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Contents.

(Illustrated articles are marked with an asterisk.)

TABLE OF CONTENTS OF SCIENTIFIC AMERICAN SUPPLEMENT No. 1092.

For the Week Ending December 5, 1896.

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A NOTABLE EVENT IN AMERICAN SHIPBUILDING.

It is not putting the case too strongly to say that no event in the history of American shipbuilding has had greater significance than the recent placing of an order by the Japanese government with the Cramps Shipbuilding Company, of Philadelphia, and the Union Iron Works, of San Francisco, for the construction of two war vessels. It marks a forward step in the development, or rather rehabilitation of our maritime interests, as notable in its way as the floating of the first steel cruisers of our new navy some dozen or more years ago, or the recent successful trials of our three first-class battleships during the past twelve months.

The action of the Japanese government in intrusting the building of two of the crack ships of its present programme to American builders proves that the uniform excellence of the ships and material which have been turned out of American yards has had its effect. It means that, in the estimation of the youngest and most progressive of the naval powers of the world, our work is fully up to the standard of the oldest and most experienced yards of Europe. Not, however, that we needed any such indorsement. Ships like the battleship Indiana, the armored cruiser Brooklyn, and the protected cruisers Minneapolis and Columbia, are as fine vessels of their class as are to be found afloat to-day; but, still there is one circumstance which gives special importance to the action of the Japanese in placing this order with us, and this is that they have but lately emerged from a war in which their victories were won by the type of vessel which they are now having built in American yards. They are, therefore, specially qualified to judge of its value, and would naturally wish to place the order with those firms which are best qualified to carry it out.

The contracts were awarded after mature deliberation, and a thorough consideration of plans submitted by European builders, the Japanese commissioners having first visited the various shipbuilding yards in this and other countries.

The new ships will be 405 feet long, with 45 feet beam, and about 17½ feet draught, the normal displacement being 4,760 tons. They will have high speed—about 22½ knots—and will be heavily armed, carrying two 8 inch guns of the semi-rapid fire type, ten 4·7 inch rapid fire guns, twelve 12 pounders, two 6 pounders, and two 2½ pounders. It will be seen that they are enlarged Yoshinos, a type of swift, powerfully armed cruiser, of moderate size, which rendered good service in the operations of the late Chinese war.

There is every reason to expect this successful competition of our home yards with those of the world will open the way for an extended connection with those countries whose navies are built abroad. Japan itself is evidently aiming at naval supremacy in the Pacific, and will undoubtedly call for ships faster than her yards can supply them, and the various South American republics are entirely dependent upon foreign shipbuilders for new vessels. Our great shipbuilding concerns on the Atlantic and Pacific coasts are advantageously placed for competition. They are nearer in some cases by many thousands of miles, and we have, moreover, all the advantage which our excellent relations with these peoples, especially on the southern continent, undoubtedly gives us.

The securing of these contracts is another evidence of the wisdom shown by the government in decreeing that the ships of the new United States navy should be built in American yards and entirely of American material. It required some courage to do this at a time when the cost of building warships was much greater in this country than in Europe, the art being yet in its infancy. And yet in no other way could the naval shipbuilding industry have been resuscitated in this country. The enormous first cost of the necessary plant for the manufacture of armor and machinery would have prevented any private corporation from undertaking its erection, unless they were sure that a certain amount of orders would be forthcoming each year. And, although the earlier ships were costly, it was not long before the many improved and labor-saving methods which American establishments introduced into the manufacture of ships, guns and armor enabled them to make a rapid reduction in the price of their bids for government work. This was shown at the bidding for the last three battleships authorized by Congress, when the prices showed a reduction of from twenty to thirty per cent over the cost of the earlier battleships contracted for a few years before.

