Notes and Queries

R. S. B., of Ill.—The best chemists regard it as settled that nitrogen forms a part of steel. Nitrogen and carbon combine to form cyanogen, and steel is considered a cyanide of iron.

J. B. F., of Conn.—"Anastatic Printing" is a term which has been used for printing with plates of zinc, prepared by etching and transferred copies of prints. A printed sheet of an engraved picture, or map, is first moistened with dilute nitric acid, which acts upon all the parts but those containing the printer's ink. The sheet is then pressed smoothly upon a flat zinc plate, and is allowed to remain for a short period. The acid in the paper attacks and etches all the zinc surface except those portions covered with the ink of the print, which being protected, are left in relief. The plate of zinc is then washed with a solution of gum in weak phosphoric acid, which wets only the portions that have been etched. A roller containing lithographer's ink is now passed over the plate, when the raised parts containing the transfer print take up the ink from the roller, while the etched portions are not effected. A sheet of paper is now laid upon the zinc plate, which is run into the press and an impression taken. It was anticipated at one period that this system of printing would, in a great measure, supersede that of lithography with prepared stones, but such hopes have not been realized. We have seen several very legible but somewhat coarse maps produced by anastatic printing.

G. W. C., of N. Y.—You will find full information respecting the examination of engineers for the navy, the amount of their salaries, and a great deal of other useful information about the American navy, on page 198, Vol. IV., present series of the SCIENTIFIC AMERICAN. The Board for examining candidates for Navy Engineers commenced a session on the 4th of this month at the navy yard, Philadelphia.

M. C., of Pa.—Soluble glass would not answer, we believe, for coating the inside of petroleum oil barrels, as it would be liable to crack off when the barrels are rolled.

C. L. D. G., of Me.—Three pounds of salt and half a pound of white copperas (sulphate of zinc) are sufficient for mixing with a bushel of lime in making good whitewash for outhouses.

G. Q. J., of Mass.—A knowledge of elementary chemistry would be a great advantage to you in practicing the art of varnish-making. Mussprat's Chemistry is not yet completed: it is a very useful and reliable chemical cyclopedia. Miller's Chemistry would be a good work for you to study. A little essential oil, especially oil of cloves—when mixed with gum-paste—prevents it from becoming moldy.

M. C. L., of C. W.—It is generally estimated that 5-horse power will drive one run of mill-stones; though at the Metropolitan Mills in this city it takes just 10-horse power to each run with the bolting machinery, &c. Thirty-three thousand pounds of water per minute falling one foot gives 1-horse power. Hence if the fall was 7 feet it would take 4,714 lbs., per minute, and with 10 feet 3,300 lbs. As your wheel would waste from 10 to 50 per cent of the power, the proper allowance must be made for this. An ordinary overshot wheel generally yields about 70 per cent of the whole power of the water.

E. S., of N. Y.—Fulton's first war steamer was provided with appliances to discharge steam and hot water into the vessel of an enemy, and thus convert it into a huge stewing-pan.

S. G. & Bros., of Ohio.—We are not acquainted with any other method of tempering the steel mold boards of plows to prevent them warping, than the exercise of care in the common mode of operation. Cover the surface with a paste of flour and salt, heat the mold boards slowly and carefully up to a low red heat, and then dip cautiously into cold water or oil. Some makers of steel plows keep their modes of tempering secret.

MULEY SAWS.—A correspondent desires to obtain information respecting the best length of pitman for muley saws. Different opinions and practices prevail among sawyers respecting the length of pitman to length of stroke. The experience of practical sawyers given to the public, would be of general benefit and lead to the adoption of more uniform and correct proportions in mill gearing.

Money Received

At the Scientific American Office on account of Patent Office business, during one week preceding Wednesday, Sept. 4, 1861:—

