

SECTION G — PHYSICS

G09 EDUCATING; CRYPTOGRAPHY; DISPLAY; ADVERTISING; SEALS

G09B EDUCATIONAL OR DEMONSTRATION APPLIANCES; APPLIANCES FOR TEACHING, OR COMMUNICATING WITH, THE BLIND, DEAF OR MUTE; MODELS; PLANETARIA; GLOBES; MAPS; DIAGRAMS (devices for psychotechnics or for testing reaction times A61B 5/16; games, sports, amusements A63; projectors, projector screens G03B)

Note(s)

- This subclass covers :
 - simulators regarded as teaching or training devices, which is the case if they give perceptible sensations having a likeness to the sensations a student would experience in reality in response to actions taken by him;
 - models of buildings, installations, or the like.
- This subclass does not cover :
 - simulators which merely demonstrate or illustrate the function of an apparatus or of a system by means involving computing, and therefore cannot be regarded as teaching or training devices. Such simulators are covered by class G06, if no provision exists elsewhere;
 - components of simulators, if identical with real devices or machines, which are covered by the relevant subclasses for these devices or machines and not by class G09.

Subclass index

TEACHING EQUIPMENT IN GENERAL

General principle of operation

manual or mechanical.....1/00, 3/00

electrical.....5/00, 7/00

operating by question and answer.....3/00, 7/00

Simulators.....9/00

TEACHING EQUIPMENT FOR SPECIFIC PURPOSES

For writing, shorthand, drawing, painting; for typing.....11/00, 13/00

For music; for reading.....15/00, 17/00

Models for scientific or technical training.....23/00, 25/00

Planetaria, globes; maps, diagrams.....27/00, 29/00

Other teaching equipment.....19/00

TEACHING, AND COMMUNICATING WITH, THE BLIND OR DEAF.....21/00

1/00	Manually- or mechanically-operated educational appliances using elements forming or bearing symbols, signs, pictures, or the like which are arranged or adapted to be arranged in one or more particular ways (puzzle-games A63F 9/00; advertising or displaying in general G09F)	1/16	• • the elements each bearing a plurality of different symbols, signs, or combinations of symbols and signs, only one symbol, sign, or combination thereof, of each element to be used at a time
1/02	• and having a support carrying or adapted to carry the elements	1/18	• • • the elements being rotatable
1/04	• • the elements each bearing a single symbol or a single combination of symbols	1/20	• • • • and bearing the symbols on a surface parallel to the axis of rotation
1/06	• • • and being attachable to, or mounted on, the support	1/22	• • • • and bearing the symbols on a surface perpendicular to the axis of rotation
1/08	• • • • by means of magnets	1/24	• • • the elements being in flexible-strip form, e.g. endless bands
1/10	• • • • by means of pins and holes	1/26	• • • the elements being arranged in fan form
1/12	• • • • by means of ring-like securing elements (sheets temporarily attached together by rings or coils B42F 3/00, B42F 5/00)	1/28	• • • the elements being slidable
1/14	• • • • the elements being slidably mounted on the support	1/30	• • wherein the elements are adapted to be arranged in co-operation with the support to form symbols (without special support G09B 1/40)
		1/32	• comprising elements to be used without a special support
		1/34	• • the elements to be placed loosely in adjacent relationship

