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Central Station Heating Plants.

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The accompanying sketch shows the method of lubricating the engines and pumps arranged by myself at the Edinburg Water & Light Plant, Edinburg, Ind. An oil tank is used, which is kept warm by means of a steam coil. A line of the exhaust goes free. It has been noted in the passages from the tank system, returning to the station is only 90 degrees cooler than the heating.

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Vibrating Boiler.

I am troubled with a vibrating boiler and would like to know of some remedy apparent reason for this, as the boiler is not seeing service which has been in operation but one year. It is not used for steam. It is a large pipe, having two walls in which there is no vibration. Sketch shows general arrangement of boiler and engine.

Edward D. Bezzer.

The Indicator was Better than the Expert.

I send you two indicator diagrams from Mr. W. H. Wakeman inquires in the February issue as to what advantage the overhanging boiler has over the flush front. I should say it had none. In fact Mr. Wakeman has not mentioned all the evils of such a class of boiler. Some will say, of course, that there is no arch to keep up in them and are better on that account, but with a good casting to put the bricks on, the danger of the arch falling down in the flush front is reduced to a minimum. I saw one overhanging where perhaps the overhanging boiler was an asset while it was serving as a small boiler and the tubes leaked so badly that the foreman was hired to keep the furnace without getting the hot water all over him and they just had to get the boiler repaired where, if it had been a flush front, they would never have done so. With the vibrating boiler the air gets between the shell and brickwork in spite of all the front end of the tube must be cooler than if they were further back in the flush front, and this must be a loss. You cannot keep any firebrick or fireclay from causing the same result.

The doors happen to be shut a little hard, down they come, and moving these boilers the smoke box is a continuation of the shell and air for a while to handle that front end with care or you send the smoke box, thus straining the joint where the flue sheet is riveted to the shell. Last, but by no means least, is the overhanging boiler, where there has to be lifted up and propped with a side, whereas in a flush front and so on, a 24-inch boiler, there is a deflection of heat, which is sufficient to do away with the deflected fireman's head ready to fall on the

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