

INTRODUCTION TO INTELLECTUAL PROPERTY

Intellectual Property refers to creation of mind i.e. *inventions, industrial designs for article, literary & artistic work, symbols etc.* used in commerce.

Intellectual property is divided into two categories: *industrial property*, which includes inventions (patents), trademarks, industrial designs, and geographic indications of source: and *Copyright*, which includes literary and artistic works such as novels, poems, plays, films and musical works etc. According to the *TRIPS Agreement*, the intellectual property has been classified into—*Patents, Industrial Designs, Trade Marks, Copyright, Geographical Indications, Layout Designs of Integrated Circuits, Protection of Undisclosed Information/Trade Secrets*. Different IP Rights vary in the protection they provide.

PATENTS—WHAT IT IS

A *Patent* is an intellectual property right relating to inventions and is the grant of exclusive right, for limited period, provided by the Government to the patentee, in exchange of full disclosure of his invention, for excluding others, from making, using, selling, importing the patented product or process producing that product for those purposes. The purpose of this system is to encourage inventions by promoting their protection and utilization so as to contribute to the development of industries, which in turn, contributes to the promotion of technological innovation and to the transfer and dissemination of technology. Under the system, Patents ensure property rights (legal title) for the invention for which patent have been granted, which may be extremely valuable to an individual or a Company. One should make the fullest possible use of the Patent System and the benefits it provides. Patent right is territorial in nature and a patent obtained in one country is not enforceable in other country. The inventors/their assignees are required to file separate patent applications in different countries for obtaining the patent in those countries.

LEGISLATION

The Patent System in India is governed by the Patents Act, 1970(No. 39 of 1970) as amended by the Patents (Amendment) Act, 2002 and the Patents Rules, 2003 effective from 20-05-2003 in India.

ADMINISTRATION

The Patent Office, under the Department of Industrial Policy & Promotion, Ministry of Commerce & Industry, performs the statutory duties in connection with the grant of patents for new inventions and registration of industrial designs. Patent Offices are located at Kolkata (Head Office), Mumbai, Chennai and Delhi to deal with the applications for patents originating within their respective territorial jurisdictions. *Details of the locations of the above Patent Offices with their territorial jurisdiction have been shown in annexure I.*

Patent Information System (PIS) located at Nagpur maintains a comprehensive collection of patent specifications and patent related literature, on a worldwide basis and provides technological information contained in patent or patent related literature through search services and patent document supply services.

Intellectual Property Training Institute (IPTI) located at Nagpur provides training to the officials of IP offices and other users of the system who are working in the field of Intellectual Property Rights.

INTERNATIONAL TREATIES

India is a member-state of World Intellectual Property Organisation (*WIPO*), an International Organisation, responsible for the promotion of the protection of intellectual property throughout the world. India is a member of the following International Organisations and Treaties in respect of Patents:

- a) World Trade Organization (WTO) with effect from 01-01-1995.
- b) Convention establishing World Intellectual Property Organisation, (*WIPO*).
- c) Paris Convention for the protection of Industrial Property with effect from Dec.7, 1998.
- d) Patent Co-operation Treaty (PCT) with effect from Dec.7, 1998.
- e) Budapest Treaty with effect from 17th December, 2001.

TYPES OF PATENTS

- a) Ordinary Patents
- b) Patents of Addition (granted for Improvement or Modification of the already patented invention for the unexpired term of the main patent).
- c) Convention applications with priority date, claiming on the basis of filing in Convention Countries
- d) National Phase Applications under PCT.

WHO MAY APPLY

Application may be made by the inventor, either alone or jointly with another, or his/their assignee, legal representative of deceased inventor or assignee are entitled to apply.

GENERAL PRECAUTION FOR APPLICANT

The first to file system is employed, in which, among persons having filed the same invention, first one is granted a patent. Therefore, a completed invention should be filed promptly. It is common experience that through ignorance of patent law, inventors act unknowingly and jeopardize the chance of obtaining patents for their inventions. The most common of these indiscretions is to publish their inventions in newspapers or scientific and technical journals, before applying for patents. Publication of an invention, even by the inventor himself, would (except under certain rare circumstances) constitute a bar for the subsequent patenting of it. Similarly, the use of the invention in Public, or the commercial use of the invention in public or even in secrecy, prior to the date of filing patent application would be a fatal objection to the grant of a patent for such invention, thereafter. There is, however, no objection to the secret working of the invention by way of reasonable trial or experiment, or to the disclosure of the invention to other confidentially.

Another mistake, which is frequently made by the inventors, is to wait until their inventions are fully developed for commercial working, before applying for patents. It is, therefore, advisable to apply for a patent as soon as the inventor's idea of the nature of the invention has taken a definite shape.

It is permissible to file an application for a patent accompanied by a "Provisional Specification" describing the invention. The application may, therefore, be made even before the full details of working the invention are developed. The filing of an application for a patent disclosing the invention would secure "provisional protection", and thereby, enable the inventor to work out the practical details of the invention and to file complete specification within 12/15 months with extension from the date of filing of provisional specification.

WHAT IS PATENTABLE INVENTION

Under the Patents Act, an Invention means “a new product or process involving an inventive step and also capable of being made or used in the industry”. It means the invention to be patentable should be technical in nature and should meet the following criteria –

- i) Novelty: The matter disclosed in the specification is not published in India or elsewhere before the date of filing of the patent application in India.
- ii) Inventive Step: The invention is not obvious to a person skilled in the art in the light of the prior publication/knowledge/ document.
- iii) Industrially applicable: Invention should possess utility, so that it can be made or used in the industry.

WHAT IS NOT PATENTABLE

The following are Non-Patentable inventions within the meaning of the Act: -

- (a) an invention which is frivolous or which claims anything obviously contrary to well established natural laws;
- (b) an invention the primary or intended use or commercial exploitation of which could be contrary to public order or morality or which causes serious prejudice to human, animal or plant life or health or to the environment;
- (c) the mere discovery of a scientific principle or the formulation of an abstract theory (or discovery of any living thing or non-living substances occurring in nature);
- (d) the mere discovery of any new property or new use for a known substance or of the mere use of a known process, machine or apparatus unless such known process results in a new product or employs at least one new reactant;
- (e) a substance obtained by a mere admixture resulting only in the aggregation of the properties of the components thereof or a process for producing such substance;
- (f) the mere arrangement or re-arrangement or duplication of known devices each functioning independently of one another in a known way;

- (g) a method of agriculture or horticulture;
- (h) any process for the medicinal, surgical, curative, prophylactic (diagnostic therapeutic) or other treatment of human beings or any process for a similar treatment of animals to render them free of disease or to increase their economic value or that of their products.
- (i) plants and animals in whole or any part thereof other than micro-organisms but including seeds, varieties and species and essentially biological processes for production or propagation of plants and animals;
- (j) a mathematical or business method or a computer programme per se or algorithms;
- (k) a literary, dramatic, musical or artistic work or any other aesthetic creation whatsoever including cinematographic works and television productions;
- (l) a mere scheme or rule or method of performing mental act or method of playing game;
- (m) a presentation of information;
- (n) topography of integrated circuits;
- (o) an invention which in effect, is traditional knowledge or which is an aggregation or duplication of known properties of traditionally known component or components.
- (p) Inventions relating to atomic energy and prejudicial to the defence of India.
- (q) In the case of inventions relating to substances prepared or produced by "chemical processes" (including alloys, optical glass, semiconductors and inter-metallic compounds) and substance intended for use or capable of being used as drug and food, no patent will be granted in respect of claims for the substances themselves, but claims for the method or processes of manufacture will be patented. "Chemical Process" includes biochemical, biotechnological and micro-biological process.

