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PATENT MANUAL

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U. S. DEPARTMENT OF AGRICULTURE

For Employees of the UNITED STATES DEPARTMENT OF AGRICULTURE

Agriculture Handbook No. 111
United States Department of Agriculture
Washington, D. C.

PATENT MANUAL

For Employees of the
UNITED STATES
DEPARTMENT OF
AGRICULTURE

AGRICULTURE HANDBOOK No. 111

UNITED STATES DEPARTMENT OF AGRICULTURE

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PREFACE

The purpose of this Manual is to assist employees of the United States Department of Agriculture, particularly those engaged in research and those administering research projects, in recognizing an invention in its early stages and in preserving the public interest in Department inventions through the medium of patents. A further purpose is to clarify some of the phases that relate to the ownership and use of patents and to encourage employees to report inventions.

The Manual contains a brief explanation of the evolution of a patent. Certain sections are intended to arouse interest in inventions and patents in general. This is important if an understanding of the relationships between the research of the Department and commercial research concerning patent matters is to be achieved.

Sections are included to guide in the use of the published patent art as an adjunct to scientific knowledge. Information is incorporated to aid research organizations of the Department in assembling a usable file of copies of patents to supplement other reference literature.

This Manual supersedes Miscellaneous Publication 551, "Patent Manual for Employees of the U. S. Department of Agriculture 1944" and the 1952 unnumbered and processed revision of that publication. It is sponsored by the Office of the General Counsel and the Department Committee on Patent Policy, members of which are as follows:

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F. P. Cullinan, Agricultural Research Service.
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The manuscript of the Manual was prepared by T. A. Seegrist on behalf of the Committee, and it has been reviewed by various members of the Committee.

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Patent Manual for Employees of the United States Department of Agriculture

Chapter I

PATENT POLICY OF THE DEPARTMENT

The United States Department of Agriculture conducts an extensive research program, and obtaining patents is an important supplement thereto. It is impracticable to deal on a modern basis with large-scale research activities without an adequate supporting patent program. To carry out such a patent program, it is important that those engaged in research have an understanding of the purpose of obtaining patents on inventions made in the Department.

The object of most of the research in the Department is to benefit the public directly. Research projects, such as those directed toward the development of new uses for agricultural commodities, are intended for the benefit of the public. Use by the Government itself of new developments resulting from its research projects is of little or no concern. That an invention made as a result of such research should not be patented by private interests is established Department policy.

If the Department does not obtain a patent on an invention resulting from such research, the field may be left open for someone else to obtain the patent. This would be true even if the Department disclosed the invention in a publication, because a publication is not a bar to the granting of a patent to another if his application is filed in the Patent Office within a year of the publication date and he can show that he made the invention before the date of the publication. Such a circumstance is not infrequent. Independent workers often make the same invention at about the same time, especially in a rapidly advancing art. The fact that the one who disclosed his invention in a publication may actually have made his invention before the applicant for the patent would not prevent issuance of the patent, because there is no provision in Patent Office procedure to establish priority under such circumstances.

If the Department has filed a patent application for an invention, a special proceeding may be instituted in the Patent Office to settle the question of priority. Such a proceeding, referred to as an "interference," is declared only when at least two applicants claim substantially the same patentable subject matter. Disclosure of its invention in a publication is not enough to involve the Department in an interference. Consequently, unless the Department files applications for patents on its inventions, it has practically no opportunity to contest the attempts of others to obtain the patents.

Some inventions resulting from Department research should be dedicated to the public. Publication of these would suffice if there was assurance that patents would not be obtained by others.

The Department patent also serves other purposes. The assigned patent affords prospective users the opportunity to obtain licenses under liberal terms. Organizations having a nonprofit patent policy, such as the Department of Agriculture, do not gain monetary advantages from the licensing of their patents. Significant advantages are gained, however, from developing and perfecting cooperative relationships with private interests through the medium of licenses. A patent license relationship demands amicable cooperation between the parties if maximum benefits are to be derived. Both the licensor and the licensee have the common purpose of maximum utilization of the invention, and they cooperate to obtain this end. The patent license relationship frequently stimulates further independent invention and discovery on the part of the licensee. At the very least, it stimulates concerted efforts by all parties to exchange technical information in a spirit of mutual cooperation.

The Department patent also presents in published form a description of the invention together with a delineation of its scope. The patents are worthwhile contributions to the technical knowledge and serve to place, with a certain degree of exactness, Government-owned inventions in their proper setting of privately owned patented technology.

The properly drawn patent specification is a disclosure of technical information for the specific purpose of guiding others to obtain the advantages of the invention. In this sense it is a very useful parcel of knowledge and may be used in the same way that other technical publications are used. The Department patent thus furnishes an effective expedient through which the Department can obtain wider dissemination of information concerning its research findings. For example, the United States Patent Office Official Gazette contains brief information relating to each weekly issue of patents by that Office, and copies of patents are widely distributed by the Patent Office. Technical journals, particularly those of the abstract type, regularly pub-

lish information about patents. Patent owners or associations of individual organizations frequently exchange information on granted patents. The Department of Agriculture encourages the inclusion of information on its patents in pertinent trade journals. Patents are also included in various lists published by the Department of Agriculture and by other Government agencies.

In addition, the Government-assigned patent provides a procedure, through its licenses, for the Department to exercise a degree of quality control of products manufactured under the licenses where there is a substantial reason for such control.

Chapter II

FUNDAMENTALS OF PATENT LAW

Section 1—The Patent System of the United States

In England, before 1623, monopolies were granted to favorites of the Crown for the purpose of carrying on various trades. Such monopolies, often granted for ordinary trades already established throughout the kingdom, deprived all but a favored few of the privilege of carrying on those trades. The practice grew and finally became so burdensome that in 1623, in the reign of James I, the Statute of Monopolies was enacted. This law abolished all but a few existing monopolies and prohibited any new monopolies except patents that might be granted for inventions and new trades brought into the kingdom. Such patents, however, were to extend for limited periods only.

The American patent and copyright system provided for in the Constitution is similar to the Statute of Monopolies. Its purpose is to promote the progress of science and useful arts. To this end the Constitution empowers Congress to secure for limited times to authors and inventors the exclusive right to their respective writings and discoveries.

The promotion of science and the arts, as stated in the Constitution and in laws enacted thereunder, is effected by conferring on the inventor the right to exclude others from practicing (making, using, and vending) his invention for a period of 17 years. At the expiration of the 17 years his rights disappear, and the invention may be freely practiced by the public.

It is this excluding right that encourages patent owners in the commercial production of new developments and thus accomplishes the fundamental constitutional purpose of promoting the progress of the useful arts. It is production that is anticipated, and the production achievements of this country are to a significant degree attributable to the excluding privileges afforded by our patent system.

Section 2—The Patent

The essential part of the patent is the specification, including the claims. For every patent issued there is a record file that contains the correspondence between the Patent Office and the applicant, to-

gether with the original specification, oath, and other documents. This file is kept in the Patent Office Record Room where it is open to public inspection. Only the specification of the patent is published by the Patent Office. The other file material is not necessary for most purposes for which a patent is studied.

The specification constitutes the description of the subject matter and the identification of the invention covered by the patent. The specification, apart from the claims, is intended to be a narrative description of how the invention is carried out so that anyone skilled in that branch of learning can reproduce the invention and use it. The claims are intended to be definitions of the subject matter covered by the patent. They may, and occasionally do, take in only a part of the field described in the specification, but they may cover this part in a broad scope. The claims are important to one who may be expecting to use the invention commercially, because they define what he may not do without infringing the patent. The claims are also important to the patent owner, because they define the scope of subject matter that he may exclude others from practicing.

A patent creates the statutory rights of exclusion mentioned previously. The violation of patent rights is called infringement, and patent infringers may be sued. A person may successfully answer in an infringement suit by demonstrating that he is not actually infringing the subject matter included in the claims of the patent, or that the patent itself, or the claim that is alleged to be infringed, is invalid.

The enforcement of patent rights is a complicated and highly technical field. It is unnecessary for employees of the Department to concern themselves with this phase of patent matters.

Section 3—Ownership of Patent Rights in Inventions

United States patents are issued in the name of the inventor, but this does not necessarily mean that the inventor owns the patent. He may assign or agree to assign the patent rights before the invention is patented. Such assignment before patenting carries the ownership rights to any patent that may be granted later. The patent then issues in the name of the inventor, but it is issued to the assignee provided the assignment has been recorded in the Patent Office.

In most research organizations, research employees agree to assign to their employers the patent rights to inventions made in the course of their employment. The agreement may be derived directly by appropriate clauses in the employment contract, or it may be derived indirectly by a code of rules or regulations governing employees or by implication arising from employment consideration.

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In the Department of Agriculture, the patent regulations—1 AR Chapter 15 (app. A)—are a condition of employment. The regulations apply particularly to research employees—persons most likely to make inventions. They are based on pertinent orders, such as Executive Order 10096 (app. B), Executive Order 9865 (app. D), Administrative Order No. 5 (app. C), and Administrative Order No. 6 (19 F. R. 3937). These should be consulted carefully when any questions arise involving ownership of patent rights.

Section 4—Types of Department Rights in Patents

The Department rights in patents fall into three classes: (1) Patents assigned to the Government, (2) patents dedicated to the public, and (3) patents in which commercial rights are retained by the inventor.

Government-owned inventions developed in the Department of Agriculture are either assigned to the Government or dedicated to the public, depending to some extent on the subject matter of the invention. They usually are assigned (1) if the subject matter is of such nature that some measure of quality control over the products manufactured under the patent is desirable to safeguard the public, or (2) in anticipation of legislative authority to grant exclusive licenses, or (3) for the purpose of public relations and to obtain information on the utilization of the invention. On the other hand, where quality control is not necessary, the invention may be dedicated to the public, and anyone is then free to use the invention without a license.

When an employee of the Department makes an invention under circumstances that do not require assignment or dedication, the inventor is entitled to retain commercial rights. In other words, the patent is his own individual property, except that, in accordance with the regulations, the United States Government may have a license in the invention or may have rights arising from law.

The Department regulations (1 AR 880 to 883) set forth procedures for submitting inventions to the Office of the General Counsel and provide for a determination of ownership between the Government and the employee-inventor. The determination is made in the Office of the General Counsel, subject to review by or appeal to the Chairman of the Government Patents Board. The regulations also set forth a procedure for the employee-inventor to request commercial rights in an invention.

Section 5—Statutory Subject Matter of Patents

Even though patented inventions usually are considered creations of distinctive merit, it does not follow that all creative contributions may be patented. The classes of subject matter that may be patented are expressly enumerated in the patent statutes. To be patented an

invention must be (1) an art or process, (2) a machine, (3) an article of manufacture, (4) a composition of matter, (5) a design, or (6) a variety of plant.

The first class includes methods for bringing about useful physical or chemical results, for example, a chemical process or a process of manufacturing some article. The second includes mechanical devices capable of producing predetermined physical effects by their own operation, for example, an electric motor. The third includes man-made objects that do not operate as machines but are definitely capable of individual treatment in trade and commerce, such as a hairbrush. A composition of matter is formed by the intermixture of two or more ingredients in such a way that the identity of each separate ingredient is substantially lost while it exists in the composition. This class includes composite articles resulting from chemical union and mechanical mixtures (whether they are gases, liquids, or solids).

Design patents are granted on ornamental designs for articles of manufacture. The subject matter covered relates only to appearance, functional utility being of no moment.

Plant patents are granted only on asexually reproduced new varieties, excluding tuber-propagated plants.

A particular invention does not need to be fitted into a particular class in the patent application. It needs only to fall within the classes as a whole, and the class need not be indicated in the patent, except in the case of a design or plant.

Discoveries that fall outside the above classes are not patentable for lack of statutory provision. For example, discovery of the correct analysis and structure of an existing vitamin is, in itself, not patentable. Neither is a new way of doing business, printed matter, etc., although machines, articles of manufacture, etc., associated with these may be patented.

Chapter III

HISTORY OF PATENT REGULATIONS OF THE DEPARTMENT

The patent policies and regulations of the Department of Agriculture have been under study during the past several years and have undergone considerable revision, particularly to bring them in agreement with the 1947 Recommendations of the Attorney General to the President, Executive Order 10096 (app. B) as supplemented by Administrative Order No. 5 (app. C), and Executive Order 9865 (app. D). The last revision of the Department regulations, 1 AR Chapter 15 (app. A), is dated October 24, 1955.

This chapter reviews the history of the regulations, and explains the basis of various provisions. The regulations deal only with inventions of Department employees.

During its early years of research activity, the Department had no regulations pertaining to inventions by its employees. Some of the research resulted in inventions, and a few patents were obtained by employees engaged in the research. The object of the research was to benefit the agricultural industry. Any benefit to the Government in procurement was remote.

Attempts by the patent holders to commercialize their inventions led to adverse criticism of the Department, especially by Members of Congress. It was contended that inventions made by employees under funds appropriated by Congress for conducting research should be in the public domain.

As a result of such criticism the Secretary issued Departmental Circular No. 3 on May 8, 1905. It reads in part as follows:

> Hereafter when any employee of the Department makes any new and useful discovery or invention of any machine, device, or process connected with the work of the Department through the expenditure of Government time and Government money, you are directed to cause a patent to be applied for on the said discovery or invention through the law officer of the Department. The patent will be taken out in the name of the inventor, without any expense to him, and will allow to any citizen of the United States the use of the patented article or process without payments of royalty.

The circular also prohibited an employee-inventor from obtaining a patent in any other way on any invention "connected with the work of the Department." The regulation thus required submission of all such inventions. If the Department determined to obtain a patent,

it was obtained under the No-Fee Act. An employee-inventor was unequivocally denied any rights in the patent, but he was not prohibited from obtaining patents on his other inventions.

At that time it was generally understood that patents obtained under the No-Fee Act were dedicated to the public by virtue of the act itself, so no dedication clause was required in the patent.

To what extent the circular resulted in submission of inventions is not determinable, as there is no way of measuring the number of inventions that fell under the requirement but were not submitted because the employees were not familiar with the circular, or because the employees or their superiors failed to recognize patentable inventions resulting from Department activity, or for other reasons.

Although the circular underwent some revision (regulation No. 140, sometime prior to 1918, and regulation No. 234, 1919), there was little change in substance or practice during the two decades from 1918 to 1938.

In about 1918 the Bureau of Chemistry of the Department of Agriculture and the Bureau of Mines of the Department of Commerce suggested legislation that would authorize a Government agency to expedite Government inventions by patenting the invention, developing it on a commercial scale, and granting financial rewards to inventors.

