74 Signalling systems

74a Household signalling devices: electric and mechanical bells, drop indicators, call and time alarm devices; fire and burglary alarm devices, signalling devices for restaurants, household and hotel telegraphs; ringing devices for tower bells

74b Telemetering

74c Control devices, fire and police telegraphs

74d Acoustic and optical signal devices, except those covered by 74a – 74c

74d1 (IPC: G08G) Traffic control systems

74a Household signalling devices: electric and mechanical bells, drop indicators, call and time alarm devices; fire and burglary alarm devices, signalling devices for restaurants, household and hotel telegraphs; ringing devices for tower bells

Acoustic household signalling by means of electric bells, especially signalling devices for restaurants, household and hotel telegraphs

74a-1 Systems and circuits for electric bells, also with return signal and automatic connection and disconnection, supply from power line

74a-2 Electric bells [buzzers] with automatic interruption

74a-3 Watertight electric bells

74a-4 Special electric bells, e.g. slow ringing, adjustable duration, single-stroke bells, variable sound, motor bells

74a-5 Alternating current electric bells (21a2-29/01)

74a-6 Accessories for electric bells: switches, contacts, bell bodies

Signalling by means of mechanical bells (fixing of bicycle bells on bicycle and operation by a bicycle component, e.g. grip, pedal, tyre, rim 63g-8)

74a-7/01 Bells operated by compressed air or steam

74a-7/02 Bells operated by crank drives, rods, pull chains, pull cables, levers, in general

74a-7/03 Shape, material and mounting of sounding body, e.g. bell bodies, hand bells, gong sticks, and of the clapper

74a-8/01 One-stroke bells with spring clapper cocked by tension or compression

74a-8/02 Multi-stroke bells with spring clapper cocked by tension or compression, cuckoo bells

74a-8/10 Bells with rotating bodies striking the clapper or other stop member

74a-8/11 Bells with balls projected against the fixed body or rotating clappers, centrifugal clappers

74a-9 Mechanical bells with special characteristics, e.g. slow, continuous ringing of arbitrary duration, with double stroke

Household optical signalling

74a-10 Electro-optical indicators for homes, restaurants, physicians, etc. also coin-operated (43b); electrical indicator for presence and absence

74a-11 Electric drop indicators, also circuits (21a2-29/02; 74c-1)

74a-12 Mechano-optical indicating devices for restaurants, etc., seat-occupancy indicators for presence and absence, signals for calling waiter

Alarm devices and time-alarm devices

Electrical installations for central alarm and time signals for several circuits with arbitrarily set signal durations

74a-13/01 Connecting devices
74a-13/10 Circuits
74a-14 Signalling devices for indication of definite time intervals independently of absolute time

Electric alarm and time-signalling devices for signal current circuits with arbitrarily controllable signal times

74a-15/01 Contact actuation by alarm mechanism: by lever of alarm winding gear, in the release operation, the expansion of the spring, by the clapper, by change of position of alarm clock as a result of shocks while ringing
74a-15/10 Contact-making by revolving parts, e.g. pointers, disks, cylinders
74a-15/20 Circuits
74a-16 Contact devices for repetition of signals and arbitrary regulation of signal time

Electric alarm and time-signalling devices with special characteristics

74a-17/01 Light, heat or electric shock alarms
74a-17/02 Alarm given by music, talking appliances, etc. with the use of long lines (without long line 83a-73)
74a-17/03 Time-signalling devices with indicator boards
74a-18 Electric alarm and time signalling devices in pocket watches
74a-19 Time-signalling devices with permanently set signal times, e.g. signal clocks for factories or schools
74a-20 Mechanical ringing devices using mechanical or electric long line (without long line 83a-71, 83a-73)

Burglar alarms using electric devices (68a-35 – 68a-37)

74a-21/01 Circuits for burglar alarms in general (emergency calling over telephone lines 21a3-49/30)
74a-21/02 Systems for emergency calls on outer walls of houses
74a-21/10 actuated by sound waves, e.g. using listening microphones
74a-21/11 actuated by visible or invisible light rays, using photosensitive cells
74a-21/12 actuated by high-frequency waves, e.g. by variation of capacitance or inductance (21g-30; 21a1-48/53 – 21a1-48/63)
74a-21/13 Burglar alarms using phonographs (devices incorporating transmission of phonograph signals over telephone lines 21a3-49/20)
74a-22/01 Door and window contacts (electric door switches 21c-37)
74a-22/02 Wire contact arrangements, also for area protection
74a-23 Vibration contacts for burglar alarms
74a-24 Lock contacts for burglar alarms (68a-37)
74a-25 Electric burglar alarms for safes in general, also with time alarm (68e-6) e.g. by means of wire netting, alarm screens, alarm curtains, wall contacts, reinforced contact plates, alarm carpets
74a-26 Electric alarms for prevention of theft of portable items, like suitcases, clothes, paintings, etc. (safeguarding of cars against theft 63a-71; of motorcycles 63h-16; safeguarding of suitcases against theft 33b-14/01)

