

CROSS-REFERENCE ART COLLECTIONS

2 **DRIVING MECHANISMS (DRIVING
MECHANISMS FOR TURKISH TIME
SUBCLASS 167; DRIVING
MECHANISMS IN THE HANDS
SUBCLASS 396; DRIVING
MECHANISMS FOR PHONOGRAPHIC
APPARATUS G11B 19/00; SPRINGS,
DRIVING WEIGHT ENGINES F03G;
DRIVING MECHANISMS FOR
CINEMATOGRAPHY G03B 1/00;
DRIVING MECHANISMS; DRIVING
MECHANISMS FOR TIME FUSES FOR
MISSILES F42C; DRIVING
MECHANISMS FOR TOYS A63H 11/
23) [G04B 1/00]**

3 ..With driving weight [G04B 1/02]

4 ..Mechanisms in which the
clockwork acts as the driving
weight [G04B 1/04]

5 ..With several weights (winding
up several weights
simultaneously subclass 23)
[G04B 1/06]

6 ..Driving weights; chains; chain
wheels; arbors for chain
wheels (wheels and spindles in
general F16F) [G04B 1/08]

7 ..With mainspring (synchronous
motors with power reserve
subclass 559; springs in
general F16F) [G04B 1/10]

8 ..Having a form other than a
helix (subclasses 9 and 10
take precedence) [G04B 1/10B]

9 ..With several mainsprings
(installations with a
mainspring and an auxiliary
spring subclass 19; winding up
several mainsprings
simultaneously subclass 28)
[G04B 1/12]

10 ..Mainsprings; bridles therefor
(mainsprings with bridles
subclass 14; alloys C22C;
springs in general F16F;
constructions for compensation
of changes in the motive power
of the mainspring subclass 18;
construction of the hairspring
subclass 111; arrangements
facilitating the removal of
the mainspring subclass 291)
[G04B 1/14]

11 ...Composition and manufacture of
the springs (see note attached
to this subclass)

12 ..Barrels; arbors; barrel axles
(arrangements facilitating the
removal of the mainspring
subclass 291) [G04B 1/16]

13 ...Spring cylinder with friction
transmission to the gearing
(especially for Roskopf
clockworks; friction clutch
between spring and spring
cylinder subclass 15) [G04B 1/
16B]

14 ..Constructions for connecting
the ends of the mainsprings
with the barrel or the arbor
(mainsprings and bridles
therefor subclass 10; clamping
the hairspring on the
regulator subclass 121;
clamping the hairspring on the
arbor subclass 135) [G04B 1/
18]

15 ...Friction clutch between spring
and spring cylinder (friction
transmission between spring
cylinder and gearing subclass
13; other arrangements for
protection against rupture or
overwinding subclass 16) [G04B
1/18B]

16 ...Protecting arrangements
against rupture or overwinding
of the mainspring located in
the barrel or attached to the
barrel (see note attached to
this subclass)

17 Stop mechanisms [G04B 1/20B]

- 18 ..Compensation of changes in the motive power of the mainspring (by mechanical shaping of the mainspring subclass 10; automatic regulation of the pendulum subclass 115; of the regulator subclass 211) [G04B 1/22]
- 19 ...With the aid of an interposed power accumulator (secondary spring) which is always tensioned (winding up several mainsprings or driving weights simultaneously subclass 28) [G04B 1/22B]
- 20 .With both mainsprings and driving weights (winding up several mainsprings or driving weights simultaneously subclass 28) [G04B 1/24]
- 21 .Driven by liquids or gases; liquid or gaseous drives or mechanically controlled secondary clocks (winding up by pneumatic means subclass 39; winding up automatically by wind power subclass 63; winding up by electrothermal or electro-pneumatic arrangements subclass 427; thermoelectric or thermo-pneumatic driving mechanisms subclass 495) [G04B 1/26]
- 22 ..Clockwork systems working therewith (winding up electrical or mechanical clocks subclass 428; electrical clockwork installations subclass 524); winding [G04B 1/26B]
- 23 **NORMAL WINDING OF CLOCKWORKS BY HAND OR MECHANICALLY; WINDING UP SEVERAL MAINSPRINGS OR DRIVING WEIGHTS SIMULTANEOUSLY (SEE NOTE ATTACHED TO THIS SUBCLASS)**
- 24 .By pushbutton (crown combined with pushbutton subclass 34; construction of pushbutton subclass 35; waterproof pushbutton subclass 341) [G04B 3/00B]
- 25 .By lever mechanism [G04B 3/00C]
- 26 .By draw mechanism [G04B 3/00D]
- 27 .Mechanical winding up; winding up with special equipment (removably- mounted keys subclass 29; winding up equipment for clocks with automatic winding up equipment subclass 40) [G04B 3/00F]
- 28 .Winding up several mainsprings or driving weights simultaneously (driving mechanisms with several weights subclass 5; driving mechanisms with several mainsprings subclass 9; driving mechanisms with a mainspring and a secondary spring subclass 19; driving mechanisms with a mainspring driving weights subclass 20; winding up the striking mechanisms with the clockwork and vice versa subclass 228) [G04B 3/00G]
- 29 .Removably mounted keys or the like (special tools for clockworks with difficult access, universal keys for watches with a small crown subclass 27; keys with means preventing overwinding subclass 36; protecting means preventing overwinding subclass 38) [G04B 3/02]
- 30 .Rigidly mounted keys, knob, or crowns (jointed winding stem subclass 322) [G04B 3/04]
- 31 ..Construction of crowns for rotating movement; connection with the winding stem; winding stems [G04B 3/04B]
- 32 ..Locking of the operating element, also by mounting in a concealed place [G04B 3/04C]
- 33 ..Storing the operating element, also bringing it out of storage [G04B 3/04D]
- 34 ..Operation by rotation and axial movement with extra function of axial shift of operating element, e.g., crown combined with push button, etc. (winding up by push button subclass 24) [G04B 3/04F]

- 35 ..Operation exclusively by axial movement of a pushbutton, e.g., for chronographs, etc. (winding up by pushbutton subclass 24; hermetically sealed pushbutton subclass 341) [G04B 3/04G]
- 36 .Keys or the like with means preventing overwinding (protecting devices arranged in, or attached to, the barrel subclass 16; in connection with automatic winding devices subclass 20; construction of removably mounted keys subclass 29; means preventing overwinding, including those attached to the case, subclass 38; protecting means subclass 71; protection against overwinding for electrical winding up arrangements for mechanical clocks subclass 443) [G04B 3/06]
- 37 .By parts of the cases (setting the time-indicating means by parts of the case subclass 248) [G04B 3/08]
- 38 ..Protecting means preventing overwinding (arranged in, or attached to, the barrel subclass 16; in connection with keys subclass 36; in connection with automatic winding devices subclass 66; protection subclass 71; of electrical winding up arrangements for mechanical clocks subclass 443) [G04B 3/10]
- 39 .By mechanical means, e.g., pneumatic motor, etc. (winding up with electric or electromechanical means subclass 425; liquid or gas driving mechanisms subclass 21; automatic winding up by wind power subclass 62) [G04B 3/12]
- 40 **AUTOMATIC WINDING UP (NORMAL WINDING UP BY HAND OR MECHANICALLY SUBCLASS 23; AUTOMATIC WINDING IN COMBINATION WITH HAND WINDING SUBCLASS 68; ELECTRICAL WINDING OF MECHANICAL CLOCKWORKS SUBCLASS 443; ADVERTISING BY MAKING USE OF VIBRATIONS OR SHOCKS OF LAND VEHICLES G09F 21/04) [G04B 5/00]**
- 41 .By moving of parts of the clockwork which are not primarily for winding up [G04B 5/00B]
- 42 .By relative movement between watchbands, case, or parts of the case [G04B 5/00C]
- 43 .Clockworks, which wind up by driving the function, e.g., perpetua mobilia, etc. (see also F03G 7/10) [G04B 5/00K]
- 44 .By self-winding caused by the movement of the watch (bearings, suspensions for oscillating weights subclass 53; mechanisms for transformation of an oscillating movement into a rotating movement in only one direction subclass 73) [G04B 5/02]
- 45 ..By oscillating weights the movement of which is limited (setting the time indicating means with the aid of a rocking bar subclass 248) [G04B 5/04]
- 46 ...Acting in one direction only [G04B 5/06]
- 47 ...Acting in both directions [G04B 5/08]
- 48 ..By oscillating weights the movement of which is not limited [G04B 5/10]
- 49 ...Acting in one direction only [G04B 5/12]
- 50 ...Acting in both directions [G04B 5/14]
- 51 ..Construction of the weights [G04B 5/16]

- 52 ...Weights consisting of several parts (diverse weights which are movable in more than one plane subclass 59) [G04B 5/16B]
- 53 ..Supports, suspensions, or guide arrangements, for oscillating weights (transmission of the movement of the winding up weight to the mainspring subclasses 45 and 48; support of the driving weight by protecting means which prevent overwinding, e.g., by interposing of a glide clutch, etc. subclass 66; bearings in general subclass 284) [G04B 5/18]
- 54 ...Bearing of the rocking bar exclusively in the center of rotation [G04B 5/18B]
- 55The center of rotation not being the center of the clockwork [G04B 5/18B2]
- 56 ...The bearing of the rocking bar is in the center of rotation combined with a support or guide arrangement [G04B 5/18C]
- 57 ...Guide arrangement of the moving weight in a straight course [G04B 5/18D]
- 58 ...Guide arrangement of the moving weight in a circular course [G04B 5/18F]
- 59 ...Suspension of the moving weight by elastic means (subclass 60 takes precedence) [G04B 5/18G]
- 60 ...Bearing, guide arrangements, or suspension allowing movement in more than one plane, e.g., there is more than one moving weight, or more than one plane in which the weight moves, and it can change place relative to the clockwork, etc. [G04B 5/18K]
- 61 ...Bearing, guide arrangements, or suspension of the movement forming oscillating weight [G04B 5/18M]
- 62 ..By movement of other objects, e.g., by opening a handbag, by opening a case, by opening a door, etc; winding up by wind power [G04B 5/20]
- 63 ..By liquids or gases (driven by liquids or gases subclass 21; winding up by pneumatic motor subclass 39; winding up by electrothermal or electro-pneumatic driving means subclass 427; driving of the clockwork by such means subclass 495) [G04B 5/20D]
- 64 ..By rotating axles, e.g., tachometers (direct drive of the clockwork, e.g., without winding up of a spring or the like by a rotating axle, etc. subclass 68; combination with measuring instruments in general subclass 411) [G04B 5/20F]
- 65 ..By thermometric, barometric, or like effects or alterations (by electrothermal or electro-pneumatic driving means subclass 427; driving the clockwork by such means subclass 495) [G04B 5/22]
- 66 ..Protecting means preventing overwinding (arranged in, or attached to, the barrel subclass 16; in connection with keys or the like subclass 36; in connection with parts of the cases subclass 38; support of the moving weight subclass 53; protection means subclass 71; electrical driving means for mechanical clockworks subclass 443) [G04B 5/24]
- 67 ..By locking the moving weight [G04B 5/24B]
- 68 **COMBINED NORMAL AND AUTOMATIC WINDING UP (NORMAL WINDING UP BY HAND OR MECHANICALLY SUBCLASS 23; AUTOMATIC WINDING UP SUBCLASS 40; ELECTRIC WINDING UP OF MECHANICAL CLOCKWORKS SUBCLASS 427) [G04B 7/00]**
- 69 **SUPERVISION OF THE STATE OF WINDING, E.G., INDICATING THE AMOUNT OF WINDING, ETC, [G04B 9/00]**
- 70 ..By optical indication of the amount of winding [G04B 9/00B]

- 71 .Devices controlled by such state, e.g., device affording protection means against overwinding, etc. (protecting means preventing overwinding arranged in or on the barrel subclass 16; protecting means in connection with keys or the like subclass 36; in connection with parts of the cases subclass 38; in connection with automatic winding devices subclass 66; electric winding up of mechanical clockworks subclass 443) [G04B 9/02]
- 72 ..Acoustical or electrical indicating means [G04B 9/02B]
- 73 **CLICK DEVICES; STOP CLICKS; CLUTCHES (MECHANISMS FOR WINDING UP BY HAND SUBCLASS 23; AUTOMATIC WINDING UP SUBCLASS 40;)** [G04B 11/00]
- 74 .Devices in which the motion of a rotating member is limited to one direction [G04B 11/00B]
- 75 ..With a ratchet which makes contact with the rotating member by means of teeth [G04B 11/00B2]
- 76 ...Rotatable about a fixed axis by means of spring action [G04B 11/B2B]
- 77 ..With clamping member [G04B 11/00B3]
- 78 ..With friction member, e.g., click spring, etc. [G04B 11/00B4]
- 79 .Ratchet construction for driving rotating members in one direction, e.g., a ratchet on an oscillating member driving a ratchet wheel, etc. [G04B 11/00C]
- 80 .Clutch mechanism between two rotating members with transfer of movement in both directions, possibly with limitation on the transfer of power [G04B 11/00D]
- 81 ..With friction member, e.g., with spring action, etc. [G04B 11/00D4]
- 82 ..With magnetic elements [G04B 11/00D5]
- 83 .Clutch mechanism between two rotating members with transfer of movement in only one direction (free running devices) [G04B 11/00F]
- 84 ..With friction members, e.g., click spring, etc. [G04B 11/00F4]
- 85 **GEARWORK (GEARWORK FOR DRIVING THE HANDS SUBCLASS 140; CALIBERS SUBCLASS 284; DISPOSITIONS AND COMPONENTS FOR TRANSMISSION IN GENERAL F16H)** [G04B 13/00]
- 86 .With the choice of adjustable or varying transmission ratio [G04B 13/00B]
- 87 .Where rotation in one direction is changed into a stepping movement [G04B 13/00C]
- 88 ..With a step for each complete revolution (counters in general H03K) [G04B 13/00C2]
- 89 .Where a revolution in both directions is changed into a revolution in one direction [G04B 13/00D]
- 90 ..With two free wheel positions [G04B 13/00D2]
- 91 .With differential work [G04B 13/00G]
- 92 ..Differentials [G04B 13/00G2]
- 93 .Wheels; pinions; spindles; pivots (bearings subclass 271; chain wheels, spindles for chain wheels, also chains and driving weights subclass 6) [G04B 13/02]
- 94 ..Assembly and manufacture (assembly and manufacture of springs subclass 11; machines and tools for the manufacture of chain wheels for clocks subclass 685; component parts and manufacture of the escape wheel subclass 102; steel alloys C21C 33/00-41/00; manufacture of pinions from synthetic material B29; nonferrous alloys C22C; pinions manufactured by milling and planing B23F) operating mechanisms [G04B 13/02R]

