

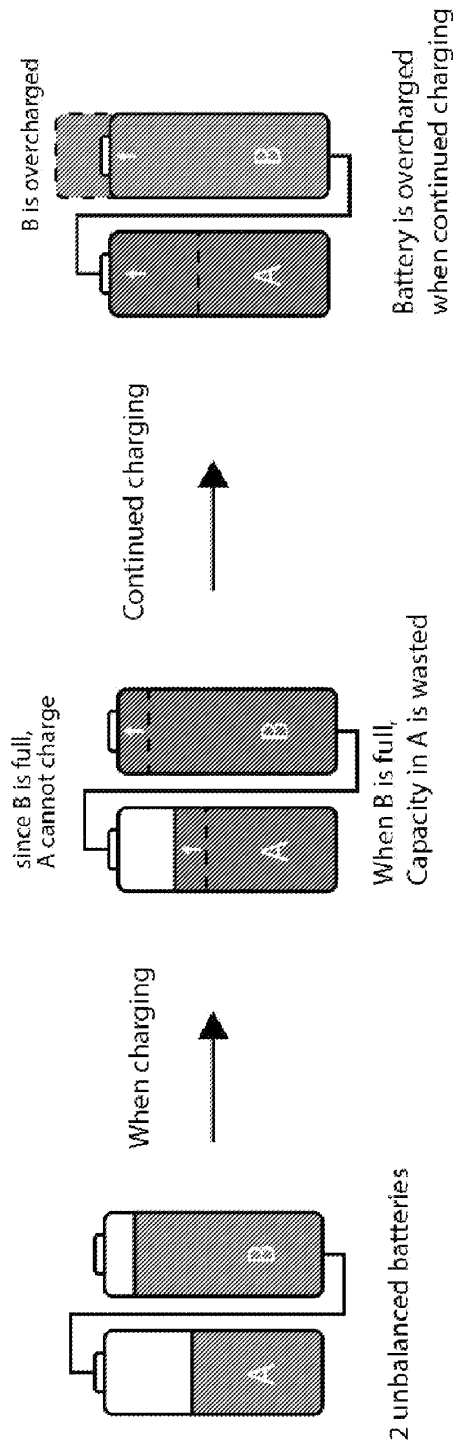


Fig. 1A illustrates problem faced by series-connected batteries during charging

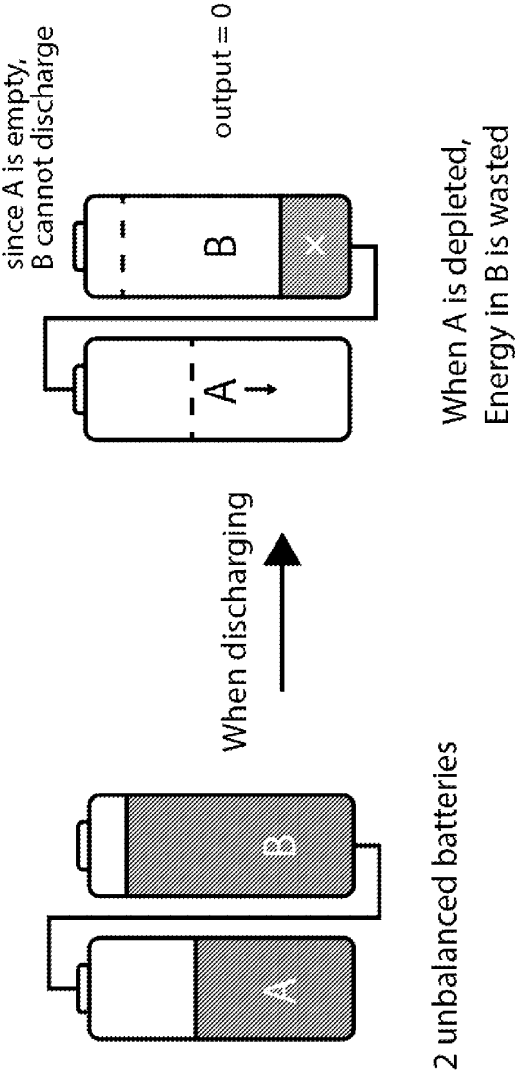


Fig. 1B illustrates problem faced by series-connected batteries during discharging

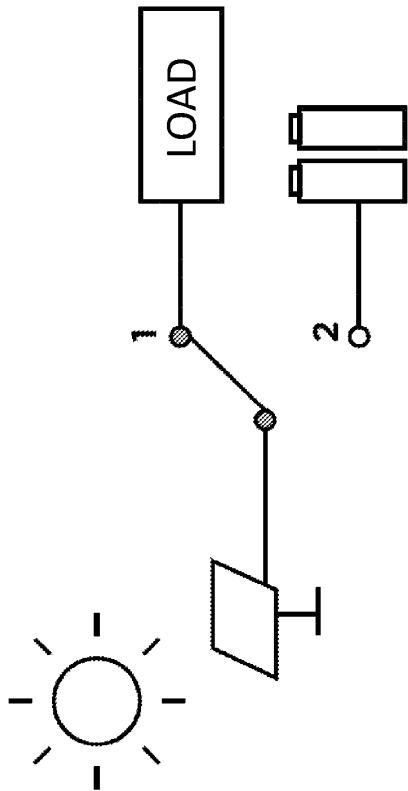


Fig. 2 is a prior art switch system illustration where the battery competes with the load

