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Charles Proteus Steinmetz Collection

Letter Book 4 – Sept 1910 to Nov 1910

Page	Date	Description
1-1c	15 Sept 1910	M.A Cudin, GE, to C.P. Steinmetz. How are silicon tube drill furnaces getting along? Related letters attached.
2	15 Sept 1910	C.P. Steinmetz to W.C. Fish, GE Lynn. Visit to Lynn.
3-4c	15 Sept 1910	C.P. Steinmetz to T. C. Martin, National Electric Light Association. Manuscript of C.P. Steinmetz discussion. "I rather sympathize with the government" regarding natural resource policies. "Conservation is essentially an engineering problem...[there is an] exaggerated idea of the value of water power... [engineers should be] assisting the government in developing an effective constructive policy of conservation...."
5-9	15 Sept 1910	C.P. Steinmetz to E.W. Rice, Jr. Confidential. Discussions with S.A. Moss, GE Lynn, on experimental steam turbine investigations. Moss's work on an experimental turbine to relate experimental data to theoretical predictions of steam path should be continued "energetically." Details discussed.
10	16 Sept 1910	W.R. Whitney, GE, to C.P. Steinmetz. "We have made a great number experiments with Bakelite... there ought to be some field in which this material would fit" but so far it has been either too expensive or unsuitable.
11	16 Sept 1910	W.R. Whitney, GE, to C.P. Steinmetz. Vacuum conditions of lamps and their effect on life. Investigation continues. No conclusions.
12-13	17 Sept 1910	M.W. Allen, National Carbon Co., Cleveland OH to J.L.R. Hayden. Tests on experimental carbons for arc lamps.
14	17 Sept 1910	Sidney Braman, Secretary, Pittsfield MA Board of Trade to C.P. Steinmetz. Lecture request.
15-16	17 Sept 1910	E.E.F. Creighton to E.H. Blake, GE Pittsfield. Making of aluminum [conductors for lightning arrestors?]
17 -18	19 Sept 1910	C.P. Steinmetz to W.R. Whitney, GE. "you still misunderstand the situation" regarding Bakelite (see 10 above). "What we are badly in need of is an insulating material as coil insulation in high voltage apparatus" and here bakelite appears advantageous regardless of cost. "I believe the laboratory could materially assist..."
19-23	20 Sept 1910	E.R. Barry, GE Lynn, to W.R. Whitney, GE. Tests on fused carbide submitted by GE Research Laboratory.
24	20 Sept 1910	J.L.R. Hayden to E.E. Lucas, Pittsfield MA. C.P. Steinmetz visit to Pittsfield.

25-26	20 Sept 1910	Herbert E. Ives, Physical Laboratory, National Electric Light Association, Cleveland OH. Demonstrations to be used in Johns Hopkins Illuminating Engineering course.
27	20 Sept 1910	J.L.R. Hayden to James J. McKenna, NY City. Transfer of insurance from White Steamer NO. 7056 to 1911 Marmon Touring Car.
28	20 Sept 1910	C.P. Steinmetz to Sidney T. Braman, Secretary, Pittsfield MA Board of Trade. Accepts lecture invitation.
29	20 Sept 1910	C.P. Steinmetz to Parker House, Boston MA. Telegram. Reserve room with bath.
30	21 Sept 1910	J.L.R. Hayden to R. Sternberg, Springfield MA. C.P. Steinmetz "too busy" to lecture to Springfield Board of Trade on 20 Oct.
31	22 Sept 1910	Sidney T. Braman, Secretary, Pittsfield MA Board of Trade. Details of lecture.
32	22 Sept 1910	J.L.R. Hayden to Mr. Rayno, Marmon Car Co., Albany NY. Carburetor leak in Marmon car.
33	22 Sept 1910	Edw. N. Lake, Secretary, Chicago AIEE to C.P. Steinmetz. Lecture arrangements
34	22 Sept 1910	J.L.R. Hayden to W.B. Curtis, GE. Request for running shop order for Pittsfield development work.
35-36	23 Sept 1910	G.H. Reid, GE to C.P. Steinmetz. President of Great Western Power Co. "is awaiting certain information and recommendations from yourself and Mr. Faccioli to the outcome of tests Mr. Faccioli made..." regarding capacity of lightning arrestors.
37	23 Sept 1910	J.L.R. Hayden to H.S. Baldwin, GE Lynn. Request for information on comparative tests of magnetos.
38	23 Sept 1910	C.P. Steinmetz to C.R. Richards, Dean, University of Nebraska. In answer to query, recommends Earl Wheeler for position as chair, Electrical Engineering Dept., University of Nebraska.
39	23 Sept 1910	C.P. Steinmetz to C.S. Van Dyke, GE. removal of overhead electric lines.
40-41	24 Sept 1910	Otis Allen Kenyon, EE, NY City to C.P. Steinmetz. Editing of Steinmetz book Electrical Engineering Mathematics.
42	22 Sept 1910	F. Twyman, Adam Hilger Ltd., London to H. F. Parshall, GE. Might mercury vapor lamps injure eyes of workmen?
43	24 Sept 1910	H.F. Parshall, GE, to C.P. Steinmetz. Forwarding letter [42, above].
44	26 Sept 1910	E.F.W. Alexanderson to C.P. Steinmetz. Synchronizing force of Alternators. Wants to build experimental apparatus for measuring synchronizing cost at cost of \$100. Handwriting on letter: "C.P. Steinmetz. O.K."
45	26 Sept 1910	C.P. Steinmetz to Sidney F. Braman, Board of Trade, Pittsfield MA. Title of lecture is "The Domestic Use of Electricity."
46	26 Sept 1910	C.P. Steinmetz to G. Faccioli. Have you made progress in securing a Ryan cyclograph (Braun tube oscillograph).
47	26 Sept 1910	C.P. Steinmetz to Jerbert E/ Ives, Cleveland OH. Arrangements for Johns Hopkins illuminating engineering lectures.
48	26 Sept 1910	C.P. Steinmetz to Edw. N. Lake, AIEE, Chicago IL. Title of lecture is "Industrial Importance of Electrostatics and Electric Impulse Forces.

