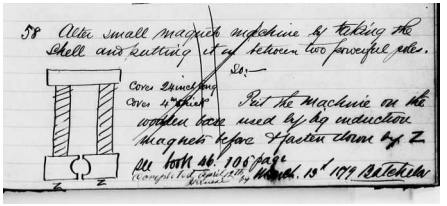
[Menlo Park,] March 13th 1879

Equipment Specification: Electric Lighting



58 Alter small magneto machine by taking the shell and putting it in between two powerful poles. So:—

Cores 24 inch long Cores 4 in thick Put the machine on the wooden base used by big induction magnets before & fasten down by Z see book 46. 105 page ⟨Completed April 12th 79 J Kruesi⟩

Batchelor

ADS, NjWOE, Batchelor, Cat. 1308:119 (Order No. 58) (*TAEM* 90:726; *TAED* MBN003:33). Written by Charles Batchelor; double X later written across entry. [a]Marginalia written by John Kruesi.

1. This is the order number; see Doc. 1687 n. 1.

2. See Doc. 1696.

3. The original shell had 25 coils but used No. 26 silk-covered wire (N-79-02-10:7, Lab. [*TAEM* 32:1145; *TAED* N046:5]). It was, however,

apparently altered before being placed between the bipolar field magnets. In the same notebook entry where Charles Batchelor specifies the dimensions of the field magnets he indicates that the shell was to be 6 inches in diameter with 25 coils of No. 18 silk-covered wire (N-79-01-21:119, Lab. [*TAEM* 30:645; *TAED* No16:61]).

4. The following order (No. 59), also dated 13 March, was to unwind and cut the cores of the two large induction magnets to the same size as that of their magnetizing magnet. There are also other orders from around this time for alternative magnet designs. Batchelor entered another order (No. 60) on 13 March that indicated a bar of iron was scheduled to arrive the following day and should be cut in half to be made into a magnet for experimental purposes while Order No. 55, dated 10 March, was to make a permanent steel magnet with two poles. Cat. 1308: 119–21 (Order Nos. 55, 59–60), Batchelor (*TAEM* 90:726–27; *TAED* MBN003:33–34).

5. A similar drawing, later dated 25 March, appears on that page and shows the dimensions of the field magnets as 2½ feet high and 4 inches thick. In another notebook Batchelor indicated that the two field magnets were each to be 2 feet high and 4 inches in diameter with a total resistance of 1 ohm. After calculating the resistance of various wire sizes that might be used for winding them he decided to order No. 13 cotton covered wire. The measured drawing of this machine is dated 13 March. N-79-02-10:105, N-79-01-21:121, Oversize Machine Shop Drawings (1879–1880), all Lab. (*TAEM* 32:1193, 30:646, 45:53; *TAED* No46:53, No16:62, NS7986CAI).

6. John Kreusi, Edison's principal machinist. *TAEB* 2:633 n. 6.