By Executive Order 3721 (August 9, 1922) the President appointed an Interdepartmental Patent Board to survey the matter of inventions made by Government employees. This Board recommended establishment of a general Government patent policy, but this was not effected.

In 1924 the Secretary of Agriculture replaced regulation No. 234 with regulation No. 686, which reads as follows:

> Pending the establishment of a general policy with respect to inventions and patents by Government employees on which an Interdepartmental Patent Board is now at work, all cases arising within the Department of Agriculture where an employee has made a discovery or invention in any wise connected with the work of the Department which in the judgment of the employee or one of his superior officers in the Department should be patented either in the interest of the employee, or that of the public or both, a brief report on the subject will be prepared and transmitted to the Secretary by the Chief of the Bureau in which the employee is employed. The report should cover the character of the discovery or invention and the circumstances under which it was made or developed in sufficient detail to enable a just and adequate judgment to be made on the facts then available as to the equitable or legal rights of the Government and the employee respectively. Determination will then be made as to what measure of control, if any, the Department should have or exercise in the patenting and subsequent administration of such discovery or invention.

Although some changes in procedures were made in this regulation, the previous policy relative to dedication of patent rights remained unaltered.

The antagonism of some employees toward the policy, because of its apparent inequities, and the decision in the *Dubilier Condenser Corp.* case of 1933 (289 U. S. 178) led the Office of the Solicitor (now Office of the General Counsel) to determine patent rights of employees in accordance with the principles of the *Dubilier* case, that is, on the basis of whether the invention was made as a result of a specific job assignment and without regard to its relationship to the Department's activities or the expenditure of Government funds and time. This policy was expressed in regulation No. 1561 issued in 1936, which replaced regulation No. 686. The pertinent portion of regulation No. 1561 reads as follows:

> If the invention involved is found to be within the specifically assigned duties of an employee, he will be required to dedicate it to the public, or, in the event it is desired to retain administrative control of the subject matter in the Department, such invention will be assigned to the Secretary of Agriculture. When an invention does not come within the scope of employment of the inventor-employee and where the subject matter is of interest to the Government, a patent application will be filed through the Department, under which the Government retains or obtains a shopright or right of free use and all other commercial rights remain in the inventor.

Memorandum No. 731 issued in 1937 set forth a procedure for submitting inventions and expressly authorized the Solicitor to make the determination of ownership where the employee-inventor requested commercial rights.

The policy thus established remained in effect for about 10 years, during which time a considerable number of Solicitor's Opinions regarding patent rights were rendered. Many inventors were allowed to retain commercial rights to their inventions.

The Solicitor's findings were regarded by some administrative officials of the Department as resulting, in some instances at least, in an undesirable patent policy. It was possible for an employee engaged in research for public benefit to produce an invention outside his specific job assignment, but nevertheless at Government expense and in the purview of Department activities and perhaps within the specific job assignment of another employee, and yet retain commercial rights. For example, an employee could make an invention within a contemplated project not yet assigned to him or to others, by making use of Government information available perhaps to only a few employees. This would lead to the very type of adverse criticism that had been leveled at the Department previously.

In about 1940 the Department began considering various proposals for altering the regulations to provide a basis for denying an inventor commercial rights to an invention made at Government expense or time or by utilizing Government information.

As a result, amendment No. 254 was issued October 13, 1947. This was later incorporated into 1 AR as chapter 15. The substantive portion concerning the patent rights reads as follows:

> Any invention made by an employee of the Department that (1) falls within the assigned duties of the employees or (2) was developed with the substantial use of Government time, funds, expendable materials, or unpublished information shall either be dedicated to the public or, in the event that it is desirable to retain control of the invention in the Department, shall be assigned to the United States as represented by the Secretary. The fact that an idea that leads to an invention occurs to an employee when he is on duty shall not in itself be sufficient to require such dedication or assignment.

This regulation remained unchanged until July 19, 1950, when Amendment No. 30 was issued to bring the regulation into better harmony with Executive Order 10096 (issued January 23, 1950). Amendment No. 42 was issued October 5, 1951, to further clarify the regulation relative to Executive Order 10096 and Administrative Order No. 5. The last amendment was issued October 24, 1955, to bring the regulations into conformity with the organization structure of the Department, but no substantive changes were included.

No case was submitted to the Solicitor for determination of the inventor's rights under the 1947 regulation before Executive Order 10096 was issued. A few were submitted subsequently. In determining the inventor's rights in these cases, the 1947 regulation was so construed as to render it the same in substance as Executive Order 10096. Thus, the Department's regulations relative to the substantive domestic patent rights of its employee-inventors have remained unchanged since the 1947 regulation was issued.

The regulations relative to foreign patent rights developed independently of those relative to domestic patent rights.

Prior to August 12, 1943, there were no regulations relating to foreign patent rights of employee-inventors. It was understood that the employees owned the foreign patent rights, and they were free to seek foreign patents regardless of the disposition of the domestic patent rights.

General Departmental Circular No. 4 (dated August 12, 1943) expressly recognized the inventor's foreign patent rights but required that the inventor give the Government a free license in any foreign patent sought when the domestic patent rights were assignable to the Government or, in some instances, when the Government was entitled to a shopright.

Circular No. 4 was canceled immediately after issuance of Executive Order 9865 on June 14, 1947 (app. D).

The regulation of 1947, amendment No. 254, included provisions based on Executive Order 9865 for the Government to acquire the foreign patent rights if the domestic rights were assignable to the

Government or subject to dedication to the public and if the Government, operating through the Office of Technical Services, Department of Commerce, desired to obtain foreign patents. This amounted to an option in the Government to obtain the foreign rights on request. This Department has not at any time taken more than an option in employee inventions.

Chapter IV

DEVELOPMENT OF INVENTION PRIOR TO FILING OF PATENT APPLICATION

The following sections are concerned with inventive developments prior to the application for patent. An attempt has been made to help the inventor determine whether he has made a patentable invention, and to show how he may prepare a proper record of his invention and how he may assist the Office of the General Counsel in the preparation of the patent application.

Section 1—Novelty and Utility

An invention, to be patentable, must be new and useful. In a patent sense, the word "new" has a broader meaning than it has in common usage. The usual test of novelty (newness) applied by the Patent Office is the novelty search in which available printed matter is consulted to find if there is a previous description of the invention claimed. This search brings forth prior published knowledge. The invention must also be new with respect to public use in this country. Novelty is a question of fact and must be treated so in patent prosecution. Generally, the inventor encounters only the published prior knowledge or "prior art" in the form of patent or literature reference.

Any reference prior to the patent application is considered by the Patent Office to be prior art. A printed publication in any country or a public use of an invention in the United States, if more than a year before the application, constitutes a statutory bar, regardless of whether the source of the publication or use is from the applicant or another. If the reference is less than a year old it will prevent issuance of a patent only if it is derived from another and is prior to the date the applicant made the invention. If a reference cited by the Patent Office is less than a year old, the applicant must establish his inventive date as prior to the reference or show that the source of the reference is from himself in order for the Patent Office to withdraw the reference.

Prior unpublished experimental uses, abandoned experiments, or lost arts are not proper references.

The invention must be useful, but the degree of utility required is not such as to excel all prior means of accomplishing the same objective.

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An invention is useful in a patent sense if it is capable of performing some beneficial function. Inventions that are inoperative or frivolous, or are injurious to health, morals, or good order of society lack utility.

Section 2—Basic Inventions and Improvements

Research may be directed to exploration of a relatively unknown field, or it may be an endeavor to improve existing methods or things. In the first instance, the research sometimes leads to inventions that may change an existing industry or may create a new industry. In the second instance, the research leads to inventions of relatively lesser impact on existing methods and products. Research of the former type is sometimes referred to as "basic," but there is no clear line of distinction between basic and nonbasic research. However, any particular research project is more basic than that which is derived from it.

Likewise, patents resulting from the more basic research may be broader than succeeding patents that are directed to subsidiary phases of the research. They will dominate the succeeding patents.

The existence of a patent dominating an industry does not mean that no further invention will be recognized in that field by the Patent Office. Indeed, most patents that are granted are on improvements in patented inventions.

Because the dominant patent and the improvement patent both exist, the patent rights of each must be reckoned with throughout the life of the patents. It is not unusual for one who wishes to practice the invention under an improvement patent to obtain a license from the holder of a dominant patent.

Section 3—Conception of the Invention

An invention begins with its mental visualization or conception. The conception date is of vital importance and may become significant in preserving the patent rights.

Although precise treatment of this subject is beyond the scope of this manual, there are a few guides that the employee-inventor may use to help recognize and deal properly with the conception at the time it occurs. The conception must be complete. The result, as well as the means for bringing about that result, must be visualized. The conception may be broad, but breadth should not be confused with vagueness. It should include specific phases, for example, specific chemicals, specific physical conditions, specific apparatus or structure. Finally, to be of patentable significance, the conception must relate to something useful.

Because the conception is a mental process, it must be communicated to others who understand it before it can be proved satisfactorily.

Furthermore, because testimony by others may be necessary in obtaining a patent, it is preferable to communicate the conception in writing to a person who may act as witness at some future time, and that person should read, sign, and date the writing (preferably on each page), or keep other diary notes, so that he can, if called as a witness, identify the writing and establish its date and content.

It is wise to keep in mind that the date of conception is the earliest date to which an inventor can be entitled for priority purposes. If the inventor can demonstrate reasonable, continuous diligence in carrying out (constructing and testing) the conceived invention, for purposes of priority he may be considered as having made the invention when he began the continuous diligence. If this diligence began immediately after conception, then the date to which the inventor is entitled is the date on which the invention was conceived.

Section 4—Reduction to Practice of the Invention

The act of transforming an inventive concept into physical reality (construction and testing) is referred to as "reduction to practice" of the invention. This act is an important step in the development of an invention. The general rules of reduction to practice for the four most important classes of invention are:

(1) A process is reduced to practice when it is successfully performed; this normally requires a test of results to demonstrate the success.

(2) A machine, when it is assembled and tested or used.

(3) An article of manufacture, when it is completely manufactured and tested or used.

(4) A composition of matter, when it is completely composed and tested or used.

Chemical compounds have a distinctive status as compositions of matter. It is frequently necessary to perform chemical analyses as an essential part of reduction to practice, because the inventor must at least determine the chemical composition of the compound before he can be said to have tested it.

There are some circumstances under which reduction to practice may be considered complete without the test, but they are rare. Tests in general should duplicate as nearly as possible the intended conditions of use. Laboratory tests that do not duplicate conditions of use may fail to establish reduction to practice.

Section 5—Joint Inventorship

In an ideal situation of joint inventorship, two or more persons conceive the invention, each contributing a share of the complete idea. In practice, however, coinventorships are often difficult to determine.

The invention frequently develops progressively, with numerous persons contributing in one way or another.

To determine whether or not a person should be included as a coinventor, his contribution toward the inventive concept should be carefully weighed. He must have contributed more than time and energy. A laboratory technician who merely carries out instructions or who may have been present during a discussion of the invention without contributing toward the conception is not a coinventor. Neither is a supervisor who presents a problem without providing any part of the solution a coinventor.

The principle of inventorship is illustrated by the experienced scientist who conceives an inventive idea, communicates it to his employees, and instructs them to carry it out. If the employees do no more than carry out the instructions communicated to them, they cannot properly be considered coinventors. If, on the other hand, the scientist presents to his employees a problem to be solved without suggesting the solution, and they solve it themselves in the laboratory, the inventorship lies with them and not him. Again, if the solution is obtained by an exchange of pertinent ideas among all of the members of the group, it is a case of joint inventorship involving all who contributed.

In determining coinventorship, the degree of contribution of each inventor is not of significance.

Under present law, an application for patent may be corrected if through error it either includes the name of a person who is not an inventor or excludes the name of one who is. (See rule 45, app. E.)

Section 6—The Prior Art Search

Experience has shown that most applications for patents filed through the Department contain patentable subject matter and the number of applications that could definitely be eliminated from filing in the Patent Office by a prior art search is too small to make the procedure of practical benefit. In the usual research project, the prior art is fairly well covered before the laboratory work is started. For this reason, a prior art search to determine whether a Department invention is probably patentable normally is not made before filing the application for patent.

Even though a search of patent literature may not be a part of the literature search of a scientist, he should know how these searches are conducted. The patent literature contains a wealth of technical information that is not to be found elsewhere, and the ability to make a patent literature search is of benefit not only for future patent purposes but also as a means of obtaining vital technological information.

Search of the patent literature has the same general purpose as

any other search of literature. To be complete, a search of literature should include the patent literature.

Patent searches may be classified as follows: (1) State of the art search, (2) preliminary search, (3) validity search, and (4) infringement search.

A state of the art search is usually a search of the literature for all the information on some particular subject. An example would be a search to determine the methods applied to extract oil from oilseeds by means of solvents.

A preliminary search is an investigation of the literature relating to an invention before a patent application is filed. Its main purpose is to determine patentable novelty.

A validity search is the most intense search of all. It is a search of prior literature and patents to find any disclosure meeting the claims of a given patent. The purpose of a validity search is to find prior art that may be used in an infringement action to invalidate the claims of a patent in suit. Such a search is of little concern to the Department because it is seldom involved in an infringement action.

An infringement search is a search through the pertinent United States patents issued within the previous 17 years to ascertain if they contain claims that may be infringed by a contemplated process or product. Its scope is limited, for it is confined solely to United States patents. But it is a difficult search for it requires skill in analyzing patent claims. An infringement search also is of little concern to the Department.

Because patents are practically impossible to search by title, a good workable classification must be provided. A file of patent literature can be an excellent source of information for Department agencies, but employee-inventors will not be called on to make a validity or infringement search in the normal course of duty.

Section 7—Notebooks and Original Records

The sources of material for a patent application normally are the records of the experiments involved. These may include the laboratory notebook, the official report, and any other written record. Good records are an essential part of good research, especially if they involve patentable inventions.

The probative value of records is important in patent matters because they may have to be used as evidence of invention, both as to completeness and as to time. Although the use of original records to demonstrate priority and completeness of invention is the exception rather than the rule in Department patent prosecution, it is impossible to predict occasions when such necessity will arise, and the wise

course is to prepare all original records so that they will be of maximum value as proof.

The conception should be recorded and immediately corroborated by communicating it to a witness who is not a coinventor. Oral communication is not satisfactory, as it places an excessive burden on the memory of the witness. Appropriate witnessing may be accomplished by asking the witness to read the recorded conception, and then asking him to place his initials and the date on the record.

