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Locomotive for Ascending Inclined Planes Controversy.

We have received a pamphlet from Mr. Wm. Hoyt, of Dupont, Indiana, respecting his claims as original inventor of an improved locomotive for ascending inclined planes, in opposition to those of Mr. Andrew Cathcart, foreman of the machine shop at the Railroad Depot of the Madison and Indianapolis Railroad.

The improvement consists in providing a cog wheel on the locomotive to work into a central rack on the incline of the road, the said cog wheel being so adjusted and arranged as to accommodate itself by spring lever power to the unevenness of the track. Mr. Hoyt states that he invented his improvement and constructed a model, in 1840, and that he exhibited it in Philadelphia and Washington, and in that year he filed specifications of his improvements in the Patent Office, thereby, as he says, giving notice to the world of his discovery, but was not able to procure a patent until 1849.

We want to give a word of advice here. The above shows us that Mr. Hoyt had not, and has not, correct ideas about Patent Laws, and we are afraid that this is the case with many of our inventors. The very first thing which should be done, is to apply for a patent, as the laws, when correctly construed, make an invention public property, if it has been in public use two years before applying for a Patent,—this is evidence of abandonment of the invention to the public. Every machine constructed and in use before the application for the patent, can be used after it is issued, for it is not an infringement of the Patent, no patent being in existence before the machine. We are afraid that many are ignorant on this point: Mr. Hoyt wesee is, although from the pamphlet before us it appears that he is the original and first inventor, but we have not the evidence of the other side. In April, 1849, he secured a patent under Mr. Burke, and it seems that this decision of Mr. Burke was reversed by Mr. Ewbank on the 1st of last September, awarding the priority of invention to Mr. Cathcart.

An engine upon the principle of the invention in controversy, is now at work successfully on the railroad named, constructed in Philadelphia under the instruction of Mr. Cathcart, in 1847–8. Although it appears plain to us, as we have already stated, (viewing only one side) that Mr. Hoyt is the first inventor, yet he is mistaken when he says, that "if Mr. Cathcart does not establish his title to the invention, the Railroad Co. will have to pay Mr. Hoyt damages." He will find that the 7th section, Patent Laws of 1839, is plain on this point. By this law it may be probable that owing to delay of the inventor in applying for a patent, it is now public property, for this section of the Patent Laws declares that if a machine has been in use two years before application has been made for the patent, the patent, if granted, will not be valid; and it does not appear that Mr. Hoyt applied for a a patent before 1849, which is unfortunate for him. We are always pained to hear of ininventors losing their rights by delay in applying for their patents. If an inventor is afraid that his improvement may be stolen, he should file a caveat, before his model is finished. This can be done by a decent drawing and description, and the *fee* to the Patent Office of $20, forms part of the patent fee. When the model is finished, the patent should be applied for as soon as possible. This prevents after controversies about priority of invention—law suits should alway be avoided, if possible.

Opinions, Rotary Engine, &c.

We frequently receive communications upon subjects which have been fully discussed in our columns before, and consequently we lay them aside, for it would neither be policy nor wisdom to publish them. Those who write will therefore see that we do what we think is right in the matter.

It is singular how many there are who write to us about things which have already been discussed or described by us. A careful attention to treasure up the interesting facts found in our columns, would do more for every one than at first sight they are aware of. We do not pretend to find every one of the same way of thinking as ourselves, for while there are many men, there will be many opinions about the same thing; but as a general thing we are happy to know that our views of things, and our arguments upon almost every question we discuss, find their way favorably into the hearts of reasonable men—men of intelligence and thought.

Last week, however, one of our worthy correspondents differed from us a great deal in our views upon rotary engines. He thought our notions in favor of the reciprocating kind were rather old fashioned, and that we had not right views of the spirit of progress in invention. So far from this being the case, our views upon the subject are strictly in accordance with the spirit of improvement, and although they are a little old fashioned, yet they are not, by thousands of years, as old fashioned as those of our friends who advocate the cause of the rotary engine. The first steam engine was Hero's, which was invented more than two thousand years ago. There is more simplicity in the ordinary rotary engine than in the cylinder one. Any body could make a rotary engine, and one that would operate tolerably well on a small scale, but when we come to a huge engine of great power, all experience —and that is a great deal—has proven rotary engines unfit for prime motors, as compared with the more ingenious and scientific cylinder one. When steam prefers to act in curved lines, instead of straight ones, then a rotary engine will economise the whole power of the steam, but not before, for steam acts by expansive pressure, not by gravitating power, like water.

