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CS-202: Law For Computer Science Professionals

Class 4: Software and Business Method Patents

David W. Hansen, Instructor

October 19, 2006

Tidbit Of The Week

Bill Gates (1991)

"If people understood how patents would be granted when most of today's ideas were invented and had taken out patents, the industry would be at a complete standstill today. I feel confident that some large company will patent some obvious thing related to interface, object orientation, algorithm, application extension or other crucial technique."

Bill Gates (2004)

- “Now, measuring innovation is not something that can be done with one simple number.”
- “One measure you can look at is the patents that we go out and apply for.”
- “The software industry is one that, other than the pharmaceutical industry, probably patents are the most important compared to many other industries. In the case of pharmaceuticals, it's the only thing between the generic and the actual recovery of investment by the inventor of the product. Here we have implementation, services, many other things that go into that value equation.
- But ***the patent piece is an important piece***, and something that you might even say, industry wide, you see increased, intense focus on.”

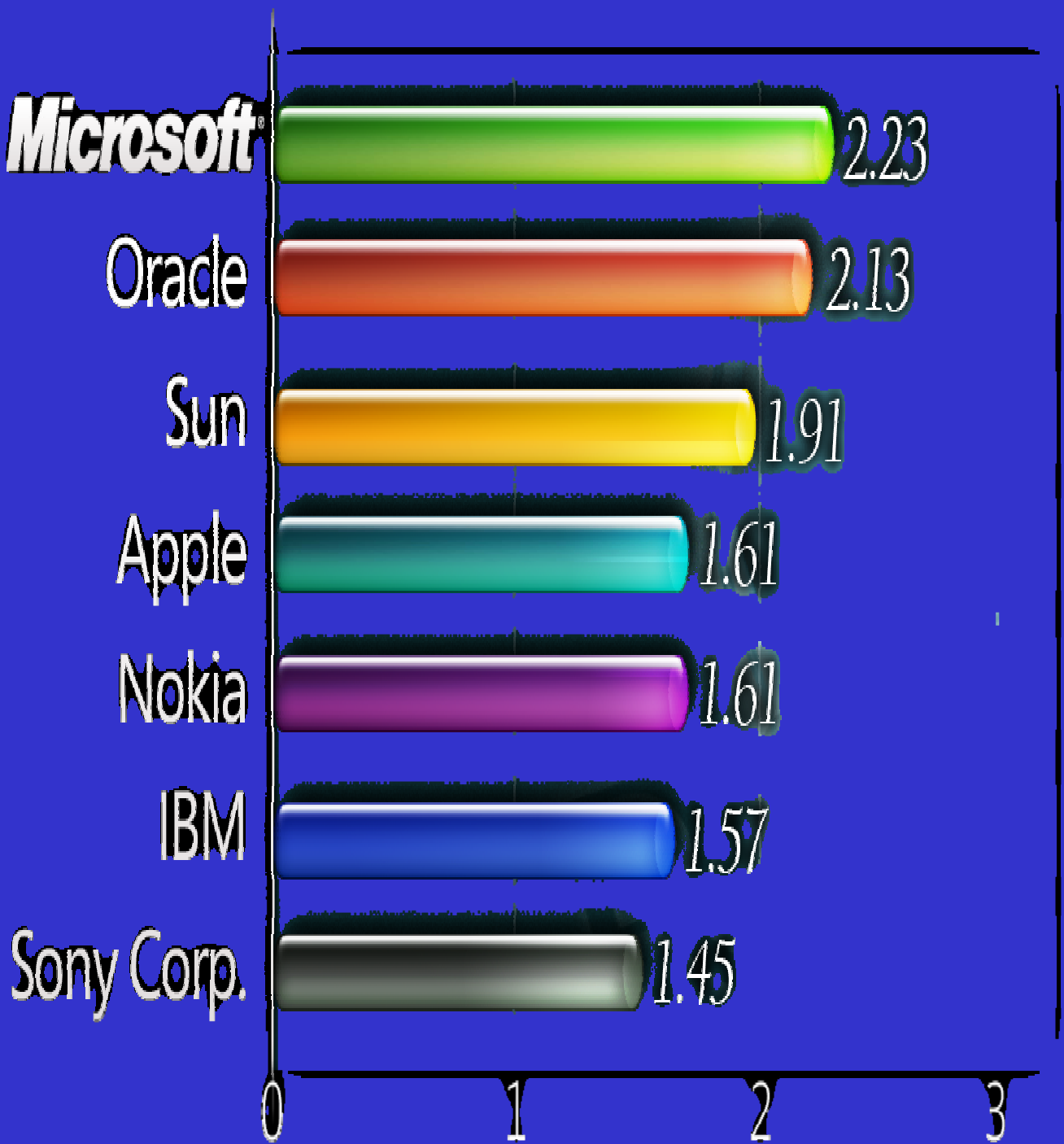
Bill Gates (2004)

- “One measure of patent importance is called ‘current impact.’”
- “[W]hat it does is say, patents coming after yours, how much do they think your work is of enough importance that they cite that as prior art.
- “This measure showcases the broader significance of a company’s patents by examining how often its U.S. patents from the previous five years are cited as prior art in the current year’s batch.”

