**NOTES**

1. This subclass covers:
   - electronic time-pieces with no moving parts;
   - electronic circuitry for producing timing pulses irrespective of the nature of the time indicating means utilised.
2. This subclass does not cover electronic time-pieces with moving parts, which are covered by subclass G04C.

**WARNING**

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

### 3/00 Producing timing pulses (driving circuits for stepping motors G04C 3/14; producing preselected time intervals for use as timing standards G04F 5/00; pulse technique in general H03K; control, synchronisation, or stabilisation of generators in general H03L)

- 3/02 Circuits for deriving low frequency timing pulses from pulses of higher frequency (pulse frequency dividers in general H03K 23/00 - H03K 29/00)
- 3/022 .. {the desired number of pulses per unit time being obtained by adding to or subtracting from a pulse train one or more pulses (in general G06F 7/68)}
- 3/025 .. {by storing time-date which are periodically investigated and modified accordingly, e.g. by using cyclic shift-registers)
- 3/027 .. {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 (synchronisation of electric time pieces G04G 7/00, G04C 11/00)}
- 3/04 Temperature-compensating arrangements

### 5/00 Setting, i.e. correcting or changing, the time-indication (radio-controlled time-pieces G04R)

- 5/002 .. {brought into action by radio}
- 5/005 .. {Debouncing circuits}
- 5/007 .. {by using a separate register into which the entire correct setting is introduced, which is thereafter transferred to the time counters}
- 5/02 .. by temporarily changing the number of pulses per unit time, e.g. quick-feed method
- 5/022 .. {quick-feed method}
- 5/025 .. {the time-counters first being reset to zero}
- 5/027 .. {by adding or suppressing individual pulses, e.g. for step-motor)
- 5/04 .. by setting each of the displayed values, e.g. date, hour, independently

### 5/041 .. {Correction of the minutes counter in function of the seconds' counter position at zero adjustment of the latter)

### 5/043 .. {using commutating devices for selecting the value, e.g. hours, minutes, seconds, to be corrected}

### 5/045 .. {using a sequential electronic commutator}

### 5/046 .. {by 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}

### 5/048 .. {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}

### 7/00 Synchronisation (radio-controlled time-pieces G04R)

- 7/005 .. {provided with arrangements to prevent synchronisation by interfering signals (G04G 7/023 takes precedence)}
- 7/02 .. {by radio)
- 7/023 .. {provided with arrangements to prevent synchronisation by interfering signals)
- 7/026 .. {the time-piece preparing itself on set times on the reception of the synchronising signal}

### 9/00 Visual time or date indication means

- 9/0005 .. {Transmission of control signals)
- 9/0011 .. {using coded signals (synchronisation combined with automatic setting at regular intervals, e.g. by coded signals G04G 7/00)
- 9/0017 .. {in which the light emitting display elements may be activated at will or are controlled in accordance with the ambient light)
- 9/0023 .. {by light valves in general (G04G 9/06, G04G 9/12 takes precedence; electro-, magneto- or acoustooptic devices in general G02F 1/00)
- 9/0029 .. {Details)
- 9/0035 .. {constructional)
- 9/0041 .. {Illumination devices)
techniques \{ (G04G 9/0082 indicating elements, e.g. by using multiplexing by building-up characters using a combination of takes precedence) \} 
		- \{ by controlling light sources, e.g. electroluminescent diodes \} 

9/0094 . . . \{ using light valves, e.g. liquid crystals \} 

9/02 . . . \{ by selecting desired characters out of a number of characters or by selecting indicating elements the positions of which represent the time, e.g. by using multiplexing techniques \{ (G04G 9/0082 takes precedence) \} 

9/022 . . . \{ using multiplexing techniques \} 

9/025 . . . \{ provided with date indication \} 

9/027 . . . \{ provided with means for displaying at will a time indication or a date or a part thereof \} 

9/04 . . . \{ by controlling light sources, e.g. electroluminescent diodes \{ (G04G 9/0058 takes precedence) \} 

9/042 . . . \{ using multiplexing techniques \} 

9/045 . . . \{ provided with date indication \} 

9/047 . . . \{ provided with means for displaying at will a time indication or a date or a part thereof \} 

