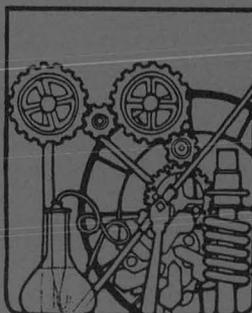


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## INVENTION AND PATENT GUIDELINES

Robert J. Morris

Patent Adviser



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## INVENTION AND PATENT GUIDELINES

Robert J. Morris  
Patent Adviser

The Lawrence Berkeley Laboratory (LBL) is operated and funded in accordance with the terms of a contract between the University of California (UC) and the U.S. Department of Energy (DOE).

The contract specifies that the rights to all LBL inventions shall belong to the United States, as represented by DOE, and secondarily to UC.

Accordingly, LBL requires each staff member to sign a patent agreement which sets forth mutual rights and obligations regarding patent rights. (DOE neither pays royalties nor gives awards to inventors.) In addition, LBL maintains a patent group to ensure that all inventions are properly and promptly reported to DOE and UC and that invention rights are neither jeopardized nor lost.

These guidelines were prepared to help you to understand and comply with the invention and patent policies and procedures as they are administered at LBL. The guidelines cover:

- What is patentable
- The patent procedure
- Patent searches
- Invention record keeping
- Patent clearances for reports
- Staff/LBL patent agreement

### What Is Patentable?

To be patentable, an invention must be new, unobvious, and useful, and fall within the category of a process, machine, manufacture, or composition of matter.

A process, within the meaning of the U.S. Patent Statute, is a method of producing some new physical result or an old physical result in a new and unobvious way; for instance, a heat treatment for steel or a water purification treatment. A process usually comprises the performance of one or more operational steps to obtain such a result, and may include a new (unobvious) use for an old material.

A machine may be defined as a device, or combination of devices, by which some operation can be performed; for example, a pump or film processor.

A manufacture, broadly speaking, is anything made by one's industry and effort. It comprises some physical structure, such as a solid state device, film, or lens. Neither a product of nature nor a natural chemical element, even a newly discovered one, is a manufacture within the meaning of the Statute.

A composition of matter is the product resulting from the intermixture of two or more ingredients which has properties different from those of the ingredients individually. It may be a mechanical mixture, such as cement, or a chemical compound, such as a polymer.

The Statute embraces not only a process, machine, manufacture, or composition of matter, but also any new and unobvious improvement thereof. Thus, a process, machine, manufacture, or composition of matter need not be a unique or distinct entity to be a proper subject

for patent protection. It may represent or constitute improvement of a known entity--an advance in the arts or science.

#### The Patent Procedure

When you recognize that you have made an invention, the LBL Patent Office should be contacted as soon as possible but always:

1. Before any written description has been submitted to a publisher or conference
2. Before a description appears in an LBL report, press release, or any written report which will be available to people outside LBL or DOE
3. Before any public demonstration of the invention
4. Before any regular use of the invention at LBL or elsewhere except for testing and development
5. Before any public disclosure, such as in a talk, poster or slide show, when the audience is not restricted to people from LBL, DOE, or DOE contractors
6. Within six months after the invention is conceived

It is not a requirement that the invention be reduced to practice before a patent application is filed. That is, no model or actual unit must be constructed before a patent can be obtained. Ideas should be reported to the LBL Patent Group, even though DOE may not make a decision about filing an application until after the operability or need for the invention is shown by actual construction of a model or by laboratory operation of the invention. Again, no description of the invention can be made public until DOE has granted patent clearance.

The first step in reporting an invention to DOE and UC is the preparation of an Invention Disclosure by the LBL Patent Group. Timely preparation of the Invention Disclosure, (within six months after conception of the invention) is a requirement of the basic DOE/UC/LBL Contract 48. In addition, the Invention Disclosure provides an early written record that can be helpful in determining the first inventor when similar ideas are developed at about the same time.

The Invention Disclosure requires the following information; however, the inventor should expect to be asked for additional, relevant facts.

