

Scientific American.

MUNN & CO., Editors and Proprietors.

PUBLISHED WEEKLY AT NO. 37 PARK ROW (PARK BUILDING), NEW YORK.

O. D. MUNN. A. E. BEACH.

The American News Co., Agents, 121 Nassau street, New York. The New York News Co., 8 Spruce street, New York. A. Asher & Co., 20 Unter den Linden, Berlin, Prussia, are Agents for the German States. Messrs. Sampson Low, Son & Marston, Crown Building, 185 Fleet street, London, are the Agents to receive European subscriptions. Orders sent to them will be promptly attended to.

VOL. XXV., NO. 10 . . . [NEW SERIES.] Twenty-sixth Year.

NEW YORK, SATURDAY, SEPTEMBER 2, 1871.

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STANISLAS SOREL.

With characteristic modesty, Sir Walter Scott, when at the zenith of his literary fame, distinctly assigned to literature a lower place than that occupied by science. He once wrote to Joanna Baillie that "men like Watt, or whose genius strongly tends to invent and execute those wonderful combinations which extend in such an incalculable degree the human force and command over the physical world, do not come within ordinary rules."

One of these men passed away from earth on the 18th of last March, the very day the Communist insurrection began to rage in Paris. His name was Stanislas Sorel; and few men have more completely filled the terms of Scott's definition, as quoted above, than he. His inventions for saving life, for simplifying and facilitating labor, and, in fine, for "extending the human force and command over the physical world" have given him an honorable place among the world's benefactors.

Stanislas Sorel, the son of a poor clock maker at Putanges, in the department of Orne, France, was born in 1803. He received no education, but at an early age began to toil at the paternal trade. Under the discouragements of ignorance and the indifference to intellectual and material progress which characterized the community of which he was a member, his native genius asserted itself, and he early won a local fame as an ingenious and skillful artisan. He married, at the age of twenty-one, a young woman of his native town, and assiduously labored at his bench until 1829, when, no longer able to endure the restraints of his seclusion, he boldly set out for Paris.

Friendless and almost penniless he entered the great city, and for several years endured such hardships as only the strongest natures are able to survive. Obligated, in order to gain a bare subsistence for his family—a wife and two children—to toil steadily at his trade, he yet found opportunities of gathering knowledge, and of unconsciously fitting himself for his grand career. He attended lectures on scientific subjects, experimented as he could, and finally produced some inventions which may be said to have foreshadowed his subsequent achievements. Among the most important were the solar lamp and thermostatic siphon.

In 1838, he discovered and perfected in detail the process of galvanizing iron, and his invention was cordially recognized by the Society for the Encouragement of National Industry, which awarded him a gold medal. From this success his advance was rapid and brilliant. Not a year passed in which he did not produce some original discovery or some important improvement in practical science.

He invented the alarm whistle attached to the safety apparatus of steam boilers; improvement in the manufacture of oxide of zinc, now generally adopted; the waterproofing of woven fabrics; the oxychloride of zinc cement, the cheap filling for teeth now used by dentists under various names, but which for general purposes was superseded by his last, and, as M. Sorel always claimed, greatest discovery, the oxychloride of magnesium cement. And it was upon the multitudinous applications of this new and wonderful compound that he was engaged when overtaken by death.

For those inventions and discoveries he received a score of prizes, gold and silver medals, the Montyou prize twice, the decoration of the Legion of Honor, and the "Marquis of Argensteuil Prize" of 12,000 francs, or \$2,400 in gold, which prize is given by the Academy of Sciences for discoveries

only of the greatest value, and which had been awarded to but two persons before, Messrs. Vicat and Chevreul.

The names of these discoveries will suffice to indicate to the intelligent reader the extent and value of his services to the world.

So numerous and varied are the articles made from galvanized iron that it has ceased to be a novelty. Doubtless in a few years the same will be true of magnesium cement, to which we called attention in connection with the articles made by the Union Stone Company, of Boston, in the SCIENTIFIC AMERICAN of October 22, 1870, and April 29, 1871.

M. Sorel, dying amid the distractions of a terrible civil war, lacked those grateful tributes of honor which in happier times his great services to science and humanity would have elicited; but it is not too late for America, who, in common with France has shared his benefactions, to revive and freshen the memory of his genius and his works.

