New Inventions.

Pictures on Glass.

Our Philadelphia exchanges state that Messrs. Langenheim, of that city, have discovered the art of making photographic pictures on glass, such as portraits, landscape views, copies of daguerreotypes, &c.

At a recent meeting of the Paris Academy of Sciences, this process was described by M. Reghault, in behalf of M. Evrard, of Lille, who is said to have discovered it in 1847. The princple of the discovery is a matrix of albumen, rendered sensible to the action of light, by aceto-nitrate of silver, and spread in a thin layer on a plate of glass. The process is to take a certain number of the white of eggs, and remove all the non-transparent part, and then add a few drops of a saturated solution of iodate of potassium, then beat the eggs into froth and allow it to settle. The plate of glass is well cleaned with alcohol, and the albumen is then spread over the glass in a thin layer with another piece of glass. The glass must have a perfect thin coat adhering to it, when it is hung up by one of the corners to drain off the excess. The glass is then placed flat upon a level board, screened from dust and allowed to dry. When dry it is submitted to a good heat, but not so much that the albumen will peel off. After this the glass is dipped into a solution of aceto-nitrate of silver, face downwards, after which it is removed and immersed in a basin of clean water, being stirred in it for a few seconds, then taken out, held up by a corner, and is completely sensitive, moist or dry, to receive photographic impressions. It is then placed in the camera obscura, after which it is dipped in a bath of galic acid, to which is added a little of aceto-nitrate of silver. Care is taken not to let the glass remain too long in this. After being dipped in the galic acid it is washed in water and then immersed in a solution of the bromide of potassium (20 parts to 100 of water,) after which it is carefully and well washed in water, and left to dry in a horizontal position in a dark room.

This is a description of the process of producing photographic pictures on glass, as communicated to the Paris Academy of Sciences. There are some other little nic-nacs, which are essential to a successful and good picture—but this is a very minute description—one sufficient for an artist to do all the rest himself.

Improvement in Gun Casting.

A new method has been resorted to at the Cannon Foundry, near Pittsburgh, for the production of guns. Instead of bringing them from the mould solid, and afterwards boring them, they are cast with the proper bore, the core being carefully prepared so as to enclose a circle of cold water, which it receives and discharges in a continuous current, during the process of cooling, the object, probably, being to chill the inner surface more rapidly than the outer, and thereby give to it a greater density and strength. The plan is the suggestion of Lieut. Rodman, and two guns—one cast on the old and the other on the new plan—having been subjected to the usual tests, the first exploded on the 84th, and the latter on the 255th round. This shows a great superiority over the common mode of making cannon, and if future experiments substantiate this successful one, Lieut. Rodman's invention will come into general use.

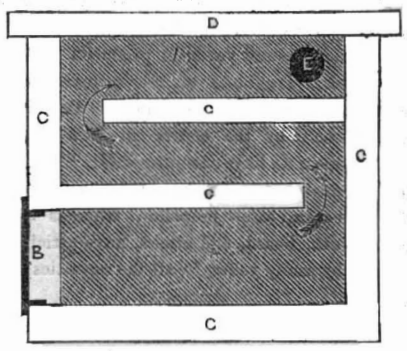
Russian Furnace.

This is a furnace which Mr. S. C. Palmer, of Foxboro', Mass., has described to us in an article for the benefit of our readers who use wood for fuel.

Fig. 1 is a longitudinal section showing a fire place and flues in the interior; A the fire place; B is a common iron door with closing aperture for draught; C is the brick work; D is a soap stone cap; E is a short funnel connecting flues with chimney; this should have a damper which can be closed tight, it may be reached back of the furnace. The furnace should set a few inches from the chimney so as to save the heat from all sides. This figure shows but two flues.

Fig. 2 is a transverse section, showing the fire place with four flues in the interior. The letters correspond with fig. 1; the figures are the flues. They are generally built of brick which work in as easily as into other kinds of work, but a soap stone cap makes them more durable. They are sometimes made entirely of soapstone, but I do not know whether they operate as well.

Fig. 1.

