Intellectual Property in the New Technological Age

Workshop for Federal Judges
May 19-22, 2015
University of California at Berkeley School of Law
Berkeley, California

The Landscape of Intellectual Property Law
Materials

Antitrust
Contracts
Trade Secret
Patent

Comprehensive
User-friendly
Best practices
Menu of choices
Intended for wide audience:
District judges
New and experienced law clerks
Practitioners
Scholars
Basis for promoting exchange of information among courts
Periodic updating

Patent Case Management Judicial Guide

Key Features

- Comprehensive
- User-friendly
- Best practices
  - Menu of choices
- Intended for wide audience:
  - District judges
  - New and experienced law clerks
  - Practitioners
  - Scholars
- Basis for promoting exchange of information about case management among courts
- Periodic updating
https://www.law.berkeley.edu/centers/berkeley-center-for-law-technology/upcoming-events/ipnewtechnologicalage2015/
Password:

Protected: Intellectual Property in the New Technological Age 2015

MAY 19 – 22, 2015

The Berkeley Center for Law & Technology (BCLT) and the Federal Judicial Center (FJC) are proud to host the 18th Intellectual Property in the New Digital Age Program in Berkeley, California. This four and a half day program will feature an integrated set of lectures by Berkeley Law Faculty and Distinguished Scholars, as well as judicial members and leading practitioners and professors with particular experience in intellectual property. For details on the lecturers, please visit our speakers page.

Resources

SIMULATION MATERIALS FOR MAY 2015 PROGRAM

Tab 1  Claim Construction Simulation: Mannosoft v. Oracle
Tab 2  Claim Construction Simulation: Lux v. BrightBlue
Tab 3  Trademark Preliminary Injunction Simulation 1: Polar Shock — Polar Corp. v. PerstCo.
Tab 4  Trademark Preliminary Injunction Simulation 2: Source

PATENT LAW

A. Validity

1. Subject Matter

Software and Business Methods
- Alice Corp. v. CLS Bank Int'l, 134 S.Ct. 2347 (2014)

Biotechnology
- Association for Molecular Pathology v. Myriad Genetics, 133 S.Ct. 2107 (2013)
Market for Patent Litigation?
The “Market” for Patent Litigation

Good or Service = Patent Dispute Resolution

Choice of Forum = The “Market”

Patentee Factors in Selecting a Tribunal

• where the parties are located
  • e.g., high tech (ND Cal); pharma (D NJ)

• success rate
  • win percentage
  • damage awards
  • injunctive relief

• speed
  • Rocket Docket

• likelihood of reaching trial

• rules
  • Patent Local Rules

• decisionmakers
  • experience of jurists
  • jury pool
  • outsourcing to special masters

Strategic Elements

• venue transfer propensity
• joinder/severance
  • venue insurance
  • economies of scale
  • reduce risk of defensive
    non-mutual collateral estoppel
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Patent Cases Filed

Heat Map of Cases by District (2014)

Source: Lex Machina
Why do we have patents?

U.S. Constitution
Article I §8, cl. 8
Congress shall have power
To Promote the Progress of Science and the useful Arts, by securing for limited Times, to Authors and Inventors, the exclusive Right to their respective Writings and Discoveries.

The patent system ... added the fuel of interest to the fire of genius, in the discovery and production of new and useful things.

Abraham Lincoln, Second Lecture on Discoveries and Inventions (Feb. 11, 1859).
How do inventions occur?

FLASH OF GENIUS

CUMULATIVE INNOVATION

Patents and Innovation:
Two Parables

VisiCalc
Lotus 1-2-3
Microsoft Excel
XEROGRAPHY

Over 300 Patents

1930 1938 1944 1949 1959

frustrated patent attorney

U.S. Patent XXX

Battelle

NEW XEROX 914

10-22-46 ASTORIA

12
Step 1: Charge the Xerox Drum

Step 2: Expose the Xerox Drum

Step 3: Develop the Latent Image

Step 4: Transfer the Image to the Copy Paper

Step 5: Fix the Image to the Copy Paper

Step 6: Clean the Xerox Drum
Prototype Workstation
(the world's first personal computer)

Xerox Alto (1973)
Graphical User Interface

Xerox Alto

Star

1979 - Xerox Ethernet Illustration

SPREADSHEETS

Tailoring Legal Protection for Computer Software

Peter S. Menell*

It became evident by the mid-1970s that intellectual work embodied in new technologies—in particular, computer software—did not fit neatly within the traditional forms of legal protection for intellectual property.1

- Network Effects
- Low Technological Risk
- Low Capital Costs
- Multiple Modes of Protection

Frameworks for Protection of Computer Software

Lotus v. Borland (1st Cir. 1995) aff’d equally divided S. Ct.
Cramming more components onto integrated circuits

With unit cost falling as the number of components per circuit rises, by 1975 economics may dictate squeezing as many as 65,000 components on a single silicon chip.

By Gordon E. Moore
Director, Research and Development Laboratories, Fairchild Semiconductor division of Fairchild Camera and Instrument Corp.

Electronics, Volume 38, Number 8, April 19, 1965

Moore’s Law

Intel’s latest chip offers 3,500 times more performance, is 90,000 times more energy efficient and about 60,000 times lower cost.
If the 1971 Volkswagen Beetle advanced at this rate . . .

you would be able to go 300,000 miles per hour

getting two million miles per gallon of gas

all for 4 cents!
Climate Change

Pollution

Fossil Fuels, Geopolitics, and Terrorism

SolarCity
The Patent System

- Patent Application
- Examination
- Prosecution
- District Court
- Federal Circuit
- Litigation

US Utility Patent Grants Per Year

Term: 20 years from filing

 Claims

Filing


0 50000 100000 150000 200000 250000 300000

US Patent

Claims

To

year

20

years from

filing

Term: 20

years from

filing

Term: 20

years from

filing

Claim

To

year

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Term: 20
§ 101 Inventions Patentable

Whoever 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, subject to the conditions and requirements of this title.
That when any person shall allege that he or they have invented any new and useful art, machine, manufacture or composition of matter, or any new and useful improvement may be granted [a patent] therefor
Whoever 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, subject to the conditions and requirements of this title.

A principle, in the abstract, is a fundamental truth; an original cause; a motive; these cannot be patented, as no one can claim in either of them an exclusive right. Nor can an exclusive right exist to a new power, should one be discovered in addition to those already known. Through the agency of machinery a new steam power may be said to have been generated. But no one can appropriate this power exclusively to himself, under the patent laws. The same may be said of electricity, and of any other power in nature, which is alike open to all, and may be applied to useful purposes by the use of machinery.

In all such cases, the processes used to extract, modify, and concentrate natural agencies, constitute the invention. The elements of the power exist; the invention is not in discovering them, but in applying them to useful objects. . . .
**O’Reilly v. Morse, 56 U.S. (15 How.) 62 (1854)**

**Telegraph**

Samuel F.B. Morse

**International Morse Code**

1. A dash is equal to three dots.
2. The space between parts of a single letter is equal to one dot.
3. The space between letters is equal to three dots.
4. The space between words is equal to seven dots.

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1. A period is equal to one dot.
2. The space between the parts of a single letter is equal to one dot.
3. The space between letters is equal to three dots.
4. The space between words is equal to seven dots.
Telegraph

First. Having thus fully described my invention, I wish it to be understood that I do not claim the use of the galvanic current, or current of electricity, for the purpose of telegraphic communications, generally, but what I specially claim as my invention and improvement is making use of the motive power of magnetism, when developed by the action of such current or currents, substantially as set forth in the foregoing description of the first principal part of my invention, as means of operating or giving motion to machinery, which may be used to imprint signals upon paper or other suitable material or to produce sounds in any desired manner for the purpose of telegraphic communication at any distances.

Eighth. 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 electromagnetism, however developed, for making or printing intelligible characters, letters, or signs, at any distances . . . 1840 Patent
It is impossible to misunderstand the extent of this claim. He claims the exclusive right to every improvement where the motive power is the electric or galvanic current, and the result is the marking or printing intelligible characters, signs, or letters at a distance.

If this claim can be maintained, it matters not by what process or machinery the result is accomplished. For aught that we now know, some future inventor, in the onward march of science, may discover a mode of writing or printing at a distance by means of the electric or galvanic current, without using any part of the process or combination set forth in the plaintiff's specification. * * *

Nor is this all, while he shuts the door against inventions of other persons, the patentee would be able to avail himself of new discoveries in the properties and powers of electro-magnetism which scientific men might bring to light. * * * In fine he claims an exclusive right to use a manner and process which he has not described and indeed had not invented, and therefore could not describe when he obtained his patent. The court is of opinion that the claim is too broad, and not warranted by law.

Many cases have been referred to in the argument * * * We shall speak of those only which seem to be considered as leading ones. And those most relied on, and pressed upon the court, in behalf of the patentee, are the cases which arose in England upon Neilson's patent for the introduction of heated air between the blowing apparatus and the furnace

Neilson, in his specification, described his invention as one for the improved application of air to produce heat in fires, forges, and furnaces, where a blowing apparatus is required. And it was to be applied as follows: The blast or current of air produced by the blowing apparatus was to be passed from it into an air-vessel or receptacle made sufficiently strong to endure the blast; and through or from that vessel or receptacle by means of a tube, pipe, or aperture into the fire, the receptacle be kept artificially heated to a considerable temperture by heat externally applied.
the defendant among other defences insisted-
that [1] the machinery for heating the air and
throwing it hot into the furnace was not
sufficiently described in the specification,
and the patent void on that account—and
also, [2] that a patent for throwing hot air into the
furnace, instead of cold, and thereby increasing the intensity of the heat, was
a patent for a principle, and that a principle was not patentable.

[1] Upon the first of these defences, the jury found that a man of ordinary
skill and knowledge of the subject, looking at the specification alone, could
construct such an apparatus . . .

