



NEW YORK, JUNE 17, 1848.

Steam Navigation.

The present great increase of personal intercourse between the people of different nations, is the result of different applications of the steam engine. Many who look upon splendid steamers forget that they are the result of a different application of the steam engine from that of the locomotive. It is true that the difference is great but still there is a similitude. It is the steam engine that may be called the great civilizer of the present age. The application of the steam engine to navigation has created a perfect revolution in commerce already, although it is as yet but in its infancy. The origin of applying steam to propel vessels is claimed by many. Papin in 1690 proposed to propel boats by racks and pinions with pistons working in steam cylinders. This was undoubtedly the first steamboat, although Spain claims that invention as hers in the person of one Blasco de Garey, who exhibited his steamboat before Charles V. in 1543, at Barcelona. The first patent for a steamboat was granted to Jonathan Hulls, of London, in 1736. He constructed a boat and the experiments were very fair, but he met with much opposition and abandoned the project. His method of propulsion was by a wheel at the stern. In 1788 Fitch and Rumsey of this country, made some very promising experiments but from the great imperfection of their engines, their schemes were abandoned. It was not until James Watt had greatly improved the steam engine that it was successfully applied to navigation, and it was one of his engines that Fulton applied to propel his ever-to-be-remembered "Clermont," in 1807. Previous to this Messrs. Miller, Symington & Taylor constructed a boat on the Forth and Clyde Canal, Scotland, which went at the rate of five miles an hour, an account of which was published in the newspapers of that period, but that boat was laid aside for 18 years—the period when Fulton successfully and permanently established navigation by steam. Some have endeavored to make light of Fulton's claims to this invention, but we must remember that it is he alone who brings an invention into successful operation who is entitled to the reward. It was not until 1812 that Great Britain again attempted steam navigation. This was done by Henry Bell, of Glasgow, with a boat of 25 tons, named the Comet. It was perfectly successful, and from that day to this steam navigation has increased and improved and never been suspended in Britain, while in this country it is older by at least five years. It is somewhat singular that New York in America, and Glasgow in Scotland, still maintain a supremacy over other places for steam ship building—the first impulse seems still to be felt. The first line of steamboats that ever was established between two distant seaports, was by David Napier, uncle to the engineer who has fitted up all the engines of the Cunard line; this was in 1818, and to this fact of steamboat engine building having been so long in the Napier family, may be attributed the facilities at command and the experience to guide which have raised the name of Robert Napier to such eminence as an engineer.

About twenty years ago it was a common opinion among seafaring men that "steamboats might do very well for navigating rivers but never for crossing the ocean." This idea appears strange to us now, but all men are apt to doubt new projects. What would Fulton himself now say to see the Washington, the Herman and the United States making the passage to England in twelve days, and a week-long communication kept up by steam between the United States and Britain. Perhaps it would not be too much to predict that in fifty years from this period mere sailing vessels will scarcely be known on the Atlantic, and

for fifty dollars any citizen will be able to go and visit London and return to New York.—Far greater wonders than these have been accomplished during the last fifty years. The people of Scotland have erected a monument to Henry Bell at the place to which his first steamboat made her first trip. It is a neat pile with the inscription, "To Henry Bell." It stands upon the ruins of the old Roman wall that divided the dominions of the then mistress of the world from those of the fierce and unconquered Caledonian—it is a romantic spot. We hope yet to see as suitable and a still more noble monument erected to Robert Fulton.

Marble and Cements.

