Searching for Prior Art in the USPTO Database

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Patents & Licensing

Disclaimer: This seminar is provided for informational purposes only and should not be considered legal advice.
Patentability

Utility (non-provisional) patents are granted for a new, nonobvious and useful:

- Process
- Machine
- Article of manufacture
- Composition of matter
- Improvement to any of the above
Prior Art

• U.S. Patents and patent applications
• Foreign Patents and patent applications
• Journal and magazine articles
• Books, manuals, and catalogs
• Websites and databases
• Conference proceedings
• Scientific papers
• Product literature
• Other public documents
Benefits of a Good Prior Art Search

• Improved patent application
• Understanding work of other researchers
• Competitive information – companies
• Avoid patent infringement
• Learn more about your field of research
USPTO Patent Databases contain more than 7.5 million documents

• USPTO website includes a database of published patent applications from 2001 to present.
• Text searchable patent database from 1976 to present is available through USPTO website.
• Scanned images of patents back to 1790 are searchable by current U.S. patent classification, patent number, and issue date.
Classification

• A classification system is an arrangement of categories used to organize subject matter by characteristics and relationships.

• Classification systems are very useful for sorting and searching large collections of information.
US Patent Classification

- United States Patent Classification (USPC) system contains more than 460 classes and 150,000 subclasses.
- Notation is the broader class number followed by a slash and a second number indicating the more specific subclass within the class.
Key word Search Issues

- Vague or inconsistent terminology
- Obsolete names and terms
- Different meanings in different fields
- Synonyms

Classification searching is done to retrieve sets of relevant patents back to 1790
Seven Step Classification Based Search

Classification

1. Brainstorm key words that describe the invention - purpose, use, features, composition.

2. Look up the words in the Index to the U.S. Patent Classification to find potential class/subclasses.

3. Verify the relevancy of the class/subclasses by using the Classification Schedule in the Manual of Classification.

4. Read the Classification Definitions to verify the scope of the subclasses and note “see also” references.
Seven Step Search

Access Full Text

5. Search the Issued Patents and the Published Applications databases by “Current US Classification” and access full text patents and published applications.

Review and References

6. Review the claims, specification, and drawings of documents retrieved for relevancy.

7. Check all references for documents judged to be most relevant and note the “U.S. Cl.” and “Field of Search” areas for additional class/subclasses to search.
Step 1: Brainstorm key words

Description of the invention

• What does it do?
  – Essential function of the invention

• What is the end result?
  – Essential effect or basic product resulting from the invention

• What is it made of?
  – Physical structure of the invention

• What is it used for?
  – Intended use for the invention
Step 2: Index to USPC

Find potential classes and subclasses
• Look up each term that describes your invention in the Index
• Note class and subclass numbers for each term
Step 2: Index to USPC

• From USPTO Home Page select Patents / Patent Classification / Browse Index to USPC
Step 2: Index to USPC

- Look up additional terms in the Index to Classification that were identified in Step 1
- If the precise subclasses for an invention are not in the Index, use the Index to discover the potential classes
- Compile a list of potential classes/subclasses
Step 3: Verify relevancy of class
Judge relevancy of each of these classifications by looking in the Class Schedule for all the class/subclasses identified in Step 2

- Scan from top to bottom focusing on the bold, capitalized headings first
- See where subclasses suggested by the Index fall in the outline and decide if they are still relevant
- Subclasses are not always in numerical order
Step 3: Verify relevancy of class

- From USPTO Home Page / Patents / Patent Classification / Browse USPC Class Numbers and Titles, or
- From USPTO Home Page / Patents / Patent Classification / Search USPC Index, Schedules, and Definitions / Search Schedule, or
- From USPC Index click on class or subclass number
Step 4: Classification Definitions

• Read the definition of the classifications that are potentially relevant
• Based on the subclass definition, determine its relevancy
• Review “see or search class” for recommendations for additional related classes and subclasses
Step 4: Classification Definitions

• From Class Schedule select the Class Number to get Class definition

• From Class Schedule select the subclass number or words to open the subclass definition window

• From USPTO Home Page / Patents / Patent Classification / Search USPC Index, Schedules, and Definitions / Search Definitions
Step 5: Search Issued Patents and Patent Applications

USPTO Website Retrieval Options

• Select red P icon to the left of the subclass number to retrieve the list of patent numbers and titles for all patents within the subclass

• Select blue A icon to the left of the subclass number to retrieve the list of patent application numbers and titles for all patent applications within the subclass
Step 5: Search Issued Patents and Patent Applications

• USPTO website provides TIFF images
• Free Patents Online to get pdf files http://www.freepatentsonline.com/
• Google Patents
Step 5: Search Issued Patents and Patent Applications

• If there is a large number of documents in the class/subclass, the number of patents issued after 1976 may be reduced by a classification and key word search.

• Note: All patents prior to 1976 should be reviewed.
Step 6: Review documents

**Title**

**Abstract**

**Drawing**

An apparatus capable of transporting a rider, specifically for an amusement ride. The apparatus is constructed in the form of a substantially hollow sphere which rides along the ground, which is preferably inclined, a track, or a predetermined path (being substantially flat but with guide rails or walls along its sides). An inner carriage, to which the rider's seat is attached, moves independently of the sphere and maintains a substantially constant attitude while the sphere rolls. The inner carriage can be formed in varying shapes such as a sphere, hemisphere, semicircle, tube or a circle.

