Steam Carriages for Common Roads.

According to our promise of last week, we hereby present a brief history, with some reflections, on the attempts to use steam coaches on common roads. We would not do this at present, but for communications on the subject which have appeared in some of our daily papers, the tendency of which is to throw dust in the eyes of the people.

The idea of applying steam to propel carriages on common roads is somewhat ancient. A patent was issued for such an application in our country during the Presidency of Washington ; and in 1804 Oliver Evans, of Pa., constructed a small steam wagon. In Europe the idea is older still, for in 1763, John T. Cugnot, a Frenchman, constructed a model carriage moved by steam, and exhibited it in the city of Brussels. The application of steam to wagons was suggested in the first patent of James Watt, and from this hint his friend William Murdock, in 1784 constructed a small working model, which is yet in existence. In 1811, Charles Reynolds, of East Windsor, Conn., obtained a patent for a steam carriage, and in 1823, Louis Bigelow, of Petersham, Mass., also obtained one. None of these inventors, so far as we know, ever built a large steam carriage; the serious difficulties to their use on common roads, no doubt, deterred them. These difficulties were first tested in 1821, by J. Griffith, of Brompton, England. He constructed a large carriage, but it was soon rendered useless. In 1824, Messrs. Burstall & Hill built a steam coach, and made some experiments in London; this carriage was a failure too. In 1826 Goldsworthy Gurney, of London, an energetic and ingenious man, took up the subject in earnest. Of him, Luke Hebert in his history says, "he has done more on experimental trials than any other individual, owing probably to his having had greater funds placed at his disposal; it must also be admitted that he has succeeded in making more extended journeys at the speed of ordinary stage coaches, than his cotemporaries." After Gurney's first carriage was built, one was constructed by David Gordon, but it proved unsuccessful. From 1826 to 1830 a number of steam-coach inventors appeared on the field of action, and in the latter year there were either five or six steam carriages running on different roads in England. Sir Charles Dance, Sir James Anderson, Colonel Maceroni, Dr. Church, Gurney, Sumner and Ogle, and Walter Hancock, built and run carriages.

In 1832, a Committee appointed by Parliament made a report on the subject of using steam coaches on common roads. It was exceedingly favorable to their use, and set forth only one obstacle to their success and the annihilation of common stage coaches; that obstacle was the excessively high tolls charged. These the committee recommended to be reduced. The testimony of some very distinguished persons was favorable to the steam coach, but the most of that testimony was *ex parte*, and could not be fully trusted. All the steam coaches then made and experimented with, were eventually laid aside.

One reason why higher tolls were charged for steam than common stage coaches was owing to their greater weight; they soon cut up the roads into deep ruts. It was asserted that although their weight was greater, they were no more severe on roads than common stages, the horses' feet of which, it was alleged, were more destructive than the heavy steam carriages. This the road trustees could not believe with their eyes open; the wheel tracks on all roads involve the greatest expenditure for repairs.

In 1833 or '34 two steam coaches were run for a short period in Scotland, between the city of Glasgow and the town of Paisley. The distance was seven miles, the road nearly all the way as smooth as a floor. The boiler of one of these steam-coaches having exploded, killing four or five persons, an injunction was issued against them. We have been informed by one that these coaches were "Gordon's," by another that they were made by Robert Napier, while a third says they were built by that excellent engineer, Scott Russell. It makes no matter who was the builder, nor whether they run in 1833 or 1834, the name and date are of very little consequence; the fact is the main point, and that is not denied. These coaches were well built, but they failed to compete with the stage coaches, which run along with them in opposition. These steam coaches paid no tolls, for, by the law, tolls could only be charged for carriages drawn by horses. By another law, no stones (road-metal) could be placed on the road by the trustees of more than one cubic inch in size. The laws are very strict in regard to road obstructions in that country, and had the steam coach, as has been asserted, been broken down by uncommon obstructions placed in its path, those who placed the obstuctions there would probably have been either hanged or sent to a penal colony. None of the horse stages broke down on that road, and they had to pass over the same obstacles, if any, as the steam coaches. As steam coaches for common roads have all to be built very light, their boilers have either to be made very small, thereby increasing the danger from running short of water, or else they have to be made of very thin metal, and are therefore very subject to explosions from a slight overpressure.