- 95 **ESCAPEMENTS (MAGNETIC SUBCLASS 496; IN STRIKING MECHANISMS SUBCLASS 224;) [G04B 15/00]**
- 96 .Permanently in contact with the regulating mechanism [G04B 15/02]
- 97 ..Cylinder escapements [G04B 15/04]
- 98 .Free escapements [G04B 15/06]
- 99 ..Lever escapements [G04B 15/08]
- 100 .With constant impulses for the regulating mechanism (electrically driven pendulums with mechanical pulse transmission and constant pulse subclass 455; electrically driven pendulums with mechanical pulse transmission and constant pulse subclass 468) [G04B 15/10]
- 101 .Adjusting (tools therefor subclass 665); restricting the amplitude of the lever or the like (adjusting the gear train subclass 293) [G04B 15/12]
- 102 .Component parts or constructional details, e.g., construction of the lever or the escape wheel, etc; assembly and manufacture of spring subclass 11; assembly and manufacture of components, e.g., pinions, spindles, etc., subclass 94; oils for clockwork bearings in general subclass 281 [G04B 15/14]
- 103 **MECHANISMS FOR STABILIZING FREQUENCY (MAGNETIC SUBCLASS 497; IN STRIKING MECHANISMS SUBCLASS 224; STOPPING AND REGULATING OF THE RUNNING SUBCLASS 234; ELECTRICAL AND THERMOELECTRIC REGULATING MECHANISMS SUBCLASS 496) [G04B 17/00]**
- 104 .Regulating mechanisms where the movement is maintained by pneumatic means (oscillation generation by pneumatic means subclass 828) [G04B 17/00B]
- 105 .Oscillators acting by gravity, e.g., pendulum swinging in a plane, etc. (setting the pendulum to the required length subclass 115; temperature compensation for pendulums subclass 128; bearings in general, e.g., knife-edge subclass 271, etc; clocks fitted in pendulums subclass 396; imitation pendulums driven by the clock mechanism subclasses 387 and 388; pendulum ornamentation subclass 389; contacts actuated by a pendulum subclass 546; measurement of force with a pendulum G01V 7/12) [G04B 17/02]
- 106 ..Composite and multiple pendulums; synchronization of mechanical pendulums, (electrical synchronization G03C 3/02; pendulum systems subclass 532) [G04B 17/02B]
- 107 .Oscillators acting by spring tension [G04B 17/04]
- 108 ..With oscillating blade springs (mechanical oscillations maintained by electromagnetic means, e.g., tuning forks, etc. subclass 548) [G04B 17/04B]
- 109 ..Oscillators with hairsprings, e.g., balance, etc. (electrically driven balances subclass 466; contacts actuated by a balance subclass 546) [G04B 17/06]
- 110 ...Balance construction (balances with frequency adjustment screw subclass 116; balances with temperature compensation subclass 127; balancing devices subclass 132) [G04B 17/06B]
- 111 ...Manufacture of the spiral spring (locking of the spiral spring by the regulating lever subclass 121; spiral spring with temperature compensation subclass 129; fixation of the spiral spring on the collet subclass 135; mainspring subclass 10) [G04B 17/06C]

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| <p>112 ..Oscillators with coil springs stretched and unstretched axially [G04B 17/08]</p> <p>113 ..Oscillators with torsion strips or springs acting in the same manner as torsion strips, e.g., weight oscillating in a horizontal plane, etc. (electrically driven torsion pendulum subclass 464) [G04B 17/10]</p> <p>114 ..Setting the frequency [G04B 17/12]</p> <p>115 ..By displacement of devices carried by the pendulum or by adjusting the pendulum length (pendulums and suspension subclass 105; self-adjustment of the regulating lever subclasses 122, 123, and 509; adjusting the stroke of the pendulum subclass 123; indicating by acoustic means subclass 217; synchronization with a standard clock subclass 509; metronome with a variable length subclass 821) [G04B 17/12B]</p> <p>116 ..By adjusting the devices fixed on the balance (construction of the pendulum subclass 110; balancing subclass 132) [G04B 17/12C]</p> <p>117 ..Adjustment devices [G04B 17/14]</p> <p>118 ...Adjusting the regulator from the outside [G04B 17/14B]</p> <p>119 ...With means for fine adjustment of the regulator [G04B 17/14C]</p> <p>120 ...Bearings for regulators [G04B 17/14D]</p> <p>121 ...Locking the hairspring in the regulator key (hairsprings subclass 111; locking the mainspring on the axle subclass 14) [G04B 17/14F]</p> | <p>122 ...Setting the regulator by means dependent on another device, e.g., by the time indication setting mechanism, etc. (automatic adjustment of the pendulum length subclass 115, 128, and 506; automatic adjustment of the regulator for temperature compensation subclass 126; automatic adjustment of the regulator dependent on the tension of the mainspring subclass 18) [G04B 17/14K]</p> <p>123 ..Adjusting the beat of the pendulum, balance or the like (adjusting the frequency subclass 114) [G04B 17/16]</p> <p>124 ..By setting the collet or the stub of the hairspring [G04B 17/18]</p> <p>125 ..Compensation of mechanisms for stabilizing frequency [G04B 17/20]</p> <p>126 ..For the effect of variations of temperature (alloys with small expansion coefficient C21C, C22C; adjustment of the regulator dependant on adjustment of the hands subclass 122; depending on the difference in time with a comparison clockwork subclass 509) [G04B 17/22]</p> <p>127 ...With balances (construction of balances subclass 110) [G04B 17/22B]</p> <p>128 ...With pendulums (construction of pendulums subclass 105; setting frequency on the pendulum subclass 115) [G04B 17/22C]</p> <p>129 ...Composition and manufacture of the material used (composition and manufacture of hairsprings subclass 111; of springs subclass 11; anti-magnetic alloys subclass 380; ferrous alloys C22C; nonferrous alloys C22C, B22F) [G04B 17/22R]</p> <p>130 ..For the effect of variations of atmospheric pressure [G04B 17/24]</p> <p>131 ..For the effect of variations of the impulses [G04B 17/26]</p> |
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- 132 ..For the effect of unbalance of the weights, e.g., tourbillon, etc. (construction of the balance subclass 110; setting the frequency by adjusting devices fixed on the balance subclass 116) [G04B 17/28]
- 133 ...Tourbillons [G04B 17/28B]
- 134 .Rotating governors, e.g., centrifugal governors, fan governors, etc. (for striking mechanisms subclass 224; electrically driven subclass 465) [G04B 17/30]
- 135 .Component parts or constructional details, e.g., collet, stud, etc. [G04B 17/32]
- 136 ..Devices for locking the spring on the axle of the balance [G04B 17/32B]
- 137 ...Construction of the spiral roll [G04B 17/32B2]
- 138 ..Means for locking the spring in a stationary position, e.g., using a block, etc. [G04B 17/32C]
- 139 **INDICATING BY VISUAL MEANS (BY ELECTRIC LAMPS SUBCLASS 576; INDICATING BY ACOUSTICAL MEANS MECHANICALLY SUBCLASS 217, ELECTRICALLY SUBCLASS 580; ACOUSTIC SIGNALS AT PRESELECTED TIMES MECHANICALLY SUBCLASS 229, ELECTRICALLY SUBCLASS 580; OPTICAL TIME SIGNALS AT PRESELECTED TIMES MECHANICALLY SUBCLASS 244, ELECTRICALLY SUBCLASS 577; CONTINUOUS TIME INDICATION BY ELECTRIC MEANS SUBCLASS 564; VISIBLE SIGNALLING ARRANGEMENTS G08B 5/00) [G04B 19/00]**
- 140 .Back-gearing arrangements between gear train and hands (transmissions in general subclass 85) [G04B 19/02]
- 141 ..For simultaneous indicating on several dials (indicating means allowing simultaneous indication subclass 146; with several separate dials subclass 149; extra hands for indicating different local apparent times subclass 168) [G04B 19/02B]
- 142 .Hands; discs with a single mark or the like (moving indicating arrangements which have scales or numbers with stationary hands or reading means subclass 162; optical projection of the position of the hands subclass 216) [G04B 19/04]
- 143 ..Construction and manufacture of the hands; arrangements for increasing reading accuracy (hands with illumination subclass 214; specially shaped hands, e.g., figures or pictures, etc., subclass 389; clockwork in the hands subclass 396; invisible drive of the hands subclass 397) [G04B 19/04B]
- 144 ..Mounting and setting of the hands on the axle [G04B 19/04C]
- 145 ..Indicating by means of a disc with a mark or window (for simultaneous indicating subclass 146) [G04B 19/04D]
- 146 ..Having the possibility of indicating on more than one scale, e.g., hands with variable length which work on different scales, etc. (simultaneous indicating on several dials subclass 141; used as moving scales subclass 163; different indications on several scales or dials, e.g., for different local apparent times, etc., subclass 168) [G04B 19/04F]
- 147 .Dials (for time-pieces without clockwork subclass 416; moving discs subclass 162; illuminated dials or hands subclass 213) [G04B 19/06]
- 148 ..With several parts [G04B 19/06B]

- 149 ..Geometrical arrangement of the graduations [G04B 19/08]
- 150 ...Varying from the normal closed scale [G04B 19/08B]
- 151 ..Varying from the normal 12 hour arrangement [G04B 19/08D]
- 152 ...With several separate scales (for indicating the same or different times of the clockwork; indicating devices making several simultaneous indications possible subclass 146) [G04B 19/08F]
- 153 ..Ornamental shape of the graduations or the surface of the dial; attachment of the graduations to the dial (cases for special purposes, e.g., ring or button watches, etc. subclass 342; indicating means with special effects subclass 381) [G04B 19/10]
- 154 ..Attached or inlaid numbers (attaching of jewels) [G04B 19/10B]
- 155 ...Special number markings [G04B 19/10K]
- 156 ..Selection of materials for dials or graduations (markings) [G04B 19/12]
- 157 ..Fastening the dials to the clock or watch plates [G04B 19/14]
- 158 ..Shiftable dials, e.g., indicating alternately from 1 to 12 and from 13 to 24, etc. (dials with a scale other than the normal 12 hour scale subclass 151) [G04B 19/16]
- 159 ...Numbers which are visible alternately from 1 to 12 and from 13 to 24 on the same dial [G04B 19/16B]
- 160 ...With rotating scales [G04B 19/16C]
- 161 ..Graduations on the crystal or glass, on the bezel, or on the rim [G04B 19/18]
- 162 ..Indicating by numbered bands, drums, discs, or sheets (indicating means without numbers or hands in general subclass 142; illuminated subclass 213; with optical projection digest subclass; gearwork and linking in general subclass 85; electrically driven subclass 579; counter mechanisms G06M) [G04B 19/20]
- 163 ..By means of turning discs (disc-shaped indicating devices with a reference mark or a window subclass 145; discs driven by clockwork and producing optical special effects subclass 382; with inscriptions or drawings driven by a clockwork subclass 384; with figures or parts of figures driven by clockwork subclass 386) [G04B 19/20B]
- 164 ..With spatial scales, e.g., on drums (drum-shaped or spatial indicating devices, etc., subclass 142; fixed scales or dials subclass 147; scales disposed on a terrestrial globe for indicating local times in different places subclass 167; clockwork combined with a lamp with no functional relationship subclass 404) [G04B 19/20C]
- 165 ..By means of sheets [G04B 19/20D]
- 166 ..By means of bands (bands as time indicating means with a reference mark or window subclass 142) [G04B 19/20F]
- 167 ..Arrangements for indicating different local apparent times; universal time pieces (indicating by means of numbers or signs disposed on moving devices subclass 162; illumination of dials or hands subclass 231; combination with a terrestrial globe in general subclass 404) [G04B 19/22]

- 168 ..By means of hands or supplementary pair of hands (simultaneous indication on several dials subclass 141; indicating devices giving several simultaneous indications subclass 146) [G04B 19/22B]
- 169 ..With a three dimensional geographical representation, e.g., a terrestrial globe, as dial, etc. [G04B 19/22G]
- 170 .Clocks or watches with data indicators, e.g., calendar clocks or watches, etc.; clockwork calendars (indication by discs with numbers, in general subclass 162; link and gear work subclass 85; combination of the clockwork with a settable calendar subclass 398; calendars in general B42D 5/04, G09D 3/00; electrical counters and counting circuits H03K; clockwork for advertising G09F 23/16; devices for time computing where an unknown may be determined G02B) [G04B 19/24]
- 171 ..With one or more indicating devices in disc shape, construction production and support of the date indicating disc, also its fixation in a determined position [G04B 19/24B]
- 172 ...Up to date devices (moving indicating devices not driven by the clock- work subclass 400; setting the hands subclass 248) [G04B 19/24B3]
- 173 ...Independent date indicating devices driven either by clockwork or by the hand, e.g., calendar watches, etc.) [G04B 19/24B5]
- 174Driven or freed by a steady movement [G04B 19/24B5B]
- 175With more than one date indicating device and without suppression of data [G04B 19/24B5B2]
- 176With more than one date indicating device and with automatic suppression of certain data, e.g., for correct indication at the end of the month [G04B 19/24B5B4]
- 177 ...The date indicating device being paced or freed mechanically by a clockwork movement [G04B 19/24B7]
- 178The indicating devices are continuously driven by the clockwork movement [G04B 19/24B7C]
- 179With more than one date indicating device and without data suppression [G04B 19/24B7C2]
- 180The indicating devices are driven step by step by the clockwork movement [G04B 19/24B7D]
- 181With more than one date indicating device and without data suppression [G04B 19/24B7D2]
- 182With more than one date indicating device and with suppression of certain data [G04B 19/24B7D4]
- 183 ...The indicating devices are driven by successive steps by means of a loaded energy source and freed at a certain moment by the clockwork movement [G04B 19/24B7F]
- 184With more than one date indicating device and without data suppression [G04B 19/24B7F2]
- 185With more than one date indicating device and with suppression of certain data [G04B 19/24B7F4]
- 186 ...The indicating devices being driven by their own energy source, and that being freed at regular time periods [G04B 19/24B7G]
- 187 ..With one or several indicating devices, being drum shaped or three-dimensional [G04B 19/24C]
- 188 ...Independent date indicators activated by clockwork or by hand [G04B 19/24C5]

