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WATER-POWER FROM THE MISSISSIPPI.

The Large Hydro-Electric Development in the Centre of the United States.

BY G. DONALD DELL

The notable things in the water-power development in the Mississippi River are three: the location; the size of the plant, and the solution of some engineering problems involved.

The location is in the centre of the Mississippi Valley with its large supply of raw materials for factories and its large consumption of manufactured products—and there are no other large water-power sites near this one.

The development at the foot of the Des Moines Rapids in the Mississippi yields over 300,000 horse-power on the turbine shafts. It consists of a dam 4,649 feet long, including the abutments at either end, a power house 1,718 feet long, a large lock with a lift of 40 feet, and a large dry dock, besides appurtenant structures rendered necessary by the conditions found there.

Considerations of river flow prescribed by the United States government regulating navigation, of storage, and of constant head, determined the plan of the dam. It consists of 119 arched spans with 30-foot spaces between 6-foot piers; in each span is a spillway topped by a steel gate. The dam is gravity section, massive concrete with each one of the 119 sections capable of withstanding all stresses upon it without reference to any other part of the structure. At first glance, the dam strongly suggests a bridge, and reduced to its lowest

Part of Forebay Side of Power House, Showing Arch in Front of Each Unit. Behind the Arches are the Pilasters Carrying the Strainers and Separating the Four Intakes to each Turbine.