Anonymous Article in the New York Sun[1]


The Sun.

MONDAY, SEPTEMBER 16, 1878.

EDISON'S NEWEST MARVEL.

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Mr. Edison says that he has discovered how to make electricity a cheap and practicable substitute for illuminating gas. Many scientific men have worked assiduously in that direction, but with little success. A powerful electric light was the result of these experiments, but the problem of its division into many small lights was a puzzler. Gramme, Siemens, Brush, Wallace,[2] and others produced at most ten lights from a single machine, but a single one of them was found to be impracticable for lighting ought save large foundries, mills, and workshops. It has been reserved for Mr. Edison to solve the difficult problem desired. This, he says, he has done within a few days. His experience with the telephone, however, has taught him to be cautious, and he is exerting himself to protect the new scientific marvel, which, he says, will make the use of gas for illumination a thing of the past.

Mr. Edison, besides his power of origination, has the faculty for developing the ideas and mechanical constructions of others. He visited the Roosevelt pianoforte factory in this city, and, while examining the component parts of the instruments, made four suggestions so valuable that they have been patented.[3] While in the mining district of the West, recently, he devised a means of determining the presence of gold below the surface without resorting to costly and laborious boring and blasting.[4] While on a visit to William Wallace, the electrical machine manufacturer, in Ansonia, Conn., he was shown the lately perfected dynamo-electric machine for transmitting power by electricity. When power is applied to this machine, it will not only reproduce it, but will turn it into light. Although said by Edison to be more powerful than any other machine of the kind known, it will divide the light of the electricity produced into but ten separate lights. These being equal in power to 4,000 candles, their impractibility for general purposes is apparent. Each of these lights is in a substantial metal frame, capable of holding in a horizontal position two carbon plates, each twelve inches long two and a half wide, and one-half thick. The upper and lower parts of the frame are insulated from each other, and one of the conduct-

ing wires is connected with each carbon. In the centre, and above the upper carbon, is an electro magnet in the circuit, with an armature, by means of which the upper carbon is separated from the lower as far as desired. Wires from the source of electricity are placed in the binding posts. The carbons being together, the circuit is closed, the electro magnet acts, raising and lowering the upper carbon enough to give a bright light. The light moves toward the opposite end from which it starts, then changes and goes back, always moving toward the place where the carbons are nearest together. If from any cause the light goes out, the circuit is broken, and the electric magnet ceases to act. Instantly the upper magnet falls, the circuit is closed, it relights, and separates the carbon again.

Edison on returning home after his visit to Ansonia, studied and experimented with electric lights. On Friday last his efforts were crowned with success, and the project that has filled the minds of many scientific men for years was developed.

"I have it now!" he said, on Saturday, while vigorously turning the handle of a Ritchie inductive coil[5] in his laboratory at Menlo Park, "and, singularly enough, I have obtained it through an entirely different process than that from which scientific men have ever sought to secure it. They have all been working in the same groove, and when it is known how I have accomplished my object, everybody will wonder why they have never thought of it, it is so simple. When ten lights have been produced by a single electric machine, it has been thought to be a great triumph of scientific skill. With the process I have just discovered, I can produce a thousand—aye, ten thousand—from one machine. Indeed, the number may be said to be infinite. When the brilliancy and cheapness of the lights are made known to be public—which will be in a few weeks, or just as soon as I can thoroughly protect the process—illumination by carbureted hydrogen gas will be discarded. With fifteen or twenty of these dynamo-electric machines recently perfected by Mr. Wallace I can light the entire lower part of New York city, using a 500 horse power engine. I purpose to establish one of these light centres in Nassau street, whence wires can be run up town as far as the Cooper Institute,[6] down to the Battery,[7] and across to both rivers. These wires must be insulated, and laid in the ground in the same manner as gas pipes. I also propose to utilize the gas burners and chandeliers now in use.[8] In each house I can place a light meter, whence these wires will pass through the house,

tapping small metallic contrivances that may be placed over each burner. Then housekeepers may turn off their gas, and send the meters back to the companies whence they came. Whenever it is desired to light a jet, it will only be necessary to touch a little spring near it. No matches are required.