49	27 Sept 1910	C.P. Steinmetz to E.W. Pope, Sec. AIEE. Illustration to accompany discussion.
50-52	27 Sept 1910	C.P. Steinmetz to E.W. Rice, Jr. Steam Turbine Research. "It appears to me very desirable to have an experimental investigator made" of the efficiency of expansion nozzles and steam turbine buckets. Experiments could be conducted on a single stage of a large turbine without "serious expense." Dr. Moss laid out plans for such tests "some time ago." ..."recommend to have the investigation continued and completed."
53	28 Sept 1910	C.P. Steinmetz to W.C. Fish, GE Lynn. Attached I send you copy of review of development of TiC for luminous arc lamp.[Review not included]
54	28 Sept 1910	C.P. Steinmetz to E.W. Rice, Jr. Attached I send you copy of review of development of TiC for luminous arc lamp.[Review not included]
55	28 Sept 1910	C.P. Steinmetz to W.f. Story GE. Request for telephone extension.
56	29 Sept 1910	Ernst Berg to C.P. Steinmetz. Invitation to visit Illinois for Electro-Chemical Society Meeting and Berg at U. Illinois. C.P. Steinmetz shorthand.
57	29 Sept 1910	E.F. W. Alexanderson to C.P. Steinmetz. Moe details on tests of synchronizing force of alternators. See 44 above.
58-60	29 Sept 1910	Attachment to above letter. E.F.W. Alexanderson to W.J. Foster. Proposal for parallel operation of gas engine driven generators and estimate of fly wheel effects.
61	29 Sept 1910	C.P. Steinmetz to C.s. Van Dyke, GE. Removal of overhead electric wires.
62	29 Sept 1910	J.W. Upp, GE Switchboard Dept to W.S. Moody, GE Transformer Dept. Copy to C.P. Steinmetz. Series reactances for generators.
63-64	30 Sept 1910	H.M. Hobart, EE, London ENG to C.P. Steinmetz. Would like to work for Steinmetz Consulting Dept., and hopes arrangement can be made for him to do so after completing his current course of lectures in London. [Henry Metcalf Hobart, an MIT grad who had previously worked for GE, did return to GE in 1911 and served as a consulting engineer from 1911 to 1940]
65	30 Sept 1910	Ernest Hyde (?) to C.P. Steinmetz. Illustrations for illuminating engineering lectures.
66	30 Sept 1910	C.P. Steinmetz to C.N. Chamberlin, GE Lynn. Attached I send you copy of review of development of TiC for luminous arc lamp.[Review not included]
67-68	30 Sept 1910	C.P. Steinmetz to M.A. Oudin, GE Foreign Dept. Referring to attached correspondence [not included here] "I therefore do not consider it safe to use single conductor armored cable in high voltage power systems."
69-71	30 Sept 1910	C.P. Steinmetz to C.W. Stone. Power limiting reactances. Those C.P. Steinmetz saw in Pittsfield yesterday are "very satisfactory." Suggests some improvements.
72	1 Oct 1910	Heath and Mulligan Mfg. Co, Chicago to C.P. Steinmetz. Selling metal preservative for protection of steel structures.
73-74	1 Oct 1910	C.P. Steinmetz to E.W. Rice, Jr. Water sterilization by mercury lamp. C.P. Steinmetz believes ultraviolet light from mercury lamp would be less effective for killing microorganisms than would ozone.
75	1 Oct 1910	C.P. Steinmetz to Schenectady Illuminating and Gas Co. Paying gas and electric bills.

76-81c	1 Oct 1910	Frank C. Woodside. Report of Investigation with Aluminum Co. of America. [Appears to be industrial espionage: "I found it impossible to gain admission to their works and so got all the following information by questioning every man in sight at the factory."] Describes manufacturing process in detail. Purpose is to find the difficulty"located in our process at Pittsfield.... The Aluminum Company's attitude is that we are doing something foolish in our end of the operation. " (see 99 below)
82	3 Oct 1910	C.P. Steinmetz to C.A. Kenyon, New York City. C.P. Steinmetz sorry that new position will require Kenyon to cease editing Steinmetz books.
83-88	4 Oct 1910	Ernst Berg, Prof. EE, U. of Illinois, to E.W. Rice, Jr. Importance of a steam meter for pulsating flow. "It would sound the death knell to the great majority of old team stations." Much technical detail. "I am sending a copy of this to Steinmetz."
89	4 Oct 1910	C.P. Steinmetz to A.G. Davis, GE Patent Dept. In reply to letter, C.P. Steinmetz does not believe that proposed dynamic condenser of Prof. Theodore Bodde "offers any advantage over the synchronous condenser for large sizes."
90	4 Oct 1910	C.P. Steinmetz to S. Ferguson, GE Research Lab. Enclosing volt-ampere characteristics of incandescent lamps.
91	5 Oct 1910	A.G. Davis, GE Patent Dept. to Prof. Theodore Dodde [sic. See 89 above] Northfield, Vermont. GE "does not care to acquire an interest in this invention." Mentions correspondence with Steinmetz.
92	5 Oct 1910	J.L.R. Hayden to A. McK. Gifford, GE Pittsfield. Requisition for a type H transformer impregnated with bakelite.
93	5 Oct 1910	George P. Sever, Chairman, AIEE, to C.P. Steinmetz. Requests discussion of "Potential Stresses in Dielectrics" by H. Pender and H.S. Osborne. Steinmetz shorthand.
94	5 Oct 1910	C.P. Steinmetz to Heath & Milligan Mfg. Co, Chicago IL. See 72 above. Would be glad to be put on mailing list.
95	5 Oct 1910	C.P. Steinmetz to C.G. Huth GE. Request for specifications for laying floors.
96	5 Oct 1910	C.P. Steinmetz to McGraw Hill Book Co. Corrected proof of "Engineering mathematics."
97	6 Oct 1910	Ernst Berg, EE, University of Illinois, to C.P. Steinmetz, with attachment of Ernst Berg to P. Junkersfeld, Commonwealth Edison Co. "Please note attached copy of letter I have written to Junkersfeld.... give me as much ammunition as you possibly can... you are as usual very slow in answering your mail." To Junkersfeld: "It seems possible that the University may be able to get one large appropriation next year, an appropriation of \$500,000, towards establishing a great laboratory....you are in a good position... to suggest some good reasons why a large electrical building with equipment would be best justified.... I want to show that we may count on a very large support from the citizens of Illinois when the time of granting the appropriation comes."
98	6 Oct 1910	C.P. Steinmetz to G.D. Rosenthal, St. Louis. Thanks for "photographs of Mr. Edison, yourself, and myself."

