Rapid Charging System on the Electric Power Storage type

(International Patent Application: PCT/JP2008/000261)

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Tasks to solve toward popularization of Electric Vehicle (EV)

① EV operates advantageously for the improvement of global environment, but suffers from higher cost against gasoline automobiles(could be resolved within several years).

② EV is capable of covering less than 200 km for a charging, and difficult to assure reliable operation in the area with insufficient infrastructure for re-charging service(could be resolved within several years).

③ EV may suffer from long waiting time from the rapid charging system, CHAdeMO standard, taking some half an hour for an ordinary passenger car(difficult to resolve with existing technologies).

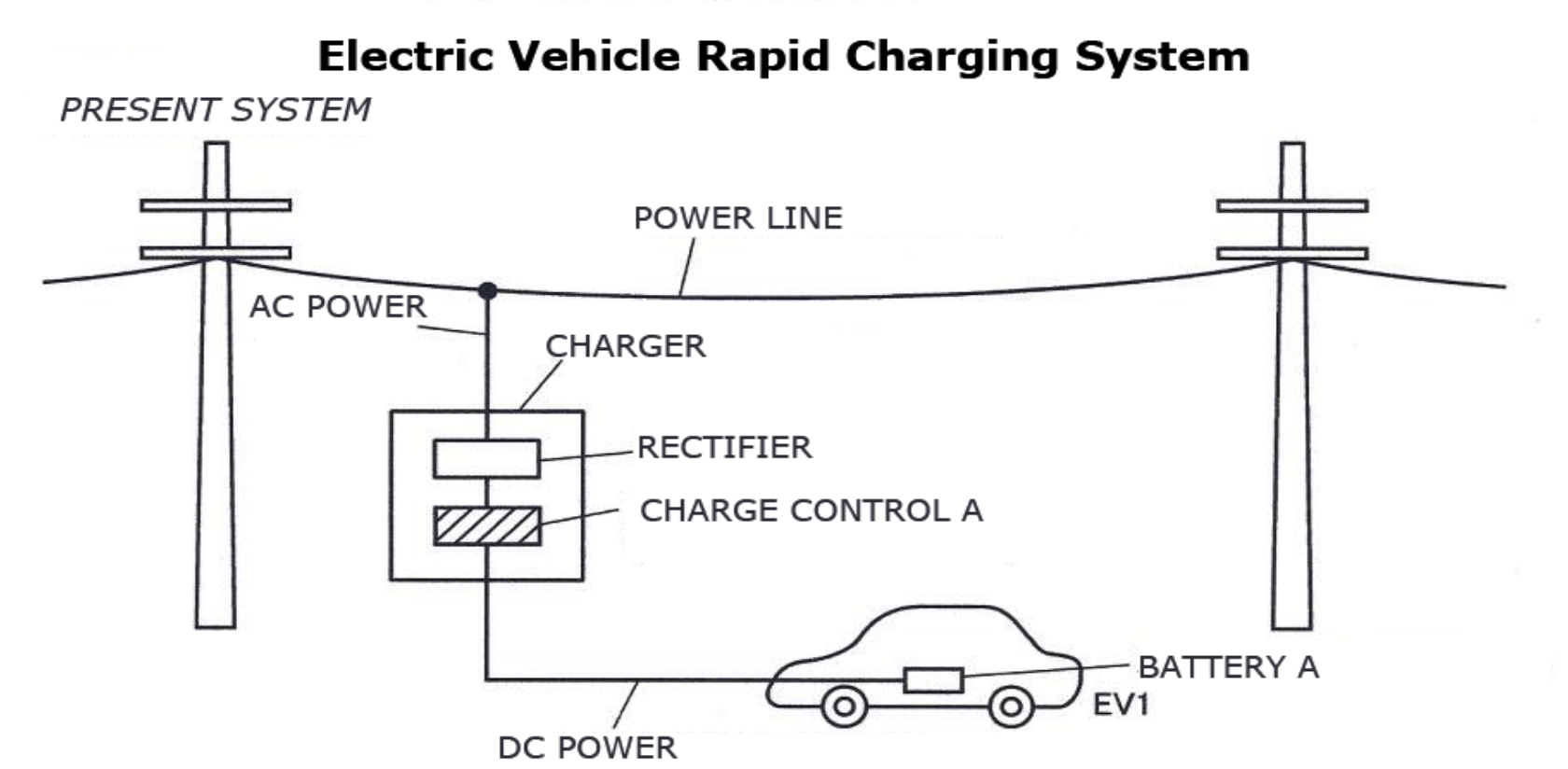
Technological tasks to solve toward reduction of charging time

① Batteries of EV may suffer performance deterioration when subjected to high-power rapid-charging, often with abnormal heat generation (an issue on EVs' side).this issue is being resolved from improvements in batteries.