Burglar alarms using mechanical devices

74a-27 Mechanical burglar alarm devices, in general (68e)
74a-28 Pneumatic devices for burglar alarms (68e-6)
74a-29 Detonating burglar alarms (68a-36)

Fire-alarm devices (50b-7; 61a-17; 61a-18; 74b-3; 74c-14/01 – 74c-23)

74a-30 Electric circuits

74a-31 Fuses (21c-69; 21c-70)
74a-32 Thermo-pneumatic devices, e.g. air thermometers
74a-33 Fire alarms actuated by combustion gases and smoke (for ships 65a2-41)
74a-34 Mercury thermometers
74a-35 Metal thermometers and cord contacts
74a-36 Fire alarms using thermoelectric currents and variation of electric resistance
74a-37 Fire alarms responsive to sudden heating

Ringing devices for tower bells

74a-39/01 with permanent coupling by means of crank drive between the bell and a motor rotating permanently and in same direction
74a-39/02 with intermittent coupling between the bell and a motor rotating permanently in same direction
74a-39/03 with permanent coupling between the bell and a motor alternately rotating in opposite directions
74a-39/04 with electromagnetic drive
74a-39/05 with pneumatic or hydraulic drive
74a-39/06 with ringing of fixed bells by means of movable clapper
74a-39/07 with devices for catching the clapper
74a-39/10 General, e.g. structure of bell and clapper

74b **Telemetering** (radio telemetering 21a4-48/01 – 21a4-48/06; indicating and reading devices for general use 47i-6)

Telemetering apparatus

74b-1 for variations in water level and flow (13c-1 – 13c-13; 42c-27 – 42c-29; 65a2-43; alarm devices on gas pipes 4c-14)
74b-2 for pressure variations (42k)
74b-3 for temperature variations (42i-1 – 42i-11; 74a-30 – 74a-37)
74b-4 for indications of gas analysers (421)
74b-5/01 for changes caused by disturbances in the state of electrical apparatus of general type (apparatus of special type, e.g. 21d1-57; protective circuits 21c-68/50)
74b-5/02 for breakdowns in mechanical equipment of general type (equipment of special type, e.g. 47a-18; 65a2-65)
74b-6 for speed and direction of rotation of machines (speed indicators with direct indication 42o)
74b-7/01 for compass positions (42c-32 – 42c-36; 65a2-55)
74b-7/50 for force and direction of wind

Data telemetering devices

74b-8/01 by means of auxiliary current, e.g. by variation of electric resistance or by compensation (21e-29/02; 21e-32; 42d)
74b-8/02 by frequency variation (21c-45/06; 21c-47/53)
74b-8/03 by conversion of data into direct or alternating current
74b-8/04 by induction
74b-8/05 by pulses, in general
74b-8/06 by pulses of duration proportional to the data
74b-8/07 by pulses in numbers proportional to the data
74b-8/08 by pulses in numbers per unit of time, i. e. frequency, proportional to the data
74b-9 Telemetering devices for counters, e.g. work or quantity-counters (21e-14 – 21e-25; 42p-3; 42p-10/10)
74b-10 Devices for telemetering of the sum or difference of data (42d-4; 21e-35; 42m)
74b-11 Devices for repeated teletransmission of data (21a1; 21a3-46; 21c-47)
74b-12 Luminous indicator panels for remote indication of the total condition of electric systems

74c Control devices, fire and police telegraphs

Control and control-indication devices without automatic execution of command (47i-6; 65a2)

74c-1 with signalling by means of incandescent lamps, drop indicators, bells (74a)

74c-2 with setting of receiver by means of electromagnetically operated step-by-step mechanism (21c-45/07)

74c-3 with setting of receiver by means of the directional force of electromagnets arranged in a circle (21c-46/01)

74c-4 with setting of receiver according to the three-magnet system (21c-46/01)

74c-5 with setting of receiver by means of a step-by-step variable resistor in the transmitter according to the principle of variable voltage (21c-46/05)

74c-6 with setting of receiver by means of a variable step-by-step resistor in the transmitter according to the principle of comparison of resistance (21c-46/05)

74c-7 with setting of receiver by means of a rotating field (21c-46/02)

