

CPC**COOPERATIVE PATENT CLASSIFICATION****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](#) to [F16H 63/00](#))

NOTE

This subclass covers :

- members of general applicability for mechanical control;
- mechanical systems for moving members to one or more definite settings.

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:

[A61G 13/02](#) Controls for adjusting operating tables
[A61G 15/02](#) Controls for adjusting operating chairs
[B25J](#) Manipulators, e.g. controls therefor
[B60K 26/00](#) Arrangement or mounting of propulsion-unit control devices in vehicles
[B60T 7/00](#) Vehicle brake-action initiating means
[B62D 33/073](#) Adaptations of control devices for movable vehicle cabs
[B62K 21/00](#) Cycle-steering devices
[B62K 23/00](#) Rider-operated controls specially adapted for cycles
[B62L 3/00](#) Brake-actuating mechanisms specially adapted for cycles
[B63H 25/02](#) Marine steering initiating means
[B66B 1/00](#) Controls for elevators
[B66C 13/18](#) Control systems or devices for cranes
[B66C 13/56](#) Arrangements of handles or pedals for crane operation
[E02F 9/20](#) Control devices for dredging or soil shifting machines
[F16C 3/28](#) Adjustable cranks or eccentrics
[F16D 43/00](#) Automatic clutches
{ [F16H 59/00](#) to [F16H 63/00](#) Speed changing or reversing mechanisms for gearings conveying rotary motion }
[F16K 31/00](#), [F16K 33/00](#) Controls for valves
[F16P 3/00](#) Safety devices acting in conjunction with the control or operation of a machine
[F16P 7/02](#) Stopping machines on occurrence of dangerous conditions therein
[G02B 21/32](#) Micromanipulators structurally combined with microscopes
[G04B 1/00](#) to [G04B 18/00](#) Driving mechanisms in clocks or watches
[G06C](#) Digital computers in which all the computation is effected mechanically
[G06F 3/02](#) Manual computer input arrangements
[G06K 11/00](#) Converting a pattern of mechanical parameters into electric signals
[G21C 7/08](#) Displacement of solid control elements in nuclear reactors
[H01H](#) Mechanisms for operating switch contacts
[H03J 1/00](#) Mechanical control of resonant circuits.

Guidance heading:

G05G 1/00 **Controlling members, e.g. knobs or handles; Assemblies or arrangements thereof; Indicating position of controlling members** ({ means for preventing, limiting or returning the movements of parts of a control mechanism [G05G 5/00](#); providing feel, e.g. means to create a counterforce [G05G 5/03](#); specially adapted for programme control [G05G 21/00](#); vibration damping [G05G 25/02](#); } joysticks [G05G 9/04](#); steering wheels for motor vehicles [B62D](#))

NOTE

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

- [G05G 1/01](#) . Arrangements of two or more controlling members with respect to one another (double foot control, e.g. for instruction vehicles [G05G 1/34](#); mounting units comprising an assembly with two or more pedals [G05G 1/36](#))
- [G05G 1/015](#) . Arrangements for indicating the position of a controlling member (means for continuously detecting pedal position [G05G 1/38](#); means for detecting position through tactile feedback [G05G 5/03](#))
- [G05G 1/02](#) . Controlling members for hand actuation by linear movement, e.g. push buttons
- [G05G 1/025](#) . . {actuated by sliding movement }
- [G05G 1/04](#) . Controlling members for hand actuation by pivoting movement, e.g. levers
- [G05G 1/06](#) . . Details of their grip parts { ([G05G 1/10](#) takes precedence) }
- [G05G 1/08](#) . Controlling members for hand actuation by rotary movement, e.g. hand wheels
- [G05G 1/082](#) . . {having safety devices, e.g. means for disengaging the control member from the actuated member }
- [G05G 1/085](#) . . {Crank handles ([G05G 1/082](#) takes precedence) }
- [G05G 1/087](#) . . {retractable; Flush control knobs }
- [G05G 1/10](#) . . Details, e.g. of discs, knobs, wheels or handles { ([G05G 1/085](#) takes precedence) }
- [G05G 1/105](#) . . . {comprising arrangements for illumination }
- [G05G 1/12](#) . . . Means for securing the members on rotatable spindles or the like
- [G05G 1/30](#) . Controlling members actuated by foot
- [G05G 1/305](#) . . { Compound pedal co-operating with two or more controlled members }
- [G05G 1/32](#) . . with means to prevent injury
- [G05G 1/323](#) . . . means disconnecting the connection between pedal and controlled member, e.g. by breaking or bending the connecting rod
- [G05G 1/327](#) . . . means disconnecting the pedal from its hinge or support, e.g. by breaking or bending the support
- [G05G 1/34](#) . . Double foot controls, e.g. for instruction vehicles
- [G05G 1/36](#) . . Mounting units comprising an assembly of two or more pedals, e.g. for facilitating mounting
- [G05G 1/38](#) . . comprising means to continuously detect pedal position

