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Herbs Related Patents

There are many commonly found and used herbs / plants in India which find reference in patent documents, sometimes in the description and sometimes in the claims. Documents under consideration could be granted patents or patents in the pipeline. It is possible that such herbs are also found and used in other parts of the world. PFC would cover one or more such herbs in its forthcoming issues in the context of their uses in India and the associated indigenous knowledge. The first one to be covered in the series is Kala Jeera or Nigella sativa which is a native of Syria and Lebanon, but also cultivated in India in Assam, Bihar, Himachal Pradesh and Punjab. Kala jeera is also known as Kalonji in Hindi and Gujarati, Mugrela in Hindi and Bengali, Nellajeelakaira in Telugu, Karunjiragam in Tamil, Karejirage in Kannada and Karunchiragam in Malyalam.

Kala jeera has been characterised quite well and the characteristics are well reported in the Wealth of India and the Compendium of Indian Medicinal Plants. Kala jeera has been found useful for brochospasms, a powerful gallatugogue, active against E-coli, salmonella, staphy lococcus aurcus, aspergillus flavus and fusarium tenuis. It has been found to show cyto-toxicity against ehrlich asciter carcinoma (EAC), Dalton's lymphoma ascites and serama.

All patents granted or in the pipeline relate to medicinal use of kala jeera by itself or in combination with other herbs / plants. There are four patents granted related to kala jeera by the USPTO. Two patent applications have been published by the Japanese Patent Office and one PCT application also stands published. There is one US application which has been filed as convention application in many countries namely, EPO, PCT, Hungary, Slovenia, Poland, Brazil, Japan, Australia and Canada.

Granted Patents

US Patent 6,042,834 (Herbal composition for diabetes and method of treatment)

This patent deals with a herbal composition for diabetes which consists of 23% by weight dried powdered seeds of Nigella sativa along with many other seeds e.g. 15 percent by weight of dried powdered seeds of Trigonella foenum-graecums (methi). It may be noted that what has been patented is a herbal composition (in which Nigella sativa is one of the components) and not the Nigella sativa (NS) per se.

US Patent 5,653,981 (Use of Nigella Sativa to increase immune function)

This deals with a pharmaceutical composition for treatment of cancer and other conditions and prevention of side effects of anti-cancer chemotherapy and increasing the immune function. The composition contains an extract of the plant Nigella sativa. Some of the claims of the patent are:-

1. A pharmaceutical unit

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dosage form for the inhibition of cancer cell growth in humans consisting essentially of a cancer cell growth inhibiting amount of an extract from Nigella sativa wherein the amount is within a range of from about 0.3g/kg body weight to about 0.6g/kg body weight and a pharmaceutically suitable carrier.

2. A method for inhibiting the growth of cancer cells without affecting non tumor cells in a human cancer patient in need thereof comprising administering to the patient a cancer cell growth inhibiting amount of an extract from Nigella sativa, wherein the amount is effective to inhibit the growth of the cancer cells without affecting non tumor cells. About 20-40 grams of extract per day is administered to the patient. The extract can also be administered to a human cancer patient suffering from melanoma or colon cancer. The amount of the extract from Nigella sativa is also administered orally/rectally in combination with a pharmaceutically acceptable excipient for oral/rectal administration.

3.The method of claim 2, wherein the amount of the extract from Nigella sativa is administered parenterally in combination with a pharmaceutically acceptable carrier.

4. The method of claim 3 wherein the amount of the extract from Nigella sativa is administered by an administration route selected from the group consisting of intraperitoneal injection, intramuscular injection, intravenous injection, and subcutaneous injection, in combination with a pharmaceutically acceptable carrier.

US Patent 5,648,089 (Extract solution and herbal mixture for treatment of hepatitis)

This deals with a herbal formulation for the treatment of viral, hepatitis diseases. The claims of the patent are: -

1. A herbal combination for the treatment of viral hepatitis diseases, comprising a mixture for oral administration of the dried plants, viz Phyllanthus Embilca L (40%), dried fruit of Teminalia Chebiola RETZ (10%), Cichorium Intyus L (7%) excluding the roots, Carthamus Tincorius L (10%), Solenostemma Argel Hayne (3%) excluding roots, seeds of Nigella Sativa L (10%), Erythraea Centaurium Pers (5%) excluding roots, stem and leaves of the plant Cynara Cardunculus Var. Scoly (10%) and rhisome (stems) of Rheuon officinale Baill (5%)

2. The herbal combination of claim 1, further comprising nasal drops for administration together with the oral mixture, the nasal drops comprising an extract of the fruit of the plant Ecballium Elacterium A. Rich.

3. A composition for treatment of viral hepatitis diseases comprising an aqueous solution for nasal administration, said solution comprising an extract of the fruit of the plant Ecballium Elaterium A. Rich.

US Patent 5,482,711 (Use of Nigella Sativa to increase immune function)

This deals with a pharmaceutical composition for treatment of cancer and other conditions and prevention of side effects of anti-cancer chemotherapy and increasing the immune function. Some of the claims of the patent are: -

1. A method for activating immune competent cells in humans in order to increase the immune function in humans, the immune competent cells being selected from the group consisting of CD19, HLADR, NKCD3/CD56+ and CD38, the method comprising administering to humans an effective dose of an extract from Nigella sativa at a concentration which is effective to activate the immune competent cells by reducing the presence of interferon inhibitor factor or lymphokine inhibitor factor. The effective dose is between about 20 and about 40 grams of the extract per day.

2. A method for increasing antibody producing B cells in humans, the B cells having minor antigen binding sites, comprising administering to humans an effective dose of an extract from Nigella sativa, at a concentration which is effective to free the tumor antigen binding sites on the

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B cells thereby increasing the antibody producing B cells. The effective dose is between about 20 and about 40 grams of the extract per day.

