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perfectly conversant with the mode of doing business at the United States Patent Office, and with the greater part of theinventions which have been patented. Information concerning the patentability of inventions is freely given, without charge, on sending a model or drawing and description to this office.

#### 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 it to us, with a full description, for advice. The points of nevelty are carefully examined, and a written reply, corresponding with the facts, is promptly sent free of charge. Address MUNN & CO., \$0.37 Park Row, New York.

PRELIMINARY EXAMINATIONS AT THE PATENT OFFICE. The service we render gratuitously upon examining an invention does not extend to a search at the Patent Offlee, 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 Offlee. 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 Offlee, and a report setting forth the prospects of obtianing 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 Offlee, corner of F and Seventh streets, Washington, by experienced and competent persons. Many thousands such examinations have been made through this offlee. 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 consists, for the Patent Office. These should be securely packed, the inventor's namemarked on them and sent, with the Government fees, by express. The express charge should be pre-paid. 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 sendingbank bills by mail, having the letter registered by the postmaster. Address MUNN & CO., No. 37 Park Row, New York. The revised Patent Laws, enacted by Congress on the 2d of March,

The revised Patent Laws, enacted by Congress on the 2d of March, 1861, are now in full force, and prove 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 \$15.4 Other changes in the fees are also made as follows -

On	filing each Caveat\$10	
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On	filing application for design, fourteen years\$30	

The law abolishes discrimination in fees required of foreigners, excepting natives of such countries as discriminate against citizens of the United States-thus allowing Austrian, French, Belgian, English, Russian, Spanish and all other foreigners except the Canadians, to enjoy all the privilezes of our patent system (but in cases of designs) on the above terms. Foreigners cannot secure their in ventions by filing a caveat; to citizens only is this privilege accorded.

During the last seventeen 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 goiffdence reposed in our Agency by the inventors throughout the country, we would state that we have acted as agents for at least TWENTY 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 SCIEN-TIFIC 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.

#### 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, printed in English and German, is furnished gratis on application by mail. Address MUNN & CO., No. 37 Park Row, New York.

# ASSIGNMENTS OF PATENTS.

Assignments of patents, and agreements between aichtees and manufacturers are 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 inventors or patentees 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.

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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 story of the 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 Americancitizens are procured through the Scientific American Patent Agency, No. 37 Park Row, New York. 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 Government Patent Offices, &c., may be had graits upon application at our principal office, No. 37 Park Row, New York, or any of our branch offices.



R. R. H., of Cal.—We have safely received the little block of wood cut from an ancient California tree, but your interesting letter is unavoidably "crowded out" until our next number.

W. W. T. of S. C.—You say you are an engineer and ask us if water can be forced into a boiler through a vacuum by Giffard's injector. If you will consider the nature of a vacuum you will see that your question is meaningless. If you fill the condenser with water there will be no vacuum, consequently you cannot force water through it to the boiler. The atmosphere supplies all the injector necessary toget fluids into a vacuum.

B. D. H., of L. I.—Professor Donney's experiments with boiling water deprived of air and made to burst instantaneously into vapor at about 360° have been mentioned several times by us, as explaining the cause of some boiler explosions. Such experiments are overlooked by most writers on boiler explosions.

A. C. R., of Mass.—The frigate Minnesota carries 32 9-inch Dahlgren guns on the gun-deck and 14 of 9.inch and 2 of 11-inch on the spar-deck. You will find a description of the armament of several frigates on page 265, Vol. IV (new series), of the SCIENTFIC AMERICAN. No reliance can be placed on floating paragraphs giving the armament of foreign war vessels, more especially as naval gunnery is in a transition state. Old guns are being frequently changed for new cannon of greater caliber.

H. M., of N. Y.—You may dissolve platinum in a hot mixture of two parts of concentrated muriatic acid and one part of concentrated nitric acid. You can probably obtain some of this metal from the chemists in Buffalo—the city where you reside.

A. H., of Pa.—So far as we know, there is not a linen factory in operation in the United States. Perhaps the best way for you to do, in obtaining first-class machines for mauufacturing linen, would be to import them from P. Fairbairn's Works, Leeds, England.