② Concentration of electric power supply in large capacity for rapid charging of EVs may overload and disrupt the electric power transmission system . (power suppliers' issue)

③ According to the latest CHAdeMO system, a rapid charger is capable of charging only one EV at a time (issue against international standardization).

Conventional system for rapid charging of EV

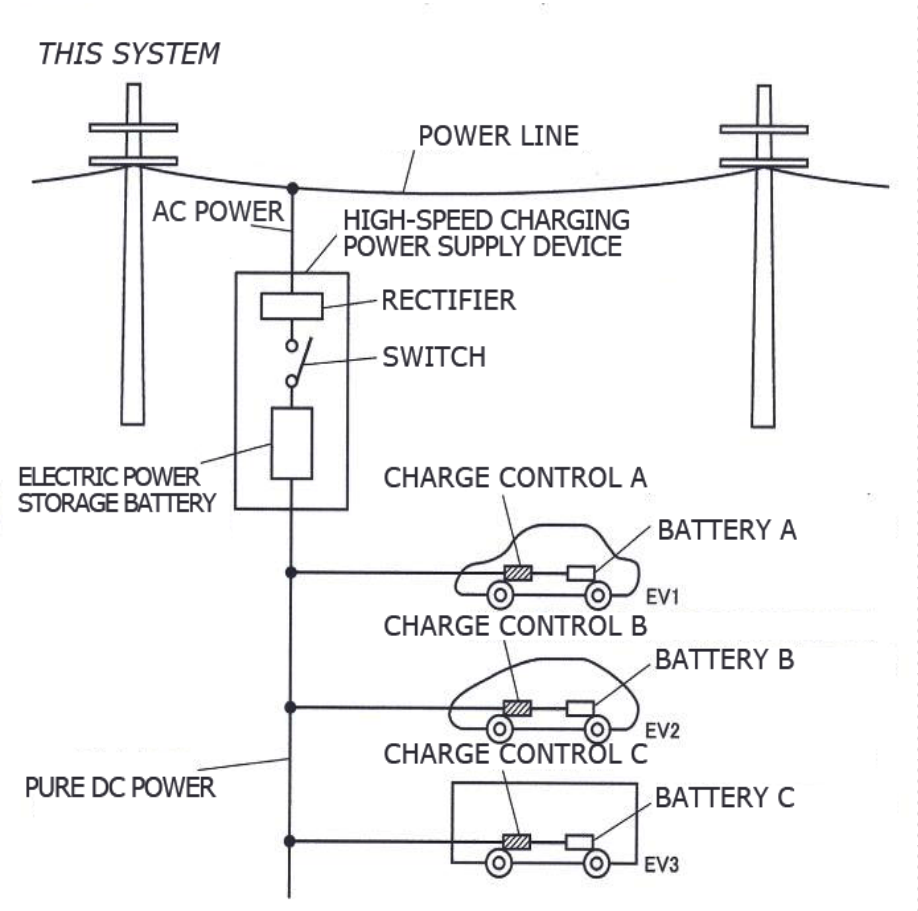


Rapid Charging System on the Electric Power Storage type (Patented)