99-100	7 Oct 1910	S.H. Blake, GE Pittsfield, to C.P. Steinmetz. Aluminum for Lighting Arrestors. Problems in analyzing aluminum to get results which agree with Aluminum Co. (Seems to be issue referred to in items 76-81c above)
101	7 Oct 1910	C.P. Steinmetz to George F. Sever, Chairman, AIEE. Will give a short discussion on "Dielectrics" paper..."we are making a very extended and complete investigation on the subject of high voltage dielectric phenomena, which will probably continue into next year," when we will give a full report to AIEE.
102-106	8 Oct 1910	W.L.R. Emmet to C.P. Steinmetz. Attached: W.L.R Emmet to Richard E. Rice, GE Lynn. Comments on records received from Steinmetz of recent experimental turbine tests at Lynn." Finds "certain inconsistencies." Described in detail, along with recommendations for further tests.
107	8 Oct 1910	I.J. Schwatt, Univ. of Pennsylvania to C.P. Steinmetz. Request for lecture to Sigma Xi.
108	10 Oct 1910	C.P. Steinmetz to T.R. Lansingh, NY City. Photo and biography of C.P. Steinmetz.
109	10 Oct 1910	C.P. Steinmetz to E.W. Rice, Jr. Attached Technical Report No. 10940 [not attached]
110	10 Oct 1910	James Lyman, GE Chicago, to C.P. Steinmetz. Lecture request. Steinmetz shorthand.
111	10 Oct 1910	McGraw Hill Book Co. to C.P. Steinmetz. Please send corrected p.23 of your manuscript.
112	10 Oct 1910	George Seward, Virginia Electrolytic Co., NY City to C.P. Steinmetz. "Purest Silicon... you wrote in regard to pure silicon... I would very much like to know if in your opinion a reasonably large market for this material would develop" if delivered with high purity... "would not be sold at less than 25 cents per Lb."
113	10 Oct 1910	C.P. Steinmetz to Ralph B. Carter, NY City. Order of spray pump.
114	10 Oct 1910	C.P. Steinmetz to Edw. P. Hyde, President, Electrical Illuminating Society. Illustration for Electrical Illuminants lecture.
115	10 Oct 1910	C.P. Steinmetz to E.W. Rice, Jr. "Institute [AIEE?] Meeting at Pittsfield and Schenectady... Mr. Moody misunderstood the situation entirely.... The purpose of the American Institute Meeting has nothing whatever to do with General Electric Company."
116	10 Oct 1910	C.P. Steinmetz to G.D. Rosenfeld. Thanks for photos of "Mr. Edison and Myself." See 98 above.
117	11 Oct 1910	H. Gunn, Secretary, Labor Lyceum, [Schenectady?] to C.P. Steinmetz. "Dear Comrade... we have secured Machinist Hall on State St. for the Labor Lyceum commencing Oct. 30 and we would greatly like you to be the speaker there."
118	11 Oct 1910	J.L.R. Hayden to G.N. Chamberlin, Lynn. Please send us a dozen carbons for experimental titanium carbide lamp.
119	11 Oct 1910	George Seward, Virginia Electrolytic Co., NY City to C.P. Steinmetz. Invitation to dinner at Grand Union Hotel. See 112 above.

120	11 Oct 1910	C.P. Steinmetz to Thomas A. Edison. "When I had the pleasure to talk to you at the last Edison Convention on high voltage insulation you suggested the formaldehyde phenol and similar condensation products, and I understood you to say, that you had investigated a number of such products and found methods of making them by which water would not split off in the final condensation. We have done some experimenting with Bakelite, and I should be very glad if you would feel like giving me information..... I send you one of my photographs, taken by the son of a dear friend and former employer, the late Mr. Eickmeyer" (requests Edison photo).
121	11 Oct 1910	C.P. Steinmetz Edward P. Hyde, Illuminating Engineering Society. Syllabus for lectures on "Electric Illuminants."
122	11 Oct 1910	C.P. Steinmetz to McGraw Hill Book Co. Correction and return of p. 23.
123-124	11 Oct 1910	C.P. Steinmetz to H.F. Parshall, GE, London. Reply to query on possible injury to eyes from mercury arc lamp. See 42-43 above. "I do not believe there is any such danger... I have used the mercury lamp exclusively to work by since 8 years... I never had any trouble using the mercury lamp...when I used the incandescent lamp I experienced considerable trouble with conjunctivitis and iritis... I should therefore consider the mercury lamp the ideal form of lighting."
125-126	11 Oct 1910	C.P. Steinmetz to C.W. Stone GE. Regarding another breakdown of synchronous reactances for Chicago Edison... "after the agitation regarding those reactances, the existence of an over sight in the specifications appears rather discouraging". Tests need to be made at high voltage and high frequency, not just high voltage before "it is safe to let it go out."
127	11 Oct 1910	John B. Whitehead, EE, Johns Hopkins U. to C.P. Steinmetz. Invitation to Baltimore Club while there for Illuminating Engineering lectures.
128	12 Oct 1910	E.M. Hewlett to C.P. Steinmetz. "We are now ready to take title to the South Mobile property... We need the balance of your subscription within a few days..." Steinmetz shorthand.
129	12 Oct 1910	C.P. Steinmetz to Major Gifford, GE. Train reservations to Chicago for 18 Oct 1910.
130	12 Oct 1910	C.P. Steinmetz to H. Gunn (see 117 above). "Dear Friend". Cannot speak to Labor Lyceum 30 Oct 1910 because of travel to Baltimore, but can speak 6 Nov 1910. Proposed subject: "Conservation of Natural Resources." ..."it might be of interest to discuss it from our point of view."
131	12 Oct 1910	John B. Whitehead to C.P. Steinmetz. Requests lantern slides of illustrations from Steinmetz book.
132	13 Oct 1910	Ernst Berg to C.P. Steinmetz. Can you lecture to Tau Beta Pi during upcoming visit to Illinois? Handwritten on letter." Telegraph! Impossible to lecture this time..."
133-134	13? Oct 1910	Ernst Berg to C.P. Steinmetz. Renews request for Steinmetz talk to Illinois students." The boys would never forgive me if you cut us out."
135	14 Oct 1910	C.P. Steinmetz to James Lyman, GE Chicago. Lecture arrangements.

136-138	17 Oct 1910	Ralph W. Pope, Secretary, AIEE, to E.A. Baldwin and S.H. Blake, GE. Proposed joint meeting of Schenectady and Pittsfield Sections of AIEE. Meeting should be restricted to 12 papers delivered over 3 days.
139	17 Oct 1910	C.P. Steinmetz to E.J. Berg (see 132-134 above). Telegram. "Impossible to lecture this time: shall be back November."
140	17 Oct 1910	C.P. Steinmetz to E.J. Berg. (Letter) Repeats that he will come to U. of Illinois to lecture in November.
141	17 Oct 1910	C.P. Steinmetz to Anson W. Burchard, NY Office, GE. "Referring to attached letter, I have not heard anything of the alleged discovery of means of refrigeration by direct electricity and do [not?] believe in it."
142-143	17 Oct 1910	C.P. Steinmetz to G.N. Chamberlin. Tests of experimental TiC lamp look "very promising." Details.
144	17 Oct 1910	C.P. Steinmetz to McGraw Hill Book Co. Enclosed find corrected proof of Engineering Mathematics.
145	17 Oct 1910	C.P. Steinmetz to M.S. Seelman, editor, National Electric Light Association. "I consider it safer to have overhead wires of 10,000 volts and over bare and not insulated. " Insulation typically becomes unsafe when exposed to weather, and its presence gives a "false sense of safety."
146	17 Oct 1910	C.P. Steinmetz to C.W. Stone, GE. Conversations with Mr. Burnet on "above subject" [not specified]. "Boucherot has done a lot of original work, of a similar class as Leblanc, and has beaten me several times by having something invented, which I afterward invented again." [Charles Leonard Maurice Leblanc (not to be confused with author Maurice Leblanc, writer of the Arsene Lupin mysteries) , and Paul Boucherot were inventors of alternating current electrical machines]
147-149	17 Oct 1910	K. Tornberg. Report on Cast Magnetite Electrodes. Cast electrodes showed "extraordinary long life." Details.
150-151	17 Oct 1910	R. Mulleneux Walmsley [?], Norhampton Polytechnic Institute, London ENG. Invitation to deliver Advanced Lectures in Electrical Engineering for honorarium of about 100 pounds [\$500?].
152	18 Oct 1917	J.L.R. Hayden to C.C. Chesney, GE. Wants to use his name as reference for transfer from Associate to full membership in AIEE.
153-154	18 Oct 1910	C.P. Steinmetz to E.J. Berg. Plans for November visit to Illinois.
155	18 Oct 1910	C.P. Steinmetz to J.J. Schwatt, Prof. Mathematics, U. of Penna. Declines invitation to lecture Penn chapter of Sigma Xi.
156	18 Oct 1910	C.P. Steinmetz to John B. Stockwell, Cleveland, O. In answer to question about Maxwell's work: "Maxwell is recognized as highest authority in theoretical electricity, and this respect is not out of date and never can be. Obviously, however, since his work has been written some time ago, it does not contain the application of general theory to those subjects in electrical science and engineering which have become of importance more recently."
157	18 Oct 1910	C.P. Steinmetz to John B. Whitehead, Johns Hopkins U. Accepts invitation to be Whitehead's guest at Baltimore Club.