[2] And upon the second ground of
defence, Baron Parke, who delivered the
opinion of the court, said:

‘It is very difficult to distinguish it from the specification of a patent
for a principle, and this at first created in the minds of the court much
difficulty; but after full consideration we think that the plaintiff does
not merely claim a principle, but a machine, embodying a principle,
and a very valuable one. We think the case must be considered as if
the principle being well known, the plaintiff had first invented a mode
of applying it by a mechanical apparatus to furnaces, and his
invention then consists in this: by interposing a receptacle for heated
air between the blowing apparatus and the furnace. In this receptacle
he directs the air to be heated by the application of heat externally to
the receptacle, and thus he accomplishes the object of applying the
blast, which was before cold air, in a heated state to the furnace.’
We see nothing in this opinion differing in any degree from the familiar principles of law applicable to patent cases. Neilson claimed no particular mode of constructing the receptacle, or of heating it. He pointed out the manner in which it might be done; but admitted that it might also be done in a variety of ways; and at a higher or lower temperature; and that all of them would produce the effect in a greater or less degree, provided the air was heated by passing through a heated receptacle. And hence it seems that the court at first doubted, whether it was a patent for any thing more than the discovery that hot air would promote the ignition of fuel better than cold. And if this had been the construction, the court, it appears, would have held his patent to be void; because the discovery of a principle in natural philosophy or physical science, is not patentable.

But after much consideration, it was finally decided that this principle must be regarded as well known, and that the plaintiff had invented a mechanical mode of applying it to furnaces; and that his invention consisted in interposing a heated receptacle, between the blower and the furnace, and by this means heating the air after it left the blower, and before it was thrown into the fire. Whoever, therefore, used this method of throwing hot air into the furnace, used the process he had invented, and thereby infringed his patent, although the form of the receptacle or the mechanical arrangements for heating it, might be different from those described by the patentee.
Undoubtedly, the principle that hot air will promote the ignition of fuel better than cold, was embodied in this machine. But the patent was not supported because this principle was embodied in it. He would have been equally entitled to a patent, if he had invented an improvement in the mechanical arrangements of the blowing apparatus, or in the furnace, while a cold current of air was still used. But his patent was supported, because he had invented a mechanical apparatus, by which a current of hot air, instead of cold, could be thrown in. And this new method was protected by his patent. The interposition of a heated receptacle, in any form, was the novelty he invented.

But Professor Morse has not discovered, that the electric or galvanic current will always print at a distance, no matter what may be the form of the machinery or mechanical contrivances through which it passes. You may use electro-magnetism as a motive power, and yet not produce the described effect, that is, print at a distance intelligible marks or signs. To produce that effect, it must be combined with, and passed through, and operate upon, certain complicated and delicate machinery, adjusted and arranged upon philosophical principles, and prepared by the highest mechanical skill.
Funk Brothers Seed Co. v. Kalo Inoculant Co., 333 U.S. 127 (1948)

“An inoculant for leguminous plants comprising a plurality of selected mutually non-inhibitive strains of different species of bacteria of the genus Rhizobium, said strains being unaffected by each other in respect to their ability to fix nitrogen in the leguminous plant for which they are selected.”

Justice William O. Douglas

Funk Brothers Seed Co. v. Kalo Inoculant Co., 333 U.S. 127 (1948)

[The patentee] does not create inhibition or non-inhibition in the bacteria. Their qualities are the work of nature. For patents cannot issue for the discovery of phenomena of nature. The qualities of these bacteria, like the heat of the sun, electricity, or the quality of metals, are part of the storehouse of knowledge of all men. They are manifestations of laws of nature, free to all men and reserved exclusively to none. He who discovers a hitherto unknown phenomenon of nature has no claim to 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.

Discovery of the fact that certain strains of each species of these bacteria can be mixed without harmful effect to the properties of either is a discovery of their qualities of non-inhibition. It is no more than the discovery of some of the handiwork of nature and hence is not patentable. The aggregation of select strains of the several species into one product is an application of that newly-discovered natural principle. But however ingenious the discovery of that natural principle may have been, the application of it is hardly more than an advance in the packaging of the inoculants.

Inventive application requirement
Concurring

The patent is invalid not for unpatentable subject matter but rather for want of a clear, concise description of how the combinations were made or used.

“It only confuses the issue . . . 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.”

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**Patentable Subject Matter**

- **Laws of Nature**
  - Abstract Ideas
    - “art”
    - machine
    - manufacture
    - composition of matter

- **Things Found in Nature**
  - Physical Phenomena
Although the principal purpose of the bill is the codification of title 35, United States Code and involves simplification and clarification of language and arrangement, and elimination of obsolete and redundant provisions there are a number of changes in substantive statutory law. These will be explained in some detail in the revision notes keyed to each section which appear in the appendix of this report. The major changes or innovations in the title consist of incorporating a requirement for invention in §103 and the judicial doctrine of contributory infringement in §271.
8. The method of converting signals from binary coded decimal into binary which comprises the steps of
   (1) storing the binary coded signals in a reentrant shift register,
   (2) shifting the signals to the right 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 register 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) adding a “1” to said first position, and
   (7) 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.

“Phenomena of nature, though just discovered, mental processes, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work.”

- “[T]he process claim is so abstract and sweeping as to cover both known and unknown uses of the BCD to pure binary conversion.”
- “the patent would wholly pre-empt the mathematical formula and in practical effect would be a patent on the algorithm itself.”

**Gottschalk v. Benson, 409 U.S. 63 (1972)**

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BCD Binary

1101010011010153 =
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 [petroleum refining] wherein said alarm limit has a current value of

\[ B_0 + K \]

wherein \(B_0\) 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 \(B_1\), using the following equation:

\[ B_1 = B_0(1.0 - F) + PVL(F) \]

where \(F\) is a predetermined number greater than zero and less than 1.0;
3. Determining an updated alarm limit which is defined as \(B_1 + K\); and thereafter
4. Adjusting said alarm limit to said updated alarm limit value.

_Parker v. Flook, 437 U.S. 584 (1978)_
Step 1: measure the present value of the process variable (e.g., the temperature)

Step 2: use an algorithm to calculate an updated alarm-limit value

Step 3: the actual alarm limit is adjusted to the updated value.

an alarm may signal the presence of an abnormal condition indicating either inefficiency or danger.

*Parker v. Flook*, 437 U.S. 584 (1978)

[In *O’Reilly v. Morse*], [i]n reviewing earlier cases applying the rule that a scientific principle cannot be patented, the Court placed particular emphasis on the English case of *Neilson v. Harford* (1844), which involved the circulation of heated air in a furnace system to increase its efficiency.

“‘It is very difficult to distinguish it [the Neilson patent] from the specification of a patent for a principle, and this at first created in the minds of the court much difficulty; but after full consideration, we think that the plaintiff does not merely claim a principle, but a machine, embodying a principle, and a very valuable one. *We think the case must be considered as if the principle being well known, the plaintiff had first invented a mode of applying it . . . .’” 15 How., at 115 (emphasis added).

*We think this case must also be considered as if the principle or mathematical formula were well known.*
The process itself, not merely the mathematical algorithm, must be new and useful.

Parker v. Flook, 437 U.S. 584 (1978)

Benson: “the patent would wholly pre-empt the mathematical formula and in practical effect would be a patent on the algorithm itself.”

Respondent’s claims would not “wholly preempt the mathematical formula” since there are uses of his formula outside of oil-refining.

He argues that the presence of specific “post-solution” activity--the adjustment of the alarm limit--distinguishes this case from Benson.

The notion that post-solution activity, no matter how conventional or obvious in itself, can transform an unpatentable principle into a patentable process exalts form over substance.

The process itself, not merely the mathematical algorithm, must be new and useful.

“Respondent’s process is unpatentable under § 101, not because it contains a mathematical algorithm as one component, but because once that algorithm is assumed to be within the prior art, the application, considered as a whole, contains no patentable invention.”

Law of Nature Limitation

“inventive” application of the law of nature

• misunderstanding of Neilson v. Harford (1841)

• it did not require “inventive” application of laws of nature

• not applied in the UK

• such a rule is unwise and unworkable doctrine, especially in the context of modern biological and algorithmic science
Method For Updating Alarm Limits

Step 1: measure the present value of the process variable (e.g., the temperature)

Step 2: use an algorithm to calculate an updated alarm-limit value

Step 3: adjust the actual alarm limit to the updated value.

an alarm may signal the presence of an abnormal condition indicating either inefficiency or danger.

“Respondent’s process is unpatentable under § 101, not because it contains a mathematical algorithm as one component, but because once that algorithm is assumed to be within the prior art, the application, considered as a whole, contains no patentable invention.”

_Parker v. Flook, 437 U.S. 584 (1978)_
United States Patent

Diehr, II et al.

19

4344,142

Aug. 10, 1982

Diamond v. Diehr,
450 U.S. 175 (1980)

“[T]he respondents here do not seek to patent a mathematical formula. Instead, they seek patent protection for a process of curing synthetic rubber. Their process admittedly employs a well-known mathematical equation, but they do not seek to pre-empt the use of that equation. Rather, they seek only to foreclose from others the use of that equation in conjunction with all of the other steps in their claimed process. These include installing rubber in a press, closing the mold, constantly determining the temperature of the mold, constantly recalculating the appropriate cure time through the use of the formula and a digital computer, and automatically opening the press at the proper time. Obviously, one does not need a ‘computer’ to cure natural or synthetic rubber, but if the computer use incorporated in the process patent significantly lessens the possibility of ‘overcuring’ or ‘undercuring,’ the process as a whole does not thereby become unpatentable subject matter.”

• “In determining the eligibility of respondents’ claimed process for patent protection under §101, their claims must be considered as a whole.”

