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## Charles Proteus Steinmetz Collection

### Letter Book 7 – 16 Mar 1911 to 28 May 1911

Page	Date	Description
1	16 Mar 1911	William A. Bucke, EE, Toronto to David B. Rushmore, GE. Notes that Bucke wanted Steinmetz to include "Line Disturbances" in his upcoming Toronto address, and Rushmore has forwarded that request to Steinmetz. Also notes that "I have not the least doubt that Westinghouse Single-phase Railway Apparatus will receive due consideration in Mr. Murray's hands. "(W.S. Murray was an independent consulting engineer working on the experimental electrification of part of the New York and New Haven Railroad.)
2	16 Mar 1911	J.L.R. Hayden to S.R. Blake, GE Pittsfield. Improvements in arc lamps.
3	16 Mar 1911	J.L.R. Hayden to Kirk Brown, president, Condensite Corp., Glen Ridge NJ.
4	16 Mar 1911	J.L.R. Hayden to G.R. Chamberlin, GE Lynn. Requests minutes or latest Arc Lamp Meeting.
5	16 Mar 1911	J.L.R. Hayden to Harry Cook, Albany NY. Visit by Cook to see "Mr. Parsons" and Steinmetz.
6	16 Mar 1911	J.L.R. Hayden to A. McK. Gifford, GE Pittsfield. Request for report on Bakelite.
7	16 Mar 1911	J.L.R. Hayden to A. McK. Gifford, GE Pittsfield. Iron and steel for ring construction.
8	16 Mar 1911	J.L.R. Hayden to John B. Whitehead, Johns Hopkins. "I have induced Dr. Steinmetz to come to Baltimore."
9	16 Mar 1911	C.P. Steinmetz to G.F. Sever, AIEE, New York City. "I shall not be able to give a paper on the Electrolytic Condenser this year, for the reason that so considerable development work is now in progress, and it thus is not yet reasonable to give as conclusive report on the phenomena of the aluminum cell, as I would consider desirable."
10	16 Mar 1911	S.B. Way, Chief Engineer Union Electric Light and Power, St. Louis MO. Sending a photo of Steinmetz and Edison. shorthand.

11	17 Mar 1911	J.L.R. Hayden to C.M. Brewster, Williamsburg MA. Sending two tungsten lamps.
12	17 Mar 1911	J.L.R. Hayden to A. McK. Gifford, GE Pittsfield. Performance of China wood oil, Scyadine Oil and linseed oil in insulation.
13- 14	17 Mar 1911	S.W. Stratton, Director, U.S. Bureau of Standards to C.P. Steinmetz. Seeks information on one time Union College staff member Dr. Thomas W. Wright re original experiments of James Watt on definition of horsepower.
15	20 Mar 1911	J.L.R. Hayden to A. McK. Gifford, GE Pittsfield. Use of Bakelite and various oils in insulation .
16	20 Mar 1911	J.L.R. Hayden to Myers Automobile Top Co., Dayton OH. Top for Marmon 1911 Model car.
17	20 Mar 1911	J.L.R. Hayden to John B. Whitehead, Johns Hopkins. C.P. Steinmetz will lecture on "The Electromagnetic Field" or "New Developments in Electrical Engineering Theory."
18	20 Mar 1911	C.P. Steinmetz to "Frank A. Berford" [should be Frank A. Benford] Schenectady. Thanks for drawing my attention to errors, for correction in later editions. [See letter from Benford in Book 6]
19- 20	20 Mar 1911	C.P. Steinmetz to G. Faccioli, GE Pittsfield. Seeks Faccioli's help, during Faccioli participation in upcoming Conference at Turin, in promoting Steinmetz version of vector notation, [versus that of Kennelly?].
21	20 Mar 1911	C.P. Steinmetz to Major Gifford, GE. Train reservations.
22- 25	20 Mar 1911	C.P. Steinmetz to Willard J. Hield, Vice President, Twin City Rapid Transit Co., Minneapolis MN. Answers to Hield's questions on electrolytic corrosion of lead and iron structures in the soil. Details.
26	20 Mar 1911	C.P. Steinmetz to J.W. Lieb, Jr., New York Edison Co., NY City. In response to Lieb's letter regarding Mr. Faccioli's participation at Turin Conference, "have induced him to prepare a paper on high voltage phenomena in transmission line".
27	20 Mar 1911	C.P. Steinmetz to S.W. Stratton, Director, U.S. Bureau of Standards. See 13-14. Wright died two years ago.
28	20 Mar 1911	C.P. Steinmetz to S.B. Way, St. Louis. Thanks for picture . Send one to Edison.
29- 30	21 Mar 1911	E.E.F. Creighton to A.H. Moore, Chairman, Standardizing Committee, GE. Copy to C.P. Steinmetz. Tests to be carried out on Southern Power Company system by GE regarding effects of lightning.
31	21 Mar 1911	J.L.R. Hayden to John B. Whitehead, Johns Hopkins. Telegram. C.P. Steinmetz travel arrangements.

32	21 Mar 1911	J.A. Sandford, EE, R. Thomas & Sons Co., E. Liverpool OH. Attached are photos of tests made with 400,000 volt GE transformer. C.P. Steinmetz shorthand. [R. Thomas & Sons are manufacturers of porcelain insulators.]
33	21 Mar 1911	C.P. Steinmetz to L. Bunet, Paris FR. Approval of translation of C.P. Steinmetz books into French.
34	21 Mar 1911	C.P. Steinmetz to L. Bunet, Paris FR. More formal version of approval of translation of C.P. Steinmetz books into French.
35	21 Mar 1911	C.P. Steinmetz to Parker House, Boston MA. . Telegram. Room reservation
36	21 Mar 1911	C.P. Steinmetz to G.E. Parsons, Boston MA. Request for meeting.
37	21 Mar 1911	C.P. Steinmetz to R.W. Pope, AIEE, NY. City. "Confidential. Please let me know by return mail, how you stand regarding the proposed amendment to the Constitution.
38	22 Mar 1911	C.P. Steinmetz to C.W. Stone, GE. "Enclosed I send you a discussion of questions". [Appears to refer to following letter.
38a - 38g	22 Mar 1911	C.P. Steinmetz to E.W. Rice, Jr. On the Use of Fluorescence for increasing the efficiency and Correcting the Color of Illuminants. "Fluorescence and phosphorescence has been many times considered theoretically as a possible means of illuminating but always appeared hopeless by its low efficiency. With the development, in the last years, of illuminants in which the radiator is very rich in ultraviolet rays, as the mercury arc, the vacuum tube, and metal arcs in general, the situation appears somewhat changed." Suggests using a Geissler tube as the source of ultraviolet rays, and fluorescent minerals such as sulphides and silicates, as earlier proposed by W.S. Andrews, to convert that light to visible frequencies.. "It thus appears to me that some work should be done by our company in this direction of converting ultraviolet or otherwise physiologically inefficient radiation into useful light radiation." Notes this work relates to the Moore Tube, a nitrogen filled Geissler tube, and should draw on the expertise of now retired Edison associate W.S. Andrews, "who knows more on the subject of fluorescence and phosphorescence than anyone else." Reserve a room for him at the Research Laboratory. [This proposal was a small milestone in the history of the 20 <sup>th</sup> century fluorescent lamp, which works on the principles Steinmetz outlines. GE's main role in this evolutionary development came later. According to The GE Fluorescent Lamp Pioneers, "On Oct 14, 1941, U.S. Patent No. 2,259,040 was issued to George E. Inman; the filing date was Apr 22,

