

collecting at the blow off was driven to the other end of the boiler, resulting in a few days in a nice bag about 6 inches in diameter.

have changed things, not only the feed-water connections, but the furnace as well. I might add that we have only cleaned the

Whiting Foundry Equipment Co., Harvey, Ill., for the Illinois Central Railway Co. to do this work.

POWER DIRECT FROM COAL.

In his spare hours, away from the laboratory, Thomas A. Edison is having to go through the mental crucible preparatory to physical experiments to be undertaken later, two inventions, the last of a commercial nature which he will undertake. One is the development of power direct from coal; the other, the artificial manufacture of black diamonds to be used for drilling purposes.

"If I do not reach it myself I will live to see the day when power will be utilized from coal without the aid of steam," said Mr. Edison. "We are working in that direction, and some morning the world will be informed that the discovery is a fact. Electricity is many times more effectual than steam. In a few years a steam railroad will be a novelty."

"I have been experimenting to get a black diamond which is better for drilling purposes than the white diamond. So far I have not succeeded, but have not given up. Imagine the impetus that would be given to the mining industry through the discovery of a cheap diamond for boring purposes. Not the hundredth part of one per cent. of the metals in the western mountains has been reached yet."

A SOAP BUBBLE HANGING FROM A REED.

HENRY FREDERIC AMIEL—1821-1881.

Our life is but a soap bubble hanging from a reed; it is formed, expands to its full size, clothes itself with loveliest colors of the prism, and even escapes at moments from the law of gravitation; but soon the black speck appears in it, and the globe of emerald and gold vanishes into space, leaving behind it nothing but a simple drop of turbid water. All the poets have made this comparison, it is so striking and so true. To appear, to

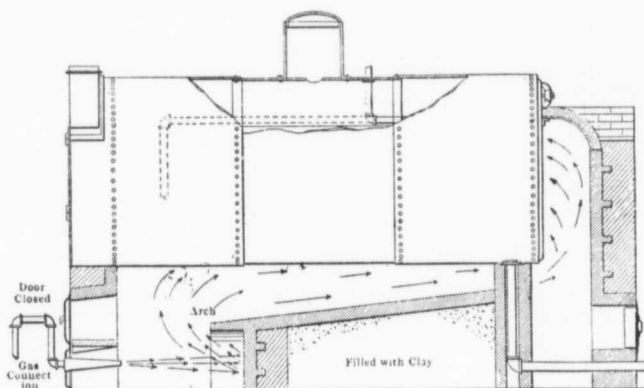


FIG. 2. SHOWING THE CHANGES MADE IN THE SETTING

The illustration also shows the way the furnace was constructed. Note the slant of the fire bridgewall and the location of the bag. In Fig. 2 is shown the way I

boiler once since making the change, but found that the mud was near the blowoff outlet, while before it was in the front end of the boiler.—Power.

Electric Walking Jib Crane

Special Walking Jib Crane Installation in Railroad Shop for Handling Wheels and Axles. Electrical and Mechanical Brakes on Hoisting Mechanism.

A very interesting jib crane installation is shown in the accompanying illustration. This crane is installed in the Burnside shops of the Illinois Central Railway, for handling locomotives and car wheels and axles. It is used chiefly to distribute them about the shop to wheel lathes.

The crane travels on a permanent monorail track, running the entire length of the shop at right angles to the erecting pits. The top of the mast is supported by an I-beam track, as shown.

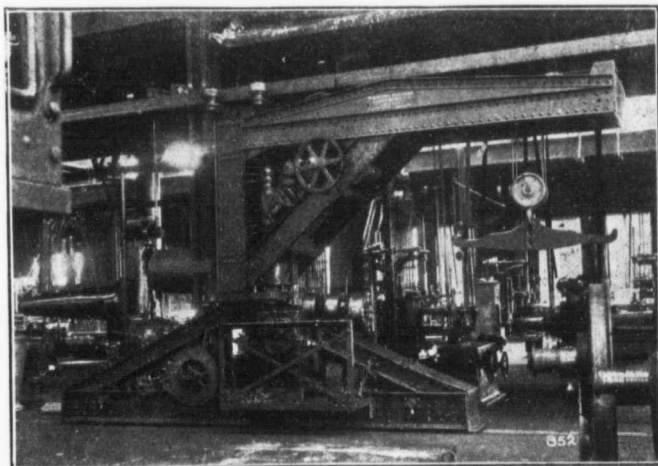
The track is laid as close to the columns separating the erecting floor from the machine shop floor as clearance will permit, so that the crane serves the erecting pit on one side of the track, and the wheel lathes on the other.

The capacity of the crane is 7 tons. It is operated by four motors: the 15 h.p. hoist motor, hoisting 16 feet per minute; the 10 h.p. crane travel motor, travel being at the rate of 180 feet per minute; the 2 h.p. rack motor, which racks the trolley on the jib at the rate of 90 feet per minute; and the 2 h.p. jib rotating motor, which swings the jib at the rate of two r.p.m.

The crane has a working radius of 12 feet. The jib is fixed in a horizontal position. The maximum lift of hook from rail is 10 feet. It will be noticed that the crane has very low head room.

The hoisting gearing of the crane is provided with a double automatic safety brake, so arranged that the load may be raised and lowered by power, and is automatically sustained at all times. This brake attachment consists of two independent brakes,

one mechanical and one electrical. The electric brake is operated by an electric solenoid in circuit with the hoisting motor, and so arranged as to come automatically



Walking Electric Jib Crane.

into action when the electrical current is off the hoisting motor circuit.

This crane was specially designed by The

shine, to disappear; to be born, to suffer, and to die; is it not the whole sum of life. for a butterfly, for a nation, for a star?