

Financial Asset Management Patents

A Financial Industry Perspective



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Agenda

- ❑ What are the rights of a Patent Owner?
- ❑ What Is Patentable?
- ❑ How does one obtain a Patent?
- ❑ How does one enforce a Patent?
- ❑ How does one defend against a Patent Claim?
- ❑ Where is the industry and where are we going?
- ❑ Q & A

What is a Patent?

- A limited monopoly,
 - *... granted by the U.S. government*
 - *... which guarantees its owners the right to exclude others from making, using, selling, offering for sale, or importing*
 - *... the invention covered by the claims of such patent*
 - *... into or within the United States (national in scope)*

What are the rights of a Patent Holder?

- Right to exclude others from
 - *making,*
 - *using,*
 - *selling,*
 - *offering for sale, or*
 - *importing*
- The invention covered by the claims

How does one get a patent?

- In exchange for that limited monopoly,
 - *... the patentee must disclose the invention*
 - *... in such clear and definite terms*
 - *... to enable one of ordinary skill in the art to which the invention pertains*
 - *... to make and use the claimed invention*
 - *... without undue experimentation*
 - *...including the best mode of practicing the invention contemplated by the inventor at time of filing*

Financial Industry Patent Application

- Patent Application
 - Background
 - Field of Invention
 - Related Art
 - Summary
 - Claims
 - System
 - Method
 - Computer Program Product
 - Drawings
 - Detailed Description

What is an invention?



- Conception
 - *Eureka!*
- Reduction to practice
 - *Constructive*
 - Filing the complete patent application in the USPTO
 - *Actual*

What is patentable?

- Any useful, new, and non-obvious
 - ... *machine*
 - ... *apparatus*
 - ... *composition of matter*
 - ... *process (i.e., “method”)*

Early Method Patent

- ❑ Italian Renaissance Architect and Engineer - Filippo Brunelleschi (1377–1446)
- ❑ In 1421 obtained patent for an improved method of transporting goods such as marble up and down the river Arno in Florence more cheaply, using a flat-keeled boat with paddle wheels, designed to be towed by smaller boats.
- ❑ The inventor would not share his idea without a promise of 3 year exclusivity.



Early Financial Patents

- ❑ **First financial patent** - granted March 19, 1799, to Jacob Perkins for "Detecting Counterfeit Notes." Details of the invention, were lost in the great Patent Office fire of 1836.
- ❑ **Earliest detailed financial patent** - granted April 28, 1815, to John Kneas, a printing method entitled "A Mode of Preventing Counterfeiting."
- ❑ **In first 50 years-** U.S. Patent Office granted forty-one financial patents for inventions relating to bank notes (2 patents), bills of credit (1), bills of exchange (1), check blanks (4); detecting and preventing counterfeiting (10), coin counting (1), interest calculation tables (5), and lotteries (17).

Source: USPTO

What is Patentable?

- “[a]nything under the sun that is made by man.” - *Diamond v. Chakrabarty*, 44 U.S. 303 (1980)
- Execution of a process of opening and closing an oven door to vulcanize rubber, following the calculation of a solution (where the actual innovation resided) was sufficiently significant “post solution activity” to deem the subject matter patentable. - *Diamond v. Diehr*, 450 U.S. 175 (1981).

Financial Industry Patents

Table 1. – Exemplary Financial Asset Management Patents

<i>Inventor(s)</i>	<i>Title</i>	<i>Filing Date</i>	<i>Patent No.</i>	<i>Grant Date</i>
Atkins, Charles A.	System for the Operation of a Financial Account	April 15, 1987 December 6, 1994 August 27, 1991 April 15, 1997 January 16, 1992 April 16, 1991 March 26, 1997	4,953,085 5,644,727 5,864,828 5,875,437 5,884,285 5,911,135 5,911,136	August 28, 1990 July 1, 1997 January 26, 1999 February 23, 1999 March 16, 1999 June 8, 1999 June 8, 1999
Champion, Robert R. and Twist Jr., Basil R.	Goal-Directed Financial Asset Management System	September 1, 1989	5,126,936	June 30, 1992
Barr, Dean S. and Mani, Ganesh	Predictive Neural Network Means and Method for Selecting a Portfolio of Securities wherein each network has been trained using data relating to a corresponding security	August 31, 1994	5,761,442	June 2, 1998
Fernholz, Erhard R.	Apparatus and Accompanying Methods for Automatically Modifying a Financial Portfolio Through Dynamic Re-weighting based on a Non-constant Function of Current Capitalization Weights	December 13, 1996	5,819,238	October 6, 1998
Maggioncalda, Jeff N., Sharpe, William F., Jones, Christopher L., Fine, Ken, Tauber, Ellen, Scott, Jason, Grenadier, Steven R., Park, Ronald T.	Financial Advisory System	December 10, 1997 May 25, 1999 December 2, 1997 February 1, 2000 July 12, 2001	5,918,217 6,012,044 6,021,397 7,016,870 7,062,458	June 29, 1999 January 4, 2000 February 1, 2000 March 21, 2006 June 13, 2006
Michaud, Richard O. and Michaud, Robert	Portfolio Optimization by Means of Resampled Efficient Frontiers	September 9, 1998 October 25, 2002	6,003,018 6,928,418	December 14, 1999 August 9, 2005

