New Inventions.

Balloon Railway.

A gentleman connected with a scientific institution, in Cincinnati, describes to us a balloon railway—its object being to make the balloon practicable by giving it direction, power of starting, stopping, raising and lighting at the will of those attached to the car. He proposes to have a guiding rail suspended by strong posts at any reasonable distance from the ground. In order to work a balloon on this railway, he proposes to render it sufficiently buoyant, to sustain freight and passengers, and have it secured by a cord 100 or more feet long, connected to the rail by means of a sliding eye or cap made in two sections, so that by means of a smaller cord of the same length the eye or cap can be shut tight on the rail to stop or hold the balloon, or allow it to float along at the pleasure of the ballooneer. While thus secured it can, by means of the rope, be drawn to the earth at any time, for letting out and taking in passengers. This proposition to drive a balloon is the only one which has any sort of practicability about it, but we have no confidence that it will ever be adopted, for the reason that during the rapid progress of the balloon thus attached, it would exert a wonderful binding force between the sliding eye and the rail—tending to retard its rapid flight.

All attempts to apply balloons to the purposes of conveyance, we must regard as wild chimeras, tending only to disappoint the projectors. They are much older than the steam engine, and hitherto all experiments have proved abortive, and are only calculated to stimulate good mechanics and truly scientific men to look upon them as phantoms.

We would add that the same plan as the above described, was shown to us and several other editors in this city, something like a year since. We well remember, that one o our cotemporary editors stimulated the inventor with the belief that it would revolutionize the travel of the world. His ardor, however, was a little dampened after we had pointed out some of the insurmountable scientific objections, and we have not heard from him since.

Improved Lathe Machine.

Mr. William Merrill, of Northampton, Portage Co., Ohio, has made some excellent improvements on machinery for making laths, for which he has taken measures to secure a patent. The machine makes the laths out of the slabs of legs. It has a circular saw which slits the lath out of a slab as it is fed in, and it has a revolving knife on the saw spindle, which turns the edge of the lath after the saw has cut it. The slab is carried forward the whole length, allowing the saw to cut a lath the whole length, when a projection on the saw frame takes the slab, turns it over on revolving rollers, which bring it back to the person to feed it in, who stands at the end of the frame, and merely feeds in the slabs to the slitting saw.

This machine has a register to it, which rings a bell when a hundred laths are finished, to tell the operator that a bunch is ready for binding, so that no counting is required for that purpose.

Gas from Water.

"Mr. Solomon Sutter, a highly respectable mechanic of Alleghany City, has, we understand, discovered a method of decomposing water by mechanical means, and without the use of a galvanic battery, at a merely nominal expense. He made this discovery by mere accident, in the pursuit of his business as a blacksmith, and was first made aware of the fact by the hydrogen evolved from the water exploding, though fortunately without doing much damage."

[There is a mistake in the above, which the Pittsburgh Gazette terms "an important discovery." Hydrogen gas does not explode; it must be mixed with oxygen before it becomes explosive. We must state pointedly that the decomposition of water by hot iron, &c., and by electro magnets, is not new. The decomposition of water cheaply is the grand object.

Larkin's Improvement in Augur Handles.

This is an improvement in the construction of augur handles, invented by Mr. John E. Larkin, of Ballston Spa, Saratoga Co., N. Y., who has taken measures to secure a patent for the same.

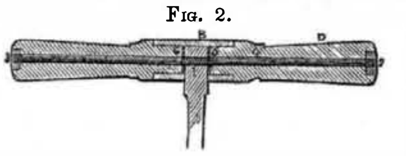
Figure 1 represents the Augur in the handle. Figure 2 is a longitudinal section, through the handle, showing the socket of the augur. The same letters of reference indicate like parts.