Patents in Pipeline

PCT WO0032211 A1 (Enteral pharmaceutical preparation)

This invention discloses an enteral pharma preparation which includes Nigella Sativa. The main claim of the patent is "An enteral pharmaceutical preparation which includes black cumin oil (Nigella sativa)." The other claims include preparation with polyunsaturated fatty acids like flax oil, essential vitamins and minerals and vegetable oil. There is a claim, which says that the formulations can also be used for treating arthritis and gout.

PCT WO 0051580 A2 (Asthma / Allergy therapy that targets T Lymphocytes and / or Eosinophilis)

A pharmaceutical composition consisting of Glicophospho-peptical or pure seeds of Nigella sativa in a concentration which stimulate Thl lymphocytes and selectively switch off the eosinophilic airway inflammation.

JP60054312A2 (Preventive for dental caries)

This deals with a composition of Chinese and Japanese herbs with Nigella sativa which is effective against dental caries.

JP7138126A2 (Antioxidant)

This deals with an antioxidant composition containing at least one kind of solvent extract of plants, one of them is Nigella sativa; the composition is effective for preventive chapped skin and for keeping the springiness and gloss of the skin.

Scientists working in the area of herbal medicine should look at these documents carefully to get new ideas or to expand on their ongoing work or even to see if prior art is getting protected through patents.

Patenting in Leather

This study deals with an analysis of patent applications filed in India in the leather sector. The analysis covers the applications filed from 1995 to 1999. Forty four (44) applications related to this sector, have been identified which cover areas like tanning of leather, processing of wastes generated by the leather industry, processing of hides and skins, dyes for leather and footwear. The data for the analysis has been taken from the Ekaswa-A database of PFC. The year wise distribution of the patent applications filed in India for the period 1995 to 1999 is given in **Table I.**

Table I

Year	No of applications filed
1995	12
1996	8
1997	10
1998	5
1999	9

It is observed that about 30% applications are convention applications which is relatively low as compared to the share of convention applications in other areas of technology. It is further seen, as shown in **Table II** below, that only about 50% applications were filed by foreigners.

Table II

Total applications filed	44
Number of convention applications	15
Applications filed by foreigners/ foreign companies	23
Applications filed by Indians/Indian companies	21
Companies/ individuals filing 2 or more than 2 applications	6
Indian companies filing 2 or more than 2 applications	3

Generally speaking,the patenting activity is quite slow in this area and hence, one does not expect many applications from any one agency. **Table III** gives the names of agencies/individuals who filed 2 or more patent applications during the period.

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Patenting in Leather

Table III

Company	No. of applications
Council of Scientific and Industrial Research (CSIR)	10
API Polymers Ltd	3
Novo Nordisk A/S	3
Max India Ltd, Punjab	2
Stockhausen GMBH & Co	2
Vaz Guy Andrew (Individual)	2

According to **Table IV,** most applications (approx. 50%) were filed in the area of leather treatment.

Table IV

Area	No. of Applications
Leather treatment	23
Footwear	8
Hides & skins	5
Leather tanning	5
Leather waste management	2

Council of Scientific and Industrial Research (CSIR) has 10 patent applications related to leather processing. These applications include process for elimination of free formaldehyde present in leather, contact adhesive for leather surfaces, process for chrome management in tannery sludge, process for dyeing leather using low intensity power ultrasound and process for preparing eco-friendly black colorant from myrobalan sludge for use in leather industry. It is interesting to know that most of the patent applications were filed after the launch of the "Leather Technology Mission".

All the three applications of **API Polymers (India) Ltd** relate to footwear. Two of them are for shoes with air ventilation system and one is for improvements in footwear. **Novo Nordisk** has its hold on processing of hides and skins into leather. One application is for dehairing of hides and skins by means of enzymes, second is for enzymatic degreasing of skins and hides and the third is for a method for the processing of hides or skins into leather. **Max India Ltd** of Punjab has 2 applications for treatment of leather. One application relates to treatment by a malt film and the other relates to treatment by a gloss film. **Stockhausen GMBH & Co Kg** has 2 applications for making of agents used in leather processing. An individual named Vaz Guy Andrew has both his applications for improved blast resistant footwear. A single application for biodegradable leather was filed by Bayer Aktiengesellschaft, Germany in 1998. Kalpana Polytec India Ltd has one application for a process for preparing material to be used in shoe industry and particularly utilizing agricultural waste.

Applications were also filed for tanning composition, making of agents to impart water proofness to leather and furs, enzyme preparation for use in leather processing, soles for footwear, device for sharpening of edges of leather blancks, leather area measuring device and the like.

(This article is at the request of one of the readers.)

Case Study

Sustained release ophthalmic compositions containing water soluble medicaments

The present invention relates to an ophthalmic composition that provides sustained release of a water soluble medicament such as timolol. A typical formulation comprises a crosslinked carboxy-containing polymer, a medicament, a sugar and water. The composition has a pH of at least 6.7 but a viscosity of from about 1000 to 5000 cps. The patent was granted a US Patent (Patent no. 6159458) to a US company, InSite Vision.

Prior-Art

Ophthalmic compositions having corsslinked carboxy-containing polymers have been used as drug delivery systems. The following are the relevant prior-art.

1. U.S. Pat. No. 5,192,535 discloses topical ophthalmic medicament delivery systems for sustained release of medicaments. These systems undergo a substantial increase in viscosity upon contact with tear fluid. For example, when an aqueous suspension which comprises about 0.1% to about 6.5%, by weight, of crosslinked carboxyvinyl polymer and has a pH of about 3 to about 6.5., comes into contact with the tear fluid in the eye, which typically has a pH of around 7.2 to 7.4, the pH increases and the polymer expands thereby increasing the viscosity. The

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Case Study...

resulting more viscous gel remains in the eye for a longer period of time and thus enhances the sustained release of the medicament. Under this system, the initial viscosity (from 1,000 to 30,000 cps) can be low enough so as to facilitate application to the eye in the drop form. The drawback of this method is that it is applicable to only systems with low pH of less than 6.5.

