



ONE OF THE GREAT DAMS AT EUGENIA FALLS

It makes possible a reservoir capable of containing 1,000,000,000 gallons of water

be satisfied to see the water trickling through a mill-race and revolving a paddle before it rushed to freedom down the hill. We, however, must not overlook the fact that the problem was to utilize Eugenia's power to the fullest extent and to bear in mind that any pipe-line thrown down the hill would bear a pressure of three hundred pounds to the square inch at the bottom, in addition to the water travelling at a rate that would shame an express train.

With these facts before them, the engineers built a wooden pipe-line from the concrete dam to the brink of the hill. The words "wooden pipe-line" must not be construed to mean a similar article to that used by miners in sluicing and washing operations. Eugenia's pipe-line is constructed like a wash-tub. It is three feet across and bound, every six inches, with an iron ring.

At the point selected for descent the wood line enters a gigantic steel

tank, one hundred and five feet high. This is the surge tank, or the safety-valve of the system. In the event of a sudden stoppage of the turbine machinery this tank will settle the water and absorb the shock of the recoil, which, if not passed into the surge-tank, might blow the pipe-line to pieces. On the down side of the surge tank the construction of the pipe-line changes from wood to steel.

The power-house is a small brick structure, and the visitor realizes for the first time the latent powers of Eugenia when he enters the building and notices the diminutive size of the units that are going to convert the water energy into electrical energy. As he looks at the units, not much higher than his head, he is at first inclined to doubt that ten thousand horse-power will come from these. But the brass plates say so, and his examination of the powerful turbines will soon convince him that it is so and that Eugenia has only been con-