“Inventing the Future” – The Role of Utility Models and Patents in Leveraging Technical Innovation in the Marketplace

Christian Helmers

June 22, 2014
(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

(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.

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

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

(51) **Int. Cl.**: 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**

<table>
<thead>
<tr>
<th>U.S. PATENT DOCUMENTS</th>
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</table>

* cited by examiner

Primary Examiner—Kien T. Nguyen

Attorney, Agent, or Firm—Peter Lowell Olson

4 Claims, 3 Drawing Sheets
Overview

- What is a patent (utility model)?
- How to read a patent (utility model)
- Should you obtain a patent/utility model?
- Intellectual property management strategy
What is a patent? What is it not?

• A patent is:
  ▶ Codified form of knowledge
  ▶ Publicly accessible and searchable information
  ▶ Right to deny third parties use of invention ⇒ negative right – has value only when can be potentially used to effectively exclude third parties (value ex ante largely unknown)
  ▶ Territorial right for a predetermined limited period of time
  ▶ Consists of claims

• A patent is not:
  ▶ 1:1 measure of innovation

• Note: Patent system extremely complex
Worldwide growth in patent filings

Figure A.1.1.1 Trend in patent applications worldwide

Note: World totals are WIPO estimates using data covering approximately 130 patent offices (see Data Description). These estimates include direct applications and PCT national phase entry data.

Source: WIPO Statistics Database, October 2013
China’s spectacular patent explosion

Figure A.2.1.2 Trend in patent applications for the top five offices

Note: The top five offices were selected based on their 2012 totals.
Source: WIPO Statistics Database, October 2013
What is a patent? What is it not?

- Principal criteria for patentability of an invention:
  - **Novelty**: invention must not yet be in public domain anywhere in the world before the priority date of the corresponding patent.
  - **Inventive step (non-obviousness)**: invention must not be an obvious modification of what is already known, meaning that the invention must be neither re-producible based solely on existing patented claims nor ex-ante an obvious solution to the problem to someone skilled in the art.
  - **Capability of being used in any kind of industry**: the patented invention must contain the potential of commercial value through an industrial application.
Principal criteria for patentability of an invention:

- What does this mean in practice?
  - **Novelty**: Is there any other document (single document) that contains all features of all claims? If no ⇒ invention novel.
  - **Inventive step**: Could-Would-Test
    - **Could**: Are there several documents that if combined contain all features of all claims? If no ⇒ inventive step
    - **Would**: Would a person skilled in the art have combined these document at the time of claimed priority to solve the objective technical (not commercial) problem described in the patent? If no ⇒ inventive step
  - **Capability of being used in any kind of industry**: in practice normally not an issue.
What is a patent? What is it not?

- Invention has to represent **patentable subject matter** (defined differently by different patent offices – which is TRIPS conform)
  - A number of new concepts and methods are excluded from patent protection by EPO: scientific or mathematical discoveries, theories or methods, literary, dramatic, musical or artistic works, schemes, rules or methods for performing a mental act, playing a game or doing business, and methods of medical treatment.
  - Subject matter more broadly defined at the USPTO (includes software and business methods)
  - We will talk specifically about software.
• Article QQ.E.1: Patents / Patentable Subject matter
  1. Subject to the provisions of paragraph 2 and 3, each Party shall make patents available for any invention, whether a product or process, in all fields of technology, provided that the invention is new, involves an inventive step, and is capable of industrial application. [US/AU propose; 88 CL/MY/PE/SG/VN/BN/NZ/CA/MX oppose: The Parties confirm that: patents shall be available for any new uses or methods of using a known product], [US/JP propose; CL/MY/PE/SG/VN/BN/AU/NZ/CA/MX oppose: (b) a Party may not deny a patent solely on the basis that the product did not result in enhanced efficacy of the known product when the applicant has set forth distinguishing features establishing that the invention is new, involves an inventive step, and is capable of industrial application.]
Some basic concepts

- No ‘international’ patents
- National patent – patent only valid in jurisdiction where granted
- Regional patent systems, for example European Patent Convention (EPC) or African Regional Intellectual Property Organization (ARIPO)
- Patent Cooperation Treaty – PCT system (WIPO)
- Substantial institutional differences across patent offices (has impact on patent characteristics – e.g., (in)famous ‘Sashimi’ patents at JPO – and patent ‘quality’)

How to read a patent - Important Concepts

- The different dates associated with a patent
- Timeline

![Diagram showing the timeline of patent process with key dates: Priority, Application, Publication, Grant.]