G09B

- 1/36 • • the elements being connectible by corresponding projections and recesses
- 1/38 • • the elements being connectible magnetically
- 1/40 • • to form symbols or signs by appropriate arrangement
- 3/00 Manually- or mechanically-operated teaching appliances working with questions and answers** (electrically-operated G09B 7/00; advertising or displaying in general G09F)
- 3/02 • of the type wherein the student is expected to construct an answer to the question which is presented or wherein the machine gives an answer to the question presented by the student
- 3/04 • • of chart form (masks G09B 17/02)
- 3/06 • of the multiple-choice answer type, i.e. where a given question is provided with a series of answers and a choice has to be made
- 3/08 • • of chart form (having one set of answers common to a plurality of questions G09B 3/12)
- 3/10 • • wherein one set of answers is common to a plurality of questions
- 3/12 • • • of chart form
- 5/00 Electrically-operated educational appliances** (working with questions and answers G09B 7/00; simulators G09B 9/00; advertising or displaying in general G09F) [2]
- Note(s)**
Group G09B 5/08 takes precedence over groups G09B 5/02-G09B 5/06.
- 5/02 • with visual presentation of the material to be studied, e.g. using film strip
- 5/04 • with audible presentation of the material to be studied (reading and recognising printed or written characters G06K 9/00; sound-recording or reproducing G11B)
- 5/06 • with both visual and audible presentation of the material to be studied
- 5/08 • providing for individual presentation of information to a plurality of student stations [2]
- 5/10 • • all student stations being capable of presenting the same information simultaneously (G09B 5/14 takes precedence) [2]
- 5/12 • • different stations being capable of presenting different information simultaneously (G09B 5/14 takes precedence) [2]
- 5/14 • • with provision for individual teacher-student communication [2]
- 7/00 Electrically-operated teaching apparatus or devices working with questions and answers** (mechanically-operated G09B 3/00; computing arrangements G06F)
- 7/02 • of the type wherein the student is expected to construct an answer to the question which is presented or wherein the machine gives an answer to the question presented by the student
- 7/04 • • characterised by modifying the teaching programme in response to a wrong answer, e.g. repeating the question, supplying a further explanation
- 7/06 • of the multiple-choice answer type, i.e. where a given question is provided with a series of answers and a choice has to be made from the answers
- 7/07 • • providing for individual presentation of questions to a plurality of student stations [2]
- 7/073 • • • all student stations being capable of presenting the same questions simultaneously [2]
- 7/077 • • • different stations being capable of presenting different questions simultaneously [2]
- 7/08 • • characterised by modifying the teaching programme in response to a wrong answer, e.g. repeating the question, supplying further information
- 7/10 • • wherein a set of answers is common to a plurality of questions
- 7/12 • • • characterised by modifying the teaching programme in response to a wrong answer, e.g. repeating the question, supplying further information
- 9/00 Simulators for teaching or training purposes** (for the use of weapons F41; computing aspects G06)
- 9/02 • for teaching control of vehicles or other craft
- 9/04 • • for teaching control of land vehicles
- 9/042 • • • providing simulation in a real vehicle (G09B 9/052, G09B 9/058 take precedence) [5]
- 9/048 • • • a model being viewed and manoeuvred from a remote point (G09B 9/052, G09B 9/058 take precedence) [5]
- 9/05 • • • the view from a vehicle being simulated (G09B 9/052, G09B 9/058 take precedence) [5]
- 9/052 • • • characterised by provision for recording or measuring trainee's performance (devices for psychotechnics, e.g. for vehicle drivers, A61B 5/16, A61B 5/18) [5]
- 9/058 • • • for teaching control of cycles or motorcycles [5]
- 9/06 • • for teaching control of ships, boats, or other waterborne vehicles [2]
- 9/08 • • for teaching control of aircraft, e.g. Link trainer
- 9/10 • • • with simulated flight- or engine-generated force being applied to aircraft occupant (G09B 9/28 takes precedence) [5]
- 9/12 • • • Motion systems for aircraft simulators [5]
- 9/14 • • • • controlled by fluid actuated piston or cylinder ram [5]
- 9/16 • • • Ambient or aircraft conditions simulated or indicated by instrument or alarm [5]
- 9/18 • • • • Condition of engine or fuel supply [5]
- 9/20 • • • • Simulation or indication of aircraft attitude [5]
- 9/22 • • • including aircraft sound simulation [5]
- 9/24 • • • including display or recording of simulated flight path [5]
- 9/26 • • • Simulation of radio-navigation [5]
- 9/28 • • • Simulation of stick forces or the like [5]
- 9/30 • • • Simulation of view from aircraft [5]
- 9/32 • • • • by projected image (G09B 9/36 takes precedence) [5]
- 9/34 • • • • by cathode-ray screen display (G09B 9/36 takes precedence) [5]
- 9/36 • • • • Simulation of night or reduced visibility flight [5]
- 9/38 • • • • • Simulation of runway outlining or approach lights [5]
- 9/40 • • • Simulation of airborne radar [5]
- 9/42 • • • Aircraft, aircraft simulator, or means connected thereto, travelling on the ground or water during simulated flight training [5]
- 9/44 • • • providing simulation in a real aircraft flying through the atmosphere without restriction of its path [5]
- 9/46 • • • the aircraft being a helicopter [5]

