

TRIUMPH OF ELECTRICITY.

FURNISHING LIGHT FOR NEXT TO NOTHING.

WESLEY W. GARY'S LATEST INVENTION—A MACHINE WHICH, WITH HIS MAGNETIC MOTOR, WILL DRIVE GAS COMPANIES FROM THE FIELD—A PLAIN DESCRIPTION OF THE DISCOVERY.

Special Dispatch to the New-York Times.

Boston, Dec. 13.—Wesley W. Gary has taken a most important step with his magnetic motor, and now is prepared to present it in connection with that invention which is attracting so much attention in the old as well as the new country—the electric light. It is believed that he has solved the problem which so many are patiently studying, and that with his appliance the obstacles in the way of the popular introduction of the electric light can be entirely overcome. Knowing that he had been for some days—and nights—experimenting in this direction, and was making rapid progress, I called upon him this forenoon, and found his work complete, his apparatus perfected, and himself prepared to demonstrate what he could do, and to state frankly and clearly what he claims—for it is one of Mr. Gary's strong points that he makes no secret of his discoveries and the way he has reached them, or of the principle of his inventions, allowing them to appear before the public on their own merits, only protecting himself by the declaration of his claims, and by the proper application at the Patent Office.

As is now well known, the greatest obstacle in the way of the substitution of the electric light for gas is the cost and expense of power for producing the former, it being largely in excess of the cost of the latter. Other minor difficulties have been overcome by Edison, Sawyer, and others; and to invent some appliance for reducing this cost is the task upon which many electricians and others are at this moment bending all their energies. It is this problem which Mr. Gary claims to have solved. By the simplest of devices, which he exhibited to me to-day, he utilizes his own newly-discovered principle in such a way as to generate electricity for the light at absolutely no expense beyond the cost of the machine, which itself is automatic. I asked Mr. Gary to explain his machine and its working, beginning at the beginning, that it might be thoroughly understood by laymen as well as scientists, and this he showed perfect willingness to do.

To produce magneto-electric currents it is necessary to change the polarity in an induced magnet or piece of soft iron. "This is usually done," observed Mr. Gary, "by revolving the iron in front of, and close to, the poles of a permanent or electro-magnet, the polarity changing as it passes from the field of one pole to the other, as the current is only induced at the point where the polarity changes. A high rate of speed is required to produce a steady or uniform current suitable for the light. The currents are induced by the change of polarity of the iron, and the polarity is changed by change of position. The power required to change the position depends on the distance the iron moves; the amount of electricity on the speed. This model," directing attention to the new work upon his table, "is of a machine I have contrived to change the polarity with less exhaust of power, for the reason that the iron moves a less distance. This, as you see is a compound permanent magnet, with a piece of iron coiled with wire, attached to a lever, pivoted in the centre, and adjusted so as to move over the neutral line; and it is so balanced that you can blow it over with your breath;" and this was practically demonstrated. "You see that every time it passes the line it produces a spark, and moves an eighth of an inch. One movement over the line and back produces sparks precisely as does one revolution of the iron in the old way. The difference in the power required is the difference in the distance the iron moves to make the same number of changes."

"Your new invention, then, is simply a practical application of the principle, which you have discovered, of the existence of the neutral line, at the point in the magnetic field where the polarity changes, and which is antagonistic to the heretofore universally accepted theory that magnetism is a static force?"

"Precisely. It is only on this principle that the thing is possible."

Mr. Gary then proceeded to illustrate his principle by setting his model in motion. It is of the same compound magnets which he used in the machine where the polarity was changed by the agency of a diminutive battery, before he had made the action of his motor entirely automatic. He had taken away the battery, rearranged the magnets, and used the two wires which formerly connected with the battery. These wires he had coiled around the piece of soft iron, furnishing them with small and primitive metallic handles at the other ends. This piece of soft iron hung like a pendulum on "the neutral line," in front of the compound permanent—not electro—magnet. At the request of Mr. Gary I took a handle in each hand, whereupon he set the piece of soft iron in motion, vibrating it by means of a fly-wheel. Although the vibrations were not very rapid, I immediately felt the electric current in my arms very strongly, and affecting me somewhat disagreeably. He then asked me to rub the metallic handles together, or at least to draw one across the surface of the other. I did so, and a train of bright sparks was the result. "You see these vibrations are very moderate," said Mr. Gary; "last evening I disconnected the fly-wheel, and Mrs. Gary and the landlady joined hands and took hold of the handles. I then vibrated the piece of soft iron quite rapidly, the vibrations not being over an eighth of an inch in length, and gave the ladies such a shock as, I grieve to say, nearly knocked them down. This result was obtained, you will notice, from a compound permanent magnet weighing only a few pounds."

Mr. Gary pointed to the motor, which all the time was industriously ticking away on the mantel, and observed: "You see that little machine. That will furnish power enough to make these vibrations for me, and so you see all my electricity is generated at absolutely no expense save the machine itself." Thus, if electricity is generated at no expense, and Edison produces the light at no consumption of fuel, &c., it can easily be seen how "dirt cheap" the light of the very immediate future may be. Mr. Gary is putting on suitable appliances to cause the vibrations of the iron, and will immediately secure letters-patent both here and in Europe, and place his invention at the disposal of the public. He feels confident that it will throw more light upon the subject than all the arguments or theories that have ever been advanced for or against it, and his confidence is shared by prominent electricians and capitalists, who stand ready with money.

The New York Times

Published: December 14, 1878

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