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United States Patent Office, and with the greater part of the inventions which have been patented. Information concerning the patenta bility 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 patent able, 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 novelty are carefully examined, and a written reply, corresponding with the facts, is promptly sent free of charge. Address MUNN & CO. No. 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 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 prelimary examinations are made through our Branch Office, corner of F

and Seventh streets, Washington, by experienced and competent persons. Many thousands such examinations have been made through this office. 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 name marked 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 sending bank-bills by mail, having the letter registered by the post-master. Address MUNN & CO., No. 37 Park Row, New York.

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 par-ties 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\$1	.0
On filing each application for a Patent, except for a design\$1	5
On issuing each original Patent\$2	ŏ
On issuing each original attentions	
On appeal to Commissioner of Patents\$2	Ų
On application for Re-issue\$3	U
On application for Extension of Patent)()
On granting the Extension	W.
On filing a Disclaimer	LO .
On filing application for Design, three and a half years\$1	.0
On filing application for Design, seven years	5
On filing application for design, fourteen years\$3	O.

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 privileges 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 confidence 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 flat ter ing testimonials for the services we have rendered them, and the wealth which has inured to the inventors whose patents were se cured 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 •n 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 applica tion by mail. Address MUNN & CO., No. 37 Park Row, New

ASSIGNMENTS OF PATENTS.

Assignments of patents, and agreen nts between patentees and manufacturers are carefully prepared and splaced 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 an-

Communications and remittances by mail, and models by express (prepaid), should be addressed to MUNN & CO., No. 37 Park Row, New York.

REJECTED APPLICATIONS.

We are prepared to undertake the investigation and prosecution of ejected 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 p ecuted are invited to correspond with us on the subject, giving a brief story of the case, inclosing the official letters, &c.

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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 thro 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 pur sued in obtaining patents in foreign countries through our Agency, the requirements of different Government Patent Offices, &c. be had gratis upon application at our principal office, No. 37 Park Row, New York, or any of our branch offi es.



J. H. P., of N. Y .- The hair hygrometer consists of a human or other long hair prepared by immersion in a solution made with soda and slacked lime. One extremity of it is fastened to a hook and the other end is attached to a small weight to keep it stretched. The hair passes over a small brass pulley which is a pointer that moves over the face of a dial. When the surrounding atmosphere is moist, the hair is elongated by absorbing an additional quantity of moisture; the counterpoise then descends and turns the pulley which moves the index hand. A solution of common salt and lime is a good hygrometric preparation, and a piece of cotton cord will answer the same purpose as a hair. the utility of barometers, we have seen several that were of no more use than a piece of wood. Their utility depends upon the accuracy of their construction.

B. and B., of Wis.-Galvanized iron is not a non-conductor of heat. The oxides of zinc and copper are poisonous. Tinned iron pans are better than zinced iron pans for concentrating sorghum Vacuum copper pans heated with steam are employed in all our large sugar refineries.

L. W. A., of N. Y.—In heating iron wire from the freezing to the boiling point of water—212 Fah—it expands 1-812th of its length. It expands and contracts uniformly. Zinc is the most expansible of all metals; a rod of it expands 1-323rd of its length in being heated 180 degrees. Two distinct inventions cannot be

J. S. Q., of Mass.—Smiles's "Lives of the Engineers" is an English publication, not republished here so far as we know

A. R., of N. Y.—G. P. Putnam, No. 532 Broadway, this city, is the publisher of Ruttan's work on the "Ventilation Buildings."

W. H., of Ill.-Among the very first telegraphs constructed was Alexander's, which had a separate wire, as you propose for each letter of the alphabet. It would be far too expensive to onstruct and operate lines with such a number of wir

L. W., of Mass.—We cannot give you much light upon the subject of frictional gearing for the reason that very little known concerning their practical operation. There is no earthly reason to our thinking why they should not work unless it be that they absorb more power than toothed wheels; this would hardly n possible. As you can readily understand our time is too much occupied to devote any considerable portion of it to resea bearing exclusively upon one point. The only way in which information can be obtained in regard to the efficacy of these agents is ation can be obtained in regard to the chicacy of these agents is to experiment carefully. This we hope to see done, and we wil gladly publish any information we receive on the subject.