1. Title of the invention.
2. Inventor(s)' name(s).
3. Technical abstract.
4. Detailed description of the invention, with emphasis on the best mode of operation or best configuration.
5. List of any reports describing the invention. Usually, these are unpublished LBL reports, internal reports, etc.
6. Prior art, that is, devices or processes already known that are most like the invention being disclosed. This information facilitates a comparison of what is old and what is new, so that the new aspects of the invention can be particularly emphasized.
7. The extent of past, present, and probable future use of the invention and whether the use will be in the governmental or commercial sector.
8. Miscellaneous information: for instance, use of non-DOE funds, if any, must be noted along with relevant agreement or contract numbers, so that a copy of the disclosure can be sent

to the other funding sources. Also, note if any of the inventors are citizens of countries other than the United States.

The Invention Disclosure is not a patent application; a patent application is a more formal document submitted to the U. S. Patent Office. The Invention Disclosure is a smaller package of information used by DOE and UC in making a decision as to whether to proceed with preparation of a patent application in the United States or other countries. A patent search, evaluation of the importance of the invention to DOE programs, commercial potential, degree of development, etc., may be considered in this decision.

If either DOE or UC decides to file a patent application, you will be notified. If you have obtained significant additional information about the invention since the Invention Disclosure was prepared, be sure you inform the person preparing the application. Of particular interest are new data, results, newly discovered uses, or variations in either the structure or method of the invention. In addition, you should report any closely related developments by anyone else that you may have heard of or read about.

If UC wants to obtain a patent covering the invention, UC must apply for a waiver of rights from DOE. UC patent regulations will then cover such matters as the distribution of royalties. Copies of the UC regulations are available at the LBL Patent Office.

You may, with UC permission, petition for a waiver of DOE patent rights and, if the waiver is granted, file a patent application for your LBL-originated invention. The waiver request must be sent to DOE within nine months after the invention is first conceived. The grant of a waiver of patent rights by DOE is dependent on considerations in

federal regulations. Instructions for the procedure are available at the LBL Patent Office -- ask for "DOE Waivers of Domestic and Foreign Rights to Employee Inventions."

#### Patent Searches

The LBL Patent Office has neither the staff nor the facilities to conduct routine patent searches. If you want to know what has been invented in a particular subject area, you can make a patent search. You can conduct a patent search in two convenient ways:

1. A computer reference service staff in the LBL Library can identify patents listed in the Energy Data Base. The patents can be sorted according to subject matter.
2. The only complete patent library in the U.S.A. where patents are arranged by subject matter is in the U.S. Patent and Trademark Office in Washington D.C. However, the Sunnyvale Patent Library (located at the the Sunnyvale Public Library) in Sunnyvale, California, has patents from 1962 (Patent No. 3,015,103 and above) to the present, arranged by subject matter. Plan to do your own searching -- the library staff does not provide that service.

Sunnyvale Patent Library  
665 W. Olive Avenue  
Sunnyvale, California 94086  
Telephone: (408) 736-0795 or  
(408) 245-9171

If you know the patent number, the LBL library can obtain both domestic and foreign patents. However, if you want to order a U.S. patent from the U.S. Patent and Trademark Office yourself, order by patent number

(\$.50 per patent). Delivery time is about one month. Request the patent from:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Patent Copy Sales Branch

For delivery within about ten days, send \$1.00 per patent and mark your order "Special Handling."

#### Invention Record Keeping

It is not unusual for two or more inventors to independently develop similar inventions at about the same time. The question as to who will receive title to the patent may well depend on who has kept the most complete and authenticated records.

The procedure set forth below is recommended for recording data describing original research and development work.

1. Record the data in a permanently bound ledger-type notebook with numbered pages (e.g., from LBL stores: Stock No. 7530-12489 for a 150-page book and Stock No. 7530-12490 for a 300-page book)
2. Make all entries in ink
3. Put the date and your signature at the top of each page and at the end of each experiment
4. Periodically, have your notes reviewed by two knowledgeable LBL employees (not the inventor, co-inventors, or developers of the work being recorded) and authenticated by attaching the statement shown below. When especially significant data are

being recorded, this should be done at least once a week

The authentication form is as follows:

---

Disclosed to and understood by me this \_\_\_\_\_ day of \_\_\_\_\_,  
19\_\_.