APPROPRIATE OFFICE FOR FILING AN APPLICATION & FOR OTHER PROCEEDINGS

Application is required to be filed according to the territorial limits where the applicant or the first mentioned applicant in case joint applicants for a patent normally resides or has domicile or has a place of business or the place from where the invention actually originated. If the applicant for the patent or party in a proceeding having no business places or domicile in India, the appropriate office will be according to the address of service in India given by the applicant or party in a proceeding . The appropriate office once decided in respect of any proceedings under the Act shall not ordinarily be changed. The four patent offices are located at Kolkatta, Mumbai, Delhi & Chennai (Annexure 1).

PUBLICATION & EXAMINATION OF PATENT APPLICATIONS

i) Publication:

Publication of all the applications for patents except the applications prejudicial to the defence of India or abandoned due to non-filing of complete specification within the prescribed time-limit after provisional or withdrawal of the application will be published in the official Gazette after 18 months from the date of filing of the application or the date of priority whichever is earlier. The publication will include the particulars of the date of the application, application number, name and address of the applicant along with the abstract. No application for patent shall be opened for public inspection before publication. After the date of publication of the application, as stated above, the complete specification along with provisional and drawing, if any, and abstract may be inspected at the appropriate office by making a written request to the Controller in the prescribed manner.

ii) Request for examination

No application for patent will be examined if no request is made by the applicant or by any other interested person in Form-19 with prescribed fee of Rs.1,000/- and Rs.3,000/- for individual and for legal entity respectively, within a period of 48 months from the date of filing of the application for patent. However, in case of applications for patents filed before 20th May, 2003, the request is required to be made by the applicant or any other interested person within a period of 12 months from 20th May, 2003 or within 48 months from the date of application whichever is later. Where no request against the application for patent has been filed within the prescribed period, the aforesaid application will be treated as withdrawn and, hereinafter, application cannot be revived.

iii) EXAMINATION

Applications for patent, where requests have been made by the applicants or by any other interested persons, the applications will be taken up for examination strictly according to the serial number of the requests received on Form 19. A First Examination Report (FER) stating the objections/requirements is communicated to the applicant or his agent according to the address for service. An applicant shall submit his first reply to the FER within a period of 4 months from the date of FER.. Application or complete specification is required to be amended in order to meet the objections/requirements within a period of 12 months from the date of First Examination Report (FER). No further extension of time is available in this regard. If all the objections are not complied with within the period of 12 months, the application will be deemed to have been abandoned. When the application is in order for acceptance, it is notified in the Gazette of India.

WITHDRAWAL OF PATENT APPLICATION

The application for patent can be withdrawn at least 3(Three) months before the first publication which will be 18(Eighteen) months from the date of filing or date of priority whichever is earlier.

The application can also be withdrawn at any time before the grant of the patent.

The application withdrawn after the date of publication, cannot be refiled as it is already laid open for public inspection. However, application withdrawn before the publication can be refiled provided it is not opened otherwise.

OPPOSITION

Notice of opposition must be filed within 4(four) months of notification in the Official Gazette. Extension of one month is available, but must be applied for before expiry of initial four month period in Form-4 with prescribed fee.

GRANT OR SEALING OF PATENT

If the application is not opposed or the opposition is decided in favour of the applicant or is not refused, the patent is granted or sealed on making a request in Form 9 alongwith sealing fee within 6 months from the date of notification of acceptance of the complete specification in the Gazette of India at the appropriate office where the application was filed. However, it is extendable by three months. If the sealing fee is not paid within the prescribed period, it will be treated as "NO PATENT". There is no provision in the Act to revive the said patent.

TERM AND DATE OF PATENT

Term of every patent will be 20 years from the date of filing of patent application, irrespective of whether it is filed with provisional or complete specification.

Date of patent is the date on which the application for patent is filed, irrespective of whether it is accompanied with provisional or complete specification.

RIGHTS OF THE PATENTEE

Where a patent covers a product, the grant of patent gives the patentee the exclusive right to prevent others from performing, without authorisation, the act of making, using, offering for sale, selling or importing that product for the above purpose.

Where a patent covers a process, the patentee has the exclusive right to exclude others from performing, without his authorisation, the act of using that process, using and offering for sale, selling or importing for those purposes, the product obtained directly by that process in India, wherein product for which no patent is granted is excluded. These rights created by statute are circumscribed by various conditions and limitations as provided in the Patents Act, 1970 as amended by The Patents (amendment) Act, 2002.

REGISTER OF PATENT

A Register of Patents will be kept in the Patent Office and its branch offices. Register of Patent can be inspected or extract from it can be obtained on payment of prescribed fee. Register of Patent contains the names and addresses of the patentee, notification of assignment etc., particulars in respect of validity or proprietorship of patent and payment of renewal fee.

RENEWAL FEE

To keep the patent in force, Renewal fee is to be paid every year. The first renewal fee is payable for third year of the patent's life and must be paid before the patent's second anniversary. If the patent has not been issued within the period, renewal fees may be accumulated and paid immediately after the patent is sealed, or within three months of its recordal in Register of Patents or within extended period of six months upto 9 months from the date of recordal. If the renewal is not paid within the prescribed time, the patent will cease to have effect. However, provision to restore the patent is possible provided application is made within eighteen months from the date of cessation.

Renewal fee is measured from the date of filing of the Patent application. Six month's grace time is available with extension fee for payment of renewal fee. No renewal fees is payable on Patents of Addition, unless the original patent is revoked and if the Patent of Addition is converted into an independent patent; renewal fee, then, becomes payable for the remainder of the term of the main patent.

RESTORATION

Application for restoration of a patent that lapses due to non-payment of renewal fees must be made within 18 months of lapse. The application is to be filed to the appropriate office according to the jurisdiction.

DOCUMENTS REQUIRED FOR FILING AN APPLICATION

- 1) Application form in duplicate (Form 1 or 1A).
- 2) Provisional or complete specification in duplicate. If the provisional specification is filed, it must be followed by the complete specification within 12 months/15 months with extension (Form 2).
- 3) Drawing in duplicate (if necessary).
- 4) Abstract of the invention in duplicate.
- 5) Information & undertaking listing the number, filing date & current status of each foreign patent application in duplicate (Form 3).
- 6) Priority document (if priority date is claimed) in convention application.
- 7) Declaration of inventor-ship where provisional specification is followed by complete specification or in case of convention application (Form 5).
- 8) Power of attorney (if filed through Patent Agent).
- 9) Fee (to be paid in cash/by cheque/by demand draft) (See Schedule I).

(Note: The cheque or demand draft should be payable to the "Controller of Patents" drawn on any schedule bank at a place where the appropriate office is situated).

PROVISIONAL SPECIFICATION

Application for patent may be accompanied by the provisional specification. It should contain the description of invention with drawing, if required. It is not necessary to include Claim. However, the complete specification should be fairly based on the matter disclosed in the provisional specification and should be filed within 12 months (extendable by 3 months) from the date of filing of provisional specification. If the complete specification is not filed within 12 months or within the extended period, the application will be deemed to have been abandoned.

