a century ago, and indeed almost rivals the speed of the locomotive itself. Previous to 1812, our intercourse with foreign countries and with our colonial possessions depended entirely upon the state of the weather. It was only in favorable seasons that a passage was open, and we had often to wait days, or even a week, before Dublin could be reached from Holyhead. Now, this distance of 63 miles is accomplished in all weathers in little more than three hours. The passage to Amer a used to occupy six weeks or two months; now it is accomplished in eight or nine days. The passage round the Cape to India is reduced from nearly half a year to less than a third of that time, whilst that country may be reached by the overland route in less than a month.

The public mind had scarcely recovered itself from the changes which steam navigation had caused, and the impulse it had given to commerce, when a new and even more gigantic power of locomotion was inaugurated. Less than a quarter of a century had elapsed since the first steamboats floated on the waters of the Hudson and the Clyde, when the achievements thence resulting were followed by the application of the same agency to the almost superhuman flight of the locomotive and its attendant train. I well remember the competition at Rainhill in 1830, and the incredulity everywhere evinced at the proposal to run locomotives at 20 miles an hour. Neither George Stephenson himself, nor any one else, had at that time the most distant idea of the capabilities of the railway system. On the contrary, it was generally considered impossible to exceed 10 or 12 miles an hour; and our present high velocities, due to high-pressure steam and the tubular system of boilers, have surpassed the most sanguine expectations of engineers. The sagacity of George Stephenson at once seized upon the suggestion of Henry Booth, to employ tubular boilers; and that, united to the blast-pipe, previously known, has been the means of effecting all the wonders we now witness in a system that has done more for the developement of practical science and the civilization of man than any discovery since the days of Adam.

The extraordinary developements of practical science in our system of textile manufacture are, however, not entirely due to the steam engine, although they are now in a great measure dependent on it. The machinery of these manufactures had its origin before the steam engine had been applied, except for mining purposes; and the inventions of Arkwright, Hargreaves, and Crompton, were not conceived under the impression that steam would be their moving power. On the contrary, they depended upon water; and the cotton machinery of this district had attained considerable perfection before steam came to the aid of the manufacturer, and ultimately enabled him to increase the production to its present enormous extent. I shall not attempt a description of the machinery of the textile manufactures, because ocular inspection will be far more acceptable. I can only refer you to a list of establishments in which you may examine their operations on a large scale, and which I earnestly recommend to your attention. I may, however, advert to a few of the improvements which have marked the progress of the manufacturing system in this country. When Arkwright patented his water frames in 1767, the annual consumption of cotton was about four million pounds weight. Now it is one thousand two hundred millions pounds weight—300 times as much. Within half a century the number of spindles at work, spinning cotton alone, has increased tenfold; whilst, by superior mechanism, each spindle produces fifty per cent. more yarn than on the old system. Hence the importance to which the cotton trade has risen, equalling at the present time the whole revenue of the three kingdoms, or £70,000,000 sterling per annum. As late as 1820 the power loom was not in existence; now it produces about fourteen million yards of cloth, or, in more familiar terms, nearly eight thousand miles of cloth per diem. I give these particulars to show the immense power of production of this country, and to afford some conception of the number and quality of the machines which effect such wonderful results. Mule spinning was introduced by Crompion, in 1787, with about twenty spindles to each machine. The powers of the machine were, however, rapidly increased; and now it has been so perfected that 2000 or even 3000 spindles are directed by a single person. At first the winding on, or forming the shape of the cop, was performed by hand; but this has been superseded by rendering the machine automatic, so that it now performs the whole operation of drawing, stretching, and twisting the thread, and winding it on to the exact form, ready for the reel or the shuttle as may be required. These, and other improvements in carding, roving, combing, spinning, and weaving, have established in this country an entirely new system of industry; it has given employment to greatly increased numbers, and a more intelligent class of work-people.

In iron-ship building, an immense field is open before us. Our wooden walls have, to all appearance, seen their last days: and, as one of the early pioneers in iron construction, as applied to shipbuilding, I am highly gratified to witness a change of opinion that augurs well for the security of the liberties of the country. From the commencement of iron-ship building in 1830 to the present time, there could be only one opinion amongst those best acquainted with the subject, namely, that iron must eventually supercede timber in every form of naval construction. The large ocean steamers, the Himalaya, the Persia, and the Great Eastern, abundantly show