Signed: \_\_\_\_\_

Signed: \_\_\_\_\_

---

5. Make entries on consecutive pages; do not leave large blank spaces.
6. If practical, include photographs, sketches, drawings, data sheets, etc. in the notebook. If it is not practical to place documentary material in the notebook, the material should be clearly and identically referred to in the notebook.
7. Make no erasures and remove no pages. If you wish to correct an entry, cross out the erroneous words with a single line (do not obliterate the incorrect entry) and insert the correction directly above or following the deleted material. Initial and date the change.
8. The description should be sufficiently clear and complete so that someone else with skill in the subject area can understand the device or method.
9. The date of the first actual reduction to practice of an invention is especially important. The first successful test or

operation of a possible invention should be witnessed as soon as possible and both witnesses should record the fact in their own notebooks and authenticate the inventor's notebook.

10. Record new ideas in the notebook.

A sample of a properly maintained notebook page is reproduced in Figure 1.

#### Patent Clearances for Technical Reports

If you describe your LBL work in a report (LBL report, UCID report, conference paper, news release, etc.) you must obtain a patent clearance before the report is distributed outside LBL. If the report is handled by the Technical Information Department, patent review is an automatic part of the procedure. If the report is not being processed through TID, you must make sure that the patent review is carried out. Contact the LBL Patent Group for more information.

Ordinarily, patent reviews are completed in less than one day if it is determined that no invention is described in the report. If the report describes an invention, the review and preparation of the disclosure takes one to three weeks, depending on work load, accessibility of the inventors, etc. Make any special scheduling problem known to the Patent Group.

DOE ordinarily makes a determination as to foreign filing in one to four weeks after receiving the invention disclosure. If DOE decides either not to file a patent application or to file only in the United States, permission is usually given to publish the report. If DOE decides to undertake foreign filing, the report cannot be published until a patent application is prepared and filed in the United States

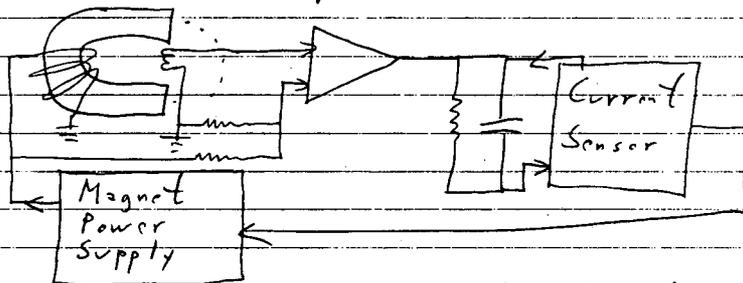
Date and sign at the top of the page

August 8, 1979

John D. Doe

Make description complete enough so that it is obvious what you have in mind

While working on control circuits for the new X Y C magnet, it occurred to me that the magnetic field could be measured and ~~applied~~ negative feedback <sup>applied</sup> as in the circuit sketched below, to reduce ripple and transients to a lower value than conventional circuits can provide.



Calculations show that ripple below 20 Hertz should be reduced by a factor of 10 less than that of the Jones circuit.

John D. Doe

August 8, 1979

Sign and date at the end of each entry

Witnesses should read all entries back to previous authentication

Disclosed to and understood by me

this 10th day of August, 1979

Signed [Signature]

Signed [Signature]

Start next entry immediately below signatures of witnesses--do not leave large blank areas

Figure 1. Sample notebook page

Patent and Trademark Office.

The above time periods are estimates and can vary considerably. Usually, you can greatly reduce or even eliminate publication delays by describing your invention to the LBL Patent Group well in advance of the time you wish to submit your report for publication.

#### Staff/LBL Patent Agreement

In UC's contract with DOE, UC agrees to obtain a patent agreement signed by each LBL employee. Therefore, you, as an LBL employee or guest, sign a patent agreement at the time you start your LBL work.

In the Patent Agreement, among other things, you agree to:

1. Furnish complete information regarding each possibly patentable device, process, or product. (The LBL Patent Office assembles the information in an Invention Disclosure and sends it on to both DOE and UC:.)
2. Assist in obtaining a patent (such as signing various patent forms).
3. Assign patent rights over to the U.S. Government or UC when requested.
4. Refrain from publishing any information about LBL scientific or technical developments until patent clearance approval has been obtained.
5. Maintain LBL notebooks or equivalent records required to document the conception and first actual reduction to practice of inventions.

