

# “INTERNSHIP ON PATENT SEARCHING AND ANALYSIS”

Project report submitted in partial fulfillment of the requirement for the degree of  
Bachelor of Technology  
in  
**BIOTECHNOLOGY**



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By

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Under the enlightenment of

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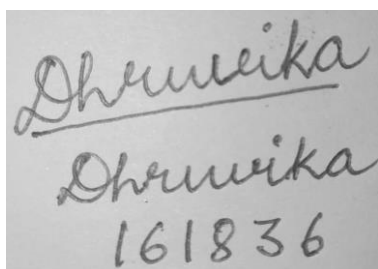
## DECLARATION

I thusly announce that the work titled "**Internship on Patent Searching and analysis**" is submitted as a Project Work has been completed by me at **Talwar and Talwar Consultants and Services Pvt. Ltd., Mohali** under the direction of **Mr. Punit Talwar**. Any further augmentation, continuation or utilization of this training must be attempted with earlier express composed assent from the Supervisor, **Talwar and Talwar Consultants and Services Pvt. Ltd., Mohali**.

For my 7<sup>th</sup> Semester project, titled **Cryopreservation and Regeneration of *Picrorhiza kurroa*** was carried out under the supervision of **Dr. Hemant Sood**.

I further declare that the training work or any part thereof has not been previously submitted for any degree or diploma in any university.

Signature:



Dhruvika  
Dhruvika  
161836

Date: 25<sup>th</sup> May, 2020

## **ACKNOWLEDGEMENT**

One generally need somebody who moves us to show improvement over we know now, I should offer my thanks to the individuals who helped me and guided me during preparing. I might want to communicate a genuine gratitude to different individuals to help me en route in finishing my preparation effectively. I might want to thank every one of them for their energy and backing.

I would like to thank my supervisor for his consistent help and direction all through the preparation. He had been a steady wellspring of help for understanding the six months training. Without his assistance it would have been a significant troublesome undertaking for understanding the idea driving the industrial training.

I would likewise prefer to welcome the endeavors of the considerable number of individuals from my Biotechnology team for their consistent and sacrificial help towards me to somewhat finish the undertaking to the best of my efficiencies.

Thank you very much!

Signature:

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Date: 25<sup>th</sup> May,2020



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### **Provisional Training Certificate**

This is to certify that **Dhruvika** . (Employee Code: TTCS-69) is undergoing full time training at Talwar & Talwar Consultants and Services Pvt. Ltd. as **Intern - PRW** from **3rd Feb 2020** till date. The internship is going to complete on **31<sup>st</sup> Jul 2020**.

During the tenure in the company, her performance has been highly satisfactory.

**For Talwar & Talwar Consultants and Services Pvt. Ltd.**

S. S. Bisht

**Assistant Manager- HR**

*S. S. Bisht*

Authenticated through  
Legalify.com  
S. S. Bisht  
Date: Fri May 29 17:14:18 IST  
2020

**Registered Office:** Talwar & Talwar Consultants and Services Pvt. Ltd. SCO-304, Sector 38D, Chandigarh, India -160037

**CIN:** U74140CH2009PTC031731 | **IEC:** 2212000146 | **PAN:** AADCT5236H

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# **Chapter - 1**

## **COMPANY OUTLINE**

TT(Talwar and Talwar)consultants and services (ISO 27001 and ISO 9001: 2008 confirmed) is resolved as the fundamental suppliers of top - score material having a place and Innovative Services, serving to clients to value the odds and address troubles. With time, TT Consultants and services has worked with its customers to give chief patent patent legitimate continuing help like Patent Drafting, searches related to Patentability, Invalidation, Freedom to operate and so on and patent prosecution services.

TT Consultants have a worldwide nearness through 5 workplaces worldwide in India, USA and Taiwan, and have shown their skill to customers in excess of 30 significant topographies.

TT Consultants and services gives a novel mix and relationship of the world, patent request association and a world patent examination association containing the best specialists over earth. TT Consultants and services is among the prime logical control partnerships in Asian countries, offering patents types of assistance throughout the previous thirteen years to a developing rundown of glad customers wherever the world. In its steady interest to start, it's been prepared to with progress accept the various frameworks, tools and services pointed towards giving utmost quality answers for its customers.

## CHAPTER – 2

### INTRODUCTION TO THE ALLOCATED TASK

#### 2.1 Intellectual Property

Any intangible manifestations of human mind is known as Intellectual property.

#### 2.2 IPR ( Intellectual Property Rights )

Intellectual property rights ( IPR ) is characterized as thoughts, innovations, and articulations dependent on which there is open readiness to present the present status of properties. IPR gives certain exclusive regulations and rights to the innovator or developers of the property, giving them power to receive business rewards and reputation, result of their imaginative efforts.

##### 2.2.1 Types of IPR

**Patent:** A patent is a privilege allowed to an inventor that allows the inventor to reject others from making, selling or using the creation for a timeframe. The patent framework is intended to support innovations that are novel and valuable to society and is valid for 20 years.