Corroboration of reduction to practice requires actual observation of the reduction by a witness. It differs in this way from corroboration of conception. The witness should observe the construction and tests, so that he can testify regarding them independently of information that is communicated to him. The best corroborating witness is one who actually performed the reduction to practice for the inventor or who assisted the inventor and preferably kept his own records.

Section 8—Submission of Inventions to the Office of The General Counsel

The procedure for submitting an invention for patenting purposes is set forth generally in the regulations, 1 AR Chapter 15 (app. A). The submission normally originates with the inventor and is forwarded through official channels and the Administrator, Agricultural Research Service, to the Office of the General Counsel.

Certain administrative determinations are made before the invention is submitted to the General Counsel. These include:

(A) A determination as to whether an invention has been made. The regulations do not specify any particular manner for making this determination. Therefore, the initial determination rests with the research employee, or his immediate superior, because if he does not submit the invention the matter is closed. A submitted case may also be halted at any point in its administrative route to the General Counsel on the ground that an invention has not been made.

Normally the Office of the General Counsel does not enter into this determination unless requested. However, if the subject matter submitted does not fall within a statutory class of patentable subject matter it may be refused. Also in some instances the Office may, on its own initiative, make a preliminary search and if anticipating references are found remand the case for the inventor or administrative personnel to point out how the subject matter is inventive over the reference. Such a procedure frequently results in the case being dropped.

(B) A determination as to whether the invention is used or likely to be used in the public interest. Such a determination is essential for

filing the application under the No-Fee Act. It is an element of the certification to the Commissioner of Patents by the Administrator of the Agricultural Research Service. Most submitted inventions result directly from Department research projects and belong to the Government. There is no question of the propriety in certifying these. Also, where an invention is one used or likely to be used by the Government in procurement, certification is proper.

(C) If the patent rights are subject to ownership by the Government, a determination as to whether the patent rights are to be dedicated or assigned. Whether the patent rights are dedicated or assigned is not of significance because in either event the patent is available for public use. The several advantages derived from assignment were discussed in chapter I. At present, assignment is the usual practice although before about 1930 dedication was universal in the Department.

The preparation, filing, and prosecution of the application following the above determinations are functions of the Office of the General Counsel. The patent attorney may seek technical aid concerning the invention and references cited by the Patent Office from the inventor or those officially near him, and also from other sources.

The Office of the General Counsel has available forms (designated as OGC–5 and OGC–7) that may aid inventors and administrative officials in submission of inventions.

Chapter V

PREPARATION AND PROSECUTION OF PATENT APPLICATIONS

Section 1—Preparation of the Patent Application

In reporting the disclosure of inventions to the Office of the General Counsel in accordance with the Department regulations, the form of expression is left largely to the discretion of the inventor. The form employed in the usual technical report is adequate, provided the proper information is given.

Because an application once filed in the Patent Office cannot be amended by the addition of new matter, the description submitted to the patent attorney should contain sufficient information to afford the best possible description in the application when filed.

Promptness in filing the patent application is important. The inventor should not delay reporting the invention, especially if he is also publishing a scientific paper disclosing it.

The description of the invention should contain, first of all, a clear statement of its gist or "center of gravity." The description should also contain a clear statement of the broad scope of the invention, especially if the scope or range of equivalents is not easily discernible, as in the so-called chemical cases. This includes ranges and properties of ingredients, ranges of equivalent materials, products, physical variables, etc.

The description should also contain a specific statement of the invention, such as specific examples of a process or composition of matter, and a detailed drawing and description of a machine or article of manufacture. Drawings may also be included in process inventions if they aid in understanding the invention. Such drawings may be schematic showings or flowsheets.

Preparing a formal patent specification and drafting claims are exacting procedures. Long practice has established a certain general pattern of disclosure in both the specification and the drawing. However, the established pattern may be varied if required for a better description of the invention. The specification, in any event, should contain a complete description of the invention and not just fragmentary portions of it. Generally, no essential feature of the invention should be left to the imagination. In this respect, a patent specifica-

tion may differ from disclosure in a scientific paper which frequently leaves much unsaid for the sake of conciseness.

To prepare an adequate patent specification, the drafter should have complete information on the invention. He should know its substance as well as the uses to which it could be put, its relationship to other inventions in the field, and all other facts that have a substantial bearing on it.

Normally, the preparation of the specification and claims in formal patent specification form is a function of the patent attorney. However, submission of information to the Office of the General Counsel in a form similar to that of the formal application is an aid. Rules 71 through 78 from the Rules of Practice of the Patent Office (not pertinent to design or plant applications) are quoted in appendix E as a guide. Rules 81 through 88, also in appendix E, relate to the drawing.

Section 2—The Scope and Gist of the Invention

A patent specification differs from a scientific paper in some essential features. In a patent specification nothing is assumed that is not obvious. If broad claims are desired, it usually is not enough, especially in the unpredictable type of invention, to present a single experiment. In describing the invention, therefore, unobvious equivalents should be discussed and operative ranges of physical conditions should be stated. The inventor should describe the entire scope of all the important variables a skilled research worker would need to know to carry out the invention in all its variations.

In reporting his invention, the inventor should bear in mind that his description of the invention will also be considered by persons who are not skilled workers, for example, the patent attorney, Patent Office examiners, and perhaps judges, if the application or patent is ever brought into litigation. Simplicity and clarity of language and explanation of even the "obvious" details are therefore desirable.

It is an aid to the attorney in preparing the patent application to be advised of the prior art known to the inventor and to have the inventor explain how his invention is an improvement thereover.

In comparing the invention with the prior art, laudatory statements are of little aid. The specific problem solved by the invention and how the invention effects a solution should be stated clearly.

Generalizations and discussions of the invention in broad terms are important but should not be taken to extremes. It should be noted that a patent of the Department is also a publication of the Department and the inventor should use caution in making predictions that are not substantiated, unless it is clear he is making them as predictions. Broad generalizing statements based on guesses should not

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be made merely to obtain scope in the claims. Precision of disclosure in the Department's publications is more important than scope in its patents.

A well-presented disclosure of an invention normally includes a statement of the gist of the invention followed by at least one specific example; several such examples are preferable in inventions of the unpredictable type. This material may be amplified by a disclosure of the operative or critical limits of the various features of the invention.

Section 3—Claim Drafting

In the preparation and prosecution of a patent application, the preparation and subsequent amendment of the claims is of primary concern. The claims are closely scrutinized by the Patent Office.

The inventor or administrative personnel cannot hope to be proficient in claim drafting. The long history of claim drafting and patent prosecution before the Patent Office has evolved a complex and special phraseology. When submitting an invention, the inventor should describe his subject matter in brief statements that point out the features of novelty, and he may suggest claims. It is inadvisable, however, for the inventor to pattern claims after those found in issued patents unless he is completely confident that he understands the full purport of the terminology. In suggesting claims or in reviewing claims drafted by the patent attorney, the primary consideration of the inventor should be accuracy and completeness. If the inventor considers the claim to be too narrow, he should explain the reasons to the attorney. Several claims are often included to define the invention in varying degrees of scope.

Section 4—Execution of the Application Papers

After the attorney has prepared the formal application papers, they must be executed by the inventor. The oath must be signed in the presence of a notary public or other official qualified to administer oaths, and the specification should be attached. The signature required is the natural signature of the full name of the inventor. Initials may be substituted for the middle name in the customary signature, as John J. Doe. For indexing purposes, the Patent Office requires that the full first name and middle initial be shown in the application, preferably in the signature.

The purpose of the oath is to insure that the circumstances of the application known to the inventor comply with various legal requirements of the statutes, and the oath must be filed with the application papers. The execution of the oath is a swearing to certain of the statements contained in the body of the oath. It should be read

carefully before it is executed to ascertain if the statements contained in it apply to the facts. In case of variance, the inventor should inform his supervisor and the patent attorney.

The assignment is a document of conveyance by which the inventor transfers legal title to the Government. Even though the circumstances surrounding a Government invention equitably entitle the Government to ownership, assignment should be executed in order to convey and record the legal ownership properly. The assignment need not be notarized or witnessed.

After the inventor has executed the formal application, he should return it to the Office of the General Counsel through official channels for filing in the Patent Office.

If the invention has been: (1) Described in a printed publication in any country, (2) placed in public use (not experimental use) in this country, or (3) placed on sale in this country, the application must be filed in the Patent Office within 1 year from the date of publication, public use, or sale; a later application is barred by statute. This is true even though the publication, public use, or sale is by the inventor himself. Although this rule may seem harsh, it must be understood that the public has to be considered in these matters. The objective of the patent system is the promotion of the arts and sciences. The privileges accorded the inventor are simply means for accomplishing this objective. In other words, the primary consideration in the field of patents is the benefit to the public. In making this rule, the lawmakers sought to prevent withdrawal of an invention from use by the public long after the public has learned of it and had an opportunity to put it into use. If the inventor has knowledge of such 1-year-old publication, public use, or sale, he should not execute the application.

Section 5—Prosecution of the Patent Application

The Office of the General Counsel files the formal application for patent, including at least the specification with the claims and oath, in the Patent Office where it is examined for rejection or allowance purposes. The correspondence that develops between the Patent Office and the inventor or his attorney is called the prosecution. The prosecution stage is normally followed either by grant of the patent or by abandonment of the application.

The purpose of the Patent Office examination is to determine whether a patentable invention is described and claimed properly. One of the most important features of the examination is the prior art search by the patent examiner. In taking action on the application the examiner may reject claims as anticipated by, or as unpatentable over, references he cites. This type of rejection challenges the inventor to distinguish his invention from the work of others.

In commenting on references cited by the Patent Office, the patent attorney must rely most heavily on the inventor himself, as he is the one most familiar with the details of distinction and the importance of each detail.

The Patent Office compares the claims not only with prior art but also with the inventor's specification. For example, does the specification clearly describe what is claimed? Do the claims include subject matter that will not work? Are the claims definite in meaning? The Patent Office also reviews the papers of the application for formal correctness, paying considerable attention to the specification and drawing, if there is a drawing.

Usually, the first action taken by the Patent Office will include a rejection of some or all of the claims. Frequently, amendment to the claims will put them in acceptable form, but as a rule the Patent Office does not suggest amendments. Rejection of the original claims does not necessarily indicate that a patent will not be granted, unless the cited prior art substantially anticipates the whole invention.

Section 6—The Response

The applicant has the right to respond to the rejection of the claims within 6 months, or less if the Patent Office sets a shorter time. Failure to respond completely within that period may be interpreted as abandonment of the application. The inventor need not concern himself with the completeness of the response, i. e., whether each rejection and requirement is properly satisfied. That matter is for the attorney.

The inventor is frequently requested by his attorney to supply comments on the references, as explained in the following section. In his response, the inventor, through his patent attorney, has the burden of persuading the Patent Office that the application should be reconsidered and the patent granted. This may be done by argument, by amending rejected claims, by canceling rejected claims, or by any of a score of actions or combinations of actions, depending on the particular circumstances.

Frequently, suggestions for avoiding a rejection will occur to an inventor, and he should transmit these to the patent attorney with his comments on the references. It is helpful to include an explanation of how the suggested action will avoid the rejection, particularly if it requires amending or replacing claims.

Section 7—Comments on the References

The patent attorney usually requests the inventor to comment on the references for the purpose of replying to a Patent Office rejection. In his comments, the inventor should keep in mind that the rejection is directed toward the claims, and not the invention as a whole. It

may be possible to change the claims and avoid the rejection. For this and other obvious reasons, the inventor should read the rejected claims carefully to make sure they express his invention clearly and accurately.

The claimed invention should be distinguised from the prior art by pointing out the features that are different. Laudatory statements of his own invention or derogatory statements about the reference are of little value in replying to the Patent Office. Even a reference that appears to have little bearing on the invention should be examined carefully for portions that are pertinent. Sometimes seemingly remote references contain statements that are pertinent. Sometimes such references are cited because the Patent Office interprets the claims as broad enough to include them. In commenting on a reference, the inventor should point out what he has in his disclosed invention that is not found in the reference. An explanation of what the reference discloses may be helpful when the disclosure is inconsistent with the inventor's disclosure.

If the references anticipate the invention, that is to say, disclose substantially the same thing, the fact should be stated plainly. Anticipation of Department inventions occurs rarely, and the inventor should not become discouraged or disappointed because his claims are rejected.

References cited by the Patent Office frequently are prior United States patents. These are usually cited as publications, and the pertinent disclosures are in the specification proper rather than in the claims. In studying the patent, therefore, the inventor should concentrate on the specification to find the pertinent disclosure.

Section 8—Affidavits

It may be desirable in certain instances to present facts by affidavit for the Examiner's consideration. The affidavit may relate to (1) time of inventive act, or (2) expert opinion or factual comparison.

Affidavits relating to the time of the inventive act are used in "swearing back of" references. Affidavits of expert opinion or comparison usually are filed voluntarily by an inventor in persuading the Patent Office to grant claims. The purpose of the affidavit in either case is to present evidence in a credible form.

Statements of fact in some affidavits should be supported by exhibits, such as photographic copies of original records or pertinent portions thereof, photographs of models, or copies of letters received from disinterested parties. The patent attorney may ask the inventor for a narrative statement of the facts together with copies of pertinent exhibits for use in preparing the necessary affidavit. If an exhibit discloses material not pertinent to the affidavit, it should be called to

the attention of the patent attorney so that it may be deleted if desirable. The patent attorney needs to know if more than one person will be required to sign an affidavit, especially if the several persons live in different parts of the country. For separate notarizations, the affidavit must be prepared in a special form.

Section 9—Election of Species

Inventors are entitled to claim as many as 5 different species of their invention in 1 application provided a broad claim covering all 5 is allowable. However, if more than 1 species is claimed, the Patent Office may require that the application be restricted to 1 if the broad claim is not allowed. This requirement for restriction must be complied with regardless of seeming patentability of all species.

In complying with Patent Office requirement, the inventor should elect a species representative and typical of the broad invention. It is also desirable that the elected species be the most remote from known similar products or methods and one for which the inventor can demonstrate maximum advantage over the prior art.

The Patent Office may also require restriction on the ground that a plurality of divisible inventions is claimed. For example, division may lie between a product and its process of manufacture, an apparatus and the process carried out by it, or a combination and a subcombination thereof. The inventor or his attorney should make the election even though it is proper also to traverse the requirement for restriction.

