

G04B

**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 [F03G](#); electromechanical clocks or watches [G04C](#);
electromechanical clocks with attached or built-in means
operating any device at pre-selected times or after
predetermined time intervals [G04C 23/00](#); clocks or watches
with stop devices [G04F 7/08](#))**

Definition statement

This subclass/group covers:

A mechanical timepiece is defined as a timepiece which is:

Driven by power which does not use electricity; therefore mechanically driven, pneumatically driven, hydraulically driven timepieces, sundials (but not electronic simulations of sundials);

mechanically regulated, hence making no use of electric, magnetic or electromagnetic means.

Relationship between large subject matter areas

[G04B 19/30](#) and indented subclasses are by definition partially overlapping fields with electromechanical/electronic timepieces since an electric power (for example for the LEDs or the lamps) could be used to drive the timepiece and it could occur that the same power for driving the timepiece is used to illuminate the dial. It is therefore required to classify devices for the illumination of dials and hands in [G04B 19/30](#) and subclasses and possibly in [G04G 9/00](#) or [G04C 17/00](#) in case further aspects not concerning the illumination are present. LCD and similar electronic displays are not considered within the scope of [G04B 19/30](#) and should be classified in [G04G 9/00](#) or [G04C 17/00](#) only.

[G04B 43/007](#) : consider to classify also in [G04G 17/00](#).

In [G04B 37/1486](#) the arrangements concerning the watch case for fixing to a bracelets are classified. The details about the bracelets are classified in [A47C 15/00](#). Often a double CPC code may be needed.

Exceptions:

Winders for automatic and manually wound watches: although the heading of [G04D 7/009](#) is not appropriate, the winders for automatic watches are classified in that group and not the [G04B 5/00](#). The watch winders for manually wound watches are given the [G04B 3/006](#).

Winding up machines with means to prevent overwinding are classified in the above mentioned [G04D 7/009](#) and [G04B 3/006](#) respectively. However winding keys with means preventing overwinding are in [G04B 3/06](#).

See also comments on [G04C 1/00](#).

Timepieces combined with pen are not classified in [G04B 47/00](#) but in [B43K 29/087](#) only.

References relevant to classification in this subclass

This subclass/group does not cover:

Timepieces in which the power is generated electrically AND mechanically do not form part of [G04B](#).

Mechanical parts of electronic or electromechanical timepieces should be classified in [G04C](#) or [G04G](#) in the structural parts fields, in particular in [G04G 17/00](#).

However, connections between parts, special gearings that could also be used in mechanically driven watches should also be classified in [G04B](#).

Special rules of classification within this group

[G04B 47/06](#) and subclasses: electrically driven timepieces have been classified here for long time by mistake since a suitable class was not found in [G04C-G04G](#); it is reminded that **G04B47/00IS** a virtual extension of [G04B 37/12](#) (case for special purposes) and mainly concerns the technical details of the cases. This means that [G04B 47/06](#) should only deal with special arrangement of the cases of mechanically driven timepieces with an extra measurement and/or indicating device not interfering with the driving. The main aspect of such timepieces are the interface between the case and the measurement/indicating device.

The same applies for the head class [G04B 47/00](#).

Typical case: a mechanically driven watch with a pressure sensor and indicator, the details about the mounting of the sensor in the case, or details about the mounting of the indicator on the dial, etc. will be classified in [G04B 47/00](#).

Electronic timepieces with integrated measuring instruments are also classified in [G04G 21/00](#).

G04B 1/00

Driving mechanisms [N: driving mechanisms for Turkish time [G04B 19/22](#); driving mechanisms in the hands [G04B 45/043](#); 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 [A63H11/23](#)]

Informative references

Attention is drawn to the following places, which may be of interest for search:

Driving mechanisms for toys including clockwork mechanisms	A63H 29/02
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Special rules of classification within this group

When searching in [G04B 1/225](#) consider also to extend the search to [G04B 15/10](#) (escapements with constant pulses).

