NEW YORK, JUNE 2, 1849.

Cast Iron Houses.

The late disastrous fires which have occurred in various cities and villages in our country, suggests to us, with warning voice, the propriety of providing, as far as possible, against the frequent occurrence of such misfortunes. One prominent cause of severe and destructive fires in our country is, the great amount of wood material used in our buildings. The timber employed in buildings soon becomes like tinder and spreads along from board to beam, when once ignited, with almost electric speed. Even in our cities, in streets where we behold beautiful stone and brick fronts, we too often find the rear and outhouses composed of the most inflamable materials. It is our opinion, and we have expressed it before, that iron is yet destined to play a most important part in public and domestic architecture. Cast iron is cheaper than stone. It can be moulded into every variety of form for beauty, grace and just proportion, both for strength and economy of space. It would not be like old wood, or brick or stone either. After it had served its day and generation, and some more fashionable design was desired by the owner, to replace what might be considered "antiquated," it then has its value, although it be a thousand years old. It can again be taken to the foundry and become changed from the merely economical form and proportions, to the "sublime and the beautiful" in architecture. This branch of architecture is a new one in our country; but very few cast iron buildings have yet been erected, and these have been confined we believe to this city. The pioneer, the designer and contractor of all these works is the ingenious Mr. James Bogardus of No. 40 Eldridge st. The iron stores of Mr. Lang on Washington st. are his designs, and so are those now erecting on the corner of Centre and Duane streets.

Of course this branch of architecture, must present some very different features from any other branch, such as the manner of tieing the beams, the way of supporting them, and also of keying together the different parts.—One thing is certain, no mortar is used to cement them together, but they are united by bolt and screw, and can be again taken apart, to be marched off in short notice to California or some other ilk. Iron houses then have great advantages over every other kind—and they will no doubt soon commend themselves to general favor.

Mechanical Powers.

There is a great deal of ignorance among all classes respecting Mechanical Power.—Some believe that a great power is gained by an increase or multiplicity of levers, wedges, screws, &c. The mechanical powers are generally embraced under six heads, viz. the lever, the wheel and axle, the pulley, the inclined plane, the wedge and the screw. There are some people who think that there is something magical in these mechanical contrivances to create a great power. It is true that in the hands of the ingenious and the skillful wonders to the ignorant have been performed by the combination of the lever and screw, or the other mechanical combinations. Houses have been lifted from their foundations by a few screws and levers. Ships have been transported over mountains by a few rollers and levers, and lofty columns have been elevated by the lever, pulley, wheel and axle. It is no wonder then that the ignorant who saw these things done, or see them done every day, think that there is something mysterious in those mechanical contrivances to accomplish their more than Herculean feats of strength and power. In works on the mechanical powers, each power is generally treated under a separate head. but the principles of all of them are the same. "every pressure acting with a certain velocity, or through a certain space, is convertible into greater pressure when acting with a less velocity, or through a smaller space but the quantity of mechanical force is unchanged, and all that the lever or wedge or screw accomplish, is simply a transformation of power. There is no power gained by a lever, the power is merely put into another shape. A man can lift twice as much with a lever 20 feet in length as he could do with one 10 feet in length, but then he would just take twice as long to do this. In this nutshell lies the whole principle of the mechanical powers. A pound weight will balance a pound weight and no more. There are some men who imagine that they can gain power by complicated mechanical contrivances. Many an ingenious plan of wheels, springs, and levers have we seen, to create a self-acting mechanical power—a perpetual motion. But of all the many ingenious contrivances that have been invented for this purpose, not one is now in existence. We have had a great number of letters sent to us, relative to such powers, but we have universally advised the projectors to spend no time or money on such chimerical objects. Whatever is gained in power by mechanical combinations, is lost in velocity. The power of any machine is measured by its force and velocity combined, and the data of a horse power in steam engines or any other prime mover is the capacity of lifting 33,000 lbs. one foot high in a minute. Here we have the velocity and force, and if we double the velocity we only get 16,500 lbs. lifted one foot high in half a minute. This is a familiar solution of the principles of the mechanical powers We think that it will be the means of saving some of our correspondents time, trouble and expense, at least that is our object. It is part of our duty to explain things new and old. The correct principles of science are old, and yet are ever new.

