The superficial area of the elevation comprised between the extremities of the abutments, the water level, and the level of the rails, is 76,396 square feet, and the cost per square foot of elevation was thus about 14, 2a., 64. The work was planned and executed under the general direction of M. Dillion, Inspector-General of Ponts et Chaussées, and general representative of the administrative council of the Paris and Orléans Railway Company; and of M. Morandière, Engineer-in-Chief of Ponts et Chaussées, and director of the new works on the western section of the company’s lines.

The engineers in charge of the work were M. Croizette Desnoyers, Engineer-in-Chief of Ponts et Chaussées, and chief engineer of the company’s lines in Bretagne and Vendée; M. Moreau, Engineer of Ponts et Chaussées, and the engineer of the company, who prepared the plans; and M. Dubray, Engineer of Ponts et Chaussées, who had actually charge of the works.

The chief of that section of the Paris and Orléans Company’s lines upon which the bridge is situated was M. Violet, Conduiteur of Ponts et Chaussées; and, finally, the contractor for the work was M. Perrichon.

THE CLIFTON SUSPENSION BRIDGE; NIAGARA FALLS.

PLATES LIX. AND LX.

The bridge known as the Clifton Suspension Bridge was constructed under the authority of two charters—one from the State of New York, and the other from the Dominion of Canada. By the former it is known as the “Niagara Falls Suspension Bridge,” and by the latter as the “Clifton Suspension Bridge.” The authorized capital under each charter is 200,000 dols.; in all, 400,000 dols.

The wonderful structure, completed by Mr. Roebling in 1855, has now for a period of seventeen years fully answered the purpose for which it was designed—that is, to form a connecting link between the Great Western Railway of Canada and the New York Central. It has a clear span of 821 ft. 4 in., between the centres of towers. The upper platform carries a single track having a mixed gauge 5 ft. 6 in. and 4 ft. 8¼ in., over which the freight and passenger cars and engines of both roads are continually passing and repassing, limited, however, to a walking pace of five miles an hour. The lower platform has a double track for the accommodation of foot-passengers and carriages.

The new bridge has been designed not for heavy traffic, but for the accommodation chiefly of the pleasure travel for foot-passengers, and for carriages employed by visitors to the Falls, as well as for the local traffic between the five small towns—Chippewa, Drummondville, and Clifton on the Canada side, and Niagara City and Niagara Falls on the New York side.

For this purpose it was assumed that the ordinary transitory load of passengers and vehicles passing over the bridge at any one time would seldom exceed fifty tons, while on rare occasions the load might rise to 100 tons. The bridge has been designed of adequate strength in all its parts to sustain the greater load with safety. It has a single track 10 ft. in width, affording ample room for a pedestrian to pass a carriage or sleigh at any point on the suspended roadway, and by the adoption of proper regulations for the use of it, will afford all the accommodation the public will require for many years to come.

The general direction of the Niagara river between Lake Erie and Lake Ontario is nearly north and south. At the Falls it presents an elbow, running north-west to the crest of the fall, and thus turning at right angles and running north-east.

The new bridge has been erected from the design and under the supervision of Mr. Samuel Keefer, to whom we are indebted for detailed particulars of its construction. It spans the gorge just below the cataract, commanding a view southward of both falls, and of a portion of the rapids above them, of Goat Island, and of Table Rock. Northward the course of the river is traced for two miles down to the railway suspension bridge, which, with the trains crossing it, is plainly visible from the new one. Here the river turns away to the left, and is lost to view.

The end of the bridge resting on the right bank is situated in Porter’s Grove, at the foot of Niagara-