

The walls and Dock entrance are 7 to 1 rubble concrete, faced with sandstone in 2 feet courses. The sandstone facing of the Dock, according to the contract drawing, was in 1 foot courses; but as good stone was easily obtainable of large size in the district, it was ultimately decided to adopt 2 feet courses. The sandstone was obtained from Salt Spring or Admiralty Island, and the granite from Nelson Island, respectively distant from Esquimalt, 50 and 100 miles. A skin of 9 inches in thickness of 5 to 1 Portland cement fine concrete was introduced into the bottom of the whole of the foundations, against the backs of all the walls, and also behind the brickwork and stone facing work, and generally throughout the works.

The whole of the Dock-side walls are built vertical, the upper portions being carried by rubble concrete arches. Under the bottom of the Dock there are 6 arterial box drains, laid in 5 to 1 Portland cement porous concrete, which are connected with the rubble drains running behind the walls in each arched recess, the whole of which discharge into the drainage pump well.

The inverts are 112 feet radius, the outer being 15 feet wide, and the inner 20 feet, both of which are faced with sandstone with a hearting of brickwork and 7 to 1 concrete. (Figs. 10, 11.) The caisson berth meeting faces and quoins of the Invert are of granite, which are very fine-axe dressed for 12 inches in width, and which have a projection of $\frac{3}{4}$ of an inch. (Fig. 10.)

The invert at the bottom of the caisson chamber is of brickwork set in 3 to 1 Portland cement compo, and founded on 7 to 1 concrete, and the walls of the chamber are of hammer-dressed sandstone, in 2 feet courses, with 5 arched recesses on each side. The chamber is provided with stop quoins (Figs. 13 to 17) at its entrance, and by means of balks of timber inserted therein, can be converted into a dock for painting or repairing the caisson.

The cast-iron boxes carrying the rollers on which the caisson travels are set in brickwork on the bottom of the chamber and berth. At each end of the caisson chamber pathway there is a scouring culvert, which can be used, when desired, to clear the roller pathway of any mud that may accumulate. (Fig. 10.)

The Dock is provided with four timber slides and stairs, of finely dressed masonry, two at the head and two at the stern, there are also twelve cedar double fenders, with ladders in them of 4 feet in width, six patent hand power capstans, and the necessary mooring posts, a powder magazine, all necessary lavatories, &c., 3 hydrants on each side of the Dock, with a first-rate water supply. Outside the entrance to the Dock are two wrought-iron buoys attached to screw moorings by a 2 $\frac{1}{2}$ inch stud cable, for the purpose of facilitating the docking and undocking of vessels. The works are now lit up at night by electricity. The engine and boiler house and chimney shaft are faced with hammer-dressed ashlar, backed with brickwork in Portland cement. The chimney shaft is 90 feet 9 inches above coping level; it was found necessary to go to 45 feet below coping for foundation for the same.

The paving at the centre portion of the Dock bottom, for a width of 10 feet, consists of two courses of stone 2 feet in depth and 1 foot 9 inches in width, and filled in between with 5 courses of 18 inches in depth, and the remaining portion of the Dock bottom is paved with 20 courses of stone 2 feet in depth by 18 inches in width, the whole being laid in Portland cement compo.

The discharge pipe from the auxiliary drainage pump is carried through the quays, and across the caisson chamber immediately under the surface of the quays, and down the face of the Harbour quay wall.

There are also two culvert mouths, 4 feet in diameter, in the faces of the Harbor or quay walls. The one on the west side is the discharge from the main pumps, and the other for scouring the caisson berth at its eastern end.

One of Mr. Kipple's patented Travelling and Folding Bridge Caissons was constructed and erected for this Dock, by the Dominion Bridge Works Co., at LaSalle, Quebec, and transported in pieces by the Canadian Pacific Railway to Esquimalt. The caisson herein illustrated is provided with keels, which travel on two lines of rollers placed on the bottom of the chamber and caisson recess. (Fig. 19.)