In a late article in Chambers' Edinburgh Journal, there is a somewhat interesting although not a very instructive account of artificial marble and valuable cements discovered recently by a lady, Mrs. Marshall. The discovery is based upon a theory adopted by Mrs. Marshall, "that the animal and vegetable remains found in the second and tertiary strata, were in their aggregation the result of chemical or electric action exerted upon particles." By a number of experiments in mixing the sulphate of lime with shells, and letting the mixture remain for a long time, an artificial stone was produced, the substance gradually growing harder, hardening from the centre outwards. A few leaves dropped on the surface of the mixture when it was fluid sunk upon the surface and became exactly like those curious worm like borings which occur in the face of compact limestone. Among the experiments of this scientific lady, a cement has been discovered which is a perfect cure for dampness in cellars—walls that have been covered with it for two years, and which formerly were uninhabitable from effluvia and dampness have been rendered healthy and perfectly dry. This cement is very valuable, but the process of making is not explained.—It however brought to our recollection a patent marble cement discovered by Keene, some years ago, which may be of use to some of our readers. Plaster of Paris with about one-sixteenth its weight of alum is mixed with water into a dough and burned in a furnace like gypsum. After this it is ground to powder and is fit for use. This cement is employed like stucco, but it can be colored with ochre and the sulphate of copper, alkanet root, and a number of other coloring substances so as to give it the appearance of veined marble, or mosaic work. This is capable of a fine polish but does not stand the weather, yet for flooring, it is both handsome and durable, and can be made and used by any person.

New Charts.

Lieut. Maury of the Observatory at Washington, has published some charts of "winds and currents," which should meet the attention of all our navigators. He has discovered a region of better winds along the great circle to South America, which is a most important one; for the passage to Rio, China, and all places south of the Equator is shortened some ten or fifteen days. No vessel should go to sea without these charts. We understand they will be given to any navigator who will send the track of his vessel with a record of his winds and currents, to the Observatory at Washington; and who, upon application to that office, will be supplied with the charts, sailing directions, &c.

Ascent of Popocatepetl.

Five American officers of the army in Mexico and one Englishman, have ascended the highest peak of the mountains of North America. Twenty five attempted the ascent and only six accomplished it. They planted the star spangled banner on the highest elevation and returned to the city of Mexico. The Indians could not believe that they had been there. On the top was a huge crater 500 yards in diameter and about as many in depth.

Mr. John Eggleston, millwright of Rochester, N. Y., has built for Senor Aguirba, of Bilboa, Spain, a model of a Flouring mill, which is to be used as the pattern for the construction of one in that far distant country.

Some skillful engineer has calculated that the present demand for wood, as fuel in this country is about 10,210,000 cords per annum.

Ancient Work on Mechanics.

I see that Mr. Ewbank in his valuable work on Hydraulics, page 285, refers to the celebrated work of Ramelli, and states that he had not been able to procure a copy of the work. It may be a public service to mention that a copy of this rare work, originally belonging to the Library of the Jesuits at Quebec, which was purchased at its sale when the Order was suppressed, after the capture of Canada by the the English, and subsequently fell into the hands of the late Simeon De Witt, and was sold a few years ago by me to the Patent Office. It is the only copy of the work that I have ever heard of as being in this country, and is an extraordinary exposition of the advance of mechanic art at its era. It was told me that directly after its reception at the Patent Office, a number of applications ready for the seal were rejected by reason of their exhibition in its pages. Whilst it was in my possession I used it repeatedly to show inventors that their contrivances had been anticipated nearly two centuries and a half ago.—This will readily be credited upon a perusal of the contents of the book subjoined, which will shew the value and extent of the work.

The work is in folio, 338 pages letter press, duplicated Italian and French descriptions of 195 different engines or combinations of engines in military or isometrical perspective, delineated perfectly and lucidly; each engraving, folio page, devoted to a separate engine or machine, ornamented with appropriate embellishments of building, landscape or fortress, with men and animals in proper position of service in connection with the subject of the drawing.

The Frontispiece represents the author in military dress at a table, with his dividers in hand measuring the plot of a fortress, on a plan lying before him, the picture being completed by engineering instruments, armor, &c. in the best style of the portraits of the day.

The title page is:—"Le diverse et artificiose machine, del Capitano Agostino Ramelli, del ponte della Tresea Ingegniero del Christianissimo Re di Francia di di polonia. Nelliquali si contengono varii et industriosi monumenti degni de grandissima speculatione per caverne beneficio infinito in ogni sorte d' operation. Composto in lingua Italiana et Francese. Aparagi in casa del autore co privilegio del Re. 1588."