- 189 ...The date indicating mechanism is driven or disabled mechanically by a clockwork [G04B 19/24C7]
- 190 ...The indicating devices are stepwise driven by the clockwork [G04B 19/24C7D]
- 191 ...The indicating devices are driven by successive steps by means of a charged energy source and freed at a certain moment by the clockwork [G04B 19/24C7F]
- 192 ...The indicating devices are driven by their energy source which is freed at regular time intervals [G04B 19/24C7G]
- 193 ..With one or more sheet-shaped indicating devices [G04B 19/24D]
- 194 ...The date indicating mechanism is driven by or mechanically freed by clockwork [G04B 19/24D7]
- 195 ..With one or more band-shaped indicating devices [G04B 19/24F]
- 196 ...Independent date indicating devices actuated manually or by the clockwork [G04B 19/24F5]
- 197 ...The date indicating device being driven or freed mechanically by a clockwork [G04B 19/24F7]
- 198 ...The indicating devices are driven stepwise by the clockwork [G04B 19/24F7D]
- 199 ...The indicating devices are driven by successive steps by means of a charged energy source and freed at a determined moment by the clockwork [G04B 19/24F7F]
- 200 ...The indicating devices are driven by their own energy source which is freed at regular intervals [G04B 19/24F7G]
- 201 ..Different kinds of date indicating mechanism, e.g., with discs and drums, or drums, and bands, etc. [G04B 19/24G]
- 202 ...Independent date indicating devices activated normally or by clockwork [G04B 19/24G5]
- 203 ...Date indicating devices driven or freed mechanically by a clockwork [G04B 19/24G7]
- 204 ...The indicating devices are driven stepwise by the clockwork [G04B 19/24G7D]
- 205 ...The indicating devices are driven by successive steps by means of a charged energy source and freed at a determined moment by the clockwork [G04B 19/24G7F]
- 206 ...The indicating devices are driven by their own energy source which is freed at regular intervals [G04B 19/24G7G]
- 207 .Clocks or watches with indicators for tides, for the phases of the moon, or the like (planetaria G09B 27/00 - 27/06; arrangements for table reference, e.g., menstrual tables, etc., G06C 3/00) [G04B 19/26]
- 208 ..With indicators for biological cycles [G04B 19/26]
- 209 ..With indicators for tides [G04B 19/26M]
- 210 ..With indicators for the phases of the moon [G04B 19/26P]
- 211 .Adjustable guide marks or pointers for indicating determined points of time (inscriptions or pictures moved by hand subclass 385) [G04B 19/28]
- 212 ..On rotatable rings [G04B 19/28B]
- 213 .Illumination of dials or hands (arrangements for indicating different local apparent times by means of a globe illuminated from inside subclass 167; continuous indication of the time by nonelectric light sources subclass 243; illumination by electric lamps which function at fixed times or periodically subclass 578; illuminated panels G09F 13/00, 13/22) [G04B 19/30]

- 214 ..Whereby the hands carry the source of light (hands and manufacture thereof subclass 143; projection of hands or dials subclass 216; illumination of scales and/or hands on moving scales H03J 1/02; on compasses G01C 17/24; on weighing apparatus G01G 23/18; on measuring instruments G01D 11/28) [G04B 19/30B]
- 215 ..By luminescent substances (for advertising G09F 19/18; disc or drum shaped indicating means with marks or windows subclass 142; with numbers or number-marks subclass 162; illumination of dials and hands, etc., subclass 213; projection of hands and/or scales on weighing apparatus G01G 19/00; on measuring instruments G01D 5/26B) [G04B 19/32]
- 216 .Position of the hands projected optically (for advertising G09F 19/18; indicating by disc or drums with mark or window subclass 142, with figures or signs subclass 162; illumination of dials or hands subclass 213, case for electrical components subclass 452; optical projection of a pointer and/or scale for weighing apparatus G01G 23/32; for measuring instruments G01D 5/26B) [G04B 19/34]
- 217 **INDICATING BY ACOUSTIC MEANS (AT PRESELECTED TIMES SUBCLASS 229; BY ELECTROACOUSTIC MEANS OR ELECTROACOUSTIC TIME INDICATING SUBCLASS 582; TIME INDICATING BY MEANS OTHER THAN ACOUSTICALLY, OR COMBINED MEANS SUBCLASS 243; TIME INDICATING BY VISUAL MEANS SUBCLASS 139; ACOUSTIC SIGNALLING ARRANGEMENTS G08B 3/00) [G04B 21/00]**
- 218 .Periodical acoustic signalling arrangements (subclass 219 takes precedence); (adjustment of the frequency by setting the length of the pendulum subclass 115) [G04B 21/00B]
- 219 .Regular striking mechanisms giving the full hour, half hour, or quarter hour [G04B 21/02]
- 220 ..With saw mechanism [G04B 21/02B]
- 221 ...With silent saw action [G04B 21/02B2]
- 222 ..With locking wheel [G04B 21/02C]
- 223 ..Hour wheels; racks or rakes; snails or similar control mechanisms [G04B 21/04]
- 224 ..Details of striking mechanisms, e.g., hammer, fan governor, etc. (escapements in general subclass 95; mechanisms for stabilizing frequency subclass 103; resistance regulators G05D 13/00; mechanical toys A63H) [G04B 21/06]
- 225 ..Sounding bodies; whistles; musical apparatus (with electroacoustical transmitters subclass 580; sounding arrangements in alarm clocks subclass 237; cases with arrangements for enhancing sound production subclass 303; carillons and sounding boards G10F 1/08, 1/10, G10D 13/08) [G04B 21/08]
- 226 ..Releasing or locking the regular stroke, e.g., for silence during the night, etc. [G04B 21/10]
- 227 ..Reiterating watches or clocks [G04B 21/12]
- 228 ..Winding up the striking mechanism by the clockwork; winding up the clockwork by the striking mechanism; winding up by hand or mechanically subclass 23) [G04B 21/14]

- 229 **ARRANGEMENTS PRODUCING ACOUSTIC SIGNALS AT PRESELECTED TIMES (OPTICAL TIME INDICATING SUBCLASS 139, 564, AND 577; INDICATING BY ACOUSTIC MEANS SUBCLASS 217; INDICATING TIME BY MEANS OTHER THAN ACOUSTIC OR OPTICAL OR BY A COMBINATION OF MEANS SUBCLASS 243; ACOUSTIC TIME SIGNALS PRODUCED ELECTRICALLY SUBCLASS 580; COIN-FREED ALARM CLOCKS G07F 17/00B; ACOUSTIC SIGNALLING MEANS G08B 3/00) [G04B 23/00]**
- 230 ..By starting up musical boxes or other musical recordings (starting up and stopping of phonographs by means of clockwork apparatus G11B 33/06) [G04B 23/00B]
- 231 ..Alarm clocks (electrically released alarm signals subclass 580; waking up by electric lamps subclass 578; by other means subclass 244; alarm clocks with electric contacts subclass 608) [G04B 23/02]
- 232 ..Controls, e.g., winding up the alarm, adjusting and indicating the waking time, etc. [G04B 23/02B]
- 233 ..Stopping means [G04B 23/02C]
- 234 ..Driving, e.g., by springs or common drive with the clockwork, etc.; gears; escapements (escapements in general subclass 95; regulating means for clockworks in general subclass 103) [G04B 23/02D]
- 235 ..Signal triggering (in alarm clocks which deliver also or only nonacoustic signals subclass 244) [G04B 23/02F]
- 236 ..Hammer driving; hammers; devices with several hammers or sounding bodies; vibrators [G04B 23/02G]
- 237 ..Sounding bodies; boxes used as sounding cases; fixation on or in the case (sounding bodies subclass 225; case enhancing transmission of sound waves subclass 303) [G04B 23/02H]
- 238 ..With coarse and fine setting of the preselected times [G04B 23/04]
- 239 ..Adjustable for several preselected times with automatic stopping of the signal [G04B 23/06]
- 240 ..Operating on successive days without resetting; operating only once in each 24 hours [G04B 23/08]
- 241 ..With pre-signal; with repeated signal; with changeable intensity of sound [G04B 23/10]
- 242 ..Alarm watches to be worn in pockets or on the wrist (giving signals by stimulating the skin subclass 246) [G04B 23/12]
- 243 **INDICATING THE TIME BY OTHER MEANS OR BY COMBINED MEANS (ELECTRIC OR ELECTROMECHANICAL INDICATING SUBCLASS 425; ILLUMINATION OF DIALS AND HAND SUBCLASS 213; INDICATING BY ACOUSTIC MEANS SUBCLASS 217; ARRANGEMENTS PRODUCING ACOUSTIC SIGNALS AT PRESELECTED TIMES SUBCLASS 229; CONTINUOUSLY INDICATING THE TIME OPTICALLY BY ELECTRIC MEANS SUBCLASS 577; PRODUCING ACOUSTIC TIME SIGNALS BY ELECTRICAL MEANS SUBCLASS 580; GAS LAMP ADJUSTMENT BY CLOCKWORK SUBCLASS 243; DEVICES FOR COOKING EGGS A47J 29/00) [G04B 25/00]**
- 244 ..In alarm clocks (subclass 246 takes precedence) [G04B 25/00]
- 245 ..By feeling; clocks or watches for blind persons [G04B 25/02]
- 246 ..Alarm clocks or watches with devices stimulating the skin (normal pocket or wrist alarm clocks subclass 242) [G04B 25/04]

- 247 .By moving figures, e.g., cuckoo clocks, trumpet clocks, etc. (figures, or part of figures set in motion by the clockwork and creating an optical special effect subclass 382; figures or parts of figures not used to indicate time subclass 386; clockworks driving inscriptions or figures subclass 384; time-indication by means of plates or bands driven electrically subclass 582) [G04B 25/06]
- 248 **MECHANICAL DEVICES FOR SETTING THE TIME-INDICATING MEANS [G04B 27/00]**
- 249 .Internal gear therefor, e.g., for setting the second hand or for setting several clockworks, etc. [G04B 27/00B]
- 250 .The setting apparatus being crown shaped (subclass 255 takes precedence) [G04B 27/00C]
- 251 .Having several simultaneous functions, e.g., stopping or starting the clockwork or the hands, etc. (subclass 255 takes precedence) [G04B 27/00D]
- 252 .Stepwise or on determined values (subclass 255 takes precedence) [G04B 27/00F]
- 253 .Otherwise than manually (subclass 255 takes precedence) (oscillatory weights in general subclass 45) [G04B 27/00G]
- 254 .With parts which are put together with the winding parts, but are functionally separate from them [G04B 27/00K]
- 255 .By making use of the winding means (winding by hand or mechanically subclass 23) [G04B 27/02]
- 256 ..Changing of the winding position to the setting position and vice versa is done with an independent part of the winding or setting mechanism (subclasses 259 and 261 take precedence) (by part of the case subclass 264) [G04B 27/02B]
- 257 ..For several clockworks or pairs of hands and/or supplementary functions [G04B 27/02F]
- 258 ..With clutch wheel (support and displacement of the winding stem through the case, means for preventing the stem from going too far, fixation subclass 322) [G04B 27/04]
- 259 ...Changing the winding position to the setting position and vice versa is done with an independent part of the winding or setting mechanism [G04B 27/04B]
- 260 ..With rocking bar (support and displacement of the winding stem through the case, means preventing the stem from going too far, fixation subclass 322) [G04B 27/06]
- 261 ...Changing the winding position to the setting position and vice versa is done with an independent part of the winding or setting mechanism [G04B 27/06B]
- 262 .By using parts of the case (winding by using parts of the case subclass 37) [G04B 27/08]
- 263 ..Which may be used for winding when changed from the normal position [G04B 27/08B]
- 264 ..Which, after displacing a supplementary part, may be used for winding (similar devices subclass 256; in mechanisms with coupled pinions subclass 259; in rocking mechanisms subclass 261) [G04B 27/08C]
- 265 **FRAMEWORKS [G04B 29/00]**
- 266 .Plates; bridges; cocks [G04B 29/02]
- 267 ..Bridges [G04B 29/02B]
- 268 ..Cocks [G04B 29/02C]

