

| Symbol           | Typ                 | Titel                                                                                                                                                                                                        |
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| <b>G</b>         | <b>Sektion</b>      | <b>PHYSICS</b>                                                                                                                                                                                               |
| <b>G06</b>       | <b>Klasse</b>       | <b>COMPUTING; CALCULATING; COUNTING (score computers for games A63B 71/06 , A63D 15/20 , A63F 1/18; combinations of writing implements with computing devices B43K 29/08)</b>                                |
| <b>G06K</b>      | <b>Unterklasse</b>  | <b>RECOGNITION OF DATA; PRESENTATION OF DATA; RECORD CARRIERS; HANDLING RECORD CARRIERS (postal sorting B07C; secondary surveillance radar G01S; detecting presence of transponders or tags G01S , G01V)</b> |
| <b>G06K 1/00</b> | <b>Hauptgruppe</b>  | <b>Methods or arrangements for marking the record carrier in digital fashion (interpreting G06K 3/02 )</b>                                                                                                   |
| G06K 1/02        | 1-Punkt Untergruppe | . by punching (punching in general B26F)                                                                                                                                                                     |
| G06K 1/04        | 2-Punkt Untergruppe | . . controlled by sensing markings on the record carrier being punched (sensing of record carriers G06K 7/00)                                                                                                |
| G06K 1/05        | 2-Punkt Untergruppe | . . High-speed punches, e.g. controlled by electric computer                                                                                                                                                 |
| G06K 1/06        | 2-Punkt Untergruppe | . . Manually-controlled devices                                                                                                                                                                              |
| G06K 1/08        | 3-Punkt Untergruppe | . . . Card punches                                                                                                                                                                                           |
| G06K 1/10        | 3-Punkt Untergruppe | . . . Tape punches (specially adapted for a particular purpose, see the relevant subclass, e.g. for transmission of digital information H04L)                                                                |
| G06K 1/12        | 1-Punkt Untergruppe | . otherwise than by punching (printing in general B41 , e.g. B41J)                                                                                                                                           |
| G06K 1/14        | 1-Punkt Untergruppe | . by transferring data from a similar or dissimilar record carrier                                                                                                                                           |
| G06K 1/16        | 2-Punkt Untergruppe | . . by reproducing data from one punched card on to one or more punched cards without the code representation, i.e. duplicating                                                                              |
| G06K 1/18        | 2-Punkt Untergruppe | . . by transferring data from one type of record carrier on to another type of record carrier, e.g. from magnetic tape to punched card                                                                       |
| G06K 1/20        | 1-Punkt Untergruppe | . Simultaneous marking of record carrier and printing-out of data, e.g. printing-punch                                                                                                                       |
| G06K 1/22        | 2-Punkt Untergruppe | . . Simultaneous marking and printing on different record carriers, e.g. on different types of record carrier                                                                                                |
| <b>G06K 3/00</b> | <b>Hauptgruppe</b>  | <b>Methods or arrangements for printing of data in the shape of alphanumeric or other characters from a record carrier, e.g. interpreting, printing-out from a magnetic tape</b>                             |
| G06K 3/02        | 1-Punkt Untergruppe | . Translating markings on a record carrier into printed data on the same record carrier, i.e. interpreting                                                                                                   |
| <b>G06K 5/00</b> | <b>Hauptgruppe</b>  | <b>Methods or arrangements for verifying the correctness of markings on a record carrier; Column-detection devices</b>                                                                                       |
| G06K 5/02        | 1-Punkt Untergruppe | . the verifying forming a part of the marking action                                                                                                                                                         |
| G06K 5/04        | 1-Punkt Untergruppe | . Verifying the alignment of markings                                                                                                                                                                        |
| <b>G06K 7/00</b> | <b>Hauptgruppe</b>  | <b>Methods or arrangements for sensing record carriers (G06K 9/00 takes precedence)</b>                                                                                                                      |
| G06K 7/01        | 1-Punkt Untergruppe | . Details                                                                                                                                                                                                    |
| G06K 7/015       | 2-Punkt Untergruppe | . . Aligning or centring of the sensing device with respect to the record carrier (in general G11B)                                                                                                          |
| G06K 7/016       | 2-Punkt Untergruppe | . . Synchronisation of sensing process (in general G11B)                                                                                                                                                     |
| G06K 7/02        | 1-Punkt Untergruppe | . by pneumatic or hydraulic means, e.g. sensing punched holes with compressed air; by sonic means                                                                                                            |
| G06K 7/04        | 1-Punkt Untergruppe | . by mechanical means, e.g. by pins operating electric contacts                                                                                                                                              |
| G06K 7/06        | 1-Punkt Untergruppe | . by means which conduct current when a mark is sensed or absent, e.g. contact brush for a conductive mark                                                                                                   |

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| G06K 7/08        | 1-Punkt Untergruppe | . by means detecting the change of an electrostatic or magnetic field, e.g. by detecting change of capacitance between electrodes                                                                                                                                                                                           |
| G06K 7/10        | 1-Punkt Untergruppe | . by electromagnetic radiation, e.g. optical sensing; by corpuscular radiation                                                                                                                                                                                                                                              |