., of Pa.—If you were to give your invention to the Government, it would be taken no notice of, unless it were brought to the notice of the War Department by some person of influence, and then it would be unwise to trust to the authorities for remuneration. Your only chance of making anything by your invention is to get some person of capital and influence interested with you by giving him a good share, take a patent and have a gun made for testing before the proper officers, and then if satisfactory be ready to execute such orders as you might obtain.

J. S., of Ohio.—A lense is not suitable to place in the wall of your dark cellar for obtaining light. Use good com

T. F., of Ind .- There is no first-class work on millwrighting extant. Since the publication of Oliver Evans's work, H. C. Baird, of Philadelphia, has published "Hughes's American Miller," which may answer your purpose.

Lieut. P., of Va.-Your apparatus for disabling guns is allogether too cumbrous and costly. A patched round shot would answer just as well as it, and they are frequently used for the purpurpose. Something that can be used quickly and carried easily is

Money Received

At the Scientific American Office, on account of Patent Office business, from Wednesday, January 21, to Wednesday January 28, 1863 :-

P. B., of N. Y., \$26; R. E., of N. Y., \$26; W. M., of N. Y., \$26; J. F. T., of N. Y., \$26; W. L. F., of N. J., \$40; J. B., of N. Y., \$26; J. F. T., of N. Y., \$26; W. L. F., of N. J., \$40; J. B., of N. Y., \$26; D. J. S., of N. Y., \$20; D. L. D. G., of N. J., \$45; E. Van II., of Mass., \$20; J. G., of N. Y., \$20; H. B., of N. J., \$20; A. B., of N. J., \$30; J. G. H., of N. Y., 20; L. B., of N. Y., \$15; J. B., of N. Y., \$41; F. T., of N. Y., \$25; E. B., of France, \$20; M. B. D., of Pa., \$41; E. M., of N. Y., \$20; G. A. W., of V., 15; J. J., of Mass, \$20; G. S., on N. Y., \$15; L. K., of Mass., \$20, A. C., of Va., \$45; H. S. S., of N. Y., \$20; C. W. H., of Mass, \$66; S. S. W., of Pa., \$67; L. B., of N. Y., \$22; G. W. A., of Mass, \$10; W. B. A., of O., \$15; T. J. H., of O., \$15; L. B., of Wis., \$15; G. H. S., of Iowa, \$20; J. & D. S., of Wis., \$15; L. B., of Wis., \$22; L. A. A. of Conp. \$20; J. & D. S., of Wis., \$15; L. B., of N. Y. \$22; L. A. A. of Conp. \$20; J. & D. S., of Wis., \$15; L. B., of N. Y. \$22; L. A. A. of Conp. \$20; J. & D. S., of Gonp. \$20; J. \$15; J. H., of N. Y., \$22; J. A. A., of Conn., \$10; J. E., of Conn., \$25; M. D. H., of N. Y., \$12; J. R., Jr., of Mass., \$10; J. P. E., of Pa., \$30; M. D. H., of N. Y., \$12; J. R., Jr., of Mass., \$10; J. P. E., of Pa., \$30; L. H. O., of N. Y., \$15; F. D., of R. I., \$25; J. C. C., of Pa., \$20; J. H., of Ill., \$25; W. B., of Conn., \$15; G. F. C., of Mass., \$15; J. C. P., of N. Y., \$25; H. W., of Cal., \$25; J. A. W., of Wis., \$15; T. & N., of N. Y., \$25; J. F. L., of N. Y., \$25; G. C. B., of Ill., \$10; A. M. H., of Cal., \$30; F. W. G., of N. Y., \$150; C. H. H., of C. W., \$15; A. L., of N. J., \$15; G. S. A., of N. Y., \$34; E. J. W., of N. Y., \$15; C. R. S., of N. H., \$25; W. J. R., of N. S., \$15; C. R. S., of N. H., \$15; G. M., Jr., of Ill., \$25; M. A. D., of Mich., \$25; J. R., of Minn., \$15; A. P., of N. Y., \$392; S. & M., of Ind., \$16.