Financial Industry Patents

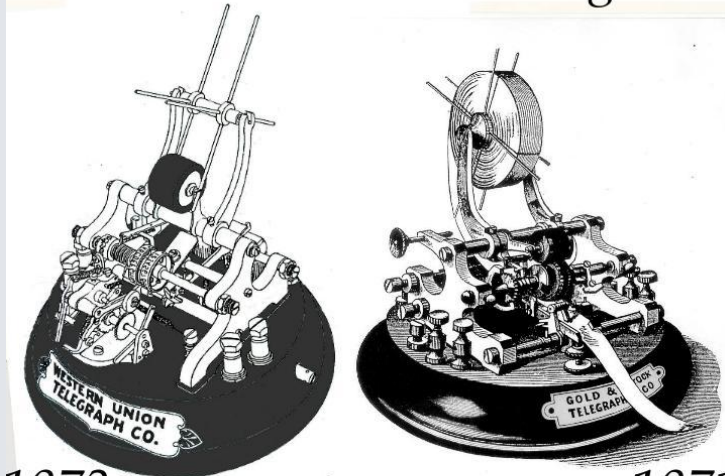
Table 1. – Exemplary Financial Asset Management Patents (continued)				
<i>Inventor(s)</i>	<i>Title</i>	<i>Filing Date</i>	<i>Patent No.</i>	<i>Grant Date</i>
Giansante, Joseph E.	Investment Portfolio Selection System and Method* *Expired for failure to pay maintenance fee.	November 27, 1996	6,275,814	August 14, 2001
Baker, Nardin L.	Rapid Method of Analysis for Correlation of Asset Return to Future Financial Liabilities	August 2, 1989	6,336,103	January 1, 2002
Karp, Ronald A. and Karp, Jeffrey M.	Method and Apparatus for Tax-Efficient Investment Using both Long and Short Positions	October 6, 1999	6,832,209	December 14, 2004
Lear, James A.	Investment Portfolio Selection	January 27, 2000	6,912,509	June 28, 2005
Gastineau, Gary L. and Weber, Clifford, et al.	Determining Intra-Day Net Asset Value of an Actively Managed Exchange Traded Fund	March 27, 2000 March 27, 2000 April 16, 2002	6,941,280 7,099,838 7,305,362	September 6, 2005 August 29, 2006 December 4, 2007
Green, Paul T.	Financial Instrument Filtering System and Method Therefor	September 3, 1999	7,013,291	March 14, 2006
Kihn, John	Momentum Investment System, Process and Product	August 26, 2000	7,020,629	March 28, 2006
Usui, Masaaki	Method and System for Unified Management of Plurality of Assets Using Computer Networks	October 6, 2000 based on May 24, 2000 (JP)	7,069,241	June 27, 2006
Arnott, Robert D.	Method and apparatus for Managing a Virtual Mutual Fund	September 23, 2002	7,117,175	October 3, 2006
Chen, Peng and Milevsky, Moshe A.	Optimal Asset Allocation During Retirement in the Presence of Fixed and Variable Immediate Life Annuities	June 18, 2002	7,120,601	October 10, 2006
Philip, Karun and Maini, Harpal	Segregation and Management of Financial Assets by Rules	October 20, 2000	7,181,422	February 20, 2007

Improvements

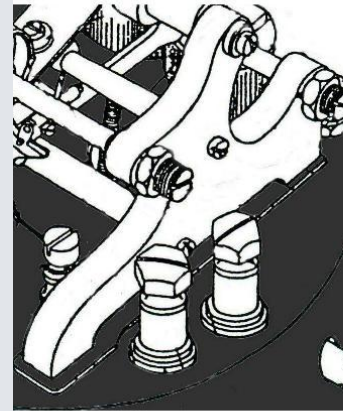
Case Study - Telegraphy

- ❑ William Sturgeon
 - Electromagnet (EM)
- ❑ Joseph Henry
 - Communicate with (EM)
- ❑ Samuel Morse
 - Communicate with signals
- ❑ Edward Calahan
 - Communicate stock information and print
- ❑ Thomas Alva Edison
 - Universal Stock Ticker