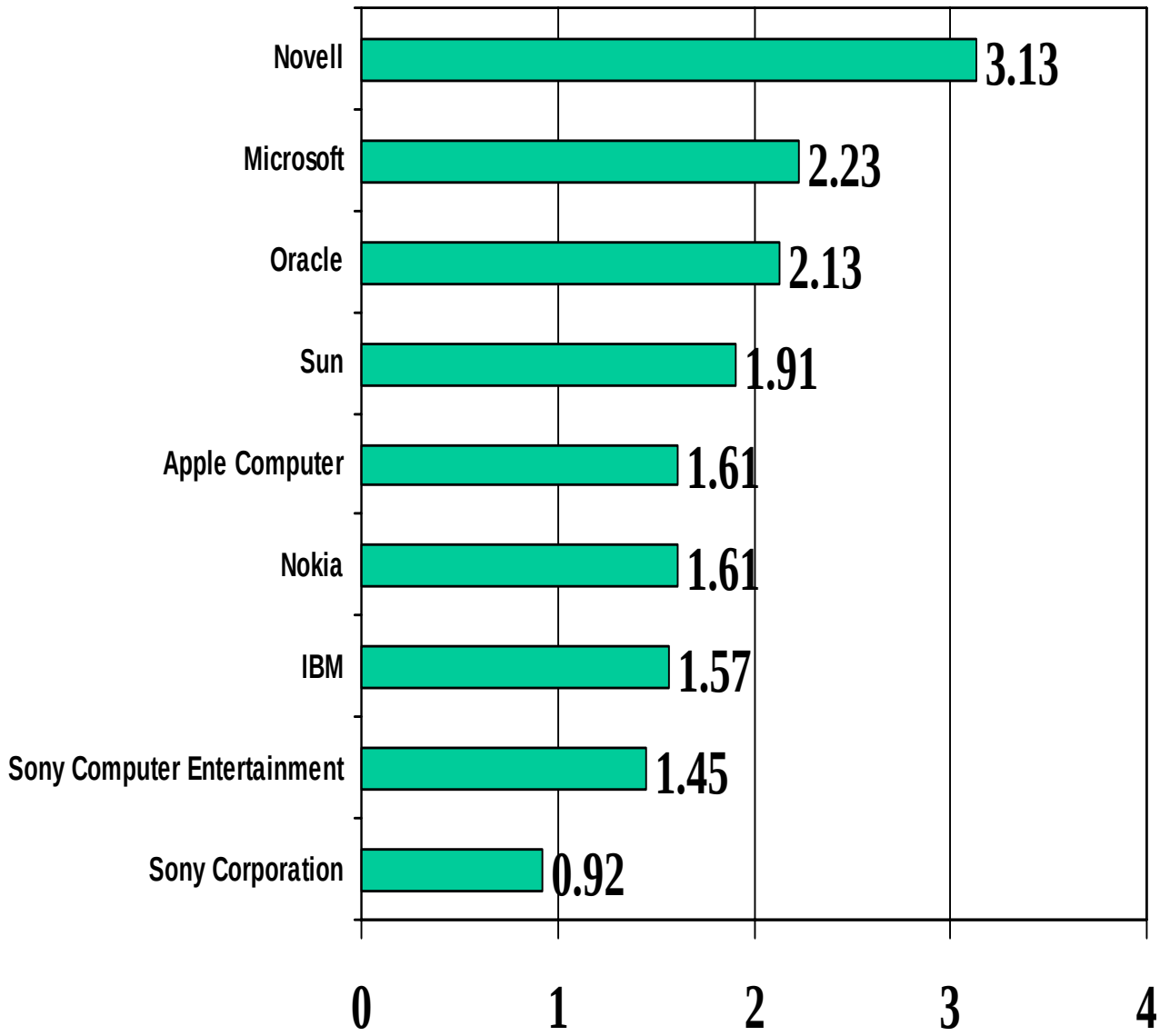
“Current Impact Index”

- “Current impact” is “one of about four or five measures people use to look at overall patent quality.”
- “A value of 1.0 represents average citation frequency, so, for example, a value of 1.4 would indicate a company’s patents were cited 40 percent more often than the average.”
- “You can see we measure up fairly well. Not a dramatic difference, ranging from 1.45 to 2.23.”
- But we think patents are patents. What we're doing is, if anything, more valuable than what others are doing.”

Current Impact



“Current Impact”

