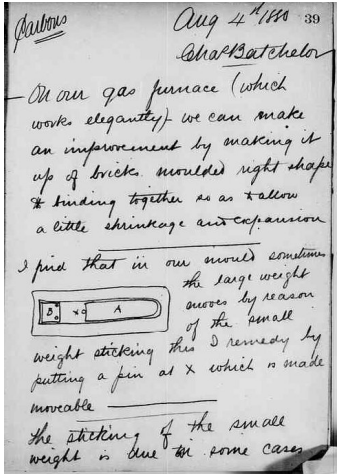
Notebook Entry:
Electric Lighting


Carbons Aug 4th 1880 39
Chas Batchelor
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[Menlo Park,] Aug 4th 1880

Carbons[a]

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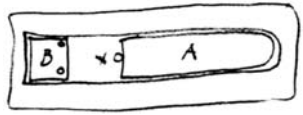
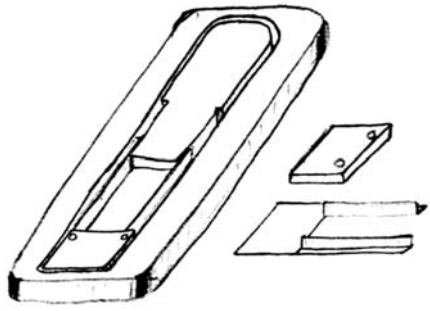


I find that in our mould sometimes the large weight moves by reason of the small weight sticking this I remedy by putting a pin at X which is made moveable[a]

The sticking of the small weight is due ~~to~~in some cases to small globules of metal or other substance coming out of the nickel at a high heat[a]

These globules sometimes actually hold up the small weight so that its pressure is not felt on the fibres and consequently the ends are not flat— In such a case when the fibre shrink it pulls the weight by jerks and when finished is corrugated[a]

A good way to obviate part of this is to make a mould like this:—



A thin plate of nickel lies under the fibre and has a side turned up— The weight lies on top of this plate with the fibre ends in between— The sides of this plate ~~has~~ also confine the body of the fibre to a smaller chamber thus making less liability to oxidization

Chas Batchelor

X, NjWOE, Lab., N-80-06-02 (*TAEM* 36:414; *TAED* N105:17). Written by Charles Batchelor; multiply signed and dated. [a]Followed by dividing mark.

1. This furnace was designed in connection with a nickel mould so that carbonization took place in an atmosphere of hydrocarbon gases to prevent oxygen from affecting the filaments. Earlier in the year, probably in February, laboratory chemist Otto Moses had designed a carbonizing furnace for this purpose (it is pictured in Friedel and Israel 1986 [p. 164]). It is not clear if the Moses furnace was more generally used at the laboratory for carbonizing filaments. The new mould and furnace were designed by Charles Batchelor in late June and early July. According to Charles Mott the mould was a "nickel box of size sufficient in depth to hold 30 slotted plates, the bottom of one serving as a cover or lid for the one beneath, each entire plate in this way requiring about ⅛ of an inch. The plates are only large enough for one loop at a time and the box or mould filled with the plates is designed to be used in a gas furnace which will be devised expressly for the purpose." The furnace was contracted out and arrived at Menlo Park on 20 July. During the following week the "gas and blast pipes and fixtures" were installed and the furnace was tested on 29 July; the following day another of these was apparently set up in the chemical laboratory. Edison executed a patent for this carbonizing apparatus on 30 July, which subsequently issued as U.S. Patent