• New focus: post-calculation activity
Bilski Claim 1

A method for managing the consumption risk costs of a commodity provider at a fixed price comprising the steps of:

(a) initiating a series of transactions between said commodity provider and consumers of said commodity wherein said consumers purchase said commodity at a fixed rate based upon historical averages, said fixed rate corresponding to a risk position of said consumer;

(b) identifying market participants for said commodity having a counter-risk position to said consumers; and

(c) initiating a series of transactions between said commodity provider and said market participants at a second fixed rate such that said series of market participant transactions balances the risk position of said of consumer transactions.
**Process: Machine-or-Transformation Test**

Cannot preempt a “fundamental principle”

- Law of Nature
- Natural Phenomena
- Abstract Idea

**Patentable Processes**

- Tied to a Machine
- Transforms an Article to a Specified Different State

  - transformation must be “central” to purpose of claimed process

*In re Bilski, 545 F.3d 943 (Fed. Cir. 2008) (en banc)*

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**Bilski Claim 1**

A method for managing the consumption risk costs of a commodity provider at a fixed price comprising the steps of:

(a) initiating a series of transactions between said commodity provider and consumers of said commodity wherein said consumers purchase said commodity at a fixed rate based upon historical averages, said fixed rate corresponding to a risk position of said consumer;

(b) identifying market participants for said commodity having a counter-risk position to said consumers;

(c) initiating a series of transactions between said commodity provider and said market participants at a second fixed rate such that said series of market participant transactions balances the risk position of said consumer transactions.

- not limited to any specific machine
- transformation of legal obligations or relationships, business risks, or other abstractions are not physical objects or substances or representative of physical objects or substances
This Court's precedents establish that the machine-or-transformation test is a useful and important clue, an investigative tool, for determining whether some claimed inventions are processes under § 101. The machine-or-transformation test is not the sole test for deciding whether an invention is a patent-eligible “process.”

**Patentable Processes**

- Tied to a Machine
- Transforms an Article to a Specified Different State

*Bilski v. Kappos, 130 S.Ct. 3218 (2010)*

It is important to emphasize that the Court today is not commenting on the patentability of any particular invention, let alone holding that any of the above-mentioned technologies from the Information Age should or should not receive patent protection. This Age puts the possibility of innovation in the hands of more people and raises new difficulties for the patent law. With ever more people trying to innovate and thus seeking patent protections for their inventions, the patent law faces a great challenge in striking the balance between protecting inventors and not granting monopolies over procedures that others would discover by independent, creative application of general principles. Nothing in this opinion should be read to take a position on where that balance ought to be struck.

*Bilski v. Kappos, 130 S.Ct. 3218 (2010)*
1. A method of optimizing therapeutic efficacy for treatment of an immune-mediated gastrointestinal disorder, comprising:

(a) administering a drug providing 6-thioguanine to a subject having said immune-mediated gastrointestinal disorder; and
(b) determining the level of 6-thioguanine in said subject having said immune-mediated gastrointestinal disorder,

wherein the level of 6-thioguanine less than about 230 pmol per 8x10^8 red blood cells indicates a need to increase the amount of said drug subsequently administered to said subject and

wherein the level of 6-thioguanine greater than about 400 pmol per 8x10^8 red blood cells indicates a need to decrease the amount of said drug subsequently administered to said subject.
This Court has previously discussed in detail an English case, *Neilson*, which involved a patent claim that posed a legal problem very similar to the problem now before us. **

The English court concluded that the claimed process did more than simply instruct users to use the principle that hot air promotes ignition better than cold air, since it explained how the principle could be implemented in an *inventive* way. Baron Parke wrote (for the court):

‘It is very difficult to distinguish it from the specification of a patent for a principle, and this at first created in the minds of the court much difficulty; but after full consideration we think that the plaintiff does not merely claim a principle, but a machine, embodying a principle, and a very valuable one. We think the case must be considered as if the principle being well known, the plaintiff had first invented a mode of applying it by a mechanical apparatus to furnaces, and his invention then consists in this: by interposing a receptacle for heated air between the blowing apparatus and the furnace. In this receptacle he directs the air to be heated by the application of heat externally to the receptacle, and thus he accomplishes the object of applying the blast, which was before cold air, in a heated state to the furnace.’

---

**What is Unconventional or Inventive beyond the Scientific Principle?**

Thus, the claimed process included not only a law of nature but also several *unconventional steps* (such as inserting the receptacle, applying heat to the receptacle externally, and blowing the air into the furnace) that confined the claims to a particular, useful application of the principle.
"Respondent’s process is unpatentable under § 101, not because it contains a mathematical algorithm as one component, but because once that algorithm is assumed to be within the prior art, the application, considered as a whole, contains no patentable invention."

"Claims must be considered as a whole."

Effectively overruled by *Diamond v. Diehr* (1980)

Parker v. Flook, 437 U.S. 584 (1978)

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"Respondent’s process is unpatentable under § 101, not because it contains a law of nature as one component, but because once that law of nature is assumed to be within the prior art, the application, considered as a whole, contains no patentable invention."


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Parker v. Flook, 437 U.S. 584 (1978)

"Respondent’s process is unpatentable under § 101, not because it contains a law of nature as one component, but because once that law of nature is assumed to be within the prior art, the application, considered as a whole, contains no patentable invention."

33. A method of exchanging obligations as between parties, each party holding a credit record and a debit record with an exchange institution, the credit records and debit records for exchange of predetermined obligations, the method comprising the steps of:
(a) creating a shadow credit record and a shadow debit record for each stakeholder party to be held independently by a supervisory institution from the exchange institutions;
(b) obtaining from each exchange institution a start-of-day balance for each shadow credit record and shadow debit record;
(c) for every transaction resulting in an exchange obligation, the supervisory institution adjusting each respective party's shadow credit record or shadow debit record, allowing only those transactions that do not result in the value of the shadow debit record being less than the value of the shadow credit record at any time, each said adjustment taking place in chronological order; and
(d) at the end-of-day, the supervisory institution instructing ones of the exchange institutions to exchange credits or debits to the credit record and debit record of the respective parties in accordance with the adjustments of the said permitted transactions, the credits and debits being irrevocable, time invariant obligations placed on the exchange institutions.
A method of exchanging obligations as between parties, each party holding a credit record and a debit record with an exchange institution, the credit records and debit records for exchange of predetermined obligations, the method comprising the steps of:

(a) creating a shadow credit record and a shadow debit record for each stakeholder party to be held independently by a supervisory institution from the exchange institutions;

(b) obtaining from each exchange institution a start-of-day balance for each shadow credit record and shadow debit record;

(c) for every transaction resulting in an exchange obligation, the supervisory institution adjusting each respective party's shadow credit record or shadow debit record, allowing only these transactions that do not result in the value of the shadow debit record being less than the value of the shadow credit record at any time, each said adjustment taking place in chronological order;

and

(d) at the end-of-day, the supervisory institution instructing ones of the exchange institutions to exchange credits or debits to the credit record and debit record of the respective parties in accordance with the adjustments of the said permitted transactions, the credits and debits being irrevocable, time invariant obligations placed on the exchange institutions.

PATENTABLE SUBJECT MATTER LIMITATIONS

1. Patent Ineligible Subject Matter

• Law of Nature
• Natural Phenomena
• Abstract Idea

• Rationale: Pre-emption – “patent law may not inhibit further discovery by improperly tying up the future use” of basic building blocks of human ingenuity; could impede cumulative creativity.

2. Inventive Application Doctrine: To be patentable, a claim directed to a patent ineligible concept must contain an inventive concept sufficient to transform the patent ineligible concept into a patent-eligible application of the concept.

• Must be more than well-understood, routine, conventional activity already engaged in by the scientific community.
• requires “more than simply stat[ing] the [abstract idea] while adding the words ‘apply it.’ ”
**Patentable Subject Matter**

- **Laws of Nature**
  - Manufacture
- **Abstract Ideas**
  - “Process”
  - Machine
  - Manufacture
  - Composition of matter
- **Things Found in Nature**
- **Physical Phenomena**

---

**UTILITY**

**§ 101 Inventions Patentable**

Whoever invents or discovers any new and **useful** process, machine . . .

**Principal Contexts:**
- unsuccessful inventions (e.g., perpetual motion machines)
- chemical inventions
- biotechnology (express sequence tags)
**UTILITY**

- **Specific and Substantial Utility**
  - particular practical purpose
  - specific (“high biological activity” alone insufficient)
  - substantial - real world use (e.g., link to a disease)
  - not trivial (e.g., use as landfill)

- **Credible Utility**
  - whether a person of ordinary skill in the art would accept that the invention is currently available for its purported use
  - illogical (e.g., perpetual motion)
  - Cf. §112 ¶1 enablement
  - not factually supported

Utility Examination Guidelines
66 Fed Reg. 1092 (2001)

**NOVELTY**

- First to Invent
  §§ 102(a),(e),(f),(g)

- Timely Filing
  §§ 102(b),(c),(d)

Baseline

First to Invent

Timely Filing

US Patent Application

Jones

Date of Invention

Filing Date

“One year”

“Grace Period”
§ 102 A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for the patent.

must be enabling to qualify as prior art

References § 102(a)

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<tr>
<th>Categories</th>
<th>Scope/Proof</th>
<th>Effective Date</th>
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<td>Public Knowledge</td>
<td>• excludes trade secrets</td>
<td>Presented to Public</td>
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<td>• excludes gov’t classified research</td>
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<td>• extent to which observers understood invention</td>
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<td>Public Use</td>
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"Swearing Behind" a Reference

Rule 131 Practice

Rule 131 Affidavit
Invention occurred at least as early as Sept. 30, 2007.