The handle is made in two parts, the one to fit into the other. One has a hollow metal socket, the other has a bolt which passes through a hole bored in the centre of the one

Fig. 1.

carrying the socket of the augur, coupling together by screw and fixed nuts, to hold the shank of the augur snugly, and to remove it at any moment when desired. A is one half of the handle. It is bored through its entire length, and it has a nut, 3, securely fixed inside on its outward end. B is a metal socket which is securely fitted to the part A of the handle. There is a hole in the said socket to receive the upper end of the shank of the augur, C. D is the other part of the handle. It carries the bolt or pin, 4. This bolt has a screw, 1, cut on its middle part, and one on each of its ends. The screw on the ends of the bolts fit into reverse-thread fixed nuts, 3, 2, and there is a thread cut in the opening, G, 5, made through the shank of the augur. By taking the one

Fig. 2.



half, D, of the handle with the screw bolt, 4, in it, and passing the said bolt through the opening, G, 5, in the augur shank, whenever the screw of the bolt comes to the nut 3, it is turned to the right, and then the bolt is screwed into the said nut, and also the screw, 1, into the thread in the shank of the augur, (forming a nut;) and thus the two sections of the handle are coupled together, and the augur firmly secured in its socket. This handle is adapted for augurs of various sizes, if the openings in their shanks are made with openings and threads to couple with the screw-bolt, 4. The augur can always be screwed up to any degree of tightness, and no motion of the augur in operation has any tendency to loosen the screw coupling.

Letters upon business relating to this improvement will receive attention, if addressed (post-paid) to Mr. Larkin, at Ballston.

Terra Cotta.

This artificial stone is now beginning to be extensively used in England, and was first introduced there about 60 years ago, by a lady named Miss Goode. She established a small manufactory at Lambeth, which attained a considerable celebrity. The greater part of the St. Pancras Church has all its ornamental details made of artificial stone, and cost $27,000. The Statue of Britannia, which crowns the Nelson Monument at Yarmouth, is made of artificial stone, and it is so durable that the natural stone of the monument exhibits signs of decay, while the terra cotta is as firm as the day on which it was set up.

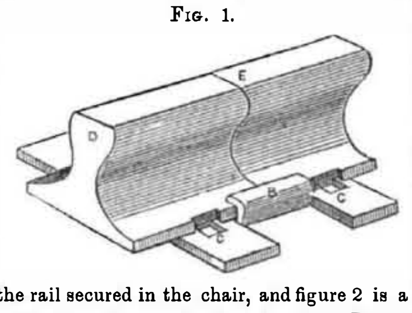
The principal ingredient in English terra cotta, is potter's white clay, one-half; pulverised stone ware, one-fifth; ditto of glass, two-fifths, and powdered white sand and flint, two-fifths. These ingredients are well mixed together, in water, moulded, and baked. Some beautiful artificial stone is made in New York under the name of Scagliola. It is not the same as the above described terra cotta, but in appearance nothing can be more beautiful. It resembles glass on the outside, in respect to polish, with all the variegated beauty of many colored marble.

Van Anden's Patent Rail Chair.

This invention is the property of Mr. William Van Anden, the inventor, and Mr. William Bushnell, of Poughkeepsie, N. Y. The chair is made of wrought iron, by a machine secured by patent to Mr. Van Anden in the United States, and for which measures have been taken to secure a patent in England.

We have seen a model of the machine, and can confidently speak of the ingenuity displayed in its construction, and its value as a useful invention. Figure 1 is a perspective view of

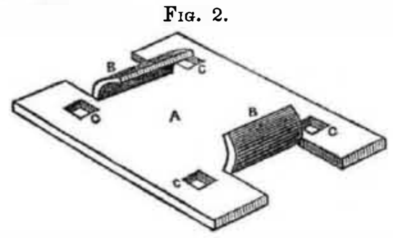
Fig. 1.



the rail secured in the chair, and figure 2 is a perspective view of the chair itself. D E are the sections of two rails placed together and secured at the joint on the chair by the jaws, B B. The chair is bolted down by the spikes, C C. In fig. 2 the chair is represented as made of a single block or plate, A, of wrought iron.

The machine takes the bar of iron as it comes from the rolls—cuts it—forms the jaws, punches the holes and completes the chair at a single blow. The chair is set in its proper place on the track, spiked down, and the ends of the two rails brought together within the jaws, as represented in fig. 1. The jaws are then ham-

Fig. 2.



mered down snug upon the bed plate of the rails, thus securing them in the most perfect manner, The advantages of the wrought over the cast iron rail chair admits of but little argument. The proprietors, whose names are mentioned above, express themselves able and willing to show its great superiority at any moment, and all communications addressed to them on the subject will receive attention.

Electro Magnetism as a Motive Power.