	Note(s)		
	When classifying in group G09B 9/46, classification is also made in other appropriate subgroups of group G09B 9/08, if of interest.		
9/48	• • • a model being viewed and manoeuvred from a remote point [5]		
9/50	• • • Automatically directing the course of the aircraft [5]		
9/52	• • for teaching control of an outer space vehicle [5]		
9/54	• Simulation of radar (G09B 9/40 takes precedence) [5]		
9/56	• Simulation of sonar [5]		
11/00	Teaching hand-writing, shorthand, drawing, or painting		
11/02	• Finger, hand, or arm supporting devices		
11/04	• Guide sheets or plates; Tracing charts (templets for drawing purposes B43L 13/20)		
11/06	• Devices involving the use of transparent or translucent tracing material, e.g. copy books		
11/08	• Teaching shorthand		
11/10	• Teaching painting		
13/00	Teaching typing		
13/02	• Dummy practice keyboard apparatus (for teaching music G09B 15/08)		
13/04	• Devices used in association with a real typewriter, teleprinter, or the like		
15/00	Teaching music (metronomes G04F 5/02)		
15/02	• Boards or like means for providing an indication of notes		
15/04	• • with sound-emitters		
15/06	• Devices for exercising or strengthening fingers or arms; Devices for holding fingers or arms in a proper position for playing (for teaching typing G09B 13/00; exercising apparatus for developing or strengthening the muscles for physical training A63B 21/00, A63B 23/00)		
15/08	• Practice keyboards (for teaching typing G09B 13/02)		
17/00	Teaching reading (teaching lip-reading G09B 21/06)		
17/02	• Line indicators or other guides or masks		
17/04	• for increasing the rate of reading; Reading rate control		
19/00	Teaching not covered by other main groups of this subclass (teaching or practice apparatus for gun-aiming or gun-laying F41G 3/26)		
19/02	• Counting; Calculating (abacus G06C 1/00)		
19/04	• Speaking (with audible presentation of the material to be studied G09B 5/04)		
19/06	• Foreign languages (with audible presentation of the material to be studied G09B 5/04)		
19/08	• • Printed or written appliances, e.g. textbooks, bilingual letter assemblies, charts		
19/10	• Modelling		
19/12	• Clock-reading		
19/14	• Traffic procedures, e.g. traffic regulations		
19/16	• Control of vehicles or other craft (simulators G09B 9/02)		
19/18	• Book-keeping or economics		
19/20	• Needlework		
19/22	• Games, e.g. card games		
19/24	• Use of tools		
19/26	• Dot-and-dash telegraph codes [2]		
21/00	Teaching, or communicating with, the blind, deaf or mute (audible presentation of material to be studied G09B 5/04; devices or methods for replacing direct visual or auditory perception by another kind of perception A61F 9/08, A61F 11/04; audible indication of meter readings or of colour G01D 7/12; watches for blind persons G04B 25/02; methods or arrangements for reading or recognising printed or written characters G06K 9/00; speech analysis, speech recognition G10L; sound-recording or reproducing, <i>per se</i> G11B) [2, 4]		
21/02	• Devices for Braille writing (typewriters for Braille B41J 3/32)		
21/04	• Devices for conversing with the deaf-blind		
21/06	• Devices for teaching lip-reading		
23/00	Models for scientific, medical, or mathematical purposes, e.g. full-sized device for demonstration purposes (in the nature of toys A63H)		
23/02	• for mathematics (for statics or dynamics G09B 23/08)		
23/04	• • for geometry, trigonometry, projection, or perspective (for surveying G09B 25/06)		
23/06	• for physics		
23/08	• • for statics or dynamics		
23/10	• • • of solid bodies		
23/12	• • • of liquids or gases		
23/14	• • for acoustics		
23/16	• • for science of heat		
23/18	• • for electricity or magnetism		
23/20	• • for atomic physics or nucleonics		
23/22	• • for optics		
23/24	• for chemistry		
23/26	• for molecular structures; for crystallography		
23/28	• for medicine		
23/30	• • Anatomical models (dental articulators A61C 11/00)		
23/32	• • • with moving parts		
23/34	• • • with removable parts		
23/36	• for zoology		
23/38	• for botany		
23/40	• for geology		
25/00	Models for purposes not provided for in group G09B 23/00, e.g. full-sized devices for demonstration purposes (model vehicles, tracks therefor, models in the nature of toys A63H)		
25/02	• of industrial processes; of machinery		
25/04	• of buildings		
25/06	• for surveying; for geography, e.g. relief models (globes G09B 27/00; maps G09B 29/00)		
25/08	• of scenic effects, e.g. trees, rocks, water surfaces (for stage purposes A63J 1/00)		
27/00	Planetaria; Globes		
27/02	• Tellurions; Orreries		
27/04	• Star maps		
27/06	• Celestial globes		
27/08	• Globes (celestial globes G09B 27/06)		
29/00	Maps; Plans; Charts; Diagrams, e.g. route diagram (star maps G09B 27/04; devices for holding or supporting maps A47B 97/02; for computing purposes G06G 1/14, G06G 1/16; display boards G09F)		
29/02	• sectional		
29/04	• • the sections being arranged in the form of a foldable sheet or sheets		
29/06	• of belt form, e.g. endless belt		

G09B

- 29/08 • Hanging maps or the like
- 29/10 • Map spot or co-ordinate position indicators; Map-reading aids (optical projection apparatus G03B)
- 29/12 • Relief maps (relief models G09B 25/06)
- 29/14 • Local-time charts