D. C. S., of Conn., $53; L. S., of N. Y., $10; R. L., of Mass., $20; A. A., of Ohio, $20; F. L. H., of Vt., $40; G. J., of N. Y., $20; J. M. O., of N. Y., $20; J. B. B., of Cal., $20; L. A. B., of N. Y., $20; W. S. M., of N. Y., $45; H. G. S., of N. Y., $20; G. F., of N. Y., $40; C. Van H., of Mass., $25; C. McW., of Cal., $30; E. T. & J. H., of N. Y., $22; J. J. K., of Ill., $15; W. R. P., of Ohio, $15; S. & P., of Conn., $15; T. W., of Ill., $15; J. M. F., of Ill., $15; W. M., of Mass., $20; J. P. R., of Iowa, $25; L. B. L., of Cal., $30; C. H. B., of Mass., $30; T. J. P., of Pa., $15; A. W., of Pa., $15; C. L. N., of N. Y., $15; S. & R., of N. Y., $30; W. H. A., of Conn., $15; C. B., of N. Y., $15; E. F., of N. Y., $15; J. E., of Conn., $25; J. G. W., of N. Y., $250; J. L. L., of N. Y., $15; W. M., of Ohio, $25; W. P., of N. Y., $25; H. J. P., of N. Y., $25; T. J. W., of England, $70; C. & M., of N. Y., $30; W. O. L., of N. Y., $25.

Specifications and drawings and models belonging to parties with the following initials have been forwarded to the Patent Office from Aug. 28, to Wednesday, Sept. 4, 1861:—

J. C. C., of Conn.; C. McW., of Cal.; N. B., of Ky.; G. A. R., of Germany (2 cases); C. & M., of N. Y.; J. G. W., of N. Y.; C. A. W., of Mass.; L. B. L., of Cal.; J. P. R., of Iowa; G. F., of N. Y.; C. L., of Ohio; W. M., of Mass.; W. M., of Ohio; E. P. R., of N. Y. (2 cases); J. H. S., of N. J.; C. H. B., of Mass.; L. T., of N. Y.; C. Van H., of Mass.; J. W. H., of N. S.; W. P., of N. Y.; T. J. W., of England (2 cases); W. O. L., of N. Y.; H. C., of England; O. B., of Ohio; H. J. P., of N. Y.

New Books and Periodicals Received.

THE UNION FOREVER.—We have received from the publisher, James D. Torrey, No. 13 Spruce street, this city, the first number of a history of the war, which is published in weekly parts, at ten cents each. It is entitled "The Union Forever, and the War for the Union. A History of the Rise and Progress of the Rebellion, and Consecutive Narrative of Events and Incidents, from the First Stages of the Treason against the Republic, Down to the Close of the Conflict, Together with Important Documents, Extracts from Remarkable Speeches, &c., &c." This is a very good current history of the war, in convenient form for preservation.

INSTRUCTIONS ABOUT EUROPEAN PATENTS, With a Synopsis of the Patent Laws of the Various Countries.

AMERICAN INVENTORS SHOULD BEAR IN MIND that, as a general rule, any invention which is valuable to the patentee in this ountry is worth equally as much in England and some other foreign countries. Four patents—American, English, French and Belgian—will secure an inventor exclusive monopoly to his discovery among 100,000,000 of the most intelligent people in the world. The facilities of business and steam communication are such that patents can be obtained abroad by our citizens almost as easily as at home. The majority of all patents taken out by Americans in foreign countries are obtained through the Scientific American Patent Agency. We have established agencies at all the principal European seats of government, and obtain patents in Great Britain, France, Belgium, Prussia, Austria, Spain, &c., with promptness and dispatch.

It is generally much better to apply for foreign patents simultaneously with the application here; or, if this cannot be conveniently done, as little time as possible should be lost after the patent is issued, as the laws in some foreign countries allow patents to any one who first makes the application, and in this way many inventors are deprived of valid patents for their own inventions.

Many valuable inventions are yearly introduced into Europe from the United State, by parties ever on the alert to pick up whatever they can lay their hands upon which may seem useful.

Models are not required in any European country, but the utmost care and experience is necessary in the preparation of each case.

GREAT BRITAIN.

Patents for inventions under the new law, as amended by the act of Oct. 1, 1852, and now in operation, include the United Kingdom of Great Britain and Ireland in one grant, which confers the exclusive right to make, use, exercise or vend. This is conceded to the inventor, or the introducer, for a period of fourteen years, subject, after the patent is granted, and the first expenses paid, to a government tax twice during its existence—once within three years, and once again within seven. The purchaser of a patent would assume the payment of these taxes.

There is no provision in the English law requiring that a patented invention shall be introduced into public use within any specified limit. Under the Patent Act of October, 1852, the British government relinquished its right to grant patents for any of its colonies, each colony being permitted to regulate its own patent system. If a patent has been previously taken out in a foreign country, the British patent will expire with it.

