

CPC**COOPERATIVE PATENT CLASSIFICATION****G04D**

APPARATUS OR TOOLS SPECIALLY DESIGNED FOR MAKING OR MAINTAINING CLOCKS OR WATCHES (machine tools in general [B23](#), [B24](#); hand tools in general [B25](#))

G04D 1/00

Gripping, holding, or supporting devices {(stands in general [F16M](#); for instruments [G01D 11/30](#), [B01L](#))}

- G04D 1/0007 . {for assembly entirely by hand}
- G04D 1/0014 . . {Workbenches, supports; Workbenches provided with suction devices; for dust; Illumination}
- G04D 1/0021 . . {Supporting means facilitating assembly and mechanisation, e.g. magazines for components (machines for assembly [G04D 1/0071](#); supports in general [G04D 1/06](#))}
- G04D 1/0028 . . {Screwdrivers (screwdrivers in general [B25B 15/00](#))}
- G04D 1/0035 . . . {with power source for driving the screwdriver}
- G04D 1/0042 . . {tools for setting, riveting or pressing, e.g. nippers for this purpose (machines therefor [G04D 3/042](#), [G04D 3/045](#), [G04D 3/047](#))}
- G04D 1/005 . {for non-automatic assembly, with automatic transport between workbenches}
- G04D 1/0057 . . {Conveyor belts or chains (in general [B65G](#))}
- G04D 1/0064 . . {Turntables or plates (carousels) (in general [B65G 47/00](#))}
- G04D 1/0071 . {for totally automated assembly}
- G04D 1/0078 . {Automated gripping means (hand-operated gripping means [G04D 1/02](#))}
- G04D 1/0085 . . {with pneumatic holding means (hand tools with pneumatic means [G04D 1/02](#))}
- G04D 1/0092 . {Devices for positioning and sorting of the components (sorting and positioning in general [B23Q](#))}
- G04D 1/02 . Tweezers; Vice clamps or other special hand tools for watchmakers {([G04D 1/04](#), [G04D 1/08](#), [G04D 1/10](#) take precedence; vices [B25B](#); devices for setting bearing jewels and parts thereof [G04D 3/04](#); devices for setting watch glasses [G04D 3/06](#))}
- G04D 1/021 . . {Tweezers (tweezers for medical purposes [A61B](#); setting tools [B41B 1/00](#))}
- G04D 1/022 . . {Universal nippers (nippers for setting watch glasses [G04D 3/067](#))}
- G04D 1/023 . . {Revolving-head nippers (jaw plates for latches [G04D 3/0218](#))}
- G04D 1/025 . . {Hand screws}
- G04D 1/026 . . {Clamps for holding bearing jewels (machines for setting bearing jewels [G04D 3/0002](#))}
- G04D 1/027 . . {Hand tools for gripping or holding by magnetic means}
- G04D 1/028 . . {Hand tools for gripping or holding by pneumatic means}
- G04D 1/04 . Tools for setting springs]
- G04D 1/041 . . {for springs of driving mechanisms (machines therefor [G04D 3/0007](#))}
- G04D 1/042 . . {for coil springs in regulating mechanisms (machines therefor [G04D 3/0041](#))}
- G04D 1/044 . . . {for working the ends (machines therefor [G04D 3/0041](#))}
- G04D 1/045 . . . {for fastening the ends (machines therefor [G04D 3/0007](#), [G04D 3/0041](#))}
- G04D 1/047 {on the coil roll}

