1. Charles Farley was married to Upton’s eldest sister, Maria Louisa. This letter was addressed to him at Peabody, Mass., Upton’s hometown. Vinton 1874, 350, 432–33.

2. Upton informed his father on 6 July that he had “entered into the agreement I spoke of with Mr. Edison to have 5% of the profits from the light, and 5% of the stock he now holds in the electric light” (see Doc. 1762 n. 4). Upton expected to receive 37 shares of Edison’s stock in the Edison Electric Light Co. and received 36 at the end of July. This number is far lower than 5% of Edison’s original bloc of 2,500 shares; apart from the allocation discussed in Doc. 1668 it is not known how Edison disposed of the balance of his stock. An agreement between Edison and Upton which may be that referred to here is missing from WJH (series 2, box 33). Upton to Elijah Upton, 6 and 27 July 1879, Upton (TAEM 95:543, 551; TAED MU021, MU025).

3. Upton had written his father on 6 July, one day before revising Doc. 1772, that “We have now the best generator of electricity ever made and this in itself will make a business.” Upton to Elijah Upton, 6 July 1879, Upton (TAEM 95:543; TAED MU021).

4. Upton was presumably referring to Edison’s contract with the Edison Electric Light Co. (Doc. 1577). The fifth article provided for the cash payment; the sixth article set forth conditions for a guaranteed minimum royalty of $15,000 per year during the life of the patents.

1776

To Louis Glass

Dear Sir.

The box of sand was rec’d last week. I found but a few scales of platinum in the chunk of blue gravel. I ran it through my stamp mill. There is plenty of platinum in the sand as it comes from the flume (the middle compartment of the box) and a considerable amount, about ¼ as much platinum in the sand after it has passed through the amalgamating pans. I am now having an accurate analysis made. Perhaps there is some mistake about the sand which has passed through the amalgamion pans as I find when treated with acid there is a great deal of gold in it, but it takes a long time to make its appearance being in the centre of the fine magnetic particles. How many barrels or tons of sand do you work per month or year? That is I want to get an idea of the quantity of sand taken from the flumes, the total product which I can figure on after I have the analysis. I have 4 of my young men working up processes to get the gold and platinum out of the sand after it has passed your pans. If we succeed and you will let us have the sand we will give you
the gold as I don't care anything about that and do not want to make any money except scientifically. Am going to start a man for your place soon who will carry good letters and who is a thoroughly first class fellow.6

I rec'd a sample of black sand Saturday from Calpella Mendocino Co— This sample had not been worked and I found 50 times more platinum and iridosmine than gold in it.7 The writer says there is plenty of the sand. My agent will probably want to hire a prospector to travel with him through the state do you think he will have any difficulty in hiring one?

In regard to the platinum near Oroville to which you refer what would be the probable cost of prospecting for that vein which you speak of as being discovered several years ago?8

I send you a “Daily Graphic” with a cartoon which may interest you.9

I will also send you a pony crown Telephone in a day or two—tried to get two but failed—10

In the course of 2 or 3 weeks I expect to have some of the new style chemical receivers. Not having the right to sell or give them away I will loan you 2 (permanently) and anything else I can do for you do not hesitate to call on me. Thanking you for your kindness in giving information and for the sample ores I remain Very Truly Y ours

Thomas A Edison

LS (letterpress copy), NjWOE, Lbk. 4:477 (TAEM 80:102; TAED LB004477). Written by Stockton Griffin. “or tons” interlined above. bAdded in left margin. cInterlined above.

1. Louis Glass was secretary of the Spring Valley Mining & Irrigating Co. in Cherokee, a rich hydraulic mining site north of Oroville in north-central California. He subsequently became general manager of the Pacific Phonograph Co. in San Francisco (Gudde 1975, s.v. “Cherokee”; TAEMG 3, s.v. “Glass, Louis”). He first wrote on 12 June in reply to Edison’s inquiry addressed to Wells Fargo & Co. because “it is from our mine the Platinum etc has been obtained in this locality” (DF [TAEM 50:667; TAED D7928ZBH]).

2. In his draft of a letter sent on 21 June, Edison had asked for 25 pounds of black sand from the Spring Valley mine. Glass forwarded one sample of gold-bearing gravel and two of black sand, one from which the gold had been removed and the other still untreated. Edison later reported that the untreated sand contained “181 oz per ton of the platino id metals of which 110 oz is pure platinum.” TAE marginalia on Glass to TAE, 12 June 1879; Glass to TAE, 2 July 1879; TAE to Glass, 1 Sept. 1879; all DF (TAEM 50:667, 779; 51:147; TAED D7928ZH, D7928ZEA, D7928ZOE).

3. The Scientific American reported in its 26 July issue that “Mr. Edison has a stamp mill and all the apparatus required for reducing ores of
various kinds. His facilities for reducing refractory ores and metals are particularly good.” Nothing is known of the mill except for John Kruesi’s 4 June measured drawing of a “Platinum Stamp Mill.” Its operation is not apparent but evidently a five-toothed cog wheel would crush or grind ore against a flat surface. At least two other devices for handling platinum ores were to have been built later. On 15 July, Batchelor wrote an order to “make a platinum separator to get fine scales out of the black sand.” His accompanying sketch is unclear but may represent some sort of pan sifter. Ten days later Kruesi ordered an “ore concentrator,” evidently a form of centrifuge. “Progress at Menlo Park,” *Sci. Am.* 41 (1879): 52; Machine Shop Drawings (1879–1880), Lab. (TAEM 45:70; TAED NS7986CAV); Cat. 1308:161, 165 (Order Nos. 212, 213), Batchelor (TAEM 90:747, 749; TAEB MBN003:54, 56).