2. US patent no.5,340,572 discloses, in one embodiment, a system containing an aqueous suspension of crosslinked carboxyvinyl polymers and a medicament having multiple amine groups (e.g., an antibiotic), at a pH of 7.5 or more. This suspension can be administered in drop form and remains a gel upon contact with tear fluid so as to provide comfortable and sustained release of the medicament. The delivery system preferably has a viscosity in the range of 5,000 to 30,000 cps. The amount of crosslinked carboxyvinyl polymer is typically within the range of from 0.05% to 10%, by weight, based on the total weight of the aqueous suspension. The drawback is that the ophthalmic systems will have a relative high pH of 5000 cps, where is as the desirable level

The amount of polymers in these compositions is restricted by increased pH and reduced viscosity. Sufficient amount of polymers is necessary to have a desirable drug release profile. On the other hand, if the viscosity of the formulation is increased, it becomes difficult to administer the same to the eye in the drop form. Thus, the prior-art no. 1 above is suitable for ophthalmic systems with low pH, while no. 2 though suited for systems with high pH, there is the problem of increased viscosity.

Therefore both the above are not suited for certain medicaments like timolol, where a high level of pH is necessary for increased corneal as well as conjunctiva penetration. Accordingly, the object of the present invention is to provide a novel ophthalmic composition that has a low viscosity and pH above 6.7, for sustained release of a water soluble medicament and is easily administered in liquid drop form to the eye. *The novelty of the present invention is in the finding that the release rate profile of a water soluble medicament from an ophthalmic composition having a pH of 6.7 or above and containing sufficiently low amounts of crosslinked carboxy-containing polymers so as to have a viscosity of from 1000 to 5000 cps, is improved by incorporating a sugar therein. The sugar is preferably mannitol or sorbitol. It may be noted that none of the prior-art taught the use of sugar as a medicament release profile enhancer.* The polymers used in the invention include those described in earlier US patents, such as lightly crosslinked polymers of acrylic acid. Thus, the major difference in the present invention is addition of sugar as one of the components in addition to polymers mentioned in the prior-art.

Ophthalmic compositions according to the present invention typically have a peak release of medicament no sooner than 30 minutes (i.e., peak release occurs at 30 minutes or later), preferably no sooner than 45 minutes, after administration. For comparison purposes, a typical medicated eye drop that does not provide sustained release will exhibit a peak release within 15 minutes after administration in vitro.

EXAMPLE

A composition is formed from the ingredients shown in the following table in amounts within the stated range. The composition exhibits good sustained release of timolol and has a viscosity of from 1500 to 3500 cps @ 2.25 sec.sup.-1 under the conditions described above.

Amount of each component added to make the formulation

Ingredients		**Wt. %**
polycarbophil, U.S.P.	:	0.6 to 0.8
edetate disodium, U.S.P.	:	0.09 to 0.11
sodium chloride, U.S.P.	:	0.25 to 0.45
timolol Maleate, U.S.P.	:	0.612 to 0.748

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Case Study...

sodium hydroxide, N.F.	:	q.s to pH 7.0 to 7.8
sorbitol, N.F.	:	1.5
glycerin, U.S.P.	:	0.2
benzalkonium chloride, N.F.	:	0.008
purified water	:	q.s to 100

Claims

The patent has 26 claims covering different percentage compositions the polymers, sugars and the medicaments. Ophthalmic formulations containing specific drugs, specific crosslinked carboxy-containing polymers and sugars are also claimed. The major claims are reproduced below.

1. An ophthalmic composition comprising:

   a pharmacologically effective amount of a water soluble ophthalmic medicament, about 0.5 to 2.0% crosslinked carboxy-containing polymer, about 0.5 to 5.0% sugar, and water; said composition having a pH of at least about 6.7 and a viscosity of from about 1000 to 5000 cps.

2. The composition according to claim 1, wherein said crosslinked carboxy-containing polymer comprises 0.6% to 0.9% of the composition.

3. The composition according to claim 1, wherein said polymer is a lightly crosslinked carboxy-containing polymer.

4. The composition according to claim 1, wherein the polymer is comprised of at least 90% acrylic acid monomers and 0.1% to 5% crosslinking agent.

5. The composition according to claim 4, wherein the crosslinking agent is a difunctional crosslinking agent.

6. The composition according to claim 4, wherein said crosslinking agent is selected from the group consisting of divinyl glycol, 2,3-dihydroxyhexa-1,5-diene, 2,5-dimethyl-1,5-hexadiene, divinylbenzene; N,N-diallylacrylamide, N,N-diallymethacrylamide, and mixtures thereof.

7. The composition according to claim 1, wherein said composition exhibits a medicament release profile such that no more than 60% of said medicament is released during the first hour after administration.

8. A method for treating an eye, which comprises administering to an eye in need thereof an effective amount of the composition according to claim 1.

9. An ophthalmic composition comprising:

(a) water, (b) a polymer component that consists essentially of one or more crosslinked carboxy-containing polymers, (c) sugar, and (c) timolol; wherein said composition has a pH of at least 7.0 and a viscosity of from about 1500 to 3500 cps.

Russian Health Mountains in France

Mr.Charles Populus, Director of the Military Hospitals was granted a patent on constructing Russian Health Mountains by the French government on 10 June 1816. Originally such mountains were built on the islands of Christonsky and Telaguinn located at 1/2 a league from St.Petersburg in Russia and were visited by more than 20,000 people on Sundays and on festival days.

In Russia, the doctors recommended climbing down from these artificial mountains. These mountains served the purpose of fun and also took care of the health. Even today such mountains used for fun purposes are called Russian Mountains in France. It is interesting to note that this patent was granted almost 180 years back when most countries in the world, including India, did not have any system of awarding such rights for introducing / inventing a new product in the market.

