



## New Inventions.

### New Process of Plating by Heat.

This is a process recently discovered by M. Hessenberg of Leipsic, and read before the Polytechnic Society of that famous city.

The metal to be plated is first well cleaned and polished, then its surface is moistened with salt water by a camel hair pencil. It is then spread over with a powder, made as follows: Dissolve silver in nitric acid and precipitate the silver by introducing a slip of copper, then wash and dry the precipitate. Take one part of this powder or precipitate, one part of the chloride of silver and two parts of calcined borax. These ingredients are mixed together with care in a porcelain mortar and washed through a fine silk sieve. This powder is placed on the metal in such a manner that a layer of it covers the whole surface, when the metal is placed in a clear charcoal fire and heated to redness. It is then taken out and immersed in boiling pure water, or water with a very small quantity of the tartrate of potash dissolved in it. After this it is rubbed with a stiff brush over every part. It then appears to be already entirely silvered, which is very important as this is the basis of the art, and the silver in this way penetrates the metal for the following operations.

The metal is again covered with a paste, made as follows:—Mix carefully equal parts of silver powder, pure sal ammoniac, pure salt, sulphate of zinc and clear ox gall. These are all ground together very fine adding a little distilled water with a little dissolved gum in it. When this paste is laid on with a pencil, the article is placed in a clear charcoal fire, heated cherry red, then plunged into boiling water, and when it is cold, it is well rubbed. This is repeated four or five times, when the object is sufficiently silvered and fit to receive the lustre of the burnisher.

Articles silvered or plated in this way show when broken that the silver has evidently penetrated into the copper, thereby ensuring the most durable plating that can possibly be obtained. The points and edges of plated goods from which the silver has been worn off may be restored by this means, and to effect this, it will be necessary only to apply the process to those parts which may require a renewal of the silvering—a neat fire made on the silversmith's forge can be built for the particular article. Articles which may have been blackened and tarnished may readily be restored to their original beauty by this simple, easy and exceedingly valuable process.

### Astonishing Discovery.

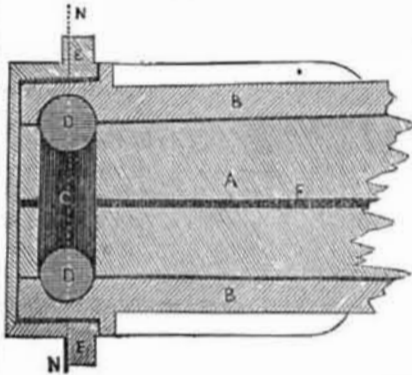
The Londonderry Journal, of the 27th ult has a statement of an astonishing discovery which was communicated to the Society for the improvement and growth of Flax held in Belfast. The following extract contains the truth of the matter:

"Mr. Owen referred to the discovery which his friend Dr. Hodges would say was worthy of the deepest consideration of every one present. Having heard some time since that from peat there could be produced ammonia, naphtha, soda-ash, oil, spermaceti and some other substances, he left London for Paris, and called on an eminent chemist there. He had previously been speaking on the subject with a Mr. Reece, also an eminent chemist, who told him that for the expense of £30 he could produce from 100 lbs of peat chemical results to the value of £148. It was Mr. Reece who referred him to the Paris chemist, and he (Mr. Owen) produced it to him and repeated the statement of Mr. Reece, as to what he could do with the peat, the former assured him (Mr. Owen) that he really could do all that he had stated in the document. He then rang a bell, and ordered the results of his experiments to be brought up from his own laboratory, and he (Mr. Owen) saw with his own eyes the sperm candles made; the ammonia, the oil,

and the soda-ash produced from peat; and that chemist thought this was the greatest discovery of the age, and one which would eventually, convert the greatest curse of Ireland—the bogs, heretofore unprofitable, and the greatest obstacle of improvement—into the greatest blessings, and double the fertility of the soil, to an extent that none could estimate. Well he (Mr. Owen) being a man of business, declined to take any or all these statements for granted, and, consequently, he got a number of experiments made by Dr. Hodges and his friend, Mr. Reece, which were entirely confirmatory of all the statements made by his friend, Mr. Reece. But still, not to deceive himself or others, he was determined to have an experiment made on a large scale, and had employed the largest apparatus in use for that purpose; and he rejoiced to tell this meeting, that, on Tuesday last, his experiments had been commenced, and the results were beyond all expectation, for everything had succeeded to his utmost wishes." [Mr. Owen here handed to the Chairman a sample of the spermaceti so prepared by him, which was minutely examined by a great number of gentlemen in the room.]