US Patent Application
Jones

Sep. 30, 2007

Earlier (Pre-filing) Conception/ Reduction to Practice Dates

Oct. 1, 2007

Dec. 20, 2007

Anticipation

What does it mean for a reference to anticipate an invention?
### Patent Components

#### Specification

**Description:** description of the technical problem faced by the inventor and how the inventor solves the problem.

**Drawings:** if necessary

**Claim(s):** single sentence rule

- **preamble** introduction
  - comprising (open)

- **transition**
  - consisting of (closed)
  - consisting essentially of (hybrid)

- **body** elements/restrictions

A slicing device for cheese and the like, comprising:

- a base providing a flat cutting surface and having a passageway extending inwardly from an edge thereof parallel to said flat cutting surface and displaced down from the plane thereof;

- a bar having a generally U-shape with one leg extending into said passageway for pivotal movement of said bar about the axis of said passageway;

- a cutting element extending transversely across said base and having one end secured at the pivot axis of said bar;

- and a handle rotatably mounted on the other leg of said bar and rotatable about the longitudinal axis of said other leg between a first and a second angular position, said cutting element being secured to said handle at a point displaced from the axis of rotation thereof.

#### CLAIM ELEMENTS

- Rotating handle at end of bar
- U-shaped bar
- Cutting element attached to bar
- Base, with passageway
The popularity of wine and cheese parties has raised interest in cheese slicers that can be handled safely by people who are half-tanked. One promising design is a cutting board featuring a U-shaped bar that holds a tightened wire. A passageway in the cutting board base would ensure that the wire cut cleanly through the cheese.
Claim Chart

Invention Compared with Prior Art

<table>
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<tr>
<th></th>
<th>Rotating handle at end of bar</th>
<th>Cutting element attached to bar</th>
<th>Base, with passageway</th>
<th>U-shaped bar</th>
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<tbody>
<tr>
<td>Smith Article</td>
<td></td>
<td>X</td>
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<td>Jones Patent</td>
<td>X</td>
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<tr>
<td>Adams Slicer</td>
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INVENTION NOT ANTICIPATED

NOVELTY § 102(b)

§ 102  A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States,
Statutory Bar Dates


One Year Grace Period

§102(b) hurdle

Statutory Bar Dates


One day gap
NOVELTY § 102(g)

§ 102 A person shall be entitled to a patent unless --

(g) (1) [inter partes proceeding] during the course of an interference conducted under section 135 or section 291, another inventor involved therein establishes, to the extent permitted by section 104, that before such person’s invention thereof the invention was made by such other inventor and not abandoned, suppressed, or concealed, or

(2) [ex parte prosecution/invalidity defense] before such person’s invention thereof, the invention was made in this country by another inventor who had not abandoned, suppressed, or concealed it.

In determining priority under this subsection, there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

Priority Rule §102(g)

The first inventor to reduce to practice has priority unless another inventor can prove:

(1) first conception

& (2) reasonable diligence from before A’s conception date

Critical Period
Conception

The formation in the mind of the inventor of a definite idea of a complete and operative invention as it is thereafter reduced to practice.

A person of ordinary skill in the art could reduce to practice without undue experimentation.

Reduction to Practice
Reduction to Practice

Actual
- Building a model
- Making a drawing

Constructive
- Filing an enabling patent application (model not required)

Date of Invention

Filing date
but may carry back to date of conception if inventor was reasonably diligent and did not abandon, suppress, or conceal invention.
Reasonable Diligence

Valid Excuses

• need to develop a closely related invention to test the primary invention
• serious illness
• laboratory burns down

Invalid Excuses

• extended vacation /hiatus
• insufficient money
• company relocates

AMERICA INVENTS ACT
§ 102. Conditions for Patentability; Novelty
(a) NOVELTY; PRIOR ART.—A person shall be entitled to a patent unless --
   (1) the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention; or
   (2) the claimed invention was described in a patent issued under section 151, or in an application for patent published or deemed published under section 122(b), in which the patent or application, as the case may be, names another inventor and was effectively filed before the effective filing date of the claimed invention.

§ 100. Definitions
(i)(1) The term ‘effective filing date’ for a claimed invention in a patent or application for patent means—
   (A) if subparagraph (B) does not apply, the actual filing date of the patent or the application for the patent containing a claim to the invention; or
   (B) the filing date of the earliest application for which the patent or application is entitled, as to such invention, to a right of priority under section 119, 365(a), or 365(b) or to the benefit of an earlier filing date under section 120, 121, or 365(c).
(2) The effective filing date for a claimed invention in an application for reissue or reissued patent shall be determined by deeming the claim to the invention to have been contained in the patent for which reissue was sought.
§ 102. Conditions for Patentability; Novelty
(b) EXCEPTIONS.--

(1) DISCLOSURES MADE 1 YEAR OR LESS BEFORE THE EFFECTIVE FILING DATE OF THE CLAIMED INVENTION.—A disclosure made 1 year or less before the effective filing date of a claimed invention shall not be prior art to the claimed invention under subsection (a)(1) if—
(A) the disclosure was made by the inventor or joint inventor or by another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor; or
(B) the subject matter disclosed had, before such disclosure, been publicly disclosed by the inventor or a joint inventor or another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor.

(2) DISCLOSURES APPEARING IN APPLICATIONS AND PATENTS.—A disclosure shall not be prior art to a claimed invention under subsection (a)(2) if—
(A) the subject matter disclosed was obtained directly or indirectly from the inventor or a joint inventor;
(B) the subject matter disclosed had, before such subject matter was effectively filed under subsection (a)(2), been publicly disclosed by the inventor or a joint inventor or another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor; or
(C) the subject matter disclosed and the claimed invention, not later than the effective filing date of the claimed invention, were owned by the same person or subject to an obligation of assignment to the same person.
FIRST TO FILE

- Prior Art is established as of effective filing date
- Date of invention is no longer relevant; inventor cannot swear behind references
- No geographic limitations on prior art
- Prior art based on earlier-filed applications is maintained (compare new §§102(a) (2), 102(d) to existing §102(e))
- New administrative “Derivation Proceeding” is created to ensure that the first person to file is actually a true inventor
  - §135 – Derivation Proceeding – within 1 year of publication
  - §291 – Civil Action – within 1 year of issuance of 1st patent

**Effective Date:** applicable to applications filed 18 months from date of enactment (March 16, 2013)

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**FIRST TO FILE**

- Publication by 3rd Party is Prior Art; A cannot swear behind reference
- * independent of A
- June 1, 2013

**America Invents Act of 2011**
FIRST TO FILE

A gets patent; Disclosure by inventor during grace period is not prior art

June 1, 2012 to June 1, 2013

A - Disclosure

Science

US Patent Application

One Year Grace Period

America Invents Act of 2011

Third Party Publication After Inventor Grace Period Disclosure Not Prior Art; A gets patent

June 1, 2012 to June 1, 2013

A - Disclosure

Science

nature

US Patent Application

One Year Grace Period

* independent of A

America Invents Act of 2011
Defining the “Invention” Threshold: Ingenuity
Defining the “Invention” Threshold: Ingenuity

Prior Art

Claimed Invention

But this [substitution] can never be the subject of a patent. . . . The difference [between this new manufacture and the prior art is] destitute of ingenuity or invention. It may afford evidence of judgment and skill in the selection and adaptation of the materials in the manufacture of the instrument for the purposes intended, but nothing more.”

[Un]less more ingenuity and skill in applying the old method of fastening the shank and the knob were required in the application to it to the clay or porcelain knob than were possessed by an ordinary mechanic acquainted with the business, there was an absence of the degree of skill and ingenuity which constitute essential elements of every invention. In other words, the improvement is the work of the skilled mechanic, not that of the inventor.”

*Hotchkiss v. Greenwood*, 2 U.S. 248 (1850)

---

Defining the “Invention” Threshold: Ingenuity

Problem: articulating an objective and determinative standard; otherwise subjective and vague “I know it when I see it.”

“The flash of creative genius” test

Patent Act of 1952

Non-obviousness reqt made express

- flash of genius

*Cuno Engineering Corp. v. Automatic Devices Corp.*, 314 U.S. 84, 91 (1941)
NON-OBVIOUSNESS § 103

“A patent may not be obtained...if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.”

Graham v. John Deere

Is it obvious to move the hinge plate from under the shank to above the shank?

Enhanced flexibility

Improved Design
Secondary Considerations

Economic and motivational factors that may be considered:

- long-felt but unsolved need
- commercial success
- failed efforts of others
- copying by others
- praise for the invention
- unexpected results
- disbelief of experts

Nexus Requirement

Concern Over “Hindsight Bias”
Concern Over “Hindsight Bias”

“Teaching, Suggestion, Motivation to Combine” (TSM) Test

Claim Elements
- Rotating handle at end of bar
- Cutting element attached to bar
- Base, with passageway
- U-shaped bar

Reference A: Smith Article
- September 1974 Cheese Industry Today
- The Ultimate Cheese Slicer
  J. Smith
- The popularity of wine and cheese parties has raised interest in cheese slicers that can be handled safely by people who are half-tanked.
- One promising design is a cutting board featuring a U-shaped bar that holds a tightened wire. A passageway in the cutting board base would ensure that the wire cut cleanly through the cheese.

Reference B: Edwards, Cake Slicer Patent
- Tightening Handle
- Wire

All elements are present when both Reference A and Reference B are considered.

Non-obviousness requirement not met if suggestion, teaching, or motivation to combine elements for multiple references.
4. A vehicle control pedal apparatus (12) comprising:
   a support (18) adapted to be mounted to a vehicle structure (20);
   an adjustable pedal assembly (22) having a pedal arm (14) moveable in fore and aft directions with respect to said support (18);
   a pivot (24) for pivotally supporting said adjustable pedal assembly (22) with respect to said support (18) and defining a pivot axis (26); and
   an electronic control (28) attached to said support (18) for controlling a vehicle system;

said apparatus (12) characterized by said electronic control (28) being responsive to said pivot (24) for providing a signal (32) that corresponds to pedal arm position as said pedal arm (14) pivots about said pivot axis (26) between rest and applied positions wherein the position of said pivot (24) remains constant while said pedal arm (14) moves in fore and aft directions with respect to said pivot (24).
4. A vehicle control pedal apparatus (12) comprising:
a support (18) adapted to be mounted to a vehicle structure (20);
an adjustable pedal assembly (22) having a pedal arm (14) moveable in force and aft directions with respect to said support (18);
a pivot (24) for pivotally supporting said adjustable pedal assembly (22) with respect to said support (18) and defining a pivot axis (26); and
an electronic control (28) attached to said support (18) for controlling a vehicle system;
said apparatus (12) characterized by said electronic control (28) being responsive to said pivot (24) for providing a signal (32) that corresponds to pedal arm position as said pedal arm (14) pivots about said pivot axis (26) between rest and applied positions wherein the position of said pivot (24) remains constant while said pedal arm (14) moves in fore and aft directions with respect to said pivot (24).

