

Miscellaneous.

Foreign Correspondence.

LONDON, April 25th, 1851.

"The work goes bravely on" in the departments of the Great Exhibition Building. On the day I penned my last letter, the veteran Duke of Wellington, "the Iron Captain," visited the Exhibition, and after walking through it for some time, he at last arrived at the French department, where he paused to observe one of the exhibitors removing from an oak case various costly articles of gold and silver, and just at that very moment he uncovered a pair of equestrian statuettes of the Duke himself, and his once redoubtable opponent on the field of Waterloo, Napoleon Bonaparte. The old General smiled at the incident, while the sharp-eyed Frenchman looked at the statuettes and then at the Duke with an enquiring look, when the veteran nodded his assent to the resemblance. In a few moments the General was surprised and surrounded by Frenchmen. They politely raised their caps, and with true military salute he passed on to the next department.

The opening of the Exhibition is to take place on the first, as mentioned in my last. It will be a grand affair. The throne is now erecting for the Island Queen near to the centre of the large transept. A platform is to be erected, and the Archbishop of Canterbury, all the officers of State, and foreign ambassadors will attend in full dress. There will be splendid music, and after a number of ceremonies, the Queen, Prince Albert, the officers of State, and all the Commissioners will form a procession through the "wide expanse" of the building, after which the exhibition will be declared open for the public.

Owing to a profound degree of dissatisfaction on the part of the exhibitors of articles of sculpture and statuary with the proposed arrangement of Sir R. Westmacott, who had been charged with the superintendance of the sculpture room, the greater proportion have been withdrawn by the exhibitors, and places have been obtained for them in the transept and nave of the building. It appears that the plan proposed by Sir Richard Westmacott was to place the whole of the articles of sculpture, without regard to the nature of the subject, upon counters of a uniform height, which was absurd on the face of it. The artists, on the other hand wished to place their productions on pedestals adapted to the size and character of the subjects, which was only just and reasonable. This proposal was not acceded to; and many, if not most, of the articles were accordingly removed. Among the groups and figures which have emerged from what the artists have just termed "the condemned cell," to the liberty of the transept and nave, are—MacDowall's "Satan tempting Eve," and "Michael and Satan," "Dr. Jenner," "Jacob and Rachel," and various others. There is now a somewhat numerous collection of articles of sculpture in the transept. A group in marble, by Engel, executed for Prince Albert, attracts considerable notice. The group represents an Amazon rescuing her sister-in-arms from an Argonaut who had carried her captive.

As the art of ship-building is one for which our countrymen are distinguished, and as alleged improvements always attract their attention, especially in New York, where so much is at stake in ships, I see it mentioned in some of the Liverpool papers, that an improvement has been made there by a Mr. McKimm, which is thus described:—

"The object of the projector appears to have been to form an uninterrupted, unbroken, and continual line of binding, to extend from one end of the vessel to the other, and to connect every frame of timber together, in its passage along the side of the ship, in such a way as to render the framework inextensible and incompressible, and to give the greatest amount of stability to the frame-work, independent of any support from the plank-work, and to complete the object without wounding the frame with bolts, &c. With this object in view he has succeeded in accomplishing the desired ef-

fect by the introduction of two arched lines, constructed of iron plate-work, the one arch extending upwards, the other extending downwards as far as the bilge of the vessel; the arches being reversed, one chord line of iron plate-work answers both arched lines, and materially assists in the longitudinal tie, which extends in a vertical longitudinal position from stem to stern-post, forming within themselves the contour of the beam of a steam-engine within the frame of the vessel; one beam being so formed in each side of the vessel and continued round from stem to stern-post, where they terminate, and are bolted together through the stem and stern-post; the very formation of which tends to counteract the different forces exerted on the body, and opposing every tendency to hogging or sagging, which is more or less common to all vessels, particularly colonial built vessels. The scheme appears well worthy of notice amongst those who are interested in the construction, safety, and durability of such vessels."

EXCELSIOR.

FORKLAND, Greene Co., Ala., April 21.