**Trademark:** A trademark is a sign, word, phrase, symbol, design or its combination capable of determining the merchandise or administrators of each endeavor from those of different undertakings.

**Geographical Indications:** GI can be a name or a sign which is used on goods having a peculiar geographical origination and is possessing traits or characteristics or prominence that are necessarily to that place of origination.

**Copyright:** Exclusive rights given to the creator of an imaginative work, for example, music, books, films, figures and so forth. The proprietor can utilize the work himself or can offer consent to another person. Copyrights ensured work can't be used without the approval of the proprietor of the rights. Validity of copyrights is for the lifetime of the creator and at least for the next fifty years after his demise.



**Trade Secret:** Trade secret is any procedure, recipe, practice, plan, instrument or data which is commonly not known to people in general by which a business determines a financial bit of leeway. Such insider facts are classified data for the most part not known to people in general so its mystery must be kept up.

## 2.3 Patents

Exclusive rights granted for an innovation which is any new and useful procedure, machine or arrangement of matter, or any new and helpful enhancements. For being patentable, an invention must satisfy every single other prerequisite of patentability. Its legitimacy is for the next twenty years from the date of grant. It is the patent proprietor who is having an advantage and decides who can or cannot use the patented innovation. Patent proprietors can give consent or permit or can also sell the rights of the invention to someone else who will at that point become the new proprietor of the patent. After the patent terminates, its protection ends and the innovation comes in the open space. Proprietor will have no exclusive rights to the development which presently becomes for business abuse by others.

### 2.3.1 What are the Patent Types

- Utility patents,
  - Design Patents,
  - Plant Patent
- 
- **Utility patents:** A utility patent, ensures the manner in which an article is utilized and works. It is the most widely recognized kind of patent that individuals look for. This sort of patent spreads procedure, compositions of matter , machines, and manufactures that are new and helpful. Processes allude to any demonstrations or techniques for accomplishing something, for the most part including modern or specialized processes. Compositions of matter are essentially substance compositions, which can incorporate a blend of fixings or new synthetic mixes. A utility patent legitimacy is for 20 years from the date of filing.



**General utility-**

Requirement of  
functionality

**Specific utility-**

Invention actually  
performs the function

**Moral utility-**

Invention should not  
harm anyone ethics

- **Design Patents:** As far as getting a design patent, a design is characterized as the "surface ornamentation" of an item, which can incorporate the shape or setup of an article. So as to acquire this sort of patent assurance, the design must be indistinguishable from the item. While the article and its design must be indistinguishable, a design patent will just secure the item's appearance. You can implement your design patent for just 14 years after it is issued.
- **Plant Patent:** Plant patent can be acquired to secure new and particular plants. A couple of prerequisites to acquire this sort of patent are that the plant isn't a tuber engendered plant (for example an Irish potato), the plant isn't found in an uncultivated state, and the plant can be asexually duplicated. Asexual reproduction implies that as opposed to being imitated with seed, the plant is replicated by joining or cutting the plant. Plant licenses require asexual reproduction since it's evidence that the patent candidate can recreate the plant. Its legitimacy is for 20 years from the date of filling.

**Advantages.:**

- It keep other out of the market
- Rivals are restricted
- Generates incomes from permit or sale
- Validity to the product is given

**Disadvantages :**

- Increase overall price
- Accountability

## 2.4 Things which cannot be Patented:

- Nature laws
- Ideas of the abstract
- Mental process
- Matter which is printed
- Computer programs
- Means of doing business

## 2.5 Benchmark for Patentability

- **Novelty:** Novelty could be a patentability request. Partner innovation isn't new thus not patentable in the event that it totally was certifiable to the overall population before the date of filing of the application, or before its date of need if the need of partner prior application is asserted.  
The point of the novelty request is to thwart the previous art from being restrictive again. The innovation should be new and won't be seen previously.
- **Inventive step and non-obviousness:** The innovative advance and non-obviousness duplicate an equivalent general patentability request blessing in most patent laws, in accordance with that partner degree development should be adequately inventive i.e., non-self-evident — to be exclusive.
- **Utility:** The innovation ought to have some modern utility. It must fulfill a few necessities of the people.

## 2.6 Portions of Application

- Title at the top.
- Abstract contains brief of the invention.
- Domain and subdomain of the invention belongs to the field of the invention.
- Background represents the domain and prior art, has is being added. What are the problems in the prior art for which the creator is providing solution in the invention.
- List of all the possible embodiments of the invention is mentioned in the summary.

- Drawings brief description.
- Drawings detailed description.
- The scope of the invention is defined by the claims. One actually gets rights on the basis of claims.
- Drawings which has to be compulsory in United States.

## II.7 Citations

When document is mentioning another document by having some related content.

**Backward :** Previous art references which are found in patents.

**Forward :** After the patent has been issued, references related to innovation carried out in that field.

## II.8 Salient dates in Application of Patent:

- **Date of invention:** It is the date on which there was completion of innovation.
- **Date of filing:** Date on which the patent was first filed in the patent office with whole information.
- **Date of priority:** Initial filing anywhere across the world.
- **Date of issue:** Also known as Grant date of the patent. On this date the patent is
- **Date of expiration:** It is the date when the creator of the invention has no protection. Now the patent is free to be used in public domain.
- **Date of publication:** When the information of the patent is fully disclosed to the public and it is eighteen months after the date of priority.