C. C. P., of Ohio.—The specimen of ore which you have sent us is iron pyrites of very little value. J. W. and M., of Mass.—We are not acquainted with a

- J. W. and M., of Mass.—We are not acquainted with a more safe method of using petroleum in rosin gas retorts for making gas than with the siphon—the same that is used to feed the rosin-oil to the retort.
- J. W., of Ohio.—You cannot obtain an available motivepowerfrom permanent steel magnets, but you may spin a copper disk on an axis situated between two electro-magnets, by breaking and closing the circuit alternafely. A hood of india-rubber or glass will not protect a piece of steel from the influence of a steel magnet placed adjacent to it. If a magnet is rotated rapidly beneath a copper disk freely suspended, the disk will soon turn and follow the magnet.
- C. C. L., of Fla.—Nitrogen is not a product of perfect combustion. The nitrogen of the air which passes into a furnace during combustion passes off unaltered in character, at a high heat and cannot be justly called a product of combustion. The oxygen of the air combines, chemically, with the carbon of the anthractie, forming carbonic acid and it is a product of combustion. If bituminous coal or wood is the fuel, the hydrogen of the fuel also combines with an equivalent of oxygen and forms water, and thus two different products of combustion—carbonic acid and water—are obtained.

J. W. B., of N. Y.—Your article on steam boiler explosiosions does not suggest anything new on the subject; we have therefore decided not to publish it.

J. D., of Ill.—We have already given you all the information we possess respecting the method of melting large masses of steel in France. A reverberatory furnace is used, and the steel to be melted is covered with pulverized iron slag.

#### Money Received

At the Scientific American Office, on account of Patent Office business, from Wednesday, March 11, to Wednesday, March 18, 1863 :--

H. T., of N. Y., \$42; H. and D., of N. J., \$26; A. C. F., of N. Y., \$25; A. J., of N. Y., \$26; A. B. T., of N. Y., \$26; W. M. J., of Cal., \$213; R. L., of N. Y., \$20; A. A. W., of Mich., \$40; J. K., of Conn., \$40; T. H. C., of N. H., \$20; C. T. B., of N. J., \$16; J. F. J., of N. Y., \$41; E. J. M., of N. Y., \$20; O. H. K., of Saxony, \$41; J. A. T., of Mass., \$41; O. R. H., of Ohio, \$40; W. S. P., of Mich., \$20; A. T. H., of N. Y., \$22; G. W., of N. Y., \$16; B. D., of N. Y., \$46; C. R. of N. J., \$16; H. M., of N. Y., \$20; W. D. S., of N. Y., \$40; C. R. of N. J., \$16; H. M., of N. Y., \$20; W. D. S., of N. Y., \$20; R. H., of V... \$20; S. S. W', of Pa., \$40; E. T. S., of Ohio, \$20; L. B., of N. Y., \$20; H. L. B., of N. Y., \$16; E. G. H., of N. S., \$20; A. W., of N. Y., \$41; T. W., of Mass., 16; G. F. C., of Mass., \$21; J. H., of N. Y., \$16; G. H., of II., \$266; J. M. A., of Mass., \$21; J. H., of N. Y., \$51; G. H., of II., \$266; J. M. A., of Mass., \$12; J. H., of N. Y., \$25; C. U., of V. Hill, \$10; R. H., of III., \$15; C. H. H., of III., \$16; T. C., of R. I., \$35; W. K. L., of Mass., \$16; J. W. P., of Minn., \$16; H. S., of Pa., \$10; D. C. G., of Pa., \$10; J. P., of N. Y., \$16; H. H., of II., \$25; L. D., of Mass., \$45; G. B. F., of III., \$10; A. B., of Conn., \$16; H. U., of Conn., \$40; L. and E., of III., \$10; A. B., of Conn., \$16; H. U., of Conn., \$40; L. and E., of III., \$10; J. H. J. of II., \$12; C. M. L., of Conn., \$25; S. and N., of Iud., \$15; J. K. H., of III., \$15; C. H. H., of C. W., \$26; S. S. of Mass., \$16; J. M. S., of V., \$25; J. B. S. of Conn., \$25; S. T., of Mass., \$15; J. H. H., of II., \$15; C. H. H., of Conn., \$25; S. T., of Mass., \$25; W. D. R., of N. J., \$12; C. M. H., of Conn., \$25; S. T., D. Mass., \$25; W. D. R., of V., \$25; J. E. S. of Conn., \$25; S. T., D. Mass., \$25; W. D. R., of V. N., \$25; J. E. S. of Conn., \$25; N. P. B., of N. N. , S

Persons having remitted money to this office will please to examine the above list to see that their initials appear in it, and if they have not received an acknowledgment by mail, and their initials are not to be found in this list, they will please notify us immediately, and inform us the amount, and how it was sent, whether by mail or express.

