's U.S. Pat. No. 174,465, hereafter the '465 patent, was at issue. The claim read:

> 5. The method of, and apparatus for, transmitting vocal or other sounds telegraphically, as herein described, by causing electrical undulations, similar in form to the vibrations of the air accompanying the said vocal or other sound, substantially as set forth.

The useful result was transmitting vocal or other sounds telegraphically. The manifestations of nature applied included electrical undulations. The specification of the '465 patent describes human-caused steps and structures required to transmit vocal or other sounds telegraphically by applying electrical undulations. '465 patent *passim*. The difference between Bell's fifth claim and Morse's eighth claim is that Bell's fifth claim expressly limits itself, twice, to the description of the specification.

The results in *O'Reilly* and *The Telephone Cases* are consistent with the tripartite system of patentable subject matter. In *O'Reilly*, Morse sought to characterize the mere association of a manifestation of nature and an achievable useful result as an invention. The printing of characters over a distance could be achieved through, in part, electromagnetism, as shown by claims 1-7 of the Re117 patent. However,

Morse's eighth claim was not bound to any human-caused steps or structures. The useful result of printing characters over a distance could not be produced by electromagnetism alone and no human-caused structures or steps, no invention, filled the void. That fact rendered the eighth claim an abstract idea. In *The Telephone Cases*, Bell limited claim 5 by the description of the '465 patent's specification, which set forth human-caused structures and steps that would, in fact, achieve the useful result.

The eighth claim of the Re117 patent appears to be the last patent claim considered by the Court in which a bare correlation between a manifestation of nature and a useful result was claimed. In decisions subsequent to *O'Reilly*, the Court has considered more subtle and nuanced claims. The dominant challenge has been to ensure that claimed subject matter is human-caused and based on manifestations of nature, but does not in fact preempt a manifestation of nature.

iv. Confirming a distinction between the manifestations of nature applied and human-caused structures or steps

As set forth above, *Mackay* supports the position that claimed subject matter must ***apply*** manifestations of nature. Conversely, the holding in *Benson* (409 U.S. 63) confirms that claimed subject matter must not be ***directed merely to*** a manifestation of nature and thus lack human-caused

structures or steps. In *Benson*, the claims at issue were directed to a method of converting signals from binary coded decimal form into binary form. *Id.* at 73-4 (appendix). The manifestation of nature applied by the claimed subject matter was a mathematical formula. *Id.* The useful result achieved by the claimed subject matter was a signal in binary form for use in a digital computer. *Id.* at 71-2. The Court determined that, if patented, the claim "would wholly preempt the mathematical formula and in practical effect would be a patent on the algorithm itself." *Id.* The claimed subject matter purporting to be a human-caused invention was merely a single manifestation of nature, an algorithm.

In *Parker*, the claim would not have wholly preempted a mathematical formula but was nonetheless unpatentable. In *Parker*, the requirement that patentable subject matter involve three distinct elements is confirmed. The useful result achieved by the claimed subject matter was an updated alarm limit for transient operating conditions of catalytic conversion processes. *Parker*, 437 U.S. at 585. The claim read:

> 1. A method for updating the value of at least one alarm limit on at least one process variable involved in a process comprising the catalytic chemical conversion of hydrocarbons wherein said alarm limit has a current value of Bo+K wherein Bo is the current alarm base and K is a predetermined alarm offset which comprises:

> (1) Determining the present value of said process variable, said present value being defined as PVL;
>
> (2) Determining a new alarm base, B1, using the following equation: B1=Bo(1.0-F)+PVL(F) where F is a predetermined number greater than zero and less than 1.0;
>
> (3) Determining an updated alarm limit which is defined as B1+K; and thereafter
>
> (4) Adjusting said alarm limit to said updated alarm limit value.

Id. at 596-7 (appendix). Steps 1-3 of the method represent a formula for arriving at the updated alarm limit and is the single manifestation of nature applied. Step 4 is couched in terms of human activity, but is merely a restatement of the useful result. "Updating" and "adjusting" both involve change. As used in the claim, the terms are synonymous. Thus, the claim simply recites the manifestation of nature and the useful result. The claim is thus similar to Morse's eighth claim in Re117. The claim in *Parker* differs from Morse's eighth claim in Re117 in that the useful result can be achieved based strictly on the claimed subject matter. However, the claimed subject matter recited a single manifestation of nature.