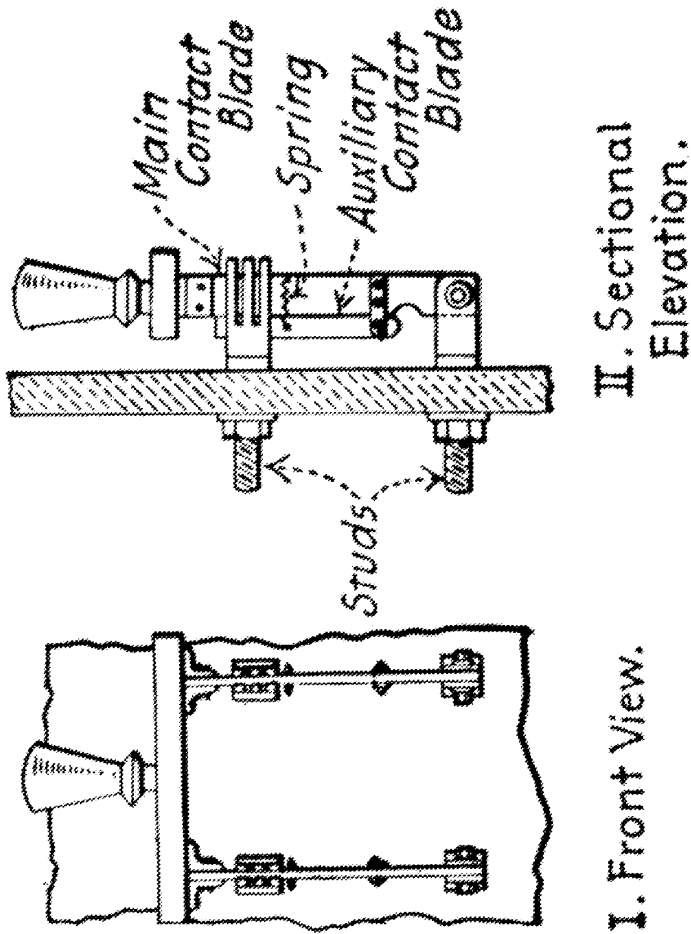


Fig. 3 is a prior art 'make or break' switch invented by Holmes.

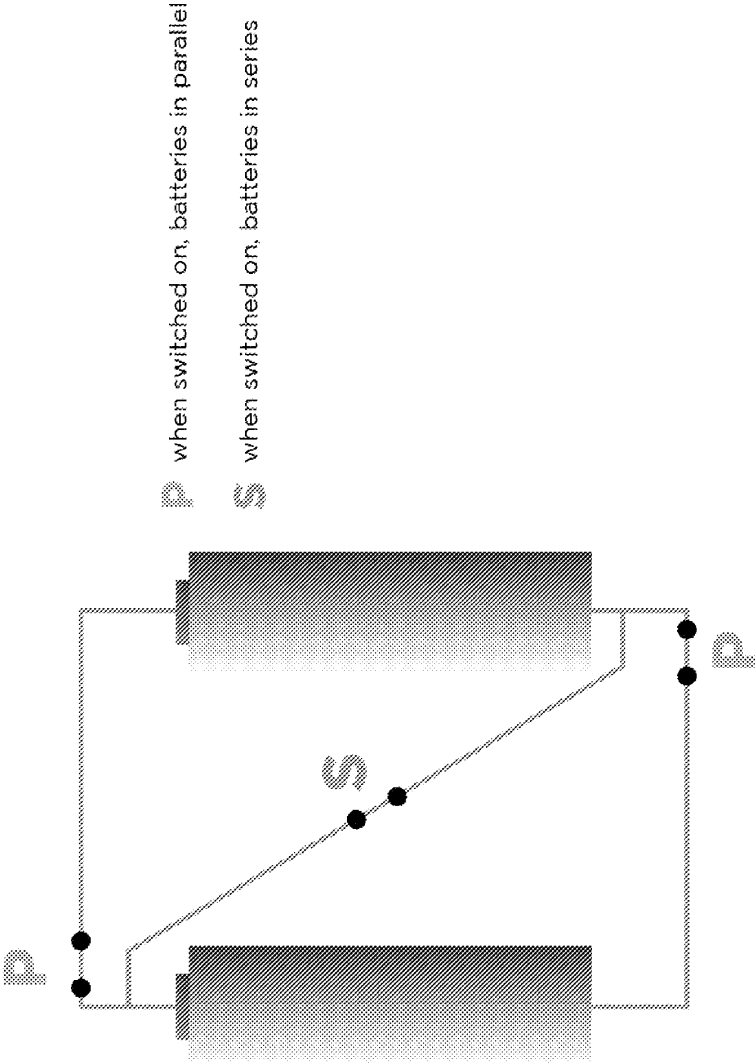


Fig. 4A illustrates switch used to isolate parallel and series circuits for 2-battery system

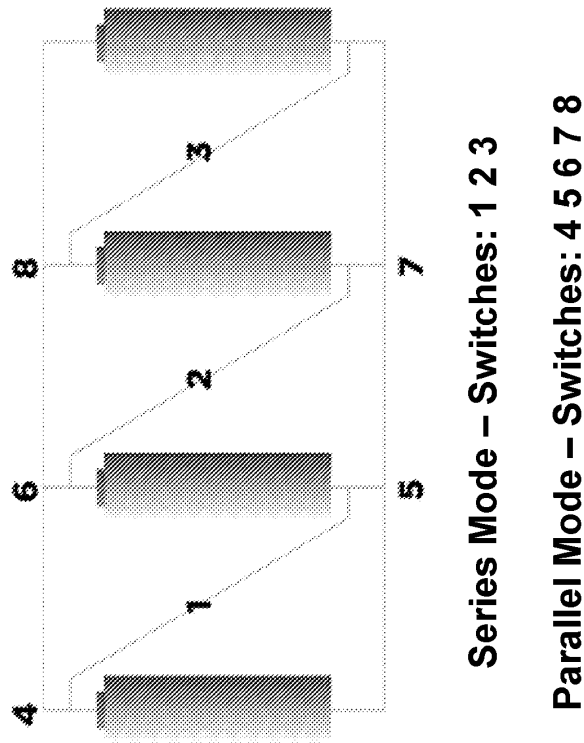


Fig. 4B illustrates switch used to isolate parallel and series circuits for 4-battery system

