EARLY FORMS OF LETTERS PATENT.

The forms which letters patent for inventions have taken at different stages in the history of this country are various and interesting. In colonial times their form was that of a grant directly from the legislative bodies. There were no general patent laws, but a separate act was passed for each patent, and each act was conditioned to fit the merits of the particular invention which it was to protect. These acts usually recited that, whereas the petitioner had made a certain invention which was esteemed to be valuable; it was, therefore, enacted that he should have certain exclusive rights in the invention for a specified time and under certain conditions.

The earliest patents contained no description of the invention except its title, and the identity of the invention had to be established by extraneous evidence. Some of the later colonial patents contained quite complete statements of the object and mode of operation of the invention, but there was no detailed description of the invention. The first patent to contain a specification was granted in 1712 to John Nasmyth.

The term of the grant varied according to the importance of the invention, but was usually fourteen years, in conformity to the British system. Conditions were frequently attached to the grant. For instance, the General Court, or legislature, of the Massachusetts Bay Colony in 1646 granted a patent to Joseph Jenkes for "manufactures of engines of mills to go by water for speedy dispatch of much work with few hands," enacted that "no other person should set up or use any such new invention or trade for fourteen years," and imposed the conditions that the court should have power "to restrain the exportation of such manufactures and the prices of them to moderation if so required."

Patents granted under all the various patent laws of the United States have had the caption "The United States of America," followed by the phrase "To all to whom these presents shall come," and have closed with the usual attestation: "In testimony whereof I have hereunto set my hand and caused the seal —— to be affixed," etc.

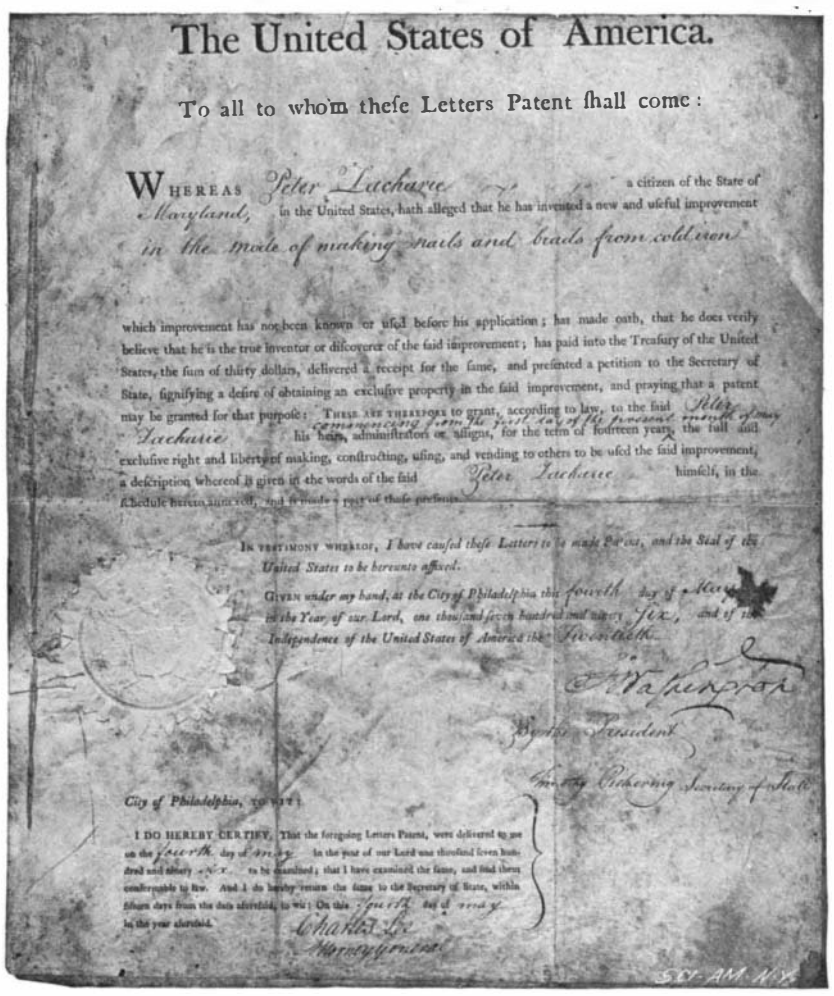
Under the act of 1790 the patent recited that "Whereas the applicant has invented" certain things and the invention appears to be "useful and important," . . . "These are, therefore, . . . to grant" to the said inventor, "his heirs, administrators, and assigns, for the term of fourteen years, the sole and exclusive right and liberty of using and vending to others" the said invention. The patent contained only the title and purpose of the invention. There was no specification or drawing forming a part of the document. The statement that the invention appeared to be "useful and important" was to indicate that the invention had been examined by the Secretary of State and the Secretary of War as required by the act. Following the usual clause of attestation, the patent was signed by the President, George Washington, and by the Secretary of State, who at that time was Thomas Jefferson. The seal used was that of the United States. At the foot of the patent was a certification of the Attorney-General, Edmund Randolph, that he had examined the patent and found it conformable to the patent act. The conjunction "and" which appears before "assigns" was changed to "or" in the patents granted under the later acts.

