

## SCIENTIFIC MUSEUM.

## Daguerreotypes on Paper.

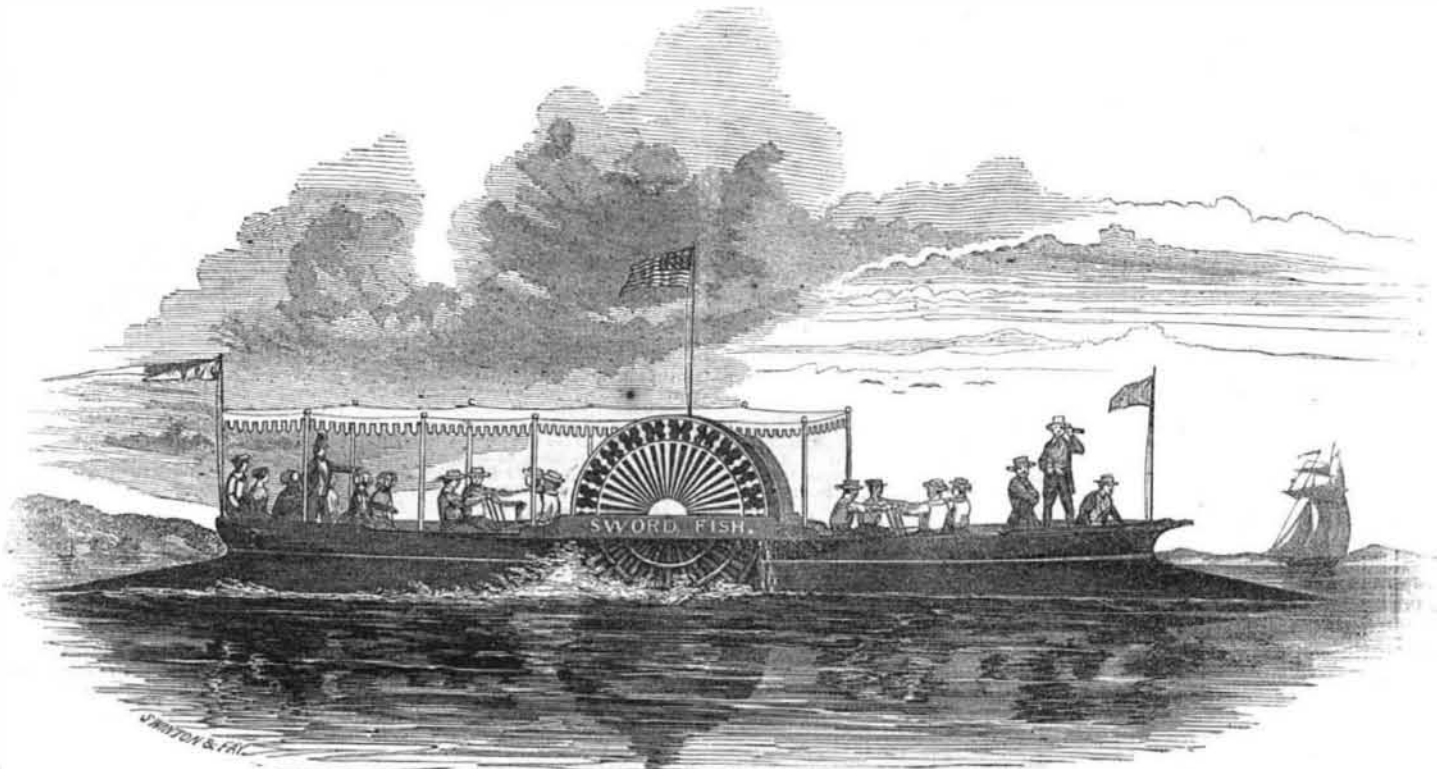
The Boston Transcript says:—"A valuable improvement in daguerreotypes has been made by Mr. J. A. Whipple, of this city, in connection with Mr. W. B. Jones. By a new and delicate process, daguerreotypes can be transferred in the most perfect manner to paper. We have seen several specimens, and

can testify to the extraordinary accuracy and beauty of the impressions. The idea of daguerreotyping on paper was first carried out by Mr. Fox Talbot, an English gentleman of fortune, and his invention was called the Talbotype. The greatest difficulty in his process was the uneven texture and fibrous character of the paper, upon which the images were taken. Messrs. Whipple and Jones substituted films upon glass for the paper negatives of Talbot, for which improve-

ment they secured letters patent in the United States. The same thing was discovered at about the same time by Neipce, a French scientific gentleman; but pictures taken in this manner upon glass still lacked the harmony of light and shade desirable. Objects in the shade, as in many daguerreotypes, could not be distinguished. Mr. Whipple has recently improved upon the process so as to obviate this difficulty, and to give in every object represented, the delicate shading of nature

The pictures we have seen are in every respect equal to the original daguerreotypes in effect, and superior as objects for preservation and parlor ornament. We commend the curious examination of Mr. Whipple's specimens." [We have seen Talbotypes, long ago which, in every respect, equalled Daguerreotypes, and unless Messrs. Whipple & Jones have far transcended the efforts of others, in economy, they cannot claim much by merely rivalling daguerreotypes.

## A CHALLENGE.—DAVISON'S NEW MODEL FOR SHIPS, &amp;c.



The accompanying engraving is a view of Darius Davison's pleasure barge the "Sword Fish," which was the first boat built on the new model. It is comparatively a heavy boat as she was intended for a small engine; and yet from her light draught of water and easy water lines, has been run at a speed of 12 miles an hour by the power of eight men, and rides a heavy sea more buoyantly, steadily, easily, rapidly, and is dryer than any boat of similar size built on any other model.—This is asserted by Mr. Davison.