Every man should examine into the heart of a mechanical principle, and not be content with merely viewing its face, and whenever this is done in the case of the steam engine, there will be far less waste of thought, toil, time and money, upon what are intended to be improvements on the steam engine. We know a case at the present moment where we are sure $50,000 will not clear the expenses of a rotary engine that is now building to propel a steamboat on the North River. The inventor is rich, but we are always sorry to see money and ingenuity thrown away in a wrong direction.

The question about a rotary engine, and many other scientific and mechanical questions about which there are different opinions among a large class of men, cannot be settled by anything less than *deeds*, not words. Ærial navigation, propelling by electricity, &c., are among the number of such questions, but perhaps above all others, at present, a telegraph across the Atlantic absorbs the most attention. Before any company should undertake to construct a telegraph through the ocean, they should first try experiments on a large scale to test its practicability. A proposition like that, should be as clearly established to be practicable before making the final move, as was that of the Britannia Tubular Bridge, by Stephenson. A scheme of such magnitude should not be left to conjecture for success.

The reception of some recent communications, which were more speculative than desirable for our columns, induced us to make the above remarks, which we have no doubt will be of some benefit to not a few of our readers.

Walls of Buildings.

There is a great amount of recklessness, and ignorance also, displayed in the erection of the walls of buildings in this city. It is but two weeks since the walls of two buildings fell down, and in one case eight men lost their lives. It is a fact that many buildings are erected, the outside walls of which could not support themselves for a single moment. There are two evils in their erection. One is the slenderness of the walls, the other is bad mortar. The first is an evil of cupidity, the second may be an evil of the same kind, or it may be one of ignorance on the part of the mason. A strict law requiring walls to be made of a certain thickness, according to their height, will remove the first evil; a knowledge of the nature of mortar and the manner of making it, will remove the second. There are many buildings in this city, the mortar of which can be picked from between the bricks like sand, there being no cohesion between the mortar and the brick. Such buildings are supported by the weight of the mass of materials of which they are composed, and the plumb line of the walls. This is the reason why so many walls in our city come tumbling down when some of the inside supports are taken away, and why others tumble down, after the walls have been thrust out of line by fire.—There are few of our builders who could erect a leaning tower by their present system of building. We see some buildings torn down almost every day, without the least appearance of cohesion between the bricks and mortar. The mortar should be made to form some union, instead of a mere interstrata between the different rows of bricks, &c.

Buildings which are erected in frosty weather are always weaker in their walls than those erected in temperate weather. Why? Because the water of the mortar freezes and destroys the union between the mortar and brick, just as the freezing of water precipitates the heavy particles which before have been suspended in it. Almost every body has observed the truth of what we say. We suppose that some entertain an idea, that all mortar is mortar no matter what kind of lime may be used, how it is treated and how it is mixed, but there is a great difference in the value of lime, and there is just as much in the making of good mortar as there is in making anything else. Anybody can throw some shells of lime among water, and then mix some sand along with it, but such a composition can no more be considered mortar than to mix some flour, water and yeast together, and call it *bread*. As so much of the stability of brick-work and masonry depends upon the binding properties of mortar or cement, especially when exposed to side pressure, such as retaining walls and piers, it is of great importance to ascertain and use the best kind of materials for this purpose.

