

## CLASS 903, HYBRID ELECTRIC VEHICLES (HEVs)

### SECTION I - CLASS DEFINITION

#### CROSS-REFERENCE ART COLLECTIONS

This class includes arrangement or mounting of plural prime movers for mutual or common propulsion of a vehicle. This class includes specific HEV topologies, components, and arrangements of components specially adapted for HEVs, as well as controls of components specially adapted for HEVs.

This class was initially established as a result of a joint reclassification project of HEV technology completed by the Japanese Patent Office (JPO) and the European Patent Office (EPO). At the time of introduction, all U.S. documents in these subclasses were either classified directly by the EPO or JPO, or through family member processing of classified documents. The subclasses also contain foreign documents classified directly by these countries.

Since Class 903 was established, many of the related IPC subclasses were abolished. Additionally, some of the subclasses that had been in Class 903 when it was established were transferred to Class 180 in January 2009. The U.S. patents are updated with classifications assigned by U.S. examiners. Foreign patents for subclasses existing in the IPC are updated on a regular basis from the EPO and JPO databases.

#### CROSS-REFERENCE ART COLLECTIONS

### 902 PRIME MOVERS COMPRISING ELECTRICAL AND INTERNAL COMBUSTION MOTORS (EPO/JPO):

Subject matter under the Class Definition wherein one prime mover comprises a motor that converts electrical energy to mechanical work and a second prime mover that comprises a chamber wherein combustible material is burned and the heat energy thus developed is converted into work.

### 903 Having energy storing means (e.g., battery, capacitor) (EPO/JPO):

Subject matter under cross-reference art collection 902 is substantially the same in scope as ECLA classification B60K6/04 and FI classification B60K 6/04.

### 904 Component specially adapted for HEV (EPO/JPO):

Subject matter under cross-reference art collection 903 is substantially the same in scope as ECLA classification B60K6/04B, and FI classification B60K 6/04,100.

### 905 Combustion engine (EPO/JPO):

Subject matter under cross-reference art collection 904 is substantially the same in scope as ECLA classification B60K6/04B2 and FI classification B60K 6/04,110.

### 906 Motor or generator (EPO/JPO):

Subject matter under cross-reference art collection 904 is substantially the same in scope as ECLA classification B60K6/04B4 and FI classification B60K 6/04, 120.

### 907 Electricity storage (e.g., battery, capacitor) (EPO/JPO):

Subject matter under cross-reference art collection 904 is substantially the same in scope as ECLA classification B60K6/04B6 and FI classification B60K 6/04,130.

### 908 Fuel cell (EPO/JPO):

Subject matter under cross-reference art collection 904 is substantially the same in scope as ECLA classification B60K6/04B8 and FI classification B60K 6/04, 140.

### 909 Gearing (EPO/JPO):

Subject matter under cross-reference art collection 904 is substantially the same in scope as ECLA classification B60K6/04B10 and FI classification B60K 6/04,150.

### 910 Orbital (e.g., planetary gears) (EPO/JPO):

Subject matter under cross-reference art collection 909 is substantially the same in scope as ECLA classification B60K6/04B10B and FI classification B60K 6/04, 151.

### 911 With two or more gear sets (EPO/JPO):

Subject matter under cross-reference art collection 910 is substantially the same in scope as ECLA classification B60K6/04B10B and FI classification B60K 6/04, 151.

### 912 Drive line clutch (EPO/JPO):

Subject matter under cross-reference art collection 904 is substantially the same in scope as

- ECLA classification B60K6/04B12 and FI classification B60K 6/04, 160.
- 913 One way (EPO/JPO):**  
Subject matter under cross-reference art collection 912 is substantially the same in scope as ECLA classification B60K6/04B12B and FI classification B60K 6/04, 161
- 914 Actuated (e.g., engaged or disengaged by electrical, hydraulic or mechanical means) (EPO/JPO):**  
Subject matter under cross-reference art collection 912 is substantially the same in scope as ECLA classification B60K6/04B12D and FI classification B60K 6/04, 163.
- 915 Specific drive or transmission adapted for HEV (EPO/JPO):**  
Subject matter under cross-reference art collection 904 is substantially the same in scope as ECLA classification B60K6/04T and FI classification B60K 6/04, 700.
- 916 With plurality of drive axles (EPO/JPO):**  
Subject matter under cross-reference art collection 915 is substantially the same in scope as ECLA classification B60K6/04T2 and FI classification B60K 6/04, 710.
- 917 With transmission for changing gear ratio (EPO/JPO):**  
Subject matter under cross-reference art collection 915 is substantially the same in scope as ECLA classification B60K6/04T4 and FI classification B60K 6/04, 730.
- 918 Continuously variable (EPO/JPO):**  
Subject matter under cross-reference art collection 917 is substantially the same in scope as ECLA classification B60K6/04T4C and FI classification B60K 6/04, 731.
- 919 Stepped shift (EPO/JPO):**  
Subject matter under cross-reference art collection 917 is substantially the same in scope as ECLA classification B60K6/04T4S and FI classification B60K 6/04, 733.
- 930 Conjoint control of different elements (EPO/JPO):**  
Subject matter under cross-reference art collection 903 is substantially the same in scope as
- ECLA classification B60K6/04F and FI classification B60K 6/04, 400.
- 944 Characterized by control of fuel cell (EPO/JPO):**  
Subject matter under cross-reference art collection 903 is substantially the same in scope as ECLA classification B60K6/04D8 and FI classification B60K 6/04, 340.
- 945 Characterized by control of gearing (e.g., control of transmission ratio) (EPO/JPO):**  
Subject matter under cross-reference art collection 903 is substantially the same in scope as ECLA classification B60K6/04D10 and FI classification B60K 6/04, 350.
- 946 Characterized by control of driveline clutch (EPO/JPO):**  
Subject matter under cross-reference art collection 903 is substantially the same in scope as ECLA classification B60K6/04D12 and FI classification B60K 6/04, 360.
- 947 Characterized by control of braking (e.g., blending of regeneration, friction braking) (EPO/JPO):**  
Subject matter under cross-reference art collection 903 is substantially the same in scope as ECLA classification B60K6/04D14 and FI classification B60K 6/04, 370.
- 951 Assembly or relative location of components (EPO/JPO):**  
Subject matter under cross-reference art collection 903 is substantially the same in scope as ECLA classification B60K6/04B14 and FI classification B60K 6/04, 170.
- 952 Housing details (EPO/JPO):**  
Subject matter under cross-reference art collection 903 is substantially the same in scope as ECLA classification B60K6/04B14B and FI classification B60K 6/04, 171.
- 960 Having chargeable mechanical accumulator (EPO/JPO):**  
Subject matter under cross-reference art collection 903 is substantially the same in scope as ECLA classification B60K6/06 and FI classification B60K 6/06.
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