Essential Holding

expansive, flexible, functional approach

• back to basics (Deere framework)
“Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.” Graham v. John Deere Co., 383 U.S. 1, 17-18 (1966)

• rejects rigid adherence to TSM test
“When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability.”
**KSR Int’l v. Teleflex**

**Application to Facts**

**PHOSITA:** “the level of ordinary skill in pedal design was ‘an undergraduate degree in mechanical engineering (or an equivalent amount of industry experience) [and] familiarity with pedal control systems for vehicles.’”

**Prior Art:** “Asano taught everything contained in claim 4 except the use of a sensor to detect the pedal's position and transmit it to the computer controlling the throttle. That additional aspect was revealed in sources such as the ’068 patent and the sensors used by Chevrolet.”

**Market Demand:** “In the 1990's it became more common to install computers in cars to control engine operation. . . . an electronic sensor is necessary”

**Secondary Factors:** “Teleflex has shown no secondary factors to dislodge the determination that claim 4 is obvious”

**Conclusion:** “we see little difference between the teachings of Asano and Smith and the adjustable electronic pedal disclosed in claim 4. . . . A person having ordinary skill in the art could have combined Asano with a pedal position sensor in a fashion encompassed by claim 4, and would have seen the benefits of doing so.”

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**Mechanical Pedal Design**

**POSITION ADJUSTABLE PEDAL ASSEMBLY**
- Inventors: Yoshihito Asano; Yoshikazu Katsumi, both of Shinjuku, Japan
- Patent Number: 5,010,782
- Date of Patent: Apr. 30, 1991
- Filed: Jul. 28, 1989

**ADJUSTABLE CONTROL PEDAL APPARATUS**
- Patent Number: 5,460,061
- Date of Patent: Oct. 24, 1995
- Filed: Sep. 17, 1993
Electronic Sensor

ACCELERATOR PEDAL ASSEMBLY

Inventors: Ronald A. Smith, Milford; Joseph M. Piate, Livonia, both of Mich.

Patent Number: 5,063,811

Date of Patent: Nov. 12, 1991

Filed: Jul. 9, 1990

FOOT PEDAL ARRANGEMENT FOR ELECTRONIC THROTTLE CONTROL OF TRUCK ENGINES

Inventors: Jay D. Byler, Beaverton; James G. Hensyk, Kenzie, both of Ore.

Patent Number: 5,241,936

Date of Patent: Sep. 7, 1993

Filed: Sep. 9, 1991

ELECTRONIC ACCELERATOR PEDAL ASSEMBLY WITH PEDAL FORCE SENSOR

Inventors: James E. White, Warsaw; John Zanesky, Jr., Elkhart, both of Ind.

Patent Number: 5,385,068

Date of Patent: Jan. 31, 1995

Filed: Dec. 18, 1992

Patentable Subject Matter Limitations

1. Patent Ineligible Subject Matter

- Law of Nature
- Natural Phenomena
- Abstract Idea

Rationale: Pre-emption – “patent law may not inhibit further discovery by improperly tying up the future use” of basic building blocks of human ingenuity; could impede cumulative creativity.

2. Inventive Application Doctrine: To be patentable, a claim directed to a patent ineligible concept must contain an inventive concept sufficient to transform the patent ineligible concept into a patent-eligible application of the concept.

- Must be more than well-understood, routine, conventional activity already engaged in by the scientific community.
- requires “more than simply stat[ing] the [abstract idea] while adding the words ‘apply it.’”
§ 101 Patentable Subject Matter: Interplay with § 103/ § 112 Analysis

Perspectives

§ 101 requires a point-of-novelty approach, in which courts filter out claim elements found in the prior art before evaluating a claim for abstractness.

"It is important to distinguish novelty and obviousness from the ‘inventive feature’ inquiry required by the Supreme Court in Alice.” Focus on whether the patent adds something to the abstract idea that is “integral to the claimed invention” and avoids preemption/encumbering fundamental principle (§ 112 overbreadth).


§ 101 Patentable Subject Matter: Interplay with § 103/ § 112 Analysis

It is important to distinguish novelty and obviousness from the “inventive feature” inquiry required by the Supreme Court in Alice. . . .[T]he inventive feature question concerns whether the patent adds something to the abstract idea that is “integral to the claimed invention....” Bancorp, 687 F.3d at 1278. . . .[I]n the context of § 101, “inventive feature” is better understood as referring to the abstract idea doctrine’s prohibition on patenting fundamental truths, whether or not the fundamental truth was recently discovered. Alice, 134 S.Ct. at 2357 (discussing Gottschalk v. Benson, 409 U.S. 63 (1972): “Because the algorithm was an abstract idea, the claim had to supply a ‘new and useful’ application of the idea in order to be patent eligible. But the computer implementation did not supply the necessary inventive concept; the process could be ‘carried out in existing computers long in use.’ ”). The addition of a conventional element like a generic computer to an abstract idea does not add an “inventive feature” to the abstract idea, and thus the claim is unpatentable under § 101.

METHOD AND DEVICE FOR MONITORING MEDICATION USAGE

ABSTRACT

The present invention provides methods for detecting and quantifying metabolites in a biological sample by measuring the concentration of a test metabolite in the sample and comparing that concentration against the concentration of the reference metabolite; enabling accurate metabolite concentration measurements to determine aberrant drug usage patterns. Also disclosed is an analytical testing device and related computer-assisted products for detecting and quantifying metabolites in a biological sample efficiently and accurately.

1. A method for quantifying at least one metabolite in a biological sample comprising the steps of:
   (a) providing one biological sample obtained from a patient on a prescribed medication regimen, wherein the sample comprises at least one test metabolite, wherein in the sample is urine;
   (b) providing one set of known normative data specific to a reference metabolite, wherein the set of data is collected from a population that is on a prescribed medication regimen;
   (c) contacting the biological sample with an analytical device;
   (d) detecting the presence of at least one test metabolite in the biological sample with the device, wherein the device is capable of measuring the concentration of the test metabolite in the sample;
   (e) normalizing the biological sample to adjust for changes in the patient’s hydration status by determining the metabolite/creatinine ratio of the patient; and
   (f) quantifying the concentration of at least one test metabolite in the biological sample by comparing a ratio between the concentration of the test metabolite from the patient to the set of known normative data specific to the reference metabolite concentration.

Millennium argues that the claims are conventional [and hence lack an “inventive concept” beyond the abstract idea] because they “direct medical professionals to measure the level of a drug metabolite, to normalize data via a creatinine ratio, and then to compare that value against the creatinine ratios of a population of individuals.”
§ 101 Patentable Subject Matter:
§ 103 Analysis with Subsidiary Facts

Prior art at the time of the invention “assists in determining whether the combination of elements in ‘680 patent constitute inventive concept. See Mayo, 132 S.Ct. at 1298 (patent is invalid if any additional steps consist of well-understood, routine, conventional activity already engaged in by the scientific community).”

“whether the scientific community would have thought to do something at the time of invention is very much dependent on what activities scientists had already been engaged in at the time.”

“In reviewing the experts’ reports, however, there is nothing that supports a finding that the combination of the steps is routine and conventional.”

“Millennium can point to no reference demonstrating the existence of or even suggesting the combination of the comparative step with the additional steps of the invention. . . . This provides indicia that the ‘680 patent is inventive for § 101 purposes. See Mayo, 132 S.Ct. at 1297–99.”

19. A system useful in an outsource provider serving web pages offering commercial opportunities, the system comprising:

(a) a computer store containing data, for each of a plurality of first web pages, defining a plurality of visually perceptible elements, which visually perceptible elements correspond to the plurality of first web pages;

(i) wherein each of the first web pages belongs to one of a plurality of web page owners;

(ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and

(iii) wherein the selected merchant, the outsource provider, and the owner of the first web page displaying the associated link are each third parties with respect to one other;

(b) a computer server at the outsource provider, which computer server is coupled to the computer store and programmed to:

(i) receive from the web browser of a computer user a signal indicating activation of one of the links displayed by one of the first web pages;

(ii) automatically identify as the source page the one of the first web pages on which the link has been activated;

(iii) in response to identification of the source page, automatically retrieve the stored data corresponding to the source page; and

(iv) using the data retrieved, automatically generate and transmit to the web browser a second web page that displays: (A) information associated with the commerce object associated with the link that has been activated, and (B) the plurality of visually perceptible elements visually corresponding to the source page.

Upon the click of an advertisement for a third-party product displayed on a host’s website, the visitor is no longer transported to the third party’s website. Instead, the patent claims call for an ‘outsource provider’ having a web server which directs the visitor to an automatically-generated hybrid web page that combines visual ‘look and feel’ elements from the host website and product information from the third-party merchant’s website related to the clicked advertisement.

In this way, rather than instantly losing visitors to the third-party’s website, the host website can instead send its visitors to a web page on the outsource provider's server that 1) incorporates “look and feel” elements from the host website, and 2) provides visitors with the opportunity to purchase products from the third-party merchant without actually entering that merchant’s website.
Patentable Subject Matter Limitations

Step 1: Abstract Idea
- mathematical algorithms, including those executed on a generic computer
- some fundamental economic and conventional business practices
  - Bilski/Alice (hedging);
  - Ultracmercial (advertising as a currency);
  - buySAFE (using a computer to create a “transaction performance guaranty”);
  - Accenture Global Servs. (“generalized software components” to implement insurance-policy-related tasks);
  - Bancorp Servs. (using computer to manage a stable-value protected life insurance policy)

Is the claim invention rooted in the functioning of the computer?

