

ing behind the south abutment, are formed the pump well, and engine pit, and drainage tunnel from the main dock body.

Gate.

When the dock is in use the entrance is closed by a steel caisson gate whose general dimensions and construction are shown upon the drawings accompanying this paper and the two photographs here shown.

The material specified was medium, open hearth, acid steel, testing from 54 to 62,000 number in tension, per sq. in., and containing not more than .08% of phosphorus and not more than .04% of sulphur.

A 4" by 12" oak strip is fastened along each face of the keel, stem and stern posts, to which is attached a 10" by 1/2" gum gasket. It carries a permanent ballast of concrete.

For filling the dock, it is provided with six 36" valves, and for water ballast, four, 6" valves and one 8" centrifugal pump with steam engine. Steam is supplied from the boilers in the main power house.

The gate draws 13'-8" of water when carrying only permanent ballast, and at such times its displacement is 212 tons. It was built under special contract, by the Spedden Ship Building Co., of Baltimore.

Main Body of the Dock.

The bottom of the dock is supported by 13 longitudinal rows of 20 ft., piles. The five center rows are spaced 4 ft. c. to c. longitudinally and 3 ft., c. to c. transversely. Upon these comes more directly the weight upon the keel blocks. The other 8 rows are spaced 8 ft., c. to c. longitudinally and transversely as shown on the "Half Midship Section" on the drawings. The sides of the dock are supported by rows of 25, 30, 35 and 40 ft., piles, spaced 4 and 8 ft., on centers. The piles are capped by 12" by 12" yellow pine timbers, secured to each pile with 1" by 20" drift bolts. The main cross timbers are spaced 8 ft., c. to c. They consist of Oregon (Douglas) Fir, 16" by 18" by 70 in length. Midway between each of these on the center line of the dock, is a similar piece, 14 ft., in length. They are secured to the pile capping with 1" by 30" drift bolts. Along the sides of the cross timbers are spiked 4" by 10" floor joists, and from the ends of the 14 ft. cross timbers, 6" by 10" floor joists extend to the foot of the side slopes. Upon these is spiked a flooring of 4" white oak plank. The first 80 feet of dock floor adjacent to the entrance and the last 40 next the head, is on a level with the tops of the cross timbers. The balance is 4" below the level at the center line and slopes uniformly toward