- G05G 1/40 . . . adjustable
- G05G 1/405 infinitely adjustable
- G05G 1/42 . . . non-pivoting, e.g. sliding
- G05G 1/44 . . . pivoting
- G05G 1/445 about a central fulcrum
- G05G 1/46 . . . Means, e.g. links, for connecting the pedal to the controlled unit
- G05G 1/48 . . . Non-slip pedal treads; Pedal extensions or attachments characterised by mechanical features only
- G05G 1/483 Non-slip treads; Pedal extensions or attachments characterised by mechanical features only
- G05G 1/487 Pedal extensions
- G05G 1/50 . . . Manufacturing of pedals; Pedals characterised by the material used
- G05G 1/503 . . . { Controlling members for hand-actuation }
- G05G 1/506 . . . { Controlling members for foot-actuation }

- G05G 1/52 . . Controlling members specially adapted for actuation by other parts of the human body than hand or foot

- G05G 1/54 . . Controlling members specially adapted for actuation by auxiliary operating members or extensions; Operating members or extensions therefor ([pedal extensions](#))
- G05G 1/56 . . . Controlling members specially adapted for actuation by keys, screwdrivers or like tools

- G05G 1/58 . . Rests or guides for relevant parts of the operator's body
- G05G 1/60 . . . Foot rests or foot guides
- G05G 1/62 . . . Arm rests

- G05G 3/00** **Controlled members; Assemblies or arrangements thereof** ([interlocking of controlled members G05G 5/08](#))

- G05G 5/00** **Means for preventing, limiting or returning the movements of parts of a control mechanism, e.g. locking controlling member** ([G05G 17/00 takes precedence](#))

- G05G 5/005 . . {for preventing unintentional use of a control mechanism ([G05G 5/28 takes precedence](#)) }

- G05G 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 ([G05G 5/28 takes precedence](#))

- G05G 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 G05G 1/015](#))

- G05G 5/04 . . Stops for limiting movement of members e.g. adjustable stop ([G05G 5/03](#), [G05G 5/05](#), [G05G 5/28 take precedence](#))

- G05G 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 ([G05G 5/28 takes precedence](#))

- G05G 5/06 . for holding members in one or a limited number of definite positions only ([G05G 5/005](#) , [G05G 5/03](#), [G05G 5/05](#), [G05G 5/28](#) take precedence)
- G05G 5/065 . . {using a spring-loaded ball }
- G05G 5/08 . . Interlocking of members, e.g. locking member in a particular position before or during the movement of another member

- G05G 5/12 . for holding members in an indefinite number of positions, e.g. by a toothed quadrant ([G05G 5/28](#) takes precedence)
- G05G 5/14 . . by locking a member with respect to a fixed quadrant, rod, or the like
- G05G 5/16 . . . by friction
- G05G 5/18 . . . by positive interengagement, e.g. by a pawl
- G05G 5/20 . . by locking a quadrant, rod, or the like carried by the member
- G05G 5/22 . . . by friction
- G05G 5/24 . . . by positive interengagement, e.g. by a pawl
- G05G 5/26 . . by other means than a quadrant, rod, or the like