| G06K 7/12        | 2-Punkt Untergruppe | . . using a selected wavelength, e.g. to sense red marks and ignore blue marks                                                                                                                                                                                                                                              |
| G06K 7/14        | 2-Punkt Untergruppe | . . using light without selection of wavelength, e.g. sensing reflected white light                                                                                                                                                                                                                                         |
| <b>G06K 9/00</b> | <b>Hauptgruppe</b>  | <b>Methods or arrangements for reading or recognising printed or written characters or for recognising patterns, e.g. fingerprints ( processing or analysis of tracks of nuclear particles G01T 5/02 ; testing patterns on paper currency or similar valuable papers G07D 7/20 ; speech recognition G10L 15/00 ) [1, 7]</b> |
| G06K 9/03        | 1-Punkt Untergruppe | . Detection or correction of errors, e.g. by rescanning the pattern [3]                                                                                                                                                                                                                                                     |
| G06K 9/18        | 1-Punkt Untergruppe | . using printed characters having additional code marks or containing code marks, e.g. the character being composed of individual strokes of different shape, each representing a different code value                                                                                                                      |
| G06K 9/20        | 1-Punkt Untergruppe | . Image acquisition [3]                                                                                                                                                                                                                                                                                                     |
| G06K 9/22        | 2-Punkt Untergruppe | . . using hand-held instruments [3]                                                                                                                                                                                                                                                                                         |
| G06K 9/24        | 3-Punkt Untergruppe | . . . Construction of the instrument [3]                                                                                                                                                                                                                                                                                    |
| G06K 9/26        | 2-Punkt Untergruppe | . . using a slot moved over the image [3]                                                                                                                                                                                                                                                                                   |
| G06K 9/28        | 2-Punkt Untergruppe | . . using discrete sensing elements at predetermined points [3]                                                                                                                                                                                                                                                             |
| G06K 9/30        | 2-Punkt Untergruppe | . . using automatic curve following means [3]                                                                                                                                                                                                                                                                               |
| G06K 9/32        | 2-Punkt Untergruppe | . . Aligning or centering of the image pick-up or image-field [3]                                                                                                                                                                                                                                                           |
| G06K 9/34        | 2-Punkt Untergruppe | . . Segmentation of touching or overlapping patterns in the image field [3]                                                                                                                                                                                                                                                 |
| G06K 9/36        | 1-Punkt Untergruppe | . Image preprocessing, i.e. processing the image information without deciding about the identity of the image (image data processing or generation, in general G06T) [3]                                                                                                                                                    |
| G06K 9/38        | 2-Punkt Untergruppe | . . Quantising the analogue image signal [3]                                                                                                                                                                                                                                                                                |
| G06K 9/40        | 2-Punkt Untergruppe | . . Noise filtering [3]                                                                                                                                                                                                                                                                                                     |
| G06K 9/42        | 2-Punkt Untergruppe | . . Normalisation of the pattern dimensions [3]                                                                                                                                                                                                                                                                             |
| G06K 9/44        | 2-Punkt Untergruppe | . . Smoothing or thinning of the pattern [3]                                                                                                                                                                                                                                                                                |
| G06K 9/46        | 2-Punkt Untergruppe | . . Extraction of features or characteristics of the image [3]                                                                                                                                                                                                                                                              |
| G06K 9/48        | 3-Punkt Untergruppe | . . . by coding the contour of the pattern [3]                                                                                                                                                                                                                                                                              |
| G06K 9/50        | 3-Punkt Untergruppe | . . . by analysing segments intersecting the pattern [3]                                                                                                                                                                                                                                                                    |
| G06K 9/52        | 3-Punkt Untergruppe | . . . by deriving mathematical or geometrical properties from the whole image [3]                                                                                                                                                                                                                                           |
| G06K 9/54        | 2-Punkt Untergruppe | . . Combinations of preprocessing functions [3]                                                                                                                                                                                                                                                                             |
