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American Commissioner at the World's Fair.

It is well known that Edward Riddle, of Boston, was appointed U. S. Commissioner at the World's Fair in London, in 1851, without the least public qualification to recommend him for that position. He was not known as an inventor, manufacturer, or artist. He was undistinguished for engineering or mechanical capacity, and as for any sympathy with American Exhibitors at the World's Fair, he was never charged with the possession of such a noble feeling. Our government provided a frigate to carry exhibitors' articles to England, but so defective were the arrangements, and so deficient was the Commissioner in means to do anything for the honor of his country, that but for George Peabody, the American banker in London, who advanced ten thousand dollars for decorations and incidental expences in fitting up the American department, the whole affair, so far as the Commission was concerned, would have fallen—disgracefully fallen—through. It is well known that American exhibitors paid pretty well for the whistle in London, but we have never heard it asserted that Mr. Riddle was a loser by the taxes levied by him upon his countrymen.

A meeting was held in this city on the 11th of April, 1853, by the American Exhibitors at the London World's Fair, at which they expressed their opinions very freely respecting the modest demands of Commissioner Riddle upon them. Mr. Bell, of West Farms, near this city, stated that he was an exhibitor in London, had sent his articles by a private vessel, paid all expenses himself, and was awarded a medal, which was given to the Commissioner for delivery, but was refused by his secretary until he—Mr. Bell—paid £2 2s. ($10 12cts.) Mr. Roy, of West Troy, N. Y., stated that he had sent four plaid long shawls to the Exhibition, worth $24 15 cts. each, that Mr. Riddle sold two of them for $5 6cts. each, that one had been stolen, and that a lady to whom he sent an order to draw the other was refused it. Numerous other cases of a like character were related at that meeting, and it was unanimously admitted, that the seven hundred American exhibitors at the World's Fair, paid several thousands dollars for overcharges. Those whom our government sent to England to watch over their interests, were the very persons who, above all others, seemed to watch for an opportunity to make all out of them which they honestly could, in a pecuniary sense. We never conversed with an exhibitor on the subject who did not seem to be possessed with the feeling that the Commissioner—Mr. Riddle—instead of losing anything, was, on the contrary, a great gainer, yet we now find him applying to Congress, for remuneration for his services at the World's Fair in London. This evinces that he has either suffered from the position he occupied, or that he is ungrateful for the positive and incidental advantages which accrued to him from it.

On the 1st of this month, Senator Stuart presented Mr. E. Riddle's memorial asking for remuneration, and his petition was referred to the Committee on Finance. We respectfully suggest to that Committee the examination of competent witnesses, before they make their report on the matter. They will find the names and residences of quite a number of them on page 254, Vol. 8, Sci. Am. We have not the least doubt but a universal burst of indignation would be manifested by all these exhibitors, if a single cent were paid to Mr. Riddle without a full examination into the case, and a full investigation cannot be had unless exhibitors are called upon to give their testimony. As servants of the public, and as advocates of American industry everywhere, we call upon the Finance Committee of the U. S. Senate, to whom Mr. Riddle's petition has been referred, to give this subject a full investigation, and report on the same at an early date. This is a question which interests a great number of our citizens, and an opportunity is now presented to the Committee to unveil important facts that have been hid from the public for four years, although many efforts have been made to reach them. Such an investigation, carried out fully, will be an act of justice to all. If Mr. Riddle is innocent of the charges which have been made against him, and if he has suffered pecuniarily by his services in London, then he has been a much abused man, and a full investigation, for his sake, is demanded. If he has done what exhibitors have charged him with, at the meeting referred to, justice also demands that his conduct should be held up in an official and national light, as a warning to all unfaithful stewards in the Republic.

Muntz Metal Sheathing and Bolts—Caution to Shipbuilders.