		1936. It has generally been regarded as the foundation patent. However, some companies were working on the lamp at the same time as GE, and some individuals had already filed for patents. GE strengthened its position when it purchased a German patent that preceded Inman's. GE paid \$180,000 for U.S. Patent No 2,182,732 that had been issued to Friedrich Meyer, Hans J. Spanner, and Edmund Germer. While one might argue the real inventor of the fluorescent lamp, it is clear that GE was the first to introduce it."]
39	23 Mar 1911	H.H. Humphrey, St. Louis MO, to C.P. Steinmetz. .Telegram. Lecture invitation. C.P. Steinmetz shorthand
40	23 Mar 1910	Earl Wheeler, Washington DC. To C.P. Steinmetz. Glad to hear you will address Cosmos Club. "I want you to be my guest." [Col. Earl Wheeler was head of Electrical Engineer and Mechanical Engineer School, US Army.] C.P. Steinmetz shorthand.
41- 43	20 Mar 1911	E.R. Berry. Memorandum- Intensified Lamp Coils. On deterioration of Bakelite insulation in coils of arc lamps in use in Boston.
44- 45	24 Mar 1911	George W. Roosa. Insulation Heat Destruction Tests. On intensified arc lamp.
46	22 Mar 1911	Albert A.E. Sterzing, NY City, to C.P. Steinmetz. Sent you registered letter with drawings and calculations for "an invention of mine." C.P. Steinmetz shorthand. [Sterzing patented inventions on steam generators, heat exchangers, transmission of electric currents.]
47	25 Mar 1911	J.L.R. Hayden to E.R. Berry, GE Lynn" we would like to get the report you made on bakelite with regards to the arc lamp."
48	25 Mar 1911	J.L.R. Hayden to E.J. Guay, GE Lynn. 'please send us the winding specifications for the titanium carbide lamp. "
49	25 Mar 1911	J.L.R. Hayden to Myers Automobile Top Co., Dayton OH. Top for 1911 Marmon auto.
50	25 Mar 1911	Alfred D. Rosenthal, GE- St. Louis MO. Repeat of invitation to lecture. C.P. Steinmetz handwriting. " Impossible to come to convention, very sorry"
51	25 Mar 1911	C.P. Steinmetz to Gano Dunn, VP & Chief Engr., Crocker - Wheeler Co., Ampere NJ. Personal and Confidential. "I should like very much to hear confidentially your opinion" regarding amendment to AIEE constitution "referring to the office of the Secretary.... in its personal relations I do not quite like it."
52	25 Mar 1911	C.P. Steinmetz to H.E. Humphrey, St. Louis MO. Repeats inability to attend St. Louis Convention.
53	25 Mar	C.P. Steinmetz to Old Town Canoe Co., Old Town ME.

	1911	Requests "complete catalogues of your boats and canoes."
54	25 Mar 1911	C.P. Steinmetz to J.A. Sandford, Jr. Thanks for photos of transformer discharge (see 32 above). Send more.
55- 56	25 Mar 1911	C.P. Steinmetz to C.W. Stone. "Referring to attached letter on the compression chamber lightning arrester: I believe this is a good thing, and should be pushed energetically." Some detail.
57	25 Mar 1911	Pinehas [sic] Varnum Stephens, EE and ME, NY City to C.P. Steinmetz. "After a conversation with your sales engineers in New York and before making a selection of electrical apparatus, I decided to address a letter of inquiry to you." Describes proposed system. "I will greatly appreciate any comment you can make."
58	27 Mar 1911	J.L.R. Hayden to M.W. Allen, National Carbon Co., Cleveland OH. Mr. Blake will ship you lamps this week.
59	27 Mar 1911	J.L.R. Hayden to E.R. Berry, GE Lynn. One of the gears has been broken on the "scream[sic] separator."
60	27 Mar 1911	J.L.R. Hayden to E.J. Guay, GE Lynn. Requests information on consumption of carbon in flame and titanium lamps.
61	27 Mar 1911	C.P. Steinmetz to Standard Underground Cable Co. Requests hand book of underground cables.
62	28 Mar 1911	C.P. Steinmetz to E.J. Berg, U. Illinois. Thanks for corrections to Transient Phenomena. Unable to "find time" to read syllabus of Engineering mathematics, though "It is one of the subjects in which I am greatly interested."
63	28 Mar 1911	C.P. Steinmetz to E.A. Bucke, EE, Toronto CA. C.P. Steinmetz will discuss "Line Disturbances" at May meeting.
64	28 Mar 1911	C.P. Steinmetz to M.M. Foss, McGraw Hill Books. Sending corrected copy of Transient Phenomena.
65- 66	28 Mar 1911	C.P. Steinmetz to W.S. Moody, GE Pittsfield. "Mr. Stone has shown me blue prints of the fire-proof current transformer, and I believe we should make all possible efforts to produce such a transformer as promptly as possible." Detailed comments on design.
67	28 Mar 1911	C.P. Steinmetz to G.D. Rosenthal, GE St. Louis MO. Telegram. "Impossible to come to convention. Very sorry."
68	28 Mar 1911	C.P. Steinmetz to Albert A.E. Sterzing, NY City. "Received your registered letter, containing drawings and calculations of an invention, and shall write you regarding the same in a few days."
69	28 Mar 1911	C.P. Steinmetz to C.W. Stone, GE. "Attached I send you letter [from P.V. Stephens, see 57 above] which I received with my answer. If you agree with it, please forward."
70	28 Mar 1911	C.P. Steinmetz to Earl Wheeler, Washington DC. See 40 above. "Accept with thanks" invitation to be Wheeler's guest