MESSRS. EDITORS—I intrusted some business in the hands of the "Inventors' National Institute," at Baltimore, Md., in 1849 and 1850. I inclosed to Mr. Jas. Coppuck, Corresponding Secretary, Inventors' National Institute, Baltimore, Md., a description and rough sketched drawings of an improvement on Water Wheels. I also inclosed \$15 or \$20 as fees, &c., for examining into the novelty of my alleged improvements, the receipt of which was acknowledged; and they informed me that it was their decided opinion that I was entitled to a patent, but it would require some time to examine fully into the matter, to give me all the information I requested, which they would do in a few weeks. More than a year has now passed, and I have heard nothing further from them; I have written several times since, and have not received any answer from them. I am therefore at a loss to know whether the fault is in them or in the mail.

I have come to the conclusion that it is likely the Institute has fallen through, and it is nobody's business to answer my communications directed to the Institute. I will therefore take the liberty of inquiring of you, if you can inform me whether the Inventors' National Institute, at Baltimore, still continues to transact business as Patent Agents. Respectfully yours,
J. H****.

[The above letter we publish for the purpose of making a few remarks in regard to the matter. The letter tells its own story, and there is no doubt our correspondent has been genteelly swindled under the garb of a high-sounding title. We do not know that the Corresponding Secretary is at all chargeable for the evident misappropriation of the funds; the presumption is that he was a salaried officer, but we advise our correspondent to address him a letter of inquiry at Mount Holly, N. J., where, we feel sure, he formerly resided, and we presume Mr. Coppuck will afford him some information to whom he can apply for satisfaction.—[Ed.]

Doings at Washington.

MR. EW BANK, &c.—The correspondent of the Tribune says:—

As to Mr. Ewbank, the charges against him are finally set at rest. They have been examined carefully by his chief, Mr. Secretary Stuart, and Mr. Attorney-General Crittenden, who pronounce them in detail as either unfounded or frivolous.

The absolute facts with reference to the appointment of Mr. Ewbank have never been known. They are simply these as I have them, not from Mr. Ewbank, but from the highest possible authority. Mr. Secretary Ewing saw his work upon Hydraulics, and considering it a scientific performance, sent to the author to inquire if he would accept the place of Commissioner of Patents. Upon understanding that he would, the matter came up in Cabinet, and the appointment was made. I do not think that at the time it was known that he was born in England. When opposition was made on that account, he found defenders, some of whom it was erroneously supposed aided in procuring his appointment.

I see it stated in some papers that Mr. Ewbank had been ordered to pay the amount he expended in publishing his official report to the Secretary of the Interior with reference to the extension of certain patents. This is not the case. Mr. Ewbank's accounts for the quarter are now before the accounting officers, and have not yet been acted upon. There is, therefore, as yet, no decision with reference to the validity of the items complained of.

[The official report mentioned here, we have made some enquiries about, and find it to be very different from the idea conveyed in the above. It relates to the publishing of the report in a number of papers in different parts of the country, for which they were ordered to send their bills to the Patent Office. Charges were preferred against him for this, we believe, but we always thought that he did not intend to charge the Patent Fund with it, as it related to his own business. We therefore concluded that the charges were preferred in a mistake. However, we are not acquainted with private doings in the matter, and do not pretend to "be wise beyond what is written."

Incrustations on Steam Boilers.

The incrustations which form in the interior of steam boilers have given rise to much discussion, and many substances have been recommended for the purpose of obviating a result attended with so much difficulty to the engineer.

Several attempts have been made to deprive water of the saline matter which it holds in solution before it is introduced into the boilers, but these have been without effect, and the main object seems now to be to prevent the incrustations adhering so firmly to the boiler that their removal will not be attended with much trouble.

Coal tar was recommended a year or two ago in the Scientific American, I believe, as being most effective in preventing these incrustations; but little notice seems to have been taken of it, and potatoes, sugar, &c., were recommended and tried, but did not entirely succeed.

In the city of Louisville, where the water is more highly charged with lime than it is in many other places, this inconvenience is severely felt; there, after a trial of various substances, they find the coal tar to succeed better than any other article.

The following is the manner of using it: after the boiler has been cleaned, about one pint of the tar is introduced into it, after which it is poured into the heater, and thus reaches the boiler. In Louisville, one pint a week, introduced into the heater, is sufficient for a double flued boiler twenty-eight feet long.