G09C CIPHERING OR DECIPHERING APPARATUS FOR CRYPTOGRAPHIC OR OTHER PURPOSES INVOLVING THE NEED FOR SECRECY (secret communication H04K; arrangements for transmitting secret digital information H04L 9/00)

- 1/00 **Apparatus or methods whereby a given sequence of signs, e.g. an intelligible text, is transformed into an unintelligible sequence of signs by transposing the signs or groups of signs or by replacing them by others according to a predetermined system** (cryptographic typewriters G09C 3/00)
 - 1/02 • by using a ciphering code in chart form
 - 1/04 • with sign carriers or indicators moved relative to one another to positions determined by a permutation code or key, so as to indicate the appropriate corresponding clear or ciphered text
 - 1/06 • wherein elements corresponding to the signs making up the clear text are operatively connected with elements corresponding to the signs making up the ciphered text, the connections, during operation of the apparatus, being automatically and continuously permuted by a coding or key member
 - 1/08 • • the connections being mechanical
 - 1/10 • • the connections being electrical
 - 1/12 • • • comprising contact-bearing permutation discs
- 1/14 • • involving removable or interchangeable coding numbers, e.g. master tapes, punched cards
- 3/00 **Typewriters for ciphering or deciphering cryptographic text** (marking record carriers G06K)
 - 3/02 • with auxiliary keys or keyboards acting on the original keys or keyboards
 - 3/04 • wherein the operative connections between the keys and the type-bars are automatically and continuously permuted, during operation, by a coding or key member
 - 3/06 • • the connections being mechanical
 - 3/08 • • the connections being electrical
 - 3/10 • • involving removable or interchangeable coding members, e.g. master tapes, punched cards
- 5/00 **Ciphering or deciphering apparatus or methods not provided for in other groups of this subclass, e.g. involving the concealment or deformation of graphic data such as designs, written or printed messages**

G09D RAILWAY OR LIKE TIME OR FARE TABLES; PERPETUAL CALENDARS (calendar blocks B42D 5/04; clockwork-driven G04B; comprising computing means G06C)

- 1/00 **Railway or like time or fare tables; Indicating or reading aids therefor** (essentially incorporating maps or route diagrams G09B; railway routing charts G09B; display devices, e.g. railway indicator boards, G09F)
 - 3/04 • wherein members bearing the indicia are movably mounted in the calendar
 - 3/06 • • with rotatable members
 - 3/08 • • • of disc form
 - 3/10 • • with members in band form
 - 3/12 • electrically operated
- 3/00 **Perpetual calendars**
 - 3/02 • with interchangeable members bearing the indicia

G09F DISPLAYING; ADVERTISING; SIGNS; LABELS OR NAME-PLATES; SEALS (display cases A47F; designs or pictures characterised by special or unusual light effects, e.g. changing, B44F 1/00; disposition of road signs or traffic signals E01F 9/00; lighting in general F21; arrangements for controlling light beams G02F 1/00; visible signalling arrangements or devices G08B 5/00; traffic control systems G08G; arrangements or circuits for control of indicating devices using static means to present variable information G09G; static indicating arrangements comprising integral associations of a plurality of light sources H01J, H01K, H01L, H05B 33/12)

Note(s)

1. In this subclass, the following term is used with the meaning indicated:
 - "sign" designates a mark or indication serving to make something recognisable, the information presented being non-varying, even if it is flashing; by way of example it covers, therefore, advertising hoardings, or luminous, or light reflecting, safety arrangements.
2. Attention is drawn to the Notes following the titles of class B81 and subclass B81B relating to "micro-structural devices" and "micro-structural systems".

Subclass index

INFORMATION AND ADVERTISING

- Displaying samples.....5/00
- With fixed information:
 - show-cards; labels or tags; signs, plates, characters.....1/00, 3/00, 7/00
- With variable information:
 - by combination of elements; by movement of complete information.....9/00, 11/00
- Illuminated signs; luminous advertising.....13/00

Supports used for bill-posting and advertising: panels; banners; goods; others.....15/00, 17/00, 23/00, 19/00
 PROCESSES OF ADVERTISING
 Movable; audible; audio-visual; others.....21/00, 25/00, 27/00, 19/00