The requirement for restriction, whether based on plural claimed species or on plural divisional inventions, is made, in part at least, to render the Patent Office examination system administratively feasible. If claiming of different inventions in 1 application were permitted, classification of the application work between the examiners and classification of the patents when granted would become hopelessly confused. Furthermore, Congress, in providing that fees be paid for patents, did not intend more than 1 invention to be claimed in 1 application.

The restriction and divisional procedure is a highly technical phase of patent prosecution with which the inventor need not concern himself beyond stating the election or providing information that will enable the patent attorney to make the desired election. Furthermore, making the election one way or another does not affect the substantive rights as the nonelected species or nonelected divisible invention can be claimed in a new application without any loss of rights. Also, if a single species is elected, the nonelected species can later be claimed in that same application provided a broad claim covering them is found allowable.

Section 10—The Repeated Rejection

The Patent Office considers the amendments and argument in the response, and again takes action in the case. If some claims still are not allowable, these are again rejected and the reasons are stated. At this point the inventor and his attorney should make certain that the claims are drafted accurately and completely and, moreover, that the examiner's position is clearly understood. If the Patent Office appears to be correct in interpreting the invention and the prior art, and the rejected claims appear to be the best possible definitions of the invention, the issue is crystallized and it may be concentrated on in the prosecution. This point may be reached at the second rejection, but frequently it is not reached until the third, and sometimes not until later.

If the Patent Office is, or appears to be, in error in interpreting the invention claimed or in interpreting the references, that fact should be stated clearly in the inventor's comments and a detailed explanation should be provided. This point is important, for on it may depend the fate of the application, yet it may escape all but the trained scientist.

Section 11—The Final Rejection

When an issue in the prosecution has been reached, the patent examiner customarily issues a final action closing the prosecution before him. The clarity of the issue depends much on the effort and skill of the inventor and his attorney during the earlier stages of the prosecution. Lack of definiteness and lack of clarity of the issue may necessitate further communication with the examiner, and, as the case is under final rejection, the inventor is at a disadvantage, for any action by the examiner thereafter (known as an advisory action) is at his own discretion. Such action does not stay the time necessary for responding to the final rejection. Response to a final action is normally limited to (a) cancellation of the rejected claims or other compliance to outstanding requirements, or (b) an appeal to the Board of Appeals.

Section 12—The Appeal

The final action is normally a turning point in the prosecution. At this point the decision must be made as to whether or not an appeal is to be made from the action.

The final action may be based on a rejection of the claims on their merits, on formal grounds, or on both. The inventor usually is called on for recommendations regarding a final rejection relating to the technical or scientific aspects of the case. The Office of the General

Counsel may advise whether appeal should be made from a final rejection based on formal or legal grounds. In Department applications, appeals on the merits are relatively infrequent. For example, appeals usually are not made solely to obtain additional breadth of claims, particularly if the application contains allowed claims covering the invention in a reasonable scope. On the other hand, an appeal should be made where the examiner appears to be in error as to pertinent technological facts, or where the subject matter of the application is deemed sufficiently important to render broad protection desirable.

Section 13—The Appeal Brief

Preparation of the appeal brief requires considerable legal skill and knowledge, and the patent attorney is responsible for it. The inventor, however, has the responsibility of making available all the technological facts that bear on the issues. When an appeal is recommended, the inventor should review the record of the case carefully to make sure that his previous discussions are clear and have been interpreted correctly. If the arguments for his invention are not clear cut in the record, a summary should be prepared and forwarded with the recommendation for appeal, together with any additional points bearing on the issue.

The Office of the General Counsel may request factual support of statements made by the inventor, the better to present the case on appeal. This is an occasion for that Office to prepare affidavits of the type previously discussed.

Chapter VI

INCIDENTAL AND UNUSUAL FEATURES OF PATENT PROSECUTION

The foregoing sections describe briefly the sequence of events leading to a granted patent. They are the circumstances that are normally encountered. There are, in addition, a few unusual features that are relatively important to a more complete understanding of patent prosecution.

The following sections are intended to give the inventor a brief introduction to some of these unusual features of patent prosecution. All his activities in connection with these features are to be carried out under the close guidance of the attorneys who are responsible for the prosecution of the case. It is not advisable for him to take action without such guidance.

Section 1—Interview with the Patent Examiner

All the familiar difficulties that surround doing business by correspondence are present in the prosecution of a patent application. For this reason, the attorneys often meet with the patent examiner for the purpose of clarifying issues.

Only rarely does the attorney in charge of an application decide that the prosecution would be aided materially by an interview between the patent examiner and the inventor. Nevertheless, inventors sometimes attend the interview. It may be advantageous, for example, for the inventor to explain complicated technology. He may be able to remove doubts relating to the merits of the invention from the mind of the patent examiner.

Section 2—Certificate of Correction and Reissue of Patent

All errors in the specification, especially if significant, should be called to the attention of the attorneys as soon as they are discovered. Even with all the precautions normally taken, errors may occur in the printed patent.

There are two ways of correcting errors in patents. If the error occurred on the part of the Patent Office, or if it relates only to informalities, it may be corrected by requesting a Certificate of Correction.

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See Rules 322 and 323 (app. E). However, if an error occurs that is of considerable moment and is not the fault of the Patent Office a reissue of the patent may be required. The application for reissue is reprosecuted in the Patent Office.

It is advisable to correct errors that might lead to a misinterpretation of the sense of the specification. If the error is likely to lead to ambiguity, or if it is a significant error in technological fact, the inventor should bring it to the attention of the attorneys when it is discovered. He should include a statement of the significance of the error and how it arose, if he knows.

The Patent Office requires a verified showing that the error sought to be corrected by a reissue application arose through inadvertence, accident, or mistake. Because the filing of a reissue patent application is a rather serious undertaking and requires considerable work for all concerned, such applications should not be sought except for substantial reason.

In any event the original patent or a showing of its loss must be submitted to the Patent Office to make a correction.

Section 3—Divisional and Continuation-in-Part Applications

When the Patent Office perceives that the claims of an application include more than one invention, a requirement for restriction to one of the inventions is made. The nonelected invention can be included in the subject matter of a divisional application.

Whether or not a given set of claims includes more than one invention is often a complex legal question. A practical discussion of divisional practice cannot be made here. Examples of relationships on which restriction may be required are: (1) An apparatus and process carried out by the apparatus, (2) a process and article or composition produced thereby, (3) two or more classes of chemicals, and (4) a new chemical compound and its uses, such as insecticides, plastics, and the like. The specifications of divisional applications may be identical, the difference being only in the claims; or the disclosure of the divisional application that is filed later may be reduced by omitting the disclosure of the unclaimed subject matter.

The continuation-in-part application is similar to the divisional application, except that the continuation-in-part invention is incompletely disclosed in the first application, i. e., the second application contains "new matter" relative to the first. As in divisional applications, there must be separate inventions if separate patents are sought. However, a continuation-in-part application may be filed to replace a pending application for the purpose of enlarging the disclosure or correcting defects, and in this instance the continuation-in-part may claim the same invention that was originally claimed.

Questions of divisible inventions involve many considerations that are familiar only to the experienced patent attorney. All inventions that are so closely related that there may be question of their divisibility should be presented together.

When a continuation-in-part application is proposed, the intended disposal of the first or "parent" application should be indicated to the patent attorney so as to avoid confusion. Thus, if the continuation-in-part application is intended to replace a pending application for the purpose of correcting defects or amplifying subject matter and does not claim a divisional invention, the parent application should be abandoned.

Section 4—Citation of Decisions

In his correspondence relating to a patent application, the examiner may support his statements by citing previous decisions. In the same manner, the patent attorney may cite decisions in the reply. The purpose is to show that a similar issue has been dealt with previously and has been decided according to the respective holding or argument. It is a long-established policy in American law to stand by decisions and not to disturb settled matters—to follow rules or principles laid down in previous judicial decisions.

Inventors are not expected to furnish information relating to cited decisions, as this is primarily a legal matter. Nevertheless, it may be interesting to note that a cited decision is not necessarily conclusive. It may be controverted by distinguishing the facts to show that the same issue is not involved, or by other methods familiar to the patent attorney.

Section 5—The Interference

When two or more copending patent applications claim substantially the same patentable invention, the applications are said to be in interference. If the ownership is different, the Patent Office considers declaring the interference formally.

The purpose of a formal interference proceeding is to determine which applicant is the first or original inventor. The proceeding is carried out by the Interference Division of the Patent Office. This Division bases its decision on the presentation of facts that prove, or tend to prove, priority or originality of invention. It is here that corroborative records of priority play their most important part. It is here also that the inventor and his witnesses may be called on to present such evidence by being examined and cross-examined by the attorneys for the various applicants.

An interference proceeding is costly and requires careful preparation and considerable work, especially by the attorneys. Frequently

it it unnecessary to carry the proceeding to completion, for the fact of priority may be apparent at a very early stage. For these and other reasons, an interference may be settled between the parties in an informal manner. This tends to eliminate expense, formality, and delay, and at the same time the results are substantially the same as obtainable by a formal proceeding.

Section 6—Interference Testimony

After an interference is declared and after the preliminary action has been completed, the Examiner of Interferences sets a time for taking testimony. The taking of testimony is the proceeding in which an inventor and his corroborating witnesses endeavor to establish priority or originality of invention. With the assistance of his attorney, the inventor introduces exhibits and statements into the record in an effort to establish as early a date as possible for conception, commencement of diligence, or reduction to practice, as the situation may require. Special preparation for testimony includes a careful review of the records to insure that the best possible evidence will be introduced and the earliest dates will be proved. Opposing attorneys have the right to cross-examine the witnesses to expose weak points in the proof. Accordingly, the witnesses should be prepared to support their statements.

Chapter VII

LICENSING PATENTS

Section 1—Patent Rights and Licenses in Commercial Practice

A patent provides for commercial control of an invention. It is a grant that creates rights in the patent owner for a limited time to exclude others from practicing the invention, that is, from making, using, and vending that which is covered by the patent as defined in the claim. A patent owner may license others to practice any one or all of these exclusive rights, for any period less than or for the entire period of the patent, and to any territorial extent. He may exact royalty or other types of consideration. A license is a waiver on the part of the patent owner of his right to exclude the licensee from practicing the invention. The license may be exclusive or it may be nonexclusive. An exclusive license transfers to the licensee the right to exclude others including even the owner unless it excepts him. If the license grants the exclusive right of making, using, and vending, is for the entire term of the patent, and covers the United States and its Territories, it amounts to an assignment of the patent, as all rights of the patent have been transferred.

Section 2—Licenses of the Department

The Department of Agriculture, a public agency, naturally follows a patent policy differing from commercial concerns. Its patents are used to serve the public interest. Through favorable licensing conditions, the Department has found it possible to maintain, and often actually to establish, mutually beneficial cooperative relationships with private industry. This public relationship feature is discussed more fully in chapter I.

It is Department policy to encourage use by the public of its research developments, as the primary aim of much of its research is utilization. In accordance with this policy, licenses issued by the Department are nonexclusive and royalty-free.

Section 3—Procedure in Licensing of Department Patents

No special form is required for anyone to request a license under a patent controlled by the Department. All that is essential is that the patent and licensee be properly identified. If the licensee is a

natural person, the name and residence and place of business should be stated. A partnership should be so identified. If the licensee is a corporation, the name, State of incorporation, and place of business should be stated. Generally, administrative officials, when considering the granting of the license, are also interested in the licensee's purpose in requesting the license.

The request is customarily addressed to the Department of Agriculture, Office of the General Counsel, Washington 25, D. C. This Office transfers the request to the appropriate agency administering the patent.

It is usual practice for that agency to direct a memorandum to the Administrator, Agricultural Research Service (who is authorized to sign), recommending that the license be granted (including all information necessary to complete the license) and to route the memorandum through the Office of the General Counsel where the necessary documents are prepared and attached for the Administrator's signature, and where the complete statistical records of all patents controlled by the Department and of the licenses granted are kept.

A usual form of license in use by the Department is found in appendix I.

Chapter VIII

COPYRIGHTS AND TRADEMARKS

Section 1—Copyrights

Copyrights are registered in the Copyright Office of the Library of Congress and may be obtained on works of art such as books, musical compositions, drawings, and motion-picture plays. The right to registration is created by publication of the copyright work with a notice of copyright thereon. The copyright includes the right to exclude others from copying and vending the work covered. Material in the public domain is not subject to copyright but may be embodied in the copyright work. In such event the copyright covers only that portion of the work contributed by the author.

The Department is not interested in obtaining copyrights on its published works. The law provides that "No copyrights shall subsist * * * in any publication of the United States Government." Employee-authors of published work in which the Government has no proprietary interest may register the copyrights.

Employees of the Department should avoid copying material covered by a copyright without clearance from the owner, and they should indicate the source when copying material with clearance for publication or distribution purposes.

Section 2—Trademarks

A trademark is an arbitrary mark or symbol associated with a particular class of goods or services to indicate the origin or the producer of the goods or services. The right to a trademark is established by its use in commerce. If the use has been in interstate commerce, the mark may be registered in the United States Patent Office. Registration has the legal effect of raising a presumption of validity of the mark and placing jurisdiction for infringement in the Federal courts. It has the practical effect of placing the mark in the search records of the Patent Office. This avoids inadvertent infringement by others who may search the Patent Office records before adopting any given mark, and also makes the mark available to the examiners for citation against others who may subsequently seek to register a conflicting mark.

If a new mark is adopted in commerce as a generic term, trademark rights should not be obtained on it. This Department has on occasion assisted the Patent Office in obtaining evidence of new generic terms by sending it literature or other evidence showing use of the term in its generic meaning, especially where adoption or use of the term occurs in a Department publication or in Department correspondence.

In a few instances, the Department has registered trademarks over which it holds proprietary interests, for example, marks used in connection with the National Poultry and Turkey Improvement Plan. The Department permits use of these marks by producers cooperating in the plan to identify the breeding state and pullorum class of the hatchery, provided all the requirements for that state and class have been met. The mark is applied to the hatching eggs, chicks, poults, or mature stock that are traded in commerce. The Department also registered a mark showing a shield bearing the letters "U. S. D. A." This mark together with a quality designation is placed on meats and other foods for certification purposes by inspectors operating under the voluntary inspection program of the Department.

Chapter IX

INVENTIONS DEVELOPED UNDER CONTRACT RESEARCH

Executive Order 10096 and the corresponding parts of 1 AR Chapter 15 (app. A) apply only to Government employees and not to research financed in whole or in part by the Government through other procedures such as under grants, contracts, or cooperative agreements.