Medical Errors.—Seasonable Medicines.

There are a great number of people who believe that they must take a certain quantity of medicine at regular intervals. It has long been a popular notion that every person would be the better of taking physic in the spring. Salts have been generally considered the best medicine, as being in vulgar phrase "very cooling for the blood." This we suppose, is to fit the stomach for the heats of Summer. It has long been customary for doctors to prescribe calomel for persons before landing on some tropical coast, to prevent fever incident to regions of a malarian clime.—But experience has proven this to be a practical piece of injudicious nonsense, it having been found, that persons who landed on the coast of Africa without being salivated, generally were not so readily attacked by fever as those who submitted to the mercurial dose.—No person should take physic unless he or she is sick. There are some who take Medicine as regularly as they do their food, and seem to place inestimable value on their apothecary establishments. These people are never well, and never will be while they are in league with that old Serpent "physic" Frequent bathings, good nourishing diet regularly taken, plenty of exercise in the open air, regular hours of sleep, and a cheerful disposition, are the best medicines in the world.

There are some people who think that saw dust bread, (Graham's) is the very thing for health, long life and happiness. Such kind of food unless used with plenty of good meat, is more nourishing to the grave than the human body. As there are a number of people engaged in sedentary occupations it is not possible for them to be often in any other than an ailing condition. They fly to medicine for relief and soon find it in the grave. Those who labor in cotton factories do not breathe the pure atmosphere and are too long confined to daily labor, as the hours of toil in our country are generally admitted by those capable of judging to be more than the human system is well able to bear. This is the reason why so many men engaged in such occupations become invalids after 40 years of age, helped to such a state of physical suffering, no doubt in a great measure by seeking relief at first in medicines, a relief which could only possibly be found in a nourishing diet combined with gentle tonics, instead of treating themselves to cathartic reductions.

One great and common medical error, is to treat the stomach in warm weather with huge tumblers full of soda water or spruce beer to create a "good appetite." Many a man has destroyed his stomach past remedy by soda water. No person requires so much food in warm weather as he does in cold weather, and to doctor the stomach for something which is not a disease, is the sure way to create disease.

Fog Bell.

BOSTON, May 22, 1849.

MESSRS. MUNN & Co.—Allow me to correct you in regard to the new Fog Bell referred to in your paper of last week. The bell is operated substantially by fog—operating in the following manner on the machinery: The apparatus which rings the bell is wound up and detained in a wound state by a lever extending from the machinery into the open air. To the end of this lever is affixed a large sponge, which will absorb the moisture from the fog and by becoming heavy settle down the lever and let the machinery free and thus the bell is rung by fog.

Respectfully, C. B. H.

[We are a little in the *fog* about this bell yet. If the sponge is affixed on the end of the lever in the open air, we must suppose that a shower will be fully as effectual in ringing the bell as the fog will. We can easily see how a dry sponge may absorb moisture from the atmosphere to operate a wire lever by its increased gravity and set free a pall to ring the bell.—Probably the sponge is protected from rain by a cap above, but is free to the influence of the fog or mist. There is another species of fog, however, for which it will not answer, viz. dry fogs. These frequently occur in different parts of the world.—ED.

Astronomical Expedition to Chili.

This expedition for which Congress made an appropriation is to determine the parallex of the planets, by observations on Venus and Mars, made at places situated north and south of the equator.

In order to carry out successfully the objects of the expedition, it is necessary that it should be provided, besides other instruments, with an achromatic telescope which it was supposed could be only obtained in Europe, at an expense beyond the amount of the Government appropriation, the mean sum of $5000. In this emergency Lieut. Gillis applied to the Secretary of the Smithsonian Institute for aid. It was proposed that the Institute should purchase the instruments and loan them to the expedition, on the condition that they were to be returned to the Institute in case Congress refused to appropriate the necessary funds to pay for them. Mr. Secretary Henry and the Executive Committee, considering this a proper occasion for the application of the funds of the Institute to the promotion of science, took immediate steps to procure the instrument. But Importers could not be found to take the order except at an enormous advance on the cost, and Mr. Merz, the successor to Frauenhofer, wrote that a nine-feet equatorial could not be made by the 20th April the time stipulated. Thus matters stood when Mr. Henry Fitz of N. Y. volunteered to make an object-glass from Guinaud's discs of the same dimensions as the somewhat celebrated lens from Frauenhofer's establishment at the High School Observatory in Philadelphia, viz: 6½ inches clear aperture and 9 feet focal length, which should be compared side by side with the object-glass, and if it proved equal to it in performance, he should charge for it only the charge of a similar lens at Munich (about $500), otherwise the Smithsonian Institution should have the use of it, free of charge, until another could be obtained from Germany. And Mr. Wm S. Young of Philadelphia, having already made two equatorial stands of the same size, guaranteed to furnish the mounting within the period stated.

