the river. It was proposed first to locate the abutments on the stratum of Clinton limestone, but this was not feasible on the Canadian side, where a foundation of concrete was laid. On both sides the abutments are located almost midway of the cliffs. The Queenston quarries supplied the stone for the Canadian masonry, and for the other side it was obtained from Clairmont, N.Y. From the abutments on either bank spring the great steel arch spanning the gorge, with its highest point 226 feet above the water. At each end a trussed span 115 feet long connects the arch with the bluff. The total length of the bridge, with its approaches, is over 1,100 feet. One end of each shore span is hitched to the arch by a pin at the intersection of the end post and top chord of the arch, while the shore end rests on expansion rollers, which in turn rest on masonry abutments.

The new arch will have two floors, or decks. The upper floor is occupied by the double track of the Grand Trunk railway, and is thirty-five feet wide. On the lower floor, which is fifty-seven feet wide, are a carriageway, sidewalks, and trolley track. The old suspension had but a single track on its upper deck for railway purposes, and the double track affords greatly increased facilities for railway traffic. Resting on the upper chords of the arch, above each post, there will be transverse steel beams, and between these beams will be four lines of longitudinal steel stringers seven feet apart, and directly under the railway tracks. The lower deck will be formed by four lines of longitudinal steel stringers, about seven feet apart, and transversed beams. The "I" beams, which will be placed across the stringers, will extend beyond the trusses to carry the sidewalks. It is on this floor that the first trolley track across the Niagara is to be laid, and the new bridge will carry the first trolley car to pass between the United States and Canada. The carriageway and trolley track will be planked with oak plank, and the sidewalk will be a few inches above the carriageway.

WEIGHT OF THE STRUCTURE.

The arch when completed will contain over 6,000,000 pounds of steel. Of this amount there are about 5,560,000 pounds of steel plates and angles, 218,000 pounds of steel castings. 182,143 pounds of eye bars and pins, and about 30,000 pounds of wrought iron rods, etc. The great incentive to the construction of the new bridge was the desire to insure safety and increased facilities for crossing the gorge, and in consequence it is designed to carry a very heavy load, both on the upper and lower decks. It is expected that the arch will carry on each railroad track two locomotives with four pairs of drivers each, and 40,000 pounds on each driver. These are to be followed by a train having a weight of 3,500 pounds per foot. And the lower floor is expected to carry 3,000 pounds to the running foot, altogether an exceedingly heavy load.

During the time that the arch has been building, the old suspension bridge has been in constant use, despite the fact that the new bridge has been built beneath and about it, practically on its very site. This called for the display of rare engineering skill and extreme accuracy in the length of all the pieces of steel that entered the arch.

The engineer in charge of the work was Mr. L. L. Buck, the chief engineer of the Niagara Falls International Bridge Company, and the Niagara Falls Suspension Bridge Company, owners of the bridge. This is not the first time Mr. Buck's rare abilities have been exercised in connection with the bridges over the Niagara gorge. The old railway suspension bridge, begun in 1848 and completed in 1855, was of wood with stone towers. In 1880 the wood was replaced by steel, and six years later the stone towers gave place to new ones of steel. All this difficult work of renewing was done under Mr. Buck's supervision without the least interruption of regular traffic. The old bridge was the first great bridge of its kind to be erected in America, and its removal takes away one of the early landmarks of railroad enterprise on this continent.

The contract for the erection of the new bridge was held by the Pennsylvania Steel Co., of Steelton, Pa.

Mr. J. T. Harvie's lumber and lath mill at Burk's Falls, Ont., was destroyed by fire a few days ago. Loss about $10,000.