

IRON-CLAD VESSELS FOR THE NAVY—WHAT IS THE BEST COATING FOR THEIR BOTTOMS?—A GOVERNMENT INSPECTOR'S REPORT.

How shall the bottoms of iron ships be best protected from oxydation and the adherence of barnacles and seaweeds? This is a practical question of absorbing interest to all commercial nations. On page 9 of the present volume of the *SCIENTIFIC AMERICAN* we directed the attention of chemists and others to the importance of discovering a new and effective composition for the above purpose, and in response we have received the following communication:—

MESSEURS. EDITORS:—A report was recently made by three Commissioners, naval officers appointed by the Secretary of the Navy, to investigate the subject of building iron-clad vessels for naval warfare and harbor defences. In the body of the report made by the commissioners is embraced the following statement:—“One strong objection to iron vessels which, so far as we know, has not yet been overcome, is the oxydation or rust in salt water, and their liability to become foul under water by the attachment of sea grass and animalcules to their bottoms. The best preventive we know of is a coating of pure zinc paint, which, so long as it lasts, is believed to be an antidote to this cause of evil.”

There are three points in the above extract from the report of the commissioners to which the attention of the Secretary of the Navy and all persons interested in iron vessels ought to be directed.

That salt water will rapidly oxidize iron is a well-known fact, but it is very strange that when a perfect antidote has for years been known it should not be applied. More than eight years have elapsed since a series of experiments were made by James Jarvis, Esq., under the direction of the then Secretary of the Navy, and the following extract from the report of Mr. Jarvis evinces the fact that a remedy for all the evils spoken of in the report recently made, viz., oxydation or rust, fouling and the attachment of animalcules to the bottoms of iron vessels has long been known:—

U. S. NAVY YARD,
GOSPORT, VA., Dec. 31, 1853.

SIR:—In April last I deposited in the Southern branch of Elizabeth river [opposite this yard] a great number of blocks of wood, on all of which I had painted three coats of all kinds of paint extant. Two or three kinds of the paint, where there were three coats, kept the sea worm from generating or being generated under the surface of the wood. This was not the general fact, except only in the pieces having three coats of white zinc paint. On all other paints the oysters and common barnacle, during the summer, have grown to a considerable size.

I prepared two sheets of iron about eighteen inches square. On two sides I had put on three coats of white zinc paint, and on the two opposite I had put on three coats of red lead. These preparations remained in the river the whole summer. Mark this, the white zinc is as clear of any barnacle as it was when first prepared. On the side of the red lead are many barnacles.

JAMES JARVIS, Inspector.

One of these pieces of iron plate has been left at our office, and, as stated by Mr. Jarvis, the side which was painted with three coats of red lead, is quite rough and rusty, and has no less than ten barnacles of different sizes adhering to it, while the other side, which is coated with zinc white, is free from rust, comparatively smooth, and there is not a speck of shell upon it. If we considered this experiment conclusive as to the zinc white being a perfect protective of the hulls of iron ships it would afford us great pleasure to recommend it unqualifiedly for general adoption. The sample before us would indicate it to be perfectly effective for the purpose stated, but we think that a three-months' experiment does not establish its superiority over any other ingredient tried, although it certainly shows it to be superior to red lead for a coating, and we hope the Navy Department will thoroughly test it upon some of its new iron vessels. Various compositions have been used with quite favorable results. In 1859 the British iron steamer *Himalaya* ran for nine months, making 26,000 miles in that period, and had been in every climate, and yet when she was taken into dock for some repairs the bottom was found quite smooth, the plates free from rust and not a barnacle adhering to them. Red lead was used as a primary coat for the *Himalaya*, and over this a patent composition principally composed of asphalt. Yet this very favorable experiment has not been considered conclusive, on the other side of the Atlantic, as to the virtues of the composition.

On page 344 of the last volume of the *SCIENTIFIC AMERICAN*, we published the specification of Mr. Muntz for sheathing iron ships with Muntz metal (brass) laid

upon the top of a coat of india rubber; and upon another page of this issue of the *SCIENTIFIC AMERICAN* there is a description of a new mode of sheathing iron vessels with copper laid upon a coat of asphalt, and fastened with screws. English iron shipbuilders seem to have settled down lately to the conclusion that smooth sheet brass or copper is the only sure protection for the iron hulls of ships, hence the many recent attempts to apply the sheathing with a non-conducting substance between it and the iron, so as to prevent the two metals becoming a huge galvanic pile. This, we believe, will be very difficult to accomplish; we are, therefore, disposed to encourage every effort to obtain a perfectly reliable composition for the purpose. We trust that further experiments will be made with the zinc white and other compositions applied practically to iron vessels, and that the results will be communicated to us for publication. It is a subject of vast importance to us and all other nations.

DEATH OF A DISTINGUISHED MANUFACTURER.

One of the most upright and enterprising of our cotton manufacturers has been called away to “the better land.” Benjamin S. Walcott, Esq., died at his residence, New York Mills, Oneida Co., N. Y., on the 12th ult., aged 76 years. He was born in Cumberland, R. I., Sept. 29th, 1786; and his father being a manufacturer, he early acquired a competent knowledge of cotton machinery and manufacturing operations. In 1825, while employed as chief machinist in the Oneida Mills, the late Benjamin Marshall, Esq., of Troy, N. Y., selected him as his agent to erect, fit up and manage the original factory, called New York Mills, and ever since he has been identified with the growth and interests of this well known manufacturing village. Under his fostering care it has ever been a model of neatness, activity, morality and intelligence. As agent (with an interest) for Mr. Marshall, he conducted the New York Mills for twenty-two years with great success. He employed the best machinery and the best machinists which could be obtained, and he was exceedingly choice in the selection of careful and able operatives. The goods manufactured at New York Mills have always enjoyed a special reputation for superiority, and have ever brought the highest prices of domestic cotton goods in our markets. Personally, we know that Mr. Walcott was continually expending large sums in obtaining improvements in machinery, whereby he was able to maintain a superiority in his manufactured goods. This was a ruling element of success in his undertakings.