| G06K 9/56        | 3-Punkt Untergruppe | . . . using a local operator, i.e. means to operate on an elementary image point in terms of the immediate surroundings of this point [3]                                                                                                                                                                                   |
| G06K 9/58        | 2-Punkt Untergruppe | . . using optical means [3]                                                                                                                                                                                                                                                                                                 |
| G06K 9/60        | 1-Punkt Untergruppe | . Combination of image acquisition and preprocessing functions [3]                                                                                                                                                                                                                                                          |

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| G06K 9/62         | 1-Punkt Untergruppe | . Methods or arrangements for recognition using electronic means (learning machines G06F 15/18; digital correlation G06F 17/15; analogue correlation G06G 7/19) [3]                                                                                                                                                                                                                                                                                                                                                                           |
| G06K 9/64         | 2-Punkt Untergruppe | . . using simultaneous comparisons or correlations of the image signals with a plurality of references, e.g. resistor matrix [3]                                                                                                                                                                                                                                                                                                                                                                                                              |
| G06K 9/66         | 3-Punkt Untergruppe | . . . references adjustable by an adaptive method, e.g. learning [3]                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| G06K 9/68         | 2-Punkt Untergruppe | . . using sequential comparisons of the image signals with a plurality of reference, e.g. addressable memory [3]                                                                                                                                                                                                                                                                                                                                                                                                                              |
| G06K 9/70         | 3-Punkt Untergruppe | . . . the selection of the next reference depending on the result of the preceding comparison [3]                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| G06K 9/72         | 2-Punkt Untergruppe | . . using context analysis based on the provisionally recognised identity of a number of successive patterns, e.g. a word [3]                                                                                                                                                                                                                                                                                                                                                                                                                 |
| G06K 9/74         | 1-Punkt Untergruppe | . Arrangements for recognition using optical reference masks (optical analogue correlation G06E 3/00) [3]                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| G06K 9/76         | 2-Punkt Untergruppe | . . using holographic masks [3]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| G06K 9/78         | 1-Punkt Untergruppe | . Combination of image acquisition and recognition functions [3]                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| G06K 9/80         | 1-Punkt Untergruppe | . Combination of image preprocessing and recognition functions [3]                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| G06K 9/82         | 2-Punkt Untergruppe | . . using optical means in one or both functions [3]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>G06K 11/00</b> | <b>Hauptgruppe</b>  | <b>Methods or arrangements for graph-reading or for converting the pattern of mechanical parameters, e.g. force or presence, into electrical signals (combined with character or pattern recognition G06K 9/00; feelers for copying devices on machine tools B23Q 35/00; arrangements for measuring areas G01B; measuring force G01L; adapted as input devices to computers G06F 3/00; systems for transmitting the position of an object with respect to a predetermined reference system, e.g. tele-autographic system, G08C 21/00) [2]</b> |
| G06K 11/02        | 1-Punkt Untergruppe | . Automatic curve followers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| G06K 11/04        | 2-Punkt Untergruppe | . . using an auxiliary scanning pattern [2]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| G06K 11/06        | 1-Punkt Untergruppe | . Devices for converting the position of a manually-operated writing or tracing member into an electrical signal [3]                                                                                                                                                                                                                                                                                                                                                                                                                          |
| G06K 11/08        | 2-Punkt Untergruppe | . . using opto-electronic means [5]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| G06K 11/10        | 2-Punkt Untergruppe | . . using sets of wires, e.g. crossed wires (G06K 11/12 takes precedence) [5]                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| G06K 11/12        | 2-Punkt Untergruppe | . . using resistive elements, e.g. a single continuous surface or two parallel surfaces put in contact [5]                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| G06K 11/14        | 2-Punkt Untergruppe | . . using propagating acoustic waves [5]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| G06K 11/16        | 2-Punkt Untergruppe | . . using other specific means, e.g. capacitive, piezo-electric, electromagnetic [5]                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| G06K 11/18        | 2-Punkt Untergruppe | . . Hand-held sensing devices, e.g. light-pen, joystick, mouse, tracing-ball (accessories for games using an electronically generated display A63F 13/02) [5]                                                                                                                                                                                                                                                                                                                                                                                 |
| G06K 11/20        | 3-Punkt Untergruppe | . . . Control means for sensing devices [5]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>G06K 13/00</b> | <b>Hauptgruppe</b>  | <b>Conveying record carriers from one station to another, e.g. from stack to punching mechanism (transport devices in general B65G)</b>                                                                                                                                                                                                                                                                                                                                                                                                       |
