lock. The inlet is 45 feet above the upper guard-gates and 7 feet below the surface of the water, and is covered with an iron grating. It has a cut-off valve 9 feet from the inlet. Its interior diameter is 36 inches.

The pump for emptying the lock is in the cellar of the machine house. It is a centrifugal, run by a belt from the main shaft. It is about 8 feet below the surface of the water. When the water is to be pumped out of the lock, the guard-gates above and below it are closed. Seventeen hours are required to empty the lock with the pump.

The dynamo for the electric lights, used in lighting the locks, is a ten-arc-light machine of the " Brush " patent. It is run by a belt from the main shaft. The force required is eight horse-power.

The power capstan is on the lock wall near the machine house. It is run by belts from the main shaft. The capstan is used for warping vessels into and out of the lock. A system of lines and snatch-blocks extends around the lock, so that vessels can be warped in from either end and to either side.

The movable dam is about 3,000 feet from the lock, and is designed to check the flow of water so that the upper guard-gates can be closed in case the lock-gates are accidentally carried away. It consists of an ordinary swing-bridge, one end of which can be swung across the canal. A series of wickets are suspended side by side from a horizontal truss hung beneath the bridge, and abutting, at either end (when the bridge is closed), against heavy buffers securely anchored to the masonry. One end of each wicket can be let down until it rests against a sill in the bottom of the canal. When the wickets are all down they form a vertical bulkhead or dam. The wickets are 23 in number ; each wicket is supported in an iron frame.

The bottom of the canal under the movable dam is covered with a floor. The dead weight on the truss due to the wickets and frames is 1,600 pounds per running foot. This is counter-poised by brick work at the opposite end of the truss. The lateral pressure of the water against the wickets, is 3,400 pounds per running foot.