

Scientific American

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To Subscribers.

This is the 26th Number of Volume 7 of the Scientific American—completing the half volume. We can send all the back numbers of the volume to new subscribers, and shall be happy to do so to as many as desire to possess them. We believe that no mechanic, artisan, inventor, or lover of useful knowledge, can be posted up on the progress of the arts and sciences, who does not take the Scientific American. The reason of this is very evident, it being the only paper exclusively devoted to collecting, arranging, and discussing questions relating to such subjects. It is the only paper in the United States that publishes an Official List of all the Patents granted every week, with the claims of the patentees. It is invaluable to all those interested in patents.

We hope our friends will send in their subscriptions as soon as possible; this volume will be the best ever published. A friend of ours has said to us, he "would willingly pay his subscription to obtain merely the mechanical engravings that appear in our columns;" they are the finest specimens of mechanical engravings on wood ever presented to the American public.

Priority of Discovery.

Steam navigation, railroads, and the electric telegraph, have so linked together the whole civilized world, that men of science and inventors live and act, as it were, in one vast hall, separated only by the arch of a mountain here, and the aisle of an ocean there, but all within the sound of the hammer of the press, which, whether it be in America, or France, Prussia, Denmark, or England, soon concentrates the whole attention of the assembly. Whenever a discovery is made in one part of the world, it is at once sent flying to another, either on an electric bolt, or the wings of steam, and in a very time it flames out in bold relief, through the columns of the press, to challenge and gain the admiration of the world, according to its grandeur or worth. There is now a general and active contest for priority in discovery, and the arbiter in the case is the first public account which is given of the discovery or invention. The press, and the means now employed to communicate intelligence so rapidly from one place to another, have stimulated the spirit of investigation to a wonderful degree. It will not do now for a man to sit quiet upon an important discovery, as did Sir Isaac Newton, for years; no, nor for months, and perhaps it is not safe to do so for a day. If he does not come forward at once, he is liable to lose the whole merit—and profits, too, if there be any—of the discovery, for who can tell but another person, in a different place, may make a like discovery the next day or week, and if he first communicates a knowledge of it to the world, he will reasonably be looked upon as the first discoverer. How many inventors have we known who procrastinated to secure their inventions for some time after they were fully matured, and, by so doing, found that others had been before them but a short time—long enough, however, to render all their toil, study, and expense nothing but mementos of their dilatory conduct. Discoveries and inventions succeed one another so rapidly, now, that it will not do for men to sleep over their matured inventions; he who is first must prove himself to be the successful competitor by appearing first at the arbitrator's stand. It is reasonable to suppose that there are many men, in various parts of the world, now investigating the same subject, or studying to improve the same machine, or they may be resolving and re-resolving the same problems. More than one may make the great and desired discovery at the same time, but he who first makes his discovery public will justly be entitled to the claims of priority, and be entitled to the honors and emoluments, whatever they may be, which flow from the legal title of originality.

It is no wonder to us why there are now so many claimants for every new and useful discovery. The struggle for priority of invention is a battle and a race, and sometimes the

race is not to the swift nor the battle to the strong, but to the wise and the prudent.

Within a very few years there has been a controversy between Prof. Wheaton and Mr. Bain, about who was the inventor of the Telegraph Clock. In 1849 there was a like controversy between Prof. Mitchell and Dr. Locke, of Cincinnati, about who was the inventor of the Electric Astronomical Clock. Quite a number of controversies have taken place between different claimants of inventions and discoveries; we do not know of a single great and good invention that has not been claimed by more than one person. These things can easily be decided now, by the rule of public arbitration. It is not enough for a man to say, now-a-days, "I studied out that invention years ago, and spoke about it to this, that, and the other person, but did not then complete it." This will not do; there never has yet been an improvement made that did not engage the attention of quite a number of persons at some time of their lives. The man who consummates and brings out his invention first, is justly entitled to be called the original inventor.

Gas for Illumination.

France claims, with England, the honor of first using gas for illumination. The first notice that we have of the production of coal gas, artificially made for illumination, is a letter published in the Philosophical Transactions, in 1739, but the said letter was addressed to Robert Boyle, the philosopher, by Rev. Dr. Clayton, of Kildare, Ireland, and Boyle died in 1691. Before coal gas was employed for public illumination, it used to be made for experiments in colleges. It was not until 1798 that it was first practically applied for lighting a building. The idea of applying coal gas for general illumination seems to have occurred first to Mr. Murdoch, a Scotch engineer, employed by James Watt, and residing in Redruth, Wales. In 1792 he commenced a series of experiments and produced gas enough to light up his own house and office. Five years after that he put up a gas apparatus in Scotland, and in 1798 he put up a gas apparatus at the engine works of Messrs. Boulton & Watt, at Soho, England. He continued his experiments for a number of years, and very little general attention was paid to them, until upon the occasion of a public illumination, when he lighted up the front of the factory so brilliantly, that the news of it soon flew through all the country, and many then wanted to claim the credit of the discovery. To Mr. Murdoch belongs the whole credit of practically demonstrating its utility, and to no one else.