Under the law of 1793 the patent recited that "Whereas" the petitioner "hath alleged that he has invented a new and useful improvement in" (giving the title of the invention), has "made oath," etc., has paid the fee and has "presented a petition to the Secretary of State" . . . "that a patent might be granted," . . . "These are therefore to grant to the said" inventor, "his heirs, administrators, or assigns, for the term of fourteen years, the full and exclusive right and liberty of making, constructing, using, and vending to others to be used the said improvement, a description whereof is given in the words of the said" inventor "himself in the schedule hereunto annexed, and made a part of these presents." Then followed the clause of attestation and the signatures of the President and Secretary of State. As before, the patent was sealed with the seal of the United States and was certified by the Attorney-General to be conformable to law.

It will be noticed that there was no statement that the invention had been examined as to novelty, as in the patents granted under the prior act, for, under the act of 1793, the patents were granted as a matter of right upon petition to the Secretary of State, the same as is done under the British system. Under the act of 1790 the patent did not refer to an oath, as no oath was required, but the patents granted in pursuance of the act of 1793, it will be observed, recited that the inventor had made oath to his inventorship

The patent had attached to it and forming a part of it a description of the invention, usually in the inventor's handwriting. A drawing was also attached, if two copies of it had been furnished by the applicant, but if only one had been furnished, it was retained in the records of the State Department.

About 1807 the practice was begun of reciting the advantages of the invention at the close of the description, and from 1812 it became customary to close with a paragraph which stated more particularly what the inventor regarded as constituting his invention.



The United States of America.

To all to whom these Letters Patent shall come:

WHEREAS Peter Lacharee of Maryland, a citizen of the State of in the United States, hath alleged that he has invented a new and useful improvement in the mode of making nails and brads from cold iron

which improvement has not been known or used before his application; has made oath, that he does verily believe that he is the true inventor or discoverer of the said improvement; has paid into the Treasury of the United States, the sum of thirty dollars, delivered a receipt for the same, and presented a petition to the Secretary of State, signifying a desire of obtaining an exclusive property in the said improvement, and praying that a patent may be granted for that purpose: THESE ARE THEREFORE to grant, according to law, to the said Peter Lacharee his heirs, administrators or assigns, for the term of fourteen years, the full and exclusive right and liberty of making, constructing, using, and vending to others to be used the said improvement, a description whereof is given in the words of the said Peter Lacharee himself, in the schedule hereto annexed, and is made a part of these presents.

IN TESTIMONY WHEREOF, I have caused these Letters to be made Patent, and the Seal of the United States to be hereunto affixed.

GIVEN under my hand, at the City of Philadelphia this fourth day of March in the Year of our Lord, one thousand seven hundred and ninety six, and of the Independence of the United States of America the twenty-first.

G. Washington

By the President

Th: Jefferson Secretary of State

City of Philadelphia, to wit:

I DO HEREBY CERTIFY, That the foregoing Letters Patent, were delivered to me on the fourth day of March In the year of our Lord one thousand seven hundred and ninety six to be examined; that I have examined the same, and find them conformable to law. And I do hereby return the same to the Secretary of State, within fifteen days from the date aforesaid, to wit: On this fourth day of March in the year aforesaid.

Charles Lee Attorney General

AN EARLY UNITED STATES PATENT SIGNED BY WASHINGTON

There was no substantial change in the form of the grant of United States patents from 1793 until 1836, except that the language was more conservative, to make it more apparent that the statements of fact were only those of inventor and not of the officials.

The act of 1836 returned to the American system which was inaugurated by the act of 1790, and required that the invention should be examined as to its merits before a patent should issue. It also established the Patent Office as a bureau of the Department of State and created the office of Commissioner of Patents. A seal for the Patent Office was also provided. The patents issued under this act recited the allegations of the petition and oath, the payment of the fee and presentation of the petition. The grant was in the same terms as those used under the act of 1790, and the patent had, as forming a part thereof, a description and drawing of the invention. This act required a particular statement of the extent of the invention, and claims that were more or less crude appeared at the close of the specification. The patent was signed by the Secretary of State, countersigned by the Commissioner of Patents and sealed with the seal of the Patent Office.