A sample copy of the LBL Patent Agreement Form is shown in Figure 2. Relevant paragraphs from the governing contract are reproduced in Figure 3.

PATENT AGREEMENT

This agreement is made by me with The Regents of the University of California, a corporation, hereinafter called University, in part consideration of my employment, and of wages and/or salary to be paid to me during any period of my employment by University.

I understand and agree that every possible patentable device, process, or product, hereinafter referred to as invention, which I conceive or make (actually reduce to practice) while employed by University shall be examined by University to determine rights and equities therein in accordance with University's patent policy, and I further agree to furnish University with complete information with respect to each.

I further agree that, in the event any such invention shall be deemed by University to be patentable, and University desires, pursuant to determination by University as to its rights and equities therein, to seek patent protection thereon, I shall execute any documents and do all things necessary, at University's expense, to assign to University all rights, title and interest therein and to assist University in securing patent protection thereon.

I further agree that I will do all things necessary to enable University to perform its obligations to grantors of funds for research or contracting agencies as said obligations have been undertaken by University, including the University's obligations in regard to patents and technical and scientific records under Contract W-7405-ENG-48 with the U.S. Government. I agree to abide by the terms of Article XV of said contract, excerpts of which are set forth on the reverse side of this agreement, and as they may be amended from time to time, to the extent applicable to me, and further agree that the Government shall have prior right to determine title to all such inventions, and that I will report all such inventions to the Director, Lawrence Berkeley Laboratory (LBL), or his designee. In order that the patent interests of the University and the Government shall not be adversely affected I agree not to publish any information regarding scientific or technical developments made or conceived in the course of or under Contract W-7405-ENG-48 without patent approval obtained through the Director, LBL, or his designee for this purpose.

Anything herein contained to the contrary notwithstanding, University may relinquish to me all or a part of its right to any such invention, if, in its judgment, it deems it desirable to so do.

By execution of this agreement I understand that I am not waiving any rights to a percentage of royalty payments received by University, as set forth in University Regulation No. 23, University Policy Regarding Patents. I further understand that I may, with the approval of the University, request a waiver determination by the U.S. Government on my identified inventions as set forth in 41CFR 9-9.109-6.

I agree to be bound hereunder for and during any periods of employment by University.

Dated: \_\_\_\_\_ Name: \_\_\_\_\_  
Please Print

Witness: \_\_\_\_\_  
Signature

Figure 2. LBL employee patent agreement

...

(b) Allocation of principal rights. (1) Assignment to the Government. The University agrees to assign to the Government the entire right, title, and interest throughout the world in and to each Subject Invention, except to the extent that rights are retained by the University under paragraphs (b) (2) and (c) of this clause.

...

(e) Invention identification disclosures and reports. (1) The University shall establish and maintain active and effective procedures to ensure that Subject Inventions are promptly identified and timely disclosed. These procedures shall include the maintenance of laboratory notebooks or equivalent records and any other records that are reasonably necessary to document the conception and/or the first actual reduction to practice of Subject Inventions, and records which show that the procedures for identifying and disclosing the inventions are followed.

...

(f) Publications. It is recognized that during the course of the work under this contract, the University or its employees may from time to time desire to release or publish information regarding scientific or technical developments made or conceived in the course of or under this contract. In order that public disclosure of such information will not adversely affect the patent interests of DOE or the University, patent approval for release or publication shall be secured from Patent Counsel prior to any such release or publication.

...

NOTE

At LBL, patent related duties and functions have been delegated by the Director to the LBL Patent Group. Employees, are therefore, requested to contact the LBL Patent Group for processing of patent matters.

Figure 3. Excerpts from Modification No. 23, Contract No. W-7405-ENG-48

This report was done with support from the Department of Energy. Any conclusions or opinions expressed in this report represent solely those of the author(s) and not necessarily those of The Regents of the University of California, the Lawrence Berkeley Laboratory or the Department of Energy.

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