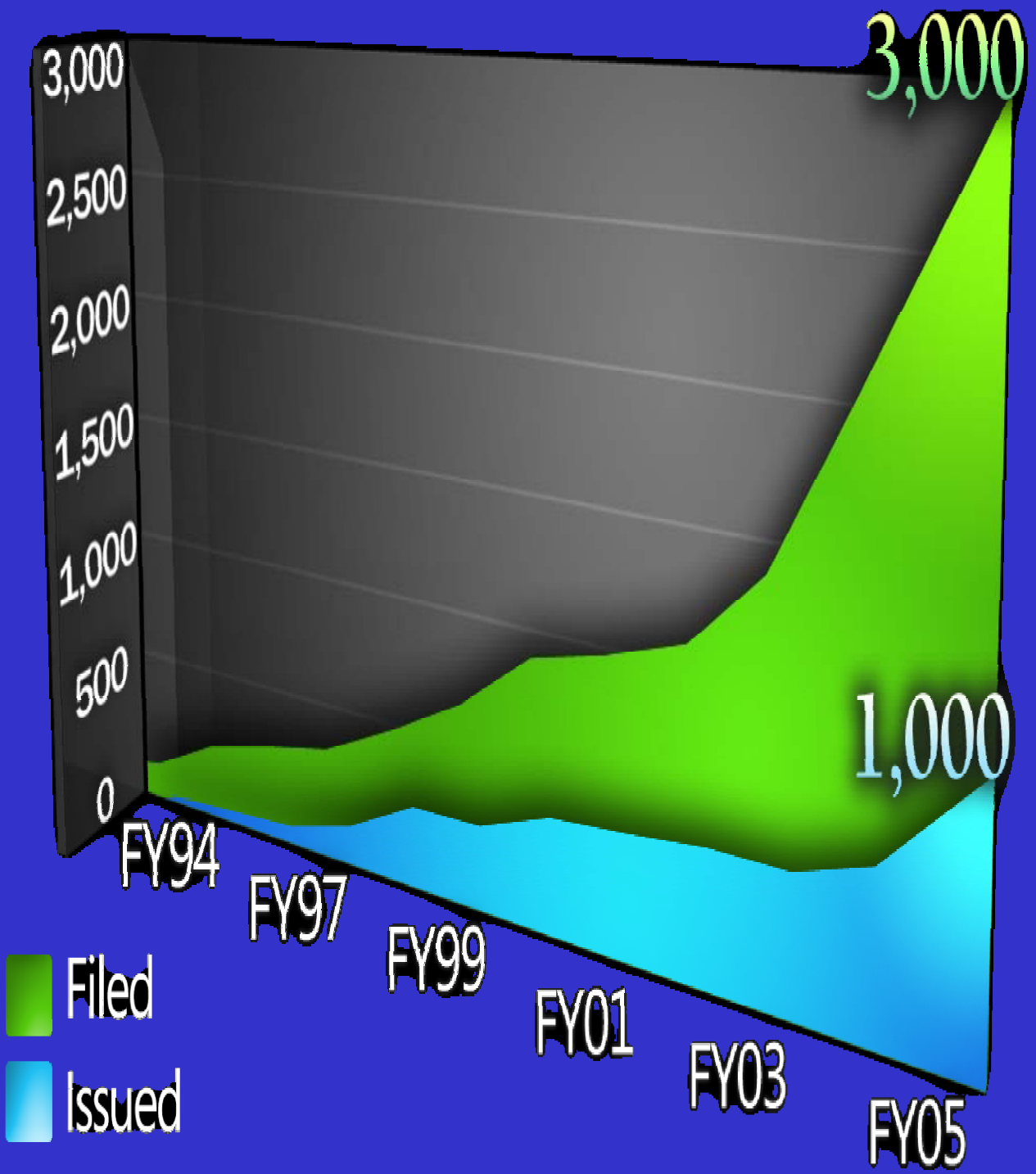


Microsoft Patents

- Prior to 1990, Microsoft received 8 patents.
- In 1994 a Los Angeles jury awarded Stac Electronics $120 million in damages based on Microsoft's infringement of two Stac data compression patents covering aspects of the MS-DOS 6.0 and 6.2 operating systems.
- Microsoft settled by buying a 15% interest in Stac.
- Since 1990, Microsoft has obtained over 3,000 patents.

Increased Commitment

Microsoft Patents



Cycle Of Innovation

1. Secure IP rights on our products
2. License in IP for our products
3. Stand behind our customers and products with indemnification
4. License out IP rights to others

Business Week (10/04)

The World's Rising Innovation Hot Spots

In 2003, U.S. inventors secured 88,000 U.S. patents. The U.S. spent 2.7% of GDP on R&D and graduated 400,000 scientists and engineers. But developing nations are making rapid progress.

	INDIA	CHINA	RUSSIA
Strengths	Embedded software, drugs, business software, chip design	Mechanical engineering, computer graphics, handwriting recognition	Aerospace, software, laser optics, energy, algorithms, chemistry
U.S. Patents	1993: 30; 2003: 354	1993: 60; 2003: 366	1993: 62; 2003: 268
R&D Spending	1% OF GDP	1.2% OF GDP	1.2% OF GDP
Science & Engineering Grads*	316 THOUSAND	337 THOUSAND	216 THOUSAND

	ISRAEL	SINGAPORE	TAIWAN	SOUTH KOREA
Strengths	Optical and wireless communications, chips, software, sensors	Broadband, grid computing, biotech, handheld devices, computer peripherials	Chips, PCs, multi-media devices, network equip-ment	Digital displays, memory chips, computer games wireless telecom, broad-band
U.S. Patents	1993: 306; 2003: 1,188	1993: 39; 2003: 438	1993: 62; 2003: 5,300	1993: 764; 2003: 3,952
R&D Spending	4.7% OF GDP	2.2% OF GDP	2.3% OF GDP	2.9% OF GDP
Science & Engineering Grads*	14 THOUSAND	5.6 THOUSAND	49 THOUSAND	97 THOUSAND

*Total annual new bachelor's degrees or higher

Data: OECD, National Science Foundation, and CHI Research

Software Patents

Statutory Subject Matter

Title 35, § 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 . . . .”

“Nonstatutory” Subject Matter

The Supreme Court has identified three categories of unpatentable subject matter:

1. Laws of nature (*e.g.*, $e=mc^2$)
2. Natural phenomena (*e.g.*, life forms)
3. Abstract ideas (*e.g.*, renewable energy sources)

“Mathematical algorithms” are deemed unpatentable to the extent they are merely “abstract ideas.”