Universal Ticker Designs

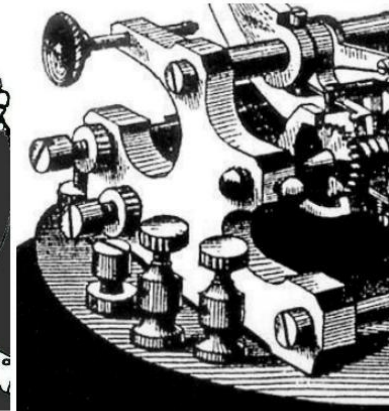


1873

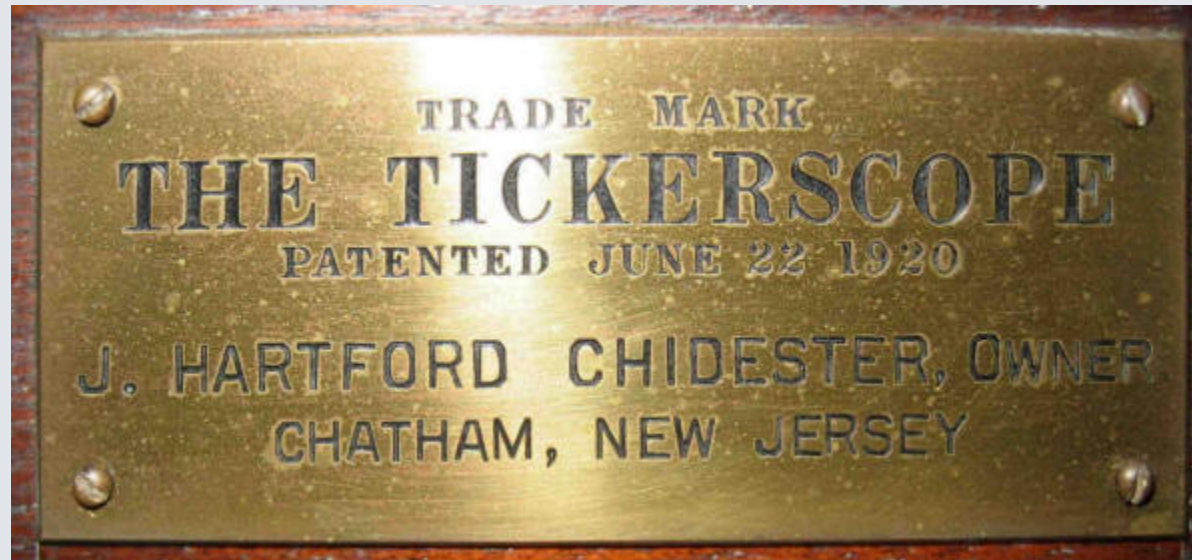


1873 Edison design

1871



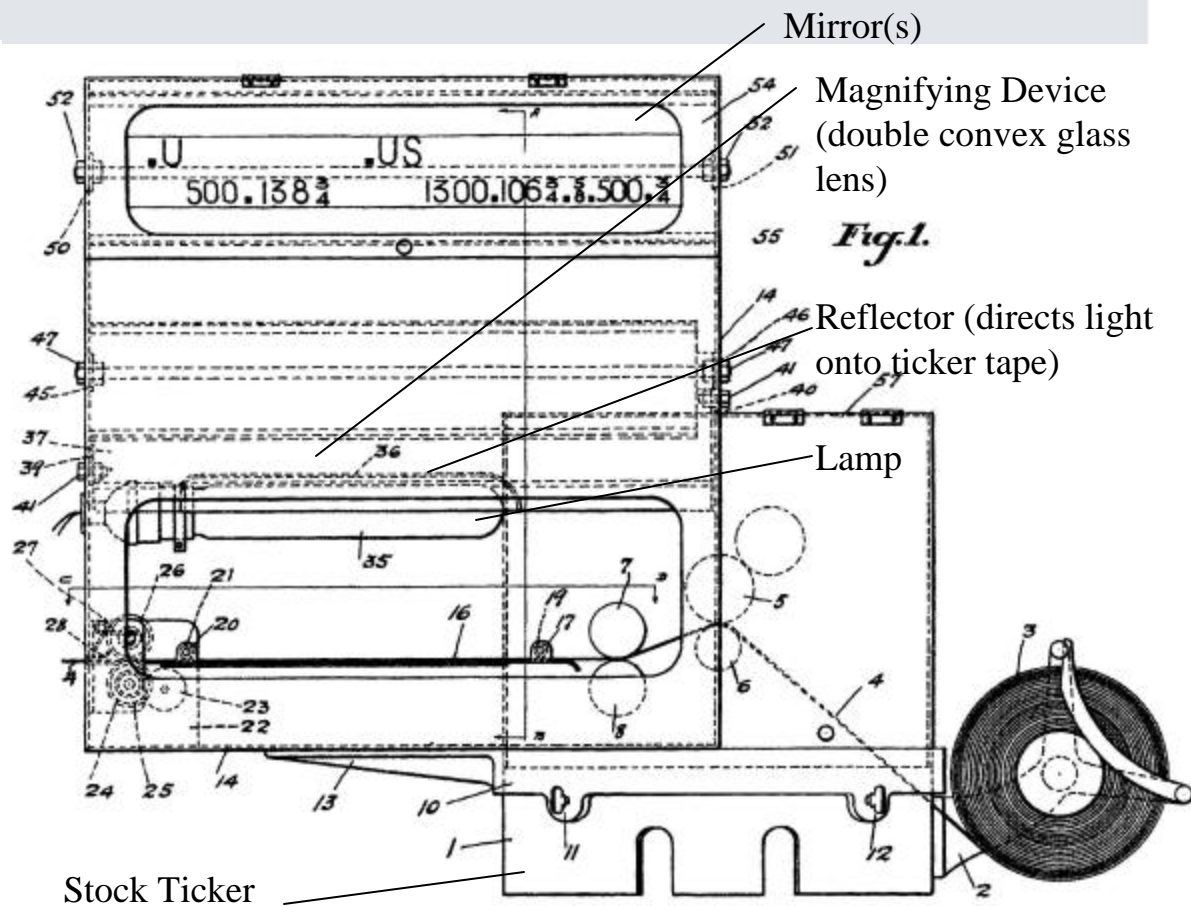
1871 Edison & Unger design



The TickerScope was invented in 1917 by John Hartford Chidester, and U.S. Patent No. 1,344,379 was granted in 1920.

Source: USPTO and www.edisonticker.com

Tickerscope



UNITED STATES PATENT OFFICE.

JOHN HARTFORD CHIDESTER, OF SUMMIT, NEW JERSEY.

ILLUMINATED DISPLAYING DEVICE.

1,344,379.

Specification of Letters Patent. Patented June 22, 1920.

Application filed March 1, 1917. Serial No. 151,851.

To all whom it may concern:

Be it known that I, JOHN HARTFORD CHIDESTER, a citizen of the United States, and a resident of Summit, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Illuminated Displaying Devices, of which the following is a specification.

The invention relates to a device to be used in connection with a "stock ticker" or like machines, and is designed to render the tape simultaneously visible to a large number of persons, and this without handling the tape by individuals and to discharge the tape so that it may be inspected in the usual way if desired.

Objects and advantages of the invention will be set forth in part hereinafter, and in part will be obvious herefrom, the same being realized and attained through the instrumentalities and combinations set forth in the appended claim.

The invention consists in the novel parts, constructions, arrangements, combinations and improvements herein shown and described.

The accompanying drawings, referred to herein, and forming a part hereof, illustrate one embodiment of the invention, the same serving in connection with the description to explain the principles of the invention.

Of the drawings:—

Figure 1 is a side elevation of a device constructed in accordance with the principles of the invention, shown attached to the usual form of stock ticker;

Fig. 2 is a vertical, transverse section on the line A—B of Fig. 1, looking in the direction of the arrows;

Fig. 3 is a horizontal, fragmentary section on the line C—D of Fig. 1, looking in the direction of the arrows;

* Fig. 4 is a fragmentary, sectional detail of a magnifying device; and

Fig. 5 is a similar view of a reflecting and magnifying device.

Referring to the accompanying drawings, illustrating by way of example one embodiment of the invention, portions of a stock ticker are shown, comprising a substantially circular frame 1, supporting a bracket 2 for the paper roll 3, the web 4 of paper passing from the roll through the machine and being imprinted in a well-known manner.