Coal gas is made by placing cannel coal in a red-hot cylinder of clay or iron, and sealing it up tightly. A pipe leads off at one end, and through it the volatile parts of the coal pass off in the form of gas; this gas passes through lime water before it is allowed to enter the reservoir. The lime water absorbs the ammonia and sulphurous gases contained in the coal: the gas is thus purified, and after it leaves the lime-water it is passed through cold water, which cools and washes it. Before the way to purify coal gas was discovered, the sulphuric acid gave great trouble; it blackened white painted walls, and burned hangings, &c. This way of making gas is now in general use. It is still the cheapest gas produced.

Gas made from oil does not require to be purified. The process to make it is cheaper, but the material is dearer. The coke, or residuum of the coal which makes the gas, is taken out of the retort and used for fuel. Coal gas is composed of hydrogen and carbon. The white light is solid particles of coal in an incandescent state. Hydrogen gives only a faint blue light. Dr. Hare, of Philadelphia, was the first person who made the discovery that, by directing a stream of oxygen and hydrogen upon a piece of clay, it became incandescent, and gave out a bright light. Sir Humphrey Davy first discovered that platina became incandescent in a stream of ignited hydrogen gas.

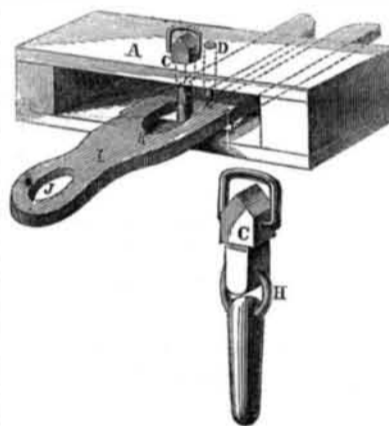
Mr. Goldsworthy Gurney, a very eminent English inventor, residing in Bude, Wales, from which the Bude Light gets its name, in 1839, passed coal gas through naphtha, and discovered that its illuminating properties were

increased by the gas absorbing some of the naphtha.

The gases of water (hydrogen and oxygen) have often been proposed for purposes of illumination, but they cannot be used like coal gas, not having any carbon in them, as they give a feeble light unless directed on a piece of lime. In 1833 a gentleman of Brussels, in Belgium, passed water gases through naphtha, and made a good light. In 1834 a Mr. Constable, in England, took out a patent for passing steam through red-hot anthracite coal, then passing the hydrogen thus generated, mixed with a certain portion of the air, through turpentine, to improve its luminosity. In 1848, J. C. Robertson obtained a patent in England, for distilling a mixture of resin, saw-dust, potash, and lime, and passing the vapors thus obtained over red-hot surfaces, thereby producing a gas fit for illumination. White's method of making water gas is to drop water into the top of a red-hot iron cylinder containing wood charcoal, at the bottom of which is red-hot scrap-iron: the iron absorbs the oxygen; the hydrogen passes off by a pipe at the bottom into a horizontal red-hot cylinder, in which it meets with the vapor of resin, which is made in another adjoining retort. The two vapors are thus mixed, and, passing off through water, are cooled, when they pass to the reservoir; this gas makes a very beautiful light.

These are the heads and particulars of the history of gas illumination,—we present them because we have received quite a number of letters on the subject lately. Let us say, here, that Dr. Gesner, of Halifax, Nova Scotia, has a United States patent for a very beautiful and economical method of making gas from petroleum. Mr. Crutchett (we do not know where he now resides) has also a United States patent for an improved apparatus for making gas.

Patent Car Platform and Coupling.



The accompanying engravings represent the improved Car Platform, in combination with the jointed self-acting pin and stationary pin, for coupling and disconnecting cars, invented by Mr. George Winters, of Portsmouth, Dauphin Co., Pa., and secured to him by patent in the month of September last.