“Algorithm” Example

- Calculate the hypotenuse of a right triangle:
  - Raise “a” to the power of 2; call the result “x”
  - Raise “b” to the power of 2; call the result “y”
  - Add “x” and “y”; call the result “z”
  - Take the square root of “z”; call the result “c”
- The Pythagorean Theorem.
- Not patentable “abstract idea” or “law of nature.”

Computer Programs

- A “process” used to control operation of a physical device.
- If used with a computer, a computer program is part of a “machine.”
- Section 101 states that both “processes” and “machines” are patentable subject matter.

Gottschalk v. Benson (1972)

- Process for converting binary-coded decimal numbers (BCD) into binary numbers.
- 15 coded to 0001 (decimal 1) 0101 (decimal 5), and so on.
- Claims unpatentable as simply an "abstract" idea or "mathematical truth"
- Supreme Court:
  - "Transformation and reduction of an article 'to a different state or thing' is the clue to the patentability of a process claim that does not include particular machines."
- Court denied intent to bar patents on computer programs per se:
  - Section 101 does not allow patent that is "not limited to any particular art or technology, to any particular apparatus or machinery, or to any particular end use."

Parker v. Flook (1978)

- Process for updating an “alarm limit” – a number used to indicate an abnormal condition in a catalytic conversion of hydrocarbons.
- The algorithm devised by Flook was used to update “alarm limit” during process to warn of abnormality.
- USSC:
  - Flook’s “mathematical algorithm” is not patentable even though it is used only in connection with a catalytic conversion process.
  - Patenting the process would be tantamount to patenting an “abstract idea” or “law of nature.”
- The patent claim at issue was not specific as to ***how*** the alarm limit was to be used in the process.

Diamond v. Diehr (1981)

- Process for curing rubber inside a molding press.
- To determine proper time to open the press, Diehr's method called for the use of a constant measurement of temperature in the press.
- Data fed to a computer which use the "Arrhenius" equation to periodically recalculate the time needed for the rubber to cure.
- When the calculated optimum and actual curing time were the same, the computer automatically opened the press.

Diamond v. Diehr (1981)

- Supreme Court majority viewed the invention as not an algorithm per se, but rather a patentable method of curing rubber that happened to use a mathematical algorithm
- Diehr's method was considered an industrial process for "transforming . . . an article . . . into a different state or thing."
- The process was not unpatentable simply because various steps involved the use of an equation and a computer.

Diamond v. Diehr (1981)

- Diehr did not seek a monopoly on the use the “Arrhenius” equation itself; only a use of the equation with other steps in the rubber curing process.
- The Court distinguished *Flook* as a case in which the claimed method did nothing more than calculate a “number.”
- Had the claim in *Flook* been drafted to include additional references to the catalytic conversion process, it might have been patentable.

Federal Circuit Decisions

The *Freeman-Walter-Abele* test:

- Determine whether the claim recites a mathematical algorithm directly or indirectly.
- If directly, determine whether the claimed invention as a whole is no more than the algorithm itself, *i.e.*., whether the claim is directed to an algorithm that is not applied to or limited by physical elements or process steps (nonstatutory).
- If the algorithm is applied in one or more steps of an otherwise statutory process, or one or more elements of an otherwise statutory apparatus claim (statutory).

- A distinction is thus drawn between (i) claiming an algorithm in the abstract, and, (ii) claiming application to a physical process or a specific machine to perform the algorithm.

Federal Circuit Examples

- Non-statutory claims:
  - A method of conducting an auction, where the algorithm was not tied to specific computer hardware or used for physical transformation *(In re Shrader* (1994)).
  - An algorithm for constructing a "bubble hierarchy" to define the space around an object which kept robots from hitting fixed objects where the claim did not refer to the specific use (*In re* Warmerdam (1994)).

Federal Circuit Examples

- Statutory claims:
  - Apparatus including various physical components, one using an “autocorrelation” algorithm to recognize patterns in signals (voice recognition) (*In re Iwahashi* (1989)).
  - Apparatus including a combination of means to perform calculations in connection with an oscilloscope rasterizer used to smooth jagged lines in the display (*In re Alappat* (1994))
    - “This is not a disembodied mathematical concept which may be characterized as an ‘abstract idea,’ but rather a specific machine to produce a useful, concrete, and tangible result.”
  - Method of analyzing electrocariographic signals to detect dangerous heart conditions which used an algorithm (*Arrhythmia Research* (1992)).
    - The signals analyzed were not “abstractions” because they were related to the patient’s heart function” and “the resultant output is not an abstract number, but is a signal related to the patient’s heart activity.

Federal Circuit Examples

- Non-statutory:
  - Method for diagnosing an abnormal condition in a patient which depended on gathering data on a variety of patient parameters (*In re Grams* (1989)).
    - Since an algorithm can be used only by plugging data into the equation, a patent claim that merely adds a step for gathering data is the same as patenting the algorithm – "applicants are, in essence, claiming the mathematical algorithm, which the cannot do under *Gottschalk v. Benson*."
- Statutory:
  - Method of analyzing EKG signals to detect dangerous heart conditions (*Arrhythmia Research* (1992)).
    - The signals analyzed were not "abstractions" because they were "related to the patient's heart function" and "the resultant output is not an abstract number, but is a signal related to the patient's heart activity."
    - The data processing involved "physical process steps that transform one physical, electrical signal to another," *i.e.*., the application of an algorithm to a specific process.