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- 1/00 Cardboard or like show-cards of foldable or flexible material**
- 1/02 • Single substantially-flat cards
 - 1/04 • Folded cards
 - 1/06 • • to be erected in three dimensions (G09F 1/08 takes precedence)
 - 1/08 • wholly or partly imitating the form of an object, e.g. of the article to be advertised
 - 1/10 • Supports or holders for show-cards
 - 1/12 • • Frames therefor
 - 1/14 • • in the form of legs
- 3/00 Labels, tag tickets, or similar identification or indication means** (medals or badges A44C 3/00; making labels B31D 1/02; sheets temporarily attached together B42F; labelling B65C; tags attached to, or associated with, an object, in order to enable detection of the object G01V 15/00; labels on record carriers G11B 23/38); **Seals; Postage or like stamps**
- 3/02 • Forms or constructions (layered products B32B)
 - 3/03 • • of security seals
 - 3/04 • to be fastened or secured by the material of the label itself, e.g. by thermo-adhesion (by a separate adhesive layer G09F 3/10)
 - 3/06 • • by clamping action (by separate clamps G09F 3/16)
 - 3/08 • Fastening or securing by means not forming part of the material of the label itself
 - 3/10 • • by an adhesive layer
 - 3/12 • • by pins, staples, or the like
 - 3/14 • • by strings, straps, chains, or wires
 - 3/16 • • by clamps
 - 3/18 • • Casings, frames, or enclosures for labels
 - 3/20 • • • for adjustable, removable, or interchangeable labels
- 5/00 Means for displaying samples**
- 5/02 • Portable sample cases
 - 5/04 • Cards of samples; Books of samples (packages comprising articles attached to cards, sheets, or webs for removal therefrom B65D 73/00)
- 7/00 Signs, name or number plates, letters, numerals, or symbols** (vehicle registration number plates B60R 13/10); **Panels or boards** (show-cards G09F 1/00; indicating arrangements for variable information G09F 9/00, G09F 11/00; illuminated signs G09F 13/00; boards for notices or posters G09F 15/00)
- 7/02 • Signs, plates, panels, or boards using readily-detachable elements bearing or forming symbols
 - 7/04 • • the elements being secured or adapted to be secured by magnetic means
 - 7/06 • • the elements being secured or adapted to be secured by means of pins and holes
 - 7/08 • • the elements being secured or adapted to be secured by means of grooves, rails, or slits
 - 7/10 • • • and slidably mounted
 - 7/12 • • the elements being secured or adapted to be secured by self-adhesion, moisture, suction, slow-drying adhesive, or the like
- 7/14 • • Constructional features of the symbol-bearing or -forming elements
 - 7/16 • Letters, numerals, or other symbols, adapted for permanent fixing to a support
 - 7/18 • Means for attaching signs, plates, panels, or boards to a supporting structure
 - 7/20 • • for adjustably mounting
 - 7/22 • • for rotatably or swingably mounting, e.g. for boards adapted to be rotated by the wind
- 9/00 Indicating arrangements for variable information in which the information is built-up on a support by selection or combination of individual elements** (in which the variable information is permanently attached to a movable support G09F 11/00; light guides G02B 6/00; abacus G06C 1/00; slide rules G06G 1/00)
- 9/30 • in which the desired character or characters are formed by combining individual elements (panels comprising a number of electrodes in a single cell controlling light arriving from an independent light source, e.g. electro-optical or magneto-optical cell, G02F 1/00)
 - 9/302 • • characterised by the form or geometrical disposition of the individual elements [7]
 - 9/305 • • being the ends of optical fibres (G09F 9/302 takes precedence) [7]
 - 9/307 • • being incandescent filaments (G09F 9/302 takes precedence; incandescent panels comprising a number of separate incandescent bodies, per se H01K 9/00) [3, 7]
 - 9/313 • • being gas discharge devices (G09F 9/302 takes precedence; gas discharge panels comprising a number of discharge gaps, per se H01J 17/49) [3, 7]
 - 9/33 • • being semiconductor devices, e.g. diodes (G09F 9/302 takes precedence; semiconductor integrated circuits comprising components specially adapted for emission of light, per se H01L 27/15) [3, 7]
 - 9/35 • • being liquid crystals (G09F 9/302 takes precedence; liquid crystal materials C09K 19/00) [3, 7]
 - 9/37 • • being movable elements (G09F 9/302 takes precedence) [3, 7]
 - 9/40 • in which the desired character is selected from a number of characters arranged one beside the other, e.g. on a common carrier plate
 - 9/46 • in which the desired character is selected from a number of characters arranged one behind the other
- 11/00 Indicating arrangements for variable information in which the complete information is permanently attached to a movable support which brings it to the display position** (using static means to present variable information G09F 9/00; showcases or show-cabinets with arrangements for continuously or intermittently moving the merchandise A47F 3/08)
- 11/02 • the display elements being secured to rotating members, e.g. drums, spindles
 - 11/04 • • the elements being secured to rotating discs
 - 11/06 • • the elements being stiff plates or cards (on rotating discs G09F 11/04)