269	..Materials and manufacturing (alloys, in general C22C) [G04B 29/02S]	284	CALIBERS (DISPOSITION OF COMPONENTS OF THE AUTOMATIC WINDING MECHANISM IN RELATION TO THE CLOCKWORK SUBCLASS 53) [G04B 33/00]
270	.Connecting or supporting parts [G04B 29/04]	285	.Circular calibers [G04B 33/02]
271	BEARINGS; POINT SUSPENSIONS, OR COUNTER-POINT SUSPENSIONS; PIVOT BEARINGS; SINGLE PARTS THEREFOR (BEARINGS IN GENERAL F16C; MANUFACTURE AND COMPOSITION OF SPRINGS SUBCLASS 11; SUSPENSION OF OSCILLATING WEIGHTS SUBCLASS 54; SUSPENSION OF A PENDULUM SUBCLASS 105; DEVICES FOR FIXATION OF BEARING JEWELS, BEARINGS, SLEEVES, ETC., SUBCLASS 735; BEARINGS FOR ELECTRICAL MEASUREMENT APPARATUS G01R 1/10, 1/12, 11/12, 11/14; INSERTING JEWELS A44C 17/04; INSERTING CUTTING DIAMONDS B23P 5/00) [G04B 31/00]	286	.Noncircular calibers [G04B 33/04]
272	.Jeweled bearings [G04B 31/00B]	287	.Of extremely flat shape [G04B 33/06]
273	..With jewel hole and jewel cap (shock damping bearings with jewel hole and jewel cap subclass 283) [G04B 31/00B2]	288	.In which the gear train is arranged in different planes, e.g., parallel or inclined to each other, etc. (subclass 289 takes precedence) (cases for special purposes, e.g., button or ring clockwork, etc. subclass 342) [G04B 33/08]
274	..With only jewel hole [G04B 31/00B3]	289	.With second hand arranged in the center of the dial [G04B 33/10]
275	..With only jewel cap [G04B 31/00B4]	290	.For extremely long running times [G04B 33/12]
276	.Metal bearings [G04B 31/00C]	291	.Calibers of which the mainsprings or barrels are easily removable (main-springs subclass 10; barrels, arbors subclass 12; normal or mechanical winding subclass 23) [G04B 33/14]
277	..With metallic ball bearings and metallic roller bearings [G04B 31/00C2]	292	.With arrangements affording protection of the clockwork against damage as a consequence of a rupture of the mainspring (protection devices against the rupture of the mainspring or its over-tension, placed in the spring-drum or fixed on it against rupture if the mainspring is wound too far subclass 16) [G04B 33/16]
278	..Metal step-bearings [G04B 31/00C3]	293	ADJUSTING THE GEAR TRAIN, E.G., THE BACKLASH OR THE ARBORS, DEPTH OF MESHING OF THE GEARS, ETC. (ADJUSTING THE ESCAPEMENT SUBCLASS 101) [G04B 35/00]
279	.Plastic bearings [G04B 31/00D]	294	CASES (CASES WITH A SPECIAL SHAPE SUBCLASS 390; ORNAMENTATION OF THE CASE SUBCLASS 395; CARTRIDGES A45C 11/00-11/38) [G04B 37/00]
280	.Manufacture and mounting processes [G04B 31/00S]	295	.For pocket watches and wrist watches [G04B 37/00B]
281	.Lubrication (self-lubricated bearings in plastics subclass 279; lubrication of the escape wheel subclass 102; lubrication of synchronous clockworks subclass 563; lubrication devices and lubricant containers subclass 746) [G04B 31/00T]		
282	.Shock damping bearings (shock damping in the case subclasses 309, 310, and 313) [G04B 31/02]		

- 296 ..With folding cover or folding bottom (hinge without spring) [G04B 37/00B2]
- 297 ..With cover or bottom with a spring (savonette), bench watch opening or closing with spring action subclass 318) [G04B 37/00B3]
- 298 ..With cover or bottom which can slide or turn (without a spring action) [G04B 37/00B4]
- 299 ..The cover or the bottom can slide or turn with a spring action [G04B 37/00B5]
- 300 ..With cover or protection device which can be completely removed, either by lifting off or by sliding, or by turning (protection covers, protection cases also against humidity) [G04B 37/00B6]
- 301 ..For shaped watches [G04B 37/008B]
- 302 .For wall clocks and balances (feet and stands for clocks subclass 357) [G04B 37/00C]
- 303 .With means to enhance sound transmission (sonorous means for chimes subclass 225; for alarm clocks subclass 237; clockworks combined with musical devices subclass 405) [G04B 37/00J]
- 304 .For more than one clockwork [G04B 37/00K]
- 305 .For clock parts, e.g., for the escapement or the electric motor, etc. (protection cases and air tight vacuum means for clockwork parts subclass 338) [G04B 37/00M]
- 306 .Evacuated cases; cases filled with gas or liquids; cases containing substances for absorbing or binding moisture or dust [G04B 37/02]
- 307 .Mounting the clockwork in the cases; shock absorbing mountings [G04B 37/04]
- 308 ..Fixed mounting of pocket watches and wrist watches [G04B 37/04B]
- 309 ...With shock damping means not related to the winding stem (shock damping bearings subclass 282; shock protection subclass 378) [G04B 37/04B2]
- 310 ...With shock damping means including the winding stem (shock damping bearings subclass 282; shock protection subclass 382) [G04B 37/04B3]
- 311 ...For shaped watches [G04B 37/04B5]
- 312 ..Fixed mounting relating to wall clocks and pendulums [G04B 37/04C]
- 313 ...With shock damping means (shock damping bearings subclass 282; protection against shocks with shields subclass 378) [G04B 37/04C2]
- 314 ..Mounting relative to pocket and wrist watches allowing a rocking movement about a hinge or any other movement (covers and protective cases which may be removed completely either by direct removal or by sliding or turning subclass 300; ornamentation and interchangeable parts of cases, modifying the external appearance of the clockwork subclass 373) [G04B 37/04D]
- 315 ...Clockwork movements coming out for allowing time reading or winding (with springs) [G04B 37/04D2]
- 316 ...Clockwork movements which come out by spring action for time reading and winding [G04B 37/04D3]
- 317 ...Free standing watches (montre chevalet) [G04B 37/04D4]
- 318 ...Free standing watches where the clockwork, on opening or closing the case, is ejected or returned by spring action, or possibly with a spring for opening or closing the case (cases with spring action cover subclass 310; wrist watches or pocket watches which can be used as free standing watches with the aid of certain parts of the case subclass 358) [G04B 37/04D5]

- 319 ...Rocking mounting of the clockwork [G04B 37/04D6]
- 320 ..Mountings relative to wall-clockworks and to pendulums allowing certain movements [G04B 37/04F]
- 321 ..Mountings for sound-damping [G04B 37/04G]
- 322 ..Forming the passage for the winding stem through the case; divided winding stems (watertight protection means for the winding stem subclass 339; fixing the knob to the case subclass 356; winding and setting the hands with the winding stem with clutch wheel subclass 258, with rocking bar subclass 260) [G04B 37/06]
- 323 ..Means for preventing the winding stem from being pulled out too far [G04B 37/06B]
- 324 ...By a tirette [G04B 37/06B2]
- 325 ..Divided stem (tige brisee) (normal winding stems subclass 31) [G04B 37/06D]
- 326 ..Stem passage not being part of the layout of the clockwork [G04B 37/06F]
- 327 ..Hermetic sealing of openings, joints, passages, or slits (covers or protecting devices which can be directly removed, or by sliding or turning subclass 300; hermetic sealing of watch or crystal with special pieces subclass 373; hermetically-sealed electrical switches H01H 23/06) [G04B 37/08]
- 328 ..Complete encasings for wrist or pocket watches also comprising means for hermetic sealing of the winding stem and crown (hermetic sealing of the stem or crown subclass 339) [G04B 37/08B]
- 329 ...Without special hermetic sealing pieces [G04B 37/08B2]
- 330 ...For shaped watches [G04B 37/08B5]
- 331 ..Complete encasings for wrist or pocket watches without means for hermetic sealing of winding stem or crown [G04B 37/08C]
- 332 ...Without special hermetic sealing pieces [G04B 37/08C2]
- 333 ...For shaped watches [G04B 37/08C5]
- 334 ..Of the bottom of wrist or pocket watches [G04B 37/08K]
- 335 ...Without special hermetic sealing pieces [G04B 37/08K2]
- 336 ...For shaped watches [G04B 37/08K5]
- 337 ..Protection of wrist or pocket watch cases against dust [G04B 37/08M]
- 338 ..Means affording hermetic sealing inside the case, e.g., protective case for the clockwork against dust, the escapement being in a hermetically sealed case, etc. (case for watch pieces subclass 305; synchronous motor lubrication subclass 563) [G04B 37/08P]
- 339 ..Of winding stems (construction of winding crowns subclass 24; in combination with hermetic sealing subclass 328) [G04B 37/10]
- 340 ...By screwing the crown onto the case [G04B 37/10D]
- 341 ...Of pushbuttons (winding up by pushbutton subclass 24; crown in the form of pushbutton subclass 34; construction of pushbuttons subclass 35) [G04B 37/10F]
- 342 ..Cases for special purposes, e.g., watch combined with ring, watch combined with button, etc. (see note attached to this subclass)
- 343 ..Used as a mirror [G04B 37/12B]
- 344 ..Allowing note taking (cases with means for holding sheets of note-paper subclass 345; adjustable guide marks or pointers for indicating determined points of time subclass 211; changeable indicators subclass 393) [G04B 37/12C]
- 345 ..Used as containers or cartridges [G04B 37/12D]

- 346 .Suspending devices, supports, or stands for timepieces insofar as they form part of the case (wrist watch straps, fastening means therefor A44C 5/00) [G04B 37/14]
- 347 ..Means for fixing the clockwork pieces on other objects (possibly on walls) [G04B 37/14B]
- 348 ...Separable means [G04B 37/14B2]
- 349 ...Means which can be adjusted as a function of the clockwork piece [G04B 37/14B3]
- 350 ...Means whereby the clockwork piece may move with regard to its suspension device [G04B 37/14B4]
- 351 ...Fixation on items of clothing, e.g., with clips, etc. (button watches subclass 342; brooches A44C 1/00; other similar fixation means, in general A45F 5/02) [G04B 37/14B5]
- 352 ..Fixation on flat support, e.g., on dashboard, etc. [G04B 37/14B6]
- 353 ..Means for suspending pocket, or other types of watches, e.g., on small chains, etc. (bracelet fixings subclass 359) [G04B 37/14C]
- 354 ...Construction and manufacture of case crown and clip [G04B 37/14C2]
- 355 ...With the case crown and a clip [G04B 37/14C3]
- 356 ...Fixing the case crown onto the case [G04B 37/14C4]
- 357 ..Supports and feet for supporting the clockwork (cases for standing clockworks in general subclass 302) [G04B 37/14D]
- 358 ...Formed by parts of the case (standing watches by bringing them out of the case or purse subclass 318) [G04B 37/14D2]
- 359 ..Arrangements for fixing to a bracelet (building watches into bracelets montre marquise subclass 342; arrangements for hanging pocket or other watches on chains subclass 353) [G04B 37/14F]
- 360 ...By means of a feather spring [G04B 37/14F2]
- 361 ..Fastening the case to the bracelet [G04B 37/16]
- 362 .For pocket or wrist watches (subclasses 306-361 take precedence) [G04B 37/18]
- 363 ..With hinged covers or backs [G04B 37/20]
- 364 .Materials or processes of manufacturing pocket watch or wrist watch cases (machines or tools for the manufacture of clockwork cases subclasses 709, 710, and 734; decoration or tools therefor subclass 391) [G04B 37/22]
- 365 ..Wear resistant cases [G04G 37/22D]
- 366 ..Nonmetallic cases (subclass 365 takes precedence) [G04B 37/22K]
- 367 ...Coated with a metallic layer [G04B 37/22K2]
- 368 **WATCH CRYSTALS; FASTENING OR SEALING OF CRYSTALS; CLOCK GLASSES [G04B 39/00]**
- 369 .Made of glass [G04B 39/00B]
- 370 .From a material other than glass [G04B 39/00C]
- 371 ..Out of wear resistant material, e.g., sapphire, etc. [G04B 39/00C2]
- 372 .With means for magnified reading (combinations with a magnifying glass in general subclass 398) [G04B 39/00G]
- 373 .Arrangements for sealing (sealing the case and winding stem subclass 327) [G04B 39/00K]
- 374 ..Without special sealing parts [G04B 39/00K2]
- 375 **LOCKING OR HOLDING DEVICES FOR PENDULUMS, CHIMES, OR THE LIKE, FOR USE DURING TRANSPORT [G04B 41/00]**
- 376 .Holding and locking of the pendulum only [G04B 41/00B]
- 377 **PROTECTING CLOCKWORKS BY SHIELDS OR OTHER MEANS AGAINST EXTERNAL INFLUENCES, E.G., MAGNETIC FIELDS, ETC. (DEMAGNETIZING APPARATUS SUBCLASS 783) [G04B 43/00]**

- 378 .Component shock protection arrangements (shock damping bearings subclass 282; shock-damping in the case subclass 307; protection of the pendulum or chime during transport subclass 375) [G04B 43/00B]
- 379 .Protection against temperature influences [G04B 43/00C]
- 380 .Antimagnetic alloys (antimagnetic alloys with temperature compensation subclass 129; apparatus for antimagnetizing subclass 783; alloys in general C22C) [G04B 43/00R]
- 381 **TIMEPIECES OF WHICH THE INDICATING MEANS OR CASE PROVOKE SPECIAL EFFECTS, E.G., AESTHETIC EFFECTS, ETC. (ORNAMENTAL SHAPING OF DIALS SUBCLASS 153 SPECIAL EFFECTS AND PICTURES IN GENERAL B44F) [G04B 45/00]**
- 382 .Light-, colour-, line-, or spot-effects caused by parts or pictures moved by the clockwork (disc-shaped indicating parts subclasses 145 and 163; figures or parts thereof for indicating the time, moved by the clockwork subclass 247) [G04B 45/00B]
- 383 .Light-, colour-, line- or spot-effects caused by or on stationary parts (change of appearance by exchangeable case parts subclass 409) [G04B 45/00C]
- 384 .Inscriptions or pictures moved by the clockwork, e.g., for advertising, etc. (clocks with abrupt time indication subclass 85; disc-shaped indicating elements subclasses 145 and 163; advertising in general G09F) [G04B 45/00D]
- 385 .Inscriptions and pictures moved by hand (clockworks with abrupt time indication subclass 85; adjustable hands or mechanisms subclass 211; combination of clockwork with counter, e.g., for sports results, etc., subclass 381; movable ornaments and decorations subclass 408) [G04B 45/00F]
- 386 .Figures or parts thereof moved by the clockwork (disc-shaped indicating by moving figures subclass 247; normal moving parts of the clockwork visible through a window, e.g., the escapement, etc., subclass 394) [G04B 45/00H]
- 387 ..With oscillating motion, in pocket- or wrist watches [G04B 45/00H2]
- 388 ..With oscillating motion in hanging or standing clockworks such as imitation of a real pendulum [G04B 45/00H3]
- 389 ..Moving parts of the clockwork e.g., pendulum, hands in special form, mostly constructed as a figure (cases and nonmoving parts of the clockwork in various forms subclass 390; decoration and manufacturing methods therefor, also for moving parts subclass 391; construction of normal pendulums subclass 105; construction of normal hands subclass 143) [G04B 45/00H4]
- 390 .Cases and movable parts with a special shape (movable parts with a special shape subclass 389; decoration in general, and methods of manufacture thereof subclass 391; cases in general subclass 294; combination with genuine utensils or mounting therein subclass 398) [G04B 45/00K]