AT&T v. Excel (1999)

- The Court must determine whether:
  - the claimed subject matter is merely “a disembodied mathematical concept representing nothing more than a ‘law of nature’ or an ‘abstract idea’” (unpatentable)
  - OR
  - “the mathematical concept has been reduced to some practical application rendering it ‘useful’” (patentable)
- The test is the same whether the invention is a machine or a process.
- Can involve a “physical transformation or conversion from one state to another, BUT not required.
- A “useful application” is all that is required.

Business Method Patents

State Street Bank (1998)

- "Hub and spoke" system that allows as administrator to monitor and record financial information flow and make the calculations needed to maintain a partner fund financial services configuration.
- Allows several mutual funds – the "spokes" – to pool investment funds into a single portfolio – the "hub" – to allow consolidation of costs of fund administration and tax advantages of a partnership.
- Allows for daily allocation of assets of two or more "spokes" that are invested in the same "hub."

State Street Bank (1998)

- Allows for daily allocation of assets of two or more “spokes” that are invested in the same “hub.”
- Determines the percentage share that each “spoke” maintains in the “hub” while taking into consideration daily changes in the value of the “hub’s” investment securities and the amount of each “spoke’s” assets.
- Allows for allocation among the “spokes” of the “hub’s” daily income, expenses, and net realized and unrealized gain or loss.

State Street Bank (1998)

- The district court concluded that the claimed subject matter fell into one or two "judicially-created" exceptions to § 101 statutory subject matter:
  - The "mathematical algorithm" exception, or
  - The "business method" exception.
- The district court held that the patent was invalid on the ground that it claimed non-statutory subject matter.

State Street Bank (1998)

- The Federal Circuit held that section 101 should be read “expansively.”
- The Supreme Court has held that section 101 covers “anything under the sun that it made by man.”
- It is improper to read limitations into § 101 “where the legislative history indicates that Congress did not intend such limitations.”

State Street Bank (1998)

- The “mathematical algorithm” exception:
  - Does not apply where algorithms “are reduced to some type of practical application, i.e., ‘a useful, concrete, and tangible result.’”
- The *Freeman-Walter-Abele* test “has little, if any, applicability to determining the presence of statutory subject matter.”
- The question of whether a claim encompasses statutory subject matter should focus on:
  - “the essential characteristics of the subject matter, in particular its practical utility.”
- The claimed “hub and spoke” system is patentable because it “produces a ‘useful, concrete, and tangible result.’”

State Street Bank (1998)

- The “business method” exception to patentability:
  - “We take this opportunity to lay this ill-conceived exception to rest.”
- “Any historical distinctions between a method of ‘doing’ business and the means of carrying it out blur in the complexity of modern business systems.”
- “Whether the claims are directed to subject matter within § 101 should not turn on whether the claimed subject matter does ‘business’ instead of something else.”

New York Times (8/98)

- “If your mathematical formula has a practical end, you can probably patent it.”
- “This is going to cause a surge in patents relating to financial instruments.”
- “You can probably get a patent on anything so long as it is not purely mathematical – as long as it produces a concrete, tangible result.”

Business Week (10/98)

- "Critics fear that the *State Street* decision will give a few lucky patent holders huge windfall profits – meanwhile slowing the spread of valuable commercial innovations."
- "A torrent of lawsuits seeking to capitalize on the *State Street* decision is likely to come next."
- After *State Street*, "the rush to patent business methods will only grow more feverish."

EXAMPLES

Amazon 1-Click Patent

- Amazon sued Barnes & Noble for infringement of Amazon's "one-click" patent.
- The patent covers a method which allows a repeat customer to bypass address and credit card data entry forms (Amazon can access the information directly from the customer's account).
- The district court held that Amazon's patent was probably valid and infringed and enjoined Barnes & Noble's use of "one-click" purchasing.
- Reversed by Federal Circuit based on questions concerning validity.
- The case ultimately settled after public furor and proposed boycott.

Amazon 1-Click Patent

Jeff Bezos called for patent reform in an "Open Letter" (attached).

- Patent laws "should recognize that business method and software patents are fundamentally different"
- "Business method and software patents "should have a much shorter lifespan . . . I would propose 3 to 5 years."
- In "the age of the Internet, a good software innovation can catch a lot of wind in 3 to 5 years."
- "Bottom line: fewer patents, of hight average quality, with shorter lifetime. Fewer, better, shorter."
- Suggested the name "fast patents."

No intent to give up the 1-Click patent.

- "Despite the call from many thoughtful folks for us to give up our patent unilaterally, I don't believe it would be right for us to do so."

Obstacles ahead for Amazon's 1-Click checkout?

By Anne Broache
Staff Writer, CNET News.com
Published: October 4, 2005, 12:21 PM PDT

TalkBack | E-mail | Print | TrackBack

WASHINGTON--A federal appeals court has indicated that Amazon.com's famous 1-Click checkout system might be covered by another company's patent on electronic transactions.

Amazon and a one-person Virginia company called IPXL Holdings on Tuesday made their cases before the U.S. Appeals Court for the Federal Circuit. Last August, Amazon won before a trial judge in the U.S. District Court in Alexandria, Va., who decided that because the 1-Click feature was designed for processing orders and shipping, and not paying for goods, no infringement took place.

Patent 6,149,055, held by IPXL, covers an "electronic financial system" dealing with storing, predicting and presenting information about users engaging in electronic transactions.

In an ironic twist for the online retailer, the 1-Click feature is no stranger to court action. Amazon gained notoriety years ago for attempting to enforce its own patent on that system against Barnes & Noble's Web operations--resulting in a now-ended boycott by the Free Software Foundation and an unusual "open letter" from CEO Jeff Bezos acknowledging flaws in the patent system.