"Again, the same wire that brings the light to you," Mr. Edison continued, "will also bring power and heat. With the power you can run an elevator, a sewing machine or any other mechanical contrivance that requires a motor, and by means of the heat you may cook your food. To utilize the heat, it will only be necessary to have the ovens or stoves properly arranged for its reception. This can be done at trifling cost. The dynamo-electric machine, called a telemachon, and which has already been described in THE SUN,[9] may be run by water or steam power at a distance. When used in a large city the machine would of necessity be run by steam power. I have computed the relative cost of the light power and heat generated by the electricity transmitted to the telemachon to be but a fraction of the cost where obtained in the ordinary way. By a battery or steam power it is forty-six times cheaper, and by water power probably 95 per cent. cheaper."

It has been computed that by Edison's process the same amount of light that is given by 1,000 cubic feet of the carbureted hydrogen gas now used in this city, and for which from $2.50 to $3 is paid, may be obtained for from twelve to fifteen cents. Edison will soon give a public exhibition of his new invention.

PD, NjWOE, *New York Sun*, 16 Sept. 1878, [3]. In Batchelor, Cat. 1241:887 (*TAEM* 94:354). [a]Followed by centered horizontal line.

1. This article was most likely written by Amos Cummings.

2. Zénobe-Théophile Gramme, the Siemens Brothers firm, Charles Brush, and William Wallace were among the early commercial manufacturers of dynamo-electric generators.

3. Hilborne Roosevelt's pipe organ shop was on W. 18th St. (*Wilson's Business Directory of New York City* 1879, 541). Nothing is known of any such patents; Edison did not receive them.

4. See Doc. 1393 n. 4.

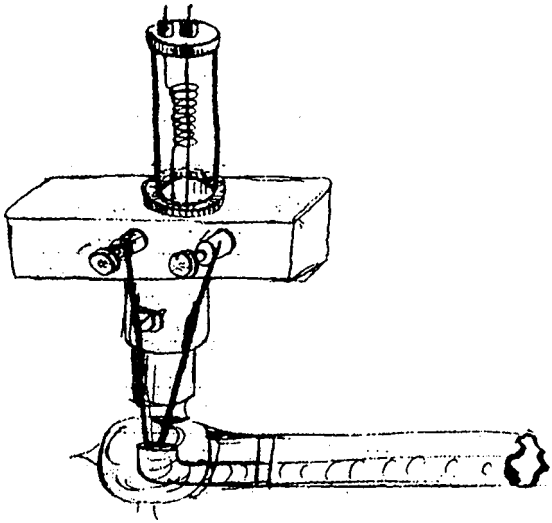
5. A powerful coil in which the windings are placed in parallel disks in order to prevent internal arcing. It was designed by Edward Ritchie and made by Ritchie & Sons of Boston. See *TAEB* 1:82 n. 11.

6. The Cooper Union for the Advancement of Science and Art, on Eighth St. at Fifth Ave.

7. The Battery, named for the battery of guns at the fort built by Dutch settlers, is at the southern end of the city at the foot of Broadway. From 1855 to 1890, when the Ellis Island facility opened, it was the east coast federal immigration center. Jackson 1995, s.v. "Battery Park."

8. Shortly before this article appeared, Charles Batchelor began to draw electric lights mounted on gas fixtures. One sketch of 17 September shows a gas pipe used as the conduit for lamp wiring. Vol. 16:24, Lab. (*TAEM* 4:504); see also Vol. 16:9, 10, 25, 31, Lab. (*TAEM* 4:488, 490, 504, 510).

Design for an electric light using a gas fixture.



9. The 10 September *New York Mail* reprint of the *New York Sun's* report of the same day on Wallace's dynamo is in Cat. 1241, item 878, Batchelor (*TAEM* 94:349). The *Sun*'s report was also widely reprinted in Britain.

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