We have the pleasure to place before our readers a description of a Single Pole Quadruplex, which has just been invented by Superintendent B. B Toye, of the Great North Western Telegraph Company's service at Toronto We understand the patents have been applied for, as we are confident from the serviceable appearance of the innovation, that this new Canadian invention will be adopted everywhere in America and Europe

We should like to see an electrical society formed in this city from amongst the employees of the various companies. We feel quite satisfied much good would result from the monthly lectures on, and discussion of, subjects affecting the general interest of all. New York, Chicago, Cincinnati and other cities have such associations, and there is no reason why we should not organize. We shall be glad to receive any suggestions.

C. F. Sise, the General Manager of the Bell Telephone Company, is an excellent executive business officer, and has brought the extension of this organization to a very high state of efficiency. The general use of the telephone at Montreal compares very favorably with the other large cities of the universe. On the 1st of this month 1,090 Bell instruments were in use in this city, and by the 1st of May it is expected the number of subscribers will have increased to 1 200. The Company have a large and extensive staff of employees.

The Royal Electric Company prices average from $400 to $5,000 for each machine and from $65 to $80 for each lamp for street lighting. Lamps will burn some 7½ hours and some 14 hours. A single lamp is 1 200 candle power, or equal to 125 gas burners of 16 candle power each. The cost of lighting a square area by 100 gas burners consuming 6 feet per hour, which would be 600 feet per hour, or for six hours burning 3,600 feet at $2 50 per 1,000 feet, would amount to $8,85 and giving 1,600 candle power only. The electric lamps will light the same space for six hours at $1.50, giving 6,000 candle power, or lighting 4,400 candle power greater than gas for $7.35 less money.

Leonard Henkle, inventor and electrician, of Rochester, N. Y., says that he has negotiated for the purchase of land on the Canada side of the river and for power from the great Horseshoe Fall for the lighting of sixty-five American and Canadian cities, connected by means of underground cables with electric lights generated at Niagara. The plans are all drawn for ten hydraulic engines of 200,000 horse power each, and gigantic machinery That Henkle himself means business is attested by the fact that he will soon open an office on the Canadian side of the river, and endeavor to complete arrangements with capitalists, whom he expects will furnish $22,000,000 for the undertaking.

The suggestion in our last with regard to forming an Electrical Society in this city has been warmly commended by various members of the profession. The society should be in working order before the advent of the British Association for the Advancement of Science, which will meet at Montreal in August, 1884. If a few influential gentlemen will call a meeting at such time and place as would be most convenient for those desiring to attend same, an organization would be sure to result Who will make this first move? Remember Sir William Thompson and Mr. W. H. Preece are coming, and they should not find us unprepared to receive them. Some noted American members of the profession are also coming.

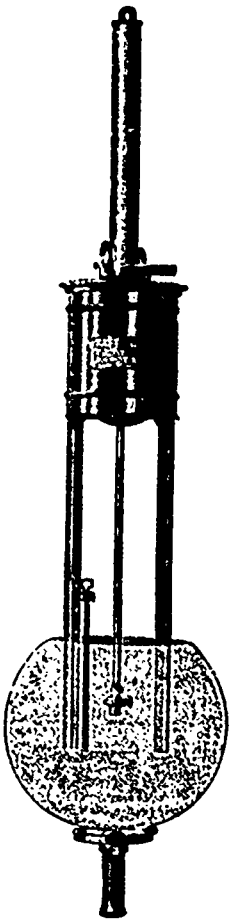
Mr. F. N. Gisborne, F.R.C.S., the able and energetic Superintendent of Government Telegraphs and Signal Service of the Dominion, delivered a very interesting lecture on the Origin and Development of Electrical Science" at Ottawa, under the auspices of the Literary and Scientific Society on the 21st of last month The chief feature of the lecture consisted of colored drawings expressly prepared by him for those uninitiated in electrical science, thus enabling all present to understand the general principles upon which dynamos, cable testing and duplex working, &c., &c., are based. The lecture was delivered without notes in a clear and pleasant off-hand manner. Not the least interesting part was that of describing the introduction of the electric telegraph into Canada in 1846, when Mr. Gisborne was an employee of the Montreal Telegraph Company, and who opened the first office in Quebec The discourse drew forth frequent applause and was a most comprehensive survey of the whole field of modern electrical application.