		at Cosmos Club. Will talk there on "The Present Limits of Long Distance Transmission."
71	29 Mar 1911	J.L.R. Hayden to J.W. Aylesworth., Condensite Co., Glen Ridge NJ. Condensite insulated coils "satisfactory." Would like to get a gallon to "put it through the regular factory practice to be able to compare it with our other standard insulations."
72	29 Mar 1911	J.L.R. Hayden to E.J. Guay, GE Lynn. Arc lamp electrodes.
73	29 Mar 1911	J.L.R. Hayden to Mr. Tressler, GE Pittsfield. Wattmeter for use in testing iron; please send us samples of your insulating material; let us know when you are going to try the cyclograph.
74-79	29 Mar 1911	C.P. Steinmetz to E.G. Stott, NY City. Detailed comments on methods of selection of officers of AIEE. Opposes change in Constitution to distribute Board of Directors geographically, as that would make it harder to assemble board. "I believe the nominations [to the Board] should be in the hands of a few men." Those should be men "actively interested in the Institute" but should not include candidates for office. "That is, the committee should consist of Past Presidents." ...Regarding officers 'my personal preference would be for <b>engineers</b> who are taking active part in the engineering of the Institute".
80	29 Mar 1911	William A. Bucke, Toronto CA, to C.P. Steinmetz. Pleased you will address the Toronto AIEE on Transients. In Electric Circuits.
81-83	30 Mar 1911	C.P. Steinmetz to A.G. Davis. Experimental Work on Titanium Lamps. "We should restrict our development work within the lines which work done this far has shown to be most promising." Details.
84-86	31 Mar 1911	E.R. Berry, GE Lynn to C.P. Steinmetz. Bakelite Treated Coils. "complete information regarding the troubles experienced at these works with Bakelite treated coils." Trouble seems to be in the cotton in which the Bakelite is impregnated, not the Bakelite itself.
87	1 April 1911	Dugald C. Jackson to C.P. Steinmetz. Imminent retirement of Mr. Pope as secretary led to proposal of making future executive Secretary an officer appointed by Board of Directors. This has been expressed as an Amendment to the Constitution of the AIEE. Jackson and Pope seem in favor of this change.
88-90	1 Apr 1911	C.P. Steinmetz to Bassett Jones, Jr. NYC. Disagrees with Jones's view that [Steinmetz] Symbolic Method is "illogical" compared to Vector Method. "'I [C.P. Steinmetz] have arrived at the symbolic representation of alternating waves

		from the view of the theory of functions of a complex variable, of Riemann, Weyerstrass, etc." ... "The symbolic method... in reality is not vector analysis."
91-93	1 Apr 1911	C.P. Steinmetz to C.W. Stone, GE. Sees no "urgent need" for intermediate grade of membership in the AIEE. "in an engineering society, only engineers should have voting power.." Non-engineers such as a "promoter" or one "having some money invested in an electrical company" should be able to join the AIEE, but as "third class" members without voting power. More details.
94-97	3 Apr 1911	E.E.F. Creighton to W.S. Moody, GE Pittsfield. 70,000 Volt Mercury Arc Rectification. "We have discussed the subject with Dr. Steinmetz and he considers the use of a three phase transformer to be all right."
98	3 Apr 1911	C.P. Steinmetz to W.S. Moody, GE Pittsfield. Received Moody letter of 1 Apr 1911 re fire proof current transformer, see 65-66 above. C.P. Steinmetz suggests use of "alundum" a form of fused alumina, in place of porcelain or quarts, as alundum is a better heat insulator.
99	3 Apr 1911	C.P. Steinmetz to M.P. Rice, GE. "please send me <b>as soon as possible</b> two sets of silver prints of the following oscillograms."
100	3 Apr 1911	C.W. Stone. Scheduling of 1911 Local Office Engineers' Meeting.
101	3 Apr 1911	S.H. Blake, GE and Chairman Pittsfield-AIEE. Invitation to AIEE dinner in honor of William Stanley. C.P. Steinmetz shorthand.
102	5 Apr 1911	G. Faccioli, GE Pittsfield to C.P. Steinmetz. Is "the use of linseed oil for impregnating wood dangerous." Handwriting [Steinmetz?] "Trying is probably the only thing."
103	5 Apr 1911	C.W. Stone, GE, to C.P. Steinmetz. Answer to letter from P.V. Stephens, see 57,69. Suggest different system than either of the ones proposed by Stephens.
104-108	5 Apr 1911	John B. Taylor, GE, to E.W. Rice, Jr. Current Limiting Devices for Alternating Current Circuits. Detailed suggestions and sketch.
109-110	6 Apr 1911	E.F.W. Alexanderson to D.B. Rushmore, GE. Separation of Ores by Electrostatic Fields. Preliminary tests arranged by Mr. Barrows in Mr. Hewlett's high tension laboratory were made yesterday by Mr. Constock of Witherbee-Sherman Co. Results "were entirely to his satisfaction." Will scale up. Method is based on Comstock's patent, GE being only equipment supplier.
111	7 Apr 1911	J.L.R. Hayden to E.J. Guay, GE Lynn. Telegram. "We will not be in Schenectady all next week."

112	7 Apr 1911	C.P. Steinmetz to S.H. Blake, Pittsfield MA. Unable to attend William Stanley Dinner
113	7 Apr 1911	C.P. Steinmetz to S.H. Blake, GE Pittsfield. Reactive regulators for series arc lamps to be installed in Chicago. C.P. Steinmetz believes further investigation is needed. "Since it is a new and representative installation I believe we should be specially sure that everything is right and satisfactory."
114	7 Apr 1911	C.P. Steinmetz to E.W. Rice. Humphrey Pump. "Referring to the attached correspondence [not attached] and Prof. Fessenden's proposition of using solid fuel, I consider the entire matter as very interesting, and believe we should seriously consider it and experimentally investigate it." [The Humphrey Pump was a liquid piston internal combustion engine pump for use in water supplies, of brief use ca 1910-1915, but apparently not with solid fuel. ]
117	7 Apr 1911	C.P. Steinmetz to Earl Wheeler, Washington DC. Details of visit.
118	8 Apr 1911	J.L.R. Hayden to G. Faccioli, GE Pittsfield. "linseed oil... better be tried by test."
119	8 Apr 1911	C.P. Steinmetz to J.T. Broderick, GE. Requests running shop order for Consulting Dept., C.W. Stone.
120-121	10 Apr 1911	J.L.R. Hayden to G.N. Chamberlin. Issues in development of titanium carbide lamp. "Dr. Steinmetz is very much satisfied with the way the work is progressing."
122	10 Apr 1911	C.P. Steinmetz to Phinhas Varnum Stephens, EE and ME, NY City. Recommends Stephens arrangement B. See 57, 69, 103.
123-127	11 Apr 1911	E.E.F. Creighton to M.C. Troy, GE. Telephone lightning arrestors for Western Electric Co. "I feel personally that the Western Electric Company gave no direct assistance in the device.....the new essential, and difficult features of this arrester were entirely developed in the [GE] Lightning Arrester Laboratory. [however] "The exchange of opinion on developmental conditions and the requirements with the engineers of the Western Electric Co. has been valuable and productive of the quickest results...there is no one more vitally interested in to the success of the arrester and the maintenance of further free intercourse with the Western Electric Co. than the writer."
128	11 Apr 1911	M.A. Oudin, GE, to H.G. Foust GE. Covering letter for a report describing some Siemens Schukert synchronous motor driven air compressors recently installed in South Africa. [Report not included.]
129	12 Apr 1911	Scream [sic] separator, papers of the Electrochemical society, marc lamps, condensation product, porcelain



