

G 04 B MECHANICALLY-DRIVEN CLOCKS OR WATCHES; MECHANICAL PARTS OF CLOCKS OR WATCHES IN GENERAL; TIME-PIECES USING THE POSITION OF THE SUN, MOON, OR STARS (spring- or weight-driven mechanisms in general **F 03 G**; electromechanical clocks or watches **G 04 C**; electromechanical clocks with attached or built-in means operating any device at preselected times or after predetermined time intervals **G 04 C 23/00**; clocks or watches with stop devices **G 04 F 7/08**; structural details or housings specially adapted for electronic time-pieces with no moving parts **G 04 G 17/00**)

Note

This subclass covers mechanically-driven calendar clocks or clockwork calendars, and the mechanical part of such clocks or calendars.

Subclass Index

DRIVING MECHANISM.....	1/00	TIME INDICATING.....	19/00, 21/00, 23/00, 25/00
WINDING		TIME SETTING.....	27/00
Normal; automatic; combined.....	3/00; 5/00; 7/00	FRAMEWORKS; SUPPORTS; CALIBERS.....	29/00; 31/00; 33/00
Supervision; winding parts.....	9/00; 11/00	PROTECTION OF CLOCKWORK	
CLOCK MOVEMENT		Cases; crystals, glasses; other	
Escapement; frequency stabiliser;		protection means.....	37/00; 39/00; 41/00, 43/00
setting frequency gearwork;		UNUSUAL CLOCKS.....	45/00, 47/00, 49/00
adjusting thereof.....	15/00; 17/00; 18/00; 13/00; 35/00		

Driving mechanisms

1/00 Driving mechanisms

- 1/02 . with driving weight
- 1/04 . . Mechanisms in which the clockwork acts as the driving weight
- 1/06 . . with several weights
- 1/08 . . Driving weights; Chains; Chain wheels; Arbors for chain wheels
- 1/10 . with mainspring
- 1/12 . . with several mainsprings
- 1/14 . . Mainsprings; Bridles therefor (mainsprings with bridles **1/18**; alloys **C 22 C**; springs in general **F 16 F**)
- 1/16 . . Barrels; Arbors; Barrel axles (arrangements facilitating the removal of the mainspring **33/14**)
- 1/18 . . Constructions for connecting the ends of mainsprings with the barrel or the arbor
- 1/20 . . . Protecting arrangements against rupture or overwinding of the mainspring located in the barrel or attached to the barrel (in connection with keys or the like **3/06**, **3/10**; in connection with automatic winding devices **5/24**)
- 1/22 . . Compensation of changes in the motive power of the mainspring (by mechanical shaping of the mainspring **1/14**)
- 1/24 . with both mainsprings and driving weights
- 1/26 . driven by liquids or gases; Liquid or gaseous drives for mechanically-controlled secondary clocks

Winding

3/00 Normal winding of clockworks by hand or mechanically; Winding-up several mainsprings or driving weights simultaneously

- 3/02 . Removably-mounted keys or the like
- 3/04 . Rigidly-mounted keys, knobs, or crowns (divided winding stems **37/06**)

- 3/06 . Keys or the like with means preventing overwinding (protecting devices arranged in, or attached to, the barrel **1/20**; in connection with automatic winding devices **5/24**)
- 3/08 . by parts of the cases
- 3/10 . . Protecting means preventing overwinding (arranged in, or attached to, the barrel **1/20**; in connection with keys **3/06**; in connection with automatic winding devices **5/24**)
- 3/12 . by mechanical means, e.g. pneumatic motor (winding-up with electric or electromechanical means **G 04 C**)
- 5/00 Automatic winding-up**
- 5/02 . by self-winding caused by movement of the watch
- 5/04 . . by oscillating weights the movement of which is limited
- 5/06 . . . acting in one direction only
- 5/08 . . . acting in both directions
- 5/10 . . by oscillating weights the movement of which is not limited
- 5/12 . . . acting in one direction only
- 5/14 . . . acting in both directions
- 5/16 . . Construction of the weights
- 5/18 . . Supports, suspensions, or guide arrangements, for oscillating weights
- 5/19 . . . Suspension of the oscillating weight at its centre of rotation **[3]**
- 5/20 . by movements of other objects, e.g. by opening hand-bag, by opening case, by opening door; Winding-up by wind power
- 5/22 . by thermometric, barometric, or like effects or alterations
- 5/24 . Protecting means preventing overwinding (arranged in, or attached to, the barrel **1/20**; in connection with keys or the like **3/06**; in connection with parts of the cases **3/10**)
- 7/00 Combined normal and automatic winding-up**

9/00 Supervision of the state of winding, e.g. indicating the amount of winding

- 9/02 . Devices controlled by such state, e.g. device affording protection against overwinding (protecting means preventing overwinding arranged in or on the barrel 1/20; protecting means in connection with keys or the like 3/06; in connection with parts of the cases 3/10; in connection with automatic winding devices 5/24)