13 Claims, 6 Drawing Sheets
Step 6: Review documents

- Drawings
- Background of the invention
- Summary of the invention
- Detailed description of the invention
Step 6: Review documents

What is claimed is:
1. A method of tracking and analyzing movement of human subjects, the method comprising:
   providing a plurality of tracking technology sensors;
   placing the plurality of sensors within a designated space;
   determining an origin location within the space;
   providing a plurality of tracking technology transponders,
   wherein the transponders provide location parameters;
   affixing one of the plurality of transponders to each human subject;
   collecting the location parameters of each human subject
   from the transponders at predetermined time intervals
   using the sensors;
   determining a plurality of movement paths for each human subject
   from the location parameters, wherein each
   movement path comprises the location parameters from
   each period of movement of each human subject;
   recording the plurality of movement paths for fractal
   dimension tortuosity characteristics;
   setting a spatial scale;
   calculating an estimated fractal dimension for each of the
   plurality of movement paths of each human subject; and
   calculating an average of the estimated fractal dimensions
   for each of the plurality of movement paths for each
   subject to produce a single fractal dimension score for
   each human subject, wherein a high fractal dimension score
   corresponds to a high likelihood of agitated movement
   and the greater the value of the fractal dimension score corresponds to the greater degree of agitated
   movement.
2. The method of claim 1, further comprising:
   removing location parameters that represent impossible
   movement.

Review Claims

• Located at the end of the patent
• Legal boundaries of the intellectual property

Note: Claim interpretation may require legal opinion from a patent attorney.
Step 7: Check references cited

(12) United States Patent
Barbeau et al.

(54) OPTIMIZING PERFORMANCE OF LOCATION-AWARE APPLICATIONS USING STATE MACHINES

(75) Inventors: Sean J. Barbeau, Tampa, FL (US); Philip L. Winters, Tampa, FL (US); Rafael Perez, Temple Terrace, FL (US); Miguel Labrador, Tampa, FL (US); Nevine Georggi, Vally, CA (US)

(73) Assignee: University of South Florida, Tampa, FL (US)

(48) Int. Cl.
H04Q 7/20 (2006.01)

(52) U.S. Cl.
455/456.1; 455/414.1; 455/456.3; 340/530.13

(58) Field of Classification Search
455/456.1, 455/456.2, 455/414.1, 403, 455/404.2, 67.11, 115.1, 115.3; 340/530.13

See application file for complete search history.

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KR 301574 A 2/2003
WO 199953472 A1 10/1999

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(21) Appl. No.: 12/245,072
(22) Filed: Oct. 3, 2008
(40) Provisional application No. 60/977,140, filed on Oct. 3, 2007.
(45) Date of Patent: Oct. 11, 2011
(40) Patent No.: US 8,036,679 B1

Review for relevancy
• US Patents
• Foreign Patents
• Other Publications

(74) Attorney, Agent or Firm — Courtney M. Dunn; Smith & Hopen, P.A.

ABSTRACT
A location-aware method that dynamically adjusts software parameters in Location-Based Service (LBS) applications in real-time based on environmental conditions and application requirements. The invention saves power expended during position calculations while increasing application performance, optimizes settings for the application based on real-time conditions, and reduces bandwidth used. In an embodiment, the present method comprises a state machine or a plurality of state machines.

27 Claims, 11 Drawing Sheets
Step 7: Field of Search

**United States Patent**
Mullins et al.

**Patent No.:** US 6,783,273 B1
**Date of Patent:** Aug. 31, 2004

**METHOD FOR TESTING INTEGRITY OF CONCRETE SHAFTS**

**Inventors:** Austin Gray Mullins, Odessa, FL (US); Stanley C. Kranc, Tampa, FL (US)

**Assignee:** University of South Florida, Tampa, FL (US)

**Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 90 days.

**Appl. No.:** 10/249,508
**Filed:** Apr. 15, 2003

**Related U.S. Application Data**
**Provisional application No. 60/319,196, filed on Apr. 22, 2002.**

**Int. Cl.** 7. "G01N 25/00; G01N 25/72; G01K 3/00"

**U.S. Cl.** 374/45, 374/4, 374/137; 374/53

**Field of Search** 374/4, 45, 53, 374/136, 137, 141, 148; 73/803

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4,123,166 A 10/1978 Brooks, Jr.
4,232,559 A 11/1980 Aleczi
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4,748,855 A 6/1988 Barnoff

- Current U.S. Classification – may provide additional ideas for other subclasses to review
- Field of Search – classifications the patent examiner searched

Compare these classifications to your search – review classification schedule and class definitions
Classification Search

1. Brainstorm key words to describe the invention
2. Use key words to find initial class/subclass
   Index to the U.S. Patent Classification
3. Verify the relevancy of the class/subclass
   Classification Schedule
4. Confirm scope of subclass
   Classification Definitions
Classification Search

5. Access patents and patent applications
6. Review the claims, specification, and drawings for relevancy
7. Check references and note Classification and Field of Search for additional class/subclasses to search
USPTO website links


• Index to the U.S. Patent Classification http://www.uspto.gov/web/patents/classification/uspcindex/indextouspc.htm

• Classification Schedule in Manual of Classification http://www.uspto.gov/web/patents/classification/

• Classification Definitions http://www.uspto.gov/web/patents/classification/

• Issued Patents http://patft.uspto.gov/

• Published Applications http://patft.uspto.gov/