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| G04D 1/048 | {on the coil bobbin} |
| G04D 1/06 | . Supporting devices for clockworks or parts of time-pieces {(for automatic assembly G04D 1/0021)} |
| G04D 1/063 | .. {provided with a pick-up means, e.g. microphone (measuring and control means for comparison with a standard frequency G04D 7/12)} |
| G04D 1/066 | .. {Packaging and boxes for transport (packaging for small items, packaging for special items B65D)} |
| G04D 1/08 | . Tools for setting or removing hands {(machines therefor G04D 3/0046)} |
| G04D 1/10 | . Devices for opening or closing watch bottoms or covers {(machines therefor G04D 3/00)} |
| G04D 3/00 | Watchmakers` or watch-repairers` machines or tools for working materials {(metal working in general class B23)} |
| G04D 3/0002 | . {for mechanical working other than with a lathe (lathes for watchmakers G04D 3/02)} |
| G04D 3/0005 | .. {for parts of driving means} |
| G04D 3/0007 | ... {for springs (springs in general B21F ; mainspring construction G04B 1/14 ; springs for the regulating mechanism see G04D 3/0041)} |
| G04D 3/001 | ... {for spring barrels (construction of spring barrels G04B 1/16 , G04B 1/18)} |
| G04D 3/0012 | .. {for parts of the winding-up mechanism, e.g. for winding axles, crowns (construction thereof G04B 3/00 , G04B 5/00)} |
| G04D 3/0015 | .. {for components of the pawl construction, stop clicks, clutches (construction thereof G04B 11/00)} |
| G04D 3/0017 | .. {for components of gearworks (construction thereof G04B 13/00)} |
| G04D 3/002 | ... {for gear wheels or gears} |
| G04D 3/0023 | ... {for axles, sleeves} |
| G04D 3/0025 | ... {for axletaps, e.g. for grinding or polishing thereof (on a lathe G04D 3/02)} |
| G04D 3/0028 | .. {for components of the escape mechanism (construction thereof G04B 15/00)} |
| G04D 3/003 | ... {for levers} |
| G04D 3/0033 | ... {for lever wheels} |
| G04D 3/0035 | .. {for components of the regulating mechanism} |
| G04D 3/0038 | ... {for balances (construction therefor G04B 17/063)} |
| G04D 3/0041 | ... {for coil-springs (coil-springs in general B21F ; springs for the driving mechanism G04D 3/0007)} |
| G04D 3/0043 | .. {for components of the time-indicating mechanisms (construction thereof G04B 19/00)} |
| G04D 3/0046 | ... {for hands (construction thereof G04B 19/00)} |
| G04D 3/0048 | ... {for dials (construction thereof G04B 19/10 , G04B 19/12)} |
| G04D 3/0051 | ... {for time markers} |
| G04D 3/0053 | .. {for framework components (construction thereof G04B 29/00)} |
| G04D 3/0056 | .. {for bearing components (construction thereof G04B 31/00)} |
| G04D 3/0058 | ... {for bearing jewels (machines for boring through stones B28D ; for diamonds B24B ; diamond polishing B24B 9/16 ; manufacture of drawing stones B23P 5/00 ; setting of industrial stones B23P 15/24)} |

- G04D 3/0061 . . {for components for protecting the mechanism against external influences (construction thereof [G04B 37/00](#), [G04B 43/00](#))}
- G04D 3/0064 . . . {for cases}
- G04D 3/0066 . . . {for the fastening means of the case or bracelet (construction thereof [G04B 37/1486](#))}
- G04D 3/0069 . {for working with non-mechanical means, e.g. chemical, electrochemical, metallising, vapourising; with electron beams, laser beams}
- G04D 3/0071 . . {for bearing components}
- G04D 3/0074 . {for treatment of the material, e.g. surface treatment}
- G04D 3/0076 . . {for components of driving mechanisms, e.g. mainspring}
- G04D 3/0079 . . {for gearwork components}
- G04D 3/0082 . . . {for gear wheels or gears}
- G04D 3/0084 . . . {for axles, sleeves}
- G04D 3/0087 . . {for components of the escapement mechanism, e.g. lever escapement, escape wheel}
- G04D 3/0089 . . {for components of the regulating mechanism, e.g. coil springs}
- G04D 3/0092 . . {for components of the time-indicating mechanism, e.g. dials}
- G04D 3/0094 . . {for bearing components}
- G04D 3/0097 . . {for components of the means protecting the mechanism against external influences, e.g. cases}
- G04D 3/02 . {Lathes, with one or more supports; Burnishing machines, with one or more supports {(metal lathes [B23B](#); automatic lathes [B23B](#); grinding and polishing in general class [B24](#))}
- G04D 3/0209 . . {Components}
- G04D 3/0218 . . . {Jaw-plates, revolving-head nippers}
- G04D 3/0227 . . {for the manufacture of special components for clockworks}
- G04D 3/0236 . . . {for gearwork components}
- G04D 3/0245 {for gear wheels or gears}
- G04D 3/0254 {for axles, sleeves}
- G04D 3/0263 {for axle taps}
- G04D 3/0272 . . . {for components of the time-indicating mechanism, e.g. dials}
- G04D 3/0281 . . . {for bearing components}
- G04D 3/029 . . . {for components of the means protecting the mechanism from external influences, e.g. cases}
- G04D 3/04 . {Devices for placing bearing jewels, bearing sleeves, or the like in position {(fixing jewels [A44C 17/04](#); tools for assembling and taking apart gear wheels and bearing components [B25B](#); machines for the manufacture of bearing jewels and components [G04D 3/0002](#))}
- G04D 3/042 . . {for bearing jewels (pressing nippers and hand tools [G04D 1/0042](#))}
- G04D 3/045 . . {for lever, Impulse-pin (adjustment of the escapement [G04D 7/06](#))}
- G04D 3/047 . . {for the coil rolls or bobbins}
- G04D 3/06 . {Devices for shaping or setting watch glasses {(cutting watch glasses [C03B 33/04](#); grinding or working of spectacle lenses and lenses [B24B](#); working plastic materials in general [B29](#))}