9/06 . . . \{ using light valves, e.g. liquid crystals \} 

9/062 . . . \{ using multiplexing techniques \} 

9/065 . . . \{ using a drop of liquid suspended by capillary forces and moved by an electric field \} 

9/067 . . . \{ using mechano-optical means \} 

9/08 . . . \{ by building-up characters using a combination of indicating elements, e.g. by using multiplexing techniques \{ (G04G 9/0082 takes precedence) \} 

9/082 . . . \{ using multiplexing techniques \} 

9/085 . . . \{ provided with date indication \} 

9/087 . . . \{ provided with means for displaying at will a time indication or a date or a part thereof \} 

9/10 . . . \{ by controlling light sources, e.g. electroluminescent diodes \{ (G04G 9/0058 takes precedence) \} 

9/102 . . . \{ using multiplexing techniques \} 

9/105 . . . \{ provided with date indication \} 

9/107 . . . \{ provided with means for displaying at will a time indication or a date or a part thereof \} 

9/12 . . . \{ using light valves, e.g. liquid crystals \} 

9/122 . . . \{ using multiplexing techniques \} 

9/124 . . . \{ provided with date indication \} 

9/126 . . . \{ provided with means for displaying at will a time indication or a date or a part thereof \} 

9/128 . . . \{ using mechano-optical means \} 

11/00 Producing optical signals at preselected times 

13/00 Producing acoustic time signals 

13/02 . . . \{ at preselected times, e.g. alarm clocks \} 

13/021 . . . \{ (Details) \} 

13/023 . . . \{ Adjusting the duration or amplitude of signals \} 

13/025 . . . \{ acting only at one preselected time \} 

13/026 . . . \{ acting at a number of different times \} 

13/028 . . . \{ combined with a radio \} 

15/00 Time-pieces comprising means to be operated at preselected times or after preselected time intervals \{ G04G 11/00, G04G 13/00 \} take precedence; \{ electronic timers G04F 1/005 \}; pulse delay circuits H03K 5/13; electronic time-delay switches H03K 17/296; electronic time-programme switches which automatically terminate their operation after the programme is completed H03K 17/296) 

15/003 . . . \{ acting only at one preselected time or during one adjustable time interval \} 

15/006 . . . \{ for operating at a number of different times \{ cigar or cigarette receptacles or boxes with means for limiting the frequency of smoking A24F 15/005) \} 

17/00 Structural details; Housing (constructional details of radio-controlled time-pieces, e.g. antennas G04R 60/00) 

17/005 . . . \{ Time-pieces combined with games \} 

17/007 . . . \{ Component assemblies \} 

17/004 . . . \{ Mounting of electronic components \} 

17/0045 . . . \{ Mounting of the display \} 

17/006 . . . \{ Electric connectors, e.g. conductive elastomers \} 

17/008 . . . \{ Housings \} 

17/0083 . . . \{ Watches distributed over several housings \} 

17/0086 . . . \{ Desktop clocks \} 

19/00 Electric power supply circuits specially adapted for use in electronic time-pieces 

19/002 . . . \{ Conversion or regulation of current or voltage \} 

19/004 . . . \{ Capacitive voltage division or multiplication \} 

19/006 . . . \{ Regulation \} 

19/008 . . . \{ Arrangements for preventing voltage drop due to overloading the power supply \} 

19/10 . . . \{ Arrangements for supplying back-up power \} 

19/12 . . . \{ Arrangements for reducing power consumption during storage \} 

21/00 Input or output devices integrated in time-pieces 

21/02 . . . \{ Detectors of external physical values, e.g. temperature \} 

21/025 . . . \{ for measuring physiological data \} 

21/04 . . . \{ using radio waves \{ radio-controlled time-pieces G04R \} \} 

21/06 . . . \{ using voice \} 

21/08 . . . \{ Touch switches specially adapted for time-pieces \} 

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

99/003 . . . \{ Pulse shaping; Amplification \} 

99/006 . . . \{ Electronic time-pieces using a microcomputer, e.g. for multi-function clocks \}