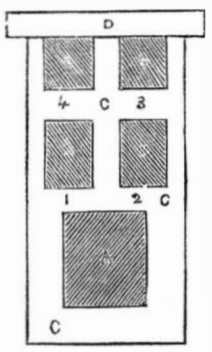


The fire place is filled with wood, and the dampers opened till the wood gets well on fire. The dampers are then closed perfectly tight, though not so suddenly as to make it smoke. It will want no more attention till the wood is nearly gone, when it can be replenished and immediately shut up if there are plenty of coals. It never need be opened more than three times a day in coldest weather, morning, noon and night, and in more moderate weather not more than once or twice. The draught is generally good.

A common form is about three feet in length, sixteen inches wide, two and a half feet high, —though the size should depend upon the size of the room. They may be built upon the floor by having a sufficient thickness of brick between the floor and fire. The cost of one made all of brick, is not over four dollars, (pressed brick.) A new furnace must be dry before it is used.

Mr. Palmer says: "I have witnessed their operations, more or less, for eight years, and constantly for two years of that time. A furnace consumes less wood than a stove, and requires but little care. It preserves an agreeable and equible temperature in the room, as it presents a far greater amount of heating surface than a stove, consequently it does not require to be so intensely heated."

Fig. 2.



He is acquainted in two villages where they are much used in sitting rooms, but they are not suitable for rooms that are only to be heated occasionally. During the past year Mr. Palmer says, "we have used two of these furnaces, one in the sitting room and one in the shop, and we would not use two stoves instead of them for fifty dollars." The fire never goes out of them from November to April.

The objection which some urge against them is their want of beauty. We know of no kind of paint that is suitable to use for them, but if they are neatly built, and frequently whitewashed with a little whitening, in which is mixed some alum water, they look very well. These furnaces could be built to burn coal as well as wood.

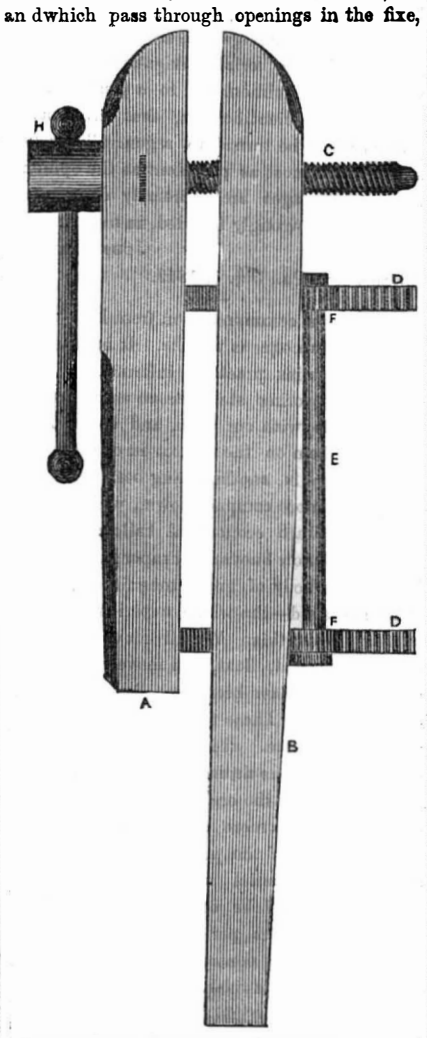
We are much obliged to Mr. Palmer for calling our attention to this subject. We know something about them, having seen them used while journeying in some other parts of the world, and we consider them an excellent and cheap apparatus for heating many kinds of apartments.

Telegraph Manipulator.

Mr. S. Thomas, of Norwich, N. Y., has invented a telegraphic manipulator. It is for the purpose of transcribing the messages.

Cowle's Patent Parallel Vice.

This is an improvement on the Parallel Vice recently patented by Josiah Cowles, (the inventor,) who resides in Belchertown, Mass., and is a very simple and beautiful invention. A is the moveable jaw, and B the permanent one C is the screw and H the lever. D D are two racks secured firmly to the moveable jaw, A. an dwhich pass through openings in the fixe,



jaw, B, and mesh into two small pinions, F F which are secured on a vertical arbor, E, the ends of which are secured in small journal boxes or bearings, attached to the back of jaw, B. The racks, therefore, do not pass through the exact middle part of the jaw, but they are held with the utmost steadiness by the pinions and it is not possible for the jaws to be in any other than a true parallel position. It operates very finely. The claim is for "the screw and jaws in combination with the racks, pinion, and arbor." More information about rights, &c., may be obtained by letter, (*p. p.*), addressed to the ingenious inventor.