During the use of this substance the lime is found in the boilers in large flakes, or if not absolutely loose, is removed by the application of the slightest force.

In one establishment this agent has been used for a period of six months, and in another for more than a year.

Coal tar is a very economical substance for this purpose, especially in cities where gas is manufactured from coal.

CHARLES W. WRIGHT, M. D.
Cincinnati, 1851.

Good Parsnips.

Parsnips are an excellent vegetable, both for the table and for the feeding of farm stock. We believe our farmers do not pay so much attention to the raising of this root as they should do. We have lately received a sample of a few from Mr. Wm. Taylor, of Schenectady, N. Y., of the English kind, which are of a very superior flavor, and far better than those which are common among us.

Improvement in Making Flour.

Whatever adds to or improves the quality of anything useful to man is of great importance, and is particularly worthy of attention, especially when the improvement relates to such an article as the "staff of life"—flour. An improvement relating to our improved system of milling has lately been somewhat prominently brought under our notice in a pamphlet published by the inventor and patentee, Mr. D. P. Bonnel, of Tecumseh, Michigan.

This improved process consists in separating the starch from the glutinous substances contained in the grain, and submitting the latter to a second active grinding or scouring process. This is effected by placing a set or run of auxiliary mill stones, (under a very rapid motion, from 300 to 500 revolutions per minute,) so as to intercept the whole body of the offal on its passage from the first or superfine bolts, to the return or duster bolts. The auxiliary mill may be adapted in size to the work to be done; a stone 36 inches in diameter being sufficient for a common 4 run mill. It should be driven with a spur wheel or gearing of some kind, as a belt is liable to slip and lose motion. The eye of the stone should be made very conical, and the irons put in so as to leave as much room in the eye as possible—the whole of which should be covered with smooth sheet iron or tin. The stones should be strongly banded, hung and balanced very nicely, dressed true and smooth, with a pretty large proportion of deep furrows about the eye or centre. The feeding is supplied and made very uniform and perfect, by substituting a large funnel for the common "hopper, shoe and damsel." Around the tube of the funnel is cut a screw which passes through a nut set immediately over the runner's eye. This tube reaches down in the eye of the runner until it comes nearly upon the top of the bale, which should be formed so as to fit, or nearly so, the opening of the tube; then, by turning the funnel, the screw widens or contracts the opening at the top of the bale, admitting more or less feed, as desired.

In using this improvement, the first grinding should be done with reference to the starch entirely, always being careful to reduce no part of it so fine as to destroy its granular qualities. This done, the bolting is free, and the starch is bolted out in passing through the first or superfine bolts. The remainder of the stuffs is sent directly to the auxiliary mill, where it is ground to any degree of fineness the miller may desire. It is then passed through the lower merchant or duster bolts, and such portion of it sent back to the same as may be necessary, until all the flour is brought out clear from "speckula," when it is continually sent to the cooler or first bolts, to be uniformly incorporated with the superfine flour.

This method of a second grinding is stated to make better fine flour out of fewer bushels of wheat than by the old processes. This we can believe, much of the real muscle producing food being lost in the bran; it is not the whitest flour that is the best by any means. In the United States we have 8,000,000 surplus barrels of flour annually, and this must find a market somewhere. In Europe, we have to compete with Russia and Germany, and it is only by improvements in milling that we can expect to compete with them. This is a subject worthy of the most earnest attention of our millers and farmers.

The Great Bell at Notre Dame.

The large bell of the Cathedral of Notre Dame was rung on Good Friday, after a silence of three years, caused by repairs in the belfry. A large crowd assembled on the Parvis to hear it. The bell is called Emmanuel, was cast in 1682, and Louis XIV, named it in the christening ceremony. Formerly sixteen men were required to ring it, but owing to an improvement in the hanging, four now suffice. The relics of the Cathedral were, on Good Friday, carried round in solemn procession after a sermon of the Abbe de Ravignaa. The President of the Republic was present, and there was a vast congregation.

Copper Boilers.

It is stated that copper boilers are henceforth to be used on board the steamers of the Royal Navy, as their greater durability has been found to render them cheaper in the end than iron boilers, of which the first cost is small.

M. Gaysa, a Hungarian traveller in Africa, has discovered the tomb, quadrant, &c., of Jaques Compagnon, a French traveller who was lost in the interior of Senegambia, in 1760.

