

CPC COOPERATIVE PATENT CLASSIFICATION

B PERFORMING OPERATIONS; TRANSPORTING

(NOTES omitted)

TRANSPORTING

B60 VEHICLES IN GENERAL

(NOTE omitted)

B60K ARRANGEMENT OR MOUNTING OF PROPULSION UNITS OR OF TRANSMISSIONS IN VEHICLES; ARRANGEMENT OR MOUNTING OF PLURAL DIVERSE PRIME-MOVERS IN VEHICLES; AUXILIARY DRIVES FOR VEHICLES; INSTRUMENTATION OR DASHBOARDS FOR VEHICLES; ARRANGEMENTS IN CONNECTION WITH COOLING, AIR INTAKE, GAS EXHAUST OR FUEL SUPPLY OF PROPULSION UNITS IN VEHICLES

NOTES

1. In this subclass, the following terms or expressions are used with the meanings indicated:
 - "auxiliary drives" means drives of auxiliary or external machines or devices from the propulsion unit, transmission, or other parts of the vehicle, and includes the control of such drives;
 - "transmission" means all propulsion parts linking propulsion units, e.g. engines, to ultimate propulsive elements, e.g. wheels.
2. Attention is drawn to the Note following the title of class [B60](#)

Arrangement or mounting of propulsion units in vehicles

1/00	Arrangement or mounting of electrical propulsion units (B60K 7/00 takes precedence; arrangement or mounting of plural diverse prime-movers for mutual or common propulsion B60K 6/00)
2001/001	• {one motor mounted on a propulsion axle for rotating right and left wheels of this axle}
2001/003	• {with means for cooling the electrical propulsion units}
2001/005	• . {the electric storage means}
2001/006	• . {the electric motors}
2001/008	• {with means for heating the electrical propulsion units}
1/02	• comprising more than one electric motor
1/04	• of the electric storage means for propulsion
2001/0405	• . {characterised by their position}
2001/0411	• . . {Arrangement in the front part of the vehicle}
2001/0416	• . . {Arrangement in the rear part of the vehicle}
2001/0422	• . . {Arrangement under the front seats}
2001/0427	• . . {Arrangement between the seats}
2001/0433	• . . {Arrangement under the rear seats}
2001/0438	• . . {Arrangement under the floor}
2001/0444	• . . {Arrangement on a trailer}
2001/045	• . . {Arrangement in a wheel, e.g. a spare wheel}
2001/0455	• . {Removal or replacement of the energy storages}
2001/0461	• . . {from the side}
2001/0466	• . . {from above}
2001/0472	• . . {from below}
2001/0477	• . . {from the back}
2001/0483	• . . {from the front}
2001/0488	• . . {with arrangements for pivoting}
2001/0494	• . . {with arrangements for sliding}

3/00

Arrangement or mounting of steam or gaseous-pressure propulsion units ([B60K 7/00](#) takes precedence; arrangement or mounting of plural diverse prime-movers for mutual or common propulsion [B60K 6/00](#))

- 3/02 • of piston type
- 3/04 • of turbine type

5/00

Arrangement or mounting of internal-combustion or jet-propulsion units ([B60K 7/00](#) takes precedence; arrangement or mounting of plural diverse prime-movers for mutual or common propulsion [B60K 6/00](#))

2005/003	• {the internal combustion or jet propulsion unit is arranged between the front and the rear axle}
2005/006	• {the internal combustion or jet propulsion unit is arranged behind the rear axle}
5/02	• with the engine main axis, e.g. crankshaft axis, substantially in or parallel to the longitudinal centre line of the vehicle
5/04	• with the engine main axis, e.g. crankshaft axis, transversely to the longitudinal centre line of the vehicle
5/06	• . with the engine main axis substantially vertical
5/08	• comprising more than one engine
5/10	• providing for ready detachment of engine
5/12	• Arrangement of engine supports
5/1208	• . {Resilient supports (B60K 5/1241 - B60K 5/1291 take precedence)}
5/1216	• . . {characterised by the location of the supports relative to the motor or to each other (B60K 5/1225 takes precedence)}
5/1225	• . . {comprising resilient rings surrounding a part of the unit}

