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Iron Improvements.—Kelly versus Bessemer.

Our readers will remember the great excitement that was created when the account of what was called the "Bessemer process" of treating iron was given to the world. We published a description of this process in the first and second numbers of our present volume; and we were then of opinion that Henry Bessemer, of London, was the first inventor of it. But very soon afterwards we were placed in possession of information which convinced us that J. G. Martien, of Newark, N. J., was a prior inventor to Mr. Bessemer, and we stated the grounds we had for entertaining such an opinion on page 21. Not long after that period, however, we received a communication from William Kelly, of the Suwanee Iron Works, Ky., which we published on page 43, in which he claimed priority over all others, as the inventor of this process, and he has at last proved his title to it. In our list of patent claims on another page of this number, it will be observed that he has been granted a patent, although one had been previously issued to Mr. Bessemer for the same invention. When Mr. Kelly's application for a patent came up before the Patent Office for examination, a patent was refused, of course; and an interference was then declared, at his request, and the following document will show the action which flowed from it:—

"In the matter of interference between the patent of Henry Bessemer, of London, and the application of William Kelly, of Lyon county, Ky., for improvements in the manufacture of iron and steel, the hearing of which was fixed for the first Monday in April.

It appears that, by the concurrent testimony of numerous witnesses, Kelly made this invention, and showed it by drawings and experiments as early as 1847, and this testimony appears to be reliable in every respect.

The patent of Bessemer was sealed at London on the 11th of April, 1856, and bears date the 11th of October, 1855.

Priority of invention in this case is awarded to said Kelly, and it is ordered that a patent be issued accordingly, unless an appeal be taken within sixty days from this date."

S. T. SHUGERT, Acting Commissioner.

U. S. Patent Office,  
April 13, 1857.

Thus the interference has been decided, and Henry Bessemer's American patent is of no more value to him than so much waste paper. According to our patent law, patents are only granted to original inventors, therefore although a patent may have been issued to an inventor, a subsequent applicant who can prove priority to the same invention will be granted one also. The claims of these two patentees may afterwards be contested in any United States Court, but the first inventor will alone be sustained, and the court has the power of annulling the illegitimate patent. This feature of our patent law is oftentimes productive of great injury to inventors, as is evident in the above case. Mr. Bessemer, without the least knowledge of Mr. Kelly's experiments, applied for a patent; it was granted, as it should have been, the invention was new and useful, so far as the Patent Office was aware. But soon afterwards Mr. William Kelly applies for a patent for the same thing, he proves priority of invention, and a patent is granted to him, which action renders the patent of Bessemer—for which he paid a fee of \$500 to the Patent Office—worthless. We certainly sympathize with him in this case, and blame Mr. Kelly for negligence in not securing his patent at a much earlier date. He should have applied for one either at the time or soon after he invented the process. Had he done so, and Mr. Bessemer had applied for a patent afterwards, ignorant of prior claims, and had been rejected, he at least could have withdrawn \$333, that part of his patent fee allowed by law to be refunded in case of a rejection—now he loses all. But if Mr. Kelly had obtained a patent in 1847, the probability is that

a knowledge of his invention being thus rendered accessible, it would have prevented the great expense which subsequent inventors (like Mr. Bessemer) have incurred, not only in applying for a patent, but in making experiments. It is a duty which inventors owe to their brother inventors to apply for patents for their inventions as soon as possible, in order to prevent others incurring unnecessary expense in making experiments, as well as applying for patents. Perhaps they have never thought of this before; we hope they will not forget it hereafter.

Our patent law, we believe, ought to be reformed in that particular feature by which Mr. Bessemer's patent has been superseded. A certain fixed time should be allowed for an inventor to apply for a patent for his invention, and if he does not do so within that period, if his invention has been publicly used by himself, it should become public property, otherwise he should not be allowed to subvert a patent granted to another, who has taken proper measures to put the public in possession of the invention.

American Steam Plowing.