		squirting.
130	12 Apr 1911	J.L.R. Hayden to E.A. Wagner, AIEE, Ft. Wayne, IN. Expects C.P. Steinmetz will be able to give talk in Ft. Wayne in the fall.
131-132	13 Apr 1911	R.B. Owen, Franklin Institute, Philadelphia PA, to C.P. Steinmetz. Sends stenographic report of Steinmetz lecture to Franklin Institute for shaping into paper for Franklin Institute Journal, noting the "enthusiasm with which it was received and the interest which it created."
133	14 Apr 1911	C.P. Steinmetz to J.L.R. Hayden, Hotel Knickerbocker, NY City. Telegram. "Can not come to New York tonight." Busy with "building matters. "
134	14 Apr 1911	C.P. Steinmetz to E.D. Manson, GE Transportation Dept. Train reservations to Chicago.
135	14 Apr 1911	W.R. Whitney, GE, to C.P. Steinmetz. Next meeting of Advisory Council of the Research laboratory will be Wed. 19 Apr.
136-137	15 Apr 1911	M.W. Allen, National Carbon Co., Cleveland OH, to J.L.R. Hayden. . Issues in development of better carbons for arc lamps.
138	15 Apr 1911	C.P. Steinmetz to S.H. Blake, GE Pittsfield. Letter of introduction for R.S. Huntington, a test engineer and acquaintance of "my old friend S.D. Field." [Huntington later founded a firm supplying electrical equipment to power southern cotton mills. S.D. Field may be Stephen Dudley Field, son of the promoter of the Atlantic Cable, and himself a significant inventor of electrical and communication devices].
139	15 Apr 1911	C.P. Steinmetz to G. Faccioli. Same as above.
140	15 Apr 1911	C.P. Steinmetz to W.N. Johnson, Schenectady. "... an unexpected business trip... makes it impossible for me to be present at your meeting, and thereby makes it necessary for me to express in writing my agreement with the progressive aims of your organization. Now, where the republican party of new York State has thrown away its former ambition of being the party of progress, and where all over the country forces are at work to tear down what little advance toward progress the nation has made in former administrations, I believe it is essential for all citizens , to energetically cooperate to restore the democratic government, which was the aim when the nation was founded, and more particularly: in municipal affairs to give us an efficient method of administration, of which we may be proud of [sic]; In national affairs, to give us an organization, which

		will utilize the economic laws of the modern industrial development for the benefit of all the nation, instead of helplessly submitting or wantonly opposing economic laws which cannot be broken without national self destruction.”
141	15 Apr 1911	C.P. Steinmetz to E.W. Rice, Jr. Attached is letter to Mr. Herr.
142-143	15 Apr 1911	C.P. Steinmetz to E.M. Herr, 1 <sup>st</sup> VP. Westinghouse Electric & Mfg. Co, Pittsburgh, PA. At E.W. Rice, Jr.’s request, C.P. Steinmetz writes to recommend use as far as possible of the metric system in engineering calculations, and discarding of the English system. “This does not seem feasible for the work shops, outside of the work shops, and the men directly connected with the factory” but can and should be done for engineering work.” C.P. Steinmetz signs himself “Chief Consulting Engineer of the General Electric Co.” [ a description he rarely if ever uses in signing other letters]
144	15 Apr 1911	C.P. Steinmetz to W.R. Whitney. Requests postponement of meeting of Advisory Council of GE Research lab so C.P. Steinmetz can attend.
144-146	17 Apr 1911	J.L.R. Hayden to M.W. Allen, National Carbon Co., Cleveland OH. Trouble with flame carbons.
147	17 Apr 1911	J.L.R. Hayden to Bosch Magneto Co., NY City. Problems with magneto and ignition coil on 1911 Marmon.
148	17 Apr 1911	J.L.R. Hayden to A. Mc.K. Gifford, GE Pittsfield. Sending information about condensation products of Parbenfabriken of Elberfeld Co., NY City. “Mr. Barringer [GE Research lab insulation expert] claims it is not much good.”
149	17 Apr 1911	J.L.R. Hayden to W.J. Wooldridge, GE Pittsfield. In response to letter suggests a time to “talk this over” with C.P. Steinmetz.
150	17 Apr 1911	E.M. Herr, 1 <sup>st</sup> VP. Westinghouse Elec. & Mfg. Co, Pittsburgh PA to C.P. Steinmetz. Thanks for your letter on units. (See 142-143) C.P. Steinmetz shorthand.
151	18 Apr 1911	J.L.R. Hayden to J.W. Aylesworth, Condensite Co, Glen Ridge NJ. Requisition to Condensite Corp. to “wind up the [insulated] tubes”, with specification.
152	18 Apr 1911	J.L.R. Hayden to E.L. Berry, GE Lynn. Request data on magnetite electrodes.
153	18 Apr 1911	J.L.R. Hayden to S.H. Blake, GE Pittsfield, Improvements by National Carbon Co. on electrodes for arc lamps.
154	18 Apr 1911	J.L.R. Hayden to S. H. Blake, GE Pittsfield. Efforts to fit William Stanley Dinner (see 101, 112) into C.P. Steinmetz schedule.
155	18 Apr 1911	J.L.R. Hayden to W.W. Lewis, GE Pittsfield. Seeks diagram of connections used in high frequency tests at Union College, for use in insulation tests.

