

SCIENTIFIC MUSEUM.

Ericsson on "the Ericsson;" Stirling on "Stirling's."

Some exceedingly funny and strange statements are now being published about hot air engines and their authors. Pliny Miles delivered a lecture in this city on the 1st inst., on Iceland, and after stating that this continent was first discovered by the Norsemen, under Eric the Red, he said, "Capt. Ericsson is believed to be one of his lineal descendants." It no doubt took more labor to make this discovery than to invent the hot air engine. Some of our daily papers have endorsed this discovery of the descendant of Eric the Red. The only powerful rival to the hot air engine, is Andrew Jackson Davis, the Seer. He, by the power of his *will*, has but to look into his press room, nod his head, and off goes his printing press. The "American Gazette," Phila., says, "It is stated by those who have seen the caloric engine in operation, that if no attention is paid to it, the only result will be, that when the fire goes out, the machinery will stop." These innocent remarks are made to show what a wonderful virtue there is in the caloric engine. We are led to infer from them that when the fires of a steam engine go out every person must run for life or death, for fear of an explosion, or that the machine will work away without any fuel at all.

Since the Ericsson has arrived at Alexandria, it has been visited by the great folks at Washington, and Capts. Ericsson, Sands, and Lowber, have made reports to Hon. J. P. Kennedy, now ex-Secretary of the Navy.—Capt. Ericsson's letter says, "the motion of the paddle wheels was more continuous than that of steamships, owing to the powerful momentum of the double pistons which form a main feature in the caloric engine." This is really a captivating feature in engineering. The next time Messrs. Stillman, Allen & Co., or Charles W. Copeland design a pair of marine engines, they must put in four single acting cylinders, instead of two double ones, because you see gentlemen, to give them a more powerful momentum, all you have to do is to increase the number of the pistons. By the reports of Capts. Sands and Lowber the Ericsson's wheels made only 6½ revolutions per minute in her trip to the Potomac; taking the diameter of her wheels and allowing 25 per cent slip—a fair allowance—she made only 3½ miles per hour—this will never do. A correspondent of the "Brooklyn Eagle—an engineer—says, "she would take 48 days to go to Liverpool at the rate she took to go from New York to Alexandria."—He advises the owners to own up at once. A proposition was made to that generous old gentleman, Uncle Sam, to build him two war ships with Ericsson's engines. The Hon. J. P. Kennedy calls hot air "a new motive power;" he must certainly be posted up in inventions. It is singular how philanthropic all the owners of doubtful inventions are in respect to the welfare of Uncle Samuel, for how the hot air engines with most of the machinery above water line, and with single acting cylinders having huge pistons which neither can work horizontally nor on an incline, can answer for war vessels, we are at a loss to determine.

A remarkable instance of collateral testimony to prove what we have said about Stirling's claims to the hot air engine has just been presented. A number of the "Glasgow Advertiser" of January says, that about thirty years ago a boat named the Highland Lad, fitted with hot air engines invented by Dr. Stirling—the engines were built by Claud Girdwood—ran for some time on the Clyde, but the heat soon destroyed the furnaces and cylinders; it says that Ericsson's engines are but a modification of Stirling's. A nephew of Dr. Stirling's, living in Canada, in a letter to the "Montreal Transcript," 31st January, which we have before us, says, "he saw the hot air engine of his uncle in Claud Girdwood's Foundry." Thus two witnesses, unknown to one another, and living three thousand miles separate, have given testimony in favor of all we have stated. But to put this question at rest for ever, and to nail the insi-

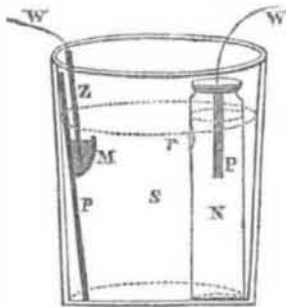
nuations thrown out by some of our daily papers in the teeth of their authors, respecting the truth of what we have said, we say that a description with two engravings of Stirling's hot air engine was published in our country in 1828, on pages 314, 15, and 16, of the "Journal of the Franklin Inst.," Vol. 5, where our readers will find said illustrations and description. We perceive that since we referred our readers to documents where they would find a description of Stirling's hot air engine, in the "London Mechanics' Magazine," that the said information has been published by a cotemporary. We are glad to see that it is published, and that our cotemporary and others are now viewing the matter in its true light, yet let us say that a very minute and full description of Stirling's hot air engine was published by us five years ago on pages 134 and 142, Vol. 3. Scientific American, before one was commenced in this country by Capt. Ericsson, and which embraces his principle of refrigeration, and as it respects economy of size far surpasses it. If those professedly eminent and literary men who have called this caloric engine "a new power," had been constant readers of the Scientific American, they would not have made themselves so eminently ridiculous as they have done by exposing their ignorance about inventions.

