

## New Inventions.

### New Locomotive and Value of Its Patent.

We learn by the Pottsville Register, that a new locomotive, the invention of Mr. Demphul, has been tried on the Philadelphia and Reading Railroad, and with such success as to save one half the fuel of the Winant Engines. It is for burning anthracite coal:—

"The boiler of the new Engine forms as it were a cylindrical hollow-square, open only in front. Instead of the fire passing through tubes, a series of 2½ wide tubes connect the back of the boiler with the top. They are curved over the centre of the fire which plays freely all through them. They are filled with water, which enters from the back portion of the angular boiler and is driven with great force up in to the top of the same continuous chamber. These tubes run well up into the dome and penetrate the inner boiler, leaving no external joints exposed to the fire. It is demonstrated that this arrangement gives steam more quickly with one half the fuel usually consumed."

It has also a new blower to throw back upon the fire the fine particles of carbon which are in general driven up the smoke pipe. This is a good idea—all our steamboats should have one. This engine is to be (or is now) withdrawn from the road, owing to the impossibility of the inventor and the company coming to terms—the patentee asking too much for the use of his invention. The following comments of the Register are worthy of special attention by a very great number of our readers.

"The inventor of this Engine has an idea that it will revolutionize the earth and that his patent right is invulnerable and ineluctable—and no reasonable negotiation can be made with him. We know enough of Engines to perceive that every separate thing claimed as new is now in use and that if he can hold exclusive right to anything he will be rigidly confined to his particular combination and arrangement, which cannot escape evasion.—Our readers who understand the principles of Montgomery's patent boiler will see that the main novelty in Demphul's is but a slight variation from the form of the other. Montgomery's boiler increases the steam making power 40 per cent. from a given quantity of fuel. But we are equally confident that if some such a sum as \$100,000 would satisfy him, he could get it by sales of his rights, whether valid or not to persons who willingly pay in such cases what is liberal and as savagely resist demands that are preposterous and oppressive. The Battins had a lesson on that subject which Mr. Demphul might study with profit. He would now be selling rights to manufacture coal-breakers at \$100 a piece and putting thousands per annum into his pockets if that had sufficed. But reason forsook him; opposition found his invention was not original and so the Supreme Court decided."

### Stereolaic Cloth.

We have received a sample of this kind of cloth from P. S. Devlan of Reading, Pa., who brought it with him from England during his recent visit to Europe. This kind of cloth, is dyed in a different manner from the old way and is also finished by a different process. The color (black) is not affected by sulphuric acid and its finish is as superior to that by the old way, as can well be imagined. It is manufactured by Gibson, Ord & Co., Leeds, and we must say, they have made a great improvement in the manufacture of broadcloth. We have a sample of cloth, dyed and finished in the old way, made of the same wool, and the difference is very striking. The Stereolaic is soft, lustrous, and will not shrink or spot with rain, and the nap is so closely laid that it is impermeable to dust.

### New Tent.

A new tent, on an improved plan, has just been constructed by Mr. J. H. Landell, sailmaker, of Newark, N. J., which combines many advantages over the "wall tent," now in use in the army. It is circular in form, capable of accommodating a much larger number of persons, and hence proportionately cheaper than the tent commonly used.

### Improved Churn.

Mr. O. W. Wilkinson, of Fayette, Seneca County, N. Y., has invented a new improvement in the construction of a churn agitator, for which he has taken measures to secure a patent, and which is stated to operate most beautifully. The dashers are set on a horizontal shaft, running through the churn, into which are fixed blades, or distinct arms, each the section of a screw. This form of dasher is said to produce the butter in a very short period, is worked with great ease, and brings a better result, in a greater quantity of butter, than many other churns.

### New Ink.

S. French, corner of Nassau and Spruce streets, this city, has shown us a newly invented ink, by which a copy of a letter written with it can be taken in a short space of time without the aid of a copying press. We saw the operation performed, and can really commend it as a great desideratum for business men, and to all who desire to keep copies of their correspondence. It has been secured by letters patent in England, and measures are about to be taken to secure it in this country.