NEW YORK MECHANICS' INSTITUTE.

This Institute has lately removed to the large building at the junction of Division street and the Bowery, as represented in the engraving below. This spacious building, comprising four floors, each containing 3,500 square feet, has been taken on a lease of five years, and it is resolved to devote the whole of this large space, except so much as is required for the Library and Reading Room (which has been tastefully fitted up on a part of the first floor), to the purpose of a Polytechnic Institute like that in London. An opportunity will thus be afforded to Mechanics, Inventors, and Artists, at all times, to bring into public notice the products of their ingenuity and skill; and to the public not only to see collected in one place

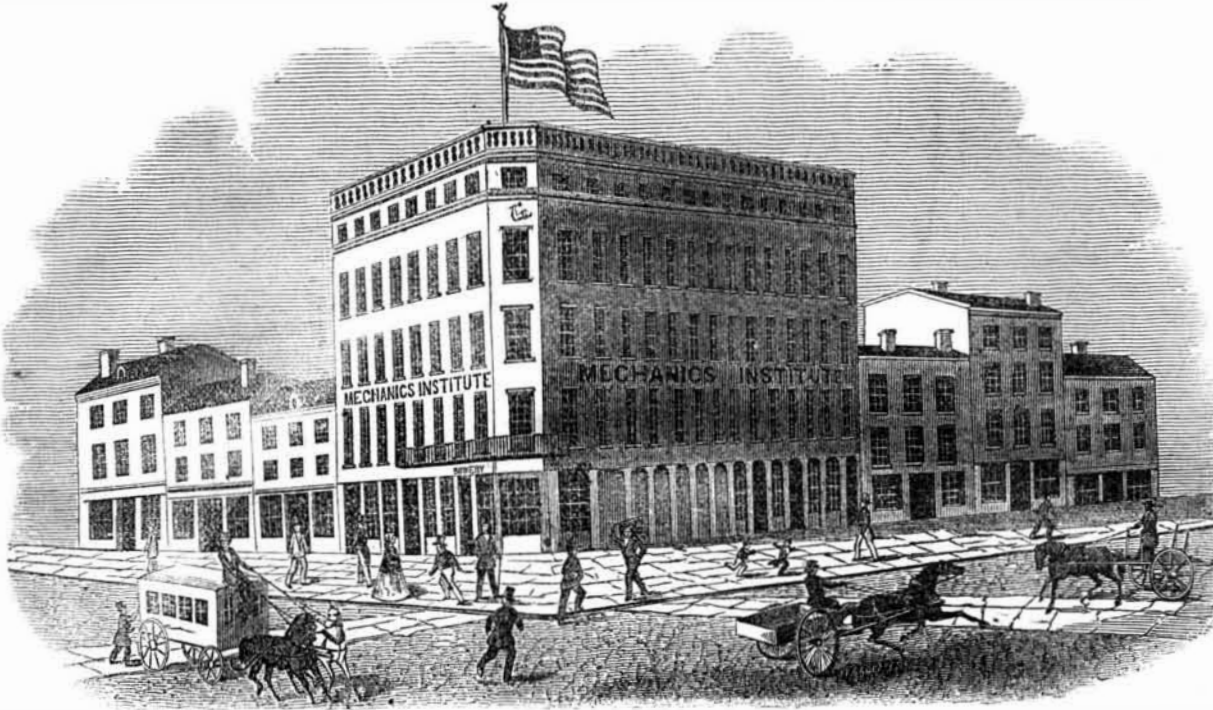
specimens of rare and excellent workmanship in the various branches of art, but to inspect the actual operations of workmen in the more curious, new, and ornamental fabrications. A steam engine will be provided to drive such as require power, and for the proper display of the machinery on exhibition. Familiar lectures will be delivered as frequently as may be, on chemical, mechanical, and other scientific subjects, and illustrative of the objects and operations exhibited, and every effort will be made to render the exhibition worthy of this Institute, and of our city and country.

The Exhibition will be permanently open after this week, and we cordially commend it to the public. Those who desire to exhibit

machinery in this city, will find power and room there to do so, at all times.

