

# CPC COOPERATIVE PATENT CLASSIFICATION

## G PHYSICS (NOTES omitted)

### INSTRUMENTS

**G05** **CONTROLLING; REGULATING** (specially adapted to a particular field of use, [see the relevant place for that field, e.g. A62C 37/00, B03B 13/00, B23Q](#))  
(NOTES omitted)

**G05G** **CONTROL DEVICES OR SYSTEMS INsofar AS CHARACTERISED BY MECHANICAL FEATURES ONLY** ("Bowden" or like mechanisms [F16C 1/10](#); gearings or mechanisms not peculiar to this purpose [F16H](#); speed changing or reversing mechanisms for gearings conveying rotary motion [F16H 59/00](#) - [F16H 63/00](#))

#### NOTES

1. This subclass covers:
  - members of general applicability for mechanical control;
  - mechanical systems for moving members to one or more definite settings.
2. Systems peculiar to the control of particular machines or apparatus provided for in a single other class are classified in the relevant class for such machines or apparatus, for example:

<a href="#">A61G 13/02</a>	Controls for adjusting operating tables
<a href="#">A61G 15/02</a>	Controls for adjusting operating chairs
<a href="#">A63F 13/20, A63F 13/98</a>	Accessories for games using an electronically generated display
<a href="#">B25J</a>	Manipulators, e.g. controls therefor
<a href="#">B60K 26/00</a>	Arrangement or mounting of propulsion-unit control devices in vehicles
<a href="#">B60T 7/00</a>	Vehicle brake-action initiating means
<a href="#">B62D 33/073</a>	Adaptations of control devices for movable vehicle cabs
<a href="#">B62K 21/00</a>	Cycle-steering devices
<a href="#">B62K 23/00</a>	Rider-operated controls specially adapted for cycles
<a href="#">B62L 3/00</a>	Brake-actuating mechanisms specially adapted for cycles
<a href="#">B63H 25/02</a>	Marine steering initiating means
<a href="#">B66B 1/00</a>	Controls for elevators
<a href="#">B66C 13/18</a>	Control systems or devices for cranes
<a href="#">B66C 13/56</a>	Arrangements of handles or pedals for crane operation
<a href="#">E02F 9/20</a>	Control devices for dredging or soil shifting machines
<a href="#">F16C 3/28</a>	Adjustable cranks or eccentrics
<a href="#">F16D 43/00</a>	Automatic clutches
<a href="#">F16K 31/00, F16K 33/00</a>	Controls for valves
<a href="#">F16P 3/00</a>	Safety devices acting in conjunction with the control or operation of a machine
<a href="#">F16P 7/02</a>	Stopping machines on occurrence of dangerous conditions therein
<a href="#">G02B 21/32</a>	Micromanipulators structurally combined with microscopes
<a href="#">G04B 1/00 - G04B 18/00</a>	Driving mechanisms in clocks or watches
<a href="#">G06C</a>	Digital computers in which all the computation is effected mechanically
<a href="#">G06F 3/02</a>	Manual computer input arrangements
<a href="#">G06K 11/00</a>	Converting a pattern of mechanical parameters into electric signals
<a href="#">G21C 7/08</a>	Displacement of solid control elements in nuclear reactors
<a href="#">H01H</a>	Mechanisms for operating switch contacts
<a href="#">H03J 1/00</a>	Mechanical control of resonant circuits.