### The Ball Axle.

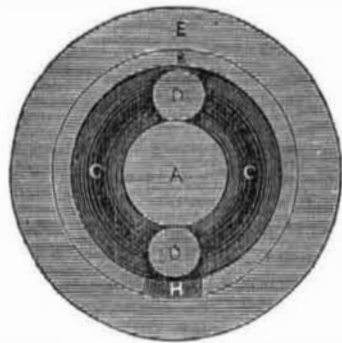
FIG. 1.



This is a beautiful invention by Mr. Charles Chinnock, No. 54 Cliff street, this city, for which the patent was issued two weeks ago.

Fig. 1, is a horizontal section, and fig. 2 is a transverse section, taken at the line N-N. The same letters refer to like parts. A, is the axle. B, is the bush of the wheel, part of which, as will be observed, projects outside of the wheel. In the inside of the bush is a semi-circular groove running all around and there is a similar semi-circular groove cut or cast in the axle—the two forming a complete spherical groove C. It is evident then that if a small ball is inserted in that groove, that it will couple the axle and wheel together, and prevent—the grand desideratum all lateral motion of the wheel. This is the principle of the invention. D D, are two balls, which make an equal bearing with very little friction. The balls are inserted in a small opening H in the bush, which is plugged with a little piece of leather and the cap E secured

FIG. 2.



on preventing the ingress of any dirt whatever. F is a small channel for the admission of lubricating material which can by this invention be most beautifully supplied, the groove C, forming an oil box. This is a very simple invention and as beautiful as simple. The more it is examined the more favorably are we impressed with its advantages. The balls are of chilled iron and they may be said to be indestructible.

### Annealing Wrought Iron.

A patent for the following manner of manufacturing wrought iron into articles of various forms without the expense and trouble of forging them, has been taken out in England

by Mr. Wm. Rocke, of Dudley, Worcestershire. First scraps or pieces of wrought iron are melted in a cupola furnace with the fan blast, or in a reverberatory furnace. For small quantities a pot or crucible will answer every purpose. The melted wrought iron scraps are run into moulds the same as cast iron, and are then very brittle, deficient in malleability.

Second—the moulded articles are annealed as follows. The articles are piled in an iron box lined with fire brick, or a casing only of bricks. The articles in the box are then surrounded with iron ore, (the red is the best, but any will answer,) mixed with ground charcoal and covered so as to keep out the air, which would injure the process. The articles however, may be merely covered up with the ore and ground charcoal, or the ore itself, but all admission of air prevented, when they are subjected to a certain heat for some time, which gives them the required malleability. The watching of this part of the process is a nice job—great care must be observed by the workman until he gets sufficient practice to know when the process is complete. He must therefore be acquainted with the different kinds of iron and a little practice will give correctness to the eye, for let science say what it will, the most difficult knicknacks in the arts, are dependant for success upon the skill of the eye (the practical part.) A small bar cast along with the articles, may be placed in the box and drawn out with the tongs from time to time to ascertain the state of the iron and detect the completion of the process, when the articles may be removed.

For inferior articles a quantity of cast iron may be mixed and melted with the wrought iron scraps, but in no case should there be more of the cast than the wrought iron melted together. Articles may be made in this manner with the temper of steel, by mixing one fourth of cast steel with the wrought iron, or more steel according to the temper of the article wanted, but in no case to exceed the quantity of wrought iron. It would be well to melt the iron before the steel is introduced into the pot, but this does not make much difference. All the mixtures of the wrought iron and cast iron, and of the wrought iron and steel, are melted, moulded and annealed. The claim of this invention, is for the reproducing of malleability in castings of wrought iron by the annealing process described.

### Improved Gauge Cock.

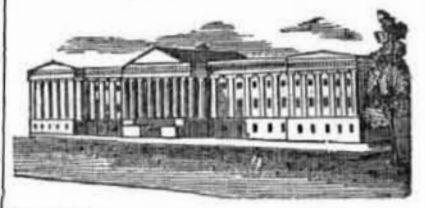


This is another gauge cock invented by Mr. H. Tyler, of Worcester, Mass.