COMPLETE SPECIFICATION*

The complete specification is an essential document in the procedure of patent application with drawing required to be attached according to the necessity. Complete specification shall fully describe the invention with drawing, if required, disclosing the best method known to the applicant and end with Claim/Claims defining the scope of protection sought. The protection under the Patents Act depends upon the detailed disclosure of the invention as the subject of its protection. The specification must be written in such a manner that person of ordinary skill in the relevant field to which the invention pertains, can understand the invention. Normally, it should contain the following matter-

1) Title of invention, 2) Field of invention, 3) Background of invention with regard to the drawback of associated with known art, 4) Object of invention, 5) Statement of invention, 6) A summary of invention, 7) A brief description of the accompanying drawing, 8) Detailed description of the invention with reference to drawing/examples, 9) Claim(s), 10) Abstract.

The specification must start with a title, which is short, and, which describes the general nature of invention. The title should not contain anyone's name, a fancy name and trade name or personal name or any abbreviation etc.

*(See Specimen)

Description:

The specification must be written in good and clear English or Hindi. The specification should indicate those features which are essential for the operation of the invention as well as those features for which a choice can be made. The description must be sufficiently detailed for someone who works in the same area of technology to be able to perform the invention from the information given in the description. The best method of putting the invention into effect is required to be described in the description.

In case of biological invention, it is required to mention the source or geographical origin of biological material used for the invention

Claim:

A set of properly drafted claim is an important part of complete specification. The complete specification must have at least one Claim. The claim is drafted in a number of paragraphs serially numbered. The first claim is the main claim which is made as wide as possible. The subsidiary claims refer to the main claim and include qualifying or explanatory clauses on the various integers of the main claim or optional features. They may also contain independent claims. Although the claim clauses consist of a number of claims, the totality of the claims must relate to one invention only. It should be noted that a claim is a statement of technical facts expressed in legal terms defining the scope of the invention sought to be protected.

Abstract

The abstract is the concise summary of the invention preferably within 150 words. It shall commence with the title of the invention, preferably within 15 words. It should be prepared in such a way that one can understand the technical problem and solution with its usefulness. If necessary, most relevant drawing should also be included in the abstract, particularly, in mechanical type inventions. Each main feature mentioned in the abstract and illustrated by a drawing should be indicated by reference numerals. In case of Chemical invention, it should contain the Chemical Formula for understanding the invention. However, it cannot be used for the purpose of interpreting the scope of protection in legal proceeding.

DRAWING*

Drawing should be filed on standard A4 size sheet in duplicate. Drawing should be drawn on the sheet with margin of 4 cm on top and left hand and 3 cm at the bottom and right hand side. Figure should be shown clearly on sufficient scale in upright position with respect to top and bottom position of the sheet. At left-hand top corner of the sheet, the name of applicant should be mentioned. No. of sheets and sheet no. should be mentioned at the right hand top corner. At the right-hand bottom, signature of the applicant/agent should be made mentioning the name there under. A reference letter/numerals as used in the description should also be used in denoting the corresponding component/part in the figure(s). No descriptive matter should appear on drawing except under certain cases such as flow sheet, chemical and other reactions etc. No drawing or sketch should appear in the specification.

*(See Specimen)

TECHNICAL LIBRARY OF PATENT OFFICES

The Patent Office and its branches have Technical Library services which are available to the public.

Collections of Technical Library

- 1) Scientific & Technical books.
- 2) Indian & foreign scientific and technical Journals.
- 3) Indian & foreign Journals on Intellectual Property Rights.
- 4) CD ROMS containing full texts of Indian patents.
- 5) CD ROMs containing the Patent abstracts of EPO, Japan.
- 6) CD ROMs containing the full text of U.K., Australia & PCT.
- 7) Gazette of India (Part III, Section 2) containing Patent proceedings under the Indian Patent Act, 1970 (As amended by Patent Act, 2002)
- 8) Official Gazettes of Foreign countries.
- 9) Other publications of the Patent Office.
- 10) Published Indian Patent specifications arranged according to fields of inventions as per Indian and International Patent classification.

(Note: Xerox copies of the Patents and other documents can be obtained on payment of prescribed charge of Rs.4/- per page.)

For further information, visit our website www.ipindia.nic.in/ www.ipindia.gov.in

Specimen of 'COMPLETE SPECIFICATION'

[Note The annotations in the right margin of this specification are for information only. They should NOT be included in your specification]

BED SHEET TENSIONER

[Title]

This invention relates to improvement in device for tensioning of bed sheets

[Technical field of the invention]

For many people the lack of smoothness in the lower sheet on a bed causes discomfort which can result in lack of sleep

[Background and any problem with the 'prior art']

There have been many proposals to tension a bed sheet, but these have all required that some fitting or other be provided on the bed sheet on which to fasten some form of retaining strap For example one previous device proposes buttonholes or similar apertures along the length of the sheet and an elastic strap having a button at each end to fasten underneath the mattress to keep the bed sheet tensioned These proposals have the disadvantage that a standard bed Sheet bought from a shop cannot be used until it has been modified by including button holes (or other fastening arrangements) on the sheet

These problems are overcome by the present invention, which provides a bed sheet tensioning

[Summary of the invention]

device comprising a resilient strap with releasable fasteners at each end thereof, each of the releasable fasteners being adapted to fasten the strap to the cloth material of a bed sheet by gripping the cloth material without any part of the fasteners being included on the cloth material

In one form of the invention, the releasable fasteners comprise a plate having a projection with an enlarged head and an engagement clip thereon, the clip adapted to realisably engage the projection under the enlarged head with the cloth material of the bed sheet trapped there between

[List of preferred and optional features are to be

In another form of the invention, the releasable fasteners may comprise a pair of jaws resiliently biased towards each other such that the jaws may grip between them the edge of a bed sheet or a portion of material within a bed sheet to tension the bed sheet as required. Such jaws may include serrations to assist with gripping of the bed sheet material.

The resilient strap may be made of rubber or elasticised cloth or any other resilient material such as a spring. Such a spring may be encased in a cloth sleeve to prevent it attaching itself to mattress covers or sheets.

The fasteners may be made of any suitable material, such as metal, or moulded plastic.

To assist with understanding the invention, reference will now be made to the accompanying drawings, which show one example of the invention.

Brief description of the drawing:

FIG. 1 shows one example of a bed sheet tensioning device according to this invention.

[Summary of the drawings (if there are drawings.)]

FIG.2 shows the application of such a bed sheet tensioning device to a corner of a mattress.

Detailed description of the preferred embodiments:

Referring to FIG. 1 can be seen that the bed sheet tensioning device according to this invention comprises an elongate resilient strap 1 comprised

[Description of an example of the invention]

of an elasticized cloth strap having loops 2 and 3 at each end thereof. The loops 2 and 3 are formed by sewing at 4 and 5 respectively, after an elongate slot 6 and 7 respectively has had the loop passed there through.

The elongate slots 6 and 7 are on end fastener assemblies 8 and 9 respectively. The end fastener assembly 8 comprises essentially a planar base 10 having at one end a slot 6 substantially transverse to the direction of elongation of the planar base 10 and at the other end a substantially mushroom shaped projection 11. The projection 11 comprises a stalk portion 12 and a held 13. A wire clip 14 is pivotally mounted to a projection 15 on the base 10

and includes a loop portion 16 to just fit over the head 13 of the projection 11. When a sheet of cloth is placed between the clip 14 and the planar base 10 the extra thickness of cloth over the projection 11 causes the loop 16 to have an interference fit with the head 13 which enables releasable retention of the cloth of the bed sheet to the end fastener assembly.