## CHAPTER - 3

### MODULAR ELUCIDATION

#### 3.1 Kinds of Searching

**3.1.1 Novelty search:** To know if the innovation is patentable or non-patentable. The search is not limited by date. Patents till present are searched and given to the creator.

**3.1.2 Invalidity search :** Claims are concerned in invalidity search. It is done before the date of the priority of the subject patent which the client has given to us or may be a date. So the claims are the basis of rejection if someone came up with his innovation before the filing of questioned patent. Date of priority plays a crucial role.

**3.1.3 Infringement search:** At the point when somebody is utilizing or selling or making item with authorization of the innovator. Within at least one cases the encroaching party's item falls. So in this we discover the organization's items which are encroaching the subject patent cases.

**3.1.4 FTO search:** It is pivotal to direct FTO search before the commercialization of the item to guarantee that the ideal item can be securely propelled in a particular market without disregarding or encroaching others licensed innovation directly inside that specific jurisdiction.

**3.1.5 State of the art search:** Allows a client to learn which technology right now being created in the field is looked. It also tells about the trending technologies and what can be their drawbacks or what are the requirements that the client has to work upon in order to make his innovation more advantageous to the society.

#### 3.2. Types of Patent Application

**3.2.1 Ordinary Application:** The first application for patent recorded in the Patent Office without claiming priority from any application or with no reference to some other application under procedure in the Patent office is called a standard application

**3.2.2 Convention Application:** At the point when a candidate files a patent application, guaranteeing a priority date dependent on the equivalent or generously comparative application recorded in one or more of the convention nations, it is known as a convention application. To

get a convention status, a candidate should document the application before any of the patent offices within 12 months from the date of first application in the convention nation.

**3.2.3 PCT-International Application:** For filing patent application Patent Cooperation Treaty or PCT is an international agreement. Be that as it may, there is nothing called as a 'world patent'. The PCT application doesn't accommodate the grant of a worldwide patent, it basically gives a smooth out procedure to the patent application process in numerous nations simultaneously.

**3.2.4 PCT-National Phase Application:** The PCT-national phase must follow the international phase. The applicant should separately 'go into the national phase'. For example, file a National phase application in every region he wishes to enter. The applicant can enter the national phase in up to 138 nations inside 30-31 months (relies upon the laws of the assigned nations) from the international filing date or priority date (whichever is prior). In the event that the applicant doesn't enter the national phase inside the recommended time limit, the International Application loses its impact in the assigned or chosen States.

**3.2.5 Patent of addition Application:** Patent of addition application has been made for a patent in regard of any improvement or change of an innovation depicted or uncovered in the total specification previous applied for or has a patent. So as to be patentable, an improvement must be something in excess of a minor workshop improvement and ought to freely fulfill the test of invention. The significant advantage is the exception of renewal fee in as much as the primary patent is restored. A patent of addition slips with the suspension of the fundamental patent.

**3.2.6 Divisional Application:** Divisional application permits a maker to sever an application into at least two utilizations of patent. This can be on the grounds that the first application was endeavoring to guarantee for various inventions simultaneously. There ought to be single application which should guarantee single development.

### **3.3 Claims**

It is the degree of the security given by a patent or the insurance needed in a very application. It characterizes the extent of security allowed by the patent. it's extra important to get claims that encapsulate the peripheral arrangement of confinements that separate partner invention over what preceded. Less limitations will build dismissal on account of absence of curiosity.

### 3.3.1 Kinds of Claims

- **Independent claims:** A claim that explains the invention, covers the multiple features of the innovation and is always broader.
- **Dependent claims:** A claim which is dependent on the parent claim which can add features to the claim parent but cannot eliminate any feature from the parent claim. e.g.
- **Multiple dependent claim:** Any dependent claim which is referring to more than one claims.

### 3.4. Basic kind of Patents laws:

- **III.4. 1:** 35 USC 101- Innovation should be useful.
- **III.4. 2:** 35 USC 102- Innovation should be novel.
- **III.4. 3:** 35 USC 101- Innovation should be non-obvious.
- **III.4. 4:** 35 USC 112- There must be fully disclosure of the invention.

## CHAPTER - 4

### COMPREHENSIVE ELUCIDATION

#### 4.1 Diverse forms of Claims

**4.1.1 Jepson Claims:** It is a further improvement of a prior existing invention. The turn of events, the invention being improved and furthermore the parts that are changed territory unit referenced. It's not used in household application anyway is acknowledged in USPTO. It helps in clarifying the novelty basically "where inside the improvement includes" is for the most part there in Jepson claims.

**4.1.2 Reach Through Claims:** Claims try to ensure things which have not been found by an inventor, yet may be found later on by utilizing their innovation.

**4.1.3 Markush Claims:** Claims which are utilized in science. Claims which are utilized to choose an articular component of the development wherein the component might be chosen from a gathering of components in which all sharing some regular qualities.