158	18 Oct 1910	C.P. Steinmetz to John B. Whitehead. In response to request, does not have lantern slides of illustrations from his books.
159-161	19 Oct 1910	E.F.W. Alexanderson to W.B. Potts, GE, copy to C.P. Steinmetz. Single Phase Locomotive with Phase Converter and Three Phase Motor. Alexanderson's idea for phase converter locomotive, while not competitive for passenger locomotives and speeds above 30 mph, appears promising for freight and tunnel work.
162-163	19 Oct 1910	Walter S. Moody, GE, to C.W. Stone, GE, copy to Steinmetz. Synchronous Reactance for Chicago Edison Co. "... we talked the subject of high frequency tests over with Dr. Steinmetz, and he felt that a test of 25,000-volts across the terminals of the reactance, obtained with a wireless outfit, would be satisfactory."
164	19 Oct 1910	P. Rowell, Institution of Electrical Engineers, London. Invitation to deliver the 3 rd Kelvin Lecture, in early 1911. Honorarium 25 pounds.
165	19 Oct 1910	John B. Whitehead, Johns Hopkins, to C.P. Steinmetz. Details of Baltimore visit. Steinmetz shorthand.
166	20 Oct 1910	C.H. Benjamin, EE, Purdue to C.P. Steinmetz. Lecture invitation.
167-169	21 Oct 1910	E.F.W. Alexanderson to A.A. Buck, GE Patent Dept. Improvements to auto-synchronous type of electric motor known as Danielson's motor. Note in pencil on copy to Steinmetz. "We are making tests on these schemes."
170-171	21 Oct 1910	C.M. Davis, GE, to C.W. Stone, GE, copy to Steinmetz. Commonwealth Edison Company's Reactances. Progress report. Reactances "to be tested the following day with both high potential and high frequency tests, as suggested by Dr. Steinmetz." (See 125-126 above).
172	21 Oct 1910	J.L.R. Hayden to S.H. Blake, GE Pittsfield. Application to AIEE; regenerative lamp; aluminum cells.
173	21 Oct 1910	J.L.R. Hayden to G.N. Chamberlin, GE Lynn. Work on titanium carbide lamp.
174	24 Oct 1910	V.R. Lansingh, Baltimore MD to C.P. Steinmetz. Telegram Asks C.P. Steinmetz to preside at Johns Hopkins lighting course.
175	24 Oct 1910	S. Wade to V.R. Lansingh. Telegram. C.P. Steinmetz is out of town.
176	24 Oct 1910	C.P. Steinmetz to Prof. Carl M. Magnusson, Univ. Washington. "I have no doubt that we shall have a place for you in the Company's testing room....the best arrangement would be to get you into the test as a regular man, as then you can really get into the inside of things. Perhaps at the end of the year, you might spend a couple of months in my office, the Consulting Engineering Department of the Company."
177	24 Oct 1910	C.P. Steinmetz to McGraw Hill Book Co. Return of proof of figures for "Electrical Engineering mathematics."
178-179	24 Oct 1910	C.P. Steinmetz to E.W. Rice Jr. Explains that Prof. Magnusson (see 176 above) wants to spend "his vacation [sabbatical] year... on the regular force" of the test room. "I would strongly recommend this." Suggests such vacation hiring of professors be made a regular thing, as it would be "favorable to our company" by familiarizing professors with GE apparatus, by subsequent influence on students. "I believe they [professors] should receive pay just as permanent employees."

180-181	24 Oct 1910	C.P. Steinmetz to E.W. Rice, Jr. Referring to correspondence n sterilization of milk by ultraviolet light, this appears more promising than for water sterilization. "It is quite possible that such a method may be capable of industrial development."
182	24 Oct 1910	C.P. Steinmetz to John B. Whitehead, Johns Hopkins. Travel plan to Baltimore.
183	25 Oct 1910	J.L.R. Hayden to G.N. Chamberlin, GE Lynn. Visit of Chamberlin to Schenectady.
184	25 Oct 1910	J.L.R. Hayden to E.F. Foster, GE Pittsfield. Suggestions for tests of 2300 Volt "stacks of cones" [?] in electrolyte.
185	25 Oct 1910	George R. Metcalfe, AIEE, NY City, to C.P. Steinmetz. Enclosed are proofs of C.P. Steinmetz discussion on "Vector Power in Alternating Currents" and convention paper on "Transient Voltages."
186	25 Oct 1910	C.P. Steinmetz to Charles E. Benjamin, Purdue U. Unable to lecture at Purdue during the coming season.
187	25 Oct 1910	C.P. Steinmetz to Henry L. Doherty, NY City. Recommends Gano Dunn for "presidency of the Institute" [AIEE?]
188	25 Oct 1910	C.P. Steinmetz to E.M. Hewlett, GE. (See 128 above) regarding "South Mobile property... I am sorry to say that I have no money. However, I can give you a three month's note on the Schenectady Trust Company..."
189-190	25 Oct 1910	C.P. Steinmetz to A.L. Rohrer, GE. Grounding of Secondaries. "I am very strongly of the opinion that every secondary circuit which may be handled by a man should be grounded permanently...I consider it highly unsafe to permit any circuit to exist in our factory which is not grounded." Details included.
191	25 Oct 1910	C.P. Steinmetz to Mr. Stone, GE. Orders 500 folders.
192	25 Oct 1910	C.P. Steinmetz to John B. Whitehead, Johns Hopkins. Travel plans to Baltimore.
193	26 Oct 1910	William B. Kouwenhoven, EE, to C.P. Steinmetz. Kouwenhoven is a graduate student in Germany. His professor at Karlsruhe, Dr. Ing. E. Arnold, views Kouwenhoven's alma mater Brooklyn Poly as of "very low rank." Arnold regards C.P. Steinmetz as "the foremost engineer in America." Will C.P. Steinmetz please send a letter to Prof. Arnold "on the standing of Poly as technical school." [From Wikipedia " William Bennett Kouwenhoven (13 January 1886 – 10 November 1975), was an electrical engineer who developed closed-chest cardiac massage, part of CPR and also invented the first cardiac defibrillator . He was dean of Johns Hopkins School of Engineering from 1938 to 1954 and then became professor emeritus"]. See also sciencheroes.com entry on William Kouwenhoven for remarkable (though coincidental) conjunction of this letter and item 189 above/
194	27 Oct 1910	C.P. Steinmetz to S.H. Blake, GE Pittsfield. Suggests transfer of Mr. Couhey from Schenectady to Pittsfield to help with "Chicago white flame lamp, "which is "not ready for commercial use." "Our work is so unsettled, and that we do not know what days we will have much time to work on it."
195	27 Oct 1910	J.L.R. Hayden to S.H. Blake, Pittsfield. Send us a vertical flame lamp and some carbons.