- Priority: 12 months
- Application: ≥4 years
- Publication: 18 months
- Grant: ≥4 years
• Inventor vs applicant/assignee
• Inventor vs applicant/assignee
How to read a patent - Important Concepts

- International Patent Classification (IPC)
- Hierarchical technology-oriented classification
- No legal implication – shelving system
- Important to be aware of technological diversity
  - Consider for example IPC C12C11/00 (‘Fermentation processes for beer’)
  - First letter C is ‘section symbol’: ‘Chemistry and Metallurgy’
  - There are 20 classes within Section C. Classes are represented by a two-digit number following the section symbol, i.e., C12 (‘Biochemistry [...]’).
  - But still enormous technological heterogeneity within classes: for example C12 contains 11 subclasses. Subclasses are represented by a letter following the two-digit class number, i.e., C12C represents ‘Brewing of Beer’ whereas C12N represents ‘Micro-organisms or enzymes’ which contains a number of diverse technologies such as antigens and antibodies.
• Patent Family / Equivalent Set

User interface for providing consolidation and access

Page bookmark: US7434177 (B1) - User interface for providing consolidation and access

Inventor(s): ORDING BAS [US]; JOBS STEVEN P [US]; LINDSAY DONALD J [US]

Applicant(s): APPLE INC [US]

Classification:
- international: G06F3/00; G06F3/033; G06F3/048; G06F3/14; G09G5/08
- cooperative: G06F3/04842; Y10S715/977

Application number: US 19990467074 19991220

Priority number(s): US19990467074 19991220

Also published as:
- WO0146790 (A2) WO0146790 (A3) WO0146790 (A9) US201223434 (A1) US8640045 (B2)
- US8032843 (B2) JP201048835 (A) JP4933655 (B2) JP2003536125 (A) JP4620922 (B2)
- EP2148269 (A1) EP1250641 (A2) CN1425151 (A) CN1242318 (C) AU2252401 (A) AU778653 (B2)
• Patent Family / Equivalent Set

• This is not a trivial issue!
How to read a patent - Important Concepts

- Legal status
- Verifying legal status tricky...this example shows you why...
How to read a patent - Important Concepts

- Backward & forward citations
- Backward citations refer to prior art – includes other patents and non-patent-literature
- Rules differ substantially across countries
What is claimed is:
1. A computer system comprising:
   a display;
   a cursor for pointing to a position within said display;
   a bar rendered on said display and having a plurality of tiles
   associated therewith; and
   a processor for varying a size of at least one of said plurality
   of tiles on said display when said cursor is proximate
   said bar on said display and for repositioning others of
   said plurality of tiles along said bar to accommodate the
   varied size of said one tile.
2. The computer system of claim 1, wherein each of said
   plurality of tiles represents an object with which a user of said
   computer system can interact.
3. The computer system of claim 2, wherein said objects
   include at least one of: applications, documents, windows and
   uniform resource locators.
4. The computer system of claim 1, wherein said at least
   one of a plurality of tiles includes a tile to which said cursor is
   closest and a plurality of tiles adjacent to said tile.
5. The computer system of claim 1, wherein said processor
   repositions said others of said plurality of tiles in accordance
   with a predefined relationship between an effect width W, a
   default height H of said at least one of said plurality of tiles and
   a selected maximum height H of said at least one of said
   plurality of tiles.
6. The computer system of claim 5, wherein said pre-
   defined relationship includes a function S defined as:
   \[ S = (H - h) + \sin(\pi x (h + 2) + (W x 2)). \]
7. The computer system of claim 6, wherein said others of

• Claims
• Disclose the invention
Method for using computers to facilitate and control the creating of a plurality of functions

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<thead>
<tr>
<th>Patent No.</th>
<th>Date of Patent</th>
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Inventors: Lucinda Stone, Tyler, TX (US); Michael A. Dean, Tyler, TX (US)

United States Patent
Stone et al.