In general, research contracts of the Department of Agriculture (as distinguished from joint or cooperative undertakings) under which investigations are carried out by public or private organizations or individuals at Federal expense are issued under the authority of the Research and Marketing Act, as amended. Section 10 (a) of that act, as amended, specifies that "any contract made pursuant to this authority shall contain requirements making the results of research and investigations available to the public through dedication, assignment to the Government, or such other means as the Secretary shall determine." Section 205 of the same act provides that "any contract made pursuant to this section shall contain requirements making the result of such research and investigations available to the public by such means as the Secretary of Agriculture shall determine."

In order to carry out the statutory requirements, all contracts under the Research and Marketing Act contain a patent clause. The following clause is used in contracts with private organizations or individuals as a part of the patent provision and publication of results:

> The patentable results of research and investigations conducted under this contract and all information, data, and findings developed under the terms of this contract, whether apprehended during the period of the contract, or subsequent thereto, shall be made available to the public through dedication, assignment to the Secretary, publication or such other means as the contracting officer shall determine.
>
> Results of research or investigations and information concerning the project, which the contracting officer determines will not form the basis of a patent application, may be made known to the public only at the discretion of the contracting officer or his designated representative, under such conditions as the contracting officer or his designated representative may prescribe and with such credit or recognition of collaboration as he may determine.

The clause is modified insofar as public organizations are concerned to read as follows:

In accordance with the provisions of the Act, the public shall be granted all benefits of any patentable results of all research and investigations conducted under this contract, through dedication, assignment to the Secretary, publication or such other means as may be determined by the contracting officer.

Results of research or investigations and information concerning the project, which the contracting officer determines will not form the basis of a patent application, shall be made known to the public in such a manner as the parties hereto may agree. In case of failure to agree, results may be made known to the public by either party after due notice and submission of the proposed manuscript to the other with such credit or recognition as may be mutually agreed upon, provided that full responsibility is assumed by such party for any statements on which there is a difference of opinion, and provided further that no copyright shall subsist in any such publication.

Appendix A

1 AR CHAPTER 15—PATENTS ON INVENTIONS OF THE DEPARTMENT

Section 1—General

878. **Purpose.** The purpose of these regulations, which are a condition of employment of all employees of the Department, is, in general, to provide a patent policy relative to inventions of employees and to prescribe procedural rules for implementing and effectuating such policy, and for the administration of inventions subject to Department control.

879. **Definitions.** As used in this chapter, "invention" includes any art, machine, manufacture, design, or composition of matter, or any new and useful improvement thereof, or any variety of plant (qualified as indicated in 1 AR 900) which is or may be patentable under the patent laws of the United States. "Employee" includes all full-time employees of the Department. Part-time employees and part-time consultants are included insofar as inventions made during periods of official duty are concerned, except when special circumstances require an exemption, each such exemption to be subject to the approval of the Chairman of the Government Patents Board. The terms "part-time consultant" and "part-time employee" mean any person the terms of whose appointment or employment contemplate that he shall work less than (1) the minimum number of hours per day, or (2) the minimum number of days per week, or (3) the minimum number of weeks per year, regularly required of full-time employees of his class. "Administrator" refers to the Administrator of the Agricultural Research Service. "Chairman" refers to the Chairman of the Government Patents Board. "No-Fee Act" refers to 35 U. S. C 266. "Executive Order 10096" refers to the Executive order of this number dated January 23, 1950 (15 F. R. 389). "Administrative Order No. 5" refers to an order entitled "Rules and Regulations for the Administration of a Uniform Patent Policy With Respect to the Domestic Rights in Inventions made by Government Employees," dated April 26, 1951 (16 F. R. 3927). "Patent rights" include the right to cause an application for patent to be filed and to own any such application and any patents which may issue on the invention concerned, and the right to place the invention in the public domain as by dedication, publication without patenting, or otherwise. "Commercial rights" include the patent rights subject to the license rights of the Government arising pursuant to these regulations or subject to law.

Section 2—Domestic Patent Rights

880. **Determination of Domestic Patent Rights.** The domestic patent rights in inventions made by employees of the Department will be determined in accordance with Executive Order 10096 implemented by Administrative Order No. 5. Pertinent portions of that administrative order are quoted below:

(1) The Government shall obtain the entire domestic right, title, and interest in and to all inventions made by any Government employee (i) during working hours, or (ii) with a contribution by the Government of facilities, equipment, materials, funds, or information, or of time or services of other Government employees on official duty, or (iii) which bear a direct relation to or are made in consequence of the official duties of the inventor.

(2) In any case where the contribution of the Government, as measured by any one or more of the criteria set forth in subparagraph (1) last above, to the invention is insufficient equitably to justify a requirement of assignment to the Government of the entire domestic right, title, and interest in and to such invention, or in any case where the Government has insufficient interest in an invention to obtain the entire domestic right, title, and interest therein (although the Government could obtain same under subpar. (1) above), the Government agency concerned, subject to the approval of the Chairman, shall leave title to such invention in the employee, subject, however, to the reservation to the Government of a nonexclusive, irrevocable, royalty-free license in the invention with power to grant licenses for all governmental purposes, such reservation, in the terms thereof, to appear, where practicable, in any patent, domestic or foreign, which may issue on such invention.

(3) In applying the provisions of subparagraphs (1) and (2) above to the facts and circumstances relating to the making of any particular invention, it shall be presumed that an invention made by an employee who is employed or assigned (i) to invent or improve or perfect any art, machine, manufacture, or composition of matter, (ii) to conduct or perform research, development work, or both, (iii) to supervise, direct, coordinate, or review Government financed or conducted research, development work, or both, or (iv) to act in a liaison capacity among governmental or nongovernmental agencies or individuals engaged in such work, falls within the provisions of subparagraph (1) above, and it shall be presumed that any invention made by any other employee falls within the provisions of subparagraph (2) above. Either presumption may be rebutted by the facts or circumstances attendant upon the conditions under which any particular invention is made and, notwithstanding the foregoing, shall not preclude a determination that the invention falls within the provisions of subparagraph (4) next below.

(4) In any case wherein the Government neither (i) obtains the entire domestic right, title, and interest in and to an invention pursuant to the provisions of subparagraph (1) above nor (ii) reserves a nonexclusive, irrevocable, royalty-free license in the invention, with power to grant licenses for all governmental purposes, pursuant to the provisions of subparagraph (2) above, the Government shall leave the entire right, title, and interest in and to the invention in the Government employee, subject to law.

881. **Disposition of Patent Rights in Government-Owned Domestic Applications.** If a United States patent application is filed on an invention made by an employee of this Department and which is subject to ownership by the Government, either the domestic patent rights shall be dedicated to the public or, in the event that it is desirable to retain control of the invention in the Department, the application shall be assigned to the Government as represented by the Department. The dedicating clause may be included in the application over the inventor's signature.

882. **Procedure in Case the Inventor Does Not Claim Commercial Rights.** If a United States patent application is to be filed and

the domestic patent rights in the invention are to be dedicated or the application assigned as indicated in 881, *supra*, without contest, information concerning the invention shall be submitted to the General Counsel in accordance with the following procedure:

a. *Information to be submitted by inventor.* (1) A disclosure of the invention sufficient to enable the Office of the General Counsel to prepare a patent application, the inventor's full name, residence, and post office address; whether he is a full-time or part-time employee, part-time consultant, or any other type of employee; if not presently employed by the Government, whether he was so employed at the time he made the invention, and whether it was understood between him and the Government that the invention could be manufactured and used by or for the Government for governmental purposes without the payment of royalty, thus to bring the case under the requirements of 38 Ops. Atty. Gen. 402; and the citation if the invention has been disclosed in a printed publication.

(2) A brief statement of the most pertinent prior art known to the inventor and the manner in which his invention is distinguished thereover.

(3) An abstract of the invention.

b. *Submission by inventor's superior.* The inventor's superior shall promptly submit the information through Department agency channels to the Administrator along with recommendations and reasons therefor as to why patent protection should be obtained, whether the domestic patent rights should be dedicated or the application assigned, whether the invention is used or likely to be used in the public interest, and such additional information as the Administrator may require.

c. *Submission by the Administrator.* If the Administrator concludes that a patent application is to be filed, the information submitted by the inventor to his superior will be transmitted to the General Counsel with a statement as to whether the domestic patent rights are to be dedicated or the application assigned.

d. *Office of the General Counsel to handle patent application.* The Office of the General Counsel will prepare the patent application and prosecute it before the Patent Office. If the invention is disclosed in a printed publication after the inventor submits the information to his superior and before the application has been filed in the Patent Office, the Department agency should advise the General Counsel of the citation.

883. **Procedure in Case the Inventor Claims Commercial Rights.** Information concerning any invention of an employee made to any extent under any of the conditions (i), (ii), and (iii) set forth in 880 (1), *supra*, on which the inventor seeks patent protection with commercial rights therein, shall be submitted through the inventor's immediate superior, the Department agency in which he is employed, and the Administrator, to the General Counsel.

a. *Information to be submitted by inventor.* (1), (2), and (3). The same information is included under these items as under 882a, *supra*.

(4) A detailed statement of the circumstances under which the invention was made (conceived, constructed or carried out, and tested)

including information as to the extent it was made during working hours and the extent use was made of Government facilities, equipment, materials, funds, or information, or time or services of other Government employees on official duty, and such information as to his own contribution relative to these items as may be pertinent.

(5) A statement of his duties and their relation to the invention, including information sufficient to determine whether his duties place him under any of the categories (i) to (iv) of 880 (3), *supra.*

(6) A statement explaining why he believes he is entitled to commercial rights in the invention, and whether his rights should be determined pursuant to 880 (2) or to 880 (4), *supra.*

(7) A statement as to whether or not he desires to obtain a patent under the provisions of the No-Fee Act. If so, why he believes the invention is used or likely to be used in the public interest.

(8) Any other information that the Administrator may require.

b. *Submission by Department agency.* The Department agency shall promptly submit a report to the Administrator including the information given by the inventor, together with a statement as to the accuracy of the facts given under 883a (1), (4), and (5), *supra,* and any additional information regarding the circumstances under which the invention was made that will be helpful in determining whether the inventor is entitled to retain commercial rights in the invention. The agency may also submit a statement of views as to the patent rights and whether the patent right should be determined pursuant to 880 (1), 880 (2), or 880 (4) *supra,* and the agency shall give recommendations and reasons as to why patent protection should or should not be obtained, whether the domestic patent rights should be dedicated or the application assigned, and whether the invention is used or likely to be used in the public interest, in the event the Government is entitled to the domestic patent rights.

c. *Submission by the Administrator.* The Administrator shall promptly forward to the General Counsel the material submitted by the Department agency and any additional information which may have a bearing on the question of rights involved, indicating whether he approves the material submitted.

d. *Determination by Office of the General Counsel.* The Office of the General Counsel shall impartially determine in accordance with these regulations, whether or not the inventor is entitled to retain commercial rights. A determination that the inventor is entitled to commercial rights is subject to approval of the Chairman of the Government Patents Board as provided in Administrative Order No. 5. A determination that the inventor is not entitled to commercial rights pursuant to 880 (4), *supra,* is subject to an appeal to the Chairman, as provided in Administrative Order No. 5. Nothing in this regulation shall be taken to render the finding of the Office of the General Counsel conclusive in any proceeding in the courts to determine the respective rights of the Government and the inventor. In the event the inventor is entitled to retain commercial rights and an application is to be filed under the No-Fee Act, the General Counsel may prepare the application and prosecute it before the Patent Office.

If the invention is disclosed in a printed publication after the inventor submits the information through his superior and before the application is filed in the Patent Office, the inventor or the Department agency should advise the General Counsel of the citation.

e. *Procedure when employee is entitled to retain commercial rights.* If the inventor is entitled to retain commercial rights he may file an application for a patent directly in the Patent Office in the same manner as any private person, or he may request that the patent be obtained under the No-Fee Act following the procedure outlined above. In the event the inventor files an application directly in the Patent Office on an invention in which he retains title pursuant to 880 (2), *supra*, he shall keep the Department informed regarding the application and shall include the license specified in 880 (2), *supra*. However, as to any invention on which an application is filed under the No-Fee Act, the Government has a license throughout the world corresponding to that specified in 880 (2).

884. **Procedure in Case the Domestic Patent Rights Are Subject to Assignment to the Government and the Department Agency Determines Not to File a United States Patent Application.** If the domestic patent rights in an invention, except a plant, are assignable to the Government, and the Department agency has determined that a patent application should not be filed, information concerning the invention should be submitted through the agency channels to the Administrator. The submission should include that information required under 882a (1), (2), and (3), *supra*, and a statement of the agency determination including information as to the manner in which it is intended the invention will be placed in the public domain, or as to any other disposition to be made of it, and the basis on which the determination has been made. The above information shall be submitted to the Chairman for review in accordance with Administrative Order No. 5.

886. **Promptness in Handling.** Agency transmissions to the Administrator and other transmissions involving inventions that may be patented should be made promptly. The purpose of this requirement is to avoid delay that might jeopardize the inventor's or the Government's patent rights. In order to obtain the advantages of an early filing date, the application may be filed in the Patent Office prior to making the determination whether the inventor is entitled to retain commercial rights.

Section 3—Foreign Patent Rights

892. The foreign patent rights of employees are determinable in accordance with Executive Order 9865 (12 F. R. 3907) and Administrative Order No. 6 (19 F. R. 3937). No employee of the Department shall file or cause to be filed an application for patent in any foreign jurisdiction (except on behalf of and at the direction of the Government) on any invention in which the Government has acquired the patent rights, or holds an unexpired option to acquire the patent rights, in that jurisdiction, or take any steps to preclude the filing of an application on behalf of the Government.

Section 4—Plant Patents

900. **Policy.** Plants developed by employees of the Department under circumstances which render the patent rights therein assignable to the Government shall not be patented in this country.

901. **Employees Not to Assist in Preparation or Prosecution of Applications.** No employee of the Department shall assist any person in preparing or prosecuting an application for a plant patent. The Department cannot advise members of the public as to the novelty of an alleged invention. Inquiries with respect to plant patents are to be referred to the Commissioner of Patents.

902. **Review of Applications for Plant Patents.** The Agricultural Research Service is authorized to review applications for plant patents referred to it by the Commissioner of Patents and to furnish the Commissioner such pertinent information as is available in the Department.