- G05G 5/28 . for preventing unauthorised access to the controlling member or its movement to a command position

- G05G 7/00** **Manually-actuated control mechanisms provided with one single controlling member co-operating with one single controlled member; Details thereof**
(controlling members [G05G 1/00](#))

- G05G 7/02 . Characterised by special provisions for conveying or converting motion, or for acting at a distance
- G05G 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
- G05G 7/06 . . in which repeated movement of the controlling member produces increments of movement of the controlled member ([G05G 7/08](#) takes precedence)
- G05G 7/08 . . in which repeated movement of the controlling member moves the controlling member through a cycle of distinct positions
- G05G 7/10 . . specially adapted for remote control ([G05G 7/04](#) to [G05G 7/08](#) take precedence)

- G05G 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

- G05G 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

- G05G 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

- G05G 9/00** **Manually-actuated control mechanisms provided with one single controlling member co-operating with two or more controlled members, e.g. selectively, simultaneously**

- G05G 9/02 . the controlling member being movable in different independent ways, movement in each individual way actuating one controlled member only

- G05G 9/04 . . . in which movement in two or more ways can occur simultaneously
- G05G 9/047 . . . the controlling member being movable by hand about orthogonal axes, e.g. joysticks { (for switches [H01H 25/04](#)) }
- G05G 9/04737 {with six degrees of freedom }
- G05G 9/04785 {the controlling member being the operating part of a switch arrangement }
- G05G 9/04788 {comprising additional control elements }
- G05G 9/04792 {for rotary control around the axis of the controlling member }
- G05G 9/04796 {for rectilinear control along the axis of the controlling member }
- G05G 9/053 . . . the controlling member comprising a ball { ([graph-reading using a tracing ball or mouse G06K 11/18](#)) }

- G05G 9/06 . the controlled members being actuated successively by repeated movement of the controlling member

- G05G 9/08 . the controlled members being actuated successively by progressive movement of the controlling member { ([Single lever throttle and clutch control for marine engines B63H 21/22B](#)) }
- G05G 9/085 . . {the controlling member acting on a set of cams or slot cams }

- G05G 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

- G05G 11/00 Manually-actuated control mechanisms provided with two or more controlling members co-operating with one single controlled member**

- G05G 13/00 Manually-actuated control mechanisms provided with two or more controlling members and also two or more controlled members ([interlocking G05G 5/08](#))**

- G05G 13/02 . with separate controlling members for preselection and shifting of controlled members

- G05G 15/00 Mechanical devices for initiating a movement automatically due to a specific cause**

- G05G 15/002 . {due to an abnormal functioning of the controlled apparatus (if speed is abnormal [G05G 15/06](#)) }
- G05G 15/005 . {due to a dangerous situation for the operator }
- G05G 15/007 . {due to an exerted pressure }
- G05G 15/02 . due to alteration of the sense of movement of a member
- G05G 15/04 . due to distance or angle travelled by a member
- G05G 15/06 . due to the speed of rotation or of bodily movement of a member, e.g. passing an upper or lower limit thereof ([speedometers G01P](#))
- G05G 15/08 . due to the load or torque on a member, e.g. if exceeding a predetermined value thereof

- G05G 17/00 Mechanical devices for moving a member after being released; Trip or release**

mechanisms characterised thereby

- G05G 19/00** Servo-mechanisms with follow-up action, e.g. occurring in steps
- G05G 21/00** Mechanical apparatus for control of a series of operations, i.e. programme control, e.g. involving a set of cams ([G05G 5/02](#) takes precedence)
- G05G 23/00** Means for ensuring the correct positioning of parts of control mechanisms, e.g. for taking-up play
- G05G 23/02 . self-adjusting
- G05G 25/00** Other details or appurtenances of control mechanisms, e.g. supporting intermediate members elastically
- G05G 25/02 . Inhibiting the generation or transmission of noise { ([suppression of noise or vibrations in selector apparatus for gearings F16H 59/0208](#)) }
- G05G 25/04 . Sealing against entry of dust, weather or the like { ([in selector apparatus for gearings, F16H 59/0213](#)) }