- 391 .Decoration of the case and of parts thereof, e.g., as a method of manufacture thereof, etc. (specially shaped subclasses 389 and 390; decoration with inscriptions and pictures subclass 392; construction of the hands subclass 143; decoration by adding extra pieces to the clockwork subclass 406; coloring by treatment of the surface, e.g., by oxidation C25D) [G04B 45/00M]
- 392 .Pictures or inscriptions on the case or parts thereof, attaching complete pictures (decoration and manufacture thereof subclass 391; special decorative parts which are attached to the case or other parts subclass 406) [G04B 45/00P]
- 393 ..Changeable parts (cases or clockworks with holders or as holders subclass 345) [G04B 45/00P2]
- 394 .Timepieces of which the clockwork is visible partly or wholly (figures or parts thereof moved by the clockwork subclass 391) [G04B 45/02]
- 395 .Timepieces with invisible drive, e.g., with hands attached to a rotating glass disc, etc. (for advertising G09F 23/00; disc-shaped hands with marks or notches subclass 145) [G04B 45/04]
- 396 ..Whereby the clockwork is positioned in the hands or pendulum (gearwork subclass 2; pendulums subclass 105; construction of the hands subclass 143) [G04B 45/04B]
- 397 ..Whereby the driving mechanism of the hand is invisible because of special shielding (construction of the hands subclass 143) [G04B 45/04C]
- 398 **TIMEPIECES COMBINED WITH OTHER ARTICLES WHICH DO NOT INTERFERE WITH THE RUNNING OR THE TIMEKEEPING OF THE TIMEPIECE (WITH MAGNIFYING GLASS BUILT INTO THE FACE SUBCLASS 368; CLOCKWORK CASES FOR SPECIAL PURPOSES SUBCLASS 342; INSCRIPTIONS OR PICTURES MOVED BY HAND SUBCLASS 385; SPECIALLY SHAPED CASES, ALSO IMITATION UTENSILS SUBCLASS 390) [G04B 47/00]**
- 399 .Mounting or fixing to the steering wheel of a vehicle [G04B 47/00B]
- 400 .Mounting in and combined with adjustable indicating means, e.g., date indicating means adjustable by hand, marks or counters, etc. (calendar clocks subclass 170) [G04B 47/00C]
- 401 .Combined with a key [G04B 47/00E]
- 402 .Combined with a lighter [G04B 47/00G]
- 403 .Combined with a pen [G04B 47/00I]
- 404 .Installations within mirrors, pictures, furniture or other household articles (see note attached to this subclass)
- 405 ..In musical instruments or loudspeakers (sounding bodies with chimes subclass 225; in alarm clocks subclass 237; cases with arrangements for enhancing the sound production subclass 303) [G04B 47/02C]
- 406 .With attached ornaments or amusement apparatus (decorated cases see subclass 381) [G04B 47/04B]
- 407 ..Fastening of jewels and the like (set on or into numbers subclass 272; jewel bearings subclass 153; setting of jewels and tools therefor A44C; devices for setting jewel bearings subclass 735) [G04B 47/04B]
- 408 ..Movable decorations and parts thereof (inscriptions and pictures moved by hand subclass 385) [G04B 47/04C]

- 409 .Changeable decorations and parts thereof, decorations for the case which change the external appearance of the clockwork (see note attached to this subclass)
- 410 ..Clockwork combined with toys (devices for teaching clock reading G09B 19/12; indicating play time G07C 1/28) [G04B 47/04K]
- 411 .With attached measuring instruments, e.g., pedometer, barometer, thermometer, or compass, etc. (in combination with a tachometer which winds up the clockwork subclass 64) [G04B 47/06]
- 412 ..With measuring instruments or calculating scales for indicating relationship between quantity and time (meters for measuring average speed, measuring speed by chronograph G01P; slide rules, and calculating wheels G06G; indicating or recording of quantity-time ratios G01D) [G04B 47/06B]
- 413 ..With a compass (compasses G01C 17/00) [G04B 47/06K]
- 414 **TIMEPIECES USING THE POSITION OF THE SUN, MOON, OR STARS (DEVICES FOR FIXING THE PLACE AND TIME BY ASTRONOMICAL OBSERVATIONS G01C 21/00) [G04B 49/00]**
- 415 .Sundials (normal dials subclass 147) [G04B 49/02]
- 416 ..Graduation or shaping of dials [G04B 49/04]
- 426 **WINDING MECHANICAL CLOCKS ELECTRICALLY (WINDING MECHANICALLY SUBCLASS 23; ELECTRICAL WINDING OF SPRING-DRIVEN ARRANGEMENTS FOR GRAMOPHONES G11B 19/20) [G04C 1/00]**
- 427 .By electrothermal or electro-pneumatic arrangements [G04C 1/00B]
- 428 .For clock systems (subclasses 429-434 take precedence) [G04C 1/00F]
- 429 .By electromagnets [G04C 1/02]
- 430 ..With snap-acting armature [G04C 1/02B]
- 431 ...Winding up springs [G04C 1/02B2]
- 432 ..Having unipolar rotating armature (two-pole or multipole arrangements subclasses 434, 435, and 439) [G04C 1/02C]
- 433 ..With linearly moving armature [G04C 1/02D]
- 434 .By electric motors with rotating or with reciprocating movement [G04C 1/04]
- 435 ..Winding up springs [G04C 1/06]
- 436 ...By oscillating movement [G04C 1/06B]
- 437 ...By continuous rotating movement [G04C 1/06C]
- 438 ...By stepping rotating movement [G04C 1/06D]
- 439 ..Raising weights [G04C 1/08]
- 440 ...By oscillating movement [G04C 1/08B]
- 441 ...By continuously rotating movement [G04C 1/08C]
- 442 ...By stepping rotating movement [G04C 1/08D]
- 443 .Protection against overwinding (in mechanical clocks or watches subclasses 16, 36, 38, 66, and 71) [G04C 1/10]
- 444 ..Of the spring [G04C 1/12]
- 445 ..Of the weights [G04C 1/14]
- 446 **ELECTROMECHANICAL CLOCKS OR WATCHES INDEPENDENT OF OTHER TIMEPIECES AND IN WHICH THE MOVEMENT IS MAINTAINED BY ELECTRIC MEANS (SYNCHRONIZATION SUBCLASS 506) [G04C 3/00]**
- 447 .Electromechanical switches for setting or display [G04C 3/00K]
- 448 ..Position, e.g., inclination dependent switches, etc. [G04C 3/00K2]
- 449 ..Magnetically controlled [G04C 3/00K3]
- 450 ..Multiple switches (subclass 449 takes precedence) [G04C 3/00K4]

- 451 ..Electromechanical contact-making and breaking devices acting as pulse generators for setting [G04C 3/00K5]
- 452 ..Mounting, assembling of components [G04C 3/00M]
- 453 ..Wherein movement is regulated by a pendulum [G04C 3/02]
- 454 ..Using mechanical coupling (using more than one pendulum subclass 457; using torsion pendulums subclass 464; using conical pendulums subclass 465) [G04C 3/02B]
- 455 ...With constant impulses [G04C 3/02B2]
- 456 ..Using other coupling means, e.g., electrostrictive, magnetostrictive, etc.) [G04C 3/02D]
- 457 ..Using more than one pendulum (synchronization between master and slave pendulums subclass 532) [G04C 3/02K]
- 458 ..Using electromagnetic coupling between electric power source and pendulum (subclass 464 takes precedence) [G04C 3/027]
- 459 ...The pendulum controlling contacts and mechanically driving the gear-train (constructional details of contact devices subclasses 545 and 608) [G04C 3/027B]
- 460 ...The pendulum controlling contacts, thereby electromagnetically driving the gear-train or several gear-trains (generating driving pulses in master-clocks subclass 541) [G04C 3/027C]
- 461 ...The pendulum controlling contacts, the pendulum driving electromagnet simultaneously driving the gear-train [G04C 3/027D]
- 462 ...The pendulum controlling indirectly, i.e., without mechanical connection, contacts, e.g., by magnetic or optic means, etc. [G04C 3/027E]
- 463 ...The pendulum controlling the gear-train by means of static switches, e.g., transistor circuits, etc. [G04C 3/027F]
- 464 ..Using torsion pendulums; using conical pendulums (construction thereof subclass 103) [G04C 3/033]
- 465 ...Using conical pendulums (construction thereof subclass 134) [G04C 3/033B]
- 466 ..Wherein movement is regulated by a balance (construction thereof subclass 110) [G04C 3/04]
- 467 ..Using mechanical coupling [G04C 3/04B]
- 468 ...With constant impulses [G04C 3/04B2]
- 469 ...Using other coupling means, e.g., electrostrictive, magnetostrictive, etc. [G04C 3/04D]
- 470 ..Using electromagnetic coupling between electric power source and balance [G04C 3/06]
- 471 ...The balance controlling contacts and mechanically driving the gear-train [G04C 3/06B]
- 472 ...The balance controlling contacts, the gear-train or several gear-trains being driven electromagnetically thereby [G04C 3/06C]
- 473 ...The balance controlling contacts, the balance driving electromagnet simultaneously driving the gear-train [G04C 3/06D]
- 474 ...The balance controlling indirectly, i.e., without mechanical connection, contacts, e.g., by magnetic or optic means, etc. [G04C 3/06E]
- 475 ...The balance controlling gear-train by means of static switches, e.g., transistor circuits, etc. (synchronization of balance subclass 520) [G04C 3/06F]
- 476 ...Constructional details, e.g., disposition of coils, etc. [G04C 3/06F2]

- 477 Driving circuits with distinct detecting and driving coils [G04C 3/06F3]
- 478 Provided with automatic control [G04C 3/06F3B]
- 479 Driving circuits using a single coil for detection and driving purposes [G04C 3/06F4]
- 480 . Wherein movement is regulated by a mechanical oscillator other than a pendulum or balance, e.g., by a tuning fork, e.g., electrostatically, etc. [G04C 3/08]
- 481 . . Driven by electromagnetic means [G04C 3/10]
- 482 . . . Constructional details [G04C 3/10B]
- 483 Of the mechanical oscillator or of the coil [G04C 3/10B2]
- 484 Of the pawl or the ratched-wheel [G04C 3/10B3]
- 485 Pawl and ratched-wheel being magnetically coupled [G04C 3/10B3B]
- 486 . . . Controlling frequency or amplitude of the oscillating system (circuits subclass 487) [G04C 3/10B4]
- 487 . . . Driving circuits [G04C 3/10C]
- 488 . . Driven by piezoelectric means; driven by magnetostrictive means [G04C 3/12]
- 489 . . . Driven by magnetostrictive means [G04C 3/12B]
- 490 . Incorporating a stepping motor (subclasses 302 to 488 take precedence) generating timing pulses subclasses 817 and 901; setting subclass 906; synchronization subclass 920; generating commutating pulses in masterclocks subclasses 525 and 541; slave clocks actuated intermittently by electromechanical step-advancing mechanisms subclass 548; control circuits for stepping motors in general H02P 8/00) [G04C 3/14]
- 491 . . Means to reduce power consumption by reducing pulse width or amplitude and related problems, e.g., detection of unwanted or missing step, etc. [G04C 3/14B]
- 492 . . Incorporating two or more stepping motors or rotors [G04C 3/14C]
- 493 . Incorporating an electrodynamic continuously rotating motor (subclasses 453 and 488 take precedence; clocks driven by synchronous motors subclass 553) (apparatus which can be set and started to measure off predetermined or adjustable fixed time intervals with electric driving means, e.g., incorporating clocks, etc., subclasses 815 and 816; electromechanical stopwatches subclass 837) [G04C 3/16]
- 494 . . Comprising a mechanical regulating device influencing the electromotor (constructional details of the mechanical regulating device subclass 103) [G04C 3/16B]
- 495 . Incorporating electrothermal or electro-pneumatic driving means [G04C 3/18]
- 496 **ELECTRIC OR MAGNETIC MEANS FOR CONVERTING OSCILLATORY TO ROTARY MOTION IN TIMEPIECES, I.E., ELECTRIC OR MAGNETIC ESCAPEMENTS (REGULATORS SUBCLASS 446) [G04C 5/00]**
- 497 . Magnetic or electromagnetic means [G04C 5/00B]
- 498 **ELECTRICALLY ACTUATED DEVICES FOR SETTING THE TIME-INDICATING MEANS (OF SLAVE CLOCKS SUBCLASS 533; OF SYNCHRONOUS CLOCKS SUBCLASS 561; MECHANICAL SETTING DEVICES SUBCLASS 248; ELECTRONIC SETTING DEVICES SUBCLASS 906) [G04C 9/00]**
- 499 . Brought into action by radio transmission [G04C 9/02]
- 500 . By blocking the driving means [G04C 9/04]
- 501 . By decoupling the driving means (combined with blocking means subclass 500) [G04C 9/06]
- 502 . By electric drive, i.e., for mechanical clocks [G04C 9/08]