196-197	27 Oct 1910	C. P. Steinmetz to E.W. Rice, Jr. Referring to letter from W.L.R. Emmet regarding possible duplication of S.A. Moss turbine work at Lynn with work at Schenectady.(See items 5-9 above). C. P. Steinmetz believes Moss work should be done and does not duplicate previous work. "While an enormous amount of [turbine] investigating work was done at Schenectady, its results were inaccessible... I have long lost track of it, except in so far as Mr. E.J. Berg kept me informed." Wants better reporting in order to eliminate any "centrifugal tendencies" between Schenectady and Lynn turbine work.
198	28 Oct 1910	C. P. Steinmetz to Geo. E. Metcalfe, AIEE. Illustrations for paper and discussion.
199-200	28 Oct 1910	C. P. Steinmetz to E.W. Rice, Jr. Endorses two previous letters from E.J. Berg to Rice proposing a steam flow meter. Favors "securing this invention for the General Electric Company." Some details.
201	29 Oct 1910	George R. Metcalfe, AIEE, to C. P. Steinmetz. Page proofs of Steinmetz discussion.
202	29 Oct 1910	C. P. Steinmetz to Grand Union Hotel, NY City. Telegram. Room reservation.
203	29 Oct 1910	C. P. Steinmetz to R. Brent Keeper, Baltimore. Declines invitation to dine at Maryland Club.
204-206	--November 1910	M.A. Hinrichs, EE, Springfield Light & Power, Springfield, OH. "after much hesitation" Hinrichs asks C. P. Steinmetz for advice regarding his proposal for "plan of generating direct current by a machine without a commutator" Details and drawings follow.
207	1 Nov 1910	J.L.R. Hayden to E.H. Blake, GE Pittsfield. Suggests using inductive resistance and slightly lower current in regenerative flame lamp.
208	1 Nov 1910	J.L.R. Hayden to G.N. Chamberlin, GE Lynn. Requests photometry curves for sand blast globe in connection with 6.5 magnetite lamp.
209	1 Nov 1910	J.L.R. Hayden to A.B. Hendricks, GE Pittsfield. Tests on insulating materials.
210	3 Nov 1910	G.N. Chamberlin to R.B. Hussey, J.L.R. Hayden. Authorizes photometry tests requested in 206 above.
211	2 Nov 1910	A. McK. Gifford, GE Pittsfield to J.L.R. Hayden. Will be glad to test your insulating materials as requested in 207 above.
212	2 Nov 1910	J.L.R. Hayden to F.T. Foster, GE Pittsfield. Requests aluminum cones containing ½ 5 manganese.
213	2 Nov 1910	J.L.R. Hayden to J.J. Frank, GE Pittsfield. Sending quartz tubing glazed with silica for testing.
214	3 Nov 1910	S.H. Blake to J.L.R. Hayden. Aluminum cones [requested in 212 above] were shipped a week ago.
215-216	3 Nov 1910	Nils Johnson, Spokane WA, to C. P. Steinmetz 3 Nov 1910. "Dear Comrade: Will you please examine this device shown in enclosed patent # 841,188 and suggest the best way of making such article... I am not a capitalist, only a poor Homesteader who has expended a lot of hard labor in vain in trying to find water, hence would like to try some other means but water witching.: [The referred to patent is a means of detecting the electrical currents allegedly indicating the flow of underground water]

217	4 Nov 1910	George Borrowman, U. Nebraska, to C. P. Steinmetz. Seeks statement endorsing the importance of teaching chemistry of materials to engineering students.
218	5 Nov 1910	E.R. Berg, FE Lynn, to J.L.R. Hayden. Plans for work on carbides.
219	5 Nov 1910	Geo. W. Hayden, Pratt & Cady Co., Hartford CT, to J.L.R. Hayden. Wants to exchange DC motor for AC motor.
220-221	5 Nov 1910	A.D.T. Libby, Dean Electric Co., Elyria, OH, to C. P. Steinmetz. Confused by information on p. 398-399 of C. P. Steinmetz "Alternating Current Phenomena" and seeks explanation.
222	7 Nov 1910	J.L.R. Hayden to Ball Carburetor Co., Bound Brook, NJ. Seeks remedy for leaky carburetor on 1911 Marmon Car.
223	7 Nov 1910	J.L.R. Hayden to George W. Hayden (see 219 above). Requested exchange would have to be handled through GE Boston Office.
224	7 Nov 1910	J.L.R. Hayden to Weed Chain Dept., NY City. Orders chains for 32" wheel.
225	9 Nov 1910	Henry Price Ball, GE Heating Device Dept to C. P. Steinmetz. Seeks information on dielectric strength of mica for use in tests on [heating] unit under development.
226-227	9 Nov 1910	Walter I. Schlichter, EE, Columbia U. "In a quandary" regarding what to do about the upcoming election of president of the AIEE, for which his friends R.D. Mershon and G.S. Dunn are both candidates. Wants advice from C. P. Steinmetz whether "my friends in the GE Company have formed an opinion." GE engineers appear to favor Dunn. Steinmetz shorthand.
228	9 Nov 1910	C. P. Steinmetz to Manager, Grand Union Hotel, NY City. Telegram. Room reservation.
229	9 Nov 1910	C. P. Steinmetz to McGraw Hill Book Co. Return of galley proofs.
230	9 Nov 1910	C. P. Steinmetz to Arthur Williams, New York Edison Co. Telegram. Travel plans.
231	11 Nov 1910	W.J. Davis, GE Pacific Coast Engineer, to C. P. Steinmetz. Seeks advice regarding installing a reactance in the main leads of the 12,000 Kw. turbine being installed at San Francisco Gas & Electric Co.
232	11 Nov 1910	J.L.R. Hayden to E.R. Berry, GE Lynn. Regarding acquisition of carbide F-17.
233-234	11 Nov 1910	J.L.R. Hayden to G.N. Chamberlin. Suggestions regarding photometry on sand-blasted or etched globe lamp. Suggests looking into use of alloy of cobalt and chromium mentioned in Franklin Institute [Proceedings] for use as the positive electrode in the 6.6. ampere magnetite lamp. Discusses tests on titanium carbide lamp.
235	11 Nov 1910	J.L.R. Hayden to G. Faccioli, GE Pittsfield. Suggests looking into new concrete compound and compound of rubber and transil, the latter for use on high tension leads of transformers and oil switches.
236	11 Nov 1910	J.L.R. Hayden to F.T. Foster, GE Pittsfield. Still have not received aluminum cones (see item 214 above).
237	11 Nov 1910	J.L.R. Hayden to A. McK. Gifford. Used of rubber mixed with transil oil in high voltage leads.