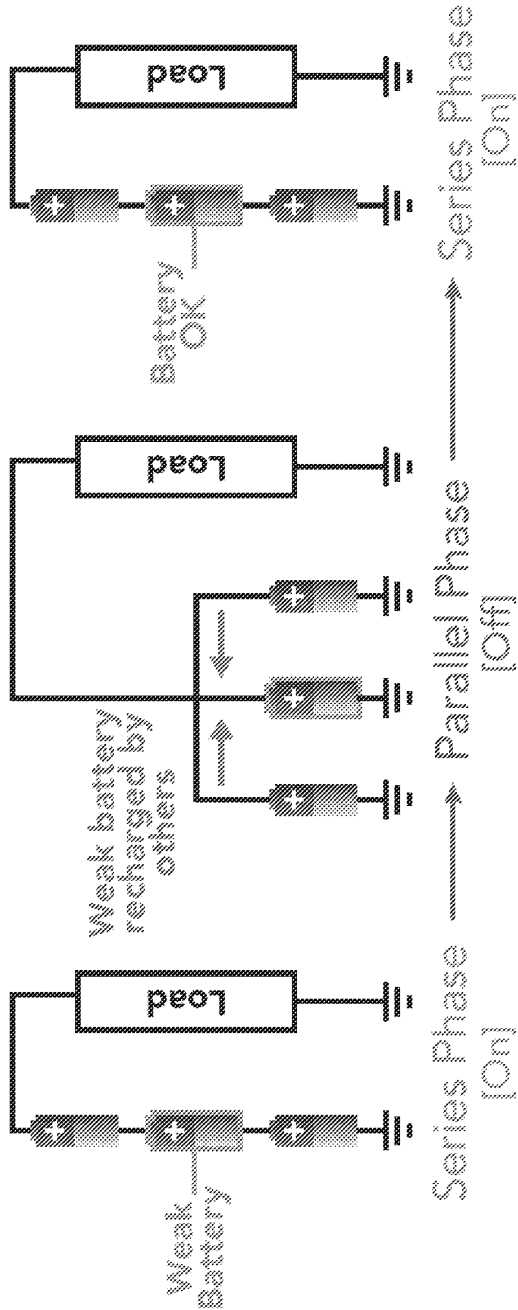


Fig. 5 illustrates the battery equalization process using the parallel phase

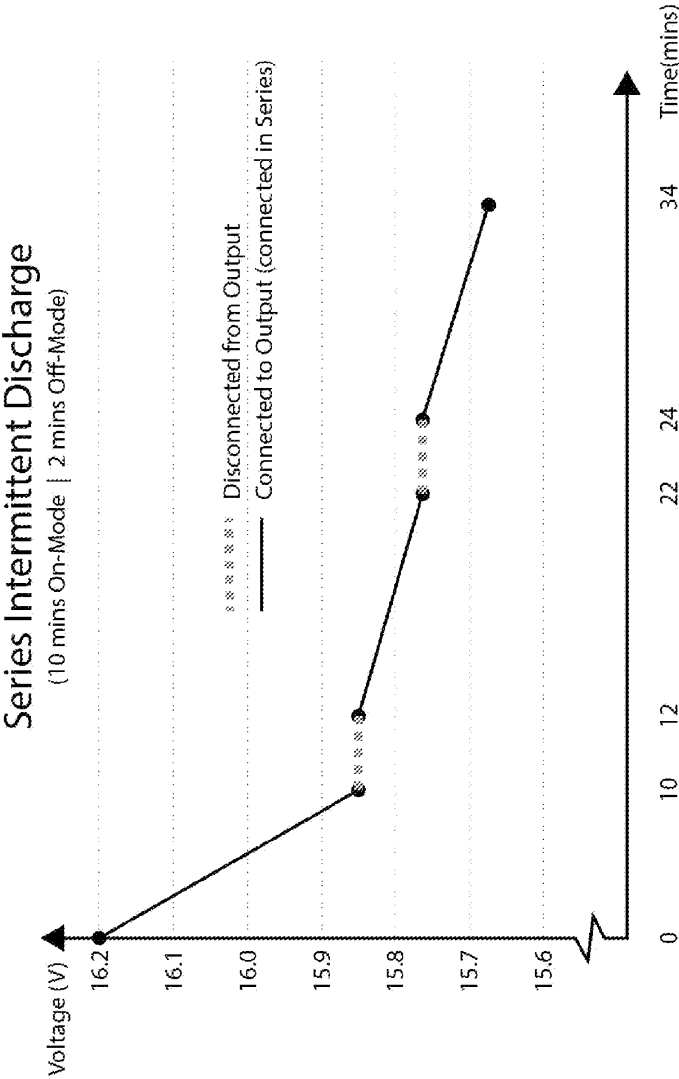


Fig. 6 illustrates intermittent discharge in series battery system

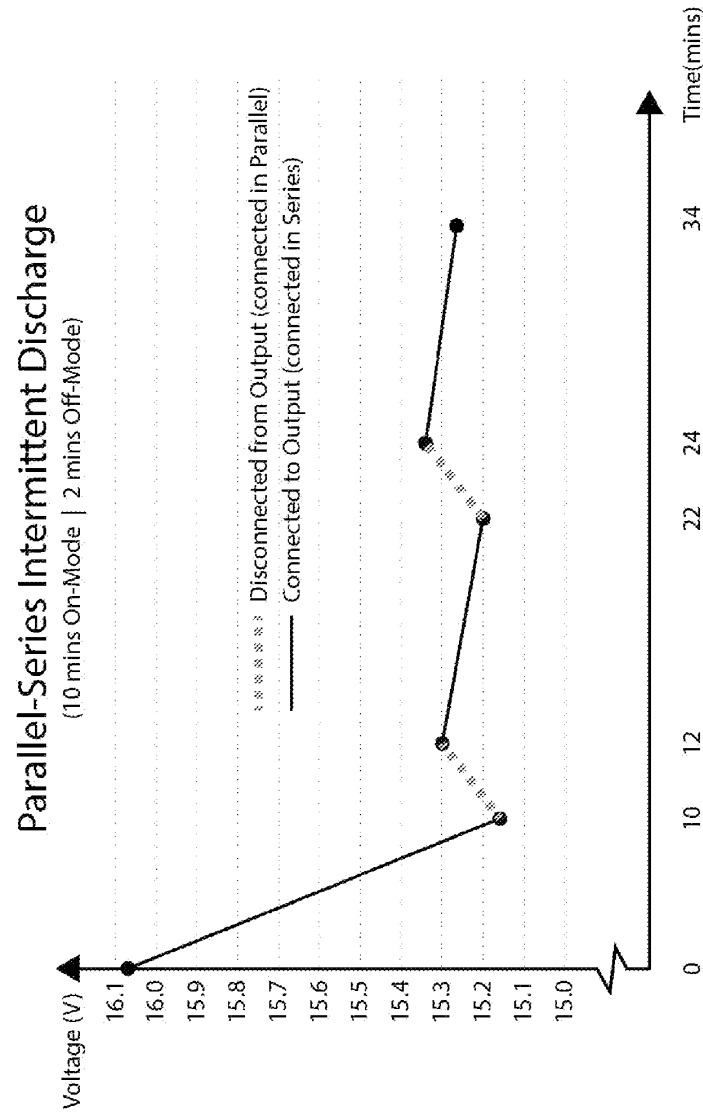


Fig. 7 illustrates intermittent switching to parallel in series connected battery system