<b>1/00</b>	<b>Controlling members, e.g. knobs or handles; Assemblies or arrangements thereof; Indicating position of controlling members</b> ({means for preventing, limiting or returning the movements of parts of a control mechanism <a href="#">G05G 5/00</a> ; providing feel, e.g. means to create a counterforce <a href="#">G05G 5/03</a> ; specially adapted for programme control <a href="#">G05G 21/00</a> ; vibration damping <a href="#">G05G 25/02</a> ;} joysticks <a href="#">G05G 9/04</a> ; steering wheels for motor vehicles <a href="#">B62D</a> )	1/46	. . Means, e.g. links, for connecting the pedal to the controlled unit
		1/48	. . Non-slip pedal treads; Pedal extensions or attachments characterised by mechanical features only
		1/483	. . . Non-slip treads; Pedal extensions or attachments characterised by mechanical features only
		1/487	. . . Pedal extensions
		1/50	. . Manufacturing of pedals; Pedals characterised by the material used
		1/503	. . . {Controlling members for hand-actuation}
		1/506	. . . {Controlling members for foot-actuation}
		1/52	. Controlling members specially adapted for actuation by other parts of the human body than hand or foot
		1/54	. Controlling members specially adapted for actuation by auxiliary operating members or extensions; Operating members or extensions therefor (pedal extensions)
		1/56	. . Controlling members specially adapted for actuation by keys, screwdrivers or like tools
		1/58	. Rests or guides for relevant parts of the operator's body
		1/60	. . Foot rests or foot guides
		1/62	. . Arm rests
	<b>NOTE</b>	<b>3/00</b>	<b>Controlled members; Assemblies or arrangements thereof (interlocking of controlled members <a href="#">G05G 5/08</a>)</b>
	Within this main group the first place priority rule is applied, i.e. at each hierarchical level classification is made in the first appropriate place	<b>5/00</b>	<b>Means for preventing, limiting or returning the movements of parts of a control mechanism, e.g. locking controlling member (<a href="#">G05G 17/00</a> takes precedence)</b>
1/01	. Arrangements of two or more controlling members with respect to one another (double foot control, e.g. for instruction vehicles <a href="#">G05G 1/34</a> ; mounting units comprising an assembly with two or more pedals <a href="#">G05G 1/36</a> )	5/005	. {for preventing unintentional use of a control mechanism ( <a href="#">G05G 5/28</a> takes precedence)}
1/015	. Arrangements for indicating the position of a controlling member (means for continuously detecting pedal position <a href="#">G05G 1/38</a> ; means for detecting position through tactile feedback <a href="#">G05G 5/03</a> )	5/02	. Means preventing undesired movements of a controlling member which can be moved in two or more separate steps or ways, e.g. restricting to a stepwise movement or to a particular sequence of movements ( <a href="#">G05G 5/28</a> takes precedence)
1/02	. Controlling members for hand actuation by linear movement, e.g. push buttons	5/03	. Means for enhancing the operator's awareness of arrival of the controlling member at a command or datum position; Providing feel, e.g. means for creating a counterforce (arrangements for indicating the position of the controlling member <a href="#">G05G 1/015</a> )
1/025	. . {actuated by sliding movement}	5/04	. Stops for limiting movement of members, e.g. adjustable stop ( <a href="#">G05G 5/03</a> , <a href="#">G05G 5/05</a> , <a href="#">G05G 5/28</a> take precedence)
1/04	. Controlling members for hand actuation by pivoting movement, e.g. levers	5/05	. Means for returning or tending to return controlling members to an inoperative or neutral position, e.g. by providing return springs or resilient end-stops ( <a href="#">G05G 5/28</a> takes precedence)
1/06	. . Details of their grip parts ({ <a href="#">G05G 1/10</a> takes precedence})	5/06	. for holding members in one or a limited number of definite positions only ({ <a href="#">G05G 5/005</a> }, <a href="#">G05G 5/03</a> , <a href="#">G05G 5/05</a> , <a href="#">G05G 5/28</a> take precedence)
1/08	. Controlling members for hand actuation by rotary movement, e.g. hand wheels	5/065	. . {using a spring-loaded ball}
1/082	. . {having safety devices, e.g. means for disengaging the control member from the actuated member}	5/08	. . Interlocking of members, e.g. locking member in a particular position before or during the movement of another member
1/085	. . {Crank handles ( <a href="#">G05G 1/082</a> takes precedence)}	5/12	. for holding members in an indefinite number of positions, e.g. by a toothed quadrant ( <a href="#">G05G 5/28</a> takes precedence)
1/087	. . {retractable; Flush control knobs}	5/14	. . by locking a member with respect to a fixed quadrant, rod, or the like
1/10	. . Details, e.g. of discs, knobs, wheels or handles ({ <a href="#">G05G 1/085</a> takes precedence})		
1/105	. . . {comprising arrangements for illumination}		
1/12	. . . Means for securing the members on rotatable spindles or the like		
1/30	. Controlling members actuated by foot		
1/305	. . {Compound pedal co-operating with two or more controlled members}		
1/32	. . with means to prevent injury		
1/323	. . . means disconnecting the connection between pedal and controlled member, e.g. by breaking or bending the connecting rod		
1/327	. . . means disconnecting the pedal from its hinge or support, e.g. by breaking or bending the support		
1/34	. . Double foot controls, e.g. for instruction vehicles		
1/36	. . Mounting units comprising an assembly of two or more pedals, e.g. for facilitating mounting		
1/38	. . comprising means to continuously detect pedal position		
1/40	. . adjustable		
1/405	. . . infinitely adjustable		
1/42	. . non-pivoting, e.g. sliding		
1/44	. . pivoting		
1/445	. . . about a central fulcrum		