238-240	12 Nov 1910	LAS-SW [?] to C. P. Steinmetz. Report on visit to Lynn Turbine Department. Moss wants decision on completing his tests (see 5-9 and 196-197 above). Department has also done "considerable work" on centrifugal compressors, including one for a vacuum cleaner, as well as "2 KW high frequency set. They are building high frequency sets (500 cycles) for wireless work. These are driven by a single stage, single wheel turbine running at a speed of 7500 RPM. The alternator is self excited."
241	14 Nov 1910	Gilbert G. Laird, New York Edison, to C. P. Steinmetz. Seeks correction of printed version of address C. P. Steinmetz gave at NY Edison.
242	14 Nov 1910	Ira Remsen, President, Johns Hopkins, to C. P. Steinmetz. Thanks and honorarium of \$50 to be sent for lighting lectures.
243-244	14 Nov 1910	C. P. Steinmetz to George Borrowman, U. Nebraska. In response to 217 above. "I consider the teaching of chemistry as the most important to the electrical engineer next to mathematics...electrochemical work is one of the large consumers of electric power... it is quite probable that electrochemistry will soon constitute the largest consumer of electric power"
245	14 Nov 1910	C. P. Steinmetz to G.N. Chamberlin, Lynn. Improvements to TiC lamp.
246	14 Nov 1910	C. P. Steinmetz to Board of Supervising Engineers, Chicago IL. orders Second Annual Report of the Board of Supervising Engineers of Chicago Traction.
247-248	14 Nov 1910	C. P. Steinmetz to W.S. Hulse, New York Office [GE?]. Confidential. In answer to letter, states that McGraw Hill is the leading publisher of technical publications in US, and his relations with McGraw Hill "have always been agreeable." In all recommends McGraw Hill as "the only company" suitable for publication of the "English edition of a reference book as the "Huette".
249	14 Nov 1910	C. P. Steinmetz to A.D.T. Libby. Explains matter on p. 398-399 of his book that puzzled Mr. Libby (see 220-221).
250	14 Nov 1910	C. P. Steinmetz to F.F. Howell, Secretary, Institute of Electrical Engineers, London. C. P. Steinmetz will not be able to give third Kelvin Lecture, as invited.
251	14 Nov 1910	C. P. Steinmetz to Walter I. Schlichter, Columbia U. Confidential. In answer to 226-227 above) C. P. Steinmetz endorses Gano S.S Dunn over Ralph D. Mershon for President of AIEE.
252	14 Nov 1910	C. P. Steinmetz to R.N. Walmsley, Northampton Polytechnic, London. C. P. Steinmetz will be unable to lecture to University of London.
253	14 Nov 1910	Arthur Williams (?), New York Edison, to C. P. Steinmetz. Seeks corrections to planned notes on Steinmetz recent talk to NY Edison to be printed in company's Edison Weekly. Steinmetz shorthand.
254	15 Nov 1910	C. P. Steinmetz to R. W. Pope. Sending you today a three part paper on "Design, Construction and Test of an Artificial Transmission Line" for the Pittsfield-Schenectady Convention of the AIEE.

255	15 Nov 1910	George R. Metcalfe, Secretary, AIEE, to C. P. Steinmetz. Enclosed transcript of C. P. Steinmetz discussion of paper by Benjamin G. Lamme and F.D. Newbury, for correction.
256	15 Nov 1910	John B. Taylor, GE consulting engineer, to Nils Johnson, Spokane WA. (See 215-216 above). Device for finding water Johnson refers to is not likely to work. "Dear Sir. Dr. C. P. Steinmetz has handed me your letter... While we are sorry you have had hard luck in locating water on your homestead, we cannot give you any encouragement in the use of the apparatus..."
257-259	16 Nov 1910	E.E.F. Creighton to C.W. Stone, GE, copy to C. P. Steinmetz. Review of work on development of lightning arrestors and insulators.
260	16 Nov 1910	J.L.R. Hayden to H.A. Rayno, Albany. Installation of new gasket and new carburetor on my 1911 Marmon.
261	16 Nov 1910	J.L.R. Hayden to W.H. Wilcox, Binghamton. Carburetor replacement.
262	16 Nov 1910	John B. Taylor, GE, to C. P. Steinmetz. Regarding Nils Johnson request (256 above). "The device described by the inventor, Mr. Adolf Schmid, can certainly be nothing other than a fraud... I do not see how the patent Office can allow anything of this sort to issue. "
263	17 Nov 1910	H.R. Sargent to N.R. Birge, GE. Copy. Tests on Cat. # 65961 Cutouts to overcome [electrical] leakage and breakdown including those of E.E.F. Creighton at Union College laboratory.
264	17 Nov 1910	J.L.R. Hayden to W.H. Wilcox, Binghamton, NY. Order of speedometer.
265	18 Nov 1910	E.E.F. Creighton to A.N. Moore, Chairman, Standardizing Committee, copy to C. P. Steinmetz. Tests on film cut outs for series incandescent lamps.
266	18 Nov 1910	Dugald C. Jackson to Ralph W. Pope, Secretary, AIEE. Copy. "After consulting with Dr. Steinmetz, I beg to appoint the following local committee for the Pittsfield-Schenectady Mid-Year [AIEE] Convention. List follows.
267-269	18 Nov 1910	C. P. Steinmetz to W.J. Davis, Pacific Coast engineer, GE. Recommendations regarding reactances for San Francisco Gas and Electric Co, in answer to 231 above.
270	18 Nov 1910	C. P. Steinmetz to W.C. Fish, GE Lynn. Regarding suggestion of J.T. Reschlyn, "on a method of improving the efficiency of incandescent light sources, which consists of reducing the power consumption by reflecting the long and useless heat rays back to the source... The suggestion is very interesting and I believe some experiments should be made on its possibility. "[The idea was later successfully used].
271	18 Nov 1910	C. P. Steinmetz to Nils Johnson, Spokane WA. (See 215-216, 256). "My Dear Sir:- In answer to your letter.... I can see no possibility that the apparatus described... could have any value in locating water... It is to be regretted that the patent office allows such obvious frauds... yours with best regards."
272	18 Nov 1910	C. P. Steinmetz to E.W. Pope, Secretary, AIEE. Order of 250 reprints of C. P. Steinmetz discussion of Dr. Kennelly's paper on "Vector Notation."
273-274	18 Nov 1910	C. P. Steinmetz to F.J. Tilden. Schenectady. "Enclosed I send you a note of recommendation requested in your letter." Recommendation attached.