A similar end fastener assembly is provided at the other end of the resilient strap 1.

FIG.2 shows the bed sheet tensioning device in operation. It can be seen that a mattress 20 has a bed sheet 21 over it, and at one corner the bed sheet tensioning device is fastened at one end to a bed sheet portion 22 at one side underneath a mattress and to a bed sheet portion 23 on the adjacent side around the corner of the mattress.

By the use of four bed sheet tensioning devices of this type, the sheet may be tensioned at four corners of the bed. The sheet as a whole will then be held firmly in position, rumpling of the sheet will be prevented, and the bed will be more comfortable. *Note Statement of claims should be on a separate page*

- | | |
|--|-----------------------------|
| I/We claim, | [The statement
of claim |
| 1. A bed sheet tensioning device comprising a resilient strap with releasable fasteners at each end thereof, each of the releasable fasteners being adapted to fasten the strap to the cloth material of a bed sheet by gripping the cloth material without any part of the fasteners being included on the cloth material. | [Independent
claim] |
| 2. The bed sheet tensioning device 1 wherein each of the releasable fasteners comprises a plate having a projection with an enlarged head and an engagement clip thereon, the clip adapted to engage the projection under the enlarged head with the cloth material of the bed sheet there between such that the fastener is engaged onto the bed sheet. | [Dependent
claim] |
| 3. The bed sheet tensioning device of claim 1 wherein the releasable fasteners comprise a pair of jaws resiliently biased towards each other. | |
| 4. The bed sheet tensioning device of claim 3 wherein the fastener's jaws include serrations to assist in gripping the bed sheet. | |
| 5. The bed sheet tensioning device of any one of claims 1 to 4 wherein the resilient strap is a spring enclosed in a cloth sleeve. | |
| 6. The bed sheet tensioning device of any one of claims 1 to 4 wherein the resilient strap is made of rubber. | |
| 7. A bed sheet tensioning device substantially as herein described with reference to the accompanying drawing. | [Omnibus claim.] |

Dated this _____ day of _____ 2003.

Name of Applicant (BLOCK
LETTERS)

ABSTRACT

[The Abstract of the invention.]

A device is useful for holding a bed sheet firmly in place on a mattress is disclosed. The device is an elastic strap (1) with a clip (8,9) on each end. The clips (8,9) are arranged to grip the edge of a bed sheet (22,23) on the underside a mattress (20). By using this device at each corner of the bed sheet is held firmly in place.

Name of Applicant

No. of Sheets-2
Sheet No .1

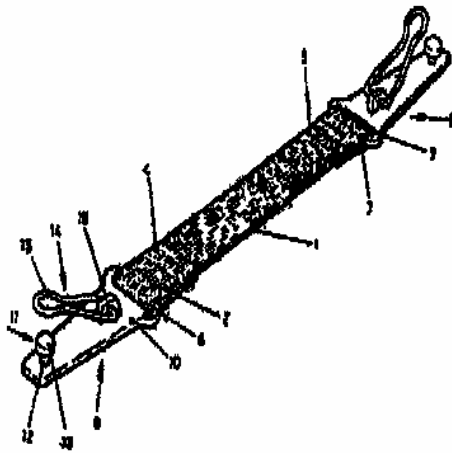


FIGURE-1

Signature & Date
of Applicant/Agent

Name of Applicant

No. of Sheets-2
Sheet No .2

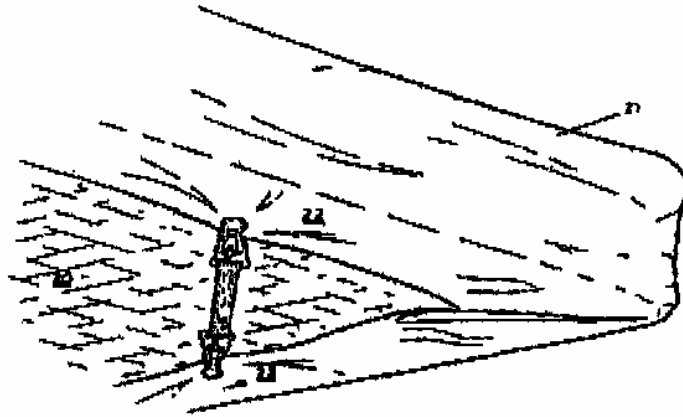


FIGURE-2

Signature & Date
of Applicant/Agent

Specimen of 'COMPLETE SPECIFICATION'

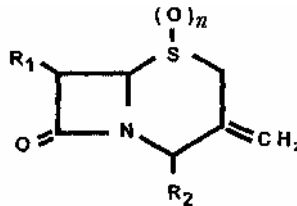
Process for the preparation of 3-Exomethylene Cephalosporins [Title]

The invention relates to a new process for the preparation of 3-exomethylene cephalosporins. These 3-exomethylenecepham compounds are useful as intermediates in the semisynthetic preparation of a variety of potent antimicrobial agents. [Background of Invention]

Several procedures are now available to produce 3-methylenecepham compounds. US Patent No 4,354,022 discloses a process for preparing 3-methylenecepham sulphides by reacting 3-halomethyl-3-cephem with a combination of activated Zinc metal and ammonium salt. However, of the 3-halomethyl-3-cephem compounds, only chloromethyl is exemplified in this reference. German patent no 3,711,625 also describes the reduction procedure only for chloromethyl cephem compounds. In Chem Pharm. Bull. 36 (2) 582-591 (1988) the preparation of 7-amino-3-methylene cepham-4-carboxylic acid is given by reduction of the corresponding 3-(5-methyl-1,3,4-thiadiazol-2-yl) thiomethyl-3-cephem derivative with zinc either in acidic or in anhydrous neutral conditions. In European Patent Appl. 132,394, the preparation of 3-methylene-1-oxocephem compounds is given by reaction of the corresponding 3-acetoxymethyl cephem compounds with activated zinc and ammonium chloride. [Prior Art]

In accordance with the present invention there is provided a new process using active tin generated in SnCl₂-Al system to achieve 3-exomethylene cephalosporin compounds of high purity and in good yields. The side product 3-methyl-3-cephem compound is formed in minor quantity in the method described in the present invention. [Statement of Invention]

According to the present invention, 3-exomethylene cephalosporins of the formula :

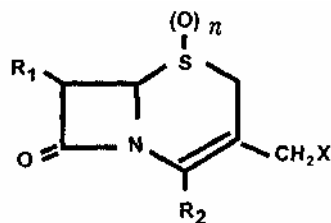


Wherein

R₁ is amino or a protected amino group,

R₂ is a carboxy or a protected carboxy group and

n is 0, 1 or 2, can be prepared by reducing a compound of the formula



Wherein

R₁, R₂ and n are each as defined above and

X is halogen, by the use of active zero-valent tin generated in SnCl₂-Al system, in a solvent, at a temperature of about 5 °C to above 60 °C.

Suitable "protected amino group" may include an amino group substituted with a suitable protective group which is conventionally used in Cephalosporin and Penicillin compounds as a protective group of the amino group at their 7th or 6th position, and suitable 'protected amino group' may include acylamino, phenyl (lower) alkylamino. (cyclo) alkylamino. [Detailed description of the invention]

Suitable 'acylamino' groups include aliphatic, aromatic and heterocyclic acylamino groups, the acyl group being for example formyl, acetyl, propionyl, butyryl, valeryl, hexanoyl methoxy carboxyl, ethoxycarbonyl, t-butoxycarbonyl, benzoyl, toluoyl, naphthoyl, phenylacetyl, phenylpropionyl, phenoxy carbonyl-phenoxycetyl thienylacetyl.