### New Method of Refining Gold.

Prof. Richard S. McCulloch, who fills the chair of Natural Philosophy at Princeton College, and who previously held the office of melter and refiner of the U. S. Mint, has addressed a letter to the Secretary of the Treasury, in which he states that he has discovered a new, quick and economical method of refining argentiferous and other gold bullion, whereby the work may be done in one-half the present time, and a large saving effected in interest upon the amount which is currently refined, and withdrawn for that purpose from the use of the depositor, or from the Treasury by advances for his accommodation. The writer adds, that "in labor and materials this new method would also save about one-half of the cost required by the process now used in the Mint of the United States; so that the charge to depositors for refining, which now is, as by law directed, fixed at the actual cost thereof, may be considerably reduced. The apparatus is less costly and more compact than that used in either of the methods now employed. The advantages in respect to space are such that probably five times as much work as at present may be done in the same building. In the Mint at Philadelphia ten millions of dollars per month may be refined, and the sum of \$1,000 would, I believe, cover the cost of the alterations and apparatus required."

### Remington's Bridge.

On Wednesday last week, we examined the model of this bridge now on exhibition in this city. We do not wish to say much about it at present, as we may be able to present an engraving of it at some other time. Suffice it to say that it appears to be one of the most simple bridges ever designed, for cheapness of construction according to the length of span. The model is 160 feet in the clear, composed of four stringers of a little over two inches square at the abutments, and tapering to about an inch square at the centre. It is of the form of an inverted arch. The stringers are made of several pieces of white pine joined together by a scarf joint; their ends, when they are joined, being bevelled at a very slight angle, and the bevelled parts lapped over each other, and attached with glue, so that when united, each stringer appears to be a continuous and single piece. These joinings are so arranged as that only one of them ever occurs in the same cross section of the bridge, and they are neither bolted nor clamped, but depend entirely upon the glue for their adhesion. Each of these stringers have about nine feet bearing on the abutments or suspension piers, to which they are firmly attached by iron bolts.

### Water versus Steam Power.

We have enquiries often made of us respecting the relative values of steam and water power—enquiries which we find ourselves unable always to answer, owing to the question being one wholly of practical economy; in other words, determined by fair experience. If any of our correspondents are in possession of clear, defined results, respecting the comparative economical merits of these two powers, they will do us and the public a benefit by furnishing us with the said information.

### Wheeling Bridge.

Chancellor Wallworth, to whom the Wheeling Bridge case was referred by the United States Supreme Court, has submitted to the Court that the Bridge is a nuisance. What is now to be done? Will the Bridge have to be taken down, or the piers raised so high as to allow unobstructed progress to the tallest funnels of Steamboats on the Ohio.

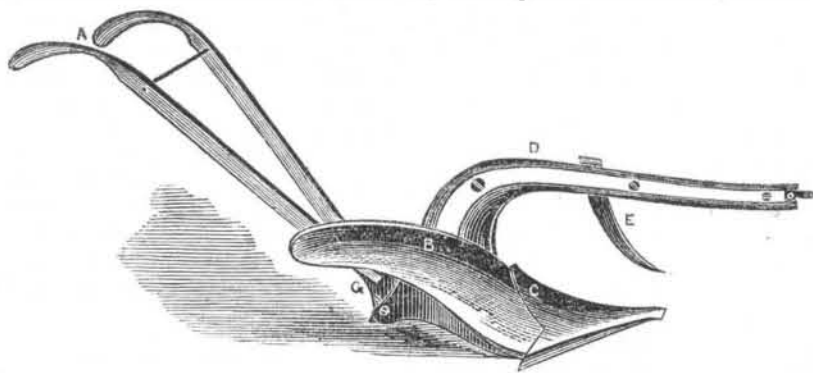
### Will Saltpetre Explode.

Since the explosions at Brooklyn and Philadelphia, this old mooted question is being revived with fury and fume. Getlemen, we say, don't write about what you don't know, but mind the old advice, "prove all things, hold fast that which is good."

### Erratum.

On the 10th and 11th lines of the second column of page 341, for "water entirely into oxygen at the one pole, and entirely into oxygen at the other," read entirely into hydrogen at one pole, and entirely into oxygen at the other.

### IMPROVED PLOW.—Figure 1.

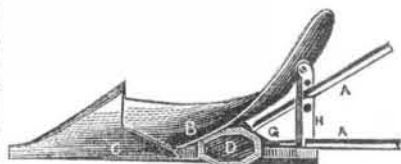


These two engravings represent a new and beautiful plow—constructed and invented by Mr. T. Baker of Troy, N. Y. Figure 1 is a side elevation, and fig. 2 is a top or plan view (looking down on it.) Figure 1 is slightly thrown up to show the bottom. The same letters refer to like parts on both of the figures.