| G06K 13/02        | 1-Punkt Untergruppe | . the record carrier having longitudinal dimension comparable with transverse dimension, e.g. punched card                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| G06K 13/04        | 2-Punkt Untergruppe | . . Details, e.g. flaps in card-sorting apparatus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| G06K 13/05        | 3-Punkt Untergruppe | . . . Capstans; Pinch rollers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| G06K 13/06        | 2-Punkt Untergruppe | . . Guiding cards; Checking correct operation of card-conveying mechanisms [2]                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

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| G06K 13/063       | 3-Punkt Untergruppe | . . . Aligning cards [2]                                                                                                                                                                                           |
| G06K 13/067       | 3-Punkt Untergruppe | . . . Checking presence, absence, correct position, or moving status of cards [2]                                                                                                                                  |
| G06K 13/07        | 2-Punkt Untergruppe | . . Transporting of cards between stations                                                                                                                                                                         |
| G06K 13/073       | 3-Punkt Untergruppe | . . . with continuous movement [2]                                                                                                                                                                                 |
| G06K 13/077       | 3-Punkt Untergruppe | . . . with intermittent movement; Braking or stopping movement [2]                                                                                                                                                 |
| G06K 13/08        | 2-Punkt Untergruppe | . . Feeding or discharging cards                                                                                                                                                                                   |
| G06K 13/10        | 3-Punkt Untergruppe | . . . from magazine to conveying arrangement                                                                                                                                                                       |
| G06K 13/103       | 4-Punkt Untergruppe | . . . . using mechanical means [2]                                                                                                                                                                                 |
| G06K 13/107       | 4-Punkt Untergruppe | . . . . using pneumatic means [2]                                                                                                                                                                                  |
| G06K 13/12        | 3-Punkt Untergruppe | . . . from conveying arrangement to magazine                                                                                                                                                                       |
| G06K 13/14        | 3-Punkt Untergruppe | . . . Card magazines, e.g. pocket, hopper (card magazines in general B42F)                                                                                                                                         |
| G06K 13/16        | 2-Punkt Untergruppe | . . Handling flexible sheets, e.g. cheques                                                                                                                                                                         |
| G06K 13/18        | 1-Punkt Untergruppe | . the record carrier being longitudinally extended, e.g. punched tape (features of interest apart from data processing G11B; magnetic-tape drive G11B 15/00)                                                       |
| G06K 13/20        | 2-Punkt Untergruppe | . . Details                                                                                                                                                                                                        |
| G06K 13/22        | 3-Punkt Untergruppe | . . . Capstans; Pinch rollers                                                                                                                                                                                      |
| G06K 13/24        | 2-Punkt Untergruppe | . . Guiding of record carriers; Recognising end of record carrier                                                                                                                                                  |
| G06K 13/26        | 2-Punkt Untergruppe | . . Winding-up or unwinding of record carriers; Driving of record carriers [2]                                                                                                                                     |
| G06K 13/28        | 3-Punkt Untergruppe | . . . continuously [2]                                                                                                                                                                                             |
| G06K 13/30        | 3-Punkt Untergruppe | . . . intermittently [2]                                                                                                                                                                                           |
| <b>G06K 15/00</b> | <b>Hauptgruppe</b>  | <b>Arrangements for producing a permanent visual presentation of the output data [3]</b>                                                                                                                           |
| G06K 15/02        | 1-Punkt Untergruppe | . using printers (printers per se B41J)                                                                                                                                                                            |
| G06K 15/04        | 2-Punkt Untergruppe | . . by rack-type printers                                                                                                                                                                                          |
| G06K 15/06        | 2-Punkt Untergruppe | . . by type-wheel printers                                                                                                                                                                                         |
| G06K 15/07        | 3-Punkt Untergruppe | . . . by continuously-rotating-type-wheel printers, e.g. rotating-type-drum printers [2]                                                                                                                           |
| G06K 15/08        | 2-Punkt Untergruppe | . . by flight printing with type font moving in the direction of the printed line, e.g. chain printers                                                                                                             |
| G06K 15/10        | 2-Punkt Untergruppe | . . by matrix printers                                                                                                                                                                                             |
| G06K 15/12        | 2-Punkt Untergruppe | . . by photographic printing                                                                                                                                                                                       |
| G06K 15/14        | 2-Punkt Untergruppe | . . by electrographic printing, e.g. xerography; by magnetographic printing                                                                                                                                        |