G04B 3/00

Normal winding of clockworks by hand or mechanically; Winding up several mainsprings or driving weights simultaneously [N: automatic winding up [G04B 5/00](#); combined normal and automatic winding up [G04B 7/00](#); Click devices [G04B 11/00](#); winding up the striking mechanism by the clockwork and vice versa [G04B 21/14](#); mechanical devices for setting the time-indication by using the winding means [G04B 27/02](#), [G04B 27/083](#); calibers of which the mainsprings are easily removable [G04B 33/14](#); winding mechanical clocks electrically [G04C 1/00](#); tools for setting springs [G04D 1/04](#); driving mechanisms for gramophones [G11B 19/00](#); driving mechanisms for cinematographs [G03B 1/00](#)]

Special rules of classification within this group

When searching in [G04B 3/006](#) consider also to extend the search to [A47F 7/022](#) (display cases or boxes for watches).

When searching in [G04B 3/04](#) and indented subgroups consider also to extend the search to [G04C 3/001](#) (electrical switches).

G04B 5/00

Automatic winding up [N: normal winding up by hand or mechanically [G04B 3/00](#); automatic winding in combination with hand winding [G04B 7/00](#); electrical winding of

mechanical clockworks [G04C 1/00](#); advertising by making use of vibrations or shocks of land vehicles [G09F 21/045](#)]

G04B 7/00

Combined normal and automatic winding up [N: normal winding up by hand or mechanically [G04B 3/00](#); automatic winding up [G04B 5/00](#); electric winding up of mechanical clockworks [G04C 1/003](#)]

G04B 9/00

Supervision of the state of winding, e.g. indicating the amount of winding

G04B 11/00

Click devices; Stop clicks; Clutches [N: mechanisms for winding up by hand [G04B 3/00](#); automatic winding up [G04B 5/00](#) ; clutches in general, class 111]

Special rules of classification within this group

Only rarely a patent application or a technical document is mainly directed to a click device or a clutch per se. In general click devices or clutches form part of a more complex device such as a transmission clutch from the oscillating weight to a mainspring, a calendar wheel or a time zone wheel etc. This entails that [G04B 11/00](#) contains almost (at least) double classified documents. It is required to classify a document here only when the details on the click/clutch are not trivial for the man skilled in the art.

G04B 13/00

Gearwork [N: Gearwork for driving the hands [G04B 19/02](#); calibers [G04B 33/00](#) ; dispositions and components for transmission in general [F16H](#)]

Special rules of classification within this group

Only rarely a patent application or a technical document is mainly directed to a click device or a clutch per se. In general click devices or clutches form part of a more complex device such as a transmission clutch from the oscillating weight to a mainspring, a calendar wheel or a time zone wheel etc. This entails that [G04B 11/00](#) contains almost (at least) double classified documents. It is required to classify a document here only when the details on the click/clutch are not trivial for the man skilled in the art.

G04B 15/00

Escapements [N: magnetic [G04C 5/005](#); in striking mechanisms [G04B 21/06](#); in alarm clocks [G04B23/06D](#)]

Informative references

Attention is drawn to the following places, which may be of interest for search:

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Detent escapements	G04B 15/06
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G04B 17/00

Mechanisms for stabilising frequency [N: (for setting frequency [G04B 18/00](#); magnetic [G04C 5/005](#); in striking mechanisms [G04B 21/06](#); stopping and regulating of the running [G04B 23/023](#); electrically driven mechanical regulation [G04B3/16](#); electrical and thermo-electric regulating mechanisms [G04C 5/00](#))]

Special rules of classification within this group

"Mechanisms for stabilising frequency" in the title of [G04B 17/00](#) should be interpreted as "Mechanisms giving time standard in mechanical watches". On the contrary [G04B 18/00](#) deals with "Adjustment or fine setting of the mechanisms giving the time standard".

There can be an overlapping between the two fields, especially when construction and fine setting come together. For example adjusting devices on the balance. So consider to search in both [G04B 18/003](#) and [G04B 17/063](#) for example.

