

MISCELLANEOUS.

Foundations, Natural and Artificial.

Mr. C. Clegg, Jr., in a paper read to the London Institution of Civil Engineers, states that all appliances, it is thought, will be replaced in a few years, either by Mitchell's Screw Piles, or Potts' Pneumatic Cylinders, both of which have already been used with success on many large works. The former originated with the screw mooring, and has been successfully employed for the Fleetwood, the Belfast, the Maplin, and the Chapman Sand Lighthouses, and in several other places; for a pier at Courtown, county Wexford, for the staging for the breakwater at Portland, for the foundation of many railway bridges and viaducts, and for many other important works.

The latter was first applied to a bridge on the Chester and Holyhead Railway, in which the tubes were sunk by means of a double air pump, the pile sinking as the exhausting process was continued; nineteen tubes, each 12 inches in diameter, were thus put down, so that their heads were level, and to them a cast-iron plate was fixed, on which the pier was built. Experience has shown it to be advisable to make the tubes of greater diameter, so that now they are used 5 feet, and even 7 feet in diameter. In this case the simple exhausting process is not sufficient to overcome the friction of the sides; another vessel has, therefore, been introduced between the tube and air-pump, and this is first exhausted, and then a communication is opened between the tube and the exhausted vessel, when a double effect is produced, the excavating or exhausting process, as in the former instance, with the addition of a sudden blow on the head of the piles. A modification of this process has been adopted at the Rochester Bridge, where the cylinders were used as diving-bells; a plenum being established in them, so as to exclude the water. This is found to be preferable, as the cylinders will not descend in a stony bottom.

Another Claimant for the Steamboat.

At a recent session of the French Academy of Sciences, M. Arago announced that M. Kuhlmann, in Marburg, has discovered a hitherto unpublished correspondence between Denis Papin and Leibnitz, from which it appears that in the year 1707, Papin, who then lived at Hanan, and who, since 1695, had perceived the possibility of applying steam to the propulsion of vessels, was not contented with the idea only, but had made successful experiments with a little boat, upon the Fulda, which was afterwards altered according to the system ascribed to the English mechanic, Maudslay.—[Ex.]

[It is well known that the steamboat failed to be successful until the steam engine was improved. Papin's experiments, if he made any, were failures, consequently they were of no benefit to the world. Papin, however, was a most ingenious Frenchman, and the world is indebted to him for a number of very useful discoveries.]

Beet Sugar in Utah.

We learn that Messrs. J. W. Coward, W. Collinson and Russell, who have recently emigrated from England to Utah, have taken with them machinery for the manufacture of Beet-Root Sugar on the largest scale. They are wealthy men, and have invested \$250,000 in this enterprise alone. Their machinery was made in England, and will turn out two hundred and sixty tons of sugar in a year. Fifty wagons were ordered at Kanesville, to carry the machinery to Salt Lake City. The beet-seed was sent out last year. There is no better country in the world for the production of beets, or other roots, than Utah. It will be a great advantage to the people to have an article so indispensable as sugar, supplied from a manufactory among themselves.

The Cow Tree.

In the forests of Brazil there is a remarkable tree, named "the cow tree," because it exudes a juice when tapped, which answers the purpose of milk to the inhabitants. During several months of the year, when no rain falls, and its branches are dried up, if the trunk be tapped, this sweet and nutritious milk ex-

udes. The flow is most abundant at sun-rise, like that of our sugar maples. The natives receive the milk in large vessels; it soon grows yellow like cream, and thickens on the surface. Some drink it plentifully under the tree. It is used in coffee in place of cow's milk. The tree is very large, and is used in ship-building.

Foreign Patents.

The cost of a patent-right, in England, is about £100, or \$500. This high fee operates as a restriction upon the number of inventions seeking protection in this way. The poor inventor of a machine of comparatively small value, cannot afford to pay for protection so large a proportion of profits, as yet prospective and uncertain. The number of patents issued annually is less than half the average issued by our own Patent Office for the last four years. The fee for a patent in our own country is \$30 to an American citizen, \$500 to a subject of the Queen of Great Britain, and \$300 to all other persons being foreigners. The fee to British subjects is based upon the principle of retaliation. Its reduction was repeatedly urged upon the consideration of Congress by the late Commissioner of Patents, on the double ground of policy and justice, inasmuch as our citizens are charged no more in England than British subjects; and, moreover, the reduction of our fee would bring us a great number of valuable inventions which do not now come to us.—[Philadelphia Ledger.]

