Learning Outcomes

By the end of this session, you should know:

- What is a patent?
- How to read a patent document
- How to search for patents in Patsnap
  - Patsnap
  - Patsnap Insights
Introduction to IP & Patents

Patents is one form of intellectual property (IP)

Other forms of IP include copyright, registered design, trademark, etc.

For more information, go to Patent Libguide and refer to the FAQ section.

FAQs

- FAQ: How to find if I have a patent number?
  Quick guide on how to find the patent number if you have the number.
- FAQ: How to read a patent.
  This is one of the FAQs from The Lens. A U.S. patent is used as an example to explain the purpose and goals for each section of the patent document.
- Inventor’s handbook: "Basic guidance on the key stages of turning an invention into a commercial product." - SPO
- IP@SG Singapore: Understanding IP & Innovation: Patents
  The authors in this editorial article gave some hints and tips on how to read patent documents to locate key scientific findings.
- World Intellectual Property Organization: About Patents
  This site gives a quick guide on different forms of intellectual property.

http://libguides.nus.edu.sg/patents
Why Search for Patents

- Point out new directions in research
- Generate ideas for projects/research
- Reduce wastage on duplicating research
- Gain access to a wealth of technical information not published anywhere else
- Don’t search patents only as last part of the research process
What is in a Patent Document

LSM3244
Pre-Class Questions

Use Of Olive Oil In The Preparation Of A Product For Oral Hygiene For Eliminating Or Reducing Bacterial Plaque And/Or Bacteria In The Mouth

- What is the patent number?

- Is this a patent application or granted patent?

- What was this patent issued?

-This patent was cited by several patents. Indicate how many patents have cited this patent. List one of the titles and the patent number.

What are the problems you have encountered when doing this exercise?
A Very Simple Timeline - Patent Filing

Inventor File for Patent

- Typically published **18 months** after the filing date of application

Publication of Patent Application

- May take up to several years before a patent is granted

Publication of Granted Patent

- Generally, protected for **20 years** from date of filing

Patents may be abandoned or may expire earlier
What is in a patent document?

Click on the link (US7074391) to view this patent online.

Other Sections Include:
- Description of the Invention
- Claims

See FAQs on How to Read Patent Document (Patent Libguide)
Claims

Patents Act


(5) The claim or claims shall —

(a) define the matter for which the applicant seeks protection;

(b) be clear and concise;

(c) be supported by the description; and

(d) relate to one invention or to a group of inventions which are so linked as to form a single inventive concept.
Claims

- Independent Claims
  “Generally an independent claim is one that does not refer to any other claim. Some independent claims may refer to other claims....”

- Dependent Claims
  “A dependent claim can depend upon one or more independent claims or one or more dependent claims....”

Source: Independent And Dependent Claims

- What are the dependent and independent claims for US7074391?
What is in a patent document?

Additional Search Tips

- Patent Classifications
  - A61Q11/00 Preparations for care of the teeth, of the oral cavity or of dentures; Dentifrices, e.g. toothpastes; Mouth rinses
  - A61K31/045 Hydroxy compounds, e.g. alcohols; Salts thereof, e.g. alcohohlates
  - A61K31/7004 Monosaccharides having only carbon, hydrogen and oxygen atoms
  - A61K33/16 Fluorine compounds
  - A61K36/63 Oleaceae (Olive family), e.g. Jasmine, lilac or ash tree
  - A61K8/022 Oils, fats or waxes; Derivatives thereof, e.g. hydrogenation products thereof of vegetable origin

- Citations

Source: https://patents.google.com/patent/US7074391B1
Patent Classifications

- One way to search patents is using patent classification
- Search patents more effectively
- Different patent classification systems
  - International Patent Classification (IPC)
    - used by >100 countries
  - Cooperative Patent Classification (CPC)
    - partnership between the United States Patent and Trademark Office (USPTO) and the European Patent Office (EPO)
  - United States Patent Classification (USPC)
- Can use patent classification to search for old patents
International Patent Classification (IPC)

The IPC system
Patent documents are classified according to different classification systems depending on the patent granting authority concerned. The most important classification system is the International Patent Classification (IPC).

Introduced in 1968, the IPC is used by all patent offices worldwide, some of which also use a national classification system. The IPC has a hierarchical structure and is subdivided into sections, classes, subclasses, groups and subgroups. One of the most precise classification systems available, the IPC currently divides technology into around 70,000 sub-areas.

