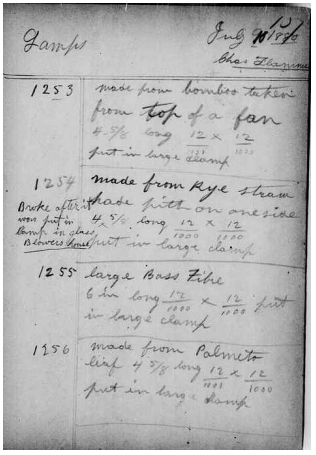
[Menlo Park,] July 9̶10 1880

Notebook Entry: Electric Lighting



Lamps[a]

1253 made from bamboo taken from ftop of a fan[1] 4–5/8 long 12/1000 × 12/1000 put in large clamp[b]

1254 made from Rye straw hade pith on one side 4–5/8 long 12/1000 × 12/1000 put in large clamp[b] ⟨Broke after it was put in lamp in glass Blowers house⟩[c]

1255 large Bass Fibre 6 in long 12/1000 × 12/1000 put in large clamp[b]

1256 made from Palmeto leaf 4 5/8 long 12/1000 × 12/1000 put in large clamp[2b]

1257[3] 1258 2 regular Bass Fibres put in same as we put paper carbon in  old way of clamping 4–5/8 long 12/1000 × 12/1000[b]

1259[d] made from paper 4–5/8 12/1000 × $\frac{12\frac{1}{2}}{1000}$ put in large clamp[4b]

1260 Made[d] from Bamboo taken from top of a fan 4–5/8 long by 12/1000 × 12/1000

Chas Flammer

X, NjWOE, Lab., N-80-03-06:151 (*TAEM* 33:1035; *TAED* No57:75). Written by Charles Flammer. [a]Beginning of table below marked by horizontal dividing lines; item numbers separated from text by vertical dividing lines. [b]Followed by dividing mark. [c]Marginalia written by Charles Flammer; followed by dividing mark. [d]Obscured overwritten text.

1. This is one of the first extant references to experiments with bamboo lamp filaments. Lamp 1248 was made with a bamboo filament the previous day but it broke before testing. Lamp 1253 produced a cold resistance of 188 ohms and the equivalent of 8.6 lamps per horsepower. N-80-07-05:25, 28; Mott Journal 80-07-10:3, both Lab. (*TAEM* 36:279, 281; 37:303; *TAED* N104:14, 16; N117:1).

Edison's impetus for trying bamboo is not certain. Charles Mott wrote in his journal on 7 July that "A collection of Bamboo Recd and choice Bast have been obtained and some loops cut out but none yet put in the lamps to test" (Mott Journal N-80-03-14:282, Lab. [*TAEM* 33:825; *TAED* N053:143]). Francis Jehl (1937–41, 614–15) recalled that:

> We always had . . . palm leaf fans lying about on the tables upstairs; these fans were often used in the course of experiments, especially when we desired to evaporate some liquid in a shallow glass plate or dry some mixture. It thus happened sometime towards the latter part of April or May that Edison noticed, while doing some microscopic work with a filament of carbon, that one of these fans was lying near his instrument. In his stooping position he noticed that a part of the binding rim of the fan was detached and was away from the fan leaf. He received the impulse to take the fan up and examine the rim: on closer examination it was found to be made from some sort of cane. He cut a piece of it, planed it and put it under his microscope: its structural characteristics were the most ideal thus far obtained. Batchelor was called to prepare a few raw filaments from the rim of the fan and carbonize them. The results were that Edison was satisfied that he now had a better carbon than that produced from the paper cardboard.

2. This may be the lamp which Mott indicated this day was tested at 483 ohms cold, 300 ohms hot, and produced the equivalent of 9.6 lamps per horsepower. Mott Journal N-80-07-10:3, Lab. (*TAEM* 37:303; *TAED* N117:1).

3. The page that begins with this lamp record is marked to indicate that it was later entered as an exhibit for Edison in a patent interference, *Edison v. Maxim v. Swan.*

4. This lamp broke before it could be tested. N-80-07-05:30, Lab. (*TAEM* 36:282; *TAED* N104:17).