

Intellectual Property

Introduction to patenting and technology protection

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What is Intellectual Property?

- Intellectual property can be defined as products of individuals' minds - products that result from intellectual, creative processes.
- Legal Forms of Intellectual Property Include:
 - **Patents**, Trademarks, Copyrights and Trade Secrets
- Practical forms of Intellectual Property Include:
 - Ideas -> Inventions -> Innovations

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Time Horizons for Protection

- Patent
 - 20 years from filing date
- Copyright
 - 70 years from death of author
- Trade Secret
 - As long as you can keep it a secret

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Basis for a Patent System

- *U.S. Constitution: "to promote the progress of science and useful arts by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries"*
- *Enrich the fund of public knowledge*
 - An invention is of no good to humanity until it is disclosed/used but once it is used it can be readily copied by others.
 - Granting a temporary monopoly will encourage disclosure and support commerce
 - Reward/incentive for investment of time and money
 - Encouraging "inventing around"
 - Requirement for disclosure of preferred embodiment.

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Idea to Innovation

- Idea
 - Basic concept or general solution to a problem.
- Invention
 - Specific solution that can be described in a patent claim.
- Innovation
 - An invention that has achieved commercial potential.

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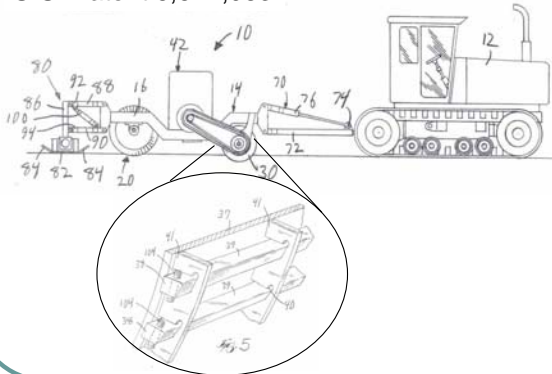
Idea

- “There should be a way to smooth out snow trails. You could do it with a machine like a tractor but works better than the existing drag systems”

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Invention

U.S. Patent 6,671,983



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Innovation...



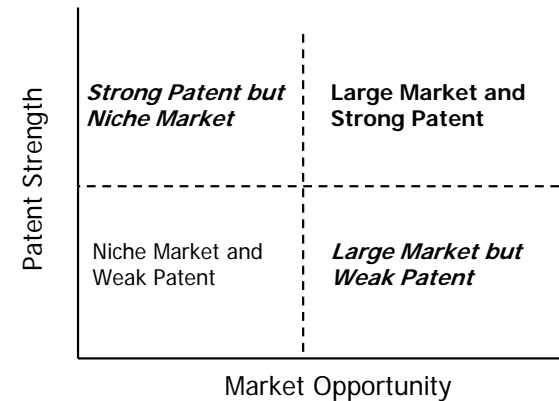
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Basic Protection Considerations

- Idea to Invention
 - Is the technology patentable?
- Invention to Innovation
 - How strong is the patent likely to be?
 - What is the size of the market for the technology?
 - Is that market enhanced by protection of the technology?

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Commercial Opportunity Assessment



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If not patent then what?

- Trade Secret
- Know-how
- Back to the drawing board
- Run to the market...

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Types of Patents

- Utility patents
 - may be granted to anyone who invents or discovers any new, useful, and non-obvious process, machine, article of manufacture, or composition of matter, or any new and useful improvement thereof.
- Design patents
 - may be granted to anyone who invents a new, original, and ornamental design for an article of manufacture.
- Plant patents
 - may be granted to anyone who invents or discovers AND asexually reproduces any distinct and new variety of plant.

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Requirements for patentability

- Novel
 - The object of the patent must be new (not published, previously available for purchase, or available to the public in any way).
- Non-Obvious
 - The invention must not be obvious to those “skilled in the art”.
- Useful
 - Must satisfy some productive purpose.

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Patenting Algorithms and Computer Software

- Traditionally software was protected via copyright.
- Patenting of software is an evolving area.
- Cannot patent a “natural phenomenon” or a “mathematical result in pure form or number” - e.g. a rule of nature, a mathematical equation as itself, or the pure results of an equation.

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Algorithms and Software (cont.)