Incidentally it should be mentioned in this connection that there is no greater stimulus to the creation of a merchant marine than is offered by a liberal policy of naval shipbuilding. The costly plant, the expert workmen and the skilled designers which are essential to the success of naval yards, whether public or private, exercise a powerful stimulus upon the general shipbuilding interests of the country. The firm that can build an Indiana or a Massachusetts is well equipped for the construction of a St. Paul or a St. Louis. There ought to be no reason why we should not compete for Atlantic liners as successfully as we have done for these Japanese warships. If we cannot at present build the large ocean steamer as cheaply as the English and German firms, there is every reason to hope that we soon shall do so. At the last visit of the British ironmasters to this country they freely admitted that manufactured product was turned out more cheaply in this country than was possible at home, and this in spite of the higher wages. They attributed the difference to improved machinery, skillful administration and greater efficiency of labor. There is no reason to suppose that we have reached the limits of progression along these lines in our shipbuilding industry, and it is reasonable to look for a time, not far distant, when orders for European passenger and sailing ships will be freely placed in American yards.

GOOD LOCOMOTIVE PERFORMANCE WITH HEAVY LOADS.

On the occasion of a recent trip by our representative from Philadelphia to Jersey City over the Pennsylvania Railroad, some exceptionally good running was done by the company's well known compound locomotive No. 1515. The train consisted of thirteen cars of more than average weight, as will be seen from the accompanying figures, and it was hauled over the division in two hours and twelve minutes, or one minute less than schedule time.

In reply to our inquiry, Mr. Thomas U. Ely, chief of motive power, writes us:

"This locomotive is a compound, and was built in 1892 as an experiment to enable us to get some information in regard to the compounding principle. It was the first locomotive with seven foot driving wheels built in modern practice up to that time. It has done excellent work and seems well adapted to hauling heavy trains at a high speed.

"The train on which your representative rode from Philadelphia to Jersey City on October 4 consisted of thirteen cars, as follows:

	Weight of Equipment. Pounds.	Weight with Lading. Pounds.
Two sleeping cars	190,000	197,500
Three coaches	196,800	216,300
One dining car	95,000	95,000
Two mail cars	125,600	201,600
One baggage car	55,000	95,000
Four express cars	210,400	330,400
Totals	872,800	1,135,800
Locomotive		145,500
Tender		77,000
Total weight of train		1,358,300

"The steam pressure was 205 pounds."

No. 1515 is a two cylinder compound, with two outside cylinders, 19½ and 31 inches in diameter, with 28 inch stroke. It has piston valves 12½ inches in diameter, which are placed in the saddle within the frames, and, therefore, between instead of on top of the cylinders. The hurricane deck is carried at the level of the cab floor and just clears the top of the cylinders, being curved down in front of them to the regulation height of an ordinary pilot. The boiler is of the Belpane pattern, with a firebox 3 feet 4 inches wide and 9 feet long. The drivers are, as stated, 7 feet in diameter, and as the boiler is 65 inches in diameter, it is necessarily carried very high, the center being 9 feet above the rails.

The truck wheels and those under the tender are unusually large, 42 inch, the tender being of the English type, six wheeled, with a rigid wheelbase. It weighs 77,000 pounds when loaded with 3,000 gallons of water and 15,000 pounds of coal.

Referring again to the table of weights, it will be noticed that 568 tons were hauled for a distance of 90 miles at the rate of over 40 miles per hour, and we are informed that the locomotive was working well within its maximum power. This is as fine a performance in hauling a heavy train at express speed as has come within our notice, and it proves that there are certain classes of work for which the compound is specially adapted. Recent experience both in this country and abroad seems to establish the superiority of the simple engine for exceptionally high speeds, and it is significant that in the recent racing from London to Scotland the latter type did most of the work. At lower speeds, and with heavier loads, the compound begins to show an economy.

A New Harbor Mail Transport.

The plan begun last August of having the foreign mails transferred to special tugs while the steamers were detained at quarantine, and transported to the various railway terminals direct without going to the New York office and then to the respective transportation lines, has operated so well during the past few months that the post office department at Washington will recommend to Congress the building of a special mail transport boat of rapid speed fitted up with sorting bins and tables similar to the present railway mail cars, which will meet incoming vessels and take the mails off at quarantine. Then on the way up New York Harbor the clerks will quickly distribute and sort the mail matter intended for the different roads. It is calculated much time will be saved in this way and a more prompt delivery of the mails insured. The proposed vessel is to cost $40,000.