There is nothing on this continent, except the Annual Fairs held in our large cities, in the least resembling this contemplated exhibition; and they, being held for a few weeks only in each year, cannot afford to the public or to inventors and artisans, the advantages which will thus be extended to them.

But along with the permanent Polytechnic Exhibition, we would sincerely recommend the instituting of a great Annual Exhibition or Fair, by the Institute, to be held about the latter part of August or the early part of September every year. A Fair, conducted in an impartial manner, and by such an intelligent



bend the truss, the forces will act horizontally at the middle of its length and vertically at the ends. That at intermediate points their moment or intensity will be proportional. That at the outer ends of the upper arc or rail, the horizontal forces will be zero—liable however to be moved or thrust outward horizontally in consequence of the increased horizontal pressure at the middle, produced by an increase of load, such as would bend the cambered truss downwards. Now, to prevent this horizontal outward movement at the ends of the upper arc, and the consequent racking of vousoirs, he uses the quarter braces, and by having their ends attached against the ends of said arcs, and at different points to the lower part of the truss, the degree of inclination of each brace will ensure an amount of vertical support, in proportion to the amount of vertical pressure occurring at their several points of connection at their lower ends. Whatever amount of vertical pressure is intercepted by these braces, will be conveyed through their length without further intermingling with the truss, and lodged at their upper ends, directly over the abutments, thence downwards. And at the same time that these braces meet and dispose of the requirements of the unequal vertical pressure, they will equalize the horizontal forces in the upper arcs, changing their ends from zero, to a pressure if not quite equal to that of the middle. And yet the original direction of the forces, to the extent they are left to act on each part, will not be changed, though their intensity will be equalized.

It has been supposed by many that the science of Bridge Building was perfect, that nothing new could be elicited, that all the resources of mechanical philosophy had been expended, and every pressure and thrust to sustain a bridge was well known, but we see now many new ideas advanced and we have no doubt but they are correct ones. The innumerable quantity of bridges which have been constructed on our railroads have incited the genius and directed the attention of observing and skillful men to every point at issue and not at issue in Bridge Building. Mr. Herman Haupt, of Penn., in his late able work on Bridges, advances some excellent ideas from page 63 to 170, and he distinctly points out a vertical strain, the very thing which is provided against by the counter braces in Severson's bridge.

Plank Roads in Missouri.

The St. Louis Intelligencer says:—A belief in the importance and value of plank road seems to be fast gaining ground, and already we find several about being commenced in our State. Among others, we note the Ste. Genevieve, Iron Mountain, and Pilot Knob plank road. This company have secured the service of Mr. Kirkwood, the Chief Engineer of the Pacific Railroad Company, under whose directions a reconnaissance of the country has just been made, and the instrumental survey about being commenced. It is the intention to push this work to completion as fast as possible, and the contract is to be made in July next. The capital stock has been subscribed. We understand the report of the reconnaissance is very favorable, and that the practicability and value of the proposed road is undoubted. The distance of Ste. Genevieve to the Iron Mountain is about 45 miles, with a branch of nine miles to the Pilot Knob, the route of the road passing through a fine agricultural country, where there is an abundance of oak and pine timber of good quality.

We believe the company purpose building branches to the lead mines in the neighborhood of Frederickton, and also to Potosi. Farmington lies on the main route.

A rare literary curiosity is noticed by the Philadelphia North American as being in the possession of Mr. E. Waterman, of that city. It is a vellum volume done in the year 1200, long before the art of printing was discovered, and the type-like clearness, regularity and compactness of the lettering, as well as the exquisite delicacy and beauty of the ornamental writing in colors, which illuminates every page of the book, constitute it one of the most remarkable relics that have descended to us from the times anterior to types and printers.

examining corps as can be furnished by the many able mechanics belonging to the Institute. is demanded of the city of New York, to expiate the many wrongs she has done to exhibitors, who have come here from a distance to other Fairs, and to show to the whole country that we have the clear ringing metal of worth among our celebrated engineering community—many of whom belong to the Mechanics' Institute. In order to avoid the errors into which other Fair-holding institutions have fallen, let us give a few words of advice, as we have paid particular attention to such matters, and have heard (as we always do hear) the complaints of those who have been wronged and dealt with in a partial manner.