Various parts of the stock ticker are shown in dotted lines including the rolls 5, 6, 7 and 8 which feed the strip through the machine.

The machine of my present invention is provided with an annular frame 10, fitting over the frame 1 of the stock ticker, and being attached thereto in a suitable manner, as by clamping screws 11 and 12. Supported upon the frame 10 and upon the bracket 13 extending outwardly therefrom is a casing 14. Within the casing are provided means for illuminating the printed ticker strip 4 and for projecting and displaying the strip so that it may be simultaneously viewed by a large number of persons at a relatively great distance. Referring more in detail to the embodied exemplification, a supporting runway 16 is provided, extending horizontally. At the forward end of the runway 16 are upwardly extending lugs 17 and 18, which serve as side guides for the tape, and which support a guiding roller 19, located above the tape 4. At the other end of the runway 16, are lugs 20 generally similar to lugs 17 and 18, and a top guiding and holding roller 21 similar to the roller 19.

Means are provided for feeding the tape through the device as it is printed and supplied from the ticker, said means being adapted to keep the tape smooth and flat upon the runway 16. The embodied form of such means comprises a clock mechanism 22, which mechanism drives a gear 23, the gear 23 meshing with a gear 24 upon the shaft of a roller 25, located beneath the tape 4. Cooperating with the driven feeding roller 25 is a spring pressed roller 26 engaging with the upper face of the tape, and being resiliently pressed downward by a spring or springs 27, the two rollers thus providing a friction or slip feed and tension upon the tape 4. A guiding lip or plate 28 may be utilized to facilitate the threading of the strip 4 through the machine.

In the embodied form of illuminating means, a lamp 35 is mounted within the casing 14, and extends along in the same direction as the tape 4. The lamp 35 is provided with a reflector 36, adapted to reflect the light from the lamp upon the ticker strip 4. The light is thence reflected by means of mirrors, utilizing also, if desired, a magnifying device, and is finally presented at the exhibition point to be viewed, as al-

13

1,344,379

ready stated, by a relatively large number of persons simultaneously and at relatively a great distance from the device.

In the embodied form, a magnifying device is utilized comprising a bar of glass 37, mounted in a frame 38, which frame is carried by brackets 39 and 40 at either end of the casing. The brackets are supported, respectively, by bolts 41, with which they have a slotted connection, as shown clearly in Fig. 2, thereby affording both transverse and angular adjustment for the magnifying device 37.

The light from the ticker strip 4, whether the magnifying device be utilized or omitted, is received upon a mirror 43, which mirror is supported in a frame 44, the frame being supported in brackets 45 and 46, which brackets, respectively, are attached to the casing 14 by bolts 47. The mirror 43 is thus capable of angular adjustment as desired. From the mirror 43 the image from the ticker tape is reflected to a mirror 48, which mirror is supported in a frame 49, carried by brackets or lugs 50 and 51. These brackets are supported, respectively, upon the casing 14 by bolts 52, thereby being likewise capable of angular adjustment.

The casing 14 is provided with convenient doors or closures, a door 54 having a plate of glass or other transparent material 55 therein, which permits viewing of the printing on the ticker tape at the exhibition point, as already described, and provides access to the upper part of the casing 14. A transparent slide 56 permits a direct view of the ticker tape 4 upon the runway 16, where it is strongly lighted by the lamp 35. A door 57 permits access to the ticker mechanism.

It will be seen that the device, while possessing the advantages pointed out, is attachable to an ordinary ticker without

changing any of the mechanism thereof, merely by the use of the clamping screws 11 and 12.

Fig. 4 represents a form of double convex magnifying bar 37 and Fig. 5 represents a form of magnifying mirror.

From all the foregoing it will be understood that a device has been provided embodying the objects and advantages herein set forth, together with other objects and advantages, which will be obvious or which may be ascertained from practice with the invention. It will also be understood that changes may be made from the structure shown and described, within the scope of the accompanying claim, without departing from the principles of the invention and without sacrificing its chief advantages.

What I claim as my invention and desire to secure by Letters Patent is:—

An attachment for stock tickers comprising in combination a frame having a contour to conform to the shape of a stock ticker cabinet, means for removably securing said frame to said cabinet, a casing fixed to frame and having communication with the ticker tape outlet of said cabinet, said casing being provided with a pair of sight openings, means to feed a ticker tape from said outlet transversely of said casing and in visible relation to one of said sight openings, a lamp arranged to illuminate said tape, transparent material in said openings, and means to project upon the other of said openings a true image of tape data.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

JOHN HARTFORD CHIDESTER.

Witnesses:
ISABELLA C. KIDD,
LOUISE LORER.

Example Apparatus Claim – Narrower in scope

- An **apparatus** for displaying stock buy/sell data from ticker tape from a stock ticker, comprising:
 - means for receiving ticker tape from the stock ticker;
 - a **lamp** illuminates the stock buy/sell data in proximity to the ticker tape;
 - at least one **mirror** reflects an image of the stock buy/sell data from the ticker tape and displays the image for viewing by a plurality of people at one time; and
 - a **magnifier** magnifies the image from the ticker tape onto the at least one mirror.

Example Method Claim – Broader in scope

- A method for displaying stock buy/sell data from a ticker tape from a stock ticker, comprising:
 - a) **receiving** stock buy/sell data on the ticker tape from the stock ticker;
 - b) **illuminating** the securities buy/sell data; (optional?)
 - c) **reflecting** an image of the stock buy/sell data; (optional?)
 - d) **magnifying** the reflected image; and
 - e) **displaying** the reflected image for viewing by a plurality of people at one time.

Broader Method Claim

- A method for displaying securities buy/sell data, comprising:
 - a) **receiving** securities buy/sell data;
 - b) **magnifying** the securities buy/sell data; and
 - c) **displaying** the image for viewing by a plurality of people at one time.