5/1233	. . . {comprising protective elements, e.g. for protecting against heat, dust}	6/26	. . . characterised by the motors or the generators
5/1241	. . {Link-type support (B60K 5/125, B60K 5/1275 take precedence)}	2006/262	. . . . {the motor or generator are used as clutch, e.g. between engine and driveshaft}
5/125	. . {Telescopic supports, e.g. telescopic dampers (B60K 5/1275 takes precedence)}	2006/264	. . . . {with outer rotor and inner stator}
5/1258	. . {Wire-type supports (B60K 5/1275 takes precedence)}	2006/266	. . . . {with two coaxial motors or generators}
5/1266	. . {Supports comprising friction damping devices (B60K 5/125, B60K 5/1283 take precedence)}	2006/268	. . . . {Electric drive motor starts the engine, i.e. used as starter motor}
5/1275	. . {Plastically deformable supports}	6/28	. . . characterised by the electric energy storing means, e.g. batteries or capacitors
5/1283	. . {Adjustable supports, e.g. the mounting or the characteristics being adjustable}	6/30	. . . characterised by chargeable mechanical accumulators, e.g. flywheels
5/1291	. . {Supports comprising stoppers}	6/32	. . . characterised by the fuel cells
6/00	Arrangement or mounting of plural diverse prime-movers for mutual or common propulsion, e.g. hybrid propulsion systems comprising electric motors and internal combustion engines	6/34	. . . characterised by the absence of energy storing means
NOTE		6/36	. . . characterised by the transmission gearings
In this subgroup, the following expressions are used, with the meanings indicated:		6/365	. . . . with the gears having orbital motion
<ul style="list-style-type: none"> "prime-mover" means a propulsion unit or source of motive power providing a mechanical output, e.g. via a rotating shaft; "hybrid electric vehicle" [HEV] means a vehicle having an electric prime-mover and a combustion engine, in which the electrical prime-mover and the combustion engine either singly or in combination, drive the ultimate propulsive elements, e.g. wheels; "energy storing means" means apparatus for storing propulsive energy and providing stored energy to drive the prime mover or the ultimate propulsive elements, e.g. wheels; "motor-generator" means an electric machine, such as a motor or a generator, or a mechanical combination thereof, which can provide positive mechanical output force or torque and which can function at other times as an electric generator. 		6/38	. . . characterised by the driveline clutches (shift clutches within the gearing or transmission B60K 6/36)
6/08	. Prime-movers comprising combustion engines and mechanical or fluid energy storing means	2006/381	. . . . {characterized by driveline brakes}
6/10	. . by means of a chargeable mechanical accumulator, e.g. flywheel	6/383	. . . . One-way clutches or freewheel devices
6/105	. . . {the accumulator being a flywheel}	6/387	. . . . Actuated clutches, i.e. clutches engaged or disengaged by electric, hydraulic or mechanical actuating means
6/12	. . by means of a chargeable fluidic accumulator	6/40	. . . characterised by the assembly or relative disposition of components
2006/123	. . . {for driving pneumatic motors}	6/405	. . . . Housings
2006/126	. . . {the hydraulic accumulator starts the engine}	6/42	. . characterised by the architecture of the hybrid electric vehicle
6/20	. the prime-movers consisting of electric motors and internal combustion engines, e.g. HEVs	6/44	. . . Series-parallel type
NOTE		6/442	. . . . Series-parallel switching type
When classifying in one of groups B60K 6/22, B60K 6/42 or B60K 6/50, further technical information, which is considered to represent information of interest for search, should also be classified in the other subgroups of main group B60K 6/00 to enable searching using a combination of classification symbols		6/445	. . . . Differential gearing distribution type
6/22	. . characterised by apparatus, components or means specially adapted for HEVs	6/448	. . . . Electrical distribution type
6/24	. . . characterised by the combustion engines	6/46	. . . Series type
		6/48	. . . Parallel type
		2006/4808	. . . . {Electric machine connected or connectable to gearbox output shaft}
		2006/4816	. . . . {Electric machine connected or connectable to gearbox internal shaft}
		2006/4825	. . . . {Electric machine connected or connectable to gearbox input shaft}
		2006/4833	. . . . {Step up or reduction gearing driving generator, e.g. to operate generator in most efficient speed range}
		2006/4841	. . . . . {the gear provides shifting between multiple ratios}
		6/485	. . . . Motor-assist type
		6/50	. . Architecture of the driveline characterised by arrangement or kind of transmission units
		6/52	. . . Driving a plurality of drive axles, e.g. four-wheel drive
		6/54	. . . Transmission for changing ratio
		2006/541	. . . . {without reverse ratio using instead electric reversing}
		2006/542	. . . . {with overdrive ratio}
		6/543	. . . . the transmission being a continuously variable transmission
		6/547	. . . . the transmission being a stepped gearing
		7/00	Disposition of motor in, or adjacent to, traction wheel
		7/0007	. {the motor being electric}
		7/0015	. {the motor being hydraulic}
		7/0023	. {the motor being pneumatic}

- 2007/003 . {with two or more motors driving a single wheel}
- 2007/0038 . {the motor moving together with the wheel axle}
- 2007/0046 . {the motor moving together with the vehicle body, i.e. moving independently from the wheel axle}
- 2007/0053 . {the motor moving relative to the vehicle body and to the wheel axle}
- 2007/0061 . {the motor axle being parallel to the wheel axle}
- 2007/0069 . {the motor axle being perpendicular to the wheel axle}
- 2007/0076 . . {the motor axle being horizontal}
- 2007/0084 . . {the motor axle being vertical}
- 2007/0092 . {the motor axle being coaxial to the wheel axle}

8/00 Arrangement or mounting of propulsion units not provided for in one of main groups B60K 1/00 - B60K 7/00

Arrangements in connection with cooling, air intake, gas exhaust, fuel supply, or power supply of propulsion units in vehicles

- 11/00 Arrangement in connection with cooling of propulsion units**
 - 11/02 . with liquid cooling
 - 11/04 . . Arrangement or mounting of radiators, radiator shutters, or radiator blinds
 - 11/06 . with air cooling
 - 11/08 . Air inlets for cooling; Shutters or blinds therefor
 - 11/085 . . {with adjustable shutters or blinds}
- 13/00 Arrangement in connection with combustion air intake or gas exhaust of propulsion units**
 - 13/02 . concerning intake
 - 13/04 . concerning exhaust
 - 13/06 . using structural parts of the vehicle as ducts, e.g. frame parts
- 15/00 Arrangement in connection with fuel supply of combustion engines {or other fuel consuming energy converters, e.g. fuel cells}; Mounting or construction of fuel tanks**
 - 15/01 . Arrangement of fuel conduits
 - 15/013 . . {of gas conduits}
 - 2015/016 . . {Fuel conduits having more than one internal passage, e.g. for different types of fuel}
 - 15/03 . Fuel tanks
 - 15/03006 . . {Gas tanks (B60K 15/07 takes precedence)}
 - 2015/03013 . . . {Control systems for LPG tanks}
 - 2015/03019 . . . {Filling of gas tanks}
 - 2015/03026 . . . {comprising a valve}
 - 2015/03032 . . {Manufacturing of fuel tanks}
 - 2015/03039 . . . {made of a combination of non metallic and metallic materials}
 - 2015/03046 . . . {made from more than one layer}
 - 2015/03052 . . . {Fuel tanks made of two balloons, one inside the other}
 - 2015/03059 . . . {Fuel tanks with double shells or more}
 - 2015/03065 {with material filled between the walls}
 - 2015/03072 . . {Arrangements for reducing evaporation}
 - 2015/03078 . . . {Membranes, layers or the like covering the surface of the fuel}
 - 2015/03085 {using inflatable bags or bladders in the tanks}
 - 2015/03092 . . {with latent heat storages to reduce the evaporation of fuel}