Scheme: "selected from the cluster consisting of A, B and C".

**4.1.4 Product by Process Claims:** claims an item characterized as far as procedure of assembling uniquely in concoction and pharmaceutical enterprises.

**"Product obtained by a process comprises of XYZ"**

**4.1.5 Omnibus Claims:** Allude to the portrayal or the drawings which are giving any expressing explicitary includes or giving a particular restriction.

**4.1.6 Swiss Claims:** Proposed to cover the principal, second and ensuing therapeutic utilization of a known substance. For instance: a medication was initially showcased to lessen cerebral pains. It was along these lines found likewise to profit those experiencing heart maladies.

#### IV.2 Patent Cooperation Treaty:

Ways for dealing with universal protection of patent:

- By applying in every nation independently where patent is looked for. Cost gets exceptionally elevated, examination of documents and so forth.



- Apply according to the "Paris Convention". It gives a year delay, priority date and so on are fundamental highlights.
- By filing a PCT application it gives an inventor a thirty/thirty one months delay, primer examination alternative choice and searching report of earlier art depending upon the creators wish in which he is looking for to obtain a patent.

#### **IV.2.1 PCT**

Universal law of patent which gives a blend methodology to file patent applications and to ensure manifestations in all of its contracting states. Under PCT, patent application which gets recorded is known as PCT application.

Steps:

A single filing of a PCT application is made with RO (Receiving Office) in one language. Search is performed by International Searching Authority (ISA) in addition to composed conclusion in regards to the patentability of the creation which is the subject of the application. Preliminary examination is finished by International Preliminary Examination Authority (IPEA) yet it is discretionary. After this the national regional authorities look at the application Then the last issuance of application.

The states which are gatherings to the PCT establish the International Patent Cooperation Union regional patent office like EPO and ARIPO (African Regional IP Office). These offices award regional patents.

Any occupant or national of a contracting condition of the PCT may document a PCT application. Under this framework, patent protection is given in assigned states contained in the PCT application.

#### **IV.2.2 WIPO part in PCT**

WIPO sees the recording of global application under the PCT. It is liable for distributing PCT applications. It gets and stores PCT applications alongside their related documents of patent pursuit and examination. The deserts in the PCT applications are distinguished during International stage and can be redressed before the application arrives at the national patent office and enters the national period of patent assessment.

### **IV.2.3 Choices and steps under PCT filing:**

#### **Alternative 1**

First documenting a PCT application by following PCT custom necessities. Charges is paid One of the trend-setter ought to be the inhabitant of PCT contracting state. It very well may be documented in two different ways: either at the getting office or with WIPO legitimately. There is a period limit for the accommodation of document. That time limit is given on site of WIPO and accommodation of archives should happen inside that time limit. From the date of the need time limit is estimated.

#### **Alternative 2**

National application is filed first and then a PCT application inside a year. When there is filing of PCT application, the creator has upto year and a half to settle on which nations he needs to apply for patent. He can additionally defer it by first applying for national application and then inside a year apply for PCT application. During a year time frame following the filing of the priority application, the candidate can decide to document at least one extra national application, as new refinements or encapsulations of the invention are created. PCT application can consolidate the revelations of, and claiming priority to, all the national applications that were filed during the prior twelve months related to that innovation. PCT applications can likewise incorporate new revelations relating to the invention or new claims that were not gone ahead in any of the past priority applications. Nonetheless, to acquire advantage of prior priority date, the new claim must be upheld by prior priority application.

All out deferral = (twelve+ year and a half)

1. National application (priority date claim)
2. PCT application is filed in a year.
3. Upto thirty months after the date of the priority or eighteen months after the filing of PCT, application enters the national stage of selected PCT selected countries.

### **IV.3 Patent Classification System**

An approach for the arrangement of documents in a patent office to identify that from which field of technology the patent is related and to facilitate its searching and easy reclamation.

WIPO is managing International Patent Classification (IPC)

USPTO is managing USPC (US patent classification)

European Patent Office (EPO) is managing ECLA (European Classification)

### IV.3.1 Searching based on Classification

#### IV.3.1.1 Advantages:

- Does not include grammatical language.
- Changes in phrasing is not required
- Ideas searching
- Available for patent reports where no full content of claims/description is accessible.

#### IV.3.1.2 Disadvantages:

- Structure of classifications is very complex.
- Classification rules learnig is required.

### IV.3.2 Different kinds of classification

- **International patent Classification (IPC):** It is a progressive patent order framework utilized in more than 100 nations to group the substance of patents in a uniform way. It was made under Strasbourg understanding (1971), one of various arrangements directed by WIPO. It is refreshed all the time by a board of trustees of specialists. Center characterizations are to be updated each 3years from issue and advance orders are to be modified after an interval of three months.
- **European patent Classification (ECLA):** It is managed by EPO and is an extension of IPC. IPC and ECLA both are divided into 8 segments which are additionally isolated into classes, sections, sub-classes, groups and sub groups.