The telescope has been completed and the result is in the highest degree satisfactory. It has been submitted to Prof. Kendall of the Philadelphia High School, and other scientific gentlemen of that city, by whom it has been subjected to a comparison with Frauenhofer's telescope, and their report pronounces the American instrument fully equal to that of the celebrated German manufacturer.

The population of the city of Newark, N. J. is now computed at 32,000.

Dwellings for the Working Classes.

By some of the London papers we perceive that there is an association for "improving the dwellings of the working classes." Prince Albert we believe, is one of the leading men in this enterprise. At Old St. Pancras Road, the society has rented 110 sets of rooms all of which are constantly occupied by respectable persons of various trades and occupations.—The tenants are uniformly satisfied with the extra comforts they obtain by this principle of association—comforts which at the ordinary rate of such accommodation, are well worth double the rent which the association charges, and which rent is consequently paid with remarkable punctuality.

This enterprise is no doubt a philanthropic one and it has been highly commended. Some of our citizens here talk about such an association and in connexion with that to provide cheap baths for the working classes. These things no doubt betray a very admirable spirit, but we do not wish to see the working classes poked into buildings for them exclusively as a matter of charity. We want to see them have good and comfortable houses as a matter of right—the workers should enjoy the fruits of their labors.

Patent Suit.

On Friday last the 19th ult. in the Circuit Court held in this city, Judge Nelson on the bench, there was decided a very interesting case for the infringement of a patent for a machine to manufacture lead pipe, Tatham and others plaintiffs, Lowber and others defendants. The verdict was given for plaintiffs, with estimated damages of $11,934. This is the second trial on this case, the former having been decided against the plaintiffs.

Portable Iron Houses.

Peter Naylor of No. 18 Stone street, this city, has succeeded in constructing houses of the above description, which are both ingenious, and valuable to those about to embark for the "placers." The iron is grooved in such a manner that all parts of the house, roof and sides, slide together, and a house 20 by 15 ft. can be put together in less than one day, and can be packed in a box 9 feet long, 1 foot deep and 2 feet wide, and are furnished at $100.—They are considered much cheaper than wood and far more durable and comfortable. We commend them to the attention of parties about to visit the Gold regions.

Notice.

We would call attention to the advertisement of Mr. T. C. Frye, in this number.

We have had an interview with him, and feel confident that his services will prove valuable to parties requiring the careful management of steam machinery. His letters of credit, are from gentlemen of the highest respectability, and we have no doubt of his qualifications as a practical engineer.

We understand from the American Union, published in Boston, that Messrs. Shegog & Chapin, of Columbia, S. C., have sent to that city one of their improved life preserving Mattresses, an engraving and description of which was published in No. 35 Scientific American. We commend it to the attention of the editors of the Union, and hope they will take the trouble to examine the mattress and give it an Editorial notice. It is certainly worthy of it as many valuable lives might be saved by its use on board of vessels.

Seven physicians of Milwaukee have signed an address which occupies a column of the Daily Wisconsin, exhorting the public to adopt the homeopathic system of treatment in case they are attacked by the Cholera. They refer to the relative success of the true system of homeopathy in Europe in 1831-2.

Our London Patrons.

We are happy in being able to inform our English patrons that such arrangements have been completed with the London Patent Office that the Scientific American may hereafter be found there. Messrs. Barlow & Payne are agents at 89 Chancery Lane, and will receive remittances on account of the Scientific American from those who may desire to subscribe.

Terms—3 dollars per year and postage paid out of the United States.