| G06K 15/16        | 2-Punkt Untergruppe | . . Means for paper feeding or form feeding                                                                                                                                                                        |
| G06K 15/22        | 1-Punkt Untergruppe | . using plotters (plotters per se B43L 13/00) [3]                                                                                                                                                                  |
| <b>G06K 17/00</b> | <b>Hauptgruppe</b>  | <b>Methods or arrangements for effecting co-operative working between equipments covered by two or more of the preceding main groups, e.g. automatic card files incorporating conveying and reading operations</b> |

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| <b>G06K 19/00</b> | <b>Hauptgruppe</b>  | <b>Record carriers for use with machines and with at least a part designed to carry digital markings ( record carriers adapted for controlling specific machines, see the appropriate subclass for the machine, e.g. B23Q , D03C , G10F , H04L; form printing B41; file cards B42F 19/00; record carriers in general G11)</b> |
| G06K 19/02        | 1-Punkt Untergruppe | . characterised by the selection of materials, e.g. to avoid wear during transport through the machine                                                                                                                                                                                                                        |
| G06K 19/04        | 1-Punkt Untergruppe | . characterised by the shape                                                                                                                                                                                                                                                                                                  |
| G06K 19/06        | 1-Punkt Untergruppe | . characterised by the kind of the digital marking, e.g. shape, nature, code                                                                                                                                                                                                                                                  |
| G06K 19/063       | 2-Punkt Untergruppe | . . the carrier being marginally punched or notched, e.g. having elongated slots [5]                                                                                                                                                                                                                                          |
| G06K 19/067       | 2-Punkt Untergruppe | . . Record carriers with conductive marks, printed circuits or semiconductor circuit elements, e.g. credit or identity cards (using a coded card to authorise calls from a telephone set H04M 1/675) [5]                                                                                                                      |
| G06K 19/07        | 3-Punkt Untergruppe | . . . with integrated circuit chips [5]                                                                                                                                                                                                                                                                                       |
| G06K 19/073       | 4-Punkt Untergruppe | . . . . Special arrangements for circuits, e.g. for protecting identification code in memory (protection against unauthorised use of computer memory G06F 12/14) [5]                                                                                                                                                          |
| G06K 19/077       | 4-Punkt Untergruppe | . . . . Constructional details, e.g. mounting of circuits in the carrier [5]                                                                                                                                                                                                                                                  |
| G06K 19/08        | 2-Punkt Untergruppe | . . using markings of different kinds in the same record carrier, e.g. one marking being sensed by optical and the other by magnetic means                                                                                                                                                                                    |
| G06K 19/10        | 3-Punkt Untergruppe | . . . at least one kind of marking being used for authentication, e.g. of credit or identity cards (verification of coded identity or credit cards in mechanisms actuated by them G07F 7/12) [5]                                                                                                                              |
| G06K 19/12        | 4-Punkt Untergruppe | . . . . the marking being sensed by magnetic means [5]                                                                                                                                                                                                                                                                        |
| G06K 19/14        | 4-Punkt Untergruppe | . . . . the marking being sensed by radiation [5]                                                                                                                                                                                                                                                                             |
| G06K 19/16        | 5-Punkt Untergruppe | . . . . . the marking being a hologram or diffraction grating [5]                                                                                                                                                                                                                                                             |
| G06K 19/18        | 4-Punkt Untergruppe | . . . . Constructional details [5]                                                                                                                                                                                                                                                                                            |
| <b>G06K 21/00</b> | <b>Hauptgruppe</b>  | <b>Information retrieval from punched cards designed for manual use or handling by machine (G06K 19/00 takes precedence); Apparatus for handling such cards, e.g. marking or correcting</b>                                                                                                                                   |
| G06K 21/02        | 1-Punkt Untergruppe | . in which coincidence of markings is sensed mechanically, e.g. by needle                                                                                                                                                                                                                                                     |
| G06K 21/04        | 1-Punkt Untergruppe | . in which coincidence of markings is sensed optically, e.g. peek-a-boo system                                                                                                                                                                                                                                                |
| G06K 21/06        | 1-Punkt Untergruppe | . Apparatus or tools adapted for slotting or otherwise marking information-retrieval cards (tools for perforating in general B26F)                                                                                                                                                                                            |
| G06K 21/08        | 1-Punkt Untergruppe | . Apparatus or tools for correcting punching or slotting errors [2]                                                                                                                                                                                                                                                           |