156	19 Apr 1911	J.L.R. Hayden to G.N. Chamberlin, GE Lynn. An "indestructible copper alloy" which Mr. Van Allen of GE Schenectady Works has developed for soldering irons might be useful as an arc lamp electrode.
157	19 Apr 1911	J.L.R. Hayden to Ernest J. Giesebrecht, Brooklyn NY. "the New York Electrical School is as good as any school that you could attend."
158	20 Apr 1911	E.J. Guay, GE, to C.P. Steinmetz. Telegram. "Wire when lamps received. "C.P. Steinmetz handwriting." Lamps arrived, Can see you Monday or Tuesday."
159	20 Apr 1911	C.P. Steinmetz to William a. Durgin, Chicago IL. Thanks for photos of "the group of us at the switch tests of the Commonwealth Edison Company."
160	20 Apr 1911	C.P. Steinmetz to E.H. Herr, Westinghouse Co., Pittsburgh, PA. See 141-143, 150 [Another shorthand Rosetta Stone]. . "will be very much obliged indeed if you could inform me of your conclusions" regarding electrical units.
161	20 Apr 1911	C.P. Steinmetz to S.H. Riker, Troy, NY. Previous engagements make it impossible for C.P. Steinmetz to speak at Riker's meeting.
162	20 Apr 1911	C.M. Davis. Work Report. Week Ending April 22. Calculations on visual corona... Investigation on gaseous and vapor conductors. .. course of lectures on Illuminating Engineering completed.
163	22 Apr 1911	J.L.R. Hayden to Otto Hains, Bosch Magneto Co., NY City. Troubles with 1911 Marmon ignition coil
164	22 Apr 1911	C.P. Steinmetz To S.H. Blake, GE Pittsfield. Modification of schedule to attend William Stanley Banquet.
165	22 Apr 1911	C.P. Steinmetz to H.J. Guay, GE Lynn. Telegram. "Lamps arrived, Con see you Monday or Tuesday next week."
166-167	22 Apr 1911	C.P. Steinmetz to McGraw Hill Book Co. Corrections and suggestions for 2 <sup>nd</sup> edition of Transient Phenomena.
168	22 Apr 1911	C.P. Steinmetz to W.B. Manson, GE Transportation Dept. Requests travel arrangements to enable him to attend William Stanley dinner.
169	24 Apr 1911	J.L.R. Hayden to S.E. Blake, GE Pittsfield. Telegram. Unable to go with you to Cleveland.
170	24 Apr 1911	J.L.R. Hayden to W.J. Wooldridge, GE Pittsfield. Telegram. "Can you arrange to be in Schenectady Tuesday noon?"
171	24 Apr 1911	C.P. Steinmetz to E.R. Berry, GE Pittsfield. Suggestions for electrode tests.
172	24 Apr 1911	C.P. Steinmetz to E.W. Rice, Jr. Attached is report made by engineer of Commonwealth Edison Co., Chicago, "on our consultation on the bus bar reactances in the Chicago Edison Company's generating system. The report is correct, except

		that it rather lays more stress than justified on my defense of the necessity of use of bus bar reactances. However, these reactances are necessary, in parallel operation..."
173-177	20 Apr 1911	R.F. Schuchardt. Memorandum on Conference on Fisk and Quarry Street Bus Reactances, 18 Apr 1911. Present. Dr. Steinmetz, Dr. Berg, Messrs. Emmet, Lyman, Place, Junkersfeld, Abbot, Gear, Roper, Jamison, Schweitzer, Durgin, and Schuchardt. Berg's recommendations and Steinmetz's slightly differed, Steinmetz recommending higher reactances. After "a lengthy and detailed discussion" Drs. Steinmetz and Berg reached agreement. Lengthy discussion of details. "Mr. Abbot asked Dr. Steinmetz how much safer he considered our system will be with the generator reactances than it now is without., to which Dr. Steinmetz replied that we have been more fortunate than safe thus far." More discussion of technical details. "The conclusion on this subject of bus bar reactances was to ask the General Electric Company for proposals on three complete sets of two ohm coils."
178	24 Apr 1911	C.P. Steinmetz to Dr. E. Weintraub, GE Lynn. "My Dear Weintraub. Will you please let me know by return mail how much you pay to your first glass-blower. My glass blower has asked for an increase of pay, as he has not received an increase for many years, and claims that he gets less than good glass blowers get elsewhere. He is a very good man, doing considerably more than mere glass-blowing, and therefore appears to me entitled to receive an appropriate pay, and for this reason I should be very much obliged if you would let me know confidentially how much you pay your best glass blower."
179	25 Apr 1911	C.P. Steinmetz to S.H. Blake, Pittsfield Works. Will be able to attend full William Stanley Banquet. See 101, 112, 164, 168.
180	25 Apr 1911	C.P. Steinmetz to Burbank, Douglass & Co. 242 Middle St. Portland ME. Regarding question, has nor seen or heard anything of an arc light burning denatured alcohol.
181	25 Apr 1911	C.P. Steinmetz to W.W. Freeman, President, Edison Electric Illuminating Co. Brooklyn NY. Will speak to his group.
182-183	25 Apr 1911	Edward Caldwell, Treasurer, McGraw Hill Books. Proofs and manuscript are being attended to, but economics do not permit following C.P. Steinmetz suggestion of printing a separate pamphlet of tables with the book.
184	26 Apr 1911	I.J. Schwatt, U. of Pennsylvania, to C.P. Steinmetz. Asks for granting of an interview to a friend, T.I. Wodo of Japan, an "excellent mathematician.... a very good physicist... a man of exceptional character... honest, upright and true... he has the

		misfortune that he is poor." "While some of us foreigners have been able to establish ourselves in this country, yet it is to be assumed that the teaching positions of the future will be selected by those who have a proper command of the language and also the proper pronunciation... there are very few foreigners who drop their accent... For all these reasons Mr. Wodo has come to the conclusion that it might be best for him to study engineering.
185	26 Apr 1911	Walter C. Smith, AIEE Pittsfield MA, to C.P. Steinmetz. Request that C.P. Steinmetz give talk at William Stanley dinner.
186	26 Apr 1911	C.P. Steinmetz to William A. Bucke, Toronto CN. Travel plans.
187-190	26 Apr 1911	C.P. Steinmetz to A.G. Davis, GE. C.P. Steinmetz patent disclosure on "high tension switching of transmission lines." Details.
191	26 Apr 1911	C.P. Steinmetz to Otto Lissan, GE. "I have carefully investigated the proposed 100,000 volt transmission line of which you gave me data as submitted by the European Company... report of which I attach" [not attached].
192	26 Apr 1911	C.P. Steinmetz to R.W. Pope, AIEE. Enclosed discussion of Berg and Franklin papers on Vector Rotation at Schenectady-Pittsfield AIEE meeting. [not attached].
193	26 Apr 1911	C.P. Steinmetz to M.P. Rice, GE. Recommendation to supply publications to test me "right from the beginning" of their work at GE.
194	26 Apr 1911	C.P. Steinmetz to A.L. Rohrer, GE. Request to "accommodate these three boys [electrical engineering graduates of Missouri State University] by taking them in the testing room."
195	26 Apr 1911	C.P. Steinmetz to W.R. Whitney, GE Research lab. "As you probably know, some time ago I have again organized a department, the Consulting Engineering Department, and if any matter should come up in the work of your department which you or any of your assistants wish to discuss with me, I shall be very glad to do so. I am now in my office at the Company's works every day except Thursday, from 10 to 12, for shorter consultation, and at my laboratory on Wendell Avenue from 3 to 5 for longer consultations."
196-197	27 Apr 1911	E.R. Berry, GE Lynn, to J.L.R. Hayden. Improvements in arc lamp electrodes.
198	27 Apr 1911	J.L.R. Hayden to G.E. Parsons, Architect, Boston MA Requests sending plans for "the mill" to Mr. Harrison.
199	26 Apr 1911	Comfort A. Adams, Professor EE, Harvard to C.P. Steinmetz. Speaking request for Lawrence Scientific School annual dinner.