It is designed as a gauge and self stop cock B is a hub screwed into the boiler plate by F. A1 is the main steam tube, into which D, the gauge is screwed. In the interior of this tube is a grooved conical piston which lets the steam pass up the tube and escape out of the small tube below B. The piston is connected with a coiled spring and a shank, which pass through B, and a collar A2 which fits as a gland into B. E is a handle which passes through an eye in the end of the shank, and after D is turned round the steam or water can only escape by pushing in the shank by the handle E, which presses the piston from its conical seat in A1. After the boiler has been tested, the piston springs into its conical seat and shuts off the steam itself. C is a screw cap on the outer end of the shank. This is a very compact gauge cock. It has no stuffing box, as A2 fits conically into its seat in the screw part of the hub, and therefore it is very valuable on that account.

### Rhenmatism.

By drinking a strong decoction of *saven* for a few days, the most bitter rheumatism, it is said, will give way. *Saven* is an evergreen nearly resembling spruce.



## LIST OF PATENTS

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending January 16, 1849.

To P. S. Devlan, of Reading, Penn., for improved Lubricating Compound. Patented Jan. 16, 1849.

To James Callaghan, of New Bedford, Mass. for improved method of directing the Scoops in Dredging Machines. Patented Jan. 16, 1849.

To Samuel Truscott, of Columbia, Penn., for improvement in Cast Iron Car Wheels. Patented Jan. 16, 1849.

To Henry Wright, of Newcastle, Me., for improvement in Boot Trees. Patented Jan. 16, 1849.

To John Sheriff, of Pittsburg, Penn., for improvement in Stop Cocks for hot water and steam. Patented Jan. 16, 1849.

To Bliss Corser, of Mount Morris, N. Y., for improvement in Clapboard Machines. Patented Jan. 16, 1849.

To Oliver Barr, of Aurora, Ill., for improvement in Harvesting Machines. Patented Jan. 16, 1849.

To A. Bigelow and J. Butler, of Granville, Ohio, for improvement in Looms. Patented Jan. 16, 1849.

To Emery N. Moore, of Boston, Mass. for improvement in machine for Postmarking Letters. Patented Jan. 16, 1849.

To David B. Rogers, of Seneca Falls, N. Y. for improvement in Cultivators. Patented Jan. 16, 1849.

To Wilbur M. Davis, of Gardiner, Me. for improvement in machinery for making Boxes. Patented Jan. 16, 1849.

To Hazard Knowles, of Washington, D. C. for improvement in Mill Bushes. Patented Jan. 16, 1849.

To L. P. Curtiss, of Cincinnati, Ohio, for improvement in Indicating Telegraphs. Patented Jan. 16, 1849.

### Reduction of Silver Ores.

Two new modes of reducing silver ore have been recently introduced from Germany into Mexico, which promises ere long to supersede entirely the use of that expensive agent quick-silver. The discoverer is a Mr. Ziervogel. According to the present mode the ore is first calcined with salt which converts the sulphuret into a chloride; it is then at once removed from the furnace to a suitable tub, or other vessel, and a hot solution of salt poured over it which immediately takes up the chloride of silver and holds it in solution; the liquid is then drawn into another vessel, containing metallic copper when the solution is decomposed, the silver being precipitated, and the liquor by a simple process is brought to its original starting point and may be used over and over again with but little loss of salt. In the second process ores or sulphurets, are carefully roasted in a reverberatory furnace until they are converted into sulphates, when they are thrown into a suitable vessel, and boiling water poured over them, which immediately dissolves the sulphates; the liquid is then drawn off and the silver precipitated by the same method as the first process. The latter process is best adapted for ores which contain a large portion of iron and copper pyrites as a certain quantity of sulphur must be present to ensure the conversion into a sulphate.

### Poisoning with Pounded Glass.

We find in the last number of the Medical Examiner published by Lindsay & Blakeston, a curious case quoted from the West. Jour. of Med and Surg., going to disprove the idea, so familiar and long established, of pounded glass being poison. It was the case of a little infant, only nine months old, whom some wretch had dosed with upwards of eighty grains of powdered glass, "of every size," says the periodical quoted, "from a grain of wheat to the finest sand," without the child at any time showing the slightest indisposition or receiving any hurt.