- 2015/03098 . . {with a device for mixing liquids in the fuel tank, e.g. for mixing oil and fuel}
- 2015/03105 . . {with supplementary interior tanks inside the fuel tank}
- 2015/03111 . . {Swirl pots}
- 2015/03118 . . {Multiple tanks, i.e. two or more separate tanks}
- 2015/03125 . . . {Suction lines for dual tanks}
- 2015/03131 . . . {Systems for filling dual tanks}
- 2015/03138 . . . {Pumping means between the compartments}
- 2015/03144 . . . {Fluid connections between the tanks}
- 2015/03151 . . . {Mechanical connection between the tanks}
- 2015/03157 . . . {for supply different types of fuel to the motor}
- 2015/03164 . . {Modular concepts for fuel tanks}
- 2015/03171 . . {Expansion tanks}
- 15/03177 . . {made of non-metallic material, e.g. plastics, or of a combination of non-metallic and metallic material (B60K 15/03006 takes precedence)}
- 2015/03184 . . {Exchangeable tanks, i.e. the empty tank is replaced by refilled tank}
- 2015/0319 . . {with electronic systems, e.g. for controlling fuelling or venting}
- 2015/03197 . . . {Systems for exchanging data}
- 2015/03203 {during refuelling}
- 2015/0321 . . {characterised by special sensors, the mounting thereof}
- 2015/03217 . . . {Fuel level sensors}
- 2015/03223 {comprising at least two level fuel sensors}
- 2015/0323 . . . {Sensors for detecting presence or absence of the filling nozzle}
- 2015/03236 . . {characterised by special filters, the mounting thereof}
- 2015/03243 . . {characterised by special pumps, the mounting thereof}
- 2015/0325 . . . {Jet pumps}
- 2015/03256 . . {characterised by special valves, the mounting thereof}
- 2015/03263 . . . {Ball valves}
- 2015/03269 . . . {Flap valves}
- 2015/03276 . . . {Valves with membranes}
- 2015/03282 . . . {Umbrella type valves}
- 2015/03289 . . . {Float valves; Floats therefor}
- 2015/03296 . . . {Pressure regulating valves}
- 2015/03302 . . . {Electromagnetic valves}
- 2015/03309 . . {Tanks specially adapted for particular fuels}
- 2015/03315 . . . {for hydrogen}
- 2015/03322 . . . {for methanol}
- 2015/03328 . . {Arrangements or special measures related to fuel tanks or fuel handling}
- 2015/03335 . . . {for fast filling of fuel tanks, e.g. specific filler pipes for pressurised fuelling}
- 2015/03342 . . . {to allow automatic or robotised filling of the tank}
- 2015/03348 . . . {for supplying additives to fuel}
- 2015/03355 . . . {for supplying different types of fuel}
- 2015/03361 . . . {for checking the quality or quantity of fuel during filling of fuel tank}
- 2015/03368 . . . {for preventing overfilling of tanks}
- 2015/03375 . . . {to improve security}
- 2015/03381 . . . {for preventing explosions}
- 2015/03388 . . . {in case of a roll over of the vehicle}
- 2015/03394 . . . {for preventing expulsion of fuel during filling of the tank}
- 2015/03401 . . . {for preventing electrostatic charges}

2015/03407	. . .	{to protect tanks against projectiles}	2015/0438	. . . . .	{using screw or bayonet}
2015/03414	. . .	{associated with the fuel tank for cooling heated fuel}	2015/0441	. . . . .	{with torque control}
2015/03421	. . .	{to protect the fuel tank against heat}	2015/0445	. . . . .	{using hinges}
2015/03427	. . .	{for heating fuel, e.g. to avoiding freezing}	2015/0448	. . . .	{comprising spherical valve type closures}
2015/03434	. . .	{for preventing theft of fuel}	2015/0451	. . . .	{Sealing means in the closure cap}
2015/0344	. . .	{comprising baffles}	2015/0454	. . . .	{combined closing of the fuel inlet and bodywork inlet by one element which is visible from outside}
2015/03447	. . .	{for improving the sealing}	2015/0458	. . .	{Details of the tank inlet}
2015/03453	. . .	{for fixing or mounting parts of the fuel tank together}	2015/0461	. . . .	{comprising a filler pipe shutter, e.g. trap, door or flap for fuel inlet}
2015/0346	. . . .	{by welding}	2015/0464	. . . .	{comprising a flexible or extendable filler pipes, e.g. corrugated, foldable or with bellows}
2015/03467	. . . .	{by clip or snap fit fittings}	2015/0467	. . . .	{Fuel tanks with more than one filler pipe}
2015/03473	. . .	{for draining or emptying a fuel tank}	2015/047	. . . .	{Manufacturing of the fuel inlet or connecting elements to fuel inlet, e.g. pipes or venting tubes}
2015/0348	. . .	{for returning the fuel from the motor}	2015/0474	. . . .	{Arrangement of fuel filler pipes in relation to vehicle body}
2015/03486	. .	{characterised by the materials the tank or parts thereof are essentially made from}	2015/0477	. . . .	{Details of the filler neck tank side}
2015/03493	. . .	{made of plastics}	2015/048	. . . .	{Arrangements for sealing the fuel inlet during filling}
15/035	. .	characterised by venting means	2015/0483	. . . .	{Means to inhibit the introduction of too small or too big filler nozzles}
15/03504	. . .	{adapted to avoid loss of fuel or fuel vapour, e.g. with vapour recovery systems}	2015/0487	. . . .	{Means to shield vehicle bodywork from fuel, e.g. during filling}
2015/03509	. . . .	{with a droplet separator in the vent line}	2015/049	. . . .	{Means for determining the position of the filler nozzle in the filler pipe}
2015/03514	. . . .	{with vapor recovery means}	2015/0493	. . . .	{Means for checking absence or presence of closure cap}
15/03519	. . .	{Valve arrangements in the vent line}	2015/0496	. . . .	{the fuel inlet being arranged on the top of the fuel tank}
2015/03523	. . .	{Arrangements of the venting tube}	15/05	. . .	Inlet covers
2015/03528	. . . .	{Mounting of venting tubes}	2015/0507	. . . .	{Arrangements for adjusting the inlet cover}
2015/03533	. . . .	{the venting tube being movable with the fuel level}	2015/0515	. . . .	{Arrangements for closing or opening of inlet cover}
2015/03538	. . . .	{the venting tube being connected with the filler tube}	2015/0523	. . . .	{with sliding connection to the vehicle body}
2015/03542	. . .	{Mounting of the venting means}	2015/053	. . . .	{with hinged connection to the vehicle body}
2015/03547	. . . .	{the venting means are integrated in the fuel cap or inlet cover}	2015/0538	. . . .	{with open or close mechanism automatically actuated}
2015/03552	. . . .	{the venting means are integrated into the fuel filler pipe}	2015/0546	. . . .	{Arrangements for checking the position of the inlet cover}
2015/03557	. . . .	{comprising elements of the venting device integrated in the fuel tank, e.g. vapor recovery means}	2015/0553	. . . .	{Details concerning the inlet box or bowl in the vehicle car body panel}
2015/03561	. . .	{Venting means working at specific times}	2015/0561	. . . .	{Locking means for the inlet cover}
2015/03566	. . . .	{comprising means for stopping the venting of fuel vapor, e.g. during refuelling or engine stop}	2015/0569	. . . .	{with actuator fixed to the inlet cover}
2015/03571	. . . .	{Venting during driving}	2015/0576	. . . .	{with actuator fixed to the vehicle body}
2015/03576	. . . .	{Venting during filling the reservoir}	2015/0584	. . . .	{the locking bolt is linearly moved to lock or unlock}
2015/0358	. . .	{the venting is actuated by specific signals or positions of particular parts}	2015/0592	. . . .	{with storage means for the cap}
2015/03585	. . . .	{by gas pressure}	15/06	. .	characterised by fuel reserve systems
2015/0359	. . . .	{by filler cap or inlet cover position}	15/061	. . .	{with level control}
2015/03595	. . . .	{by filler nozzle}	2015/062	. . . .	{Arrangement for filling the fuel reserve systems}
15/04	. .	Tank inlets (B60K 15/077 takes precedence)	15/063	. .	Arrangement of tanks
15/0403	. . .	{Anti-siphoning devices}	2015/0631	. . .	{the fuel tank forming at least part of the vehicle floor}
15/0406	. . .	{Filler caps for fuel tanks}	2015/0632	. . .	{the fuel tank is arranged below the front seat}
15/0409	. . . .	{Provided with a lock}	2015/0633	. . .	{the fuel tank is arranged below the rear seat}
2015/0412	. . . .	{the key can only be withdrawn when the cap is placed on the filler neck}			
2015/0416	. . . .	{electrically actuated}			
2015/0419	. . . .	{Self-sealing closure caps, e.g. that don't have to be removed manually}			
2015/0422	. . . .	{actuated by the inlet cover}			
2015/0425	. . . .	{actuated by a motor}			
2015/0429	. . . .	{actuated by the nozzle}			
2015/0432	. . . .	{having a specific connection between the cap and the vehicle or tank opening}			
2015/0435	. . . .	{using a sliding connection}			