While the whole patent document is being reproduced, it must be noted that the structure of the document is quite different from what a modern patent document may look like. For example, there are no separate claims in the document and detailed drawings have not been included. The patent reads as follows:-

"Such mountains were constructed with wood at an elevation of forty-three feet above the ground level. These were covered from the sides, with

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Russian Health...

planks, or with waterproof cloth. The upper part is mounted with a lodge measuring twenty-four square feet with an elevation of about sixteen feet. Sleighs with castors were used for climbing down from them. The sleighs had an elegant shape and were around three feet long, twenty inches wide and twenty-eight inches high.

The castors and wheels adapted to these sleighs were made of copper or cast iron. The diameter of the castors was six inches, and the diameter of the wheels was about eighteen inches.

The starting point of these sleighs is fixed on one of the sides of the lodge. The sleighs ply in a cyclic motion, and reached the foot of the slope located at a hundred and sixty feet from the starting point here, the speed acquired during the descent, gives the sleighs enough force to cover another distance of the same length.

The sleighs when come to a stop at this point, the same distance can be covered by climbing up the stairs, which lead to the lodge of a similar mountain, mounted in the opposite direction. Having reached the end of this mountain, one has to climb the first one again, the one that was already covered, and which always brings one back to the first step of the other mountain's staircase; as is indicated in the **Fig. 1.**

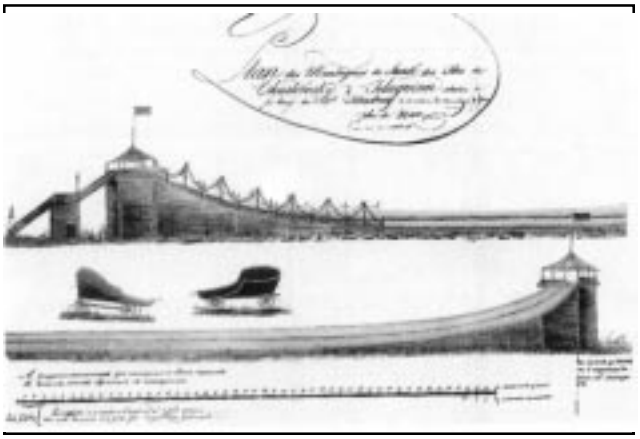

Fig. 1

The sleighs whose wheels rest on the floor of the mountains, have rollers, placed in a perpendicular direction to the castors; these rollers move in grooves that are lodged at the level of the hubs of the wheels; in such a manner that the sleighs are invariably fixed and that no accident will occur due to them.

These mountains could be constructed, in such dimensions of width, that two, three, four and even six sleighs could climb down in front and could be followed by a very great quantity without any fear of banging into each other or being disturbed during the run.

A trellis in the shape of garlands, is fixed on the two sides of the mountains starting from the lodge where the slope begins, till a distance of a hundred and sixty feet, where the ground is covered only with planks that are laid flat, and fixtures so as to fix the sleighs, just as they are fixed at the highest elevation. At the end of the application the inventor recorded the following:-

"The plan that I have just explained and which is attached to the present report is **simple** and **ingenious** at the same time. Costs of construction are such that one has to be assured of a **Privilege for offering it to the public,** which will be delighted, I think, to enjoy, following the example of the Russians, in whose country this game is often recommended by Messers Doctors".

The underlined words may be taken note of. By using these words the inventor tried to establish the novelty / ingenuity of his inventive work and at the same time asked for the privilege for himself in the form of a patent for disclosing his invention to the public. It was quite a common practice in those days to pray to the Authority in a country for special rights such as the patent right; commonly, the authority used to be a king or a monarch.

A patent of addition was also filed for the same patent with some changes in the roofing and the lodge.

"The roofing of the lodges was to be done in the Gothic style following the example of ancient towers of Moscow; the framework that would support them would, at each end, represent four columns, which would bear them, a row boat whose cut will end in a silver globe.

The lodge would be located with windows in the shape of porticos on which Chinese style lanterns would be fitted. The stairs leading to them would

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Russian Health...

no longer be straight as represented in the first plan, it would go around the clock which is bearing the lodge and will be divided into three floors which will constitutes as many galleries; the first will lead to the restaurant, the second to the cafe and the third to the top of the lodge, i.e., to the platform from where the sleighs leave.

The external decoration will represent, like we can see in the **Fig. 2,** a rock in which a new mechanism used for bring up the cars will be hung in such a manner that they will reach the place

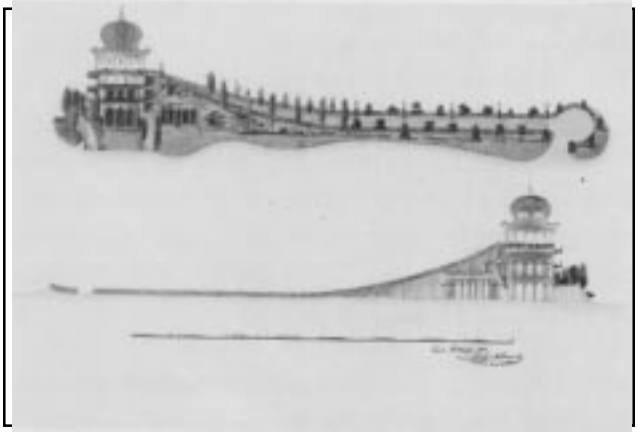

Fig. 2

where the public have access to them without its being aware of the process by which the sleighs have reached there.

Porticos will decorate the entire length of the mountain, which will not be hidden by the rock till the place where the elevation of the framework will permit it.

