

PATENT CLAIMS.

Owing to the interruption of the mail, our official list of patent claims was not received in time for this week's paper. We print in place of them a very interesting account of the mines of Germany with their curious old superstitions about witch hazels, and other modes of finding treasure.

To Treat Potatoes and Prevent Rot.

The *Country Gentleman* states that a foreign farmer came to the conclusion last year that the potato rot was caused by a minute fungus, which commenced on the leaf, propagated with great rapidity, and washed into the tubers by rains. He tried the following experiment to prevent its injurious effects, and was very successful. He planted potatoes in double rows instead of single, the two rows occupying about a foot in width, a foot of vacant space remaining on the outside of each row. They were planted upon the level ground, and hoed up at the usual time. When the tops had attained their full growth, about the first of July, he turned them over right and left toward the vacant spaces, by adding earth between the rows and pressing down the haulms, so as to prevent their retaining an erect position, and to allow the rain, instead of descending to the roots, to run off upon the vacant space. The result was a most excellent crop, while other potatoes of the same species planted in the same field in the common way, turned out a complete failure. This system can be easily tried without involving extra labor or expense.

Lofty Roofs for Photographic Rooms.

A correspondent of the *Photographic News* states that rooms with lofty ceilings—glass roofs—produce pictures very superior to those which have low roofs. He says:—"Above all things, have a lofty room, 10 or 12 feet high where the sitter stands, and then you may use almost direct light overhead, and yet you have it soft. Decidedly, have your glass to the floor, if you can, and let the sitter look at the north or northeast; your camera will then be in the south, and have a good-sized box or screen to keep the direct light from the lens. My opinion is, that if the sitter is in direct sunlight, or rather in the direction of direct light (say south, southeast or west), no matter how your blinds are arranged, you cannot depend on soft pictures, and you are at the mercy of every passing cloud. In the other position, by a very little management, you can work without being annoyed with sunshine, at every period of the year, and all day long."

SOLDIERS' UNDERCLOTHES.—On this subject, the Philadelphia *Ledger* presents the following very timely remarks:—"We would remind all who are volunteering as soldiers, and their friends, that one great danger to which they will be exposed arises from the miasmata generated in low, swampy districts in Southern climates. Northern men cannot guard too carefully against the ravages of disease, induced, in most cases, by dressing too lightly or exposure to night air. We are apt to imagine the planter in Virginia as being rigged out in a broad-brimmed hat and brown linen during the summer season; but not a few are in the habit of dressing in woolen clothes the whole year round, while the practice of wearing flannel underclothes is all but universal. Engineers and firemen are obliged to wear the same dress, and for a like reason. The profuse perspiration which flows through the pores, renders the body peculiarly liable to the dangerous effects of sudden chills, and flannel is the best preventive against these, as well as the attacks of the malarious influence."

SHEET ZINC FOR ROOFING.—A report of a committee appointed by the Central Society of Architects, in Paris, recommends "that zinc, which was at first rejected, but is now so generally used, should be applied with great care, as certain precautions, very simple, but never to be overlooked, are indispensable. Thus: contact with plaster, which contains a destructive salt, is to be avoided; also, contact with iron, which is very injurious, and liable to cause a rapid oxydation. Eave gutters should always be supported by galvanized brackets, and no gutter or sheet zinc should be laid on oak boards.



M. H. M., of N. Y.—We should suppose that the simple way of expelling air from butter cans would be to fill the cans by compression perfectly full of butter, leaving no room for the air.

J. W. W., of N. H.—You will find the information which you ask for in relation to the cost, &c., of howitzers, in the last and present numbers of the *SCIENTIFIC AMERICAN*. Each arm of the service, the infantry, the artillery, and the cavalry, has its special uses, and no army is complete without them all.

G. H., of Ky.—"The Microscope and its Revelations," published by Blanchard & Lea, of Philadelphia, contains the information you desire respecting the construction of the microscope.