NEW YORK POLICE INSPECTION OF BOILERS.

The public alarm, caused by the Westfield explosion, has aroused the sanitary police to activity, and five engineers are now employed in the examination of boilers throughout the city. Up to the 23rd August, they had, according to report, inspected one hundred and twenty-six boilers, and had pronounced seventeen defective. The steam gage was defective in ten, the safety valve in three. Two boilers were totally condemned. Both these boilers were under ground, one in a cellar, and another in a vault. Various other defects were found; flues, steam drums, and shells leaking, etc., etc. We trust these inspectors are doing thorough work. They certainly are proceeding in hot haste. They have averaged at least twenty-five boilers apiece in twenty-three days, according to this report, counting in Sundays.

In view of the explosion of the boiler of the steam tug Starbuck, which had only a few days previous been inspected, the public is not satisfied with merely the announcement that inspection is going on with rapidity. We wish to know whether the inspectors go inside of the boilers, or whether they are too fat to get in. We wish to know whether the sitting down to a champagne supper, or being asked to step behind the cabin door a moment, constitutes an inspection or not. We wish to know whether an old boiler well greased over till it shines is passed for a new one, when there are private reasons for so doing. We all "want to know, you know," and intend to be troublesome unless we get the information we seek. Let the "Tite Barnacles" heed the fact that people are thoroughly aroused upon this subject, and are not to be satisfied with fables.

The facts relative to the explosion upon the Starbuck are these:

In towing three canal boats from Port Johnson, N. J., to this city on Saturday, August 19th, she exploded her boiler when in the channel separating Staten Island and New Jersey, and about half way between Port Johnson and New Brighton. There were five persons on the tug at the time. The fireman was standing directly in front of the furnace when the boiler gave way, and was so badly scalded by the hot water and the steam that he died in a few minutes. The engineer was talking with the deck hand, outside the engine room, when the noise of escaping steam was heard. They ran aft, but the deck hand returned, and succeeded in reaching the lever by which the boat was stopped. The captain, in the meantime, sprang upon another boat. No one but the fireman was injured.

As we have said, this boiler had been recently inspected: that is, it had undergone the ceremony usually styled inspection, but which the public is resolved shall no longer be called by that name.

In the testimony taken by the coroner, it was sworn by Mr. McMurray, whose testimony in the Westfield case we published last week, that there were only two sound stays in the boiler; that in some places the boiler was only one sixty-fourth of an inch in thickness, that the steam gage indicated ten pounds too much, and that the safety valve was set at seventy-two pounds; also that the boiler was patched to an unusual extent. According to Captain Roder's testimony, the inspection occupied only from one half to three fourths of an hour. Mr. McMurray also testified to the worn out condition of the furnace.

The jury rendered the following VERDICT.

We find that George Williams was scalded to death by the bursting of the boiler of the steamtug H. G. Starbuck, on the 19th of August, 1871.

We find the United States Inspector, E. Platt Stratton, and the Engineer, Charles H. Mills, guilty of manslaughter in the third degree; and censure the owners of the steamtug for carelessness in running said vessel while in an unfit condition, and also Inspector Matthews, for granting a certificate as engineer to said Charles H. Mills.

A few more such verdicts as this, and inspectors will find the people are in earnest.

STEAM BOILER LEGISLATION IN ENGLAND.

The management of steam boilers is, for reasons sufficiently obvious and painful, the question of the day with us; and the report of a select committee of the British House of Commons, just issued from the press, will be interesting to all our readers. Its chief noticeable features may be described as follows: The numerous voluntary associations for the inspection of steam boilers are highly spoken of by the committee as being useful in preventing explosions. But the difficulty in inducing many obstinate and ignorant boiler owners to join these associations, combined with the facts that many boilers are placed in cellars, under doorways, in the midst of crowded dwellings on public thoroughfares, and

with the notorious truths that many of these boilers are most faulty in design, construction, and equipment, and are run by men ignorant of this special work, and untrustworthy in their characters, indicates the necessity for stringent legislation on this most important subject.