In *Benson* and *Parker*, the Court provided a first guideline to confirm that claimed subject does not merely cloak a manifestation of nature: claimed subject matter reciting a single manifestation of nature preempts that manifestation of nature. In *Diamond v. Chakrabarty*, 447 U.S. 303 (1980), the

Court provided a second guideline. The claims at issue were directed to human-made, genetically engineered bacteria. *Id.* at 305. The bacteria achieved the useful result of breaking down crude oil expelled during a spill. *Id.* at n.2. The Court found that the claims were directed to patentable subject matter since they were "not nature's handiwork." *Id.* at 310. This quality of invention was also identified as relevant in *The Telephone Cases*. In finding Bell's patent valid, the Court stated that electricity in its natural state would not achieve the useful result of transmitting sounds. *The Telephone Cases*, 126 U.S. at 532 ("electricity, left to itself, will not do what is wanted"). Claimed subject matter fails to define an invention if the claim recites things already occurring in nature.[6]

The holding in *Funk Bros.* stands in contrast to, but reinforces *Chakrabarty* and *The Telephone Cases* on this point. The claims at issue were directed to a combination of strains of Rhizobium bacteria. *Funk Bros.*, 333 U.S. at 128-30. Generally, the bacteria were applied to infect leguminous plants, such as clover, alfalfa, and soy beans. *Id.* The bacteria allowed the leguminous plants to absorb nitrogen from the air, for subsequent conversion to organic nitrogenous compounds. *Id.* There existed numerous species of

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[6] See also *Smith v. Snow*, 294 U.S. 1, 22 (1935). "By the use of materials in a particular manner he secured the performance of the function by a means which had never occurred in nature, and had not been anticipated by the prior art; this is a patentable method or process."

Rhizobium bacteria and various strains of each species. *Id.* No one species would infect the roots of all species of leguminous plants and the various species would exert an inhibitory effect on each other when mixed, resulting in reduced efficiency. *Id.* The applicant discovered that some strains could be packaged together without producing the inhibitory effect. *Id.*

The claims recited the combination of two or more strains of bacteria which were "mutually non-inhibitive" and "unaffected by each other's ability to fix nitrogen in the leguminous plant for which they are specific." *Id.* at n.1. The Court acknowledged that the combination yielded advantages, such as allowing farmers to buy one package of bacteria instead of many and simplifying dealer inventory. *Id.* at 131. However, the Court determined that these advantages arose from a primary or underlying useful result, that the strains of bacteria would not inhibit one another. "All that remains, therefore, are advantages of the mixed inoculants themselves. They are not enough." *Id.* at 132. The Court explained:

> Each species has the same effect it always had. The bacteria perform in their natural way. Their use in combination does not improve in any way their natural functioning. They serve the ends nature originally provided and act quite independently of any effort of the patentee. *Id.* at 131.

Thus, the holding in *Funk Bros.* confirms that claimed subject matter fails to define an invention if

the useful result is the direct consequence of unaltered manifestations of nature. Merely combining two manifestations of nature (different strains of bacteria) did not make the claims directed to the necessary effect of the combination patentable.

v. Summary

In *Brenner*, claims based on manifestations of nature and reciting steps that produced something not naturally occurring were found invalid because a useful result was lacking. In *Mackay*, claims that could be applied to produce something (1) not naturally occurring and (2) objectively useable were found invalid because manifestations of nature did not support the claims. *O'Reilly* stands for the now unremarkable position that something human-caused must be set forth between the manifestations of nature applied and the useful result achieved. These cases demonstrate that each element of the tripartite system must be present for patentable subject matter. *The Telephone Cases*, *Benson*, *Parker*, *Chakrabarty*, and *Funk Bros.* flesh out a necessary aspect of the relationship among the three elements: the claimed subject matter, manifestations of nature applied, and useful results achieved must be distinct from one another.

D. Benefits of the Tripartite System and Perspective

i. The model of patentable subject matter as a tripartite system divides the analysis into components that are individually easier to assess

The machine-or-transformation test represents a good-faith, but misguided attempt to turn the inquiry under § 101 into two, alternative questions. As amply demonstrated by precedent, the inquiry is far more complicated. The tripartite system model that is proposed herein apportions this complex issue into several sub-inquiries, while remaining consistent with precedent.