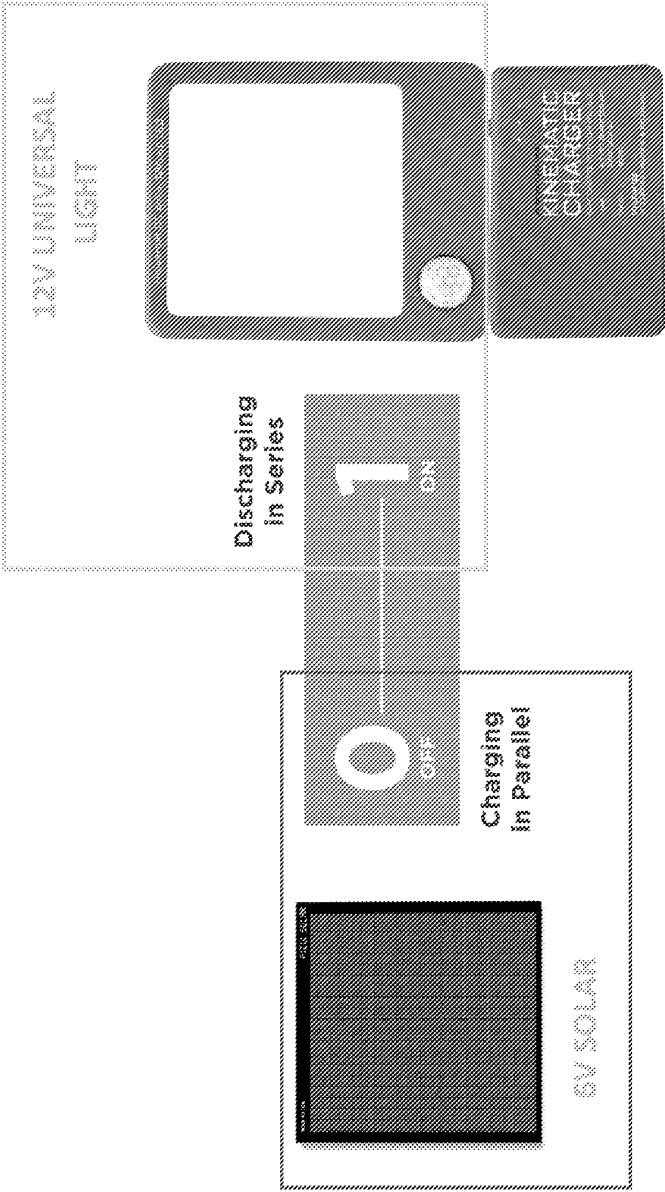


Fig. 8 illustrates an isolated load charging in parallel off-state

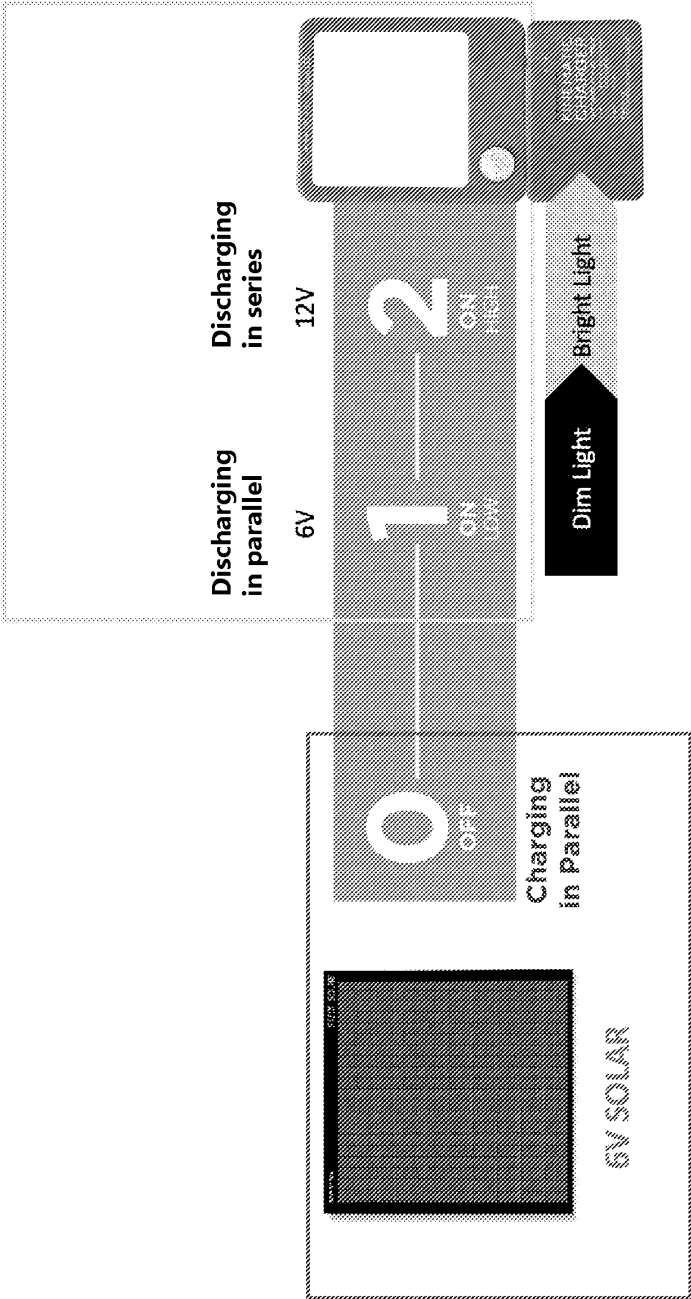


Fig. 9 illustrates a 3-state switching where parallel is used for low voltage

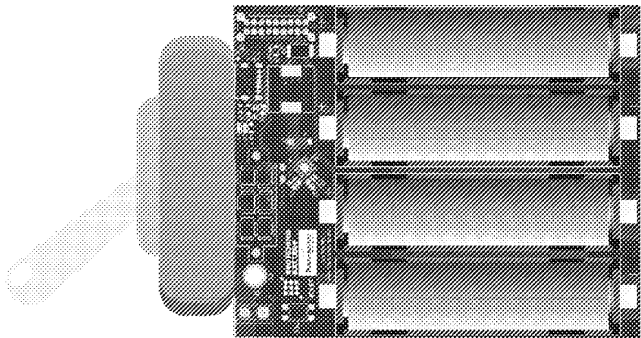
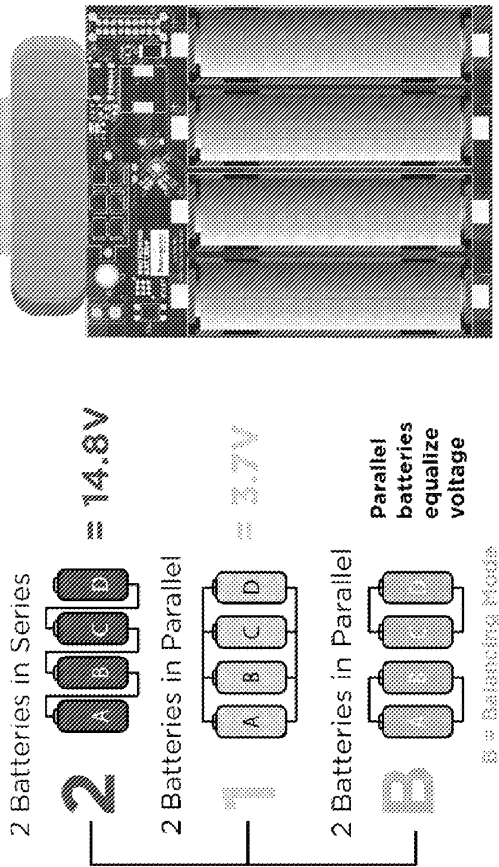


