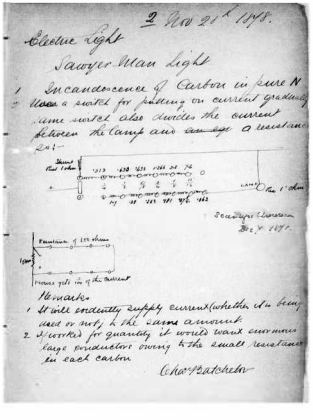
[Menlo Park,] Nov 28th 1878.

Notebook Entry: Electric Lighting

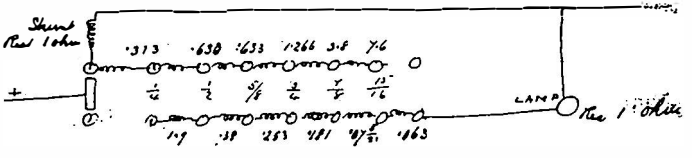


Electric Light

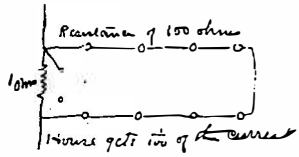
Sawyer-Man Light

1 Incandescence of Carbon in pure N

2 Uses[a] a switch for putting on current gradually same switch also divides the current between the lamp and ~~an equ~~ a resistance so:—[1]



Scientific American Dec 7 1878.[2]



Remarks

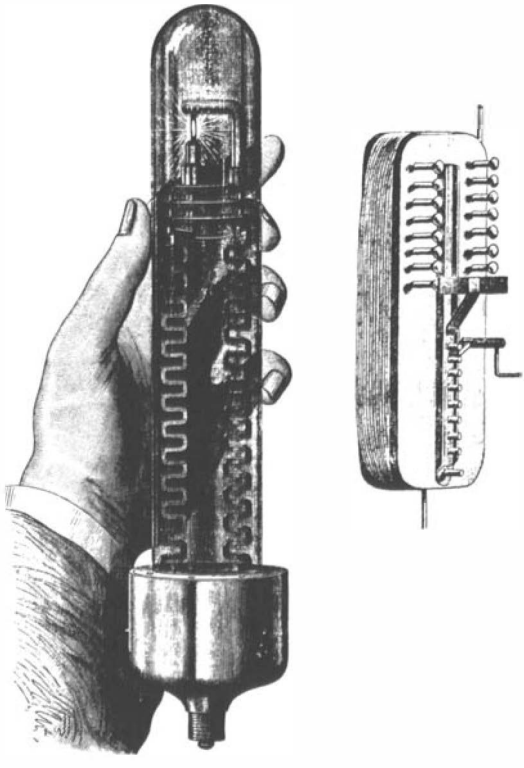
1 It will evidently supply current (whether it is being used or not) to the same amount.

2 If worked for quantity it would want enormous large conductors owing to the small resistance in each carbon

Chas Batchelor

X, NjWOE, Lab., Cat. 1304:2 (*TAEM* 91:4). Written by Batchelor. [2]Obscured overwritten letters.

1. Text is (left) "Shunt Rest 1 ohm" and (right) "LAMP Res 1 ohm." Numerals are (left to right): (top) ".313," ".630," ".633," "1.266," "3.8," "7.6"; (center) "1/4," "1/2," "5/8," "3/4," "7/8," "15/16"; (bottom) "1.9," ".38," ".253," ".181," ".07321," ".063." Batchelor's drawing is adapted from figure 5 of an article on the electric light research of William Sawyer and Albon Man which appeared in the 7 December *Scientific American* (39:351, 354–55); actually published about 27 or 28 November. Sawyer and Man designed their switch to protect the carbon burner in



The Sawyer-Man electric lamp (left). The switch for a Sawyer-Man light (right).

their lamp from heating too rapidly. The contact at left between posts 1 and 1 was moved successively between terminal pairs to the right, diverting a fraction of the current from the shunt at the upper left to a lamp of equal resistance in the lower right corner. The lamp and shunt circuits were proportioned so that the resistance of the complete apparatus remained constant at all times. "The Sawyer-Man Electric Lamp," Cat. 1241, item 1044, Batchelor (*TAEM* 94:429).

2. Batchelor copied this diagram from figure 7; however, he left out the diagonal line at bottom left corresponding to the one at top left. Text is "1 ohm," "Resistance of 100 ohms" and "House gets 1/100 of the current."