11/00 Click devices; Stop clicks; Clutches

- 11/02 . Devices allowing the motion of a rotatable part in only one direction [3]
- 11/04 . . Pawl constructions therefor, e.g. pawl secured to an oscillating member actuating a ratchet [3]

13/00 Gearwork

- 13/02 . Wheels; Pinions; Spindles; Pivots (bearings 31/00)

15/00 Escapements (electric or magnetic means for converting oscillatory to rotary motion in electromechanical time-pieces G 04 C 5/00)

- 15/02 . permanently in contact with the regulating mechanism
- 15/04 . . Cylinder escapements
- 15/06 . Free escapements
- 15/08 . . Lever escapements
- 15/10 . with constant impulses for the regulating mechanism
- 15/12 . Adjusting (tools therefor G 04 D 1/02); Restricting the amplitude of the lever or the like
- 15/14 . Component parts or constructional details, e.g. construction of the lever or the escape wheel

17/00 Mechanisms for stabilising frequency [3]

- 17/02 . Oscillators acting by gravity, e.g. pendulum swinging in a plane
- 17/04 . Oscillators acting by spring tension
- 17/06 . . Oscillators with hairsprings, e.g. balance
- 17/08 . . Oscillators with coil springs stretched and unstretched axially
- 17/10 . . Oscillators with torsion strips or with springs acting in the same manner as torsion strips, e.g. weight oscillating in a horizontal plane
- 17/20 . Compensation of mechanisms for stabilizing frequency
- 17/22 . . for the effect of variations of temperature (alloys independent of variations of temperature C 22 C)
- 17/24 . . for the effect of variations of atmospheric pressure
- 17/26 . . for the effect of variations of the impulses
- 17/28 . . for the effect of unbalance of the weights, e.g. tourbillon
- 17/30 . Rotating governors, e.g. centrifugal governors, fan governors (for striking mechanism 21/06)
- 17/32 . Component parts or constructional details, e.g. collet, stud
- 17/34 . . for fastening the hairspring onto the balance [3]

18/00 Mechanisms for setting frequency [3]

- 18/02 . Regulator devices; Indexing devices [3]
- 18/04 . Adjusting the beat of the pendulum, balance, or the like, e.g. putting into beat [3]
- 18/06 . . by setting the collet or the stud of a hairspring [3]
- 18/08 . Component parts or constructional details [3]

Time indicating**19/00 Indicating by visual means** (by electric lamps G 04 C 17/02; display arrangements in general G 09)

- 19/02 . Back-gearing arrangements between gear train and hands
- 19/04 . Hands; Discs with a single mark or the like
- 19/06 . Dials (for time-pieces without clockwork 49/04)
- 19/08 . . Geometrical arrangement of the graduations
- 19/10 . . Ornamental shape of the graduations or the surface of the dial; Attachment of graduations to the dial
- 19/12 . . Selection of materials for dials or graduations
- 19/14 . . Fastening the dials to the clock or the watch plates
- 19/16 . . Shiftable dials, e.g. indicating alternately from 1 to 12 and from 13 to 24
- 19/18 . . Graduations on the crystal or glass, on the bezel, or on the rim
- 19/20 . Indicating by numbered bands, drums, discs, or sheets
- 19/21 . . Drums [3]
- 19/22 . Arrangements for indicating different local apparent times; Universal time-pieces
- 19/23 . . by means of additional hands or additional pairs of hands [3]
- 19/24 . Clocks or watches with date indicators; Clockwork calendars
- 19/243 . . characterised by the shape of the date indicator [3]
- 19/247 . . . disc-shaped [3]
- 19/25 Devices for setting the date indicators manually [3]
- 19/253 Driving or releasing mechanisms [3]
- 19/257 . . . drum-shaped [3]
- 19/26 . Clocks or watches with indicators for tides, for the phases of the moon, or the like
- 19/28 . Adjustable guide marks or pointers for indicating determined points of time
- 19/30 . Illumination of dials or hands
- 19/32 . . by luminescent substances
- 19/34 . Position of the hands projected optically

21/00 Indicating by acoustic means (at preselected times 23/00; by electro-acoustic means G 04 C 21/04; sound-producing apparatus per se G 10)

- 21/02 . Regular striking mechanisms giving the full hour, half hour, or quarter hour
- 21/04 . . Hour wheels; Racks or rakes; Snails or similar control mechanisms
- 21/06 . . Details of striking mechanisms, e.g. hammer, fan governor
- 21/08 . . Sounding bodies; Whistles; Musical apparatus (with electro-acoustic transmitters G 04 C 21/00)
- 21/10 . . Releasing or locking the regular stroke, e.g. for silence during the night
- 21/12 . . Reiterating watches or clocks
- 21/14 . . Winding-up the striking mechanism by the clockwork; Winding-up the clockwork by the striking mechanism

23/00 Arrangements producing acoustic signals at preselected times (metronomes G 04 F 5/02; sound-producing apparatus per se G 10)

- 23/02 . Alarm clocks (electrically-released alarm signals G 04 C 21/00)
- 23/03 . . Alarm signal stop arrangements [3]
- 23/04 . . with coarse and fine setting of the preselected time
- 23/06 . . adjustable for several preselected times with automatic stopping of the signal