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- 11/08 • • the elements being flexible sheets (on rotating discs G09F 11/04)
- 11/10 • • Electric control therefor
- 11/12 • the display elements being carried by endless belts, chains, or the like
- 11/14 • • the elements being in the form of stiff flaps, boards, cards, or the like
- 11/15 • • the elements being flexible sheets
- 11/16 • • Electric control therefor
- 11/18 • the display elements being carried by belts, chains, or the like, other than endless
- 11/20 • • the elements being in the form of stiff flaps, boards, cards, or the like
- 11/21 • • the elements being flexible sheets
- 11/22 • • Electric control therefor
- 11/23 • the advertising or display material forming part of rotating members, e.g. in the form of perforations, prints, or transparencies on a drum or disc
- 11/235 • • Electric control therefor
- 11/24 • the advertising or display material forming part of a moving band, e.g. in the form of perforations, prints, or transparencies
- 11/26 • • of an endless band
- 11/28 • • • Electric control therefor
- 11/29 • • of a band other than endless
- 11/295 • • • Electric control therefor
- 11/30 • the display elements being fed one by one from a storage place to a display position
- 11/32 • • the feeding means comprising belts or chains, e.g. endless belts or chains
- 11/34 • • the feeding means comprising electromagnets
- 13/00 Illuminated signs; Luminous advertising** (G09F 9/00, G09F 11/00 take precedence; control of displays in general using static means to present variable information G09G)
- 13/02 • Signs, boards, or panels, illuminated by artificial light sources positioned in front of the insignia
- 13/04 • Signs, boards, or panels, illuminated from behind the insignia
- 13/06 • • using individual cut-out symbols or cut-out silhouettes, e.g. perforated signs
- 13/08 • • using both translucent and non-translucent layers (backlighting of liquid crystal display panels G02F 1/13357)
- 13/10 • • • using transparencies
- 13/12 • • using a transparent mirror or other light-reflecting surface transparent to transmitted light whereby a sign, symbol, picture, or other information is visible only when illuminated
- 13/14 • • Arrangements of reflectors therein
- 13/16 • Signs formed of, or incorporating, reflecting elements or surfaces, e.g. warning signs having triangular or other geometrical shape
- 13/18 • Edge-illuminated signs
- 13/20 • with luminescent surfaces or parts (luminescent materials C09K 11/00; light sources using luminescence F21K 2/00)
- 13/22 • • electroluminescent (electroluminescent light sources per se H05B 33/00)
- 13/24 • using tubes or the like filled with liquid, e.g. bubbling liquid
- 13/26 • Signs formed by electric discharge tubes (by selective lighting G09F 9/00)
- 13/28 • Signs formed by filament-type lamps (by selective lighting G09F 9/00)
- 13/30 • with moving light sources, e.g. rotating luminous tubes
- 13/32 • with moving optical part or parts, e.g. mirrors
- 13/34 • with light sources co-operating with movable members, e.g. with shutters to cover or uncover the light source (apparatus wherein advertising or display material is moved in a continuous or intermittent succession G09F 11/00)
- 13/36 • • co-operating with rotating screening means
- 13/42 • with light sources activated by non-visible radiation (cathode ray image or pattern display tubes H01J 31/10; lamps with luminescent screens excited by cathode rays H01J 63/06)
- 13/44 • with gas as lighting source
- 13/46 • Advertising by fireworks
- 15/00 Boards, hoardings, pillars, or like structures for notices, placards, posters, or the like**
- 15/02 • Bills, posters, or the like therefor
- 17/00 Flags; Banners; Mountings therefor** (devices specially adapted or mounted for storing and repeatedly paying-out and re-storing lengths of material B65H 75/34)
- 19/00 Advertising or display means not otherwise provided for**
- 19/02 • incorporating moving display members
- 19/04 • • operated by the opening or closing of doors, e.g. shop door
- 19/06 • • Writing devices
- 19/08 • • Dolls, faces, or other representations of living forms with moving parts (in the nature of toys A63H)
- 19/10 • • Devices demonstrating the action of an article to be advertised
- 19/12 • using special optical effects (designs or pictures characterised by special light effects B44F 1/00, e.g. changing pictures B44F 1/10)
- 19/14 • • displaying different signs depending upon the view-point of the observer
- 19/16 • • involving the use of mirrors
- 19/18 • • involving the use of optical projection means, e.g. projection of images on clouds (projection apparatus per se G03B)
- 19/20 • • with colour-mixing effects
- 19/22 • Advertising or display means on roads, walls, or similar surfaces, e.g. illuminated (illuminated signs in general G09F 13/00)
- 21/00 Mobile visual advertising**
- 21/02 • by a carrier person or animal
- 21/04 • by land vehicles
- 21/06 • by aeroplanes, airships, balloons, or kites
- 21/08 • • the advertising matter being arranged on the aircraft
- 21/10 • • • illuminated
- 21/12 • • the advertising matter being towed by the aircraft (kites per se B64C 31/06)
- 21/14 • • • illuminated
- 21/16 • • Sky-writing (aircraft adaptation for sky-writing B64D 1/20)
- 21/18 • by ships or other floating means
- 21/20 • • illuminated
- 21/22 • Dispensing devices for pamphlets or similar advertising matter from vehicles (from aircraft B64D 1/00)