- 2015/0634 . . . {the fuel tank is arranged below the vehicle floor}
- 2015/0635 . . . {the fuel tank is arranged between the seats}
- 2015/0636 . . . {the fuel tank being part of the chassis or frame}
- 2015/0637 . . . {the fuel tank is arranged in the front of the vehicle}
- 2015/0638 . . . {the fuel tank is arranged in the rear of the vehicle}
- 2015/0639 . . . {the fuel tank is arranged near or in the roof}
- 15/067 . . . Mounting of tanks
- 2015/0675 {allowing deflection movements of the tank in case of a crash}
- 15/07 of gas tanks
- 15/073 . . Tank construction specially adapted to the vehicle ([B60K 15/077](#) takes precedence)
- 15/077 . . with means modifying or controlling distribution or motion of fuel, e.g. to prevent noise, surge, splash or fuel starvation
- 2015/0772 . . . {Floats in the fuel tank}
- 2015/0775 . . . {for reducing movement or slash noise of fuel}
- 2015/0777 . . . {in-tank reservoirs or baffles integrally manufactured with the fuel Tank}
- 15/10 . . concerning gas-producing plants

16/00 Arrangements in connection with power supply of propulsion units in vehicles from forces of nature, e.g. sun or wind (electric propulsion with power supply from forces of nature, e.g. sun or wind, [B60L 8/00](#); wind motors specially adapted for installation on vehicles [F03D 9/32](#))

NOTE

When classifying in this group, details of sail or rigging arrangements which are suited for marine wind propulsion are also classified in the relevant groups of subclass [B63H](#), e.g. in groups [B63H 8/00](#), [B63H 9/04](#).

- 2016/003 . . {solar power driven}
- 2016/006 . . {wind power driven}

Arrangement or mounting of transmissions or their control in vehicles

- 17/00 Arrangement or mounting of transmissions in vehicles**
- 17/02 . . characterised by arrangement, location, or kind of clutch
- 17/04 . . characterised by arrangement, location or kind of gearing
- 17/043 . . {Transmission unit disposed in on near the vehicle wheel, or between the differential gear unit and the wheel}
- 17/046 . . . {with planetary gearing having orbital motion}
- 17/06 . . of change-speed gearing ([B60K 17/10](#) - [B60K 17/16](#) take precedence)
- 17/08 . . . of mechanical type
- 17/10 . . of fluid gearing
- 17/105 . . . {Units comprising at least a part of the gearing and a torque-transmitting axle, e.g. transaxles ([B60K 17/14](#) takes precedence)}
- 17/12 . . of electric gearing
- 17/14 . . the motor of fluid or electric gearing being disposed in, or adjacent to, traction wheel