Fig. 10A illustrates 3-mode switch for 4-battery system

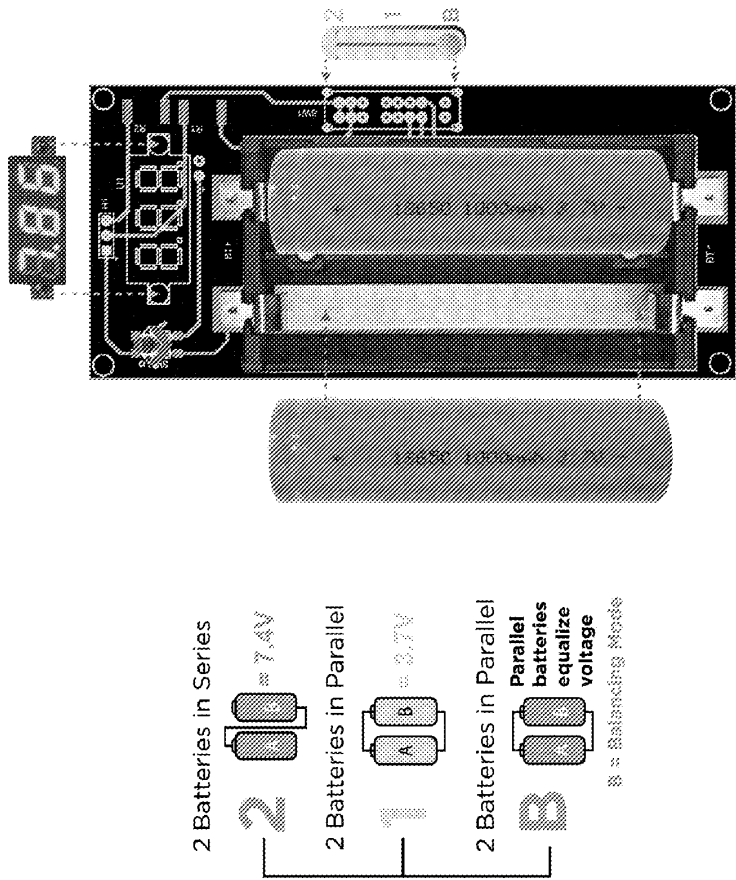


Fig. 10B illustrates 3-mode switch for 2-battery system

Charging Mode - 2 batteries in parallel

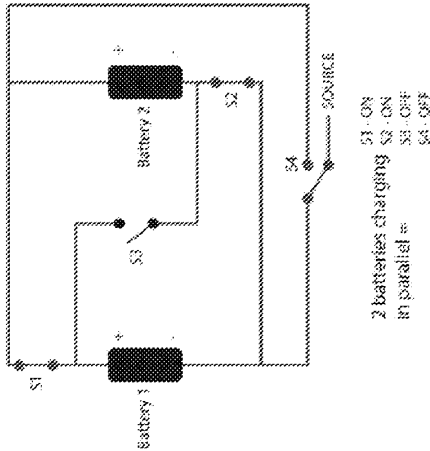


Fig. 11C