R. M., of Mich.—The only way to make the stamp heads of cast iron hard is to cast the metal in iron molds, so as to chill-harden the surface. Wolfram cannot be obtained here. The hardest cast iron with which we are acquainted is made from the Franklinite ore in New Jersey.

C. D. S., of N. Y.—Brass is an alloy composed of copper and zinc. Its rate of expansion depends entirely upon the relative quantities of the two metals of which it is formed. It is difficult to find two pieces of brass (if made in different establishments) that will expand equally. Well-tempered spring wire will bend around a common thread spool and spring back again. Its elasticity depends entirely upon the temper given to it.

S. F., of Pa.—It is necessary, in laying railroad rails in winter, to leave a space between their ends to allow them to expand in warm weather. A sphere is the strongest hollow body of a given diameter to resist pressure on all parts of the surface. Crucibles are made of plumbago and of platinum.

R. B., of Mass.—The writer of this has seen men in California digging with spades into granite seven feet in depth. The surface of the granite there is being disintegrated from the decomposition of the felspar. There is nothing in science better settled than the composition of water; it is composed of 1 pound of hydrogen to 8.013 pounds of oxygen; but it is so powerful a solvent that it is seldom obtained in a state of purity.

J. T. R., of N. Y.—A decoction of sumac, or dilute gallic acid will answer to prepare your writing paper, to prevent the successful erasure of writing. Paper prepared in this manner, if written upon with ink containing the sulphate of iron, will show a dark border around every letter that has been erased with any of the known chemicals used by counterfeiters, and thus fraudulent efforts at altering such writing can be detected.

T. N. B., of Conn.—No electric engine can generate a current of electricity sufficient to drive itself, and, at the same time, have a surplus for depositing metals. Such a motor would be perpetual motion, which is a mechanical impossibility.

W. A. B., of Conn.—To color cotton red, steep it in a decoction of sumac for 10 hours, then take it out, squeeze the water from it, and steep it for five hours in a solution of alum. After this, wash the cotton, squeeze and handle it in a hot decoction of red-wood, when it will be dyed a good red color. Four pounds of red-wood are required for 10 pounds of cotton.

W. M., of Mass.—An excess of sulphur and the addition of two-fifths of chlorate of potassa, to common powder will render it very rapid of ignition. Powder for blasting in mines, containing about twenty-five per cent of chlorate of potassa, has been patented. Its combustion is very perfect, but for rifled fire-arms and large cannon, common coarse powder is the safest and best. Hard coal may be used as a substitute for charcoal, in making powder, but it is not so good. Charcoal made of willow is the best for making gunpowder.

J. Y., of Pa.—In some of Sharpe's rifles, the breech-gate becomes so expanded by heat, after firing a few shots, that it is almost impossible to move it. This is not owing to any defect in the principle of the gate, but from imperfect workmanship. We have now a Sharpe's rifle which never becomes stiff in working, however rapidly it may be fired, but it leaks a little at the breech. This could be avoided by using a graduated and adjustable spring for pressing on the back of the breech-gate. This rifle has to be protected from rain, as the moisture is liable to get into the charge.

J. C., of Pa.—In rifled cannon, the windage is generally filled with leaden bands. The only wad used in cannon is the flannel bag of which the cartridge is made.

G. F. L., of N. Y.—Wood can be coppered by the electroplating process. It is covered with plumbago for the operation, as this is a good conductor.

H. W., of Pa.—While petroleum oils may be very excellent to prevent the surface of polished iron from oxidizing, we do not think they can ever supersede pure sperm oil as a lubricator. The heavy or "dead" coal oils are somewhat unctuous, but the lighter qualities are not; they are as volatile as alcohol, and are not oils within the old meaning of the term.

J. K., of Ohio.—The peroxyd of manganese has been used for many years for rendering luseed oil quick-drying. It is added slowly to the oil while the latter is boiling. About an ounce to the pint will be sufficient for your purpose. If you desire to keep the oil as clear in color as possible, use the sulphate of zinc, or sugar of lead, for rendering it quick-drying. Litharge gives a dark brown color to the oil.