Section 5—Requests to Patent Office to Advance the Examination of Patent Applications

907. Rule 102 of the Rules of Practice in the U. S. Patent Office provides for advancing the examination of (making special) applications for patents that are of peculiar importance to the public service, upon the request of Department heads. Department agencies receiving requests from persons outside the Department that the Commissioner of Patents be asked to advance the examination of applications for patents pending before him shall, before taking any further action in the matter, call upon the person making the request for a copy of the application concerned, together with the serial number and filing date thereof. Upon receipt of this information the agency interested shall determine whether the invention, if patented, will be of peculiar importance to the Department and whether the immediate consideration of the application and issuance of the patent will be of advantage to the Department in the prosecution of its work. Employees who handle or obtain any such information shall not reveal it prior to issuance of the patent, without consent of the person making the request, except as required for the purpose of this section. If such request is thought to be justified, appropriate recommendations and reasons therefor will be submitted to the Administrator for making the request to the Commissioner of Patents.

Section 6—Information Concerning Inventions and Patent Applications to be Revealed Only for Official Purposes

912. Employee-inventors, and employees who handle or obtain information concerning inventions of the employee-inventors, or concerning any other invention in which the Department may have an interest, on which an application for patent has not been filed, or concerning the status of any such filed application or the subject matter thereof, shall not reveal such information prior to issuance of the patent, except for official purposes.

Section 7—Assignment of Administrative Functions

918. All administrative functions on behalf of the Secretary relating to the acquisition and administration of patents are assigned to the Agricultural Research Service. (See 9 AR 200i.) Such functions include, for example, making certifications to the Commissioner of Patents for filing patent applications under the No-Fee Act; requesting the Commissioner of Patents to make applications special; signing an abandonment or consent to abandonment of an application filed under the No-Fee Act or of an application assigned to the Government or dedicated to the public and administered by the Department; signing of, or of a consent to an abandonment of contest, a concession of priority, or a disclaimer, to terminate an interference; and issuing licenses under patents, or patent applications, administered by the Department.

Appendix B

EXECUTIVE ORDER 10096

Providing for a Uniform Patent Policy for the Government With Respect to Inventions Made by Government Employees and for the Administration of Such Policy

WHEREAS inventive advances in scientific and technological fields frequently result from governmental activities carried on by Government employees; and

WHEREAS the Government of the United States is expending large sums of money annually for the conduct of these activities; and

WHEREAS these advances constitute a vast national resource; and

WHEREAS it is fitting and proper that the inventive product of functions of the Government, carried out by Government employees, should be available to the Government; and

WHEREAS the rights of Government employees in their inventions should be recognized in appropriate instances; and

WHEREAS the carrying out of the policy of this order requires appropriate administrative arrangements:

NOW, THEREFORE, by virtue of the authority vested in me by the Constitution and statutes, and as President of the United States and Commander in Chief of the Armed Forces of the United States, in the interest of the establishment and operation of a uniform patent policy for the Government with respect to inventions made by Government employees, it is hereby ordered as follows:

1. The following basic policy is established for all Government agencies with respect to inventions hereafter made by any Government employee:

(a) The Government shall obtain the entire right, title, and interest in and to all inventions made by any Government employee (1) during working hours, or (2) with a contribution by the Government of facilities, equipment, materials, funds, or information, or of time or services of other Government employees on official duty, or (3) which bear a direct relation to or are made in consequence of the official duties of the inventor.

(b) In any case where the contribution of the Government, as measured by any one or more of the criteria set forth in paragraph (a) last above, to the invention is insufficient equitably to justify a requirement of assignment to the Government of the entire right, title, and interest to such invention, or in any case where the Government has insufficient interest in an invention to obtain entire right,

title, and interest therein (although the Government could obtain same under par. (a) above), the Government agency concerned, subject to the approval of the Chairman of the Government Patents Board (provided for in par. 3 of this order and hereinafter referred to as the Chairman), shall leave title to such invention in the employee, subject, however, to the reservation to the Government of a nonexclusive, irrevocable, royalty-free license in the invention with power to grant licenses for all governmental purposes, such reservation, in the terms thereof, to appear where practicable in any patent, domestic or foreign, which may issue on such invention.

(c) In applying the provisions of paragraphs (a) and (b) above, to the facts and circumstances relating to the making of any particular invention, it shall be presumed that an invention made by an employee who is employed or assigned (i) to invent or improve or perfect any art, machine, manufacture, or composition of matter, (ii) to conduct or perform research, development work, or both, (iii) to supervise, direct, coordinate, or review Government financed or conducted research, development work, or both, or (iv) to act in a liaison capacity among governmental or nongovernmental agencies or individuals engaged in such work, or made by an employee included within any other category of employees specified by regulations issued pursuant to section 4 (b) hereof, falls within the provisions of paragraph (a) above, and it shall be presumed that any invention made by any other employee falls within the provisions of paragraph (b), above. Either presumption may be rebutted by the facts or circumstances attendant upon the conditions under which any particular invention is made and, notwithstanding the foregoing, shall not preclude a determination that the invention falls within the provisions of paragraph (d) next below.

(d) In any case wherein the Government neither (1) pursuant to the provision of paragraph (a) above, obtains entire right, title, and interest in and to an invention nor (2) pursuant to the provisions of paragraph (b) above, reserves a nonexclusive, irrevocable, royalty-free license in the invention with power to grant licenses for all governmental purposes, the Government shall leave the entire right, title, and interest in and to the invention in the Government employee, subject to law.

(e) Actions taken and rights acquired under the foregoing provisions of this section shall be reported to the Chairman in accordance with procedures established by him.

2. Subject to considerations of national security, or public health, safety, or welfare, the following basic policy is established for the collection, and dissemination to the public, of information concerning inventions resulting from Government research and development activities:

(a) When an invention is made under circumstances defined in paragraph 1 (a) of this order giving the United States the right to title thereto, the Government agency concerned shall either prepare and file an application for patent therefor in the United States Patent Office or make a full disclosure of the invention promptly to the Chairman, who may, if he determines the Government interest so requires, cause application for patent to be filed or cause the invention to be

fully disclosed by publication thereof: *Provided, however*, That, consistent with present practice of the Department of Agriculture, no application for patent shall, without the approval of the Secretary of Agriculture, be filed in respect of any variety of plant invented by any employee of that Department.

(b) Under arrangements made and policies adopted by the Chairman, all inventions or rights therein, including licenses, owned or controlled by the United States or any Government agency shall be indexed, and copies, summaries, analyses, and abstracts thereof shall be maintained and made available to all Government agencies and to public libraries, universities, trade associations, scientists and scientific groups, industrial and commercial organizations, and all other interested groups of persons.[1]

3. (a) A Government Patents Board is established consisting of a Chairman of the Government Patents Board, who shall be appointed by the President, and of one representative from each of the following:

Department of Agriculture
Department of Commerce
Department of the Interior
Department of Justice
Department of State
Department of Defense
Civil Service Commission
Federal Security Agency
National Advisory Committee for Aeronautics
General Services Administration

Each such representative, together with an alternate, shall be designated by the head of the agency concerned.

(b) The Government Patents Board shall advise and confer with the Chairman concerning the operation of those aspects of the Government's patent policy which are affected by the provisions of this order or of Executive Order No. 9865, and suggest modifications or improvements where necessary.

(c) Consonant with law, the agencies referred to in paragraph 3 (a) hereof shall as may be necessary for the purpose of effectuating this order furnish assistance to the Board in accordance with section 214 of the Independent Offices Appropriation Act, 1946, 59 Stat. 134, 31 U. S. C. 691. The Department of Commerce shall provide necessary office accommodations and facilities for the use of the Board and the Chairman.

(d) The Chairman shall establish such committees and other working groups as may be required to advise or assist him in the performance of any of his functions.

(e) The Chairman of the Government Patents Board and the Chairman of the Interdepartmental Committee on Scientific Research and Development (provided for by Executive Order No. 9912 of December 24, 1947) shall establish and maintain such mutual consultation as will effect the proper coordination of affairs of common concern.

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[1] Paragraph 2 (b) of Executive Order No. 10096 was revoked by Executive Order No. 10695, January 16, 1957.

4. With a view to obtaining uniform application of the policies set out in this order and uniform operations thereunder, the Chairman is authorized and directed:

(a) To consult and advise with Government agencies concerning the application and operation of the policies outlined herein;

(b) After consultation with the Government Patents Board, to formulate and submit to the President for approval such proposed rules and regulations as may be necessary or desirable to implement and effectuate the aforesaid policies, together with the recommendations of the Government Patents Board thereon;

(c) To submit annually a report to the President concerning the operation of such policies, and from time to time such recommendations for modification thereof as may be deemed desirable;

(d) To determine with finality any controversies or disputes between any Government agency and its employees, to the extent submitted by any party to the dispute, concerning the ownership of inventions made by such employees or rights therein; and

(e) To perform such other or further functions or duties as may from time to time be prescribed by the President or by statute.

5. The functions and duties of the Secretary of Commerce and the Department of Commerce under the provisions of Executive Order No. 9865 of June 14, 1947, are hereby transferred to the Chairman and the whole or any part of such functions and duties may be delegated by him to any Government agency or officer: *Provided*, That said Executive Order No. 9865 shall not be deemed to be amended or affected by any provision of this Executive order other than this paragraph 5.

6. Each Government agency shall take all steps appropriate to effectuate this order, including the promulgation of necessary regulations which shall not be inconsistent with this order or with regulations issued pursuant to paragraph 4 (b) hereof.

7. As used in this Executive order, the next stated terms in singular and plural are defined as follows for the purposes hereof:

(a) "Government agency" includes any executive department and any independent commission, board, office, agency, authority, or other establishment of the executive branch of the Government of the United States (including any such independent regulatory commission or board, any such wholly owned corporation, and the Smithsonian Institution), but excludes the Atomic Energy Commission.

(b) "Government employee" includes any officer or employee, civilian or military, of any Government agency, except such part-time consultants or employees as may be excluded by regulations promulgated pursuant to paragraph 4 (b) hereof.

(c) "Invention" includes any art, machine, manufacture, design, or composition of matter, or any new and useful improvement thereof, or any variety of plant, which is or may be patentable under the patent laws of the United States.

Appendix C

ADMINISTRATIVE ORDER NO. 5

Rules and Regulations for the Administration of a Uniform Patent Policy with Respect to the Domestic Rights in Inventions Made by Government Employees

Section 1. Purpose. The purpose of this order is to provide for the administration of a uniform patent policy for the Government with respect to the domestic rights in inventions made by Government employees and to prescribe rules and regulations for implementing and effectuating such policy.

Section 2. Authority. Authority for the administration of a uniform patent policy is provided in Executive Order 10096, dated January 23, 1950 (15 F. R. 389).

Section 3. Scope. This order applies to any invention made by a Government employee on or after January 23, 1950, and to any action taken with respect thereto.

Section 4. Definitions. (a) The term "Government agency," as used in this order, means any executive department or independent establishment of the executive branch of the Government (including any independent regulatory commission or board, any corporation wholly owned by the United States, and the Smithsonian Institution), but does not include the Atomic Energy Commission.

(b) The term "Government employee," as used in this order, means any officer or employee, civilian or military, of any Government agency, including any part-time consultant or part-time employee except as may otherwise be provided for by agency regulation approved by the Chairman.

(c) The term "invention," as used in this order, means any art, machine, manufacture, design, or composition of matter, or any new and useful improvement thereof, or any variety of plant, which is or may be patentable under the patent laws of the United States.

(d) The term "Chairman," as used in this order, means the Chairman of the Government Patents Board.

Section 5. Determination of Invention. Each Government agency will determine whether the results of research, development, or other activity within the agency constitute invention within the purview of Executive Order 10096.

Section 6. Determination of Rights in and to Inventions. (a) Subject to review by the Chairman as provided for in this order, each Government agency will determine the respective rights of the Gov-

ernment and of the inventor in and to any invention made by a Government employee while under the administrative jurisdiction of such agency.

(b) The following rules shall be applied in determining the respective rights of the Government and of the inventor in and to any invention that is subject to the provisions of this order:

(1) The Government shall obtain the entire domestic right, title, and interest in and to all inventions made by any Government employee (i) during working hours, or (ii) with a contribution by the Government of facilities, equipment, materials, funds, or information, or of time or services of other Government employees on official duty, or (iii) which bear a direct relation to or are made in consequence of the official duties of the inventor.

(2) In any case where the contribution of the Government, as measured by any one or more of the criteria set forth in subparagraph (1) last above, to the invention is insufficient equitably to justify a requirement of assignment to the Government of the entire domestic right, title, and interest in and to such invention, or in any case where the Government has insufficient interest in an invention to obtain the entire domestic right, title, and interest therein (although the Government could obtain same under subpar. (1) above), the Government agency concerned, subject to the approval of the Chairman, shall leave title to such invention in the employee, subject, however, to the reservation to the Government of a nonexclusive, irrevocable, royalty-free license in the invention with power to grant licenses for all governmental purposes, such reservation, in the terms thereof, to appear, where practicable, in any patent, domestic or foreign, which may issue on such invention.

(3) In applying the provisions of subparagraphs (1) and (2) above to the facts and circumstances relating to the making of any particular invention, it shall be presumed that an invention made by an employee who is employed or assigned (i) to invent or improve or perfect any art, machine, manufacture, or composition of matter, (ii) to conduct or perform research, development work, or both, (iii) to supervise, direct, coordinate, or review Government financed or conducted research, development work, or both, or (iv) to act in a liaison capacity among governmental or nongovernmental agencies or individuals engaged in such work, falls within the provisions of subparagraph (1) above, and it shall be presumed that any invention made by any other employee falls within the provisions of subparagraph (2) above. Either presumption may be rebutted by the facts or circumstances attendant upon the conditions under which any particular invention is made and, notwithstanding the foregoing, shall not preclude a determination that the invention falls within the provisions of subparagraph (4) next below.

(4) In any case wherein the Government neither (i) obtains the entire domestic right, title, and interest in and to an invention pursuant to the provisions of subparagraph (1) above nor (ii) reserves a nonexclusive, irrevocable, royalty-free license in the invention, with power to grant licenses for all governmental purposes, pursuant to the provisions of subparagraph (2) above, the Government shall leave the entire right, title, and interest in and to the invention in the Government employee, subject to law.

(c) In the event that a Government agency determines, pursuant to subparagraph (2) or subparagraph (4) of paragraph (b) of this section, that title to an invention will be left with an employee, the agency shall, subject to considerations of national security, or public health, safety, or welfare, report to the Chairman, promptly upon making such determination, the following information concerning the invention:

(1) Description of the invention in sufficient detail to permit a satisfactory review;

(2) Name of inventor and his employment status; and

(3) Statement of agency determination and reasons therefor.

