A cascaded three-phase symmetrical multistage Cockcroft-Walton voltage multiplier (CW-VM) is proposed in this report. It consists of three single-phase symmetrical voltage multipliers, which are connected in series at their smoothing columns like string of batteries and are driven by three-phase ac power source. The smoothing column of each voltage multiplier is charged twice every cycle independently by respective oscillating columns and discharged in series through load. The charging discharging process completes six times a cycle and therefore the output voltage ripple's frequency is of sixth order of the drive signal frequency. Thus the proposed approach eliminates the first five harmonic components of load generated voltage ripples and sixth harmonic is the major ripple component. The proposed cascaded three-phase symmetrical voltage multiplier has less than half the voltage ripple, and three times larger output voltage and output power than the conventional single-phase symmetrical CW-VM. Experimental and simulation results of the laboratory prototype are given to show the feasibility of proposed cascaded three-phase symmetrical CW-VM.