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THE INCANDESCENT LIGHT CO. OF TORONTO.

We illustrate and describe herewith the central station of the above company. The building was erected in 1889 and the foundations rest on good solid clay. It does not cover the entire lot, which has a frontage of 100 feet and a depth of about 175 feet, enough ground having been left for future extensions.

The boiler room occupies a space at the rear or west end of the building 56 feet wide by 65 feet long, and is separated from the engine and dynamo room by a solid brick wall. There are eight boilers—six return flue and two Babcock & Wilcox water tube, the former being rated at 175 h. p. each and the latter at 400

h. p. each, making a total of 1850 h. p. Each boiler is provided with a separate damper and in the breeching is placed another damper controlled automatically.

Coal is delivered direct from the teams into the coal hole, and descends by gravitation to boiler room floor, and is then wheeled to the various

boilers as required. It is carefully weighed and each fireman keeps accurate account of the amount of coal burned during his run. The ashes are removed by an endless belt with steel buckets driven by a 2 h. p. motor, and are raised a height of 20 feet and dumped into a chute which conveys them outside the building.

There are three feed pumps, viz., two duplex and one tandem compound. The feed water pipes are so arranged that water can be taken from either of the main pipes indicated on ground floor plan Fig. 1, and also from the well outside of the building. The drips from all the engines run into this well, and whatever heat is got from same is utilized. The water is pumped through Wainright exhaust steam heaters and enters the boilers at about 200 Fah. Water is supplied from the city mains by meter measurement. There are two smoke stacks, the positions of which are shown on Fig. 1, their heights being 100 feet and 150 feet respectively. At present the two water tube boilers are connected to the latter, which is of sufficient capacity for at least 2,500 h. p. in boilers.

The engine and dynamo room is 56 feet wide by about 115 feet long. Fig. 1 shows the general layout of the plant and Fig. 2 shows a general view taken from one end of the room. The engines are six in number, viz., two Straight Lines, three Arming-ton & Sums, and one Lake Erie Cross Compound. Owing to the

station being situated fully a mile from the lake, the plant is entirely non-condensing. The figures show the arrangement so plainly that a detailed description is unnecessary.

The generators are of the Edison type throughout—the two 250 k. w. direct connected being the latest addition, having been made by the Canadian General Electric Company at Peterboro'. These machines have been running right along since they were installed over eighteen months ago, and running at times up to 300 k. w., have given the best possible satisfaction, and are certainly a credit to the builders and also to those in charge for the care that appears to have been taken in keeping them in their present first-class condition. It may be mentioned that these

were the first of this kind made at Peterboro'. The dimensions of the vertical engine are 19 x 38 x 22 inch stroke, 130 revolutions per minute.

The switch board shown in Fig. 4 is divided into three sections—all switches on the positive side of system in one section, all negative switches in another, and the neutral in an-

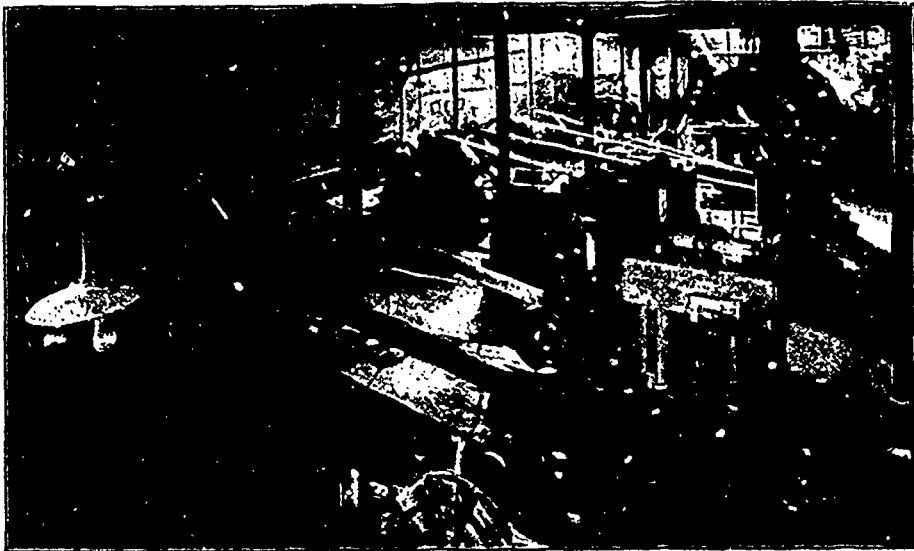


FIG. 1. INCANDESCENT LIGHT CO. OF TORONTO—FIG. 2

other. The position of same is shown in Fig. 1 and Fig. 2. It is arranged that two different pressures can be run, but owing to the peculiarity of the load, and the distribution of same at times, three different pressures are run by dividing the auxiliary bus. We described in our February, 1894, issue, the manner in which Mr. Milne, the general superintendent, arranged the switchboard for running at 500 volts for street railway purposes, together with the three-wire system. It might be well for our readers to refer to that again and take in Fig. 4 in conjunction with same, seeing we have now a more general description of the plant. Fig. 3 represents diagrammatically the generators and their connections to switchboard—the generators, commencing from the left hand side, being connected in pairs to their respective engines, and are 1st pair, two 250 k. w.; 2nd and 3rd pairs, 100 k. w. each, and the remaining three pairs 80 k. w. each. By tracing out the connections it will be clearly seen how the three-wire system was run in connection with the 500-volt system. Recording volt meters are used which record the pressure at the junction boxes throughout the city. A careful record is kept of the ampere output, which is plotted on a chart and kept for reference.

All current is sold by meter. The dayload is composed chiefly of motors, there being almost 1000 h. p. connected to system. The total number of lights connected is about 25,000. The station