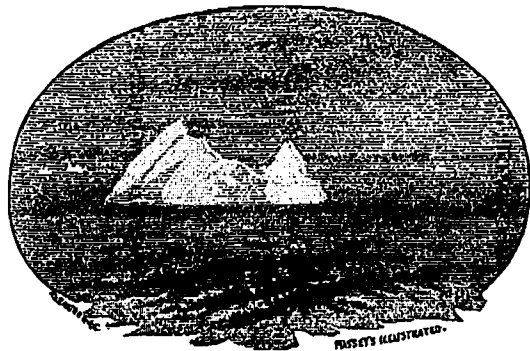


in at Moville, the port of Londonderry, for the mails, and, having had a glimpse of the lovely green shores of the Emerald Isle, turned westward, since when we have been having anything but a pleasant passage. Strong head winds and heavy seas have



ICEBERGS OFF THE COAST OF NEWFOUNDLAND.

Engraved for MASSEY'S ILLUSTRATED from photographs by W. E. H. Massey, Esq., taken from the deck of the S.S. "Parisian."

tossed us about and impeded our progress, making it generally unpleasant, though there is now a prospect of better things. The *Parisian* is a fine ship, the largest and best we have yet travelled in on this trip, and Capt. Smith, who is a whole host in himself, does all in his power to help the passengers enjoy themselves.

JUNE 14TH.

The weather is cold and fine, and the coast of Newfoundland is now in plain sight. Within range of vision are some thirty-five to forty icebergs, some of which are of enormous size and most beautiful to look upon. So clear and beautiful is the weather, and our course so close to some of these icebergs, I have been able to make several photographs of them. Ere long we will be steaming up the Gulf of the St. Lawrence, and entering our fair Dominion on the opposite side of the continent from that on which we left it in September last.

We shall have travelled between thirty-five and forty thousand miles when we arrive home, and have gone *around* the world in the fullest sense of that word, having passed through all the lines of longitude, and all lines of latitude from 47° South

(Bluff, New Zealand) to 56° North (Loch Katrine, Scotland). A wealthy and well-educated gentleman (though his knowledge of geography was deficient) said the other day, "but you did not go around the world, for you have not been to China."

I could but smile, for, on the contrary, we had gone around in the *completest* sense, having passed through our antipodes, while the man who goes from Canada to China and then on to England and home without going south of the equator does not go *around* the world at all in one sense, any more than a person would who made the circuit within half a degree of the pole, and so passed through all the meridians of longitude.

While this grand tour has been a great privilege and one of pleasure and profit, I have, nevertheless, had enough of travel to satiate me for some time to come, and shall be glad to resume my post at home.

I shall be rejoiced again to set foot on Canadian soil—the land I love above all lands—and especially to get back to Toronto, the city I love above all cities. Of all the towns and cities I have visited, I have found none I like so well. I sincerely believe the energetic farmer, laborer, mechanic, clerk, or business man has as good a chance, if not better, of succeeding in Canada as anywhere, all things considered; and from my observation during this and other tours, I am firmly convinced that the condition of the workman of Toronto is better than it is elsewhere; better, even, than it is in the majority of cities in the United States, and certainly quite equal, at least, to his estate in the best American cities.

I also believe that the Canadian farmer—especially the Ontario farmer—has a better lot than the farmers in the best of the United States, and decidedly better than the agriculturists of the other countries I have visited.

With this epistle I bring to a close the series of letters containing an account of my long tour, which, all being well, will terminate in the course of a few days, when I hope again to resume my duties at home.

The Forth Bridge.

This construction of the Forth Bridge, Scotland, is justly regarded as one of the greatest scientific and mechanical

achievements of modern times. The total length of the viaduct is 3,296 feet, or nearly 1½ miles, and there are two spans 1710 feet, two of 680 feet, fifteen of 168 feet girders, four of 57 feet, and three of 25 feet being masonry arches.

The clear headway for navigation is 150 feet for 500 feet in the centre of the 1710 feet spans. The extreme height of the structure is 361 feet above, and the extreme depth of foundations 91 feet below, the level of high water.

There are about 53,000 tons of steel in the superstructure of the viaduct, and about 140,000 cubic yards of masonry and concrete in the foundation and piers.

The main piers, three in number, consist each of a group of four masonry columns, faced with granite, 49 feet in diameter at the top, and 36 feet high, which rest either on the solid rock or on concrete, carried down in most cases by means of caissons, of a maximum diameter of 70 feet, to the rock or boulder clay, which is of almost equal solidity.

The stresses to be provided for are those arising from the weight of the structure itself, the rolling load, and wind, as well as from change of temperature.

The rolling load had been taken as one ton per foot run on each line of rails over the whole structure, or a train on each line consisting of sixty short coal trucks of fifteen tons each, weighing in the aggregate 142 tons.

