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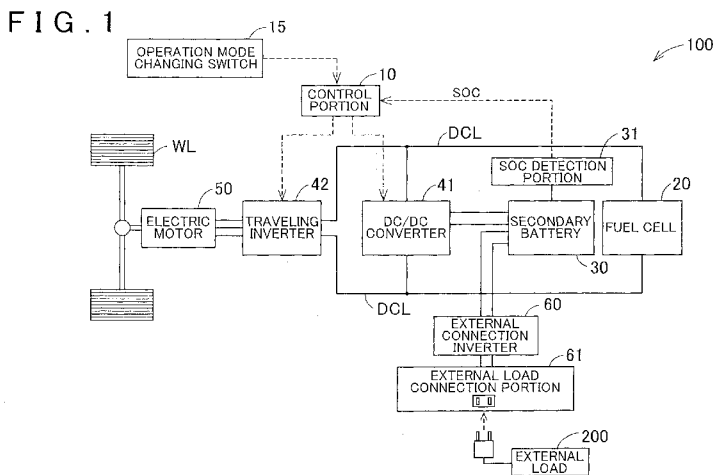
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MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ,
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(54) Title: VEHICLE INCLUDING SECONDARY BATTERY AND CONTROL METHOD FOR VEHICLE INCLUDING SEC-
ONDARY BATTERY



(57) Abstract: A vehicle including a secondary battery (30) includes an electricity generation device; an amount-of-stored electricity detection portion; an inverter (60) that converts electric power output from the secondary battery (30) into alternating-current power; an external load connection portion that connects an external load to the secondary battery (30) via the inverter (60); and a control portion (10) that controls charging/discharging of the secondary battery (30). The control portion (10) causes the electricity generation device to charge the secondary battery (30) based on a value detected by the amount-of-stored electricity detection portion such that the amount of electricity stored in the secondary battery (30) is in a predetermined range, and the control portion (10) performs a control such that when the electric power is supplied to the external load during stoppage of the vehicle, an upper limit value of the amount of stored electricity is different from the upper limit value during traveling of the vehicle.



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A. CLASSIFICATION OF SUBJECT MATTER
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ADD.
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B. FIELDS SEARCHED
Minimum documentation searched (classification system followed by classification symbols)
B60L H02J H02M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|--|-----------------------|
| X | JP 2008 245416 A (OSAKA GAS CO LTD) 9 October 2008 (2008-10-09) figures 1, 4 paragraph [0001] paragraph [0010] paragraph [0021] paragraph [0029] - paragraph [0038] paragraph [0042] - paragraph [0047] paragraph [0052] paragraph [0068] | 1,2,4-6 |
| X | JP 2002 315193 A (MITSUBISHI HEAVY IND LTD) 25 October 2002 (2002-10-25) figures 1, 2 paragraph [0005] - paragraph [0009] paragraph [0028] paragraph [0030] - paragraph [0035] paragraph [0040] - paragraph [0046] ----- -/-- | 1,2,6 |

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|--|--|-----------------------|
| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| A | JP 2010 173390 A (NISSAN MOTOR) 12 August 2010 (2010-08-12) abstract figures 1, 3, 5 paragraph [0002] paragraph [0016] - paragraph [0024] paragraph [0046] - paragraph [0047] paragraph [0030] paragraph [0056] ----- | 1,6 |

INTERNATIONAL SEARCH REPORT

Information on patent family members

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PCT/IB2012/002002

| Patent document cited in search report | | Publication date | Patent family member(s) | Publication date |
|---|---|---------------------|----------------------------|---------------------|
| JP 2008245416 | A | 09-10-2008 | JP 4976897 B2 | 18-07-2012 |
| | | | JP 2008245416 A | 09-10-2008 |
| ----- | | | | |
| JP 2002315193 | A | 25-10-2002 | JP 3758986 B2 | 22-03-2006 |
| | | | JP 2002315193 A | 25-10-2002 |
| ----- | | | | |
| JP 2010173390 | A | 12-08-2010 | NONE | |
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