#### **Features:**

1. Extremely gifted work force: ECLA classes are just relegated by the EPO analyzing corps for example a little assemblage of profoundly prepared people keeps up the importance of the framework.
2. Narrow class definition: The sub groups are additionally further classifications.
3. Accelerated modification plans: It is amended even before 5 years time of update of International patent classification .
4. NPL classification: In the sub group non patent literature is also included.

### **Disadvantages:**

ECLA classes are given a while after grouping. It can't be utilized to recover recently issuing/publishing documents.

- **Cooperative Patent Classification (CPC):** A juncture association among US Patent and Trademark office and EPO to coordinate toward a typical characterization framework. It is generally founded on ECLA and is changed to guarantee consistency with the IPC controlled by WIPO. CPC is a push to bring the accepted procedures of USPTO and EPO together and to make patent research universally perfect.

### **Objectives to launch CPC**

1. Improves exploring of patents.
2. Resources distribution.

CPC to a greater extent is founded on the past European order framework (ECLA), which itself was a progressively explicit and point by point variant of the International Patent Classification framework.

### ● **US Patent Classification:**

- It is only applicable to the documents of patents of United States. US classification is divided into class and subclass. Class is three digit number and subclass is a six digit number in which last three digits are decimal places. Classes and subclasses are separated by a slash.
- For instance: bbb/NNN.nnn

### **Advantages:**

There is more exact arrangement of patents of US than it is finished with IPC. USPC can without much of a stretch adjust to the advances which are changing since it is overhauled all the more oftenly in comparison to IPC.

## **CHAPTER - 5**

### **PROJECT TACKLED**

#### **5.1 Patentability Searching**

Patentability searching incorporates searching of the earlier art, which consolidates patent applications which are published, patents which are issued, and some other distributed archives, with the purpose of choosing if filing your patent application looks good. In case you find prior art that delineates your innovation absolutely or show it plainly obvious, probably you shouldn't take a stab at endeavoring to patent your advancement. It is at times called a prior art search or basically only a patent search.

It is favorable to play out a primer patentability search prior to documenting an application, Doing so will give a thought of the nearest related prior art, and permit the patent professors to be drafted "around" this past art, with the goal that the curiosity of the innovation will be increasingly evident to the examiner.

A patentability search can also help in preparation of the application.

##### **5.1.1 Searching patent documents**

A patentability search will typically include searching of significant patent assortments - United states, European , Japanese , patent cooperation treaty assortments. Albeit any prior published record can be utilized against a patent application, most patent examiners from significant patent workplaces will go directly to these assortments, so it bodes well to remember them for any patentability search, regardless of how superficial. The patent search instrument ought to be chosen in order to increase fundamental essential inclusion, however valuing is typically a limitation with shorter patentability examinations.

##### **5.1.2 How Non-Patent literature searching is done**

A patentability search will likewise incorporate searching of non-patent literature. Crucial sources of non-patent literature incorporating numerous specialized branches of knowledge incorporate, yet are not constrained to:

Engineering village (membership), google, Scopus(membership),Google scholar

##### **5.1.3 Specific Search Strategies**

These search systems are instances of explicit accepted procedures that can be applied over the span of a patentability search. These are steps to be taken notwithstanding acknowledged search rehearses that apply to all searches.

- There should always be a discussion with the client to know that if there is a need to find documents that can describe alternative embodiments or is it a easy search demanding only the results which are relevant.
- The person who is performing the search should discuss with client that whether the search has to be carried on all the claims just like as the examiner will be doing after receiving the application.
- There should always be a search on innovator name to know about the field of research of interest of the innovator.

#### **5.1.4 Case study (Patentability Search)**

At extremely starting stage, our customer will give us just smidgen data with respect to their development. They never unveil their complete innovation, yet they manage us to accomplish the relevant citation while searching through different databases.

**Presently let us assume, the client has given us this much data with respect to their invention.**

A chickpea protein concentration, from legume plant, which is debittered and used as meat or cheese analog in different food products. The protein extraction steps comprises suspension, precipitation and filtration.

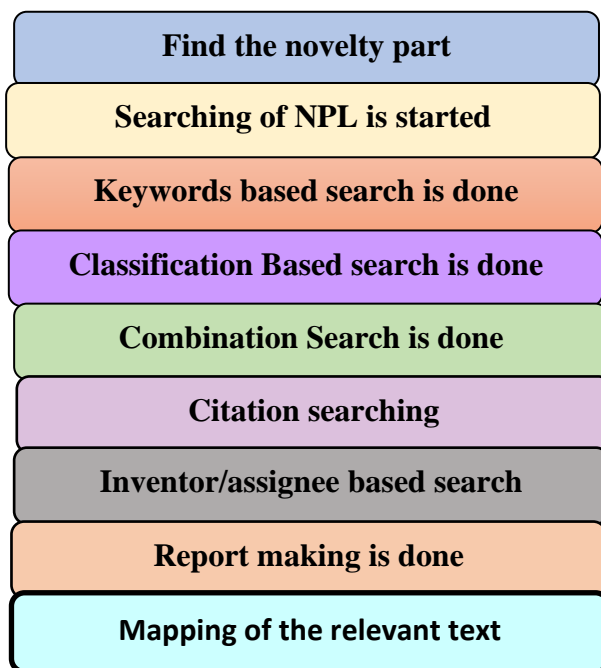
The debittering of protein were achieved by treating slurry with fumaric acid, under the acidic condition.