- 17/145 . . . {the electric gearing being disposed in or adjacent to traction wheel}
- 17/16 . . of differential gearing
- 17/165 . . . {provided between independent half axles ([B60K 17/18](#), [B60K 17/20](#) take precedence)}
- 17/18 . . . {in which the differential movement is obtained by resilient means}
- 17/20 . . . {in which the differential movement is limited}
- 17/22 . . characterised by arrangement, location, or type of main drive shafting, e.g. cardan shaft
- 17/24 . . Arrangement of mountings for shafting
- 17/26 . . characterised by arrangement, location, or type of freewheel device
- 17/28 . . characterised by arrangement, location, or type of power take-off
- 17/30 . . the ultimate propulsive elements, e.g. ground wheels, being steerable
- 17/303 . . {with a gearwheel on the steering knuckle or kingpin axis}
- 17/306 . . {with a universal joint in the axis of the steering knuckle}
- 17/32 . . the ultimate propulsive elements, e.g. ground wheels, being rockable about a horizontal pivot
- 17/34 . . for driving both front and rear wheels, e.g. four wheel drive vehicles
- 17/342 . . having a longitudinal, endless element, e.g. belt or chain, for transmitting drive to wheels
- 17/344 . . having a transfer gear
- 17/346 . . . the transfer gear being a differential gear
- 17/3462 {with means for changing distribution of torque between front and rear wheels}
- 17/3465 {self-actuated means, e.g. differential locked automatically by difference of speed}
- 17/3467 {combined with a change speed gearing, e.g. range gear}
- 17/348 . . having differential means for driving one set of wheels, e.g. the front, at one speed and the other set, e.g. the rear, at a different speed ([B60K 17/346](#) takes precedence)
- 17/35 . . . including arrangements for suppressing or influencing the power transfer, e.g. viscous clutches
- 17/3505 {with self-actuated means, e.g. by difference of speed}
- 17/351 {comprising a viscous clutch}
- 17/3515 {with a clutch adjacent to traction wheel, e.g. automatic wheel hub}
- 17/352 {manually operated}
- 17/354 . . having separate mechanical assemblies for transmitting drive to the front or to the rear wheels or set of wheels
- 17/356 . . having fluid or electric motor, for driving one or more wheels
- 17/358 . . {all driven wheels being steerable}
- 17/36 . . for driving tandem wheels

20/00 Arrangement or mounting of change-speed gearing control devices in vehicles

- 20/02 . . of initiating means
- 20/04 . . floor mounted
- 20/06 . . mounted on steering column or the like
- 20/08 . . Dashboard means

23/00	Arrangement or mounting of control devices for vehicle transmissions, or parts thereof, not otherwise provided for
2023/005	. { Adjusting multiple pedals, e.g. for their initial position }
23/02	. for main transmission clutches
2023/025	. . { Adjusting of clutch pedal positions }
23/04	. for differential gearing
2023/043	. . { Control means for varying left-right torque distribution, e.g. torque vectoring }
2023/046	. . { Axle differential locking means }
23/06	. for freewheel devices
23/08	. for changing number of driven wheels {, for switching from driving one axle to driving two or more axles (B60K 17/3515 takes precedence) }
23/0808	. . { for varying torque distribution between driven axles, e.g. by transfer clutch }
2023/0816	. . . { for varying front-rear torque distribution with a central differential }
2023/0825	. . . . { for adding torque to the front wheels }
2023/0833	. . . . { for adding torque to the rear wheels }
2023/0841	. . . { for locking a central differential, e.g. by using a lock-up clutch }
2023/085	. . { automatically actuated }
2023/0858	. . . { with electric means, e.g. electro-hydraulic means }
2023/0866	. . . { with hydraulic means only }
2023/0875	. . . { with mechanical means only }
2023/0883	. . { manually actuated }
2023/0891	. . . { with actuator levers, e.g. shift levers or linkage for changing two-wheel to four-wheel drive }
25/00	Auxiliary drives (arrangement of tyre-inflating pumps mounted on vehicles B60C 23/10)
2025/005	. { driven by electric motors forming part of the propulsion unit }
25/02	. directly from an engine shaft
2025/022	. . { by a mechanical transmission }
2025/024	. . . { with variable ratio }
2025/026	. . { by a hydraulic transmission }
2025/028	. . { by a pneumatic transmission }
25/04	. from static or dynamic pressure or vacuum, developed by the engine
25/06	. from the transmission power take-off
2025/065	. . { the transmission being fluidic, e.g. hydraulic }
25/08	. from a ground wheel, e.g. engaging the wheel tread or rim
25/10	. directly from oscillating movements due to vehicle running motion, e.g. suspension movement
2025/103	. . { by electric means }
2025/106	. . { by fluid means }
26/00	Arrangement or mounting of propulsion-unit control devices in vehicles
26/02	. of initiating means or elements
26/021	. . { with means for providing feel, e.g. by changing pedal force characteristics }
2026/022	. . . { with tactile feedback from a controller, e.g. vibrations }
2026/023	. . . { with electrical means to generate counter force or torque }

2026/024	. . { Adjustable consoles, e.g. for changing position of mounting casings }
2026/025	. . { Input devices for controlling electric drive motors }
2026/026	. . { Adjusting of accelerator pedal positions }
2026/027	. . { Acceleration input members mounted on a seat }
2026/028	. . { Acceleration input members mounted on steering wheel or column }
2026/029	. . { Joystick type control devices for acceleration }
26/04	. of means connecting initiating means or elements to propulsion unit
2026/043	. . { with mechanical gearings }
2026/046	. . { with electrical transmission means }

28/00 **Safety devices for propulsion-unit control, specially adapted for, or arranged in, vehicles, e.g. preventing fuel supply or ignition in the event of potentially dangerous conditions (electric safety devices on electrically-propelled vehicles [B60L 3/00](#))**

WARNING

Groups [B60K 28/00](#) - [B60K 28/165](#) are impacted by reclassification into groups [B60W 60/00](#) - [B60W 60/007](#), [B60W 2300/00](#) - [B60W 2530/213](#), [B60W 2540/041](#) - [B60W 2540/049](#), [B60W 2552/00](#) - [B60W 2556/65](#), [B60W 2710/00](#) - [B60W 2720/406](#), and [B60W 2754/00](#) - [B60W 2900/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