Our attention has been directed again to this subject by a letter from Obed Hussey, of Baltimore, Md., who has been so instrumental in bringing reaping machines into useful and practical operation, in which he informs us he has made two public successful trials with a steam plow, of his own invention. One of these trials took place at the cattle show of the State Agricultural Society of Maryland, held at Baltimore in 1855. The Committee of the Society appointed to witness the experiment, made a very favorable report, and he was awarded a first-class premium. Four large plows were drawn by the engine, several times across the grounds; and turned furrows, from seven to fourteen inches deep. In October, last year, he again exhibited his steam plow at the cattle show of the State Agricultural Society of Indiana, held at Indianapolis; and the Committee of that Society awarded him a silver cup and diploma. In this experiment, the engine drew six plows several times across a field of heavy sod, in the presence of a large number of spectators, who gave vent to their feelings of admiration by repeated cheers.

It seems that Mr. Hussey sent us reports of these two experiments, and he thinks we have not done him justice in stating as we have done, in a recent article, that we were not aware of a single such experiment having been made in our country. These reports never reached us, or we certainly would not have omitted to have given him due credit, had we been acquainted with the facts in the respective cases. We were perfectly well aware that a number of model steam plows had been made, but did not know that a single large working one had ever been operated.

His steam plow is now out on the prairies, but it, as yet, has only plowed about ten acres. The person who has charge of it has found great difficulty in arranging suitable plows to operate satisfactorily; but he believes it will yet be made to perform well, and as far as Mr. Hussey is able—with but feeble resources—he is determined to push forward in making further experiments.

In England and Scotland, steam plowing is no longer a problematical operation—it is a perfect success so far as the working of the plows is concerned—but as yet, it is not so cheap as plowing by horses. Unless such agricultural operations can be performed with steam cheaper than with animal power, of course, it cannot and will not be used. All the English steam plows yet constructed, appear to be too heavy and bulky; Boydell's, which is stated to be the most successful, weighs no less than ten tons; and the very lightest of which we have had any published accounts, is no less than five tons in weight. Such gross steam plows will never answer for America. As animal or horse power is cheaper in America than in England, the question naturally arises, if steam plowing cannot compete in that country with horse plowing, in point of economy, how can it do so in America? And if it cannot, what is the use of agitating the subject?

Our country is more favorable for steam

plowing than England. There are hundreds of miles of fertile prairies, where steam plows can operate, without difficulty; whereas, in England, fields of uniform levels are small, "few and far between." Another point of encouragement is, this; the cost of steam plowing in England has been reduced over seventy-five per cent., within a few years, by improvements in the machines; it is now but a very little dearer than horse power; and there can be no doubt, we think, but it will soon be reduced, by further improvements, to cost much less. It would certainly be something to feel proud of, if some of our inventors were to produce the steam plow of the world, after so many experiments have been made on the other side of the Atlantic. They have done so with the reaping machine and the electric telegraph; European inventors were the first in time, but American inventors the first in excellence!

In this place, we take the opportunity to correct an opinion which seems to have become rather general, viz., that some person has offered a prize of \$50,000 for the first successful American steam plow. No such prize has ever been offered. Mr. Bronson Murray, a farmer in Illinois, offered to subscribe \$500 towards a prize of \$50,000, for the first successful steam plow, and he called upon his brother farmers to join him in raising such a fund, but his call has not been responded to, and thus the matter stands at present.

A Great Engineers' Institution.

We have a great number of distinguished civil engineers in our country, but their reputation is *scrupular*; they exercise no united influence for the advancement of science, art, or useful enterprises. A few years since, an Institution of Civil Engineers was formed in this State; but after a feeble existence of only two years, we believe, it expired. If we take a look abroad, we will find the Institution of Civil Engineers in London, whose transactions are not only an honor to themselves, but worthy of imitation throughout the world. The members of it are high-toned and jealous of their personal honor as professional men; and they give encouragement to new and great enterprises, by their influence and contributions, and thus assist to bring many new and useful inventions into public use. Men of the highest scientific and mechanical attainments are proud of being connected with it, and they take a deep interest in making all its meetings attractive. Recently, as we find stated in the *London Engineer*, its members presented Chas. Manly—who had been secretary for eighteen years, and retired on account of his age—with a testimonial, which shows how they do up things. This consisted of a beautiful time-piece, a silver candelabra, and £2,000 (about \$10,000) in cash. On the occasion, Mr. Manly stated that he had been a practical mechanic; earned his bread when a boy, by daily toil, and had afterwards arisen to merit the confidence of the ablest engineers in England, by making it a rule to be faithful, upright, and industrious in duty, and in the pursuit of knowledge to advance him in his profession.