In the last number of the London *Artisan* there is a letter from R. Armstrong, on Muntz patent metal, as an article of ship sheathing and bolting—a subject of the deepest importance to shipbuilders and underwriters. He asserts there should be an immediate investigation to see if mixed metals, such as Muntz metal, when used for the bolting and sheathing of vessels exposed to the action of sea water, retains its tenacity and ductility. He says, "in every case in my experience where it has been necessary to have bolts removed, I have found them broken asunder, or so brittle that the slightest force was sufficient to break them. From the appearance of the metal its nature seemed to be quite changed, having more the appearance of brown earthenware than brass. The same metal when used as sheathing becomes so brittle in a few years that it may be crushed in the palm of the hand. If such is the case with the sheathing the same agency may be supposed to be at work with the bolts when exposed to the action of sea water. The most prominent parts of a vessel, such as the stem, keel, and stern post, are bolted wholly with this metal. Vessels must be brought into great peril when fastened with bolts of such a treacherous material. I have no doubt that many of the ships that are never heard of are lost in consequence of the bolts having lost that tenacity and ductility so necessary to enable them to fulfill the purposes for which they are employed."

Mr. Armstrong thinks that an electrical action takes place when Muntz metal, which is composed of copper and zinc, is exposed to sea water, and that the operation is the same as in a galvanic battery. It is at least a most important question for practical chemists to investigate, and a most vital one to our ship owners. We believe that most all our ships are sheathed with this metal, and a great quantity of such bolts are used. As our mercantile navy is nearly the largest in the world, and is increasing with great rapidity, no time should be lost in investigating this question in all its bearings. If Muntz metal is merely cheaper in price than pure copper, it cannot be so economical and safe if it deteriorates in the manner described in the above extract. If Mr. Armstrong is correct, and he asserts positively he is, the sooner we go back to the use of pure copper for ship sheathing and bolts, so much the better as a matter of economy and safety for our ships.

Impure Coal.

A half-a-dollar, or even a dollar difference in the price of a tun of coal, is but a small amount, when quality is taken into consideration. Different qualities of coal come from the same mine, and neither the name nor price are evidence of its real value. We have known coals sold this season for seven dollars per tun that were really dearer than others—said to be from the same mine—which cost seven and a half dollars. Those who used and tested the two kinds informed us, and presented evidence of the truth of their assertions, that the kind which they bought at half a dollar less per tun, was about two dollars dearer than the other kind.

It is not an easy matter to decide upon the quality of coal from its appearance. It requires considerable experience to do this; hence it is easy to deceive those who buy. The coal which produces the least refuse (ashes) is the best. Some coals contain twice as much shale and incombustible matter as others. Great care should be exercised at the mines in selecting coal for the market. Coal has been very high in price this winter, and is very bad in quality; we never heard so many complaints before respecting bad coal. One evil is enough, but to combine two is far from flattering to our friends at the mines of Pennsylvania.

High Winds in New York.

We have paid close attention for a number of years to the periods of the day when high winds have prevailed in this city and Long Island, and we have been surprised at their occurring with almost undeviating regularity during night. Excepting sudden thunder gusts, gales of wind rise and continue during night, and die away with increasing daylight. Gales commence blowing generally from the south-east, then shift to the north-east, and expire in the north-west, with terrible dying throes. Sometimes, however, they commence in the north-east, and die out in the south-west. They all shift suddenly from point to point. We have often noticed that many moderate gales of wind take place between 9 and 12 P. M. We do not know why this should be so, we only know that such is the fact.

The Smithsonian Institute.

The Virginia *Sentinel*, speaking of the manner of carrying out the will of the founder of the above named Institution, takes the ground, that the method of *active operations* by scientific investigations, and by cheap publications of new discoveries for general distribution, is the only way of doing this. It says, "If a mammoth and indiscriminate library had been the agency to which Smithson looked to accomplish his purpose, he would have said so, because he could have said so in a word. Smithson was an ardent devotee of science and general knowledge, and pursued his researches with great zeal. He had a high reputation as a chemist, and as an illustration of his analytic skill, it is related of him that "on one occasion he caught a tear as it was trickling down the face of a lady, lost half, examined the remainder, and discovered in it several salts."

Railroad Explosive Signals.

The Railroad *Advocate* of the 27th ult. says, "We do not think under any circumstances that Mr. Wilkinson can be justly accused of having pirated any essential ideas of the Explosive Alarm Signals from the last volume of the Scientific American."

He never has been accused of *pirating* any essential ideas of Explosive Signals from our columns. If he obtained any such ideas from our columns when they were not the subject of a patent, they were free property to him and every other person. It always affords us pleasure when we hear of any suggestions made through our columns put into practice.

