timbers are omitted in the abutment, and under the gate platform and apron; but here the concrete, instead of being as at the head 2½ ft. average depth, is 6 ft. deep with anchor straps for the cross floor timbers extending to the bottom.

No indications of springs were observed during construction. It was thought best, however, in view of possible developments of either spring water or under leakage, to insert in the concrete 2 in. vertical iron tubes, 20 ft. apart, alternating on opposite sides of the keel track throughout the length of the dock. The lower ends, extending into the gravel below the concrete, were left open, and the upper ends, protruding above the concrete, were fitted with valves (light dead weights) opening upwards. There has been no flow from these tubes.

A line of sheet piling surrounds the entire structure at a distance of 26 ft. from the coping. The sides of the dock are supported by transverse frames 4 ft. apart from centre to centre, extending from the floor to the line of sheet piling, and made up as follows:—A heavy pitch pine main brace or rafter abutting at its lower end on the cross floor timber and stringer already described, and at its upper end on the coping; a cap of 12 in. square pitch pine running horizontally from coping to sheet piling; brace and cap resting on 12 in. spruce piles 5 ft. apart, all three parts of the system being bound together by a diagonal tie of pitch pine, firmly bolted to them, and acting, to use another roof term, like an ordinary collar beam.

These transverse frames are connected on top by the coping, which is built up of three heavy pieces of pitch pine, and are further stiffened laterally by the altars. The altars are of pitch pine. Two are sawn from a stick 11 in. x 14 in., by ripping obliquely, not from corner to corner, but cutting each 14 in. side 3 in. back from the corner. These are bolted with an oblique face resting on the main braces, an 11 in. side uppermost and horizontal, and a 3 in. side looking towards the coping, and covering by that much the next altar above. A series of continuous steps, ascending from floor to coping with 8 in. rise and 11 in. tread, is thus formed around the entire body and head of the dock, admitting of convenient access at any point.

The entrance works differ somewhat in detail of construction from the body. Six lines of transverse sheet piling on each side run from the floors to the main outer line before referred to, one at the end of the apron, two at each sill, and one at the inner end of the inner abutment. The concrete foundation is carried 5 feet beyond the floors, and the sides or walls are backed by concrete 5 feet thick at the bottom and 2 feet thick at coping. The cross floor timbers and main braces are covered by two thicknesses of 6 in. timber breaking joint. Each course is thoroughly caulked with dry pine wedges.

The transverse floor timbers in the inner abutment are 10 in. higher than the corresponding body floor timbers. The rise from the main floor is formed by six large oak timbers, rabbetted and bolted together, and backed up by heavy oak knees, running back over and framed into the main floor timbers.

There are two positions for the gate 20 feet apart. At each sill four heavy pieces of oak rabbetted and securely fastened together form a step or offset, that runs across the floor and up the sides, and receives the weight and thrust of the gate when in position. The top courses of 6 in. timber are rabbetted into and are flush with the sill timber. There are no grooves, and the chances of troublesome obstructions are consequently much lessened. The offsets are fitted with stout rubber gaskets, against which the gate bears and forms a water-tight joint.