A WIRE-WOUND FLYWHEEL.

The following description of a heavy flywheel composed of wire appears in the American Manufacturer:—"Amongst the most recent and novel applications of wire, perhaps none has greater interest to the mechanical world than that presented by the new wire flywheel lately erected at the Mannesmann Tube Company's Works, Germany. Heavy flywheels driven at high velocities obviously present dangers of breaking asunder from the great centrifugal force developed. The wheel at the factory mentioned consists of a cast iron hub or boss, to which two steel plate discs or checks, about 20 ft. in diameter, are bolted. The peripheral space between the discs is filled in with some 70 tons of No. 5 steel wire, completely wound around the hub, and the tensile resistance thus obtained is far superior to any casting. This huge flywheel is driven at a speed of 240 revolutions per minute, or a peripheral velocity of about 2.8 miles per minute (250 ft. per second, approximately), which is nearly three times the average speed of any express train in the world. The length of wire upon such a constructed flywheel would be about 250 miles."

THE "WOOD" ARC SYSTEM.

THE Canadian General Electric Co. have, within the past year, placed on the market a complete line of arc apparatus of the well known "Wood" type. The selection of the "Wood" machine as their standard for arc lighting was only arrived at after a careful consideration of the requirements of the best arc practice and of the relative adaptability to the same of the different leading arc systems owned or controlled by the Company.



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Wood Arc Lamp

In the "Wood" dynamo it has been aimed to combine certain essential features of design and construction by which it is claimed a distinct superiority has been gained. The most salient point in the machine is its simplicity in design, combined with solidity of construction. To the design of the armature, always the weak spot in an arc machine, special attention has been paid. The insulation and ventilation are of the best, and the coils are easily and separately removable in case of damage. The automatic regulation is it is claimed the most perfect attainable, variations ranging from full load to one lamp, being handled instantly without sparking or perceptible change in the candle power of the lamps. A recent improvement has been the equipping of these dynamos with the standard Edison self-oiling ring bearing.

The lamps used with the system are the Company's improved standard C. K. single carbon lamp which with a ⅝ carbon is claimed to be admirably adapted for all night lighting, and for those cases in which a double carbon lamp is required. The standard "Wood" type is manufactured. Both of these types of lamp are designed to secure the greatest simplicity compatible with steady and reliable service. A simple clutch feed is used and the number of moving parts reduced to a minimum. The minor accessories of the system, ammeters, lightning arresters, cut-outs, hoods, hangerboards, etc., have all been carefully worked out with a view to combining in one system the various features which experience has shown to be essential to the satisfactory operation of a modern arc lighting plant.

ALTERNATORS IN PARALLEL.

A striking illustration of the tendency of alternators to keep in step, when they have once been synchronized and connected in parallel, occurred a short time ago at one of the power houses of the Ottawa Electric Company.

Two 750 light Westinghouse a. c. dynamos, with surface wound armatures, driven from the same countershaft, by separate pulleys, were furnishing current to a circuit of about 1200 lamps.

The machines ran in this manner for several days without anything unusual occurring. One afternoon, shortly after starting up for the evening run, the ammeter, which was connected between the machines, suddenly showed a higher reading than the ammeter on the line. This indicated that one of the dynamos was carrying all the load and was also sending some current through the other. The circuit was removed and both machines shut down. The switches between them were opened and it was then attempted to start again. As soon as the machinery was set in motion the cause of the rise in current between the dynamos became quite apparent—one of them and the pulley on the driving shaft to which it was belted stood still. The key had slipped out of the driving pulley and the dynamo, which had now become a motor, was driving the pulley instead of being driven by it But for the change in the ammeter reading the accident would not have been noticed—at least not until the heating of the armature carrying the load had attracted the attention of the dynamo tender.