Specifications and drawings and models belonging to parties with the following initials have been forwarded to the Patent Office from Wednesday, March 11, to Wednesday, March 18, 1863:---H. T., of N. J.; A. J., of N.Y.; M. V. D., of N. J.; D. M. S., of V.; J. B. S., of Conn.; L. M. Van S., of N. J.; E. E., of Ill.; H. U., of Conn.; J. H. S., of Ill.; S. C. K., of Mass; C. O. L., of V.; H. & D., of N.J.; A. B. T., of N. Y.; O. H. K., of Saxony; T. C., of R.I.; L. R., of N.Y.; A. T. W., of Iowa; D. J. O, of Pa.; N. P. B., of N.Y.; L. & E., of Ill.; A. G., of N. Y.; J. H. of N. Y.; C. H. H., of N.Y.; C. H. H., of N.Y.; S. T. of Mass.; B. D. S., of N.Y.; J. A. B., of Ohio; R. W. S. of Mass.; G. H., of R. I.; G. F. C., of Mass.; G. G. H., of Ill.

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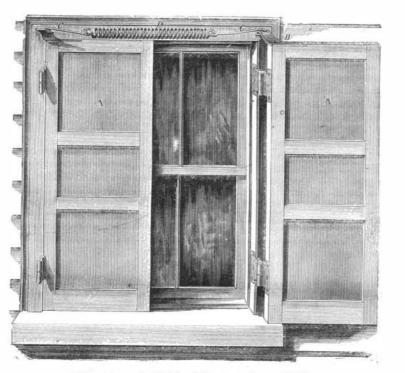
# Improved Patent Blind Fastening.

Nearly all housekeepers must have experienced, at one time or another, the personal annoyance and injury to the windows which results from the violent slamming of the blinds to and fro in high winds. Many a sleepless night has been passed from the impossibility of keeping the shutters in a fixed position-they persisting in banging to and fro with every adverse blast. These discomforts have been overcome by the device herewith illustrated. The shutters, A, have a small iron arm, B, screwed to the top of them, which is provided with a hole in one end; into this hole one end of the small wire link, C, is passed, the other extremity of the same being connected with the spiral spring, D. This comprises the whole of the invention, and it is both simple and mixed acids the most explosive gun cotton was pro-

soluble in ether and alcohol. His method of making it was by immersing cotton in a mixture consisting of one part of nitric acid added to three of sulphuric acid. After being immersed for five minutes the cotton was washed repeatedly in water and dried. The sulphuric acid contained in the mixture was simply to absorb the water formed in the process, which would otherwise weaken the nitric acid and cause it to dissolve the pyroxyline. Chemists soon recognized the analogy of these two compounds, starch and lignine being similar in composition, and cotton fiber being nearly pure lignine. Further research proved that there were three principal varieties of pyroxyline, depending on the strength of the nitrosulphuric acid used. By employing the strongest

passes without the receipt of some of the same material from quarters where, before the war, it was hardly ever heard of, much less grown. But the most extraordinary revulsion in the cotton trade is the large exportation which is now taking place to the Federal States. During the last few days several cargoes of cotton have been sent from Liverpool to New York at full prices, the cost of which must be largely increased by the cost of shipment. This reversal of the ordinary laws of trade will doubtless continue as long as the war lasts."

CORNELIAN containing a globule of water was ecently found on the coast of Tuscany. These pebbles exhibit a crystalline cavity, which, when broken, is about one-third filled with water.