2028/003	. { inhibiting the starter motor, e.g. by controlling ignition or park lock circuits }
2028/006	. { disconnecting the electric power supply, e.g. the vehicle battery }
28/02	. responsive to conditions relating to the driver
28/04	. . responsive to presence or absence of the driver, e.g. to weight or lack thereof
28/06	. . responsive to incapacity of driver
28/063	. . . { preventing starting of vehicles }
28/066	. . . { actuating a signalling device (B60K 28/063 takes precedence) }
28/08	. responsive to conditions relating to the cargo, e.g. overload
28/10	. responsive to conditions relating to the vehicle
28/12	. . responsive to conditions relating to doors or doors locks, e.g. open door
28/14	. . responsive to accident or emergency, e.g. deceleration, tilt of vehicle
28/16	. . responsive to, or preventing, spinning or skidding of wheels
28/165	. . . { acting on elements of the vehicle drive train other than the propulsion unit and brakes, e.g. transmission, clutch, differential }

31/00 **Vehicle fittings, acting on a single sub-unit only, for automatically controlling vehicle speed, i.e. preventing speed from exceeding an arbitrarily established velocity or maintaining speed at a particular velocity, as selected by the vehicle operator**

NOTE

In this group:

B60K

B60K 31/00
(continued)

- the means ordinarily includes a device, e.g. a servomechanism, for operating a velocity-affecting element of the vehicle, e.g. the throttle;
- a means for preventing a vehicle from exceeding a particular speed is often referred to as a "governor", whereas a means for maintaining the vehicle within a relatively narrow speed range is generally designated as "speed control". Since these two functions are frequently interrelated, no attempt has been made to identify such means as being particularly adapted to perform only one, or the other of the functions.

- 31/0008 . {including means for detecting potential obstacles in vehicle path}
- 2031/0016 . . {Identification of obstacles; Selection of a target vehicle}
- 2031/0025 . . {Detecting position of target vehicle, e.g. vehicle driving ahead from host vehicle}
- 2031/0033 . . {Detecting longitudinal speed or acceleration of target vehicle}
- 2031/0041 . . {Detecting lateral speed of target vehicle}
- 2031/005 . . {Selecting more than one target vehicle, e.g. using several preceding vehicles as target}
- 31/0058 . {responsive to externally generated signalling}
- 31/0066 . {responsive to vehicle path curvature}
- 31/0075 . . {responsive to vehicle steering angle}
- 2031/0091 . {Speed limiters or speed cutters}
- 31/02 . including electrically actuated servomechanism
- 31/04 . . and means for comparing one electrical quantity, e.g. voltage, pulse, waveform, flux, or the like, with another quantity of a like kind, which comparison means is involved in the development of an electrical signal which is fed into the controlling means
- 31/042 . . . {where at least one electrical quantity is set by the vehicle operator}
- 31/045 {in a memory, e.g. a capacitor}
- 31/047 {the memory being digital}
- 31/06 . including fluid pressure actuated servomechanism {in which the vehicle velocity affecting element is actuated by fluid pressure}
- 31/08 . . and one or more electrical components for establishing or regulating input pressure
- 31/10 . . and means for comparing one electrical quantity, e.g. voltage, pulse, waveform, flux, or the like, with another quantity of a like kind, which comparison means is involved in the development of a pressure which is fed into the controlling means
- 31/102 . . . {where at least one electrical quantity is set by the vehicle operator}
- 31/105 {in a memory, e.g. a capacitor}
- 31/107 {the memory being digital}
- 31/12 . including a device responsive to centrifugal force

NOTES

1. This subgroup covers also, for example, the pendulum of a curve compensator, i.e. a refinement to the regulating means for automatically adjusting the "set" speed of the means to changes in the course of the roadway along which the vehicle is travelling.

2. In this subgroup, rotating weights driven at a speed proportional to that of the vehicle's motor presently predominate.

- 31/14 . . having an electrical switch which is caused to function by the centrifugal force
- 31/16 . having means to prevent or discourage unauthorised use or adjusting of the controlling means
- 31/18 . including a device to audibly, visibly, or otherwise signal the existence of unusual or unintended speed
- 31/185 . . {connected to the speedometer display, e.g. by sensors or switches responsive to the position of the indicator needle}

Instruments specially adapted for vehicles or dashboards; Arrangement of instruments or dashboards in or on vehicles

35/00 Instruments specially adapted for vehicles; Arrangement of instruments in or on vehicles

NOTE

{In this group, it is desirable to add the indexing codes of [B60K 2360/20](#) - [B60K 2360/48](#), [B60K 2360/60](#) - [B60K 2360/62](#) and [B60K 2360/92](#) - [B60K 2360/96](#)}

- 35/10 . Input arrangements, i.e. from user to vehicle, associated with vehicle functions or specially adapted therefor

NOTE

{In this group, it is desirable to add the indexing codes of [B60K 2360/11](#) - [B60K 2360/149](#)}

- 35/20 . Output arrangements, i.e. from vehicle to user, associated with vehicle functions or specially adapted therefor

NOTE

{In the groups [B60K 35/20](#) - [B60K 35/22](#) and [B60K 35/26](#), it is desirable to add the indexing codes of [B60K 2360/151](#) - [B60K 2360/1526](#)}

- 35/21 . . using visual output, e.g. blinking lights or matrix displays
- 35/211 . . . {producing three-dimensional [3D] effects, e.g. stereoscopic images}
- 35/212 . . . {displaying on manual operation elements, e.g. on a knob}
- 35/213 . . . {Virtual instruments}
- 35/214 . . . {Variable gauge scales, e.g. scale enlargement to adapt to maximum driving speed}
- 35/215 . . . characterised by the combination of multiple visual outputs, e.g. combined instruments with analogue meters and additional displays
- 35/22 . . . Display screens
- 35/223 {Flexible displays}
- 35/23 . . . Head-up displays [HUD] ([optical aspects of head-up displays G02B 27/01](#))
- 35/231 characterised by their arrangement or structure for integration into vehicles
- 35/232 controlling the projection distance of virtual images depending on the condition of the vehicle or the driver
- 35/233 controlling the size or position in display areas of virtual images depending on the condition of the vehicle or the driver

- 35/234 controlling the brightness, colour or contrast of virtual images depending on the driving conditions or on the condition of the vehicle or the driver
- 35/235 with means for detecting the driver's gaze direction or eye points
- 35/25 . . using haptic output
- 35/26 . . using acoustic output
- 35/265 . . . {Voice}
- 35/28 . . characterised by the type of the output information, e.g. video entertainment or vehicle dynamics information; characterised by the purpose of the output information, e.g. for attracting the attention of the driver

