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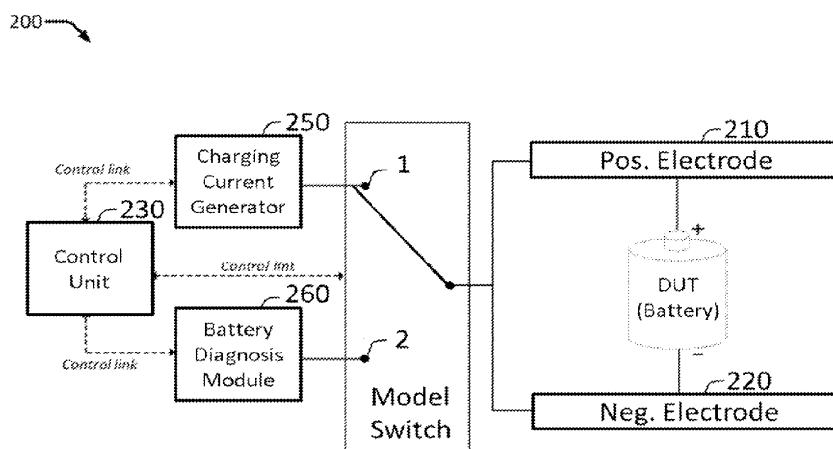


FIG. 2

(57) Abstract: Various embodiments of a battery charging apparatus are disclosed, along with methods of charging and rejuvenating a battery using the apparatus. The apparatus may include a positive electrode and a negative electrode which are configured to connect to a battery, and a charging current generator generating a charging current that charges the battery for a period of time via the positive and negative electrodes by adding electric charge to the battery. The charging current is generated based on parameters of the battery, including a charging constant and an initial charging state. In some embodiments, a natural logarithm of a ratio of the added electric charge to the initial charging state substantially equals to a product of the charging constant and a length of the period of time and negative one.

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