The report in a case falling within the provisions of subparagraph (2) of paragraph (b) of this section shall be made after the expiration of the period prescribed in section 7 of this order for the taking of an appeal, or it may be made prior to the expiration of such period if the employee acquiesces in the agency determination. The Chairman thereupon shall review the determination of the Government agency, and his decision respecting the matter shall be final, subject to the right of the inventor to submit to the Chairman, within 30 days (or such longer period as the Chairman may, for good cause, fix in any case) after receiving notice of such decision, a petition for the reconsideration of the decision if it gives to the Government greater rights than the agency determination. A copy of any such petition must also be filed by the inventor with the employing agency within the prescribed period.

Section 7. Appeals by Employees. (a) Any Government employee who is aggrieved by an agency determination pursuant to subparagraph (1) or subparagraph (2) of paragraph (b) of section 6 of this order may obtain a review of the agency determination by filing, within 30 days (or such longer period as the Chairman may, for good cause, fix in any case) after receiving notice of such determination, a written appeal with the Chairman and a copy of the appeal with the Government agency.

(b) In the event of the filing of an appeal pursuant to paragraph (a) of this section, the Government agency which made the determination shall, subject to considerations of national security, or public health, safety, or welfare, furnish the Chairman in writing, promptly upon the filing of the appeal, the following information concerning the invention involved in the appeal:

(1) Description of the invention in sufficient detail to permit a satisfactory review;

(2) Name of the inventor and his employment status, including a detailed statement of his official duties and responsibilities at the time of making the invention; and

(3) Detailed statement of the nature of the dispute or controversy, together with copies of the agency determination, of any briefs or written arguments that may have been filed, of any statements or other evidence that may have been considered by the agency, and of other relevant material.

(c) The decision of the Chairman upon any appeal taken pursuant to this section shall be final.

Section 8. Patent Protection. (a) A Government agency, upon determining that an invention coming within the scope of subparagraph (1) or subparagraph (2) of paragraph (b) of section 6 of this order has been made, shall thereupon determine whether patent protection will be sought in the United States by the agency for such invention. A controversy over the respective rights of the Government and of the inventor in any case shall not delay the taking of the actions provided for in this section. In cases coming within the scope of subparagraph (2) of paragraph (b) of section 6 of this order, agency action looking toward such patent protection shall be contingent upon the consent of the inventor.

(b) Where there is a dispute as to whether subparagraph (1) or subparagraph (2) of paragraph (b) of section 6 of this order applies in determining the respective rights of the Government and of an employee in and to any invention, the agency will determine whether patent protection will be sought in the United States pending the Chairman's decision on the dispute, and, if it decides that an application for patent should be filed, will take such rights as are specified in subparagraph (2) of paragraph (b) of section 6 of this order, but this shall be without prejudice to acquiring the rights specified in subparagraph (1) of that paragraph should the Chairman so decide.

(c) Where an agency has determined to leave title to an invention with an employee under subparagraph (2) of paragraph (b) of section 6 of this order, the agency will, upon the filing of an application for patent and pending review of the determination by the Chairman, take the rights specified in that subparagraph without prejudice to the subsequent acquisition by the Government of the rights specified in subparagraph (1) of that paragraph should the Chairman so decide.

(d) In the event that patent protection is sought by an agency for an invention made by a Government employee, the agency shall, subject to considerations of national security, or public health, safety, or welfare, report to the Chairman promptly upon the filing of an application for patent, the following information concerning the invention:

(1) Brief description of the invention;

(2) Name of the inventor and his employment status; and

(3) Serial number, title of invention, and date on which the application was filed.

(e) In the event that a Government agency determines that an application for patent will not be filed on an invention made under the circumstances specified in subparagraph (1) of paragraph (b) of section 6 of this order, giving the United States the right to title thereto, the agency shall, subject to considerations of national security, or public health, safety, or welfare, report to the Chairman, promptly upon making such determination, the following information concerning the invention:

(1) Description of the invention in sufficient detail to permit a satisfactory review;

(2) Name of the inventor and his employment status; and

(3) Statement of agency determination and reasons therefor.

The Chairman may, if he determines that the interest of the Government so requires and subject to considerations of national security,

or public health, safety, or welfare, cause an application for patent to be filed or cause the invention to be fully disclosed by publication thereof; *Provided, however*, That no application for patent respecting any variety of plant invented by an employee of the Department of Agriculture shall be filed without the approval of the Secretary of Agriculture.

(f) Whenever a patent hereafter issues on an invention made by a Government employee, in respect to which the Government has any right, title, or interest, including a license, the Government agency concerned shall, promptly upon the issuance of the patent, furnish to the Chairman:

(1) An abstract of the invention;

(2) Name of the inventor and his employment status;

(3) A copy of the patent; and

(4) Statement of the nature and extent of the right, title, or interest of the Government in the invention.

Section 9. Report Forms. The Chairman will prescribe the forms to be used by Government agencies in submitting the reports specified in this order.

Section 10. Liaison. Each Government agency shall designate a liaison officer at the agency level to deal with the Office of the Chairman: *Provided, however*, That the Departments of the Army, the Navy, and the Air Force may each designate a liaison officer.

Section 11. Dissemination of Order. Each Government agency shall make appropriate arrangements for the dissemination to its employees of the provisions of this order.

Section 12. Revocation. Administrative Order No. 1, dated September 6, 1950, is superseded by the provisions of this order, which shall remain in effect until further notice.

Appendix D

EXECUTIVE ORDER 9865

Providing for the Protection Abroad of Inventions Resulting From Research Financed by the Government

WHEREAS the Government of the United States now has and will hereafter acquire title to, or the right to file foreign patent applications for, numerous inventions arising out of scientific and technical research carried on by or for the Government; and

WHEREAS it is in the interest of the United States to acquire patent protection abroad on certain inventions resulting from Government financed research; and

WHEREAS it is in the interest of the Government to foster, promote, and develop the foreign commerce of the United States:

NOW, THEREFORE, by virtue of the authority vested in me as President of the United States by the Constitution and statutes, and as Commander in Chief of the Army and Navy, and in the interest of the foreign affairs functions of the United States and the internal management of the Government, it is hereby ordered as follows:

1. All Government departments and agencies shall, whenever practicable, acquire the right to file foreign patent applications on inventions resulting from research conducted or financed by the Government.

2. All Government departments and agencies which have or may hereafter acquire title to inventions or the right to file patent applications abroad thereon, shall fully and continuously inform the Department of Commerce concerning such inventions, except as provided in section 6 hereof, and shall make recommendations to the Department of Commerce as to which of such inventions should receive patent protection by the United States abroad and the foreign jurisdictions in which such patent protection should be sought. The recommendations of such departments and agencies shall indicate the immediate or future industrial, commercial, or other value of the invention concerned, including its value to public health.

3. The Department of Commerce shall determine whether, and in what foreign jurisdictions, the United States should seek patents for such inventions and, to the extent of appropriations available therefor, shall procure patent protection for such inventions, taking all action, consistent with existing law, necessary to acquire and maintain patent rights abroad. Such determinations of the said Department shall be made after full consultation with United States industry and commerce, with the Department of State, and with other Govern-

ment agencies familiar with the technical, scientific, industrial, commercial, or other economic or social factors affecting the invention involved, and after consideration of the availability of valid patent protection in the countries determined to be immediate or potential markets for, or producers of, products, processes, or services covered by or relating to the invention.

4. The Department of Commerce shall administer foreign patents acquired by the United States under the terms of this order and shall issue licenses thereunder in accordance with law under such rules and regulations as the Secretary of Commerce shall prescribe. Nationals of the United States shall be granted licenses on a nonexclusive royalty-free basis except in such cases as the Secretary shall determine and proclaim it to be inconsistent with the public interest to issue such licenses on a nonexclusive royalty-free basis.

5. The Department of State, in consultation with the Department of Commerce, shall negotiate arrangements among governments under which each government and its nationals shall have access to the foreign patents of the other participating governments. Patents relating to matters of public health may be licensed by the Secretary of Commerce, with the approval of the Secretary of State, to any country or its nationals upon such terms and conditions as are in accordance with law and as the Secretary of Commerce determines to be appropriate, regardless of whether such country is a party to the arrangements provided for in this section.

6. There shall be exempted from the provisions of this order (a) all inventions within the jurisdiction of the Atomic Energy Commission except in such cases as the said Commission specifically authorizes the inclusion of an invention under the terms of this order; and (b) all other inventions officially classified as secret or confidential for reasons of the national security. Nothing in this order shall supersede the declassification policies and procedures established by Executive Orders Nos. 9568 of June 8, 1945, 9604 of August 25, 1945, and 9809 of December 12, 1946.

Appendix E

PERTINENT PATENT OFFICE RULES

45. **Joint Inventors.** (a) Joint inventors must apply for a patent jointly and each must sign the application papers and make the required oath; neither of them alone, nor less than the entire number, can apply for a patent for an invention invented by them jointly, except as provided in rule 47.

(b) If an application for patent has been made through error and without any deceptive intention by two or more persons as joint inventors when they were not in fact joint inventors, the application may be amended to remove the names of those not inventors upon filing a statement of the facts verified by all of the original applicants, and an oath as required by rule 65 by the applicant who is the actual inventor, provided the amendment is diligently made. Such amendments must have the written consent of any assignee.

(c) If an application for patent has been made through error and without any deceptive intention by less than all the actual joint inventors, the application may be amended to include all the joint inventors upon filing a statement of the facts verified by, and an oath as required by rule 65 executed by, all the actual joint inventors, provided the amendment is diligently made. Such amendments must have the written consent of any assignee.

47. **Filing by Other Than Inventor.** (a) If a joint inventor refuses to join in an application for patent or cannot be found or reached after diligent effort, the application may be made by the other inventor on behalf of himself and the omitted inventor. Such application must be accompanied by proof of the pertinent facts and must state the last known address of the omitted inventor. The Patent Office shall forward notice of the filing of the application to the omitted inventor at said address. Should such notice be returned to the Office undelivered, or should the address of the omitted inventor be unknown, notice of the filing of the application shall be published in the Official Gazette. The omitted inventor may subsequently join in the application on filing an oath of the character required by rule 65. A patent may be granted to the inventor making the application, upon a showing satisfactory to the Commissioner, subject to the same rights which the omitted inventor would have had if he had been joined.

(b) Whenever an inventor refuses to execute an application for patent, or cannot be found or reached after diligent effort, a person to whom the inventor has assigned or agreed in writing to assign the invention or who otherwise shows sufficient proprietary interest in the matter justifying such action may make application for patent on behalf of and as agent for the inventor. Such application must be accompanied by proof of the pertinent facts and a showing that

such action is necessary to preserve the rights of the parties or to prevent irreparable damage, and must state the last known address of the inventor. The assignment, written agreement to assign, or other evidence of proprietary interest, or a verified copy thereof, must be filed in the Patent Office at the time of filing the application. The Office shall forward notice of the filing of the application to the inventor at the address stated in the application. Should such notice be returned to the Office undelivered, or should the address of the inventor be unknown, notice of the filing of the application shall be published in the Official Gazette. The inventor may subsequently join in the application on filing an oath of the character required by rule 65. A patent may be granted to the inventor upon a showing satisfactory to the Commissioner.

Specification

71. **Detailed Description and Specification of the Invention.** (a) The specification must include a written description of the invention or discovery and of the manner and process of making and using the same, and is required to be in such full, clear, concise, and exact terms as to enable any person skilled in the art or science to which the invention or discovery appertains, or with which it is most nearly connected, to make and use the same.

(b) The specification must set forth the precise invention for which a patent is solicited, in such manner as to distinguish it from other inventions and from what is old. It must describe completely a specific embodiment of the process, machine, manufacture, composition of matter or improvement invented, and must explain the mode of operation or principle whenever applicable. The best mode contemplated by the inventor of carrying out his invention must be set forth.

(c) In the case of an improvement, the specification must particularly point out the part or parts of the process, machine, manufacture, or composition of matter to which the improvement relates, and the description should be confined to the specific improvement and to such parts as necessarily cooperate with it or as may be necessary to a complete understanding or description of it.

72. **Title of the Invention.** The title of the invention, which should be as short and specific as possible, should appear as a heading on the first page of the specification, if it does not otherwise appear at the beginning of the application.

73. **Summary of the Invention.** A brief summary of the invention indicating its nature and substance, which may include a statement of the object of the invention, should precede the detailed description. Such summary should, when set forth, be commensurate with the invention as claimed and any object recited should be that of the invention as claimed.

74. **Reference to Drawings.** When there are drawings, there shall be a brief description of the several views of the drawings and the detailed description of the invention shall refer to the different views by specifying the numbers of the figures, and to the different parts by use of reference letters or numerals (preferably the latter).

75. Claims. (a) The specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention or discovery.

(b) More than one claim may be presented, provided they differ substantially from each other and are not unduly multiplied.

(c) When more than one claim is presented, they may be placed in dependent form in which a claim may refer back to and further restrict a single preceding claim.

(d) The claim or claims must conform to the invention as set forth in the remainder of the specification and the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description.

See rules 141 to 147 as to claiming different inventions in one application.

76. Signature to the Specification. The specification need not be signed when followed by the oath and constituting part of the original application papers, otherwise it must be signed by the applicant in person.

77. **Arrangement of Specification.** The following order of arrangement should be observed in framing the specification:

(a) Title of the invention; or a preamble stating the name, citizenship, and residence of the applicant and the title of the invention may be used.

(b) Brief summary of the invention.

(c) Brief description of the several views of the drawing, if there are drawings.

(d) Detailed description.

(e) Claim or claims.

(f) Signature (see rule 76).

78. **Cross-references to Other Applications.** (a) When an applicant files an application claiming an invention disclosed in a prior filed copending application of the same applicant, the second application must contain or be amended to contain a reference in the specification to the prior application, identifying it by serial number and filing date and indicating the relationship of the applications, if the benefit of the filing date of the prior application is claimed; if no such reference is made the prior application must be referred to in a separate paper filed in the later application. Cross-references to other related applications may be made when appropriate. (See rule 14 (b).)

(b) Where two or more applications filed by the same applicant, or owned by the same party, contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention in more than one application.