503	ARRANGEMENTS OF ELECTRIC POWER SUPPLIES IN TIMEPIECES (CIRCUITS SUBCLASS 888; MOUNTING, ASSEMBLING OF COMPONENTS OF ELECTROMECHANICAL WATCHES SUBCLASS 452, OF ELECTRONIC WATCHES SUBCLASS 877) [G04C 10/00]	516	.With direct mechanical action on the time-indicating means (time setting subclass 498) [G04C 11/06]
504	.The power supply being a radioactive or photovoltaic source [G04C 10/02]	517	.Using an electro-magnet or - motor for oscillation correction [G04C 11/08]
505	.With means for indicating the condition of the power supply (in general G01R 31/00B) [G04C 10/04]	518	..Using an electromagnet [G04C 11/08K]
506	SYNCHRONIZATION OF INDEPENDENTLY DRIVEN CLOCKS (SYNCHRONIZATION BETWEEN MASTER AND SLAVE PENDULUMS SUBCLASS 532; SYNCHRONIZATION OF ELECTRONIC OSCILLATORS IN GENERAL H03L 7/00) [G04C 11/00]	519	...Acting on the pendulum (mutual synchronization of pendulums subclass 532) [G04C 11/08K5]
507	.By changing the driving speed [G04C 11/00B]	520	...Acting on the balance [G04C 11/08K6]
508	.By changing the ratio of the driving gear [G04C 11/00C]	521	..Using an electromotor [G04C 11/08M]
509	.By positioning of the index or by regulating the length of the pendulum in dependence on the time difference with a standard [G04C 11/00H]	522	...Acting on the pendulum (mutual synchronization of pendulums subclass 532) [G04C 11/08M5]
510	.By radio (time setting brought into action by radio subclass 499) [G04C 11/02]	523	...Acting on the balance [G04C 11/08M6]
511	..Provided with arrangements to prevent synchronization by interfering signals [G04C 11/02B]	524	DRIVING MECHANISMS FOR CLOCKS BY MASTER CLOCKS [G04C 13/00]
512	..The timepiece preparing itself on set times on the reception of the synchronizing signal [G04C 11/02C]	525	.Circuit arrangements; electric clock installations [G04C 13/02]
513	.Over a line (transmitting time signals over telephone networks H04M 11/06; time setting subclass 498) [G04C 11/04]	526	..Master-slave systems using transmission of singular pulses for driving directly slave clocks step-by-step (subclass 533 takes precedence) [G04C 13/02B]
514	..Provided with arrangements to prevent synchronization by interfering signals [G04C 11/04B]	527	...Via existing power distribution lines [G04C 13/02B2]
515	..The timepiece preparing itself on set time on the reception of the synchronizing signal [G04C 11/04C]	528	...Via existing transmission lines (transmitting time signals over telephone networks H04M 11/06) [G04C 13/02B3]
		529	...Via special lines [G04C 13/02B4]
		530	...By radio [G04C 13/02B5]
		531	..Master-slave systems using transmission of other driving signals, e.g., coded signals, etc. [G04C 13/02F]
		532	..Transmission systems for synchronization of pendulum of slave clocks by pendulums of master clocks [G04C 13/02K]
		533	..Pulse transmission systems with additional means for setting the time indication of slave clocks (subclass 532 takes precedence) [G04C 13/03]

- 534 ..Master clocks [G04C 13/04]
- 535 ...Monitoring or controlling master clock or system with more than one master clock, e.g., for switching over to standby motor or power system, etc. [G04C 13/04B]
- 536 ...By using devices similar to slave clocks [G04C 13/04B2]
- 537 ...Systems in which slave clocks function as master clocks for other slave clocks (synchronization of independently driven clocks subclass 506; setting subclass 498) [G04C 13/04B3]
- 538 ...Provided with supplementary means for setting or changing the time indication of the slave clocks [G04C 13/04C]
- 539 ...For automatically correcting or compensating for disturbances [G04C 13/04C2]
- 540 ...For automatically setting of slave clocks after correction or after setting of master clock [G04C 13/04C3]
- 541 ...Arrangements for generating normal driving pulses (generating timing pulses in general subclass 817) [G04C 13/04D]
- 542 ...By starting an independent mechanical driving device, e.g., motor controlling the contacts, etc. [G04C 13/04D2]
- 543 ...By switching on an electromagnetic driving device, e.g., electromotor, controlling the contacts, etc. [G04C 13/04D3]
- 544 ...By using current generating driving device [G04C 13/04D4]
- 545 ...Contact devices (for simultaneously winding several clocks subclass 426) [G04C 13/06]
- 546 ...Controlled by a pendulum or a balance [G04C 13/06B]
- 547 .Slave clocks actuated intermittently [G04C 13/08]
- 548 ..By electromechanical step-advancing mechanisms (independent clocks or watches incorporating a stepping motor subclass 490; stepping motors in general H02K 33/00) [G04C 13/10]
- 549 ...Setting the time-indicating means (master-slave systems with setting means subclass 533; adjusting independently driven clocks subclasses 498 and 506) [G04C 13/10C]
- 550 ...With rotating armature [G04C 13/11]
- 551 ..By continuously rotating electric motors (independent clocks subclass 493; clocks driven by synchronous motors subclass 553) [G04C 13/12]
- 552 ..By electrically released mechanical driving mechanisms [G04C 13/14]
- 553 **CLOCKS DRIVEN BY SYNCHRONOUS MOTORS [G04C 15/00]**
- 554 .Without power reserve [G04C 15/00B]
- 555 ..Provided with hand-actuated starting device [G04C 15/00B2]
- 556 ..Provided with automatic starting device [G04C 15/00B3]
- 557 ..Provided with means for indicating disturbance [G04C 15/00B4]
- 558 ..Provided with means for checking sense of rotation [G04C 15/00B5]
- 559 .With power reserve [G04C 15/00C]
- 560 .Synchronous clock systems, e.g., provided with radiolink or using transmission of alternating current via existing power distribution lines, etc. [G04C 15/00H]
- 561 ..Setting the time-indicating means, e.g., by controlling the frequency or by changing the drive of the separate clocks by using an auxiliary motor, etc. [G04C 15/00H2]

- 562 ..Automatic stabilization of net frequency with regard to time, e.g., by comparing one of the clocks with an independent clock, means being provided for automatic compensation of disturbances, etc. [G04C 15/00H3]
- 563 .Lubricating [G04C 15/00T]
- 564 **INDICATING THE TIME OPTICALLY BY ELECTRIC MEANS (SUBCLASS 577 TAKES PRECEDENCE; BY MECHANICAL MEANS SUBCLASSES 139 AND 162) [G04C 17/00] PRECEDENCE; BY MECHANICAL MEANS SUBCLASSES 139 AND 162) [G04C 17/00]**
- 565 .By hands [G04C 17/00B]
- 566 ..With date indication [G04C 17/00B2]
- 567 .By flaps [G04C 17/00F]
- 568 ..With date indication [G04C 17/00F2]
- 569 ..By a combination of different types of indicating devices, e.g., flaps and drums, etc. [G04C 17/00K]
- 570 .By discs (by drums subclass 573) [G04C 17/00S]
- 571 ..With date indication [G04C 17/00S2]
- 572 ...Electromagnetically driven, e.g., intermittently, etc. (clocks incorporating stepping motor subclass 490) [G04C 17/00S2B]
- 573 .By drums or drumlike devices [G04C 17/00T]
- 574 ..With date indication [G04C 17/00T2]
- 575 .Combined electro-optical and electromechanical displays [G04C 17/00V]
- 576 .By electric lamps [G04C 17/02]
- 577 **PRODUCING OPTICAL TIME SIGNALS AT PREFIXED TIMES BY ELECTRIC MEANS [G04C 19/00]**
- 578 .By electric lamps [G04C 19/02]
- 579 .By indicating members moved electrically, e.g., flap, band, etc. [G04C 19/04]
- 580 **PRODUCING ACOUSTIC TIME SIGNALS BY ELECTRICAL MEANS (FOR MECHANICAL CLOCKS OR WATCHES SUBCLASSES 225 AND 243) [G04C 21/00]**
- 581 .Constructional details (subclasses 582 and 588 take precedence) (sound-producing devices in general G10K, e.g., 1/00) [G04C 21/02]
- 582 .Indicating the time of the day (acoustic indication of time subclass 217) [G04C 21/04]
- 583 ..By striking mechanism [G04C 21/06]
- 584 ...With snail [G04C 21/08]
- 585 ...With locking plate [G04C 21/10]
- 586 ..By electro-acoustic time means [G04C 21/12]
- 587 ...Electro-acoustic time announcement, i.e., spoken [G04C 21/14]
- 588 .Producing the signals at adjustable fixed times [G04C 21/16]
- 589 ..By mechanically unlocking an electromechanical vibrator, e.g., actuated by the leakage flux of the electric driving means, etc. [G04C 21/18]
- 590 ...Provided with means for sheeting off or temporarily stopping the signal [G04C 21/20F]
- 591 ..By closing a contact to ring an electromechanical alarm [G04C 21/20]
- 592 ...By the hand(s) or handlike members closing the contact [G04C 21/20B]
- 593 ...Put into action by the arbor of a mechanical alarm work [G04C 21/22]
- 594 ...Put into action by the spring of a mechanical alarm work [G04C 21/24]
- 595 ...Put into action by the vibrations caused by the operation of a mechanical alarm work [G04C 21/26]
- 596 ..By closing a contact to put into action electro-acoustic means, e.g., awakening by music, etc. [G04C 21/28]
- 597 ..With provision for a number of operations at different times, e.g., ringing the bells in a school, etc. [G04C 21/30]

- 598 ...By the hand(s) or handlike members closing the contacts [G04C 21/30B]
- 599 ...Giving indications at a number of places each at a different time, e.g., system of alarms in a hotel, etc. [G04C 21/32]
- 600 ...By the hand(s) or handlike members closing the contacts [G04C 21/32B]
- 601 ...Adjustable from the different places themselves [G04C 21/32K]
- 602 ..Devices on watches or similar portable timepieces [G04C 21/34]
- 603 ..Signal-repeating devices [G04C 21/36]
- 604 ..Adjusting the duration of signals [G04C 21/38]
- 605 **CLOCKS WITH ATTACHED OR BUILT-IN MEANS OPERATING ANY DEVICE AT PRESELECTED TIMES OR AFTER PRESELECTED TIME INTERVALS (IF RESTRICTED TO PRODUCING ACOUSTIC TIME SIGNALS BY ELECTRICAL MEANS SUBCLASS 580; MECHANICAL ALARM CLOCKS SUBCLASS 231; APPARATUS WHICH CAN BE SET AND STARTED TO MEASURE OFF PREDETERMINED INTERVALS SUBCLASS 815; TIME OR TIME-PROGRAM SWITCHES WHICH AUTOMATICALLY TERMINATE THEIR OPERATION AFTER THE PROGRAM IS COMPLETED H01H 43/00) [G04C 23/00]**
- 606 ..Constructional details [G04C 23/02]
- 607 ..Housings, supports, shielding, or similar stationary parts [G04C 23/04]
- 608 ..Driving or regulating means [G04C 23/06]
- 609 ..Programming means [G04C 23/08]
- 610 ..For actuating any element which operates, or initiates the operation of, the device concerned [G04C 23/10]
- 611 ..Electric circuitry [G04C 23/12]
- 612 ..Mechanisms continuously running to relate the operation(s) to the time of day [G04C 23/14]
- 613 ..Acting only at one preselected time or during one adjustable time- interval [G04C 23/16]
- 614 ..For operating one device at a number of different times [G04C 23/18]
- 615 ...With contacts operated, or formed by clock hands or elements of similar form [G04C 23/20]
- 616 ...With the actuating element carried by a disc [G04C 23/22]
- 617 ...The actuating element controlling another element mechanically [G04C 23/24]
- 618 ..For operating a number of devices at different times [G04C 23/26]
- 619 ...With contacts operated, or formed, by clock hands or elements of similar form [G04C 23/28]
- 620 ...With the actuating element carried by a disc [G04C 23/30]
- 621 ...The actuating element controlling another element mechanically [G04C 23/32]
- 622 ..With provision for automatic modification of the program, e.g., on Sunday, etc. [G04C 23/34]
- 623 ...Some operations being performed at another time [G04C 23/34G]
- 624 ...Another program being carried out [G04C 23/34H]
- 625 ...Some operations being overridden [G04C 23/34M]
- 626 ...By external influences [G04C 23/36]
- 627 ..Mechanisms measuring a chosen time interval independently of the time of day at which interval starts [G04C 23/38]
- 628 ..Using continuously running mechanism [G04C 23/40]
- 629 ..Acting only at the end of a single time interval [G04C 23/42]
- 630 ...With provision for selection from a number of preset intervals [G04C 23/44]
- 631 ...With provision for adjustment of the interval (subclass 630 takes precedence) [G04C 23/46]
- 632 ..Acting at the end of successive time intervals [G04C 23/48]

- 633 ..With provision for modification of the interval(s) by external influences [G04C 23/50]
- 651 **GRIPPING, HOLDING OR SUPPORTING DEVICES (STANDS IN GENERAL F16M; FOR INSTRUMENTS G01D 11/30, B01L) [G04D 1/00]**
- 652 .For assembly entirely by hand [G04D 1/00B]
- 653 ..Workbenches, supports; workbenches provided with suction devices; for dust; illumination [G04D 1/00B2]
- 654 ..Supporting means facilitating assembly and mechanization, e.g., magazines for components, etc. (machines for assembly subclass 661; supports in general subclass 680) [G04B 1/00B3]
- 655 ..Screwdrivers (screwdrivers in general B65B) [G04D 1/00B5]
- 656 ...With power source for driving the screwdriver [G04D 1/00B5B]
- 657 ..Tools for setting, riveting or pressing, e.g., nippers for this purpose, etc. (machines therefor subclass 736, 737, and 738) [G04D 1/00B6]
- 658 .For nonautomatic assembly, with automatic transport between workbenches [G04D 1/00C]
- 659 ..Conveyor belts or chains (in general B65C) [G04D 1/00C2]
- 660 ..Turntables or plates, e.g., carousels, etc. (in general B65G 47/00) [G04D 1/00C3]
- 661 .For totally automated assembly [G04D 1/00D]
- 662 .Automated gripping means (hand-operated gripping means subclass 665) [G04D 1/00G]
- 663 ..With pneumatic holding means (hand tools with pneumatic means subclass 665) [G04D 1/00G2]
- 664 .Devices for positioning and sorting of the components (sorting and positioning in general B23Q) [G04D 1/00H]
- 665 .Tweezers; vice clamps or other special hand tools for watchmakers (subclasses 673, 683, and 684 take precedence; vices B25B; devices for setting bearing jewels and parts thereof subclass 735; devices for setting watch glasses subclass 739) [G04D 1/02]
- 666 ..Tweezers (tweezers for medical purposes A61B; setting tools B41B 1/00) [G04D 1/02B]
- 667 ..Universal nippers (nippers for setting watch glasses digest 742) [G04D 1/02C]
- 668 ..Revolving-head nippers (jaw plates for latches subclass 726) [G04D 1/02D]
- 669 ..Hand screws [G04D 1/02F]
- 670 ..Clamps for holding bearing jewels (machines for setting bearing jewels subclass 685) [G04D 1/02G]
- 671 ..Hand tools for gripping or holding by magnetic means [G04D 1/02H]
- 672 ..Hand tools for gripping or holding by pneumatic means [G04D 1/02K]
- 673 .Tools for setting springs [G04D 1/04]
- 674 ..For springs of driving mechanisms (machines therefor subclass 710) [G04D 1/04B]
- 675 ..For coil springs in regulating mechanisms (machines therefor subclass 701) [G04D 1/04C]
- 676 ...For working the ends (machines therefor subclass 701) [G04D 1/04C2]
- 677 ...For fastening the ends (machines therefor subclass 701) [G04D 1/04C3]
- 678 ...On the coil roll [G04D 1/04C3B]
- 679 ...On the coil bobbin [G04D 1/04C3C]
- 680 .Supporting devices for clockworks or parts of timepieces (for automatic assembly subclass 654) [G04D 1/06]

