GATES.

Two minutes are required to open or close the lock gates.

There are four gates, designated as upper and lower lock-gates and upper and lower guard-gates. The frame work is of white oak and sheathing of Norway pine. The weight of one leaf of the upper lock-gate is 40 tons and of one leaf of the lower lockgate 76 tons.

The guard-gates are only used when repairs are being made to the lock. They are opened and closed by means of temporary block and tackle operated by a power capstan. Both leaves of the upper guard-gate are provided with valves, with which to till the lock after it has been pumped out. The valves are worked with a hand wrench from the top of the leaf. The lock can be filled through these valves in about one hour.

FILLING.

Eleven minutes are required to fill the lock.

The water is let into the locks from two culverts under the floor. These culverts are each 8 feet square, and extend from the well above the upper lock-gate to the well above the lower lock-gate. The water is admitted into the culverts through a well which is covered with a grating.

The covering of the culverts is the floor of the lock. The water passes into the lock chamber through 58 apertures in the lock floor. Each aperture has an area of 3 square feet; the 58 apertures 174 square feet. This area is increased to 190 square feet by the man-holes left in the bulkhead at the lower end of the culverts.

The filling values through which the water enters the enlyerts are two in number, and are located in the well just above the upper lock-gate. Each value, when shut, closes the entrance to one of the culverts. Each value is 10 feet wide and 8 feet deep. The values are made with horizontal cast-iron axles, and frames, to which a covering of boiler iron is bolted.

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