E. H. N., of Mass.—Your plan for a camp bakery seems to be an excellent invention. What say you to our publishing an engraving of it?

Money Received

At the Scientific American Office on account of Patent Office business, for the week ending Saturday, May 4, 1861:—

J. B. B., of Cal., \$15; S. & A., of Ohio, \$25; C. R., of Vt., \$30; T. K. A., of N. Y., \$15; G. G. C., of Mich., \$25; L. S., of N. Y., \$40; S. J. G., of N. Y., \$10; C. T. P., of N. Y., \$360; J. F. H., of N. Y., \$30; C. & W., of Maine, \$25; A. B. P., of Cal., \$25; K. & B., of Cal., \$25;

J. S. S., of N. Y., \$20; R. B. N., of Cal., \$150; W. B., of N. J., \$25; P. R., of Iowa, \$22; C. & W., of N. Y., \$12; G. S., of Iowa, \$15; T. C. C., of N. Y., \$25; J. D. B., of N. Y., \$10; D. S., of Mass., \$25; H. L. P., of Mich., \$25; J. A. B., of Mich., \$25; W. Y., of N. Y., \$25; A. T., of N. Y., \$15; L. S. S., of N. Y., \$40; W. L. S., of Cal., \$50; W. & S., of Ohio, \$15; G. & C. B., of N. Y., \$20; S. R. W., of N. Y., \$15; H. A. H., of Mass., \$20; G. W. C., of Ga., \$25; D. B., of Mo., \$25; J. G. W., of N. Y., \$100; C. & L., of N. Y., \$25; C. B., of N. Y., \$15; A. A., of Ill., \$30; M. M. P., of Vt., \$15; W. F., of Ill., \$15; M. L. G., of Ill., \$15; J. G., of N. Y., \$15; S. E. A., of N. Y., \$25; M. G. C., of N. Y., \$20; A. W., of Vt., \$15; M. L. B., of N. Y., \$20; J. & R., of N. Y., \$20; T. G., of Mich., \$25; W. W., of N. Y., \$25.

Specifications and drawings belonging to parties with the following initials have been forwarded to the Patent Office during the week ending May 4, 1861:—

C. R., of Vt.; T. C. H., of N. Y.; G. G. C., of Mich.; E. C., of N. Y.; G. L., of N. Y.; W. Y., of N. Y.; L. B., of Cal.; M. G. C., of N. Y.; H. L. P., of Mich.; S. & A., of Ohio; D. S., of Mass.; W. W., of N. Y.; J. G. W., of N. Y.; C. & W., of Maine; L. S., of N. Y.; A. B. P., of Cal.; S. A. B., of Conn.; C. & W. H. R., of Mass.; A. A., of Ill.; J. D. B., of N. Y.; S. S. H., of N. Y.; C. & W., of N. Y.; S. R. H., of N. Y.; S. E. A., of N. Y.; C. & L., of N. Y.; K. & B., of Cal.

RATES OF ADVERTISING.

Thirty Cents per line for each and every insertion, payable in advance. To enable all to understand how to calculate the amount they must send when they wish advertisements published, we will explain that ten words average one line. Engravings will not be admitted into our advertising columns; and, as heretofore, the publishers reserve to themselves the right to reject any advertisement sent for publication.

CHANGE IN THE PATENT LAWS.

NEW ARRANGEMENTS—PATENTS GRANTED FOR SEVENTEEN YEARS.

The new Patent Laws, recently enacted by Congress, are 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 in 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 for whom we have taken out Patents have addressed to us most flattering testimonials 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.

Testimonials.