FRANCE.

Patents in France are granted for a term of fifteen years, unless the invention has been previously secured by patent in some other country; in such case, it must take date with and expire with the previous patent. After the patent is issued, the French government requires the payment of a small tax each year so long as the patent is kept alive, and two years' time is given to put the invention patented into practice.

It should be borne in mind that, although the French law does not require that the applicant should make oath to his papers, yet if a patent should be obtained by any other person than the inventor, upon proof being adduced to this effect before the proper tribunal, the patent would be declared illegal.

BELGIUM.

Patents in Belgium are granted for twenty years, or if previously patented in another country, they expire with the date thereof. The working of the invention must take place within one year from date of patent; but an extension for an additional year may be obtained on application to the proper authorities. Inventors are only legally entitled to take out patents.

THE NETHERLANDS.

Patents are granted by the Royal Institute of the Netherlands to natives or foreigners represented by a resident subject, which extend to a period of about two years, within which time the invention must be brought into use, and upon payment of an additional tax, a patent will be granted to complete its whole term of fifteen years. Unless these conditions are complied with, the patent ceases.

PRUSSIA.

Applications for patents in Prussia are examined by the Royal Polytechnic Commission, and unless there is novelty in the invention, the applicant's petition will be denied; and if it is granted, the invention must be worked within six months afterward. A respite, however, of six additional months may be obtained, if good and sufficient reasons for it can be shown.

AUSTRIA

Austrian patents are granted for a term of fifteen years, upon the payment of 1,000 florins, or about $500 in American currency. This sum, however, is not all required to be paid in advance. It is usual to pay the tax for the first five years upon the deposit of the papers, and the patent must be worked within its first year. The Emperor can extend the patent and privilege of working by special grant. In order to obtain a patent in Austria, an authenticated copy of the original Letters Patent must be produced.

SPAIN.

The duration of a Spanish patent of importation is five years, and can be prolonged to ten years; and the invention is to be worked within one year and one day.

To obtain a Cuban patent requires a special application and an extra charge.

RUSSIA.

Since the close of the Crimean war, considerable attention has been given to Russian patents by Americans. Russia is a country rich in mineral and agricultural products, and there seems to be a field open for certain kinds of improvements. The present Emperor is very liberally disposed toward inventors, and as an evidence of the interest which he takes in the progress of mechanic arts, we may state that we have had visits from two distinguished Russian *savans*, specially sent out by the Emperor to examine Amdrican inventions. As Russian patents are expensive, and somewhat difficult to obtain, we do not take it upon ourselves to advise applications; inventors must judge for themselves; and this remark applies not only to Russia, but also to all other foreign countries.

CANADA.

Patents of invention are granted only to actual residents of Canada and British subjects. Under the general Patent Law of Canada, an American cannot procure a patent for his invention there. The only way in which he can do so is by virtue of a special act of Parliament, which is very difficult, uncertain, and expensive to obtain. Several zealous friends of reform in Canada are working earnestly to bring about a reciprocal law, but their efforts have thus far proved fruitless.

BRITISH INDIA.

The date of the law, Feb. 28, 856; duration of a patent, fourteen years. Invention must be worked within two years from date of petition. Privilege granted only to the original inventor or his authorized agent in India.

SAXONY.

Duration of patent, from five to ten years. Invention must be worked within one year from date of grant. Careful examination made before granting a patent.

HANOVER.

Duration of patent, ten years; and in case of foreign patent having been previously obtained, an authenticated copy of said patent must be produced. Invention must be worked within six months from date of grant.

SARDINIA.

Duration of patent, from one to fifteen years. Patents for five years or less must be worked within one year, and all others within two years.

NORWAY AND SWEDEN.

Duration of patent, three years, at least; fifteen at most, according to the nature and importance of the invention. Patents for foreign inventions not to exceed the term granted abroad, and to be worked within one, two or four years.

AUSTRALIA.

Date of law, March 31, 1854. Careful examination made by competent persons previous to issue of patent, which, when granted, extends to fourteen years. Imported inventions are valid according to duration of foreign patent. It would require from twelve to eighteen months to procure a patent from the Australian government.

Parties holding foreign patents secured through our agency will be notified from time to time of the condition of their cases.

GENERAL REMARKS.