Reflections on Tickerscope

- ❑ What is useful, novel and nonobvious about the Tickerscope invention?
- ❑ What he created was the function, “the ability to allow multiple people to see a ticker at the same time.”
- ❑ The technology changes. If the innovation is only tied to a technology, the invention will go the way of the buggy whip and the vacuum tube. If one cannot just protect just the function, then one may very easily design around by a slightly different implementation.

VALUE ADDED, VALUES DRIVEN.SM



Idea/Expression Dichotomy

- The expression/idea dichotomy – **copyright** protects an expression of an idea, patents protect the idea itself.
- In the case of copyright © the right is very narrow, but for a long time period (life of the author + 70 years). Patents on the other hand protect an idea much more broadly, to encourage disclosure of the invention, but for a significantly shorter duration.

Considerations for Filing Financial Business Method Patents

- Should the “business method” be maintained as a **trade secret**?
 - Is it easily detected by others?
 - Can the idea’s secrecy be maintained?
 - What is the useful life of the process?
 - Will competitors likely file for patents on similar methods?

Publication of Financial Patent Applications

- **Publication Of New Applications:**
- All utility applications (including all continuation applications) filed on or after November 29, 2000 are published about 18 months after earliest priority date unless:
 - At time of filing, a request is filed with a certification that the application will not be foreign filed in a country that publishes applications; or
 - After filing, a request is filed to abandon the application and to withdraw publication no later than about 16 months from earliest priority date.
- Thus patents are the opposite of a trade secret.

So you get some patents to protect your innovations...life is good



How does one enforce one's Patent Rights?

- Licensing
 - Exclusive
 - Non-exclusive
 - Field of Use
- Litigation
 - Patent Infringement Suit
 - Remedies
 - Damages
 - Injunction

Why Patent Financial Business Methods?



Defense

Offense

Why Patent Financial Business Methods? Offensive Reasons

- ❑ Exclude others from making, using, selling, offering to sell, or importing the invention
- ❑ Protect R&D Investments
- ❑ Occupy field in and/or surrounding key standards
- ❑ Market advantage – Leverage exclusive rights to developments, sue to obtain injunction (shut down infringer) and/or damages
- ❑ License to obtain license revenues or royalties
- ❑ Marketing advantage
- ❑ Enhance or maintain a first mover advantage

Why Patent Financial Business Methods? Defensive Reasons

- ❑ Defend against competitors' patents
- ❑ Bargaining Chip for Cross license
- ❑ Allow counter suit if sued
- ❑ Bolster settlement position
- ❑ Investors desire to protect the "idea"
- ❑ Independent development by others may obtain IP rights



Infringement of Financial Business Method Patents

- Direct Infringement
- Contributory or Active Inducement



Life was good...But one day you may need to gain access to someone else's technology...



How does one defend against another's Patent Rights?

- ❑ Design Around
- ❑ License
- ❑ Litigation
 - Defenses to Claim of Infringement of Financial Business Method Patents
 - Non-infringement
 - Invalidity of the Patent
 - Not useful, new or nonobvious
 - Unenforceability

What lies ahead?



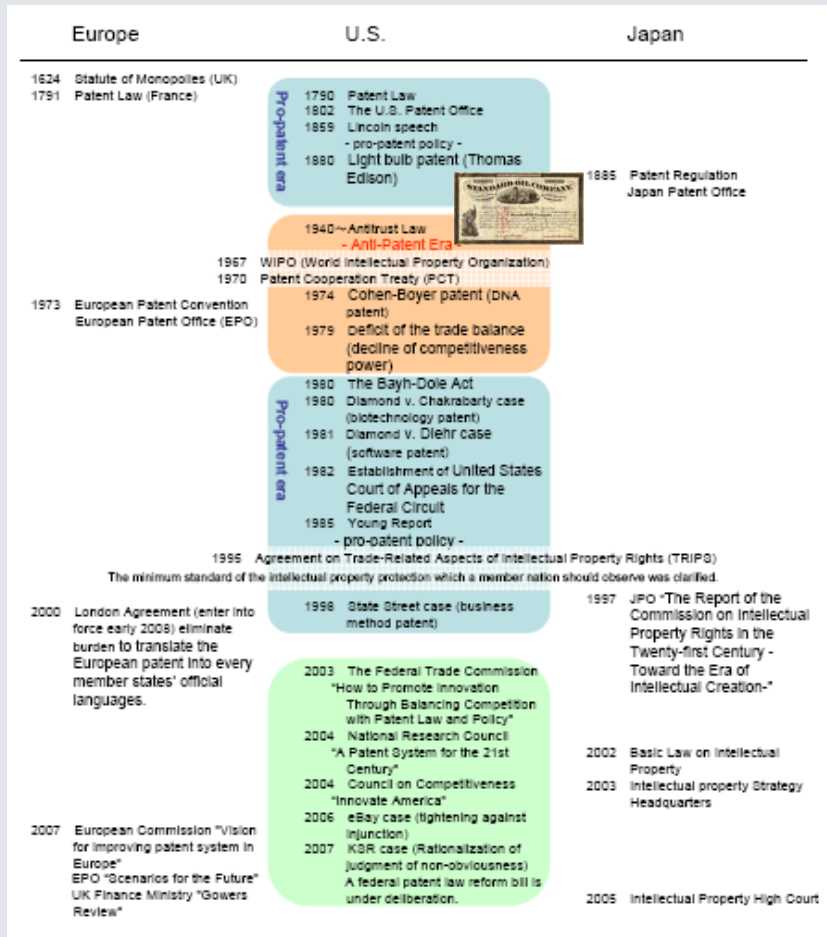
High Tide...
or Low Tide?



Where is the Industry and where are we going?