It was long supposed that the hardness of any mortar depended on the hardness of the limestone of which it was made, but the celebrated Smeaton overturned this idea by his researches on the subject. The most of our limestone, however, can make good mortar, if well treated. After being made into quicklime, it should, for making mortar, be laid in heaps and slacked by pouring water on it, and then it should be covered up with sand when slacked in a heap, until it is wanted for use. It will then be fine flour, quite warm, and the sand and it should be mixed together in the manner it is now generally done, only it should be worked by the spade or broad hoe, far better than is commonly done. Lime should be used as soon as possible after it is made up, for when it stands exposed for some time, it absorbs carbonic acid gas from the atmosphere, and again acquires some of the qualities it had before it was burned at all. The quality of sand is a very important item in making mortar. It should be clean and sharp and free from impurities. The quantity of sand to the lime, is also a very important item, but unfortunately for our American authors on Civil Engineering, they have rather compiled than experimented, hence we have only copies of foreign works on this subject. A common rule is two of sand to one of lime, but experience and close observation is required to determine this exactly, and nothing should be left to guess work. Common mortar, if good, adheres better to brick than stone. To make mortar into a good kind of cement, it is recommended to use brick dust mixed with the lime and sand, as a puzzolana. There is no doubt but what our masons are very sparing of cements and prodigal of sand, and there are good reasons for this. Landlords pay so high for their building lots, which have no inherent value in themselves, because they required little labor to make them, and they try to save all they can on the mason and architect's bills. Above all things it is prodigality to be saving in the foundation, walls or roofing of buildings. These parts, above all others, should be well constructed.

[Remainder next week.]

An Example for Builders.

The N. Y. Mirror, in the following paragraph, presents an example worthy of following in cities, where crowded thoroughfares render obstructions to a free passage dangerous as well as annoying. It says, in speaking of an improvement in that city:—The point which we wish to commend to the attention of builders is, the remarkable care shown in demolishing the buildings. Not a bit of rubbish has been allowed to remain in Nassau street, nor a brick even to obstruct the thoroughfare. In all the pullings down about town, we have never observed a more commendable instance of regard for the public safety and convenience. —[Phila. Ledger.

[We are sorry to say that the Mirror's paragraph is not true. Nassau street is now crowded up with bricks, rotten planks and mortar. It would be a good thing if some effectual remedy was devised for lumbering our streets with rubbish of old building materials, but we do not see how this could be done; we must be content to plod along in the old fashioned way, overlooking temporary street inconveniences for new improvements in building.

Who First Carried Coal from this Country to Philadelphia?

Much misapprehension has hitherto existed on this subject. It has been generally supposed that the coal first taken from Schuylkill County to Philadelphia was a wagon load at comparative great cost, by the late George Shoemaker, about the year 1820. This is not correct. As early as 1795, or thereabouts, Gen. Nichols, (father of the late Francis B. Nichols,) Gen. Arthur St. Clair, John Nicholson, and others formed a company to carry coal from Schuylkill county to Philadelphia, and about that time they freighted an ark with coal and took it to that city. It was deposited in the Potters' field, now Washington square, and there it remained for many years, a heap of "black stones," exciting the curiosity and jeers of the idle and "knowing ones," and a monument of the supposed folly of those who, it was thought, had exposed their ignorance by attempting to apply those "black stones" to any useful purpose.—[Min. Reg.

[We have heard it stated, that so ignorant were most people of the nature and value of anthracite coal, a few years ago, when some was presented to Prof. Mitchell for experimental burning in a common wood stove. —He declared it to be a most excellent substance for extinguishing the fire of the bottomless pit. *We* estimate this kind of coal at a far higher rate than any other kind, especially for domestic purposes.

Advice about Caveats.

A case recently came under our notice where the Patent Office, refused to accredit the $20 paid for the Caveat fee towards a patent because the fee for Caveat was paid in as follows by a mistake:—the invention was the work of two individuals, but they thought it was all one whether the caveat was filed in one or both of their names, if the patent was applied for in the names of both. They applied for the patent in both of their names, and the *caveat* fee requested to be applied towards the Patent fee. This was refused, because the Caveat was in the name of one of the inventors only.

Chicago Mechanics' Fair.

The third Annual Fair of the Chicago Mechanics Institute, Ill., commenced on Monday of last week, and was highly creditable to that young but great North Western City,—the articles exhibited being of a very superior character, although not so numerous as the first Fair of this Institution. It is the general complaint against Mechanics Institutes that "they do not hold out—they want stamina and perseverance." We are sorry that such a complaint has its foundation in truth, but it has; this should arouse our mechanics to act energetically *always*.

M. Bodisco, the Russian Minister, whom Madam Rumor exiled to Siberia, arrived in the Cambria.