In 1836, all the inventors of steam coaches for common roads had disappeared from the scene of contest in Britain, excepting Walter Hancock, and in that year his carriage run constantly for twenty weeks. In a letter to the London "Mechanics Magazine," dated September 22, of that year, he says: "years of practice have put all doubts of the economy, safety, and superiority of steam traveling on common roads, at rest, when compared with horse traveling, and I have now in preparation calculations founded on actual practice which will, when published, prove that steam locomotives on common roads is not unworthy of the attention of the capitalist, though the reverse of this has been denied rather mildly of late, by parties who do not desire that this branch of improvement should prosper against the interests of themselves." Where now are Hancock's carriages? If they were economical, as he asserted they were, why have they disappeared?

As all the horse stages have disappeared from the common roads in England, for ten years, and as the toll keepers and road commissioners would very gladly see steam coaches take their place, it follows, that the folly of contending against railroads has become evident to Gurney, Russell, Gordon and others, or else they would not for ten years have let the opportunity pass away unimproved. There has not been a steam coach running on common roads in England for eighteen years; all those built—and we suppose there were more than twenty of them—failed of success. We are sustained by positive facts in making this assertion. It is the railroad, in conjunction with the locomotive, which has been the means of opening up and affording those great facilities which now exist for inland commerce and travel.

The great sensible idea which now prevails, is not to convert the stage into a steam coach for common roads, but to convert common roads into railroads. Those who feast on obsolete ideas of a different character, appear to be neither sober nor sensible men. Why, because it is the rail that removes the great obstacles to rapid, cheap and safe travel, for at a speed of ten miles an hour, according to Tredgold, a horse can draw nine times more on a railroad than on a common road ; and yet in the face of common sense, and all engineering experience, some propose, in this age of improvements to use steam-coaches on common and plank roads. In 1851 a plan was proposed in this city for building a new steam carriage for common and plank roads, and an association with an assumed capital of $100,000, we believe, was organised for this purpose. The steam carriage was asserted to be an improvement on all others; and one of these improvements was placing the cylinders outside of the wheels, an arrangement which gained for "Bury's" locomotives the title of "Boxers." The arrangement is a bad one in every sense of the term; for at high velocities, the carriage would acquire a sinuous dangerous motion, like that of a drunken man ready to tumble into the first ditch. After three years' efforts to construct such a steam carriage, one has at last been completed by the association, we suppose. We again assert, what we have often done before, that it will prove an abortive effort—it will fail of success. Its failure or success is the issue, to test our veracity, knowledge, and experience respecting the project. Let it at once be placed on the Troy and Albany road, or any plank road in this State, for one year, or even six months, and let it (the question) be decided at the earliest date.

Before the era of railroads, the attempts to run steam coaches on common roads were plausible, but the sensible ideas and plans of one age become irrational in another. The match-lock musket was an improvement on the long-bow; and the flint-lock an improvement on the match-lock, but would any sensible man use either of them now? Not one. The idea of employing steam coaches on common roads now, if there were no railroads, might be entertained by sober and sensible men as a very good one indeed, but with our already splendid system of railroads, and these but in their infancy, such an idea, at the present time, is worthy of Rip Van Winkle.

(For the Scientific American.)

More Bad Gas.

A very serious drawback to the enjoyment of the here existing pure air, is produced by the impure gas furnished by the company lately established. All the principal hotels have gas introduced in their bed chambers, &c.—Now this gas is furnished and consumed without being in the least purified. Price $5 per one thousand cubic feet. I was made conscious of the bad quality of the gas by being awakened from an otherwise sound sleep by experiencing an unusual difficulty of respiration. I soon found that this difficulty was produced by the well known choky effect of "Sulphate of Ammonia," produced by the consumption of this, said to be, carbonated hydrogen. I was subsequently amused by the fact that the hotel proprietors (the complaint is general) had the gas fitters in constant requisition for the purpose of finding out and stopping imaginary "leaks;" a very profitable job for the fitter, I must confess, but not very profitable, as far as health is concerned, for the lodger. Why is this nuisance tolerated?

In this connection I would call attention to the fact, that "gas companies" frequently have two or more gasometers, one of which they fill with unpurified gas, which they supply after bed hours, supposing that good enough for street illumination; but they, probably, wilfully forget that it is just after the stores and theatres are closed that impure gas produces the most mischief, for they ought to be, if they are not, aware that a considerable quantity is used in bed chambers of hotels, as well as private houses.