- 681 ..Provided with a pickup means, e.g., microphone, etc. (measuring and control means for comparison with a standard frequency subclass 769) [G04D 1/06B]
- 682 ..Packaging and boxes for transport (packaging for small items, packaging for special items B65D) [G04D 1/06G]
- 683 ..Tools for setting or removing hands [G04D 1/08]
- 684 ..Devices for opening or closing watch bottoms or covers (machines therefor subclass 685) [G04D 1/10]
- 685 **WATCHMAKER'S OR WATCH-REPAIRER'S MACHINES OR TOOLS FOR WORKING MATERIALS (METAL WORKING IN GENERAL CLASS B23) [G04D 3/00]**
- 686 ..For mechanical working other than with a lathe (lathes for watchmakers subclass 724) [G04D 3/00B]
- 687 ..For parts of driving means [G04D 3/00B2]
- 688 ...For springs (springs in general B21F; mainspring construction subclass 10; springs for the regulating mechanism subclass 701) [G04B 3/00B2B]
- 689 ...For spring barrels (construction of spring barrels subclasses 12 and 14) [G04D 3/00B2C]
- 690 ..For parts of the winding-up mechanism, e.g., for winding axles, crowns, etc. (construction thereof subclasses 23 and 40) [G04D 3/00B4]
- 691 ..For components of the pawl construction, stop clicks, clutches (construction thereof subclass 73) [G04D 3/00B6]
- 692 ..For components of gearworks (construction thereof subclass 85) [G04D 3/00B8B]
- 693 ...For gear wheels or gears [G04D 3/00B8B]
- 694 ...For axles or sleeves [G04D 3/00B8C]
- 695 ...For axle taps, e.g., for grinding or polishing thereof, etc. (on a lathe subclass 724) [G04D 3/00B8D]
- 696 ..For components of the escape mechanism (construction thereof subclass 95) [G04D 3/00B10]
- 697 ...For levers [G04D 3/00B10B]
- 698 ...For lever wheels [G04D 3/00B10C]
- 699 ..For components of the regulating mechanism [G04D 3/00B12]
- 700 ...For balances (construction therefor subclass 110) [G04D 3/00B12B]
- 701 ...For coil-springs (coil-springs in general B12F; springs for the driving mechanism subclass 710) [G04D 3/00B12C]
- 702 ..For components of the time-indicating mechanisms (construction thereof subclass 139) [G04D 3/00B14]
- 703 ...For hands (construction thereof subclass 139) [G04D 3/00B14B]
- 704 ...For dials (construction thereof subclasses 139 and 153) [G04D 3/00B14C]
- 705 ...For time markers [G04D 3/00B14D]
- 706 ..For framework components (construction thereof subclass 265) [G04D 3/00B16]
- 707 ..For bearing components (construction thereof subclass 271) [G04D 3/00B18]
- 708 ...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 3/00B18B]
- 709 ..For components for protecting the mechanism against external influences (construction thereof subclasses 294 and 377) [G04D 3/00B20]
- 710 ...For cases [G04D 3/00B20B]

- 711 ...For the fastening means of the case or bracelet (construction thereof subclass 359) [G04D 3/00B20C]
- 712 .For working with nonmechanical means, e.g., chemical, electrochemical, metallizing, vaporizing, etc; with electron beams, laser beams [G04D 3/00C]
- 713 ..For bearing components [G04D 3/00C1]
- 714 .For treatment of the material, e.g., surface treatment, etc. [G04D 3/00D]
- 715 ..For components of driving mechanisms, e.g., mainspring, etc. [G04D 3/00D2]
- 716 ..For gearwork components [G04D 3/00D8]
- 717 ...For gear wheels or gears [G04D 3/00D8B]
- 718 ...For axles, sleeves [G04D 3/00D8C]
- 719 ..For components of the escapement mechanism, e.g., lever escapement, escape wheel, etc. [G04D 3/00D10]
- 720 ..For components of the regulating mechanism, e.g., coil springs, etc. [G04D 3/00D12]
- 721 ..For components of the time-indicating mechanism, e.g., dials, etc. [G04D 3/00D14]
- 722 ..For bearing components [G04D 3/00D18]
- 723 ..For components of the means protecting the mechanism against external influences, e.g., cases, etc. [G04D 3/00D20]
- 724 .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 3/02]
- 725 ..Components [G04D 3/02B]
- 726 ...Jaw-plates, revolving-head nippers [G04D 3/02B2]
- 727 ..For the manufacture of special components for clockworks [G04D 3/02C]
- 728 ...For gearwork components [G04D 3/02C8]
- 729For gear wheels or gears [G04D 3/02C8B]
- 730For axles, sleeves [G04D 3/02C8C]
- 731For axle taps [G04D 3/02C8D]
- 732 ...For components of the time-indicating mechanism, e.g., dials, etc. [G04D 3/02C14]
- 733 ...For bearing components [G04D 3/02C18]
- 734 ...For components of the means protecting the mechanism from external influences, e.g., cases, etc. [G04D 3/02C20]
- 735 .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 digest 686) [G04D 3/04]
- 736 ..For bearing jewels (pressing nippers and handtools subclass 657) [G04D 3/04B]
- 737 ..For lever, impulse-pin (adjustment of the escapement subclass 760) [G04D 3/04C]
- 738 ..For the coil rolls or bobbins [G04D 3/04D]
- 739 .Devices for shaping or setting watch glasses (cutting watch glasses C03B 33/04; grinding and working of spectacle lenses and lenses B24B; working plastic materials in general B29B) [G04D 3/06]
- 740 ..Shaping without chipping away, e.g., by hot pressing or by punching out the whole piece from a plate, etc. [G04D 3/06B]
- 741 ..Shaping by removing material, e.g., cutting out from a plate, milling the edges, etc. [G04D 3/06C]
- 742 ..Setting or taking apart, whereby a temporary deformation of the glass may take place [G04D 3/06D]
- 743 .Machines or apparatus for cleaning [G04D 3/08]

- 744 ..Whereby the components to be cleaned are placed in a container [G04D 3/08B]
- 745 ...Whereby the container rotates in a cleaning fluid [G04D 3/08B2]
- 746 **OILING DEVICES; SPECIAL LUBRICANT CONTAINERS FOR WATCHMAKERS (BEARINGS CONSTRUCTED WITH REGARD TO OILING OF THE CLOCKWORK SUBCLASS 281; OILCANS FOR LUBRICATING IN GENERAL F16N 3/04) [G04D 5/00]**
- 747 .Oilcans and other handtools for lubricating special parts of the clockwork mechanism [G04D 5/00B]
- 748 **MEASURING, COUNTING, CALIBRATING, TESTING, OR REGULATING APPARATUS (MEASURING DEVICES AND CALIBERS IN GENERAL G01B; COUNTERS IN GENERAL H03K) [G04D 7/00]**
- 749 .Purely mechanical measuring and testing apparatus [G04D 7/00B]
- 750 .Electrical measuring and testing apparatus [G04D 7/00C]
- 751 ..For electric or electronic clocks [G04D 7/00C2]
- 752 .Optical measuring and testing apparatus [G04D 7/00D]
- 753 .Counters for small components, e.g., bearing jewels, etc. [G04D 7/00G]
- 754 .Testing apparatus for complete clockworks with regard to external influences or general good working [G04D 7/00K]
- 755 ..With regard to the sealing of the case [G04D 7/00K2]
- 756 ..With regard to the reaction to shocks [G04D 7/00K3]
- 757 ..With regard to the functioning of the automatic winding-up device [G04D 7/00K4]
- 758 .For mainsprings [G04D 7/02]
- 759 .For gearwork, e.g., optical control of gear wheels, etc. (optical control in general G01B, G01B 9/08) [G04D 7/04]
- 760 .For escapements [G04D 7/06]
- 761 .For balance wheels [G04D 7/08]
- 762 ..For adjusting the fellow or the shafts (adjustment of the gear wheels subclass 759) [G04D 7/08B]
- 763 ..For balancing [G04D 7/08C]
- 764 ...By setting adjustable elements, e.g., balance wheel screws, etc. [G04D 7/08C2]
- 765 ...By removing material from the balance wheel itself [G04D 7/08C3]
- 766 ...Automatic devices therefor (balancing and loading or removing, carried out automatically) [G04D 7/08C3B]
- 767 ...By loading the balance wheel itself with material [G04D 7/08C4]
- 768 .For hairsprings of balances [G04D 7/10]
- 769 .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 subclass 681; measuring short time intervals subclass 844; frequency measuring in general H04B, G01R) [G04D 7/12]
- 770 ..Only for measuring [G04D 7/12B]
- 771 ...For complete clockworks [G04D 7/12B2]
- 772 ...With recording, e.g., vibrograph, etc. [G04D 7/12B2B]
- 773Devices for facilitating the reading or the interpretation of the recording [G04D 7/12B2B2]
- 774 ...For the control mechanism only found from outside the clockwork [G04D 7/12B3]
- 775 ...For measuring amplitude [G04D 7/12B3B]
- 776 ...For measuring frequency [G04D 7/12B3C]
- 777 ..Wherein further adjustment devices are present [G04D 7/12C]
- 778 ...For complete clockworks [G04D 7/12C2]
- 779 ...For the control mechanism only from outside the clockwork [G04D 7/12C3]
- 780 ...Whereby the adjustment device works on the compass [G04D 7/12C3B]

- 781 ...Whereby the adjustment device works on the mainspring [G04D 7/12C3C]
- 782 ...Whereby the adjustment device works on the balance wheel [G04D 7/12C3D]
- 783 **DEMAGNETIZING DEVICES**
(**DEMAGNETIZING IN GENERAL H01F 13/00**) [G04D 9/00]
- 801 **APPARATUS WHICH CAN BE SET AND STARTED TO MEASURE OFF PREDETERMINED OR ADJUSTABLY FIXED TIME INTERVALS WITHOUT DRIVING MECHANISMS, E.G., EGG TIMER, ETC. (ELECTRIC TIME AND TIME-PROGRAM SWITCHES H01H 43/00)** [G04F 1/00]
- 802 .Using electronic timing, e.g., counting means, etc. (pulse time delay arrangements H03K 5/13; modifications of electronic switches for introducing a time delay before switching H03K 17/28) [G04F 1/00B]
- 803 .By consuming prefixed quantities of materials, e.g., by burning candle, etc. [G04F 1/02]
- 804 .By movement or acceleration due to gravity [G04F 1/04]
- 805 ..By flowing away of a prefixed quantity of fine granular or liquid materials, e.g., sand-glass, water-clock, etc. [G04F 1/06]
- 806 ...Using acoustic signalling [G04F 1/06B]
- 807 ...Using electrical contact device [G04F 1/06C]
- 808 ..By a body falling a prefixed distance in air or in a viscous material [G04F 1/08]
- 809 **APPARATUS WHICH CAN BE SET AND STARTED TO MEASURE OFF PREDETERMINED OR ADJUSTABLY FIXED TIME INTERVALS WITH DRIVING MECHANISMS, E.G., DOSIMETER WITH CLOCKWORK, ETC. (ELECTRIC TIME OR TIME-PROGRAM SWITCHES H01H 43/00)** [G04F 3/00]
- 810 .With mechanical driving mechanisms [G04F 3/02]
- 811 ..Using mechanical signaling device [G04F 3/02B]
- 812 ..Mechanically actuated (cigar or cigarette receptacles or boxes with means for limiting the frequency of smoking A24F 15/00B) [G04F 3/02C]
- 813 ..Using electrical contacts, e.g., for actuating electro-acoustic device, etc. [G04F 3/02D]
- 814 ..Additional arrangements in connection with ordinary nonelectric clocks for this purpose [G04F 3/04]
- 815 .With electric driving mechanisms [G04F 3/06]
- 816 ..Additional arrangements in connection with ordinary electric clocks for this purpose [G04F 3/08]
- 817 **APPARATUS FOR PRODUCING PRESELECTED TIME INTERVALS FOR USE AS TIMING STANDARDS (GENERATING CLOCK SIGNALS FOR ELECTRIC DIGITAL COMPUTERS G06F 1/04; REGULATING FREQUENCY IN GENERAL H03C, L)** [G04F 5/00]
- 818 .Metronomes (periodic signalization by acoustic signals in general subclass 218) [G04F 5/02]
- 819 ..Mechanic metronomes [G04F 5/02B]
- 820 ..Electronic metronomes (rhythm generation for electrophonic musical instruments G10H 1/36) [G04F 5/02C]
- 821 ..Using electromechanical driving, e.g., of optical scanned recordings, etc. (electrophonic musical instruments in which tones are generated by electromechanical means, e.g., by using pickup means for reading recorded waves, etc. G10H 3/00) [G04F 5/02D]
- 822 .Using oscillators with electromechanical resonators (producing electric oscillations or timing pulses [G04F 5/04]
- 823 ..Using piezoelectric resonators [G04F 5/06]