- G04D 3/062 .. {Shaping without chipping away, e.g. by hot pressing or by punching out the whole piece from a plate}
- G04D 3/065 .. {Shaping by removing material, e.g. cutting out from a plate, milling the edges}
- G04D 3/067 .. {Setting or taking apart, whereby a temporary deformation of the glass may take place}
- G04D 3/08 . Machines or apparatus for cleaning
- G04D 3/083 .. {whereby the components to be cleaned are placed in a container}
- G04D 3/086 ... {whereby the container rotates in a cleaning fluid}

- G04D 5/00** **Oiling devices; Special lubricant containers for watchmakers** {(bearings constructed with regard to oiling of the clockwork [G04B 31/08](#); oilcans for lubricating in general [F16N 3/04](#))}
- G04D 5/005 . {Oilcans and other hand tools for lubricating special parts of the clockwork mechanism}

- G04D 7/00** **Measuring, counting, calibrating, testing or regulating apparatus** {(measuring devices and calibers in general [G01B](#); counters in general [H03K](#))}
- G04D 7/001 . {Purely mechanical measuring and testing apparatus}
- G04D 7/002 . {Electrical measuring and testing apparatus}
- G04D 7/003 .. {for electric or electronic clocks}
- G04D 7/004 . {Optical measuring and testing apparatus}
- G04D 7/005 . {Counters for small components, e.g. bearing jewels}
- G04D 7/006 . {Testing apparatus for complete clockworks with regard to external influences or general good working}
- G04D 7/007 .. {with regard to the sealing of the case}
- G04D 7/008 .. {with regard to the reaction to shocks}
- G04D 7/009 .. {with regard to the functioning of the automatic winding-up device}
- G04D 7/02 . for mainsprings
- G04D 7/04 . for gearwork, {(e.g. optical control of gear wheels; optical control in general [G01B](#), [G01B 9/08](#))}
- G04D 7/06 . for escapements
- G04D 7/08 . for balance wheels
- G04D 7/081 .. {for adjusting the fellow or the shafts (adjustment of the gear wheels [G04D 7/04](#))}
- G04D 7/082 .. {for balancing}
- G04D 7/084 ... {by setting adjustable elements, e.g. balance wheel screws}
- G04D 7/085 ... {by removing material from the balance wheel itself}
- G04D 7/087 {Automatic devices therefor (balancing and loading or removing carried out automatically)}
- G04D 7/088 ... {by loading the balance wheel itself with material}
- G04D 7/10 . for hairsprings {of balances}
- G04D 7/12 . Timing devices for clocks or watches for comparing the rate of the oscillating member with a standard {(supporting devices for clocks with built-in recording apparatus [G04D 1/063](#); measuring short time intervals [G04F 10/00](#); frequency measuring in general [H04B](#), [G01R](#))}

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| G04D 7/1207 | .. | {only for measuring} |
| G04D 7/1214 | ... | {for complete clockworks} |
| G04D 7/1221 | | {with recording, e.g. vibrograph} |
| G04D 7/1228 | | {Devices for facilitating the reading or the interpretation of the recording} |
| G04D 7/1235 | ... | {for the control mechanism only (found from outside the clockwork)} |
| G04D 7/1242 | | {for measuring amplitude} |
| G04D 7/125 | | {for measuring frequency} |
| G04D 7/1257 | .. | {wherein further adjustment devices are present} |
| G04D 7/1264 | ... | {for complete clockworks} |
| G04D 7/1271 | ... | {for the control mechanism only (from outside the clockwork)} |
| G04D 7/1278 | | {whereby the adjustment device works on the compass} |
| G04D 7/1285 | | {whereby the adjustment device works on the mainspring} |
| G04D 7/1292 | | {whereby the adjustment device works on the balance wheel} |

G04D 9/00 **Demagnetising devices** (demagnetising in general [H01F 13/00](#))

G04D 99/00 **Subject matter not provided for in other groups of this subclass**