# HICKS'S PATENT BLIND FASTENING.

quired. There are many advantages which this fastening possesses over others in common use, and the principal ones may be here enumerated :--In brick or stone houses this fastening is entirely out of sight, being under the window heads, and protected by them from being clogged with ice or snow. The top of the blinds are drawn together by it, and thus prevented from sagging or bearing too heavily on the upper hinges. It also dispenses with all staples or hooks in the house or window sill ; such parts are generally the first to get out of order, and they disfigure the appearance of the building. These blind fastenings are made of the best materials and are very durable. In still sunny weather the shutters can be partially closed, so as to exclude the rays and heat of old Sol, and yet admit the light and air-a very desirable feature not possessed by other fasteners.

The patent for this invention was procured on May 2, 1861, by W. Cleveland Hicks, of 105 Hicks street, Brooklyn: further information respecting them can be had by addressing him, at that place, or C. D. Kellogg, Boston, Mass.

# Collodion and Gun Cotton.

Collodion is a viscid semi-transparent fluid formed by dissolving pyroxyline (gun cotton) in a mixture of ether and alcohol. Pyroxyline is prepared byimmersing cotton, flax, unsized paper, or any substance composed of lignine in a mixture of nitric and sulphuric acid. In 1833 M. Braconnot discovered that, when starch was submitted to the action of nitricacid it became converted into a peculiar substance, which dissolved in the acid, and was precipitated upon the addition of water. This substance, which was named xyloidine, was found to explode when dry, at a temperature of 356°. The subsequent researches of M. Pelouze proved this substance to be starch, in which one equivalent of hydrogen was replaced by one of peroxide of nitrogen. In 1846 M. Schönbein discov-

effective; no other fixtures or attachments are re- | duced ; it contained the largest amount of peroxide of nitrogen, and was only soluble in acetic ether. This was the quality most adapted for blasting operations. The second kind, made with a slightly weaker acid than the last, contained less peroxide of nitrogen, was not so explosive, dissolved readily in ether and alcohol, and is now used for making collodion. The third form, made from still weaker acids, contained still less peroxide of nitrogen and was only combustible.

### The Manufacture of Steel Petticoats.

The report of the French jury at the London Exhibition gives the following particulars on the importance of the trade to which the fashion of crino-ering the springs is worth, under certain circumstances, 30 francs for every hundred kilogrammes of steel, making a total of 1.260,000 francs for the 4,200,000 kilogrammes of that metal used for this purpose. The value of the raw material used is about 4,830,000 francs yearly, and the cost of the labor is 5,670,000 francs, without including the making of the petticoats. The steel springs for skirts made yearly in France weigh 2,400,000 kilogrammes, in England 1,200,000 kilogrammes, and in other countries 600,000 kilogrammes-in all, 4,200,000 kilogrammes. These springs are covered with cotton at 2 francs 50 centimes per kilogramme on an average, which makes the total proceeds 10,500,000 francs. Taking the steel in bars to be worth on the average 85 francs per 100 kilogrammes, its total value is 570,000 francs."

# Cotton from China.

The European Times says :--- "Strange events have been produced by the civil war in America. We are now receiving cotton, in driblets, it is true, from the most likely and unlikely places in the world. A ship has just arrived in the Mersey from China with a full ered gun cotton or pyroxyline, an explosive material, cargo of this invaluable staple, and hardly a week



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industrial pursuits now published; and the proprietors are determined to keep up the reputation they have earned during the eighteen vears they have been connected with its publication To the Inventor!

The SCIENTIFIC AMERICAN is indispensable to every inventor, as it not only contains illustrated descriptions of nearly all the best inventions as they come, but each number contains an Official List of the Claims of all the Patents issued from the United States Patent e during the week previous ; thus giving a correct his ory of the progress of inventions in this country. We are also receiving, every week, the best scientific journals of Great Britain, France and Germany; thus placing in our possession all that is transpiring in me-chanical science and art in those old countries. We shall continue to transfer to our columns copious extracts from those journals of whatever we may deem of interest to our readers.

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No person engaged in any of the mechanical pursuits should think of doing without the SCIENTIFIC AMERICAN. It costs but six cents per week ; every number contains from six to ten engravings of new machines and inventions which cannot be found in any other publication. It is an established rule of the publishers to insert n one but engravings, and those of the first class in the art, drawn riai ngraved by experienced artists, under their pressly for this paper.

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