Areas of technology
In the IPC, the technology is divided into eight main sections:

- A Human Necessities
- B Performing Operations; Transporting
- C Chemistry; Metallurgy
- D Textiles; Paper
- E Fixed Constructions
- F Mechanical Engineering; Lighting; Heating; Weapons; Blasting Engines or Pumps
- G Physics
- H Electricity

## International patent classification (IPC)

### IPC divisions

The IPC has a systematic and hierarchical structure. Classification becomes more detailed with every further (sub)division, as you can see in this example: Level

<table>
<thead>
<tr>
<th>Section</th>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>Human necessities</td>
</tr>
<tr>
<td>Class</td>
<td>A21</td>
<td>Baking, edible doughs</td>
</tr>
<tr>
<td>Subclass</td>
<td>A21C</td>
<td>Machines or equipment for processing doughs</td>
</tr>
<tr>
<td>Group</td>
<td>A21C1</td>
<td>Mixing or kneading machine for the preparation of dough</td>
</tr>
<tr>
<td>Subgroup</td>
<td>A21C1/06</td>
<td>With horizontally-mounted mixing or kneading tools</td>
</tr>
</tbody>
</table>

Guess This Invention (Using IPC)
How to Find Patents Using Patsnap

LSM3244
How to Find Patents – Patent Libguide

NUS Subscribed Databases

Internet Sources
How to Find Patents Using Patsnap

Types of Searches
- Semantic searching
- Keywords searching
- International Patent Classification
- Citation Search
Login : Patsnap

Login via :
NUS Libraries Portal (http://libportal.nus.edu.sg)

Tips:
You can also access Patsnap via Patent Libguide (Database tab) (http://libguides.nus.edu.sg/patents)
Semantic Search
Patent Number: US7074391
Semantic Search

Patent Number: US7074391
The aim of this study was to compare an olive-oil containing paste against a fluoride matched control in a clinical re-growth trial to determine any effect, and then subsequently in vitro to elucidate potential mechanisms of action. With a significant difference between the control and experimental paste, and a reduction in plaque area of 22%, the olive oil may represent an important plaque inhibitory agent. A reduction in plaque of 20%, as measured by percentage plaque coverage, is generally required to show that an active ingredient has possible efficacy.3 It must be noted that the index scores represent a small change within a small volume of plaque between the control and test paste. This is a reflection of the insensitivity of index measurements, such as the Turesky scale. Indeed, it is possible to achieve a 50% reduction in plaque area and yet remain at the same index measurement level. Here, the value of the planimetric measurement is seen, with a larger difference detected between the products. Nonetheless, each measurement method separated the pastes statistically.

Keywords Search: Low salt soya sauce

- Identify the keywords in the topic: Low salt, soya sauce
- Find the synonyms / alternate terms of the keywords: Salt, Sodium Chloride, NaCl
- Look for different variations of keywords: Reduce, Reduces, Reduction \(\Rightarrow\) reduc*
- Use phrase searching: “Soya Sauce” “Soy Sauce”
- Use Boolean operators: “Low salt” AND “Soya Sauce”

Use AND and OR as necessary.
## Keywords Searching

### Useful Search Operators

<table>
<thead>
<tr>
<th>Operator</th>
<th>Explanation</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>AND</td>
<td>2 keywords must be found in document</td>
<td>apple AND orange</td>
</tr>
<tr>
<td>OR</td>
<td>Either keywords found in document</td>
<td>apple OR orange</td>
</tr>
<tr>
<td>NOT</td>
<td>1(^{st}) keyword must be found but exclude 2(^{nd}) keyword</td>
<td>apple NOT orange</td>
</tr>
<tr>
<td>“ &quot;</td>
<td>Keywords within quotation marks must be next to each other in the order specified</td>
<td>“apple juice”</td>
</tr>
<tr>
<td>( )</td>
<td>Using parentheses to define search order</td>
<td>(apple OR orange) NOT juice</td>
</tr>
<tr>
<td>*</td>
<td>Replace a string of characters</td>
<td>function*</td>
</tr>
<tr>
<td>$Wn</td>
<td>Search words within “n” words of each other, in any order</td>
<td>vitamins $W5 nutrients</td>
</tr>
<tr>
<td>$WS</td>
<td>Search words within SAME sentence</td>
<td>vitamins $WS nutrients</td>
</tr>
</tbody>
</table>

Go to Search Helper for more tips: [Search Syntax Tab](#)
Search Statement

Query: Low salt soya sauce

("soya sauce" OR "soy sauce") AND (salt OR “sodium chloride” OR NaCl) AND (reduc* OR low)

All Fields: Retrieved > 10,500 records

Review Search Statement

("soya sauce" OR "soy sauce") AND ((salt OR “sodium chloride” OR NaCl) $WS (reduc* OR low))

Retrieved > 6,500 records
Find Other Patents (Document Level)

Retrieve Other Relevant Patents Using:

- Citation
- Patent Classifications
Find Other Patents (Document Level)

Retrieve Other Relevant Patents Using:

- Citation

US5380530
Oral Care Composition Coated Gum
**Find Other Patents (Document Level)**

