

It is well, perhaps, to call attention to the fact that, in the above cases, the cost of handling ashes does not include any proportion of the fixed charges.

The actual cost per ton is not so important as a comparison of costs between old and new methods of doing the work. In the case of the Erie plant, at Cleveland, the reduction per ton due to the installation of a locomotive crane was about 12 cents. At this plant there is another crane not in service at present.

Belt Conveyor.—The inclined belt conveyor is a very well-known type, an example of which is found at the Cleveland yards of the Pennsylvania Lines West. The general layout is shown in plate No. 1.

This plant consists of a single pocket of 500 tons capacity fed by a belt from a track hopper. This is situated beneath the coal car track, and directs the coal on to a steel trough of trapezoidal section, from which it is delivered to the belt by an automatic feeder making about 35 strokes per minute. (See plate No. 2.)

This is built of steel plates to fit the trough section, is mounted on rollers, and has a reciprocating movement actuated by a crank driven from the lower belt drum shaft. At one end of its stroke it uncovers the hopper opening and pushes the coal that falls through along the trough until it falls on to the belt. The feeding action is intermittent, and is automatically regulated by the speed of the belt. Around the lower part of the belt are wooden guards to prevent the coal from spilling as it falls from the trough.

The belt is made of cotton duck faced with rubber, $\frac{3}{4}$ " thick by 30" wide, and runs about drums on 200 ft. centres. The slope is about 25°, according to the usual practice, and it is troughed by means of 3 roll idlers, set 5 ft. 3 in. apart. The inclination of the outer rolls is about 20°, and lubrication is effected by grease cups, which also help to protect the journals from grit. The belt will deliver 100 tons per hour at a speed of 200 ft. per minute, but in daily operation averages 50 tons in 42 minutes, with a speed of 125 ft. per minute, the power consumption being about 15 H. P. The average life of one of these belts is from 2½ to 4 years.

The belt and its supports, together with a 2-ft. gangway, are completely housed, the housing being supported midway by a wooden trestle tower. Beneath the belt runway is the engine room containing the belt-driving drums, which are geared to an 18 H. P. simple horizontal engine making 110 revolutions per minute. Steam is supplied from the roundhouse boilers (a distance of about 500 ft.) by an overhead pipe protected by a galvanized iron casing.

In a shed beneath the coal wharf the sand for the locomotives