Off Mode - 2 batteries in parallel

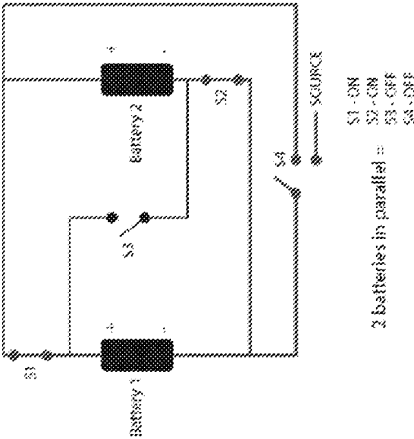


Fig. 11B

On Mode - 2 batteries in series

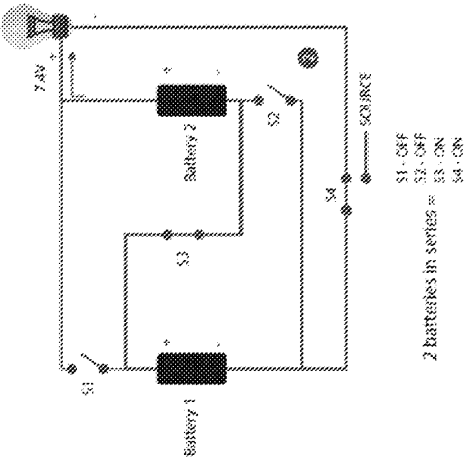


Fig. 11A

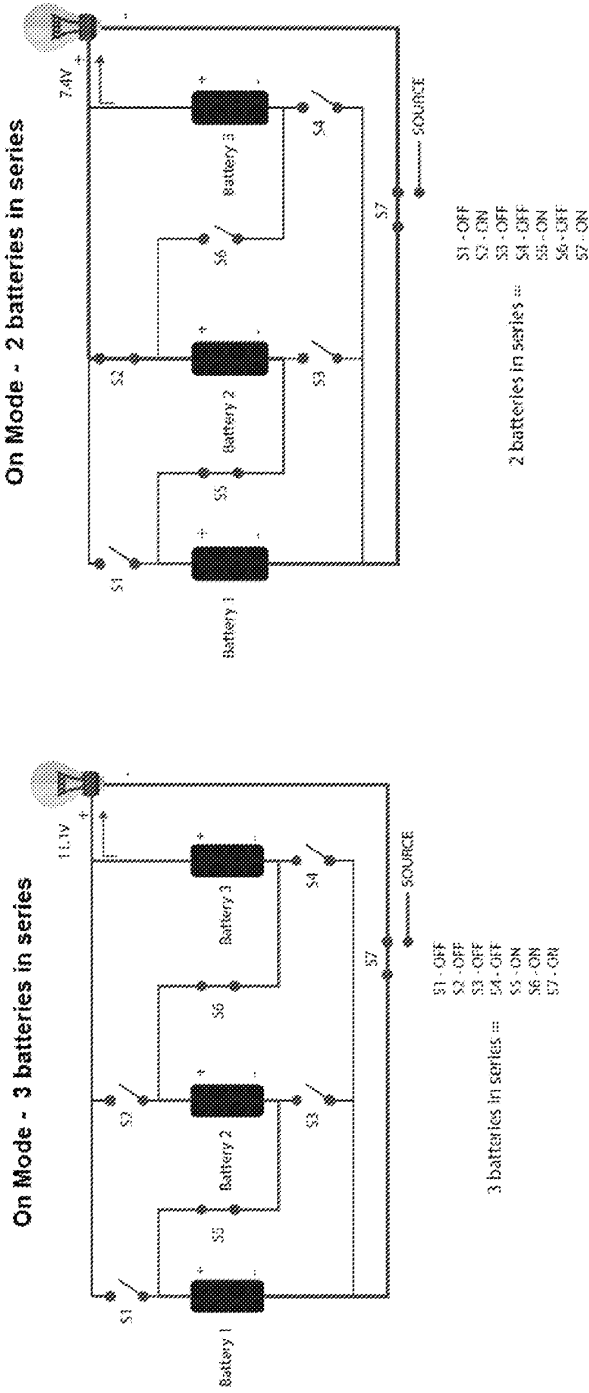


Fig. 12A

Fig. 12B

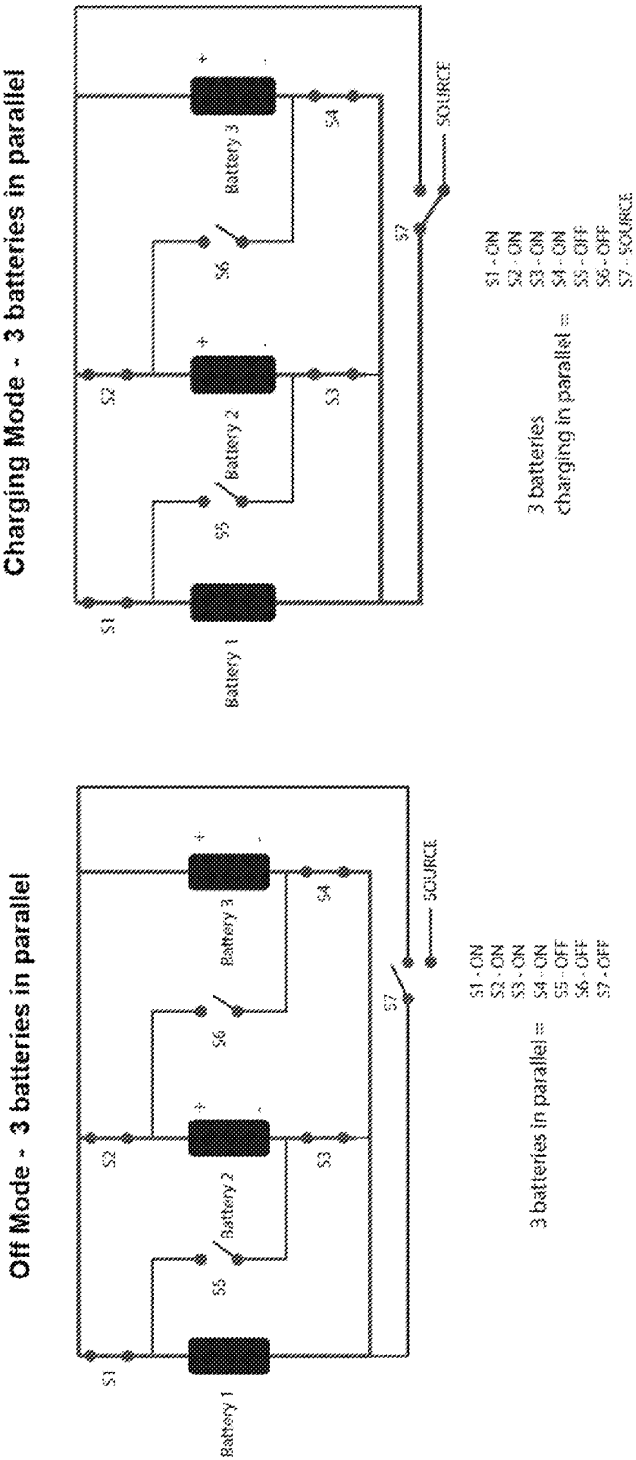