[This is true in every respect. There are very many useful inventions used with closed doors in England, especially in the manufacture and finishing of textile fabrics. If our patent fees were reduced, these would soon be introduced here, and by our laws would have to be sold at reasonable rates. We hope to see this reform carried out next year.]

Interesting Statistics of the New York Post Office.

It appears from an official statement that during the quarter ending March 31st, there were received by sea at the New York Post Office, 645,179 letters, and 310,812 newspapers. Of the letters received, 183,342 were by the Chagres steamers; 82,946 by the Bremen steamers; 91,785 by the Collins line; 262,882 by the Cunarders; and 24,224 by private ships. During the same period there were sent 177,004 by the Chagres steamers; 127,044 by the Bremen; 109,743 by the Collins; 266,108 by the Cunard steamers, and 7,383 by private ships—total 587,282. Newspapers sent, 435,136. The whole number of sea letters received and sent, was 1,332,461. To this add the domestic correspondence of the quarter, 5,603,493, and 180,000 circulars, and it will give 7,115,954 letters and circulars that have passed through the office during the quarter, or a daily average of 80,000. The gross amount of domestic and foreign letters sent and received for the quarter ending June 30, 1851, being the last quarter under the old law, was 4,494,430, showing an increase in favor of the quarter ending March 31, 1852, of 1,119,063 letters, or about 25 per cent.

When we shall have an ocean cheap postage of ten or five cents, there will be an increase of letters of more than four hundred per cent.

Sub-Marine Wire.

Mr. Henry Evans, of New Bedford, has invented a sub-marine telegraph wire rope, which is considered by those who have examined it as possessing superior qualities. It is constructed of hemp yarns of any thickness required, the yarns being saturated in a composition that is durable and impervious to water. The rope is made by machinery designed for the purpose, only one operation being required to complete it. The four strands of which it is composed are made at the same time, and the rope laid up and finished on a heart. A copper, steel, or iron wire, of any required size is completely bedded in the centre of each strand, and one also in the heart of the rope, making five wires in all. The cavity of the rope is filled solid with yarns, and then a thick coating of the same is put over the outside, making the rope perfectly round. The whole is then covered with iron or copper rods. The principle combines strength, durability, and economy. The machinery is capable of making a rope of any

length without splicing, and giving the advantage of five different wires.

Electric Clock.

The Boston Journal describes, as one of the curiosities of the age, an electric clock recently completed by Mr. N. Farmer on an entirely new principle, and pronounced by scientific men to be the most perfect and simple of any. All wheel-work in the time-keeping part is dispensed with, therefore all friction is overcome. The time-keeping part of the clock is simply a pendulum, an electro-magnet, and two armatures. The vibrations of the pendulum break and close the circuit of electricity, while the combined action of the electro-magnet and armatures keep it in motion.

It is a clock that runs without weights or springs, or anything of the kind. Its moving power is a galvanic battery, which requires a small quantity of sulphuric acid once or twice a year; or if the workmanship of the clock is delicate, a copper plate buried in the ground will keep it in motion. There is no friction to be overcome save the suspension points of the pendulum, and the two armatures. Hence it approaches nearest to perfection as a time-keeper of anything in existence. One hundred or a thousand clocks all over the city, all ticking at the same instant, and keeping the same time, may be carried by the pendulum.—[Ex.]

[The above paragraph we have seen in a number of papers. We have not seen the clock; but, as described above, its operation is exactly the same as that of Bain, which we saw in this city three years ago.]

Improved Preparation of Butter.

M. Chamblambel observes (in the Comptes Rendus), if butter contained only the fatty parts of milk, it would undergo only very slow alteration in contact with the air. But it retains a certain quantity of caseum, which exists in the cream; this caseum is converted into a ferment, and gives rise to butyric acid, to which the disagreeable taste of rancid butter is owing. The washings which the butter is made to undergo can only imperfectly free it from this cause of alteration; for the water does moisten the butter, and cannot dissolve the caseum, rendered insoluble, under the influence of the acids, which are developed in cream. A more complete purification may be arrived at, by saturating these acids the caseum would again become soluble, and consequently the butter would retain only very small quantities, which would be removed almost entirely by washing.