#### **Search begins:**

The search starts with understanding the novelty of the exposure. Patent analyst needs to comprehend the novelty by perusing the background and description of the exposure. In the event that he/she can't get it, at that point he/she should examine the novelty with the innovator in any case the search won't be toward the path where the creator needs it to be. So understanding of the disclosure is must. After this the genuine search starts.

As indicated by our divulgence the novelty part is that the client sends the retransmission solicitation to the framework and the error in the message is additionally featured which as per the inventor was absent in the prior art.

#### **5.1.5 Steps of Searching:**



**NOTE: By and large we break the client data into key features, with the goal that it will assist us with breaking the entire innovation into parts. The parting of divulgence make innovation much moreclear to comprehend.**

**Key Features according to Client’s Disclosure**

<b>KF 1.</b>	The legume is selected from the group consisting of: chickpeas, green peas, yellow peas, lentils, peanuts, trefoil, soybeans, pinto beans and any combination thereof to make a protein concentrate
<b>KF 1.1</b>	The said food product is a meat and cheese analog
<b>KF 1.2</b>	The food material is chickpea flour or legume flour is essentially devoid of bitterness is selected from the group consisting of beverages, snacks, bars, sports food, and medical food.

<b>KF 2</b>	A method for manufacturing a legume protein concentrate, wherein a debittering process of chickpea protein concentrate is achieved by using fumaric acid.
<b>KF 3</b>	The method of extracting the proteins from the product comprises a step of alkalization to a pH value of between 8 and 10.

**Relevant Citations:** [WO2018011986A1](#) (Mapped according to key features)

<b>Application/Patent no.</b>	WO2018011986A1
<b>Title</b>	Chickpea protein concentrate
<b>Assignee</b>	YISSUM RES DEV CO OF OSMANIA UNIV JERUSALEM LTD
<b>Inventor</b>	HENRIK.L; TINA LAWW; JOHN GEORGE PETE
<b>Priority Date</b>	2017-08-11
<b>Filing Date</b>	2018-08-10
<b>Family Members</b>	US20190131010 (A3)   EP3479264 (A2)   JP2019526307 (A3)
<b>Abstract</b>	
The current innovation gives debittered chickpea based protein concentrates, strategies for assembling thereof and food items involving the protein concentrates.	
<b>Relevant Text</b>	
<b>Claims</b>	



- 1. A debittered chickpea protein concentrate contains a protein substance of over 70% by weight of complete dry issue.**
7. The chickpea protein concentrate of any of cases 1 to 6, **said chickpea protein concentrate is made by a technique which contains a stage of debittering chickpea material.**
8. The chickpea protein concentrates of guarantee 7, **wherein the debittering step involves blending the material in with fumaric acid.**
9. The chickpea protein concentrate of any of cases 6 to 8, wherein **the strategy involves a stage of alkalization to a pH value of somewhere in the range of 8 and 10.**
- 10. A food item containing the chickpea protein concentrate** of any of cases 1 to 9.
12. **The food result of any of cases 10 or 11, said food thing is a meat analog** chose from the gathering comprising of hamburger, pork, sheep, chicken and fish meat analogs.
- 13. A technique for assembling a debittered chickpea protein concentrate, the strategy including the means of: (I) giving a water suspension of chickpea material; (ii) debittering the chickpea material; and (iii) removing the proteins from the result of step (ii).**
14. The strategy for **claim 13, wherein step (ii) involves blending the material in with fumaric acid.**
18. The strategy for any of cases 13 to 17, wherein step (ii) contains acidification to about pH 4.5.
- 20. The strategy for any of cases 13 to 19, said technique further involves a stage of concentrating proteins by a procedure chose from the gathering comprising of: membrane distillation, nanofiltration, ultrafiltration, diafiltration, and evaporation.**

### **Description**

**The current creation identifies with tasteful chickpea protein concentrates, specifically to concentrates acquired by a procedure including a debittering step,** strategies for assembling of the protein concentrates, and food items containing the protein concentrates.

The current innovation gives attractive chickpea protein concentrates, food items involving the protein concentrates and techniques for assembling thereof. Specifically the current innovation gives debittered chickpea high-protein concentrates. **The current creation gives in certain encapsulations chickpea based meat and cheddar substitutes having structures, surfaces and**

**flavors that look like creature meat or cheddar.** The current innovation further gives in certain epitomes techniques to assembling debittered chickpea protein concentrates.

**The current creation is situated to a limited extent on the surprising finding that delivering chickpea protein concentrate by a strategy involving a stage of debittering with fumaric acid, give an agreeable, great protein concentrate valuable as a source material for an assortment of food items.** The techniques for the development contain a debittering step with fumaric acid, isolating the accelerated protein, and protein extraction in basic conditions.

