The small portion of the current which passes through the cell carries over copper and deposits it upon the thin plate. If one lamp is placed in connection, it draws current from the main, and a proportionate quantity passing through the cell effects a deposit upon the thin plate; if another lamp is connected, double the quantity is deposited, and so on. At the end of any period, say one month, the plate is taken by the inspector to the central office and accurately weighed. As the deposit of copper upon the thin plate will be proportioned to the total amount of current passing into the house, the same becomes a correct measure or standard for the charge for the electricity supplied. [Brit. Pat. 4,226 (1878)]

In a variation Edison described in the U.S. application, one plate could be suspended from a spring balance and its weight read from an external dial “but this requires delicate mechanism in every house, which is rendered unnecessary by weighing the plates” (see Doc. 1622 for this design). The May design includes a feature that was not included in either the U.S. or British applications. This was a circuit breaker (the magnet and lever shown at bottom in Batchelor’s drawing) that would interrupt the circuit in case of an unusually heavy current, such as that caused by a short circuit.

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**Platinum Search Circular**

_MENLO PARK, N.J.* [c. May 1, 1879]¹

Dear Sir:

Would you be so kind as to inform me if the metal platinum occurs in your neighborhood? This metal as a rule, is found in scales associated with free gold, generally in placers.

If there is any in your vicinity, or if you can gain information from experienced miners as to localities where it can be found and will forward such information to my address I will consider it a special favor, as I shall require large quantities in my new system of Electric lighting.²

An early reply to this circular will be greatly appreciated.

Very truly,

Thomas. A. Edison.

ALS (electric pen copy), NjWOE, DF (TAEM 50:589; TAED D7928G). ¹Place from laboratory handstamp.
1. Although Edison had received by this date letters from two individuals responding to newspaper stories about his need for platinum, this circular letter marks the beginning of his intensive and highly public search for the mineral. He may have been prompted to write it by Doc. 1729, which he would have received at the end of April. The New York Sun subsequently reported that he sent approximately 2,000 copies to “Postmasters and other public men in mining regions” around 1 May, enclosing with them specimen cards sprinkled with platinum and iridosemine. Edison wrote the circular in his fine telegraphic hand and had it reproduced with the electric pen; the first extant reply to it, dated 7 May from the Dakota Territory, was addressed to Edison on the copy from which the text of this document is taken. William Ross to TAE, 3 Apr. 1879; Fred Gerhard to TAE, 8 Apr. 1879; A. J. Cogan to TAE, 7 May 1879; all DF (TAEM 50:581, 583, 589; TAED D7928A, D7928B, D7928H); “Wanted, A Platinum Mine,” New York Sun, 7 July 1879, Cat. 1241, item 1224, Batchelor (TAEM 94:494; TAED MBSB21224X).

2. Edison received scores of letters about platinum throughout the late spring and summer, some replying to this circular and others to specific inquiries. On 14 May he instructed Stockton Griffin to “get a box marked Platina & keep all the correspondence etc in it.” Many of the incoming letters include Edison’s marginal comments, some of them extensive and illustrative of the extent of his search. Marginalia on A. R. C. Selwyn to Edwin Pope, 14 May 1879; DF (TAEM 50:593; TAED D7928L); for a sample of the replies see the folder “Mining–Platinum Search,” DF (TAEM 50:580; TAED D7928).

Edison, who was familiar with existing sources of platinum (see Doc. 489), made numerous personal inquiries regarding as-yet-undeveloped supplies. He solicited help on 30 April from Wexel & De Gress, a muntions firm operating in Central and South America, and the next day from Edison Electric Light Co. secretary Calvin Goddard. He contacted other acquaintances, including A. E. Foote, a Philadelphia mineral dealer, James Dwight Dana, and George Barker. Barker replied that the amount of platinum produced from known sources “is very limited at least for general use,” and cautioned that “An indiscriminate examination for it in all possible rocks, would therefore be a great waste of time.” Wexel & De Gress to TAE, 3 May 1879; Goddard to TAE, 2 May 1879; Dana to TAE, 28 May 1879; Barker to TAE, 30 May 1879; all DF (TAEM 50:587, 586, 605; 49:252; TAED D7928E, D7928D, D7928U, D7903ZEM); TAE to Foote, 26 May 1879, Lbk. 4:358 (TAEM 80:80; TAED LB004358A).

Somewhat later, Edison contacted state officials concerning geological surveys. In July, after having turned his attention to ferrous black sands found in California and coastal Oregon and Washington (see Doc. 1767), he ordered detailed maps of those states as well as Nevada, Mexico, Canada, and other countries. He also wrote to the U.S. Minister to Russia in St. Petersburg that he was “endeavoring to collect statistics regarding the product of platinum from all parts of the world” and desired answers to four specific questions about the production, price, and export of it in Russia, “which at present is the only market in the world.” TAE to G.W. & C.B. Colton & Co., 9 and 15 July 1879, Lbk. 4:456 and 482; TAE to U.S. Minister, Russia, 18 July 1879, Lbk. 5:2 (TAEM 80:93, 104,126; TAED LB004456, LB004482, LB005002); replies from state officials.

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[Menlo Park, c. May 1, 1879]

Preliminary Specification Provisional Specification for a new English patent

I have ascertained that when wires or sheets of platina Iridium or other metallic conductors of Electricity which fuse at a high temperature are exposed to a high temperature near their melting point in air either for several hours by passing a current of electricity through them and then are allowed to cool the metal is found to be ruptured and under the microscope there is revealed myrids of cracks in every direction, many of which are seen to reach nearly to the centre of the wire. Hence if I have also discovered that platinum or platinum alloyed with Iridium or metals of the platinum group

If the heat is long continued these cracks I have also discovered that contrary to the received notion platinum or platinum & Iridium alloy looses weight when exposed to the heat of a candle that even heated air causes it to lose weight, that the loss is so great that it tinges a hydrogen flame green, and under the influence of an Electric current that at a yellow white heat the loss is very great, after a time the metal falls to pieces. Hence: wire and sheets of platinum or platinum & Iridium alloy as now known in commerce are useless for giving light by incandescence because its electrical resistance changes by loss in weight and its melting point as a whole light giving power for the total surface is greatly reduced by the cracks or ruptures the melting point being determined by the weakest spot where the greatest difference of potential of the electric current is present which abnormally heats t at causes

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