“these claims stand apart [from the aforementioned abstract ideas] because they do not merely recite the performance of some business practice known from the pre-Internet world along with the requirement to perform it on the Internet. Instead, the claimed solution is necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks.”

DDR Holdings, LLC v. Hotels.com, L.P., 773 F.3d 1245 (Fed. Cir. 2014)

Patentable Subject Matter Limitations

Step 1: Abstract Idea
“upon the click of an advertisement for a third-party product displayed on a host’s website, the visitor is no longer transported to the third party’s website. Instead, the patent claims call for an ‘outsource provider’ having a web server which directs the visitor to a automatically-generated hybrid web page that combines visual ‘look and feel’ elements from the host website and product information from the third-party merchant’s website related to the clicked advertisement.”

- Dissent characterizes this as little more than a “store within a store,” but this overlooks the computer/web functionality.
- Majority focuses on the specific application; this does not preempt the idea.
Patentable Subject Matter Limitations

Step 2: Inventive Application

“Instead of the computer network operating in its normal, expected manner by sending the website visitor to the third-party website that appears to be connected with the clicked advertisement, the claimed system generates and directs the visitor to the above-described hybrid web page that presents product information from the third-party and visual “look and feel” elements from the host website.”

• “When the limitations of the ’399 patent’s asserted claims are taken together as an ordered combination, the claims recite an invention that is not merely the routine or conventional use of the Internet.”

How did the majority reach this conclusion?

• bald assertion? No discussion of prior art.

• backstop: “the claims at issue do not attempt to preempt every application of the idea of increasing sales by making two web pages look the same.”

DDR Holdings, LLC v. Hotels.com, L.P., 773 F.3d 1245 (Fed. Cir. 2014)

§ 101 Patentable Subject Matter: Summary

Pure Business Methods – Unpatentable abstract concepts (Bilski (Stevens concurrence) effectively prevails)

Software – Does it improve the functioning of a computer or otherwise contribute to a concrete technological invention?

“Caltech’s patents improve a computer’s functionality by applying concepts unique to computing (like using a linear transform operation to encode data) to solve a problem unique to computing (data corruption due to noise).”


Bioscience – Must apply “laws of nature” or “natural phenomena” – however valuable, break-through, or difficult to discover – in an “inventive” way
“Quid pro quo” for patent; “allows the PTO to examine applications effectively; courts to understand the invention, determine compliance with the statute, and construe the claims; and the public to understand and improve upon the invention and to avoid the claimed boundaries”

Ariad Pharmaceuticals v. Eli Lilly and Co., 598 F.3d 1336, 1345 (Fed. Cir. 2010)
SPECIFICATION §112(a)

The specification shall contain a **written description** of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2 distinct requirements

\[
\begin{align*}
\text{• written description} \\
\text{• enablement}
\end{align*}
\]

Enablement §112(a)

**Test:** Whether a person of ordinary skill in the art would be required to engage in *undue experimentation* in order to make and use the invention. *In re Wands*, 858 F.2d 731 (Fed. Cir. 1988)

**Factors to Consider (illustrative, not mandatory):**

- quantity of experimentation necessary
- amount of direction or guidance presented
- presence or absence of *working* examples
- nature of the invention
- state of prior art at time of filing
- relative skill of those in the art
- predictability or unpredictability of the art
- breadth of claims - reasonable correlation
The Incandescent Lamp Patent

U.S. Patent 317,076
Sawyer and Man
Specification
May 15, 1885

No especial description of making the illuminating carbon conductors . . . is thought necessary . . . The advantages resulting from the manufacture of the carbon from vegetable fibrous or textile matter instead of mineral or gas carbon are many . . .

Claims:
1. An incandescing conductor for an electric lamp, of carbonized fibrous or textile material and of an arch or horseshoe shape . . .
2. The combination . . . of an electric circuit and an incandescing conductor of carbonized fibrous material . . . and a transparent hermetically sealed chamber in which the conductor is enclosed.
3. The incandescent conductor for an electric lamp, formed of carbonized paper . . .

Had experimented with carbonized paper

Tested 6,000 varieties of conductors

 Disclosure must be commensurate with scope

not infringed

Enablement

Enabled: Everything inventor teaches one skilled in the art.

Enabled

Claim

Claim

Claim
**Written Description §112(a)**

**Two Complicating Issues:**

1. Policing amendment practice to prevent abuse of priority dates
2. Prevent overreaching of genus claims

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**Written Description**

**Enabled:** Everything inventor teaches one skilled in the art.

**Described:** Everything inventor “adequately describes” to allow one skilled in the art to recognize that the inventor invented what is claimed.
Section 112(a) contains a “written description” requirement that is separate from the enablement requirement

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains * * * to make and use the same * * *

Ariad Pharmaceuticals v. Eli Lilly and Co., 598 F.3d 1336 (Fed. Cir. 2010) (en banc)

Written Description: Scope and Purpose

Definition: the specification must clearly allow persons of ordinary skill in the art to recognize that the inventor invented/possessed what is claimed as of the filing date.

• “an objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the art”
  • the specification must demonstrate possession
    • does not demand examples or actual reduction to practice (RTP); constructive RTP can establish written description
  • question of fact that depends on the context: nature and scope of the claims; complexity and predictability of relevant technology; extent and content of the prior art; maturity of the science or technology
    • particular relevance to generic claims – ensuring scope commensurate with invention

Ariad Pharmaceuticals v. Eli Lilly and Co., 598 F.3d 1336 (Fed. Cir. 2010) (en banc)
Anti-Gun Jumping Principle

Patent is invalid if inventor did not actually “possess” the invention
• functionally-defined genus claim must be supported sufficient specific species

Ariad Pharmaceuticals v. Eli Lily & Co.,
598 F.3d 1336 (Fed. Cir. 2010) (en banc)

Gentry Gallery v. Berkline Corp.

Disclosed: A sectional sofa segment with a pair of reclining seat sections built into it with a console that accommodates the controls. The push button controls may be mounted on the top or sides of the console.

Original Claim: A sectional sofa comprising a pair of reclining seats, a fixed console, and a pair of control means mounted directly on the console.
Disclosed: A sectional sofa segment with a pair of reclining seat sections built into it with a console that accommodates the controls. The push button controls may be mounted on the top or sides of the console.

Original Claim: A sectional sofa comprising a pair of reclining seats, a fixed console, and a pair of control means mounted directly on the console.

Amended Claim: A sectional sofa comprising a pair of reclining seats, a fixed console, and a pair of control means mounted on the double reclining sofa seat section.
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- “Omnibus” or “formal” claims, that define the invention entirely by reference to the specification, fail to “particularly point out and distinctly claim” utility inventions.
  - Nonetheless, claims are to be read in light of the specification.

- One Sentence Rule
Definite Claim(s) §112(b)

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

A patent is invalid for indefiniteness if its claims, read in light of the patent’s specification and prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.


Infringement

§ 271 Infringement of Patent

(a) Except as otherwise provided in this title, whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor, infringes the patent.

- without authority
- makes, uses, sells, or imports the patented invention
  - or imports product made by a patented process (§271 (g))
- within the United States
- during the patent term
Metes and Bounds

Patent

Claim Limitations

• A. Rotating Handle
• B. Cutting element attached to bar
• C. Base with passageway
• D. U-shaped bar

Deed

Legal Description

Infringement Analysis

Claim Construction

Validity

Comparison of: claimed invention and accused device
Comparison of: Claimed Invention and Accused Device

- Literal
- Non-Literal (Doctrine of Equivalents)

Determining Literal Infringement

Material Claim Restrictions

- Rotating handle at end of bar
- Cutting element attached to bar
- Base, with passageway
- U-shaped bar

“Accused Device I”

“Accused Device II”

Not Infringing

Infringing
Cheese Slicing Devices

Claim Limitation or Restriction

Cutting element attached to bar

Base with passageway

U-shaped bar

Rotating handle at end of bar

Non-Literal Infringement

Claimed Invention

Rotating handle attached to bar

Metal wire attached to bar

Base, with passageway

U-shaped bar

Fishing Line

"Accused Device"

INFRINGING UNDER DOE?
Graver Tank v. Linde Air Products

Unionmelt: calcium & magnesium silicates
Lincolnweld: calcium & manganese silicates

“if it performs substantially the same function in substantially the same way to obtain the same ‘result.’” *Graver Tank*, 339 U.S. 605, 608 (1950).

Similarities found:
- Function: Electric welding composition
- Chemists testified that Magnesium and Manganese react similarly
- Result: Same kind & quality of weld employed using similar mechanical methods.

Patent Scope

Doctrine of Equivalents

Cheese Slicing Devices

- Rotating handle at end of bar
- Base with passageway
- Metal wire attached to bar

“if it performs substantially the same function in substantially the same way to obtain the same result.”
In a process for the purification of a dye . . . the improvement which comprises: subjecting an aqueous solution to ultrafiltration through a membrane having a nominal pore diameter of 5-15 Angstroms under a hydrostatic pressure of approximately 200 to 400 p.s.i.g. to thereby cause separation of said impurities from said dye.

**Doctrines of Equivalents**

“If it performs substantially the same function in substantially the same way to obtain the same result.” *Graver Tank*, 339 U.S. 605, 608 (1950)

*Element by Element Comparison:* “Each element contained in a patent claim is deemed material to defining the scope of the patented invention, and thus the doctrine of equivalents must be applied to individual elements of the claim, not to the invention as a whole.”


- Can apply to later developed technologies
- DOE assessed at the time of infringement
**Doctrine of Equivalents**

“If it performs substantially the same function in substantially the same way to obtain the same ‘result.’” *Graver Tank*, 339 U.S. 605, 608 (1950)

**Limited by Prosecution History Estoppel**

**Presumption:** claim amendments made during prosecution were made to escape prior art. *Warner-Jenkinson Co., v. Hilton Davis Chemical Co.*, 520 U.S. 17 (1997).