**The current creation gives chickpea based protein concentrate, reasonable as a source material for the planning of an assortment of food items.** The current innovation further gives strategies for assembling tasteful chickpea based protein concentrate. The protein concentrates unveiled in this **are appropriate for getting ready meat substitutes having surfaces and flavors like meat.** The protein concentrates revealed thus are likewise appropriate for planning milk options, protein shakes, sports nourishment, vitality bars, tidbits and clinical food. The techniques for assembling protein concentrate as depicted in this incorporate acidification of a chickpea material utilizing fumaric acid. **The techniques further contain an alkalization venture to a pH value of somewhere in the range of 7.5 and 10. The strategy for getting ready protein concentrate in certain exemplifications further involves a stage of membrane distillation method.** Profitably, the current creation gives techniques for assembling chickpea protein concentrates with more significant returns and diminished degree of sharpness. The current development further gives in certain encapsulations, strategies for assembling protein separates from other vegetables.

As indicated by certain encapsulations, **step (iii) contains alkalization to a pH value of somewhere in the range of 7.5 and 10. As indicated by specific exemplifications, step (iii) involves alkalization to pH 9. As indicated by specific exemplifications, step (iii) includes alkalization to pH 8.**

According to certain exemplifications, **exposing the item to alkaline conditions involves the utilization of NaOH or KOH.**

**The chickpea protein items gave in this might be set up to human or creature utilization.** They might be cooked, in part cooked, or solidified either in uncooked, in part cooked, or cooked state. Cooking may incorporate fricasseeing either as sauteing or as profound singing, heating, smoking, steaming, and blends thereof. As per a few epitomes, **the chickpea protein items are utilized in prepared suppers, including however not restricted to soups, noodles, burritos, bean stews,**

**sandwiches, lasagnas, pasta sauces, stews, kebabs, pizza fixings, and meat sticks.** As indicated by certain encapsulations, the chickpea protein items are blended in with other protein items, including yet not constrained to other plant-determined items and/or creature meat.

## Queries

	Queries	Database	No. of Hits
1.	CTB= (((FABACEAE* OR LENTIL* OR LEGUM*) NEAR4 (“CHICKPEA” OR “CHICK PEA” OR “GRAM PEA” OR “CICER ARIETINUM” OR “BENGAL GRAM” OR GARBANZO OR “EGYPTIAN PEA” OR CICER) NEAR5 (PROTEIN*2) NEAR6 (CONCENTRA* OR SUPPLEMENT* OR EXTRACT*2)) AND (DEBITTER* OR DETOXI*)) NEAR15 (“FUMARIC ACID” OR “C4H4OH” OR “TRANS-BUTENEDIOIC ACID”));	THOMSON	234/434
2.	CTB= (((METHOD* OR SYSTEM* OR PROCESS* OR TECHNIQ* OR TECHNOLOG* OR STEP* OR PROCEDUR*) NEAR10 (REMOV* OR ISOLAT* OR EXTRACT* OR PURIF*) NEAR10 (“CHICKPEA” OR “CHICK PEA” OR “GRAM PEA” OR “CICER ARIETINUM” OR “BENGAL GRAM” OR GARBANZO OR “EGYPTIAN PEA” OR CICER) NEAR7 (PROTEIN*2)) AND ALL=((ALKALI*	THOMSON	196/267

	<p>SAME (“KOH” OR “NAOH” OR “POTTASIUM HYDROXIDE” OR “SODIUM HYDROXIDE”)) AND (FILTER* OR SEPARAT* OR EXTRACT* OR PRECIPIT* OR CONCENTRAT*) NEAR15 (DISTILLATION*2 OR “NANOFILTRATION” OR “ULTRAFILTRATION” OR “DIAFILTRATION” OR “EVAPORATION”));</p>		
3.	<p>((“CHICKPEA” OR “CHICK PEA” OR “GRAM PEA” OR “CICER ARIETINUM” OR “BENGAL GRAM” OR GARBANZO OR “EGYPTIAN PEA” OR CICER) 8D (PROTEIN) 8D (CONCENTRAT+ OR EXTRACT+ OR SUPPLEMENT+ OR ADDITIV+ OR FLOUR+ OR PRODUCT+ OR FOOD????)/TI/AB/CLMS AND ((“FUMARIC ACID” OR “C4H4OH” OR “TRANS-BUTENEDIOIC ACID”) P ((REMOV+ OR EXTRACT+ OR DISCARD+ OR TREAT+ OR SEPARAT+ OR ELIMINAT+ OR WASH+ OR WITHDRAW+) 10D (BITTER+ OR TART+ OR TANG+ OR SOUR+ OR SAPONIN+ OR PHYTIC) 15D (PROTEIN)))/TI/AB/CLMS/TX AND ((A23J-03/227 OR <u>A23L27/26</u>)/IPC/CPC</p>	ORBIT	203/408
4.	<p>((MEAT OR PORK OR BEEF OR CHEESE OR LAMB) 9D (PROTEIN)</p>	ORBIT	236/663