1st. The Mechanics' Institute should not look to mere money-making for the purpose of supporting a few favored men, as its first object. The payment of the expenses—such as fair salaries for the permanent offices, is necessary, but no more. Many institutions become mere hives of drones, being managed by a few very incompetent men, so far as scientific and mechanical qualifications are concerned.

2nd. The examining corps must be able and impartial men; they must not say to one man "pay for the gold and you will have a gold medal next year; this year we have given one to your neighbor, because we gave him only a diploma last year, and he has paid for the metal."

3rd. The Institute should conduct its Fairs without respect to persons—not forbidding one man to exhibit one thing with some quack excuse, and allowing another man to exhibit as much quackery as he pleases.

4th. To do their duty without fear. They cannot expect to please all, and we would say, "do not try it by subterfuge and favor.

5th. Let all the actions of the Institute be above board, upright in principle, downright in action.

The City of New York can support one of the best Mechanics' Institutes in the world. The Institute, about which we are now speaking, has made a grand move in the right di-

rection; we like to see it, and as long as it is conducted well we will heartily advocate the good cause. We have occupied, and will always occupy, the position of freedom from partial influences, so as to be independent of all parties and cliques, and thereby untrammelled by any considerations but truth and right. When we see wrong done, it makes no matter what the Institute may be, we will speak out as we always have done. We like the plan of the Mechanics' Institute, it is a good one,—let it be carried out perseveringly and impartially, and great good will result from it. Let our mechanics support it with heart and hand; let them consider their honor at stake in doing so. No city in the world presents so many advantages as this for conducting such an institution. Its officers are not retired generals, nor do such titles afford certificates of promotion to judge of the merits of works of art and engineering. Many of our most able engineers are members of it, and it is to be hoped that all will become so.

The Institute occupies four large rooms; on the first floor above the stores are the Library and Reading Rooms, and there is to be a fountain for hydraulic machines, &c. On the second floor, steam engines, machinery, and working models will be exhibited. On the third is the Lecture Room, where machinery, if necessary, will be exhibited; the fourth floor will be devoted to classes in modelling, and the exhibition of less finished articles.

We would state that there is a most excellent school connected with the Institute, in which the children of the members receive a good education on reasonable terms. We have, upon a number of occasions, spoken well of the object of this Institute, and within the past three years have happily witnessed its exit from the cellar in the City Hall to its present large and respectable rooms. If five thousand of our young mechanics would walk up and put down \$3 each, before the Fourth of July, they would become members, and thus render to themselves the privilege of the use of a large library. They would afterwards be able to keep Independence Day with a clear conscience.

More about Severson's Bridge.

Two weeks ago we published an illustrated description of the iron Bridge invented by Mr. Benjamin Severson, of Schenectady, N. Y. As there are some principles mentioned in Haupt's late work on Bridge Building, as new and which attracted Mr. Severson's attention some years ago, and are embraced in his bridge, we publish the following about the quarter braces and refer our readers to the engraving to make a re-examination.

The quarter-braces, made of wire cables or wrought-iron rods, starting from the ends of the upper arcs and connected at different points to the lower parts of the vousoirs, add much to the strength of the structure. At the middle of the length of the truss, the positive and negative forces act horizontally, and at the ends act vertically on the abutments. The amount of vertical pressure at intermediate points, is in proportion to the distance of each point from the ends or middle of the truss; and, regarding these braces as resultants, acting in the direction of their length, an analysis of the forces will show that the amount of vertical support given by each brace, will also be in proportion to the amount of vertical support at their several points of connection with the lower part of the truss. And these braces being connected to the end pieces, opposite the ends of the upper rigid arc, and by means of screws made to press firmly against the ends of the arc, the arcs being cambered, it is evident that any downward bending of the structure will produce a horizontal thrust of the ends of the arcs against the upper ends of these braces; thus regulating the intensity of their tension, by the amount of pressure of a load on the bridge,—hence, the amount of vertical support, rendered by each brace at its lower end, will be governed by the amount of thrust or pressure received at its upper end, from the end of the arc bearing against it; thus the tension of the braces will at all times act with an intensity in proportion to the pressure of a load on the bridge.

In the construction of his iron bridge, Mr. Severson has assumed that in the truss without the quarter braces, when the load does not