

more advantageous to move the crane over the load and place the slings with the main hoist, than to employ the auxiliary hoist for that purpose. The leading of the hoisting ropes over the head of the tower and thence over the boom truck, which is never under full load, greatly facilitates the ease and rapidity of operation and greatly reduces any shock caused by the slipping of a load. The suspension of the boom proves to be extremely advantageous. One of the cranes has been so violently struck by a vessel that the boom was forced to its extreme position and the tower itself twisted until some of the trucks left the tracks, but, owing to this extreme flexibility of the boom, the resultant damage was negligible.

The operation of the cranes as a whole has been eminently satisfactory to both their designers and builders and to the Railway Company. They are large and expensive machines, but they have so thoroughly demonstrated their merits in the few months they have been in operation, that, in future, there is little doubt that similar machinery will be employed on all large wharves. The resultant economy in handling the freight and in the dispatch of vessels makes the installation of such machinery on all important wharves eminently advisable.

The cranes were designed and constructed by the C. W. Hunt Company, of New York. Although the plans were prepared under the author's direction, the design is the result of the combined work of Messrs. C. W. Hunt, C. C. King, Wm. Seaton, W. D. Stivers, and the author, ably assisted by Messrs. A. W. Gibbs, Genl. Supt. of Motive Power, his assistant, Mr. B. F. Wood, and A. S. Vogt, Mechanical Engineer, of the Pennsylvania Railroad Company.