5/16	. . . by friction	2009/0474	. . . . {characterised by means converting mechanical movement into electric signals}
5/18	. . . by positive interengagement, e.g. by a pawl	2009/04744	. . . . {Switches}
5/20	. . by locking a quadrant, rod, or the like carried by the member	2009/04748	. . . . {Position sensor for rotary movement, e.g. potentiometer}
5/22	. . . by friction	2009/04751	. . . . {Position sensor for linear movement}
5/24	. . . by positive interengagement, e.g. by a pawl	2009/04755	. . . . {Magnetic sensor, e.g. hall generator, pick-up coil}
5/26	. . by other means than a quadrant, rod, or the like	2009/04759	. . . . {Light-sensitive detector, e.g. photoelectric}
5/28	. for preventing unauthorised access to the controlling member or its movement to a command position	2009/04762	. . . . {Force transducer, e.g. strain gauge}
<b>7/00</b>	<b>Manually-actuated control mechanisms provided with one single controlling member co-operating with one single controlled member; Details thereof (controlling members <a href="#">G05G 1/00</a>)</b>	2009/04766	. . . . {providing feel, e.g. indexing means, means to create counterforce}
7/02	. characterised by special provisions for conveying or converting motion, or for acting at a distance	2009/0477	. . . . {holding the member in a number of definite positions}
7/04	. . altering the ratio of motion or force between controlling member and controlled member as a function of the position of the controlling member	2009/04774	. . . . {with additional switches or sensors on the handle}
7/06	. . in which repeated movement of the controlling member produces increments of movement of the controlled member ( <a href="#">G05G 7/08 takes precedence</a> )	2009/04777	. . . . {with additional push or pull action on the handle}
7/08	. . in which repeated movement of the controlling member moves the controlling member through a cycle of distinct positions	2009/04781	. . . . {with additional rotation of the controlling member}
7/10	. . specially adapted for remote control ( <a href="#">G05G 7/04 - G05G 7/08 take precedence</a> )	<b>NOTE</b> Provisional indexing codes related to scheme of trilateral project T021	
7/12	. specially adapted for actuating a member on a system in motion with respect to the controlling member, e.g. on a rotating shaft	9/04785	. . . . {the controlling member being the operating part of a switch arrangement}
7/14	. characterised by means for delaying initiation of, or making more gradual throughout, the movement of the controlled member in response to a given input from the controlling member, e.g. by providing lost motion in the command train	9/04788	. . . . {comprising additional control elements}
7/16	. Special provisions for reducing the effect of slight relative movement between supports of the mechanism, e.g. resulting from resilient mounting of a controlled mechanism	9/04792	. . . . {for rotary control around the axis of the controlling member}
<b>9/00</b>	<b>Manually-actuated control mechanisms provided with one single controlling member co-operating with two or more controlled members, e.g. selectively, simultaneously</b>	9/04796	. . . . {for rectilinear control along the axis of the controlling member}
9/02	. the controlling member being movable in different independent ways, movement in each individual way actuating one controlled member only	9/053	. . . . the controlling member comprising a ball ( <a href="#">graph-reading using a tracing ball or mouse G06F 3/033</a> )
9/04	. . in which movement in two or more ways can occur simultaneously	9/06	. the controlled members being actuated successively by repeated movement of the controlling member
9/047	. . . the controlling member being movable by hand about orthogonal axes, e.g. joysticks ( <a href="#">for switches H01H 25/04</a> )	9/08	. the controlled members being actuated successively by progressive movement of the controlling member ( <a href="#">single lever throttle and clutch control for marine engines B63H 21/213</a> )
2009/04703	. . . . {Mounting of controlling member}	9/085	. . {the controlling member acting on a set of cams or slot cams}
2009/04707	. . . . {with ball joint}	9/10	. with preselection and subsequent movement of each controlled member by movement of the controlling member in two different ways, e.g. guided by a shift gate
2009/04711	. . . . {with substantially hemispherical bearing part forced into engagement, e.g. by a spring}	<b>11/00</b>	<b>Manually-actuated control mechanisms provided with two or more controlling members co-operating with one single controlled member</b>
2009/04714	. . . . {with orthogonal axes}	<b>13/00</b>	<b>Manually-actuated control mechanisms provided with two or more controlling members and also two or more controlled members (<a href="#">interlocking G05G 5/08</a>)</b>
2009/04718	. . . . {with cardan or gimbal type joint}	13/02	. with separate controlling members for preselection and shifting of controlled members
2009/04722	. . . . {elastic, e.g. flexible shaft}	<b>15/00</b>	<b>Mechanical devices for initiating a movement automatically due to a specific cause</b>
2009/04725	. . . . {with coil spring}	15/002	. {due to an abnormal functioning of the controlled apparatus ( <a href="#">if speed is abnormal G05G 15/06</a> )}
2009/04729	. . . . {melastomeric}	15/005	. {due to a dangerous situation for the operator}
2009/04733	. . . . {with a joint having a nutating disc, e.g. forced by a spring}	15/007	. {due to an exerted pressure}
9/04737	. . . . {with six degrees of freedom}		