	12D (ANALOG?? OR ANALOUGE OR SUPPLEMENT+ OR SUBSTITUT+))/TI/AB/CLMS/TX AND (ACID+) 10D (FUMARIC OR OR “C4H4OH” OR “TRANS-BUTENEDIOIC ACID”) AND ((ALKALI????) P (“KOH” OR “NAOH” OR “POTTASIMUM HYDROXIDE” OR “SODIUM HYDROXIDE”)) AND ((DISTILLATION?? OR “NANOFILTRATION” OR “ULTRAFILTRATION” OR “DIAFILTRATION” OR “EVAPORATION”) P (FILTER+ OR SEPARAT+ OR EXTRACT+ OR PRECIPIT+ OR CONCENTRAT+ OR TREAT+ OR WASH+)) TI/AB/CLMS/ AND (A23J-03/140 OR A23L-11/000)		
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### Queries of the NPL

S. no.	Queries	Database
1	(CHICKPEA OR “GRAM PEA” OR GARBANZO) (PROTEIN) (CONCENTRATE) (“FOOD PRODUCT”) (MEAT OR CHEESE) (ANALOG OR SUBSTITUTE)	GOOGLE, GOOGLE SCHOLAR, IEEE EXPLORE, SCIENCE DIRECT
2	(METHOD OR STEP OR PROCEDURE OR TECHNIQUE OR PROCESS) (LEGUME OR “LENTIL”) (PROTEIN) (“FUMARIC ACID”) (DEBITTER OR DETOxic) (FILTRATION) (PHYTIC OR SAPONIN) (“NaOH” OR “KaOH”)	GOOGLE, GOOGLE SCHOLAR, IEEE EXPLORE, SCIENCE DIRECT

### IPC Classification

Classification	Definition
<u>A23L-02/734</u>	Meat relish
A23M-06/267	Meat like texture food
<u>A23N-03/014</u>	Vegetable proteins
<u>A23K-09/100</u>	Pulses, for example Products of leguminous plants, for creation of grain or food; Products from vegetables; Preparation or treatment thereof, for example Treatment with phosphates

### Keywords

Additive	Distillation	Lentil	Separate
Alkaline	Egyptian Pea	Meat	Sodium Hydroxide
Analog	Eliminate	Method	Sour
Beef	Evaporation	Nanofiltration	Step
Bengal Gram	Extract	“NaOH”	Substitute
Bitter	“Fabaceae”	Phytic	Supplement
“C4H4OH”	Filter	Pork	System
Cheese	Flour	Potassium Hydroxide	Tang
Chickpea	Food	Precipitate	Tart
Cicer	“Fumaric Acid”	Procedure	Technique
“Cicer Arietinum”	Garbanzo	Process	Technology
Concentrate	Gram Pea	Product	Trans-Butenedioic Acid;
De-bitter	Isolate	Protein	Treat
Detoxify	“KOH”	Purify	Ultrafiltration
“Diafiltration”	Lamb	Remove	Wash
Discard	Legume	“Saponin”	Withdraw

## **CHAPTER-6**

### **PRACTICAL APPLICATION**

- A patent gives the designer the alternative of preventing somebody else from assembling, duplicating, selling or bringing in the patented merchandise without consent of the patent holder.
- The patent bearer is having exclusive business rights to utilize the invention.
- The patent bearer can easily make use of invention for his/her own motivation.
- The patent bearer older can permit the patent to others for us. Licensing provides revenue to business by collecting royalties from the users.
- The patent holder has a right to sell the patent any value they accept to be reasonable.
- The patent gives assurance to a foreordained period of twenty years keeping your rivals under control.
- Patents are in part answerable for headways in clinical science, biotechnology, sedate science, PCs and so forth.
- A patent prize inventor with the previously mentioned favorable circumstances and thus, makes greater and better revelations.

## **CHAPTER-7**

### **CONCLUSION**

In the wake of finishing the preparation we come to think about the significance of the patents in the innovative world. A ton of cash is spent by the organizations everywhere throughout the world in the protected innovation. It is the main way which is utilized to ensure the privileges of the individuals' protected innovation. To get a patent you require a solid thought which which should be new, never seen before, non-obvious and be of some use to the humans without harming or hurting any individual notions. A person gets the patent protections on the basis of the claims. One can stop others from using your innovation on the basis of what you have mentioned in the claims. Date models play a crucial role for the reasercher as it kees on changing with the change in the type of search. Npl and patents are provided in case of search related to patentability. Npl and patents prior to the date of priority is given in case of search related to invalidation. In refutation we give NPL and patents before the priority or successful filing date of subject patent. If there should arise an occurrence of infringement we give the items which are presented in the market after the date of priority of subject patent. If the customers requests patents are also provided in that case.

During the preparation I went over a great deal of new innovations. I did Nanobiotechnology as well as mechanical projects.

### **References**

1. [www.intellogist.com](http://www.intellogist.com)
2. Thomson innovation training manual
3. Orbit user guide



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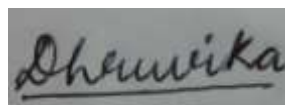
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