METHOD FOR USING COMPUTERS TO FACILITATE AND CONTROL THE CREATING OF A PLURALITY OF FUNCTIONS

<table>
<thead>
<tr>
<th>Patent No.</th>
<th>Inventors</th>
</tr>
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<tbody>
<tr>
<td>5,404,291 A</td>
<td>Kerr et al.</td>
</tr>
<tr>
<td>5,412,416 A</td>
<td>Nemirofsky</td>
</tr>
<tr>
<td>5,448,625 A</td>
<td>Lederman</td>
</tr>
<tr>
<td>5,504,321 A</td>
<td>Sheldon</td>
</tr>
<tr>
<td>5,543,856 A</td>
<td>Rosser et al.</td>
</tr>
<tr>
<td>5,581,461 A</td>
<td>Coll et al.</td>
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<tr>
<td>5,613,012 A</td>
<td>Hoffman et al.</td>
</tr>
<tr>
<td>5,615,277 A</td>
<td>Hoffman</td>
</tr>
<tr>
<td>5,684,918 A</td>
<td>Abecassis</td>
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Disclosure?
Utilty models

• **Comparison of utility model and invention patent:**
  
  • Lower statutory requirements for patentability (non-obviousness)
  • No or ‘light’ examination
  • Granted faster (∼6 months)
  • Lower fees
  • Shorter lifetime (7-10 years, no extension or renewal)
  • Sometimes more restricted subject matter
  • Sometimes only for products not processes
  • Sometimes possibility to convert utility model into invention patent
Apple’s slide-to-unlock ‘invention’ – utility model

(10) DE 21 2006 000 081 U1 2008.09.25

(12) Gebrauchsmusterschrift

(21) Aktenzeichen: 21 2006 000 081.9
(22) Anmeldetag: 30.11.2006
(86) PCT-Aktenzeichen: PCT/US2006/061370
(87) PCT-Veröffentlichungstag: 05.07.2007
(87) PCT-Veröffentlichungs-Nr.: WO 2007/076210
(47) Eintragungstag: 21.08.2008
(43) Bekanntmachung im Patentblatt: 25.09.2008

(30) Unionspriorität:

(74) Name und Wohnsitz des Vertreters:
Patent- und Rechtsanwälte Bardehle, Pagenberg, Dost, Altenburg, Geissler, 81679 München

(73) Name und Wohnsitz des Inhabers:
Apple Inc., Cupertino, Calif., US

Die folgenden Angaben sind den vom Anmelder eingereichten Unterlagen entnommen

(54) Bezeichnung: Benutzerschnittstelle zum Entsperren einer Vorrichtung durch Ausführen von Gesten auf einem Entsperrungsbild
UNLOCKING A DEVICE BY PERFORMING GESTURES ON AN UNLOCK IMAGE

ENTSPPERRUNG EINER VORRICHTUNG DURCH DURCHFÜHRUNG VON GESTEN AUF EINEM
ENTSPPERRUNGSBILD

DEVERROUILLAGE D’UN DISPOSITIF PAR DES GESTES EFFECTUES SUR UNE IMAGE DE
DEVERROUILLAGE

Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI
SK TR


Date of publication of application: 10.03.2010 Bulletin 2010/10

Int Cl.: G06F 21/20(2006.01) G06F 3/048(2006.01)

International application number:
PCT/US2006/061370

International publication number:
• Share of innovations not developed if patent protection had not been available (Mansfield, 1986):
  • Pharmaceuticals and chemicals, patent protection essential for 30%
  • Petroleum, machinery, and fabricated metals, patent protection essential for 10-20%

• Very little patenting – 4% of innovative companies in UK patent, but large differences across industries (Hall et al., 2013)

• Dissonance: 25% of Finnish companies companies say patents most important mechanism, 15% secrecy – but 62% say rely on secrecy, 16% on patents (Leiponen and Byma, 2009).
Why patent?