Fig. 12D

Fig. 12C

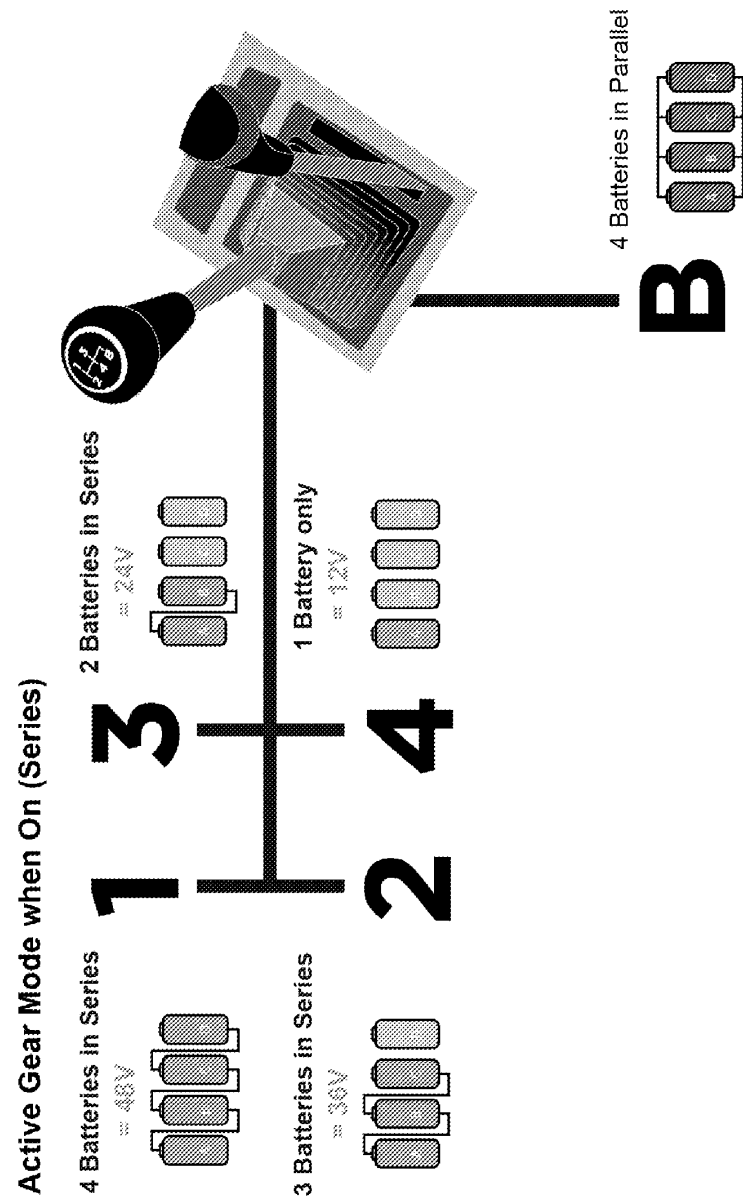


Fig. 13 illustrates a 4-gear mode system for BEV

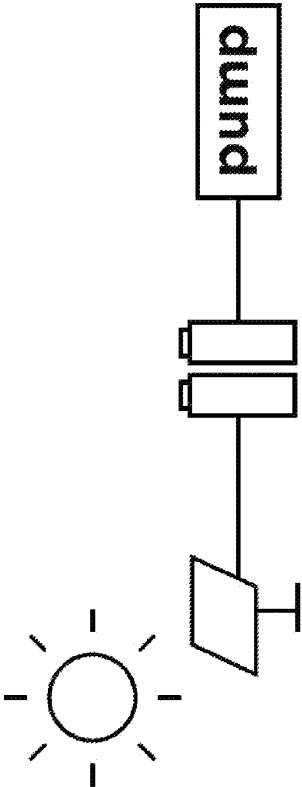


Fig. 14 Battery as Central Bank of entire energy system

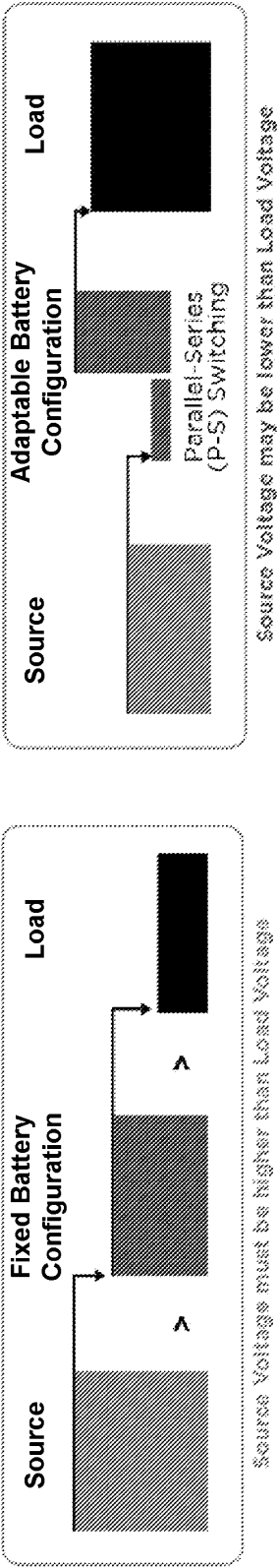