200-201	28 Apr 1911	J.W. Aylesworth, Condensite Corp., Glen Ridge NJ to A. McK. Gifford, GE Pittsfield. Tests on disks and transformer coils using Condensite based insulation.
202-203	28 Apr 1911	A.L. Rohrer, GE, to C.P. Steinmetz. Unable to give special preference for test positions for three University of Missouri Graduates, per C.P. Steinmetz request. See 194. Students' letter attached.
204	28 Apr 1911	J.W. Root, Albany NY, to C.P. Steinmetz. Requests C.P. Steinmetz presence at Phi Gamma Delta banquet.
205-206	28 Apr 1911	C.P. Steinmetz to A.G. Davis, GE. "Will you please investigate, whether there is anything new, and therefore patentable, in the use of hexamethylene-tetramine $[(CH_2)_6N_4]$ as condensing agent." Describes results of C.P. Steinmetz experiments. [Hexamethylene-tetramine was the catalyst used in 1907 by Leo Baekeland in developing Bakelite, so Steinmetz's idea was not generally new, though particular features of it might have been new].
207	1 May 1911	Frederick Nicholls to C.P. Steinmetz. Telegram. Invitation to dinner before Toronto talk. C.P. Steinmetz handwriting: "very glad to attend."
208	1 May 1911	C.P. Steinmetz to Prof. Comfort A. Adams, Harvard. See 199. Unable to give talk due to conflict with AIEE Annual Convention.
209-210	1 May 1911	C.P. Steinmetz to Edward Caldwell, McGraw Hill Book Co. Repeat of request that McGraw Hill publish supporting tables separate from new edition of Transient Phenomena.
211-212	1 May 1911	C.P. Steinmetz to L.A. Ferguson, 2 <sup>nd</sup> VP. Commonwealth Edison Co., Chicago IL. "I fully agree with you on the desirability of communicating the exact results to the engineering fraternity" of "investigations made jointly by your and our people jointly at Chicago, [see 173-177] and I would suggest that from our side, Mr. E.E. Merriam reads a paper on the results... with regard to all circuit breakers and current limiting reactances."
213	1 May 1911	C.P. Steinmetz to E.M. Hewlett, GE. Follow up on previous letter, 211-212. "I suppose it will be a considerable inconvenience to have Mr. Merriam get out such a paper which involves considerable work on such short notice.... but at the same time you realize that our relations with the Commonwealth Edison Company are such, and they believe that they have had cause of being dissatisfied with our attention to their requirements in the last year, that it appears very desirable that we should comply with their wishes."
214	1 May 1911	C.P. Steinmetz to J.W. Root, Albany NY. Unable to attend our

		[Phi Gamma Delta] banquet.
215	1 May 1911	C.P. Steinmetz to I.J. Schwatt, U. Pennsylvania, Philadelphia PA. Will be very glad to meet with Mr. T.I. Wodo. See 184.
216	1 May 1911	C.P. Steinmetz to E.C. Smith, AIEE Pittsfield MA. "will be glad to make a few reminiscences at the Stanley banquet."
217	1 May 1911	C.P. Steinmetz to DR. E. Weintraub, GE Lynn. Request copy of Weintraub's report on "the German quartz lamp"
218	2 May 1911	W.H. Eisenbeis, AIEE, Toronto CN to C.P. Steinmetz. Lecture arrangements.
219	2 May 1911	C.P. Steinmetz to Frederick Nicholls, GM Canadian GE, Toronto CN. Telegram. "Very glad to attend dinner."
220	3 May 1911	C.P. Steinmetz to W.H. Eisenbeis, AIEE, Toronto CN." Will not require a lantern and operator, but would like to have a blackboard available."
221-222	3 May 1911	C.P. Steinmetz to A. McK. Gifford, GE Pittsfield. "I am very glad to see the progress you are making in producing condensation products. In this regard however I would suggest not to use any one of the names which have been used by others in designating the condensation products made at Pittsfield, but rather give it a new name. As we are not certain whether it is identically the same of any of the existing condensation products, it would be objectionable from a point of view of protection if we became accustomed to call it a trade name. I have tentatively called it "Giffordite... later on we can still give it a name in accordance with the customs of the company." Suggestions for further work. [Giffordite was a polymer made using hexamethylene-tetramine, as in Steinmetz's patent disclosure in letter 205-206. The "custom of the Company" was to give new GE-created names to the results of its research and development, even if the actual products closely resembled previously invented ones. In this case, both Condensite and probably Giffordite were very close in composition, perhaps identical to, Bakelite.]
223-223a	3 May 1911	C.P. Steinmetz to R.B. Owens, Franklin Institute, Philadelphia PA. Corrections to manuscript of C.P. Steinmetz address to Franklin Institute. Drawing attached.
224	3 May 1911	C.P. Steinmetz to R.W. Pope, AIEE, NY City. Corrected manuscripts from C.P. Steinmetz and [W.L.R.] Emmet from Schenectady-Pittsfield AIEE Meeting.
225	4 May 1911	R.B. Owens, Franklin Institute to C.P. Steinmetz. Thanks for paper, and plans for visit to Schenectady.
226	5 May 1911	J.L.R. Hayden to J.W. Aylesworth. Reminder of planned visit by Aylesworth to Schenectady.
227	5 May 1911	J.L.R. Hayden to E.R. Berry, GE Lynn. Iron plating of

