

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}
- 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](#))}
- 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**