While it is true of most of the European countries herein specified, that the system of examination is not so rigid as that practised in this country, yet it is vastly important that inventors should have their papers prepared only by the most competent solicitors, in order that they may stand the test of a searching legal examination; as it is a common practice when a patentee finds a purchaser for his invention for the latter to cause such examination to be made before he will accept the title.

It is also very unsafe to entrust a useful invention to any other than a solicitor of known integrity and ability. Inventors should beware of speculators, whether in the guise of patent agents or patent brokers, as they cannot ordinarily be trusted with valuable inventions.

Messrs. MUNN & CO. have been established *fifteen years* as American and Foreign Patent Attorneys and publishers of the SCIENTIFIC AMERICAN, and during this time they have been entrusted with some of the most important inventions of the age; and it is a matter of pardonable pride in them to state that not a single case can be adduced in which they have ever betrayed the important trust committed to their care. Their agents in London, Paris, and other Continental cities, are among the oldest and most reliable Patent Solicitors in Europe, and they will have no connection with any other.

CAUTION.—It has become a somewhat common practice for agents located in England to send out circulars soliciting the patronage of American inventors. We caution the latter against heeding such applications, or they may otherwise fall into the hands of irresponsible parties, and thus be defrauded of their rights. It is much safer for inventors to entrust their cases to the care of a competent, reliable agent at home.

FEES.—The fees required by us for the preparation of foreign applications are not the same in every case; as, in some instances, when the inventions are of a complicated character, we are obliged to charge a higher fee. Applicants can always depend, however, upon our best terms, and can learn all particulars upon application, either in person or by letter.

Parties desiring to procure patents in Europe can correspond with the undersigned, and obtain all the necessary advice and information respecting the expenses of obtaining foreign patents.

All letters should be addressed o Messrs. MUNN & CO., No. 37 Park-row, New York.

CHANGE IN THE PATENT LAWS.

NEW ARRANGEMENTS—PATENTS GRANTED FOR SEVENTEEN YEARS.

The new Patent Laws, recently enacted by Congress, ar now in full force, and promise to be of great benefit to all parties who are concerned in new inventions.

The duration of patents granted under the new act is prolonged to SEVENTEEN years, and the government fee required on filing an application for a patent is reduced from **$30** down to **$15**. Other changes the fees are also made as follows:—

On filing each Caveat	$10
On filing each application for a Patent, except for a design	$15
On issuing each original Patent	$20
On appeal to Commissioner of Patents	$20
On application for Re-issue	$30
On application for Extension of Patent	$50
On granting the Extension	$50
On filing Disclaimer	$10
On filing application for Design, three and a half years	$10
On filing application for Design, seven years	$15
On filing application for Design, fourteen years	$30

The law abolishes discrimination in fees required of foreigners, except in reference to such countries as discriminate against citizens of the United States—thus allowing English, French, Belgian, Austrian, Russian, Spanish, and all other foreigners except the Canadians, to enjoy all the privileges of our patent system (except in cases of designs on the above terms.

During the last sixteen years, the business of procuring Patents for new inventions in the United States and all foreign countries has been conducted by Messrs. MUNN & CO., in connection with the publication of the SCIENTIFIC AMERICAN; and as an evidence of the confidence reposed in our Agency by the Inventors throughout the country, we would state that we have acted as agents for more than FIFTEEN THOUSAND Inventors! In fact, the publishers of this paper have become identified with the whole brotherhood of Inventors and Patentees, at home and abroad. Thousands of Inventors o whom we have taken out Patents have addressed to us most flattering estimonials for the services we have rendered them, and the wealth which has inured to the Inventors whose Patents were secured through this Office, and afterward illustrated in the SCIENTIFIC AMERICAN, would amount to many millions of dollars! We would state that we never had a more efficient corps of Draughtsmen and Specification Writers than are employed at present in our extensive Offices, and we are prepared to attend to Patent business of all kinds in the quickest time and on the most liberal terms.

Rejected Applications.

We are prepared to undertake the investigation and prosecution of rejected cases, on reasonable terms. The close proximity of our Washington Agency to the Patent Office affords us rare opportunities for the examination and comparison of references, models, drawings, documents, &c. Our success in the prosecution of rejected cases has been very great. The principal portion of our charge is generally left dependent upon the final result.

All persons having rejected cases which they desire to have prosecuted are invited to correspond with us on the subject, giving a brief history of their case, inclosing the official letters, &c.