23/00	Advertising on or in specific articles, e.g. ashtrays, letter-boxes (on or in vehicles G09F 21/00; containers, packaging-elements, or packages, with auxiliary means or provisions for displaying articles B65D)	23/08	• • with tableware
23/02	• the advertising matter being displayed by the operation of the article	23/10	• on paper articles, e.g. booklets, newspapers
23/04	• • illuminated	23/12	• • on toilet paper
23/06	• the advertising matter being combined with articles for restaurants, shops, or offices (on paper articles G09F 23/10)	23/14	• on toys, games, puzzles, or similar devices
		23/16	• on clocks, e.g. controlled by the clock mechanism
		25/00	Audible advertising (sound-recording or reproducing in general G11B; public address systems H04R 27/00)
		27/00	Combined visual and audible advertising or displaying, e.g. for public address

G09G ARRANGEMENTS OR CIRCUITS FOR CONTROL OF INDICATING DEVICES USING STATIC MEANS TO PRESENT VARIABLE INFORMATION (lighting in general F21; arrangements for displaying electric variables or waveforms G01R 13/00; devices or arrangements for the control of light beams G02F 1/00; indicating of time by visual means G04B 19/00, G04C 17/00, G04G 9/00; arrangements for transferring data between computers and peripheral equipment G06F 3/00; visible signalling arrangements or devices G08B 5/00; traffic control systems G08G; display, advertising, signs G09F, e.g. static indicating arrangements comprising an association of a number of separate sources or light control cells G09F 9/00; static indicating arrangements comprising integral associations of a number of light sources H01J, H01K, H01L, H05B 33/12; circuits in pulse counters for indicating the result H03K 21/18; coding, decoding or code conversion, in general H03M; reproducing a picture or pattern using electric signals representing parts thereof and produced by scanning an original H04N) **[3, 4, 5]**

Note(s)

1. This subclass covers indicator consoles, i.e. arrangements or circuits for processing control signals to achieve the display, e.g. for the calling up, reception, storage, regeneration, coding, decoding, addressing of control signals.
2. This subclass does not cover the structural details of the indicating devices, such as panels or tubes per se, or assemblies of individual light sources, which are covered by the relevant subclasses, e.g. H01J, H01K, H01L, G02F, G09F, H05B.
3. Contrary to subclass H04N, in which are classified display devices capable of representing continuous brightness value scales, this subclass is limited to devices using only a discrete number of brightness values, e.g. visible/non-visible.
4. The visual effect may be produced by a luminescent screen scanned by an electron beam, directly by controlled light sources, by projection of light, from controlled light sources onto characters, symbols, or elements thereof drawn on a support, or by electric, magnetic, or acoustic control of the parameters of light rays from an independent source.

1/00	Control arrangements or circuits, of interest only in connection with cathode-ray tube indicators (cathode-ray oscilloscopes G01R 13/20; television H04N) [3]	1/22	• using tubes permitting selection of a complete character from a number of characters [3]
1/02	• Storage circuits (G09G 1/06-G09G 1/28 take precedence) [3]	1/24	• using tubes permitting selection of individual elements forming in combination a character [3]
1/04	• Deflection circuits [3]	1/26	• using storage tubes [3]
1/06	• using single beam tubes (G09G 1/26, G09G 1/28 take precedence) [3]	1/28	• using colour tubes [3]
1/07	• • with combined raster scan and calligraphic display [5]	3/00	Control arrangements or circuits, of interest only in connection with visual indicators other than cathode-ray tubes (optical scanning systems in general G02B 26/10) [3]
1/08	• • the beam directly tracing characters, the information to be displayed controlling the deflection as a function of time in two spatial co-ordinates, e.g. according to a cartesian co-ordinate system [3]	3/02	• by tracing or scanning a light beam on a screen [3]
1/10	• • • the deflection signals being produced by essentially digital means, e.g. incrementally [3]	3/04	• for presentation of a single character by selection from a plurality of characters, or by composing the character by combination of individual elements, e.g. segments [3]
1/12	• • • the deflection signals being produced by essentially analogue means [3]	3/06	• • using controlled light sources [3]
1/14	• • the beam tracing a pattern independent of the information to be displayed, this latter determining the parts of the pattern rendered respectively visible and invisible [3]	3/08	• • • using incandescent filaments [3]
1/16	• • • the pattern of rectangular co-ordinates extending over the whole area of the screen, i.e. television type raster [3]	3/10	• • • using gas tubes [3]
1/18	• • • a small local pattern covering only a single character, and stepping to a position for the following character, e.g. in rectangular or polar co-ordinates, or in the form of a framed star [3]	3/12	• • • using electroluminescent elements (using cathode-ray tubes with phosphor screens G09G 1/00) [3]
1/20	• using multi-beam tubes (G09G 1/26, G09G 1/28 take precedence) [3]	3/14	• • • • Semiconductor devices, e.g. diodes [3]
		3/16	• • by control of light from an independent source [3]
		3/18	• • • using liquid crystals [3]
		3/19	• • • using electrochromic devices [5]
		3/20	• for presentation of an assembly of a number of characters, e.g. a page, by composing the assembly by combination of individual elements arranged in a matrix [3]
		3/22	• • using controlled light sources [3]
		3/24	• • • using incandescent filaments [3]