The Drawings

81. **Drawings Required.** The applicant for patent is required by statute to furnish a drawing of his invention whenever the nature of the case admits of it; this drawing must be filed with the application. Illustrations facilitating an understanding of the invention (for example, flowsheets in cases of processes, and diagrammatic views) may also be furnished in the same manner as drawings, and may be required by the Office when considered necessary or desirable.

82. **Signature to Drawing.** Signatures are not required on the drawing if it accompanies and is referred to in the other papers of the application, otherwise the drawing must be signed. The drawing may be signed by the applicant in person or have the name of the applicant placed thereon followed by the signature of the attorney or agent as such.

83. **Content of Drawing.** The drawing must show every feature of the invention specified in the claims. When the invention consists of an improvement on an old machine the drawing must when possible exhibit, in one or more views, the improved portion itself, disconnected from the old structure, and also in another view, so much only of the old structure as will suffice to show the connection of the invention therewith.

84. **Standards for Drawings.** The complete drawing is printed and published when the patent issues, and a copy is attached to the patent. This work is done by the photolithographic process, the sheets of drawings being reduced about one-third in size. In addition, a reduction of a selected portion of the drawings of each application is published in the Official Gazette. It is therefore necessary for these and other reasons that the character of each drawing be brought as nearly as possible to a uniform standard of execution and excellence, suited to the requirements of the reproduction process and of the use of the drawings, to give the best results in the interests of inventors, of the Office, and of the public. The following regulations with respect to drawings are accordingly prescribed:

(a) *Paper and ink.* Drawings must be made upon pure white paper of a thickness corresponding to 2-ply or 3-ply bristol board. The surface of the paper must be calendered and smooth and of a quality which will permit erasure and correction. India ink alone must be used for pen drawings to secure perfectly black solid lines. The use of white pigment to cover lines is not acceptable.

(b) *Size of sheet and margins.* The size of a sheet on which a drawing is made must be exactly 10 by 15 inches. One inch from its edges a single marginal line is to be drawn, leaving the "sight" precisely 8 by 13 inches. Within this margin all work must be included. One of the shorter sides of the sheet is regarded as its top, and, measuring down from the marginal line, a space of not less than 1¼ inches is to be left blank for the heading of title, name, number, and date, which will be applied subsequently by the Office in a uniform style.

(c) *Character of lines.* All drawings must be made with drafting instruments or by photolithographic process which will give them

satisfactory reproduction characteristics. Every line and letter (signatures included) must be absolutely black. This direction applies to all lines however fine, to shading, and to lines representing cut surfaces in sectional views. All lines must be clean, sharp, and solid, and fine or crowded lines should be avoided. Solid black should not be used for sectional or surface shading. Freehand work should be avoided wherever it is possible to do so.

(d) *Hatching and shading.* Hatching should be made by oblique parallel lines, which may be not less than about one-twentieth inch apart.

Heavy lines on the shade side of objects should be used except where they tend to thicken the work and obscure reference characters. The light should come from the upper left-hand corner at an angle of 45°. Surface delineations should be shown by proper shading, which should be open.

(e) *Scale.* The scale to which a drawing is made ought to be large enough to show the mechanism without crowding when the drawing is reduced in reproduction, and views of portions of the mechanism on a larger scale should be used when necessary to show details clearly; 2 or more sheets should be used if 1 does not give sufficient room to accomplish this end, but the number of sheets should not be more than is necessary.

(f) *Reference characters.* The different views should be consecutively numbered figures. Reference numerals (and letters, but numerals are preferred) must be plain, legible, and carefully formed, and not be encircled. They should, if possible, measure at least one-eighth of an inch in height so that they may bear reduction to one twenty-fourth of an inch; and they may be slightly larger when there is sufficient room. They must not be so placed in the close and complex parts of the drawing as to interfere with a thorough comprehension of the same, and therefore should rarely cross or mingle with the lines. When necessarily grouped around a certain part, they should be placed at a little distance, at the closest point where there is available space, and connected by lines with the parts to which they refer. They should not be placed upon hatched or shaded surfaces but when necessary, a blank space may be left in the hatching or shading where the character occurs so that it shall appear perfectly distinct and separate from the work. The same part of an invention appearing in more than one view of the drawing must always be designated by the same character, and the same character must never be used to designate different parts.

(g) *Symbols, legends.* Graphical drawing symbols for conventional elements may be used when appropriate, subject to approval by the Office. The elements for which such symbols are used must be adequately identified in the specification. While descriptive matter on drawings is not permitted, suitable legends may be used, or may be required in proper cases, as in diagrammatic views and flowsheets or to show materials. The lettering should be as large as, or larger than, the reference characters.

(h) *Location of signature and names.* The signature of the applicant, or the name of the applicant and signature of the attorney or agent, may be placed in the lower right-hand corner of each sheet

within the marginal line, or may be placed below the lower marginal line.

(i) *Views.* The drawing must contain as many figures as may be necessary to show the invention; the figures should be consecutively numbered if possible, in the order in which they appear. The figures may be plan, elevation, section, or perspective views, and detail views of portions or elements, on a larger scale if necessary may also be used. Exploded views, with the separated parts of the same figure embraced by a bracket, to show the relationship or order of assembly of various parts are permissible. When necessary a view of a large machine or device in its entirety may be broken and extended over several sheets if there is no loss in facility of understanding the view (the different parts should be identified by the same figure number but followed by the letters, a, b, c, etc., for each part). The plane upon which a sectional view is taken should be indicated on the general view by a broken line, the ends of which should be designated by numerals corresponding to the figure number of the sectional view and have arrows applied to indicate the direction in which the view is taken. A moved position may be shown by a broken line superimposed upon a suitable figure if this can be done without crowding, otherwise a separate figure must be used for this purpose. Modified forms of construction can only be shown in separate figures. Views should not be connected by projection lines nor should center lines be used.

(j) *Arrangement of views.* All views on the same sheet must stand in the same direction and should, if possible, stand so that they can be read with the sheet held in an upright position. If views longer than the width of the sheet are necessary for the clearest illustration of the invention, the sheet may be turned on its side. The space for a heading must then be reserved at the right and the signatures placed at the left, occupying the same space and position on the sheet as in the upright views and being horizontal when the sheet is held in an upright position. One figure must not be placed upon another or within the outline of another.

(k) *Figure for Official Gazette.* The drawing should, as far as possible, be so planned that one of the views will be suitable for publication in the Official Gazette as the illustration of the invention.

(l) *Extraneous matter.* An agent's or attorney's stamp, or address, or other extraneous matter, will not be permitted upon the face of a drawing, within or without the marginal line, except that the title of the invention and identifying indicia, to distinguish from other drawings filed at the same time, may be placed below the lower margin.

(m) *Transmission of drawings.* Drawings transmitted to the Office should be sent flat, protected by a sheet of heavy binder's board, or may be rolled for transmission in a suitable mailing tube; but must never be folded. If received creased or mutilated, new drawings will be required.

85. **Informal Drawings.** The requirements of rule 84 relating to drawings will be strictly enforced. A drawing not executed in conformity thereto may be admitted for purpose of examination, but in

such case the drawing must be corrected or a new one furnished, as required. The necessary corrections will be made by the Office upon applicant's request and at his expense.

86. **Draftsmen To Make Drawings.** Applicants are advised to employ competent draftsmen to make their drawings.

The Office may furnish the drawings at the applicant's expense as promptly as its draftsmen can make them, for applicants who cannot otherwise conveniently procure them.

87. **Return of Drawings.** The drawings of an accepted application will not be returned to the applicant except for signature.

A photographic print is made of the drawing of an accepted application.

88. **Use of Old Drawings.** If the drawings of a new application are to be identical with the drawings of a previous application of the applicant on file in the Office, or with part of such drawings, the old drawings or any sheets thereof may be used if the prior application is, or is about to be, abandoned, or if the sheets to be used are canceled in the prior application. The new application must be accompanied by a letter requesting the transfer of the drawings, which should be completely identified.

141. **Different Inventions in One Application.** Two or more independent and distinct inventions may not be claimed in 1 application except that more than 1 species of an invention, not to exceed 5, may be specifically claimed in different claims in 1 application, provided the application also includes an allowable claim generic to all the claimed species and all the claims to each species in excess of 1 are written in dependent form (rule 75) or otherwise include all the limitations of the generic claim.

142. **Requirement for Restriction.** (a) If two or more independent and distinct inventions are claimed in a single application, the examiner in his action shall require the applicant in his response to that action to elect that invention to which his claims shall be restricted, this official action being called a requirement for restriction (also known as a requirement for division). If the distinctness and independence of the inventions be clear, such requirement will be made before any action on the merits; however, it may be made at any time before final action in the case, at the discretion of the examiner.

(b) Claims to the invention or inventions not elected, if not canceled, are nevertheless withdrawn from further consideration by the examiner by the election, subject, however, to reinstatement in the event the requirement for restriction is withdrawn or overruled.

146. **Election of Species.** In the first action on an application containing a generic claim and claims restricted separately to each of more than one species embraced thereby, the examiner, if of the opinion after a complete search on the generic claims that no generic claim presented is allowable, shall require the applicant in his response to that action to elect that species of his invention to which his claims shall be restricted if no generic claim is finally held allowable. However, if such application contains claims directed to more than 5

species, the examiner may require restriction of the claims to not more than 5 species before taking any further action in the case.

147. **Separate Application for Invention Not Elected.** The non-elected inventions, those not elected after a requirement for restriction (rule 142), may be made the subjects of separate applications, which must conform to the rules applicable to original applications and which will be examined in the same manner as original applications. However, if such an application is filed before the patenting or abandonment of or termination of proceedings on the original application, and if the drawings are identical and the application papers comprise a copy of the original application as filed, prepared, and certified by the Patent Office, together with a proposed amendment canceling the irrelevant claims or other matter, signing and execution by the applicant may be omitted.

322. **Certificate of Correction of Office Mistake.** A certificate of correction under 35 U. S. C. 254, may be issued at the request of the patentee or his assignee and endorsed on the patent itself. Such certificate will not be issued at the request or suggestion of anyone not owning an interest in the patent, nor on motion of the Office, without first notifying the patentee (including any assignee of record) and affording him an opportunity to be heard.

If the nature of the mistake on the part of the Office is such that a certificate of correction is deemed inappropriate in form, the Commissioner may issue a corrected patent in lieu thereof as a more appropriate form for certificate of correction, without expense to the patentee.

323. **Certificate of Correction of Applicant's Mistake.** Whenever a mistake of a clerical or typographical nature or of minor character which was not the fault of the Office, appears in a patent and a showing is made that such mistake occurred in good faith, the Commissioner may, upon payment of the required fee, issue a certificate of correction, which shall be endorsed on the patent itself, if the correction does not involve such changes in the patent as would constitute new matter or would require reexamination.

Appendix F

PERTINENT PATENT STATUTES

Section 100. Definitions. When used in this title unless the context otherwise indicates—

(b) The term "process" means process, art, or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material.

Section 101. Inventions Patentable. Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Section 102. Conditions for Patentability; Novelty and Loss of Right to Patent. A person shall be entitled to a patent unless—

(a) The invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent; or

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than 1 year prior to the date of the application for patent in the United States; or

(c) He has abandoned the invention; or

(d) The invention was first patented or caused to be patented by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application filed more than 12 months before the filing of the application in the United States; or

(e) The invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent; or

(f) He did not himself invent the subject matter sought to be patented; or

(g) Before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

Section 266. Issue of Patents Without Fees to Government Employees. The Commissioner may grant, subject to the provisions of

this title, to any officer, enlisted man, or employee of the Government, except officers and employees of the Patent Office, a patent without the payment of fees, when the head of a department or agency certifies the invention is used or likely to be used in the public interest and the applicant in his application states that the invention described therein, if patented, may be manufactured and used by the Government for governmental purposes without the payment to him of any royalty thereon, which stipulation shall be included in the patent.

Appendix G

PLANT PATENT ACT

35 **U. S. C. 161. Patents for Plants.** Whoever invents or discovers and asexually reproduces any distinct and new variety of plant, including cultivated sports, mutants, hybrids, and newly found seedlings, other than a tuber propagated plant or a plant found in an uncultivated state, may obtain a patent therefor, subject to the conditions and requirements of this title.

35 **U. S. C. 164. Assistance of Department of Agriculture.** The President may by Executive order direct the Secretary of Agriculture, in accordance with the requests of the Commissioner, for the purpose of carrying into effect the provisions of this title with respect to plants (1) to furnish available information of the Department of Agriculture, (2) to conduct through the appropriate bureau or division of the Department research upon special problems, or (3) to detail to the Commissioner officers and employees of the Department.

Appendix H

ASSIGNMENT

WHEREAS, I, _____, residing at _____ _____, an employee of the United States Department of Agriculture, have invented an improvement in _____, as described in the United States patent application on said invention executed by me on the __ day of _____, 19__, the United States patent rights in said invention being assignable to the United States by virtue of my having made the invention under applicable law and regulations of the United States Department of Agriculture which render the patent rights so assignable; and

WHEREAS, the United States, as represented by the Secretary of Agriculture, is desirous of acquiring an assignment of said patent rights;

NOW, THEREFORE, in consideration of these premises, and for other consideration, receipt of which on the part of the undersigned is hereby acknowledged, I hereby assign said patent rights to the United States of America, as represented by the Secretary of Agriculture.

Executed _____, 19__. _____

Appendix I

LICENSE

WHEREAS, United States patent No. ----------, issued to ----------, for ----------, is assigned to the United States of America as represented by the Secretary of Agriculture, hereinafter referred to as Licensor, and it is desirable in the public interest to have the invention covered by the patent practiced; and

WHEREAS, ----------, hereinafter referred to as Licensee, desires to practice the said invention;

NOW, THEREFORE, in consideration of these premises, a royalty-free, non-exclusive and non-transferable license is hereby granted to Licensee to practice the invention within the territory of the United States of America, it being understood that Licensor neither assumes any responsibility if Licensee in practicing the invention should infringe any other patent, nor assumes any other responsibility due to the practicing of the invention, that Licensee will not use this license to indicate that the Government sponsors, recommends, or approves any products produced under the license, that this license does not relieve Licensee from compliance with requirements of law; that Licensee may terminate this license upon notice to Licensor, and that Licensor may revoke it upon notice to Licensee with the reason for such revocation and giving Licensee opportunity to be heard in the matter.

Date executed:

UNITED STATES OF AMERICA,
By ----------,
Administrator,
Agricultural Research Service,
United States Department of Agriculture.

U. S. GOVERNMENT PRINTING OFFICE: 1957