- Patents are new to the Financial Asset Management Industry
 - Wide scale adoption only a decade old
- Trend is toward reining in patentable subject matter
 - Courts, Congressional Legislative Reform, PTO Rulemaking

The Pendulum Swings Back

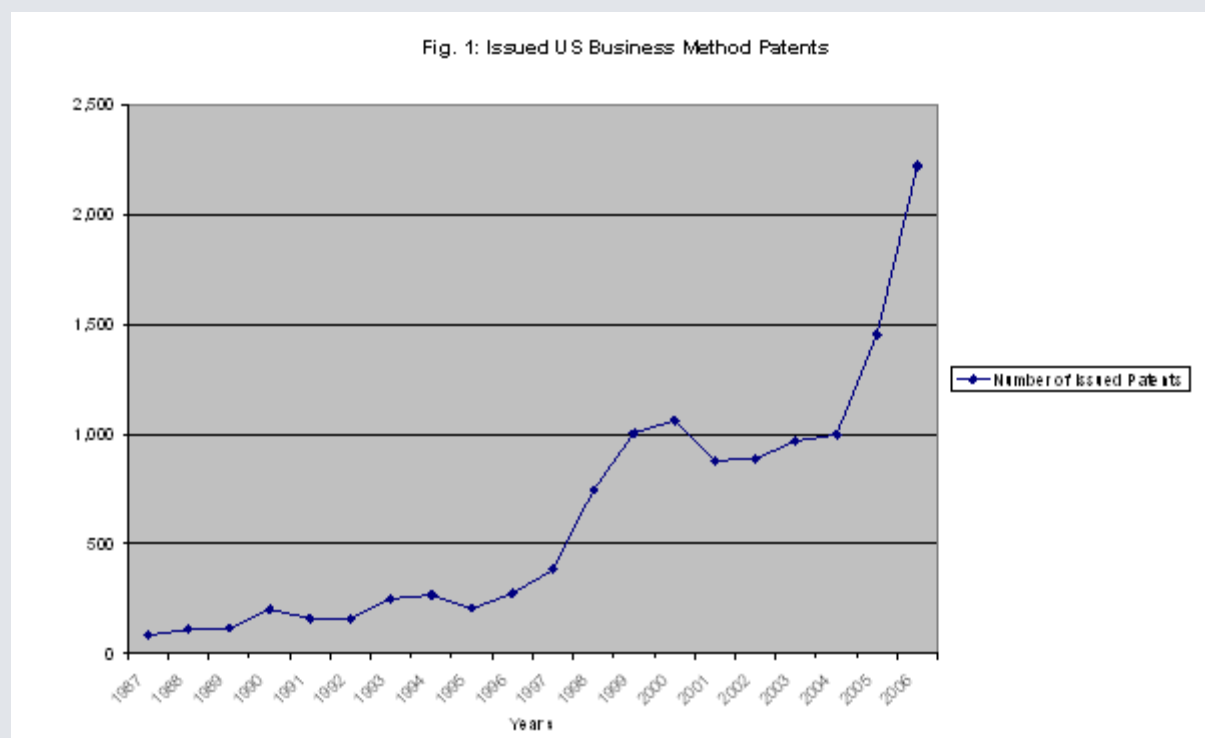


- 1790-1930s – Pro-Patent
- 1940-1970s – Anti-Patent
- 1980-2000 – Pro-Patent
- 2003-2008 – ??????