The sleighs will be double, triple, quadruple and will be positioned in such a manner that a man will climb down facing a lady, or back to back if it will be suitable; The sleighs will vary in shape but they will be like those that are in use now, fixed on castors and inserted (on rollers, placed at the end of each axle) in grooves lodged on the mountains.

Rings will be placed on the right side and the left side of the slope in such a manner that the people who are going down can have fun in catching the rings.

From the highest elevation of the slope till the place which houses the barrier to the sleighs, there will be trees planted every six feet and per floor in such a fashion as to bring out the slope of the mountain in a perfect manner.

All these improvements that experience will have proven to be necessary for the pleasure of the public will be made with the greatest speed and the owners will spare no efforts to retain the favour that their establishment enjoys from the public."

Features of external ornamentation and configuration formed a part of the patent document which in the modern days would be subject matter of industrial design and not of patents. Such details were the reflection of the love for the creative work which was so intense that the creator did not want any creative feature, big or small, which was of significance, to go unnoticed and hence, its presentation did not leave anything for imagination and interpretation. It is not material to the inventor how and in what form his invention is protected.

How is that a patent was granted for something which was already known in the public domain although in a different country? Patent laws during those days did not necessarily look for inventions for grant of a patent. A "Letter Patent" was granted for introducing a new product (may be known elsewhere) and the Letter Patent provided an exclusive marketing right to the holder of the 'Letter Patent'. Therefore, if someone introduced, lets say a new spices in a country and if the king/monarch of the country was pleased with the product, he would issue a Letter Patent to the person introducing the spices. This would have happened even if the spices was used elsewhere, for the same or similar purpose. Further, the whole concept of novelty would have been limited to local boundaries as there was practically no way of determining the global novelty in terms of prior published work. It may be remembered that printing presses came on the scene only in the eighteenth century. Therefore, in this case Mr Populus perhaps did not have any hesitation in disclosing that the idea had been borrowed from Russia without the fear of getting disqualified from getting a patent.

When creation is to lead the way, it has to have clarity for the law to protect it from unlawful use and counterfeiting so that the ultimate users of the creation do not suffer. The spirit behind protecting human inventions has not changed for many centuries now and who wouldn't say that this has kept the science and technology growing.

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Frequently Asked Questions on Patents

What is a patent?

A patent is a legal monopoly, which is granted for a limited time by a country to the owner of an invention. Merely to have a patent does not give the owner the right to use or exploit a patented invention; that right may still be affected by other laws such as health and safety regulations, or the food and drugs regulation or even by other patents. The patent in the law is a property right and it can be given away, inherited, sold, licensed and can even be abandoned. As it is conferred by the state, the state in certain cases even after grant, and whether or not it has been in the meantime sold or licensed, can revoke it. A patent obtained in one country is not enforceable in any other country unless the patent has been granted in that country too. Patent rights are therefore territorial in nature and inventors/their assignees have to file separate patent applications in different countries for obtaining patents in those countries.

What are the criteria adopted for grant of a patent to an invention?

An invention must meet the following three criteria to be eligible for grant of a patent :

i) Novelty

ii) Inventiveness (Non-obviousness)

iii) Usefulness

Novelty

An invention will be considered novel if it does not form the state of the art. State of the art is assessed in a global context. An invention will not be novel if it has been disclosed in the public through any type of publication anywhere in the world. Information appearing in magazines, technical journals, books, newspapers etc will constitute the state of the art. Oral description of the invention in seminar/conference can spoil novelty if the patent application is not filed within a stipulated time (6 months in India). Prior use of the invention before the filing date can also destroy the novelty.

Inventiveness (Non-obviousness)

A patent application involves an inventive step if the proposed invention is not obvious to a person skilled in the art i.e., skilled in the subject matter of the patent application. Inventiveness cannot be decided on the material contained in unpublished patents. The complexity or the simplicity of an inventive step does not have any bearing on the grant of a patent. If there is an inventive step between the proposed patent and the prior art at that point of time, then an invention has taken place. A mere 'scintilla' of invention is sufficient to found a valid patent.

Usefulness

An invention must possess utility for the grant of patent. No

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Domestic News

Indian Petrochemical Corporation Ltd has been granted the following three US patents for novel adsorbent formulations :

1) Process for the preparation of a molecular sieve adsorbent for selectively adsorbing nitrogen from a gaseous mixture (Pat No. 6, 030, 916)

2) Process for the separation of a molecular sieve adsorbent for selectively adsorbing oxygen from a gaseous mixture. (Pat No. 6,087, 289)

3) Process for the preparation of a molecular sieve adsorbent for selectively adsorbing methane from a gaseous mixture. (Pat No 6,090,738)

IPCL has filed an Indian patent application (Application No. 510/Mum/2000 for a process for separation and recovery of methane from a methane nitrogen gaseous mixture. IPCL has obtained 2 Indian patents as well. These are as given below:

1) A novel process for the synthesis of special acrylic fiber forming acrylonitrile based polymer in dimethyl acetamide water suspension system (Pat. No 181907)

2) A process for the preparation for an acrylonitrile based terpolymer. (Pat. No. 183166)

(IPCL News, Oct 2000)

Waterfalls Institute of Technology Transfer, New Delhi has recently published a book

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Frequently Asked...

valid patent can be granted for an invention devoid of utility.

What are patentable inventions under the Patent Act, 1970?

Invention means any new and useful:

a) Art, process, method or manner of manufacture

b) Machines, apparatus or other article

c) Substances produced by manufacture, and include any new and useful improvements of any of them and an alleged invention.

However, inventions claiming substances intended for use, or capable of being used, as food or as medicine or drug or relating to substances prepared or produced by chemical processes (including alloys, optical glass, semiconductors and inter-metallic compounds) are not patentable.

Who are responsible for administration of IPRs in the country?

Patents, designs and trademarks are under the charge of the Controller General of Patents, Designs and Trademarks which is under the control of the Department of Industrial Development, Ministry of Industry. Copyright is under the charge of the Ministry of Human Resource Development.