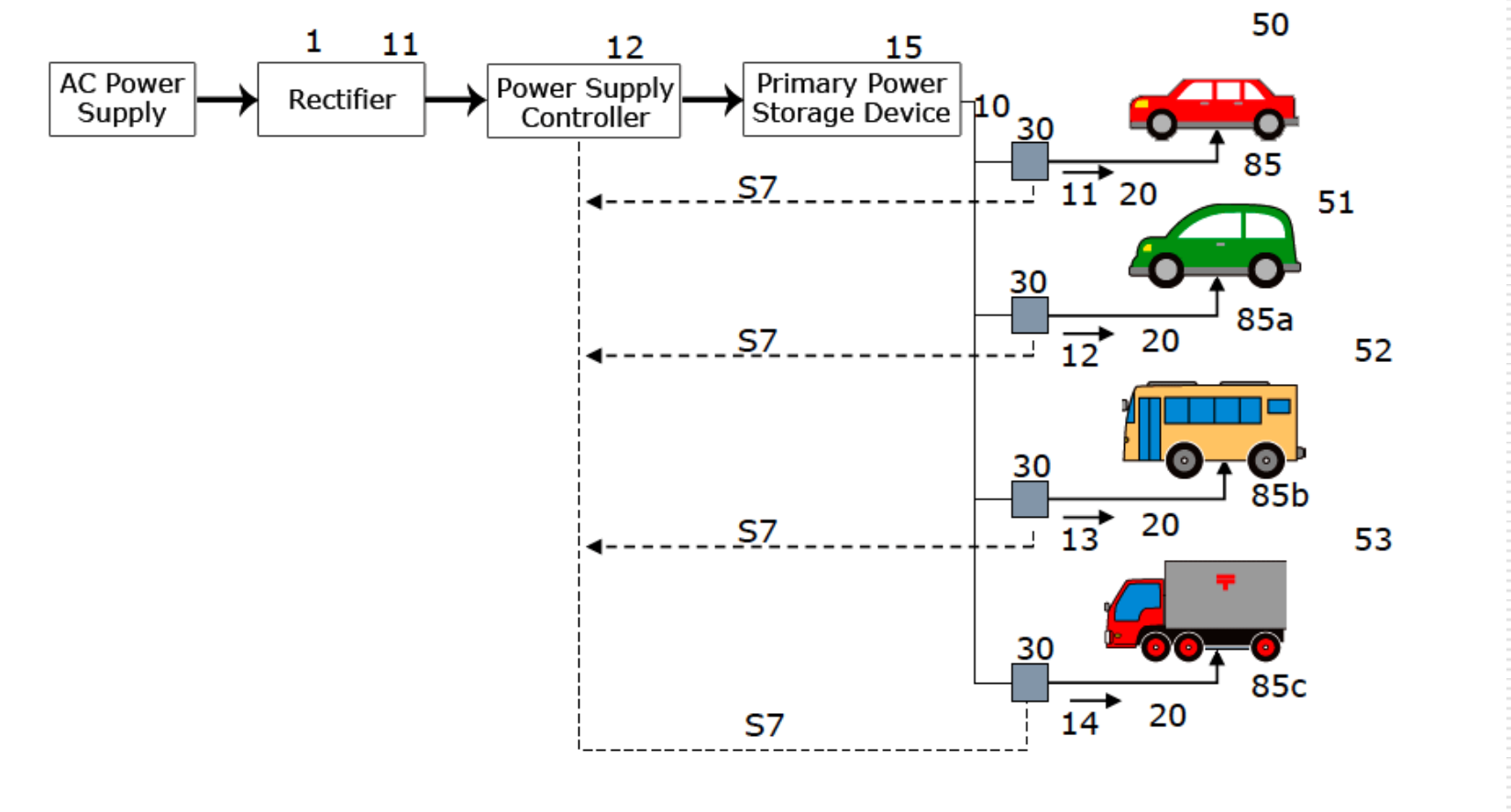
①Electric power is stored in large capacity batteries.

②Batteries are disconnected from power line before starting the charging process.