Fig. 15 shows that source voltage may be lower than load voltage

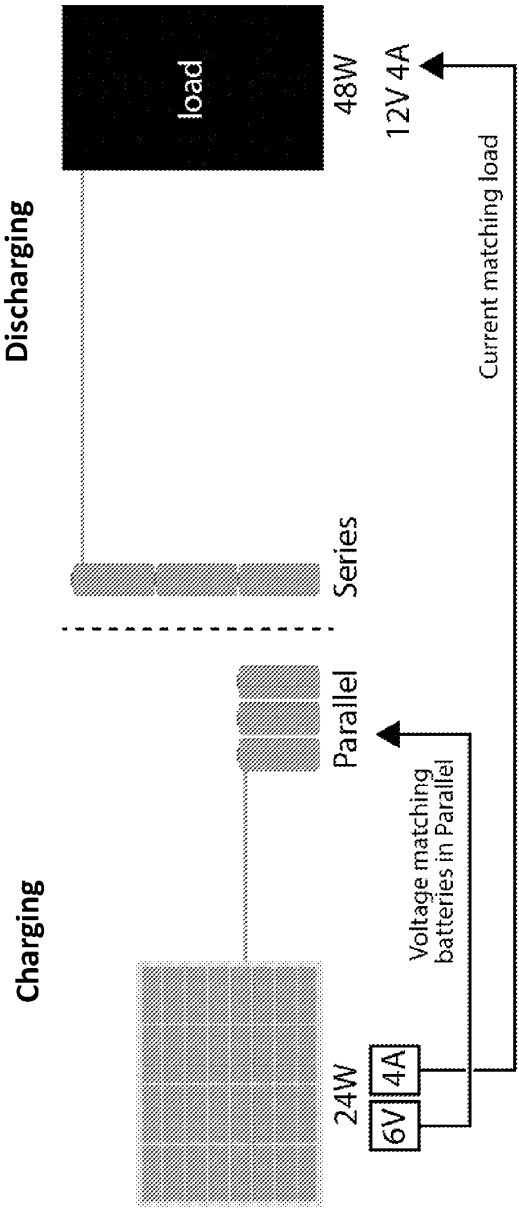


Fig. 16 The Kinematic Charger matches the current for the load

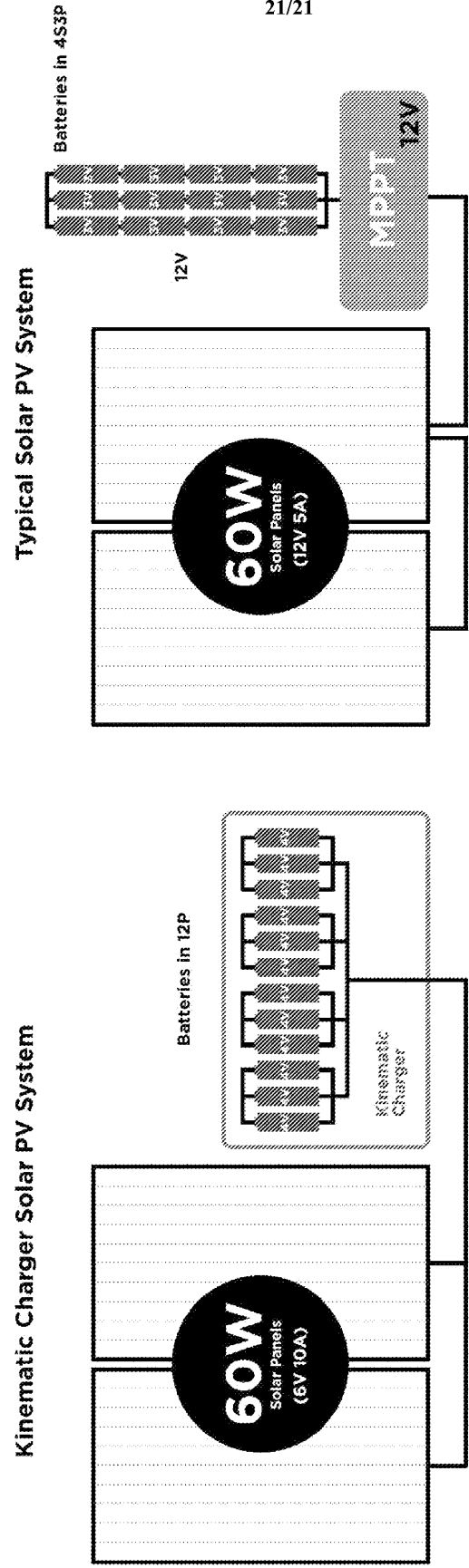


Fig. 17 experimental comparison of two solar panel systems of 60W