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SCIENTIFIC AMERICAN SUPPLEMENT

No. 780.

For the Week Ending December 13, 1890.

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THE CENTENNIAL OF THE UNITED STATES PATENT SYSTEM.

The wealth and economic prosperity of our country are so largely due to the system of patents, by which our inventors have been encouraged to pursue their unselfish labors, that among the many centennials which have been and are to be commemorated, the one hundredth anniversary of our patent system should not be overlooked. It is proposed to celebrate it at Washington, D. C., in April, 1891. A large and influential meeting in furtherance of the idea has been recently held in Washington. Although a year will have elapsed since the true centennial, it is not too late to fittingly commemorate America's industrial progress. The elebration will really be within the 101st year of the system's life.

On July 31st, 1790, Samuel Hopkins was awarded a patent for making pot and pearl ashes. On August 6 and December 18 of the same year two other inventors received patents for inventions. Those three patents were the first year's work of the patent system. The business increased rapidly, for in 1791 we find no less than thirty-three patents issued. The next year 1792 was what may be termed an off year, only eleven patents appearing on the record. These early records afford a basis for an impressive contrast. In a single week at the present time between four and five hundred patents are issued, and the roll of patentees is approaching a half million.

It is, therefore, fitting that the centennial of the patent system should be made the occasion of proper celebration. Without the mechanical progress of the last century it is hard to say where America and the world would stand. The increase of population has demanded enormous supplies of food and general necessaries. Modern life has tended to concentration in cities. It is only by the inventor's efforts that the limited number of farmers and other direct producers have been able to feed and clothe the multitudes of dwellers in the great centers. The whole modern system of existence depends on the inventors. Without them there would be no centralized distribution of people, the suburbs of a city would for all practical purposes be isolated from it, and the populace would be distributed over the surface of the land and live, Chinese fashion, by their own direct efforts. The American inventor has made his influence felt everywhere and has exercised a world-wide influence. The proposed centennial, in view of what he has done, will be an international epoch. American inventions are introduced everywhere, and the most remote countries must regard the United States as the birthplace of much that has become essential to their very existence.

A SCHOOL OF SHIP BUILDING—THE OBJECTS AND IDEAS OF ITS FOUNDER.

Mr. William H. Webb, of this city, the veteran ship builder and millionaire, has perfected his plans for the organization of a school of ship building, and home. The site for the school has been selected, the plans accepted, and the money is ready. Mr. Webb himself furnishes the SCIENTIFIC AMERICAN with the following details:

"The object of this institution, as its name indicates, is twofold. The academic department is designed to furnish to any young man, rich or poor, native or citizen of the United States, who upon examination proves himself competent, of good character, and worthy, a free education in the art and science of ship building and marine engine building, both theoretical and practical, together with board, lodging, and necessary implements while obtaining such education. The home will afford an asylum for aged, invalid, or unfortunate men who have been engaged in building hulls of vessels or marine engines for such, or any parts of either the hulls or engines in any section of the United States, together with the wives of such persons.

"The instruction will be carried to the very nearest point of entrance into a workshop or a shipyard, the aim being to merge as far as possible the theoretical with the practical. An important feature of the instruction will be a 'laying-off' loft, where the young men will be instructed in 'laying down' a vessel and in making all the patterns and moulds preparatory to going out into the shipyard. The institution will not only furnish free tuition, but also will provide the students with board and lodging, so that to enter the academy a young man will need only a suit of clothes, a common school education, and a good character. When completed it will be the only institution in the world that affords such a training and carries it to so advanced a stage.

"In addition to the quarters for the students and the pensioners, provision has been made in the building plans for the housing of manager, professors, and tutors. Finally, the institution has been endowed with sufficient money for its maintenance and supplies. We were delayed a whole year by the action of Governor Hill, who refused to sign the bill incorporating the institution, on the ground that the charter was an antiquated one; this he alleged as his reason for opposing the charter. We finally accommodated the provisions of the charter with his views, and the institution is thereby limited as to the value of the property it will be allowed to hold, two million dollars being now fixed as the limit.

"The trustees of the institution are the president of the Chamber of Commerce of the State of New York, a member of the General Society of Mechanics and Tradesmen of the City of New York, to be designated by the society, Prof. Trowbridge, of Columbia College, the president of the New York Hospital Society, Richard Poillon, Henry Steers, Andrew Reed, Charles H. Cramp, William Henry Webb, Thomas F. Rowland, and Stevenson Taylor.

"The academy and home will be strictly non-sectarian, but the chapel will be open to services by such religious denominations as the board of trustees may invite. Considering the fact that there exists no similar institution to serve as a model, the trustees are making good progress in the work, and we hope that in two years the academy and home will be ready for occupation.

"The technical education of the average shipwright of to-day is not what it should be. There being no institution where a preparatory training may be procured, the young men in the trade, if they would learn anything more than the practical part of the business, must pick it up, piecemeal, in the workshop or the shipyard. But the fact is that in these workshops and shipyards only a few can have the opportunity to learn any theory whatever, and when they can obtain this training it is, at best, very unscientific. Nor has it ever been any better in this respect. When I learned the trade in my father's yard in this city, there were no scientific schools and little opportunity for the theoretical education of the mechanic.

"The modern shipwright should be scientifically educated. It is part of his business not only to swing the ax and drive the plane, but also to manipulate the needle point and triangle, to make drawings, patterns and moulds, and to solve the intricate problems which arise in making plans for the framing of the ship. His vocation in this respect is a peculiar one. In no other of the kindred trades, as house building, bridge building, is a combination of theoretical with practical training so much required.

"The extinction of the apprenticeship system was a great blow to the ship building industry of the United States. And one of the benefits which will be derived from such an institution as is proposed will be a training offered to young men which will take the place of the apprenticeship system of the past. The chief cause of the overthrow of this system was the fact that it was not in harmony with the character of our institutions, and the youth of the country becoming dissatisfied, its destruction was completed by the action of the trades unions.

"The primary cause, however, of the decline of ship building in the United States was the lack of statesmanship on the part of our legislators, who neglected to establish steamship lines by subsidies, and American shipping not being able to compete with the subsidized lines of other countries, the American merchant marine passed almost out of existence. Finally came the civil war, which put a clincher upon it. Since then the Lloyds (English) company of underwriters have favored English vessels to the prejudice of American, and have thus done much to destroy our commerce even down to the present day. Again, the foreign importers have always given their patronage to foreign ship owners.

"It is the general belief in this country that the construction of iron ships was the chief cause of the decline of American ship building. But such is not the case, because in the old days we were building in this country wooden ships of such superior quality, and at so moderate cost, that we brought all the world here as purchasers. But when they came to build iron ships abroad, the English underwriters favored the foreign-built iron ship, because they could build iron ships there cheaper than wooden ones.

"In my judgment, if wooden ships could be built in England as cheaply as in America, *we never would have heard of the introduction of iron hulls,* as wood is undoubtedly the more suitable material for the construction of a ship.

"Moreover, it is much easier to build an iron ship than a wooden one. It requires far less judgment and less mechanical skill. This every iron ship builder will admit, as nearly all have at some time been engaged in building wooden hulls. In building a hull of iron, the raw material is fashioned into any form required.

"Wood shaping, on the other hand, demands much judgment and skillful treatment. This particular branch of the work was usually in charge of the most skillful mechanic in the yard, who was known as the converter.

"In my opinion we have lost nothing of the art of ship building; and although the best ships ever built, the American packets, have passed out of existence, the freight ships now built in the East are the equal of any we ever had.

"But I have not yet mentioned one of the greatest causes of the decline of ship building in the United