



W. S., of Ohio.—The bore of Whitworth's gun is made six-sided, as you supposed, and with a twist. His English patent covers all polygonal forms.

G. T., of Mass.—We think that water cement and gravel makes the best pipe for conducting water. It will be necessary to get some one who understands the art to lay it for you, or to show you how.

E. H. P., of Ill.—We do not think your diagram of the comet's positions of sufficient interest to pay for engraving.

W. R. T., of N. Y.—There is difference of opinion about the propriety of placing iron shields for ships upon elastic surfaces; some high authorities claiming that the more solid the backing, the better. It is entirely settled, however, that plates welded together in one solid mass offer far greater resistance than if merely riveted or bolted together.

W. E. S., of Conn.—Sharp's percussion pellets were patented in 1853. He also has a patent for throwing a percussion pellet between the hammer and nipple while the hammer is falling.

W. H., of N. Y.—By boiling coconut oil with a small quantity of carbonate of soda, an ounce to the gallon, for half an hour, then allowing it to settle, it will be deprived of its fetid smell in a great measure, but not perfectly.

G. G., of Ohio.—You can obtain Holzappel's "Mechanical Manipulations" from Balliere Brothers, No. 410 Broadway, or John Wiley, No. 56 Walker-street, this city.

G. S., of Mo.—When A, who is patentee, sells a machine to B, the latter can lend it to whom he pleases, unless there is some specific clause in the bill of sale prohibiting him to do so.

T. S. H., of Ill.—Various specifics have been recommended for preventing scale in steam boilers. The use of some slippery elm bark fed into the boiler weekly, and blowing off with the surface cock frequently, will keep a boiler clean for a long time when using hard water.

W. F. M., of Pa.—Bourne's "Catechism of the Steam Engine," and Bourne's "Treatise on the Steam Engine," would afford you all the information desired. They are published in London.

T. G., of Md.—When or by whom guns were invented is uncertain. The origin both of guns and gunpowder is involved in obscurity. It is recorded that Mahomet II. battered the walls of Constantinople with cannon in the year 1453, some of them being of the caliber of 1,200 lbs., throwing enormous stones at the rate of three or four per day. During the interval of firing, all damage done to the assaulted fortification could generally be repaired. At an earlier period than this, the French procured cannon for the invasion of Italy, which cannon were mounted on carriages and drawn by horses.

D. C., of Canada.—We cannot encourage you to apply for a patent on your paddle wheel. The same thing was patented some years ago by Abner Chapman, and we find it also illustrated in the volume of Canadian patents just issued, page 546.

J. R. F., of N. Y.—You do not state clearly when the infringement commenced, nor whether they infringed both the original claim and the reissued claim, or only the latter. If there was an infringement of the original claim, then the infringer is liable for damages upon the original patent up to the date of the reissue. Liability as to the reissued patent would commence with the date of the reissue.

D. McJ., of C. W.—The substance that you send us is mica, one of the three stones that form granite. The other two are quartz and felspar. In regard to your subscription, our books show that your term expired with No. 22, Vol. IV. We presume you were credited with the amount you specify.

O. P. C., of Maine.—We do not know anything about the merits of McCormick's extension cases, and have seen none of the testimony. What we hope ever to contend for, in all such cases, is a fair, impartial hearing, and a decision based upon the facts as sustained by the evidence. If mere prejudice and interest are allowed to bear rule against an applicant, then the intention and spirit of our patent law is nullified. If a man is arrested for crime, he is supposed to be innocent until found guilty by evidence submitted according to law.

B. M., of N. Y.—Wells' "Philosophy," published by Gould & Lincoln, Boston, will give you the latest facts in electricity. The following are reliable works on photography:—Harwick's "Photographic Chemistry," \$2.25; Waldack's "Photography," \$1; "The Ambrotype," 25 cents. You can get these of Chas. A. Seely, editor of the *Photographic Journal*, No. 244 Canal-street, New York. There is no gain of power by the lever. What is gained in power is lost in time.

A. J. B., of C. T.—Iron pyrites may be rendered soluble in water by roasting slowly first in the open hearth, or roasting in any furnace where a full supply of air is admitted.

E. H. F., of Mass.—In order to become a first-rate engineer, you must go into an establishment where engines are built, and become a practical engineer. King's work on steam propellers is published by D. Van Nostrand, No. 192 Broadway, this city.

BYRON KILBOURN, Milwaukee, Wis., wishes to correspond with the best manufacturer of steel in the United States.

J. G. W., of N. Y.—You can procure a good steam heating apparatus of Messrs. Leeds & Vaux, No. 110 Broadway, this city.

C. C., of Pa.—Send us on your model and first installment of patent fee without delay, and we will prepare your case at once. The business of the Patent Office goes on with great regularity.

