

A SIMPLE MAGNETIC INDICATOR.

PROF. W. M. Stine, Physical and Electrical Department of Ohio University, writes as follows: Those having charge of dynamos would often like to know the distribution of the external lines of force in their machines, and much useful knowledge could be obtained in this way. If a magnetic needle is used, it is very apt to change its polarity; it can only indicate in one plane; and in no case can it present a complete picture to the eye. Iron filings, when sprinkled on glass or paper, give a more complete and satisfactory picture, but the use of filings is not only limited to horizontal positions, but they may be drawn into the dynamo and make serious trouble.

It occurred to the writer, while looking at the excellent maps in Carl Hering's "Dynamo Electric Machinery," that they could have been more accurately drawn had iron filings, at least, supplemented the magnetic needle. With this in mind, an indicator was prepared by placing about half an ounce of filings in a mor-

tar and grinding them as fine as possible, and then placing them in a four-ounce flat bottle filled with concentrated glycerine. The high viscosity and specific gravity of the glycerine hold the filings in suspension and when the bottle is brought near the dynamo the lines of force appear very clearly. Since they are shown in three-dimensional space, they appear as they really are in space. When the bottle is held near the head of a bolt or sharp projection on the frame the magnetic discharging power of a point or edge becomes quite apparent. These projections are defects which still exist in many dynamos.

If the bottle is passed along a field coil, in many cases it will show that lines of force pass out thickly from a section of the winding and return a few inches farther along the coil. The relative intensity of the leakage can, at the same time, be seen. These are only a few of the many interesting facts which this simple indicator reveals, and other applications can be readily suggested. It is advisable to use a large flat bottle of clear glass in order to obtain the best results.

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SPARKS.

The Western Union Telegraph company have decided to increase their capital stock from \$13,000,000 to \$100,000,000.

To prevent rubber gaskets from sticking to hand-hole plates, give them a coat of common whitewash or plumbago.

The Peoples' Electric Light Co. has been organized at Windsor, Ont., with a capital stock of \$50,000, to operate the Edison plant.

A movement is on foot in Montreal to form a local association of the workmen in the employ of the telegraph, telephone and electric street railway companies.

The Nanaimo Electric Light Works have been sold by auction to Mr. Emerson, of New Westminster. The price paid was \$25,040, which is said to be less than one-half the original cost.

The Canadian Whitney-Hoyt Electrical Instrument Co. has taken a five years' lease of part of the building formerly occupied by the Edison Co. at Sherbrooke, Que., with the object of manufacturing for the Canadian market.

A man whose wagon was damaged by coming in contact with an electric car in Hamilton, last July, brought suit against the Street Railway Co., urging that the accident was due to carelessness on the part of the motorman. The judge nonsuited the plaintiff.

What is said to be the largest generator ever installed in Canada, will be placed in the power station of the Ottawa Street Railway Co. The weight of the machine is 33,000 pounds, and it will furnish current for the operation of the road and for heating purposes.

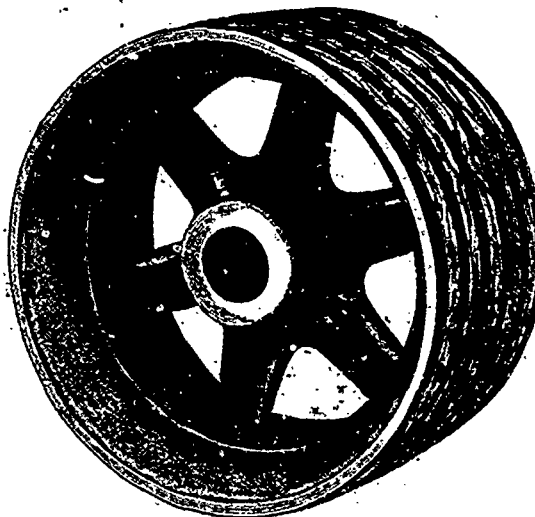
The St. Henri Light and Power Co., which was recently granted a charter by the Quebec Legislature, empowering it to deal in electricity, gas and other illuminants, and to lay pipes or erect poles in any city, town or municipality in the Province of Quebec, including the city of Montreal, will endeavor to secure the Montreal lighting franchise, both for gas and electricity on the expiration of the present contract. It is said that English capitalists have offered to take up all the available stock of the Company, the capital of which is placed at \$1,000,000. A drop in the stock of the Montreal Gas Co. has followed the announcement of the above facts.

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