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Domestic News

titled, "An Introduction to the Guiding Principles in the Decisions on Patent Law". The book compiled and edited by Dr. K.V. Swaminathan is a compilation of 101 recent cases decided in many countries. The cases are grouped under the criteria of patentability, novelty, obviousness, disclosure, aspects relating grant, special issues, jurisdiction, infringement, relief, revocation and procedures. An analysis of court rulings pertaining to each specific group has been presented in the book. The book shall be of use to lawyers, patent attorneys, patent agents, policy makers, scientists, technologists and R&D consultants. The book can be had from M/s Bahri Brothers, 742, Lajpat Rai Market, Delhi (Tel : 2966291) or Waterfalls Institute of Technology Transfer, J-29, South Extension Part-I, New Delhi - 110049, Tel : 4642269.

A short course on "IPRs in Agriculture : The Emerging Scenario" was conducted at the University of Agricultural Sciences, Bangalore from August 1-10, 2000. In all 34 lectures and 2 films were presented to 24 participants from many agricultural universities and institutes. The course sponsored by the Indian Council of Agricultural Research aimed at educating the agricultural scientists directly connected with rural development. Issues like indigenous knowledge of medicinal plants, economic implications of IPR on Indian agriculture, Seed Act and law enforcement in India, sui generis system of plant variety protection and patenting of genes were discussed.

Himalayan Institute of Medical Sciences (HIMS), Dehradun has developed a novel skin ointment for treatment of leucoderma. Patent has been applied for this ointment in USA, Australia and Europe. The United States Patent and Trademark Office for issuance of a patent have accepted it. The ointment when applied five times a week restored pigmentation in six months in 84 per cent cases and there is no side effect.

(All India Biotech Association News letter, Vol 7 No 4, July - Aug 2000)

The Department of Biotechnology has taken up a Rs. 49 crore project for sequencing of the rice genome. India has chosen to sequence a part of rice chromosome-11. It has chosen 10 million MB segment to be sequenced over the next five years. The other countries participating in program include Japan, USA, China, Korea, Thailand, France, Taiwan, UK and Canada. The program is being carried out jointly by Department of Plant Molecular Biology of Delhi University and National Research Centre for Plant Biotechnology of Indian Agricultural Research Institute.

(The Asian Age, 13 Aug 2000)

India has been successful in

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PFC Wishes its Readers a Very Happy New Year.

Patent Filing in Australia through PCT

The general requirements for entry in to national phase of Australian Patent Office for a PCT application in which Australia is the designated or the elected office are presented. The PCT application translated into English must reach the Australian Patent Office within 21 months from the priority date if the applicant has decided to enter into the national phase after the search report or within 31 months from the priority date if the applicant has decided to enter into the national phase after the examination report. The patent application covering the description, claims, any text matter of drawings, abstract and amendments if any must be translated into English. There is no provision for any exemptions, reduction or refunds of the national fee.

Under the special requirements of the office, verification of translation is a must. This requires a simple statement by the person who made the translation.

Another requirement is the notice of entitlement concerning the inventor and the right of the nominated person to an Australian patent. Lastly, address for service in Australia is required but no representation by an agent is required.

Any person registered to practice as a patent attorney before the office can act as an agent.

An international application for patent may be converted into an application for a petty patent at any time before a request for examination is made. The request that the international application shall be treated as an application for a petty patent must be filed in writing and refer to the national application number.

The fee schedule in Australian dollar for Australian Patent Office as the designated office for a PCT application is given below:

FEES (Australian Dollar)

Standard patent applications

Filing fee 280

Where the number of sheets comprising the specification (including drawings) exceeds 30,

For each sheet in excess of 30 12

Request for examination fee:

(a) where no direction is issued by the commissioner (AUP Sec. 44(1); for ordinary examination 405

where no direction is issued by the commissioner (AUP Sec. 44(1); 47), for modified examination 335

(b) where Commissioner directs examination (AUP Sec. 44(2); 44(4)), for ordinary examination 350

where Commissioner directs examination (AUP Sec. 44(2); 44(4); for modified examination 290

Continuation/renewal fees

(becoming payable on each anniversary of the international filing date from the 3rd onwards):

- On the 3rd anniversary 115
- On the 4th anniversary 140
- On the 5th anniversary 165
- On the 6th anniversary 200
- On the 7th anniversary 235
- On the 8th anniversary 270
- On the 9th anniversary 305
- On the 10th anniversary 345
- On the 11th anniversary 385
- On the 12th anniversary 430
- On the 13th anniversary 475
- On the 14th anniversary 525
- On the 15th anniversary 575
- On the 16th anniversary 630
- On the 17th anniversary 680
- On the 18th anniversary 730
- On the 19th anniversary 790

Fee for extension of time limit:

(a) where there is an error or omission on the part of the person concerned or his agent or attorney

(i) where application is filed before expiration of time to be extended- for each or part of a month 65

(ii) where application is filed after the time to be extended the amount payable under (i) plus the amount of 90

(iii) if extension is granted after the expiration of the period for which the application is made- for each or part of a month for which the time is extended 65

(b) for circumstances beyond the control of the person concerned- application for extension of time 65

(c) to pay continuation fee for each or part of a month for which the time is extended 65

Fee for voluntary amendments 105

Petty patent applications

Petty patent filing fee 280

All fees must be paid to the Australian Patent Office in Australian dollars by check, money order, bank draft or cash. National fees may be paid by any of the means listed above.

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Congrats-Kottayam Team

A team of scientists from the Mahatma Gandhi University, Kottayam has obtained two US patents on their inventions related to extracts of Garcinia Cambogia fruits and Hibiscus plant. These extracted acids, when produced from the chemical route, are quite expensive. Both Garcinia acid and Hibiscus acids are widely used as important ingredients in many pharmacological as well as synthetic fronts.