- The Federal Circuit invalidated the IPXL patent on November 21, 2005

Apple iPod – Microsoft

Apple, Microsoft duel over iPod patent

By Greg Sandoval, The Associated Press

SAN FRANCISCO — Given the intense rivalry between Apple Computer Inc. and Microsoft Corp., this recent revelation had a comedic tinge: Apple took too long to file a patent on part of its blockbuster iPod music players, so Microsoft beat Apple to it.

Apple CEO Steve Jobs talks about the iPod in April. Apple took too long to file a patent covering its iPod players, so Microsoft beat Apple to it. By Shizuo Kambayashi, AP

Bloggers and other tech pundits snickered at the prospect of Steve Jobs having to pay Bill Gates royalties on the beloved iPods, which account for more than one-third of Apple's revenue. One Web columnist even dubbed the patent office the "iPod killer."

But that scenario is unlikely.

To be sure, the U.S. Patent & Trademark Office last month did reject a request that Apple filed in October 2002 to patent technologies that support the iPod's rotational wheel interface. The reason for the rejection: Microsoft had apparently outraced Apple to the patent office with a similar request by five months.

Jury: eBay guilty of patent infringement

update A federal jury on Tuesday found eBay guilty of patent infringement and ordered the online auction giant to pay $35 million in damages.

A U.S. district Court jury sided with MercExchange of Great Falls, Va., which accused eBay in 2001 of infringing on three patents held by MercExchange founder Tom Woolston. The verdict determined that eBay and its Half.com subsidiary willfully infringed on two of those patents with their "Buy It Now" feature for fixed-price sales.

The willful infringement ruling opens the door for the judge to hold eBay liable for triple damages, or $105 million, said Neil Smith, an attorney specializing in intellectual property law at Howard Rice, a San Francisco firm. The judge may also issue an injunction against eBay to prevent the company from continuing to use the patented invention, a method for using a credit card to lock in an offer when purchasing items online, Smith said.

"The important implication is the specter of an injunction," Smith said. "It casts some uncertainly over the right to use the invention, which may impact the 'Buy It Now' feature at both eBay and Half.com. That feature certainly relates to a good chunk of their business."

Last year a judge ruled that the third patent, which covers online auction technology, is invalid and unenforceable.

eBay intends to ask the judge to set aside Tuesday's verdict and seek a new trial, said spokesman Kevin Pursglove. The evidence presented in the course of the trial doesn't justify the verdict, he said.

"In eBay's view, this dispute that is far from over," Pursglove added.

By Alorie Gilbert
Staff Writer, CNET News.com
Published: May 27, 2003, 8:10 PM PDT

The Swing Patent

Boy takes swing at US patents

10:23 17 April 2002
NewScientist.com news service

A five-year-old kid from Minnesota has patented a way of swinging on a child's swing. The US Patent Office issued patent 6,368,227 on 9 April to Steven Olson of St Paul, Minnesota for a "method of swinging on a swing". Olson's father Peter is a patent attorney.

(12) **United States Patent**
Olson

(10) **Patent No.: US 6,368,227 B1**
(45) **Date of Patent: Apr. 9, 2002**

(54) **METHOD OF SWINGING ON A SWING**

(76) Inventor: **Steven Olson**, 337 Otis Ave., St. Paul, MN (US) 55104

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/715,198**

(22) Filed: **Nov. 17, 2000**

(51) **Int. Cl.**[7] **A63G 9/00**
(52) **U.S. Cl.** **472/118**
(58) **Field of Search** 472/118, 119, 472/120, 121, 122, 123, 125

(56) **References Cited**

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242,601 A * 6/1881 Clement 472/118
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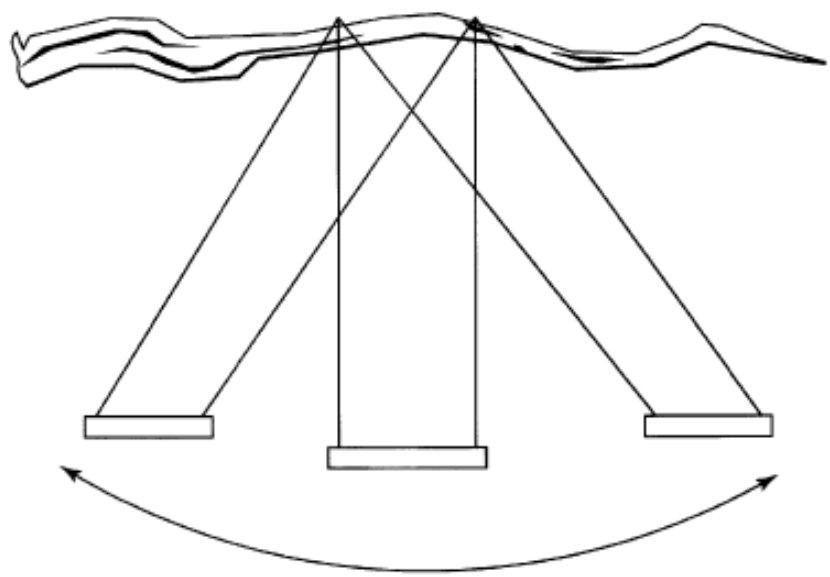
* cited by examiner

Primary Examiner—Kien T. Nguyen
(74) *Attorney, Agent, or Firm*—Peter Lowell Olson

(57) **ABSTRACT**

A method of swing on a swing is disclosed, in which a user positioned on a standard swing suspended by two chains from a substantially horizontal tree branch induces side to side motion by pulling alternately on one chain and then the other.