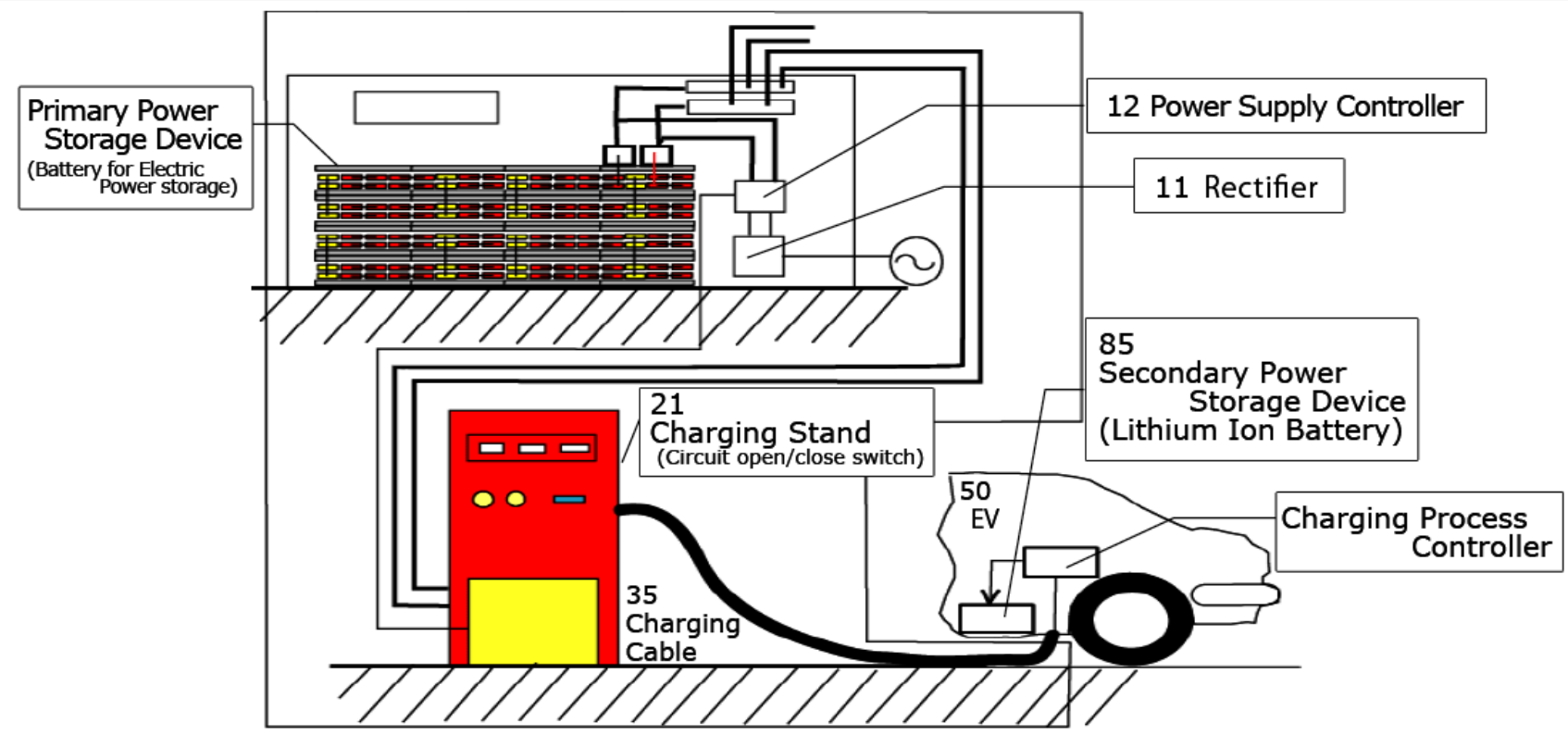
③Each EV is equipped with controller for rapid charging system.



Operation Scheme for Rapid Charging System on the Electric Power Storage type (1)



Operation Scheme for Rapid Charging System on the Electric Power Storage type (2)



Advantages for Introduction of Rapid Charging System

① Capable of fully charging large electric vehicles (such as EV buses) in about 5 minutes ; thus, waiting time for charging round can be significantly reduced.

② Capable of simultaneous rapid-charging of many EVs regardless of their battery types; thus, space and time utility is greatly improved.

③ Capable of storing large amount of electric power, has the ability to level the fluctuation of electric power supplies, such as solar cells and wind power generation, and facilitate large scale utilization of renewable energy sources.

Closing remarks

- This Rapid Charging System on Power Storage type is highly evaluated in mass media for its its high technological and economical potential.

①Presented in radio broadcasting

- TBS Dig Midnight
- FM Tokyo Frontiers – Challenge for Tomorrow
- FM Radio Very

②Presented in periodicals

- Best Car (Kohdansha)
- Dime (Shogakukan)
- Weekly Playboy (Shuei-sha)
- The Yomiuri Shimbun, San-Kei Business Eye

- **Thank you for your attention**