Evidence was given before the Committee to the effect that there are at least 100,000 boilers in the United Kingdom, in use for generating steam for stationary and agricultural engines: the enormous number of locomotives, marine engines on vessels in the harbors, and boilers for heating purposes, etc., worked at a pressure, are omitted from this estimate. The average number of boiler explosions is fifty per annum, and of lives lost from these causes, seventy-five. The majority of these calamities are due to carelessness, either in original construction, as to repairs, or to inattention on the part of users and their servants. The Committee admits that many explosions take place from causes, the existence of which cannot be detected by inspection; and does not recommend compulsory inspection, as it would tend to "lessen the responsibility of owners, who are best able to ascertain the condition of their boilers, and the competency of men employed to work them." The Committee puts its views into a practical shape by the following recommendations;

"That it be distinctly laid down by statute that the steam user is responsible for the efficiency of his boilers and machinery, and for employing competent men to work them; that, in the event of an explosion, the onus of proof of efficiency should rest on the steam user; that in order to raise prima facie proof, it shall be sufficient to show that the boiler was at the time of the explosion under the management of the owner or user or his servant, and such prima facie proof shall only be rebutted by proof that the accident arose from some cause beyond the control of such owner or user; and that it shall be no defence in an action by a servant against such owner or user being his master, that the damage arose from the negligence of a fellow servant.

"That whenever an explosion happens to a boiler, whether such explosion is or is not attended with loss of life or injury to person or damage to property, it shall be the duty of the user to report the same to the coroner of the district; and the coroner to whom the accident is reported, or in failure of such report, on the fact coming to his knowledge, shall hold an inquiry, and apply to the Board of Trade, and the Board of Trade shall thereupon direct one of their competent practical surveyors of boilers, or some other practical person, to assist the coroner in the investigation."

The objection to compulsory inspection is reasonable, apart from the well known English dislike to government meddling with trade and commerce. The recommendation to make the owner of an exploded boiler personally responsible, to throw on him the onus probandi as to the entire efficiency of the boiler in all particulars, and to make him pecuniarily liable for damages, even when the disaster is caused by the acts of his servants, cannot be too highly commended. No action of any government will do so much to raise the quality of steam boilers, or the average of knowledge of engineers and firemen, as the conviction, forced upon the boiler owners and steam users, that a faulty utensil and an incapable servant are the most dangerous possessions to have in a factory, as the evil they do touches the vital part of all commercial existences—the pocket.

IS THE WORLD ROUND OR FLAT?

About a year ago, an eccentric philosopher of London, England, named John Hampden, having convinced himself beyond all peradventure that the world was flat, not round, as commonly supposed, undertook the arduous missionary work of converting mankind to his way of belief. Not making much progress by following the ordinary methods of private preaching, he resorted to the expedient of offering a bet upon the subject. He made a public announcement, offering to stake \$2,500 against \$2,500, to be put up by any scientific man, that he could prove that the earth was flat, and not round, as every body else believed.

No one appears to have taken immediate notice of this absurd offer, whereupon Hampden came out with another announcement, in which he boldly declared that scientific men knew they were guilty of an imposition in propounding the round theory, and that, in consequence, they were afraid to take up his challenge, and stake \$2,500 as he proposed.

But the challenge having come to the notice of Mr. Alfred Russel Wallace, a gentleman of high reputation, and a member of several scientific societies, he accepted the conditions, and put up his \$2,500. This amount, together with a similar sum put up by Hampden, was deposited, subject to the order of the referee, Mr. Walsh, editor of the Field newspaper, who was to pay over the \$5,000 to the winning man.

The mode adopted for settling the question was planned by Hampden, the advocate of the flat theory, and the experiment appears to have been conducted in all respects as he desired. The ground selected was a six mile level, on the Bedford Canal. Three long poles of equal length were provided, and planted at equal depths, and at distances of three miles apart. A telescope was then employed, through which it was clearly and unmistakably perceived that the central pole was five feet above the level line of the telescope, which at once proved that the earth was not flat but rotund. Mr. Hampden expressed himself satisfied that he had lost the bet, and the money was accordingly paid over by the referee to the winner, Mr. Wallace.

The experiment and the telescope were level, but not so the head of Hampden. He that's convinced against his will, is of the same opinion still. It was not long before Hampden woke up to the mortifying conclusion that he had made a blunder, or that in some way he had been befogged. His reason told him that the earth was still flat, not round, as