**Retrieve Other Relevant Patents Using:**

- International Patent Classification

<table>
<thead>
<tr>
<th>Application Date</th>
<th>29 Dec 1992</th>
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</thead>
<tbody>
<tr>
<td>Application Number</td>
<td>US5380530</td>
</tr>
<tr>
<td>Publication Date</td>
<td>10 Jan 1995</td>
</tr>
<tr>
<td>Publication Number</td>
<td>US5380530</td>
</tr>
<tr>
<td>Issue Date</td>
<td>10 Jan 1995</td>
</tr>
<tr>
<td>Estimated Expiry Date</td>
<td>10 Jan 2012</td>
</tr>
</tbody>
</table>

- **Applicant**: WHITEHILL ORAL TECHNOLOGIES (Hazel, NJ)
- **Standardized Assignee**: WHITEHILL ORAL TECHNOLOGIES
- **Assignee**: WHITEHILL ORAL TECHNOLOGIES (Hazel, NJ)
- **Current Assignee**: WHITEHILL ORAL TECHNOLOGIES, INC. (65 GLEN GRAY ROAD, 07760, LOCUST, NEW JERSEY)
- **Inventor**: HILL, IRA D. (LOCUST, NJ)
- **Agency**: LINEK, ERNEST V.

**International Classification**

- IPC(17): A61K9/68 A23G3/00

**Cooperative Classification**


**A HUMAN NECESSITIES**

- A61 Medical or veterinary science; hygiene
- A61Q Specific use of cosmetics or similar toilet preparations
- A61Q11/00 Preparations for care of the teeth; of the oral cavity or of dentures; Dentifrices, e.g. toothpastes; Mouth rinses
Refine Your Search Results

Too many records to see?

Refine by (some of the options):
- Additional keywords
- Years
- Assignee
- Legal status
Additional Tips

Additional Help Available in Patent Libguide


- Set Up Alerts
- Save Search Query
- Search History
- Workspace
Additional Guides on Searching Patsnap

Go to Patent Libguide: Databases
Patent Libguide

For more information on patents, please visit our Patent Libguide @ http://libguides.nus.edu.sg/patents
Exercise

- Select your topic

- Find relevant patents based on your topic using the one or more of the techniques that you learnt just now:
  - Keywords searching
  - Semantic searching
  - International Patent Classification (IPC)

- From the results set, select a patent which is most relevant to you? What helps you to find this patent (reading claims, international patent classification, abstracts)?

- Share the results with your course mates.
How to Find Information in Patsnap Insights

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Patsnap Insights

- Provides business intelligence information on companies and industries

- Assess opportunities and threats, find valuable information etc. about the company or technology

- The data is based on information extracted from Patsnap database

- For more information on patents, please visit our Patent Libguide (NUS Subscribed Databases)
  (http://libguides.nus.edu.sg/c.php?g=145610&p=954535)

- Three ways to Search
  - Results page in Patsnap
  - Access directly to Patsnap Insights Dashboard
  - Workspace
Patsnap Insights

- Company Information
  - Moderna Therapeutics
  - News article “EDB arm joins $661m funding round for biotech company” (Source: [https://www.straitstimes.com/business/banking/edb-arm-joins-661m-funding-round-for-biotech-company](https://www.straitstimes.com/business/banking/edb-arm-joins-661m-funding-round-for-biotech-company)) (Viewed on 27 September 2018)
  - Possible to find out more about this company?

- Search Patsnap Insights - Company
Patsnap Insights

16.3.1 Collagen

Collagen is the most abundant protein in vertebrates and constitutes about 25% of vertebrate total proteins. It forms unique insoluble fibers that have high tensile strength and a right-handed triple superhelical rod consisting of almost three identical polypeptide chains (Ogawa et al. 2004a, b).

Traditionally, collagen is isolated from the skins of land-based animals, such as cow and pig. Non-denatured and denatured collagen have different applications: the first one is suitable for cosmetics, biomedical, and pharmaceutical industries, while the second finds applications in the food and biomedical industries (Ogawa et al. 2004a, b).

Despite the fact that fish collagens denature at temperatures below 30 °C and possess lower stability than the mammalian counterparts (Ogawa et al. 2004a, b), many studies have reported the extraction and purification of this molecule from wastes generated by the processing of sea animals, such as fish. Many species have been studied, such as black drum (Pogonias cromis), sheepshead seabream (Archosargus probatocephalus) (Ogawa et al. 2004a, b), yellowtail fish (Morimura et al. 2002), and others.
Patsnap Insights

- Identify terms to search
  - ??
  - ??
  - ??

- Search in Patsnap Insights – Create Technology Dashboard
Patsnap Insights Exercise

- Create a dashboard (company or technology)
- You may use own topic using the one or more of the techniques that you learnt just now
- Explore and share with your group mates which tables you found useful for your search
Let’s Play Kahoot!!

https://kahoot.it/
Feedback & Contact

Please also give us your feedback at end of today’s session at


For queries or request for advisory session, please contact:
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Patent Resource Team Lead, NUS Libraries

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