74c-8/01 with setting of receiver by the effect of induction of alternating magnetic fields on an armature moving therein (21c-46/02)

74c-8/10 based on the resonance principle (21c-45/06)

74c-9 with setting of receiver by means of a motor switched-on by the transmitter and automatically switched-off after setting of the receiver (21c-46/03)

74c-10 Signalling systems for mines (signalling devices for elevators (35a)

74c-11 Control and indication devices with mechanical transmission of movement (21c-45/09)

Devices for selecting and setting one specific indicating device of a multiple group

74c-12/01 General (21c-47)

74c-12/20 Indicator of stock exchange quotations

74c-12/21 Systems for paging and calling persons (person-to-person calls over telephone lines 21a3-49/30)

74c-12/22 Auction indicators

74c-13/01 Structural details

74c-13/10 Control and indication devices with coarse and fine adjustment (21c-46/01 – 21c-46/05; 72f-15/06 – 72f-15/08)

74c-13/20 Control and signal transmission by means of parts which rotate continuously and synchronously (21c-47)

74c-13/30 System supervision with respect to faults

Supervision of proper transmission of emitted signals and of proper execution of transmitted instruction (indicators for switch position 21c-45/50)

74c-13/40 by return signalling through pointers, lamps, bells, drop indicators, number-carrying drums, etc.

74c-13/41 by recording

Fire and police telegraphs (fire alarm over telephone lines 21a3-49/20)

74c-14/01 Structural details of fire-alarm devices: signalling-device casings, safety glass windows, contactors, etc.

Devices for preventing the abuse of fire alarm devices

74c-14/10 Compartments closing and locking on operation of the signal device

74c-14/11 Devices for seizing the arm or hand of the person misusing the device

74c-14/12 Marked signs, rings, keys, etc.

74c-15 Automatic signal emitters for transmission of one type of message

74c-16 Automatic signal emitters for transmission of different types of messages

74c-17 Transmission of messages directly or through an intermediate transmission station, e.g. main guard post to several other receiving stations, e.g. personnel quarters, secondary guard posts

Devices for the prevention of disturbances in the transmission of signals

74c-18/01 with simultaneous actuation of several alarm devices

74c-18/05 for line breaks, ground leakage, etc.

74c-20 Connection of home fire-alarm devices to street alarm devices

Devices for checking

74c-21/01 proper reception of messages at the receiving station, e.g. by return signal to transmitter

74c-21/10 system for faults, e.g. transmission of test messages

74c-22 Selection of message receivers from group of several

74c-23 Nonelectric fire-alarm devices

74d Acoustic and optical signal devices, except those covered by 74a – 74c (62c-25; 63a-41; 63c-67; 63c-69; 63g-8 – 63g-10; 65a2)

Acoustic signals

74d-1 Warning whistles

74d-2 Sirens

Horns or foghorns, driven

74d-3/01 by compressed air or compressed gas

74d-3/02 by exhaust gases, exhaust steam

74d-3/03 by explosion

74d-3/04 by suction air or gas

74d-3/05 electrically by d. c. current

74d-3/06 electrically by a. c. current

74d-3/07 mechanically

74d-3/08 mechanically and electrically

74d-3/09 Bulbs, pumps, pistons, levers, switches, diaphragms, casings

74d-3/10 Funnel-shaped horn mouths, protecting devices

74d-3/11 Mounting in position

74d-3/12 Sound-wave receivers for signalling purposes

74d-5 Signalling by means of acoustic signals in air in the form of speech or word signs

Signalling by means of sound passing through water or earth; determination of direction and distance by means of sound (21a4-48/01, 21a4-48/61; 21g-30; 42c-18, 42c-42)

74d-6/01 Water bells

74d-6/02 Water sirens

74d-6/03 Water sound devices, mechanically actuated

74d-6/04 Water sound devices, electromagnetically actuated

74d-6/05 Water sound devices, electrodynamically actuated

74d-6/06 Water sound devices, piezoelectrically actuated

74d-6/07 Water sound devices, general structure

74d-6/08 Water sound devices: amplitude conversion, attenuation, tuning, amplification, oscillation systems, measurements, pressure equalisation

74d-6/09 Systems and modes of operation

74d-6/10 Sound transmission by means of capacitors

74d-6/11 Sound transmission by means of compressible media

Direction and range finding

74d-6/12 by means of sound waves, in general

74d-6/13 by means of sound waves, binaural

74d-6/14 by means of sound and electric waves

74d-6/15 by means of sound echo (circuits for measurement of short-time intervals, general 83d-5)