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, January 21, to Wednesday, January 28,

P. B., of N. Y.; R. E., of N. Y.; W. M., of N. Y.; J. F. T., of N. Y.; W. L. F. of N. J.; J. B., of N. Y.; M. B. D., of Pa.; S. S. W., of Pa.; G. M. Jr. of Ill.; T. II. C., of N. H.; I. L., of N. Y.; J. M. Y., of N. Y.; J. C. P., of N. Y.; J. F. L., of N. Y.; T. and N., of N. Y.; H. W., of Cal.; E. S., of N. Y.; J. H., of N. Y.; W. J. C., of England; J. H., of Ill.; J. A. A., of Conn.; J. E., of Conn.; S. W. B., of N. Y.; H. and B., of Conn.; B. and H., of N. Y.; W. H. H., of Mich.; M. D. H., of

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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 pat-entee and date of patent, when known, and inclosing \$1 asfee for copying. We can also furnish a sketch of any patented machine issued e 1853, to accompany the claim, on receipt of \$2. Address MUNN & CO., Patent Solicitors, No. 37 Park Row, New York.

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 at this office. Address MUNN & CO. No. 37 Park-row, New York

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The arrangements for this purpose, the conditions on which the several Manufacturers will be admitted to competition, and the award of the Premiums, will be carried out by a Committee consisting of the following gentlemen:

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class, which will include Self-Propelling Engines, without reference to weight.

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Its Western Corresponding Editor, Chas. D. Bragdon, Esq., whose "Western Editorial Notes," have attracted much attention and been widely copied during the past year, will hereafter devote still more time and thought for the benefit of the Rural New Forker and its readers.

Style, Form, Terms, &c.:—Volume XIV, for 1863, will maintain the novable reputation the Rural New Forker has acquired for both Co

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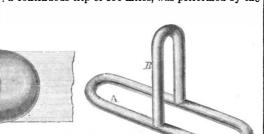
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Improved Patent Car Coupling.

So many accidents have occurred and so many valuable lives have been lost while trains of cars were being coupled together, that it has become a matter of necessity to provide some method by which the danger can be averted. Our illustration represents such a device, and we think it is well adapted to the end sought for, viz.: safety. The coupling, A, is provided with a handle or staple, B, firmly riveted to it. The brakeman, or other person making up the train, grasps this projecting handle, and inserts the coupling between the bunters as the cars come together. By using this coupling the necessity for going between the cars is obviated, as the connection

in 1861, as of 191 feet 5 inches in length, 19 feet breadth, and 8 feet 3 inches depth, with engines of 110 horse-power. This steamboat is said to have run at the rate of 21 miles per hour, but whether she continued that speed for one whole hour, we cannot say. Perhaps our fast Gravesend boats have either exceeded or approached this speed. As we have no long rivers like those in the United States, we shall never have a class of powerful boats such as the Americans have, and as size gives speed, we cannot compete with them in this respect .-- Mitchell's Steam Shipping Gazette.

The fastest running of an American steamboat, for a continuous trip of 150 miles, was performed by the



BARNES'S PATENT CAR COUPLING.

can be made, if desirable, from the platform of the | Daniel Drew on the 13th of October, 1860, on the car itself.

The patent for this invention was procured May 13, 1862, by Henry A. Barnes, of Milwaukee, Wis., and further information can be had by addressing him at that place.

Canadian Oil Springs.

A recent writer in the Toronto Globe says :-

"The question most eagerly asked of persons just come from Enniskillen, is generally the all-important one of whether the wells are holding out or not. It is a fact that many of the flowing wells have ceased to flow; and others, while still continuing to flow, do no longer yield the immense quantities that they did at first. But then, there remains yet untouched a large area of what there is every reason to believe to be good productive oil territory. The work of drilling and sinking wells is still vigorously carried on, and a rise in the price of crude oil to \$1 or \$2 per barrel would set the drills agoing at a rate hitherto unheard of. The owners of wells which have ceased to flow do not think it worth while to drill down any further until a more remunerative demand arises for crude oil. When this takes place, every effort will be made, both by drilling further and pumping, to bring the oil up, if there is any to bring. The question whether former flowing wells will yield oil by pumping, has yet to be determined.