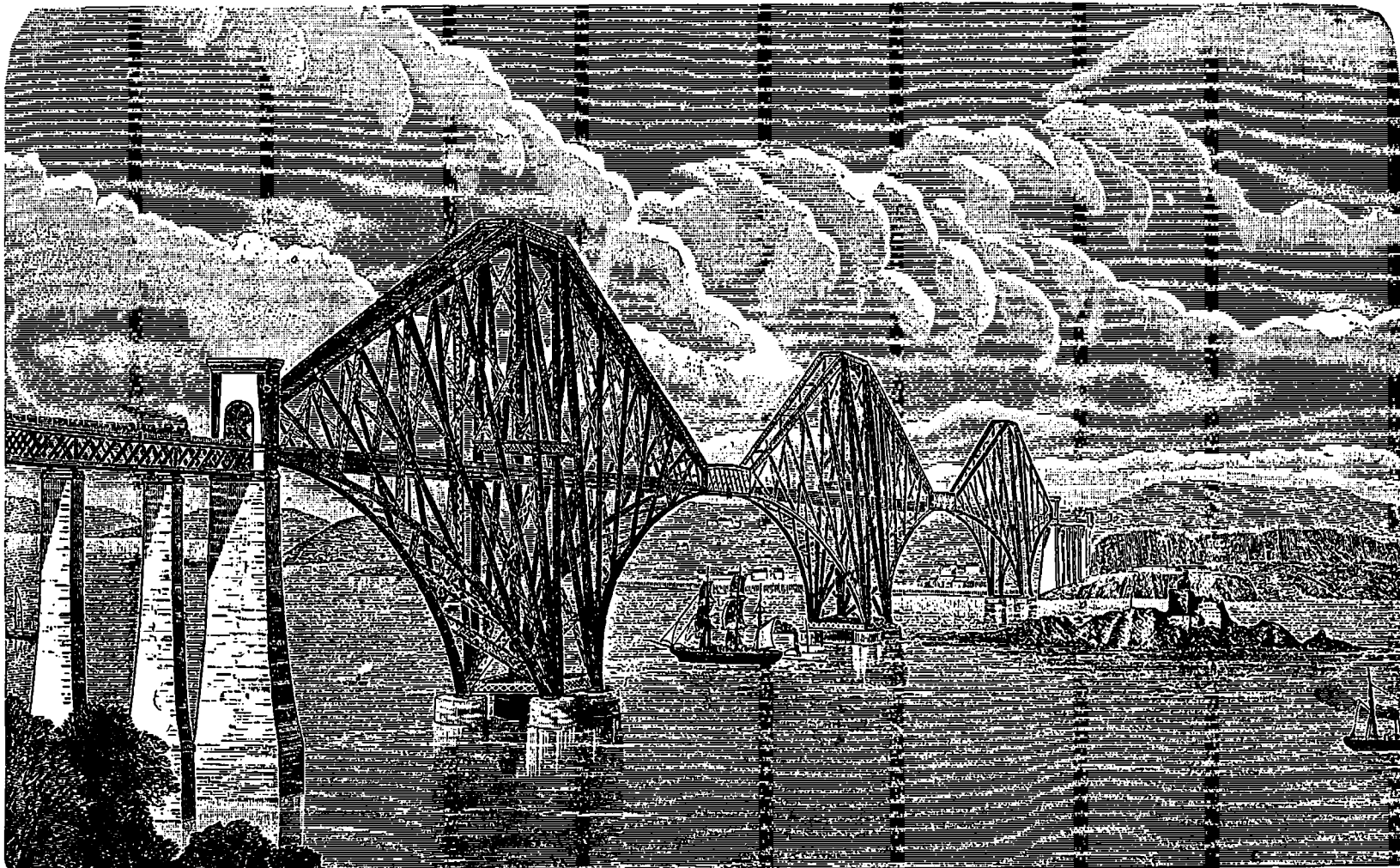
The wind pressure provided for is a pressure of 56 pounds per square foot striking the whole or any part of the exposed surface of the bridge at any angle with the horizon, the total amount on the main spans being estimated at nearly 8,000 tons.

The superstructure of the main spans is made up of three enormous double cantilevers, resting on the main piers. Those on the shore sides are 1505 feet, and that on Inch Garvie (an island fortuitously dividing the deep water space into two channels of nearly equal width) is 1620 feet in length. The effective depth over the piers is 330 feet, and at the end 35 feet. The centre portions of the two 1710 foot spans on each side of Inch Garvie are formed by two lattice girders 350 feet in length, 50 feet deep in the centre, and 37 feet deep at the ends.

The compression members of the cantilevers are, as a rule, formed of tubes either circular in form, or circular with flattened ends.

The tension members are quadrangular in section. The booms at their corners take the strains, and the vertical and horizontal bracing of the sides keep them stiff against the effects of their own weight and wind respectively.

The Forth Bridge is a most important link in the direct railway connection between Edinburgh, Perth and Dundee.



THE FORTH BRIDGE.