

power engines and 500 k. w. generators. The burned building was used exclusively for arc lighting, with sufficient power generators and alternating current machines to take the night load after midnight, when the plant in the western building was shut down.

The building contained sixty-two dynamos, of all sizes from 25 to 125 lights capacity each, and 4 pairs of horizontal Brown-Corliss engines of 500 horse power each, and 6 lines of shafting 62 feet long. The building was fairly well supplied with fire-extinguishing apparatus, including 4 sets of hose and nozzles, 15 extinguishers and innumerable pails kept well filled with water. It was thought that the continuous presence of workmen, during the entire day and night, together with these appliances, were a sufficient safeguard against any danger of loss by fire. Events proved differently, however.

The final cause of the catastrophe is somewhat difficult to arrive at. It appears that at about 4 o'clock in the morning, when all machinery was of course in operation, fire was discovered under one of the dynamos on the ground floor near one of the lines of shafting. According to orders in such an event, the engines were stopped, and the hands, together with the watchman whose duty it was to look after these matters, put out the blaze by using the extinguishers. After it was all out, and the wet belts taken from the dynamos in the vicinity, the engines were again started. This would probably be some fifteen or twenty minutes after the fire was out. The cause of what followed is now only a matter of conjecture. It appears that the various lighting circuits had only been fairly started when a sheet of flame shot up from the upper floor and appeared to envelop the entire building in that part. So rapid was its spread that, although the men sprang to the engines some of them were never shut down, and the man who remained to do it had to make his exit by a window. Just as many theories as to the cause of this second fire are advanced as there are individuals to express an opinion. The most probable one is that the acid from the extinguishers used may have sprayed upon some of the many wires, penetrated the insulation and even carried the high voltage current over the wet porcelain insulators. Be the cause, however, what it may, the fact remains that at 5 o'clock on the morning of the 21st of January, the Toronto Electric Light Company found themselves without an arc plant.

There are used for city lighting alone about eleven hundred lights, and for commercial use from five to six hundred more. No time was lost; while the fire was yet burning men were at work erecting new poles to carry the wires into other buildings, and the manager of the company put himself into communication by telephone and telegraph with every place at which it was likely that dynamos could be obtained. The response by the companies appealed to was both prompt and effective. The General Electric Co. had some dynamos of various kinds in stock, and they worked with a will. A car was loaded and shipped special from Peterboro'. At 4 o'clock p.m.—within seven or eight hours of the fire—it was backed into the siding of the Electric Light Company's works in Toronto. Two more cars were shipped and arrived a few hours afterwards. On receipt of a telegram from Toronto the Royal Electric Co. of Montreal put gangs of men to work to take out dynamos from their lighting stations, and even the machine used by them for testing lamps in their factory

was included. These were loaded upon cars and attached to the night express, reaching Toronto next morning. Within six hours of the fire a number of the latest type of Brush machines, of 125 lights capacity, were purchased and shipped from Cleveland and Lynn.

The result of this work was that the city was at no time without light. The company had a few small dynamos in their power station. These, with what reinforcements could be got in operation the first night, provided about 300 lights. This was sufficient for the centre of the city, and by using alternate lights in the outside districts the ground was fairly covered. The second night, with the exception of the extreme north-west section, a stranger would not have noticed anything unusual, and the succeeding five nights the number was added to until, within one week of the fire, the entire number was again in operation. Two dynamos were placed in the power house of the Toronto Railway Co. and a number in the incandescent light station of the Toronto Electric Light Co. at Terauley street—the remainder on the engines at Scott street and the Esplanade, that were used for driving power generators.

When the weight of the machinery required for this work is taken into consideration, as well as the intricate and delicate adjustments required, and the disorganization of the circuits caused by the loss of the distributing switchboard, it will be seen that the work done was an achievement of no ordinary magnitude. Within 36 hours of the fire the employees of the company handled and placed in position close upon one hundred tons of machinery.

In speaking of the fire Manager Wright was most enthusiastic in his expressions of appreciation of the manner in which the companies concerned came to his assistance, and of the untiring and devoted energy of his employees.

The Toronto Electric Light Company intend to replace the burned building with an entirely up-to-date fire-proof structure, so that a recurrence of the disaster will be rendered an impossibility. The engraving we present shows the works of the company as they were before the fire. The engine in the upper left hand corner is one of those just installed in the new power house for driving power generators. The building shown to the left foreground of the picture is the one destroyed. A steam derrick has been erected in the ruins to handle the heavy machinery and get the ground cleared for the new works at the earliest possible moment.

### THE CHAMBLY POWER WORKS.

THE works for the utilization of the water power at Chambly, Que., are making satisfactory progress. A concrete dam is nearing completion, which will make possible the development of 20,000 h. p., delivered to shafts in eight units, besides two units for exciters. The generators will be direct coupled to water wheels, and each unit of generator will be 2650 h.p. capacity. These generators are now in process of construction at the Royal Electric Company's works at Montreal. They are to be two-phase "S.K.C." inductor type alternating current, generating current direct from the machines at an impressed E. M. F. of 12,000 volts. There are a number of novel features connected with the working out of the enterprise—one being the high electromotive force of the generators and another the capacity of the machines.