Garcinia Cambogia fruits

The team was led by Dr.Ibnu Saud of the School of Chemical Sciences, M G University and the work was done under a project funded by DST. These patents show the way for utilising and value adding to the bio diversity of the country. Further a new optimism blossoms that patentable inventions can emanate from smaller universities which do not get enough funding.

Hibiscus Plant

Team led by Dr. Ibnu Saud

Dr. Ibnu Saud: Sitting in the centre;
From left to right: Ms. Rani R. Nair, Ms. Salini Thomas, Ms. Grace Thomas, Mr. P.V. Sasi, Ms. Chithra Gopinath and Ms. Beena Thomas

Services Offered by PFC

1. Online patent search on Indian patents (bibliographic only).
2. Search on Indian database on patent applications filed in India since 1995.
3. CD-ROM based patent search for European and US patents.
4. On-line patent searches on Internet by using international databases.
5. Mechanism for obtaning full text patent documents and patent searching elsewhere.
6. Conducting patent awareness workshops.
7. Individual queries from readers and others are attended to.
8. Facilities for patenting of inventions carried out at universities, R&D institutions, etc.
9. Free of cost bulleting on IPR.

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making Texas based firm Rice Tec to withdraw 4 out 20 claims from the patent granted in 1997 titled 'Basmati rice lines and grains'. The withdrawal of claims took place after the Agricultural Produce Export Development Authority (APEDA) filed an appeal before the United States Patents and Trademark Office (USPTO). The US firm has also withdrawn the registration of the controversial trademark 'Kasmati' for rice in UK. The Indian argument for the cancellation of trademark was based on the distinction between the trademarks and generic terms enshrined in the law.

(Business Standard, 18 Oct, 2000)

India has been designated for patent protection in over 83, 000 international applications received by the international bureau. Also, after signing the Patent Cooperation Treaty, the Indian Patent Office had received 242 international applications from Indian Nationals and over 2053 applications on the national level. The Secretary, Department of Industrial Policy, Shri P G Mankad told this at a seminar on 'Patent Cooperation Treaty in Developing Countries' in New Delhi on 8 November 2000.

(Financial Express, 9 Nov 2000)

Microsoft has announced the launch of its "Pathways for legal excellence" programme in India. The programme is a part of a global effort by the company to promote intellectual property for software and information technologies. The programme will make grants available in the following areas:

* Forums to discuss the substantive laws required to provide IPR protection for software and other new technologies.
* Knowledge building seminars for prosecutors and enforcement officials to promote better methods of evidence gathering and presenting IPR-related cases.
* Programmes to promote review and discussions of judicial rules and procedures to help support reforms focussed on ensuring that courts can move cases in an objective and expeditious manner.

The programme will work in cooperation with local law related organizations, IT industry associations and academic institutions to develop forums that create awareness about the issue.

(Business Standard, 24 Nov 2000)

The modernisation of the Indian Patent Office will reduce the time for granting patents to 36 months. Also the number of posts for patent examiners from 40 to 150 will ensure quick examination of the patent application. This was stated by the Industry Secretary Shri P G Mankad.

(Business Standard, 28 Nov 2000)

Smithkline Beecham (SB) is planning to file a petition against Sun Pharmaceuticals, Dr Reddy's Laboratories and Torrent Pharma in the Indian Patent Control Office (IPCO) for violation of patent rights of its anti-diabetic bulk drug Rosiglitazone. SB shall file the petition once it gets the exclusive marketing rights for this drug. The controversy involved here is that SB applied for EMR for this drug in India while the other three Indian companies also filed for EMRs for their Rosiglitazone formulation and introduced their brands in the market. The three Indian companies are claiming that the drug of SB is a pre-1995 patented drug for which EMR cannot be sought in India. SB is of the opinion that they had conducted some process research on the original molecule and introduced a new derivative for which it claimed an EMR.

(Business Standard, 29 Nov 2000)

The National Association for Software and Services Companies (NASSCOM) will be submitting its report on the Software Patent Rights to the Union Government in March 2001. The report is currently under preparation by the Intellectual Property Rights (IPR) Cell of NASSCOM.

(Business Standard)

The Union Cabinet has approved the signing and ratification of the agreement to establish an advisory centre on WTO Law. By becoming a member of the WTO Law Centre, India would get certain legal services free and support in WTO

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dispute settlement proceedings at discounted rates.

(Economic Times, 10 Nov 2000)

International News

A US patent (Pat No. 5, 367,070) has been obtained by a Diexel University professor, Shri Amar Nath for a technology to develop near ideal magnetic particles. They have developed novel ferromagnetic prophin compounds for which the starting compound consists of flat phthalocyanine rings lying over each other in the solid. Through this technology they have been able to achieve particles of uniform size and designed dimensions which are very close to ideal magnetic particles. These materials may enable radio photomagnetic switches, integrated optical devices, magnetostrictive sensors, and microwave materials.

(High-Tech Materials Alert, Vol 17 No 10, Oct 2000)

A web based IUP service site www.ip.com has been launched which provides a fast and economical method for submission of defensive publications by corporations, universities and individuals. IP.com enables the world wide publication of prior art to build and protect the value of IP portfolios. After an organization files patent application on core inventions, it can publish incremental innovations on the site, placing them in the public domain. Publishing innovation helps to ensure that competitive patents do not issue and in cases where they do, IP.com makes its publication available to support invalidity defenses at trial. IP.com, co-founded by Manning & Napier Information Services, has headquarters and technical development centre in Rochester, New York.

(Patent World, Issue 126, Oct 2000)

The Biological Diversity Law of Venezuela approved by the Congress in October 1999 has now been notified. The main purpose of the law is to establish the guidelines for the conservation of biological diversity in Venezuela. It also excludes from patent protection forms of life, genome or parts of it, or illegal samples collected or aspects employing collective knowledge of local indigenous communities.