275	18 Nov 1910	C. P. Steinmetz to W.R. Whitney, GE Research Lab. Seeks opinion on idea of energy saving reflection of infrared light in incandescent lamps (see 270 above) and suggestions for reflective coating material.
276	18 Nov 1910	C. P. Steinmetz to A. Williams, NY City. Enclosed corrected manuscript for NY Edison's Edison Weekly (see 253 above)
277	19 Oct 1910	Dugald C. Jackson, President, AIEE, to David B. Rushmore, GE. Suggests Rushmore detail his plan for a "Committee on Scientific Theory" and "consult with Doctor Steinmetz". Forwarded by Rushmore to Steinmetz with handwritten note.
278-279	19 Nov 1910	W.S. Moody, GE Pittsfield, to C. P. Steinmetz. Sends report on Westinghouse reactances. "You will see that these reactances differ most strikingly from what we are offering out customers... We would certainly not advocate the use of such fire traps as these devices seem to be, but, on the other hand, it would appear that there would be a good safe intermediate practice..."
280-281	19 Nov 1910	C. P. Steinmetz to H.P. Ball, GE Pittsfield. In answer to item 225 above, notes that "some very interesting work is being done by Schenectady Research Laboratory... They are making small concentric conductors which are insulated by magnesia or soapstone between the conductors". This achieves electrically insulated heating elements that are potentially "perfectly fire proof." Suggests Ball contact W.R. Whitney. [This letter is significant as it is an early contemporary description of research that resulted in the Calrod heating elements later generally used on electric stoves. GE dates development of Calrod to 1915, by C. Abbot, and its first Calrod electric range to 1928.]
282	19 Nov 1910	C. P. Steinmetz to E.E.F. Creighton. Suggests Creighton notify patent department about his improvements in film cutouts.
283	19 Nov 1910	C. P. Steinmetz to W.L.R. Emmet, GE. Returns discussion of magnetic reduction gear with C. P. Steinmetz estimates on hysteresis loss. Estimates total power loss as "fairly close to that claimed by the description that is 5%."
284-286	19 Nov 1910	C. P. Steinmetz to W. S. Moody. Reactances for Chicago Edison Co. "read the suggestions made... regarding improving their construction. I do not at all agree". Details his objections, and alternative suggestion. Issue is achieving both electrical insulation and heat insulation. Technical details.
287	19 Nov 1910	C. P. Steinmetz to Ira Remsen, President, Johns Hopkins. Expenses for C. P. Steinmetz trip to Johns Hopkins are too small to be worth bothering with.
288	19 Nov 1910	C.P. Steinmetz to E.W. Rice, Jr. "Referring to attached note, I received some time ago letter from Mr. Edison, in which he stated that he would send as soon as possible samples of various condensation products with which he has been experimenting with [sic]. Thus far I have not received these samples."

289-292	21 Nov. 1910	A.R. Dodge to E.W. Rice, Jr. Berg Steam Meter. Copy to C. P. Steinmetz. Technical discussion of Berg proposal and other ideas for such meters. No conclusion arrived at.
293-294	21 Nov 1910	John J. Frank, GE, to C. P. Steinmetz and W.S. Moody. Report on Westinghouse current limiting reactances. Recommends: "It would appear from the above [faultless performance so far of Westinghouse reactances on NY, New Haven, and Hartford RR] that we should at least consider the design of iron core reactances [something Westinghouse uses and GE does not] for the protection of alternators. If it is decided that there is no merit in the use of the iron core, I feel that we should reconsider our decision to make the device absolutely fire proof, as apparently it is needlessly expensive and difficult to obtain. "Copies to seven people in all.
295-296	21 Nov 1910	Another copy of 293-294
297	21 Nov 1910	J.LR Hayden to Nordyke, Marmon & Co. Indianapolis, IN. Exchange of Ball for Schleber carburetor in 1911 Marmon.
298	21 Nov 1910	J.L.R. Hayden to M.R. Wilcox, Binghamton, NY. Order of "Warner 60 mile speed meter."
299	21 Nov 1910	J.L.R. Hayden to W.H. Wilcox. Shipping Ball carburetor to Marmon factory for exchange.
300	21 Nov 1910	C. P. Steinmetz to H.M. Hobart, Consulting Engineer, London. "Dear Friend Hobart.... glad to hear we may see you with us again soon, in the new Consulting Engineering Department, which I have started a few months ago. It will almost be like old times again I hope."
301-302	21 Nov 1910	C. P. Steinmetz to W.S. Hulse, GE, NY City. Seeks order of three Braun tubes [cathode ray tubes] from Germany for use in building copies of Professor H. Ryan's cyclograph for measuring losses in insulating materials in high voltage lines.
303	21 Nov 1910	C.P. Steinmetz to William B. Kouwenhoven, Karlsruhe, Germany. (See 193 above). Enclosed is letter to Professor Arnold as requested "giving my opinion on the Polytechnic Institute of G=Brooklyn, as requested. I am glad to see that you are continuing your studies and are working for the doctors degree. As you know, the lectures which we gave at Brooklyn on "Radiation, Light and Illumination" have since been published by the McGraw people."
304-305	21 Nov 1910	E.E.F. Creighton to W.S. Moody, GE, copy to C. P. Steinmetz. Tests on problems encountered on transformer for Susquehanna Smelting Co. Needs shipment of another transformer to complete tests.
306	22 Nov 1910	W.S. Hulse, GE, to C. P. Steinmetz. Ordering three [Braun cathode ray] tubes as requested. See 301-302 above.
307 - 310	22 Nov 1910	C.E. Scribner, Western Electric Co. to E.E. F. Creighton, copy to C. P. Steinmetz, Describes requirements of a vacuum lightning arrestor that Creighton and GE agree to develop "to meet the demands of the railroad companies and of the competitive trade." Much technical description.

311-316	22 Nov 1910	C. P. Steinmetz to E.J. Berg, U. Illinois. Discusses disagreement with A.E. Kennelly, partly carried out in print, over whether polar diagram or crank diagram is best way to introduce students to imaginary number calculations. Seeks paper from Berg at upcoming Pittsfield-Schenectady AIEE meeting supporting the polar diagram. "I am sure you will not fail us." Discusses oscillogram and corona investigations, modifications of power limiting reactances in Chicago, progress on closing arrangement with GE on Berg steam meter, return of Hobart to Consulting Department, technical details of surging of synchronous machines. Also: "Note: For next year's presidency of the AIEE Mershon and Gano Dunn are running. I strongly favor Dunn, as he is a very nice fellow, and has always taken great interest in the Institute without getting anything out of it".
317-321	22 Nov 1910	C. P. Steinmetz to W.C. Fish. Preliminary Report on TiC Arc Lamp Investigation. Conclusions. "Efficiency and steadiness of the titanium carbide arc increase in direct proportion to the approach of the material to metallic titanium.... the best material seems to be nearly pure metallic titanium.... I believe if a suitable and satisfactory and sufficiently robust lamp mechanism would be developed by the Lynn engineers, we would be within appreciable distance of a commercially satisfactory carbide lamp."
322	22 Nov 1910	C. P. Steinmetz to Wm. Stoffregn, NY City. Orders "a number of small domestic fishes from my aquarium....I rather like to have many small fishes than a few large ones. Suggests 12 different species, but asks for "only those kind, which can live together without eating each other." Still has gold fishes, golden orfs and the eels that he bought from Stoffregn 8 year ago. Eels are two feet long, and Golden Orfs over a foot long, both now in "my greenhouse pond"
324	22 Nov 1910	J.H. Warder, Secretary, Western Society of Engineers. Proofs for report on Steinmetz address.
325	23 Nov 1910	E.E.F. Creighton to D.B. Rushmore, GE Power & Mining Dept. Copy to "my greenhouse poind". Southern Power Company is "much pleased" with performance of GE grounded phase protectors, and wishes to others for Great Falls and 99 Islands installations.
326	23 Nov 1910	E.E.F. Creighton to C.W. Stone GE. Solution to the Problems of Internal Surges in Transformers, Generators, Etc. Presents two solutions, of which h concludes "I feel confident that the first solution is efficient, cheap, and practicable." that solution is "the use of a high resistance properly attached to the internal coils."
327-328	23 Nov 1910	J.L.R. Hayden to A. McK. Gifford, GE Pittsfield. Sending for high potential test 7 copper tubes covered with various types of high potential insulation." Instructions for tests.
329-331	23 Nov 1910	C. P. Steinmetz to Allan W. Forbes, Wilkinsburg PA. Description of aspects of theory of transformers and induction motors
332	23 Nov 1910	C. P. Steinmetz to C.W. Stone, GE. Suggests W. Alexanderson look into a method of speed variation of induction motors.