4 Claims, 3 Drawing Sheets



The Swing Patent

BACKGROUND OF THE INVENTION

A few basic types of swings have been around for generations. Perhaps the most common is one that includes a seat suspended between two ropes or chains that are hung from a tree branch or other substantially horizontal support. These swings are often found in side-by-side sets of two or three or more on, for example, a school playground.

Young children often need help to climb onto a swing, and may need a push (sometimes even an "underdog" push) to begin swinging. Others may be able to begin the swinging movement on their own by pushing with their feet against the ground, and once moving may coordinate the motion of their legs and body in what may be called "pumping" to sustain the movement of the swing. When swinging in this manner, the user travels along a path as generally shown in the cross-section of FIG. 1. Another method of swinging on a swing involves twisting the seat around repeatedly so that the chains or ropes are wound in a double helix. When allowed to unwind, the swing spins quickly, which can be entertaining for the user.

These methods of swinging on a swing, although of considerable interest to some people, can lose their appeal with age and experience. A new method of swinging on a swing would therefore represent an advance of great significance and value.

The Swing Patent

Lastly, it should be noted that because pulling alternately on one chain and then the other resembles in some measure the movements one would use to swing from vines in a dense jungle forest, the swinging method of the present invention may be referred to by the present inventor and his sister as "Tarzan" swinging. The user may even choose to produce a Tarzan-type yell while swinging in the manner described, which more accurately replicates swinging on vines in a dense jungle forest. Actual jungle forestry is not required.

Licenses are available from the inventor upon request.

I claim:

1. A method of swinging on a swing, the method comprising the steps of:

a) suspending a seat for supporting a user between only two chains that are hung from a tree branch;

b) positioning a user on the seat so that the user is facing a direction perpendicular to the tree branch;

c) having the user pull alternately on one chain to induce movement of the user and the swing toward one side, and then on the other chain to induce movement of the user and the swing toward the other side; and

d) repeating step c) to create side-to-side swinging motion, relative to the user, that is parallel to the tree branch.

2. The method of claim **1**, wherein the method is practiced independently by the user to create the side-to-side motion from an initial dead stop.

3. The method of claim **1**, wherein the method further comprises the step of:

e) inducing a component of forward and back motion into the swinging motion, resulting in a swinging path that is generally shaped as an oval.

The Swing Patent

(12) **REEXAMINATION CERTIFICATE** (4803rd)
United States Patent
Olson

(10) **Number: US 6,368,227 C1**
(45) **Certificate Issued: Jul. 1, 2003**

(54) **METHOD OF SWINGING ON A SWING**

(75) Inventor: **Steven Olson**, 337 Otis Ave., St. Paul, MN (US) 55104

(73) Assignee: **Steven Olson**, St. Paul, MN (US)

Reexamination Request:
No. 90/006,289, May 21, 2002

Reexamination Certificate for:
Patent No.: **6,368,227**
Issued: **Apr. 9, 2002**
Appl. No.: **09/715,198**
Filed: **Nov. 17, 2000**

(51) **Int. Cl.**[7] **A63G 9/00**
(52) **U.S. Cl.** **472/118**
(58) **Field of Search** 272/85, 86, 87, 272/88, 91, 89, 90; 472/121, 125; 403/62

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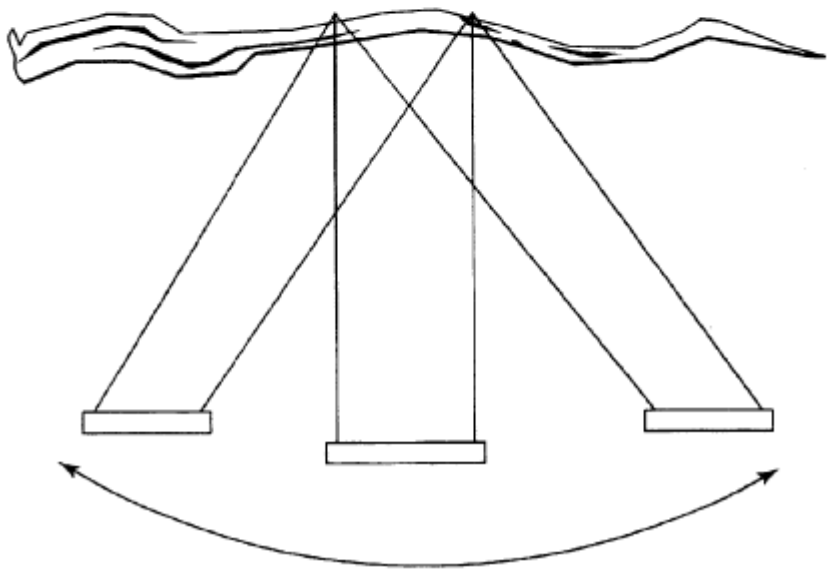
3,447,802 A * 6/1969 Grudoski

* cited by examiner

Primary Examiner—Derris H. Banks

(57) **ABSTRACT**

A method of swing on a swing is disclosed, in which a user positioned on a standard swing suspended by two chains from a substantially horizontal tree branch induces side to side motion by pulling alternately on one chain and then the other.