A is the platform, commonly called the car-bumper, at each end of the cars, with a division forming an upper and lower flooring. The upper flooring has a square aperture for the square part of the jointed pin, C, to rest in, and a round aperture, D, in which a stationary pin, E, is firmly fastened. The inner face of the upper flooring is bevelled off from the square aperture so as to allow the jointed pin, C, room to operate. The lower flooring has a triangular-shaped aperture, F, bevelled off from the sides of the aperture to the inner face of the flooring, for the lower part of the jointed pin, C, to operate in the different directions; the jointed pin operates as a self-acting coupling and disconnecting pin, with a square head at the top, having a handle or lever attached to the head. The pin is made square from the head to the joint, H; the lower part of the pin is rounding, and is of a length to suit the platform. I is the half coupling or forked-tongue, formed by a groove in front, and two oval apertures or eyes. By the eye, J, this half coupling, I, is connected to one car, whilst the centre eye, K, receives the jointed pin, C, and thus connects the cars. The forked ends of the coupling, I, pass on each side of the stationary pin, E, which is located behind the jointed pin, C, which serves as a fulcrum for the forked ends to operate on, and whenever the front car is thrown off the track,

the lower part of the jointed pin, C, is drawn to the side, and immediately disconnects itself from the half coupling, I.

The claim is for the shape and construction of the improved Car Platform, in combination with the jointed self-acting pin, stationary pin, and grooved half-coupling, as described, for the purpose of coupling and disconnecting cars.

More information about rights, &c., may be obtained by letter addressed to Mr. Winters.

McCormick's Reaping Machine Claimed as an English Invention.

Petitions for an extension of the patent of Mr. McCormick, we see, are now before Congress. It was extended, we believe, once before. We see it stated, in some papers, that Mr. McCormick recently gained "a suit in the Supreme Court of the United States, sustaining his title as an original inventor. This was an appeal from the Circuit Court of the United States, in Illinois, which had awarded to Mr. Gray, McCormick's partner, half the manufacturing profits of the concern, and to Mr. McCormick one-fourth. The Court reversed this award unanimously, and awarded to McCormick one-half of the profits, and to Gray one-fourth of them."

The extract is a quotation from an exchange, and involves a great blunder somewhere,—it is perfectly unintelligible to us. It has, however, been extensively circulated. Mr. Benjamin Cheverton—the same gentleman who made such a mistake about the Scientific American, in respect to Mr. Frost's *stame*—has written a letter to the London Mechanics' Magazine, claiming the Reaper of Mr. McCormick to be an English invention. He states it was invented in 1822, by one Henry Ogle, of Errington, near Alnwick, and that it is described in Vol. 5, page 50 (1825), of that Magazine. He says, "All its principal features are identical with those of the American Machine; there is the oscillating knife, with teeth in advance, in connection with which it acts; and there is a revolving beater to lash back the grain upon the knife." He says, the only difference in the two machines is the way of oscillating the knife, "which, in the American machine, is more mechanically arranged." He says McCormick's Reaper is just a re-invention, and he writes the letter so as to prevent the Jury of the Great Exhibition printing, in their Report, that the prize awarded to Mr. McCormick was for an original invention.

All this appears to us as something passing strange. Why was not this discovery made when Mr. McCormick was in London? and why did not the Editor of the London Mechanics' Magazine detect "the re-invention" before the scrutinizing Mr. Cheverton. We have not the volume referred to in our possession, but we venture to say that the description of Ogle's machine there, makes out the two inventions to be far more dissimilar than Mr. Cheverton would now endeavor to persuade the world that it does.

A few words from Mr. Robertson, the Editor of the London Mechanics' Magazine, upon this subject, would confer a great favor, not upon us merely, but upon the whole of our American people. The invention of Mr. McCormick is original with him, this Mr. Cheverton, nor any one else, will doubt; Mr. McCormick would not have gone to England with an invention which was known to him as a re-vamped English one.

If Ogle's Reaper, described in Vol. 5 of the Mechanics' Magazine, is the same as Mr. McCormick's, it is exceedingly important that this should be known to Mr. McCormick and others, in respect to the claims of his patent. We hope that correct information on this point will soon be forwarded to us from London.

Woodworth and Emmons.

A statement has been circulated that Judge Harris, of Albany, N. Y., had testified that Emmons confessed to him before he died, that he had acted fraudulently in the case of the Woodworth patent. Mr. Keller, in his argument says, "Emmons was an instrument used by his associates to commit fraud." The father of Emmons, now an old man, says that his son never made such a confession, and that the statements about his son committing fraud are all falsehoods. It is a great sin to tell untruths about the dead, for they cannot rise up and correct the evil.