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Rail-Road News.

Terre Haute and Indianapolis Railroad.

The entire amount or iron intended for this road has arrived at New Orleans, and a large part of it is now on its way from there to Indianapolis and Terre Haute. The whole line of the road is graded, and it is expected that, with a strong force on the work this summer, it will be completed by the first of December. The bridge across the White river, at Indianapolis, which is a fine piece of masonry, will be finished in a few months. In order to complete the abutments there were only about three hundred yards of stone to lay.

Lake Shore Railroad.

The Cleveland Herald says that this link, which is to connect that city with the New York and Erie Railroad to Dunkirk, is being pushed forward with vigor. The entire route between Cleveland and Painesville will be prepared for the rails by the middle of June, and be in a running order by the 1st of August. The section of work from the last named point to the Pennsylvania line is said to be in very efficient hands. It is expected to be ready for the laying down of the iron in the fall, and by January the first of the whole extent of the road will be opened.

Progress of the Pennsylvania Railroad.

The Greensburg Republican of Friday, April 11th says :—

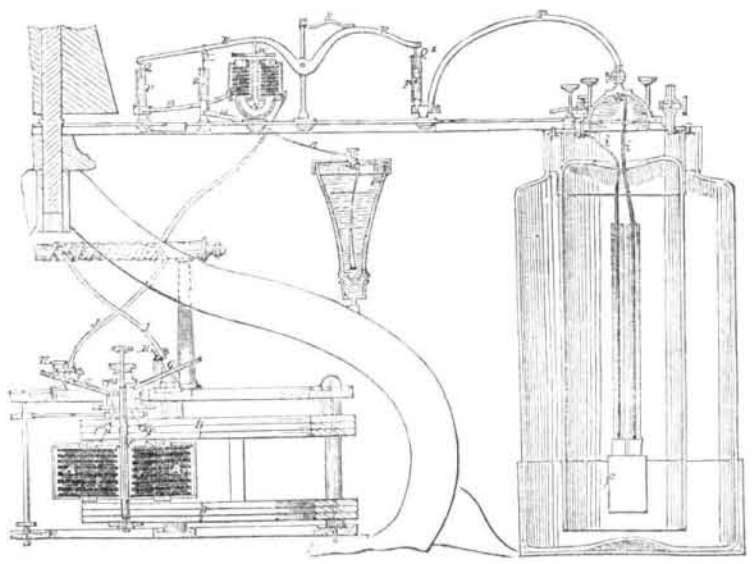
The work on the Central R R. in this vicinity, is pushed forward with considerable energy—a large number of hands are employed, and the heavy work appears to be rapidly progressing. Mr. R. Mc'Grann has commenced the tunnel, at Barclay's summit, and is now, we understand, about 30 or 40 feet under the ground—the energy and perseverance of this gentleman will complete this tunnel in three months hence. The heavy sections east of this place are progressing rapidly towards completion.

We notice that the arrangement for some time contemplated by the junction of the railroads at Macon, Geo., has been perfected. The terms have been arranged by the City Council of Macon and the Central railroad, a great majority of the citizens of Macon voting favorably to the object. This is an additional evidence of the determination of the Georgians. This state is making wonderful progress in internal enterprise.

A beautiful clock, from Boston, valued at $6,000, has just been put up in the new St. Lawrence Hall, Toronto, Canada. The pendulum is ten feet long, the ball fifty pounds weight. The striking force is seven hundred pounds.

Our friends at Halifax will now shout "On, Stanley on," as he is favorable to the Quebec Railroad.

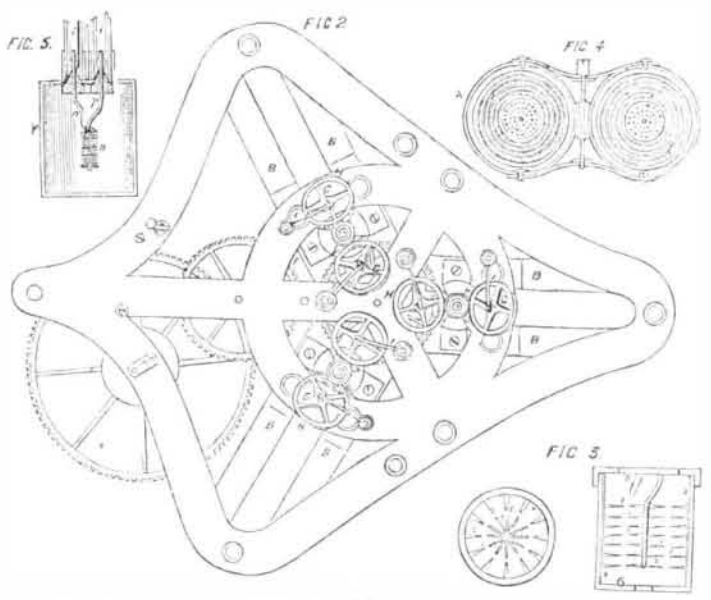
PAINE'S LIGHT---THE PATENT.---Figure 1.



This *Light* was patented in England on the 12th of June, 1850, but has only been recently enrolled. We had seen the drawings and descriptions of it in the London Mechanics' Magazine and the Patent Journal, but we waited for "Newton's Repertory of Inventions" for April, as the patent was secured in the name of Mr. Alfred V. Newton, and it was reasonable to suppose that nothing could be left obscure, as $500 was paid for the fee alone; all therefore may be set down as correct.