- **Presumption is Rebuttable:** by evidence that the reason for the claim amendments was unrelated to patentability.
- “We expect that the PTO and applicants will henceforth usually include in the prosecution history express statements of their reasons for requiring or making claim changes or interpretive assertions.” *Hilton Davis Chemical Co. v. Warner-Jenkinson*, 114 F.3d 1161 (Fed. Cir. 1997)

**Patent Scope**

**Prosecution History Estoppel: Festo Standard**

**Resolution:** • rebuttable presumption: prosecution history estoppel
  • standard for rebutting presumption:
    • alleged “equivalent” not reasonably foreseeable by PHOSITA at time of amendment (and therefore could not have been placed in the literal terms of the claim
    • rationale underlying amendment only tangentially related to “equivalent”
    • some other reason suggesting that the patentee could not have described the insubstantial substitute

Disclosed but Unclaimed: Dedicated to the Public

Specifications
Circuit Board -- While aluminum is currently the preferred material for the substrate, other metals, such as stainless steel or nickel alloys, may be used.

Claim 2
Copper foil adhered to aluminum

No Doctrine of Equivalents

Described
Claimable by inventor

Copper foil adhered to steel

can potentially be captured within two years of grant through reissue. 35 USC §251


Doctrine of Equivalents: Limiting Principles

1. All-Elements (All-Limitations) Rule *Warner Jenkinson*
   1a. Claim Vitiation *Freedman Seating*, 420 F.3d 1350, 1358 (Fed. Cir. 2005) (an accused device is not infringing under the DOE if such a finding would effectively vitiate or eliminate a claim limitation.)

   2a. Specific Exclusion *SciMed Life Sys.*, 242 F.3d 1337, 1347 (Fed. Cir. 2007) (cannot reclaim subject matter that was specifically disclaimed)

3. Prior Art *Wilson Sporting Goods*, 904 F.2d 677, 683-84 (Fed. Cir. 1990) (cannot stretch claim to cover prior art)

4. Public Dedication Rule *R.E. Service*
Festo Remand Decision
Fed Cir. (en banc) (Sept. 26, 2003)

Who decides scope whether presumption is rebutted?

Types of Infringement

- Direct versus Indirect
- Joint Infringement
- Literal versus Nonliteral

Active Inducement
- e.g., providing instructions

Contributory
- e.g., selling non-staple article of commerce known to be specially designed for infringing use
Indirect Infringement

1. Direct infringement by another and either:

2a. Active Inducement § 271(b):
   (1) Intent (can be circumstantial); and
   (2) Providing instructions (or otherwise aiding)
   
   or

2b. Contributory Infringement § 271(c):
   (1) Knowledge of infringing behavior;
   (2) Contributory acts; and
   (3) No substantial non-infringing uses

Active Inducement

§ 271(b) “[w]hoever actively induces infringement of a patent shall be liable as an infringer.”

- I know of the acts and should know that they infringe the patent
- I know of the acts; but nothing about the patent
- I know of the risk and am deliberately indifferent regarding whether the acts infringe a patent
- Wilful Blindness: I know of a high risk of infringement and took deliberate actions to avoid learning of infringement
- I know of the acts and that they infringe the patent.
the “holding in Aro II [that knowledge of the patent is required] has become a fixture in the law of contributory infringement under [section] 271(c)” 5 R. Moy, Walker on Patents §15:20, p. 15–131 (4th ed. 2009)

*** In light of the “‘special force’” of the doctrine of stare decisis with regard to questions of statutory interpretation, see John R. Sand & Gravel Co. v. United States, 552 U. S. 130, 139 (2008), we proceed on the premise that §271(c) requires knowledge of the existence of the patent that is infringed.

Based on this premise, it follows that the same knowledge is needed for induced infringement under §271(b).

: deliberate indifference to a known risk that a patent exists is not the appropriate standard under §271(b).

but willful blindness suffices

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**Active Inducement**

§ 271(b) “[w]hoever actively induces infringement of a patent shall be liable as an infringer.”

- I know of the acts and should know that they infringe the patent
- I know of the acts; but nothing about the patent
- I know of the acts and that they infringe the patent
- I know of the risk and am deliberately indifferent regarding whether they infringe a patent
- Willful Blindness: I know of a high risk of infringement and took deliberate actions to avoid learning of infringement

---

131 S.Ct 2060 (2011)
Willful Blindness

- **Deliberate**
  - The defendant (1) must subjectively believe that there is a high probability that s/he infringes a patent and (2) must take deliberate actions to avoid learning of that fact.

- **Wanton**
  - Defendant merely knows of a substantial and unjustified risk of such wrongdoing.

- **Reckless**
  - Defendant should have known of a similar risk but, in fact, did not.

- **Negligent**

Patent Act: Indirect Infringement

1. Direct infringement by another and either:

2a. *Active Inducement* § 271(b):
   - (1) Intent (can be circumstantial); and
   - (2) Providing instructions (or otherwise aiding)

   or

2b. *Contributory Infringement* § 271(c):
   - (1) Knowledge of infringing behavior;
   - (2) Contributory acts; and
   - (3) No substantial non-infringing uses

**Staple Article of Commerce Doctrine**
Types of Infringement

- Direct versus Indirect

- Joint Infringement

- Literal versus Nonliteral

Active Inducement
- e.g., providing instructions

Contributory
- e.g., selling non-staple article of commerce known to be specially designed for infringing use

Joint/Divided Infringement

(12) United States Patent
 Eylen et al.

ELECTRONIC PROVIDER—PATIENT INTERFACE SYSTEM

1. A method of automatically and electronically communicating between at least one health-care provider and a plurality of users serviced by the health-care provider, said method comprising the steps of:

   - initiating a communication by one of the plurality of users to the provider for information, wherein the provider has established a preexisting medical record for each user;
   - enabling communication by transporting the communication through a provider/patient interface over an electronic communication network to a Web site which is unique to the provider, whereupon the communication is automatically reformatted and processed or stored on a central server, said Web site supported by or in communication with the central server through a provider-patient interface service center;
   - electronically comparing content of the communication with mapped content, which has been previously provided by the provider to the central server, to formulate a response as a static or dynamic object, or a combined static and dynamic object; and

   - returning the response to the communication automatically to the user’s computer, whereupon the response is read by the user or stored on the user’s computers.

(10) Patent No.: US 6,757,898 B1
(45) Date of Patent: Jun. 29, 2004

- said provider/patient interface providing a fully automated mechanism for generating a personalized page or area within the provider’s Web site for each user serviced by the provider; and

- said patient-provider interface service center for dynamically assembling and delivering custom content to said user.
Joint/Divided Infringement

**Traditional Rule:** an infringer must practice every limitation or element of a claim to infringe it. If no single party practices each step, there is no direct infringement. Where the combined actions of multiple parties are alleged to infringe process claims, the patent holder must prove that one party exercised “control or direction” over the entire process such that all steps of the process can be attributed to the controlling party, i.e., the “mastermind.”

*BMC Resources, Inc. v. Paymentech*, 498 F.3d 1373 (Fed. Cir. 2007).

**Alternate Theory:** The patentee need only prove inducement of all steps (under § 271(a)) – whether by one party or more than one; whether or not controlled or directed by a “mastermind.”

*Akamai Technologies, Inc. v. Limelight Networks*, 692 F.3d 1301 (Fed. Cir. 2012) (en banc) (6-5 decision)
Joint/Divided Infringement

Traditional Rule: an infringer must practice every limitation or element of a claim to infringe it. If no single party practices each step, there is no direct infringement. Where the combined actions of multiple parties are alleged to infringe process claims, the patent holder must prove that one party exercised “control or direction” over the entire process such that all steps of the process can be attributed to the controlling party, i.e., the “mastermind.”

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*Akamai Technologies, Inc. v. Limelight Networks*, 692 F.3d 1301 (Fed. Cir. 2012) (en banc) (6-5 decision)


Remedies

- Injunctions
- Damages
- Attorney Fees
Permanent Injunction

Traditional four-factor test for permanent injunctive relief applies to disputes arising under the Patent Act.

- but patent holder’s willingness to license and lack of commercial activity in practicing patented invention do not preclude issuance of a permanent injunction.

*ebay v. MercExchange, 126 S.Ct. 1837 (2006)*
Unresolved issue: should injunctions be less forthcoming in non-manufacturing software/business method patentee cases?

<table>
<thead>
<tr>
<th>No -- Traditional View: Patents = Property</th>
<th>Yes – The Innovation World Has Changed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roberts, Scalia, Ginsburg</td>
<td>Thomas, Alito, Kennedy, Stevens, Souter, Breyer</td>
</tr>
</tbody>
</table>

“since at least the early 19th century, courts have granted injunctive relief upon a finding of infringement in the vast majority of patent cases.”

• some new cases reflect new economics:
  • non-manufacturing patentee scenario
  • injunctions can cause substantial harm in the context of multi-component products
  • damages may afford sufficient compensation and better serve public interest
  • vague and suspect nature of business method patents may be relevant

in the District Courts

General Rule: If you participate in the market injunction

If you don’t injunction

the drive train employs a microprocessor and a controllable torque transfer unit ("CTTU") that accepts torque input from both the ICE and the electric motor

*Paice LLC v. Toyota Motor Corp.*, 609 F.Supp.2d 620 (E.D.Tex. 2009) (“what amount of money would reasonably compensate a patentee for giving up his right to exclude yet allow an ongoing willful infringer to make a reasonable profit?” (awarding $98/vehicle))

What about exclusive licensees? *See Voda v. Cordis*, 536 F.3d 1311 (Fed. Cir. 2008) (declining injunction even though patent licensed to exclusive licensee)

Monetary Recovery

Broad, Sherman Act-like open-endedness

§285 Attorney Fees
The court in exceptional cases may award reasonable attorney fees to the prevailing party.