74d-6/16 Mounting in position

74d-7 Pyrotechnic and detonating signals (20i-43; 20i-44), signal rockets (72d-19/01; 78d-1/01)

Optical signals

74d-8/01 Light-beam telegraphy (21c-44; 21f)

74d-8/02 Infrared or ultraviolet beam telegraphy, reception of signals by photosensitive cells, photo-telephony

74d-8/03 Flicker and blinker lights operated by covering light source

74d-8/04 Flicker and blinker lights operated by variation of current supply (saw-tooth oscillations, general 21g-38; for other special purposes 21e-28/02; 21a1-35/21; 51f-2/03; 74d-8/54; 83d-5)

74d-8/05 Flicker and blinker lights operated by variation of gas supply

74d-8/10 Structural details of signal lanterns and signal lights; continuous light signals

74d-8/11 Signalling by means of sound and light beams

74d-8/15 Signalling devices on body of person or animal

74d-8/16 Signalling devices on rods

Traffic signals

74d-8/50 manually controlled

74d-8/51 automatic, invariant recurrent sequence control (20i-39/30)

74d-8/52 automatic, with variable recurrent sequence control (20i-39/30)

74d-8/53 Automatically controlled traffic regulators, indicating time left before signal change, e.g. traffic clocks

74d-8/54 controlled on passage of vehicle by roadway trip plate (saw-tooth oscillations, general 21g-38; for other special purposes 21e-28/02; 21a1-35/21; 51f-2/03; 74d-8/54; 83d-5)

74d-8/55 controlled by sound, light or electromagnetic waves

74d-8/56 Checking of traffic signal circuits (20i-39/30)

74d-8/60 Light signals in roadway, pedestrian way or curb, turtlebacks (markers without own light source embedded in roadway, e.g. paving stones, rails, studs, joint elements, gutters, 19c-6/30, 19e-9/00 – 19e-15/00)

74d-8/61 Traffic lights (74d-8/10; 20i-3)

74d-8/62 Light columns, tumbling mushrooms and columns, collapsible signboards

74d-8/63 Traffic mirrors

74d-8/64 Light-reflecting traffic signs (20i-3; 20i-24/01, 20i-24/03)

74d-8/70 in general

Optical signals other then light signals

74d-10/01 Signal arms or boards (20 i, 3, 2401, 2403)

74d-10/02 Flags

74d-10/03 Signalling by smoke or steam

74d-10/04 Weather vanes, wind-direction indicators

74d1 (IPC: G08G) Traffic control systems (road engineering aspects 19e, mounting of detectors in or on roads 19e-19/10)

Note:
This subclass includes:
(a) identification of traffic offenders;
(b) indication of the position of scheduled vehicles;
(c) indication of free spaces in parking areas.

74d1-1/00 Traffic control systems for road vehicles

74d1-1/01 . Detecting movement of traffic to be counted or controlled (74d1-1/07 to 74d1-1/14 take precedence)

74d1-1/015	. . with provision for distinguishing between two or more types of vehicles, e.g. between motor cars and cycles
74d1-1/02	. . using treadles built into the road (74d1-1/015 takes precedence; pads or other sensitive devices responsive to passage of vehicles 19e-11/00)
74d1-1/04	. . using optical or ultrasonic detectors (74d1-1/015 takes precedence)
74d1-1/06	. . using radar, e.g. Doppler radar (74d1-1/015 takes precedence)
74d1-1/065	. by counting the vehicles in a section of the road or in a parking area, i.e. comparing incoming count with outgoing count
74d1-1/07	. Controlling traffic signals
74d1-1/08	. . according to detected number or speed of vehicles
74d1-1/085	. . using a free-running cyclic timer
74d1-1/09	. Arrangements for giving variable traffic instructions (displaying variable information in general 54h)
74d1-1/095	. . Traffic lights
74d1-1/096	. . Indicators in which a mark progresses showing the time elapsed, e.g. of green phase
74d1-1/097	. Supervising of traffic control systems, e.g. by giving an alarm if two crossing streets have green light simultaneously
74d1-1/10	. taking photographs, e.g. of vehicles travelling at a speed in excess of a predetermined value
74d1-1/12	. indicating the position of scheduled vehicles, e.g. of buses to a central station
74d1-1/14	. indicating individual free spaces in parking areas
74d1-3/00	**Traffic control systems for marine craft** (radar systems 21a4-48/63)
74d1-3/02	. Anti-collision warning systems
74d1-5/00	**Traffic control systems for aircraft** (radar systems 21a4-48/63)
74d1-5/02	. Automatic landing aids, i.e. systems in which flight data of incoming planes are processed to provide landing data
74d1-5/04	. Anti-collision systems