Improved Packing for Pumps.

Fig. 2. Fig. 1.

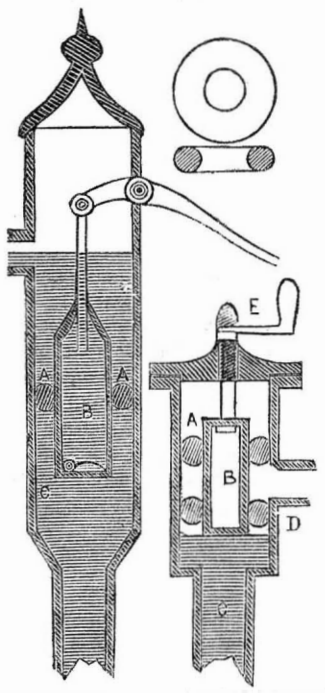


Fig. 3.

This is a plan of packing by employing a packing ring of vulcanized india rubber around the piston, by which the packing will have a rolling motion upon its own centre. Fig. 1 is a plan and section of the ring just before being applied to the piston. The cross section is in the form of a circle; the interior diameter of this ring is less than the exterior diameter of the piston. It is therefore necessary to stretch it before it can get on the piston, and the exterior diameter of the ring is a little more than the interior diameter of the cylinder, and it has therefore to be squeezed up or contracted. When placed in the cylinder, therefore, it has the eliptical shape, as represented by A, fig. 2, (which is a sectional elevation of the common lifting pump,) by being compressed between the cylinder and the barrel or piston. It forms a very tight packing. Upon an upward and downward motion of the piston, the ring moves round on the piston, and will always preserve its contact with the piston and cylinder, owing to its compressed state, and by revolving the friction is indeed but very small in the working of the pump. For light pumps these packing rings may be made hollow and filled with air, but for large rings they must be made solid. Fig. 3 shows a vertical section of this kind of packing applied to a screw piston faucet. A is the barrel or cylinder of the faucet; B is the piston valve; C is the fountain passage; D the discharge, and E the handle. Two rings of elastic india rubber are used around B. The valve being down, as shown, the fluid cannot pass from C to D, but turning the handle, E, the piston valve, B, rises, and by the rolling action of the rings, they also rise and move past the opening, D, for the free passage of the fluid. The passages should be narrow, or with a rose on the inside of them, to prevent the rings springing in.

Discoveries in Electricity.

Worcester, Oct 1, 1849.

Messrs. Munn & Co.: *Gentlemen*—Permit me, through your columns, to announce the perfect success of the Hydro Electric Light, according to the circular published in your journal last winter. With the risk of being considered an erratic genius, I choose the course that I have taken in this matter. Had I filed a specification in any patent office, at home or abroad, at the time of the discovery, long ere this we would have had a score of discoverers disputing the priority of the subject; but as it is, the light has been burning on a large scale for months, without a single attempt to dispute the originality in point of time or fact.

You are undoubtedly aware that in cases as important as this, capital can always find or make men-of-straw claims, to worry the inventor into terms. Now my secret is at issue with capital, not the lovers of science. Nothing would give me more pleasure than to communicate to the readers of your paper the principles that govern the action of my apparatus, knowing as I do, that they need but the action of an intelligent mind to be the means of immense good to my fellow men. But my brethren are not so suffering, in this matter, that I feel called upon to sacrifice my own interests for their sakes. I mean that at least one discovery shall stand undisputed, and that is the *condensing of the Electric Fluid.* I claim the knowledge of compressing the electric fluid as we do the atmosphere or the gases —the forcing and accumulation of it in a receiver, till the receiver bursts from the effects of *pressure.* This I have done frequently, in the presence of different persons, within the last few months, and will shortly do again in your city. I gather what is termed the electric fluid, as easily as a boiler is filled with water, and I retain or use it with greater facility than we can steam. The decomposition of water is but a minor application of the discovery, and only used first because it was the cheapest; and I assure you that without the elements around us change in their material or nature, the days of steam are numbered. As regards its use for the purpose of light, the invention has passed, *conditionally*, from my hands into those of heavy capitalists, who will soon settle your difficulties with the gas companies.

Yours,

Henry M. Paine.

Late foreign papers state that a new and superior method of rotting flax has just been discovered. We learn that a very superior discovery of this kind has also been made at Maysville, Ky.