About fourteen years ago Mr. Walcott became main proprietor of the establishment and associated with himself his two sons and Mr. Samuel Campbell, and since that period two other manufactories in the vicinity have been added to the corporation. About five years ago Mr. Walcott retired from active life, leaving the business of the New York Mills factories with the present proprietors—Messrs. William D. Walcott and S. Campbell.

To great practical ability Mr. Walcott added laborious habits and high intelligence derived from personal experience. He had traveled in Palestine, Europe and all sections of the United States. His patriotism was evinced last year by the present of a valuable Mississippi steamboat to our government; and although his body had been prostrated for the past two years with paralysis, his mind was clear to the last, and he ever took a deep interest in all affairs that affected the welfare of his fellow man. Success in business, and the acquirement of great wealth seemed to increase his views of Christian responsibility. He gave \$15,000 and his son William \$5,000 to Hamilton College to establish the Walcott Professorship of the Evidences of Christianity. This was one of his public acts toward an educational institution, but those who knew him personally can testify that his private and unostentatious acts of benevolence were without number, and seemed to constitute the main engrossing object of his life. In him the poor had a true friend, the distressed and unfortunate a sympathetic counsellor, and his work people looked up to him as a father. He was a model manufacturer.

THE total amount expended by the government in the purchase of fire arms, since the beginning of the rebellion, is twenty-two million dollars.

Does an Error in the Oath Affect the Legality of a Patent?

U. S. PATENT OFFICE,
WASHINGTON, January 14, 1862.

MESSEURS. MUNN & Co.—Gentlemen:—You ask the opinion of the office upon the following questions:—“Suppose an alien, in applying for a patent, inadvertently makes oath that he is a citizen of the United States, and the error is not discovered until the patent is received, in what manner can the error be corrected—by re-issue or otherwise?”

The records of the office show a precisely similar case. A French citizen, supposing himself, from his long residence in this country, a citizen of the United States, applied for a patent, making oath to his American citizenship. Discovering his error after a patent had issued, he applied for a re-issue, for the purpose of correcting the error in the oath, paying the fee required of a foreigner. The re-issue was granted by Commissioner Mason. It appears, however, by a petition of the assignee of the above-mentioned party, addressed to Congress, a copy of which is before the office, that after the granting of the re-issue the question was raised in the courts whether the Patent laws authorized such a re-issue. It is stated that the matter came before Judge Grier, in the Circuit Court of the District of Pennsylvania, who decided that a re-issue could only be for errors in the specification, and that, therefore, the patent was void. It would appear from this decision of Judge Grier that there is no remedy in the case presented by a re-issue.

The decision of Judge Story, in *Alden v. Dewey* (1 Story 334, 341), would lead to the opinion that the patent would not be invalidated by the error stated. No mode of correcting the error can be suggested by the office.

Respectfully, your obedient servant,
D. P. HOLLOWAY, Commissioner.

How our Soldiers Bear the Winter.

The following private letter, just received by one of our editors from a lieutenant of artillery in the army, at Artillery Camp near Fort Lyon, Virginia, will give an idea of the spirit in which our soldiers are bearing the severities of the season:—

Thinking you might like to hear how we get on during the stormy weather we have had for the last two weeks, I will give you an idea of it. It has snowed or rained about half the time, and the roads are in an awful condition, entirely impassable for loaded teams. We have a board shanty for a mess room with an immense fire place built of brick, taken from a rebel house we demolished. The shanty is 14 by 16 feet, and when the snow melts on the roof leaks at every crack. We are now all sitting with our rubber coats on, and the captain has bored some holes in the floor to let the water out, as we began to fear the craft would founder. But we enjoy ourselves first rate, notwithstanding all this. We sleep in our tents, which are dry, and it will not probably rain forever. Our battery is in tip-top condition now that we have had about twenty horses condemned and exchanged for good ones, and as they have not been worked much, and have plenty to eat and drink and have been under a dry shed, they take a caisson along as though it were a trotting sulky.

Our battery, like nearly all the others, consists of four 10-pounder Parrotts and two 12-pounder howitzers. But I hear that Gen. Barry is going to make all the batteries have two rifle guns and four brass Napoleon guns. These latter are light 12-pounder smooth bores, and in all respects the same as howitzers, only they have a longer range. General B. thinks two rifle guns sufficient for a battery.

Our chief of artillery in this division is the officer who surrendered Brasos Island, Texas, to the Texan rebels last spring. He had, on that occasion, only 12 men while they numbered 600. The account he gave us of the affair was very interesting. He stipulated with them that they should salute his flag, which they did with some of the powder he furnished them, and which had been condemned half a dozen times. It was not strange, therefore, that they took all the afternoon to complete the salute. After that the commissioners said they supposed he would allow their steamboat to the wharf. As all he had was one 32-pounder, some condemned ammunition and twelve muskets, which would have stopped their boat about as much as so many squirt guns, he said they might come. W.