The first step in the analysis is to confirm that the result achieved by the claimed subject matter is in fact useful, pursuant to *Brenner*. The usefulness must be objectively verifiable. This first step presumes that the claimed subject matter will in fact achieve the useful result. However, if, on its face, the useful result cannot be verified the claimed subject matter fails to be patentable. This first step will filter claims purporting results that can be only be measured in the mind.

If a useful result is achieved, the relationship between the useful result and the claimed subject matter is assessed. The useful result must not arise naturally from the claimed subject matter, pursuant to *Funk Bros.*

If the useful result is achieved and does not arise naturally from claimed subject matter, the relationship among the useful result, the claimed subject matter, and the manifestations of nature applied by the claimed subject matter is assessed. The claim must recite something human-caused between the manifestations of nature applied and the useful result achieved, pursuant to *O'Reilly*. The human-caused structure or step must be more than a restatement of the useful result, pursuant to *Parker*.[7] The claim must recite a precursor to the useful result that is necessarily human-caused.

If all three elements of the tripartite system are present, the reliability or efficacy of the applied manifestations of nature is confirmed. The claimed subject matter must be based on dependable manifestations of nature to ensure the useful result is achieved, pursuant to *Mackay*. However, the claimed subject matter must not preempt a manifestation of nature in achieving the useful result, pursuant to Benson.

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[7] The claims at issue in *Laboratory Corp. of America Holdings v. Metabolite Laboratories Inc.*, 548 U.S. 124 (2006) (Stevens, J., dissenting) would be invalid pursuant to *Parker*. Specifically, the human-caused step in the claim, the second step, is merely a restatement of the useful result.

ii. The model of patentable subject matter as a tripartite system is rigorous and flexible

As set forth above, claimed subject matter can fail to be patentable under § 101 on at least six different grounds under the tripartite system. Claimed subject matter can achieve a useful result but still fail to be patentable. Conversely, claimed subject matter can be based on manifestations of nature and achieve a specific end but nonetheless be unpatentable.

On the other hand, the tripartite model is flexible since the nature of the claimed subject matter is irrelevant. The model is based on the Court's analysis of claims directed to products or things (*Mackay*, *Funk Bros.*, *O'Reilly*, *Chakrabarty*) and of claims directed to processes (*Brenner*, *Gottschalk*, *Parker*). The model is focused on the universal characteristics of invention, not on whether claimed subject falls under an arbitrarily defined category such as business methods or technology.

iii. The model of patentable subject matter as a tripartite system will encourage focused claiming and extensive disclosure, especially in emerging fields

A patent applicant having the tripartite system as a guide will carefully define the circumstances that bring about the useful result. Prior to filing a patent application, proposed claims can be tested to confirm

all three elements of the system are present and clearly distinct from one another. Further, patent applicants in emerging fields of inventive endeavor will have a powerful incentive to fully explain the usefulness of the claimed subject matter and the reliability of the manifestations of nature being applied.

iv. Perspective

The analysis of claimed subject matter for conformance with § 101 will not always be straightforward. The overall inquiry is about identifying a line existing only in an abstract sense, between the patentable and the unpatentable. The model of patentable subject matter as a tripartite system, as thus far developed by precedent, will not provide a bright line test. However, no test should. The tripartite system represents a flexible set of inquiries that, collectively, will identify patentable subject matter in a manner consistent with precedent.

2. APPLICATION OF THE TRIPARTITE MODEL OF PATENTABLE SUBJECT MATTER TO THE PRESENT CLAIMS

A. The claimed subject matter achieves a useful result that is objectively verifiable

The claimed subject matter defines a system of balancing risk.[8] A first series of transactions are

[8] App. No. 08/833,892, claim 1.

initiated between a commodity provider and consumers of the commodity. The consumers purchase the commodity from the commodity provider at a fixed rate based on historical averages. The fixed rate paid by the consumers corresponds to a "risk position" of the consumers. A second series of transactions are initiated between the commodity provider and market participants at a second fixed rate. The market participants can be a distribution company for the commodity.[9] The second series of market participant transactions balances the risk position of the series of consumer transactions.

The lower court provided an exemplary application of the claimed system:

> For example, coal power plants (i.e., the "consumers") purchase coal to produce electricity and are averse to the risk of a spike in demand for coal since such a spike would increase the price and their costs. Conversely, coal mining companies (i.e., the "market participants") are averse to the risk of a sudden drop in demand for coal since such a drop would reduce their sales and depress prices. The claimed method envisions an intermediary, the "commodity provider," that sells coal to the power plants at a fixed price, thus isolating the power plants from the possibility of a spike in demand increasing the price of coal above

[9] *Id*. at p. 5, lines 15-16.

