## PLANT INSTALLED AT THE LONDON PAPER MILLS AT DARTFORD, ENGLAND.

## The plant consists of :---

I. Receiving hopper with supports placed outside the boiler-house on the bank of the river, in such a position that



C J252"A range of "Bennis High Temperature Machine Coking Stokers keeping steam in the boiler-house of the London Paper Mills.

the coal can be deposited into the hopper by a crane and grab.

2. Overhead coal storage bunker having a capacity of about 330 tons of coal.

3. Bennis U-link chain conveyors with driving gear and all supports.

4. Shoots to carry the fuel from the bunkers to the hoppers of the Bennis mechanical coking stokers by which the boilers are fired.

The method of operating the plant is as follows:—The coal is brought up to the wharf in barges. A grab load of coal is raised from the barge by the crane, and dumped into the receiving hopper from which it flows through an outlet into the chain conveyor, which is placed immediately beneath. The first portion of this chain conveyor is carried up an incline and the coal is thus raised to the level of the top of the bunkers. The conveyor then passes horizontally over the top of the bunkers, and the coal is dropped through openings into the storage bunkers beneath.

The coal flows by gravity from the storage bunkers into the storage hopper, and a valve is placed at the end of each shoot to control the supply of coal.

The conveyor is of the well-known U-link chain type. It has a capacity of 40 tons per hour, and is driven through suitable reduction gear by a separate motor. The overhead coal storage bunkers are built over the firing floor and are about 80'-0'' long x 11'-0'' wide having a total capacity of about 330 tons. The boiler-house

wall is utilized for one side of the bunkers, the other side consists of a reinforced brickwork wall. The bottoms of the bunkers are hoppered in shape, and are formed out of rolled steel plates with suitable stiffeners and connections.

A number of rolled steel joists run the whole length of the bunker to form supports and carry the weight between the stanchions. These longitudinal joists are supported in their turn by other transverse joists spanning the firing floor

and carried at one end on substantial stanchions, resting on the floor, the other end being built into the wall of the boiler-house. These stanchions are also used for supporting one side of the main boiler-house roof, and a light roof is built over the top of the bunkers themselves.

Access is given to the conveyor chamber over the bunkers by ladders and gangways, arranged so that all running parts are easy of access tor inspection and lubrication.

The bunker was designed to take full advantage of the existing buildings and to give the reguired storage without forming any obstruction to the movements of the boiler attendant. It is so arranged that future extensions can be easily effected.

The work of the U-link chain conveyors <sup>1</sup> = 10 feed the coal to the bunkers which deliver i: <sup>hy</sup> means of openings into the distributing shaps which deposit it in the "Bennis" high temperature smokeless and gritless coking stokers. The illustration affords a good view of this range <sup>(1)</sup> stokers with the shoots in position and in clo<sup>e</sup> connection with the bunkers immediately abov<sup>(2)</sup>.

It is, of course, important that steam-raising in paper mills should be smokeless and gritless. Harm will be done to both paper and pulp in various stages of their manufacture should grits and smuts be emitted from the chimney and 50

find their way into the incomplete manufactures. The plant was designed and installed by Edward Ben



## Fig. II.

"Bennis" U-link Chain Conveyor which in part of its travel is inclined to carry the coal to the level of the top of the bunkers. It deposits its contents by means of openings into the storage bunkers beneath. It forms part of the "Bennis" installation of coal handling plant in the boiler-house of the London Paper Mills.

> nis and Company, Limited, who are represented in Canada by Geo. H. Tod, of Toronto.