Suitable 'protected carboxy group' may include a carboxy group substituted with a conventional protective group which is conventionally used in cephalosporin and penicillin compounds as the carboxy protective group of the carboxy group at their 4th and 3rd position, for example, esterified carboxy group. Suitable examples of such protected carboxy groups include esters such as methyl ester, ethyl ester, propyl ester, butyl ester, benzyl ester, 4-nitrobenzyl ester, 2,2,2-trichloroethyl ester, diphenylmethyl ester, 4-methoxybenzyl ester.

In this specification, halogen may include chlorine, bromine and iodine.

Preferred compounds of formula I which can be made by the present invention are 3-methylene cepham and most preferably the 3-methylene-1-oxocepham and 3-methylene-1,1-dioxocepham compounds.

The reduction of compound II for the preparation of the compound I of the invention is accomplished with stannous chloride dehydrate and aluminium

number of solvents can be employed as suitable reaction solvent in the process. The solvent selected is preferably one in which the 3-halomethyl cephem substrate is substantially soluble. Solvents most commonly used include N, N,-dimethyl formamide, acetonitrile, tetrahydrofuran, water, dioxane.

The reaction conditions are not very critical. The reaction temperature range optimal for the reaction according to the invention may vary depending on the starting material, solvent and other factors. Generally, however the range of about 5 °C to 60 °C is suitable. The reaction time may vary widely, but is usually between 1-4 hrs. The product can be purified, removing any —3 methyl-3-cephem or other impurities which might be present, by standard usual techniques including crystallization from solvents such as methanol, isopropanol or acetone.

The starting 3-halomethyl-3-cephem derivatives are known compounds and may be prepared by the appropriate known methods. See, for example Japanese patent no. 76087/1975, Eur. Pat. Appl. 34,394 and Belgian patent no. 755,256.

As mentioned earlier, the 3-exomethylene cepham produced by the present process of this invention are useful as intermediates in the synthesis of cephalosporins having antibacterial activity. The 3-exomethylene cepham-1-oxides are particularly valuable in the synthesis of 3-hydroxy-cephalosporins, which may be converted readily to 3-halocephalosporins.

The following examples are given for the purposes of illustrating the present invention.

EXAMPLE -1

DIPHENYLMETHYL 7-B-PHENYLACETAMIDO-3-EXOMETHYLENECEPHAM-1-OXIDE-4-CARBOXYLATE

To a stirred solution of 5 g of diphenylmethyl 7-phenylacetamido-3-bromomethyl-3-cephem-1-oxide-4-carboxylate in 130 ml tetrahydrofuran and 50 ml water were added 5g of stannous chloride dehydrate and 1.53 g aluminium powder at 10-15 oC. The reaction progress was monitored by TLC. After the completion of the reaction, 100 ml ethyl acetate was added and organic layer was separated. Removal of the solvent afforded 4.30 g of the product that was recrystallised from isopropyl alcohol. According to quantitative HPLC-assay, the product contained 95% of the title compound. The isolated yield of the title

3-exomethylene was 87%. PMR (DMSO-d6) & : 3.45, 3.72 (2H, Abq, J=15Hz, C-2), 3.46 (2H, d, J=1.5Hz, -CH2CO), 4.78 (1H, d, J=5Hz, C-6), 5.20, 5.32 (2H, 2s, 3-exomethylene), 5.41(1H, dd, J=5Hz, 10Hz, C-7), 5.58 (1H, s, C-4), 6.54 (1H, s, diphenyl-methylmethine), 7.08 (15H, m, aromatic) and 7.78 (1H, d, J=10Hz, -NH).

EXAMPLE -2

4-METHOXYBENZYL 7-B-PHENYLACETAMIDO-3-EXOMETHYLENE CEPHAM-1-OXIDE-4-CARBOXYLATE

When proceeding according to the method described in example 1 and using

4.60 g of 4-methoxybenzyl 7-phenylacetamido-3-bromo-methyl-3-cephem.

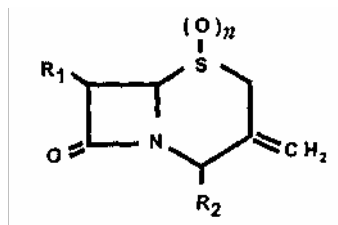
Oxide-4-carboxylate, 3.30g of 4-methoxybenzyl 7-B-phenylacetamido-3-

exomethylenecepham-l-oxide-4-carboxylate (85% of theory) were obtained.

HPLC analysis confirmed the product to be composed of 97% pure 3-exomethylenecepham.

We claim

1. A new process for preparing 3-exomethylene cephalosporins of the formula:

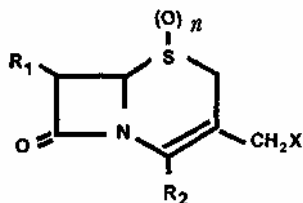


Wherein

R₁ is amino or a protected amino group,

R₂ is a carboxy or a protected carboxy group and n is 0, 1 or 2,

Which comprises reducing a 3-halomethyl-3-cepham derivative of the formula



Wherein

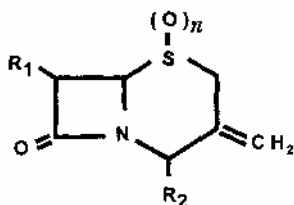
R₁, R₂ and n are each as defined above and X is halogen atom, with active tin generated in SnCl₂-Al system in presence of organic solvents of the kind such as herein described.

2. The Process according to claim 1, wherein said organic solvents are selected from tetrahydrofuran or acetonitrile or mixture thereof capable of dissolving the 3-halomethylcephem derivatives and water.
3. The process according to claim 2, in which the reaction is carried out at a temperature of about 5°C to 60°C.
4. A new process for preparing 3-exomethylenecepham compounds of the formula I substantially as herein described with reference to foregoing examples.

Dated this day of

Name of Applicant
(BLOCK LETTERS)

Abstract: A new process for preparing 3-exomethylene
cephalosporins of the formula:



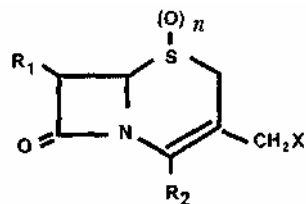
Wherein

R₁ is amino or a protected amino group,

R₂ is a carboxy or a protected carboxy group and

n is 0, 1 or 2,

Which comprises reducing a 3-helomsthy-3-
cephem derivative of the formula:



Wherein

R₁, R₂ and n are each as defined above and

X is halogen, atom, with active tin generated in SnC'l,-Al
system in presence of organic solvents of the kind such as
herein described.

(Ref. Nil).