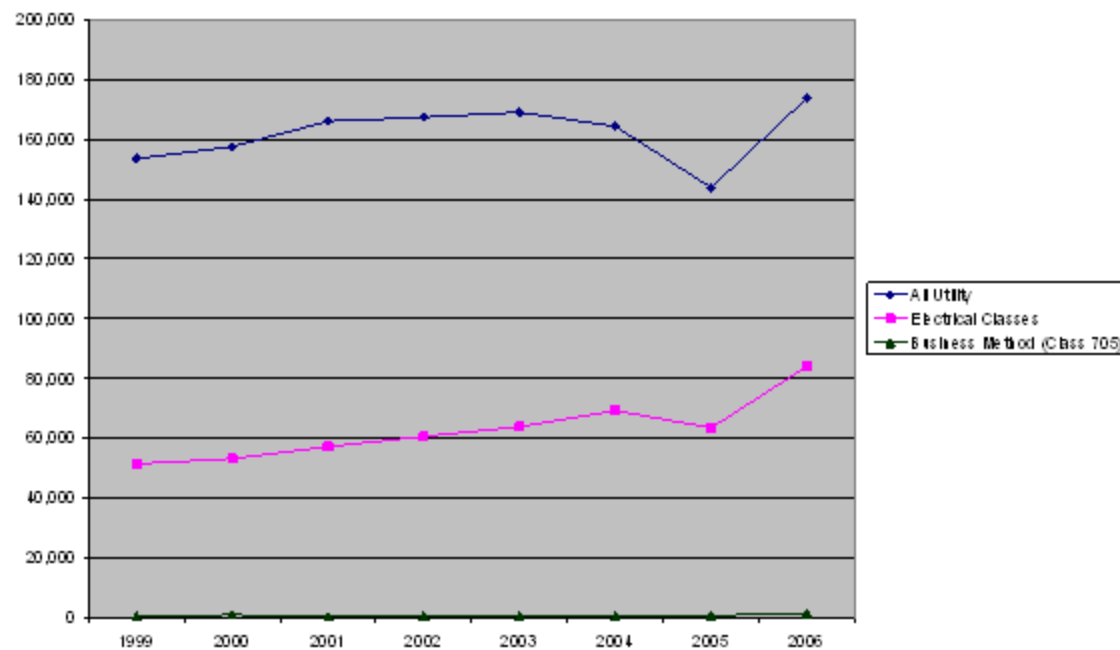
Source: Japanese Patent Office

Business Method Patents are Growing

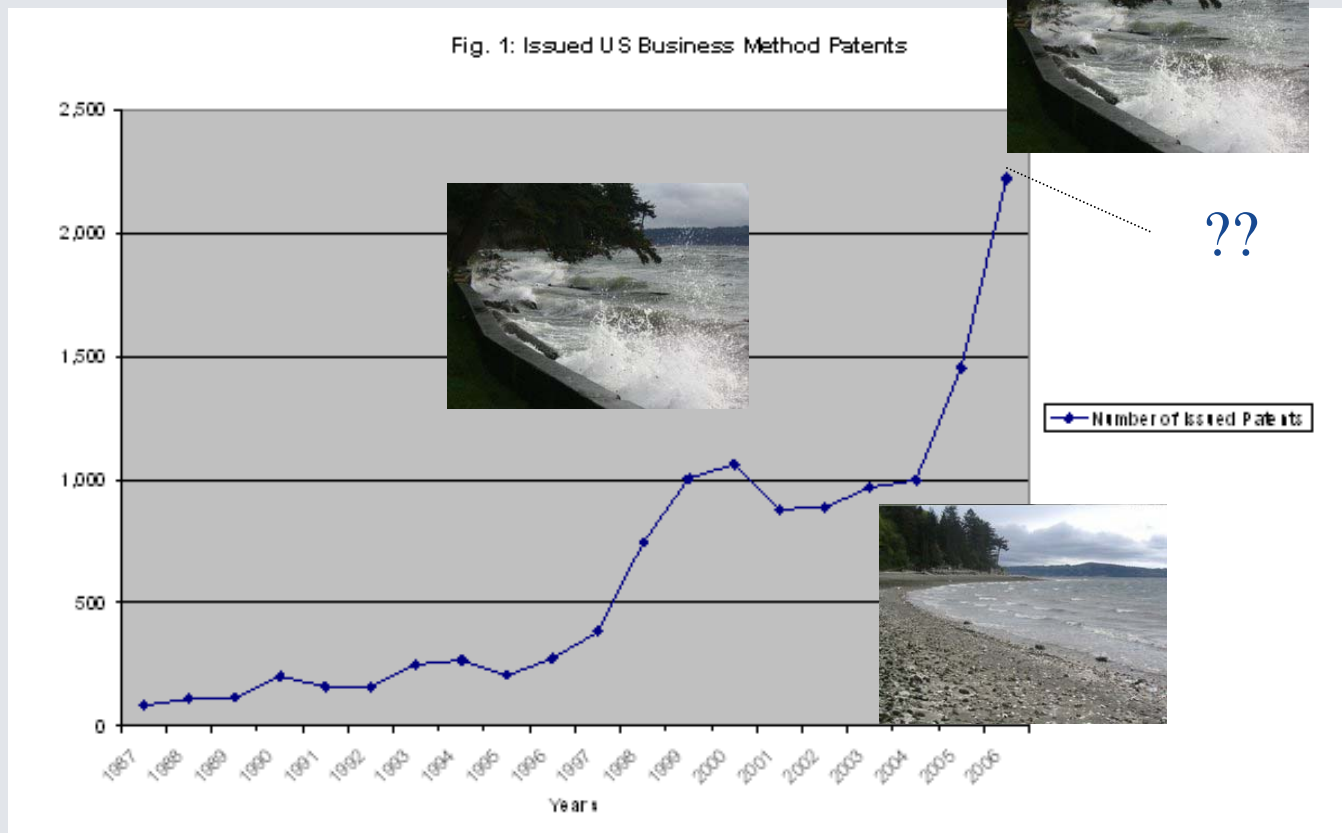


But... Business Method Patents are a very small percentage of total patents issued

Fig. 3: US Issued Patents



Business Method Issuances - Growing – but, are we due to head for another low tide?



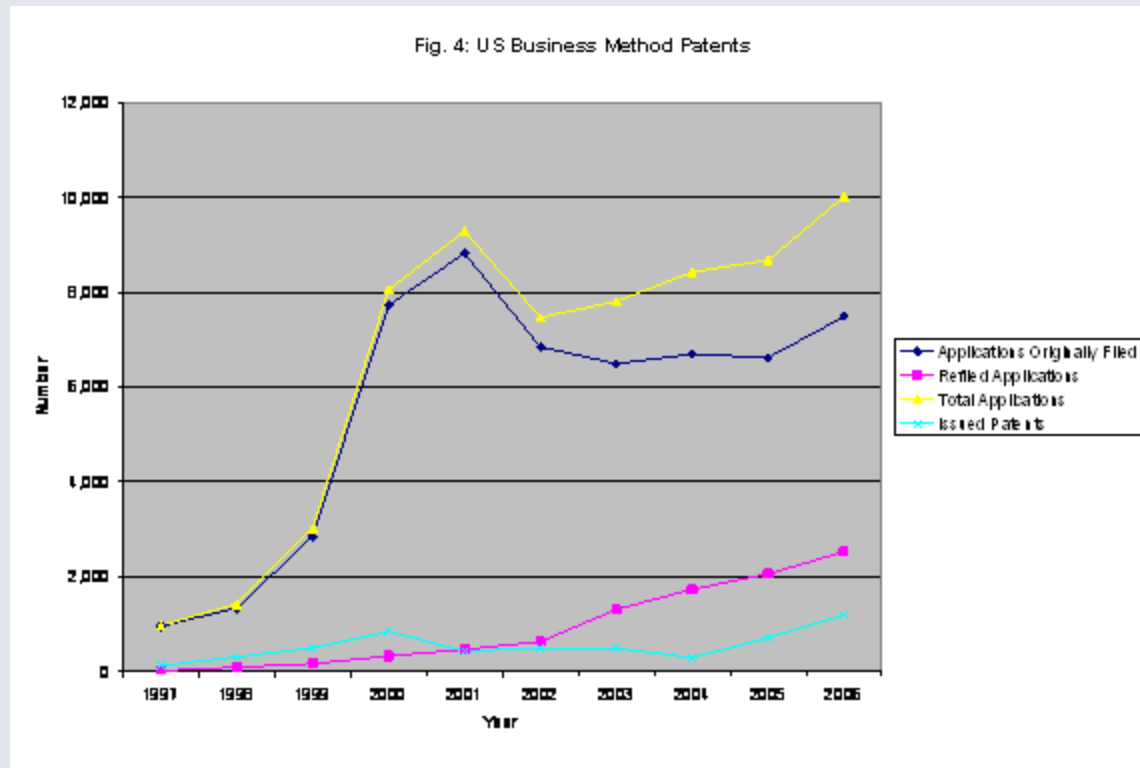
History of the Business Method Exception