The following is the way in which I propose to operate:—When the cream has been placed in the churn, pour in, by small portions at a time, and agitating the while, a sufficient quantity of milk of lime to entirely destroy the acidity; churn the cream until the butter is separated, but it must not be expected that it will collect in lumps as it generally does; decant the buttermilk, and continue to churn until it is sufficiently collected; it is then removed from the churn, and arranged in heaps as usual. By following this method, I have always obtained better products, and capable of being preserved for a longer time than those obtained by the common processes. The buttermilk loses all its sharp taste, and has been consumed with pleasure by people and animals, and has lost its laxative properties.

We have also restored, by washing with lime-water, butter which could only be used for melting. Lime-water may be replaced by any other alkaline ley.—[The Chemist.]

The Crystal Palace in New York.

We have not heard a single word about the Crystal Palace (that is to be) in New York, for two or three weeks. The Association opened with a prodigious card for subscriptions of stock at one of the great houses in our city, but surely the project is viewed with little favor by our stock-jobbers, or we should have heard more about it since the books were opened.

Increase of the Use of Opium.

A correspondent writes to the New York Evening Post as follows:—"One idea suggested itself in one of your articles is entitled to far greater weight than a person who had not given particular attention to the subject might

suppose. I refer to the use of opium as a stimulant. The extent to which this is practiced by people esteemed temperate, even in this country, is, probably, one thousand times greater than is generally believed. This may at first seem a very extravagant statement, but a good deal of investigation of the subject has led me to this conclusion."

Improved Bricks.

Henry Bushnell, of New Haven, Conn., has taken measures to secure a patent for a valuable improvement in making bricks, so as to render them impervious to water, make them very durable and at the same time more ornamental. The body of the bricks is made of any of the clays for making earthen or stoneware, and after being moulded, they are perfectly dried and covered with a solution of proper coloring matter, laid on according to any desired pattern, and then put into a kiln and burned, when they come out with a beautiful glazed surface. These bricks must be very carefully and peculiarly managed in the drying before the glazing is put on, or the glazing will be imperfect and the bricks spoiled. Mr. Bushnell prepares his bricks so as to render success certain. These bricks must be excellent for buildings exposed to north-east storms, for cellars and for drains. We hope that the hollow bricks will soon come into use; they certainly are an improvement. Some improvement in the burning of bricks must yet be made, so as to render them cheaper than they now are. It would be well if more brick and less wood were used in our city buildings; if bricks were cheaper, this would surely be the case.

Prohibiting the Sale of Goods by Sample.

The New York Legislature enacted a law making it punishable by a fine of \$300 for a non-resident to sell goods by sample in the State. Such a law has also been passed in Pennsylvania and Maryland. The Legislature of Massachusetts propose to retaliate on these states by passing a similar law, but Massachusetts surely cannot complain, for this law is founded upon her flaw of license for pedlars. Such laws are exceedingly mean and unworthy of the States which make them. It shows a narrow-minded policy not to be found in some of the despotic States of the Old World.

Gooseberry Bushes.

To make beautiful gooseberry bushes, take sprouts of last year's growth, and cut out all the eyes or buds, in the wood, leaving only two or three at the top; then push them about half the length of the cutting into mellow ground, where they will root and run up a single stock forming a beautiful symmetrical head. This prevents the gooseberry from mildewing, which often happens when the fruit lies on or near the ground, and is shaded by a superabundance of leaves and sprouts. The fruit is larger, and ripens better, and will last on the bushes, by growing in perfection, until late in the fall.

A Good Act.

The Common Council, of Baltimore, have appropriated \$10,000 for the use of the Maryland Mechanics' Institute. Would the New York Common Council do such a thing? We trow not. Such institutions do not bring any thing to the refreshment tables of our Aldermen.

No man is a gentleman, who, without provocation, would treat with incivility the humblest of his species. It is a vulgarity for which no accomplishments or dress can ever atone. Show me the man who desires to make every one happy around him, and whose greatest solicitude is never to give just cause of offence to any one, and I will show you a gentleman by nature and by practice—although he may never have worn a suit of broadcloth, nor ever have heard of a lexicon.

Preserving Hams.

As the warm weather is at hand, (we hope so, at least), it is prudent to prepare hams against flies, &c. After hams are properly smoked, they should be packed down in boxes and well covered with coarse rock salt, and then kept in a clean, cool, and dry place. The salt will answer for packing meat in the Fall.