- Rules Applied by U.S. PTO
 - Series of steps to be performed on a computer AND meets either of the following conditions:
 - Performs independent physical acts (e.g. controller software as part of the controlled system)
 - Manipulates data representing physical objects or activities to achieve a practical application (i.e. it must do more than calculate or process and produce data)

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Anatomy of a Patent

- Title
- Background
 - Field of invention
 - Description of related art
- Summary
- Description of drawings
- Description of preferred embodiment
- Claims

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Claims

- Must particularly point out and distinctly claim the invention.
- What the invention “is”, not what it “does”.
- Describe the metes and bounds of the invention – Define the “property” similar to a real estate claim.

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Example Claims

1. A grooming drum adapted for use with a snow grooming device, said drum comprising: an **elongated cylinder** including a central axis, said cylinder supportable by the snow grooming device for rotation about said central axis; a plurality of axially spaced apart and radially protruding **ribs** extending circumferentially around said cylinder, said ribs including circumferentially spaced apart **apertures**, the apertures of each rib being substantially aligned with the apertures of at least one other rib; and a plurality of elongated **cutting teeth**, each cutting tooth extending through aligned apertures of said ribs, said cutting teeth including a cross-sectional area, wherein said apertures are **larger than said cross-sectional** area to permit said cutting teeth to move with respect to said ribs as said drum rotates.

9. A snow groomer for use on a snow-covered landscape, said snow groomer comprising: a movable platform adapted to move in a forward direction; a prime mover mounted to said platform; a grooming drum rotatably mounted to said platform; and a power transmission assembly operatively interconnecting said prime mover with said grooming drum, wherein in response to operation of said prime mover, **said drum counter-rotates with respect to the forward direction** to agitate and groom snow on the snow-covered landscape.

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Inventorship

- Inventors are those that came up with the inventive concepts described in allowed claims.
- Individuals that helped demonstrate the concept are not necessarily inventors. They must have contributed inventive concepts during the demonstration process.
- Inaccurately listing inventors can result in invalidation of a patent.

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Important Considerations

- Public disclosure
 - results in forfeiture of foreign patent rights.
 - U.S. patent applications must be filed within one year of the disclosure date.
- Record keeping
 - accurate and verifiably dated records are very important in determining inventorship and priority in the event of competing applications in the U.S.

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Patent Searching

- May be prospective or retrospective
- Ultimately best done by search firm at Patent Office.
- Search by:
 - Keywords
 - Assignees
 - Inventors
- Look at:
 - Description - relevant to prior art
 - Claims - relevant to freedom to operate
 - Drawings

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Searching cont.

- Classification system assists in constraining necessary search space
- Example
 - Class 136 Batteries: Thermoelectric and Photoelectric
 - Subclass 243 photoelectric
 - .244 panel or array
 - ...246 With concentrator, orientator, reflector, or cooling means
 - ...247 Fluorescent concentrator

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Simplified Patent Process

1. Disclosure prepared
2. Prior Art search
3. Market assessment
4. Patent prepared
attorney fees for prep
5. Patent filed - US PTO and PCT (global)
patent office filing fees

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Simplified Patent Process (cont.)

6. Foreign National Filings (1-2 years)
7. Office actions
8. Response to office action
attorney fees for prosecution
9. Final office action
allowance of all or some claims
final rejection
10. Appeal

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Proprietary Rights for Employees

- Employees are typically required to assign rights of inventions to their employer as a condition of employment.
- Assignment is typically for nominal consideration (although modest compensation programs are being developed).
- Agreements are not necessarily restricted to efforts on working hours.
- Agreements also may have “non-compete” clauses.

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Invention Disclosure

- Document that describes the invention and documents its conception (priority).
- Should be signed, dated, and witnessed.
- Should be reasonably “enabling” – have a basic description of how to create the invention, including drawings.
- Supplement with notebooks and other documentation as necessary.

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When should an invention disclosure be submitted

- As soon as you have developed the concept and have some assurance that it works and meets the criteria for novelty and non-obviousness.
- Documented dates of disclosure submission can be important if there are competing applications.

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What can you do with a patent?

- A patent in and of itself is simply a document.
- The value in a patent exists in what it allows you to do (or exclude others from doing) and must be extracted either through a license agreement or using it to enhance the competitive position of your business.

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Career Opportunities Related to Patents

- Patent Attorney
- Patent Agent
- Patent Engineer
- Licensing Manager
- Technology Portfolio Manager
- Inventor
- Entrepreneur

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Additional Resources

- Web Resources
 - www.uspto.gov
 - www.delphion.com
 - www.patentcafe.com

Contact Information:

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