When the act of 1849 established the Interior Department and transferred the Patent Office thereto the signature of the Secretary of the Interior was substituted for that of the Secretary of State. Except for the change in the term of the patent from fourteen to seventeen years in 1861, the form from 1836 to 1871 was without change.

The form used at present in granting patents is the one which was adopted in 1871. In this form the previous form is condensed and the statement as to the examination is added.

The grant closes with the clause of attestation and signature of one of the Assistant Secretaries of the Interior, the signature of the Commissioner of Patents, and the seal of the Patent Office. The designation of one of the Assistant Secretaries of the Interior to sign the patents was authorized by an act approved February 18, 1888.

The description and drawing set forth the subject matter of the invention with great clearness, and the claim introduced by the act of 1836 has now become so vital a feature that it is called the life of the patent. While the claim must be supported by the description, the extent of the monopoly depends entirely upon the claim, and the choice of its language is so delicate a matter that the Supreme Court of the United States has said "claim of a patent, particularly if the invention be at all complicated, constitutes one of the most difficult legal instruments to draw with accuracy." EDWIN J. PRINDLE.

United States Patent Office.

WINTON MOTOR CARRIAGES.

Among the notable motor carriages which have been placed upon the market in the last few years are those made by the Winton Motor Carriage Company, of Cleveland, O. The problem which confronted this company when they began their experiments was to produce a motor carriage that would go wherever horses went, and their carriage was given a practical test in running from Cleveland to New York. Our engravings represent the Winton motor surrey and the Winton motor phaeton. The phaeton is a deserved favorite on account of its style, utility, and durability. It weighs 1,400 pounds and the cost of operation is only one-half cent a mile. The driving mechanism is snugly concealed in the body of the vehicle. The motor is of the single hydrocarbon type, simple, powerful, and compact, and is practically free from noise and vibration. The motor is absolutely under the control of the driver at all times and can be run at any desired speed, the motor making from 200 to 1,000 revolutions as is required. The speed of the carriage can be regulated and held at will anywhere from zero to the maximum power of the motor, which is eighteen miles per hour. The carriage is operated by levers, which engage, release, or reverse the driving mechanism and apply the brake. Variable gear for different speeds is not necessary, excepting the hill-climbing and backing gear. The

WINTON PHAETON, SIDE VIEW.

weight and dimensions are accurately proportioned to the power employed, securing the proper traction. Although intended for two, the phaeton will seat three people. It uses common stove gasoline, which can be obtained in any village, and carries a sufficient quantity for a day's run of seventy-five miles. Each carriage is finished in Brewster green, with leather cushions, dash, and fenders, and handsome nickel trimmings. They are also supplied with top, storm apron, lamp, and gong.

The surrey is another handsome vehicle, and is provided with a motor which is more powerful than the phaeton. The company are also about to build a 1,500 pound delivery wagon with variable speed, the motor having an air governor controlled by a foot-button, which regulates the intake.

Electrical Exhibition Notes.

Each of the Electrical Exhibitions held in this city of late years has been distinguished by some special feature. That of 1896 included the best public demonstration of the Roentgen rays, the transmission of power from Niagara, and the sending of a cable message around the world. The Exhibition of 1898 included a complete church lit by vacuum tubes, the application of electricity to street car traction, the first series of waxworks ever made to illustrate the history of an art, the theatrophone, and the beginnings of wireless telegraphy. The prominent feature of the 1899 Exhibition will certainly be automobilism. The exhibit of electric vehicles will be by long odds the largest and best ever seen in America, and second only to the great exhibits of Paris; in fact, in many respects it will surpass the displays of Europe, because it will illustrate particularly the application of electricity, and because the vehicles shown will demonstrate the high perfection that the art has already reached in this country. This degree of excellence is proved by the fact that, while there is no sale for European automobiles here, the manufacturers in America cannot ship machines fast enough to keep up with the demand. This automobile exhibit bids fair to be a sensation in New York, illustrating as it will the wonderfully wide range of application, carriages and wagons of every type being shown, with many special points of novelty and originality. It has been proposed, in connection with this exhibit, to organize during the show an automobile parade, making a characteristic function of it, after the style of those given in Paris through the Bois de Boulogne. It is believed that something of this character will be arranged while the National Electric Light Association is in session. The fact that to central station sources of supply this great new industry must look for the currents which it is to use gives peculiar interest to the situation, automobile plants being already among the largest consumers that central lighting stations have upon their list of patrons. Several thousand square feet will be occupied by the exhibits of a large number of automobile manufacturers, and in this way a convincing proof will be given to the American public that the new industry is fairly launched on its career. The exhibition will be open from May 8 till June 4.