- 824 ...Constructional details
(details of resonators in
general H03H 9/02) [G043F 5/
06B]
- 825 ...Trimmer condensators
(capacitors in general H01G)
[G04F 5/06B2]
- 826 ..Using magnetostrictive
resonators [G04F 5/08]
- 827 .Using electric or electronic
resonators (subclass 829 takes
precedence) [G04F 5/10]
- 828 .Using fluidic devices [G04F 5/
12]
- 829 .Using atomic clocks [G04F 5/14]
- 830 .Using pulses produced by
radioisotopes [G04F 5/16]
- 831 **APPARATUS FOR MEASURING UNKNOWN
TIME INTERVALS BY MECHANICAL
MEANS [G04F 7/00]**
- 832 .By measuring the distance of
fall or the final velocity of
a falling body [G04F 7/02]
- 833 .Using a mechanical oscillator
[G04F 7/04]
- 834 ..Running only during the time
interval to be measured, e.g.,
stopwatch, etc. [G04F 7/06]
- 835 ..Watches or clocks with stop
devices, e.g., chronograph,
etc. [G04F 7/08]
- 836 .Means used apart from the
timepiece for starting or
stopping same [G04F 7/10]
- 837 **APPARATUS FOR MEASURING UNKNOWN
TIME INTERVALS BY
ELECTROMECHANICAL MEANS [G04F
8/00]**
- 838 .Using continuously running
driving means [G04F 8/00B]
- 839 .Running only during the time
intervals to be measured,
e.g., stopwatch, etc. [G04F 8/
00C]
- 840 .Using an electromechanical
oscillator (subclasses 817 and
844 take precedence) [G04F 8/
02]
- 841 ..Using a piezoelectric
oscillator [G04F 8/04]
- 842 ..Using a magnetostrictive
oscillator [G04F 8/06]
- 843 .Means used apart from the
timepiece for starting or
stopping same [G04F 8/08]
- 844 **APPARATUS FOR MEASURING UNKNOWN
TIME INTERVALS BY ELECTRIC
MEANS (TIMING DEVICES FOR
CLOCKS OR WATCHES FOR
COMPARING THE RATE OF THE
OSCILLATING MEMBER WITH A
STANDARD SUBCLASS 769; RADAR
SYSTEMS, ANALOGOUS SYSTEMS
G01S 9/00; MEASURING FREQUENCY
G01R 23/00; MEASURING PHASE
ANGLE G01R 25/00) [G04F 10/00]**
- 845 .Using oscillators with passive
electric resonator, e.g.,
lumped LC, etc. (subclasses
846, 847, and 849 take
precedence) [G04F 10/02]
- 846 .By counting pulses or half
cycles of an alternating
current [G04F 10/04]
- 847 .By measuring phase [G04F 10/06]
- 848 .Using pulses produced by
radioisotopes [G04F 10/08]
- 849 .By measuring electric or
magnetic quantities changing
in proportion to time [G04F
10/10]
- 850 ..With conversion of the time
intervals [G04F 10/10B]
- 851 **APPARATUS FOR MEASURING UNKNOWN
TIME INTERVALS BY MEANS NOT
PROVIDED FOR IN SUBCLASS 817
TO SUBCLASS 844 [G04F 13/00]**
- 852 .Using optical means [G04F 13/02]
- 853 ..Using cathode-ray oscilloscopes
(circuits for inserting
reference time markers for
cathode-ray oscilloscopes G01R
13/30B) [G04F 13/02B]
- 854 ..Measuring duration of
ultrashort light pulses, e.g.,
in the picosecond range, etc;
particular detecting devices
therefor (nonlinear optics
G02F 1/35; monitoring
arrangements for lasers in
general H01S 3/00D;
photometry, radiation
pyrometry G01J 1/00, 5/00)
[G04F 13/02C]
- 855 .Using electrochemical means
[G04F 13/04]
- 856 .Using fluidic means [G04F 13/06]

- 876 **SUBJECT MATTER NOT PROVIDED FOR
IN SUBCLASSES 901 TO 975,
E.G., INTEGRATED CIRCUITS FOR
ELECTRONIC TIMEPIECES [G04G 1/
00]**
- 877 .Structural aspects; housings;
aesthetical aspects [G04F 1/
00B]
- 878 ..Assembly of components [G04G 1/
00B2]
- 879 ...Mounting of electronic
components [G04G 1/00B2B]
- 880 ...Mounting of the display [G04G
1/00B2B2]
- 881 ...Electric connectors, e.g.,
conductive elastomers, etc.
[G04G 1/00B2C]
- 882 ..Housings [G04G 1/00B3]
- 883 ...Watches distributed over
several housings [G04G 1/
00B3B]
- 884 ...Desktop clocks [G04G 1/00B3C]
- 885 ..Timepieces combined with an
external data detector [G04G
1/00B4]
- 886 ...For measuring physiological
data [G04G 1/00B4B]
- 887 ..Timepieces combined with games
[G04G 1/00B5]
- 888 .Electric power supply circuits
(in general H02M 1/00) [G04G
1/00C]
- 889 ..Conversion or regulation of
current or voltage [G04G 1/
00C2]
- 890 ...Capacitive voltage division or
multiplication [G04G 1/00C2B]
- 891 ...Regulation [G04G 1/00C2C]
- 892 ..Preventing voltage drop due to
overloading the power supply
[G04G 1/00C4]
- 893 ..Backup power supply [G04G 1/
00C5]
- 894 ..Reducing power consumption
during the storage of the
watch [G04G 1/00C6]
- 895 .Input or output device
integrated in a timepiece
[G04G 1/00D]
- 896 ..Using radiowaves (setting by
radio subclass 907;
synchronization by radio
subclass 922; transmission of
control signal subclass 926)
[G04G 1/00D2]
- 897 ..Using voice (producing acoustic
time signals subclass 968)
[G04G 1/00D3]
- 898 .Pulse shaping; amplification
[G04G 1/00E]
- 899 .Touch switches particularly
adapted to timepieces (in
general H03K 17/96) [G04G 1/
00K]
- 900 .Electronic timepieces using a
microcomputer, e.g., for
multifunction clocks, etc.
[G04G 1/00M]
- 901 **PRODUCING TIMING PULSES (DRIVING
CIRCUITS FOR STEPPING MOTORS
SUBCLASS 490; PRODUCING
PRESELECTED TIME INTERVALS FOR
USE AS TIMING STANDARDS
SUBCLASS 817; PULSE TECHNIQUE
IN GENERAL H03K; CONTROL,
SYNCHRONIZATION, OR
STABILIZATION OF GENERATORS IN
GENERAL H03L) [G04G 3/00]**
- 902 .Circuits for deriving low
frequency timing pulses from
pulses of higher frequency
(pulse frequency dividers in
general H03K 23/00 to 29/00)
[G04F 3/02]
- 903 ..The desired number of pulses
per unit of time being
obtained by adding to or
subtracting from a pulse
train one or more pulses (in
general G06F 7/68) [G04G 3/
02B]
- 904 ..By storing time and date which
are periodically investigated
and modified accordingly,
e.g., by using cyclic shift
registers, etc. [G04G 3/02D]
- 905 ..By combining pulse trains of
different frequencies, e.g.,
obtained from two independent
oscillators or from a common
oscillator by means of
different frequency dividing
ratios, etc. (synchronization
of electric timepieces
subclasses 506 and 920) [G04G
3/02E]

- 906 **SETTING, I.E., CORRECTING OR CHANGING THE TIME-INDICATION (SYNCHRONIZATION COMBINED WITH AUTOMATIC SETTING AT REGULAR INTERVALS, E.G., BY CODED SIGNALS, ETC., SUBCLASS 920) [G04G 5/00]**
- 907 .Brought into action by radio [G04G 5/00B]
- 908 .Debouncing circuits [G04G 5/00C]
- 909 .By using a separate register into which the entire correct setting is introduced, which is thereafter transferred to the time counters [G04G 5/00D]
- 910 .By temporarily changing the number of pulses per unit time, e.g., quick-feed method, etc. [G04G 5/02]
- 911 ..Quick-feed method [G04G 5/02B]
- 912 ...The time counters first being reset to zero [G04G 5/02B2]
- 913 ..By adding or suppressing individual pulses, e.g., for step-motor, etc. [G04G 5/02C]
- 914 .By setting each of the displayed values, e.g., date, hour, etc. independently [G04G 5/04]
- 915 ..Correction of the minutes counter in function of the seconds counter position at zero adjustment of the latter [G04G 5/04B]
- 916 ..Using a commutating device for selecting the value, e.g., hours, minutes, seconds, etc. to be corrected [G04G 5/04C]
- 917 ...Using a sequential electronic commutator [G04G 5/04C2]
- 918By using a separate register into which the correct setting of one of the counters is introduced which is thereafter transferred to the selected time counter to be reset [G04G 5/04C2D]
- 919 ...By using a separate register into which the correct setting of the selected time counter is introduced which is thereafter transferred to the time counter to be reset [G04G 5/04C3]
- 920 **SYNCHRONIZATION [G04G 7/00]**
- 921 .Provided with arrangements to prevent synchronization by interfering signals [G04G 7/00B]
- 922 .By radio [G04G 7/02]
- 923 ..Provided with arrangements to prevent synchronization by interfering signals [G04G 7/02B]
- 924 ..The timepiece preparing itself on set times on the reception of the synchronizing signal [G04G 7/02C]
- 925 **VISUAL TIME- OR DATE-INDICATION MEANS [G04G 9/00]**
- 926 .Transmission of control signals [G04G 9/00]
- 927 ..Using coded signals (synchronization combined with automatic setting at regular intervals, e.g., by coded signals, etc. subclass 920) [G04G 9/00B2]
- 928 .In which the light emitting display elements may be activated at will or are controlled in accordance with the ambient light [G04G 9/00C]
- 929 .By light valves in general (subclasses 950 and 962 take precedence; electro-, magneto-, or acoustic-optic devices in general G02F 1/00) [G04G 9/00D]
- 930 ..Details [G04G 9/00D1]
- 931 ...Constructional [G04G 9/00D1B]
- 932Illumination devices [G04G 9/00D1B2]
- 933 ...Electrical, e.g., selection or application of the operating voltage, etc. [G04G 9/00D1C]
- 934 ...Using means to adjust the display in accordance with the ambient light, e.g., switching or controlling a supplementary light source, etc. [G04G 9/00D1C2]
- 935 .Using a cathode-ray tube as display device (displaying supplementary information, such as, time on TV screen H04N 5/445) [G04G 9/00E]

- 936 .In which functions not related to time can be displayed (digital output to display devices of digital computers G06F 3/14) [G04G 9/00F]
- 937 ..Combined with a calculator or computing means [G04G 9/00F2]
- 938 .In which the time in another time zone or in another city can be displayed at will [G04G 9/00G]
- 939 .By building up characters using a combination of indicating elements and by selecting desired characters out of a number of characters or by selecting indicating elements the positions of which represent the time (this subclass is a combination of subclasses 942 and 954) [G04G 9/00H]
- 940 ..By controlling light sources, e.g., electroluminescent diodes, etc. [G04G 9/00H2]
- 941 ..Using light valves, e.g., liquid crystals, etc. [G04G 9/00H3]
- 942 .By selecting desired character out of a number of characters or by selecting indicating elements the position of which represent the time, e.g., by using multiplexing techniques, etc. [G04G 9/02]
- 943 ..Using multiplexing techniques [G04G 9/02B]
- 944 ..Provided with date indication [G04G 9/02C]
- 945 ..Provided with means for displaying at will a time indication or a date or a part thereof [G04G 9/02D]
- 946 ..By controlling light sources, e.g., electroluminescent diodes, etc. (subclass 935 takes precedence) [G04G 9/04]
- 947 ...Using multiplexing techniques [G04G 9/04]
- 948 ...Provided with date indication [G04G 9/04C]
- 949 ...Provided with means for displaying at will a time-indication or a date or a part thereof [G04G 9/04D]
- 950 ..Using light valves, e.g., liquid crystals, etc. [G04G 9/06]
- 951 ...Using multiplexing techniques [G04G 9/06B]
- 952 ...Using a drop of liquid suspended by capillary forces and moved by an electric field [G04G 9/06F]
- 953 ...Using mechano-optical means [G04G 9/06G]
- 954 .By building up characters using a combination of indicating elements, e.g., by using multiplexing techniques, etc. [G04G 9/08]
- 955 ..Using multiplexing techniques [G04G 9/08B]
- 956 ..Provided with date indication [G04G 9/08C]
- 957 ..Provided with means for displaying at will a time indication or a date or a part thereof [G04G 9/08D]
- 958 ..By controlling light sources, e.g., electroluminescent diodes, etc. (subclass 935 takes precedence) [G04G 9/10]
- 959 ...Using multiplexing techniques [G04G 9/10B]
- 960 ...Provided with date indication [G04G 9/10C]
- 961 ...Provided with means for displaying at will a time indication or a date or a part thereof [G04G 9/10D]
- 962 ..Using light valves, e.g., liquid crystals, etc. [G04G 9/12]
- 963 ...Using multiplexing techniques [G04G 9/12B]
- 964 ...Provided with date indication [G04G 9/12C]
- 965 ...Provided with means for displaying at will a time indication or a date or a part thereof [G04G 9/12D]
- 966 ...Using mechano-optical means [G04G 9/12G]
- 967 **PRODUCING OPTICAL SIGNALS AT PRESELECTED TIMES [G04G 11/00]**
- 968 **PRODUCING ACOUSTIC TIME SIGNALS [G04G 13/00]**

- 969 .At preselected times, e.g.,
alarm clocks, etc. [G04G 13/
02]
- 970 ..Details [G04G 13/02A]
- 971 ...Adjusting the duration and/or
amplitude of signals [G04G 13/
02A2]
- 972 ..Acting only at one preselected
time [G04G 13/02B]
- 973 ..Acting at a number of different
times [G04G 13/02C]
- 974 ..Combined with a radio [G04G 13/
02D]
- 975 **TIMEPIECES COMPRISING MEANS TO BE
OPERATED AT PRESELECTED TIMES
OR AFTER PRESELECTED TIME
INTERVALS (SUBCLASSES 967 AND
968 TAKE PRECEDENCE; PULSE
DELAY CIRCUITS H03K 5/13;
ELECTRONIC TIME DELAY SWITCHES
H03K 17/28; ELECTRONIC TIME
PROGRAM SWITCHES WHICH
AUTOMATICALLY TERMINATE THEIR
OPERATION AFTER THE PROGRAM IS
COMPLETED H03K 17/296;
ELECTRONIC TIMERS DIGEST 802)
[G04G 15/00]**
- 976 .Acting only at one preselected
time or during one adjustable
time interval [G04G 15/00B]
- 977 .For operating at a number of
different times (cigar or
cigarette receptacles or boxes
with means for limiting the
frequency of smoking A24F 15/
00B) [G04G 15/00C]

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