FEES schedule-I				
Sl. No..	On what payable	No. of Form	Amount of fees (in rupees)	
			Individual	For other than natural person(s) either alone or jointly with natural
			Rupees	Rupees
1..	On application for a patent under sections 5(2), 7, 54 or 135 and rule 39 accompanied by provisional/ complete specification.	1	750 Multiple of 750 in case of every multiple priority.	3,000 Multiple of 3,000 in case of every multiple priority
2.	On filing complete specification	2	No fee	No fee
3.	On filing a statement and undertaking	3	No fee	No fee
4.	On request for extension of time under sections 8(2), 9(1), 12(4), 25(1), 28(4), 43(3) or 53 (3) and rules 12(4), 13(6), 24(5), 56(1), 73(3) or 130.	4	250 per month	1,000 per month
5.	On request for sealing of a patent under section 43.	9	1,500	5,000
6.	On request for examination of application for patent under section	19	1,000	3,000
7.	On request for certified copies under section 72 or for certificate under section-147 and rule 133	-	700	2,500
8.	On request for inspection of register under section 72 inspection under rule 27 or	-	200	500

9.	For supplying of photocopies of the documents per page.	-	4	4
10.	For renewal of a patent under section 53.	-	-	-
	Before the expiration of the 2 nd year from the date of patent in respect	-	600	3,200
	Before the expiration of the 3 rd year in respect of the 4 th year	-	600	3,200
	Before the expiration of the 4 th year in respect of the 5 th year	-	600	3,200
	Before the expiration of the 5 th year in respect of the 6 th year	-	600	3,200
	Before the expiration of the 6 th year in respect of the 7 th year	-	1,500	4,500
	Before the expiration of the 7 th year in respect or the 8 th year.	-	1,500	4,500
	Before the expiration of the 8 th year in respect or the 9 th year.	-	1,500	4,500
	Before the expiration of the 9 th year in respect of the 10 th year.	-	1,500	4,500
	Before the expiration of the 10 th year in respect of the 11 th year.	-	3,500	10,000
	Before the expiration of the 11 th year in respect of the 12 th year.	-	3,500	10,000
	Before the expiration of the 12 th year in respect or the 13 th year.	-	3,500	10,000
	Before the expiration of the 13 th year in respect of the 14 th year.	-	3,500	10,000

	Before the expiration of 14 th year in respect of 15 th year	-	3,500	10,000
	Before the expiration of 15 th year in respect of 16 th year	-	5,000	15,000
	Before the expiration of 16 th year in respect of 17 th year	-	5,000	15,000
	Before the expiration of 17 th year in respect of 18 th year	-	5,000	15,000
	Before the expiration of 18 th year in respect of 19 th year	-	5,000	15,000
	Before the expiration of 19 th year in respect of 20 th year	-	5,000	15,000

PATENT COOPERATION TREATY

Patent Laws differ from country to country and there is no "World Patent" or "International Patent". However, there is an international filing system that is accessible in accordance with patent cooperation treaty (PCT). When a PCT application is filed in one of the member-states of the PCT, this is legally in effect equivalent to filing in all PCT member states, which have been designated in the application. Patent right is granted only by the particular member country after entering the national phase in that country on receipt of applicant (Corresponding to the International applicant).

**INFORMATION FOR FILING OF INTERNATIONAL
APPLICATIONS FOR PATENT UNDER PCT BY INDIAN
APPLICANTS.**

- | | |
|---|--|
| a. Competent receiving Office. | The Patent Office, Kolkata, New Delhi, Mumbai, Chennai (RO/IN) International Bureau (RO/IB). |
| b. Language of filing. | RO/IN: English, Hindi
RO/IB: Any language. |
| c. Elements of the International application. | i. Request (PCT/RO/101).
ii. Description.
iii. One or more claims.
iv. Abstract.
v. Drawings (where applicable).
vi. Fees.
vii. P. A./ G.P.A (Where applicable)
viii. Priority documents (where applicable) |
| d. No. of copies required. | RO/IN: 3(i to v) to The Patent office, Kolkata and 4(i to v) to the Patent Office Branch, New Delhi, Mumbai, Chennai RO/IB: |
| e. Competent International Searching Authorities [ISAS]. | Austrian Patent Office (AT).
Australian Patent Office (AU).
European Patent Office (EP). China Intellectual Property Office (CN).
United States Patent & Trademark Office (US). Swedish Patent Office (SE). |
| f. Competent International Preliminary Examining Authorities [IPEAs]. | Austrian Patent Office (AT).
Australian Patent Office (AU).
European Patent Office (EP). (Only if ISA was AT, EP or SE). China Intellectual Property Office (CN).
United States Patent & Trademark Office (US). Swedish Patent Office (SE). |

**THE LIST OF THE PCT FEES, AN INDIAN APPLICANT IS REQUIRED TO
PAY.**

a. To Receiving Office (The Patent Office, Kolkata and its branch office)
(w.e.f. 1-1-2004)

i.	Transmittal fee	INR 1,500 [for individual(s)] INR 5,000 [for legal entity]
ii.	International filing fee	USD 1035* for 30 sheets USD 11 extra for each remaining sheet
iii.	Reduction	
	PCT Easy Reduction	USD 74
	Electronic filing not Character coded	USD 148
	Electronic filing Character coded	USD 222
	Handling fee	USD 148
iv.	Search fee	ISA/AT-USD182 ISA/EP-USD1818* ISA/AU-USD592 ISA/CN-USD181 ISA/US-USD 1000 ISA/SE-USD1818
v.	Fees for preparing certified copy of priority document and transmission of the same to IB.	INR 1 ,000 [for individual (s)] INR 3,000 [for legal entity other than Individual(s)]

b. To the International Preliminary Examination Authority (IPEA-optional)

i.	HANDLINGFEE	IPEA/AT-EUR 159 IPEA/AU-AUD 267 IPEA/EP-EUR 159 IPEA/CN-CNY equivalent to CHF 233 IPEA/US-USD 172 IPEA/SE-SEK 1570
ii.	PRELIMINARY EXAMINATIONFEE (Optional)	IPEA/AT-EUR 159 IPEA/AU-AUD 550 IPEA/EP-EUR 1,530 IPEA/CN-CNY 1,500 PEA/US-USD 490, USD 750 if search not carried by US. IPEA/SEK-5.000

* Basic fee, designation fee and handling fee is reduced by 75% where the applicant or if there are two or more applicants, each applicant is a natural person and is a national of, and resides in India.

** Nationals (Natural or Legal Person) of state which fulfil the requirements for the corresponding reduction of certain PCT fees as specified above may be eligible for reduction by 75% in search fee and preliminary examination fee, provided a request for reduction of fee is filed in a prescribed form.

MODE OF PAYMENT

To facilitate the payment in US Dollar, as required by International Bureau of World Intellectual Property Organisation and International Searching Authority selected by the applicant, an account has been opened by RO/IN in the name of the Controller General of Patents, Designs & Trade Marks, with the State Bank of India, New York Branch, 460, Park Avenue, New York-NY- 10022 assigning account No. 2111-250821-001.

In view of above, an Indian applicant, filing an International Application for Patent under Patent Cooperation Treaty, is required to remit the consolidated amount in US Dollar by Demand Draft, payable to the 'Controller of Patents' at State Bank of India, New York Branch, for payment towards basic fee, designation fee and search fee.

ACT TO BE PERFORMED FOR ENTRY INTO THE NATIONAL PHASE

An applicant desirous of entering the-Indian national phase before DO/IN or EO/IN is required to perform certain acts within the time limit applicable for entry into the national phase [under PCT Article 39(1)]. "Performance of certain acts" means meeting the requirements as laid down in the Treaty. The requirements are of two types, namely (a) basic requirements and (b) additional special requirements to be complied with by the applicant in connection with the national phase.