(Patent World, Issue 126, Oct 2000)

The International Intellectual Property Alliance (IIPA) filed five petitions with the Office of the US Trade Representative (USTR) requesting that an interagency group review the intellectual property rights practices of five countries, namely, Brazil, Russia, Gautemala, Costa Rica and Uruguay. The petition against these countries focuses on the legal and enforcement deficiencies, which result in copyright based companies' inability to protect their rights in these markets. The US copyright industry estimates that they have approximately lost $ 1.8 billion in trade losses due to piracy in just these five countries.

(Copyright World, Issue 104, Oct 2000)

Yahoo.com has launched a domain name dispute against 37 registered domains which is a record in itself. The 37 accused domain names vary from "Attanta Yahoo.com" to "John.com" and "Yhu.com". The company has filed the case with the Internet Corporation for Assigned Names and Numbers (ICANN) for arbitration under its uniform domain name dispute resolution policy.

(World Patent Information, Vol 22 No 3, Sept 2000)

Full texts of Intellectual Property Legislation of 35 countries and the European Community as well as the full texts of all treaties administered by WIPO are now available on line. The laws are available in three languages i.e English, French and Spanish. Each of the legislative texts and treaties is preceded by a detailed bibliographic data entry which includes details such as publication dates, entry into force, related texts and language availability. This site can be reached at http://clea.wipo.in or http://www.wipo.int.clea

World Intellectual Property Organization has published WIPO Guide to Intellectual Property Worldwide, which presents report on the intellectual property

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situation in the member states that adhere to Organization treaties. The book provides individual country properties that give an overview of all aspects of intellectual property in each country. It includes basic legislation, membership of international treaties, administrative structures, governmental and non-governmental bodies for information and enforcement, educational institution teaching the subject, and industrial property statistics. The guide shall be of use to officials in national administration, legal practitioners, teachers and students, researchers, creators or owners of intellectual property as well as members of general public. For more details contact at www.wipo.int.ebookshop.

(WIPO Magazine, Sept 2000, Geneva)

A Registered Design Bill has been introduced in the Singapore Parliament, which allows design to be registered in Singapore for the first time. The likely changes under the new system include the following:

(a) The design will no longer be required to have an eye appeal.

(b) Novelty will be determined on a worldwide basis.

(c) The initial period of protection will be five years, renewable upto 15 years. There will be no substantive examination.

Presently, the design protection in Singapore is obtained through registering a design in the UK.

(Copyright World, Issue 105, November 2000)

Certain changes have been made in the Chinese Patent Law in order to bring the law in line with the specifications of the World Trade Organization on Intellectual Property before China can be admitted to the WTO membership. The new Law comes into force on 1 July, 2000. The changes include:

1. The citizens of China have now been granted the right to sue the Patent office. This means that any patent now granted can be revoked or forfeited. The old law stipulated that the local patent office has the last word on whether or not to invalidate a patent which had already been registered.
2. Encouraging innovation in China by providing that patent holders must be paid for the commercialization of their inventions.
3. State owned companies shall enjoy only partial ownership of any patent rights.

The Gulf Cooperation Council (GCC) Countries' unified Patent Law, in its amended version has been in force since 16 August 2000. The countries in the Gulf Cooperation Council include Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and United Arab Emirates. The office of the GCC has been opened at Riyadh, Saudi Arabia. The term of the patent is 20 years. The patentee is required to make sufficient exploitation of the invention covered by the patent in the GCC member states within three years from the date of grant, failing which a compulsory license shall be granted by the GCC Patent Office Board of Directors.

The United States Patent and Trademark Office has now included every patent ever issued since 1790 in its web database. Patents issued from 1790 through 1975 are searchable by patent numbers and current US patent classification while patents issued from 1976 to most recent issue week are searchable by full text fields that now include current US classification data.

(www.uspto.gov)

For the first time in the history of US patents, USPTO will begin publishing patent applications filed on or after November 29, 2000 eighteen months after the effective filing date of the application. Applications will be published electronically and will be available at the site www.uspto.gov.

The patent bibliographic database on the USPTO web site shall be discontinued from 31 December 2000. The rest of the databases for search i.e. full text database shall remain open to public as before.

Drug company Eli Lily has received a six-month extension of marketing exclusivity for its block buster anti-depressant drug Prozac.

(Finanacial Express, 17 Nov 2000)

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PFC goes International....

- First ever workshop to be conducted abroad by PFC was organized by PFC at the behest of National Science Foundation, Govt. of Sri Lanka at Candy on November 22. More than 70 scientists belonging to universitites and R&D institutions in and around Candy participated in the workshop.
- The domestic activities were maintained at the same tempo. PFC crossed the milestone of filing the 100th patent application in October.
- During the period, two US patents entitled "Convenient method for large-scale isolation of Hibiscus acid" and "Convenient method for large-scale isolation of Garcina acid" were granted to DST. These inventions have emanated from a DST funded project awarded to Dr. Ibnu Saud of the Mahatma Gandhi University, Kottayam. The filing and prosecution of the patent applications before the US Patent and Trademark Office (USPTO) were handled by the PFC.
- Three patent awareness workshops were conducted during the period. The first one was held at Jamia Millia Islamia, New Delhi on October 11. The second one was organized at Arunachal University, Itanagar on October 16 and the third one at North Eastern Regional Institute of Science and Technology (NERIST), Itanagar on October 17. These workshops were attended by about 300 scientists and technologists. With these, a total of 81 patent awareness workshops have been conducted by the PFC.

(Workshop held at Jamia Millia Islamia)

(Workshop held at Arunachal University)

Please send us questions and topics you would like to see in the coming issues

NEXT ISSUE

- **Case Study**
- **Herbs Related Patents**
- **Patents For Opposition**

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