On the 3rd inst., Mr. Gwin, from the Naval Committee in the Senate, moved that a frigate be constructed with Ericsson engines, at a cost not exceeding \$500,000. The motion was rejected by a vote of 27 nays, 19 yeas. The owners of the Ericsson, if the improvement is so superior to steam as is alleged, need not regret the decision, for they will be able to compete and surpass all our steamships. It is said that the Ericsson is going to Australia, and from thence to England. It would please us better if it made its first voyage from New York to Liverpool. Give the Ericsson a fair trial, and let her by deeds prove that all those who have expressed themselves on the negative side of the question, have been mistaken. We make this assertion, that in three years, perhaps less, a hot air engine in a ship will be among the things that were.

Farmer's Improved Sustaining Battery.

It is well known that the Grove's Battery is the best of any in use for most purposes, and also the most expensive; it is very intense, but must be kept in first rate order or it is valueless. Several months since Mr. Farmer (of the Boston Fire Alarm) entered upon a series of experiments, in order to obtain a battery which should have all of the properties of a Grove's, with less trouble in keeping it in action, and a saving of expense.

We give an engraving of the battery with an accompanying description.



The outer cell is of stone ware, holding a gallon or more; it is filled with the sulphuric solution, S, one of acid to twelve or fifteen of water. Standing in this cell is another jar, N, holding about a quart. This cell is filled with the nitric acid solution, one of acid and about four of water. The cell is made of common biscuit ware or glass, and glazed inside and out, save at the point r. This is the porous part of the cell. The glazing prevents the filtering of the nitric acid through into the sulphuric solution, and it also offers a greater resistance to the passage of the current. It is by altering the porosity of the cell that the right proportion between the solid and fluid resistance of the circuit is obtained, and thereby the greatest amount of magnetic force, according to the general law given by Ohm, that the solid and fluid resistances of a circuit should be equal. The cells may be made of glass and a porous piece inserted or blown in. The nitric cells are covered, and the platinum

strip, P, goes through it, and is soldered to the gutta percha covered wire, W. By covering the cell, the nitrous fumes are almost imperceptible, and by soldering the wire and platinum upon the outside of the cover, one trouble which so often occurs in Grove's is avoided—the unsoldering of platinsums. On the left hand side of the outside cell, and standing within it is a pocket, p; it is made of common biscuit ware, and resembles a comb-case. In the pocket is some mercury, M, and standing in the mercury is the zinc, Z, and by its side is the other pole wire of the battery W, which is also covered with gutta percha, save near the end which is immersed in the mercury. This is one cell; a series of them are arranged as in any other.

The advantages to be derived from this form of battery are the following:—

1st. Its great duration—it has been in use several months upon the short lines of the City Fire Alarm, and needs replenishing about once in four months. Upon long lines it will probably maintain its action much longer. A battery set up on the 8th of November is now (Feb. 25th) in good order; it has been used by several daguerreotypists with complete success. Mr. Whipple, an artist of Boston, well-known for his genius and perseverance in photography, had one in action four months, without renewal of acid or disturbance of any kind. L. H. Hale, another artist, had one set up the 2nd Nov., and is in good action at the present time.

2nd. Its constancy.—The magnetometer gives but a slight variation of magnetic force, remaining almost stationary during the whole time. All telegraphers know the trouble of a variable current, and for silversing purposes it has the constancy of Smee's and the intensity of Grove's.

3rd. The use of zinc in any form.—In the Grove's the zinc must be of a particular form, and the arms are frequently eaten off at the acid line, before the body is consumed, which renders the whole useless except as old zinc. In this form of battery all scraps of zinc of commerce may be used.

4th. The amalgamation of zinc.—In Grove's it is well known that unless the zinc is kept clean by an amalgam, that the action is variable. In this battery the zinc should be amalgamated when first put into the acid, and then by capillary attraction the mercury is drawn upon it, always keeping it bright and in a condition for the acid to act.

5th. No waste of mercury.—This is no inconsiderable item of expense, in a Grove's, but here it is not exhausted, remaining in the pocket when the zinc is dissolved, and ready to act its part again.

6th. The prevention of nitrous fumes, which are so disagreeable.—This is accomplished by the cover upon the nitric cell which also prevents evaporation—a great source of loss in the Grove's.

7th. The diminished porosity which has been before illustrated.

8th. Its economy.—From all the various sources of gain, it amounts, in the aggregate, to a great deal. From eight months' trial it would seem to be about fifty per cent., which will be a great item in telegraphing in this country, where competition and low rates tell largely upon the balance sheet.

