

through the screen plates. When the screen was flushed with the ordinary coal washing water the perforations in the jet pipes became plugged up, consequently clear water has to be used, and a cheap and convenient supply is found in the circulating water from a surface condenser, connected to the main centrifugal pump engine; this water being warm is less trying for the jig tenders, who have their hands immersed continually. The combined effect then of the incline and the supply of water is to rapidly flush away by flume those screenings under  $\frac{3}{8}$ -inch to the fine jigs. The remainder, under  $\frac{1}{2}$ -inch and greater than  $\frac{3}{8}$ -inch, being sluiced to the coarse jigs.

There are four coarse jigs on one side of the building, and as many fine ones on the other, all of them being essentially modifications of the Lührig jig, and designed especially for coal washing work by Mr. Stein, the engineer whose firm had charge of the erection of the plant. The fine jigs, styled "Standard two-compartment fine corn jig" by the designer, are built of wood, and wash  $7\frac{1}{2}$  tons of coal per hour.

Thus about 65 per cent. of the coal is washed by the fine jigs, since only three of the coarse jigs, with a capacity of six tons per hour each, are used at a time. The fine jigs, which have one compartment fitted with  $\frac{1}{4}$ -inch perforated plates, and the other with  $\frac{3}{8}$ -inch perforated plates, are run at 135 pulsations per minute. The feldspar used in the bed is of  $\frac{3}{8}$ -inch cubes. The coarse jigs are run at 72 pulsations per minute, and have a bed of  $\frac{3}{8}$ -inch feldspar varying from 2" to 4" in thickness, depending on the amount of slate flowing. The purified product from the jigs is sluiced to the washed coal bin, while the slate runs to a waste bin, from which it is removed by No. 7 elevator to the slate bin in a Bernard storage tower, or flushed away by the slate ejector.

The water from both these bins, carrying in suspension certain fine coal and extremely fine particles of slate, returns to the sludge tank, directly under the jigs. There this fine material settles, and at proper intervals is drawn off. This tank, being the reservoir to which all leakages drain, also acts as a sump for the washer, and the centrifugal circulating pump drawing from it uses the water over and over again. Thus the only loss of water is that carried away by the products as moisture, a small amount as leakage, and that used for flushing purposes. This amounts, in all, to about 25 per cent. by weight of the coal washed.

The washed coal is all elevated to a drainage and storage tower by No. 6 elevator, which is equipped with perforated buckets, as also are elevators Nos. 5 and 7, and the amount required for the coke ovens is lowered by chute and re-elevated by No. 5 elevator