NOTE

{In this group, it is desirable to add the indexing codes of [B60K 2360/16](#) - [B60K 2360/179](#)}

- 35/285 . . . {for improving awareness by directing driver's gaze direction or eye points}
- 35/29 . . Instruments characterised by the way in which information is handled, e.g. showing information on plural displays or prioritising information according to driving conditions

NOTE

{In this group, it is desirable to add the indexing codes of [B60K 2360/18](#) - [B60K 2360/199](#)}

- 35/40 . Instruments specially adapted for improving the visibility thereof to the user, e.g. fogging prevention or anti-reflection arrangements
- 35/405 . . {Fogging prevention}
- 35/415 . . {Glare prevention}
- 35/425 . . {Anti-reflection arrangements}
- 35/50 . Instruments characterised by their means of attachment to or integration in the vehicle ([B60K 35/231](#) takes precedence)

NOTE

{In this group, it is desirable to add the indexing codes of [B60K 2360/816](#) - [B60K 2360/834](#)}

- 35/53 . . Movable instruments, e.g. slidable
- 35/55 . Instruments with parts that can change their shape or position to configure an active screen, e.g. by folding or by rolling
- 35/60 . Instruments characterised by their location or relative disposition in or on vehicles ([arrangements of lighting devices on dashboards B60Q 3/10](#))

NOTE

{In this group, it is desirable to add the indexing codes of [B60K 2360/77](#) - [B60K 2360/797](#)}

- 35/65 . Instruments specially adapted for specific vehicle types or users, e.g. for left- or right-hand drive

NOTE

{In the groups [B60K 35/65](#) - [B60K 35/658](#), it is desirable to add the indexing codes of [B60K 2360/731](#) - [B60K 2360/741](#)}

- 35/652 . . {for left- or right-hand drive}

- 35/654 . . {the user being the driver}
- 35/656 . . {the user being a passenger}
- 35/658 . . {the instruments being ergonomically adjustable to the user}
- 35/70 . Instrument provisions for avoiding injuries to vehicle occupants in case of accidents
- 35/80 . Arrangements for controlling instruments

NOTE

{In this group, it is desirable to add the indexing codes of [B60K 2360/55](#) - [B60K 2360/577](#)}

- 35/81 . . for controlling displays
- 35/85 . Arrangements for transferring vehicle- or driver-related data

NOTE

{In this group, it is desirable to add the indexing codes of [B60K 2360/583](#) - [B60K 2360/595](#)}

- 35/90 . Calibration of instruments, e.g. setting initial or reference parameters; Testing of instruments, e.g. detecting malfunction

37/00 Dashboards (as road-vehicle superstructure sub-units [B62D 25/14](#))

NOTE

{In this group, it is desirable to add the indexing codes of [B60K 2360/40](#) - [B60K 2360/48](#), [B60K 2360/65](#) - [B60K 2360/6992](#) and [B60K 2360/84](#)}

- 37/10 . Arrangements for attaching the dashboard to the vehicle
- 37/20 . Dashboard panels

2310/00 Arrangements, adaptations or methods for cruise controls

- 2310/20 . Operator actuated switches or levers for cruise control or speed limiting systems
- 2310/22 . Displays for target speed
- 2310/24 . Speed setting methods
- 2310/242 . . setting initial target speed, e.g. initial algorithms
- 2310/244 . . changing target speed or setting a new target speed, e.g. changing algorithms
- 2310/246 . . releasing speed control, e.g. inhibiting speed control if a brake pedal is depressed
- 2310/248 . . resuming speed control, e.g. returning to old target speed
- 2310/26 . Distance setting methods, e.g. determining target distance to target vehicle
- 2310/262 . . setting initial distance to preceding vehicle, e.g. initial algorithms
- 2310/264 . . changing distance, e.g. reducing the distance for overtaking
- 2310/266 . . releasing distance control, e.g. inhibiting control if target vehicle lost or changing lane
- 2310/268 . . resuming distance control, e.g. changing target vehicle
- 2310/28 . Following time setting methods, e.g. elapsed delay between preceding and host vehicle
- 2310/30 . Mode switching, e.g. changing from one cruise control mode to another