J. B. S., of Pa.—We do not know any maker of pumps who will erect them and insure their drawing water through 150 yards of suction pipe, and force it 60 feet high. That pumps can be made to draw water that distance, we have no doubt; but the difficulty in making them operate satisfactorily will be in securing perfectly air-tight suction pipes.

Money Received

At the Scientific American Office on account of Patent Office business, during the week preceding Wednesday, July 17, 1851:

J. K. G., of N. Y., \$15; B. T., of N. Y., \$43; E. T. de V., of N. Y., \$15; W. H. S., of Conn., \$15; R. P., of N. Y., \$15; J. A. & A. S. H., of Ill., \$25; N. H. B., of Mass., \$15; F. J. B., of Wis., \$10; H. H., of Ill., \$12; G. B., of N. Y., \$15; J. M., of Ohio, \$15; L. K., of N. Y., \$15; J. W. C., of N. Y., \$20; C. F. B., of N. Y., \$20; A. H. H., of Mass., \$25; T. E. R., of Mass., \$25; S. L. M., of Conn., \$15; J. C., of Ohio, \$25; J. M., of Iowa, \$15; D. P. M., of Ill., \$15; A. F. W., of Pa., \$20; O. W. K., of Wis., \$15; M. M., of Mass., \$15; C. C. P. W., of Mass., \$30; K. B., of Cal., \$5; P. H. S., of Cal., \$5; G. W. M., of Ohio, \$15; J. J., of N. Y., \$15; J. B. V. D., of N. Y., \$15; T. G. B., of Mass., \$15; M. C. W., of Ill., \$12; L. H. O., of N. Y., \$15; J. L., of Mich., \$25; W. H. B., of Mass., \$30; J. A., of Maine, \$25; W. J. S., of N. Y., \$25; A. L. W., of Mass., \$20; S. C., of N. Y., \$20; W. D., of Mo., \$20; A. B., of C. W., \$20; T. D., of Iowa, \$20; C. K., of Vt., \$20; W. D. B., of Mass., \$20.

Specifications and drawings and models belonging to parties with the following initials have been forwarded to the Patent Office from July 10 to Wednesday, July 17, 1851:—

M. C. W., of Ill.; B. A. M., of Ct.; J. N. D., of Iowa; P. H. S., of Cal.; W. R., of N. Y.; J. M. B., of N. Y.; J. K. G., Jr., of N. Y.; C. C. P. W., of Mass.; J. C., of Ohio; J. L., of Mich.; J. J. S., of N. Y.; L. C., of N. Y.; D. S., of N. Y.; V. H. B., of Mass.; T. C. R., of Mass.; A. H. H., of Mass.; B. and C., of N. Y.; J. A. and A. S. H., of Ill.; J. M., of Ohio; H. H., of Ill.; G. J., of N. Y.; G. D. H., of Ill.; C. A., of Ill.; L. and W., of N. Y.; C. A., of Paris.

TO OUR READERS.

Models are required to accompany applications for Patents under the new law, the same as formerly, except on Design Patents, when two good drawings are all that is required to accompany the petition, specification and oath, except the government fee.

INVARIABLE RULE.—It is an established rule of this office to stop sending the paper when the time for which it was pre-paid has expired.

PATENT CLAIMS.—Persons desiring the claim of any invention which has been patented within thirty years, can obtain a copy by addressing a note to this office, stating the name of the patentee and date of patent, when known, and inclosing \$1 as fee for copying. We can also furnish a sketch of any patented machine issued since 1853, to accompany the claim, on receipt of \$2. Address MUNN & CO., Patent Solicitors, No. 37 Park Row, New York.

BINDING.—We are prepared to bind volumes, in handsome covers, with illuminated sides, and to furnish covers for other binders. Price for binding, 50 cents. Price for covers, by mail, 50 cents; by express or delivered at the office, 40 cents.

BACK NUMBERS AND VOLUMES OF THE SCIENTIFIC AMERICAN.—Volumes I, II and III. (bound or unbound) may be had at this office and from all periodical dealers. Price, bound, \$1.50 per volume, by mail, \$2—which includes postage. Price in sheets, \$1. Every mechanic, inventor or artisan in the United States should have a complete set of this publication for reference. Subscribers should not fail to preserve their numbers for binding.

NEW PAMPHLETS IN GERMAN.—We have just issued a revised edition of our pamphlet of *Instructions to Inventors*, containing a digest of the fees required under the new Patent Law, &c., printed in the German language, which persons can have gratis upon application to this office. Address MUNN & CO., No. 37 Park-row, New York.

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 country 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 States, 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 years. 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 a 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 resale, 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 inventions 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 American 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, 1856; duration of a patent, fourteen years. Invention must be worked within two years from date of patent. 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 reasonable 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 to Messrs. MUNN & CO., No. 37 Park-row, New York.