At that meeting, success to the *Great Eastern* steamship was toasted, and J. Scott Russel, who was present, stated that he was proud of being its builder; and "the most remarkable feature," he said, "connected with it was, that a body of men should be found who would subscribe £700,000 (about three and a half millions of dollars) for an undertaking, the success of which was declared to be very problematical; but that feeling would probably be diminished when it was known that about three-fourths of the shares in the undertaking were held by members of the Institution of Civil Engineers."

This is a fact of which the public generally has been entirely ignorant, and it at once affords some idea of the wealth and influence of this association. To conceive of the members of a single society capable of subscribing \$2,600,000 for the building of a steamship is a grand idea of itself. In view of this fact, no wonder J. Scott Russel could use the following language:—"The ship [*Great Eastern*] was a specimen of what the combined qualities of men could produce, and it impressed upon all beholders the advantages of such a union as the Institution afforded the means to

encourage. United, they could do almost anything, and their efforts must benefit their country, and be conducive to their own good."

American Wines.

The American grape crop is becoming something of an institution in our country. In the Great West, especially in Ohio and Missouri, thousands of acres are set apart for the cultivation of the vine, and large quantities of wine are now manufactured annually. It has been demonstrated by numerous experiments that our native grapes produce wines fully as good as the best imported from abroad, and so well aware are the people of Ohio and Missouri of this fact, that most of them prefer their own to the best imported brands. No crop, we have been informed, yields a more profitable return for the care and labor expended upon it, than the grape.

One acre produces about four hundred gallons of juice, and the wine sells at a high price, the demand for it being greater than the supply. This very circumstance, however, has led to its adulteration in some cases, as liquids have been sold for the pure native juice of the grape which were but mixtures of logwood, caramel, and a little native wine, to impart its peculiar aroma to the whole. It is greatly to be regretted that any wine manufacturer should do such a thing; but for all this there are a number of Ohio brands much prized by those who have quaffed the juice of the grape in sunny France, on the banks of the Rhine and Douro. The brands of Mr. Yeatman, of Cincinnati, and some others, have a very high reputation in the market.

The soil and the climate of several of our States are very favorable for the cultivation of the grape, and we think that not many years hence, the importation of foreign wines will cease entirely.

In Missouri, a whole county is chiefly devoted to the raising of grapes, with the sole view of manufacturing them into wine; while a Company has been formed there, with a large capital, to manufacture, bottle, store, and sell it. The wine made in Missouri is quite equal to the best in Ohio. The vineyards around Cincinnati are extending rapidly every year; one horticulturist alone, as we learn from a contemporary, sold one million of cuttings the present season.

Whenever a plentiful supply of good pure native wine is obtained, it will supersede distilled and malted liquors—beverages which are now too commonly used.

Strychnine and Hogs.

A subscriber informs us by letter that he has used strychnine for poisoning wolves in the woods of Arkansas, and made numbers of them "bite the dust." His manner of using it was by inserting the poison in a piece of meat, and leaving it in the wolf trail. He has had undoubted evidence that hogs sometimes eat such poison baits, but it never, to his knowledge, did one of them any harm. He does not believe it will kill hogs, and is therefore of opinion that it may be employed in the manufacture of whiskey, and that hogs may eat the distillery refuse without being killed by it.

Our correspondent refers particularly to the paragraph on page 297, in reference to the charge made and denied, that strychnine had been employed in the manufacture of whiskey in Ohio, because it had been stated that distillers would not use it, as it would kill the hogs which they fed on distillery refuse. If strychnine can be eaten with impunity by hogs, the question naturally arises would not their pork be poisonous? We rather think it would neither be safe nor pleasant food. But strychnine is such a peculiar organic poison that it may be perfectly decomposed in a hog's laboratory, and its flesh, therefore, might be harmless.

The latest news from Europe brought intelligence of the death of Douglas Jerrold, said to be the greatest wit in England, and who was author of the celebrated "Candle Lectures." He was editor of a weekly paper in London at the time of his decease. In his youth he was a printer, and by dint of genius and hard labor, acquired a high literary reputation.