Details of instruments or dashboards

2360/00	Indexing scheme associated with groups B60K 35/00 or B60K 37/00 relating to details of instruments or dashboards	
2360/11	. Instrument graphical user interfaces or menu aspects	2360/184 . . Displaying the same information on different displays
2360/111	. . for controlling multiple devices	2360/186 . . Displaying information according to relevancy
2360/113	. . Scrolling through menu items	2360/1868 . . . according to driving situations
2360/115	. . Selection of menu items	2360/1876 . . . according to vehicle situations
2360/117	. . Cursors	2360/188 . . Displaying information using colour changes
2360/119	. . Icons	2360/191 . . Highlight information
2360/122	. Instrument input devices with reconfigurable control functions, e.g. reconfigurable menus	2360/195 . . Blocking or enabling display functions
2360/126	. Rotatable input devices for instruments	2360/197 . . Blocking or enabling of input functions
2360/128	. Axially displaceable input devices for instruments	2360/199 . . for avoiding maloperation
2360/131	. Pivotal input devices for instruments	2360/20 . Optical features of instruments
2360/133	. Multidirectional input devices for instruments	2360/21 . . using cameras
2360/135	. . Joysticks	2360/23 . . using reflectors
2360/137	. . Jog-dials	2360/25 . . using filters
2360/139	. Clusters of instrument input devices	2360/27 . . using semi-transparent optical elements
2360/141	. Activation of instrument input devices by approaching fingers or pens	2360/28 . . . for instruments which are not visible when inactive
2360/143	. Touch sensitive instrument input devices	2360/29 . . Holographic features
2360/1434	. . Touch panels	2360/31 . . Virtual images
2360/1438	. . Touch screens	2360/33 . . Illumination features
2360/1442	. . . Emulation of input devices	2360/331 . . . Electroluminescent elements
2360/1446	. . Touch switches	2360/332 . . . Light emitting diodes
2360/145	. Instrument input by combination of touch screen and hardware input devices	2360/333 . . . Lasers
2360/146	. Instrument input by gesture	2360/334 . . . Projection means
2360/1464	. . 3D-gesture	2360/336 . . . Light guides
2360/1468	. . Touch gesture	2360/338 . . . Light strips
2360/1472	. . . Multi-touch gesture	2360/339 . . . Translucent dashboard skins
2360/1476	. . . Handwriting	2360/34 . . . Backlit symbols
2360/148	. Instrument input by voice	2360/341 . . . Illumination of dials
2360/149	. Instrument input by detecting viewing direction not otherwise provided for	2360/343 . . . Illumination of matrix displays
2360/151	. Instrument output devices for configurable output	2360/344 for additionally illuminating mechanical elements, e.g. pointers or control knobs
2360/1515	. . Reconfigurable dials	2360/345 . . . Illumination of controls
2360/1523	. Matrix displays	2360/347 . . . Optical elements for superposition of display information
2360/1526	. Dual-view displays	2360/349 . . . Adjustment of brightness
2360/16	. Type of output information	2360/40 . Hardware adaptations for dashboards or instruments
2360/161	. . Explanation of functions, e.g. instructions	2360/42 . . Circuit board features
2360/162	. . Visual feedback on control action	2360/46 . . Electrical connections
2360/163	. . Language	2360/47 . . . using wireless power transfer or transmission.
2360/164	. . Infotainment	2360/48 . . Sensors
2360/165	. . Videos and animations	2360/55 . Remote control arrangements
2360/166	. . Navigation	2360/56 . . using mobile devices
2360/167	. . Vehicle dynamics information	2360/563 . . . Vehicle displaying mobile device information
2360/168	. . Target or limit values	2360/566 . . . Mobile devices displaying vehicle information
2360/169	. . Remaining operating distance or charge	2360/569 . . . Vehicle controlling mobile device functions
2360/171	. . Vehicle or relevant part thereof displayed	2360/573 . . . Mobile devices controlling vehicle functions
2360/172	. . Driving mode indication	2360/577 . . . Mirror link with mobile devices
2360/173	. . Reversing assist	2360/583 . Data transfer between instruments
2360/174	. . Economic driving	2360/586 . Wired data transfers
2360/175	. . Autonomous driving	2360/589 . Wireless data transfers
2360/176	. . Camera images	2360/5894 . . SIM cards
2360/177	. . Augmented reality	2360/5899 . . Internet
2360/178	. . Warnings	2360/5905 . . Wi-Fi®
2360/179	. . Distances to obstacles or vehicles	2360/5911 . . Bluetooth®
2360/18	. Information management	2360/5915 . . Inter vehicle communication
2360/182	. . Distributing information between displays	2360/592 . Data transfer involving external databases
		2360/595 . Data transfer involving internal databases
		2360/60 . Structural details of dashboards or instruments
		2360/61 . . Specially adapted for utility vehicles
		2360/62 . . Anti-theft arrangements
		2360/65 . . Features of dashboards

- 2360/652 . . . Crash protection features
- 2360/658 . . . Dashboard parts used as air ducts
- 2360/66 . . Projection screens or combiners
- 2360/68 . . Features of instruments
- 2360/682 . . . Arrangements to cover or hide instruments
- 2360/685 . . . Instruments movable with steering column
- 2360/688 . . . Frames or decorative parts
- 2360/691 . . . Housings
- 2360/692 . . . Sealings
- 2360/693 . . . Cover plate features
- 2360/695 . . . Dial features
- 2360/698 . . . Pointers of combined instruments
- 2360/6985 . . . with only part of pointer being visible
- 2360/6992 . . . Light conducting pointers
- 2360/731 . Instruments adaptations for specific vehicle types or users by comprising user programmable systems
- 2360/741 . Instruments adapted for user detection
- 2360/77 . Instrument locations other than the dashboard
- 2360/771 . . on the ceiling
- 2360/774 . . on or in the centre console
- 2360/777 . . on or in sun visors
- 2360/779 . . on or in rear view mirrors
- 2360/782 . . on the steering wheel
- 2360/785 . . on or in relation to the windshield or windows
- 2360/788 . . on or in side pillars
- 2360/791 . . on or in the transmission tunnel or parking brake lever
- 2360/794 . . on or in doors
- 2360/797 . . at the vehicle exterior
- 2360/816 . Fastening of displays or touch screens
- 2360/822 . Adjustment of instruments during mounting
- 2360/828 . Mounting or fastening exchangeable modules
- 2360/834 . . Docking arrangements
- 2360/84 . Mounting of dashboard components
- 2360/92 . Manufacturing of instruments
- 2360/96 . . by assembling
- 2702/20 . . . using different control members for preselection and actuating, e.g. shift actuation is initiated by clutch pedal with elastic connection for energy accumulation
- 2704/00 Control devices, wherein the control is combined with or mainly influenced by the working of the engine or the main coupling, e.g. control device is linked to the carburettor control and is influenced by depression of pedal, for semi-automatic or non-automatic transmission having toothed wheels**
- 2704/02 . without preselection system, the control being mechanical
- 2704/04 . with preselection system, e.g. for semi-automatic transmission

Control mechanisms or devices

- 2700/00 Control mechanisms and elements applying a mechanical movement**
- 2700/02 . regulating mechanisms combined with non-mechanical transmissions
- 2702/00 Control devices wherein the control is combined with or essentially influenced by the engine or coupling, e.g. in an internal combustion engine, the control device is coupled with a carburettor control device or influenced by carburettor depression**
- 2702/02 . Automatic transmission with toothed gearing
- 2702/04 . . Control dependent on speed
- 2702/06 . . Control dependent on torque
- 2702/08 . Semi-automatic or non-automatic transmission with toothed gearing
- 2702/10 . . without a preselection system
- 2702/12 . . . the control being mechanical
- 2702/14 . . . the control being hydraulic or pneumatic
- 2702/16 . . . the control being electric
- 2702/18 . . with a preselection system, e.g. semi-automatic