RECENT CANADIAN PATENTS.

No. 37118. Geo. L. Foote, Electric Signal.
No. 37127. Wm. W. Savage, Holder for Electric Lamp.
No. 37135. Chas. W Hazeltine, Arc Lamp.
No. 37137. W. F. Wellman, Antifriction Bearing.
No. 37152. D. G. Weems, Electric Railway.
No. 37162. P. Decker, Electrical Insulator.
No. 37166. Jas. Jos. Bush, Steam Generator.
No. 37186. T. D. Bottome, Incandescent Electric Lamp.
No. 37188. W. C. Bryant, Incandescent Lamp Socket.
No. 37198. T. L. Kay, Storage Batteries.
No. 37219. Scotch Yoke for Steam Engine.
No. 37229. E. Howland, Portable Steam Boiler.
No. 37,230. E. Howland, Boiler and Engine.
No. 37,249. Ed. Mather, Furnace Grate.

SPARKS.

Mr. Fred. Stark, late of Listowel, has been appointed assistant engineer of the electric light station at Mitchell.

The Edison General Electric Company will establish an arc and incandescent lighting plant in the town of Lindsay, Ont.

Prof. Galbraith has received his first instalment of electrical instruments for the electrical engineering department of the School of Practical Science, and hopes to have his department fully equipped in a few weeks.

The city of Chicago has introduced in its telephone exchange a very useful "busy call," which enables a caller-up of a "busy" line to have his call placed on record, so that it will have attention as soon as the line is clear.

The Montreal Exhibition Association, as well as the citizens of that city, are to be congratulated upon the success which crowned their efforts in connection with the recent exhibition. The total receipts amounted to upwards of $50,000.

The Hamilton Light and Power Company is going to spend $30,000 or $40,000 in improving its system. Work has been commenced on a new power station at the corner of Main and Catharine streets. New dynamos, two new twin engines of 600 horse power each and other new plant will be added.

The agreement between the Bell Telephone Co. and the city of Toronto, which provides for a reduction in rates to $45 per year for business premises and $25 per year for residences, and the payment into the city treasury of 5 per cent. of the gross earnings of the company in the city, has been consummated. The city grants the company an exclusive franchise for five years.

Isaac Newton is said to have carried in his ring a magnet weighing but 3 grains, which could raise 746 grains or 250 times its own weight. This magnet naturally excited much admiration, but is surpassed in power by that formerly belonging to Sir John Leslie, and now in the Physical Collection at Edinburgh, weighing 3½ grains, and having a carrying power of 1,560 grains.

Prof. Elihu Thomson has recently devised a method of case-hardening iron or steel by means of the heat produced by the passage of an electric current. His process consists essentially in heating the object electrically, and then applying to the metal so heated a surrounding envelope—either gaseous, fluid or solid—for the purpose of changing or preventing change in the quality of the material, according to the special end to be attained.

Mr. B. J. Throop, who has been local manager for ten years past of the Bell Telephone Co.'s business at London, Ont., has been appointed to fill a similar position at Hamilton. Mr. S. J. T. Brown, of Hamilton, replaces Mr. Throop at London. The staff of the London office presented Mr. Throop on the eve of his departure with a kindly worded address, a couple of easy chairs, and a marble clock, in token of their appreciation of his character.

Mr. A. A. Cross, in a brief note to the *American Machinist*, thus describes a form of commutator smoother which he has found to answer the purpose. It is simply a block of maple, with a handle like a square chisel mallet, with a semi-circle cut in outer end of block, the circle to fit the commutator. Lay a piece of fine emery cloth in the semi-circle, fasten it with a tack on the side of the block, and grind away, running the dynamo about half speed. With this arrangement, and a little judgment, commutators can be kept smooth and round at little expense.

The Machinery Hall at the Industrial Exhibition presented but few exhibits in the electrical line this year. The honors were divided between the Ball Co., the Toronto Electric Light Co. and the Kay Electric Works, Hamilton. The lighting of the various buildings was done jointly by the Toronto E. L. Co. and the Ball Co. Not only was Machinery Hall less interesting from an electrical standpoint than on some former occasions, but a great falling off was observed as compared with former machinery exhibits of all kinds. The management of the Exhibition must give more attention to the requirements of machinery exhibitors if the retograde movement which has already set in in this important department is to be checked.

NOTES.

Dilute muriatic acid will take the muddy deposits out of gauge glasses.

Foaming in a boiler is most frequently caused by impurities in the water supply.

It is estimated that 20,000 horse power will be required for the electric lighting plant of the Columbian Exposition.

The *Northwestern Mechanic* says:—Vertical engines seem to be coming more and more into favor in this country for electric lighting, both for slow and high speeds. They have long been popular in England, and now quite a number of American engine builders are selling vertical high-speed compounds, and so far they appear to have been very successful.

A gentleman, well known as a maker of recording gauges, has a little son of an inquiring turn of mind. The other evening the boy said to his father: "Papa, where is Atonis?" Father—"Athens, you mean; don't you, my dear?" Inquiring son—No, Atoms, the place where people go to when the boiler explodes; because it always says they were blown to Atoms."—*Electrical Review.*

In the discussion at Providence of the topical question: "How many times per minute can a dashpot apparatus be lifted, such as used with Corliss' valve gear?" the case of an engine running at the Trenton Iron Works was cited by two or three members. It has worked successfully for several years, at 160 revolutions per minute. Another case where 150 revolutions is attained was mentioned.

That it is almost impossible for a steam engineer to secure a situation to-day unless he has sufficient knowledge to operate an electric plant, is well known, and it would seem axiomatic to state the converse proposition, and say that no electrician should be held competent to superintend a central station, or even an isolated plant, whether for railway power distribution or isolated lighting, who does not know whether or not the steam plant which drives his dynamos is being worked not only with safety to the neighborhood, but also with reasonable efficiency and economy. The weakest part of central station work has been and still is more frequently found to-day in the boiler room than elsewhere.—*Electrical Age.*

A shaft that is crooked, and is run in bearings that are in line, consumes power equal to the amount of strain it requires to bring it into line, and this strain is constant in any position that the shaft may be in, but as it revolves it shifts the strain to the bearing, and has a tendency to wear and loosen it. If the shaft is straight, and the bearings are out of line or level, the result is similar as to the constant strain of bending the shaft as it revolves, but the strain on the bearing will be one way all the time, and the tendency will be to wear the bearing in a direction that will allow the shaft to straighten itself. If a shaft is crooked and the bearings are out of line to the same amount, there will be one point in each revolution where there will be no strain, but opposite to that will be a point where it will be double, and the result will be a jerky motion, worse than if one or the other was right.