§ 284 Damages
Upon finding for the claimant the court shall award the claimant damages adequate to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by the infringer, together with interest and costs as fixed by the court. When the damages are not found by a jury, the court shall assess them. In either event, the court may increase the damages up to three times the amount found and assessed. The court may receive expert testimony as an aid to the determination of damages or of what royalty would be reasonable under the circumstances.

Prejudgment Interest
• routine absent some justification for withholding

Attorney Fees

Increased Damages
• w/i court's discretion
• up to treble damages
1. willfulness
2. egregiousness of conduct based on totality of the circumstances

mixed awards possible
• based on principle that each act of infringement is separately compensable

Lost Profits

Reasonable Royalty

§285 Attorney Fees
The court in exceptional cases may award reasonable attorney fees to the prevailing party.

Lost Profits

Appropriate measure where patent owner and infringer compete
• lost profits not presumed - factual issue: patent owner must show reasonable probability that it would have made infringer’s sales

Components:
• Diverted Sales
Patent owner must prove:
1. Demand for the patented product
2. Absence of acceptable noninfringing substitutes
3. Manufacturing/marketing capability to exploit demand
4. Profit - amount patent owner would have made

• Price Erosion
• Increased Costs

functional relationship must be established

Rite-Hite v. Kelley, 56 F.3d 1538 (Fed. Cir. 1995)

Convoyed Sales

• parts
• accessories
• **Factoring in Market Forces:** “the law requires a careful assessment of all market influences when determining lost profit or reasonable royalty damages.” See *Polaroid v. Kodak*, 16 USPQ2d 1481 (D.Mass. 1990) (conventional photography not a substitute for instant; but it did affect instant photography pricing).

• **Market Share Rule:** when more than two sellers share a market and at least one seller is a noninfringing competitor, court may apportion so as to maintain the patent owner’s share relative to the noninfringer.


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**Reasonable Royalty**

Measure of damages if lost profits are not claimed or proved; or floor

• based on:
  1. established royalty
  2. hypothetical arms’ length negotiation at time infringement began

  • prudent licensee/prudent patentee standard – good faith imputed
  • the parties believe patent to be valid, infringed, and enforceable
  • relative bargaining position; beliefs as to market potential and costs savings
  • subsequent profits (or lack thereof) irrelevant

*Georgia Pacific Factors:*

1. Royalties received for licensing the patent
2. Royalty rates for comparable technologies
3. Nature and scope of the license (e.g., exclusive, territorial restrictions)
4. Patent owner’s established policy and marketing program regarding licensing/exploitation
5. Commercial relationship between the parties (e.g., competitors vs. inventor/promoter)
6. Value of invention in generating derivative or convoyed sales
7. Duration of patent
8. Established profitability of product using invention, commercial success, and popularity
9. Advantages of patent over old modes and devices
10. Nature of invention and benefits to users
11. Extent to which infringer has used invention
12. Portion of the profit or selling price that may be customary in the particular business to allow for use of this or analogous invention(s)
13. Portion of profit credited to the invention
14. Expert testimony
15. Amount hypothetical licensor and licensee would have voluntarily and reasonably agreed to.
SYSTEM FOR SOFTWARE REGISTRATION

19. A remote registration station incorporating remote licensee unique ID generating means, said station forming part of a registration system for licensing execution of digital data in a use mode, said digital data executable on a platform, said system including local licensee unique ID generating means, said system further including mode switching means operable on said platform which permits use of said digital data in said use mode on said platform only if a licensee unique ID generated by said local licensee unique ID generating means has matched a licensee unique ID generated by said remote licensee unique ID generating means; and wherein said remote licensee unique ID generating means comprises software executed on a platform which includes the algorithm utilized by said local licensee unique ID generating means to produce said licensee unique ID.
Using a $10 per product activation value (based on a Microsoft document) and applying the 25% rule of thumb for dividing profit between licensors and licensees (based on cross-industry research) multiplying by 225,978,721 Microsoft Office and Windows activations yields a reasonable royalty of $564,946,803.

As a check, this produces a 2.9% royalty against the entire market value ($19.28 billion); which is less than the 10% level that is common in the software industry.

The patentee bears the burden of proving damages. To properly carry this burden, the patentee must “sufficiently [tie the expert testimony on damages] to the facts of the case.” Daubert, 509 U.S. at 591. If the patentee fails to tie the theory to the facts of the case, the testimony must be excluded.

The bottom line of Kumho Tire and Joiner is that one major determinant of whether an expert should be excluded under Daubert is whether he has justified the application of a general theory to the facts of the case. Consistent with this conclusion, this court has held that “[a]ny evidence unrelated to the claimed invention does not support compensation for infringement but punishes beyond the reach of the statute.” ResQNet.com, Inc. v. Lansa, Inc., 594 F.3d 860, 869 (Fed.Cir.2010).

The meaning of these cases is clear: there must be a basis in fact to associate the royalty rates used in prior licenses to the particular hypothetical negotiation at issue in the case.
Reasonable Royalty

*Daubert* and the Court’s Gatekeeping Function

- **25% rule of thumb** is a fundamentally flawed tool for determining a baseline royalty rate in a hypothetical negotiation. Evidence relying on that rule of thumb is inadmissible under *Daubert* and the Federal Rules of Evidence because it fails to tie a reasonable royalty base to the facts of the case at issue.

- the **entire market value** of products cannot be used for reasonable royalty calculations if the patented improvement is minor, no matter how low the royalty rate. For the entire market value rule to apply, the patentee must prove that the patent-related feature is the basis for customer demand or substantially creates the value of the component parts.

  *Uniloc USA, Inc. v. Microsoft Corp.*, 632 F.3d 1292 (Fed. Cir. 2011)

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Reasonable Royalty

*Daubert* and the Court’s Gatekeeping Function

**Cf. Apple v. Motorola**, 757 F.3d 1286 (Fed. Cir. 2014)

- Cautioning judges “not to overstep [their] gatekeeping role and weigh facts, evaluate the correctness of conclusions, impose [their] own preferred methodology, or judge credibility, including the credibility of one expert over another.”

- Noting that “the gatekeeping role of the judge is limited to excluding testimony based on unreliable principles and methods is particularly essential in the context of patent damages.”

- Observing “that estimating a ‘reasonable royalty’ is not an exact science. As such, the record may support a range of ‘reasonable’ royalties, rather than a single value. Likewise, there may be more than one reliable method for estimating a reasonable royalty.”

  *Uniloc USA, Inc. v. Microsoft Corp.*, 632 F.3d 1292 (Fed. Cir. 2011)
Apportionment Required for Multi-Component Products

“[W]here multi-component products are involved, the governing rule is that the ultimate combination of royalty base and royalty rate must reflect the value attributable to the infringing features of the product, and no more. As a substantive matter, it is the ‘value of what was taken’ that measures a ‘reasonable royalty’ under 35 U.S.C. § 284. . . .

When the accused infringing products have both patented and unpatented features, measuring this value requires a determination of the value added by such features. Indeed, apportionment is required even for non-royalty forms of damages . . .”


Enhanced Damages and Attorney Fees

§284 Monetary Damages

“. . . the court may increase the damages up to three times the amount found or assessed.”

§285 Attorney Fees

The court in *exceptional* cases may award reasonable attorney fees to the prevailing party.
Willfulness: Legal Standard

unknowning  

negligent  
*Underwater Devices*, 717 F.2d 1380 (Fed. Cir. 1983)
  

accidental

reckless

this definition comports with the common law usage, “which treated actions in ‘reckless disregard’ of the law as ‘willful’ violations.” *In re Seagate*, 497 F.3d 1360 (Fed. Cir. 2007) *(en banc)*

Two-Part “Objective Recklessness” Standard

We fully recognize that “the term [reckless] is not self-defining.” *Farmer v. Brennan*, 511 U.S. 825 (1994). However, “[t]he civil law generally calls a person reckless who acts . . . in the face of an unjustifiably high risk of harm that is either known or so obvious that it should be known.” Id. (citing Prosser and Keeton § 34, pp. 213-14; Restatement (Second) of Torts § 500 (1965)). Accordingly, to establish *willful infringement*, a patentee must show by clear and convincing evidence that the infringer acted despite an objectively high likelihood that its actions constituted infringement of a valid patent. See *Safeco*, slip op. at 19 (“It is [a] high risk of harm, objectively assessed, that is the essence of recklessness at common law.”). The state of mind of the accused infringer is not relevant to this objective inquiry. If *this threshold objective standard is satisfied*, the patentee must also demonstrate that this objectively-defined risk (determined by the record developed in the infringement proceeding) was either known or so obvious that it should have been known to the accused infringer. We leave it to future cases to further develop the application of this standard.

*In re Seagate*, 497 F.3d 1360, 1371 (Fed. Cir. 2007) *(en banc)*
**Willfulness**

1. **Legal Standard** – two part “objective recklessness” test; no affirmative duty of care (*In re Seagate*)

2. **Ramifications of Advice of Counsel** – failure to obtain or disclose opinion letter does not result in an adverse inference (*Knorr-Bremse*)

3. **Asserting Advice of Counsel Defense: Scope of Attorney-Client Privilege** –
   - waiver of privilege with respect to communications with opinion counsel does not waive privilege with respect to communications with trial counsel
   - waiver of *work product* privilege with opinion counsel does not waive work product privilege with respect to trial counsel “absent exceptional circumstances”

**Attorney Fees §285**

The court in *exceptional* cases may award reasonable attorney fees to the *prevailing party*.

- within trial court’s “equitable discretion”

- “an ‘exceptional’ case is simply one that stands out from others with respect to the substantive strength of a party’s litigating position (considering both the governing law and the facts of the case) or the unreasonable manner in which the case was litigated.”

- need not be established by clear and convincing evidence