Basic Requirements

Under the said basic requirements to start the national phase in India, the applicant is required to file the following with the DO/IN or EO/IN within the prescribed time limit: (Which is 31 months from the priority date in both cases), (i) An application on a plain paper or Form 1A (the option remains with the applicant):

National fee in INR: INR 750 for individual(s)

In case of no or one priority, and multiple of
INR 750 in case of every multiple priority,

INR 3000 for legal entity other than individual(s)

In case of no or one priority, and multiple of INR
3,000 in case of every multiple priority.

(ii) Where the international application has not been filed or published in one of the official languages of DO/IN or EO/IN as the case may be, a translation of the application (this replaces the requirement in (i) above in one of the official languages [under PCT Article 22: Description, claims (if amended, both as originally filed and amended together with any statement under PCT Article 39(1), Description, claims, any text matter of drawings, abstract(if any of those parts has been amended, both as originally filed and amended by the annexes to the international preliminary examination report)].

FORM 1

THE PATENTS ACT, 1970

(39 of 1970)

APPLICATION FOR GRANT OF A PATENT

(See sections 5(2), 7, 54 and 135, rule 39)

- | | |
|---|--|
| 1. Repeat the columns (a) to (c) if there are more than one applicants. | 1. I/We, 1 |
| | (a) ² |
| | (b) ³ |
| | (c) ⁴ |
| | (a) ² |
| | (b) ³ |
| | (c) ⁴ |
| | (a) ² |
| | (b) ³ |
| | (c) ⁴ |
| | (a) ² |
| | (b) ³ |
| | (c) ⁴ |
| | 2. hereby declare - |
| | (a) that I am/We are in possession of an invention titled |
| | |
| | |
| | (b) that the provisional/complete specification relating to this invention is filed with this application. |
| | (c) that there is no lawful ground of objection to the grant of a patent to me/us |

5. Repeat the columns (a) to (c) if there are more than one inventor.
3. further declare that the inventor (s) for the said invention is/are ⁵
6. Insert the name in full Family or principal name in the beginning. (a) ⁶
7. Insert the Complete address including the postal code, state and/or country. (b) ⁷
8. Insert the nationality. (c) ⁸
9. Repeat the columns (a) to (c) if there are more than one applications.
4. I/We, claim the priority from the application(s) filed in convention countries, particulars of which are as follows:⁹
10. Name of the country. (a).¹⁰
11. Application number (b).¹¹
12. Date of application. (c).¹²
13. Applicant in convention country. (d).¹³
14. Title of the invention in the convention country. (e).¹⁴
and declare that above application or each of the above applications was the first application(s) in a convention country/countries in respect of my/our invention.
5. I/We state that the said invention is an improvement in or modification of the invention, the particulars of which are as follows and of which I/We are the applicant/patentee

- 15. Application number or patent number.
- 16. Date of application or date of patent.

(a) ¹⁵

(b) ¹⁶

- 17. Application number including published serial number, if any.
- 18. Date of filing of provisional specification and/or complete specification.
- 19. Complete address including postal index number/code and state along with Telephone and Telefacsimile number(s).

- 6. I/We state that the application is divided out of my/our application, the particulars of which are given below and pray that this application deemed to have been filed on..... under section 16 of the Act.3
- (a). ¹⁷
- (b) ¹⁸
and
- 7. That I am/We are the assignee or legal representative of the true and first inventors.
- 8. That my/our address for service in India is as follows:¹⁹
-
-

- 20. Repeat the columns (a) to (c) if necessary.

- 9. Following declaration was given by the inventor(s) or applicant(s) in the convention country:
I/We the true and first inventors for this invention or the applicant(s) in the convention country declare that the applicant(s) herein is/are my/our assignee or legal representative.
20

(a) 6, 13

(b) ⁷

(c) ⁸

(.....)21

- 21. Signature of the true and first inventor(s) or applicant in the convention country with date.

Name of the natural person should also be given below the signature.

10. That to the best of my/our knowledge, information and belief the fact and matters stated herein are correct and that there is no lawful ground of objection to the grant of patent to me/us on this application.

11. Following are the attachments with the application:
- (a) Provisional/complete specification (3 copies)
 - (b) Drawings (3 copies)
 - (c) Priority documents(s)
 - (d) Statement and Undertaking on Form-3
 - (e) Power of Authority
 - (f)
 - (g)
 - (h)
 - (i) FeeRs..... in Cash/
Cheque/Bank Draft bearing
No
date.....on.....Bank.

I/We request that a patent may be granted to me/us for the said invention.

22. To be signed by the applicant(s) or by his authorised patent agent.

Dated this day of..... 20
Signature.²²

23. Name of the natural person who has signed.

(.....)²³
To
The Controller of Patents,
The Patent Office,
At

Note:- (a) Strike out which ever is inapplicable
(b) For fee: see First Schedule

FORM 1A

THE PATENTS ACT, 1970 (39 of 1970)

**APPLICATION CORRESPONDING TO AN INTERNATIONAL
APPLICATION FOR GRANT OF A PATENT**

[See section 7(1A); RULE 20(1)]

- | | |
|---|--|
| 1. Repeat the columns (a) to (c) if there are more than one applicants. | I. I/We, 1 |
| 2. Insert the name in full. The family or principal name in the beginning if the applicant is a natural person. | (a) ² |
| 3. Insert the complete addresses including postal index number/ code and state and/or country. | (b) ³ |
| 4. Insert the nationality. | (c) ⁴ |
| | (a) ² |
| | (b) ³ |
| | (c) ⁴ |
| 5. Insert international application number. | 2. hereby declare - |
| 6. Insert international filing date as allotted by the Receiving Office. | (d) that I am/We are in possession of an invention titled |
| 7. Repeat the columns (a) to (c) if there are more than one inventor. | (e) that my/our application in India is based on the international application under PCT |
| 8. Insert the name in full Family or principal name in the beginning. | no ⁵ date ⁶ |
| | 3. further declare that the inventor(s) for the said invention is/are |
| | 7 |
| | (a) ⁸ |

9. Insert the complete address including the postal code, state and/or country. (b)⁹
10. Insert the nationality. (c)¹⁰
11. Repeat the columns (a) to (e) if there are more than one applications. 4. I/We, claim the priority from the application(s) filed in convention countries, particulars of which are as follows: 11
12. Name of the country. (a)¹²
13. Application Number. (b)¹³
14. Date of application. (c)¹⁴
15. Applicant in convention country. (d)¹⁵
16. Title of the invention in the convention country. (e)¹⁶
and declare that above application or each of the above applications was the first application(s) in a convention country/countries in respect of my/our invention.
5. I/We state that the said invention is an improvement in or modification of the invention, the particulars of which are as follows and of which I/We are the applicant/patentee:
17. Application number or patent number. (a)¹⁷
(b)¹⁸
18. Date of application or date of patent. 6. That I am/We are the assignee(s) or legal representative(s) of the true and first inventors.
7. That my/our address for service in
19. Complete address including postal index number/code and state along with Telephone and Telefacsimile number(s). India is as follows:¹⁹

20. Repeat the columns (a) to (c) if necessary.

21. Signature of the true and first inventor(s) or applicant in the convention country with date. Name of the natural person should also be given below the signature.

8. Following declaration was given by the inventor(s) or applicant(s) in the convention country: I/We the true and first inventors for this invention or the applicant(s) in the convention country declare that the applicant(s) herein is/are my/our assignee or legal representative²⁰

(a)^{8, 15}

(b)⁹

(c)¹⁰

(.....)²¹

9. That to the best of my/our knowledge, information and belief the fact and matters stated herein are correct and that there is no lawful ground of objection to the grant of patent to me/us on this application.

