

## SECTION G — PHYSICS

## G05 CONTROLLING; REGULATING

**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)

**Note(s)**

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:
  - A61G 13/02.....Controls for adjusting operating tables
  - A61G 15/02.....Controls for adjusting operating chairs
  - A63F 13/02.....Accessories for games using an electronically generated display
  - 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
  - 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-G04B 18/00.....Driving mechanisms in clocks or watches
  - G06C.....Digital computers in which all the computation is effected mechanically
  - G06F 3/01.....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.

**Subclass index**

MANUALLY-ACTUATED CONTROL MECHANISMS, ONE OR MORE CONTROLLING MEMBERS	
ACTUATING ONE OR MORE CONTROLLED MEMBERS.....	7/00, 9/00, 11/00, 13/00
AUTOMATIC MOVEMENT-INITIATING DEVICES; TRIP MECHANISMS.....	15/00, 17/00
SERVO-MECHANISMS.....	19/00
PROGRAMME-CONTROL DEVICES.....	21/00
LOCKING MEANS, LIMITING MEANS; POSITIONING MEANS.....	5/00, 23/00
COMPONENT PARTS.....	1/00, 3/00, 25/00

**1/00 Controlling members, e.g. knobs or handles; Assemblies or arrangements thereof; Indicating position of controlling members** (joysticks G05G 9/04; steering wheels for motor vehicles B62D) **[2008.04]**

**Note(s) [2008.04]**

In this group the first place priority rule is applied, i.e. at each hierarchical level classification is made in the first appropriate place.

- 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) **[2008.04]**
- 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) **[2008.04]**
- 1/02 • Controlling members for hand-actuation by linear movement, e.g. push buttons **[1, 7]**
- 1/04 • Controlling members for hand-actuation by pivoting movement, e.g. levers **[1, 7]**
- 1/06 • • Details of their grip parts **[1, 7]**
- 1/08 • Controlling members for hand-actuation by rotary movement, e.g. hand wheels **[1, 7]**
- 1/10 • • Details, e.g. of discs, knobs, wheels or handles
- 1/12 • • • Means for securing the members on rotatable spindles or the like
- 1/30 • Controlling members actuated by foot **[2008.04]**
- 1/32 • • with means to prevent injury **[2008.04]**
- 1/323 • • • means disconnecting the connection between pedal and controlled member, e.g. by breaking or bending the connecting rod **[2008.04]**
- 1/327 • • • means disconnecting the pedal from its hinge or support, e.g. by breaking or bending the support **[2008.04]**
- 1/34 • • Double foot controls, e.g. for instruction vehicles **[2008.04]**
- 1/36 • • Mounting units comprising an assembly of two or more pedals, e.g. for facilitating mounting **[2008.04]**
- 1/38 • • comprising means to continuously detect pedal position **[2008.04]**
- 1/40 • • adjustable **[2008.04]**
- 1/405 • • • infinitely adjustable **[2008.04]**
- 1/42 • • non-pivoting, e.g. sliding **[2008.04]**
- 1/44 • • pivoting **[2008.04]**
- 1/445 • • • about a central fulcrum **[2008.04]**
- 1/46 • • Means, e.g. links, for connecting the pedal to the controlled unit **[2008.04]**
- 1/48 • • Non-slip pedal treads; Pedal extensions or attachments characterised by mechanical features only **[2008.04]**
- 1/483 • • • Non-slip treads **[2008.04]**
- 1/487 • • • Pedal extensions **[2008.04]**
- 1/50 • • Manufacturing of pedals; Pedals characterised by the material used **[2008.04]**
- 1/52 • Controlling members specially adapted for actuation by other parts of the human body than hand or foot **[2008.04]**
- 1/54 • Controlling members specially adapted for actuation by auxiliary operating members or extensions; Operating members or extensions therefor (pedal extensions G05G 1/487) **[2008.04]**
- 1/56 • • Controlling members specially adapted for actuation by keys, screwdrivers or like tools **[2008.04]**
- 1/58 • Rests or guides for relevant parts of the operator's body **[2008.04]**
- 1/60 • • Foot rests or foot guides **[2008.04]**
- 1/62 • • Arm rests **[2008.04]**
- 3/00 Controlled members** (gear shifter yokes F16H 63/32); **Assemblies or arrangements thereof** (interlocking of controlled members G05G 5/08) **[1, 7]**
- 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) **[5]**
- 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)
- 5/03 • Means for enhancing the operator's awareness of the 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) **[5, 2008.04]**
- 5/04 • Stops for limiting movement of members, e.g. adjustable stop (G05G 5/03, G05G 5/05, G05G 5/28 take precedence) **[5]**
- 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) **[5]**
- 5/06 • for holding members in one or a limited number of definite positions only (G05G 5/03, G05G 5/05, G05G 5/28 take precedence) **[5]**
- 5/08 • • Interlocking of members, e.g. locking a member in a particular position before or during the movement of another member
- 5/12 • for holding members in an indefinite number of positions, e.g. by a toothed quadrant (G05G 5/28 takes precedence) **[5]**
- 5/14 • • by locking a member with respect to a fixed quadrant, rod, or the like
- 5/16 • • • by friction
- 5/18 • • • by positive interengagement, e.g. by a pawl
- 5/20 • • by locking a quadrant, rod, or the like carried by the member
- 5/22 • • • by friction
- 5/24 • • • by positive interengagement, e.g. by a pawl
- 5/26 • • by other means than a quadrant, rod, or the like
- 5/28 • for preventing unauthorised access to the controlling member or its movement to a command position **[5]**
- 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)
- 7/02 • characterised by special provisions for conveying or converting motion, or for acting at a distance
- 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
- 7/06 • • in which repeated movement of the controlling member produces increments of movement of the controlled member (G05G 7/08 takes precedence)
- 7/08 • • in which repeated movement of the controlling member moves the controlled member through a cycle of distinct positions
- 7/10 • • specially adapted for remote control (G05G 7/04-G05G 7/08 take precedence)
- 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
- 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

