it is guarded on the sides by parapets, which fulfil the double office of protecting the passengers and reducing the oscillations to which the structure is liable.

The preceeding remarks apply to the plan of the bridge as it was presented and approved; but since its adoption by the commissioners a change of the location has caused certain modifications to be made to adapt it to the new site.

For the American Railroad Journal and Mechanics' Magazine.

INTERNAL IMPROVEMENTS OF NEW YORK. NO. 4.

We have shown in the preceeding numbers that, by lengthening the locks of the Erie canal, and constructing duplicate ones at certain points, its capacity for the transportation of freight will be doubled, and by an improvement in its channel, in raising the surface 1 to $1\frac{1}{2}$ feet, and adding to the width 16 feet, its capacity will be fully quadruple what it now is, and such proportions obtained in respect to the size of the boats and the canal, as will render the cost of transportation with animal power a minimum.

All this may be accomplished at an expense not exceeding six millions of dollars, or about the one seventh part of the cost of the enlargement on the plan contemplated. The State will save by this plan nearly \$30,000,000—the canal will be abundantly large enough to accommodate any prospective increase in the trade upon it for years to come, and the great desideratum of cheap transportation, effected to a degree as perfect, when all the attendant circumstances are considered, as can be attained by the proposed enlargement.

Although the arguments advanced, are believed to be quite sufficient to justify the conclusions to which we have arrived, we will give some further reasons in confirmation of their correctness.

Supposing the Erie canal to be enlarged the whole distance from Albany to Buffalo, it is easy to perceive that a similar improvement of the Oswego canal will speedily follow. The limited extent of the Oswego canal only 38 miles, half of which is natural navigation, and being, as it is, the channel of communication with lake Ontario, its importance is such as leaves no reason to doubt that its enlargement will follow that of the Erie canal, as certainly as its construction followed that of the Erie canal in the first instance.

The Cayuga and Seneca canal connecting with the Cayuga and Seneca lakes, and communicating with a fertile and populous portion of the State will also present claims for an enlargement which will be irresistable, and hence we may reasonably expect that if the plan of the enlargement is persevered in, the State in order to perfect the system will be forced into the expenditure of some seven or eight millions more than has been estimated. The advocates of the Erie Canal enlargement, although they must have seen the necessity of adding also to the size of these canals, have been silent on the subject. They have advocated the enlargement on the ground