Guidance heading:

- G05G 2009/00** Manually-actuated control mechanisms provided with one single controlling member co-operating with two or more controlled members, e.g. selectively, simultaneously
- G05G 2009/02 . the controlling member being movable in different independent ways, movement in each individual way actuating one controlled member only
- G05G 2009/04 .. in which movement in two or more ways can occur simultaneously
- G05G 2009/047 ... the controlling member being movable by hand about orthogonal axes, e.g. joysticks { ([for switches H01H 25/04](#)) }
- [G05G 2009/04703](#) Mounting of controlling member
- [G05G 2009/04707](#) with ball joint
- [G05G 2009/04711](#) with substantially hemispherical bearing part forced into engagement, e.g. by a spring
- [G05G 2009/04714](#) with orthogonal axes
- [G05G 2009/04718](#) with cardan or gimbal type joint
- [G05G 2009/04722](#) elastic, e.g. flexible shaft
- [G05G 2009/04725](#) with coil spring
- [G05G 2009/04729](#) elastomeric
- [G05G 2009/04733](#) with a joint having a nutating disc, e.g. forced by a spring
- [G05G 2009/0474](#) characterised by means converting mechanical movement into electric signals

| | | |
|-----------------|-------|---|
| G05G 2009/04744 | ..... | Switches |
| G05G 2009/04748 | ..... | Position sensor for rotary movement, e.g. potentiometer |
| G05G 2009/04751 | ..... | Position sensor for linear movement |
| G05G 2009/04755 | ..... | Magnetic sensor, e.g. hall generator, pick-up coil |
| G05G 2009/04759 | ..... | Light-sensitive detector, e.g. photoelectric |
| G05G 2009/04762 | ..... | Force transducer, e.g. strain gauge |
| G05G 2009/04766 | .... | providing feel, e.g. indexing means, means to create counterforce |
| G05G 2009/0477 | ..... | holding the member in a number of definite positions |
| G05G 2009/04774 | .... | with additional switches or sensors on the handle |
| G05G 2009/04777 | .... | with additional push or pull action on the handle |
| G05G 2009/04781 | .... | with additional rotation of the controlling member |

NOTE

Provisional indexing codes related to scheme of trilateral project T021

Guidance heading:

G05G 2505/00 **Means for preventing, limiting or returning the movements of parts of a control mechanism, e.g. locking controlling member**

Guidance heading:

G05G 2700/00 **Control mechanisms or elements therefor applying a mechanical movement**

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|--------------|--|
| G05G 2700/02 | . Means for regulating or adjusting control mechanisms, e.g. devices for automatic adjustment |
| G05G 2700/04 | . Control mechanisms limiting amplitude or adjusting datum position |
| G05G 2700/06 | .. Control mechanisms for holding members in a number of positions comprising a device to limit the control range |
| G05G 2700/08 | .. Control mechanisms for locking members in one or more positions |
| G05G 2700/10 | .. Control mechanisms for locking or at least for blocking a member in one position out of a number of several positions |
| G05G 2700/12 | . Control mechanisms with one controlling member and one controlled member |
| G05G 2700/14 | .. with one elastic element as essential part, e.g. elastic components as a part of an actuating mechanism |
| G05G 2700/16 | .. Mechanisms for conveying motion or signals for or in relation with control mechanisms |
| G05G 2700/18 | .. Systems wherein the control element may be placed in two or more positions |
| G05G 2700/20 | . Control mechanisms not otherwise provided for |
| G05G 2700/22 | . Mechanisms linking plurality of controlling or controlled members |

- G05G 2700/24 . . Locking controlled members of selectively controlled mechanisms
- G05G 2700/26 . . with a control member moving selectively or simultaneously the controlled members
- G05G 2700/28 . . . with a control member that is moved for preselection in another direction than for final actuating
- G05G 2700/30 . . . 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
- G05G 2700/32 . . with plurality of control members, e.g. preselection and actuating members actuating several controlled members