4. Glass had previously given a detailed description of the hydraulic mining process used by his firm, which produced “an immense torrent absolutely saturated with water and sand” from the crumbling hillsides, the great bulk of which was carried away in flumes and deposited in the Sacramento River valley. He explained that approximately every three months the flumes were cleared of “a large quantity of black sand but I do not suppose we save an ounce in a ton, we get only what may be left in the flumes after the water is turned off,” and he offered “no method of separating the black sand, or of even ascertaining how much there may be of it.” At this time hydraulic mine operators faced strong challenges (and even the prospect of a complete shutdown) by downstream farmers over the release of large volumes of gravel and silt. Glass to TAE, 30 June 1879, DF (TAEM 50:770; TAED D7928ZDX); Kelley 1959, 85–123.

5. This work was probably done primarily by Edison’s chemical staff, which at this time included Alfred Haid, John Lawson, Otto Moses, and possibly C. E. Mumsell, who is known to have been on the staff at least through mid-April. In his draft reply on W. C. Hendricks & Co.’s letter of 16 July, Edison indicated that

Sodium Amalgam will do better than any process reducing the heaviest coating of peroxide Iron from the Gold. would you be will[ing] to treat your clean up matter by the addition of sodium to the mercury if we will furnish it free this will give you more gold and of the platinum saved we will pay you 50¢ per oz. treat your gold and free it absolutely of silver, and do it at your mill. I have some very smart German chemists. If you will send 25 lbs of sand that has passed through the Silver pan & thrown away we will give you the amount of gold in it that would be saved to you. [DF (TAEM 50:939; TAED D7928ZHB)]

About this time Edison also dictated notes for a reply to Colorado ore dealer Frank Ballou that he had “just finished process works elegantly for taking out gold from black sand a sub for chlorination nothing used but horsepower.” On a subsequent letter from Ballou, Edison indicated that the process for separating the gold from the black sand “is an electrical one using the Dynamo machines of the electric light for furnishing current. Am perfecting it.” TAE marginalia on Ballou to TAE, 1
and 24 July 1879, DF (TAEM 50:778, 1016; TAED D7928ZDZ, D7928ZIW); for the subsequent development of this electromagnetic ore separator see Doc. 1921.

6. This was Frank McLaughlin, who departed on 11 September. Glass subsequently promised to provide “a trustworthy and experienced prospector.” McLaughlin to TAE, 13 Sept. 1879; Glass to TAE, 26 July 1879; both DF (TAEM 51:197, 50:1036; TAED D7928ZPH, D7928ZJH1).

7. P. R. Klein had sent Edison a sample of black sand from the vicinity of Calpella, in northwestern California, on 3 July. Edison replied that although it contained much platinum and iridosomite, “I hardly think it would pay to mine for platinum alone the gold is in such great excess.” Edison requested additional specimens and sent $20 to pay for preparing them because “My present impression is that we will get all the platinum we want of the Spring Valley Mining & Water Co Cherokee Cala but I desire to investigate all parts.” Klein to TAE, 3 July 1879, DF (TAEM 50:784; TAED D7928ZED); TAE to Klein, 14 July 1879, Lbk. 4:479 (TAEM 80:103; TAED LB004479).

8. Glass had described in his 30 June letter (see note 4) minerals taken from a lode in the nearby mountains “fifteen or more years ago” which a local chemist had determined to be platinum. He reported that he had recently sent “a man up there prospecting, but he found the gulch filled in about six or eight feet with earth and debris washed down from above, and was unable to get down to the lead, provided there is one there, which I believe to be the case.”

9. “The Wizard’s Search” appeared in the New York Daily Graphic on 9 July 1879, two days after a Graphic column skeptical of Edison’s electric light noted that “Maybe there is a great future before the platinum burner, but its inventor prospecting for a mine of the metal in order to give it a firm start in life is not a very hopeful sign of immediate usefulness.” In its explanation of the cartoon, however, the Graphic offered a more optimistic outlook. Contrasting Edison with alchemists and other practitioners of “effete superstition,” it described “the hero of our cartoon” as “simply a man of our time masquerading in medieval robe” and noted in conclusions that “Diamonds are so cunningly imitated as to deceive the very elect among jewellers, and in case the sage of Menlo Park should soon be found by some inquisitive reporter to have filled his backyard with manufactured platinum, so neatly done that old Mother Nature would readily endorse it as genuine, the operation in his hands would be deemed so much a matter of course that most of the newspapers would hardly think the fact worth mentioning.” “The Wizard of Menlo Park,” New York Daily Graphic, 9 July 1879, Cat. 1241, item 1225, Batchelor (TAEM 94:499; TAED MBSB21225X); “What Edison Still Wants,” New York Daily Graphic, 7 July 1879, p. 28; “Pictures of the Day,” ibid., 9 July 1879, p. 44.

10. The crown telephone was a form of magneto devised by George Phelps which used curved bar magnets arranged to resemble a crown. The “pony” may have been a small version, perhaps with only one bar (Prescott 1878b, 601–602). In his 12 June letter (see note 1) Glass had asked Edison for a hand-held carbon transmitter to use with his Phelps receivers because the instruments available from Gold and Stock in San

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In this New York Graphic cartoon of “The Wizard’s Search” for platinum, the text of Edison’s mining circular letter (Doc. 1734) appears on the placard in the foreground.

Francisco “are a cumbersome apparatus for fastening to the walls of a room.” Edison promised that he was “going to ‘hook’ a pair of telephones and send to you so when you get them you need not indicate the source from which they came.” Shortly thereafter Charles Batchelor directed that “one Pony Crown Telephone” be sent to Glass (TAE to Glass, 11 July 1879, Lbk. 4:461 [TAEM 80:95; TAED LB004461]; Cat. 1308:161 [Order No. 214], Batchelor [TAEM 90:747; TAED MBN003:54]).