- 3/26 • • • • to give the appearance of moving signs [3]
- 3/28 • • • using luminous gas-discharge panels, e.g. plasma [3]
- 3/282 • • • • using direct current (DC) panels [7]
- 3/285 • • • • using self-scanning [7]
- 3/288 • • • • using alternating current (AC) panels [7]
- 3/29 • • • • using self-shift panels [5]
- 3/30 • • • using electroluminescent panels [3]
- 3/32 • • • • semiconductive, e.g. diodes [3]
- 3/34 • • by control of light from an independent source [3]
- 3/36 • • • using liquid crystals [3]
- 3/38 • • • using electrochromic devices [5]
- 5/00 Control arrangements or circuits for visual indicators common to cathode-ray tube indicators and other visual indicators (image data processing or generation, in general G06T) [5]**
- 5/02 • characterised by the way in which colour is displayed [5]
- 5/04 • • using circuits for interfacing with colour displays [5]
- 5/06 • • using colour palettes, e.g. look-up tables [5]
- 5/08 • Cursor circuits [5]
- 5/10 • Intensity circuits [5]
- 5/12 • Synchronisation between the display unit and other units, e.g. other display units, video-disc players [5]
- 5/14 • Display of multiple viewports [5]
- 5/16 • Display of right-to-left language [5]
- 5/18 • Timing circuits for raster scan displays (specially adapted for television H04N) [5]
- 5/20 • Function-generator circuits, e.g. circle generators [5]
- 5/22 • characterised by the display of individual characters or indicia using display control signals derived from coded signals representing the characters or indicia with a character-code memory (G09G 5/42 takes precedence) [5, 7]
- 5/24 • • Generation of individual character patterns [5]
- 5/26 • • • for modifying the character dimension, e.g. double width, double height [5]
- 5/28 • • • for enhancement of character form, e.g. smoothing [5]
- 5/30 • • Control of display attribute [5]
- 5/32 • • with means for controlling the display position [5]
- 5/34 • for rolling or scrolling [5]
- 5/36 • characterised by the display of individual graphic patterns using a bit-mapped memory (G09G 5/42 takes precedence) [5, 7]
- 5/37 • • Details of the operation on graphic patterns (G09G 5/38 takes precedence) [7]
- 5/373 • • • for modifying the size of the graphic pattern [7]
- 5/377 • • • for mixing or overlaying two or more graphic patterns (G09G 5/02, G09G 5/397 take precedence) [7]
- 5/38 • • with means for controlling the display position [5]
- 5/39 • • Control of the bit-mapped memory [7]
- 5/391 • • • Resolution modifying circuits, e.g. variable screen formats [7]
- 5/393 • • • Arrangements for updating the contents of the bit-mapped memory [7]
- 5/395 • • • Arrangements specially adapted for transferring the contents of the bit-mapped memory to the screen (G09G 5/399 takes precedence) [7]
- 5/397 • • • Arrangements specially adapted for transferring the contents of two or more bit-mapped memories to the screen simultaneously, e.g. for mixing or overlay (G09G 5/02 takes precedence) [7]
- 5/399 • • • using two or more bit-mapped memories, the operations of which are switched in time, e.g. ping-pong buffers [7]
- 5/40 • characterised by the way in which both a pattern determined by character code and another pattern are displayed simultaneously, or either pattern is displayed selectively, e.g. with character code memory and a bit-mapped memory [5]
- 5/42 • characterised by the display of patterns using a display memory without fixed position correspondence between the display memory contents and the display position on the screen [7]