333	23 Nov 1910	F.W. Willcox, GE Incandescent Lamp Sales to C. P. Steinmetz. Requests C. P. Steinmetz give a talk to "College Men at Harrison Works" on "Physiological Effects of Illumination."
334	25 Nov 1910	W.S. Moody, GE Pittsfield, to J.L.R. Hayden. Request "as full information as possible on measurements of the dielectric strength of bakelite".
335	25 Nov 1910	C. P. Steinmetz to K.A. Jones, Photograph House. Requests less dark prints of various oscillograms.
336	26 Nov 1910	E.M. Hewlett, GE Switchboard Dept. to C. P. Steinmetz. Personal. "Enclosed I send you two notes referring to the South Mobile proposition." (see 128, 1888 above) "I have not dated them so you may put on the date when you put them in the bank."
337-338	26 Nov 1910	C. P. Steinmetz to A. Hinrichs, Springfield OH. "regarding direct current generator without commutator... am sorry to say that the arrangement proposed is not new....[and] does not work as described, but instead of a direct current, it gives an alternating current of couple frequency." Explanation follows. A Coil wound direct current machine without commutator is a "theoretical impossibility."
339	26 Nov 1910	C. P. Steinmetz to E.K. Humphey, U. Of Illinois. Thanks for Tau Beta Pi certificate. Sending autographed photograph.
340	26 Nov 1910	C. P. Steinmetz to R.W. Pope, AIEE. Returns corrected proof of discussion.
341	26 Nov 1910	C. P. Steinmetz to F.W. Willcox, GE Harrison Works. Due to "accumulated work here," cannot address college men at GE Harrison Works.
342	26 Nov 1910	J.L.R. Hayden to E.A. Guay, GE Lynn. Have not received the titanium carbide lamp you were going to send us.
343-347	28 Nov 1910	C. P. Steinmetz to E.W. Rice, Jr. "To give relatively the greatest safety of operation of the generating station I consider it desirable. 1) to install either power limiting reactances in all generator leads...2) To operate all the generators of all the powerhouses in multiple on one system...3) The tie feeders between the stations would then constitute a part of the ring bus." Much detail. Last page in Steinmetz shorthand.
348	28 Nov 1910	H.F. Truman to C. P. Steinmetz. Arrangements for C. P. Steinmetz talk to Brooklyn Institute of Arts and Sciences.
349	29 Nov 1910	E.R. Berry to J.L.R. Hayden. Plans to bring Titanium Lamp data to Schenectady. "I... can readily see by the work that you have been recently doing that it will be of great importance in the development of a proper Titanium Carbide lamp."
350	29 Nov 1910	W.J. Davis to C. P. Steinmetz. Thanks for letter on reactances. Expect soon to get an order from San Francisco Gas and Electric Co.
351	29 Nov 1910	J.L.R. Hayden to E.W. Caldwell, McGraw Hill Books. Suggestion of how to get picture of Steinmetz and Edison together.
352	29 Nov 1910	J.L.R. Hayden to J.J. Frank. Beginning efforts to get requested data on properties of bakelite.
353	29 Nov 1910	J.L.R. Hayden to Heath & Milligan Mfg. Co. Chicago. Is there a paint that will adhere to aluminum?

354	29 Nov 1910	J.L.R. Hayden to A.B. Hendricks. Hopes Hendricks will visit Steinmetz laboratory soon.
355-359	29 Nov 1910	C. P. Steinmetz to E.W. Rice , Jr. Relation of the National Carbon Company regarding Development of White Flame Carbons. Yellow flame carbon is "greatly limited in its usefulness by its objectionable color, in spite of its very high efficiency." White flame carbons on market have better color but much lower efficiency. Only white flame arc that can approach carbon in efficiency is titanium or titanium carbide. GE has no facilities for white flame carbon manufacture. "National Carbon Company has become interested." "The question now arises, whether we shall make some arrangement with the National Carbon Company to have them develop a titanium carbon by the use of our patents," or do it ourselves. "I am in favor of arranging some method of co-operation, whereby the National Carbon Company could develop the manufacture of white flame carbons under our patents." Titanium carbide is currently expensive, but GE owns "Canadian rutile bearing ilmenite" from which TiC can be produced. GE would supply material to National Carbon. GE has patents but "I do not know how controlling the patent situation is."
360	30 Nov 1910	E.R. Berry, GE, to Fitzgerald & Bennis, Niagara Falls, NY. Copy to J.L.R. Hayden. Wants information on determination of carbon in Titanium Carbide.
361	30 Nov 1910	E.R. Berry, GE, to C. P. Steinmetz. Have sent data on Titanium Carbide tests.
362	30 Nov 1910	Report by E.E.F Creighton on Changes in the Standard Aluminum Arrester. Sent to C. P. Steinmetz and four others. Technical changes in arrester design. "... there must be necessarily a sacrifice in one factor to gain another". Issues are spacing between cones, deterioration of film, use of charging resistance, increase in amount of electrolyte. "The question arises whether the trade conditions will stand for this increase in cost. It is barely possible that some economy in other lines may be found which will compensate for the increased factory cost. "
363	30 Nov 1910	W.S. Moody, Mgr, GE Transformer Dept. to J.L.R. Hayden. Requests tests on dielectric strength of Bakelite.
364	30 Nov 1910	J.L.R. Hayden to E.H. Blake, GE Pittsfield. Sending sample of flame carbon with non-oxidizing coating.
365	30 Nov 1910	J.L.R. Hayden to L.C. Brown, GE Lynn. Requests half a dozen carbons with special coating of tungsten oxide.
366	30 Nov 1910	C. P. Steinmetz to Eimer & Amend, NY City. Order for glass tubing.