Fig. 1 is a vertical section of an elevation. Fig. 2 is a plan view. Fig. 3 is a vertical and plan section of an electrode. Fig. 4 is a plan of the novel helices of the magnets. Fig. 5 a large vertical section of a peculiar electrode. The same letters of reference indicate like parts. A A are two helices, the cores of which may be formed of soft iron, or tubing filled with water; *t t* are the coils made hollow and containing water. They are connected at *k*, fig. 1. A rotary motion is given to these helices by clock-work which we have not fully exhibited—this being an immaterial consideration. The helices are mounted to turn upon a spindle between the poles of a pair of permanent magnets, B B. D is an insulating cap on the head of the spindle; it carries two metallic rings, one placed around its vertical edge, E, and the other around its top, E′, and insulated from one another. The termini, F F, of the helical coils, A A, are attached one to the ring, E, the other to E′. The small rod that connects these two rings on the spindle head, D, with the hollow coils, should be split its entire length to convey the fluid from the hollow coils towards the ring and allow the electricity to enter the water. The dischargers which press against these rings are

Figure 2.



made as follows: G, (there are two) fig. 2, is a wheel with its periphery covered with a non-conducting substance except at one point, H, which is a conductor. This wheel is made to press by a spring arm, I, against the ring, E, on the spindle head. The stud, K, fig. 1 which supports the spring arm is isolated, and the conducting wire, J, starts from the arm, I. By this arrangement no discharge from the helices can take place until the conducting point, H, on the wheel, G, comes in contact with the ring, E. According to the relative diameters of the wheels, G G, and the rings, E E′, so will be the amount of fluid accumulated between the discharges.

In fig. 5, *n*, is a platinum wire soldered to one of the conductors, *i i*, its other end is wound into a coil, making a cylinder. Into this coil the positive wire, *p*, is inserted. The lower end of this wire is soldered to a metallic button at the lower end of the negative coil. "This arrangement may be reversed when opposite effects are desired." The electrode is enclosed in a cylindrical casing, *f*, being a non-conductor, the upper end of which is pierced with small holes to allow the escape of the gases evolved. There is a small hole in its bottom to allow water to enter therein from a tank. Another electrode may be made by letting the wire down into the water vessel about one-third its depth, and terminating in a horizontal copper plate, in which are inserted a number of platinum wires extending downwards into the centre of a number of platinum coils attached to the bottom of the cell. Each coil must be covered with some non-conducting substance. In fig. 3, the electrode shown is constructed upon the principle of conveying the currents on large free conductors terminating in a number of radial points, 1 1,—the negativepole, 2, or pole points radiating from a centre around the conductor's terminus, and the positive pole points, 3, converging from the inside of the cell, 4. When the positive pole enters the cell, the negative is attached to its inside. The casing of the electrode must be covered on the outside with a non-conducting substance. The top, 5, is perforated, and its bottom, 6, has an aperture of about 1-6 its diameter. The conductors are insulated by passing them though glass tubes. The *electrode*, *f*, is the end of the conducting wire, and the cell in fig. 1 is where water is decomposed. The water to be decomposed must be boiled, to expel the atmospheric air.

In fig. 1 the conductors, J, are connected with the helices around an electro magnet, N, and then pass along a conductor, O, to a mercurial cylinder, P. Q, is a platinum bar pendant from the beam, R, and dipping into the mercury. At the opposite end of this beam is a similar arrangement and contrivance. From the cylinder, P,' proceeds the conductor, T, to the electrodes in the water to be decomposed, W is an armature attached to the beam, R, and dipping into the mercury. At the opposite end of this beam, is a similar arrangement and contrivances. There is a continual electric force acting by the armature, W, on the beam, R. This force is graduated by a spring, S. When the power of the magnet overcomes that of the spring, S, the platinum bar, Q′, is drawn out, (like the one, Q), from the mercury, and the circuit with the electrode is broken. To prevent the mercury rising, after Q′ is drawn out, a cylinder, Z, is provided and filled with mercury, with a bar, X, dipping into it. The mercury is here at such a height, that before Q′ leaves its bath, the current passes into Z, and passes by the wire, *a*, to the earth.

The hydrogen evolved from the water in the cell of the electrode, is carried quickly away by a tube to a vessel containing turpentine; [this is not shown in any of the drawings—a great defect in the patent]; and to the end of the tube that dips into the turpentine, there is a tube wick of an argand burner tied; this is to prolong the contact of the gas with the turpentine. If the end of the tube is perforated, it is said to answer as well. All the pipes must be electrical *non-conducting* inside. This process makes the gas luminiferous. The column of turpentine should be considerable to prevent the gas passing too fast through it.

The claims for this invention are, first,—the use of helices furnished with hollow helical coils to be filled with water or other electric absorbent. Second,—the construction and use of electrodes as described. Third,—applying electricity to the decomposition of fluids by pulsation. Fourth,—the construction and use of a governor for regulating the electric currents. Fifth,—the mode of catalysing hydrogen gas by passing it through spirits of turpentine, or other hydro-carbon, at common temperatures. Sixth,—the use of non-conducting pipes and insulated gasometers for conveying and receiving the gases.

More remarks on this subject will appear next week, but the full description and sense of the patent is here given, and in the meantime we leave the specification to the reflections of our readers.