11. Following are the attachments with the application:

(a) Complete Specification in confirmation with the international application/as amended before the IPEA, if any.

(k) Drawing(s) in confirmation with the international application/ as amended before the IPEA, if any.

(a) Statement and Undertaking on Form -3.

(b) Power of Authority

(c)
(d)
(e)
(f)

Fee Rs in Cash/
Cheque/Bank Draft bearing No.
..... date ..
on Bank..

I/We request that a patent may be granted
to me/us for the said invention.

22. To be signed by the
applicant(s) or by his authorised
patent agent.

Dated this...day of...20.....
Signature. ²²

23. Name of the natural person who has
signed.

(.....) . ²³

To
The Controller of Patents,
The Patent Office,
At

Note:- (a) Strike out whichever is not applicable.
(b) For fee: see the First Schedule

FORM 2
THE PATENTS ACT,
1970 (39 of 1970)

PROVISIONAL/ COMPLETE SPECIFICATION

(See section 10; rule 13)

- | | |
|---|---|
| 1. Title of the invention. | 1. ¹ |
| 2. Repeat the columns (a) to (c) if there are more than one applicant. | 2. ² (a). ³
.....
(b). ⁴

.....
(c). ⁵
..... |
| 3. Insert the name in full. The family or principal name in the beginning if the applicant is a natural person. | (a). ³
.....
(b). ⁴
.....
(c). ⁵
..... |
| 4. Insert the complete address including postal index number/ code, state and country. | The following specification (particularly) ⁶ ... describes the nature of this invention (and the manner in which it is to be performed) ⁶ : |
| 5. Insert the nationality. | 3. ⁷ |
| 6. Strike out in case of provisional specification. | |
| 7. Description of the invention. | |
| Description shall start from the second page. | |
| 8. Inapplicable in case of provisional specification | 4. I/We claim:- ⁸
Dated this day of 20... |

9. To be signed by the applicant or his authorised registered patent agent.

Signature .⁹

10. Name of the natural person who has signed.

(.....).¹⁰

11. (a) Not applicable in case of provisional specification

5. ¹¹
Abstract of the invention.

(b) Separate sheet to be used for this column.

Note.- Strike out whichever is not applicable

FORM 3

THE PATENTS ACT, 1970 (39 of 1970)

STATEMENT AND UNDERTAKING UNDER SECTION 8

(See section 8; rule 12)

1. Name, address and nationality of the applicant(s). I/We.¹
.....
.....
hereby declare:

2. Name, address and nationality of the person. (i) that I/We who have made this application No Dated alone/jointly with, made for the same/substantially same invention application(s) for patent in the other countries, the particulars of which are given below:

Name of the Country.	Date of application	Application No.	Status of the application	Date of publication	Date of grant
----------------------	---------------------	-----------------	---------------------------	---------------------	---------------

3. Name and address of the assignee.

(ii) that the rights in the application(s) has/have been assigned to.

³
.....
.....

(iii) that I/We undertake that upto the date of acceptance of the complete specification by the Controller, I/ We would keep him informed in writing the details regarding corresponding applications for patents filed outside India within three months from the date of filing of such application.

4. To be signed by the applicant or his authorised registered patent agent.

Dated this day of 20

Signature.⁴

5. Name of the natural person who has signed.

(.....)⁵

To
The Controller of Patents,
The Patent Office,
At
.....

Note:- For fee: see First Schedule.

FORM 4

THE PATENTS ACT, 1970

(39 of 1970)

REQUEST FOR EXTENSION OF TIME

[See sections 8(2), 9 (1), 25(1), 28(4), 43(3), 53(3);
rules 12(4), 13(6), 24(5), 56(1), 73(3), and 130]

1. Name, address and nationality of the applicant I/We. ¹
-
-
-
- hereby request for extension of time
for month(s)
under Section/Rule
- in connection with my/our
application /Patent No ..
- The reasons for making the request are
as follows: -
-
-
-

Dated this day of. 20

2. To be signed by the applicant or his authorised registered patent agent. Signature ²

3. Name of the natural person who has signed (.....)³
- To
- The Controller of Patents,
The Patent Office,
At

Note:- For fee : see First Schedule.

FORM 5

THE PATENTS ACT, 1970

(39 of 1970)

DECLARATION AS TO INVENTORSHIP

[See section 10(6); rule 13(6)]

1. Name(s) or the applicant(s). I/We. ¹
2. Repeat the column (a) to (c) if there is more than one inventor. hereby declare that the true and first inventor(s) of the invention disclosed in the complete specification filed in pursuance of my/our application numbered ... dated is/are :²
3. Insert the name in full. The family name or principal name in the beginning. (a) ³
4. Insert the complete address. (b) ⁴
5. Insert the nationality. (c) ⁵
6. To be signed by the applicant or his authorised registered patent agent. Dated this day of 20...
7. Name of the natural person who has signed Signature. ⁶.....
(.....).⁷
If any person named as inventor at above is not so named in the application, he must sign the following statement: -
I assent to the invention referred to in the above declaration, being included in the complete specification filed in pursuance of the stated application.
8. To be signed by the inventor. Signature
- (.....).⁷
To
The Controller of Patents,
The Patent Office,
At

Note: - Strike out whichever is not applicable.

FORM 9

THE PATENTS ACT, 1970

(39 of 1970)

REQUEST FOR SEALING OF A PATENT

[See section 43; rule 73(1)]

1. State the name of the applicant(s).

I/We.¹
request that a patent may be sealed
on my/our application No
dated serial No
and declare that no proceeding in
relation to that application is
pending before the Controller or
the High Court.
That to best of my/our knowledge,
information and belief the facts and
matters stated herein are correct and
that there is no lawful ground of objection
to the grant of a patent to me/us on this
application.
Dated this day of. 20 ...

2. To be signed by the applicant or his authorised registered patent agent.

Signature ².....
(.....)³.

3. Name of the natural person who has signed.

To
The Controller of Patents,
The Patent Office,
At

FORM 19

THE PATENTS ACT, 1970

(39 of 1970)

REQUEST FOR EXAMINATION OF APPLICATION FOR PATENT

[See section 11 B; rule 24(1)]

1. State the name, address and nationality.

I/We¹
.....
.....
hereby request that my/our/the application for patent No ...
filed on for the invention
..... shall be examined under sections 12 and 13 of the Act.
I/We hereby declare that I/we the applicant(s) for patent/person(s) interested for/about the above mentioned application for patent.

2. Certified copies of the documents are to be enclosed in duplicate in case the request is filed by a person other than the applicant.

As an evidence of my/our interest in the application for patent I/We hereby transmit the following documents:²
(a)
(b)
(c)

3. Complete address including postal index number/code and state along with telephone, facsimile number(s) and e-mail address.

My/our address for service in India is:.³
.....
.....

Dated this day of. 20..

4. To be signed by the applicant(s) or his authorised registered patent agent.

Signature ⁴

5. Name of the natural person who has signed.

(.....).⁵ ...

To

The Controller of Patents,
The Patent Office,

At

Note :- (a) For fee : see First Schedule.

(b) Strike out whichever is not applicable

Annexure-I

The Patent Office has its. Head Office at Kolkata and Branch Offices at Mumbai, Delhi and Chennai having Territorial Jurisdiction on a Zonal basis as shown below:-

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