- ***Hotel Security Checking Co. v. Lorraine Co.***, 160 F. 467 (2d Cir. 1908), which held that a bookkeeping system to prevent embezzlement by waiters was unpatentable, were often read to imply a "business method exception", in which business methods are unpatentable.
- USPTO took position for many years that "methods of doing business" were not patentable. Software and computer related inventions made it difficult to distinguish what was a method of doing business. Consequently they took the position that examiners would not have to determine if a claimed invention was a method of doing business or not. Patentability would be determined based on the statutory requirements of Section 101-103 of the Patent Act.
- In 1998, ***State Street Bank v. Signature Financial Group, Inc.***, (47 USPQ 2d 1596 (CAFC 1998)) challenged a patent on a computer implemented method for doing business. The court affirmed the position of the USPTO and rejected the theory that a "method of doing business" was excluded subject matter. The court confirmed this principle with ***AT&T Corporation v. Excel Communications, Inc.***, (50 USPQ 2d 1447 (Fed. Cir. 1999)). The Supreme Court denied certiorari in both, letting the decisions stand.
- The USPTO continued to require, however, that business method inventions must apply, involve, use or advance the "technological arts" in order to be patentable. This was based on an unpublished decision of the U.S. Board of Patent Appeals and Interferences, ***Ex Parte Bowman***, 61 USPQ2d 1665, 1671 (Bd Pat. App. & Inter. 2001). This requirement could be met by merely requiring that the invention be carried out on a computer.
- In October 2005 the USPTO's own administrative judges overturned this position in a majority decision of the board in ***Ex Parte Lundgren***, Appeal No. 2003-2088 (BPAI 2005). The board ruled that the "technological arts" requirement could not be sustained, [10] as no such requirement existed in law.
- ***In Re Comiskey*** in October 2007 held that "purely mental" business methods were not patentable subject matter.
- ***In Re Bilski*** to be reheard en banc in May 2008 by the Court of Appeals for the Federal Circuit will reconsider the State Street decision.

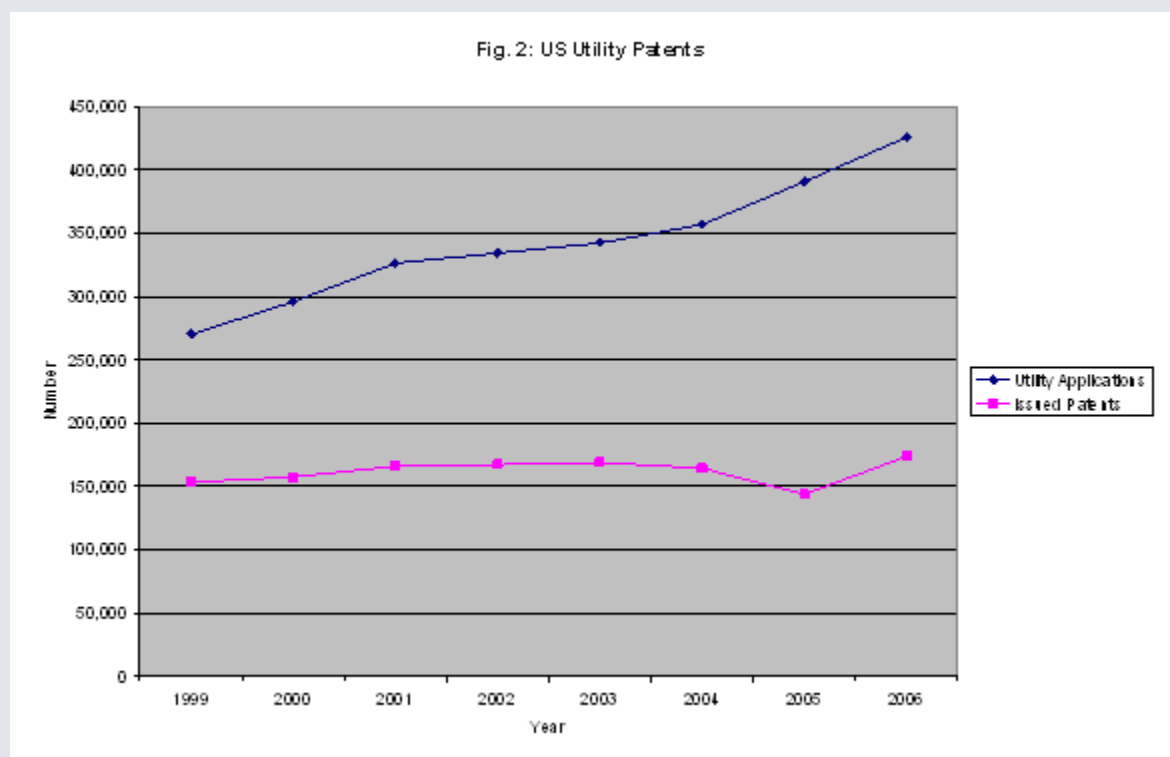
Financial Industry Business Method Inventions

- “Laws of nature, natural phenomena, and abstract ideas” are NOT Patentable.
- However, “we hold that the transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation, because it produces ‘a useful, concrete and tangible result’ – a final share price momentarily fixed for recording purposes and even accepted and relied upon by regulatory authorities and in subsequent trades.”
State Street Bank v. Signature Financial Group, Inc., at 1373, 1998.

The number of Business Methods allowed is very small compared to numbers of applications filed (approx. 20-25%)



A larger percentage of other patents are allowed as compared to are filed, (approx. 40-50%)



Q & A

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