A are the stilts or handles; B is the mould board; C is the shear; D is the beam; E is the coulter; G is the recesses to receive the lower ends of the handles. The handles pass through the guide bar, H (fig. 2.) The construction of the mould board is peculiar. This is best shown in figure 2; it has a gradual curve towards the back end, to turn the land completely over. In plowing sward every turf will be completely turned, as the mould board will lay the sward over at right angles to the perpendicular cutting point. The extremity of the turning angle of the mould board, is at such a gradual curving distance from the plow point, that it must work easy—its form being based upon the solid of least resistance; and

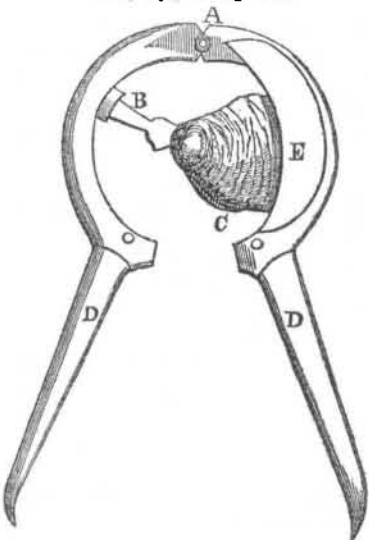
while it will completely turn over the land, it will do so by throwing it over with a rolling motion—the easiest of all for the farmer and his team. Another new feature about this plow is the beam. It is made of metal, either whole or in sections, and is hollow. This makes it of the least possible weight, with the greatest possible strength. The whole form of this plow is peculiarly beautiful, and along with this we may justly expect that its operative qualities will be equal to its appearance. More information may be obtained by letter addressed, post-paid, to Mr. Baker, No. 509

Fig. 2.



River street, Troy, who has taken measures to secure it by patent.

### New Oyster Opener.



This instrument in our oyster-eating country will no doubt receive that attention which it deserves, and as it is free property, any one may get up one to suit himself. A is a joint which unites the two jaws; B is the chisel, or opener, which is secured in a socket fixed on the left jaw, and can be set in and taken out at pleasure, a set screw being used to fasten it, or the socket may have an interior thread, and on the inner end of the chisel be made a screw to fit into it. C is the oyster; E is a recessed cheek fixed on the right jaw to hold the oyster; D D are the two handles or levers. The manner of opening the oyster, in other words, using this instrument, is represented so clearly, that "he who runneth may read," and understand. It operates like a nut cracker: By placing the oyster in the cheek, E, then bringing the knife on the peculiar spot, as shown, of the oyster, and bringing the two handles together, the shell is opened in a

twinkling. By this instrument a person may open at least four times more oysters in the same space of time, than by the common mode, and do it in a more cleanly manner. This instrument is the invention of M. Picault, a French gentleman of Paris.

### Register Hygrometer.

At one of Lord Rosse's recent scientific soirees, Mr. Appold exhibited his curious Register Hygrometer for keeping the atmosphere of the house at one regular moisture. The instrument with a variation at one degree in the moisture of the atmosphere opens a valve capable of supplying ten quarts of water per hour; delivering it to pipes covered with blotting paper heated by a gas stove, by which the water is evaporated until the atmosphere is sufficiently saturated and the valve thereby closed. A lead pencil is attached to register the distance the hygrometer travels; and thus a sheet of paper moved by clock-work shows the difference between the wet and dry bulbs of the thermometer at any period of time.

### A Useful Machine.

A patent has been granted to Daniel D. Gitt of Butler township, Adams Co. Pa., for a machine which it is believed will be of great service to farmers—it is a simple machine to dislodge, and convey into the furrow, the rubbish which collects upon the coulter or cutter of the plough, in the operation of ploughing; it is worked by a lever attached to the handle of the plough.

One jerk of the lever by the hand of the ploughman, while the plough is in progress, will dislodge all rubbish which may have accumulated, thus saving the necessity of having a boy to follow, or stopping frequently to clean the plough. For the plowing of large grass lands, such an arrangement is much required by farmers.