G04B 18/00

Mechanisms for setting frequency [N: (for stabilising frequency [G04B 17/00](#))]

Special rules of classification within this group

"Mechanisms for stabilising frequency" in the title of [G04B 17/00](#) should be interpreted as "Mechanisms giving time standard in mechanical watches". On the contrary [G04B 18/00](#) deals with "Adjustment or fine setting of the mechanisms giving the time standard".

There can be an overlapping between the two fields, especially when construction and fine setting come together. For example adjusting devices on the balance. So consider to search in both [G04B 18/003](#) and [G04B 17/063](#) for example.

G04B 19/00

Indicating the time by visual means ([N: indicating the time optically by electric means [G04C 17/00](#), e.g.] by electric lamps [G04C 17/02](#) ; display arrangements in general [G09F](#)) [C0410]

Special rules of classification within this group

In this big group the documents are classified following different criteria:

- according to the information to be displayed: [G04B 19/22](#) and subgroups [G04B 19/26](#) and subsubgroups.
- according to structural or constructional features: all the remaining subgroups of the [G04B19](#).

The two types of subgroups can be overlapping since both criteria can be used for classifying. However the first criteria normally takes priority.

Methods for dial constructions are both in [G04B 19/06](#) and subgroups and in [G04D](#), see in particular [G04D 3/0048](#) (machining), [G04D 3/0092](#) (working with non mechanical means), or [G04D 3/0272](#) (working with lathe).

Note: in the group of the watches with date ([G04B 19/24](#) and subgroups) documents are mainly classified according to the structural details, however since no class for the weekdays or particular kind of calendar (Jewish, Chinese etc) are provided, the particular calendars can be found everywhere in the subgroups of [G04B 19/24](#).

G04B 19/28

Adjustable guide marks or pointers for indicating determined points of time [N: inscriptions or pictures moved by hand [G04B 45/003](#); measurement of unknown time intervals by regulatable hands, scales or marks [G04F7/00B](#)]

Special rules of classification within this group

Consider to extend the search to [G04B 39/02](#) and subgroups since by definition the bezel has the function of fastening the watch crystal to the watch case.

G04B 21/00

Indicating the time by acoustic means (at preselected times [G04B 23/00](#); by electro-acoustic means [G04C 21/04](#); [N: indicating the time by means other than acoustically, or by combined means [G04B 25/00](#); indicating the time by visual

means [G04B 19/00](#), [G04C 17/00](#); acoustic signalling arrangements [G08B 3/00](#)])

Relationship between large subject matter areas

[G04B 21/12](#) is an overlapping subgroup with all the subgroups of the [G04B21](#) with the exception of device for manual actuation which should be found in the [G04B 21/12](#) only.

G04B 23/00

Arrangements producing acoustic signals at preselected times [N: (indicating the time by optical means [G04B 19/00](#), [G04C 17/00](#); indicating the time by acoustic means [G04B 21/00](#); indicating the time by means other than acoustic or optical, or by a combination of means [G04B 25/00](#); acoustic time signals produced electrically [G04C 21/00](#); coin-freed alarm clocks [G07F 17/0007](#); acoustic signalling means [G08B 3/00](#))]

Relationship between large subject matter areas

[G04B 23/12](#) is an overlapping subgroup with all the subgroups of the [G04B23](#) with the exception of device for manual setting of the alarm time which should be found in the [G04B 23/12](#) only.