> the fixed price. The same provider buys coal from mining companies at a second fixed price, thereby isolating the mining companies from the possibility that a drop in demand would lower prices below that fixed price. And the provider has thus hedged its risk; if demand and prices skyrocket, it has sold coal at a disadvantageous price but has bought coal at an advantageous price, and vice versa if demand and prices fall. Importantly, however, the claim is not limited to transactions involving actual commodities, and the application discloses that the recited transactions may simply involve options, i.e., rights to purchase or sell the commodity at a particular price within a particular timeframe. In re Bilski, 545 F.3d at 949-950.

The application does not identify a useful result achieved by the claimed subject matter precisely. However, the party practicing the claimed subject matter may achieve a profit defined as the margin between the transactions with consumers and the transactions with market participants.[10] This profit would be a useful result to the practicing party and would be objectively verifiable.

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[10] *Id*. at lines 12-14.

B. The useful result does not arise naturally

The useful result is profit obtained by leveraging the first and second series of commercial transactions relative to one another. These transactions must be managed and executed with skill to achieve a profit. It is therefore submitted that profit does not arise naturally.

C. The claim recites something human-caused that links the manifestations of nature applied and the useful result achieved

The manifestations of nature applied by the claimed subject matter are economic principles. The present claims recite steps that are necessarily applied and therefore caused by humans.

D. A human-caused step recited in the claimed subject matter is more than a restatement of the useful result

At least the first step of initiating transactions is a prerequisite to achieving the useful result of profit. This first step represents more than a restatement of the useful result since the profit is not achieved upon completion of this step.

E. The claimed subject matter is not based on reliable manifestations of nature

The key to making the system achieve the useful result is the determination of the risk position with substantial certainty. If the risk position cannot be determined, the scope of necessary transactions with market participants cannot be determined. Further, the useful result of profit to the practicing party will not be achieved.

The risk position appears to be qualitative. The application does not provide an equation defining the risk position. The Petitioners appear to acknowledge that the risk position can only be estimated.[11]

As noted in *Brenner*, a patent is not awarded for a hunt. *Brenner*, 383 U.S. at 536. To be patentable, the claims at issue must in fact "produce precisely the [useful] result" alleged. *O'Reilly*, 56 U.S. at 119. Therefore, for these claims to be patentable, the claim must recite a method that will in fact balance the risk position and generate profit for the commodity provider. The applicants thus allege to have discovered a business method with guaranteed profitability.

Applicants have pointed to benefits accruing to third parties to avoid this conclusion. Specifically, the application notes that consumers and market participants will enjoy isolation from cost and revenue

[11] Application 08/833,892 at p. 4, lines 18-19.

fluctuations, respectively. However, this attempt to divert attention from the useful result associated with the practicing party should be rejected.

The benefits accruing to consumers and market participants are necessarily dependent on achieving the useful result of profit to the practicing party. For example, if the practicing party achieves a true balance as recited in the claims, wherein no margin exists between the risk position and the second series of transactions, the practicing party suffers loss since some level of administrative costs will be required to maintain the system. The practicing party suffers a greater loss if the risk position is not determined accurately and a negative margin arises.

Thus, if no profit is generated, the claimed subject matter requires the practicing party to altruistically serve consumers and market participants. If such a willing party exists, there is no need for a patent. If no such party exists, the claimed subject matter fails to achieve a result since no one would practice the invention.

The useful result contemplated by the Petitioners is profit for the practicing party. Profit is an attribute that can be objectively verified. However, claimed subject matter must produce the result it purports to achieve and it is untenable to suggest that any business method can produce profit with the certainty required of patent claims. No readily appreciated economic principle supports the claimed subject

matter and no such principle is articulated in the Petitioners' application.

CONCLUSION

The analysis of claimed subject matter for conformance with § 101 should be consistent with the Court's precedent. In addition, labels like "law of nature" or "abstract idea" should be rejected in favor of a precise basis for a conclusion of unpatentability. Precedent has defined a framework that can be applied to assess claimed subject matter without regard to the environment in which it is applied to achieve a useful result. The judgment of the court of appeals should be reversed. The case should be remanded to the U.S. Patent Office to give the Petitioners an opportunity to provide evidence that the useful result of profit for the practicing party will be achieved.

Respectfully submitted,

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