- 23/08 . . operating on successive days without resetting; operating only once in each 24 hours
- 23/10 . . with presignal; with repeated signal; with changeable intensity of sound
- 23/12 . . Alarm watches to be worn in pockets or on the wrist (giving signals by stimulating the skin [25/04](#))
- 25/00 Indicating the time by other means or by combined means** (electric or electromechanical indicating [G 04 C](#))
- 25/02 . by feeling; Clocks or watches for blind persons
- 25/04 . . Alarm clocks or watches with devices stimulating the skin
- 25/06 . by moving figures, e.g. cuckoo-clock, trumpet clock
- 27/00 Mechanical devices for setting the time-indicating means**
- 27/02 . by making use of the winding means
- 27/04 . . with clutch wheel
- 27/06 . . with rocking bar
- 27/08 . by using parts of the case

Frameworks, supports, or arrangements of the clockwork parts in relation to each other, so-called "calibers"

29/00 Frameworks

- 29/02 . Plates; Bridges; Cocks
- 29/04 . Connecting or supporting parts

31/00 Bearings; Point suspensions or counter-point suspensions; Pivot bearings; Single parts therefor (bearings in general [F 16 C](#))

- 31/004 . characterised by the material used [3]
- 31/008 . . Jewel bearings ([31/04](#) takes precedence) [3]
- 31/012 . . Metallic bearings [3]
- 31/016 . . Plastic bearings [3]
- 31/02 . Shock-damping bearings
- 31/04 . . with jewel hole and cap jewel [3]
- 31/06 . Manufacture or mounting processes [3]
- 31/08 . Lubrication [3]

33/00 Calibers

- 33/02 . Circular calibers
- 33/04 . Non-circular calibers
- 33/06 . of extremely flat shape
- 33/08 . in which the gear train is arranged in different planes, e.g. parallel or inclined to each other ([33/10](#) takes precedence)
- 33/10 . with seconds hand arranged in the centre of the dial
- 33/12 . for extremely-long running times
- 33/14 . Calibers of which the mainsprings or barrels are easily removable (mainsprings [1/14](#); barrels, arbors [1/16](#))
- 33/16 . with arrangements affording protection of the clockwork against damage as a consequence of a rupture of the mainspring

35/00 Adjusting the gear train, e.g. the backlash of the arbors, depth of meshing of the gears

Protection of the clockwork against damage from outside

37/00 Cases

- 37/02 . Evacuated cases; Cases filled with gases or liquids; Cases containing substances for absorbing or binding moisture or dust

- 37/04 . Mounting the clockwork in the case; Shock-absorbing mountings
- 37/05 . . Fixed mountings for pocket or wrist watches [3]
- 37/06 . Forming the passage for the winding stem through the case; Divided winding stems
- 37/08 . Hermetic sealing of openings, joints, passages, or slits
- 37/10 . . of winding stems
- 37/11 . . of the back cover of pocket or wrist watches [3]
- 37/12 . Cases for special purposes, e.g. watch combined with ring, watch combined with button (watch guards or protectors [A 45 C 11/10](#), [11/12](#); watches combined with cosmetic powder containers [A 45 D 33/30](#))
- 37/14 . Suspending devices, supports, or stands for time-pieces in so far as they form part of the case (wrist-watch straps, fastening means therefor [A 44 C 5/00](#))
- 37/16 . . Fastening the case to the bracelet [3]
- 37/18 . for pocket or wrist watches ([37/02](#) to [37/16](#) takes precedence) [3]
- 37/20 . . with hinged covers or backs [3]
- 37/22 . Materials or processes of manufacturing pocket watch or wrist watch cases [3]

39/00 Watch crystals; Fastening or sealing crystals; Clock glasses

- 39/02 . Sealing crystals or glasses [3]

41/00 Locking or holding devices for pendulums, chimes, or the like, for use during transport

43/00 Protecting clockworks by shields or other means against external influences, e.g. magnetic fields

Clocks with unusual features

45/00 Time-pieces of which the indicating means or cases provoke special effects, e.g. aesthetic effect (ornamental shaping of dials [19/10](#))

- 45/02 . Time-pieces of which the clockwork is visible partly or wholly
- 45/04 . Time-pieces with invisible drive, e.g. with hands attached to rotating glass disc

47/00 Time-pieces combined with other articles which do not interfere with the running or the time-keeping of the time-piece ([37/12](#) takes precedence; writing or drawing implements with devices for indicating time [B 43 K 29/087](#); combined with cameras, projectors, or photographic printing apparatus [G 03 B 29/00](#))

- 47/02 . Installations within mirrors, pictures, furniture, or other household articles (combinations with vehicle mirror assemblies [B 60 R 1/12](#))
- 47/04 . with attached ornaments or amusement apparatus
- 47/06 . with attached measuring instruments, e.g. pedometer, barometer, thermometer, compass

49/00 Time-pieces using the position of the sun, moon, or stars

- 49/02 . Sundials
- 49/04 . . Graduation or shaping of dials