The work contained the description of the following Machines:—

- 110 machines for elevating water. 2 Coffers Dams. 7 Grist Mills moved by water; 3 do moved by horse; 1 do moved by men walking on an inclined wheel (dog churn movement); 1 do moved by men walking on a horizontal wheel (horse boat movement); 4 do moved by men turning windlasses or cranks; 2 do moved by weights; 2 do moved by wind. 1 portable grist mill. 2 mills for sawing stone. 1 mill for sawing wood. 1 blast forge. 2 Excavators for removing dirt in constructing canals and military fosses. 13 military flying bridges, of very extraordinary and ingenious construction, some of them being pontons—one kind of which were represented as propelled by water wheels moved by cranks. 13 machines for lifting and forcing heavy gates of fortresses from their hinges, and breaking locks and guardbars of portcullisses and grates of sewers, &c. in fortifications. 10 cranes and lifting machines. 5 for drawing heavy loads. 3 fountains. 1 artificial tree with singing birds, as a parlor ornament. 1 mode of conveying artillery over mountainous country. 4 balistæ for throwing missiles. 1 Reading Desk, being a vertical wheel reaching from the ceiling to the floor of a Library. The wheel is double, that is, two wheels parallel to each other and say two feet apart. Between these parts, at short distances, small desks balanced on a central axis are placed, and by wheel work connected with a fixed centre in the main wheel, are kept at the same angle with the horizon whatever way the wheel may turn, (being in effect the modern vertical paddle wheel,) so that books of reference being placed on these desks, the scholar sitting in front of the wheel has only to turn it till the work he desires to consult comes opposite to him, the other works in the meanwhile moving round with the wheel but remaining undisturbed in posture.

Amongst the various inventions, since re-produced, and many of them patented, I recollect—rack work frames for converting reciprocating into circular motion and vice versa, viz. the double parallel toothed rack embracing a half toothed wheel, as used in printing presses; eccentrics in place of cranks circular rotary pumps—some with pistons sliding through an eccentric axis, some with hinged valves pressing on an eccentric piston, some with ratched shaped pistons with sliding stops or valves acting upon them; quadrant staped pumps; horizontal wheel or moveable floor, as prime mover for application of animal power, and oblique wheel for same purpose, as described amongst mills, being the same arrangement as those of our horse boats and dog churns; paddle wheels for boats; besides a number of designs for screws, &c. &c. amongst the 110 machines for elevating water, which have escaped my memory.

I need hardly say that the work is eminently worth the perusal of all interested in the mechanic arts or curious in their state centuries ago, and progress since that time.

R. V. DEWITT.

Albany, N. Y. June, 1848.

[By the above interesting letter our readers will perceive what resources our Patent Office has for judging of works old and new, and hence deciding according to the strict letter of the law "new invention." Our inventors need not be surprised at the great numbers of rejections for patents. The Patent Office has a large and valuable library of works on all branches of the arts and sciences. This is another nail to the argument for the Smithsonian fund to publish a work on the progress of inventions. There is no work so much needed at the present moment—it would save thousands to our country every year. No one would believe, unless he had really experience of the fact, of the great amount of time and money expended every year, in inventing something old. It is all true invention with the inventors, but how much toil, anxiety and means might be saved by the publication of such a national work as we suggested. We think that our suggestions will yet be acted upon. It is our opinion that the gentlemen at the head of that Institution and also the Patent Office would feel a deep interest and pleasure in collecting and arranging materials for the work. Congress also, we think, would grant a sufficient sum to aid the enterprise.

Patent Agents.

The attention of manufacturers, machinists, inventors, &c. is called to the advertisement of Mr. Gilroy, in another column. He is agent for a number of valuable patent rights and has an extensive acquaintance with all the patents issued and expired, which gives him peculiar advantages.

We would also call attention to the advertisement of Messrs. Robbins & Johnson, in the city of Washington. They are able and experienced men.

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