Light for Churches and Lecture Rooms.

Messrs. Editors—You must have suffered at evening lectures or sermons from the glaring lights which almost always surround the speaker, and which produce pain in the eyes and drowsiness. Now, in observatories, a single lamp, centrally placed, sends through lenses of perhaps 1½ inches diameter, beams of light to all points in the room, which it is desired to illuminate,—such are the dials of the clocks. The portions of the graduated limbs of the astronomical instruments, &c., are many feet distant from the source of light,—a spherical shade cuts off all the rays except those which are sent through these lenses. Thus a couple of lamps or gas jets on the galleries, one on each side of the preacher or lecturer, might through three or four inch lenses, send two beams to the pages of his book, while the painful lights generally disposed about him, would be removed, much to the satisfaction of his audience, who would not suffer from

headache, and who would be less apt to sleep.

M. C. M

Washington, D. C., Feb. 20, 1853.

[We hope the above suggestions will be acted upon by many of our churches.—Ed.]

An iron foundry has been started at Desert, Utah, for the manufacture of hollow ware. Saleratus and brimstone are found there in quantities.

LITERARY NOTICES.

ANDERSON'S AMERICAN VILLA ARCHITECTURE—This is a new work on Architecture, by Charles F. Anderson, of this city, and published by G. P. Putnam & Co., Park Place: it is to be completed in seven parts, each containing three separate designs, and a supplementary number containing working drawings, specifications, &c.

The style of architecture is entirely different from any that has heretofore been presented in the many works published on the same subject in our country. The author, an eminent architect, has travelled through Europe, and has minutely inspected the architecture of the various nations there; he has also visited every State and city, from the Gulf of St. Lawrence to that of Mexico, and he has come to the conclusion, after thirty years' study, that he has produced a new style of architecture suited to the climate of our country, and the customs and habits of the age. This first number presents three designs, each containing two splendid lithographic perspective views, together with sections, for gentlemen's mansions. This is, we think, the finest work on architecture that has yet been presented to the American public.

THE SCHOOL FELLOW—A Magazine for Boys and Girls. Terms \$1 per annum; New York, C. M. Saxton, 152 Fulton street; Charleston, B. F. De Bow; Chillicothe, O., Whittemore & Saxton.—The above is the title of a monthly magazine, intended for the rising generation, and is well deserving of the patronage of parents, as a useful and instructive book to place in their children's hands. In our times, when periodical literature has become so important and the newspaper and magazine are almost a necessary of life, it is wise for every one from among the host of publications that are daily, weekly, and monthly presented to their notice, to select with care those that are worthy of their patronage. If this is judicious in their own case, it becomes a still more imperative duty to use caution and judgment with respect to the works that their children read. Much good or much harm may be done to the tender mind, whilst it unconsciously sips the honey or the distilled poison; we cannot, therefore, too earnestly call the attention of those of our readers who have families to the necessity of discretion in this respect; we would therefore particularly recommend to their notice the above periodical, which is expressly intended for the young, and which contains a fund of useful and instructive reading, together with many capital illustrations. As a literary work it has merits of a high order, and although written down to the comprehension of children, its pages show that its writers can, if necessary, write up to the understanding of those of larger growth. The "School Fellow" is an ably got up work, and does credit to all concerned about it, whether publishers, editors, contributors, artists, or mechanics. Parents cannot subscribe to a better work to place in their children's hands.

LITTELL'S LIVING AGE—No. 460 of this excellent magazine, by Littell & Son Boston, contains 17 articles selected from the very choicest of European periodicals. One on the Fire Annihilator, from the "London Examiner," is exceedingly rich: it compares D'Israeli's Budget to the apparatus—promising everything.

MINIPE'S MECHANICAL DRAWING—No. 5 of this excellent work, for self-instruction in this important art, is just issued and for sale by Dewitt & Davenport, this city.



Manufacturers and Inventors.

A new Volume of the SCIENTIFIC AMERICAN commences about the middle of September in each year. It is a journal of Scientific, Mechanical, and other improvements; the advocate of industry in all its various branches. It is published weekly in a form suitable for binding, and constitutes, at the end of each year, a splendid volume of over 400 pages, with a copious index, and from five to six hundred original engravings, together with a great amount of practical information concerning the progress of invention and discovery throughout the world.

The Scientific American is the most widely circulated and popular journal of the kind now published. Its Editors, Contributors, and Correspondents are among the ablest practical scientific men in the world.

The Patent Claims are published weekly and are invaluable to Inventors and Patentees.

We particularly warn the public against paying money to Travelling Agents, as we are not in the habit of furnishing certificates of agency to any one.

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