A great many other important features will be brought forward for the first time, and in an improved shape, at the exhibition; but, in view of the intense public interest manifested in wireless telegraphy, the management have undertaken to organize exhibits in that line of work that will be unusually instructive. It will be remembered that, in 1898, mines and torpedoes were exploded in the central tank by wireless telegraph methods, and other experiments of this nature are being planned for this year; but, in order that the public may see the whole operation itself at a glance, and at the same time go away without any lurking suspicion of the genuineness of the feat, it is proposed to exhibit complete working sets of the apparatus on a long table of glass, the table itself being set up and insulated by blocks of glass, so that there will be a clear view under and around the apparatus. This table will be about 15 feet long, and messages will be sent from one end to the other, the sending signals and the response at the receiving end being heard at once. Visiting telegraphers, operators from newspaper offices, and any other spectators will be allowed to send messages or signals themselves. The same apparatus will also be utilized in connection with the experiments for long distance work, and a series of points have been selected between which and the Garden it is proposed to exchange messages. In this manner the public will have a better opportunity than has ever been afforded before of learning for itself the modus operandi of an invention which is stirring up the world of science no less than the outside public fully as much as the Roentgen rays did at the time of their discovery.

WINTON PHAETON, FRONT VIEW.

Several valuable government exhibits have been secured, and these will be grouped and attractively displayed. They include apparatus from the Army and Navy, the Signal Corps, and the Weather Bureau, and will embrace also not a few interesting electrical relics of the late unpleasantness with Spain.

A special department will also be devoted to electrotherapy—the rapidly widening science of the application of electricity to medicine and surgery, in connection with which a great deal of elaborate apparatus has already been promised. It is the special aim and intention in connection with this exhibit to enable the public to learn for itself how far the science of electricity in the cure and prevention of diseases has gone. The utmost care is being taken to treat the subject on strictly scientific lines, and a committee of eminent specialists has been organized, whose names alone are a sufficient guarantee for the excellence of the work in this department. Another special section will illustrate the great strides made of late years in the application of electricity to dentistry. Here, again, the pervading relationship of the central station to the later branches of electricity will be emphasized, it being a fact that more and more of the practitioners who employ electricity in their work depend upon the power plants for their supply of current, with the intervention of motors and storage batteries.

A number of spectacular exhibits are also being laid out and elaborated by a committee at whose head is Mr. Luther Stieringer, whose work is so well known in connection with the electric exhibits at Chicago, Atlanta, Omaha, etc. This expert has also taken in hand the lighting of the Garden and will produce some entirely new effects, not only beautiful in themselves, but instructive as to the manner in which light should be used for the harmonious illumination of large spaces. A great many of the exhibitors are preparing features of extreme novelty and interest, to which much attention will be called as soon as it is proper to do so.

It is a happy coincidence that this Electrical Exhibition in New York will be in progress at the time the Electrical Exhibition opens at Como, Italy, to celebrate the centennial of the momentous discovery of the electric battery by Volta. The Italian exhibition opens on May 15, and it is proposed, therefore, to hold a special celebration at the Garden on Saturday, May 13, from which fraternal congratulations can be sent by cable. The New York Electrical Society, under whose auspices the exhibition of 1898 was given so brilliantly, has undertaken to reorganize the exercise of this function, and will rally to its aid on the occasion the assistance of other local and national bodies naturally interested in the matter, inviting, also, the co-operation of the Italian officials and societies. President Dunn and Secretary Guy are already at work on this matter, which commends itself generally to all who recognize how great is the debt which is owed to the famous Italian from whose work, it may be said, practical modern electricity dates.

Last year the basement was devoted almost wholly to exhibits of engines and boilers, and apparatus of that class. Although this was very successful, a great many of the exhibitors desired to be on the main floor. This has been accomplished in the present exhibition by General Manager Nathan, and the basement will thus be available for a series of very interesting exhibits of a special nature, each of which will constitute a separate entertainment, and all of which will be free to the public. There will be an electrical theater of scenic models, the theatrophone, an electrical Cave of the Winds, an electrical grotto, an exhibit of the uses of electricity under water, and several other features of equal attractiveness. Such of the space as may not have been used in this way will be thrown open to inventors and patentees, who have meritorious inventions which they wish to introduce to the public, and for which they desire to secure capital for exploitation. All likely to be interested in this opportunity are requested to communicate at once with Mr. Nathan at Madison Square Garden, who will arrange to provide them with a reasonable amount of space for their apparatus, and to assist them in every way to make an attractive demonstration at very small cost. It is believed that many worthy ideas and devices linger in obscurity for want of such an opportunity as this, and the experiment will be given a liberal trial, in order to see what it may bring forth of value and importance.

WINTON MOTOR CARRIAGE—SURREY.