

of the canal and to make the structures permanent. According to the decision of 1843, the locks were to be made 150 feet long by $26\frac{1}{2}$ feet wide, with 9 feet on the sills, with $11\frac{1}{2}$ feet of water on the sills in the entrance locks. The estimated width of the straight parts of all the reaches was to be not less than 26 feet. This enlargement fully doubled in capacity both the prism and locks of the original design. In 1880 another enlargement more than trebled the size of 1843, the width being 100 feet at the bottom. The tonnage of vessels that could pass through the canal at that time was fully six times greater than that which could pass through the original canal in 1841. There were at that time (1880) 27 locks, each 270 feet by 45 feet. But these dimensions proved entirely inadequate to the size of vessels, and another enlargement took place, the locks of which are 270 feet by 45 feet with 14 of water on the miter sills. These are the dimensions of to-day. The length of the canal is now $26\frac{3}{4}$ miles. There are three guard gates and 25 lift-locks. The total rise, or lockage, is $326\frac{3}{4}$ feet. It may be interesting to know that there has been expended on this canal up to the present time, or to 1889, \$23,787,950.30 according to the official reports.

TRENT RIVER NAVIGATION.

This canal, or series of canals, and open navigation of rivers and lakes, is mentioned simply for the reason that at times in the past it has been suggested as a possible route for a large ship canal. This navigation is a series of disconnected water stretches, extending from Trenton at the mouth of the Trent River at the Bay of Quinté, Lake Ontario, to Lake Huron, but this route has never been used for anything except local traffic, as it has a depth of but 5 or 6 feet. The entire length of the route is about 201 miles. The beginning of the work dates back to 1837. The total lockage of the Trent Valley route is 1044 feet. The impracticability of transferring this circuitous route over an undulating country into a ship canal of adequate dimensions to carry the traffic of the Great Lakes to the seaboard is apparent without any argument.

THE ST. LAWRENCE IMPROVEMENTS.

These improvements have consisted partly in dredging and removing obstructions from the natural channel, but mostly in the construction of canals to flank the very troublesome and dangerous rapids