SECTION G — PHYSICS

G09   EDUCATING; CRYPTOGRAPHY; DISPLAY; ADVERTISING; SEALS

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 <u>covers</u> 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 <u>does not cover</u> the structural details of the indicating devices, such as panels or tubes <u>per se</u>, 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]**

1/02   • Storage circuits (G09G 1/06-G09G 1/28 take precedence) **[3]**

1/04   • Deflection circuits **[3]**

1/06   • using single beam tubes (G09G 1/26, G09G 1/28 take precedence) **[3]**

1/07   • • with combined raster scan and calligraphic display **[5]**

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]**

1/10   • • • the deflection signals being produced by essentially digital means, e.g. incrementally **[3]**

1/12   • • • the deflection signals being produced by essentially analogue means **[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]**

1/16   • • • the pattern of rectangular co-ordinates extending over the whole area of the screen, i.e. television type raster **[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]**

1/20   • using multi-beam tubes (G09G 1/26, G09G 1/28 take precedence) **[3]**

1/22   • using tubes permitting selection of a complete character from a number of characters **[3]**

1/24   • using tubes permitting selection of individual elements forming in combination a character **[3]**

1/26   • using storage tubes **[3]**

1/28   • using colour tubes **[3]**

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]**

3/02   • by tracing or scanning a light beam on a screen **[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]**

3/06   • • using controlled light sources **[3]**

3/08   • • • using incandescent filaments **[3]**

3/10   • • • using gas tubes **[3]**

3/12   • • • using electroluminescent elements (using cathode-ray tubes with phosphor screens G09G 1/00) **[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]**