		electrodes, and insulating compounds.
228	5 May 1911	J.L.R. Hayden to A. McK. Gifford "What luck did you have with analysis of the Hg electrode?"
229	5 May 1911	George Edward Parsons, Architect, Boston MA to J.L.R. Hayden. "am sending you.... plans and specifications."
230	6 May 1911	J.L.R. Hayden to A. McK. Gifford. Tests with Condensite. "I note that you have found that Mr. Aylesworth is using some Nitrogen compounds. We have evidently not been working the dark."
231	8 May 1911	Martin P. Rice, GE to J.L.R. Hayden. "Sometime when Dr. Steinmetz is going to New York I wish you would make an appointment with Perie MacDonald, 576 Fifth Avenue, so that the Dr. can go in and have a good portrait taken. Mr. McDonald photographs men only, and naturally prefers distinguished men. I think the charges are \$30.00 a sitting, but the work is worth it. We have so many calls for photographs of Dr. Steinmetz that I think it would be fair to charge the expense to the Company."
232	9 May 1911	J.L.R. Hayden to E.R. Berry, GE Lynn . Visit by Berry to Schenectady.
233	9 May 1911	J.L.R. Hayden to S.H. Blake, GE Pittsfield. "The Boss stated that the Stanley Banquet was a great affair..... What policy are you going to follow in connection with the National Carbon Company? I hope you don't see fit to drop the experimental work on flame carbons, as they seem to be working out the flame carbon in a very intelligent manner."
234	9 May 1911	J.L.R. Hayden to A. McK. Gifford, GE Pittsfield. "In connection with the policy we ought to pursue in regard to condensite with the factory, I am trying to get Dr. Steinmetz and Mr. Chesney [manager of GE Pittsfield Works] to decide what they want to do." [This letter is of some historical importance as an indication that GE was as early as 1911 considering going into the manufacturing of polymers. It later did so, and for much of the 20 <sup>th</sup> century, the GE Pittsfield Works was the headquarters of GE Plastics, one of GE's major product departments.]
235	9 May 1911	J.L.R. Hayden to Gregory Electric Co., Chicago IL. Request for price quote on induction motor.
235	9 May 1911	J.L.R. Hayden to H.A. Rayne, Albany NY. Advice on purchase of induction motor.
236	10 May 1911	Ernst Berg to C.P. Steinmetz. "I have been doing some work on the short circuit tests of the Commonwealth Company and I have worked out mathematically some interesting points. Would it be proper to use this material for the Chicago Meeting of the American Institute...? While you have



		covered the subject very [previous modifier “pretty” is crossed out] well in your Transient Phenomena it is written in a way that is pretty hard to understand for the average engineer. I have evolved some mathematics which I think is a little simpler. Indeed I get fairly different results from what you obtained with your equations.”
237-241	10 May1911	E.E.F. Creighton to Hugh Pastoriza, Telluride Power Co., Provo UT. “Problems due to the particular line conditions of the Telluride Power Co.” Discussion of issues, suggestions for further work, request for data and comments.
242	10 May1911	C.P. Steinmetz to Dugald C. Jackson, AIEE. We have completed... the investigation of Corona” Notes “very great amount of work” it took, and the “practically unlimited facilities that have been made available,” therefore requests that paper’s introductory remarks emphasize that it is not mere “laboratory experiments, made with limited facilities” but work that will “finally settle all important questions on the subject of corona.” [This was not in fact the last word on the subject. Frank William Peek of Steinmetz’s Consulting Laboratory went on to develop Peek’s Law, introduced 1929, an empirical correction to the law of electrical breakdown proposed by Paschen in 1889, and a key to the practical prediction of Corona effects].
243	10 May1911	<p>C.P. Steinmetz to Prof. A.E. Kenneally, Harvard. “Received your letter of May 9<sup>th</sup> [not in letter book] and will do anything I can to have discussion on the subject of vector notation closed.” [ Steinmetz and Kenneally were the US pioneers of the introduction of mathematical methods into electrical engineering calculations. In 1911 they were involved in a mild dispute about the best way to express these ideas. The following 2015 reference gives an interesting perspective on the Steinmetz contribution</p> <p>Petroianu, Alexander I. 2015. Electrical Engineering. 97. 175. A geometric algebra reformulation and interpretation of Steinmetz’s symbolic method and his power expression in alternating current electrical circuits</p> <p>“Developed more than a century ago, Steinmetz’s symbolic method is still puzzling us. It puzzles us because, in spite of its theoretical inconsistencies, it is heuristically efficient. However, it remains the dominant method in design, analysis, and operation of electrical power networks. The paper shows that Steinmetz’s mathematical expression for electrical power is based on assumptions inconsistent with</p>

		the algebra of complex numbers. The paper argues that, although the numbers are correct, the mathematical interpretation of these numbers is not. Steinmetz got empirical right results for wrong conceptual reasons; the success of the symbolic method is based on the fact that, unwittingly, Steinmetz rediscovered Grassmann–Clifford geometric algebra. The paper challenges the dominant paradigm in power theory which represents voltage, current, active, reactive and apparent power as complex numbers and/or vectors (phasors). The author proposes a new paradigm in which these entities are represented as an algebraic group; the group is composed of a scalar, two vectors and a bivector which are residing in a four-dimensional algebraic space and in a two-dimensional Euclidean geometric space. The paper claims that Steinmetz’s symbolic method is the oldest engineering application of Clifford Algebra. The paper provides a strong motivation for a new didactic of power theory based on Geometric Algebra as Physics’ unifying language.”]
244-245	10 May1911	C.P. Steinmetz to G.F. Sever, Columbia University. Enclosed is paper on “Law of Corona”. Explanation of why a detailed description of the apparatus and methods is not being given in the paper, since this would require too great length.
246-247	11 May1911	William A. Bucke, Toronto CN, to C.P. Steinmetz. Invitation to meeting of Canadian Electrical Association.
248-255	12 May1911	E.E.F. Creighton to Hugh Pastoriza, Telluride Power Co., Provo UT. See 237-241. Detailed discussion of electrical problems of Telluride Power Co. and proposed future work to solve them. “I recognize the commercial necessity... of keeping your specific records of trouble entirely within your own organization.”
256	12 May1911	R.B. Owens, Franklin Institute, to C.P. Steinmetz. Sending galley proofs of Steinmetz paper.
257	12 May1911	C.P. Steinmetz to J.G. Pertsch, Cornell U. “I return you corrected manuscript”
258	12 May1911	C.P. Steinmetz to Prof. G.F. Sever, Columbia. Have mailed to you first part of paper on Law of Corona.
259	12 May1911	C.P. Steinmetz to D.L. Wood. GE Patent Dept. Suggests GE get patent protection for method of putting an extremely thin iron coating on an electrode, especially in view of magnetite and titanium arc lamp applications.
260	15 May1911	C.P. Steinmetz to Henry D. Allen, Secy. Mohawk Golf Club, Schenectady. Enclosed find \$1.00 for Harvard Club dinner.