"Oil Springs is certainly the busiest place of its size to be seen; in fact, a perfect hive of industry, full of life and motion. The population of the whole diggings is estimated at 2,000 or more. There are still more people than can find houseroom to live in, and rents are of tiptop hight. Landlords of houses appear to have taken "Excelsior" for their motto. Think of six dollars a month for the up-stairs, merely, of a frame house about 18 by 24, and three or four competitors for it at that! People continue to come in faster than houses can be built for them. hotels and boarding-houses are crowded, and the unfortunate inmates are fairly lost for want of a place to go to in the evening, and even for seats to sit upon after supper time."

Speed of Steamships.

A correspondent wishes to know "The highest rate a steam vessel has accomplished?" The question is a broad one, and does not distinguish between river and sea-going steamers. It has been claimed for two or three mail steamers that, under a full head of steam and canvas, with a strong wind, they have run 18 knots. Under steam alone, 17 knots has been accomplished by ocean steamers. This is equal to 19 and 4.7th statute miles. But this has been surpassed by river boats. It has been said that 31 miles per hour have been got out of an American steamer, but we do not believe it. We have not heard on this side of the Atlantic of any boat exceeding in speed the Rothesay Castle, registered at Glasgow the heel of the foot and the spring, e, prevents the

Hudson river, between New York and Albany. The average speed was 25 miles per hour, and an account of the trip will be found on page 277, Vol. III. (new series) of the Scientific American. - Eds.

FIELD'S IMPROVED ICE-CREEPER.

Every person whose occupation renders it necessary for him to be out in frosty weather must have felt the inconvenience, to say nothing of the pain, which ensues from a fall upon the icy ground. These accidents are continually occurring, and are



caused by the imperfect foot-hold of the pedestrian. It is not a little mortifying to a young gentleman to be suddenly interrupted in some good thing which he was saying to his "affianced" by feeling his person come into sudden and violent contact with the pavement. To prevent all casualties of this kind the icecreeper here illustrated has been invented. It consists of the metal plate, A, provided with a second plate, B, having a series of corrugated teeth. a. set at right angles with its base. The ends of the plate, A, flare outwardly in order to embrace the foot properly, and have narrow slots, b, in each through which the leather straps, C, are thrust and secured. The ends of the straps are provided with either buckles or strings to fasten the creeper to the foot. The small spike, c, seen in the detached creeper, enters

creeper from slipping forward or backward from its

A patent is about to issue on this invention, and further information may be had by addressing the inventor, Wm. Field, at Providence, R. I.

FEATURES OF THE FEET.—The French foot is meager, narrow and bony. The Spanish foot is small and elegantly curved, thanks to its Moorish blood, corresponding with the Castilian pride-"high in the instep." The Arab foot is proverbial for its high arch; "a stream can run under the hollow of his foot," is a description of its form. The foot of the Irish is flat and square. The English foot is short and fleshy. The American foot is apt to be disproportionally small.



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predecessors.
The SCIENTIFIC AMERICAN is devoted to the interests of Popular Science, the Mechanic Arts, Manufactures, Inventions, Agricul-ture, Commerce, and the Industrial pursuits generally, and is valuable and instructive not only in the Workshop and Manufactory, but also

in the Household, the Library and the Reading Room.

The SCIENTIFIC AMERICAN has the reputation, at home and abroad, of being the best weekly journal devoted to mechanical and industrial pursuits now published; and the proprietors are determined to keep up the reputation they have earned during the eighteen years they have been connected with its publication.

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The SCIENTIFIC AMERICAN is indispensable to every inventor as it not only contains illustrated descriptions of nearly all the best inrentions as they come, but each number contains an Official List of the Claims of all the Patents issued from the United States Patent Office during the week previous; thus giving a correct history 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 artin 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.

To the Mechanic and Manufacturer!

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 publica-tion. It is an established rule of the publishers to insert none but original engravings, and those of the first class in the art, drawn and engraved by experienced artists, under their own supervision, expressly for this paper.

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The SCIENTIFIC AMERICAN will be found a most useful journal to them. All the new discoveries in the science of chemistry are given in its columns, and the interests of the architect and carpenter are not overlooked; all the new inventions and discoveries appertaining to those pursuits being published from week to week. Useful and practical information pertaining to the interests of millwrights and millowners will be found published in the SCIENTIFIC AMERICAN, which information they cannot possibly obtain from any other source. Subjects in which planters and farmers are interested will be found discussed in the SCIENTIFIC AMERICAN; most of the improvements in agricultural implements being filustrated in its columns.

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