TO OUR READERS.

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

INVARIABLE RULE.—It is an established rule of this office to stop sending the paper when he 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.

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WILL V. J. M., OF OHIO, WHOSE INQUIRY CONcerning scale on steam boilers was answered in the SCIENTIFIC AMERICAN of March 8, 1862, please address JAMES F. LEVIN, No. 23 Central wharf, Boston, Mass. 1*

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SCIENTIFIC AMERICAN Office. No. 37 Park-row, New York.

IMPORTANT TO INVENTORS.

MESSRS. MUNN & CO., PROPRIETORS OF THE SCIENTIFIC AMERICAN, continue to solicit patents in the United States and all foreign countries, on the most reasonable terms. They also attend to various other departments of business pertaining to patents, such as Extensions, Appeal before the United States Court Interferences, Opinions relative to Infringements, &c. The long experience Messrs. MUNN & Co. have had in preparing Specifications and Drawings, extending over a period of sixteen years, has rendered them perfectly conversant with the mode of doing business at the United States Patent Office, and with the greater part of the invention which have been patented. Information concerning the patentability of inventions is freely given, without charge, or sending a model or drawing and description to this office.

Consultation may be had with the firm between NINE and FOUR o'clock, daily, at their PRINCIPAL OFFICE, No. 37 PARK ROW, NEW YORK. We have also established a BRANCH OFFICE in the CITY OF WASHINGTON, on the CORNER OF F AND SEVENTH STREETS, opposite th United States Patent Office. This office is under the general superintendence of one of the firm, and is in daily communication with th Principal Office in New York, and personal attention will be given at the Patent Office to all such cases as may require it. Inventors and others who may visit Washington, having business at the Patent Office, are cordially invited to call at their office.

They are very extensively engaged in the preparation and securing of Patents in the various European countries. For the transaction o this business they have Offices at Nos. 66 Chancery Lane, London 29 Boulevard, St. Martin, Paris, and 26 Rue des Eperonniers, Brussels. We think we may safely say that three-fourths of all the European Patents secured to American citizens are procured through our Agency.

A pamphlet of information concerning the proper course to be pursued in obtaining Patents through their Agency, the requirements of the Patent Office, &c., may be had gratis upon application at the Principal Office, or either of the Branches. They also furnish a Circular of information about Foreign Patents.

The annexed letters from former Commissioners 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 THE BUSINESS OF THE OFFICE came through your hands. I have no doubt that the public confidence thus indicated has been fully deserved, as I have always observed, in all your intercourse with the Office, a marked degree of promptness, skill and fidelity to the interests of your employers. 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 grateful testimonial:—

MESSRS. MUNN & CO.:—It affords me much pleasure to bear testimony to the able and efficient manner in which you discharged your duties as 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.—*Gentlemen:* 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, WM. D. BISHOP.

Communications and remittances should be addressed to
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TO OIL REFINERS.—PERSONS ENGAGED IN OIL refining can obtain a recipe, on moderate terms, giving full information how to refine and deodorize rock oil, by applying to THOMAS PARRY, Pittsburgh, Pa. 6 10*

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Die Unterzeichneten haben eine Anleitung, die Erfindern das Verhalten angibt, um sich ihre Patente zu sichern, herausgegeben, und verabfolgen solche gratis an dieselben.

Erfinder, welche nicht mit der englischen Sprache bekannt sind, können ihre Mittheilungen in der deutschen Sprache machen. Skizzen von Erfindungen mit kurzen, deutlich geschriebenen Beschreibungen beliebe man zu addressiren an
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Daselbst ist zu haben:

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nebst den Regeln und der Geschäftsordnung der Patent-Office und Anleitungen für den Erfinder, um sich Patente zu sichern, in den Ver. St. sowohl als in Europa. Ferner Auszüge aus den Patent-Gesetzen fremder Länder und darauf bezügliche Rathschläge; ebenfalls nützliche Winke für Erfinder und solche, welche patentiren wollen.
Preis 20 Cts., per Post 25 Cts.

The Rebel Steamer "Merrimac."

On page 304 of our last volume we published an illustration af the iron-plated steamer *Merrimac* which made such sad havoc with several of our war vessels on Saturday night. We reproduce the engraving as being the most interesting subject of any thing with which we could fill our pages at the present time. The engraving was made from a sketch drawn by one of the mechanics who worked on the vessel when it was being iron plated.