261	15 May1911	C.P. Steinmetz to L.G. Banker GE Purchasing Dept.. Order for three single burner alcohol oil stoves.
261	15 May1911	C.P. Steinmetz to Ernst Berg. Recommends Berg give a paper on momentary short circuit currents of alternators.
262	15 May1911	C.P. Steinmetz to W.A. Bucke, Toronto CN. C.P. Steinmetz will be unable to attend meeting of Canadian Electrical Association.
263	15 May1911	C.P. Steinmetz to R.B. Owens, Franklin Institute. Return of galley proofs for Unexplored Fields in Electrical Engineering.
264-266	15 May1911	Charles W. Tiffin, Exec. Secy., National Public Service Assn., NY City. Invitation for Steinmetz to join International Institute of Experts. Other members include Edison, Bell, Marconi, Westinghouse, Gustave Eiffel, ...
267	15 May1911	Gano Dunn, Ampere NJ, to C.P. Steinmetz. Telegram. "Have been elected" [president of AIEE]. Steinmetz handwriting. ""Very best congratulations."
268	15 May1911	C.P. Steinmetz to C.M. Brewster, Williamsburg MA. Room reservations.
269	17 May1911	J.L.R. Hayden to Kirk Brown, Condensite Co. Glen Ridge NJ. "Will be glad to see you and Mr. Aylesworth on May 23 <sup>rd</sup> ."
270	17 May1911	C.P. Steinmetz to F. Gutekunst, Philadelphia PA. Thanks for photo.
271	17 May1911	C.P. Steinmetz to E.F. Watson, Columbia MO. Despite turn-down at Schenectady, see 194, 202, above, C.P. Steinmetz has found a place for this U. Of Missouri EE grad at GE Pittsfield.
272	17 May1911	C.P. Steinmetz to A.L. Rohrer, GE. "Enclosed I send you an application blank of a young man who wishes to get in the testing department."
273-274	18 May1911	George M. Bacon, Anderson Electric Car Co., Detroit MI to C.P. Steinmetz. "Am enclosing copy of paragraph... is there anything in this rumor?" Paragraph, attached, reads: "What do you know about the new storage battery that is being developed by a certain Steinmetz (or someone of a similar name) in the employ of the General Electric Co? One of the high ups at Scientific American has been telling a friend of ours that the battery he "has seen at their laboratory that only weighs 75 lbs. that will do the work of a 400 lb lead batter and will revolutionize the motive power of the world." Paragraph is signed "Broadway Automobile Co." Steinmetz shorthand [almost certainly a denial of the rumor.]
275-276	18 May1911	George R. Metcalfe, AIEE, NY City to J.L.R. Hayden. Request for manuscript of Steinmetz's discussion at Schenectady-Pittsfield AIEE Meeting. Hayden discussion, on dielectric spark lag, attached.
277	18 May1911	C.P. Steinmetz to Gano Dunn, President AIEE, Ampere NJ.

		Telegram. "Very best congratulations on your election.
278	19 May1911	T. C. Martin, National Electric Light Assn., NY City to C.P. Steinmetz. Requests C.P. Steinmetz endorses nomination of Gano Dunn for Engineer's Club membership. C.P. Steinmetz shorthand.
279	22 May1911	Kirk Brown, Condensite Corp, to J.L.R. Hayden. Request to reschedule Condensite visit to Schenectady due to Aylesworth illness. C.P. Steinmetz shorthand.
280	22 May1911	F.H. Gale, GE to C.P. Steinmetz. Arrangements for N.E.L.A. Convention.
281	22 May1911	J.L.R. Hayden to George E. Metcalfe, AIEE. Loss of Hayden manuscript.
282	23 Mar1911	C.P. Steinmetz to George M. Bacon. "Referring to your letter of May 18 <sup>th</sup> , regarding a new storage battery [see 274] which I was represented as developing, this is a mistake, which probably originated from some remarks I made on the new Edison battery. Some time ago I received and put in service in my laboratory an Edison battery in place of the lead battery... and as I find the Edison battery extremely satisfactory, I may have expressed my opinion on the superiority of the Edison battery to somebody who misunderstood it..."
283-284	23 Mar1911	C.P. Steinmetz to John C. Potter, Purdue University. In answer to letter, recommends Potter undertake his "advanced course in electrical science and engineering" at Union, and suggests he can support that education with a job at GE Schenectady.
285	24 Mar1911	Louis Bell, EE, Boston MA to C.P. Steinmetz. Wants to put Steinmetz on a Committee for cooperation between illuminating engineers and ophthalmologists.
286	24 May1911	J.L.R. Hayden to Kirk Brown, Condensite Co., Glen Ridge NJ. Further need to reschedule Condensite visit.
287	24 May199	C.P. Steinmetz to E. Linzee Amory, NY City. McGraw Hill Publishing company is publisher of "Engineering Mathematics."
288	24 May1911	C.P. Steinmetzto Edward Caldwell, McGraw Hill Book Co., NY City. Enclosed corrected proof of Transient Phenomena.
289	24 May1911	C.P. Steinmetz to Secretary Admissions Committee, Engineers' Club, NY City. Endorses "in strongest possible terms" nomination of Gano Dunn to Engineers Club.
290	24May 1911	C.P. Steinmetzto F.R. Gale, GE. Travel arrangements for N.E.L.A. Convention.
291	24May 1911	C.P. Steinmetz to Manager, Grand Union Hotel, NY City. Room reservation.
292	24 May1911	C.P. Steinmetz to C. A. Raymond, President, Union College.

		Please send information on Union to John C. Potter of Purdue (see 283-284).
293	24 May1911	C.P. Steinmetz to C.W. Tiffin, National Public Service Association, NY City. Accepts nomination "of a place on the board of trustees". See 264-266.
294	25 May1911	Ralph W. Pope AIEE. Telegram. What is title of C.P. Steinmetz paper at upcoming AIEE Convention? C.P. Steinmetz handwriting: "Development of the Modern Central Station."
295	25 May1911	C.P. Steinmetz to Louis Bell, Boston MA. Accepts place on committee of illuminating engineers and ophthalmologists (see 285 above) as "I am very much interested in the physiological effects of light and illumination."
296	25 May1911	C.P. Steinmetz to C.W. Stone, GE. Term "voltage transformer" is preferable to "potential transformer"
297	25 May1911	J.L.R. Hayden to E.W. Allen, National Carbon Co., Cleveland OH. Improvements in flame carbons.
298	26 May1911	J.L.R. Hayden to G.E. Parsons, Boston MA [architect]. Sending check for \$200.00 in payment of last bill.
298	26 May1911	C.P. Steinmetz to R.W. Pope, AIEE, NY City. Telegram. "Title of my paper is "Development of Modern Central Station." Manuscript follows in a few days."