The annexed letters, from the last three Commissioner of Patents, we commend to the perusal of all persons interested in obtaining Patents:—

Messrs. MUNN & CO.:—I take pleasure in stating that, while I held the office of Commissioner of Patents, MORE THAN ONE-FOURTH OF ALL Patents, a very large proportion of the business of Inventors before the Patent Office was transacted through your agency, and that I have ever found you faithful and devoted to the interests of your clients, as well as eminently qualified to perform the duties of Patent Attorneys with skill and accuracy. Very respectfully,
Yours, very truly,
CHAS. MASON.

Immediately after the appointment of Mr. Holt to the office of Postmaster-General of the United States, he addressed to us the subjoined very gratifying testimonial:—

Messrs. MUNN & CO.:—It affords me much pleasure to bear testimony to the able and efficient manner in which you have discharged your duties of Solicitors of Patents while I had the honor of holding the office of Commissioner. Your business was very large, and you sustained (and, I doubt not, justly deserved) the reputation of energy, marked ability and uncompromising fidelity in performing your professional engagements. Very respectfully,
Your obedient servant,
J. HOLT.

Messrs. MUNN & CO.:—Gentleman: It gives me much pleasure to say that, during the time of my holding the office of Commissioner of Patents, a very large proportion of the business of Inventors before the Patent Office was transacted through your agency, and that I have ever found you faithful and devoted to the interests of your clients, as well as eminently qualified to perform the duties of Patent Attorneys with skill and accuracy. Very respectfully,
Your obedient servant,
WM. D. BISHOP.

The Examination of Inventions.

Persons having conceived an idea which they think may be patentable, are advised to make a sketch or model of their invention, and submit to us, with a full description, for advice. The points of novelty are carefully examined, and a reply written corresponding with the facts, free of charge. Address MUNN & CO., No. 37 Park-row, New York.

Preliminary Examinations at the Patent Office. The advice we render gratuitously upon examining an invention does not extend to a search at the Patent Office, to see if a like invention

has been presented there, but is an opinion based upon what knowledge we may acquire of a similar invention from the records in our Home Office. But for a fee of \$5, accompanied with a model or drawing and description, we have a special search made at the United States Patent Office, and a report setting forth the prospects of obtaining a Patent, &c., made up and mailed to the Inventor, with a pamphlet, giving instructions for further proceedings. These preliminary examinations are made through our Branch Office, corner of F and Seventh-streets, Washington, by experienced and competent persons. Over 1,500 of these examinations were made last year through this Office, and as a measure of prudence and economy, we usually advise Inventors to have a preliminary examination made. Address MUNN & CO., No. 37 Park-row, New York.

Caveats.

Persons desiring to file a Caveat can have the papers prepared in the shortest time by sending a sketch and description of the invention. The government fee for a Caveat, under the new law, is \$10. A pamphlet of advice regarding applications for Patents and Caveats furnished gratis on application by mail. Address MUNN & CO., No. 37 Park-row, New York.

How to Make an Application for a Patent.

Every applicant for a Patent must furnish a model of his invention, if susceptible of one; or if the invention is a chemical production, he must furnish samples of the ingredients of which his composition is composed, for the Patent Office. These should be securely packed, the Inventor's name marked on them, and sent, with the government fee, by express. The express charge should be prepaid. Small models from a distance can often be sent cheaper by mail. The safest way to remit money is by draft on New York, payable to the order of Munn & Co. Persons who live in remote parts of the country can usually purchase drafts from their merchants on their New York correspondents; but if not convenient to do so, there is but little risk in sending bank bills by mail, having the letter registered by the postmaster. Address MUNN & CO., No. 37 Park-row, New York.

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.

Foreign Patents.

We are very extensively engaged in the preparation and securing of Patents in the various European countries. For the transaction of this business, we have offices at Nos. 66 Chancery-lane, London; 29 Boulevard St. Martin, Paris; and 26 Rue des Eperonniers, Brussels. We think we can safely say that THREE-FOURTHS of all the European Patents secured to American citizens are procured through our Agency.

Inventors will do well to bear in mind that the English law does not limit the issue of Patents to Inventors. Any one can take out a Patent there.