It will be remembered that the *Merrimac* was one of our first class war vessels which was partially burned and then sunk at the time that the Gosport Navy Yard was destroyed to prevent it from falling into the hands of the rebels. She was a fine screw frigate, of 3,200 tuns burthen, carrying 40 large guns. The rebels, after considerable effort, succeeded in raising her, and have plated her with railroad rails inclined at a sharp angle. This armor in the recent severe trial seems to have afforded very efficient protection against the heaviest artillery at very short range. The mechanic who made the sketch described her armament as consisting of 11-inch guns, and two 100-pounder Armstrong guns. In regard to the Armstrongs he was probably mistaken, as it is understood that all those weapons that have been made were made for the British government. He said that she had a sharp steel projection at the bow for the purpose of piercing the sides of vessels; and in this he was correct, as it was with this projection that the *Cumberland* was pierced and sunk.

In connection with this illustration we also give a correct picture of the *Monitor*, sketched by our own artist previous to her departure to Fortress Monroe. A thrilling account of the contest of the *Monitos* with the *Merrimac* may be found on another page.

Lubricators for Bullets.

Formerly, tallow combined with wax was generally used as the lubricating composition for cartridges. It answered very well when the old brown-bess musket was in general use, but since the rifle has become the general weapon of the soldier, this lubricating compound has proved to be unfit for cartridges. When tallow is kept in contact with a lead bullet it exerts a carroding action on the metal and a crust forms on the bullet thus increasing its size and rendering it incapable of being rammed down, with care and rapidity in a rifle. It has been found that paraffine does not exert any chemical action upon the lead, and hence it is now very generally employed as the best cartridge lubricant. It is one of the products of petroleum and coal oils.

MR. COBDEN has promised to bring the decimal coinage question before Parliament during the ensuing session.

Tempering Bronze.

Bronze is a term usually applied to alloys of copper and tin, in contradistinction to brass, which is a compound of copper and zinc. Bronze has been longer known than iron. It was employed by the remote ancients for arms, swords, shields and almost every kind ot cutting instrument; and also for works of art. A bronze compound of 93 parts copper, by weight, and 7 of tin, is harder than copper, and yet it is more fusible. This alloy can be tempered and rendered very hard by the very opposite process of hardening steel. The bronze is first highly heated, then cooled very slowly, when it becomes hard and brittle. The same treatment would render steel soft. In order to soften or anneal bronze it is heated to redness, then plunged into cold water, when it becomes so soft that it can be stamped in a die press.

Bell metal, gun metal and statue metal are simply bronze—alloys of copper and tin. These two metals combine in almost every proportion. Bell metal contains 78 parts copper and 22 tin, and some makers add 1 per cent of antimony. Gun metal is composed of 8 parts copper and 1 of tin.

Speculum metal is a very hard bronze, which receives a very brilliant polish, and is employed for reflectors in telescopes. It is composed of 6 parts copper, 3 of tin and 1 of arsenic.

Flax Culture in Illinois.

A correspondent in an Chicago paper gives his experience with flax last year—the first experience which he had with raising it in Illinois—although he had grown it for several years previously in Ohio. He says:—In April I plowed my ground and sowed my flax in May, half a bushel to the acre, as follows: one and one-half bushel to three acres, on second sod, and the balance one-half bushel on one acre of old ground, which was very mellow, having been planted in potatoes the previous year. From the one acre of old ground I harvested 16½ bushels of good seed, and from the three acres of sod 30 bushels, making 46½ bushels as my whole crop One-half bushel of seed is sufficient for one acre of ground.

I think flax growing profitable for seed alone, and if we had machinery for working up the fiber there would be a great additional profit. The following is my account with the crop:—