G04B 25/00

Indicating the time by other means or by combined means (electric or electromechanical indicating [G04C](#); [N: illumination of dials or hands [G04B 19/30](#); indicating the time by acoustic means [G04B 21/00](#); arrangements producing acoustic signals at preselected times [G04B 23/00](#); continuously indicating the time optically by electric means [G04C 19/00](#); producing acoustic time signals by electrical means [G04C 21/00](#); gas lamp adjustment by clockwork 4D17 (= [G04B 25/00](#)); devices for cooking eggs [A47J 29/00](#)])

G04B 27/00

Mechanical devices for setting the time indicating means

Informative references

Attention is drawn to the following places, which may be of interest for search:

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Time zone correction	G04B 27/005
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G04B 29/00

Frameworks

G04B 31/00

Bearings; Point suspensions or counter-point suspensions; Pivot bearings; Single parts therefor (bearings in general [F16C](#); [N: manufacture and composition of springs [G04B 1/145](#); suspension of oscillating weights [G04B5/18B](#); suspension of a pendulum [G04B 17/02](#); bearings for electrical measurement apparatus [G01R 1/10](#), [G01R 1/12](#), [G01R 11/12](#), [G01R 11/14](#); inserting jewels [A44C 17/04](#); inserting cutting diamonds [B23P 5/00](#); devices for fixation of bearing jewels, bearing sleeves, or the like [G04D 3/04](#)])

G04B 33/00

Calibers [N: disposition of components of the automatic winding mechanism in relation to the clockwork [G04B 5/18](#)]

Definition statement

This subclass/group covers:

The general lay-out of the timepiece movement, with special reference to mutual arrangement of plates, bridges, connection parts, bearings and clockwork modules.

G04B 35/00

Adjusting the gear train, e.g. the backlash of the arbors, depth of meshing of the gears [N: adjusting the escapement [G04B 15/12](#)]

G04B 37/00

Cases [N: Cases with a special shape [G04B 45/0069](#); ornamentation of the case [G04B 47/04](#); cartridges [A45C 11/00](#) to [A45C 11/38](#)]

Special rules of classification within this group

[G04B 37/08](#) and subgroups cover also the complete encasings in general:

see heading of [G04B 37/082](#) for example which clarifies that special joint or sealing pieces may be absent.

This means that mounting arrangements of the bottom, the middle, the casing-ring, the dial and or the crystal are normally to be found here.

[G04B 37/10](#) and lower: always do this subgroup when searching for a crown or push-button construction.

[G04B 37/12](#) use this subgroups as less as possible. Use [G04B 47/00](#) or sometimes [G04B 45/00](#) instead(see also further informative reference about these two classes).

Subclasses [G04B 37/122](#), [G04B 37/125](#) and [G04B37//12D](#) can be used normally.

[G04B 37/16](#) : never use it. Use [G04B 37/1486](#) and subgroup.

[G04B 37/18](#) and [G04B 37/20](#) : never use.

G04B 39/00

Watch crystals; Fastening or sealing of crystals; Clock glasses

Special rules of classification within this group

Consider searching in [G04B 39/02](#) and subgroup when searching for fastening the crystal to the watch case.

G04B 45/00

Time pieces of which the indicating means or cases provoke special effects, e.g. aesthetic effects (ornamental shaping of dials [G04B 19/10](#)) [N: (lubrication of clockwork bearings [G04B 31/008](#) ; special effects and pictures in general [B44F](#))]

Special rules of classification within this group

Classification range [G04B 45/0069](#) to [G04B 45/0092](#) may be overlapping with [G04B 47/046](#). Consider searching in both B45/00K to B45/00P" AND B47/04F depending upon the case.

G04B 47/00

Time-pieces combined with other articles which do not interfere with the running or the time-keeping of the time-piece ([N: clockwork cases for special purposes [G04B 37/12](#); clocks with magnifying glass built in the face [G04B](#)

[39/00](#); time-pieces in which parts or cases produce special effects, e.g. aesthetic effects, [G04B 45/00](#), particularly with inscriptions or pictures moved by hand [G04B 45/003](#), with specially shaped cases or parts [G04B 45/0069](#); combination of] writing or drawing implements with devices for indicating time [B43K 29/087](#); combined with cameras, projectors, or photographic printing apparatus [G03B 29/00](#))

Special rules of classification within this group

See comments on [G04B 45/00](#) above and the section "Special rules of classification within this group".

G04B 99/00

Subject matter not provided for in other groups of this subclass