- 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
- 9/00 Manually-actuated control mechanisms provided with one single controlling member co-operating with two or more controlled members, e.g. selectively, simultaneously**
- 9/02 • the controlling member being movable in different independent ways, movement in each individual way actuating one controlled member only
- 9/04 • • in which movement in two or more ways can occur simultaneously
- 9/047 • • • the controlling member being movable by hand about orthogonal axes, e.g. joysticks [5]
- 9/053 • • • the controlling member comprising a ball [5]
- 9/06 • the controlled members being actuated successively by repeated movement of the controlling member
- 9/08 • the controlled members being actuated successively by progressive movement of the controlling member
- 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
- 11/00 Manually-actuated control mechanisms provided with two or more controlling members co-operating with one single controlled member**
- 13/00 Manually-actuated control mechanisms provided with two or more controlling members and also two or more controlled members (interlocking G05G 5/08)**
- 13/02 • with separate controlling members for preselection and shifting of controlled members
- 15/00 Mechanical devices for initiating a movement automatically due to a specific cause**
- 15/02 • due to alteration of the sense of movement of a member
- 15/04 • due to distance or angle travelled by a member
- 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)
- 15/08 • due to the load or torque on a member, e.g. if exceeding a predetermined value thereof
- 17/00 Mechanical devices for moving a member after being released; Trip or release mechanisms characterised thereby**
- 19/00 Servo-mechanisms with follow-up action, e.g. occurring in steps**
- 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)**
- 23/00 Means for ensuring the correct positioning of parts of control mechanisms, e.g. for taking-up play**
- 23/02 • self-adjusting
- 25/00 Other details, features or accessories of control mechanisms, e.g. supporting intermediate members elastically**
- 25/02 • Inhibiting the generation or transmission of noise [5]
- 25/04 • Sealing against entry of dust, weather or the like [5]