The National Intelligencer says, that Prof. Page is now delivering lectures in Washington before the Smithsonian Institute, and states that there is no longer any doubt of the application of this power as a substitute for steam.

He exhibited the most imposing experiments ever witnessed in this branch of science. An immense bar of iron, weighing one hundred and sixty pounds, was made to spring up by magnetic action, and to move rapidly up and down, dancing like a feather in the air, without any visible support. The force operating upon this bar he stated to average three hundred pounds through ten inches of its motion. He said he could raise this bar one hundred feet, as readily as though ten inches, and he expected no difficulty in doing the same with a bar weighing one ton, or a hundred tons. He could make a pile-driver or a forge-hammer, with great simplicity, and could make an engine with a stroke of six, twelve, twenty, or any number of feet.

The most beautiful experiment we ever witnessed was the loud sound and brilliant flash from the galvanic spark, when produced by a certain point in his great magnet. Each snap was loud as a pistol; and when he produced the same spark at a little distance from this point, it made no noise at all. This recent discovery he stated to have a practical bearing upon the construction of an electro-magnetic engine. Truly, a great power is here; and where is the limit to it?

He then exhibited his engine, of between four and five horse power, operated by a battery within the space of three cubit feet. It looked very unlike a magnetic machine. It was a reciprocating engine of two feet stroke, and the whole battery and engine weighed about one ton. when the power was thrown on by the motion of a lever the engine started off magnificently, making one hundred and fourteen strokes per minute; though when it droev a circular saw ten inches in diameter, sawing up boards an inch and a quarter thick into laths, the engine made but about eighty strokes per minute. There was great anxiety on the part of the spectators to obtain specimines of these laths, to preserve as trophies of this great mechanical triumph. The force operating upon his magnetic cylinder throughout the whole motion of two feet, was stated to be six hundred pounds when the engine was moving very slowly, but he had not been able to ascertain what the force was when the engine was running at a working speed, though it was considerably less. The most important and interesting point, however, is the expense of the power. Professor Page stated that he had reduced the cost so far, that it was less than steam under many and most conditions, though not so low as the cheapest steam engines. With all the imperfections of the engine, the consumption of three pounds of zinc per day would produce one horse power. The larger his engines, (contrary to what has been known before,) the greater the economy. Professor Page was himself surprised at the result. There were yet practical difficulties to be overcome; the battery had yet to be improved; and it remained to try the experiment on a grander scale, to make a power of one hundred horse, or more.

Truly the age is fraught with wonders; and we can now look forward with certanty to the time when coal will be put to better uses than to burn, scald, and destroy.

[The concluding paragraph of the above article is perhaps one of the greatest wonders of this age "fraught with wonders." If it had told us the exact period to which "we can now look forward with certainty when coal will be put to better uses than to burn, scald and destroy," it would for a *certainty* have done the State some service, especially since an extra appropriation of funds is asked for to bring such *wonders* to be facts, and this after a previous appropriation by the last Congress of $20,000, which has all been spent, it seems, upon a five horse power engine. We like to hear of discoveries and improvements which have a hopeful tendency to benefit the human race, and if an electro-magnetic engine can be worked more economically than a steam engine, then it will be a general benefit. No one can doubt this, but experiment, practical use for some time, is the only true way to prove this, for electro magnetic engines three times larger than Prof. Page's, have been constructed with high hopes of success, especially Davidson's Locomotive. It is wonderful how fortunate some people are in getting government appropriations. Prof. Morse got $30,000, and Prof. Page got $20,000. We hope the people are *satisfied* about these appropriations, if individuals are not.

Improvement in the Flax Manufacture.

We learn by the Glasgow "Daily Mail," that a very important improvement in the manufacture of flax has just been exhibited in England by a Mr. Doulan, which, it seems, prepares the flax for spinning by the removal of its fibrine matter without steeping. The discovery is said to be patented. Fourteen pounds of the unsteeped flax produced 4 pounds and 4 ounces of good flax, whereas the same quantity of steeped flax produced nearly a pound less. This is stated to be a great improvement over the old way. It almost appears certain to us that this is the invention of Robert Patterson, who patented the discovery last year in the United States, and then went back to Ireland to introduce the invention there. We were informed by Mr. Goddard, assignee in the United States, that Mr. Patterson was manufacturing by his process at his brother's factory, somewhere near Belfast.