Wethered's Steam and Steam Apparatus.

As you see, but an ignominy might have anticipated, the laws of nature were too strong for the enemy. The first engagement took place between them in June last, immediately after the Cornish engine had been placed in the hands of the scientific gentlemen whose opinions were to govern the Common Council of Hartford. Some prejudice was manifested in commencing the assault; and several were made prisoners by the weight of unjust treatment. At first the engine was started at three strokes a minute—just to get the water used to it. To every stroke of this engine, the water of course gave a heavy kick to the paddle, so by way of reminding him that the jocks had gone far enough. However, it would not do to submit without a struggle, and it was resolutely determined to raise the speed to sixty and a half per minute. This attempt of the enemy to violate the laws of its being, the water took its revenge, and a wreck fol lowed in no time. The cast iron boiler capable of withstanding the pressure of at least two hundred pounds to the inch, was shattered, sending the rest of the concern from destruction; and the water was left master of the field. The enemy hasted off to repair damages as many a day before the attack is removed...I have just come from the scene of the contest. The Cornish engine is laid up in white sand and tallow, and has not had steam since June 1st. The light lasted only about five days; but that added stupidity for a while, at least.

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Informed however that another campaign to begin will require a much more needed; and an appeal has been made to the city of Hartford to appropriate five thousand and five hundred dollars to enable the enemy to carry on with renewed vigor. One of the council city has appropriated this supply, but the other hesitated. Some of its members feel a sympathy with the water and do not think it ought to be treated so; others feel that it is not their business to interfere. I have seen it suggested in the papers that the enemy should be compelled to build a steam engine. This is a brute proposal. It is to be a steam-pipe; and it is not sufficient; and when the steam-pipe is built it is not certain that the enemy will be put out. Cast iron and stupidity can do much to ruin an engine, when worked by money enough; but in a fight where gravity, irritability, and human nature are all combined against them, they will find as formidable an opponent as Russia is to the Allies. The best thing that Philadelphia can do is to follow the example of Hartford, and to retire from a conflict in which nothing can be expected but broken homes—submitting to the first rather than a greater subsequent success.

It may be satisfactory to the gentlemen who examined and reported upon the old engine at Philadelphia to know that we are now performing good service in the same building, for which the Cornish engine fought its last battle and came off without any scars; so that their condition is much improved. The company of water engineers have formerly—giving every indication of a long and useful career.

It will be readily perceived, that if the Cornish engine cannot run three and a half strokes a minute at Philadelphia, where the pipe is not much more than half the length of the Hartford one, it would not be able to run two strokes a minute at Hartford. It was calculated that it could run two strokes in order to give the supply needed; and I suppose that all will agree, that the theory upon which the Cornish acted was correct; and that in vain have been all the efforts of the mariners who have done it.

Perseverance is better than force in the physical; as well as in the moral world; and if water cannot be induced to flow it can be made uniform and constant, produced by the application of a uniform and constant power, it is of little use to attempt to kick it up, by rushing, or as it is termed, a minute's work, with a great chymical assistant added with coal iron, and stupidity.

It will, no doubt, be satisfactory to those gentlemen who voted with me, to know, that whatever may happen from this time forth, it cannot be a more complete fallacy than would have happened had they not taken the responsibility of deciding what they did; as it is gratifying to me to know that in leading this question to responsibility, I made no argument or statement which experience has found to be fallacious.

The Cornish engines at Jersey City and Buffalo, some fallen for all their promise, and are practically, failures. But of such are the accidents. Yours, very truly,

Edw. N. Dickerson

Editor of Hartford Times—Sir: It is now about a year since the Council sent to the Common Council of the city of Hartford, resolved by reference to the fact which had been entered into by their immediate predecessor in office, for the construction of a Cornish engine to pump water in the public buildings, and to pay the contractor an equivalent in money for the profits which he had earned by its employment. In taking this step the members of the Council assumed a great responsibility, and the contract had been entered into by others than themselves—upon whom the law had imposed the duty of making it; who had been led to it by the example of many other cities, and who had been taken to obtain the best machine; who had been desired by the failures of others who had left the beaten track, from making new experiments; and whose course had been sanctioned by the approval of such men as Stevens of Hoboken, andGreat of Philadelphia. The objections which were urged in the courts against the contract, and its exclusion, were theoretical—maintained only by arguments drawn out of the principles of nature, and not by any fact whatever; while the friends of the contract supported it by the unanimous testimony of the books; and by an array of facts expressed by many practical men who were engaged in hydraulic engineering in the country.

Upon the trial of the question I took the ground that it was a physical responsibility which the council were bound to operate in the situation where the Hartford engineer had decided to place it; and upon that issue the court heard testimony and argument, and made their decision. But upon this question I now believe that I assumed the responsibility of saying, that the attempt to drive the column of water through the ascending pipe, leading from the Connecticut river to the reservoirs at Enfield and Meriden, at such a speed as would supply the needed amount, would be followed by an instantaneous destruction of the engine, and of the building in which it stood. That pipe which I spoke of was not to supply the reservoir by a direct channel, it would contain about three hundred tons of water, when full. In reply to this, several witnesses were examined, who stated, among other things, that in the city of Philadelphia, where one hundred and fifty thousand gallons were pumped through an ascending pipe of about three thousand feet in length, by double acting force pumps, the engine had divided to substitute a Cornish engine, which was considered satisfactory, because of the imperfect manner in which the old engines did their work; and it was agreed that it was deemed desirable to expand the capacity of the Cornish engines and the failure of the Coventry engine; and this only proved the ignorance of the Philadelphia engineers; and the Common Council agreed with me, as to the Cornish engine, and invited it to the skill of American engineering before entering into another one.

The contest was between science and empiricism, and, to be kicked up against intelligence, is the Common Council of Hartford, who have had, and demonstration required rational men to do. It is now an agreeable task to me, to show them the correctness of the opinion upon which they relied; and to satisfy them of their wisdom in following it.

The Cornish engine was built in Philadelphia, and, as that town testifies, is in one of the most beautiful shops in the world—of that J. P. Morris & Co. The builders had sent to England to make sure that it should be as good as possible, and to get the best fittings from the most reliable sources there. No pains were spared to make it succeed. It was run ten strokes a minute; and to do so cheaply. The ability of Philadelphia was expected to be able to set up a cold engine, and to save power. The errors committed in the Boston and Jersey City engines were to be remedied here upon an approved English plan,—just as my friend the Dr. testified. It was the knowledge there were to be ignominiously defeated; and a hundred tons of water was to submit patiently, without resistance, to be kicked up half through a pipe about three thousand feet long to the height of one hundred and twenty feet, by the clumsy plunges of a stupid machine, rushing at it tens times a