We have a large number of inspectors of drugs, flour, butter, lumber, &c., appointed to inspect the quantity and quality of their respective articles, but we have no public inspectors of gas. I submit whether we would not display more wisdom by appointing inspectors of gas, than by appointing any of the above named?

I have been led to call your attention to the above facts, in the hope that it will lead to a proper remedy, similar to those brought about in the place of my abode, by my former communications, for we have had little or no complaint of the quality of our gas since I then spoke out.

There are any quantities of different kinds of meters to measure quantity, but who will be the first to invent a meter to measure the quality of gas also? JOHN F. MASCHER.

Cape May, August, 1854.

Electricity as a Motive Power.

MESSRS. EDITORS.—It was not my intention at first to make any reply to the article of J. F. Mascher, inserted in your paper of the 29th ult., (in reply to a communication of mine of the 1st of the same month,) but I have since altered my opinion, as I consider that his article although apparently a refutation of mine is on the contrary confirmatory of it. In fact by differentiating the formula $y=1\div a\times x^2$, in which y expresses the power, a the distance from the surface to the center of action, 1 the unity of volume, and x the distance of action from the surface of an electro magnet, and replace 1 by the letter v, as a variable quantity, we shall obtain the following: $y=d.v\div(2a\times 2x)d.x$, which signifies that an electro magnet infinitely small, or in which the two poles are reduced into two consecutive points, exerts its action in the inverted ratio of the simple distance; or in more simple terms, the smaller is an electro magnet, and the greater is its proportional power.

No doubt Mr. M. can conceive more readily than any other person that his globular and ingenious magnets included in an elephant have never been noticed to be greater than those of a fly. But we will resume our interesting subject by the two following principles for the construction of an electro-magnetic machine, that is, one in which the electro magnets, with their two poles generate the power:

1st. An electro-magnetic machine cannot be increased proportionally in all its parts without losing its proportional power.

2nd. To compose an electro-magnetic machine, which will keep its proportional power in increasing it, we must employ an infinite number of electro magnets infinitely small and consequently beyond all human power. We may here add that the iron beads of Mr. M. are not magnets, since copper beads, which are not magnetic, would answer the same purpose, nor have we ever heard that muscles or nerves are magnetic bodies.

May we not more reasonably conceive that the current of electricity in the nerve would generate a conjugate current in the muscle, and that these two currents, by the new theory of undulation, would produce the contraction of the muscles, and consequently the animal motion. Until the contrary proof is given, we shall see no other electro magnet in nature than the earth itself, which moving rapidly in the ether, generates a current of electricity around its equator, and consequently forms a monstrous electro-magnet, the providential guide of our navy. With our present knowledge of electricity, an electro-magnetic machine of one horse-power can be constructed at a cost little exceeding the same power produced by steam, and if, at a future time, a more economical battery be discovered, with a greater amount of electricity, it is possible that a machine of three or perhaps four horse power may be brought into action, but the great defect in the principle will always exist. VERGNES.

New York City, 1854.

[This profound letter of Prof. Vergnes, along with his former one on page 331, it appears to us, exhausts the whole subject, and leaves nothing to be said.—ED.

American Slate.

MESSRS. EDITORS.—In your paper of the 15th inst. an inquiry is made as to deposits of slate suitable for roofing, in any of the Western States. In reply I have to state that there is a very extensive deposit of slate upon the Oawchita river, near Little Rock, Arkansas. Said quarry belongs to James B. Gilmer, of Pineville, Bossier Parish, La. Mr. G. is engaged in planting cotton upon a very large scale, but has found time to work his slate quarry to some extent. The want of good transportation has so far limited his efforts, but the railroad connecting Little Rock with the Mississippi, will, when completed, remove this objection.

This quarry is inexhaustible, easily worked, and the slate as to quality and size, equal if not superior to any in the world. Slabs four or five feet square are readily obtained, or of any size and thickness desired. For more information address James B. Gilmer, as above.

Yours, G. W. R. BAYLEY.

Tigerville, Terrebonne, La., July 1854.

Kentucky Mechanics Institute.

The Second Annual Fair of this Institution will open at Louisville, on the 26th of next month. Those who desire to exhibit there can gain all the necessary information by addressing E. E. Levering, Secretary, Louisville. We hope the mechanics of Louisville will have an excellent exhibition.