• It makes little sense to look at patenting or secrecy in isolation
• Companies choose among
  • **Formal mechanisms:** patents, trademarks, designs and copyright
  • ‘Informal’ mechanisms: secrecy, confidentiality agreements, lead time, complexity
• More reasonable approach: *why would a firm with a given innovation that can be patented choose not to rely on a patent to protect an innovation?*
• Focus on patents vs secrecy
• Assume mutually exclusive – explicit stark trade-off between disclosure and nondisclosure of an inventive idea
Why do firms patents?

<table>
<thead>
<tr>
<th></th>
<th>Patent</th>
<th>Don’t patent</th>
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<tbody>
<tr>
<td>Secrecy</td>
<td>Patent-secrecy combination</td>
<td>Secrecy only</td>
</tr>
<tr>
<td>Non-secrecy</td>
<td>Patent only</td>
<td>Disclosure-publishing</td>
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## Factors affecting the patent-secrecy choice

<table>
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<tr>
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<th>Patents</th>
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<tr>
<td>Disclosure (tacit knowledge)</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Ease of delimiting invention</td>
<td>Yes</td>
<td>Not clear</td>
</tr>
<tr>
<td>Reverse engineering allowed</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Subject matter</td>
<td>Statutory</td>
<td>Broader</td>
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<tr>
<td>Timing</td>
<td>After invention</td>
<td>Work-in-progress</td>
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<tr>
<td>Process vs. product</td>
<td>Both</td>
<td>Easier for process</td>
</tr>
<tr>
<td>Length</td>
<td>20 years</td>
<td>Longer (potentially)</td>
</tr>
<tr>
<td>Cost to obtain</td>
<td>Higher</td>
<td>Nonzero</td>
</tr>
<tr>
<td>Enforcement cost</td>
<td>Expensive</td>
<td>Expensive</td>
</tr>
<tr>
<td>Management requirements</td>
<td>IP management</td>
<td>Knowledge management</td>
</tr>
<tr>
<td>Geographical scope</td>
<td>National</td>
<td>Global</td>
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</table>
‘Patent/utility model management’ in isolation makes no sense to

Broader approach needed – how to appropriate returns to innovation?

1. What purpose does innovation serve?
2. Where do returns for innovation come from?
3. How to maximize returns?
4. What are the risks undermining returns?
5. Is there a place for formal intellectual property?
Innovation/IP strategy

- IP management has potential to influence firm’s position in market
- IP requires active strategic management:
  - Protection strategy
  - Filing strategies (e.g. anticipating publication and examination or delaying it)
  - International considerations
  - Combination of registered, unregistered IP and ‘alternative’ mechanisms
  - IP bundles
  - Maintenance
  - Monitoring
  - Commercialization
Organization of IP management

- Management of IP requires not only expertise and experience, but also **complex managerial processes** within companies.

- Organizational challenges:
  - Collection and processing of information
  - Intelligence on competitors’ technological positions and IP strategies
  - Information on oppositions, handling of disputes
  - Regulate interplay of R&D, commercialization and IP protection
  - Internal mechanisms to guarantee continuous education and training of staff on IP

- In-house or outsource?

- SMEs often rely on ad hoc solutions
Summary

- IP rights confer (strategic) value to a company by conferring the firm the legal ability to deny third parties the use of the protected invention
- Combination of commercial, technical and legal expertise, as well as commercialization
- Managerial and organizational challenges of successful IP management weigh more heavily on smaller companies than larger ones
- Plenty of empirical evidence to suggest potential rewards to effective IP management