Circulars of information concerning the proper course to be pursued in obtaining Patents in foreign countries through our Agency, the requirements of different Patent Offices, &c., may be had gratis upon application at our principal office, No. 37 Park-row, New York, or either of our Branch Offices.

Interferences.

We offer our services to examine witnesses in cases of interference, to prepare arguments, and appear before the Commissioner of Patents or in the United States Court, as counsel in conducting interferences or appeals.

For further information, send for a copy of "Hints to Inventors." Furnished free. Address MUNN & CO., No. 37 Park-row, New York.

The Validity of Patents.

Persons who are about purchasing Patent property, or Patentees who are about erecting extensive works for manufacturing under their Patents, should have their claims examined carefully by competent attorneys, to see if they are not likely to infringe some existing Patent, before making large investments. Written opinions on the validity of Patents, after careful examination into the facts, can be had for a reasonable remuneration. The price for such services is always settled upon in advance, after knowing the nature of the invention and being informed of the points on which an opinion is solicited. For further particulars, address MUNN & CO., No. 37 Park-row, New York.

Extension of Patents.

Valuable Patents are annually expiring which might be extended and bring fortunes to the households of many a poor Inventor or his family. We have had much experience in procuring the extension of Patents; and, as an evidence of our success in this department, we would state that, in all our immense practice, we have lost but two cases, and these were unsuccessful from causes entirely beyond our control.

It is important that extension cases should be managed by attorneys of the utmost skill to insure success. All documents connected with extensions require to be carefully drawn up, as any discrepancy or untruth exhibited in the papers is very liable to defeat the application.

Of all business connected with Patents, it is most important that extensions should be intrusted only to those who have had long experience, and understand the kind of evidence to be furnished the Patent Office, and the manner of presenting it. The heirs of a deceased Patentee may apply for an extension. Parties should arrange for an application for an extension at least six months before the expiration of the Patent.

For further information as to terms and mode of procedure in obtaining an extension, address MUNN & CO., No. 37 Park-row, New York.

Assignments of Patents.

The assignment of Patents, and agreements between Patentees and manufacturers, carefully prepared and placed upon the records at the Patent Office. Address MUNN & CO., at the Scientific American Patent Agency, No. 37 Park-row, New York.

It would require many columns to detail all the ways in which the inventor or Patentee may be served at our offices. We cordially invite all who have anything to do with Patent property or inventions to call at our extensive offices, No. 37 Park-row, New York, where any questions regarding the rights of Patentees, will be cheerfully answered. Communications and remittances by mail, and models by express (prepaid), should be addressed to MUNN & CO., No. 37 Park-row, New York.

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.

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 1863, to accompany the claim, on receipt of \$2. Address MUNN & CO., Patent Solicitors, No. 37 Park Row, New York.

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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.

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TO PERCUSSION CAP MAKERS.—THE UNDERSIGNED is desirous of engaging extensively in the manufacture of Percussion Caps in this city at once, and having no practical experience in the business, wishes to engage the services of a competent person to superintend the manufactory. One possessing the most approved machinery, and who will communicate with me in person (or, if that be impracticable, by letter), may make an advantageous arrangement; a sufficient capital will be furnished. JAMES PLUNKET, Nashville, Tenn.

THE GRAEFENBERG THEORY AND PRACTICE OF Medicine.—On the first day of May, 1860, the Graefenberg Company's Salesrooms, Consulting Offices and Medical Institute were removed from No. 34 Park-row to NO. 2 BOND-STREET, NEW YORK, (first door from Broadway), in order to afford greater facilities and a more central location, demanded by the rapid increase of confidence in the Graefenberg Theory and Practice. The Graefenberg Theory and Practice, and the use of their medicines, together with complete symptoms of all diseases incident to this country and climate, the best method for their prevention and cure, will be found in the GRAEFENBERG MANUAL OF HEALTH.

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