15/02	<ul style="list-style-type: none"> <li>due to alteration of the sense of movement of a member</li> </ul>	2700/26	<ul style="list-style-type: none"> <li>with a control member moving selectively or simultaneously the controlled members</li> </ul>
15/04	<ul style="list-style-type: none"> <li>due to distance or angle travelled by a member</li> </ul>	2700/28	<ul style="list-style-type: none"> <li>with a control member that is moved for preselection in another direction than for final actuating</li> </ul>
15/06	<ul style="list-style-type: none"> <li>due to the speed of rotation or of bodily movement of a member, e.g. passing an upper or lower limit thereof (<a href="#">speedometers G01P</a>)</li> </ul>	2700/30	<ul style="list-style-type: none"> <li>without preselection or differentiation between selection and actuating, e.g. control members with a fix control sequence, after a determined advance cycle, in which the control device comprises cams actuating separately the controlled members</li> </ul>
15/08	<ul style="list-style-type: none"> <li>due to the load or torque on a member, e.g. if exceeding a predetermined value thereof</li> </ul>	2700/32	<ul style="list-style-type: none"> <li>with plurality of control members, e.g. preselection and actuating members actuating several controlled members</li> </ul>
<b>17/00</b>	<b>Mechanical devices for moving a member after being released; Trip or release mechanisms characterised thereby</b>		
<b>19/00</b>	<b>Servo-mechanisms with follow-up action, e.g. occurring in steps</b>		
<b>21/00</b>	<b>Mechanical apparatus for control of a series of operations, i.e. programme control, e.g. involving a set of cams (<a href="#">G05G 5/02</a> takes precedence)</b>		
<b>23/00</b>	<b>Means for ensuring the correct positioning of parts of control mechanisms, e.g. for taking-up play</b>		
23/02	<ul style="list-style-type: none"> <li>self-adjusting</li> </ul>		
<b>25/00</b>	<b>Other details or appurtenances of control mechanisms, e.g. supporting intermediate members elastically</b>		
25/02	<ul style="list-style-type: none"> <li>Inhibiting the generation or transmission of noise {(<a href="#">suppression of noise or vibrations in selector apparatus for gearings F16H 59/0208</a>)}</li> </ul>		
25/04	<ul style="list-style-type: none"> <li>Sealing against entry of dust, weather or the like {(in selector apparatus for gearings, <a href="#">F16H 59/0213</a>)}</li> </ul>		
<b>2505/00</b>	<b>Means for preventing, limiting or returning the movements of parts of a control mechanism, e.g. locking controlling member</b>		
<b>2700/00</b>	<b>Control mechanisms or elements therefor applying a mechanical movement</b>		
2700/02	<ul style="list-style-type: none"> <li>Means for regulating or adjusting control mechanisms, e.g. devices for automatic adjustment</li> </ul>		
2700/04	<ul style="list-style-type: none"> <li>Control mechanisms limiting amplitude or adjusting datum position</li> </ul>		
2700/06	<ul style="list-style-type: none"> <li>Control mechanisms for holding members in a number of positions comprising a device to limit the control range</li> </ul>		
2700/08	<ul style="list-style-type: none"> <li>Control mechanisms for locking members in one or more positions</li> </ul>		
2700/10	<ul style="list-style-type: none"> <li>Control mechanisms for locking or at least for blocking a member in one position out of a number of several positions</li> </ul>		
2700/12	<ul style="list-style-type: none"> <li>Control mechanisms with one controlling member and one controlled member</li> </ul>		
2700/14	<ul style="list-style-type: none"> <li>with one elastic element as essential part, e.g. elastic components as a part of an actuating mechanism</li> </ul>		
2700/16	<ul style="list-style-type: none"> <li>Mechanisms for conveying motion or signals for or in relation with control mechanisms</li> </ul>		
2700/18	<ul style="list-style-type: none"> <li>Systems wherein the control element may be placed in two or more positions</li> </ul>		
2700/20	<ul style="list-style-type: none"> <li>Control mechanisms not otherwise provided for</li> </ul>		
2700/22	<ul style="list-style-type: none"> <li>Mechanisms linking plurality of controlling or controlled members</li> </ul>		
2700/24	<ul style="list-style-type: none"> <li>Locking controlled members of selectively controlled mechanisms</li> </ul>		