The keel of this vessel is 36 feet, deck 25 feet, and beam 5 feet.

The following is a challenge of Mr. Davison; it is given to the world:—

"I have been frequently asked, within the last week, if I were well enough assured of the speed and sailing qualities of vessels built on my model, to build a vessel to race with one

to be built on any other known model from which any vessel has heretofore been constructed?

In answer to these enquiries, and to gratify the interest excited in the public mind in this country and in Europe, in relation to my new model for ocean and river vessels, I will make the following offer, which will be held ready for acceptance for one month from the first day of June:—

I will build and complete within the period of six months from the first day of June, a schooner-rigged yacht on my new model, which shall be one hundred feet on deck, and when completed will cost about thirty thousand dollars; and I will sail her in a race with any other vessel that can be built within that period, on any other known model from which any vessel has heretofore been built; such vessels to be built the same length

on deck, viz: one hundred feet. And this is the only point upon which they shall be controlled in dimensions, construction, rigging, or sails, (except that the vessel shall be built of wood). And I will run my yacht in a race against her, after the period of six months from the first day of June, 1852, at any time and place, and under any circumstances that may be chosen by the other parties, whether such contest be upon the river or ocean, with or against the wind, in a heavy or light breeze. If my yacht is beaten I will deliver her with all her appurtenances to the winner of the race as a prize, and if the opposing vessel is beaten she shall be delivered to me with all her appurtenances as a prize.

I will give them the further advantage of seeing at my office a lithographic drawing of the model, rig, and sails of the yacht I propose

to build as she would appear upon the water.

Respectfully,  
DARIUS DAVISON  
374 Broadway, New York, June 5th, 1852."  
Darius Davison & Brother have formed an association to build yachts which they warrant to beat all others.

Mr. Davison's propositions have created no small excitement in our city, and throughout the country. He proposes to build a steamboat to run to and from Albany in one day; also a steamship to beat all others now in existence.

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N. B.—The public are particularly warned against paying money to Travelling Agents, as none are accredited from this office. The only safe way to obtain a paper is to remit to the publishers.

#### On Boilers.—No. 27.

MATERIALS FOR BOILERS.—It is necessary that steam boilers should be made of the very best materials; of this we have recently had a fearful lesson in this city. A steamboat named the "Eastern City," when getting up steam for her trial trip, two weeks ago, a boiler plate exploded, and no less than five persons lost their lives. It was a new boiler made of the very best Pennsylvania iron, and of a size and form capable of standing 36 lbs. pressure to the square inch, yet the explosion took place when there were only 14 lbs. pressure. The accident was a very unexpected one; it was not caused by carelessness, and no one could have anticipated the sad result. The verdict of the jury was,—We find that the deceased, William H. Stearns, John B. Curtis, Charles Gormas, Francis Mayo and Charles Hall came to their deaths from being scalded by an explosion of the boiler on board the steamer Eastern City, and also that the explosion was caused by a flaw in one of the iron plates of which it was constructed.

The testimony of two witnesses is very important. Peter McMillin being sworn said: "he is one of the superintending engineers of the Allaire Works; is fully acquainted, so far as possible, by observation, with the material in the boiler in question, as well as with the material used in all other boilers built at the Allaire works; the best Pennsylvania plate is used by us for boilers; was present at the

time of the explosion." This witness corroborated the testimony of the others who had previously sworn in relation to the trip-shaft. The accident was caused by a flaw in the iron. The sheet which was torn away was imperfect, but this could not have been detected. The boiler was made in the usual manner.

Thomas Fitzgerald sworn, says:—"He has been a boiler maker for eighteen years, and helped make the boiler in question; the iron in the boiler was 3-8ths of an inch in thickness. The explosion was caused by a flaw which could not have been detected when the boiler was making."

In this case no human eye could detect the cause of the explosion previous to its taking place, yet it was a most fatal and sad one. A boiler is no stronger than the weakest part of it, and wherever that is, for a certainty, the steam will be sure to find it out. We are afraid that more explosions take place owing to bad boilers than we are liable to suppose. If this boiler caused so much damage to life, and burst with only 14 lbs. pressure, is it not reasonable to conclude that many explosions must take place when steam is carried as high as 50 or 100 lbs., although the boilers may be constructed to stand double that amount of pressure? There is also a practice not uncommon with some boiler makers, to rust the rivet holes if the boilers leak. They employ for this purpose a solution of sal ammoniac, along with some iron filings, and this,

when formed for a few days, makes a non-conducting crust. It is not easy to rivet a thick iron boiler by manual labor, so as to make it perfectly water tight, therefore various cements are used to prevent leakage. The plates of iron for boilers should be unequivocally good, without a single doubt on the subject.

Another thing in connection with good iron is the testing of boilers after they are made. This should be done by hydraulic pressure. A plan to accomplish this is proposed in the pamphlet of Mr. Guthrie, and in the bill now before Congress to provide against the explosion of steam boilers, the testing of the boilers by hydraulic pressure is especially provided for. This method of testing boilers probes their weakest parts without danger to any person. Some boilers which we have seen were made of very pure iron; some brittle, and others made of three rolled sheets, two good ones outside enveloping an interior bad one. More attention should be devoted to the materials of which boilers are composed than there has been.

Professor Huss, the first physician in Sweden, has just published an important book on the diseases of the Swedish people. He proves that the Swedes are rapidly deteriorating, physically as to stature and strength, and morally as to intellect and virtue, a state of things which he attributes principally to the enormous use of brandy in that country.