US 6,329,919 C1

1

REEXAMINATION CERTIFICATE ISSUED UNDER 35 U.S.C. 307

THE PATENT IS HEREBY AMENDED AS INDICATED BELOW.

2

AS A RESULT OF REEXAMINATION, IT HAS BEEN DETERMINED THAT:

Claims **1–64** are now disclaimed.

* * * * *

IBM Toilet Patent

(12) **United States Patent**
Boies et al.

(10) **Patent No.: US 6,329,919 B1**
(45) **Date of Patent: Dec. 11, 2001**

(54) **SYSTEM AND METHOD FOR PROVIDING RESERVATIONS FOR RESTROOM USE**

(75) Inventors: **Stephen J. Boies**, Mahopac, NY (US); **Samuel Dinkin**, Austin, TX (US); **Paul Andrew Moskowitz**, Yorktown Heights; **Philip Shi-Lung Yu**, Chappaqua, both of NY (US)

(73) Assignee: **International Business Machines Corporation**, Armonk, NY (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/639,254**

(22) Filed: **Aug. 14, 2000**

(51) **Int. Cl.**[7] **G08B 23/00**
(52) **U.S. Cl.** **340/573.1**; 340/825.28; 340/825.29; 705/5; 705/6
(58) **Field of Search** 340/539, 573.1, 340/540, 531, 825.28, 825.29; 705/5, 6; 701/201; 707/100; 395/205

(56) **References Cited**

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5,978,770	*	11/1999	Waytena et al.	705/5

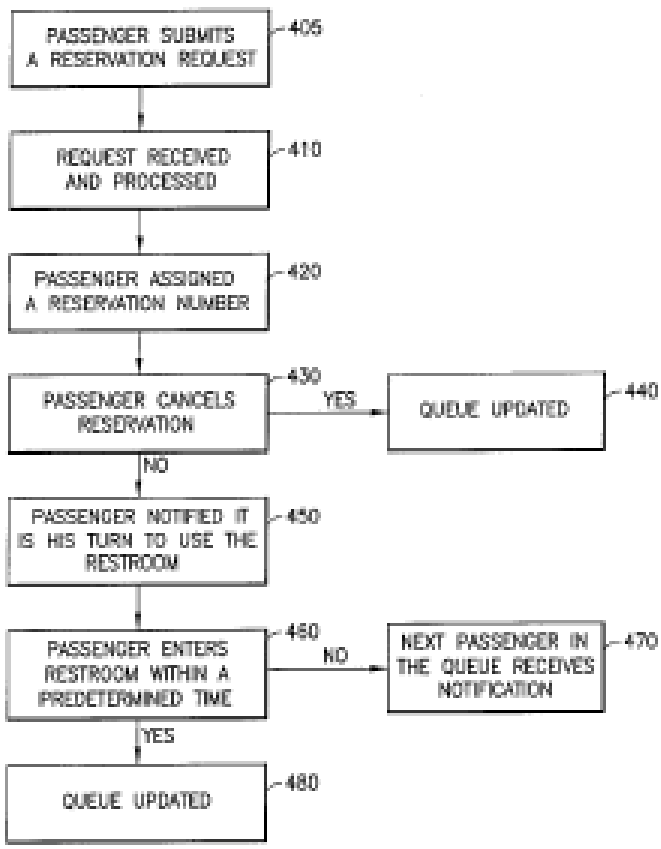
* cited by examiner

Primary Examiner—Benjamin C. Lee
(74) *Attorney, Agent, or Firm*—Morgan & Finnegan, L.L.P.

(57) **ABSTRACT**

The present invention is an apparatus, system, and method for providing reservations for restroom use. In one embodiment, a passenger on an airplane may submit a reservation request to the system for restroom use. The reservation system determines when the request can be accommodated and notifies the passenger when a restroom becomes available. The system improves airline safety by minimizing the time passengers spent standing while an airplane is in flight.

44 Claims, 4 Drawing Sheets



IBM Toilet Patent

SYSTEM AND METHOD FOR PROVIDING RESERVATIONS FOR RESTROOM USE

FIELD OF THE INVENTION

The present invention generally relates to a business method and more particularly, to an apparatus, method and system for providing reservations for restroom use.

BACKGROUND

The dangers of standing on an airplane while the airplane is in flight are well known. However, because of the shortage of restrooms on board, it is often necessary for passengers to stand for quite sometime in the aisles while queuing to use the restroom. Standing in the aisle of a moving aircraft creates safety hazard and inconveniences for both the passenger and other people on board. For example, a standing passenger may fall and injure himself or other passengers when the airplane encounters turbulence in the air. Likewise, a passenger may lose a great deal of his valuable time or miss a significant portion of an entertainment program because of waiting to use a restroom.

Similar safety concerns also exist with restroom uses on a passenger train or boat.

IBM Toilet Patent

What is claimed is:

1. A method of providing reservations for restroom use, comprising:

receiving a reservation request from a user; and

notifying the user when the restroom is available for his or her use.

2. The method according to claim 1, further comprising assigning a reservation number in response to the request.

3. The method according to claim 2, wherein said assigning the number assigns number based on a set of priority rules.

4. The method according to claim 2, wherein said assigning the number assigns number on a first come, first served basis.

5. The method according to claim 1, further comprising providing the user with an approximate waiting time.

6. The method according to claim 1, further comprising determining whether the reservation is cancelled.

IBM ultimately "dedicated the patent to the public" so it could "continue focusing on [its] high-quality patent portfolio."