The *Advocate* further says, "previous to 1852, we had been accustomed to hear of detonating or fog signals, as being in general use in England." We never heard of their being in general use in England until now.

The Franklin Institute.

The annual election of officers for this old and respectable Institution, took place on the 25th ult., when John Cresson was elected President, and John Agnew and Matthew Baldwin Vice-Presidents. Saml. L. U. Merrick, the former President, was one of the founders of the Institution, and had been President since the decease of James Ronaldson, an honored name. He declined a re-election, because he considered that others were also entitled to share the honors of such an office. The officers who have been elected, are men of reputation as inventors and engineers.

Ocean Steamers.

Cornelius Vanderbilt, the great steamship proprietor, has published a letter stating his willingness to carry the semi-monthly mail to Liverpool and back for $15,000. He considers that the large sums now paid by the American and British governments for carrying the mail, blights individual enterprise, and defies individual competition.

Steam Engine without a Boiler.

By invitation of Mr. William O'Brien, on Friday last, in company with several others, we witnessed the operation of a "steam engine without a boiler," in the yard of a blacksmith's shop, in Twelfth street, below Locust. This engine is said to be of some five-horse power, is very simple in construction and mode of operation, and occupies but little room. The furnace is about the size of an ordinary cooking stove, and in the midst of the fire are two cast-iron steam generating cylinders, about five or six inches in diameter, lying horizontally and arranged longitudinally, and at the rear end turning up at an angle of ninety degrees into what may be termed the chimney, thence extending upwards to about the hight the flames are supposed to rise from the fire.—These cylinders, being entirely surrounded by and within the fire, are kept constantly red hot. Near the front end of these cylinders, from a water tank above, a given quantity of water is ejected into each alternately, by means of peculiarly contrived valves, worked by the engine. The water in certain definite quantities being thus thrown into the red hot cylinders, is instantly converted into its appropriate quantity and bulk of steam (or decomposed into its original gases,) at a high temperature, and is simultaneously therewith worked off through the upright part or end of the cylinders in the chimney, to which the two working cylinders of the engine, which are of smaller size, and situated in the rear, are connected. What is here stated, with the piston, connecting rods, cranks and shafts, comprise the entire apparatus. Owing to its simplicity of construction and operation, the little room it occupies, the small amount of metal used, it must be much less expensive in first cost than the ordinary steam engine with its cumbrous water boilers, &c.—[Phila. Ledger, Jan. 20.

[The above plan for generating steam is neither new nor scientific, and the *Ledger*, in a sentence which we have not quoted, does not seem to have much confidence in its practicability. The red hot cylinders cannot convert water into steam as rapidly as a common steam boiler. When water is placed upon a red hot plate of metal, it at once assumes the spheroidal form, and repels the action of heat, and is converted into steam but very slowly. Red hot cylinders are weak, and cannot stand any amount of steam pressure. Red hot iron decomposes water, by absorbing the oxygen and setting the hydrogen free, therefore a red hot iron boiler will soon be destroyed. It is similar in character to Dr. Aban's steam apparatus. The boiler of Theodore Paul, patented in England in 1824, was composed of a coil of pipe, in the center of which was the fire, and is thus described on page 369 of Hebert's History of the Steam Engine, "when the fuel is ignited and the pipes are heated to redness, the water is injected by a force pump in such small portions as to cause it to be immediately converted into steam." The same principle of generating steam is embraced in McCurdy's boiler, illustrated on page 192, Vol. 7, Scientific American, in a series of articles on steam boilers.

Means of Saving Life in Shipwreck.

It seems to us that our government is getting worse and worse with respect to providing sufficient means for saving life in cases of shipwreck. Thus on the night of the 28th ult., the brig Argyle went ashore on Squam Beach, and the crew, eleven in number, took to the rigging. There they clung, with the sea breaking over them all night, and part of next day, while quite a number of persons stood on shore looking on, unable to render any assistance for the want of proper means to do so. At last the rigging gave way, and ten of the unfortunate crew were drowned before the eyes of the on-lookers, while only one was saved—he being washed ashore by the billows. Is not this disgraceful? What is the use of your Francis' surf-boots and life-boats if not fit to be applied when required in such cases.