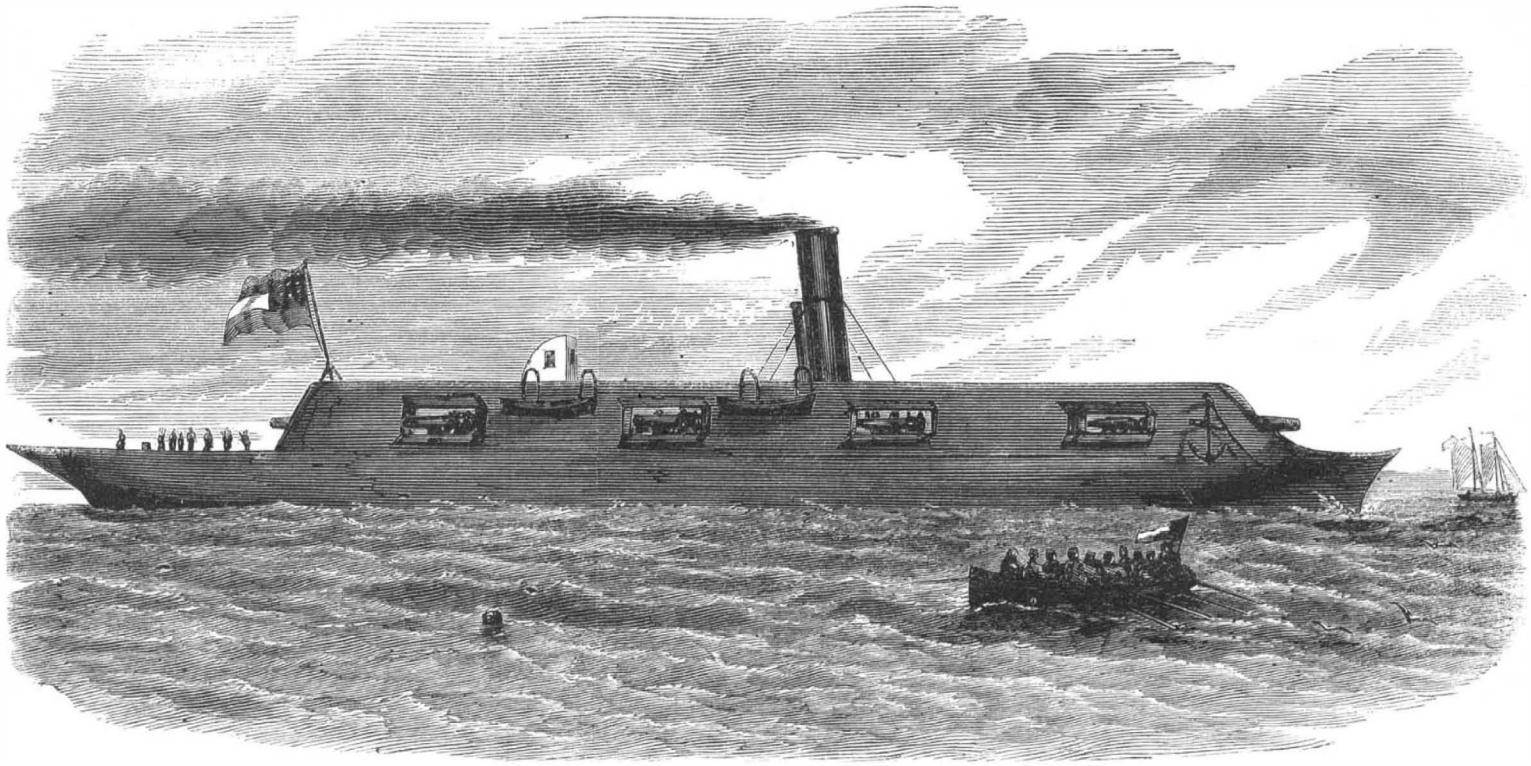
EXPENSE OF CULTURE.

Plowing four acres at 75 cents per acre	$3 00
Harrowing and sowing	3 00
Cutting	2 00
Trashing and cleaning	5 00
Call seed $1 per bushel	2 00
Total	$15 00
Value of 46½ bushels at $1	46 50
Profit on four acres of ground	$31 50

The ground upon which this was sown was a black loam, plowed as before stated, and harrowed once before and once after sowing, with a fine-tooth harrow. The crop was cut with a common grain cradle, though a reaper will work well in it. Upon the whole I conclude that flax can be grown upon the prairies of Illinois with success.

I will state that the whole crop has been loaned in this neighborhood to be sown next spring

LARGE deposits of superior porcelain clay have been discovered near Grand Rapids on the Wisconsin river.



THE IRON-PLATED REBEL STEAMER "MERRIMAC."

FROM THE STEAM PRESS OF JOHN A. GRAY.